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ROSETTA - SESAME

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ESA PLANETARY SCIENCE ARCHIVE INTERFACE CONTROL DOCUMENT

RLGS-SPEC-SONC_DPS-SCIE-9241-CNES

RO-LSE-DS-3102

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Change Log

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TBD Items

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1 Introduction

1.1 Purpose and Contents

The purpose of this EAICD (Experiment to Planetary Science Archive Interface Control Document) is twofold. First, it provides users of the SESAME experiment data with a detailed description of the data archive and a description of how it was generated, including data sources and storage destinations. Secondly, the EAICD is the official interface between the SESAME experiment team and the Philae science data archiving authority.

This document describes the data flow of the SESAME experiment on the *Rosetta* lander *Philae* from the spacecraft until the insertion into the PSA for ESA. It includes information on how data were processed, formatted, labeled and uniquely identified. The document discusses general naming schemes for data volumes, data sets, data and label files. Standards used to generate the product are explained. Software that may be used to access the product is explained further on. The design of the data set structure and of the data product is given.

The naming of levels of processing of SESAME housekeeping and science data is based on the CODMAC definition. For details of this definition and for a cross-reference to other schemes see appendix B of [AD4].

The data format presented in this document comprises the commands and data available in SESAME flight software FM-1 [AD7], FM-2 [AD8] and FM-3 [AD9].

1.2 Archiving Authorities

The Planetary Data System Standard is used as archiving standard by

- NASA for U.S. planetary missions, implemented by PDS
- ESA for European planetary missions, implemented by the Research and Scientific Support Department (RSSD) of ESA
- ESA's Planetary Science Archive (PSA)

ESA implements an online science archive, the PSA,

- to support and ease data ingestion,
- to offer additional services to the scientific user community and science operations teams as e.g. search queries that allow searches across instruments, missions and scientific disciplines,
- several data delivery options like
 - o direct download of data products, linked files and data sets
 - ftp download of data products, linked files and data sets

The PSA aims for online ingestion of logical archive volumes and will offer the creation of physical archive volumes on request.

1.3 Intended Readership

The staff of the archiving authority (SONC and PSA (RSSD, ESA)) and any potential user of the SESAME data.

1.4 Applicable Documents

- AD1 SESAME Flight Software User Manual, FM 1.0, RO-LSE-UG-3401, issue 1, revision 1, August 2001
- AD2 SESAME Flight Software User Manual, FM 2.0, RO-LSE-UG-3401, issue 2, revision 4, February 2008
- AD3 SESAME Flight Software User Manual, FM 3.0, RO-LSE-UG-3404, issue draft, revision 2, September 2009
- AD4 Planetary Data System Preparation Workbook, 1. February 1995, Version 3.1, JPL, D-7669, Part 1
- AD5 Planetary Data System Standards Reference, Aug. 1, 2003, Version 3.6, JPL, D-7669, Part 2

- AD6 ROSETTA Archive Generation, Validation and Transfer Plan, RO-EST-PL-5011, Issue 2.3, 10 January 2006
- AD7 Rosetta Time handling, RO-EST-TN-3165, Issue 1, Rev. 0, February 9, 2004
- AD8 Command and Data Management System (CDMS) Subsystem Specification, RO-LCD-SP-3101, Issue 3, Rev. 5, 29/08/2001
- AD9 ROSETTA Archive Conventions, RO-EST-TN-3372, Issue 8, Rev. 3, 19 August 2015
- AD10 CDMS DDD, RO-LCD-SW-3610, Issue 6 and above
- AD11 CDMS Command and Data Management System Subsystem Specification, RO-LCD-SP-3101 29/08/2001, Issue 3, Rev. 5
- AD12 CDMS Command and Data Management System Operation Manual, RO-LCD-SW-3402, 12/02/2001, Issue 1, Rev. 2
- AD13 Data Delivery Interface Document, RO-ESC-IF-5003, Issue B6, 23/10/2003

1.5 Acronyms and Abbreviations

| CASSE CDMS Col DAWG DDS DIM EAICD EGSE ESA HC HK LCC LOBT LSB MSB OOBT PC PCB PDS PI PP PSA RLGS RSOC RSSD S/S SESAME SFDU SIM SLR SONC TBC | Comet Acoustic Surface Sounding Experiment Central Data Management System Co-Investigator Data Archive Working Group Data Distribution System Dust Impact Monitor Experiment (planetary science) Archive Interface Control Document Electrical Ground Support Equipment European Space Agency Health-check Housekeeping Lander Control Centre Lander On-Board Time Least Significant Bit Most Significant Bit Orbiter On-Board Time Payload Check-out Printed Circuit Board Planetary Data System Principal Investigator Permittivity Probe Planetary Science Archive (ESA) Rosetta Lander Ground Segment Rosetta Science Operations Center Research and Scientific Support Department of ESA Sub-system(s) Surface Electric Sounding and Acoustic Monitoring Experiment Standard Formatted Data Unit Lander simulator (software with some hardware) SESAME Local Time Scientific Operation and Navigation Center To Be Confirmed |
|--|--|
| | |
| SONC | |
| - | |
| TBD | To Be Defined |
| тс | Telecommand |
| | |

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1.7 Acknowledgement

The writing of this document was greatly supported by using the CIVA EAICD (LCI-SP-0026-3270-IAS, issue 1.0, 3 October 2005) as a reference document.

2 Overview of Scientific Objectives, Experiment Design and Data Products

2.1 Scientific Objectives

The activity and evolution of comets is, apart from the magnitude of the solar radiation flux, strongly influenced by the properties of their surfaces. Measurements of surface parameters like composition as well as mechanical and electrical properties and their variation with rotational and orbital phase are of crucial importance. In addition, the knowledge of the local physical, structural and layering properties of cometary surfaces is needed to understand the present processes and the formation history.

These data are required for modeling the gas transport properties of cometary surfaces and related activity phenomena. Describing the gas transport is a necessary prerequisite for a solid interpretation of the gas measurements of, for example, elemental and molecular abundances that are of primary scientific importance for *Rosetta* providing information on the composition of the 'pristine' material of comet nuclei. The diurnal variation of this gas flux is strongly governed by the diffusion properties of upper cometary surface layers. Vice versa, erosion by and recondensation of this gas flux steadily modifies the surface properties.

The *Surface Electric Sounding and Acoustic Monitoring Experiment* (SESAME, Seidensticker et al., 2007) on the lander *Philae* of the ESA *Rosetta* Mission has the goal to determine several of these parameters as well as the properties of released cometary particles. SESAME is a complex of three instruments: The *Comet Acoustic Surface Sounding Experiment* (CASSE), the *Dust Impact Monitor* (DIM) and the *Permittivity Probe* (PP). It is the goal of SESAME to contribute to the understanding of the vertical and lateral structure of a cometary surface and the acting processes by conducting in-situ measurements of mechanical, electrical and particle-related properties.

The analysis of elastic waves that will be generated and recorded by CASSE will allow deducing mechanical parameters as well as the vertical (layered) structure of the cometary surface.

The DIM instrument will measure the properties of impacting ice-dust grains. These data should help to improve our understanding of the lateral variations and how activity can be evoked or choked.

PP will determine the complex permittivity of the surface material beneath *Philae*, which is a measure for the water ice content, thereby constraining the mass fractions of refractory material and other ices.

These measurements shall be performed from touchdown until 67P/Churyumov-Gerasimenko, the target comet, reaches its perihelion. Combining observations from other instruments, both on *Philae* and the *Rosetta* orbiter, with the SESAME data should improve models of cometary activity, layering processes and of the heat and gas transport within cometary surfaces.

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2.2 Experiment Design

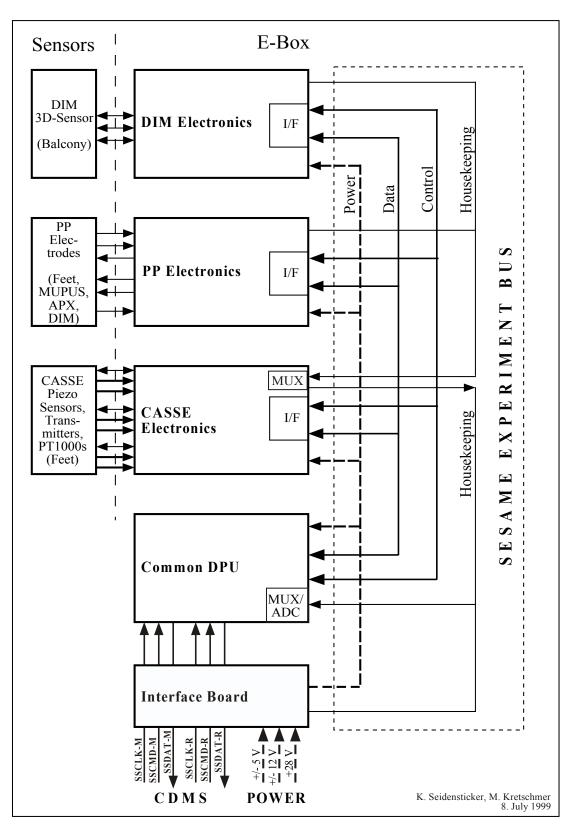


Figure 2.1: The SESAME electronics

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2.2.1 CASSE

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CASSE will investigate the outermost surface layers of comet 67P/Churyumov-Gerasimenko by transmitting and receiving vibrations in the range from 100 Hz to 10 kHz (audible frequency range). The elastic properties of the cometary surface will be investigated by recording compressional and shear waves. To guarantee sufficient ground contact in any foreseeable surface topography and composition (dust, sand, ice and their mixtures), the transmitters (actuators) and the receivers of stacked piezoceramics and triaxial piezoelectric accelerometers are integrated into the lander's six soles. The soles thus act as transmitting and receiving antennas. By switching between actuators and accelerometers, an analysis of the surface material and an in-depth sounding for detection of a layered structure or embedded local inhomogeneities are both possible. Two harpoons fired from *Philae* shall provide a fixation force of at least 5 N per sole in order to improve the ground contact of the soles and thereby the transmission and reception of vibrations.

Measuring principle

By measuring the propagation time between feet with triaxial accelerometers, the propagation velocities c_{ρ} and c_s of the acompressional and the shear waves can be derived. These velocities are related to the physical parameters and structural composition of the surface material. Identifying and measuring the thickness of subsurface layers, by detecting echoes from a steep gradient in reflectivity, is of great interest.

Physical parameters related to material properties are the elastic parameters Young's modulus *E* and Poisson number *v*. They are related to the velocities of the longitudinal and transverse elastic waves, described as compressional p- and shear s-waves in seismic terms, and the density ρ of the material. The elastic parameters can also be expressed by other mechanical parameters such as the compressional modulus and rigidity; these are related to other properties such as tensile strength and microstructure.

The interface between the soles and the cometary surface is mostly unknown. The required contact with the cometary surface strongly depends on the sole design and the final acoustic properties of the feet and landing gear. To cope with the unknown physical conditions on and in the comet, acoustic wave propagation experiments have been made in various materials simulating different cometary conditions. Laboratory studies of regolithic dust and sand, and hardened ice/dust mixtures demonstrated that acoustic sounding could be applied to cometary surfaces.

2.2.2 DIM

Most of the comet's surface is expected to be freely sublimating ice and embedded dust. When ice is exposed to solar radiation, sublimating gas molecules drag away embedded ice/dust grains of different sizes. The combined action of gas drag and gravitational forces means that the majority of the grains is either ejected into interplanetary space (smaller particles) or falls back to the nucleus (larger particles). DIM, mounted on *Philae's* balcony, will observe those particles that fall back owing to their insufficient velocities.

DIM's data will help to monitor the downward flux of grains as a function of orbital position and cometary activity (along with daily variations). This will allow the development of better models for the distribution and flux of near-surface dust and small particles as a function of their size and velocity. The impact properties will allow the acoustic signals of external and internal origin to be separated. As a bonus, this experiment may help to identify the Lander vibration noise that needs to be removed from the acoustic and seismic measurements.

Instrument principle

DIM's piezoelectric sensor on the balcony will detect the impacts of particles having energies of 10⁻¹¹-10⁻⁷ J, radii of 50 µm - 6 mm and speeds of 2.5 cm/s - 0.25 m/s. The sensor's active area is about 75 cm². The low-level electrical output signals pass through a wideband logarithmic amplifier to retain their broad dynamic range. A data acquisition unit (DAU) measures the impact characteristics (peak amplitudes, contact times, averages). The DAU is connected to SESAME's Common Data Processing Unit (DPU) by the SESAME Experiment Bus.

The sensor output is a fast or slow decaying sinusoid transient electric signal (depending on the parameters of the impacting particles). An impact is detected by a threshold detector, where the threshold is the sum of the average of the signal and a margin. The margin is programmable in order to adjust the sensitivity of detection. As the impact rate increases, the average will be increased to reduce sensitivity so that the system is not saturated: fewer impacts will be detected.

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Further, the average value of the amplified signal is sampled. In the case of very low impact rates, this is roughly equivalent to the electronic and background noise average. For very high impact rates, the individual impacts cannot be distinguished so only the average value of the signal is measured. This switchover from measuring individual impacts (Burst Mode) to the average (Continuous Mode) is automatic and is based on the measured average. The default is Burst Mode, but the Continuous Mode can be selected separately on command.

2.2.3 PP

The PP instrument is mainly a quadrupole detector using two transmitter and two receiver electrodes at any given time in so-called active mode. An AC-voltage, digitally generated by a sequencer inside the common electronics in the frequency range between 10 Hz and 20 kHz and amplitudes up to \pm 10V, is injected between two transmitter electrodes. The resulting current can be sampled with up to 180kHz sampling frequency on either of the two electrode's driver circuits. This current generates an electrical field inside the comet's surface material, which is picked up by the two receiver electrodes Rx1 and Rx2, placed inside the soles of the +Y and -Y landing gear leg, respectively.

Receiver

The measured potentials are amplified by preamplifiers, also inside these soles, by a factor of 8 and buffered to drive the long sensor cables into the Lander compartment. The PP electronics generates automatically the differential voltage between both signals, which is subsequently sampled at exactly the same moment as the corresponding current sample.

The resulting 8-bit values are stored in PP's on memory in alternating order, current values first, followed by the differential potential value. At the end of a measurement with given frequency and amplitude, the SESAME common DPU reads these data into the main memory, sorts them according to type (current or voltage) and places these vectors into the telemetry or use them for further on-board processing.

Transmitter

To achieve different geometries and thereby different penetration depths, three transmitter electrodes are implemented, which can be used in any combination. Tx1 is placed as metal mesh on the inside of the +X landing gear foot sole, Tx2 is implemented as an insulated ring lid to the APX detector, which is in contact with the comet surface once APX is lowered. Tx3 is a flexible mesh foil attached to the MUPUS PEN, lying on the comet surface the moment the PEN is deployed, from the beginning of the insertion process. In case none of the other detectors is deployed, an emergency measurement is possible using only the +X landing gear transmitter Tx1 and as return the grounding of the Lander through the harpoons. The precision of the measurements in this case would be severely reduced. The selection of the transmitter electrode pair is done by electronic switches under software control and are one of the active mode's configuration parameters.

The AC-signal is generated from a set of up to 256 8-bit values, stored before each measurement into PP's memory. The value 128 corresponds roughly to 0V, 255 to +10V and 0 to -10V. Using adjustable sequencer timing and a sine wave with different amplitudes as data set, the intended frequency and signal level can be defined. Amplitude control is used to optimize the returned current and potential signals for different material properties to the dynamic range of the digitalization module.

Passive mode

If the transmitter part is not used, the receivers are able to pick up potential variations caused e.g. by plasma waves in the vicinity of the Lander. In PP's passive mode, the potential difference is sampled with a fixed frequency of 20 kHz. The resulting data of a 1-second measurement can be sent directly via telemetry to ground for analysis. It is envisaged that a later flight software revision analyses the data directly on board and places only a logarithmic 10-bin power spectrum into the telemetry stream instead.

Plasma wave sensor (Langmuir Probe)

An additional sensor wire on top of the DIM sensor cube monitors the electrical field in the vicinity to help interpreting plasma wave like events. Field variations faster than a few Hertz cause a current flow through an integrator of the electronics. Once a minimum total charge is registered, a timer is activated and stopped again when a pre-set total charge is reached. The resulting timer value is transferred as Langmuir Probe value in the housekeeping part of SESAME's telemetry or as science part during a dedicated measurement. If no signal is detected, the timer stops at its maximum value of hexadecimal

FFFF, which then is transmitted. The timer frequency can be adjusted by command to increase the sensitivity of the sensor.

For power conservation, the three electronics groups, receiver, transmitter and Langmuir Probe are powered separately by electronic switches. Additionally, the sequencer's clock is disabled as long as no measurement is performed or the memory has to be accessed.

Housekeeping

All analog signals are routed through an 8-channel multiplexer to the same 8-bit Analog-to-Digital-Converter (ADC). The software controlled multiplexer channel selection defines, which analog parameter is digitized to be placed into the position of the first value of each sample pair mentioned above. During the health-check all eight channels are read out, providing information about the three transmitter electrodes' current monitors, the state of each receiver chain separately and the ±5V reference voltages defining the calibration of the analog electronics. Additionally the multiplexer can be disconnected, allowing characterizing the ADC separately. A series resister in the +5V power supply line for the digital part of PP's electronics not only serves as latch-up protection but allows also to monitor the power consumption of the digital part. The voltage after the resistor is divided by 2 and then monitored by the ADC on the CASSE board. The result is part of the SESAME housekeeping data set, the difference to the also returned input voltage is a direct measure for the current and thereby the health of the digital part of the PP electronics board.

2.3 Data Handling Process

SONC is responsible for the generation of the SESAME PDS data sets and the delivery to the PSA. The SESAME team will support this acitivity by delivering the relevant calibration information. The relevant contact information is provided in section 1.6. The SESAME PI is responsible for the distribution to the SESAME team.

2.3.1 Periods

Two operation periods must be distinguished in the SESAME data handling process:

- I. The in-flight activity after the launch including the Commissioning and Cruise phases. Data produced during this period are in most cases (TBD) not scientifically relevant.
- II. The in-flight scientific mission starting with the Close Observation Phase until Lander shutdown. Only this period produces scientific data.

Two data delivery periods to PSA should be distinguished:

- A. Just after the proprietary period, raw data already available at SONC, i.e. up to Level 2.
- B. When ready, calibrated SC data and reduced data (up to Level 5) will be generated and distributed to PSA.

2.3.2 Data Handling

The science data packets are retrieved in SFDU format from ESA's Data Distribution System (DDS) and archived at SONC in CDMS packets format, along with the housekeeping telemetry packets that are necessary to monitor the instruments.

The packet-specific fields are stripped out in order to reconstitute the science raw data, which are also time stamped in UTC, and stored in the SONC database. These data are furthermore converted to physical units.

All these data are electronically accessible to the PI's and Co-I's (<u>http://soncv2-rosetta.cnes.fr</u>) according to data distribution agreements between these people and enforced by access rights at SONC.

The elaboration of PDS files is handled by SONC:

As soon as the science (SC) and housekeeping (HK) data are available at SONC (starting with the commissioning data), the PDS files are directly produced from the archived data at SONC.

After this first formatting, these data are electronically available to the SESAME team in order to be analyzed, and possibly recalibrated under his control, as well as qualified according their quality. SONC will derive the geometry related keyword parameters from the adequate Spice kernel for data sets level 2 and above. Then, just after the proprietary period (six month as a minimum), the SONC team will provide the raw and calibrated data to the PSA.

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At any rate, the long-term archive is constituted at SONC. SONC is responsible for the gathering of the necessary data from the SESAME team and the distribution of the PDS-formatted data to the archive team of the RSOC. The PI's are responsible for the organization of data and their scientific correctness. The SONC controls the archive completeness before handing it over to the archive team of the RSOC, and generates the global indices.

2.4 Overview of Data Products

2.4.1 Pre-Flight Data Products

There are no pre-flight data archived to PSA.

2.4.2 Sub-System Tests

The various health-checks procedures, implemented e.g. in the SESAME Cruise Functional Test, will be used to check the status of each instrument and its sensor modifications with the changing environment:

CASSE Health Check (CAS-HC):

The CAS-HC will be used to follow-up the behavior of the CASSE transmitters and accelerometers with temperature and mechanical environment (in space or fixed to the cometary surface).

DIM Health Check (DIM-HC):

The DIM-HC consisting of several sub-tests (Power Check, Noise Test, Calibration and Sensor Test) will be used to check the actual properties of the sensor plates and the operating environment (noise). PP Health Check (PP-HC):

The PP-HC monitors the functioning and long-term stability of all PP electronics sub-systems. The included LP-value shows plasma wave events in case they happened at the time the health-check was performed. The +5V value indicates the current consumption of the digital part, which might be a function of radiation degradation over time.

These tests are described in AD3.

2.4.3 Instrument Calibrations

Although most of the SESAME measurements are relative, the following information should be used to calibrate and correct the science data:

CASSE

Amplification factors to calculate the signal strength in voltage

Pre-launch Brüel & Kjaer calibration of CASSE accelerometers (transfer from voltage to acceleration) **PP**

Calibration functions for digital current consumption in mA

Transmitter currents in mA

Potential values in mV

DIM

One sub-test (Calibration) of the DIM Health Check (DIM-HC) is for calibrating the log-amplifier (i.e. to determine the <u>actual slope</u> of the log-characteristic of the log-amplifier). The measured U, A values must be corrected according to the result of this calibration.

The SESAME team will provide and update relevant information so that the processing pipeline is up to date with the current understanding of the characteristics of SESAME.

The calibration files will be available at the SESAME laboratories and SONC. A release will be provided to PSA whenever they are refined. The delivery format is described in chap. 3.4.3.2 (Calibration directory).

2.4.4 In-Flight Data Products

Most In-Flight (science) data had been produced during mission phases "Post Hibernation Commissioning" to "First Science Sequence". But we intend to deliver also our in-flight sub-system tests (see chap. 2.4.2) as well as other cruise data, which are useful for SESAME calibration as well as

monitoring of Lander and Orbiter vibration. In addition, we are checking whether science data (particle impacts and plasma waves) can be obtained during Cruise and or Fly-Bys.

In flight data products cover four data processing levels:

Raw telemetry (CODMAC level 1):

HK and SC SESAME packets (rolbin files) as received from DDS.

These data will be available at ESOC, SONC, SESAME and PSA. They will be delivered to PSA during period A (after the proprietary period).

Raw data (CODMAC level 2):

SC raw data (edited data) separated for each instrument (CASSE, DIM, PP). The data will be available at SONC, SESAME and PSA. They will be delivered to PSA during period A (after the proprietary period).

Calibrated HK data (CODMAC level 3):

Housekeeping data in scientific units and time tagged. The data will be available at SONC, SESAME and PSA. They will be delivered to PSA during period A (after the proprietary period).

Calibrated SC data (CODMAC level 3):

Calibrated science data, time-tagged and separated for the SESAME instruments CASSE and PP. The data will be available at SONC, SESAME and PSA. They will be delivered to PSA in period B (when ready).

The data are produced during following mission phases (

SESAME

CASSE · DIM · PP SESAME EAICD

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Table 2.1).

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| | Table 2. | 1: Mission phases | | |
|---|--------------|----------------------------|--------------------------|-----------------|
| MISSION_PHASE_NAME | Abbreviation | Start Date (dd/mm/yyyy) | End Date (dd/mm/yyyy) | SESAME data (1) |
| Commissioning (part 1) | CVP1 | 05/03/2004 | 06/06/2004 | CASSE, DIM, PP |
| Cruise 1 | CR1 | 07/06/2004 | 05/09/2004 | |
| Commissioning (part 2) | CVP2 | 06/09/2004 | 16/10/2004 | CASSE, DIM, PP |
| Earth Swing-by 1 (including PC#0) | EAR1 | 17/10/2004 | 04/04/2005 | CASSE, DIM, PP |
| Cruise 2 (including PC#1,2) | CR2 | 05/04/2005 | 28/07/2006 | CASSE, DIM, PP |
| Mars Swing-by (including PC#3,4,5) | MARS | 29/07/2006 | 28/05/2007 | CASSE, DIM, PP |
| Cruise 3 | CR3 | 29/05/2007 | 12/09/2007 | |
| Earth Swing-by 2 (including PC#6, 7) | EAR2 | 13/09/2007 | 27/01/2008 | CASSE, DIM, PP |
| Cruise 4-1 (including PC#8) | CR4A | 28/01/2008 | 03/08/2008 | CASSE, DIM, PP |
| Steins Flyby | AST1 | 04/08/2008 | 05/10/2008 | CASSE |
| Cruise 4-2 (including PC#9) | CR4B | 06/10/2008 | 13/09/2009 | CASSE, DIM, PP |
| Earth Swing-by 3 (including PC#10) | EAR3 | 14/09/2009 | 13/12/2009 | CASSE, DIM, PP |
| Cruise 5 (including PC#12) | CR5 | 14/12/2009 | 06/06/2010 | CASSE, DIM, PP |
| Lutetia Flyby | AST2 | 07/06/2010 | 10/09/2010 | |
| RV Manoeuver 1 (including PC#13) | RMV1 | 11/09/2010 | 13/07/2011 | CASSE, DIM, PP |
| Cruise 6 | CR6 | 14/07/2011 | 22/01/2014 | |

| Post Hibernation Commissioning | PHC | 09/04/2014 | 24/04/2014 | CASSE, DIM, PP |
|-------------------------------------|------|------------|------------|----------------|
| Pre-delivery calibration Science | PDCS | 25/04/2014 | 11/11/2014 | CASSE, DIM, PP |

(1) The last column indicates if SESAME data are available, the first one indicates if data can come from a Payload Checkout.

After the release of the Lander, we distinguish four phases, characterized by:

- The Start and Stop dates need to be expressed in seconds
- The Lander has its own Auxiliary data

| Separation/Descent/Landing | SDL | 2014/11/12 08:35:02 | 2014/11/12 16:15:00 | CASSE, DIM, PP |
|----------------------------|-----|---------------------|---------------------|----------------|
| Rebounds | RBD | 2014/11/12 16:15:00 | 2014/11/12 17:30:20 | |
| First Science Sequence | FSS | 2014/11/12 17:30:21 | 2014/11/15 01:00:00 | CASSE, DIM, PP |
| Long Term Science | LTS | N/A | N/A | N/A |

SESAME data can come from three <u>flight software versions</u> (FM-1, FM-2 and FM-3) whose validity periods are given below:

SESAME EAICD

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| Flight Software | Begin (Date Time) | End (Date Time) |
|-----------------|------------------------------|---------------------|
| FM-1 | 2004/03/02 00:00:00 (launch) | 2007/09/24 19:39:59 |
| FM-2 | 2007/09/24 19:40:01 (PC#6) | 2009/09/24 01:59:59 |
| FM-3 | 2009/09/24 02:00:01 (PC#10) | Today |

2.4.5 Software

No SESAME software will be delivered.

2.4.6 Documentation

The documentation directory contains the following documents:

- EAICD (This document, PDF file)
- SES_CAS_CALIBRATION_DESC.ASC (ASCII file)
- SES_DIM_CALIBRATION_DESC.ASC (ASCII file)
- SES_PP_CALIBRATION_DESC.ASC (ASCII file)
- RL_SESAME_LOGBOOK.ASC, SESAME operations timeline ASCII file (ASCII file)

2.4.7 Derived and other Data Products

There are no derived products for SESAME.

2.4.8 Ancillary Data Usage

2.4.8.1 Combined Rosetta / Lander operation

Two periods should be distinguished:

The first period starts after the launch until the close Comet approach. During this period the Lander is fixed to the Orbiter and they share the same auxiliary data that is the FD (Flight Dynamic) files. In order to interpret temperature and vibration data the Orbiter / Lander geometry as well as operational details (e.g. Orbiter gyro operation) should be known.

The next period is the global mapping to close observation phase. In addition to the first period, the geometry w.r.t. the target comet as well as to sun should be known in order to interpret particle impacts on CASSE and DIM sensors. As well these data should support the analysis of PP passive and Langmuir mode measurements.

2.4.8.2 Lander delivery and relay

The third period is Lander delivery and relay (SSP). After the separation from the Orbiter, and particularly during the Comet activity phase, the Lander will have its own auxiliary data:

- Lander orientation
- Localization in space
- Sun direction
- Rosetta/Lander Timeline

The "Rosetta/Lander Timeline" is a text file describing the working context and scheduling (on-off of each experiment, performed commands etc.). This file will be produced by SONC from CDMS and HK telemetries.

2.4.8.3 On-comet operation

The final operation period is the On-comet operation (LOW to PERI). In addition to the data mentioned in chap. 2.4.8.2 the following paramters are needed for SESAME data processing:

- Orientation of the Lander / rotation angle
- Drill status: in contact with the surface or not
- Direction and incident angle of the Sun (separate for Landing Gear and the upper Lander (rotation!))

Distance and position angle of the MUPUS PEN, once deployed

The Sun information is only needed for scientific evaluation of the data later on.

The Lander Auxiliary Data on the comet (Position / Orientation / Illumination at any time + Comet models + Ancillary Data from the instruments) are available in an ANCDR (Ancillary Data Record) data set.

The following special information is needed for processing SESAME instrument data:

CASSE None.

DIM None.

NULLE

PP

- APXS status: extended or not
- Impact point of the harpoon(s)

Most of the listed information is needed to translate the measured current and potential values correctly into permittivity and conductivity of the comet surface material.

3 Archive Format and Content

3.1 Format and Conventions

Throughout this document, the SESAME data processing status will be indicated by the CODMAC code levels (see Table 3.1 and AD6 (Appendix B)).

Table 3.1: CODMAC code levels

- 1: Raw Data: Telemetry data with data embedded.
- 2: *Edited Data*: Corrected for telemetry errors and split or decommutated into a data set for a given instrument. Sometimes called Experimental Data Record. Data are also tagged with time and location of acquisition. Corresponds to NASA Level 0 data.
- 3: *Calibrated Data*: Edited data that are still in units produced by instrument, but that have been corrected so that values are expressed in or are proportional to some physical unit such as radiance. No resampling, so edited data can be reconstructed. Corresponds to NASA Level 1A.
- 4: *Re-sampled Data*: Data that have been re-sampled in the time or space domains in such a way that the original edited data cannot be reconstructed. Could be calibrated in addition to being re-sampled. Corresponds to NASA Level 1B.

5: Derived Data: Derived results, as maps, reports, graphics, etc. Corresponds to NASA Levels 2 through

6: *Ancillary Data:* Non-science data needed to generate calibrated or re-sampled data sets. Consists of instrument gains, offsets, pointing information for scan platforms etc.

3.1.1 Deliveries and Archive Volume Format

A data set will be delivered for each **simple mission phase.** Each data set will contain **only one level data processing**. The list of simple mission phases is given in AD9 (table 3).

A data set will be level-stamped as below:

Level 1 when it will contain raw telemetry data:

• SC and HK packets as received from DDS and mixed together in binary files (.rolbin).

Level 2 when it will contain raw science data:

- SC edited data (uncalibrated) separated by instrument in ASCII files (.TAB).
- PP SC data will also be separated according to operation mode.

Level 3 when it will contain calibrated data:

- HK calibrated data in ASCII file (.TAB)
- CASSE nominal calibrated time series (acceleration vs. time) (.TAB)
- PP:

Calibrated Health-Check data in ASCII files (.TAB)

Calibrated current / voltage time series for active test measurements in ASCII files (.TAB) Calibrated frequency / current amplitude / voltage amplitude / phase data sets for active measurements in ASCII files (.TAB)

Calibrated electric field densities (electric field density vs. freqency bin) and calibrated potential difference time series (voltage vs time) (passive mode) in ASCII files (.TAB)

Reference: Issue: Date: Page:

In addition a data set will contain:

- Software (in level 1 datasets)
- Calibration files (in level 3 datasets)
- Documents (see chapter 2.4.6)

A new data set release is provided when:

- The calibration information has been refined
- Additional data has been processed
- Data have been processed to a higher CODMAC level.

3.1.2 Data Set ID / Name Formation

The following naming formation scheme will be used for the SESAME data sets:

DATA_SET_ID = <INSTRUMENT_HOST_ID>-<target id>-<INSTRUMENT_ID>-<data processing level number>-<mission phase abbreviation>-<description>-<version>

DATA_SET_NAME = <INSTRUMENT_HOST_NAME> <target name> <INSTRUMENT_ID> <data processing level number> <mission phase abbreviation> <description> <version>

See AD9 (chaps. 2.1.1 and 2.1.2).

The target name will contain the name of the mission phase and the description field (optional) will be used to specify the name of the operation phase during the <u>Cruise (swing-by and flyby)</u>.

Example of DATA_SET_ID and DATA_SET_NAME for the level 3 <u>Comet phase</u> data: DATA_SET_ID = "RL-C-SESAME-3-COM-V1.0" DATA_SET_NAME= "ROSETTA-LANDER 67P SESAME 3 COM V1.0"

Example of DATA_SET_ID and DATA_SET_NAME for the level 2 <u>Mars swing-by data</u>: DATA_SET_ID = "RL-M-SESAME-2-MARS-V1.0" DATA_SET_NAME= "ROSETTA-LANDER MARS SESAME 2 MARS PC#3-4-5 V1.0"

3.1.3 Data Directory Naming Convention

The DATA directory contains data obtained after Rosetta launch, i.e. either flight data or ground reference model data. The data are archived accordingly into two separate sub-directories FLIGHT and GRM. Furthermore, the data in the FLIGHT sub-directory are sorted into sub-directories according to the three SESAME instruments and their modes. An extra sub-directory (SESAME) is used for general SESAME-related data (mainly HK) where applicable.

The top-level sub-directories have names according to the instruments:

Reference: RO-LSE-DS-3102 SESAME Issue: 1.0, LSE v2.5 **SESAME EAICD** Date: 17 December 2015 **CASSE • DIM • PP** Page: 24 of 315 SESAME/ HK SESAME general housekeeping data. Data might be extracted and duplicated to other data sets SC Health Check data (from COM HK telecommand), Content of Backup RAM Buffer (from COM RBUF TC), Messages in the science data stream: Ready Message and Error Messages CASSE/ SC First 16 words of Jobcard (from COM_RDJC TC) LI Data collected during Listening mode TR Data collected during Trigger mode SN Data collected during Sounding mode and CASSE Health Check mode ST Data collected during the Stacking mode DIM/ AV Data collected from Average Continuous and Average Continuous Test modes Continuous data: overlapping impacts (at high flux) gradually prohibit getting data of a single impact: therefore only the Average is measured. Transition limit can be defined between Burst Continuous / Average Continuous. A (Average), Selected Direction (X or Y or Z), Sampling time (i.e. the frequency of sampling from the averaged signal of the sensor. The Average Continuous Test mode is similar to the Average Continuous mode but raw voltage values of average samples are additionally included into TM stream BC Data collected during the Burst Continuous mode. Burst data (data of individual impacts): U (Peak amplitude), T (Contact time), selected Direction (X or Y or Z), selected Margin (i.e. selected sensitivity) CAL Data collected during the Calibration mode HC Data collected during the DIM Health Check NT Data collected during the Noise Test Mode PC Data collected during the Power Check mode ST Data collected during the Sensor Test mode PP/

| AM | Active mode data either from AMTEST or AM modes, permittivity data |
|----|---|
| HC | Data collected during PP Health Check mode |
| LM | Data collected during the Langmuir Probe Test mode |
| PM | Data collected during the Passive mode and Passive mode Test for plasma wave measurements |

3.1.4 File naming Convention

The data levels 2 and 3 depend on instrument mode whereas data level 1 does not. Consequently, there are two different file naming schemes defined according to the data level as follows.

File naming scheme for level 1:

FILE_NAME = <experiment>_<data type>_<begin of observation>.<ext>

SES_XYZ_ yymmddhhmn.ext

<experiment> (3 characters) = SES

<data type> (3 characters) = XYZ

- X = G for Ground, F for Flight
- Y = S for Science Data, H for Housekeeping Data, <u>B for files with both data types mixed</u> together
- Z = CODMAC level: 1 (for raw packets)

**
begin of observation>** (10 characters) = start time of test or working session. Two sessions will be separated by at least 15 minutes.

yymmddhhmn

- yy = year
- mm = month
- \circ dd = day
- hh = hour
- \circ mn = minute

<ext> (file extension) = ROL

File naming scheme for levels 2 and 3:

FILE_NAME = <experiment>_<data type>_<mode>_<begin of observation>_<data description.<ext>

SES_<XYZ>_<imo>_<yymmddhhmn>_<desc>.ext

<experiment> (3 characters): SES

- < XYZ > (3 characters):
 - X = G for Ground, F for Flight
 - Y = S for Science Data, H for Housekeeping Data, B for files with both data types mixed together
 - Z = CODMAC level: 2 for raw instrument data, 3 for calibrated data (SC or HK), 5 for derived data

<imo > (3 characters):

- i = instrument (1 character) : S, C, D, P
 - S (SESAME) for common data, C for CASSE data, D for DIM data, P for PP data
- **mo** (2 characters) = mode (see Table 3.2)
 - "___" for SESAME

< yymmddhhmn > (10 characters): start time of test or working session. A session corresponds to one instrument and one mode:

- yy = year
- mm = month
- \circ dd = day
- \circ hh = hour
- mn = minute

<desc> (4 characters maximum) = data description (see Table 3.2)

<ext> (file extension) = TAB

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Table 3.2 Values of fields "mode" and "desc" in the SESAME filename

| Instrument | Modes (mode field) | Description (desc field) |
|------------|----------------------------|---|
| SESAME | - | HC, HK, RBUF, RDJC, RMES, EMES, WPENZ |
| CASSE | SN, LI, TR, ST, HC | JOBC, SEQP, DATA, STAT, TAFT |
| DIM | HC, PC, NT, ST, CA, AV, BC | Depends of DIM mode: HC, PC, NT, CA: ST : X, Y, Z BC : PAR, AM, BM BCTEST, AV, AVTEST: PAR, SIG |
| PP | HC, AM, AT, PM, PT, LM | HC, LM: AM: PAR, DATA AMTEST: TPAR, TTX, TRX, TDAC PM: PAR, POW PMTEST: TPAR, TPOW, TRX, TCH |

Example: SES_FB1_0510040300.ROL

This file begins at 2005/10/04 03:00 and contains the SESAME (SC and HK) packets.

The corresponding level 2 data file for a CASSE sounding would be: SES_FS2_CSN_0510040300_DATA.TAB

3.2 Standards Used in Data Product Generation

3.2.1 PDS Standards

The PDS standard for the cubes is that of PDS version 3.6 as described in AD5.

3.2.2 Time Standards

3.2.2.1 Generalities

This paragraph gives a summary of the different existing formats in the Rosetta Ground segment, from their generation by the instruments to their availability at SONC:

- The Lander CDMS requires the scientific instruments to transmit the data by bursts of 8 or 64 bytes (4 or 32 16-bit words)
- When sufficient data are received, the CDMS builds packets containing 256 bytes of instrument data. The CDMS adds 18 bytes header (unit PID, sequence count, OOBT: Orbiter OBT, data type) and a 2 bytes checksum (DECW) and creates packets with a fixed length of 276 bytes¹. For transmission between Lander and Orbiter, a 4 bytes synchronization header and a 2 bytes trailing checksum (PECW) are added, increasing the packet size to 282 bytes. The extra bytes are removed by the ESS.

¹ The Lander CDMS header and the headers of the telemetry source packets from the Orbiter instruments are quite similar. There is a difference in the data field header. The byte containing PUS version, checksum flag and spare fields is set to zero in the CDMS header. Besides the last byte of the OOBT is set to zero in the CDMS header. The CDMS header has an additional word (2 bytes) after the data field header named "FORMAT ID". This word is mainly used for HK data and it contains the HK scanning period and the SID (structure identification).

To comply with ESA requirements, the time registered in the CDMS packets is the Orbiter On-Board Time (**OOBT**). It is reconstituted from the Lander On-Board Time (LOBT), as shown in **Erreur ! Source du renvoi introuvable.**.

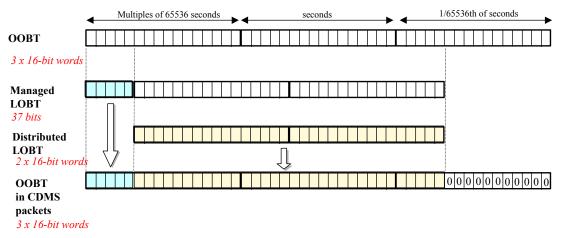


Figure 3.1: Reconstruction of on board time in CDMS packets

- The ESS groups together several packets and passes them to the Orbiter OBDH, which transmits them according to the Space/Ground interface. This part is transparent for the Lander ground segment.
- The data are delivered by the Rosetta Data Distribution System (DDS) to the SONC in SFDU format. A SFDU file is basically a collection of 276-byte packets interspersed with auxiliary information records. An 18 bytes SFDU header is added to the CDMS 276-byte packets. This header contains information added at the ground station (time correlated OBT, ground station id, virtual channel id, service channel, type of data, time quality)
- SONC processes the SFDU files to retrieve the 276-byte packets. This format is available in the SONC database.
- The relationship between both time formats (OOBT and LOBT) is given in AD10. Afterwards, SONC processes science raw packets in order to recompose the science measurement (e.g. an image or a spectrum). Figure 3.1 gives an overview of this data flow.



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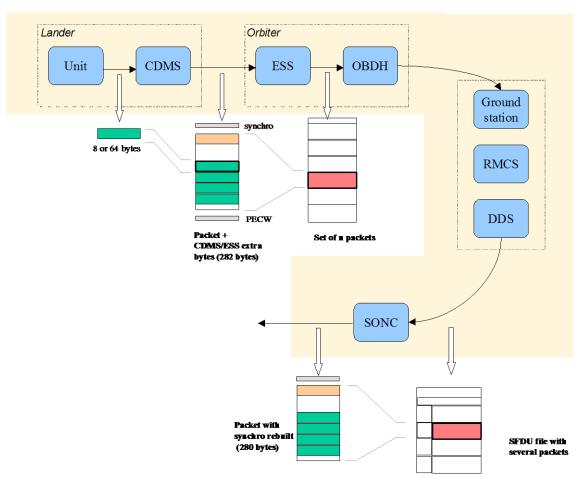


Figure 3.2: On board data flow

The following principles are applied:

- The packet wrapping is removed, and science frames that had to be split into several raw data packets are rebuilt. Basic error detection controls are applied, to recover from possible problems in the transmission chain.
- The Lander On-Board Time (LOBT) (synchronized with OOBT) extracted from the packet, and corresponding UTC time are added.
- UTC time is calculated from the On-Board time taking into account the On-Board clock drift as following:
- UTC (seconds since 01/01/1970) = LOBT (seconds) * Gradient + Offset

These coefficients are extracted from TCP packets delivered by DDS. LOBT is either the LOBT extracted from CDMS header or the experiment internal clock when it exists (CIVA, COSAC, PTOLEMY, ROMAP, ROLIS, SESAME). In the last case, it must be taken into account that the Internal clock (32 bits) resets all 4 years, 4 months, 3 days (first reset: 03/04/2007 10:42:07).

UTC time-stamped Science and HK data are available in the SONC database and used to generate PDS format.

3.2.2.2 SESAME Time standards

The time standards used in the SESAME data products are:

- SESAME Local Time
- Lander On-Board Time
- DDS header time correlated
- Universal Time Coordinated (UTC)

SESAME CASSE • DIM • PP

SESAME EAICD

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SESAME Local Time (SLT)

SESAME Local time is the only time available to the instrument during operation. It is synchronized with Lander On-board Time each time a CDMS RTIM message is received by SESAME. SESAME uses a timer with a resolution of 1/32 second to update this time between two successive CDMS RTIM messages. The SESAME flight software writes the SESAME Local Time at generation in the measurement header of each science measurement.

3.2.2.3 Lander On-Board Time (LOBT)

The instruments on board the spacecraft (Orbiter) generate telemetry source packets with an OOBT (orbiter on board time) time stamp in the header. The OOBT written into the packet header specifies the time, when CDMS can complete a packet.

In terms of HK packets this is the time of the last HK word. Using the HK scanning rate, which is given in word #9 of the packet, one can calculate the OBT of every individual word in this packet. Note that this is only valid if packets with SID (word #9) 1 or 2 are generated. Packets with SID 4 and 5 are "snapshots", which means you can apply the packet OOBT for every word in this packet. SID 3 packets have to be analyzed case by case.

In terms of SC packets this is the reception of the last 32 word block by CDMS, which also completes the SC packet. How often 32 word blocks are created (and sent) by the unit, and corresponding to this the delta time between each block, might be different for each unit. So, re-calculation of OOBT for SC words depends on this unit feature.

The Orbiter On-Board Time (OOBT) is a linear binary counter having a resolution of 1/65536 second stored in 3 16-bit words.

The Lander On-Board Time (LOBT) is a linear binary counter having a resolution of 1/32 sec, kept in 37 bits. Only the 32 least significant bits are distributed to the instruments, in 2 16-bit words. The 5 most significant bits are supposed constant during most of the mission; they are available through a specific service.

The LOBT is derived from the Orbiter On-Board Time (OOBT): the 11 least significant bits of the OOBT are discarded to obtain the LOBT, hence the reduced resolution. A re-synchronization between OOBT and LOBT is performed regularly (see AD11).

The Lander is synchronized prior to Separation and during every RF link after landing. So, during descent and the First Science Sequence this should not be a problem, since LOBT keeps synchronized as long as the Lander is powered.

For a description of time handling in the Rosetta project see AD7 "Rosetta Time handling **RO-EST-TN-3165**, issue 1, rev 0, February 9, 2004".

For a description of Lander on board time handling see AD11 (Command and Data Management System (CDMS) Subsystem Specification 29/08/2001, Issue 3, Rev. 5 **RO-LCD-SP-3101**):

§ 2.3.2.6 Synchronization and Adjustment of Lander On-board Time

§ 2.3.2.6.1 Absolute vs. relative time references

§ 2.3.2.6.2 On-board Time Failure Modes and Recovery Procedures

and AD12 (Command and Data Management System (CDMS) Operation Manual 12/02/2001, Issue 1, Rev. 2 **RO-LCD-SW-3402**): § 6. About Lander On-Board Time.

3.2.2.3.1 The DDS header time correlated

The OOBT is converted to UTC (Coordinated Universal Time) by means of time correlation and included in the additional DDS packet header when the packets are distributed via the DDS server.

The **DDS header time correlated** (SCET field in the DDS header) is the UTC of the start of measurement derived from the OOBT by time correlation.

Its format is the Sun Modified Julian Time (MJT) i.e. two 32 bit integers. The first (MSB) contains the number of seconds since 00:00:00 on 1. January 1970 and the second (LSB) integer the number of Microseconds from seconds in the first field.

Time correlation is described in AD13**Erreur ! Source du renvoi introuvable.** (Data Delivery Interface Document RO-ESC-IF-5003 Issue B6 23/10/2003, Appendix 18 § 18.1.2.1).

3.2.2.3.2 The UTC (Universal Time Coordinated)

The UTC is used as a time stamp for SC and HK SESAME data products (from level 2 to level 3).

3.2.2.3.3 Spacecraft Clock Count in PDS Labels

The PDS keywords SPACECRAFT_CLOCK_START_COUNT and

SPACECRAFT_CLOCK_STOP_COUNT refer to LOBT. The LOBT is represented in the following format: SPACECRAFT_CLOCK_START/STOP_COUNT = "<reset number>/<unit seconds>.<fractional seconds>"

The full stop character separates the unit seconds and the fractional seconds. Note that this is not a **decimal point.** The fractional seconds are expressed as multiples of $2^{-5} = 0.03125$ seconds and count from 0 to $2^{5} - 1 = 31$. E.g. in SPACECRAFT_CLOCK_START_COUNT = "3/356281394.21" the 21 fractional seconds correspond to $21 \times 2^{-5} = 0.65625$ decimal seconds.

The reset number is an integer starting at 1 and defines the epoch related to the counter value. E.g. "1/" means LOBT = 0 at 2003-01-01T00:00:00 UTC. The meaning of the other integer values is defined in the Rosetta time correlation file.

3.2.3 Cartographic Systems

SESAME uses Lander reference polar co-ordinates relative to the landing gear orientation. The center of the Landing Gear is the origin with the +X leg acting as reference direction for angle = 0 deg. The rotation angle increases clock-wise. Units are measured in cm and from 0 to 360 deg. As an example: the -Y leg is pointing in the 120 deg direction.

This Lander centric reference system has to be fixed into an appropriate topographic cometary system, in order to indicate external vibration / seismic sources.

Altitude above ground: TBD

3.3 Data Validation

The SESAME data products are delivered to PSA by SONC. The SESAME PI or the SESAME PDS responsible will validate the SC and HK data produced by SONC of all PDS CODMAC levels. These data will be distributed via the W3-SONC server.

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3.4 Archive Content

3.4.1 Volume Set

One volume corresponds to one data set. The possible values of VOLUME keywords can be found in AD9. The volume keyword values for the Commissioning mission phase are given in the following example.

| DESCRIPTION | = "This volume contains Rosetta SESAME |
|--------------------|---|
| | level 2 data products and supporting |
| | documentation from the |
| | Commissioning phase" |
| VOLUME_ID | = "RLSES2_1042" |
| VOLUME_NAME | = "SESAME RAW DATA FOR THE COMMISSIONING PHASE" |
| VOLUME_SERIES_NAME | = "ROSETTA SCIENCE ARCHIVE" |
| VOLUME_SET_ID | = "DE_DLR_PF_RLSES_10XX" |
| VOLUME_SET_NAME | = "ROSETTA SESAME DATA" |
| VOLUME_VERSION_ID | = "VERSION 1" |
| VOLUMES | = 1 |
| VOLUME_FORMAT | = "ISO-9660" |
| MEDIUM_TYPE | = "ELECTRONIC" |
| PUBLICATION_DATE | = YYYY-MM-DD |

3.4.2 Data Set

The SESAME data will be archived in Data Sets corresponding to mission phase and data level processing. Data Sets will be named according to chap 3.1.2. Each component of the name will match the corresponding component of the Data Set ID. The data set name components are defined in Table 3.3.

| Name element | Data Set ID Data Set Name | | |
|--|--|----------------|--|
| INSTRUMENT_HOST_ID / INSTRUMENT_HOST_NAME | RL (Rosetta Lander) | ROSETTA-LANDER | |
| Target ID / Target name | See AD9 See AD9 | | |
| INSTRUMENT_NAME | SESAME – SURFACE ELECTRIC SOUNDING AND ACOUSTIC MONITORING EXPERIMENT | | |
| INSTRUMENT_ID | SESAME | | |
| | Level 1 is delivered directly after the end of the proprietary period and contains level 1 Science and HK data | | |
| Data processing level number | Level 2 is delivered directly after the end of the proprietary period and contains level 2 Science data | | |
| | Level 3 is delivered after the stabilization of the calibration and contains level 3 science and HK data | | |
| Mission phase abbreviation | See AD9 | | |
| Description | N/A N/A | | |
| Version | The first version of any Data Set is V1.0 | | |

For mission phases corresponding to Mars and Earth flybys the <description> field of the data set name will contain the name of the operation phase. For example, the operation phases PC#3, PC#4 and PC#5

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(payload checkouts) are part of the mission phase "Mars swing-by". Hence, the name of the SESAME data set containing data from operation phases PC#3, PC#4 and PC#5 would be:

ROSETTA-LANDER MARS SESAME 3 MARS PC#3-4-5 V1.0

3.4.3 Directories

The directory structure of SESAME data sets is shown in

Figure 3.3.

The content of each directory is described in §3.1.3.

Level 1 dataset:

```
|-CATALOG-----
|
|
|-DATA------
[
|
|
|
|
|
|-DOCUMENT----
|-GEOMETRY----
|-INDEX------
|-LABEL------
|-SOFTWARE----
```

Level 2 and 3 datasets:

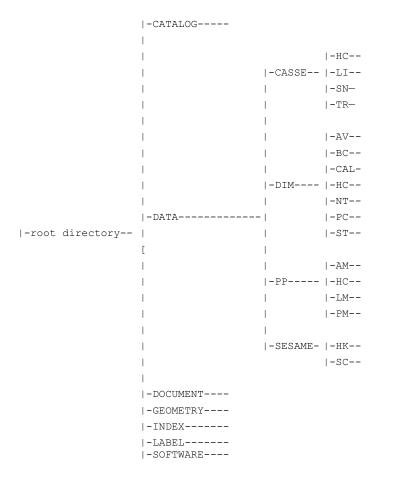


Figure 3.3: SESAME PDS directory structure

3.4.3.1 Root Directory

Files in the Root Directory include an overview of the archive, i.e. a description of the volume for the PDS Catalog. The files are contained in the Root Directory are given in Table 3.4.

| File Name | File Contents |
|--------------|--|
| AAREADME.TXT | Volume content and format information |
| | A description of the contents of this volume in a PDS format readable by both humans and computers |

Table 3.4: Files in the Root Directory

3.4.3.2 Calibration Directory

There are no calibration files provided in the calibration directory. However, the information needed for transfer from level 2 to level 3 data is provided, for each instrument, in the following files (DOCUMENT directory).

| CASSE: | CALIBRATION_DESC_CAS.TXT |
|--------|--------------------------|
| DIM : | CALIBRATION_DESC_DIM.TXT |
| PP: | CALIBRATION_DESC_PP.TXT |

3.4.3.3 Catalog Directory

The files in the Catalog Directory provide a top-level understanding of the mission, spacecraft, instruments, and data sets. The files in this directory are coordinated with the PSA team, who is responsible for loading them into the PDS catalog. The following files are found in the Catalog Directory.

| File Name | File Contents |
|--------------|---|
| CATINFO.TXT | A description of the contents of this directory |
| DATASET.CAT | Data Set description, one for each Data Set |
| INSTHOST.CAT | Instrument host (spacecraft) description, provided by the Project |
| INST.CAT | SESAME instruments description (CASSE,DIM and PP) |
| MISSION.CAT | Mission description, provided by the Project |
| PERSON.CAT | PDS personnel catalog information about the instrument team responsible for generating the data products. |
| REF.CAT | Full citations for references mentioned in any and all of the catalog files, or in any associated label files |
| SOFTWARE.CAT | Information about the software included in the SOFTWARE directory |

| Table 3.5 | Files in | the Cat | alog Directory |
|-----------|----------|---------|----------------|
| | | | |

3.4.3.4 Data Directory

DATA directory contains the subdirectories SESAME, CASSE, DIM and PP for SESAME housekeeping and the respective sensor data. Inside these subdirectories the data are organized by observation type. For naming convention, see chapter 3.1.3.

3.4.3.5 Document Directory

The DOCUMENT directory contains SESAME documentation listed in *Table 3.6*

SESAME SESAME EAICD CASSE • DIM • PP

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| Table 3.6 Files in document directory | | |
|---------------------------------------|--|--|
| File Name | File Contents | |
| DOCINFO.TXT | A description of the contents of this directory | |
| SES_EAICD.PDF | The SESAME Experiment Archive Interface Control Document (this document) as a PDF file | |
| SES_EAICD.LBL | A PDS detached label for SES_EAICD.PDF | |
| SES_FUM_FM1.PDF | SESAME Flight Software User Manual, FM 1.0, issue 1, revision 1, August 2001, RO-LSE-UG-3401 | |
| SES_FUM_FM1.LBL | PDS label for SESAME Flight Software User Manual, FM1 | |
| SES_FUM_FM2.PDF | SESAME Flight Software User Manual: Flight Software Version FM-2", RO-LSE-UG-3402, v1.0, 24 September 2008 | |
| SES_FUM_FM2.LBL | PDS label for SESAME Flight Software User Manual, FM2 | |
| SES_FUM_FM3.PDF | SESAME Flight Software User Manual, FM 3.0, issue draft, revision 2, September 2009, RO-LSE-UG-3404 | |
| SES_FUM_FM3.LBL | PDS label for SESAME Flight Software User Manual, FM3 | |
| SES_CAS_CALIBRATION_DESC.TXT | Description of CASSE calibration the transfer from level 2 to level 3 | |
| SES_CAS_CALIBRATION_DESC.LBL | PDS label for SES_CAS_CALIBRATION_DESC.TXT | |
| SES_DIM_CALIBRATION_DESC.TXT | Description of DIM calibration the transfer from level 2 to level 3 | |
| SES_DIM_CALIBRATION_DESC.LBL | PDS label for SES_DIM_CALIBRATION_DESC.TXT | |
| SES_PP_CALIBRATION_DESC.TXT | Description of PP calibration transfer from level 2 to level 3 | |
| SES_PP_CALIBRATION_DESC.LBL | PDS label for SES_PP_CALIBRATION_DESC.TXT | |

3.4.3.6 Index Directory

Files in the Index Directory are provided to help the user locate products on this archive volume and on previously released volumes in the archive. The following files are contained in the Index Directory.

| Table 3.7: Files in the Index Directory |
|---|
|---|

| File Name | File Contents |
|--------------|--|
| INDXINFO.TXT | A description of the contents of this directory |
| INDEX.TAB | A tabular listing all data products on this volume |
| INDEX.LBL | A PDS detached label that describes INDEX.TAB |

3.4.3.7 Software Directory

There is no software provided in the SOFTWARE directory.

3.4.3.8 Label Directory

The LABEL directory contains format container files (see

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Table 3.8) used by SESAME labels.

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Table 3.8: Files for levels 2 and 3 in the Label Directory. The flight software versions are named FM1, FM2, FM3 and the CODMAC levels are named L2, L3.

| File Name | File Contents |
|--------------------------|--|
| JOB_CARD.FMT | Data objects definitions for CASSE jobcard products (FM1, FM2, L2, L3) |
| JOB_CARD_FM3.FMT | Data objects definitions for CASSE jobcard products (FM3, L2, L3) |
| SEQ_PARAM_BURST2.FMT | Data objects definitions for CASSE sequence parameters products in burst mode (FM1, FM2, L2) |
| SEQ_PARAM_BURST3.FMT | Data objects definitions for CASSE sequence parameters products in burst mode (FM1, FM2, L3) |
| SEQ_PARAM_TRIG2.FMT | Data objects definitions for CASSE sequence parameters products in triggered mode (FM1, FM2, L2) |
| SEQ_PARAM_TRIG3.FMT | Data objects definitions for CASSE sequence parameters products in triggered mode (FM1, FM2, L3) |
| SEQ_PARAM_BURST2_FM3.FMT | Data objects definitions for CASSE sequence parameters products in burst mode (FM3, L2) |
| SEQ_PARAM_BURST3_FM3.FMT | Data objects definitions for CASSE sequence parameters products in burst mode (FM3, L3) |
| SEQ_PARAM_TRIG2_FM3.FMT | Data objects definitions for CASSE sequence parameters products in triggered mode (FM3, L2) |
| SEQ_PARAM_TRIG3_FM3.FMT | Data objects definitions for CASSE sequence parameters products in triggered mode (FM3, L3) |
| DATA2.FMT | Data objects definitions for CASSE data products (FM1, FM2, FM3, L2) |
| DATA3.FMT | Data objects definitions for CASSE data products (FM1, FM2, FM3, L3) |
| TAFT2.FMT | Data objects definitions for CASSE temperatures after measurement products (FM1, FM2, L2) |
| TAFT3.FMT | Data objects definitions for CASSE temperatures after measurement products (FM1, FM2, L3) |
| TAFT2_FM3.FMT | Data objects definitions for CASSE temperatures after measurement products (FM3, L2) |
| TAFT3_FM3.FMT | Data objects definitions for CASSE temperatures after measurement products (FM3, L3) |
| STAT2_FM3.FMT | Statistics block (FM3, L2 and L3) |
| DIM_BC_AM.FMT | Data objects definitions for DIM Burst Continuous Average Mode products (FM1, FM2, FM3) |
| DIM_BC_BM.FMT | Data objects definitions for DIM Burst Continuous Burst Mode products (FM1, FM2, FM3) |
| DIM_BC_BM_FM1.FMT | Data objects definitions for DIM Burst Continuous Burst Mode products (FM1) |
| DIM_BC_PAR.FMT | Data objects definitions for DIM Burst Continuous Parameters products (FM1, FM2, FM3) |
| DIM_BCT_PAR.FMT | Data objects definitions for DIM Burst Continuous Test Parameters products (FM1, FM2, FM3) |
| DIM_BCT_SIG.FMT | Burst Continuous Test (FM1, FM2) |
| DIM_BCTEST2_SIG_FM3.FMT | Burst Continuous Test 2 (FM3) |
| DIM_BCTEST2_PAR_FM3.FMT | Data objects definitions for DIM Burst Continuous Test 2 Parameters products (FM3) |
| DIM_AV_PAR.FMT | Data objects definitions for DIM Average Continuous |

| File Name | File Contents |
|------------------|---|
| | Parameters products (FM1, FM2, FM3) |
| DIM_AV_SIG.FMT | Data objects definitions for DIM Average mode products (FM1, FM2, FM3) |
| DIM_AVT_PAR.FMT | Data objects definitions for DIM Average Test mode parameters (FM1, FM2) |
| DIM_AVT_SIG.FMT | Data objects definitions for DIM Average Test mode products (FM1, FM2) |
| DIM_CA.FMT | Data objects definitions for DIM Health Check Calibration products (FM1, FM2, FM3) |
| DIM_NT.FMT | Data objects definitions for DIM Health Check Noise Test products (FM1, FM2, FM3) |
| DIM_PC.FMT | Data objects definitions for DIM Health Check Power Check products (FM1, FM2, FM3) |
| DIM_ST.FMT | Data objects definitions for DIM Health Check Sensor Test products (FM1, FM2, FM3) |
| PP_AM2_DATA.FMT | Data objects definitions for PP Active Mode products (FM2, FM3) |
| PP_AM2_PAR.FMT | Data objects definitions for PP Active Mode Parameters products (FM2, FM3) |
| PP_AMT_DAC.FMT | Data objects definitions for PP Active Mode Test DAC products (FM1, FM2, FM3) |
| PP_AMT_PAR.FMT | Calibrated data objects definitions for PP Active Mode Test Parameters products (FM1) |
| PP_AMT_PARC.FMT | Data objects definitions for PP Active Mode Test Parameters products (FM1) |
| PP_AMT2_PAR.FMT | Data objects definitions for PP Active Mode Test 2 Parameters products (FM2, FM3) |
| PP_AMT2_PARC.FMT | Calibrated data objects definitions for PP Active Mode Test 2 Parameters products (FM2, FM3) |
| PP_AMT_RX.FMT | Data objects definitions for PP Active Mode Test RX products (FM1, FM2, FM3) |
| PP_AMT_TX.FMT | Data objects definitions for PP Active Mode Test TX products (FM1, FM2, FM3) |
| PP_HC.FMT | Data objects definitions for PP Health Check products (FM1, FM2, FM3) |
| PP_LM.FMT | Data objects definitions for PP Langmuir Mode products (FM1, FM2, FM3) |
| PP_PM2_PAR.FMT | Data objects definitions for PP Passive Mode Parameters products (FM2, FM3) |
| PP_PM2_POW.FMT | Data objects definitions for PP Passive Mode Power spectrum products (FM2, FM3) |
| PP_PMT2_POW.FMT | Data objects definitions for PP Passive Mode Test 2 Power spectrum products (FM2, FM3) |
| PP_PMT2_POWC.FMT | Data objects definitions for PP Passive Mode Test 2 Power spectrum products (FM2, FM3) |
| PP_PMT2_PAR.FMT | Data objects definitions for PP Passive Mode Test Parameter products (FM2, FM3) |
| PP_PMT_RX.FMT | Data objects definitions for PP Passive Mode Test RX products (FM1, FM2, FM3) |
| PP_AM2_PARC.FMT | Calibrated data objects definitions for PP Active Mode parameters (FM2, FM3) |
| PP_AM2_DATAC.FMT | Calibrated data objects definitions for PP Active Mode products (FM2, FM3) |
| PP_AMT_TXC.FMT | Calibrated data objects definitions for PP Active Mode Test TX products (FM1, FM2, FM3) |

| File Name | File Contents | | | | |
|-------------------|--|--|--|--|--|
| PP_AMT_RXC.FMT | Calibrated data objects definitions for PP Active Mode Test RX products (FM1, FM2, FM3) | | | | |
| PP_AMT_DACC | Calibrated data objects for PP Active Mode DAC values (FM1, FM2, FM3) | | | | |
| | | | | | |
| PP_PM2_PARC.FMT | Calibrated data objects definitions for PP Passive Mode Parameters products (FM2, FM3) | | | | |
| PP_PM2_POW.FMT | Calibrated data objects definitions for PP Passive Mode Power spectrum products (FM2, FM3) | | | | |
| PP_PMT2_PARC.FMT | Calibrated data objects definitions for PP Passive Test Mode Parameters products (FM2, FM3) | | | | |
| PP_PMT2_RXC.FMT | Calibrated data objects definitions for PP Passive Mode Test RX products (FM2, FM3) | | | | |
| PP_HCC.FMT | Calibrated data objects definitions for PP Health Check (FM1, FM2, FM3) | | | | |
| PP_LMC.FMT | Calibrated data objects definitions for PP LM (FM1, FM2, FM3) | | | | |
| | | | | | |
| SESAME_EMES.FMT | Data objects definitions for common SESAME products: error messages | | | | |
| SESAME_HK.FMT | Data objects definitions for common SESAME products: housekeeping | | | | |
| SESAME_HK_FM3.FMT | Data objects definitions for common SESAME products: housekeeping (FM3) | | | | |
| SESAME_HC.FMT | Data objects definitions for common SESAME products: health check | | | | |
| SESAME_HC_FM3.FMT | Data objects definitions for common SESAME products: health check (FM3) | | | | |
| SESAME_RBUF.FMT | Data objects definitions for common SESAME products: read backup RAM buffer | | | | |
| SESAME_RDJC.FMT | Data objects definitions for common SESAME products: read stored TC buffer | | | | |
| SESAME_RMES.FMT | Data objects definitions for common SESAME products: Ready Message (FM1, FM2, FM3) | | | | |

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4 Detailed Interface Specifications

This chapter gives detailed information on the dataset, directory and file naming of the SESAME archive design at instrument and detector/sensor level.

4.1 Structure and Organization Overview

The SESAME data files will be archived in a data set on the basis of the mission phase relative to the production of the data.

Each .ROL (rolbin) file containing the raw data (telemetry packets, CODMAC level 1) will be placed in the DATA directory of the corresponding dataset (with level 1 data files, HK and SC mixed).

Each .TAB file containing uncalibrated SC data (CODMAC level 2) will be archived in the DATA directory of the corresponding dataset (with level 2 SC data files).

Each .TAB file containing calibrated SC data (CODMAC level 3) and each .CSV file containing calibrated HK (CODMAC level 3) data will be archived in the DATA directory of the corresponding datasets (with level 3 HK data files and level 3 SC data files).

The file names and directories names follow the rules explained in this document (chap 3.1.4 and 3.1.3).

4.2 Data Sets, Definition and Content

The Table 4.1 gives the definition of the name and ID of the SESAME data sets.

| Data Set ID | Data Set Name |
|---------------------------|--|
| RL-CAL-SESAME-1-CVP1-V1.0 | ROSETTA-LANDER CAL SESAME 1 CVP1 V1.0 |
| RL-CAL-SESAME-1-CVP2-V1.0 | ROSETTA-LANDER CAL SESAME 1 CVP2 V1.0 |
| RL-CAL-SESAME-1-CR2-V1.0 | ROSETTA-LANDER CAL SESAME 1 CR2 V1.0 |
| RL-CAL-SESAME-1-CR4A-V1.0 | ROSETTA-LANDER CAL SESAME 1 CR4A V1.0 |
| RL-CAL-SESAME-1-CR4B-V1.0 | ROSETTA-LANDER CAL SESAME 1 CR4B V1.0 |
| RL-CAL-SESAME-1-CR5-V1.0 | ROSETTA-LANDER CAL SESAME 1 CR5 V1.0 |
| RL-E-SESAME-1-EAR1-V1.0 | ROSETTA-LANDER EARTH SESAME 1 EAR1 V1.0 |
| RL-E-SESAME-1-EAR2-V1.0 | ROSETTA-LANDER EARTH SESAME 1 EAR2 V1.0 |
| RL-E-SESAME-1-EAR3-V1.0 | ROSETTA-LANDER EARTH SESAME 1 EAR3 V1.0 |
| RL-M-SESAME-1-MARS-V1.0 | ROSETTA-LANDER MARS SESAME 1 MARS V1.0 |
| RL-A-SESAME-1-AST1-V1.0 | ROSETTA-LANDER STEINS SESAME 1 AST1 V1.0 |
| RL-CAL-SESAME-1-RVM1-V1.0 | ROSETTA-LANDER CAL SESAME 1 RVM1 V1.0 |
| RL-CAL-SESAME-1-PHC-V1.0 | ROSETTA-LANDER CAL SESAME 1 PHC V1.0 |
| RL-CAL-SESAME-1-PDCS-V1.0 | ROSETTA-LANDER CAL SESAME 1 PDCS V1.0 |
| RL-C-SESAME-1-SDL-V1.0 | ROSETTA-LANDER 67P SESAME 1 SDL V1.0 |
| RL-C-SESAME-1-FSS-V1.0 | ROSETTA-LANDER 67P SESAME 1 FSS V1.0 |
| | |
| RL-CAL-SESAME-2-CVP1-V1.0 | ROSETTA-LANDER CAL SESAME 2 CVP1 V1.0 |
| RL-CAL-SESAME-2-CVP2-V1.0 | ROSETTA-LANDER CAL SESAME 2 CVP2 V1.0 |
| RL-CAL-SESAME-2-CR2-V1.0 | ROSETTA-LANDER CAL SESAME 2 CR2 V1.0 |
| RL-CAL-SESAME-2-CR4A-V1.0 | ROSETTA-LANDER CAL SESAME 2 CR4A V1.0 |
| RL-CAL-SESAME-2-CR4B-V1.0 | ROSETTA-LANDER CAL SESAME 2 CR4B V1.0 |
| RL-CAL-SESAME-2-CR5-V1.0 | ROSETTA-LANDER CAL SESAME 2 CR5 V1.0 |
| RL-E-SESAME-2-EAR1-V1.0 | ROSETTA-LANDER EARTH SESAME 2 EAR1 V1.0 |
| RL-E-SESAME-2-EAR2-V1.0 | ROSETTA-LANDER EARTH SESAME 2 EAR2 V1.0 |

Table 4.1: Name and ID of SESAME data sets

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| Data Set ID | Data Set Name |
|---------------------------|--|
| RL-E-SESAME-2-EAR3-V1.0 | ROSETTA-LANDER EARTH SESAME 2 EAR3 V1.0 |
| RL-M-SESAME-2-MARS-V1.0 | ROSETTA-LANDER MARS SESAME 2 MARS V1.0 |
| RL-A-SESAME-2-AST1-V1.0 | ROSETTA-LANDER STEINS SESAME 2 AST1 V1.0 |
| RL-CAL-SESAME-2-RVM1-V1.0 | ROSETTA-LANDER CAL SESAME 2 RVM1 V1.0 |
| RL-CAL-SESAME-2-PHC-V1.0 | ROSETTA-LANDER CAL SESAME 2 PHC V1.0 |
| RL-CAL-SESAME-2-PDCS-V1.0 | ROSETTA-LANDER CAL SESAME 2 PDCS V1.0 |
| RL-C-SESAME-2-SDL-V1.0 | ROSETTA-LANDER 67P SESAME 2 SDL V1.0 |
| RL-C-SESAME-2-FSS-V1.0 | ROSETTA-LANDER 67P SESAME 2 FSS V1.0 |
| | |
| RL-CAL-SESAME-3-CVP1-V1.0 | ROSETTA-LANDER CAL SESAME 3 CVP1 V1.0 |
| RL-CAL-SESAME-3-CVP2-V1.0 | ROSETTA-LANDER CAL SESAME 3 CVP2 V1.0 |
| RL-CAL-SESAME-3-CR2-V1.0 | ROSETTA-LANDER CAL SESAME 3 CR2 V1.0 |
| RL-CAL-SESAME-3-CR4A-V1.0 | ROSETTA-LANDER CAL SESAME 3 CR4A V1.0 |
| RL-CAL-SESAME-3-CR4B-V1.0 | ROSETTA-LANDER CAL SESAME 3 CR4B V1.0 |
| RL-CAL-SESAME-3-CR5-V1.0 | ROSETTA-LANDER CAL SESAME 3 CR5 V1.0 |
| RL-E-SESAME-3-EAR1-V1.0 | ROSETTA-LANDER EARTH SESAME 3 EAR1 V1.0 |
| RL-E-SESAME-3-EAR2-V1.0 | ROSETTA-LANDER EARTH SESAME 3 EAR2 V1.0 |
| RL-E-SESAME-3-EAR3-V1.0 | ROSETTA-LANDER EARTH SESAME 3 EAR3 V1.0 |
| RL-M-SESAME-3-MARS-V1.0 | ROSETTA-LANDER MARS SESAME 3 MARS V1.0 |
| RL-A-SESAME-3-AST1-V1.0 | ROSETTA-LANDER STEINS SESAME 3 AST1 V1.0 |
| RL-CAL-SESAME-3-RVM1-V1.0 | ROSETTA-LANDER CAL SESAME 3 RVM1 V1.0 |
| RL-CAL-SESAME-3-PHC-V1.0 | ROSETTA-LANDER CAL SESAME 3 PHC V1.0 |
| RL-CAL-SESAME-3-PDCS-V1.0 | ROSETTA-LANDER CAL SESAME 3 PDCS V1.0 |
| RL-C-SESAME-3-SDL-V1.0 | ROSETTA-LANDER 67P SESAME 3 SDL V1.0 |
| RL-C-SESAME-3-FSS-V1.0 | ROSETTA-LANDER 67P SESAME 3 FSS V1.0 |

4.3 Data Product Design

SESAME data products have PDS detached labels. Some of them have combined detached labels. Details are given in the following chapters.

4.3.1 SESAME raw data product (Level 1)

Level 1 contains mixed raw housekeeping and science data packets delivered by the Rosetta Lander with detached PDS labels.

4.3.1.1 File Characteristics Data Elements

PDS minimal detached labels describe the raw files (level 1). The file characteristic data elements are RECORD_TYPE, PRODUCT_TYPE and FILE_NAME. The PRODUCT_TYPE is UDR. The RECORD_TYPE for raw data is UNDEFINED, i.e. the structure of records is not described in the PDS labels since these data are intended to be processed with the EGSE software. The file contains telemetry packets, which are described in AD1.

4.3.1.2 Instrument and Detector Descriptive Data Elements

| INSTRUMENT_HOST_NAME | = "ROSETTA-LANDER" | |
|-----------------------------|--|---|
| INSTRUMENT_HOST_ID | = RL | |
| INSTRUMENT_ID | = SESAME | |
| INSTRUMENT_NAME | = "SURFACE ELECTRIC SOUNDING AND ACOUSTI | C |
| | MONITORING EXPERIMENT" | |
| INSTRUMENT_TYPE = { "ACOUS" | STIC SENSOR", "DUST IMPACT DETECTOR", | |

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"PERMITTIVITY PROBE" }

4.3.1.3 Description of Instrument

The description of the instrument is done in above and as a brief overview in the INST.CAT catalog file.

4.3.1.4 Data quality definition (level 1)

The data quality is defined (in the label) by the DATA_QUALITY_ID keyword.

The criterion is the data loss (missing data or damaged data (zero packets)) by telemetry system compared to expected amount.

The DATA_QUALITY_ID scheme is described by the associated DATA_QUALITY_DESC element as follows:

DATA_QUALITY_DESC = -1: NOT QUALIFIED

- 0: Data complete, 0% telemetry loss
- 1: data loss < 5%
- 2: 5% ≤ data loss < 10%
- 3: 10% ≤ data loss < 20%
- 4: data loss ≥ 20%

4.3.2 SESAME science level 2 data product design

Level 2 contains raw (uncalibrated) CASSE and PP time series and DIM tables. The level 2 products have PDS detached labels and combined detached labels.

The SESAME subdirectory contains calibrated housekeeping (HK) and health check data all with the appropriate time-stamp.

4.3.2.1 File Characteristics Data Elements

PDS data product **labels** contain data element information that describes important attributes of the physical structure of a data product file. The PDS file characteristic data elements for SEAME science level 2 data are:

RECORD_TYPE = FIXED_LENGTH RECORD_BYTES = ... FILE_RECORDS = ...

The RECORD_TYPE data element identifies the record characteristics of the data product file. Physical records are always fixed-length. The RECORD_BYTES data element identifies the number of bytes in each physical record in the data product file. The FILE_RECORDS data element identifies the number of physical records in the file.

4.3.2.2 Data Object Pointers Identification Data Elements

The SESAME data have combined detached labels. A single PDS detached data product label file is used to describe the contents of more than one data product file (the products belong to the same working session of a SESAME instrument). The combined detached label contains pointers to individual data products. The labels refer to FILE objects.

4.3.2.3 Instrument and Detector Descriptive Data Elements

The following data identification elements provide additional information about the SESAME data product.

| INSTRUMENT_HOST_NAME | = | "ROSETTA LANDER" |
|---------------------------------------|---|---|
| INSTRUMENT_HOST_ID | = | RL |
| INSTRUMENT_ID | = | SESAME |
| INSTRUMENT_NAME | = | "SURFACE ELECTRIC SOUNDING AND ACOUSTIC |
| | | MONITORING EXPERIMENT" |
| INSTRUMENT_TYPE | = | {"ACCELEROMETER", "DUST IMPACT DETECTOR", |
| | | "PERMITTIVITY PROBE", "UNK"} |
| <pre>FLIGHT_SOFTWARE_VERSION_ID</pre> | = | |
| CHANNELS | = | |
| | | |

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4.3.2.4 Data Object Definition

There are 14 scientific data products defined for SESAME according to the instrument modes (see §3.1.3 and Table 3.2) and flight software version.

4.3.2.4.1 CASSE Data object definition

The CASSE data are organized as tables with 24 columns containing 12 times and 12 channel values (accelerometers or transmitters): time 1 channel1 time2 channel2 ... time 12 channel12.

The association axis-channel is fixed and it is given in the label. The « Job cards » and « sequence parameters » are kept in separated files (combined detached labels).

The structures of CASSE measurements differ according to flight software version. The details concerning the telemetry formats can be found in [AD1] for flight software version 1, in [AD2] for flight software version 2 and in [AD3] for flight software version 3. The FM2 software was uploaded on 2007-09-24 at 19h40 UTC (during payload checkout #6). The FM3 software was uploaded on 2009-09-24 at 02h00 UTC (during PC#10).

Examples: CASSE sounding, FM2, level 2 (1 label file pointing to 4 data files) SES_FS2_CSN_0510040300.LBL SES_FS2_CSN_0510040300_JOBC.TAB JOBCARD.FMT)

SES FS2 CSN 0510040300 SEQP.TAB (sequence parameters, described in SEQ PARAM BURST L2.FMT for BURST mode or SEQ PARAM TRIG2 for TRIGGER mode) SES FS2 CSN 0510040300 DATA.TAB (data, ACC or TX described in DATA L2.FMT) SES FS2 CSN 0510040300 TAFT.TAB (foot temperatures, described in TAFT L2.FMT)

(label)

(parameters of jobcard, described in

CASSE sounding, FM3, level 2 (1 label file pointing to 5 data files)

SES FS2 CSN 0510040300.LBL (label) SES FS2 CSN 0510040300 JOBC.TAB (parameters of jobcard, described in JOBCARD_FM3.FMT) SES FS2_CSN_0510040300_SEQP.TAB (sequence parameters, described in SEQ PARAM BURST L2 FM3.FMT for BURST mode or SEQ_PARAM_TRIG2_FM3 for TRIGGER mode) SES FS2 CSN 0510040300 DATA.TAB (data, ACC or TX described in DATA L2.FMT or DATA_STACKED_L2.FMT for STACKING mode) SES FS2 CSN 0510040300 TAFT.TAB (foot temperatures, described in TAFT L2 FM3.FMT) SES_FS2_CSN_0510040300_STAT.TAB (measurement statistics described in STAT FM3.FMT)

The label contains the start and stop times as LOBT and UTC. The data files contain time in ms relative to the start time.

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4.3.2.4.1.1.1 CASSE Jobcard definition

A TABLE object describes the jobcard.

| OBJECT | = JOBC_TABLE |
|-------------|----------------------|
| NAME | = "JOB_CARD" |
| INTERCHANGE | FORMAT = ASCII |
| ROWS | = 1 |
| COLUMNS | = 29 |
| ROW_BYTES | = 176 |
| ^STRUCTURE | = "JOB_CARD_FM3.FMT" |
| END_OBJECT | = JOBC_TABLE |

The structure of the TABLE object is defined in the file JOB_CARD.FMT.

```
OBJECT
                  = COLUMN
                   = "SESAME_SEQ_ID"
   NAME
   DATA_TYPE
                  = ASCII INTEGER
   START_BYTE
                   = 1
   BYTES
                   = 6
                   = "I6"
   FORMAT
   UNIT
                    = "N/A"
   DESCRIPTION = "Sequence ID in the current data file"
END OBJECT
                 = COLUMN
                  = COLUMN
= "JOB_ID"
OBJECT
  NAME
   DATA_TYPE
                 = CHARACTER
   START BYTE
                   = 9
   BYTES
                   = 2
                   = "A2"
   FORMAT
   UNIT
                   = "N/A"
   DESCRIPTION = "Jobcard identifier (hex value)"
END_OBJECT = COLUMN
                  = COLUMN
= "SAVE_FULL"
OBJECT
   NAME
   DATA_TYPE
                   = ASCII INTEGER
   _ _
START_BYTE
                  = 13
   BYTES
                   = 1
                  = "I1"
   FORMAT
                   = "N/A"
   UNIT
   DESCRIPTION = "Possible values :
                     0 : Save ID Only
                      1 : Save Full"
END OBJECT = COLUMN
OBJECT
                   = COLUMN
                   = "MORE JOBS"
  NAME
   DATA_TYPE
                 = ASCII_INTEGER
= 15
   START BYTE
   BYTES
                    = 1
```

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= "I1" FORMAT = "N/A" UNIT DESCRIPTION = "Possible values : 0 : Last Job 1 : More Jobs" END OBJECT = COLUMN OBJECT = COLUMN = "SUB ID" NAME DATA TYPE = CHARACTER START_BYTE = 18 BYTES = 2 = "A2" FORMAT UNIT = "N/A" DESCRIPTION = "Hex value" END_OBJECT = COLUMN DATA_TYPE = "START_CONDITION" START_BYTE = 23 BYTES OBJECT NAME FORMAT = "A2" UNIT = "N/A" DESCRIPTION = "Hex value" END_OBJECT = COLUMN NAME = COLUMN OBJECT NAME = "REPETITIONS" DATA_TYPE = ASCII_INTEGER START_BYTE = 27 BYTES = 3 = "I3" FORMAT UNIT = "N/A" DESCRIPTION = " Number of repetitions" END OBJECT = COLUMN = COLUMN OBJECT NAME = "SOUND FREQ" = ASCII_INTEGER = 31 DATA_TYPE START_BYTE = 5 BYTES FORMAT = "I5" UNIT = "HERTZ" DESCRIPTION = " transmitter sound frequency" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SND_DURATION" DATA_TYPE = ASCII_REAL START_BYTE = 37 BYTES = 9 = "F9.1" FORMAT

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| UNIT | = "MILLISECOND" |
|-------------------|---|
| MISSING_CONSTANT | = 9999999.9 |
| DESCRIPTION | = "Sounding duration in sounding mode" |
| END_OBJECT : | = COLUMN |
| OBJECT | = COLUMN |
| | = "TRIGGER_TIMEOUT" |
| DATA_TYPE | |
| START_BYTE | = 47 |
| BYTES | = 5 |
| | = "I5" |
| UNIT | |
| MISSING_CONSTANT | |
| | = "Time-out duration, after which listening stops |
| | r signal occured" |
| END_OBJECT : | = COLUMN |
| | = COLUMN |
| NAME | = "SAMPLING_FREQ" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 53 |
| BYTES | |
| FORMAT | |
| | = "HERTZ" |
| DESCRIPTION = "Sa | ampling frequency per channel" |
| END_OBJECT : | = COLUMN |
| | = COLUMN |
| NAME | = "TX_STATUS" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| 01111 | = "N/A" |
| DESCRIPTION | = "Selection of transmitters to be used in |
| | Sounding Mode. If TX_cycle is set, after a |
| | measurement the transmitter selection is |
| | (cyclically) shifted by one position up to |
| | yield the transmitters to be used for the next |
| | measurement. If Tx_reverse is additionally set, |
| | the selection of active transmitters is shifted |
| | one position downwards instead. |
| | Bit field represented as 5 characters, the rightmost |
| | character corresponds to bit #0 and the leftmost to bit #4. |
| | Each character can be 1 (active sensor or cycle on or |
| | reversed on) or 0 (sensor not used) and have the |
| | following meaning. |
| | bit 0: TRM -Y |
| | bit 1: TRM +X |
| | bit 2: TRM +Y |
| | bit 3: TX cycle |
| | bit 4: TX reverse " |
| | — |

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END_OBJECT = COLUMN

| 0.0.700 | |
|---------------|---|
| OBJECT | = COLUMN |
| NAME | = "AGC" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | |
| BYTES | = 2 |
| FORMAT | = "A2" |
| UNIT | = "N/A" |
| DESCRIPTION = | "Amplification gain selection in hexadecimal format |
| Value to b | e written to the Amplifier Gain |
| Control re | gister of CASSE electronics. Decimal value |
| ranges from | m O (maximal gain) to 15 (minimal gain). |
| Note (a) t | he gain is not a monotone function of the |
| AGC value, | (b) the actually adjusted gain can |
| deviate, i | f automatic gain setting (AGS) is enabled." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TRIGGER_SRC" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 74 |
| BYTES | = 13 |
| FORMAT | = "A13" |
| UNIT | = "N/A" |
| DESCRIPTION = | "Subset of active sensor channels used as trigger |
| | sources. Bit field represented as 12 characters, |
| | the rightmost character corresponds to bit $\#0$ |
| | and the leftmost to bit #11. |
| | Each character can be 1 (active sensor used as a |
| | trigger source) or O (sensor not used as a trigger |
| | source) and have the following meaning. |
| | bit 0: ACC -Y, x-axis |
| | bit 1: ACC -Y, y-axis |
| | bit 2: ACC -Y, z-axis |
| | bit 3: ACC +X, x-axis |
| | bit 4: ACC +X, y-axis |
| | bit 5: ACC +X, z-axis |
| | bit 6: ACC +Y, x-axis |
| | bit 7: ACC +Y, y-axis |
| | bit 8: ACC +Y, z-axis |
| | bit 9: TRM -Y |
| | bit 10: TRM +X |
| | bit 11: TRM +Y |
| bit 12: AUTO | RANGE" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TRIGGER_DELAY" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 89 |
| BYTES | = 9 |
| FORMAT | = "F9.1" |
| | |

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|------------------------|---|--|--|
| UNIT | = "MILLISECOND" | | |
| DESCRIPTION | <pre>= " Determines the time range before (neg value) or after (positive value) a event, which shall be included in Absolute value of TrgDelay must be LIS_DURATION."</pre> | trigger the time se | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TRIGGER LEVEL POS" | | |
| DATA_TYPE | = ASCII INTEGER | | |
| – START BYTE | = 99 | | |
| BYTES | = 4 | | |
| FORMAT | = "I4" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Positive trigger level. | | |
| | Value to be written to the UTT har | dware regis | ter, |
| | which fixes the upper (always posi | tive) trigg | er |
| | threshold. Note that the actually | adjusted va | lue |
| | can be different, if automatic tri | gger level | setting |
| | is enabled." | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TRIGGER_LEVEL_NEG" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 104 | | |
| BYTES | = 4 | | |
| FORMAT | = "I4" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Negative trigger level. | | |
| | Value to be written to the LTT har | dware regis | ter, |
| | which fixes the lower (always nega | | |
| | threshold. Note that the actually | adjusted va | lue |
| | can be different, if automatic tri | gger level | setting |
| | is enabled." | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "RX_DURATION" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 109 | | |
| BYTES | = 9 | | |
| FORMAT | = "F9.1" | | |
| UNIT | = "MILLISECOND" | | |
| DESCRIPTION | = "Measurement duration " | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "RX_STATUS" | | |
| DATA_TYPE | = CHARACTER | | |
| | = 120 | | |
| BYTES | = 16 | | |

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| FORMAT | = "A16" |
|-------------|---|
| UNIT | = "N/A" |
| DESCRIPTION | = "Selection of sensor channels to be used. If cycle |
| | is set, after a measurement the receiver selection |
| | is (cyclically) shifted by one position (in the same |
| | direction as the transmitters, as indicated in |
| | TX STATUS. If the reversed flag is additionally set, |
| | the receiver cycling shall take place in the opposite |
| | direction as the transmitter cycling. |
| | Bit field represented as 15 characters, the rightmost |
| | character corresponds to bit #0 and the leftmost to |
| | bit #13. |
| | Each character can be 1 (active sensor or cycle on or |
| | reversed on) or 0 (sensor not used) and have the |
| | following meaning. |
| | bit 0: ACC -Y, x-axis |
| | |
| | bit 1: ACC -Y, y-axis |
| | bit 2: ACC -Y, z-axis |
| | bit 3: ACC +X, x-axis |
| | bit 4: ACC +X, y-axis |
| | bit 5: ACC +X, z-axis |
| | bit 6: ACC +Y, x-axis |
| | bit 7: ACC +Y, y-axis |
| | bit 8: ACC +Y, z-axis |
| | bit 9: TRM -Y bit 10: TRM +X |
| | |
| | bit 11: TRM +Y |
| | bit 12: cycle bit 13: sort |
| bit 14 : r | |
| | ustom seq " |
| END OBJECT | = COLUMN |
| | COLORIN |
| OBJECT | = COLUMN |
| NAME | = "GPW1" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 139 |
| BYTES | = 16 |
| FORMAT | = "A16" |
| UNIT | = "N/A" |
| DESCRIPTION | = "General Purpose Word 1, binary" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "GPW2" |
| — | = CHARACTER |
| START_BYTE | |
| BYTES | = 16 |
| FORMAT | = "A16" - "N / A " |
| UNIT | = "N/A" |
| | = "General Purpose Word 2, binary" |
| END_OBJECT | = COLUMN |

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OBJECT = COLUMN = "GPW3" NAME DATA TYPE = CHARACTER START BYTE = 177 BYTES = 16 = "A16" FORMAT = "N/A" UNIT DESCRIPTION = "General Purpose Word 3, in binary" END OBJECT = COLUMN OBJECT = COLUMN NAME = "FOOT TEMP" DATA TYPE = CHARACTER START BYTE = 196 BYTES = 8 = "A8" FORMAT = "N/A" UNTT DESCRIPTION = "Active foot temperature channels. Bit field represented as 15 characters, the rightmost character corresponds to bit #0 and the leftmost to bit #6. The Temperature and Radiation Dose Data Block will be generated by flight software, if at least one foot temperature channel is selected in FOOT TEMP. It will additionally be included at the end of a measuring sequence, if the Additional after job flag is set. Each character can be 1 (channel selected) or 0 (channel not selected) and have the following meaning. bit 0: Temperature -Y, TRM bit 1: Temperature -Y, ACC bit 2: Temperature +X, TRM bit 3: Temperature +X, ACC bit 4: Temperature +Y, TRM bit 5: Temperature +Y, ACC bit 6: Additional after job temperatures bit 7 : Do additional housekeeping" END OBJECT = COLUMN OBJECT = COLUMN = "OUTBUFFER_PAGE" NAME DATA TYPE = CHARACTER START BYTE = 207 BYTES = 2 = "A2" FORMAT = "N/A" UNIT = "hex value" DESCRIPTION = COLUMN END OBJECT OBJECT = COLUMN NAME = "OUTBUFFER ADDRESS" DATA TYPE = CHARACTER

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| S | TART_BYTE | | = | 212 | |
|-------|------------|---|----|-------|--------|
| В | YTES | | = | 4 | |
| F | ORMAT | | = | "A4" | |
| U | NIT | | = | "N/A' | |
| D | ESCRIPTION | | = | "hex | value" |
| END_O | BJECT | = | СС | LUMN | |

4.3.2.4.1.1.2 CASSE Sequence Parameters definition for burst mode The sequence parameters are described by a TABLE object.

| OBJECT | = SEQ_PARAM_TABLE |
|--------------------|--------------------------|
| NAME | = "SEQ_PARAM" |
| INTERCHANGE_FORMAT | r = Ascii |
| ROWS | = 6 |
| COLUMNS | = 17 |
| ROW_BYTES | = 149 |
| ^STRUCTURE | = "SEQ_PARAM_BURST2.FMT" |
| END_OBJECT | = SEQ_PARAM_TABLE |

The structure of the Sequence parameters TABLE object is defined in the file SEQ_PARAM_BURST2.FMT.

| OBJECT | = COLUMN | | |
|---|--|--|--|
| NAME | = "SESAME_SEQ_ID" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 1 | | |
| BYTES | | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I6" | | |
| DESCRIPTION | = "Sequence ID in the current data file" | | |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 8 | | |
| BYTES | = 6 | | |
| FORMAT | = "I6" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Measurement ID in the current sequence" | | |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "UTC" | | |
| DATA_TYPE | = TIME | | |
| START_BYTE | = 15 | | |
| BYTES | | | |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard | | |
| <pre>format YYYY-MM-DDThh:mm:ss.sss)"</pre> | | | |
| END_OBJECT = COLUM | IN | | |

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| OBJECT | = COLUMN |
|-------------|--|
| | = "SESAME LOCAL TIME SEQ" |
| | = ASCII INTEGER |
| START_BYTE | = 39 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| | <pre>= "Start time of sequence. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY_DIVIDER" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | |
| | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Adjusted transmitter frequency register value" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY_INCREMENT" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 59 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Adjusted sampling rate registers value" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CHANNELS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 65 |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Number of sensor channels minus one" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "ADJ_SOUND_FREQ" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| UNIT | = "HERTZ" |
| DESCRIPTION | = "Transmitter frequency. |
| | Equals zero in Listening mode" |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "ADJ_SAMPLING_FREQ" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| | = "HERTZ" |
| DESCRIPTION | = "Sampling frequency per sensor channel" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 86 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Start time of measurement. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits of |
| | LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "TOTAL_MEAS_LENGTH" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 103 |
| BYTES | = 8 |
| FORMAT | = "A8" |
| UNIT | = "N/A" |
| DESCRIPTION | = "FIFO RAM address when recording stopped |
| | 4 bytes, hexadecimal representation" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_TRM" |
| _ | = ASCII_INTEGER |
| START_BYTE | = 113 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| — | = ASCII_INTEGER |
| START_BYTE | = 119 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| | |

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| END_OBJECT | = COLUMN |
|---|--|
| NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT DESCRIPTION END_OBJECT | <pre>= 125 = 5 = "I5" = "N/A" = "Foot temperature before measurement" = COLUMN</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | = 131 = 5 |
| NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | = 137 = 5 = "I5" |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT DESCRIPTION END_OBJECT | <pre>= COLUMN = "TEMP_FOOT+Y_ACC" = ASCII_INTEGER = 143 = 5 = "I5" = "I5" = "N/A" = "Foot temperature before measurement" = COLUMN</pre> |

4.3.2.4.1.1.3 CASSE Sequence Parameters definition for trigger mode The sequence parameters are described by a TABLE object.

| OBJECT | = SEQ_PARAM_TABLE |
|-------------------|-------------------------|
| NAME | = "SEQ_PARAM" |
| INTERCHANGE_FORMA | T = ASCII |
| ROWS | = 3 |
| COLUMNS | = 21 |
| ROW_BYTES | = 204 |
| ^STRUCTURE | = "SEQ_PARAM_TRIG2.FMT" |
| END_OBJECT | = SEQ_PARAM_TABLE |

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The structure of the Sequence parameters TABLE object is defined in the file SEQ_PARAM_TRIG2.FMT-

| OBJECT | = | COLUMN |
|-------------|---|---|
| | | "SESAME_SEQ_ID" |
| | | ASCII_INTEGER |
| START_BYTE | = | 1 |
| BYTES | = | 6 |
| FORMAT | = | "16" |
| UNIT | | |
| DESCRIPTION | = | "Sequence ID in the current data file" |
| END_OBJECT | | |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | = | "MEAS_ID" |
| DATA_TYPE | = | ASCII_INTEGER |
| START_BYTE | = | 8 |
| BYTES | = | 6 |
| FORMAT | = | "I6" |
| UNIT | = | "N/A" |
| DESCRIPTION | = | "Measurement ID in the current sequence" |
| END_OBJECT | = | COLUMN |
| | | |
| OBJECT | | |
| NAME | = | "UTC" |
| DATA_TYPE | = | TIME |
| START_BYTE | = | 15 |
| BYTES | = | 23 |
| DESCRIPTION | = | "This column represents the UTC Time |
| | | for start of the sequence" |
| END_OBJECT | = | COLUMN |
| | | |
| | | COLUMN |
| | | "SESAME_LOCAL_TIME" |
| _ | | ASCII_INTEGER |
| START_BYTE | = | 39 |
| BYTES | | |
| FORMAT | | |
| DESCRIPTION | = | "Start time of measurement. SESAME local time |
| | | (SLT) runs with a resolution of 1/32 seconds. |
| | | SLT represents the least significant 32 bits of |
| | | LOBT. The most significant 5 bits are in |
| | | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = | COLUMN |
| | | |
| OBJECT | | |
| NAME | = | "ERROR_INIT" |
| DATA_TYPE | | |
| START_BYTE | = | 56 |
| BYTES | | |
| FORMAT | = | "A4 " |
| DESCRIPTION | = | "Error status after initialisation |
| | | in hexadecimal format (2 bytes). |
| | | |

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0001 EB FREQ Invalid frequency increment (adjustment of sampling

frequency); default (= 1312) used. 0002 EB_DIVRAT Invalid frequency divider (adjustment of sounding frequency); default (= 1) used. 0004 EB_CDPU_ADC Error during temperature A/D conversion. 4008 EB_NCHAN Fatal: Invalid number of sensor channels 4010 EB_TIMEO Fatal: Time-out during triggered mode. 4020 EB_NOSTRT Fatal: Measurement start condition not fulfilled. 8040 EB_RAMOVR Fatal: Allocated SESAME SRAM space exhausted. 4000 EB_FATAL_MES Fatal error or time-out; current measurement will be aborted. Columns are filled by missing_constant if the last case occurs (4000), for the concerned mesurement" END_OBJECT = COLUMN

OBJECT = COLUMN = "FREQUENCY DIVIDER" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 62 = 3 BYTES FORMAT = "I3" = "N/A" UNIT MISSING_CONSTANT = 999 DESCRIPTION = "Adjusted transmitter frequency register value" END OBJECT = COLUMN OBJECT = COLUMN NAME = "FREQUENCY INCREMENT" DATA_TYPE = ASCII INTEGER DATA_TYPE START_BYTE = 66 BYTES = 5 = "I5" FORMAT = "N/A" UNIT MISSING CONSTANT = 99999 DESCRIPTION = "Adjusted sampling rate registers value" = COLUMN END OBJECT OBJECT = COLUMN = "CHANNELS" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 72 BYTES = 3 = "I3" FORMAT UNIT = "N/A" MISSING_CONSTANT = 999 DESCRIPTION = "Number of sensor channels minus one" END OBJECT = COLUMN OBJECT = COLUMN NAME = "TRIGGER STATUS" DATA TYPE = ASCII INTEGER

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| START BYTE | = 76 |
|------------------|--|
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| — | = "Contents of Trigger Status Register at |
| | time of trigger (0 - 4095)" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "TIME_BURST_ON" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 82 |
| BYTES | = 15 |
| FORMAT | = "A15" |
| MISSING_CONSTANT | = "99999999999999999 |
| DESCRIPTION | = "SESAME Local Time at start of recording |
| | of measurement represented as : |
| | Reset number (integer starting at 1) / seconds |
| | The time resolution is 0.03125 s" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_TRIGGER" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 100 |
| BYTES | = 15 |
| FORMAT | = "A15" |
| MISSING CONSTANT | = "9999999999999999" |
| DESCRIPTION | = "SESAME Local Time when trigger occurred |
| | represented as : |
| | Reset number (integer starting at 1) / seconds |
| | The time resolution is 0.03125 s" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_BURST_OFF" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 118 |
| BYTES | = 15 |
| FORMAT | = "A15" |
| MISSING_CONSTANT | = "9999999999999999" |
| DESCRIPTION | = "SESAME Local Time at stop of recording |
| | represented as : |
| | Reset number (integer starting at 1) / seconds |
| | The time resolution is 0.03125 s" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_TRIGGER" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 136 |
| BYTES | = 8 |
| | |

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| FORMAT | = "A8" |
|------------------|--|
| MISSING_CONSTANT | = "999999999" |
| DESCRIPTION | = "FIFO RAM address when trigger occurred |
| | in hexadecimal format (4 bytes)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_BURST_OFF" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 147 = 8 |
| BYTES | - o = "A8" |
| FORMAT | - Ao = "999999999" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "FIFO RAM address when recording stopped in hexadecimal format (4 bytes)" |
| END_OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_FIRST_DAT" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 158 |
| BYTES | = 8 |
| FORMAT | = "A8" |
| MISSING_CONSTANT | = "99999999" |
| DESCRIPTION | = "FIFO RAM address of very first channel data |
| | in hexadecimal format (4 bytes)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TEMP FOOT-Y TRM" |
| DATA TYPE | = ASCII INTEGER |
| | = 168 |
| _ BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 174 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TEMP FOOT+X TRM" |
| DATA_TYPE | = ASCII INTEGER |
| START_BYTE | = 180 |
| BYTES | = 5 |
| - | |

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| FORMAT | = "15" |
|-------------|---|
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 186 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_TRM" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 192 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 198 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |

4.3.2.4.1.1.4 CASSE Data definition

The data produced in sounding or listening modes are described by the following TABLE object.

| OBJECT | = DATA_TABLE |
|--------------------|---------------|
| NAME | = "DATA" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 3852 |
| COLUMNS | = 26 |
| ROW_BYTES | = 231 |
| ^STRUCTURE | = "DATA2.FMT" |
| END_OBJECT | = DATA_TABLE |

The structure of the measured data TABLE object is defined in the file DATA2.FMT.

| OBJECT | = COLUMN |
|-----------|-------------------|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |

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| START_BYTE | = 1 |
|------------------|--|
| — | = 6 |
| | = "N/A" |
| FORMAT | |
| | = "Sequence ID in the current data file" |
| | = COLUMN |
| | COLDIN, |
| OBJECT | = COLUMN |
| | = "MEAS ID" |
| DATA_TYPE | = |
| START_BYTE | — |
| | = 6 |
| | = "I6" |
| UNIT | |
| | - N/A = "Measurement ID in the current sequence" |
| | |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "RELATIVE_TIME_1" |
| DATA_TYPE | — |
| START_BYTE | |
| | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 1 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "CHANNEL_1" |
| DATA_TYPE | |
| START_BYTE | |
| BYTES | = 6 |
| FORMAT | = "I6" |
| | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE_TIME_2" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 33 |
| BYTES | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| | |

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| MISSING_CONSTANT | = 99999.999 |
|------------------|--|
| | = "Channel 2 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_2" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 44 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "RELATIVE_TIME_3" |
| DATA_TYPE | |
| — | = 51 |
| | = 10 |
| UNIT | |
| FORMAT | |
| MISSING_CONSTANT | |
| _ | = "Channel 3 time relative to |
| DIDCITITION | start time of the measurement" |
| END OBJECT | = COLUMN |
| | COTONIA. |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL 3" |
| DATA TYPE | _ |
| - START BYTE | — |
| — | = 6 |
| FORMAT | = "16" |
| UNIT | = "N/A" |
| MISSING CONSTANT | = 999999 |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE TIME 4" |
| | |

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| DATA_TYPE | = ASCII REAL |
|---|---|
| START BYTE | |
| BYTES | |
| | = "MILLISECOND" |
| | = "F10.3" |
| MISSING_CONSTANT | |
| — | |
| DESCRIPTION | = "Channel 4 time relative to |
| END OD TECH | start time of the measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "CHANNEL 4" |
| DATA TYPE | — |
| — | |
| START_BYTE BYTES | = 6 |
| | |
| FORMAT | |
| UNIT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| | |
| | = COLUMN |
| NAME | = "RELATIVE_TIME_5" |
| NAME DATA_TYPE | <pre>= "RELATIVE_TIME_5" = ASCII_REAL</pre> |
| NAME DATA_TYPE START_BYTE | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87</pre> |
| NAME DATA_TYPE START_BYTE BYTES | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = "CHANNEL_5"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 999999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data :</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data : - non-linear ADC units for regular (non-stacked)</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | <pre>= "RELATIVE_TIME_5" = ASCII_REAL = 87 = 10 = "MILLISECOND" = "F10.3" = 99999.999 = "Channel 5 time relative to start time of the measurement" = COLUMN = COLUMN = "CHANNEL_5" = ASCII_INTEGER = 98 = 6 = "I6" = "N/A" = 999999 = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel</pre> |

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| | job card file (JOBC)" |
|------------------|--|
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE_TIME_6" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 105 |
| — | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | = 99999.999 |
| | = "Channel 6 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "CHANNEL 6" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| | = "N/A" |
| MISSING_CONSTANT | |
| | = "Channel data : |
| DESCRIPTION | |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "RELATIVE_TIME_7" |
| DATA_TYPE | — |
| START_BYTE | |
| | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 7 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "CHANNEL_7" |
| DATA_TYPE | — |
| START_BYTE | |
| | = 6 |
| FORMAT | |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Channel data : |
| | |

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|--|--|--------------|--|
| | non-linear ADC units for regular channel data block linearized stacked ADC units for data block The mode (stacked or regular) is g job card file (JOBC)" | stacked char | |
| END_OBJECT | = COLUMN | | |
| DATA_TYPE START_BYTE BYTES UNIT FORMAT MISSING_CONSTANT | = 141 = 10 = "MILLISECOND" = "F10.3" | | |
| | start time of the measurement" | | |
| END_OBJECT | = COLUMN | | |
| DATA_TYPE START_BYTE BYTES FORMAT UNIT MISSING_CONSTANT | = 152 = 6 = "I6" = "N/A" | stacked char | |
| NAME DATA_TYPE START_BYTE BYTES UNIT | = 159 = 10 = "MILLISECOND" = "F10.3" = 99999.999 | | |
| END_OBJECT | = COLUMN | | |
| OBJECT NAME DATA_TYPE START_BYTE | = "CHANNEL_9" = ASCII_INTEGER | | |

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| FORMAT | |
|------------------|--|
| UNIT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "RELATIVE_TIME_10" |
| DATA_TYPE | |
| START_BYTE | |
| BYTES | |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| | = "Channel 10 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL 10" |
| DATA TYPE | — |
| | — |
| — | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING CONSTANT | = 999999 |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | - linearized stacked ADC units for stacked channel |
| | data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE_TIME_11" |
| DATA_TYPE | — |
| START_BYTE | = 195 |
| BYTES | = 10 |
| UNIT | |
| FORMAT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 11 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |

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| OBJECT | = COLUMN |
|------------------|---|
| | = "CHANNEL 11" |
| DATA_TYPE | — |
| _ START_BYTE | — |
| BYTES | |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block |
| | linearized stacked ADC units for stacked channel data block |
| | |
| | The mode (stacked or regular) is given in the |
| END OBJECT | job card file (JOBC)" = COLUMN |
| END_ODDECI | |
| OBJECT | = COLUMN |
| | = "RELATIVE_TIME_12" |
| DATA TYPE | |
| | — |
| BYTES | |
| UNIT | |
| FORMAT | |
| MISSING_CONSTANT | = 99999.999 |
| DESCRIPTION | = "Channel 12 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_12" |
| DATA_TYPE | — |
| START_BYTE | = 224 |
| BYTES | |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel data : |
| | - non-linear ADC units for regular (non-stacked) |
| | channel data block - linearized stacked ADC units for stacked channel |
| | - Inearized stacked ADC units for stacked channel data block |
| | The mode (stacked or regular) is given in the |
| | job card file (JOBC)" |
| END OBJECT | = COLUMN |
| | 0010111 |

CASSE temperatures after measurement

The feet temperatures (accelerometers and transmitters) can be acquired also after a measurement (sounding or listening). They will be stored in ASCII table described by a TABLE object.

OBJECT NAME = TAFT_TABLE = "TAFT"

INTERCHANGE_FORMAT = ASCII ROWS = COLUMNS = 8 ROW_BYTES = 52 ^STRUCTURE = "TAFT2.FMT" END_OBJECT = TAFT_TABLE

The structure of the "after measurement temperatures" TABLE object is defined in the file TAFT2.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "MEAS_ID" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | |
| | = "I6" |
| | = "N/A" |
| | = "Measurement ID in the current sequence" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "TEMP_FOOT-Y_TRM" |
| DATA_TYPE | |
| START_BYTE | — |
| BYTES | |
| | = "15" |
| | = "N/A" |
| | = "Foot temperature after measurement" |
| END OBJECT | |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 21 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_TRM" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 27 |

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| BYTES | = 5 |
|-------------|--|
| FORMAT | = "15" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 33 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_TRM" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 39 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "TEMP_FOOT+Y_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 45 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Foot temperature after measurement" |
| END_OBJECT | = COLUMN |

4.3.2.4.1.2 Flight software version FM3

4.3.2.4.1.2.1 CASSE job card definition The job card is described by a TABLE object.

| OBJECI | . = | = JOBC_TABLE |
|--------|--------------------|----------------------|
| | NAME | = "JOB_CARD" |
| | INTERCHANGE_FORMAT | C = ASCII |
| | ROWS | = 12 |
| | COLUMNS | = 29 |
| | ROW_BYTES | = 176 |
| | ^STRUCTURE | = "JOB_CARD_FM3.FMT" |
| END | OBJECT | = JOBC_TABLE |

The structure of the TABLE object is defined in the file JOB_CARD_FM3.FMT.

OBJECT = COLUMN

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| NAME | = "SESAME_SEQ_ID" |
|-------------|---|
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "JOB_ID" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 9 |
| BYTES | = 2 |
| FORMAT | = "A2" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Jobcard identifier (hex value)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "JOB_VERSION" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 14 |
| | = 1 |
| FORMAT | = "A1" |
| UNIT | = "N/A" |
| DESCRIPTION | = "The possible values are: |
| | 0 for FM-1 and FM-2 |
| | B for FM-3" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "NMEAS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 17 |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Number of measurements (1 to 127)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "STACK" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 22 |
| BYTES | = 3 |
| FORMAT | = "A3" |
| UNIT | = "N/A" |
| DESCRIPTION | |
| | be stacked on board. The possible values are YES or NO." |
| END OBJECT | = COLUMN |
| | COLORIN . |

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| OBJECT | = COLUMN |
|------------------|---|
| NAME | = "SOUND_FREQ" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 27 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "HERTZ" |
| DESCRIPTION | = "Nominal sounding frequency" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SND_DURATION" |
| DATA_TYPE | |
| — | = 33 |
| BYTES | = 9 |
| FORMAT | = "F9.1" |
| UNIT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Sounding duration in sounding mode" |
| END_OBJECT | = COLUMN |
| | COLORIN |
| OBJECT | = COLUMN |
| NAME | = "TRIGGER_TIMEOUT" |
| DATA_TYPE | |
| _ START_BYTE | |
| BYTES | |
| FORMAT | |
| UNIT | |
| MISSING CONSTANT | |
| — | = "Time-out duration, after which listening stops |
| DEDCIVITION | if no trigger signal occurred" |
| END OBJECT | = COLUMN |
| | OCTORN |
| OBJECT | = COLUMN |
| NAME | = "SAMPLING FREQ" |
| DATA TYPE | = ASCII INTEGER |
| _ START BYTE | — |
| _ BYTES | = 6 |
| FORMAT | = "16" |
| | = "HERTZ" |
| | = "Sampling frequency per channel" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TX_STATUS" |
| DATA_TYPE | |
| START_BYTE | = 57 |
| BYTES | = 5 |
| FORMAT | = "A5" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Selection of transmitters to be used in |
| | Sounding Mode. If TX_cycle is set, after a |
| | measurement the transmitter selection is |
| | |

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|---|---|---|--|
| | <pre>(cyclically) shifted by one position yield the transmitters to be used f measurement. If Tx_reverse is addit the selection of active transmitter one position downwards instead. Bit field represented as 5 character character corresponds to bit #0 and bit #4. Each character can be 1 (active sen reversed on) or 0 (sensor not used) following meaning: bit 0: TRM -Y bit 1: TRM +X bit 2: TRM +Y bit 3: TX_cycle bit 4: TX reverse"</pre> | for the next ionally set is is shifte ers, the rig the leftmo | t, ed ghtmost ost to le on or |
| END_OBJECT | bit 4: TX_reverse" = COLUMN | | |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT DESCRIPTION | <pre>= COLUMN = "AGC" = CHARACTER = 65 = 2 = "A2" = "N/A" = "Amplification gain selection (hex Value to be written to the Amplific Control register of CASSE electron ranges from 0 (maximal gain) to 15 Note (a) the gain is not a monoton AGC value, (b) the actually adjust deviate, if automatic gain setting</pre> | er Gain ics. Decima (minimal q e function ed gain car | gain). of the n |
| END_OBJECT | = COLUMN | (1100) 20 | |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT DESCRIPTION | <pre>= COLUMN = "TRIGGER_SRC" = CHARACTER = 70 = 12 = "A12" = "N/A" = "Subset of active sensor channels of sources. Bit field represented as 1 the rightmost character corresponds and the leftmost to bit #11. Each character can be 1 (active sen trigger source) or 0 (sensor not us source) and have the following mean bit 0: ACC -Y, x-axis bit 1: ACC -Y, y-axis bit 2: ACC -Y, z-axis bit 3: ACC +X, x-axis bit 4: ACC +X, y-axis</pre> | 2 character to bit #0 sor used as red as a tr | rs, s a |

Reference: RO-LSE-DS-3102 **SESAME** Issue: 1.0, LSE v2.5 **SESAME EAICD** Date: 17 December 2015 **CASSE • DIM • PP** Page: 71 of 315 bit 5: ACC +X, z-axis bit 6: ACC +Y, x-axis bit 7: ACC +Y, y-axis bit 8: ACC +Y, z-axis bit 9: TRM -Y bit 10: TRM +X bit 11: TRM +Y" END_OBJECT = COLUMN OBJECT = COLUMN = "TRIGGER DELAY" NAME DATA TYPE = ASCII REAL START BYTE = 84 = 9 BYTES FORMAT = "F9.1" UNIT = "MILLISECOND" DESCRIPTION = "Determines the time range before (negative value) or after (positive value) a trigger event, which shall be included in the time series. Absolute value of TrgDelay must be less or equal LIS_DURATION." END OBJECT = COLUMN OBJECT = COLUMN NAME = "TRIGGER LEVEL POS" = ASCII INTEGER DATA TYPE START BYTE = 94 BYTES = 4 FORMAT = "I4" UNIT = "N/A" DESCRIPTION = "Positive trigger level. Value to be written to the UTT hardware register, which fixes the upper (always positive) trigger threshold. Note that the actually adjusted value can be different, if automatic trigger level setting is enabled." = COLUMN END OBJECT OBJECT = COLUMN = "TRIGGER LEVEL NEG" NAME DATA TYPE = ASCII INTEGER = 99 START BYTE BYTES = 4 FORMAT = "I4" UNIT = "N/A" DESCRIPTION = "Negative trigger level. Value to be written to the LTT hardware register, which fixes the lower (always negative) trigger threshold. Note that the actually adjusted value can be different, if automatic trigger level setting is enabled."

END OBJECT

= COLUMN

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| OBJECT | = COLUMN | |
|-----------------|---|--|
| NAME | = "LIS DURATION" | |
| DATA TYPE | — | |
| - START BYTE | — | |
| BYTES | = 9 | |
| FORMAT | = "F9.1" | |
| UNIT | = "MILLISECOND" | |
| DESCRIPTION | = "Listening duration" | |
| END OBJECT | = COLUMN | |
| — | | |
| OBJECT | = COLUMN | |
| NAME | = "RX_STATUS" | |
| DATA TYPE | — | |
| | | |
| — | = 14 | |
| FORMAT | = "A14" | |
| UNIT | = "N/A" | |
| DESCRIPTION | | |
| | is set, after a measurement the receiver selection | |
| | is (cyclically) shifted by one position (in the same | |
| | direction as the transmitters, as indicated in | |
| | TX STATUS. If the reversed flag is additionally set, | |
| | the receiver cycling shall take place in the opposite | |
| | direction as the transmitter cycling. | |
| | Bit field represented as 15 characters, the rightmost | |
| | character corresponds to bit #0 and the leftmost to | |
| | bit #13. | |
| | Each character can be 1 (active sensor or cycle on or | |
| | reversed on) or 0 (sensor not used) and have the | |
| | following meaning: | |
| | bit 0: ACC -Y, x-axis | |
| | bit 1: ACC -Y, y-axis | |
| | bit 2: ACC -Y, z-axis | |
| | bit 3: ACC +X, x-axis | |
| | bit 4: ACC +X, y-axis | |
| | bit 5: ACC +X, z-axis | |
| | bit 6: ACC +Y, x-axis | |
| | bit 7: ACC +Y, y-axis | |
| | bit 8: ACC +Y, z-axis | |
| | bit 9: TRM -Y | |
| | bit 10: TRM +X | |
| | bit 11: TRM +Y | |
| | bit 12: cycle | |
| | bit 13: reversed" | |
| END OBJECT | = COLUMN | |
| | 002011 | |
| OBJECT | = COLUMN | |
| NAME | = "G GEN" | |
| DATA TYPE | = ASCII INTEGER | |
| START BYTE | = 131 | |
| BYTES | = 1 | |
| FORMAT | = "I1" | |
| UNIT | = "N/A" | |
| 01.11 | , -* | |

Reference: RO-LSE-DS-3102 **SESAME** Issue: 1.0, LSE v2.5 **SESAME EAICD** Date: 17 December 2015 **CASSE • DIM • PP** Page: 73 of 315 DESCRIPTION = "Values 1 or 0 1: prepare data for automatic gain adjustment" END OBJECT = COLUMN OBJECT = COLUMN = "G COMP" NAME = ASCII INTEGER DATA TYPE START_BYTE = 133 BYTES = 1 = "I1" FORMAT UNIT = "N/A" = "0: Do not calculate optimized gain DESCRIPTION 1: Optimize for lower 1/3 of channels 2: Optimize for lower 2/3 of channels 3: Optimize for strongest channel" END OBJECT = COLUMN OBJECT = COLUMN = "TL GEN" NAME DATA_TYPE = ASCII INTEGER DATA_TYPE START_BYTE = 135 BYTES = 1 FORMAT = "I1" = "N/A" UNIT DESCRIPTION = "Values 1 or 0 1: prepare data for automatic trigger level adjustment" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TL COMP" DATA_TYPE = ASCII INTEGER START BYTE = 137 BYTES = 1 = "I1" FORMAT UNIT = "N/A" DESCRIPTION = "Values 1 or 0 1: adjust optimized trigger levels" END OBJECT = COLUMN OBJECT = COLUMN = "STATS" NAME DATA TYPE = ASCII INTEGER START_BYTE = 139 BYTES = 1 FORMAT = "I1" = "N/A" UNIT = "Values 1 or 0 DESCRIPTION 1: include channels statistics for each measurement" END OBJECT = COLUMN

OBJECT

= COLUMN

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| NAME | = "SKIP TS" |
|-------------|---|
| DATA TYPE | = ASCII INTEGER |
| | = 141 |
| BYTES | = 1 |
| FORMAT | = "I1" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Values 1 or 0 |
| | If 1 time series not included into telemetry |
| | (ignored in Stacking Mode)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "G TAR VAL" |
| DATA TYPE | = ASCII INTEGER |
| | — |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| | = "Target value for automatic gain adjustment. |
| 52501111101 | Linearized ADC units in the range 1 to 255. |
| | In combination with the value of G COMP, |
| | gain is adjusted such that the absolute |
| | values of the samples of 1/3, 2/3 or all |
| | channels are close to, but below, G TAR VAL." |
| END OBJECT | = COLUMN |
| END_ODOFC1 | |
| OBJECT | = COLUMN |
| NAME | = "TL FACTOR" |
| | = ASCII INTEGER |
| START BYTE | — |
| BYTES | = 4 |
| FORMAT | = 14 |
| UNIT | = "N/A" |
| DESCRIPTION | = "Factor for calculating the trigger levels from |
| 52501121201 | 10 to 2550%. |
| | Distance of trigger level from mean of time |
| | series (of selected trigger channels) relative |
| | to the distance between mean and the extreme |
| | sample values; TL FACTOR equals 10 (100 %) |
| | means that trigger level are set equal to the |
| | maximum deviation from mean during the |
| | pre-measurement. |
| | A TLFactor value less than or equal 10 would |
| | have caused a trigger signal during the |
| | pre-measurement. For each sensor channel |
| | - |
| | marked as trigger channel, flight software |
| | calculates preliminary trigger levels based on |
| | statistical values (Max, Min, Mean) of a |
| | pre-measurement with |
| | trglevneg = (Min-Mean) * TLFactor / 10 + Mean |
| | trglevpos = (Max-Mean) * TLFactor / 10 + Mean |
| | The smallest value of the trglevneg obtained |
| | this way is adjusted as negative trigger level |
| | |

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|----------------------------|---|--|--|
| | (TrgLevNeg), and the highest trgle positive trigger level (TrgLevPos) after correcting different gain se the pre-measurement and the Trigge measurement." | , possible ttings duri | ing |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "AMP_SETUP" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 152 | | |
| BYTES | = 4 | | |
| FORMAT | = "F4.1" | | |
| UNIT | = "SECOND" | | |
| DESCRIPTION | = "Amplifier setup time in sounding n | mode. | |
| | It represents the Duration after st | art | |
| | of time series recording used for a | mplifier | |
| | setup (to yield constant base lines | | |
| | of 1 s should normally be used, beca | ause | |
| | it enables the correct identification | | |
| | channels for all possible sampling | frequencies | 3 |
| | (no wrap-around of FIFO buffer)." | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "FIFO_LAG" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 157 | | |
| BYTES | = 4 | | |
| FORMAT | = I4 | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Optional corrective offset of the | e address o | of |
| | the first sample to be transferred. | | |
| | Range from -127 to 127" | | |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "FOOT_TEMP" | | |
| DATA_TYPE | = CHARACTER | | |
| START_BYTE | = 163 | | |
| BYTES | = 7 | | |
| FORMAT | = "A7" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Active foot temperature channels | | |
| | Bit field represented as 7 character | | |
| | rightmost character corresponds to | bit #0 | |
| | and the leftmost to bit #6. | Data Di - 1 | - |
| | The Temperature and Radiation Dose | | |
| | will be generated by flight softwar | | LEDSL |
| | one foot temperature channel is se | | ×+ |
| | FOOT_TEMP. It will additionally be | | 11 |
| | the end of a measuring sequence, i | r clie | |

| SESAME casse • dim • pp | SESAME EAICD | Reference: Issue: Date: Page: | 1.0, LSE v2.5 17 December 2015 |
|----------------------------|--------------------------------------|--|-----------------------------------|
| | additional 'after job temperature' | flag is se | et. |
| | Each character can be 1 (channel se | lected) or | |
| | 0 (channel not selected) and have t | he | |
| | following meaning: | | |
| | bit 0: Temperature -Y, TRM | | |
| | bit 1: Temperature -Y, ACC | | |
| | bit 2: Temperature +X, TRM | | |
| | bit 3: Temperature +X, ACC | | |
| | bit 4: Temperature +Y, TRM | | |
| | bit 5: Temperature +Y, ACC | | |
| | bit 6: Additional after job temper | atures" | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "ADD DELAY" | | |
| DATA TYPE | - | | |
| - START BYTE | = 172 | | |
| _ BYTES | = 3 | | |
| UNIT | = "SECOND" | | |
| FORMAT | = I3 | | |
| DESCRIPTION | = "Additional delay between measurem | ents of | |
| | a measurement sequence" | | |
| END_OBJECT | = COLUMN | | |

4.3.2.4.1.2.2 CASSE Sequence Parameters definition for burst mode (level 2, FM3) The sequence parameters are described by a TABLE object.

| OBJECT | = SEQ_PARAM_TABLE |
|-----------------|------------------------------|
| NAME | = "SEQ_PARAM" |
| INTERCHANGE_FOR | MAT = ASCII |
| ROWS | = 12 |
| COLUMNS | = 22 |
| ROW_BYTES | = 189 |
| ^STRUCTURE | = "SEQ_PARAM_BURST2_FM3.FMT" |
| END_OBJECT | = SEQ_PARAM_TABLE |

The structure of the Sequence parameters TABLE object is defined in the file SEQ_PARAM_BURST2_FM3.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |

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| START_BYTE= 8BYTES= 6FORMAT= "I6"UNIT= "N/A"DESCRIPTION= "Measurement index, i.e. the number of the measurement in the file. Starts from 1."END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "UTC"DATA_TYPE= TIME START_BYTESTART_BYTE= 15BYTES= 23DESCRIPTION= "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNDATA_TYPE= ASCII_INTEGER START_BYTESTART_BYTE= 39BYTES= 15FORMAT= "I15"DESCRIPTION= "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
|--|-------|
| FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.ss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.ss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| Starts from 1."END_OBJECT= COLUMNOBJECT= COLUMNNAME= "UTC"DATA_TYPE= TIMESTART_BYTE= 15BYTES= 23DESCRIPTION= "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "SESAME_LOCAL_TIME"DATA_TYPE= ASCII_INTEGERSTART_BYTE= 39BYTES= 15FORMAT= "I15"DESCRIPTION= "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| <pre>END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits</pre> | |
| <pre>END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits</pre> | |
| <pre>- OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits</pre> | |
| <pre>NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits</pre> | |
| DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| START_BYTE= 15BYTES= 23DESCRIPTION= "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "SESAME_LOCAL_TIME" DATA_TYPEDATA_TYPE= ASCII_INTEGERSTART_BYTE= 39BYTES= 15FORMAT= "I15" DESCRIPTIONDESCRIPTION= "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| format YYYY-MM-DDThh:mm:ss.sss)"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "SESAME_LOCAL_TIME"DATA_TYPE= ASCII_INTEGERSTART_BYTE= 39BYTES= 15FORMAT= "I15"DESCRIPTION= "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| BYTES = 15 FORMAT = "I15" DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | |
| (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits | 3 |
| | 3. |
| | 3 of |
| LOBT. The most significant 5 bits are in | |
| CDMS RSST (see SESAME Ready Message)" | |
| END OBJECT = COLUMN | |
| - | |
| OBJECT = COLUMN | |
| NAME = "FREQUENCY_DIVIDER" | |
| DATA TYPE = ASCII INTEGER | |
| START BYTE = 55 | |
| BYTES = 3 | |
| FORMAT = "I3" | |
| UNIT = $"N/A"$ | |
| DESCRIPTION = "Value of transmitter frequency control regi | ster" |
| END_OBJECT = COLUMN | |
| | |
| OBJECT = COLUMN | |
| NAME = "FREQUENCY_INCREMENT" | |
| DATA_TYPE = ASCII_INTEGER | |
| START_BYTE = 59 | |
| BYTES = 5 | |
| FORMAT = "I5" | |
| UNIT = $"N/A"$ | |
| DESCRIPTION = "Value of sampling rate control registers" | |
| END_OBJECT = COLUMN | |
| | |
| OBJECT = COLUMN | |
| NAME = "CHANNELS" | |

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| START_BYTE BYTES FORMAT UNIT | = 3 |
|--|---|
| END_OBJECT | |
| START_BYTE BYTES FORMAT | = 5 = "I5" |
| | <pre>= "N/A" = "Value of amplifier gain control register" = COLUMN</pre> |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | <pre>= COLUMN = "POWER_SETTING" = CHARACTER = 76 = 8</pre> |
| | = COLUMN = "TIME_BURST_ON" = ASCII_INTEGER |
| FORMAT UNIT DESCRIPTION END OBJECT | <pre>= "I10" = "N/A" = "SESAME High Resolution Time at start of recording with a resolution of 1/1024 s" = COLUMN</pre> |
| - OBJECT NAME | = COLUMN = "TIME_BURST_OFF" = ASCII_INTEGER |

SESAME SESAME EAICD CASSE • DIM • PP = "I10" FORMAT DESCRIPTION = "SESAME High Resolution Time when recording with a resolution of 1/1024 s" END OBJECT = COLUMN OBJECT = COLUMN = "FIFO BURST OFF" NAME DATA_TYPE = CHARACTER START_BYTE = 109 BYTES = 8 = "N/A" FORMAT = "A8" DESCRIPTION = "FIFO address of the final sample after recording stored." UNIT END OBJECT = COLUMN OBJECT = COLUMN = "FIFO_FIRST_DAT" NAME DATA TYPE = CHARACTER START_BYTE = 120 = 8 BYTES = "N/A" UNIT FORMAT = "A8" DESCRIPTION = "FIFO address of the first sample included in telemetry (hex value)" = COLUMN END OBJECT OBJECT = COLUMN = "NSAMP" NAME = ASCII_INTEGER DATA TYPE START BYTE = 130 BYTES = 10 = "I10" = "N/A" FORMAT UNIT DESCRIPTION = "Number of samples per channel in telemetry" END OBJECT = COLUMN OBJECT = COLUMN NAME = "TEMP FOOT-Y TRM" DATA_TYPE = ASCII INTEGER START BYTE = 141 = 5 BYTES = "I5" FORMAT UNIT = "MILLIVOLT" MISSING_CONSTANT = 99999 DESCRIPTION = "-Y Foot TRM temperature before measurement" END OBJECT = COLUMN OBJECT = COLUMN = "TEMP FOOT-Y ACC" NAME = ASCII_INTEGER = 147 DATA TYPE START BYTE BYTES = 5

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| FORMAT | = "15" |
|------------------|--|
| | = "MILLIVOLT" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "-Y Foot ACC temperature before measurement" |
| END OBJECT | <pre>= "-Y_Foot ACC temperature before measurement" = COLUMN</pre> |
| - | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_TRM" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "MILLIVOLT" |
| MISSING CONSTANT | = 99999 |
| DESCRIPTION | = "+X_Foot TRM temperature before measurement" |
| END_OBJECT | <pre>= "+X_Foot TRM temperature before measurement" = COLUMN</pre> |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | = "15" |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | <pre>= "+X_Foot ACC temperature before measurement"</pre> |
| END_OBJECT | <pre>= "+X_Foot ACC temperature before measurement" = COLUMN</pre> |
| | |
| | = COLUMN |
| | = "TEMP_FOOT+Y_TRM" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | = "15" |
| | = "MILLIVOLT" |
| MISSING_CONSTANT | |
| | = "+Y_Foot TRM temperature before measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | - COLUMN |
| | = COLUMN = "TEMP_FOOT+Y_ACC" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| UNIT | |
| MISSING_CONSTANT | |
| | = "+Y_Foot ACC temperature before measurement" |
| END OBJECT | |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CASSE_PCB_TEMP" |
| DATA_TYPE | |
| — | - |

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| START_BYTE | = 177 |
|------------------|---------------------------------|
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "CASSE PCB temperature" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RADFET_VOLTAGE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 183 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "RadFET voltage (0.002 V/mV)" |
| END_OBJECT | = COLUMN |

4.3.2.4.1.2.3 CASSE Sequence Parameters definition for trigger mode The sequence parameters are described by a TABLE object.

| OBJECT = | = SEQ_PARAM_TABLE |
|-------------------|-----------------------------|
| NAME | = "SEQ_PARAM" |
| INTERCHANGE_FORMA | F = ASCII |
| ROWS | = 7 |
| COLUMNS | = 25 |
| ROW_BYTES | = 220 |
| ^STRUCTURE | = "SEQ_PARAM_TRIG2_FM3.FMT" |
| END_OBJECT | = SEQ_PARAM_TABLE |

The structure of the Sequence parameters TABLE object is defined in the file SEQ_PARAM_TRIG2_FM3.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME SEQ ID" |
| NAME | |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Measurement index, i.e. the number |



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| | of the measurement in the file. |
|--------------------|---|
| | Starts from 1." |
| END_OBJECT = COLUM | IN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| | = 15 |
| _ BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT = COLUM | IN |
| OBJECT | = COLUMN |
| | = "SESAME LOCAL TIME" |
| | = ASCII INTEGER |
| START BYTE | = 39 |
| BYTES | = 15 |
| FORMAT | |
| | = "Start time of measurement. SESAME local time |
| 22001111101 | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits of |
| | LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OBJECT | = COLUMN |
| | 002000 |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY DIVIDER" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 55 |
| _ BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Value of transmitter frequency control register" |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY_INCREMENT" |
| DATA TYPE | = ASCII INTEGER |
| START_BYTE | = 59 |
| | = 5 |
| | = "I5" |
| UNIT | = "N/A" |
| | = "Value of sampling rate control registers" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNELS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 65 |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| | |

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|---|---|---|
| word (sensor lookup table length and | | |
| = COLUMN | | |
| = COLUMN | | |
| = "AGC" | | |
| = ASCII_INTEGER | | |
| = 69 | | |
| = 5 | | |
| = "I5" | | |
| = "N/A" | | |
| = "Value of amplifier gain control regi | ster" | |
| = COLUMN | | |
| = COLUMN | | |
| = "POWER_SETTING" | | |
| = CHARACTER | | |
| = 76 | | |
| = 8 | | |
| = "A8" | | |
| = "N/A" | | |
| = "Power register setting / mode (hex w | value): | |
| Bits 4 to 7 = 0: power set during mean initialization | asurement | |
| | | |
| | | |
| — | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | (s) |
| which triggered (hex value as 16#xxxx = COLUMN | s#)" | |
| = COLUMN | | |
| = "TIME_BURST_ON" | | |
| = ASCII_INTEGER | | |
| = 95 | | |
| = 10 | | |
| = "N/A" | | |
| = "I10" | | |
| | c of record | ing |
| with a resolution of 1/1024 s" = COLUMN | | |
| | <pre>= "Number of sensor channels, derived f word (sensor lookup table length and register)" = COLUMN = "AGC" = ASCII_INTEGER = 69 = 5 = "I5" = "N/A" = "Value of amplifier gain control register = COLUMN = COLUMN = COLUMN = COLUMN = "POWER_SETTING" = CHARACTER = 76 = 8 = "A8" = "N/A" = "Power register setting / mode (hex v Bits 0 to 3: value of power control r Bits 4 to 7 = 0: power set during meat initialization Bits 4 to 7 = 1: power set by previous CAS_PWRSW command" = COLUMN = COLUMN = COLUMN = "TRIGGER_STATUS" = ASCII_INTEGER = 86 = 8 = "I8" = "N/A" = 16#FFFF# = "Trigger status register indicating to which triggered (hex value as 16#xxxx = COLUMN = COLUMN = COLUMN = COLUMN = COLUMN = COLUMN = TIME_BURST_ON" = ASCII_INTEGER = 95 = 10 = "N/A" = "I10" = "SESAME High Resolution Time at start with a resolution of 1/1024 s"</pre> | <pre>SESAME EAICD Page = "Number of sensor channels, derived from SLTLA word (sensor lookup table length and address register)" = COLUMN = COLUMN = COLUMN = 'AGC" = ASCII_INTEGER = 69 = 5 = "I5" = "N/A" = "Value of amplifier gain control register" = COLUMN = COLUMN = COLUMN = 'POWER_SETTING" = CHARACTER = 76 = 8 = "A8" = "N/A" = "Power register setting / mode (hex value): Bits 0 to 3; value of power control register Bits 4 to 7 = 0: power set during measurement initialization Bits 4 to 7 = 1: power set by previous CAS_PWRSW command" = COLUMN = COLUMN = 'TAREGER_STATUS" = ASCII_INTEGER = 86 = 8 = "I8" = "N/A" = "Trigger status register indicating the channel which triggered (hex value as 16#xxx#)" = COLUMN = COLUMN = 'TIME_BURST_ON" = ASCII_INTEGER = 95 = 10 = "N/A". = "I10" = "SESAME High Resolution Time at start of record with a resolution of 1/1024 s"</pre> |

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| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "TIME_TRIGGER" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 106 |
| BYTES | = 10 |
| FORMAT | = "I10" |
| UNIT | = "N/A" |
| DESCRIPTION | = "SESAME High Resolution Time when trigger |
| | occurred with a resolution of 1/1024 s" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "TIME_BURST_OFF" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 117 |
| BYTES | = 10 |
| UNIT | = "N/A" |
| FORMAT | = "I10" |
| DESCRIPTION | = "SESAME High Resolution Time when recording |
| | with a resolution of 1/1024 s" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_TRIGGER" |
| | = CHARACTER |
| | = 129 |
| _ BYTES | = 8 |
| | = "A8" |
| | = "FIFO RAM address when trigger occurred |
| | (hex value, 4 bytes)" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_BURST_OFF" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 140 |
| | = 8 |
| UNIT | = "N/A" |
| FORMAT | = "A8" |
| DESCRIPTION | = "FIFO RAM address when recording stopped |
| | (hex value, 4 bytes)" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "FIFO_FIRST_DAT" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 151 |
| BYTES | |
| UNIT | = "N/A" |
| FORMAT | = "A8" |
| | = "FIFO RAM address of very first channel |
| | data (hex value, 4 bytes)" |
| END_OBJECT | = COLUMN |
| — | |

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| | = COLUMN |
|------------------|--|
| NAME | |
| DATA_TYPE | |
| START_BYTE | = 161 |
| BYTES | = 10 |
| FORMAT | = "I10" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Number of samples per channel in telemetry" |
| | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "TEMP FOOT-Y TRM" |
| DATA_TYPE | |
| | |
| START_BYTE | |
| | = 5 |
| FORMAT | |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "-Y_Foot TRM temperature before measurement" |
| | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA TYPE | |
| START_BYTE | — |
| | |
| BYTES | |
| FORMAT | |
| UNIT | |
| MISSING_CONSTANT | |
| | = "-Y_Foot ACC temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_TRM" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 184 |
| BYTES | = 5 |
| FORMAT | = "I5" |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | |
| | = "+X Foot TRM temperature before measurement" |
| END OBJECT | — |
| END_OBOLCI | |
| | - COLIMNI |
| | = COLUMN |
| | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "+X_Foot ACC temperature before measurement" |
| | - |

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| END | OBJECT | = | COLUMN |
|------|------------------|---|--|
| OBJE | CT | = | COLUMN |
| | NAME | = | "TEMP_FOOT+Y_TRM" |
| | DATA_TYPE | | |
| | _ START_BYTE | | |
| | BYTES | | |
| | FORMAT | | |
| | UNIT | | |
| | MISSING CONSTANT | | |
| | — | | "+Y_Foot TRM temperature before measurement" |
| | OBJECT | | |
| | | | |
| OBJE | CT | = | COLUMN |
| | | | "TEMP_FOOT+Y_ACC" |
| | DATA_TYPE | | |
| | _ START_BYTE | | |
| | BYTES | | |
| | FORMAT | | |
| | UNIT | | |
| | MISSING CONSTANT | | |
| | — | | "+Y_Foot ACC temperature before measurement" |
| | OBJECT | | |
| | | | |
| OBJE | СТ | = | COLUMN |
| | NAME | = | "CASSE_PCB_TEMP" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 208 |
| | BYTES | | |
| | FORMAT | = | "I5" |
| | UNIT | = | "MILLIVOLT" |
| | MISSING_CONSTANT | = | 99999 |
| | | | "CASSE PCB temperature" |
| | OBJECT | | |
| | | | |
| OBJE | CT | = | COLUMN |
| | NAME | = | "RADFET_VOLTAGE" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 214 |
| | BYTES | = | 5 |
| | FORMAT | = | "15" |
| | UNIT | = | "MILLIVOLT" |
| | MISSING_CONSTANT | = | 99999 |
| | | | "RadFET voltage (0.002 V/mV)" |
| END_ | OBJECT | = | COLUMN |
| | | | |

4.3.2.4.1.2.4 CASSE Data definition

The data produced in sounding or listening modes are described by the following TABLE object.

| OBJECT | = DATA_TABLE |
|--------------------|--------------|
| NAME | = "DATA" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 16438 |



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COLUMNS ROW_BYTES ^STRUCTURE END_OBJECT

= 26 = 231 = "DATA2.FMT" = DATA_TABLE

The structure of the measured data TABLE object is defined in the file DATA2.FMT-

| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| | = "N/A" |
| DESCRIPTION | = "Measurement ID in the current sequence" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "RELATIVE_TIME_1" |
| DATA_TYPE | — |
| - | = 15 |
| | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 1 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL 1" |
| DATA TYPE | — |
| START BYTE | — |
| — | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| — | = "Channel data : |
| | linear ADC units for regular (non-stacked) |
| | nnel data block |
| | arized stacked ADC units for stacked channel |
| | a block |
| | de (stacked or regular) is given in the |
| | |

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job card file (JOBC)" = COLUMN END OBJECT OBJECT = COLUMN = "RELATIVE TIME 2" NAME DATA TYPE = ASCII REAL START BYTE = 33 = 10 BYTES UNIT = "MILLISECOND" = "F10.3" FORMAT MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 2 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 2" DATA TYPE = ASCII_INTEGER START BYTE = 44 BYTES = 6 FORMAT = "I6" = "N/A" UNIT MISSING CONSTANT = 999999 DESCRIPTION = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block The mode (stacked or regular) is given in the job card file (JOBC)" = COLUMN END OBJECT OBJECT = COLUMN NAME = "RELATIVE TIME 3" DATA TYPE = ASCII REAL START BYTE = 51 BYTES = 10 UNIT = "MILLISECOND" = "F10.3" FORMAT MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 3 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 3" NAME = ASCII_INTEGER DATA TYPE START BYTE = 62 BYTES = 6 = "I6" FORMAT UNIT = "N/A" MISSING_CONSTANT = 999999 DESCRIPTION = "Channel data :

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| - non- | linear ADC units for regular (non-stacked) |
|------------------|---|
| cha | nnel data block |
| - line | arized stacked ADC units for stacked channel |
| dat | a block |
| The mo | de (stacked or regular) is given in the |
| job ca | rd file (JOBC)" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "RELATIVE_TIME_4" |
| DATA_TYPE | — |
| START_BYTE | |
| | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 4 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "CHANNEL_4" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| | = "N/A" |
| MISSING_CONSTANT | |
| | = "Channel data : |
| | linear ADC units for regular (non-stacked) nnel data block |
| | arized stacked ADC units for stacked channel |
| | a block |
| | de (stacked or regular) is given in the |
| | rd file (JOBC)" |
| END OBJECT | = COLUMN |
| END_ODOLCI | |
| OBJECT | = COLUMN |
| | = "RELATIVE_TIME_5" |
| DATA TYPE | |
| START BYTE | — |
| — | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING CONSTANT | |
| — | = "Channel 5 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_5" |
| | = ASCII_INTEGER |
| - START BYTE | — |
| — | |

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BYTES = 6 = "I6" FORMAT UNIT = "N/A" MISSING CONSTANT = 999999 DESCRIPTION = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block The mode (stacked or regular) is given in the job card file (JOBC)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "RELATIVE TIME 6" DATA TYPE = ASCII REAL START BYTE = 105 BYTES = 10 UNIT = "MILLISECOND" = "F10.3" FORMAT MISSING_CONSTANT = 99999.999 DESCRIPTION = "Channel 6 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 6" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 116 BYTES = 6 FORMAT = "I6" UNIT = "N/A" MISSING CONSTANT = 999999 DESCRIPTION = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block The mode (stacked or regular) is given in the job card file (JOBC)" END OBJECT = COLUMN OBJECT = COLUMN = "RELATIVE TIME 7" NAME DATA TYPE = ASCII REAL START BYTE = 123 BYTES = 10 = "MILLISECOND" UNIT = "F10.3" FORMAT MISSING_CONSTANT = 99999.999 DESCRIPTION = "Channel 7 time relative to start time of the measurement" END OBJECT = COLUMN

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| OBJECT | | COLUMN |
|-------------|----------|---|
| NAME | | "CHANNEL_7" |
| | | ASCII_INTEGER |
| START_BYTE | | |
| BYTES | = | |
| FORMAT | = | "16" |
| UNIT | = | "N/A" |
| MISSING_CO | ISTANT = | 999999 |
| DESCRIPTION | 1 = | "Channel data : |
| | - non-li | near ADC units for regular (non-stacked) |
| | chann | el data block |
| | - linear | ized stacked ADC units for stacked channel |
| | data | block |
| | The mode | (stacked or regular) is given in the |
| | job card | file (JOBC)" |
| END OBJECT | = | COLUMN |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | = | "RELATIVE_TIME_8" |
| | | ASCII_REAL |
| | | |
| BYTES | | |
| | | "MILLISECOND" |
| FORMAT | | |
| MISSING_CO | | |
| | | |
| DESCRIPTION | · – | "Channel 8 time relative to start time of the measurement" |
| END OD TECH | = | |
| END_OBJECT | - | COLOMN |
| OBJECT | = | COLUMN |
| NAME | | "CHANNEL 8" |
| | | ASCII INTEGER |
| START_BYTE | | — |
| | _ | |
| BYTES | | "16" |
| FORMAT | | |
| UNIT | | "N/A" |
| MISSING_CO | | |
| DESCRIPTIO | | "Channel data : |
| | | near ADC units for regular (non-stacked) |
| | | el data block |
| | | ized stacked ADC units for stacked channel |
| | data | |
| | | (stacked or regular) is given in the |
| | job card | file (JOBC)" |
| END_OBJECT | = | COLUMN |
| | | |
| OBJECT | | COLUMN |
| NAME | | "RELATIVE_TIME_9" |
| DATA_TYPE | | ASCII_REAL |
| START_BYTE | = | 159 |
| BYTES | = | 10 |
| UNIT | = | "MILLISECOND" |
| | | |

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= "F10.3" FORMAT MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 9 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 9" NAME DATA TYPE = ASCII INTEGER START_BYTE = 170BYTES = 6 = "I6" FORMAT UNIT = "N/A" MISSING CONSTANT = 999999 DESCRIPTION = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block The mode (stacked or regular) is given in the job card file (JOBC)" = COLUMN END OBJECT OBJECT = COLUMN NAME = "RELATIVE TIME 10" DATA_TYPE = ASCII REAL START_BYTE = 177 BYTES = 10 UNIT = "MILLISECOND" FORMAT = "F10.3" MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 10 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 10" NAME DATA TYPE = ASCII_INTEGER START BYTE = 188 BYTES = 6 FORMAT = "I6" = "N/A" UNIT MISSING CONSTANT = 999999 DESCRIPTION = "Channel data : - non-linear ADC units for regular (non-stacked) channel data block - linearized stacked ADC units for stacked channel data block The mode (stacked or regular) is given in the job card file (JOBC)" END OBJECT = COLUMN OBJECT = COLUMN

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| NAME | = "RELATIVE TIME 11" |
|------------------|--|
| DATA TYPE | |
| START BYTE | — |
| — | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING_CONSTANT | |
| | = "Channel 11 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_11" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 206 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Channel data : |
| - non- | linear ADC units for regular (non-stacked) |
| | nnel data block |
| - line | arized stacked ADC units for stacked channel |
| | a block |
| | de (stacked or regular) is given in the |
| | rd file (JOBC)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "RELATIVE TIME 12" |
| DATA TYPE | |
| START BYTE | — |
| — | = 10 |
| - | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING_CONSTANT | |
| — | = "Channel 12 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_12" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 224 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| | = "N/A" |
| MISSING_CONSTANT | |
| | = "Channel data : |
| - non- | |
| | linear ADC units for regular (non-stacked) |
| cha | nnel data block |
| cha - line | |



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The mode (stacked or regular) is given in the job card file (JOBC)" = COLUMN

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END OBJECT

4.3.2.4.2 DIM object definitions

The structures of DIM measurements differ according to flight software versions. The details concerning the telemetry formats can be found in [AD1] for flight software version 1 (FM1), in [AD2] for flight software version 2 (FM2) and in [AD3] for flight software version 3 (FM3). The FM2 software was uploaded on 2007-09-24 at 19h40 UTC (during Payload Checkout #6). The FM3 software was uploaded on 2009-09-24 at 02h00 UTC (during PC#10).

4.3.2.4.2.1 Flight software versions FM1 and FM2

4.3.2.4.2.1.1 DIM Health Check object definition

The DIM Health Check (HC) data are organized as tables corresponding to different modes: "calibration", "noise test", "power check" and "sensor test".

4.3.2.4.2.1.1.1 DIM HC Calibration mode

The calibration mode is described by a TABLE object.

| OBJECT | = CAL_TABLE |
|-------------------|----------------|
| NAME | = "CAL" |
| INTERCHANGE_FORMA | AT = ASCII |
| ROWS | = 4 |
| COLUMNS | = 9 |
| ROW_BYTES | = 74 |
| ^STRUCTURE | = "DIM_CA.FMT" |
| END_OBJECT | = CAL_TABLE |

The structure of the TABLE object is defined in the file DIM_CA.FMT.

| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 25 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| | |

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| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "MARGIN" |
| DATA_TYPE | = ASCII INTEGER |
| _ | = 41 |
| — | = 2 |
| FORMAT | = "I2" |
| UNIT | = "DECIBEL" |
| MISSING_CONSTANT | |
| | = "DIM calibration margin" |
| END OBJECT | |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "LEVEL" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | |
| | = 4 |
| FORMAT | = "A4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = "9999" |
| | = "DIM calibration level values can be: low or high" |
| END OBJECT | |
| - | |
| OBJECT | = COLUMN |
| NAME | = "COUNTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 51 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING CONSTANT | = 999999 |
| DESCRIPTION | = "DIM calibration timer counts" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "PEAK_MV" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 58 |
| BYTES | = 4 |
| UNIT | = "MILLIVOLT" |
| FORMAT | = "I4" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Peak voltage in mV" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_DB" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 63 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "Timer counts in compressed format" |
| | |

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| END_OBJECT | = COLUMN |
|------------------|--------------------------------|
| OBJECT | = COLUMN |
| NAME | = "PEAK_DB" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 66 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "Peak voltage in dB" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "ERROR_CODE" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 70 |
| BYTES | = 2 |
| FORMAT | = "A2" |
| UNIT | = "N/A" |
| MISSING CONSTANT | = "99" |
| DESCRIPTION | = "DIM calibration error code, |
| | 2 hexadecimal characters" |
| END_OBJECT | = COLUMN |

4.3.2.4.2.1.1.2 DIM HC Noise Test mode

The noise test mode is described by the following TABLE object.

| JECT | = | NT_TABLE |
|--------------------|--|--|
| NAME | = | "NT" |
| INTERCHANGE_FORMAT | = | ASCII |
| ROWS | = | 2 |
| COLUMNS | = | 4 |
| ROW_BYTES | = | 49 |
| ^STRUCTURE | = | "DIM_NT.FMT" |
| D_OBJECT | = | NT_TABLE |
| | NAME INTERCHANGE_FORMAT ROWS COLUMNS ROW_BYTES ^STRUCTURE | NAME = INTERCHANGE_FORMAT = ROWS = COLUMNS = ROW_BYTES = ^STRUCTURE = |

The structure of the "Noise Test" TABLE object is defined in the file DIM_NT.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 25 |

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|----------------------------|--|--|--|
| BYTES | = 15 | | |
| FORMAT | = "I15" | | |
| DESCRIPTION | <pre>= "Measurement start time. SESAM (SLT) runs with a resolution SLT represents the least sign of LOBT. The most significant CDMS RSST (see SESAME Ready M</pre> | of 1/32 see nificant 32 t 5 bits are | conds. bits |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "MARGIN" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 41 | | |
| BYTES | = 2 | | |
| FORMAT | = "12" | | |
| UNIT | = "DECIBEL" | | |
| MISSING_CONSTANT | = 99 | | |
| DESCRIPTION | = "Noise test margin" | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "ERROR_CODE" | | |
| DATA_TYPE | = CHARACTER | | |
| START_BYTE | = 45 | | |
| BYTES | = 2 | | |
| FORMAT | = "A2" | | |
| UNIT | = "N/A" | | |
| MISSING_CONSTANT | = "99" | | |
| DESCRIPTION | = "DIM NT error code, 2 hexaded | cimal chara | cters" |
| END_OBJECT | = COLUMN | | |

4.3.2.4.2.1.1.3 DIM HC Power Check mode

The data produced in power check mode are described by the following TABLE object.

| OBJECT | = PC_TABLE |
|-------------------|----------------|
| NAME | = "PC" |
| INTERCHANGE_FORMA | r = Ascii |
| ROWS | = 2 |
| COLUMNS | = 5 |
| ROW_BYTES | = 64 |
| ^STRUCTURE | = "DIM_PC.FMT" |
| END_OBJECT | = PC_TABLE |

The structure of the power check TABLE object is defined in the file DIM_PC.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |

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| END_OBJECT | = COLUMN | |
|---------------------|--|---|
| OBJECT | = COLUMN | |
| NAME | = "SESAME LOCAL TIME" | |
| DATA TYPE | = ASCII INTEGER | |
| START_BYTE | = 25 | |
| BYTES | = 15 | |
| | | |
| FORMAT | = "I15" | |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 second: SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> | s |
| END_OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "+5V" | |
| - | = ASCII_REAL | |
| START_BYTE | = 41 | |
| BYTES | = 8 | |
| FORMAT | = "F8.3" | |
| UNIT | = VOLT | |
| MISSING_CONSTANT | = 9999.999 | |
| DESCRIPTION | = "DIM +5V voltage" | |
| END OBJECT | = COLUMN | |
| _ | | |
| OBJECT | = COLUMN | |
| NAME | = "-5V" | |
| DATA TYPE | = ASCII REAL | |
| START BYTE | = 50 | |
| BYTES | = 8 | |
| - | = "F8.3" | |
| | | |
| UNIT | = VOLT | |
| MISSING_CONSTANT | = 9999.999 | |
| DESCRIPTION | = "DIM -5V voltage" | |
| END_OBJECT = COLUMN | | |
| | 0011001 | |
| OBJECT | = COLUMN | |
| NAME | = "ERROR_CODE" | |
| DATA_TYPE | = CHARACTER | |
| START_BYTE | = 60 | |
| BYTES | = 2 | |
| FORMAT | = "A2" | |
| UNIT | = "N/A" | |
| MISSING_CONSTANT | = "99" | |
| DESCRIPTION | = "DIM PC error code, 2 hexadecimal characters | " |
| END_OBJECT | = COLUMN | |
| | | |

4.3.2.4.2.1.1.4 DIM HC Sensor Test mode

Data acquired during sensor tests (X segment, Y segment and Z segment) are stored in ASCII tables with a common format. The segment name (X, Y or Z) appears in the label name.

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The data produced in sensor test modes are described by the following TABLE object.

| OBJECT | = ST_TABLE |
|---------------|----------------|
| NAME | = "ST" |
| INTERCHANGE_F | 'ORMAT = ASCII |
| ROWS | = 2 |
| COLUMNS | = 11 |
| ROW_BYTES | = 79 |
| ^STRUCTURE | = "DIM_ST.FMT" |
| END_OBJECT | = ST_TABLE |

The structure (format) of the "sensor test mode" TABLE object is defined in the file DIM_ST.FMT.

| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 25 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "DIRECTION" |
| | = CHARACTER |
| DATA_TYPE | = 42 |
| START_BYTE | |
| BYTES | = 1 |
| FORMAT | = "A1" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = "9" |
| DESCRIPTION | <pre>= "DIM sensor direction, can be X, Y or Z. Echoed command parameter."</pre> |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MARGIN" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 45 |
| BYTES | = 2 |
| FORMAT | = "12" |
| | |

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| UNIT | = "DECIBEL" |
|------------------|-----------------------------------|
| MISSING CONSTANT | = 99 |
| — | = "DIM noise test margin" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "ERROR_CODE" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 49 |
| BYTES | = 2 |
| FORMAT | = "A2" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = "99" |
| DESCRIPTION | = "DIM sensor test error code, |
| | 2 hexadecimal characters" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "AVG_MV" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 53 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "MILLIVOLT" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "DIM Average signal in mV" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "PEAK MV" |
| DATA TYPE | = ASCII INTEGER |
| | = 58 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "MILLIVOLT" |
| MISSING CONSTANT | = 9999 |
| DESCRIPTION | = "DIM Signal Peak voltage in mV" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "COUNTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 63 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "DIM Timer counts" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "AVG DB" |
| DATA TYPE | = AVG_DB = ASCII_INTEGER |
| DATA_TTED | VOCIT_INIEGEN |

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| START_BYTE | = 70 |
|------------------|--|
| BYTES | = 2 |
| FORMAT | = "I2" |
| UNIT | = "DECIBEL" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "DIM Average signal in dB" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "PEAK DB" |
| DATA TYPE | = ASCII INTEGER |
| START_BYTE | = 73 |
| BYTES | = 2 |
| FORMAT | = "I2" |
| UNIT | = "DECIBEL" |
| MISSING CONSTANT | = 99 |
| DESCRIPTION | |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TIME DB" |
| DATA_TYPE | = ASCII INTEGER |
| | = 76 |
| BYTES | = 2 |
| FORMAT | = "I2" |
| UNIT | = "DECIBEL" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "DIM impact time in compressed format" |
| END_OBJECT | = COLUMN |
| | |

4.3.2.4.2.1.2 DIM Average Test mode

During Average Test mode, average values of the signals for one sensor direction are taken at regular time intervals are stored in ASCII tables. The data are organized as ASCII tables. The measurement parameters are kept in a separate file (combined detached labels).

The measurement parameters in average test modes are described by the following TABLE object.

| OBJECT | = | DIM_AV_TEST_PAR_TABLE |
|--------------------|---|-----------------------|
| NAME | = | "DIM_AV_TEST_PAR" |
| INTERCHANGE_FORMAT | = | ASCII |
| ROWS | = | 22 |
| COLUMNS | = | 11 |
| ROW_BYTES | = | 103 |
| ^STRUCTURE | = | "DIM_AVT_PAR.FMT" |
| END_OBJECT | = | DIM_AV_TEST_PAR_TABLE |

The structure of the "average test mode" TABLE object is defined in the file DIM_AVT_PAR.FMT.

| OBJECT | = COLUMN |
|------------|-------------------|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |

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= "I6" FORMAT = "N/A" UNIT DESCRIPTION = "Sequence ID in the current data file" OBJECT = COLUMN END OBJECT = COLUMN OBJECT = COLUMN = "UTC" NAME DATA_TYPE = TIME START BYTE = 8 = 23 BYTES DESCRIPTION = "This column represents the UTC Time for start of measurement" END OBJECT = COLUMN OBJECT = COLUMN = "SESAME LOCAL TIME" NAME DATA_TYPE = CHARACTER START BYTE = 33 BYTES = 15 = "A15" FORMAT UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END OBJECT = COLUMN OBJECT = COLUMN NAME = "DIRECTION" DATA_TYPE = CHA START_BYTE = 51 = CHARACTER = 1 BYTES UNIT = "N/A" FORMAT = "A1" DESCRIPTION = "Direction in DIM coordinate system, X, Y or Z. Echoed command parameter." END OBJECT = COLUMN OBJECT = COLUMN = "ENERGY CTRL" NAME DATA TYPE = CHARACTER START BYTE = 55 BYTES = 2 UNIT = "N/A" FORMAT = "A2" DESCRIPTION = "Energy control, 00, 01 or 02. Echoed command parameter." END OBJECT = COLUMN OBJECT = COLUMN NAME = "MEAS_DURATION" DATA TYPE = ASCII INTEGER

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START BYTE = 59 STARI____ BYTES = 5 = "SECOND" FORMAT = "I5" DESCRIPTION = "Measurement duration. Echoed command parameter." END OBJECT = COLUMN OBJECT = COLUMN NAME = "N_SAMPLES" DATA_TYPE = ASCII_INTEGER START_BYTE = 65 STAKI___ BYTES = 5 = "N/A" FORMAT = "I5" DESCRIPTION = "Number of samples. " END OBJECT = COLUMN OBJECT = COLUMN NAME = "TIME_STEP_ECHOED" DATA_TYPE = ASCII_INTEGER START_BYTE = 71 BYTES = 5 = "SECOND" UNIT FORMAT = "I5" DESCRIPTION = "Time step. Echoed parameter." END OBJECT = COLUMN OBJECT = COLUMN NAME = "TIME_STEP_USED" DATA_TYPE = ASCII_INTEGER START_BYTE = 77 BYTES = 5 = "SECOND" UNIT FORMAT FORMAT = "I5" DESCRIPTION = "Time step really used." END OBJECT = COLUMN

The data produced in average test modes (signal) are described by the following TABLE object.

= DIM_AV_TEST_SIG_TABLE OBJECT = "DIM AVT SIG" NAME INTERCHANGE FORMAT = ASCII ROWS = COLUMNS = ROW BYTES = ^STRUCTURE = " DIM_AVT_SIG.FMT" ND_OBJECT = DIM_AV_TEST_SIG_TA END OBJECT = DIM AV TEST SIG TABLE

The structure of the "average test mode" TABLE object is defined in the file DIM_AVT_SIG.FMT-

OBJECT = COLUMN NAME = "SESAME SEQ ID"

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DATA TYPE = ASCII INTEGER START BYTE = 1 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Sequence ID in the current data file" END OBJECT = COLUMN OBJECT = COLUMN NAME = "DIM AM TIME" DATA TYPE = ASCII INTEGER START BYTE = 8 BYTES = 4 = "SECOND" UNIT FORMAT = "I4" DESCRIPTION = "Time relative to start time in DIM AV PAR.FMT file" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U AV" DATA TYPE = ASCII INTEGER START BYTE = 13 BYTES = 3 = "DECIBEL" UNIT FORMAT = "I3" DESCRIPTION = "Average sample" END OBJECT = COLUMN

4.3.2.4.2.1.3 DIM Average mode

During Average mode, samples of the average signal voltage of one sensor face are taken at specified time intervals. The data are organized as ASCII tables. The measurement parameters are kept in a separate file (combined detached labels).

The measurement parameters in average modes are described by the following TABLE object.

| OBJECT | = | DIM_AV_PAR_TABLE |
|--------------------|---|------------------|
| NAME | = | "DIM_AV_PAR" |
| INTERCHANGE_FORMAT | = | ASCII |
| ROWS | = | |
| COLUMNS | = | |
| ROW_BYTES | = | |
| ^STRUCTURE | = | "DIM_AV_PAR.FMT" |
| END_OBJECT | = | DIM_AV_PAR_TABLE |

The structure of the "average test mode" TABLE object is defined in the file DIM AV PAR.FMT.

| OBJECT | = COLUMN |
|------------|-------------------|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |

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= "N/A" UNTT DESCRIPTION = "Sequence ID in the current data file" END OBJECT = COLUMN = COLUMN OBJECT = "UTC" NAME DATA TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of measurement" END OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA TYPE = CHARACTER START BYTE = 33 BYTES = 15 FORMAT = "A15" = "N/A" UNIT DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END OBJECT = COLUMN OBJECT = COLUMN NAME = "DIRECTION" DATA_TYPE = CHARACTER START BYTE = 51 BYTES = 1 UNIT = "N/A" FORMAT = "A1" DESCRIPTION = "Direction in DIM coordinate system, X, Y or Z. Echoed command parameter." END OBJECT = COLUMN = COLUMN OBJECT NAME = "ENERGY_CTRL" DATA_TYPE = CHARACTER START BYTE = 55 BYTES = 2 = "N/A" UNIT FORMAT = "A2" DESCRIPTION = "Energy control, 00, 01 or 02. Echoed command parameter." END OBJECT = COLUMN = COLUMN OBJECT NAME = "MEAS DURATION" DATA TYPE = ASCII_INTEGER START BYTE = 59

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= 5 BYTES = "SECOND" = "I5" UNIT FORMAT DESCRIPTION = "Measurement duration. Echoed command parameter." END OBJECT = COLUMN OBJECT = COLUMN NAME = "N_SAMPLES" DATA_TYPE = ASCII_INTEGER START_BYTE = 65 BYTES = 5 UNIT = "N/A" FORMAT = "15" DESCRIPTION = "Number of samples. " END OBJECT = COLUMN OBJECT NAME = COLUMN = "TIME STEP ECHOED" DATA_TYPE = ASCII_INTEGER START_BYTE = 71 BYTES = 5 UNIT = "SECOND" FORMAT = "15" DESCRIPTION = "Time step. Echoed parameter." END OBJECT = COLUMN OBJECT = COLUMN NAME = "TIME STEP USED" DATA TYPE = ASCII INTEGER START BYTE = 77 BYTES = 5 UNIT = "SECOND" FORMAT = "15" DESCRIPTION = "Time step really used." END OBJECT = COLUMN

The data produced in average modes (signal) are described by the following TABLE object.

OBJECT = DIM_AV_SIG_TABLE NAME = "DIM_AV_SIG" INTERCHANGE_FORMAT = ASCII ROWS = COLUMNS = ROW_BYTES = ^STRUCTURE = "DIM_AV_SIG.FMT" END_OBJECT = DIM_AV_SIG_TABLE

The structure of the "average mode" TABLE object is defined in the file DIM_AV_SIG.FMT-

OBJECT = COLUMN NAME = "SESAME_SEQ_ID" DATA_TYPE = ASCII_INTEGER

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```
START BYTE = 1
   BYTES = 6
   FORMAT
             = "I6"
   UNIT = "N/A"
   DESCRIPTION = "Sequence ID in the current data file"
END OBJECT
                 = COLUMN
OBJECT
        = COLUMN
   NAME = "DIM AM TIME"
   DATA TYPE = ASCII INTEGER
   START BYTE = 8
   BYTES = 4
   UNIT
            = "SECOND"
   FORMAT = "I4"
   DESCRIPTION = "Time relative to start time
                     in DIM AV PAR.FMT file"
END OBJECT = COLUMN
OBJECT = COLUMN
   NAME = "U_AV"
   DATA TYPE = ASCII INTEGER
   START BYTE = 13
   BYTES
             = 3
             = "DECIBEL"
   UNIT
   FORMAT = "I3"
   DESCRIPTION = "Average sample"
END OBJECT = COLUMN
```

4.3.2.4.2.1.4 DIM Burst Continuous mode

Single events on one sensor face are registered. Measured values (peak amplitude U and impact time T) are stored on-board in a compressed way. First they are logarithmically scaled to $1 \le U[dB] \le 90 dB$ and $10 \le T[dB] \le 70 (10 \le T[dB] \le 90$ for version 1 of Flight Software). The counts for events with a particular (U[db], T[db]) combination are stored in memory cells of different sizes (one word, one byte, one nibble = 4 bit), depending on the expected frequency of such events. The resulting matrix of packed counts has a fixed size of 3585 Byte (independent of the actual number of events). Additionally average samples can be measured.

The DIM BC data are organized as (U,T) tables with dimensions (90,80), 1 to 90 for U and 10 to 90 for T. This corresponds to data produced with flight software version 1. For data obtained with versions 2 and 3 of flight software, the (U,T) table is filled with MISSING_CONSTANT (defined in DIM_BC_BM.FMT). The parameter data (general parameters, average mode parameters and burst mode parameters) associated with the BC measurement are kept in a separate file (combined detached labels).

Example: Burst continuous measurement (1 label file pointing to 3 data files)

| SES_FS3_DBC_070929214512.LBL | (label) |
|----------------------------------|---------------------------------|
| SES_FS3_DBC_070929214512_PAR.TAB | (general parameters) |
| SES_FS3_DBC_070929214512_AM.TAB | (average mode, Uav time series) |
| SES_FS3_DBC_070929214512_BM.TAB | ((U,T) table) |

The label contains the Start and Stop times of the measurement as LOBT and UTC.

DIM BC, Parameters table definition

The parameters table is the same for Burst Continuous Average mode and Burst mode.

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The parameters are described in the following TABLE object.

| OBJECT | = BC_PAR_TABLE |
|-------------|--------------------|
| NAME | = "BC_PAR" |
| INTERCHANGE | FORMAT = ASCII |
| ROWS | = 3 |
| COLUMNS | = 11 |
| ROW_BYTES | = 71 |
| ^STRUCTURE | = "DIM_BC_PAR.FMT" |
| END_OBJECT | = BC_PAR_TABLE |

The structure of the TABLE object is defined in the file DIM_BC_PAR.FMT.

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| /* FILE CONTENTS | = DIM Burst Continuous PAR data */ |
|------------------|---|
| /* | Flight software FM1, FM2, FM3, CODMAC level 2 */ |
| /* FILE_NAME | = DIM_BC_PAR.FMT */ |
| /* REVISION_NOTE | = H. Krueger, version 1, 2015-08-18 */ |
| /* | A. Hirn, version 2, 2015-11-20 */ |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Time at end of measuring period. |
| | SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "DIRECTION" |
| DATA_TYPE | = CHARACTER |
| START BYTE | = 25 |
| BYTES | = 1 |
| FORMAT | = "A1" |
| UNIT | $= N/A^{"}$ |
| MISSING CONSTANT | = "9" |
| DESCRIPTION | = "Direction in DIM coordinate system, X, Y or Z. |
| | |

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| | Echoed command parameter." | |
|------------------|-----------------------------------|--------|
| END OBJECT | COLUMN | |
| _ | | |
| OBJECT | COLUMN | |
| NAME | "MARGIN" | |
| DATA_TYPE | ASCII_INTEGER | |
| START_BYTE | 28 | |
| BYTES | 2 | |
| FORMAT | "12" | |
| UNIT | "DECIBEL" | |
| MISSING_CONSTANT | 99 | |
| DESCRIPTION | "The margin determines the detect | cion |
| | threshold of the measuring ampli | lfier. |
| | Echoed command parameter. " | |
| END_OBJECT | COLUMN | |
| | | |
| OBJECT | COLUMN | |
| NAME | "DECAY_TIME" | |
| DATA_TYPE | ASCII_INTEGER | |
| START_BYTE | 31 | |
| BYTES | 3 | |
| FORMAT | "I3" | |
| UNIT | "MILLISECOND" | |
| MISSING_CONSTANT | 999 | |
| DESCRIPTION | "Signal decay time. | |
| | Range from 0 to 255. | |
| | Echoed command parameter." | |
| END_OBJECT | COLUMN | |
| | | |
| OBJECT | COLUMN | |
| | "SAMPLING_INTERVAL" | |
| — | ASCII_INTEGER | |
| START_BYTE | 35 | |
| - | 5 | |
| FORMAT | "15" | |
| UNIT | "SECOND" | |
| MISSING_CONSTANT | 99999 | |
| DESCRIPTION | "Sampling time interval. | |
| | Echoed command parameter." | |
| END_OBJECT | COLUMN | |
| | | |
| OBJECT | COLUMN | |
| NAME | "MEAS_TIME" | |
| DATA_TYPE | ASCII_INTEGER | |
| START_BYTE | 41 | |
| BYTES | 5 "I5" | |
| FORMAT | | |
| UNIT | "SECOND" | |
| MISSING_CONSTANT | 99999 | |
| DESCRIPTION | "Measuring time. | |
| END OD TECT | Echoed command parameter." | |
| END_OBJECT | COLUMN | |

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| OBJECT | = COLUMN |
|------------------|--------------------------------|
| NAME | = "NEVENT" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 47 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "Number of events detected." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_FALSE_EVENTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 53 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "Number of false events." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_LONG_EVENTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 59 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "Number of long events." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_AV_SAMPLES" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 65 |
| BYTES | = 5 |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 99999 |
| DESCRIPTION | = "Number of average samples." |
| END_OBJECT | = COLUMN |
| | |

DIM BC Average mode data definition

The average mode data are described in the following TABLE object.

| OBJECT | = BC_AM_TABLE |
|-------------|----------------|
| NAME | = "BC_AM" |
| INTERCHANGE | FORMAT = ASCII |
| ROWS | = 22 |
| COLUMNS | = 3 |



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ROW_BYTES ^STRUCTURE END_OBJECT

= "DIM_BC_AM.FMT"

= BC_AM_TABLE

= 16

The structure of the TABLE object is defined in the file DIM_BC_AM.FMT.

| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | = ASCII INTEGER |
| | = 1 |
| _ BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "SECOND" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Time relative to start time |
| | in DIM_BM_PAR.FMT file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "U_AV" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 13 |
| BYTES | = 2 |
| FORMAT | = "I2" |
| UNIT | = "DECIBEL" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "Average sample." |
| END_OBJECT | = COLUMN |
| | |

DIM BC Burst mode data definition (FM 1)

The burst continuous data are described in the following TABLE object.

| OBJECT | = BURST_MODE_TABLE |
|--------------------|-----------------------|
| NAME | = BURST_MODE |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 3 |
| COLUMNS | = 66 |
| ROW_BYTES | = 247 |
| ^STRUCTURE | = "DIM_BC_BM_FM1.FMT" |
| END_OBJECT | = BURST_MODE_TABLE |

The structure of the TABLE object is defined in the file DIM_BC_BM_FM1.FMT.

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| | · · · · · · · · · · · · · · · · · · · |
|---------------------|--|
| OBJECT | = COLUMN |
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | |
| START BYTE | — |
| — | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT_1" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 1 dB |
| | (time in compressed format)" |
| END OBJECT = COLUMN | |
| - | |
| OBJECT | = COLUMN |
| NAME | = "CNT_2" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 11 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 2 dB |
| | (time in compressed format)" |
| END_OBJECT = COLUMN | |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_3" |
| — | = ASCII_INTEGER |
| START_BYTE | = 14 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 3 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | ~~~~~ |
| OBJECT | = COLUMN |
| NAME | = "CNT_4" |
| DATA_TYPE | = ASCII_INTEGER |
| — | = 17 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 4 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|---------------------|--|
| NAME | = "CNT_5" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 20 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | <pre>= "Counts for impact time 5 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 6" |
| | = ASCII_INTEGER |
| — | = 23 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 6 dB |
| DESCRIPTION | (time in compressed format)" |
| END OB TECH | = COLUMN |
| END_OBJECT | |
| OBJECT | = COLUMN |
| NAME | = "CNT 7" |
| | — |
| DATA_TYPE | = 26 |
| START_BYTE BYTES | = 20 |
| - | _ |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | - |
| END OBJECT = COLUMN | (time in compressed format)" |
| END_OBJECI - COLOMN | |
| OBJECT | = COLUMN |
| NAME | = "CNT 8" |
| DATA TYPE | - |
| — | = 29 |
| BYTES | = 2 |
| UNIT | - Z = "DECIBEL" |
| FORMAT | = "I2" |
| | = 12 = "Counts for impact time 8 dB |
| DESCRIPTION | (time in compressed format)" |
| END OBJECT = COLUMN | (time in compressed format) |
| END_OBJECI - COLOMN | |
| OBJECT | = COLUMN |
| NAME | = "CNT 9" |
| DATA TYPE | — |
| — | = ASCII_INTEGER = 32 |
| START_BYTE | = 32 |
| BYTES | _ |
| UNIT | = "DECIBEL" |
| | = "I2" |
| DESCRIPTION | = "Counts for impact time 9 dB |

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| END_OBJECT | (time in compressed format)" = COLUMN |
|-------------|--|
| OBJECT | = COLUMN |
| NAME | = "CNT 10" |
| DATA_TYPE | = ASCII_INTEGER |
| START BYTE | = 35 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 10 dB |
| DEDORATION | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_11" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 38 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 11 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 12" |
| DATA TYPE | = ASCII INTEGER |
| | = 41 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | <pre>= "Counts for impact time 12 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 13" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 44 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | <pre>= "Counts for impact time 13 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_14" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 47 |
| BYTES | = 2 |
| | = "DECIBEL" |

SESAME Issue: **SESAME EAICD** Date: CASSE • DIM • PP FORMAT = "12" DESCRIPTION = "Counts for impact time 14 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 15" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 50 BYTES = 2 UNIT = "DECIBEL" FORMAT = "I2" DESCRIPTION = "Counts for impact time 15 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 16" NAME DATA TYPE = ASCII INTEGER START_BYTE = 53 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" DESCRIPTION = "Counts for impact time 16 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 17" NAME DATA TYPE = ASCII INTEGER START BYTE = 56 BYTES = 2 UNIT = "DECIBEL" FORMAT = "I2" DESCRIPTION = "Counts for impact time 17 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 18" NAME DATA TYPE = ASCII INTEGER START_BYTE = 59 BYTES = 2 = "DECIBEL" UNIT = "12" FORMAT DESCRIPTION = "Counts for impact time 18 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT_19" NAME DATA TYPE = ASCII_INTEGER START BYTE = 62

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| BYTES | = 2 |
|--------------|---------------------------------|
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 19 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 20" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 65 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 20 dB |
| 22001111101 | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | 002011 |
| OBJECT | = COLUMN |
| NAME | = "CNT 21" |
| DATA TYPE | _ = ASCII INTEGER |
| | = 68 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 21 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 22" |
| DATA TYPE | = ASCII_INTEGER |
| START BYTE | = 71 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 22 dB |
| 220011111011 | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 23" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 74 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 23 dB |
| PROCINITION | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | COLORN |
| OBJECT | = COLUMN |
| NAME | = "CNT 24" |
| | |

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= ASCII INTEGER DATA TYPE START_BYTE = 77 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 24 dB (time in compressed format)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 25" = ASCII INTEGER DATA TYPE START BYTE = 80 = 2 BYTES UNIT = "DECIBEL" = "I2" FORMAT = "Counts for impact time 25 dB DESCRIPTION (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT_26" NAME DATA TYPE = ASCII_INTEGER START BYTE = 83 = 2 BYTES = "DECIBEL" UNIT FORMAT = "I2" = "Counts for impact time 26 dB DESCRIPTION (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 27" NAME = ASCII INTEGER DATA TYPE START BYTE = 86 BYTES = 2 = "DECIBEL" UNIT FORMAT = "12" DESCRIPTION = "Counts for impact time 27 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 28" NAME DATA_TYPE = ASCII INTEGER START BYTE = 89 BYTES = 2 = "DECIBEL" UNIT = "I2" FORMAT DESCRIPTION = "Counts for impact time 28 dB (time in compressed format)" END OBJECT = COLUMN

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OBJECT = COLUMN = "CNT 29" NAME DATA TYPE = ASCII INTEGER START BYTE = 92 = 2 BYTES = "DECIBEL" UNIT = "I2" FORMAT = "Counts for impact time 29 dB DESCRIPTION (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 30" NAME DATA TYPE = ASCII_INTEGER START BYTE = 95 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" = "Counts for impact time 30 dB DESCRIPTION (time in compressed format)" = COLUMN END OBJECT OBJECT = COLUMN = "CNT 31" NAME DATA TYPE = ASCII INTEGER START BYTE = 98 BYTES = 2 = "DECIBEL" UNIT = "I2" FORMAT DESCRIPTION = "Counts for impact time 31 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 32" NAME DATA TYPE = ASCII INTEGER START BYTE = 101 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 32 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 33" = ASCII_INTEGER DATA_TYPE START BYTE = 104 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 33 dB

(time in compressed format)"

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|------------------|---------------------------------|
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 34" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 107 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 34 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_35" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 110 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 35 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_36" |
| DATA_TYPE | = ASCII_INTEGER |
| _ START BYTE | = 113 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 36 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_37" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 116 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 37 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_38" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 119 |
| BYTES | = 2 |
| | |

= "DECIBEL"

= "I2"

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| DESCRIPTION | = "Counts for impact time 38 dB |
|-------------|--|
| END_OBJECT | (time in compressed format)" = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_39" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 122 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 39 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_40" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 125 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 40 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 41" |
| DATA TYPE | = ASCII INTEGER |
| | = 128 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 41 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_42" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 131 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 42 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_43" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 134 |
| BYTES | = 2 |

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= "DECIBEL" UNTT = "I2" FORMAT DESCRIPTION = "Counts for impact time 43 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT_44" NAME DATA TYPE = ASCII INTEGER START BYTE = 137 BYTES = 2 = "DECIBEL" UNIT = "I2" FORMAT DESCRIPTION = "Counts for impact time 44 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 45" NAME = ASCII INTEGER DATA TYPE START BYTE = 140 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 45 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 46" NAME DATA TYPE = ASCII INTEGER START BYTE = 143 BYTES = 2 = "DECIBEL" UNIT = "12" FORMAT DESCRIPTION = "Counts for impact time 46 dB (time in compressed format)" END_OBJECT = COLUMN OBJECT = COLUMN = "CNT 47" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 146 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" DESCRIPTION = "Counts for impact time 47 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 48" DATA TYPE = ASCII INTEGER

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| START_BYTE | = 149 |
|-------------|---------------------------------|
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 48 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_49" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 152 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 49 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_50" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 155 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 50 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_51" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 158 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 51 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_52" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 161 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 52 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |

OBJECT

= COLUMN

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| | | | 0111_00 |
|------|-------------|---|---|
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 164 |
| | BYTES | = | 2 |
| | UNIT | = | "DECIBEL" |
| | FORMAT | = | "12" |
| | DESCRIPTION | = | "Counts for impact time 53 dB (time in compressed format)" |
| END_ | OBJECT | = | COLUMN |
| OBJI | ECT | = | COLUMN |
| | NAME | = | "CNT_54" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 167 |
| | BYTES | = | 2 |
| | UNIT | = | "DECIBEL" |
| | FORMAT | = | "12" |
| | DESCRIPTION | = | "Counts for impact time 54 dB (time in compressed format)" |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJI | | | COLUMN |
| | NAME | | "CNT_55" |
| | DATA_TYPE | | ASCII_INTEGER |
| | START_BYTE | | 170 |
| | BYTES | | 2 |
| | UNIT | | "DECIBEL" |
| | FORMAT | = | "12" |
| | DESCRIPTION | = | "Counts for impact time 55 dB (time in compressed format)" |
| END_ | OBJECT | = | COLUMN |
| OBJI | ECT | = | COLUMN |
| | NAME | = | "CNT 56" |
| | DATA_TYPE | | _ ASCII_INTEGER |
| | | | 173 |
| | BYTES | = | 2 |
| | UNIT | = | "DECIBEL" |
| | FORMAT | = | "12" |
| | DESCRIPTION | = | "Counts for impact time 56 dB |
| | | | (time in compressed format)" |
| END | OBJECT | = | COLUMN |
| OBJI | ECT | = | COLUMN |
| | NAME | | "CNT 57" |
| | DATA TYPE | | ASCII INTEGER |
| | | | 176 |
| | BYTES | = | 2 |
| | UNIT | = | "DECIBEL" |
| | FORMAT | | "12" |
| | DESCRIPTION | | "Counts for impact time 57 dB |
| | | | (time in compressed format)" |
| | | | - / |

= COLUMN

= "CNT_53"

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OBJECT = COLUMN NAME = "CNT 58" DATA TYPE = ASCII INTEGER START BYTE = 179 BYTES = 2 = "DECIBEL" UNIT = "I2" FORMAT DESCRIPTION = "Counts for impact time 58 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 59" NAME DATA TYPE = ASCII INTEGER START BYTE = 182 = 2 BYTES UNIT = "DECIBEL" FORMAT = "I2" DESCRIPTION = "Counts for impact time 59 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 60" NAME DATA TYPE = ASCII INTEGER = 185 START BYTE BYTES = 2 UNIT = "DECIBEL" FORMAT = "I2" DESCRIPTION = "Counts for impact time 60 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 61" DATA TYPE = ASCII INTEGER START_BYTE = 188 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 61 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 62" NAME DATA TYPE = ASCII INTEGER START BYTE = 191 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" DESCRIPTION = "Counts for impact time 62 dB

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| | | (time in compressed format)" |
|-----------------|---|-------------------------------|
| END OBJECT | _ | COLUMN |
| | | Coloring |
| OBJECT | | COLUMN |
| NAME | | "CNT 63" |
| DATA TYPE | | ASCII_INTEGER |
| | | 194 |
| BYTES | | 2 |
| UNIT | | "DECIBEL" |
| FORMAT | | "12" |
| DESCRIPTION | | "Counts for impact time 63 dB |
| DESCRIPTION | | (time in compressed format)" |
| END OB TECT | _ | COLUMN |
| END_OBJECT | _ | COLOMN |
| OBJECT | = | COLUMN |
| NAME | | "CNT 64" |
| DATA TYPE | | ASCII INTEGER |
| START BYTE | | 197 |
| BYTES | | 2 |
| UNIT | | "DECIBEL" |
| FORMAT | | "I2" |
| DESCRIPTION | | "Counts for impact time 64 dB |
| DESCRIPTION | _ | - |
| | _ | (time in compressed format)" |
| END_OBJECT | = | COLUMN |
| OBJECT | = | COLUMN |
| NAME | | "CNT 65" |
| DATA TYPE | | ASCII INTEGER |
| START BYTE | | 200 |
| BYTES | | 2 |
| UNIT | | "DECIBEL" |
| FORMAT | | "12" |
| DESCRIPTION | | "Counts for impact time 65 dB |
| DESCRIPTION | _ | (time in compressed format)" |
| END OBJECT | _ | COLUMN |
| | | COHOTIN |
| OBJECT | = | COLUMN |
| NAME | | "CNT_66" |
| DATA TYPE | | ASCII INTEGER |
| START BYTE | | 203 |
| BYTES | | 2 |
| UNIT | | "DECIBEL" |
| FORMAT | | "12" |
| DESCRIPTION | | "Counts for impact time 66 dB |
| DESCRIPTION | | (time in compressed format)" |
| END OBJECT | = | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | | "CNT 67" |
| DATA TYPE | | ASCII_INTEGER |
| _ START_BYTE | | 206 |
| BYTES | | 2 |
| UNIT | | "DECIBEL" |
| | | |

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|---|---|
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 67 dB |
| END_OBJECT | <pre>(time in compressed format)" = COLUMN</pre> |
| | |
| OBJECT NAME | = COLUMN = "CNT 68" |
| DATA TYPE | = CN1_00 = ASCII INTEGER |
| START BYTE | = 209 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | <pre>- 12 = "Counts for impact time 68 dB</pre> |
| DESCRIPTION | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT_69" |
| DATA_TYPE | = ASCII_INTEGER |
| START BYTE | = 212 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 69 dB |
| | |
| END_OBJECT = COLUM | Ν |
| _ | N = COLUMN |
| OBJECT = COLOM NAME | |
| - Object | = COLUMN |
| - OBJECT NAME | = COLUMN = "CNT_70" |
| - OBJECT NAME DATA_TYPE | = COLUMN = "CNT_70" = ASCII_INTEGER |
| - OBJECT NAME DATA_TYPE START_BYTE | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2</pre> |
| - OBJECT DATA_TYPE START_BYTE BYTES UNIT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB</pre> |
| - OBJECT DATA_TYPE START_BYTE BYTES UNIT FORMAT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2"</pre> |
| - OBJECT DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)"</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71"</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2 = "DECIBEL"</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2 = "DECIBEL" = "I2" = "Counts for impact time 71 dB</pre> |
| OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2 = "DECIBEL" = "I2" = "Counts for impact time 71 dB (time in compressed format)"</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2 = "DECIBEL" = "I2" = "Counts for impact time 71 dB (time in compressed format)" = COLUMN</pre> |
| - OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT | <pre>= COLUMN = "CNT_70" = ASCII_INTEGER = 215 = 2 = "DECIBEL" = "I2" = "Counts for impact time 70 dB (time in compressed format)" = COLUMN = COLUMN = "CNT_71" = ASCII_INTEGER = 218 = 2 = "DECIBEL" = "I2" = "Counts for impact time 71 dB (time in compressed format)" = COLUMN = COLUMN</pre> |

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| BYTES | = 2 |
|-------------------------|---------------------------------|
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 72 dB |
| | (time in compressed format)" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "CNT 73" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 224 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 73 dB |
| | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT 74" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 227 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Counts for impact time 74 dB |
| DEGORITITION | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_75" |
| DATA TYPE | = ASCII_INTEGER |
| START BYTE | = 230 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 75 dB |
| DEDORTITION | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | COLOTIN |
| OBJECT | = COLUMN |
| NAME | = "CNT 76" |
| | - |
| DATA_TYPE START BYTE | = ASCII_INTEGER = 233 |
| _ | = 2. |
| BYTES | = Z = "DECIBEL" |
| UNIT | = "DECIBEL" = "I2" |
| FORMAT | |
| DESCRIPTION | = "Counts for impact time 76 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | 2011/00/ |
| OBJECT | = COLUMN |
| NAME | = "CNT_77" |
| | |

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DATA TYPE = ASCII INTEGER START_BYTE = 236 BYTES = 2 UNIT = "DECIBEL" = "I2" FORMAT DESCRIPTION = "Counts for impact time 77 dB (time in compressed format)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 78" DATA TYPE = ASCII_INTEGER START BYTE = 239 = 2 BYTES UNIT = "DECIBEL" FORMAT = "I2" DESCRIPTION = "Counts for impact time 78 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT_79" NAME DATA TYPE = ASCII_INTEGER START BYTE = 242 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" DESCRIPTION = "Counts for impact time 79 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 80" DATA TYPE = ASCII INTEGER START BYTE = 245 BYTES = 2 = "DECIBEL" UNIT FORMAT = "I2" DESCRIPTION = "Counts for impact time 80 dB (time in compressed format)" END OBJECT = COLUMN OBJECT = COLUMN = "CNT 81" NAME DATA_TYPE = ASCII INTEGER START BYTE = 248 BYTES = 2 = "DECIBEL" UNIT = "I2" FORMAT DESCRIPTION = "Counts for impact time 81 dB (time in compressed format)" END OBJECT = COLUMN

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| OBJECT | = COLUMN |
|-----------------|---------------------------------|
| NAME | = "CNT 82" |
| | = ASCII INTEGER |
| START BYTE | = 251 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | |
| 220011111011 | (time in compressed format)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT 83" |
| DATA TYPE | = ASCII INTEGER |
| | = 254 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 83 dB |
| | (time in compressed format)" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "CNT 84" |
| DATA TYPE | = ASCII INTEGER |
| _ START BYTE | = 257 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 84 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_85" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 260 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 85 dB |
| | (time in compressed format)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_86" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 263 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Counts for impact time 86 dB |
| | (time in compressed format)" |
| | |

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| END_OBJECT | = COLUMN |
|---|--|
| OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= COLUMN = "CNT_87" = ASCII_INTEGER = 266 = 2 = "DECIBEL" = "I2" = "Counts for impact time 87 dB</pre> |
| END_OBJECT | <pre>(time in compressed format)" = COLUMN</pre> |
| OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= COLUMN = "CNT_88" = ASCII_INTEGER = 269 = 2 = "DECIBEL" = "I2" = "Counts for impact time 88 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= COLUMN = "CNT_89" = ASCII_INTEGER = 272 = 2 = "DECIBEL" = "I2" = "Counts for impact time 89 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |
| BYTES UNIT FORMAT | <pre>= COLUMN = "CNT_90" = ASCII_INTEGER = 275 = 2 = "DECIBEL" = "I2" = "Counts for impact time 90 dB (time in compressed format)"</pre> |
| END_OBJECT | = COLUMN |

DIM BC Burst mode data definition (FM 2)

The burst continuous data are described in the following TABLE object.

OBJECT = BC_BM_TABLE NAME = "BC BM" INTERCHANGE_FORMAT = ASCII

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| ROWS | = 270 |
|------------|-------------------|
| COLUMNS | = 62 |
| ROW_BYTES | = 318 |
| ^STRUCTURE | = "DIM_BC_BM.FMT" |
| END_OBJECT | = BC_BM_TABLE |

The structure of the TABLE object is defined in the file DIM_BC_BM.FMT.

| OBJECT | = COLUMN |
|------------------|---|
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | = ASCII INTEGER |
| | = 1 |
| — | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING CONSTANT | = 999999 |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "ERROR_CODE" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 9 |
| BYTES | = 2 |
| FORMAT | = "A2" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = "99" |
| DESCRIPTION | = "DIM BC error code, 2 hexadecimal characters" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_10" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 13 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Event counts for impact time 10 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_11" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 18 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 11 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |

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| · · · · · · · · · · · · · · · · · · · | |
|---------------------------------------|---|
| NAME | = "CNT_12" |
| DATA_TYPE | = ASCII INTEGER |
| — | = 23 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| — | = "Event counts for impact time 12 dB." |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "CNT 13" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 28 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 13 dB." |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT 14" |
| DATA_TYPE | = ASCII INTEGER |
| | = 33 |
| _ BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 14 dB." |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT_15" |
| DATA TYPE | = ASCII_INTEGER |
| | = 38 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| — | = "Event counts for impact time 15 dB." |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT_16" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 43 |
| _ BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| _ DESCRIPTION | = "Event counts for impact time 16 dB." |
| END OBJECT | = COLUMN |
| _ | |

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| OBJECT NAME | = COLUMN |
|------------------|---|
| | = "CNT_17" |
| DATA_TYPE | = ASCII_INTEGER = 48 |
| START_BYTE | = 40 |
| BYTES | - 4 = "I4" |
| FORMAT | |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 17 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 18" |
| DATA_TYPE | = ASCII_INTEGER |
| START BYTE | = 53 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| | = "N/A" |
| MISSING CONSTANT | |
| — | = "Event counts for impact time 18 dB." |
| END OBJECT | = COLUMN |
| END_OBDEC1 | |
| OBJECT | = COLUMN |
| NAME | = "CNT 19" |
| DATA_TYPE | = ASCII_INTEGER |
| START BYTE | = 58 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| | = 9999 |
| | = "Event counts for impact time 19 dB." |
| END OBJECT | = COLUMN |
| | COLORIN |
| OBJECT | = COLUMN |
| NAME | = "CNT 20" |
| DATA TYPE | = ASCII INTEGER |
| | = 63 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| _ DESCRIPTION | = "Event counts for impact time 20 dB." |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT_21" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 68 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| | |

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| UNIT | = "N/A" |
|------------------|---|
| MISSING CONSTANT | = 9999 |
| — | = "Event counts for impact time 26 dB." |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT 27" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 98 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| | = "Event counts for impact time 27 dB." |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "CNT_28" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 103 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 28 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_29" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 108 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 29 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_30" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 113 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 30 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_31" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 118 |
| | |

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| | 5 |
|---------------------|---|
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 31 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_32" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 123 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 32 dB." |
| END_OBJECT | = COLUMN |
| | ~~~~~~ |
| OBJECT | = COLUMN |
| NAME | = "CNT_33" |
| DATA_TYPE | = ASCII_INTEGER = 128 |
| START_BYTE BYTES | -120 = 4 |
| FORMAT | - 4 = "I4" |
| UNIT | $= \frac{14}{N/A''}$ |
| MISSING_CONSTANT | = 9999 |
| | = "Event counts for impact time 33 dB." |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_34" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 133 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 34 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_35" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 138 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 35 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_36" |

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| DATA_TYPE | = ASCII_INTEGER |
|------------------|---|
| START_BYTE | = 143 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 36 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 37" |
| | = ASCII_INTEGER |
| START BYTE | = 148 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 37 dB." |
| END OBJECT | = COLUMN |
| END_OBJECT | |
| OBJECT | = COLUMN |
| NAME | = "CNT 38" |
| DATA TYPE | = ASCII INTEGER |
| START_BYTE | = 153 |
| BYTES | = 4 |
| | = "I4" |
| | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 38 dB." |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_39" |
| DATA TYPE | = ASCII_INTEGER |
| | = 158 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 39 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "CNT_40" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 163 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Event counts for impact time 40 dB." |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|------------------|---|
| NAME | = "CNT_42" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 173 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 42 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_43" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 178 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 43 dB." |
| | |

= COLUMN

= COLUMN

= COLUMN

OBJECT

END_OBJECT

END OBJECT

| NAME | = "CNT_44" |
|------------------|---|
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 183 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 44 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |

| . " |
|-----|
| |

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END OBJECT = COLUMN OBJECT = COLUMN = "CNT 46" NAME DATA TYPE = ASCII INTEGER START BYTE = 193 BYTES = 4 = "I4" FORMAT UNIT = "N/A" MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 46 dB." END_OBJECT = COLUMN OBJECT = COLUMN = "CNT_47" = ASCII_INTEGER NAME DATA TYPE _ START_BYTE = 198 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 47 dB." END OBJECT = COLUMN OBJECT = COLUMN = "CNT 48" NAME DATA_TYPE = ASCII INTEGER _ START_BYTE = 203 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 99999 DESCRIPTION = "Event counts for impact time 48 dB." END OBJECT = COLUMN OBJECT = COLUMN = "CNT_49" = ASCII_INTEGER NAME DATA_TYPE START_BYTE = 208 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 99999 DESCRIPTION = "Event counts for impact time 49 dB." END OBJECT OBJECT = COLUMN NAME = "CNT 50" DATA TYPE = ASCII INTEGER START_BYTE = 213 = 4 BYTES = "I4" FORMAT

= "N/A"

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| | MISSING_CONSTANT | = | 9999 |
|------|-------------------|---|---------------------------------------|
| | DESCRIPTION | = | "Event counts for impact time 50 dB." |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJ | ECT | = | COLUMN |
| | NAME | = | "CNT_51" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 218 |
| | BYTES | = | 4 |
| | FORMAT | = | "I4" |
| | UNIT | = | "N/A" |
| | MISSING_CONSTANT | = | 9999 |
| | DESCRIPTION | = | "Event counts for impact time 51 dB." |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJ | ECT | | COLUMN |
| | NAME | | "CNT_52" |
| | _ | = | ASCII_INTEGER |
| | START_BYTE | = | 223 |
| | BYTES | | 4 |
| | FORMAT | = | "I4" |
| | UNIT | | "N/A" |
| | MISSING_CONSTANT | | |
| | DESCRIPTION | = | "Event counts for impact time 52 dB." |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJ | | | COLUMN |
| | | | "CNT_53" |
| | — | | ASCII_INTEGER |
| | START_BYTE | | |
| | BYTES | | 4 |
| | FORMAT | | "I4" |
| | UNIT | | "N/A" |
| | MISSING_CONSTANT | | 9999 |
| | DESCRIPTION | | "Event counts for impact time 53 dB." |
| END | _OBJECT | = | COLUMN |
| 05 - | | | |
| OBJ: | | | COLUMN |
| | NAME | | "CNT_54" |
| | DATA_TYPE | | ASCII_INTEGER |
| | START_BYTE | | 233 |
| | BYTES | | 4 |
| | FORMAT | | |
| | UNIT | | "N/A" |
| | MISSING_CONSTANT | | 9999 |
| | DESCRIPTION | | "Event counts for impact time 54 dB." |
| END. | _OBJECT | = | COLUMN |
| | г.С.П. | _ | COLIMN |
| OBJ: | | | COLUMN |
| | NAME Data type | | "CNT_55" |
| | DATA_TYPE | | ASCII_INTEGER 238 |
| | START_BYTE | | |
| | BYTES | - | 4 |

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| FORMAT | = "I4" |
|------------------|---|
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| | = "Event counts for impact time 55 dB." |
| | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_56" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 243 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| | = "Event counts for impact time 56 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 57" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 248 |
| _ BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| | = "Event counts for impact time 57 dB." |
| END_OBJECT | = COLUMN |
| | = COLUMN |
| OBJECT NAME | = "CNT 58" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 253 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING CONSTANT | |
| DESCRIPTION | = "Event counts for impact time 58 dB." |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_59" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 258 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 59 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 60" |
| DATA TYPE | = ASCII INTEGER |
| | |

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| | 6 |
|---------------------|---|
| START_BYTE | = 263 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "CNT_61" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 268 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 61 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CNT 62" |
| | = CN1_02 = ASCII_INTEGER |
| DATA_TYPE | = 273 |
| START_BYTE BYTES | = 273 |
| FORMAT | = 4 = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| — | = "Event counts for impact time 62 dB." |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CNT_63" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 278 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 63 dB." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "CNT_64" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 283 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 64 dB." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |

OBJECT

= COLUMN

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= "CNT 65" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 288 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 65 dB." END OBJECT = COLUMN OBJECT = COLUMN = "CNT 66" NAME DATA TYPE = ASCII INTEGER = 293 START_BYTE BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 66 dB." END OBJECT = COLUMN OBJECT = COLUMN NAME = "CNT 67" = ASCII_INTEGER DATA TYPE = 298 START BYTE BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 67 dB." = COLUMN END OBJECT OBJECT = COLUMN = "CNT 68" NAME = ASCII INTEGER DATA TYPE START BYTE = 303 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 68 dB." END_OBJECT = COLUMN OBJECT = COLUMN = "CNT_69" NAME DATA TYPE = ASCII INTEGER START_BYTE = 308 = 4 BYTES FORMAT = "I4" = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Event counts for impact time 69 dB." END OBJECT = COLUMN

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| OBJECT | = COLUMN |
|------------------|---|
| NAME | = "CNT_70" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 313 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Event counts for impact time 70 dB." |
| END_OBJECT | = COLUMN |

4.3.2.4.2.1.5 DIM Burst Continuous test mode

Single events on one sensor face are registered. In DIM_BCTEST mode measured values are not stored in a compressed way (as in DIM_BC mode), but for each event the peak voltage (in mV and dB) and the impact time (timer count and time [dB]) are included in telemetry. No average samples are measured. The parameter data (general parameters, average mode parameters and burst mode parameters) associated with the BC Test measurement are kept in a separate file (combined detached labels).

DIM BC Test Parameters table

The parameters table is the same for Burst Continuous Average mode and Burst mode. The parameters are described in the following TABLE object.

| OBJECT | = BCTEST_PARAM_TABLE |
|--------------------|----------------------|
| NAME | = BCTEST_PARAM |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = |
| COLUMNS | = |
| ROW_BYTES | = |
| ^STRUCTURE | = "DIM_BCT_PAR.FMT" |
| END_OBJECT | = BCTEST_PARAM_TABLE |

The structure of the TABLE object is defined in the file DIM_BCT_PAR.FMT.

| 00.700 | 0011301 |
|-------------|--|
| OBJECT | = COLUMN |
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "This column represents the UTC Time" |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN | |
|-----------------|--|--|
| NAME | = "SESAME_LOCAL_TIME" | |
| DATA TYPE | = CHARACTER | |
| START_BYTE | = 33 | |
| BYTES | = 15 | |
| FORMAT | = "A15" | |
| UNIT | = "N/A" | |
| DESCRIPTION | = "Start time of measurement represented as : | |
| | Reset number (integer starting at 1) / seconds | |
| | The time resolution is 0.03125 s" | |
| END OBJECT | = COLUMN | |
| | 0010m | |
| OBJECT | = COLUMN | |
| NAME | = "DIRECTION" | |
| DATA TYPE | = CHARACTER | |
| - START BYTE | | |
| BYTES | = 1 | |
| UNIT | = "N/A" | |
| FORMAT | = "A1" | |
| DESCRIPTION | = "Direction in DIM coordinate system, | |
| | X, Y or Z. | |
| | Echoed command parameter." | |
| END OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "MARGIN" | |
| DATA TYPE | = ASCII INTEGER | |
| | = 54 | |
| BYTES | = 2 | |
| UNIT | = "DECIBEL" | |
| FORMAT | = "I2" | |
| DESCRIPTION | = "The margin determines the detection | |
| | threshold of the measuring amplifier. | |
| | Echoed command parameter. " | |
| END OBJECT | = COLUMN | |
| _ | | |
| OBJECT | = COLUMN | |
| NAME | = "DECAY_TIME" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 57 | |
| BYTES | = 3 | |
| UNIT | = "MILLISECOND" | |
| FORMAT | = "I3" | |
| DESCRIPTION | = "Decay time. | |
| | Range from 0 to 255. | |
| | Echoed command parameter." | |
| END_OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "MEAS_TIME" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 61 | |
| BYTES | = 5 | |
| | | |

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| UNIT | = "SECOND" |
|-------------|--------------------------------|
| FORMAT | = "I5" |
| DESCRIPTION | = "Measuring time. |
| | Echoed command parameter." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "NEVENT" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 67 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Number of events detected." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_FALSE_EVENTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 73 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Number of false events." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_LONG_EVENTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 79 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Number of long events." |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "N_AV_SAMPLES" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 85 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Number of average samples." |
| END_OBJECT | = COLUMN |
| | |

DIM BC Test data

The average mode data are described in the following TABLE object.

| OBJECT | = BCTEST_SIG_TABLE |
|--------------------|--------------------|
| NAME | = AVERAGE_MODE |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 7 |

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| COLUMNS | = 8 |
|------------|---------------------|
| ROW_BYTES | = 87 |
| ^STRUCTURE | = "DIM_BCT_SIG.FMT" |
| END_OBJECT | = BCTEST_SIG_TABLE |

The structure of the TABLE object is defined in the file DIM_BCT_SIG.FMT.

| NAME = "SESAME_SEQ_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 1 BYTES = 6 UNIT = "N/A" FORMAT = "IG" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDTh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = 51 SYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN | OBJECT | = COLUMN |
|---|---------------|---|
| DATA_TYPE = ASCII_INTEGER START_BYTE = 1 BTTS = 6 UNIT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss) " END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Sclocal_TIME_END" DATA_TYPE = CHARACTER START_BYTE = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SSEAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SSEAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN | NAME | = "SESAME SEQ ID" |
| <pre>START_BYTE = 1 BTTES = 6 UNIT = "N/A" FORMAT = "16" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN</pre> | | |
| BYTES = 6 UNIT = "N/A" PORMAT = "16" DESCRIPTION = "sequence ID in the current data file" END_OBJECT = COLUMN OBART = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDThh:nm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE | | |
| FORMAT= "16" "Sequence ID in the current data file"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "UTC" DATA_TYPEDATA_TYPE= TIME START_BYTEBYTES= 23DESCRIPTION= "Measurement time (UTC in PDS standard format YYY-MM-DDThh:mm:ss.sss) "END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNDESCRIPTION= "S_LOCAL_TIME_START" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 33 B YTESPUTES= 15 FORMATINIT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNDESCRIPTION= "S_LOCAL_TIME_END" DATA_TYPEDATA_TYPE= 51 FORMATPUTES= 15 FORMATPORMAT= "A15" UNITUNIT= "N/A" DESCRIPTIONDESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | — | |
| DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDThh:mm;ss.sss) " END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "S_LOCAL_TIME_END" DATA_TYPE = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = SEAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = COLUMN OBJECT = COLUMN OBJECT = COLUMN | UNIT | = "N/A" |
| END_OBJECT= COLUMNOBJECT= COLUMNNAME= "UTC"DATA_TYPE= TIMESTART_BYTE= 8BYTES= 23DESCRIFTION= "Measurement time (UTC in PDS standard format YYY-MM-DDThh:mm:ss.sss) "END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 33 BYTESBYTES= 15 FORMATPORMAT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNDESCRIPTION= "S_IOCAL_TIME_END" DATA_TYPEDATA_TYPE= 51 BYTESBYTES= 15 FORMATPORMAT= "N/A" DESCRIPTIONDESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | FORMAT | = "I6" |
| <pre>OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYY+MM-DDThh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN</pre> | DESCRIPTION | = "Sequence ID in the current data file" |
| NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-M-DDThh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_SAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN | | |
| NAME = "UTC" DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-M-DDThh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_SAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN | | |
| DATA_TYPE = TIME START_BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYY-MM-DDThh:mm:ss.ss) " END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN | OBJECT | = COLUMN |
| STAR_BYTE= 8BYTES= 23DESCRIPTION= "Measurement time (UTC in PDS standard format YYY-MM-DDThh:mm:ss.ss) "END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_START" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 33 BYTESBYTES= 15 FORMATUNIT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 51 BYTESBYTES= 15 FORMATUNIT= "N/A" DESCRIPTIONDESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | NAME | = "UTC" |
| BYTES = 23 DESCRIPTION = "Measurement time (UTC in PDS standard format YYY-MM-DDThh:mm:ss.sss) " END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN | DATA_TYPE | = TIME |
| DESCRIPTION = "Measurement time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss) " END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN | START_BYTE | = 8 |
| YYYY-MM-DDThh:mm:ss.ss)END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_START"DATA_TYPE= CHARACTERSTART_BYTE= 33BYTES= 15FORMAT= "A15"UNIT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 51 BYTESBYTES= 15 FORMATPORMAT= "A15" UNITUNIT= "N/A" DESCRIPTIONDESCRIPTION= "SEAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | BYTES | = 23 |
| END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_START"DATA_TYPE= CHARACTERSTART_BYTE= 33BYTES= 15FORMAT= "A15"UNIT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNDATA_TYPE= COLUMNDATA_TYPE= COLUMNDATA_TYPE= S1BYTES= 15FORMAT= "A15" UNITUNIT= "N/A"DESCRIPTION= "SEAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNDATA_TYPE= 15FORMAT= "A15" UNITUNIT= "N/A"DESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | DESCRIPTION | = "Measurement time (UTC in PDS standard format |
| OBJECT = COLUMN NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN DATA_TYPE = S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | | YYYY-MM-DDThh:mm:ss.sss) " |
| NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN | END_OBJECT | = COLUMN |
| NAME = "S_LOCAL_TIME_START" DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN | | |
| DATA_TYPE = CHARACTER START_BYTE = 33 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN | OBJECT | = COLUMN |
| START_BYTE= 33BYTES= 15FORMAT= "A15"UNIT= "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 51BYTES= 15FORMAT= "A15" UNITUNIT= "N/A" DESCRIPTIONDESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMN | NAME | = "S_LOCAL_TIME_START" |
| BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN | DATA_TYPE | = CHARACTER |
| FORMAT= "A15" "N/A"DESCRIPTION= "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END" DATA_TYPEDATA_TYPE= CHARACTER START_BYTESTART_BYTE= 51 BYTESBYTES= 15 FORMATUNIT= "N/A" DESCRIPTIONDESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNMAE= "TIMER_CNT" | START_BYTE | = 33 |
| UNIT = "N/A" DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN | BYTES | = 15 |
| DESCRIPTION = "Start time of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN | FORMAT | = "A15" |
| Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END"DATA_TYPE= CHARACTERSTART_BYTE= 51BYTES= 15FORMAT= "A15"UNIT= "N/A"DESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | UNIT | = "N/A" |
| The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "S_LOCAL_TIME_END"DATA_TYPE= CHARACTERSTART_BYTE= 51BYTES= 15FORMAT= "A15"UNIT= "N/A"DESCRIPTION= "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "TIMER_CNT" | DESCRIPTION | = "Start time of measurement represented as : |
| END_OBJECT = COLUMN OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT" | | Reset number (integer starting at 1) / seconds |
| OBJECT = COLUMN NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT" | | The time resolution is 0.03125 s" |
| <pre>NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT"</pre> | END_OBJECT | = COLUMN |
| <pre>NAME = "S_LOCAL_TIME_END" DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT"</pre> | | |
| DATA_TYPE = CHARACTER START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT" | | |
| START_BYTE = 51 BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN NAME = "TIMER_CNT" | | |
| BYTES = 15 FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | DATA_TYPE | = CHARACTER |
| <pre>FORMAT = "A15" UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT"</pre> | START_BYTE | |
| UNIT = "N/A" DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | BYTES | |
| DESCRIPTION = "SESAME local time (1/32 s) for end of measurement Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | FORMAT | |
| Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | UNIT | |
| The time resolution is 0.03125 s" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | DESCRIPTION | |
| END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TIMER_CNT" | | |
| OBJECT = COLUMN NAME = "TIMER_CNT" | | The time resolution is 0.03125 s" |
| NAME = "TIMER_CNT" | END_OBJECT | = COLUMN |
| NAME = "TIMER_CNT" | | |
| — | | |
| DATA_TYPE = ASCII_INTEGER | | _ |
| | DA'I'A_'I'YPE | = ASCII_INTEGER |

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| START_BYTE | = 68 |
|-------------|---|
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "I5" |
| DESCRIPTION | = "Timer count at impact time. |
| | The time resolution is 0.03125 s" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "PEAK_AMPLITUDE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 74 |
| BYTES | = 5 |
| UNIT | = "MILLIVOLT" |
| FORMAT | = "I5" |
| DESCRIPTION | = "Event peak amplitude" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "TIMER_CNT_CMPRS" |
| — | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| DESCRIPTION | = "Event timer count at impact time, |
| | in compressed format" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "PEAK_AMPLITUDE_CMPRS" |
| _ | = ASCII_INTEGER |
| START_BYTE | = 83 = 2 |
| BYTES | |
| UNIT | = "DECIBEL" = "12" |
| FORMAT | |
| | <pre>= "Event peak amplitude in compressed format" - COLUMN</pre> |
| END_OBJECT | = COLUMN |

4.3.2.4.2.1.6 DIM Burst Continuous test mode 2

Additionally to the regular Burst Continuous Mode (which delivers the DIM (U, T_c)-matrix), a Burst Continuous Test Mode (DIM_BCTEST2) is implemented. DIM_BCTEST2 delivers for each single impact U[mV], U[dB], TC, T_c [dB] and – deviating from DIM_BCTEST in earlier flight software versions – additionally the Lander On-board Time (LOBT), when the impact was registered (event time). The LOBT is determined directly after the event was accepted as a real impact.

As for the Burst Continuous Test mode the parameter data (general parameters, average mode parameters and burst mode parameters) are kept in a separate file (combined detached labels).

DIM BC Test 2 parameters table

The parameters table for BC Test 2 mode is the same as for the BC Test mode (see § 4.3.2.4.2.1.5)

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DIM BC Test 2 data

The BC Test 2 mode data are described in the following TABLE object.

| OBJECT | = BCTEST2_SIG_TABLE |
|--------------------|-----------------------------|
| NAME | = AVERAGE_MODE |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = |
| COLUMNS | = |
| ROW_BYTES | = |
| ^STRUCTURE | = "DIM_BCTEST2_SIG_FM3.FMT" |
| END_OBJECT | = BCTEST2_SIG_TABLE |

The structure of the TABLE object is defined in the file DIM_BCTEST2_SIG_FM3.FMT.

| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "EVENT_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Event time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "COUNTS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 24 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 999999 |
| DESCRIPTION | = "DIM calibration timer counts" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "PEAK_MV" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 31 |
| | |

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| BYTES | = 4 |
|------------------|---------------------------------------|
| UNIT | = "MILLIVOLT" |
| FORMAT | = "I4" |
| MISSING_CONSTANT | = 9999 |
| DESCRIPTION | = "Peak voltage in mV" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_DB" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 36 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "12" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "Timer counts in compressed format" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "PEAK_DB" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 39 |
| BYTES | = 2 |
| UNIT | = "DECIBEL" |
| FORMAT | = "I2" |
| MISSING_CONSTANT | = 99 |
| DESCRIPTION | = "Peak voltage in dB" |
| END_OBJECT | = COLUMN |
| | |

4.3.2.4.3 PP object definitions

The structures of PP measurements differ according to flight software versions. The details concerning the telemetry formats can be found in [AD1] for flight software version 1 (FM1), in [AD2] for flight software version 2 (FM2) and in [AD3] for flight software version 3 (FM-3). The FM2 software was uploaded on 2007-09-24 at 19h40 UTC (during Payload Checkout #6). The FM3 software was uploaded on 2009-09-24 at 02h00 UTC (during PC#10).

4.3.2.4.3.1 Flight software version FM1

4.3.2.4.3.1.1 PP Active Mode Test

During an active mode test, one active PP measurement is performed. Adjusted and measured values (DAC table read back from PP memory, time series of transmitter current and receiver voltage samples) are sent to ground. Telemetry concludes with the results of the on-board data evaluation. Adjustable parameters of command active mode test are the configuration of electrodes, the transmitting frequency and the number of sine waves.

The PP AMTEST data are organized as tables containing parameters, the DAC table read back from PP memory, transmitter and receiver time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to four data files.

Following is an example of PDS files corresponding to an AMTEST measurement.

SES_FS2_PAM_070929214512_TEST.LBL (label)

SES_FS2_PAM_070929214512_TPAR.TAB (parameters)

SES_FS2_PAM_070929214512_TDAC.TAB (DAC table)

SES_FS2_PAM_070929214512_TTX.TAB (transmitter time series)

SES_FS2_PAM_070929214512_TRX.TAB (receiver time series)

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The parameters are described by the following TABLE object.

| OBJECT | = AMT_PAR_TABLE |
|-----------------|--------------------|
| NAME | = "AMT_PAR" |
| INTERCHANGE_FOR | RMAT = ASCII |
| ROWS | = 2 |
| COLUMNS | = 8 |
| ROW_BYTES | = 82 |
| ^STRUCTURE | = "PP_AMT_PAR.FMT" |
| END_OBJECT | = AMT_PAR_TABLE |

The structure of the parameters table is described in the file PP_AMT_PAR.FMT.

/* PP AMTEST sensor settings, version 2, 2015-11-11 */

| OBJECT | = COLUMN |
|---------------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| — | = TIME |
| — | = 8 |
| | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | |
| | |
| | = "SESAME_LOCAL_TIME" |
| | = ASCII_INTEGER |
| START_BYTE BYTES | = 15 |
| FORMAT | = "I15" |
| | = IIS = "Measurement start time. SESAME local time |
| DESCRIPTION | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | - |
| END OD TECH | CDMS RSST (see SESAME Ready Message)" = COLUMN |
| END_OBJECT | - COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SENSOR_SETTINGS" |
| | = ASCII_INTEGER |
| START_BYTE | = 48 |
| BYTES | = 7 |
| UNIT | = "N/A" |
| | |

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DESCRIPTION = "Commanded (echoed) electrode combination as 3-digit hexadecimal code 16#abi# with the following meaning: a: electrode connected to the TX A output. Possible values: 0 [none], 1 [+X leg], 2 [MUPUS PEN] b: electrode connected to the TX B output. Possible values: 0 [none], 2 [MUPUS PEN], 3 [APXS] i: input channel Possible values: 0 [potential difference] 1 [current at +X leg] 2 [current at MUPUS PEN] 3 [current at APXS] 4 [direct measurement at +Y foot] 5 [direct measurement at -Y foot] 6 [reference voltage -2.5 V] 7 [reference voltage +2.5 V] " END OBJECT = COLUMN OBJECT = COLUMN = "TX FREQ" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 56 BYTES = 5 = "HERTZ" UNIT FORMAT = "I5" DESCRIPTION = "Tx frequency " END OBJECT = COLUMN OBJECT = COLUMN NAME = "TX/RX WAVES" DATA_TYPE = ASCII_INTEGER START BYTE = 62 = 3 BYTES = "N/A" UNIT = I3 FORMAT DESCRIPTION = "Number of Tx/Rx waves " = COLUMN END OBJECT = COLUMN OBJECT = "NUMBER_OF_SAMPLES" NAME DATA TYPE = ASCII INTEGER START BYTE = 66 BYTES = 5 = "N/A" UNIT FORMAT = "I5" DESCRIPTION = "Number of transmitter current and receiver voltage

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samples " END OBJECT = COLUMN

= COLUMN OBJECT NAME = "ERROR CODE" DATA_TYPE = ASCII_INTEGER START BYTE = 72 = 8 BYTES MISSING CONSTANT = 16#0000# DESCRIPTION = "Active mode results as Hex value 16#xxxx# The possible values are: 8001 Invalid register address. 8002 Error verifying register write. 8004 Error accessing power register. 8008 MUX setting not allowed. 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement is already running. 0040 Error during writing to instrument. 0080 Error during reading from instrument. 0100 Error using ADC of C-DPU. 0200 Error during DAC table generation. 0400 Calculated number of samples > N SAMP MAX. 8800 C-DPU memory exhausted. 9000 Measurement time out. 2000 Invalid command parameter. 8000 Flag indicates fatal error. " END_OBJECT = COLUMN

The DAC table is described by the following TABLE object.

| OBJECT | = AMTESTDAC_TABLE |
|--------------------|--------------------|
| NAME | = AMTESTDAC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 256 |
| COLUMNS | = 5 |
| ROW_BYTES | = 57 |
| ^STRUCTURE | = "PP_AMT_DAC.FMT" |
| END_OBJECT | = AMTESTDAC_TABLE |

The structure of the DAC table is described in the file PP AMT DAC.FMT.

| OBJECT | = COLUMN | | |
|-------------|--|--|--|
| NAME | = "SESAME_SEQ_ID" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 1 | | |
| BYTES | = 6 | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I6" | | |
| DESCRIPTION | = "Sequence ID in the current data file" | | |
| END_OBJECT | = COLUMN | | |

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| OBJECT | = COLUMN | |
|-------------|--|--|
| NAME | = "UTC" | |
| DATA_TYPE | = TIME | |
| START_BYTE | = 8 | |
| BYTES | = 23 | |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard | |
| | format YYYY-MM-DDThh:mm:ss.sss)" | |
| END_OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "SESAME LOCAL TIME" | |
| DATA TYPE | = ASCII INTEGER | |
| | = 32 | |
| BYTES | = 15 | |
| FORMAT | = "I15" | |
| DESCRIPTION | = "Measurement start time. SESAME local time | |
| | (SLT) runs with a resolution of 1/32 seconds. | |
| | SLT represents the least significant 32 bits | |
| | of LOBT. The most significant 5 bits are in | |
| | CDMS RSST (see SESAME Ready Message)" | |
| END OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "DAC SAMPLE " | |
| DATA_TYPE | = ASCII INTEGER | |
| | = 48 | |
| BYTES | = 3 | |
| UNIT | = "N/A" | |
| FORMAT | = "I3" | |
| DESCRIPTION | = "DAC sample number" | |
| END OBJECT | = COLUMN | |
| _ | | |
| OBJECT | = COLUMN | |
| NAME | = "DAC_ADC_VALUE" | |
| DATA TYPE | = ASCII_INTEGER | |
| | = 52 | |
| _ BYTES | = 3 | |
| UNIT | = "N/A" | |
| FORMAT | = "13" | |
| DESCRIPTION | = "DAC ADC value " | |
| END OBJECT | = COLUMN | |
| — | | |

The receiver time series is described by the following TABLE object.

| OBJECT | = AMTESTRX_TABLE |
|--------------------|-------------------|
| NAME | = AMTESTRX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 59 |
| ^STRUCTURE | = "PP_AMT_RX.FMT" |

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END_OBJECT

= AMT_RX_TABLE

The structure of the receiver time series table is described in the file PP_AMT_RX.FMT.

| /* PP AMTEST / AMTEST | 2 Rx table entry version 2, 2015-11-11*/ |
|-----------------------|--|
| OBJECT | = COLUMN |
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | |
| — | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RX SAMPLE " |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 48 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "I5" |
| DESCRIPTION | = "Rx sample number" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RX_ADC_VALUE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 54 |
| BYTES | = 3 |
| | |

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| UNIT | = "N/A" |
|-------------|-------------------|
| FORMAT | = "I3" |
| DESCRIPTION | = "RX ADC value " |
| END_OBJECT | = COLUMN |

The transmitter time series is described by the following TABLE object.

| OBJECT | = AMTESTTX_TABLE |
|--------------------|-------------------|
| NAME | = AMTESTTX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 59 |
| ^STRUCTURE | = "PP_AMT_TX.FMT" |
| END_OBJECT | = AMTESTTX_TABLE |

The structure of the transmitter TABLE object is defined in the file PP_AMT_TX.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | = 6 |
| | = "N/A" |
| | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| DATA TYPE | = ASCII INTEGER |
| | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OD JECH | |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TX_SAMPLE " |
| DATA_TYPE | = ASCII_INTEGER |

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| - | | | |
|------|-------------|---|--------------------|
| | START_BYTE | = | 48 |
| | BYTES | = | 5 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "I5" |
| | DESCRIPTION | = | "Tx sample number" |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJI | ECT | = | COLUMN |
| | NAME | = | "TX_ADC_VALUE" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 54 |
| | BYTES | = | 3 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "I3" |
| | DESCRIPTION | = | "Tx ADC value " |
| END | OBJECT | = | COLUMN |
| | | | |

4.3.2.4.3.1.2 PP Health Check (HC) data

Following is an example of PDS files corresponding to an HC measurement.

SES_FS2_PHC_070929214512_HC.LBL (label)

SES_FS2_PAM_070929214512_HC.TAB (parameters)

The HC data are described in the following TABLE object (simple detached label).

| OBJECT | = SES_PHC_TABLE |
|--------------------|-----------------|
| NAME | = "SES_PHC" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 14 |
| ROW_BYTES | = 100 |
| ^STRUCTURE | = "PP_HC.FMT" |
| END_OBJECT | = SES_PHC_TABLE |

The structure of the TABLE object is defined in the file PP_HC.FMT.

/* PP Health Check, version 2, 2015-11-11 */

| OBJECT | = COLUMN | |
|-------------|--|--|
| NAME | = "SESAME_SEQ_ID" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 1 | |
| BYTES | = 6 | |
| UNIT | = "N/A" | |
| FORMAT | = "I6" | |
| DESCRIPTION | = "Sequence ID in the current data file" | |
| END_OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "UTC" | |
| DATA_TYPE | = TIME | |
| START_BYTE | = 8 | |

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| BYTES | = 23 | |
|-------------|---------------------|---|
| DESCRIPTION | = "Meas | urement start time (UTC in PDS standard |
| | | at YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUM | N |
| | | |
| OBJECT | = COLUM | N |
| NAME | = "SESA | ME_LOCAL_TIME" |
| DATA_TYPE | = ASCII | INTEGER |
| START_BYTE | = 32 | |
| BYTES | = 15 | |
| FORMAT | = "I15" | |
| DESCRIPTION | (SLT SLT of L | urement start time. SESAME local time) runs with a resolution of 1/32 seconds. represents the least significant 32 bits OBT. The most significant 5 bits are in RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUM | Ν |
| | | |
| OBJECT | = COLUM | N |
| NAME | = "LP_V. | ALUE" |
| DATA_TYPE | = ASCII | INTEGER |
| START_BYTE | = 48 | |
| BYTES | = 5 | |
| UNIT | = "N/A" | |
| FORMAT | = "I5" | |
| DESCRIPTION | = "Resu | lt count of Langmuir probe measurement " |
| END_OBJECT | = COLUM | N |
| OBJECT | = COLUM | N |
| NAME | = "ADC | |
| DATA_TYPE | | INTEGER |
| START BYTE | | |
| BYTES | = 3 | |
| | = "N/A" | |
| FORMAT | = "I3" | |
| DESCRIPTION | | ld be close to 128 |
| | | represents zero with bipolar ADC)" |
| END OBJECT | - COLUM | |
| _ | | |
| OBJECT | = COLUM | Ν |
| NAME | = "-2.5 | V REF" |
| DATA_TYPE | = ASCII | INTEGER |
| START_BYTE | = 58 | |
| BYTES | = 3 | |
| UNIT | = "N/A" | |
| FORMAT | = "I3" | |
| DESCRIPTION | | V REF and +2.5V REF should be nearly |
| | _ | etrical to ADC offset" |
| END_OBJECT | = COLUM | N |
| | | λ.Υ. |
| OBJECT | - COLUM | |
| NAME | = "+2.5" | _ |
| DATA_TYPE | = ASCII | _INTEGER |

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| START_BYTE | = 62 |
|-----------------|---|
| | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | <pre>= "-2.5V REF and +2.5V REF should be nearly symmetrical to ADC offset"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "DELTA" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 66 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "Differential value RX2 - RX1" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "LEG+Y RX1" |
| | = ASCII INTEGER |
| _ START_BYTE | = 70 |
| — | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "Direct voltage from receiver 1 at +Y leg" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "LEG-Y RX2" |
| | = ASCII INTEGER |
| — | = 74 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "Direct voltage from receiver 2 at -Y leg" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LEG+X TX1" |
| DATA TYPE | = ASCII INTEGER |
| - START BYTE | = 78 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "Transmitter current at electrode 1. |
| | No voltage applied. |
| END_OBJECT | Should be close to ADC offset." = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MUPUS_PEN_TX2" |
| DATA_TYPE | = ASCII_INTEGER |

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| START_BYTE | = 82 | |
|------------------|--|--|
| BYTES | = 3 | |
| UNIT | = "N/A" | |
| FORMAT | = "I3" | |
| DESCRIPTION | = "Transmitter current at electrode 2. | |
| | No voltage applied. | |
| | Should be close to ADC offset." | |
| END OBJECT | = COLUMN | |
| _ | | |
| OBJECT | = COLUMN | |
| NAME | = "APXS_TX3" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 86 | |
| BYTES | = 3 | |
| UNIT | = "N/A" | |
| FORMAT | = "I3" | |
| DESCRIPTION | = "Transmitter current at electrode 3. | |
| | No volatge applied. | |
| | Should be close to ADC offset." | |
| END_OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "ERROR_CODE" | |
| DATA_TYPE | ASCII_INTEGER | |
| START_BYTE | = 90 | |
| BYTES | = 8 | |
| UNIT | = "N/A" | |
| MISSING_CONSTANT | = 16#0000# | |
| DESCRIPTION | = "Hex value as 16#xxxx#. The possible values are: | |
| | 8001 Invalid register address. | |
| | 8002 Error verifying register write. | |
| | 8004 Error accessing power register. | |
| | 8008 MUX setting not allowed. | |
| | 8010 Error accessing PP RAM. | |
| | 8020 Tried to start measurement but a measurement | |
| | is already running. | |
| | 0040 Error during writing to instrument. | |
| | 0080 Error during reading from instrument. | |
| | 0100 Error using ADC of C-DPU. | |
| | 0200 Error during DAC table generation. | |
| | 0400 Calculated number of samples $> N_SAMP_MAX$. | |
| | 8800 C-DPU memory exhausted. | |
| | 9000 Measurement time out. | |
| | 2000 Invalid command parameter. | |
| | 8000 Flag indicates fatal error. " | |
| END_OBJECT | = COLUMN | |
| | | |

4.3.2.4.3.1.3 PP Langmuir Probe Test (LM) data

This measurement sequence is mainly used for ground tests and is not a regular flight measurement. Following is an example of PDS files corresponding to an LM measurement.

SES_FS2_PLM_070929214512_LM.LBL (label) SES_FS2_PLM_070929214512_LM.TAB (parameters)

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The LM data are described in the following TABLE object (simple detached label).

| OBJECT | = SES_PLM_TABLE |
|--------------------|-----------------|
| NAME | = "SES_LM" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 17 |
| COLUMNS | = 6 |
| ROW_BYTES | = 61 |
| ^STRUCTURE | = "PP_LM.FMT" |
| END_OBJECT | = SES_PLM_TABLE |

The structure of the TABLE object is defined in the file PP_LM.FMT.

/* PP Langmuir Probe measurement, version 2, 2015-11-11 */

| | <pre>= COLUMN = "SESAME_SEQ_ID" = ASCII_INTEGER = 1 = 6 = "N/A" = "I6" = "Sequence ID in the current data file"</pre> |
|---|--|
| END_OBJECT | = COLUMN |
| OBJECT NAME DATA_TYPE START_BYTE BYTES DESCRIPTION END OBJECT | <pre>= COLUMN = "UTC" = TIME = 8 = 23 = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" = COLUMN</pre> |
| END_OBJECT | = COLOMN |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | = 32 = 15 = "I15" |
| OBJECT NAME DATA_TYPE START_BYTE BYTES | — |

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| UNIT | = "N/A" |
|-------------|---|
| FORMAT | = "I2" |
| DESCRIPTION | = "Nominal clock divider" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "ACT_CLK_DIV" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 51 |
| BYTES | = 2 |
| UNIT | = "N/A" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Actual clock divider" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LP_VALUE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 54 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Result count of Langmuir probe measurement " |
| END_OBJECT | = COLUMN |
| | |

4.3.2.4.3.1.4 PP Passive Mode Test (PMTEST)

The PMTEST was not used during flight.

4.3.2.4.3.2 Flight software version FM2

4.3.2.4.3.2.1 PP Active Mode Test

During an active mode test, one active PP measurement is performed. Adjusted and measured values (DAC table read back from PP memory, time series of transmitter current and receiver voltage samples) are sent to ground. Telemetry concludes with the results of the on-board data evaluation. Adjustable parameters of command active mode test are the configuration of electrodes, the transmitting frequency and amplitude and the number of sine waves. Because telemetry contains the raw time series data and the results of the on-board evaluation it is possible to check both, details of the time series and the correct working of the data evaluation.

The PP AMTEST2 data are organized as tables containing parameters including the on-board evaluation results, the DAC table read back from PP memory, transmitter and receiver time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to four data files.

Following is an example of PDS files corresponding to an AMTEST2 measurement.

SES_FS2_PAM_070929214512_TEST.LBL (label)

SES_FS2_PAM_070929214512_TPAR.TAB (parameters) SES FS2 PAM 070929214512 TDAC.TAB (DAC table) SES_FS2_PAM_070929214512_TTX.TAB (transmitter time series) SES FS2 PAM 070929214512 TRX.TAB (receiver time series)

The parameters are described by the following TABLE object.

| OBJECT | = AMT_PAR_TABLE |
|--------|-----------------|
| NAME | = "AMT_PAR" |

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INTERCHANGE_FORMAT = ASCII ROWS = 2 COLUMNS = 14 ROW_BYTES = 137 ^STRUCTURE = "PP_AMT2_PAR.FMT" = AMT PAR TABLE END OBJECT

The structure of the parameters table is described in the file PP_AMT2_PAR.FMT.

| OBJECT | = COLUMN | |
|------------------|---|--|
| | = "SESAME SEQ ID" | |
| | = ASCII INTEGER | |
| START BYTE | — | |
| — | = 6 | |
| | = "N/A" | |
| FORMAT | | |
| | = "Sequence ID in the current data file" | |
| END OBJECT | | |
| END_OBJECI | | |
| OBJECT | = COLUMN | |
| | = "UTC" | |
| DATA TYPE | = TIME | |
| _ START BYTE | = 8 | |
| — | = 23 | |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard | |
| | format YYYY-MM-DDThh:mm:ss.sss)" | |
| END OBJECT | | |
| _ | | |
| OBJECT | = COLUMN | |
| NAME | = "SESAME_LOCAL_TIME" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 32 | |
| BYTES | = 15 | |
| FORMAT | = "I15" | |
| DESCRIPTION | = "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. | |
| | SLT represents the least significant 32 bits | |
| | of LOBT. The most significant 5 bits are in | |
| | CDMS RSST (see SESAME Ready Message)" | |
| END OBJECT | = COLUMN | |
| | | |
| OBJECT | = COLUMN | |
| NAME | = "SENSOR_SETTINGS_CMD" | |
| DATA_TYPE | = ASCII_INTEGER | |
| START_BYTE | = 48 | |
| BYTES | = 7 | |
| UNIT | = "N/A" | |
| DESCRIPTION | = "Commanded (echoed) electrode combination | |
| as 3-digit | hexadecimal value 16#abi# | |
| with the f | ollowing meaning: | |
| a: electrod | e connected to the TX A output. | |
| Possible values: | | |
| 0 [none] | , | |
| | | |

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1 [+X leg], 2 [MUPUS PEN] b: electrode connected to the TX B output. Possible values: 0 [none], 2 [MUPUS PEN], 3 [APXS] i: input channel Possible values: 0 [potential difference] 1 [current at +X leg] 2 [current at MUPUS PEN] 3 [current at APXS] 4 [direct measurement at +Y foot] 5 [direct measurement at -Y foot] 6 [reference voltage -2.5 V] 7 [reference voltage +2.5 V] " END OBJECT = COLUMN OBJECT = COLUMN NAME = "TX_FREQ" DATA_TYPE = ASCII_INTEGER START_BYTE = 56 BYTES = 5 = "HERTZ" UNIT FORMAT = "I5" DESCRIPTION = "Tx frequency " END_OBJECT = COLUMN = COLUMN OBJECT NAME = "TX/RX WAVES" DATA_TYPE = ASCII_INTEGER START_BYTE = 62 = 3 BYTES = "N/A" UNIT FORMAT = "I3" DESCRIPTION = "Number of Tx/Rx waves " END OBJECT = COLUMN NAME - " NAME = "PTS_PER_WAVE" DATA_TYPE = ASCII_INTEGER START_BYTE = 66 BYTES - ^ OBJECT = "N/A" UNIT FORMAT = "I3" DESCRIPTION = "Points per wave " END OBJECT = COLUMN = COLUMN OBJECT NAME = "TX OUT DAMPING" NAME - -----DATA_TYPE = ASCII_INTEGER START BYTE = 70

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= 1 BYTES = "N/A" UNIT FORMAT = "I1" DESCRIPTION = "TX Voltage Amplitude Reduction. The possible values are: 0 maximum amplitude. 1 half amplitude. 2 quarter amplitude. 3 1/8 amplitude. 4 1/16 amplitude." END OBJECT = COLUMN = COLUMN OBJECT NAME = "ADC_DIV" DATA_TYPE = ASCII_INTEGER START_BYTE = 72 BYTES BYTES = 4 = "N/A" UNIT FORMAT = "I4" DESCRIPTION = "Sampling frequency is generated as 5 MHz / this parameter" = COLUMN END_OBJECT NAME OBJECT = COLUMN = "ADC ADDR" NAME _____ DATA_TYPE = ASCII_INTEGER START BYTE = 77 BYTES = 5 = "N/A" UNIT FORMAT = "I5" MISSING CONSTANT = 99999 DESCRIPTION = "Adjusted last address in PP memory " END OBJECT = COLUMN OBJECT = COLUMN NAME NAME = "DAC_DIV" DATA_TYPE = ASCII_INTEGER START BYTE = 83 = 4 BYTES UNIT = "N/A" FORMAT = "I4" DESCRIPTION = "Tx voltage update frequency is 5 MHz / this parameter" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "DAC_ADDR" DATA_TYPE = ASCII_INTEGER START_BYTE = 88 BYTES = 3 = "N/A" UNIT FORMAT = "I3" DESCRIPTION = "Last used address in DAC table" END OBJECT = COLUMN OBJECT = COLUMN

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= "ERROR CODE" NAME DATA TYPE = ASCII INTEGER START BYTE = 92 BYTES = 8 MISSING CONSTANT = 16#0000# DESCRIPTION = "Active mode results as hexa 16#xxxx# The possible values are: 8001 Invalid register address. 8002 Error verifying register write. 8004 Error accessing power register. 8008 MUX setting not allowed. 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement is already running. 0040 Error during writing to instrument. 0080 Error during reading from instrument. 0100 Error using ADC of C-DPU. 0200 Error during DAC table generation. 0400 Calculated number of samples > N SAMP MAX. 8800 C-DPU memory exhausted. 9000 Measurement time out. 2000 Invalid command parameter. 8000 Flag indicates fatal error. " = COLUMN END OBJECT NAME = "QUAL_FLAG_CL" DATA_TYPE = ASCII_INTEGER START_BYTE = 101 OBJECT = COLUMN = "QUAL FLAG CL" BYTES = 1 FORMAT = "I1" UNIT = "N/A" DESCRIPTION = "PP quality flags. The possible values are: 0 OK 1 at least one sample equals 0 in current (transmitter) time series" END OBJECT = COLUMN OBJECT = COLUMN = "QUAL FLAG VH" NAME DATA TYPE = ASCII INTEGER START BYTE = 103 BYTES = 1 = "I1" FORMAT = "N/A" UNIT DESCRIPTION = "PP quality flags. The possible values are: 0 OK 1 at least one sample equals 255 in voltage (receiver) time series" END OBJECT = COLUMN OBJECT = COLUMN NAME = "QUAL FLAG VL"

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DATA TYPE = ASCII INTEGER START_BYTE = 105 = 1 BYTES = "I1" FORMAT UNIT = "N/A" DESCRIPTION = "PP quality flags. The possible values are: 0 OK 1 at least one sample equals 0 in voltage (receiver) time series" END OBJECT = COLUMN OBJECT = COLUMN NAME = "POINTS_PER_WAVE" DATA_TYPE = ASCII_INTEGER START_BYTE = 107 BYTES = 3 UNIT = "N/A" FORMAT = "I3" MISSING CONSTANT = 999 DESCRIPTION = "Number of points per wave used by receiver" END OBJECT = COLUMN - COLUMN NAME OBJECT NAME = "PHASE" DATA_TYPE = ASCII_REAL START_BYTE = 111 BYTES BYTES = "DEGREE" UNIT UNIT = "DEGRE. FORMAT = "F8.4" DESCRIPTION = "Phase difference potential-current" END OBJECT = COLUMN JECT = COLUMN NAME = "CURRENT_AMPLITUDE" DATA_TYPE = ASCII_INTEGER START_BYTE = 120 OBJECT BYTES = 3 UNIT = "N/A" FORMAT = "I3" DESCRIPTION = "Scaling as raw data without offset 128 = max. ADC value for current" END_OBJECT = COLUMN OBJECT = COLUMN = "VOLTAGE_AMPLITUDE" NAME NAME = "VOLTAGE_AMPL DATA_TYPE = ASCII_INTEGER START_BYTE = 124 BYTES = 3 UNIT = "N/A" FORMAT = "I3" DESCRIPTION = "Scaling as raw data without offset 128 = max. ADC value for Rx voltage diff." END OBJECT = COLUMN

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OBJECT = COLUMN NAME = "MATH ERR" DATA_TYPE = CHARACTER START BYTE = 128 BYTES = 8 MISSING CONSTANT = 16#0000# DESCRIPTION = "Hex value as 16#xxxx# 0001 Reduce: number of vector elements odd or less than 2; fatal. 0002 Expand: less than four elements in input vector; fatal. 0004 Too much data for analysis; truncating. 0008 Too few data for analysis; padding with 128 0010 Used number of waves is not a power of 2; truncated. 0020 Not the expected number of elements in filtered arrays; fatal. 0040 Argument for sine table() not in valid range $0 \le deg2 \le 720$. 0080 Overflow in divsin() or result inexact. 0100 Too few data for trimmed mean calculation; regular mean used. 0200 No data for warr.mean; particular: analysis yields no data. 0400 Passive mode: not enough data in bin. 0800 Not enough memory for data reduction." = COLUMN END_OBJECT

The DAC table is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMTESTDAC_TABLE |
|--------------------|--------------------|
| NAME | = AMTESTDAC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 256 |
| COLUMNS | = 5 |
| ROW_BYTES | = 57 |
| ^STRUCTURE | = "PP_AMT_DAC.FMT" |
| END_OBJECT | = AMTESTDAC_TABLE |

The structure of the DAC table is described in the file PP_AMT_DAC.FMT.

/* PP AMTEST / AMTEST2 DAC table entry version 2, 2015-11-11 */ OBJECT = COLUMN NAME = "SESAME SEQ ID" DATA TYPE = ASCII INTEGER START_BYTE = 1 BYTES = 6 = "N/A" UNIT = "I6" FORMAT = "Sequence ID in the current data file" DESCRIPTION END OBJECT = COLUMN

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| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 32 |
| _ BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OBJECT | = COLUMN |
| END_OBJECT | - COLOMN |
| OBJECT | = COLUMN |
| NAME | |
| | = "DAC_SAMPLE " |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| | = "DAC sample number" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "DAC_ADC_VALUE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 52 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "DAC ADC value " |
| END_OBJECT | = COLUMN |
| | |

The receiver time series is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMTESTRX_TABLE |
|--------------------|------------------|
| NAME | = AMTESTRX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |



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ROW_BYTES ^STRUCTURE END_OBJECT = 59 = "PP_AMT_RX.FMT" = AMT_RX_TABLE

The structure of the receiver time series table is described in the file PP_AMT_RX.FMT.

| /* PP AMTEST / AMTEST2 | Rx table entry version 2, 2015-11-11*/ |
|------------------------|--|
| OBJECT | = COLUMN |
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | — |
| START_BYTE | = 32 |
| BYTES | = 15 |
| | = "I15" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RX_SAMPLE " |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 48 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "I5" |
| DESCRIPTION | = "Rx sample number" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RX ADC VALUE" |
| DATA TYPE | = ASCII INTEGER |
| | WOLT THIRDRY |

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| START_BYTE | = 54 |
|-------------|-------------------|
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "RX ADC value " |
| END_OBJECT | = COLUMN |

The transmitter time series is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMTESTTX_TABLE |
|--------------------|-------------------|
| NAME | = AMTESTTX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 59 |
| ^STRUCTURE | = "PP_AMT_TX.FMT" |
| END_OBJECT | = AMTESTTX_TABLE |

The structure of the transmitter TABLE object is defined in the file PP_AMT_TX.FMT.

/* PP AMTEST / AMTEST2 Tx table entry ,version 2, 2015-11-11 */

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |

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| OBJ | ECT | = | COLUMN |
|-----|-------------|---|--------------------|
| | NAME | = | "TX_SAMPLE " |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 48 |
| | BYTES | = | 5 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "I5" |
| | DESCRIPTION | = | "Tx sample number" |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJ | ECT | = | COLUMN |
| | NAME | = | "TX_ADC_VALUE" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 54 |
| | BYTES | = | 3 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "I3" |
| | DESCRIPTION | = | "Tx ADC value " |
| END | _OBJECT | = | COLUMN |

4.3.2.4.3.2.2 PP Health Check (HC) data

Same as FM1

4.3.2.4.3.2.3 PP Langmuir Probe Test (LM) data

Same as FM1

4.3.2.4.3.2.4 PP Passive Mode (PM) data

The PP PM data are organized as tables containing parameters and power spectra. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to two data files.

Following is an example of PDS files corresponding to a PM measurement.

SES_FS2_PPM_070929214512_PM.LBL (label) SES FS2 PPM 070929214512 PAR.TAB (parameters) SES_FS2_PPM_070929214512_POW.TAB (power spectrum)

The parameters are described by the following TABLE object.

| OBJECT | = PM2PAR_TABLE |
|--------------------|--------------------|
| NAME | = PM2PAR |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 11 |
| ROW_BYTES | = 100 |
| ^STRUCTURE | = "PP_PM2_PAR.FMT" |
| END_OBJECT | = PM2PAR_TABLE |

The structure of the parameters TABLE object is described in the file PP PM2 PAR.FMT.

/* PP PM2 parameter settings, version 2, 2015-11-11 */ OBJECT = COLUMN NAME = "SESAME SEQ ID"

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| DATA_TYPE = ASCII_INTEGER START_BYTE = 1 BYTES = 6 UNIT = "N/A" | |
|---|----|
| $\begin{array}{rcl} \text{START}_\text{BYTE} &= 1 \\ \text{BYTES} &= 6 \\ \text{UNIT} &= "N/A" \end{array}$ | |
| UNIT = $"N/A"$ | |
| | |
| | |
| FORMAT = "I6" | |
| DESCRIPTION = "Sequence ID in the current data file" | |
| END OBJECT = COLUMN | |
| _ | |
| OBJECT = COLUMN | |
| NAME = "UTC" | |
| DATA_TYPE = TIME | |
| START_BYTE = 8 | |
| BYTES = 23 | |
| DESCRIPTION = "Measurement start time (UTC in PDS standar format YYYY-MM-DDThh:mm:ss.sss)" | d |
| END_OBJECT = COLUMN | |
| | |
| OBJECT = COLUMN | |
| NAME = "SESAME_LOCAL_TIME" | |
| DATA_TYPE = ASCII_INTEGER | |
| START_BYTE = 32 | |
| BYTES = 15 | |
| FORMAT = "I15" | |
| DESCRIPTION = "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 secon SLT represents the least significant 32 bi of LOBT. The most significant 5 bits are in CDMC_DOCT (are SECOME Deady Macrometer)" | ts |
| CDMS RSST (see SESAME Ready Message)" END_OBJECT = COLUMN | |
| OBJECT = COLUMN | |
| NAME = "LP INT CLK DIV" | |
| DATA TYPE = ASCII INTEGER | |
| START BYTE = 48 | |
| BYTES = 2 | |
| UNIT = "N/A" | |
| FORMAT = "I2" | |
| DESCRIPTION = "The LP integrator clock divider determines | |
| integrating time of Langmuir Probe (LP) | |
| measurement " | |
| END_OBJECT = COLUMN | |
| | |
| OBJECT = COLUMN | |
| NAME = "LP_VALUE" | |
| DATA_TYPE = ASCII_INTEGER | |
| START_BYTE = 51 | |
| BYTES = 5 | |
| UNIT = $"N/A"$ | |
| FORMAT = "I5" | |
| DESCRIPTION = "Result count of Langmuir probe measurement | " |
| END_OBJECT = COLUMN | |
| OBJECT = COLUMN | |

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| NAME | = "LP MEAS ERR" | | |
|------------------|---|--|--|
| DATA TYPE | | | |
| - START BYTE | — | | |
| _ BYTES | | | |
| MISSING_CONSTANT | = 16#0000# | | |
| DESCRIPTION | = "Error code for LP measurement. | | |
| | Hex value as 16#xxxx#. The possible values are: | | |
| | 8001 Invalid register address. | | |
| | 8002 Error verifying register write. | | |
| | 8004 Error accessing power register. | | |
| | 8008 MUX setting not allowed. | | |
| | 8010 Error accessing PP RAM. | | |
| | 8020 Tried to start measurement but a measurement | | |
| | is already running. | | |
| | 0040 Error during writing to instrument. | | |
| | 0080 Error during reading from instrument. | | |
| | 0100 Error using ADC of C-DPU. | | |
| | 0200 Error during DAC table generation. | | |
| | 0400 Calculated number of samples $> N_SAMP_MAX$. | | |
| | 8800 C-DPU memory exhausted. | | |
| | 9000 Measurement time out. | | |
| | 2000 Invalid command parameter. | | |
| | 8000 Flag indicates fatal error. " | | |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "ADC_CLK_DIV" | | |
| DATA_TYPE | — | | |
| START_BYTE | = 66 | | |
| BYTES | | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I5" | | |
| DESCRIPTION | = "ADC clock divider used when generating the | | |
| | receiver sampling frequency: 5 MHz / this | | |
| END OBJECT | parameter " = COLUMN | | |
| END_OBOECI | - COLOMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "NB SAMPLES" | | |
| DATA TYPE | _ | | |
| | = 72 | | |
| BYTES | = 5 | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I5" | | |
| | = "Number of used samples (excluding skipped samples) " | | |
| END_OBJECT | = COLUMN | | |
| — | | | |
| OBJECT | = COLUMN | | |
| NAME | = "ERROR_CODE" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 78 | | |
| BYTES | = 8 | | |
| UNIT | = "N/A" | | |
| | | | |

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|--|---|--|--|--|--|--|
| MISSING_CONSTANT | = 16#0000# | | | | | |
| DESCRIPTION | <pre>= "Hex value as 16#xxxx#. The possible values are: 8001 Invalid register address. 8002 Error verifying register write. 8004 Error accessing power register. 8008 MUX setting not allowed. 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement is already running. 0040 Error during writing to instrument. 0080 Error during reading from instrument. 0100 Error using ADC of C-DPU. 0200 Error during DAC table generation</pre> | | | | | |
| | 0200 Error during DAC table generation. 0400 Calculated number of samples > N_SAMP_MAX. | | | | | |
| | <pre>8800 C-DPU memory exhausted. 9000 Measurement time out. 2000 Invalid command parameter. 8000 Flag indicates fatal error. "</pre> | | | | | |
| END_OBJECT | = COLUMN | | | | | |
| OBJECT NAME DATA_TYPE | <pre>= COLUMN = "NB_FREQ_BINS" = ASCII_INTEGER</pre> | | | | | |
| START_BYTE BYTES UNIT FORMAT | = 87 = 2 = "N/A" = "I2" | | | | | |
| DESCRIPTION END_OBJECT | <pre>= "Number of frequency bins " = COLUMN</pre> | | | | | |
| OBJECT NAME DATA_TYPE START_BYTE BYTES UNIT | <pre>= COLUMN = "MATH_ERR_CODE" = ASCII_INTEGER = 90 = 8 = "N/A"</pre> | | | | | |
| MISSING_CONSTANT | = 16#0000# | | | | | |
| DESCRIPTION | <pre>= "Indicates errors, which can only occur during on-board data reduction (hex value as 16#xxxx#). 0001 Reduce: number of vector elements odd or less than 2; fatal. 0002 Expand: less than four elements in input vector; fatal.</pre> | | | | | |
| | 0004 Too much data for analysis; truncating. 0008 Too few data for analysis; padding with 128 0010 Used number of waves is not a power of 2; truncated. | | | | | |
| | 0020 Not the expected number of elements in filtered arrays; fatal. | | | | | |
| | 0040 Argument for sine_table() not in valid range 0<= deg2 <=720. | | | | | |
| | 0080 Overflow in divsin() or result inexact. 0100 Too few data for trimmed mean calculation; | | | | | |

SESAME CASSE • DIM • PP SESAMEEAICD Reference: Issue: Date: Page: RO-LSE-DS-3102 1.0, LSE v2.5 17 December 2015 176 of 315 regular mean used. 0200 No data for warr.mean; particular: analysis yields no data. 176 of 315 0400 Passive mode: not enough data in bin. 0800 Not enough memory for data reduction."

END_OBJECT

The power spectrum is described by the following TABLE object.

= COLUMN

| OBJECT | = PM2POW_TABLE |
|--------------------|--------------------|
| NAME | = PM2POW |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 5 |
| ROW_BYTES | = 63 |
| ^STRUCTURE | = "PP_PM2_POW.FMT" |
| END_OBJECT | = PM2POW_TABLE |

The structure of the power spectrum TABLE object is described in the file PP_PM2_POW.FMT-

| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | = ASCII INTEGER |
| | = 1 |
| _ BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |

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| OBJECT | | COLUMN |
|-------------|---|--------------------------|
| NAME | = | "FREQ_BIN" |
| DATA_TYPE | = | ASCII_INTEGER |
| START_BYTE | = | 48 |
| BYTES | = | 2 |
| FORMAT | = | "12" |
| UNIT | = | "N/A" |
| DESCRIPTION | = | "Frequency bins meaning: |
| | | 1 20000-10000 Hz |
| | | 2 10000-5000 Hz |
| | | 3 5000-2500 Hz |
| | | 4 2500-1250 Hz |
| | | 5 1250-625 Hz |
| | | 6 625-312 Hz |
| | | 7 312-156 Hz |
| | | 8 156-78 Hz |
| | | 9 78-39 Hz |
| | | 10 39-20 Hz " |
| END OBJECT | = | COLUMN |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | = | "POWER" |
| DATA_TYPE | = | ASCII_INTEGER |
| START_BYTE | = | 51 |
| BYTES | = | 10 |
| FORMAT | = | "110" |
| UNIT | = | "N/A" |
| DESCRIPTION | = | "Raw power" |
| END_OBJECT | = | COLUMN |

4.3.2.4.3.2.5 PP Passive Mode Test (PMTEST) data

The PP PMTEST2 data are organized as tables containing parameters, power spectra and receiver (Rx) time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to three data files.

Following is an example of PDS files corresponding to a PMTEST measurement.

SES_FS2_PPM_070929214512_TEST.LBL (label)

SES_FS2_PPM_070929214512_TPAR.TAB (parameters)

SES_FS2_PPM_070929214512_TPOW.TAB (power spectrum)

SES_FS2_PPM_070929214512_TRX.TAB (receiver time series)

The parameters are described by the following TABLE object.

| OBJECT | = PM2TPAR_TABLE |
|--------------------|---------------------|
| NAME | = PM2TPAR |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 11 |
| ROW_BYTES | = 100 |
| ^STRUCTURE | = "PP_PMT2_PAR.FMT" |
| END_OBJECT | = PM2TPAR_TABLE |

The structure of the parameters TABLE object is described in the file PP_PMT2_PAR.FMT.

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/* PP PMTEST2 parameter settings, version 2, 2015-11-11 */

| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| START BYTE | |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| Disciti i i on | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| | COLDINA |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| | = ASCII INTEGER |
| — | = 32 |
| BYTES | = 15 |
| FORMAT | = "115" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LP INT CLK DIV" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 48 |
| BYTES | = 2 |
| UNIT | = "N/A" |
| FORMAT | = "12" |
| DESCRIPTION | = "The LP integrator clock divider determines |
| | integrating time of Langmuir Probe (LP) measurement " |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LP VALUE" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 51 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| | |

Reference: RO-LSE-DS-3102 **SESAME** Issue: 1.0, LSE v2.5 **SESAME EAICD** 17 December 2015 Date: **CASSE • DIM • PP** Page: 179 of 315 DESCRIPTION = "Result count of Langmuir probe measurement " END OBJECT = COLUMN = COLUMN OBJECT = "LP_MEAS_ERR" NAME = ASCII INTEGER DATA TYPE START BYTE = 57 = 8 BYTES MISSING CONSTANT = 16#0000#DESCRIPTION = "Error code for LP measurement. Hex value as 16#xxxx#. The possible values are: 8001 Invalid register address. 8002 Error verifying register write. 8004 Error accessing power register. 8008 MUX setting not allowed. 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement is already running. 0040 Error during writing to instrument. 0080 Error during reading from instrument. 0100 Error using ADC of C-DPU. 0200 Error during DAC table generation. 0400 Calculated number of samples > N SAMP MAX. 8800 C-DPU memory exhausted. 9000 Measurement time out. 2000 Invalid command parameter. 8000 Flag indicates fatal error. " = COLUMN END_OBJECT OBJECT = COLUMN = "ADC CLK DIV" NAME DATA TYPE = ASCII INTEGER START BYTE = 66 = 5 BYTES = "N/A" UNIT FORMAT = "I5" = "ADC clock divider used when generating the DESCRIPTION receiver sampling frequency: 5 MHz / this parameter " END OBJECT = COLUMN OBJECT = COLUMN = "NB SAMPLES" NAME = ASCII INTEGER DATA TYPE START BYTE = 72 BYTES = 5 = "N/A" UNIT = "15" FORMAT = "Number of used samples (excluding skipped samples) " DESCRIPTION END OBJECT = COLUMN OBJECT = COLUMN

NAME

= "ERROR CODE"

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| DATA_TYPE | — |
|------------------|--|
| START_BYTE | = 78 |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 16#0000# |
| DESCRIPTION | = "Hex value as 16#xxxx#. The possible values are: |
| | 8001 Invalid register address. |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. |
| | 8020 Tried to start measurement but a measurement |
| | is already running. |
| | 0040 Error during writing to instrument. |
| | 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples > N_SAMP_MAX. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "NB_FREQ_BINS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 87 |
| BYTES | = 2 |
| UNIT | = "N/A" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Number of frequency bins " |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MATH_ERR_CODE" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 90 |
| BYTES | = 8 |
| MISSING_CONSTANT | = 16#0000# |
| DESCRIPTION | = "Indicates errors, which can only occur during |
| | on-board data reduction (hex value as 16#xxxx#). |
| | 0001 Reduce: number of vector elements odd or less |
| | than 2; fatal. |
| | 0002 Expand: less than four elements in input |
| | vector; fatal. |
| | 0004 Too much data for analysis; truncating. |
| | 0008 Too few data for analysis; padding with 128 |
| | 0010 Used number of waves is not a power of 2; |
| | truncated. |
| | 0020 Not the expected number of elements in |
| | filtered arrays; fatal. |
| | 0040 Argument for sine_table() not in valid range |
| | |

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|----------------------------|----------|-----------------------------|--|---|
| | | 0<= deg2 <=720. | | |
| | 0080 | Overflow in divsin() or res | sult inexact | t. |
| | 0100 | Too few data for trimmed me | ean calculat | tion; |
| | | regular mean used. | | |
| | 0200 | No data for warr.mean; part | cicular: and | alysis |
| | | yields no data. | | |
| | 0400 | Passive mode: not enough da | ata in bin. | |
| | 0800 | Not enough memory for data | reduction. | T |
| END_OBJECT | = COLUMN | | | |

The un-calibrated power spectrum is described by the following TABLE object.

| OBJECT | = PM2TPOW_TABLE |
|--------------------|--------------------|
| NAME | = PM2TPOW |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 5 |
| ROW_BYTES | = 63 |
| ^STRUCTURE | = "PP_PM2_POW.FMT" |
| END_OBJECT | = PM2TPOW_TABLE |

The structure of the parameters TABLE object is identical to PM (FM2, FM3) and is described in the file PP_PM2_POW.FMT.

/* PP raw power values, version 2, 2015-11-11 */

| OBJ | ECT | = | COLUMN |
|-----|-----------------|---|--|
| | NAME | = | "SESAME_SEQ_ID" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 1 |
| | BYTES | = | 6 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "16" |
| | DESCRIPTION | = | "Sequence ID in the current data file" |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJ | ECT | = | COLUMN |
| | NAME | = | "UTC" |
| | DATA TYPE | = | TIME |
| | _ START BYTE | | |
| | BYTES | = | 23 |
| | DESCRIPTION | = | "Measurement start time (UTC in PDS standard |
| | | | format YYYY-MM-DDThh:mm:ss.sss)" |
| END | OBJECT | = | COLUMN |
| | _ | | |
| OBJ | ECT | = | COLUMN |
| | NAME | = | "SESAME_LOCAL_TIME" |
| | DATA_TYPE | = | ASCII_INTEGER |
| | START_BYTE | = | 32 |
| | BYTES | | |
| | FORMAT | = | "I15" |
| | DESCRIPTION | = | "Measurement start time. SESAME local time |
| | | | |

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|----------------------------|--|--|---------------|
| | (SLT) runs with a resolution of SLT represents the least signifi of LOBT. The most significant 5 | .cant 32 bit | ts |
| | CDMS RSST (see SESAME Ready Mess | sage)" | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "FREQ_BIN" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 48 | | |
| BYTES | = 2 | | |
| FORMAT | = "I2" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Frequency bins meaning: | | |
| | 1 20000-10000 Hz | | |
| | 2 10000-5000 Hz | | |
| | 3 5000-2500 Hz | | |
| | 4 2500-1250 Hz | | |
| | 5 1250-625 Hz | | |
| | 6 625-312 Hz | | |
| | 7 312-156 Hz | | |
| | 8 156-78 Hz | | |
| | 9 78-39 Hz | | |
| | 10 39-20 Hz " | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "POWER" | | |
| DATA TYPE | = ASCII INTEGER | | |
| | = 51 | | |
| BYTES | = 10 | | |
| FORMAT | = "I10" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "Raw power" | | |
| | - | | |

END_OBJECT

= COLUMN The receiver data are described by the following TABLE object.

| OBJECT | = PM2TRX_TABLE |
|--------------------|-------------------|
| NAME | = PM2TRX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 59 |
| ^STRUCTURE | = "PP_PMT_RX.FMT" |
| END_OBJECT | = PM2TRX_TABLE |

The structure of the receiver data TABLE object is identical to PMTEST (FM1) and is described in the file PP_PMT_RX.FMT.

/* PP PMTEST / PMTEST2 Rx table entry ,version 2, 2015-11-11 */

| OBJECT | = | COLUMN | | |
|--------|---|---------|-------|------|
| NAME | = | "SESAME | _SEQ_ | _ID" |

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| DATA TYPE | = ASCII INTEGER |
|-----------------|--|
| START BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| | COLONIA |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| _ START BYTE | = 8 |
| BYTES | = 23 |
| | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| | = ASCII INTEGER |
| - START BYTE | — |
| — | = 15 |
| FORMAT | = "115" |
| | = "Measurement start time. SESAME local time |
| DEDORATION | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RX SAMPLE " |
| DATA TYPE | = ASCII_INTEGER |
| | = 48 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "15" |
| DESCRIPTION | = "Rx sample number" |
| END OBJECT | = COLUMN |
| | COLORIN |
| OBJECT | = COLUMN |
| NAME | = "RX_ADC_VALUE" |
| DATA TYPE | = ASCII INTEGER |
| | = 54 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "RX ADC value " |
| END OBJECT | = COLUMN |
| | |

4.3.2.4.3.2.6 PP Control Table (RCTL) data

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The Control Table is sent only on request, usually as verification after changes to the frequency definitions for mode FM_AM2. The data files will be stored in the PP AM sub-directory as they define the details of the PP_AM2 measurement sequence. The request command was planned for the LTS phase and was never be used.

4.3.2.4.3.3 Flight software version FM3

4.3.2.4.3.3.1 PP Active Mode Test

Same as FM2

4.3.2.4.3.3.2 PP Health Check (HC) data

Same as FM1

4.3.2.4.3.3.3 PP Langmuir Probe Test (LM) data

Same as FM1

4.3.2.4.3.3.4 PP Passive Mode (PM) data

Same as FM2

4.3.2.4.3.3.5 PP Passive Mode Test (PMTEST) data

Same as FM2

4.3.2.5 Description of Instrument

The description of the instrument can be found in chapter 2.2 and as a brief overview in the INST.CAT catalog file.

4.3.2.6 Mission Specific Keywords

ROSETTA: CASSE_CHANNEL

- Type : ordered sequence
- **Description**: The CASSE_CHANNEL ROSETTA mission specific keyword gives the type of measurement of each multiplexer channel.

The CASSE instrument is made of 3 piezoelectric transmitters and 3 triaxial accelerometers, and the respective electronics.

The transmitters and the 3 axes of each accelerometer are connected to an analogue 12-channel multiplexer.

It is possible to select any combination of 12 sensor channels, which can be the x, y, and z axes of each accelerometer and the 3 transmitters.

The sequence contains 12 elements representing the channel correspondence for CASSE measurements. These elements are flags that indicate if a channel is used or not. To increase readability, designations of used channels are given explicitly.

The sequence takes the following form: (channel 1, channel 2, ..., channel 12).

- **Standard values**: -YACCX, -YACCY, -YACCZ, +XACCX, +XACCY, +XACCZ, +YACCX, +YACCY, +YACCZ, -YTRM, +XTRM, +YTRM.

The unused channels take the value "-1".

- Unit: none

Explanation of acronym composition:

Characters 1,2: Philae foot (-Y, +X, +Y)

Characters 3,4,5: Sensor type (ACC: accelerometer; TRM: transmitter)

Character 6: ACC axis (X, Y, Z), if a triaxial accelerometer is used.

Examples

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This means that all three channels of the accelerometer in the -Y foot are used.

Example 2:

CASSE_CHANNEL = (-1, -1, -1, -1, -1, -1, -1, -1, -1, -YTRM, +XTRM, +YTRM) This means that no accelerometer channel is used, but the transmitters of all three feet.

4.3.2.7 Data quality definition (level 2)

4.3.2.7.1 CASSE

The DATA_QUALITY_ID for CASSE is defined according to the fraction of time series with lost data (see level 1) and with ADC values of \pm 127 compared to expected data volume.

The DATA_QUALITY_ID scheme is described by the associated DATA_QUALITY_DESC element as follows.

DATA_QUALITY_DESC = -1: NOT QUALIFIED

0: Data complete, 0% data loss

1: data loss < 5%

2: 5% ≤ data loss < 10%

- 3: 10% ≤ data loss < 20%
- 4: data loss ≥ 20%

4.3.2.7.2 DIM

The DATA_QUALITY_ID for DIM is defined according to the operating mode, the number of warnings or errors and the fraction of data loss.

The following DATA_QUALITY_ID scheme is defined for the modes DIM_HC, DIM_AV and DIM_BSTEST2.

DATA_QUALITY_DESC = -1: NOT QUALIFIED

- 0: Data complete
- 1: One or more Warnings
- 2: One or more Fatal Errors
- 3: N/A
- 4: N/A

The DATA_QUALITY_ID scheme for the DIM_BC mode is calculated as follows.

If the number of "Detected Events" > 0 then "Data loss" = (No. "Long Events" and no. "False Events") / (No. "Detected Events")

The following DATA_QUALITY_ID scheme is defined for the DIM_BC mode.

DATA_QUALITY_DESC = -1: NOT QUALIFIED

0: Data complete

1: data loss or Warnings < 10%

- 2: 10% ≤ data loss < 30%
- 3: 30% ≤ data loss < 60%
- 4: data loss or Fatal Errors ≥ 60 %

The data from DIM_MES will be handled like DIM_BC or DIM_AV, whatever is appropriate.

4.3.2.7.3 PP

The DATA_QUALITY_ID for PP is defined according to the operating mode as follows.

4.3.2.7.3.1 PP Health Check

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DATA_QUALITY_DESC = -1: NOT QUALIFIED

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- 0: Data complete; no errors
 - 1: Disturbed signal: any raw parameter = 255 or 0
 - 2: One or more Fatal Errors

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- 3: N/A
- 4: N/A

4.3.2.7.3.2 PP Active Mode and Active Mode Test (PP_AM2, PP_AMTEST2)

DATA_QUALITY_DESC = -1: NOT QUALIFIED

- 0: Data complete; no errors
- 1: All QUAL-flags = 0x0F, limited use
- 2: One or more Fatal Errors
- 3: N/A
- 4: N/A

4.3.2.7.3.3 PP Passive Mode and Passive Mode Test (PP_PM2, PP_PMTEST2)

DATA_QUALITY_DESC = -1: NOT QUALIFIED

- 0: Data complete; no errors
- 1: Math Error code not equal 0, limited use
- 2: One or more Fatal Errors
- 3: N/A
- 4: N/A

4.3.2.7.4 SESAME Health-Check

The criterion for the DATA_QUALITY_ID definition is the data loss versus expected data volume.

DATA_QUALITY_DESC = -1: NOT QUALIFIED 0: Data complete; no errors 1: data loss < 5%

- 2: 5% ≤ data loss < 10%
- 3: 10% ≤ data loss < 20%
- 4: data loss ≥ 20%

4.3.2.7.5 SESAME common data object definition

The SESAME error messages are described by the following TABLE object.

| OBJECT | = EMES_TABLE |
|--------------------|---------------------|
| NAME | = EMES |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 6 |
| ROW_BYTES | = 73 |
| ^STRUCTURE | = "SESAME_EMES.FMT" |
| END_OBJECT | = EMES_TABLE |

The structure of the receiver data TABLE object is described in the file SESAME_EMES.FMT.

| OBJECT | = | COLUMN |
|------------|---|--------|
| NAME | = | "UTC" |
| DATA_TYPE | = | TIME |
| START_BYTE | = | 1 |

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= 23 BYTES DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME LOCAL TIME" DATA TYPE = ASCII INTEGER START BYTE = 25 BYTES = 15 = "I15" FORMAT = "Start time of measurement. SESAME local time DESCRIPTION (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "ERR MSG ID" DATA TYPE = CHARACTER START BYTE = 42 BYTES = 14 FORMAT = "A14" DESCRIPTION = "Identifying character string: Error Message" = COLUMN END OBJECT OBJECT = COLUMN NAME = "ERR CODE" = CHARACTER DATA TYPE START BYTE = 59 BYTES = 4 = "A4" FORMAT = "Error code word (hex value): DESCRIPTION 1101 Tried to start A/D conversion, but ADC of C-DPU is in use 1102 Unknown HK parameter ID, HK value set to HK MISVAL 1103 Tried to read A/D converted value, but conversion is not ready 1406 Received CDMS message, which is not addressed to SESAME and is not a broadcast message; message ignored 140A Received unknown CDMS data message (msgDATA) 140C Unknown Action Code (newCDMSmsg!) 140E Unknown Action Code (NewCDMSmsg?) 1412 Wrong Word Count (rcvTRG) 1414 Wrong parameters (check_actc) 1601 Unknown command category, TC ignored 1617 Unknown common TC 1A01 Wrong temperature channel, set to default 1A11 Unknown CASSE TC 1B01 Invalid margin, set margin to 0 1B02 Invalid direction, set direction to X 1D01 Could not allocate memory (COM_MEM) 1D03 Could not allocate memory (COM_HK) 1D08 Error reading Backup RAM Buffer 1D09 Error reading Stored TC Buffer E106 Could not allocate memory (COM RBUF) E402 SESAME request buffer full E4D0 Received CDMS Error Code Word with contents 0 E4D1 Received CDMS Error Code Word with contents 1 E4D2 Received CDMS Error Code Word with contents 2 E4D3 Received CDMS Error Code Word with contents 3 E4D4 Received CDMS Error Code Word with contents 4 E4D5 Received CDMS Error Code Word with contents 5

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E4D6 Received CDMS Error Code Word with contents 6 E4D7 Received CDMS Error Code Word with contents E4D8 Received CDMS Error Code Word with contents 8 E4D9 Received CDMS Error Code Word with contents 9 E4DA Received CDMS Error Code Word with contents A E4DB Received CDMS Error Code Word with contents B E4DC Received CDMS Error Code Word with contents C E4DD Received CDMS Error Code Word with contents D E4DE Received CDMS Error Code Word with contents E E4DF Received CDMS Error Code Word with contents F E501 Invalid case in module SDOUT EA20 Could not allocate memory (CAS_HC) EA22 Could not submit measurement (CAS HC) EA24 Could not allocate memory (CAS MES) EA26 Could not submit SD (CAS MES) EAFF Allocated memory space exhausted EB20 Could not allocate memory (DIM CA) EB21 Could not submit SD (DIM CA) EB22 Could not allocate memory (DIM NT) EB23 Could not submit SD (DIM_NT) EB24 Could not allocate memory (DIM ST) EB25 Could not submit SD (DIM_ST) EB26 Could not allocate memory (DIM_PC) EB27 Could not submit SD (DIM PC) EB28 Survey: Bad instrument health EB2A Could not allocate memory (DIM AV, DIM AVTEST) EB2B Could not submit SD (DIM AV, DIM AVTEST) EB2C Could not allocate memory (DIM BC, DIM BCTEST) EB2D Could not submit SD (DIM BC, DIM BCTEST) EB2E Autonomous Mode: Computed measurement duration for one AV- or BC-measurement derived from total measurement duration (TC parameter) is too small EB2F Autonomous Mode: Bad instrument health EB31 Survey: Allocated SRAM memory exhausted EB32 Survey: Excessive overcurrent interrupts EBF1 Unknown DIM TC EC30 Could not allocate memory (PP HC) EC31 Could not submit SD (PP HC) EC32 Could not allocate memory (PP_DA) EC33 Could not submit SD (PP DA) EC52 Could not allocate memory (PP LM) EC53 Could not submit SD (PP LM) EC54 Could not allocate memory (PP AM) EC55 Could not submit SD (PP AM2) EC57 Could not allocate memory (PP AMTEST2) EC58 Could not submit SD (PP AMTEST2) EC5C Could not allocate memory (PP PM2) EC5D Could not submit SD (PP PM2) EC5E Could not allocate memory (PP PMTEST2) EC5F Could not submit SD (PP PMTEST2) ECE1 Unknown PP TC ED02 Could not submit SD (COM MEM) ED04 Could not submit SD (COM HK) ED05 Could not submit SD (COM RBUF) ED07 Timeout during Backup Buffer RAM reading EDOA Timeout during Stored TC Buffer reading EDOB Could not allocate memory (COM RDJC) EDOC Could not submit SD (COM RDJC) EDOD Could not allocate memory (COM WPENZ) EDOE Could not submit SD (COM WPENZ)" = COLUMN

END OBJECT

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| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | |
|---|----------|
| END_OBJECT | = COLUMN |
| DATA_TYPE START_BYTE BYTES FORMAT | |
| END_OBJECT | = COLUMN |

The SESAME health check parameters are described by the following TABLE object.

| OBJECT | = HC_TABLE |
|--------------------|-------------------|
| NAME | = HC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 69 |
| ROW_BYTES | = 621 |
| ^STRUCTURE | = "SESAME_HC.FMT" |
| END_OBJECT | = HC_TABLE |

The structure of the receiver data TABLE object for FM1 and FM2 is described in the file SESAME_HC.FMT.

| OBJECT | = COLUMN | | | | | |
|---------------------|--|--|--|--|--|--|
| NAME | = "UTC" | | | | | |
| DATA_TYPE = TIM | 1E | | | | | |
| START_BYTE = 1 | | | | | | |
| BYTES | = 23 | | | | | |
| DESCRIPTION = "Me | easurement start time (UTC in PDS standard | | | | | |
| format YY | format YYYY-MM-DDThh:mm:ss.sss)" | | | | | |
| END_OBJECT = COLUMN | | | | | | |
| OBJECT = | COLUMN | | | | | |
| NAME = | "SESAME_LOCAL_TIME" | | | | | |
| DATA_TYPE = | ASCII_INTEGER | | | | | |
| START_BYTE = | 25 | | | | | |
| BYTES = 15 | | | | | | |

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= "I15" FORMAT DESCRIPTION = "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END OBJECT = COLUMN OBJECT = COLUMN = "CE U+5" NAME DATA TYPE = ASCII REAL START_BYTE = 41 BYTES = 5 = "F5.3" FORMAT UNIT = "VOLT" DESCRIPTION = "Common electronics +5V voltage " OBJECT = COLJIMN END OBJECT OBJECT = COLUMN = "CE U-5" NAME DATA TYPE = ASCII REAL START BYTE = 47 BYTES = 6 = "F6.3" FORMAT = "VOLT" UNIT DESCRIPTION = "Common electronics -5V voltage" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CE U+12" DATA TYPE = ASCII REAL START_BYTE = 54 BYTES = 6 = "F6.3" FORMAT = "VOLT" UNIT DESCRIPTION = "Common electronics +12V voltage " END OBJECT = COLUMN OBJECT = COLUMN = "CE U-12" NAME DATA TYPE = ASCII REAL START_BYTE = 61 = 7 BYTES FORMAT = "F7.3" = "VOLT" UNIT DESCRIPTION = "Common electronics -12V voltage " END OBJECT = COLUMN OBJECT = COLUMN = "CE U+28" NAME DATA TYPE = ASCII REAL START_BYTE = 69 BYTES = 6

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FORMAT = "F6.3"
                    = "VOLT"
   UNIT
   DESCRIPTION = "Common electronics +28V voltage"
END OBJECT = COLUMN
OBJECT
                    = COLUMN
  NAME
                   = "CE UCDP"
   DATA_TYPE
                  = ASCII_REAL
   START_BYTE = 76
   BYTES
                   = 5
                   = "F5.3"
   FORMAT
                     = "VOLT"
   UNIT
   DESCRIPTION = "Common electronics
      Common DPU +5V voltage"
END_OBJECT = COLUMN
OBJECT
                    = COLUMN
                   = "CE I+5"
   NAME
   DATA TYPE = ASCII REAL
   START BYTE = 82
   BYTES = 6
   FORMAT
                   = "F6.2"
                     = "MILLIAMPERE"
   UNIT
   DESCRIPTION = "Common electronics +5V current "
END OBJECT = COLUMN
                    = COLUMN
OBJECT
  NAME
                   = "CE I-5"
   DATA_TYPE
                   = ASCII REAL
   START BYTE = 89
                    = 6
   BYTES
   FORMAT
                    = "F6.2"
   UNIT
                     = "MILLIAMPERE"
   DESCRIPTION = "Common electronics -5V current "
END_OBJECT = COLUMN
OBJECT
                     = COLUMN
   NAME
                    = "CE I+12"
   DATA TYPE = ASCII REAL
   START_BYTE = 96
   BYTES
                    = 6
                   = "F6.2"
   FORMAT
                     = "MILLIAMPERE"
   UNIT
   DESCRIPTION = "Common electronics +12V current "
END OBJECT = COLUMN
OBJECT
                     = COLUMN
                    = "CE I-12"
   NAME
   DATA_TYPE = ASCII_REAL
   START BYTE = 103
   BYTES
                   = 6
   FORMAT
                   = "F6.2"
   UNIT
                     = "MILLIAMPERE"
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DESCRIPTION = "Common electronics -12V current " END OBJECT = COLUMN

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OBJECT = COLUMN NAME = "CE I+28" DATA TYPE = ASCII REAL START BYTE = 110 = 6 BYTES FORMAT = "F6.2" = "MILLIAMPERE" UNIT DESCRIPTION = "Common electronics +28V current " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CE SUPS" DATA TYPE = CHARACTER START_BYTE = 118 BYTES = 4 FORMAT = "A4" = "N/A" UNIT DESCRIPTION = "Common electronics SRAM usage/power status (hex value) " END OBJECT = COLUMN OBJECT = COLUMN = "CE TBO" NAME = ASCII INTEGER DATA TYPE START_BYTE = 124 BYTES = 6 = "I6" FORMAT UNIT = "SECOND" DESCRIPTION = "Common electronics Time since boot " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CE ERRF" DATA_TYPE = CHARACTER START BYTE = 132 BYTES = 4 = "A4" FORMAT = "N/A" UNIT DESCRIPTION = "Common electronics Error flags (hex value) " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CE CEID" DATA TYPE = CHARACTER START BYTE = 139 BYTES = 4 FORMAT = "A4" UNIT = "N/A"

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DESCRIPTION = "Common electronics SESAME ID (hex value:B5E5) " END OBJECT = COLUMN OBJECT = COLUMN = "CE CLTC" NAME DATA TYPE = CHARACTER START_BYTE = 146 BYTES = 4 = "A4" FORMAT UNIT = "N/A" DESCRIPTION = "Common electronics Last received TC (hex value) " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CE CBTC" DATA_TYPE = CHARACTER START BYTE = 153 BYTES = 4 FORMAT = "A4" = "N/A" UNIT DESCRIPTION = "Common electronics Last but one TC (hex value) " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CASSE TT-Y" DATA TYPE = ASCII REAL START BYTE = 159 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" DESCRIPTION = "CASSE Foot -Y/TRM temperature The temperature range is limited by the range of the ADC of the C-DPU to (-104.52, 173.55) deg Celsius " END OBJECT = COLUMN OBJECT = COLUMN = "CASSE_TA-Y" NAME DATA_TYPE = ASCII_REAL START BYTE = 167 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNIT DESCRIPTION = "CASSE Foot -Y/ACC temperature The temperature range is limited by the range of the ADC of the C-DPU to (-104.52, 173.55) deg Celsius " END OBJECT = COLUMN

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OBJECT = COLUMN NAME = "CASSE TT+X" DATA TYPE = ASCII REAL START BYTE = 175 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNTT DESCRIPTION = "CASSE Foot +X/TRM temperature The temperature range is limited by the range of the ADC of the C-DPU to (-104.52, 173.55) deg Celsius " END OBJECT = COLUMN OBJECT = COLUMN NAME = "CASSE TA+X" DATA_TYPE = ASCII_REAL START BYTE = 183 = 7 BYTES FORMAT = "F7.2" = "KELVIN" UNIT DESCRIPTION = "CASSE Foot +X/ACC temperature The temperature range is limited by the range of the ADC of the C-DPU to (-104.52, 173.55) deg Celsius " END OBJECT = COLUMN OBJECT = COLUMN = "CASSE TT+Y" NAME DATA TYPE = ASCII REAL START BYTE = 191 = 7 BYTES = "F7.2" FORMAT UNIT = "KELVIN" DESCRIPTION = "CASSE Foot +Y/TRM temperature The temperature range is limited by the range of the ADC of the C-DPU to (-104.52, 173.55) deg Celsius " END OBJECT = COLUMN OBJECT = COLUMN = "CASSE TA+Y" NAME DATA TYPE = ASCII REAL START BYTE = 199 = 7 BYTES FORMAT = "F7.2" = "KELVIN" UNIT DESCRIPTION = "CASSE Foot +Y/ACC temperature The temperature range is limited by the range

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of the ADC of the C-DPU to (-104.52, 173.55)
                deg Celsius "
END OBJECT = COLUMN
OBJECT
                     = COLUMN
                     = "CASSE TPCB"
   NAME
   DATA TYPE = ASCII REAL
   START_BYTE = 207
   BYTES
                     = 7
                     = "F7.2"
   FORMAT
   UNIT
                     = "KELVIN"
   DESCRIPTION = "CASSE board temperature "
END OBJECT = COLUMN
OBJECT
                     = COLUMN
   NAME
                    = "CASSE UFPG"
   DATA_TYPE = ASCII_REAL
   START_BYTE = 215
   BYTES
                   = 6
                    = "F6.3"
   FORMAT
   UNIT
                     = "VOLT"
   DESCRIPTION = "CASSE FPGA 3.3V "
END_OBJECT = COLUMN
OBJECT
                     = COLUMN
   NAME
                     = "CASSE URAD 1S"
   DATA TYPE = ASCII REAL
   START_BYTE = 222
   BYTES
                    = 6
                   = "F6.3"
   FORMAT
                     = "VOLT"
   UNIT
   DESCRIPTION = "CASSE total dose (RADFET) "
END OBJECT = COLUMN
OBJECT
                    = COLUMN
  NAME
                   = "DIM UD +5"
   DATA TYPE
                   = ASCII REAL
   DATA_TYPE
START_BYTE
                  = 229
   BYTES
                   = 5
                   = "F5.3"
   FORMAT
                     = "VOLT"
   UNIT
   DESCRIPTION = "DIM +5V voltage "
END_OBJECT = COLUMN
OBJECT
                   = COLUMN
   NAME
                    = "DIM UD -5"
   DATA_TYPE = ASCII_REAL
   START BYTE = 235
   BYTES
                    = 6
                    = "F6.3"
   FORMAT
   UNIT
                     = "VOLT"
   DESCRIPTION = "DIM -5V voltage "
END OBJECT = COLUMN
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OBJECT = COLUMN NAME = "PP_UP_+5" DATA TYPE = ASCII REAL START BYTE = 242 BYTES = 5 FORMAT = "F5.3" UNIT = "VOLT" DESCRIPTION = "PP +5V voltage " END OBJECT = COLUMN OBJECT = COLUMN NAME = "PP D" DATA_TYPE = ASCII INTEGER _ START_BYTE = 248 BYTES = 5 = "15" FORMAT UNIT = "N/A" DESCRIPTION = "PP electron density " END OBJECT = COLUMN OBJECT = COLUMN NAME = "PP IP -5" DATA TYPE = ASCII REAL START BYTE = 254 BYTES = 6 = "F6.3" FORMAT UNIT = "MILLIAMPERE" DESCRIPTION = "PP the current consumption of the PP digital electronics. The difference between UP+5 and the incoming +5 V supply voltage (U+05) is the voltage drop caused by the current (IP-5) through a 11.1 Ohm resistor. " END OBJECT = COLUMN OBJECT = COLUMN = "SESAME LOCAL TIME MEAS" NAME DATA_TYPE = CHARACTER START BYTE = 262 BYTES = 8 FORMAT = "A8" MISSING CONSTANT = "99999999" DESCRIPTION = "Start time of each measurement. SESAME local time runs with a resolution of 31.25 ms represented in hexa value. Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-HK CHANNEL1" NAME DATA TYPE = ASCII REAL START_BYTE = 272 BYTES = 7

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FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot -Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-I1 CHANNEL1" NAME DATA TYPE = ASCII REAL START_BYTE = 280 BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot -Y/TRM Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN = "T-R1 CHANNEL1" NAME DATA TYPE = ASCII REAL START BYTE = 288 BYTES = 7 FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot -Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-I2 CHANNEL1" NAME DATA_TYPE = ASCII_REAL START BYTE = 296 = 7 BYTES = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot -Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-R1_CHANNEL1" NAME DATA TYPE = ASCII REAL START BYTE = 304

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BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot -Y/TRM Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN = "T-HK CHANNEL2" NAME DATA_TYPE = ASCII_REAL START BYTE = 312 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot -Y/ACC Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN = "T-I1 CHANNEL2" NAME DATA TYPE = ASCII REAL START BYTE = 320 BYTES = 7 FORMAT = "F7.2" UNIT = "KELVIN" MISSING_CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot -Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R1 CHANNEL2" DATA TYPE = ASCII REAL START_BYTE = 328 = 7 BYTES = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot -Y/ACC Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN = "T-I2 CHANNEL2" NAME DATA_TYPE = ASCII_REAL START BYTE = 336

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BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot -Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R1 CHANNEL2" DATA TYPE = ASCII REAL START BYTE = 344 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot -Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-HK CHANNEL3" NAME DATA TYPE = ASCII REAL START BYTE = 352 BYTES = 7 FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot +X/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-I1 CHANNEL3" DATA TYPE = ASCII REAL START_BYTE = 360 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot +X/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R1 CHANNEL3" DATA TYPE = ASCII REAL

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START BYTE = 368 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot +X/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-I2 CHANNEL3" DATA TYPE = ASCII REAL START BYTE = 376 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNTT MISSING_CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot +X/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R1 CHANNEL3" DATA TYPE = ASCII REAL START_BYTE = 384 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot +X/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-HK CHANNEL4" NAME DATA TYPE = ASCII REAL START BYTE = 392 = 7 BYTES = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot +X/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-I1 CHANNEL4" DATA TYPE = ASCII REAL

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START BYTE = 400 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot +X/ACC Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN NAME = "T-R1 CHANNEL4" DATA TYPE = ASCII_REAL START BYTE = 408 = 7 BYTES = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot +X/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-I2 CHANNEL4" DATA TYPE = ASCII REAL START_BYTE = 416 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot +X/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-R1 CHANNEL4" NAME DATA TYPE = ASCII REAL START BYTE = 424 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot +X/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-HK CHANNEL5"

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DATA TYPE = ASCII REAL START BYTE = 432 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot +Y/TRM Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN NAME = "T-I1 CHANNEL5" DATA TYPE = ASCII_REAL START BYTE = 440 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot +Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-R1 CHANNEL5" NAME DATA_TYPE = ASCII_REAL START BYTE = 448 BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot +Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-I2 CHANNEL5" NAME DATA TYPE = ASCII REAL START BYTE = 456 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot +Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN = COLUMN

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= "T-R1 CHANNEL5" NAME DATA_TYPE = ASCII_REAL START_BYTE = 464 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot +Y/TRM Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-HK CHANNEL6" NAME DATA TYPE = ASCII REAL START BYTE = 472 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot +Y/ACC Does not exist for Software Version FM1" = COLUMN END OBJECT OBJECT = COLUMN = "T-I1 CHANNEL6" NAME DATA_TYPE = ASCII_REAL START BYTE = 480 BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for Foot +Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN = "T-R1 CHANNEL6" NAME DATA_TYPE = ASCII_REAL START BYTE = 488 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for Foot +Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN

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= "T-I2 CHANNEL6" NAME DATA_TYPE = ASCII_REAL START_BYTE = 496 BYTES = 7 = "F7.2" FORMAT = "KELVIN" UNIT MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for Foot +Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R1 CHANNEL6" DATA TYPE = ASCII REAL START BYTE = 504 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for Foot +Y/ACC Does not exist for Software Version FM1" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-HK CHANNEL7" DATA TYPE = ASCII REAL START BYTE = 512 = 7 BYTES FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for CASSE PCB temperature Does not exist for Software Version FM1 " END OBJECT = COLUMN OBJECT = COLUMN = "T-I1 CHANNEL7" NAME DATA_TYPE = ASCII_REAL START BYTE = 520 BYTES = 7 = "F7.2" FORMAT UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 1, for CASSE PCB temperature Does not exist for Software Version FM1 " END OBJECT = COLUMN

SESAME EAICD

SESAME EAICD

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OBJECT = COLUMN NAME = "T-R1 CHANNEL7" DATA_TYPE = ASCII_REAL START BYTE = 528 = 7 BYTES = "F7.2" FORMAT UNIT = "KELVIN" MISSING_CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 1 = UCDP, for CASSE PCB temperature Does not exist for Software Version FM1" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "T-I2 CHANNEL7" DATA TYPE = ASCII REAL START BYTE = 536 BYTES = 7 FORMAT = "F7.2" = "KELVIN" UNIT MISSING_CONSTANT = 9999.99 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to to reference channel 2, for CASSE PCB temperature Does not exist for Software Version FM1" END_OBJECT = COLUMN OBJECT = COLUMN = "T-R1 CHANNEL7" NAME DATA TYPE = ASCII REAL START BYTE = 544 BYTES = 7 FORMAT = "F7.2" UNIT = "KELVIN" MISSING CONSTANT = 9999.99 DESCRIPTION = "voltage of reference channel 2 = U + 28, for CASSE PCB temperature Does not exist for Software Version FM1" END OBJECT = COLUMN

The structure of the receiver data TABLE object for FM3 is described in the file SESAME_HC_FM3.FMT.

| /* FILE_CONTENTS | = SESAME Health Check */ |
|------------------|---|
| /* | Flight software FM3, CODMAC level 3 $^{\star/}$ |
| /* FILE_NAME | = SESAME_HC_FM3.FMT */ |
| /* REVISION_NOTE | = SESAME/DIM team, version 1, 2015-11-04 */ |
| /* | K. Seidensticker, version 2, 2015-11-04 */ |
| /* | W. Schmidt, version 4, 2015-11-11 */ |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |

| <pre>OBJECT = COLUMN NAME "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 25 BYTES = 15 FORMAT = "115" DESCRIPTION "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SIT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CCMS RSET (see SESAME Ready Message)" END_OBJECT = COLUMN NAME = "U+05" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F6.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F6.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F6.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F6.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN</pre> | SESAME casse • dim • pp | SESAME EAICD | Reference: Issue: Date: Page: | 1.0. LSE v2.5 |
|---|----------------------------|--|--|----------------|
| Format YYYY-MA-DDThhrmiss,sss)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESSAME_LOCAL_TIME" DATA_TYPE = ASCIT_INTEGER STAAT_SYTE = 25 NOTAAT = TIS" DESCRIPTION = "IIS" DESCRIPTION = "IIS" DESCRIPTION = "IIS" DESCRIPTION = COLUMN RAME = "UHOS" DATA_TYPE = ASCIT_REAL STAAT_SYTE = 41 SYTES = 8 FORMAT = "78.3" UNIT = "78.3" UNIT = COLUMN RAME = "UHOS" DATA_TYPE = ASCIT_REAL STAAT_SYTE = 41 SYTES = 8 FORMAT = "78.3" UNIT = "78.3" UNIT = COLUMN CBJECT = COLUMN CALLENT = COLUMN CBJECT = COLUMN CALLENT = "COLUMN NAME = "UHOS" DATA_TYPE = ASCIT_REAL STAAT_SYTE = 41 SYTES = 8 FORMAT = "78.3" UNIT = "78.3" UNIT = "78.3" UNIT = COLUMN NAME = "U-OS" DATA_TYPE = ASCII_REAL STAAT_SYTE = 4 FORMAT = "999.999 DESCRIPTION = "COMUNEN NAME = "U-OS" DATA_TYPE = ASCII_REAL STAAT_SYTE = 50 SYTES = 8 FORMAT = "98.3" UNIT = "V0.1" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COMUNEN CALLENT = COLUMN CALLENT | BYTES | = 23 | | |
| OBJECT = COLUMN NAME = "SEAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_FYTE = 23 PYTES = 15 FORMAT = "TIS" DESCRIPTION = "Measurement start time. SESAME local time (SUT) runs with a resolution of 1/32 seconds. SUT represents the least significant 32 bits of LORT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END_GRUECT = COLUMN OBJECT = COLUMN NUP = NUTICT NUPS = 8 FORMAT = "YE.3" UNT = "YOL7" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_GRUET = FS.3" UNT = NUTICT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" INTE = 999.999 DESCRIPTION = "VOL7" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" INTE = NUTES = 8 PORMAT = "YOL7" MISSING_CONSTANT = 9999.999 DESCRIPTION = | DESCRIPTION | | | dard |
| NAME = "SEGAME_LOCAL_TIME" DATA_TYPE = ASCII_INTECER STAR_BYTS = 15 FORMAT = "115" DESCRIPTION = "Measurement start time. SEGAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOST. The most significant 5 bits are in COMS RSST (see SEGAME Ready Message)" END_ORJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "U+05" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOL7" MISSING_CONSTANT = 999.999 DESCRIPTION = "COMMON electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 DYTES = 8 FORMAT = "F8.3" UNIT = "VOL7" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COMMON electronics -5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 DYTES = 8 FORMAT = "F8.3" UNIT = "VOL7" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_GAJECT = COLUMN NAME = "U-12" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_GAJECT = COLUMN NAME = "U-12" MISSING_CONSTANT = 999.999 DESCRIPTION = "COMMON electronics -5V voltage" END_GAJECT = COLUMN NAME = "U-12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOL7" MISSING_CONSTANT = 999.999 DESCRIPTION = "Common electronics +12V voltage" END_GAJECT = COLUMN OBJECT = COLUMN | END_OBJECT | = COLUMN | | |
| DATA TYPE = ASCII_INTEGER START_BYTE = 25 START_BYTE = 25 DESCRIPTION = "II5" DESCRIPTION = "Measurement start time. SESAME local time (SLI) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOST. The most significant 5 bits are in COMS RSST (see SESAME Ready Message)" END_OBJECT = COLUMN NAME = "U+05" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN MAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U-12" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | OBJECT | = COLUMN | | |
| START_EYTE= 25BYTES= 15FORWAT= "II5"DESCRIPTION= "Measurement start time. SESAME local time (SLZ) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDME RSST (see SESAME Ready Message)"END_OBJECT= COLUMNOBJECT= COLUMNDATA_TYPE= ASCII_REAL START_ENTESTART_ENTE= 41BYTES= 8 FORMATPORMAT= "F0.3" UNITUNIT= "V01C" MISSING_CONSTANTOBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "U-05" DATA_TYPEDATA_TYPE= ASCII REAL START_ENTESTART_ENTE= 6 FORMAT= "F0.3" UNIT= "V01C" MISSING_CONSTANTDESCRIPTION= "Common electronics +5V voltage"END_OBJECT= COLUMNNAME= "U-05" DATA_TYPEDATA_TYPE= ASCII REAL START_ENTESTART_ENTE= 50 DESCRIPTIONEND_CONSTANT= 9999,999 DESCRIPTIONOBJECT= COLUMNNAME= "U+12" DATA_TYPEDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 59 STTESSTART_STRE_CONSTANT= 999,999 DESCRIPTIONDESCRIPTION= "Conmon electronics +12V voltage"OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMN | NAME | = "SESAME_LOCAL_TIME" | | |
| BYTES = 15 FORMAT = "115" DESCRIPTION = "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most SESAME Ready Message)" END_OBJECT = COLUMN NAME = "U+05" DATA_TYPE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN NAME = "U-12" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 DYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | DATA_TYPE | = ASCII_INTEGER | | |
| FORMAT= "115"DESCRIPTION"Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS SESST (see SESAME Ready Message)"END_OBJECT= COLUMNNAME= "U+05"DATA_TYPE= ASCII_EEAL START_BYTEBYTES= 8 FORMATFORMAT= "F8.3" UNITUNIT= "Outon"MAE= "U-05"DATA_TYPE= COLUMNMISSING_CONSTANT= 999.993 DESCRIPTIONOBJECT= COLUMNNAME= "U-05" DATA_TYPEDATA_TYPE= ASCII_EEAL START_BYTESTART_DATE= 78.3" UNITNAME= "U-05" DATA_TYPEDATA_TYPE= ASCII_EEAL START_BYTESTART_DATE= 999.993 DESCRIPTIONDESCRIPTION= "V-05" DATA_TYPEDATA_TYPE= ASCII_EEAL START_BYTESTART_DATE= 999.993 DESCRIPTIONDESCRIPTION= "VOLT" MISSING_CONSTANT MISSING_CONSTANT DATA_TYPEOBJECT= COLUMN NAMENAME= "U+12" DATA_TYPEDATA_TYPE= ASCII_EEAL START_BYTESTART_DATE= 59 BTTESPORMAT= "F8.3" UNITUNIT= "NOLT" MISSING_CONSTANTDATA_TYPE= ASCII_EEAL START_BYTESTART_DATE= 799.993 DESCRIPTIONDESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNNAME= "VL12" DATA_TYPE <td>START_BYTE</td> <td>= 25</td> <td></td> <td></td> | START_BYTE | = 25 | | |
| DESCRIPTION = "Measurement start time. SESAME local time (SIT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 32 bits of LOBT. The most significant 32 bits of LOBT. The most significant 53 bits are in CDMS RSST (see SESAME Ready Message)" END_OBJECT = COLUMN NAME = "U+OS" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F6.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-OS" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F6.3" UNIT = "V0.1" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | BYTES | = 15 | | |
| (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDNS RSST (see SESAME Ready Message)"END_OBJECT= COLUMNNAME= "U+OS" DATA_TYPEASCII_REAL START_BYTE= 41 BYTESBYTES= 8 FORMATFORMAT= "F8.3" UNITUNIT= "VOLT" MISSING_CONSTANTOBJECT= COLUMNNAME= "U-OS" DATA_TYPEDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 50 BYTESDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 50 BYTESDOBJECT= COLUMNOBJECT= COLUMNNAME= "U-OS" DATA_TYPEDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 50 BYTESDESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNOBJECT= COLUMNMISSING_CONSTANT= 9999.999 DESCRIPTIONDESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNNAME= "U+12" DATA_TYPEDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 59 BYTESBYTES= 8 FORMATFORMAT= "P8.3" UNITUNIT= "VoLT" MISSING_CONSTANTDATA_TYPE= ASCII_REAL START_BYTESTART_BYTE= 59 BYTESBYTES= 8 FORMATFORMAT= "P99.999 DESCRIPTIONBYTES= 8 FORMATFORM | FORMAT | = "I15" | | |
| DBJECT = COLUMN NAME = "U+05" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN MAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U-12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN NAME = "U-12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN NAME = "U-12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COMMON = "COMMON = "COMMON = "U-12" DATA_TYPE = COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "COMMON = "CO | DESCRIPTION | (SLT) runs with a resolution SLT represents the least sig of LOBT. The most significan | n of 1/32 se gnificant 32 nt 5 bits ar | conds. bits |
| NAME = "U+05" DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSINC_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSINC_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = SO BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSINC_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN MISSINC_CONSTANT = 9999.999 DESCRIPTION = "VOLT" MISSINC_CONSTANT = 9999.999 DESCRIPTION = "COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSINC_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | END_OBJECT | = COLUMN | | |
| DATA_TYPE = ASCII_REAL START_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT | OBJECT | = COLUMN | | |
| STAR_BYTE = 41 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-O5" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | NAME | = "U+05" | | |
| BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | DATA_TYPE | = ASCII_REAL | | |
| FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +5V voltage"END_OBJECT= COLUMNOBJECT= COLUMNOBJECT= COLUMNNAME= "U-05"DATA_TYPE= ASCII_REALSTART_BYTE= 50BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"OBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMN | START_BYTE | = 41 | | |
| UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "V0LT" MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN | BYTES | = 8 | | |
| MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COMMN | FORMAT | = "F8.3" | | |
| DESCRIPTION = "Common electronics +5V voltage" END_OBJECT = COLUMN NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = COLUMN | UNIT | = "VOLT" | | |
| END_OBJECT= COLUMNOBJECT= COLUMNNAME= "U-05"DATA_TYPE= ASCII_REALSTART_BYTE= 50BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= COLUMNOBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= COLUMNOBJECT= COLUMN | MISSING CONSTANT | = 9999.999 | | |
| END_OBJECT= COLUMNOBJECT= COLUMNNAME= "U-05"DATA_TYPE= ASCII_REALSTART_BYTE= 50BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= COLUMNOBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= COLUMNOBJECT= COLUMN | DESCRIPTION | = "Common electronics +5V volta | ige" | |
| NAME = "U-05" DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN NAME = "U+12" DATA_TYPE = S9 BYTES = 8 FORMAT = "F8.3" UNIT = VOLT" MAME = "U+12" DATA_TYPE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN | END_OBJECT | = COLUMN | | |
| DATA_TYPE = ASCII_REAL START_BYTE = 50 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "CULUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "COLUMN END_OBJECT = COLUMN OBJECT = COLUMN | OBJECT | = COLUMN | | |
| START_BYTE= 50BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMN | NAME | = "U-05" | | |
| BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMN | DATA_TYPE | = ASCII_REAL | | |
| FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics -5V voltage"END_OBJECT= COLUMNOBJECT= COLUMNNAME= "U+12"DATA_TYPE= ASCII_REALSTART_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMN | START_BYTE | = 50 | | |
| UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | BYTES | = 8 | | |
| MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | FORMAT | = "F8.3" | | |
| DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | UNIT | = "VOLT" | | |
| DESCRIPTION = "Common electronics -5V voltage" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | MISSING CONSTANT | = 9999.999 | | |
| END_OBJECT = COLUMN OBJECT = COLUMN NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | | | ige" | |
| NAME = "U+12" DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | END_OBJECT | | - | |
| DATA_TYPE = ASCII_REAL START_BYTE = 59 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN | OBJECT | = COLUMN | | |
| START_BYTE= 59BYTES= 8FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMN | NAME | = "U+12" | | |
| BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | DATA_TYPE | = ASCII_REAL | | |
| FORMAT= "F8.3"UNIT= "VOLT"MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMNOBJECT= COLUMN | START_BYTE | = 59 | | |
| UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | BYTES | = 8 | | |
| MISSING_CONSTANT= 9999.999DESCRIPTION= "Common electronics +12V voltage"END_OBJECT= COLUMNOBJECT= COLUMN | FORMAT | = "F8.3" | | |
| DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | UNIT | = "VOLT" | | |
| DESCRIPTION = "Common electronics +12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN | MISSING_CONSTANT | = 9999.999 | | |
| OBJECT = COLUMN | | | age" | |
| | END_OBJECT | | | |
| NAME = "U-12" | OBJECT | = COLUMN | | |
| | NAME | = "U-12" | | |

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DATA TYPE = ASCII REAL START_BYTE = 68 BYTES = 8 FORMAT = "F8.3" = "VOLT" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -12V voltage" END_OBJECT = COLUMN OBJECT = COLUMN = "U+28" NAME DATA TYPE = ASCII REAL START BYTE = 77 = 8 BYTES FORMAT = "F8.3" = "VOLT" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +28V voltage" END OBJECT = COLUMN OBJECT = COLUMN = "UCDP" NAME DATA TYPE = ASCII REAL START BYTE = 86 = 8 BYTES = "F8.3" FORMAT = "VOLT" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics Common DPU +5V voltage" END OBJECT = COLUMN OBJECT = COLUMN = "I+05" NAME DATA TYPE = ASCII REAL START BYTE = 95 = 8 BYTES FORMAT = "F8.3" = "MILLIAMPERE" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics +5V current" END_OBJECT = COLUMN OBJECT = COLUMN = "I-05" NAME DATA TYPE = ASCII REAL START BYTE = 104 = 8 BYTES FORMAT = "F8.3" UNIT = "MILLIAMPERE" MISSING_CONSTANT = 9999.999 DESCRIPTION = "Common electronics -5V current" END OBJECT = COLUMN

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| OBJECT | = | COLUMN |
|------------------|---|---------------------------------------|
| NAME | | "I+12" |
| DATA TYPE | = | ASCII REAL |
| — | = | 113 |
| BYTES | = | 8 |
| FORMAT | = | "F8.3" |
| UNIT | = | "MILLIAMPERE" |
| MISSING_CONSTANT | = | 9999.999 |
| DESCRIPTION | = | "Common electronics +12V current" |
| END_OBJECT | = | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | = | "I-12" |
| DATA_TYPE | | ASCII_REAL |
| START_BYTE | = | 122 |
| BYTES | = | • |
| FORMAT | = | "F8.3" |
| | | "MILLIAMPERE" |
| MISSING_CONSTANT | | |
| | | "Common electronics -12V current" |
| END_OBJECT | = | COLUMN |
| OBJECT | _ | COLUMN |
| NAME | | "I+28" |
| | | ASCII REAL |
| START BYTE | | 131 |
| BYTES | = | |
| | | "F8.3" |
| | | "MILLIAMPERE" |
| MISSING_CONSTANT | | |
| — | | "Common electronics +28V current" |
| END OBJECT | | COLUMN |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | = | "SUPS" |
| DATA_TYPE | = | ASCII_INTEGER |
| START_BYTE | = | 140 |
| BYTES | = | 8 |
| UNIT | | "N/A" |
| MISSING_CONSTANT | | 16#FFFF# |
| DESCRIPTION | = | "Common electronics; SRAM usage/ |
| | | power status (hex value as 16#xxxx#)" |
| END_OBJECT | = | COLUMN |
| OBJECT | = | COLUMN |
| NAME | | "TIBO" |
| DATA TYPE | | ASCII INTEGER |
| START_BYTE | | 149 |
| BYTES | | 6 |
| FORMAT | | "16" |
| UNIT | | "SECOND" |
| MISSING_CONSTANT | | 999999 |
| — | | |

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| DESCRIPTION | <pre>= "Common electronics Time since boot"</pre> |
|---------------------|--|
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "ERRF" |
| DATA TYPE | = ASCII INTEGER |
| | = 156 |
| _ BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Common electronics |
| | Error flags (hex value as 16#xxxx#)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CEID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 165 |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING CONSTANT | = 16#FFFF# |
| DESCRIPTION | = "Common electronics; SESAME flight |
| | software ID (hex value, FM3: 16#C5E5#) |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CLTC" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 174 |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Common electronics; Last received TC |
| DESCRIPTION | (hex value as 16#xxxx#)" |
| END OBJECT | = COLUMN |
| END_ODOECI | |
| OBJECT | = COLUMN |
| NAME | = "CBTC" |
| DATA TYPE | = ASCII INTEGER |
| - | = 183 |
| START_BYTE BYTES | - 103 = 8 |
| | - ∘ = "N/A" |
| UNIT | |
| MISSING_CONSTANT | = 16#FFFF# |
| DESCRIPTION | = "Common electronics; Last but one TC |
| | (hex value as 16#xxxx#)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TT-Y" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 192 |
| BYTES | = 8 |
| | |

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| FORMAT | = "F8.3" |
|------------------|--------------------------|
| UNIT | = "KELVIN" |
| MISSING CONSTANT | = 9999.999 |
| DESCRIPTION | = "CASSE |
| | Foot -Y/TRM temperature" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TA-Y" |
| DATA TYPE | = ASCII_REAL |
| | = 201 |
| _ BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "KELVIN" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "CASSE |
| Dibertifiion | Foot -Y/ACC temperature" |
| END OB TECT | = COLUMN |
| END_OBJECT | = COLOMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TT+X" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 210 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "KELVIN" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "CASSE |
| | Foot +X/TRM temperature" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TA+X" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 219 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "KELVIN" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "CASSE |
| | Foot +X/ACC temperature" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TT+Y" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 228 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "KELVIN" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "CASSE |
| | Foot +Y/TRM temperature" |
| | - |

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END OBJECT = COLUMN OBJECT = COLUMN = "TA+Y" NAME DATA TYPE = ASCII REAL START BYTE = 237 BYTES = 8 = "F8.3" FORMAT UNIT = "KELVIN" MISSING_CONSTANT = 9999.999 DESCRIPTION = "CASSE Foot +Y/ACC temperature" END OBJECT = COLUMN OBJECT = COLUMN = "TPCB" NAME DATA_TYPE = ASCII REAL START_BYTE = 246 BYTES = 8 = "F8.3" FORMAT = "KELVIN" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "CASSE board temperature" END OBJECT = COLUMN OBJECT = COLUMN = "UFPG" NAME DATA_TYPE START_BYTE = ASCII_REAL = 255 BYTES = 8 = "F8.3" FORMAT = "VOLT" UNIT MISSING_CONSTANT = 99999.999 = "CASSE FPGA 3.3V voltage" UNIT END OBJECT = COLUMN OBJECT = COLUMN NAME = "URAD" DATA TYPE = ASCII REAL START_BYTE = 264 BYTES = 8 = "F8.3" FORMAT = "VOLT" UNIT MISSING_CONSTANT = 99999.999 DESCRIPTION = "CASSE total dose (RadFET)" END OBJECT = COLUMN OBJECT = COLUMN = "UD+5" NAME = ASCII REAL DATA TYPE START_BYTE = 273 BYTES = 8

= "F8.3"

FORMAT

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= "VOLT" UNTT MISSING_CONSTANT = 9999.999 DESCRIPTION = "DIM +5V voltage" END OBJECT = COLUMN OBJECT = COLUMN = "UD-5" NAME DATA_TYPE = ASCII_REAL START_BYTE = 282 BYTES = 8 = "F8.3" FORMAT = "VOLT" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "DIM -5V voltage" END OBJECT = COLUMN OBJECT = COLUMN = "UP+5" NAME DATA TYPE = ASCII REAL START_BYTE = 291 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING_CONSTANT = 9999.999 DESCRIPTION = "PP +5V voltage" END OBJECT = COLUMN OBJECT = COLUMN = "PPD" NAME DATA TYPE = ASCII INTEGER START BYTE = 300 BYTES = 5 = "I5" FORMAT = "N/A" UNIT MISSING_CONSTANT = 99999 DESCRIPTION = "PP electron density" = COLUMN END OBJECT OBJECT = COLUMN = "LMID" NAME DATA TYPE = ASCII INTEGER START BYTE = 306 BYTES = 5 FORMAT = "I5" MISSING_CONSTANT = 99999 DESCRIPTION = "Common electronics SLT mid word" END OBJECT = COLUMN OBJECT = COLUMN = "LLOW" NAME DATA TYPE = ASCII_INTEGER

START BYTE

= 312

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| | BYTES | = | 5 |
|------|------------------|---|---|
| | FORMAT | = | "15" |
| | MISSING_CONSTANT | = | 99999 |
| | | | "Common electronics |
| | | | SLT low word" |
| END | OBJECT | = | COLUMN |
| _ | - | | |
| OBJE | CT | = | COLUMN |
| | NAME | = | "T-HK_CHANNEL1" |
| | DATA TYPE | | ASCII REAL |
| | | = | 318 |
| | BYTES | = | 8 |
| | FORMAT | = | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | = | 9999.999 |
| | DESCRIPTION | | "Voltage of temperature channel using |
| | | | regular HK measurement, for Foot -Y/TRM" |
| END | OBJECT | = | COLUMN |
| _ | - | | |
| OBJE | СТ | = | COLUMN |
| | NAME | = | "T-I1 CHANNEL1" |
| | DATA TYPE | | ASCII_REAL |
| | START BYTE | | 327 |
| | BYTES | = | 8 |
| | FORMAT | = | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | = | 9999.999 |
| | DESCRIPTION | | "Intermediate voltage measured shortly after |
| | | | switching from temperature channel to reference |
| | | | channel 1, for Foot -Y/TRM" |
| END | OBJECT | = | COLUMN |
| | | | |
| OBJE | CT | = | COLUMN |
| | NAME | = | "T-R1_CHANNEL1" |
| | DATA_TYPE | = | ASCII_REAL |
| | START_BYTE | = | 336 |
| | BYTES | = | 8 |
| | FORMAT | = | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | = | 9999.999 |
| | DESCRIPTION | = | "Voltage of reference channel 1 = UCDP, |
| | | | for Foot -Y/TRM" |
| END_ | OBJECT | = | COLUMN |
| | | | |
| OBJE | CT | = | COLUMN |
| | NAME | = | "T-I2_CHANNEL1" |
| | DATA_TYPE | = | ASCII_REAL |
| | START_BYTE | = | 345 |
| | BYTES | = | 8 |
| | FORMAT | = | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | = | 9999.999 |
| | DESCRIPTION | = | "Intermediate voltage measured shortly after |
| | | | |

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| OBJECT | = COLUMN |
|------------------|---|
| NAME | = "T-R2 CHANNEL1" |
| DATA TYPE | = ASCII_REAL |
| START BYTE | = 354 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING CONSTANT | = 9999.999 |
| DESCRIPTION | = "Voltage of reference channel 2 = U + 28, |
| | for Foot -Y/TRM" |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "T-HK_CHANNEL2" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 363 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "Voltage of temperature channel using |
| | regular HK measurement, for Foot -Y/ACC" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "T-I1_CHANNEL2" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 372 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Intermediate voltage measured shortly after |
| | switching from temperature channel to reference |
| | channel 1, for Foot -Y/ACC" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "T-R1 CHANNEL2" |
| DATA TYPE | = ASCII REAL |
| START_BYTE | = 381 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.99 |
| DESCRIPTION | = "voltage of reference channel 1 = UCDP, |
| | for Foot -Y/ACC" |
| END_OBJECT | = COLUMN |
| | |

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= 8

= "F8.3"

= "VOLT"

= COLUMN

= COLUMN

= "T-R1 CHANNEL3"

= 9999.999

= "Intermediate voltage measured shortly after

from temperature channel to reference

channel 1, for Foot +X/TRM"

switching from temperature channel to reference

OBJECT NAME

END OBJECT

BYTES

UNIT

FORMAT

MISSING_CONSTANT

DESCRIPTION

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| | DATA_TYPE | = | ASCII_REAL |
|-------|------------------|---|---|
| | | = | 426 |
| | BYTES | = | 8 |
| | FORMAT | = | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | = | 9999.999 |
| | DESCRIPTION | = | "Voltage of reference channel 1 = UCDP, |
| | | | for Foot +X/TRM" |
| END | _OBJECT | = | COLUMN |
| OBJ | ЕСТ | _ | COLUMN |
| 020 | NAME | | "T-I2 CHANNEL3" |
| | DATA TYPE | | ASCII REAL |
| | START_BYTE | | 435 |
| | BYTES | | 8 |
| | FORMAT | | "F8.3" |
| | UNIT | | "VOLT" |
| | | | |
| | MISSING_CONSTANT | | 9999.999 |
| | DESCRIPTION | = | "Intermediate voltage measured shortly after |
| | | | switching from temperature channel to reference |
| | | _ | channel 2, for Foot +X/TRM" |
| END | _OBJECT | = | COLUMN |
| OBJ | ECT | = | COLUMN |
| | NAME | | "T-R2_CHANNEL3" |
| | DATA_TYPE | | ASCII REAL |
| | _ START BYTE | | 444 |
| | BYTES | | 8 |
| | FORMAT | | "F8.3" |
| | UNIT | | "VOLT" |
| | MISSING_CONSTANT | | 9999.999 |
| | DESCRIPTION | | "Voltage of reference channel 2 = U + 28, |
| | DESCRIPTION | | for Foot +X/TRM" |
| END | OBJECT | = | COLUMN |
| 0.0.7 | 202 | | |
| OBJ | | | COLUMN |
| | NAME | | "T-HK_CHANNEL4" |
| | DATA_TYPE | | ASCII_REAL |
| | START_BYTE | | 453 |
| | BYTES | | 8 |
| | FORMAT | | "F8.3" |
| | UNIT | = | "VOLT" |
| | MISSING_CONSTANT | | 9999.999 |
| | DESCRIPTION | = | "Voltage of temperature channel using |
| | | | regular HK measurement, for Foot +X/ACC" |
| END | _OBJECT | = | COLUMN |
| | 202 | | |
| OBJ | | | COLUMN |
| | NAME | | "T-I1_CHANNEL4" |
| | DATA_TYPE | | ASCII_REAL |
| | START_BYTE | | 462 |
| | BYTES | | 8 |
| | FORMAT | = | "F8.3" |

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|----------------------------|---|--|---|
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| _ DESCRIPTION | <pre>= "Intermediate voltage measured switching from temperature channel 1, for Foot +X/ACC"</pre> | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "T-R1_CHANNEL4" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 471 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| DESCRIPTION | <pre>= "Voltage of reference channel for Foot +X/ACC"</pre> | 1 = UCDP, | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "T-I2_CHANNEL4" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 480 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| DESCRIPTION | <pre>= "Intermediate voltage measured switching from temperature ch channel 2, for Foot +X/ACC"</pre> | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "T-R2 CHANNEL4" | | |
| DATA TYPE | = ASCII REAL | | |
| | = 489 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING CONSTANT | | | |
| DESCRIPTION | = "Voltage of reference channel | 2 = U + 28 | 1 |
| END OBJECT | for Foot +X/ACC" = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "T-HK_CHANNEL5" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 498 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | | | |
| DESCRIPTION | = "Voltage of temperature channe | el using | |

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| | - |
|------------------|---|
| END OBJECT | <pre>regular HK measurement, for Foot +Y/TRM" = COLUMN</pre> |
| | |
| OBJECT | = COLUMN |
| NAME | = "T-I1_CHANNEL5" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 507 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "Intermediate voltage measured shortly after switching from temperature channel to reference |
| | channel 1, for Foot +Y/TRM" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "T-R1_CHANNEL5" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 516 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | <pre>= "Voltage of reference channel 1 = UCDP, for Foot +Y/TRM"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "T-I2_CHANNEL5" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 525 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | <pre>= "Intermediate voltage measured shortly after switching from temperature channel to reference channel 2, for Foot +Y/TRM"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "T-R2_CHANNEL5" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 534 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | <pre>= "Voltage of reference channel 2 = U + 28, for Foot +Y/TRM"</pre> |
| END_OBJECT | = COLUMN |

Reference: RO-LSE-DS-3102 **SESAME** Issue: 1.0, LSE v2.5 **SESAME EAICD** 17 December 2015 Date: **CASSE • DIM • PP** Page: 219 of 315 OBJECT = COLUMN = "T-HK CHANNEL6" NAME DATA TYPE = ASCII REAL START BYTE = 543 = 8 BYTES = "F8.3" FORMAT UNIT = "VOLT" = 9999.999 MISSING_CONSTANT DESCRIPTION = "Voltage of temperature channel using regular HK measurement, for Foot +Y/ACC" END OBJECT = COLUMN OBJECT = COLUMN = "T-I1 CHANNEL6" NAME DATA TYPE = ASCII REAL START BYTE = 552 = 8 BYTES = "F8.3" FORMAT UNIT = "VOLT" MISSING CONSTANT = 9999.999 DESCRIPTION = "Intermediate voltage measured shortly after

channel 1, for Foot +Y/ACC"

= COLUMN

switching from temperature channel to reference

END OBJECT

OBJECT = COLUMN = "T-R1_CHANNEL6" NAME DATA_TYPE = ASCII_REAL START BYTE = 561 BYTES = 8 FORMAT = "F8.3" UNIT = "VOLT" MISSING CONSTANT = 9999.999 DESCRIPTION = "Voltage of reference channel 1 = UCDP, for Foot +Y/ACC" END OBJECT = COLUMN OBJECT = COLUMN = "T-I2 CHANNEL6" NAME = ASCII REAL DATA TYPE = 570 START BYTE BYTES = 8 = "F8.3" FORMAT = "VOLT" UNIT MISSING_CONSTANT = 9999.999 DESCRIPTION = "Intermediate voltage measured shortly after switching from temperature channel to reference channel 2, for Foot +Y/ACC" END OBJECT = COLUMN OBJECT = COLUMN NAME = "T-R2_CHANNEL6" DATA TYPE = ASCII REAL

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| START_BYTE | = 579 |
|------------------|---|
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING CONSTANT | = 9999.999 |
| DESCRIPTION | = "Voltage of reference channel 2 = U + 28, |
| | for Foot +Y/ACC" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "T-HK_CHANNEL7" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 588 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING_CONSTANT | = 9999.999 |
| DESCRIPTION | = "Voltage of temperature channel using |
| | regular HK measurement, for CASSE PCB |
| | temperature" |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "T-I1 CHANNEL7" |
| DATA TYPE | = ASCII REAL |
| | = 597 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING CONSTANT | |
| DESCRIPTION | |
| | switching from temperature channel to reference |
| | channel 1, for CASSE PCB temperature" |
| END_OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "T-R1 CHANNEL7" |
| DATA TYPE | = ASCII REAL |
| | = 606 |
| BYTES | = 8 |
| FORMAT | = "F8.3" |
| UNIT | = "VOLT" |
| MISSING CONSTANT | = 9999.999 |
| DESCRIPTION | = "Voltage of reference channel 1 = UCDP, |
| | for CASSE PCB temperature" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "T-I2_CHANNEL7" |
| DATA_TYPE | = ASCII_REAL |
| | = 615 |
| _ BYTES | = 8 |
| FORMAT | = "F8.3" |
| | |

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|----------------------------|--|--|---|
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| DESCRIPTION | = "Intermediate voltage measured | d shortly a | fter |
| | switching from temperature cl channel 2, for CASSE PCB temp | | eference |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "T-R2_CHANNEL7" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 624 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| DESCRIPTION | = "Voltage of reference channel | 2 = U + 28 | , |
| | for CASSE PCB temperature" | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "URAD-2" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 633 | | |
| BYTES | = 8 | | |
| FORMAT | = "F8.3" | | |
| UNIT | = "VOLT" | | |
| MISSING_CONSTANT | = 9999.999 | | |
| DESCRIPTION | = "CASSE total dose (RadFET), | | |
| | second measurement" | | |
| END_OBJECT | = COLUMN | | |

The SESAME housekeeping parameters are described by the following TABLE object.

| OBJECT | = FILE |
|--------------------|-------------------|
| RECORD_TYPE | = FIXED_LENGTH |
| FILE_RECORDS | = |
| ^HK = | |
| OBJECT | = HK_TABLE |
| NAME | = HK |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 35 |
| ROW_BYTES | = 302 |
| ^STRUCTURE | = "SESAME_HK.FMT" |
| END_OBJECT | = HK_TABLE |
| END_OBJECT | = FILE |

The structure of the receiver data TABLE object is described in the file SESAME_HK.FMT.

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The SESAME reading of Backup RAM Buffer are described by the following TABLE object.

| OBJECT | = RBUF_TABLE |
|--------------------|---------------------|
| NAME | = RBUF |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 5 |
| ROW_BYTES | = 221 |
| ^STRUCTURE | = "SESAME_RBUF.FMT" |
| END_OBJECT | = RBUF_TABLE |
| | |

The structure of the receiver data TABLE object is described in the file SESAME_RBUF.FMT.

| SESAME CASSE • DIM • PP | SESAME EAICDReference: Issue:RO-LSE-DS-3102 1.0, LSE v2.5 Date:Date:1.0, LSE v2.5 |
|----------------------------|---|
| /* FILE_CONTENTS | = SESAME Read Backup RAM Buffer */ |
| /* FILE_NAME | = SESAME_RBUF.FMT */ |
| /* REVISION_NOTE | = K. Seidensticker, version 3, 2015-11-05 */ |
| /* REVISION_NOTE | = W. Schmidt, version 4, 2015-11-11 */ |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | <pre>= "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 25 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RBUF_SUBSYS" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 41 |
| BYTES | = 8 |
| DESCRIPTION | <pre>= "Unit subsystem address (echoed TC parameter, hex value 16#xxxx#)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RBUF_OFFSET" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 50 |
| BYTES | = 8 |
| DESCRIPTION | <pre>= "Offset in backup RAM buffer (echoed TC parameter, hex value 16#xxxx#)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "RBUF_RECORD" |
| DATA_TYPE | - CHARACTER |
| | = 60 |
| BYTES | = 159 |
| FORMAT | = "A159" |
| DESCRIPTION | = "Contents of backup RAM buffer record: |
| | 64 bytes displayed as groups of 4 characters |

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(hex values) separated by blanks"
= COLUMN

END_OBJECT

The SESAME Read Stored TC buffer data (to be stored into CASSE jobcard) are described by the following TABLE object.

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| OBJECT | = RDJC_TABLE |
|--------------------|---------------------|
| NAME | = RDJC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 4 |
| ROW_BYTES | = 130 |
| ^STRUCTURE | = "SESAME_RDJC.FMT" |
| END_OBJECT | = RDJC_TABLE |

The structure of the receiver data TABLE object is described in the file SESAME_RDJC.FMT.

| OBJECT NAME DATA_TYPE START_BYTE BYTES DESCRIPTION | <pre>= COLUMN = "UTC" = TIME = 1 = 23 = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"</pre> |
|---|--|
| END_OBJECT | = COLUMN |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | <pre>= COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 25 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in</pre> |
| END OBJECT | CDMS RSST (see SESAME Ready Message)" = COLUMN |
| | |
| | |
| OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= COLUMN = "RDJC_OFFSET" = CHARACTER = 42 = 4 = "A4"</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | <pre>= "RDJC_OFFSET" = CHARACTER = 42 = 4 = "A4" = "Offset in Stored TC Buffer (echoed</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "RDJC_OFFSET" = CHARACTER = 42 = 4 = "A4" = "Offset in Stored TC Buffer (echoed</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | <pre>= "RDJC_OFFSET" = CHARACTER = 42 = 4 = "A4" = "Offset in Stored TC Buffer (echoed</pre> |

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The SESAME first to tenth command word of CDMS RSST message are described by the following TABLE object.

| OBJECT | = RMES_TABLE |
|--------------------|---------------------|
| NAME | = RMES |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 5 |
| ROW_BYTES | = 137 |
| ^STRUCTURE | = "SESAME_RMES.FMT" |
| END_OBJECT | = RMES_TABLE |

The structure of the receiver data TABLE object is described in the file SESAME_RMES.FMT-

| /* FILE CONTENTS | = SESAME Ready Message */ |
|------------------|---|
| — | = SESAME RMES.FMT */ |
| _ | = K. Seidensticker and W. Schmidt, */ |
| /* | version 5, 2015-11-05 */ |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 1 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 25 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Start time of measurement. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits of |
| | LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_SYS_MSG" |
| DATA_TYPE | = CHARACTER |
| START_BYTE | = 42 |
| BYTES | = 30 |
| FORMAT | = "A30" |
| DESCRIPTION | = "SESAME ready message: |
| | SESAME Flight S/W - Ready" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_SW_VER" |
| | |

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|----------------------------|--------------------------------------|--|--------|
| DATA TYPE | = CHARACTER | | |
| START BYTE | = 75 | | |
| BYTES | = 8 | | |
| FORMAT | = "A8" | | |
| MISSING_CONSTANT | = "FM1 " | | |
| DESCRIPTION | = "SESAME flight software versio | n, | |
| | 8 characters, padded with tra | iling blan} | s, |
| | e.g. 'FM3.00 '; | | |
| | does not exist for software v | ersion FM1' | ' |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "SESAME_RSST" | | |
| DATA_TYPE | = CHARACTER | | |
| START_BYTE | = 86 | | |
| BYTES | = 49 | | |
| FORMAT | = "A49" | | |
| DESCRIPTION | = "First to tenth command word of CD | MS RSST | |
| | message (system status table); hex | representa | ation; |
| | cf. CDMS specification (RO-LCD-SP- | 3101); | |
| | does not exist for software versio | n FM1" | |
| END_OBJECT | = COLUMN | | |

4.3.3 Science level 3 data product design

Level 3 contains calibrated and corrected CASSE and PP time series and DIM tables. The level 3 products have PDS detached labels and combined detached labels. The SESAME subdirectory contains calibrated housekeeping (HK) and health-check data all with the appropriate time-stamp. The calibration is described in SES_CAS_CALIBRATION_DESC.TXT, SES_DIM_CALIBRATION_DESC.TXT and SES_PP_CALIBRATION_DESC.TXT (DOCUMENT directory).

4.3.3.1 File Characteristics Data Elements

PDS data product **labels** contain data element information that describes important attributes of the physical structure of a data product file. The PDS file characteristic data elements for SEAME science level 3 data are:

RECORD_TYPE RECORD_BYTES FILE_RECORDS

The RECORD_TYPE data element identifies the record characteristics of the data product file. Physical records are always fixed-length. The RECORD_BYTES data element identifies the number of bytes in each physical record in the data product file. The FILE_RECORDS data element identifies the number of physical records in the file.

4.3.3.2 Data Object Pointers Identification Data Elements

The SESAME data have combined detached labels. A single PDS detached data product label file is used to describe the contents of more than one data product file (the products belong to the same working session of a SESAME instrument). The combined detached label contains pointers to individual data products. The labels refer to FILE objects.

4.3.3.3 Instrument and Detector Descriptive Data Elements

The following data identification elements provide additional information about the SESAME data product.

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|----------------------------|--|---|
| INSTRUMENT_HOST_ID | = RL | |
| INSTRUMENT_ID | = SESAME | |
| INSTRUMENT_NAME | <pre>= "SURFACE ELECTRIC SOUNDING AND ACOUSTIC MONIT EXPERIMENT"</pre> | CORING |
| INSTRUMENT_TYPE | <pre>= {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "PERMITTIVITY PROBE"}</pre> | |

4.3.3.4 Data Object Definition

4.3.3.4.1 CASSE Data object definition

The CASSE data are organized as tables with 24 columns containing 12 times and 12 channel values (accelerometers or transmitters): time1 channel1 time2 channel2 ... time12 channel12.

The association axis-channel is fixed and it is given in the label. The « Jobcards » and « sequence parameters » are kept in separated files (combined detached labels)

Example: CASSE sounding (1 label file pointing to 4 data files)

| SES_FS3_CSN_0510040300.LBL | (label) |
|---------------------------------|-------------------------|
| SES_FS3_CSN_0510040300_JOBC.TAB | (parameters of jobcard) |
| SES_FS3_CSN_0510040300_SEQP.TAB | (sequence parameters) |
| SES_FS3_CSN_0510040300_DATA.TAB | (DATA: ACC or TX) |
| SES_FS3_CSN_0510040300_TAFT.TAB | (foot temperatures) |

The label contains the Start and Stop times as LOBT and UTC. The data files contain time in ms relative to the start time.

4.3.3.4.1.1 CASSE Jobcard definition (level 3) The jobcard is described by a TABLE object.

| OBJECT | = JOBC_TABLE |
|--------------------|---------------------|
| NAME | = DATA |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = |
| COLUMNS | = |
| ROW_BYTES | = |
| ^STRUCTURE | = "JOBCARD_FM3.FMT" |
| END_OBJECT | = JOBC_TABLE |

The structure of the TABLE object is defined in the file JOBCARD_FM3.FMT.

```
OBJECT
                    = COLUMN
                     = "SESAME SEQ ID"
   NAME
   DATA TYPE = ASCII INTEGER
   START BYTE = 1
   BYTES
                    = 6
                = "I6"
 FORMAT
   UNIT
                    = "N/A"
   DESCRIPTION = "Sequence ID in the current data file"
END_OBJECT
                 = COLUMN
   NAME
DATI?
OBJECT
                    = COLUMN
                   = "JOB ID"
   DATA TYPE = CHARACTER
```

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START BYTE = 9 = 2 BYTES = "A2" FORMAT = "N/A" UNIT DESCRIPTION = "Jobcard identifier (hex value)" END_OBJECT = COLUMN OBJECT = COLUMN = "JOB_VERSION" NAME DATA TYPE = CHARACTER START_BYTE = 14 BYTES = 1 = "A1" FORMAT = "N/A" UNIT DESCRIPTION = "The possible values are: 0 for FM-1 and FM-2 B for FM-3" = COLUMN END OBJECT OBJECT = COLUMN = "NMEAS" NAME DATA TYPE = ASCII INTEGER START BYTE = 17 BYTES = 3 = "I3" FORMAT = "N/A" UNIT DESCRIPTION = "Number of measurements (1 to 127)" END OBJECT = COLUMN OBJECT = COLUMN = "STACK" NAME DATA TYPE = CHARACTER START BYTE = 22 BYTES = 3 FORMAT = "A3" UNIT = "N/A" DESCRIPTION = "Indicates that the time series shall be stacked on board. The possible values are YES or NO." END OBJECT = COLUMN OBJECT = COLUMN NAME = "SOUND FREQ" = ASCII INTEGER DATA TYPE START BYTE = 27 BYTES = 5 = "I5" FORMAT UNIT = "HERTZ" DESCRIPTION = "Nominal sounding frequency" END OBJECT = COLUMN OBJECT = COLUMN NAME = "SND DURATION"

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DATA TYPE = ASCII REAL START BYTE = 33 BYTES = 9 FORMAT = "F9.1" = "MILLISECOND" UNIT MISSING CONSTANT = 9999999.9 DESCRIPTION = "Sounding duration in sounding mode" = COLUMN END OBJECT OBJECT = COLUMN = "TRIGGER TIMEOUT" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 43 BYTES = 5 FORMAT = "15" UNIT = "SECOND" MISSING CONSTANT = 99999 DESCRIPTION = "Time-out duration, after which listening stops if no trigger signal occurred" = COLUMN END OBJECT OBJECT = COLUMN = "SAMPLING FREQ" NAME DATA TYPE = ASCII INTEGER START BYTE = 49 BYTES = 6 = "I6" FORMAT UNIT = "HERTZ" DESCRIPTION = "Sampling frequency per channel" END OBJECT = COLUMN OBJECT = COLUMN = "TX STATUS" NAME DATA TYPE = CHARACTER START BYTE = 57 BYTES = 5 = "A5" FORMAT UNIT = "N/A" DESCRIPTION = "Selection of transmitters to be used in Sounding Mode. If TX cycle is set, after a measurement the transmitter selection is (cyclically) shifted by one position up to yield the transmitters to be used for the next measurement. If Tx reverse is additionally set, the selection of active transmitters is shifted one position downwards instead. Bit field represented as 5 characters, the rightmost character corresponds to bit #0 and the leftmost to bit #4. Each character can be 1 (active sensor or cycle on or reversed on) or 0 (sensor not used) and have the following meaning: bit 0: TRM -Y

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bit 1: TRM +X bit 2: TRM +Y bit 3: TX cycle bit 4: TX reverse" END OBJECT = COLUMN OBJECT = COLUMN = "AGC" NAME DATA TYPE = CHARACTER START BYTE = 65 BYTES = 2 = "A2" FORMAT UNIT = "N/A" = "Amplification gain selection (hex value) DESCRIPTION Value to be written to the Amplifier Gain Control register of CASSE electronics. Decimal value ranges from 0 (maximal gain) to 15 (minimal gain). Note (a) the gain is not a monotone function of the AGC value, (b) the actually adjusted gain can deviate, if automatic gain setting (AGS) is enabled." = COLUMN END_OBJECT OBJECT = COLUMN = "TRIGGER SRC" NAME DATA TYPE = CHARACTER START BYTE = 70 BYTES = 12 FORMAT = "A12" = "N/A" UNIT DESCRIPTION = "Subset of active sensor channels used as trigger sources. Bit field represented as 12 characters, the rightmost character corresponds to bit #0 and the leftmost to bit #11. Each character can be 1 (active sensor used as a trigger source) or 0 (sensor not used as a trigger source) and have the following meaning: bit 0: ACC -Y, x-axis bit 1: ACC -Y, y-axis bit 2: ACC -Y, z-axis bit 3: ACC +X, x-axis bit 4: ACC +X, y-axis bit 5: ACC +X, z-axis bit 6: ACC +Y, x-axis bit 7: ACC +Y, y-axis bit 8: ACC +Y, z-axis bit 9: TRM -Y bit 10: TRM +X bit 11: TRM +Y" END OBJECT = COLUMN OBJECT = COLUMN NAME = "TRIGGER DELAY" DATA TYPE = ASCII REAL

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START BYTE = 84 = 9 BYTES FORMAT = "F9.1" = "MILLISECOND" UNIT DESCRIPTION = "Determines the time range before (negative value) or after (positive value) a trigger event, which shall be included in the time series. Absolute value of TrgDelay must be less or equal LIS DURATION." END OBJECT = COLUMN OBJECT = COLUMN NAME = "TRIGGER LEVEL POS" DATA TYPE = ASCII_INTEGER START BYTE = 94 BYTES = 4 = "I4" FORMAT = "N/A" UNTT DESCRIPTION = "Positive trigger level. Value to be written to the UTT hardware register, which fixes the upper (always positive) trigger threshold. Note that the actually adjusted value can be different, if automatic trigger level setting is enabled." END OBJECT = COLUMN OBJECT = COLUMN NAME = "TRIGGER LEVEL NEG" DATA TYPE = ASCII INTEGER START BYTE = 99 BYTES = 4 FORMAT = "I4" UNIT = "N/A" DESCRIPTION = "Negative trigger level. Value to be written to the LTT hardware register, which fixes the lower (always negative) trigger threshold. Note that the actually adjusted value can be different, if automatic trigger level setting is enabled." END OBJECT = COLUMN OBJECT = COLUMN = "LIS DURATION" NAME DATA TYPE = ASCII REAL START_BYTE = 104 BYTES = 9 = "F9.1" FORMAT = "MILLISECOND" UNIT DESCRIPTION = "Listening duration" END OBJECT = COLUMN OBJECT = COLUMN NAME = "RX STATUS"

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DATA TYPE = CHARACTER START BYTE = 115 BYTES = 14 FORMAT = "A14" = "N/A" UNIT DESCRIPTION = "Selection of sensor channels to be used. If cycle is set, after a measurement the receiver selection is (cyclically) shifted by one position (in the same direction as the transmitters, as indicated in TX STATUS. If the reversed flag is additionally set, the receiver cycling shall take place in the opposite direction as the transmitter cycling. Bit field represented as 15 characters, the rightmost character corresponds to bit #0 and the leftmost to bit #13. Each character can be 1 (active sensor or cycle on or reversed on) or 0 (sensor not used) and have the following meaning: bit 0: ACC -Y, x-axis bit 1: ACC -Y, y-axis bit 2: ACC -Y, z-axis bit 3: ACC +X, x-axis bit 4: ACC +X, y-axis bit 5: ACC +X, z-axis bit 6: ACC +Y, x-axis bit 7: ACC +Y, y-axis bit 8: ACC +Y, z-axis bit 9: TRM -Y bit 10: TRM +X bit 11: TRM +Y bit 12: cycle bit 13: reversed" END OBJECT = COLUMN OBJECT = COLUMN = "G GEN" NAME DATA TYPE = ASCII INTEGER START BYTE = 131 BYTES = 1 = "I1" FORMAT = "N/A" UNIT DESCRIPTION = "Values 1 or 0 1: prepare data for automatic gain adjustment" = COLUMN END OBJECT OBJECT = COLUMN = "G COMP" NAME DATA TYPE = ASCII INTEGER START BYTE = 133 BYTES = 1 = "I1" FORMAT UNIT = "N/A" DESCRIPTION = "0: Do not calculate optimized gain

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1: Optimize for lower 1/3 of channels 2: Optimize for lower 2/3 of channels 3: Optimize for strongest channel" = COLUMN END OBJECT OBJECT = COLUMN = "TL GEN" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 135 = 1 BYTES = "I1" FORMAT = "N/A" UNIT DESCRIPTION = "Values 1 or 0 1: prepare data for automatic trigger level adjustment" END OBJECT = COLUMN OBJECT = COLUMN = "TL COMP" NAME DATA TYPE = ASCII INTEGER START BYTE = 137 BYTES = 1 FORMAT = "I1" = "N/A" UNIT DESCRIPTION = "Values 1 or 0 1: adjust optimized trigger levels" END OBJECT = COLUMN OBJECT = COLUMN NAME = "STATS" DATA_TYPE = ASCII_INTEGER START_BYTE = 139 BYTES = 1 = "I1" FORMAT = "N/A" UNIT DESCRIPTION = "Values 1 or 0 1: include channels statistics for each measurement" = COLUMN END OBJECT OBJECT = COLUMN = "SKIP TS" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 141 BYTES = 1 = "I1" FORMAT = "N/A" UNIT DESCRIPTION = "Values 1 or 0 If 1 time series not included into telemetry (ignored in Stacking Mode)" END OBJECT = COLUMN OBJECT = COLUMN

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= "G TAR VAL" NAME DATA TYPE = ASCII INTEGER START BYTE = 143 BYTES = 3 FORMAT = "I3" UNIT = "N/A" = "Target value for automatic gain adjustment. DESCRIPTION Linearized ADC units in the range 1 to 255. In combination with the value of G COMP, gain is adjusted such that the absolute values of the samples of 1/3, 2/3 or all channels are close to, but below, G TAR VAL." END OBJECT = COLUMN OBJECT = COLUMN = "TL FACTOR" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 147 BYTES = 4 FORMAT = I4 = "N/A" UNIT DESCRIPTION = "Factor for calculating the trigger levels from 10 to 2550%. Distance of trigger level from mean of time series (of selected trigger channels) relative to the distance between mean and the extreme sample values; TL FACTOR equals 10 (100 %) means that trigger level are set equal to the maximum deviation from mean during the pre-measurement. A TLFactor value less than or equal 10 would have caused a trigger signal during the pre-measurement. For each sensor channel marked as trigger channel, flight software calculates preliminary trigger levels based on statistical values (Max, Min, Mean) of a pre-measurement with trglevneg = (Min-Mean) * TLFactor / 10 + Mean trglevpos = (Max-Mean) * TLFactor / 10 + Mean The smallest value of the trglevneg obtained this way is adjusted as negative trigger level (TrgLevNeg), and the highest trglevpos as positive trigger level (TrgLevPos), possible after correcting different gain settings during the pre-measurement and the Trigger Mode measurement." END OBJECT = COLUMN OBJECT = COLUMN NAME = "AMP SETUP" DATA TYPE = ASCII REAL START BYTE = 152 BYTES = 4

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= "SECOND" UNIT DESCRIPTION = "Amplifier setup time in sounding mode. It represents the Duration after start of time series recording used for amplifier setup (to yield constant base lines). A value of 1 s should normally be used, because it enables the correct identification of sensor channels for all possible sampling frequencies (no wrap-around of FIFO buffer)." END OBJECT = COLUMN OBJECT = COLUMN = "FIFO LAG" NAME DATA TYPE = ASCII INTEGER START BYTE = 157 = 4 BYTES FORMAT = I4 = "N/A" UNIT DESCRIPTION = "Optional corrective offset of the address of the first sample to be transferred. Range from -127 to 127" END OBJECT = COLUMN OBJECT = COLUMN = "FOOT TEMP" NAME DATA TYPE = CHARACTER START BYTE = 163 BYTES = 7 = "A7" FORMAT UNIT = "N/A" DESCRIPTION = "Active foot temperature channels. Bit field represented as 7 characters, the rightmost character corresponds to bit #0 and the leftmost to bit #6. The Temperature and Radiation Dose Data Block will be generated by flight software, if at least one foot temperature channel is selected in FOOT TEMP. It will additionally be included at the end of a measuring sequence, if the additional 'after job temperature' flag is set. Each character can be 1 (channel selected) or 0 (channel not selected) and have the following meaning: bit 0: Temperature -Y, TRM bit 1: Temperature -Y, ACC bit 2: Temperature +X, TRM bit 3: Temperature +X, ACC bit 4: Temperature +Y, TRM bit 5: Temperature +Y, ACC bit 6: Additional after job temperatures" END OBJECT = COLUMN

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| OBJECT | = COLUMN |
|--------------------|--|
| NAME | = "ADD_DELAY" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE = 17 | 2 |
| BYTES | = 3 |
| UNIT | = "SECOND" |
| FORMAT | = I3 |
| DESCRIPTION = ' | Additional delay between measurements of |
| | a measurement sequence" |
| END_OBJECT = COLUM | IN |

4.3.3.4.1.2 CASSE Sequence Parameters in burst mode definition (level3) The sequence parameters are described by a TABLE object.

| OBJECT | = | SEQ_PARAM_BURST |
|--------------------|---|--------------------------|
| NAME | | = SEQ_PARAM_BURST3 |
| INTERCHANGE_FORMAT | | = ASCII |
| ROWS | | = |
| COLUMNS | | = |
| ROW_BYTES | | = |
| ^STRUCTURE | | = "SEQ_PARAM_BURST3.FMT" |
| END_OBJECT | | = SEQ_PARAM_BURST |

The structure of the Sequence parameters TABLE object is defined in the file SEQ_PARAM_BURST3.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Measurement ID in the current sequence" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 15 |

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BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" END OBJECT = COLUMN OBJECT = COLUMN = "SESAME LOCAL TIME SEQ" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 39 BYTES = 15 = "I15" FORMAT DESCRIPTION = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END OBJECT = COLUMN OBJECT = COLUMN = "FREQUENCY DIVIDER" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 55 BYTES = 3 = "I3" FORMAT = "N/A" UNIT DESCRIPTION = "Adjusted transmitter frequency register value" END OBJECT = COLUMN OBJECT = COLUMN NAME = "FREQUENCY INCREMENT" DATA TYPE = ASCII INTEGER DATA_TYPE START_BYTE = 59 BYTES = 5 = "I5" FORMAT UNIT = "N/A" DESCRIPTION = "Adjusted sampling rate registers value" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNELS" NAME DATA TYPE = ASCII INTEGER START BYTE = 65 BYTES = 3 = "I3" FORMAT = "N/A" UNIT DESCRIPTION = "Number of sensor channels minus one" END OBJECT = COLUMN OBJECT = COLUMN = "ADJ SOUND FREQ" NAME DATA_TYPE = ASCII INTEGER START BYTE = 69 BYTES = 5

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| FORMAT | = "I5" |
|-------------|---|
| UNIT | = "HERTZ" |
| DESCRIPTION | = "Transmitter frequency. |
| | Equals zero in Listening mode" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "ADJ_SAMPLING_FREQ" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 75 |
| BYTES | = 10 |
| FORMAT | |
| UNIT | = "HERTZ" |
| DESCRIPTION | = "Sampling frequency per sensor channel" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| DESCRIPTION | = "Start time of measurement. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits of |
| | LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TOTAL_MEAS_LENGTH" |
| — | = CHARACTER |
| START_BYTE | |
| BYTES | = 8 |
| FORMAT | = "A8" |
| UNIT | = "N/A" |
| DESCRIPTION | |
| | 4 bytes, hexadecimal representation" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_TRM" |
| — | = ASCII_REAL |
| START_BYTE | |
| BYTES | = 6 |
| FORMAT | |
| | = "KELVIN" |
| | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA_TYPE | = ASCII_REAL |
| | |

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| START_BYTE | = 120 |
|-------------|---|
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_TRM" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 127 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 134 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_TRM" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 141 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 148 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| — | |

4.3.3.4.1.3 CASSE Sequence Parameters in trigger mode definition (level3) The sequence parameters are described by a TABLE object.

| OBJECT | = SEQ_PARAM_TRIG |
|--------|--------------------|
| NAME | = SEQ_PARAM_BURST3 |

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| INTERCHANGE_FORMAT | = ASCII |
|--------------------|-------------------------|
| ROWS | = |
| COLUMNS | = |
| ROW_BYTES | = |
| ^STRUCTURE | = "SEQ_PARAM_TRIG3.FMT" |
| END_OBJECT | = SEQ_PARAM_TRIG |

The structure of the Sequence parameters TABLE object for FM2 is defined in the file SEQ_PARAM_TRIG3.FMT.

| <pre>NAME = "SESAME_SEQ_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 1 BYTES = 6 UNIT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 BYTES = 15</pre> | OBJECT | = COLUMN |
|---|--|---|
| <pre>START_BYTE = 1 BYTES = 6 UNIT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN OBJECT = COLUMN</pre> | NAME | = "SESAME_SEQ_ID" |
| <pre>BYTES = 6 UNIT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | DATA_TYPE | = ASCII_INTEGER |
| <pre>BYTES = 6 UNIT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | START_BYTE | = 1 |
| <pre>FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN NAME = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | UNIT | = "N/A" |
| <pre>END_OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = ITIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| OBJECT = COLUMN NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = IIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | DESCRIPTION | = "Sequence ID in the current data file" |
| <pre>NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN MAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | END_OBJECT | = COLUMN |
| <pre>NAME = "MEAS_ID" DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| DATA_TYPE = ASCII_INTEGER START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | | |
| <pre>START_BYTE = 8 BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| BYTES = 6 FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | | |
| <pre>FORMAT = "I6" UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| <pre>UNIT = "N/A" DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| DESCRIPTION = "Measurement index, i.e. the number of the measurement in the file. Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | | |
| <pre>of the measurement in the file. Starts from 1." END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| Starts from 1." END_OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | DESCRIPTION | |
| <pre>END_OBJECT = COLUMN OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| OBJECT = COLUMN NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | | |
| <pre>NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | END_OBJECT = COLUM | IN |
| <pre>NAME = "UTC" DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| DATA_TYPE = TIME START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | OBJECT | = COLUMN |
| <pre>START_BYTE = 15 BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39</pre> | | |
| BYTES = 23 DESCRIPTION = "This column represents the UTC Time for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME | = "UTC" |
| for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE | = "UTC" = TIME |
| for start of the sequence" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE START_BYTE | = "UTC" = TIME = 15 |
| END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE START_BYTE BYTES | = "UTC" = TIME = 15 = 23 |
| NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' | <pre>= "UTC" = TIME = 15 = 23 This column represents the UTC Time</pre> |
| NAME = "SESAME_LOCAL_TIME" DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of | <pre>= "UTC" = TIME = 15 = 23 'This column represents the UTC Time E the sequence"</pre> |
| DATA_TYPE = ASCII_INTEGER START_BYTE = 39 | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of | <pre>= "UTC" = TIME = 15 = 23 'This column represents the UTC Time E the sequence"</pre> |
| START_BYTE = 39 | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUM | <pre>= "UTC" = TIME = 15 = 23 'This column represents the UTC Time E the sequence" MN</pre> |
| _ | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUM | <pre>= "UTC" = TIME = 15 = 23 'This column represents the UTC Time E the sequence" MN = COLUMN</pre> |
| BYTES = 15 | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUM OBJECT NAME | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME"</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER</pre> |
| FORMAT = "I15" | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER</pre> |
| DESCRIPTION = "Start time of measurement. SESAME local time | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15"</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds.</pre> |
| SLT represents the least significant 32 bits of | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of</pre> |
| SLT represents the least significant 32 bits of | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15"</pre> |
| | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds.</pre> |
| SLT represents the least significant 32 bits of | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of</pre> |
| SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" MN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in</pre> |
| SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in | NAME DATA_TYPE START_BYTE BYTES DESCRIPTION = ' for start of END_OBJECT = COLUN OBJECT NAME DATA_TYPE START_BYTE BYTES FORMAT DESCRIPTION | <pre>= "UTC" = TIME = 15 = 23 "This column represents the UTC Time E the sequence" NN = COLUMN = "SESAME_LOCAL_TIME" = ASCII_INTEGER = 39 = 15 = "I15" = "Start time of measurement. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |

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| OBJECT | = COLUMN |
|-------------|--|
| | = "ERROR INIT" |
| | = CHARACTER |
| START BYTE | |
| BYTES | = 4 |
| FORMAT | = "A4" |
| | = "Error status after initialisation |
| | in hexadecimal format (2 bytes). |
| Possible v | |
| 0001 EB F | REQ Invalid frequency increment (adjustment of sampling |
| | ncy); default (= 1312) used. |
| - | DIVRAT Invalid frequency divider (adjustment of sounding |
| _ | ncy); default (= 1) used. |
| 0004 EB | CDPU ADC Error during temperature A/D conversion. |
| 4008 EB | NCHAN Fatal: Invalid number of sensor channels |
| 4010 EB | TIMEO Fatal: Time-out during triggered mode. |
| 4020 EB | NOSTRT Fatal: Measurement start condition not fulfilled. |
| 8040 EB | RAMOVR Fatal: Allocated SESAME SRAM space exhausted. |
| _ | FATAL MES Fatal error or time-out; current measurement |
| _ | e aborted. |
| Columns ar | e filled by missing constant if the last case occurs (4000), |
| for the co | ncerned mesurement" |
| END_OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY_DIVIDER" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 62 |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Adjusted transmitter frequency register value" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "FREQUENCY_INCREMENT" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 66 |
| BYTES | |
| FORMAT | = "15" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Adjusted sampling rate registers value" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNELS" |
| | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Number of sensor channels minus one" |

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END OBJECT = COLUMN OBJECT = COLUMN = "TRIGGER STATUS" NAME = ASCII INTEGER DATA TYPE START BYTE = 76 BYTES = 4 = "I4" FORMAT UNIT = "N/A" MISSING CONSTANT = 9999 DESCRIPTION = "Contents of Trigger Status Register at time of trigger" END OBJECT = COLUMN OBJECT = COLUMN = "TIME BURST ON" NAME DATA_TYPE = CHARACTER START BYTE = 82 BYTES = 15 = "A15" FORMAT MISSING CONSTANT = 999999999999999 DESCRIPTION = "SESAME Local Time at start of recording of measurement represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END OBJECT = COLUMN OBJECT = COLUMN = "TIME TRIGGER" NAME DATA TYPE = CHARACTER START BYTE = 100 BYTES = 15 FORMAT = "A15" MISSING CONSTANT = 999999999999999 DESCRIPTION = "SESAME Local Time when trigger occurred represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END OBJECT = COLUMN OBJECT = COLUMN = "TIME_BURST_OFF" NAME DATA TYPE = CHARACTER DATA_TYPE START BYTE = 118 BYTES = 15 FORMAT = "A15" MISSING_CONSTANT = 999999999999999 DESCRIPTION = "SESAME Local Time at stop of recording represented as : Reset number (integer starting at 1) / seconds The time resolution is 0.03125 s" END OBJECT = COLUMN

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| OBJECT | = | COLUMN |
|------------------|---|--|
| NAME | = | "FIFO_TRIGGER" |
| DATA TYPE | | |
| _ START_BYTE | | |
| BYTES | | |
| FORMAT | = | "A8" |
| MISSING_CONSTANT | | |
| | | "FIFO RAM address when trigger occurred |
| | | in hexadecimal format (4 bytes)" |
| END OBJECT | | COLUMN |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | | |
| DATA_TYPE | | |
| START_BYTE | = | 147 |
| BYTES | = | 8 |
| FORMAT | = | "A8" |
| MISSING_CONSTANT | = | 9999999 |
| DESCRIPTION | = | "FIFO RAM address when recording stopped |
| | | in hexadecimal format (4 bytes)" |
| END_OBJECT | = | COLUMN |
| | | |
| | | COLUMN |
| NAME | | |
| DATA_TYPE | = | CHARACTER |
| START_BYTE | = | 158 |
| BYTES | = | 8 |
| FORMAT | = | "A8" |
| MISSING_CONSTANT | = | 9999999 |
| DESCRIPTION | = | "FIFO RAM address of very first channel data |
| | | in hexadecimal format (4 bytes)" |
| END_OBJECT | = | COLUMN |
| | | |
| | | COLUMN |
| NAME | | "TEMP_FOOT-Y_TRM" |
| DATA_TYPE | | |
| START_BYTE | | |
| BYTES | | |
| FORMAT | | |
| | | "KELVIN" |
| | | "Foot temperature before measurement" |
| END_OBJECT | = | COLUMN |
| OBJECT | = | COLUMN |
| NAME | | "TEMP FOOT-Y ACC" |
| DATA_TYPE | | |
| START_BYTE | | — |
| BYTES | | |
| FORMAT | | |
| | | ro.2 "KELVIN" |
| | | "Foot temperature before measurement" |
| | | COLUMN |
| END_OBJECT | _ | COTOLIN |

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| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "TEMP_FOOT+X_TRM" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 182 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 189 |
| | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_TRM" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 196 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 203 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |

The structure of the Sequence parameters TABLE object for FM3 $\,$ is defined in the file SEQ_PARAM_TRIG3_FM3.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|-----------------|---|
| NAME | = "MEAS ID" |
| DATA TYPE | = ASCII_INTEGER |
| | |
| _ | = 6 |
| FORMAT | = "16" |
| UNIT | = "N/A" |
| | = "Measurement ID in the current sequence" |
| END OBJECT | |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| _ START_BYTE | |
| _ BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| DATA TYPE | = ASCII INTEGER |
| | — |
| BYTES | |
| | = "I15" |
| | "Start time of measurement. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "FREQUENCY DIVIDER" |
| | = ASCII INTEGER |
| | |
| BYTES | = 3 |
| FORMAT | |
| | = "N/A" |
| | = "Value of transmitter frequency control register" |
| END_OBJECT = | |
| OBJECT | = COLUMN |
| | = "FREQUENCY_INCREMENT" |
| | = ASCII INTEGER |
| START_BYTE | — |
| BYTES | = 5 |
| | = "I5" |
| | = "N/A" |
| | <pre>- N/A = "Value of sampling rate control registers"</pre> |
| END_OBJECT = C | |
| OBJECT | = COLUMN |
| | |

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| NAME | = "CHANNELS" |
|-------------|--|
| DATA TYPE | = ASCII INTEGER |
| | = 65 |
| BYTES | = 3 |
| FORMAT | = "I3" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Number of sensor channels, derived from SLTLA word |
| | (sensor lookup table length and address register)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "AGC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 69 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Nominal amplifier gain; calculated by |
| | multiplying the gains of the active |
| | amplification stages indicated by the |
| | control register settings. An active |
| | amplifier stage is signified by the |
| | corresponding bit set to 0. |
| | Bits are counted from right to left |
| | Bit 1 nominal gain factor: 3.13 |
| | Bit 2 nominal gain factor: 2.13 |
| | Bit 3 nominal gain factor: 4.55 Bit 4 nominal gain factor: 5.55 |
| | Bit 9 Hominal gain factor. 5.55 Bit pattern 1010 represents a nominal |
| | gain of $5.55 \times 2.13 = 11.82$ " |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "POWER_SETTING" |
| — | = CHARACTER |
| START_BYTE | = 77 |
| BYTES | = 8 |
| FORMAT | = "A8" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Power register setting /mode |
| | This is a character string where each |
| | character represents one bit. |
| | Bits 0 to 3: value of power control register |
| | Bits 4 to 7 = 0: power set during measurement initialization Bits 4 to 7 = 1: power set by previous CAS PWRSW command " |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TRIGGER_STATUS" |
| _ | = CHARACTER |
| START_BYTE | = 88 |
| BYTES | = 12 |
| FORMAT | = "A12" |
| | |

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|----------------------------|--|--|---|
| UNIT | = "N/A" | | |
| DESCRIPTION | = "This is a Bit Pattern indicating wh | ich of the | |
| | selected trigger channels triggere | | |
| | recording bit field represented as | | ters, |
| | the rightmost character correspond | | |
| | and the leftmost to bit #11. | | |
| | Each character can be 1 (active se | ensor used a | as a |
| | trigger source) or 0 (sensor not u | ised as a | |
| | trigger source) and have the follo | | ng. |
| | bit 0: ACC -Y, x-axis | 5 | 5 |
| | bit 1: ACC -Y, y-axis | | |
| | bit 2: ACC -Y, z-axis | | |
| | bit 3: ACC +X, x-axis | | |
| | bit 4: ACC +X, y-axis | | |
| | bit 5: ACC +X, z-axis | | |
| | bit 6: ACC +Y, x-axis | | |
| | bit 7: ACC +Y, y-axis | | |
| | bit 8: ACC +Y, z-axis | | |
| | bit 9: TRM -Y | | |
| | bit 10: TRM +X | | |
| | bit 11: TRM +Y" | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TIME_BURST_ON" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 102 | | |
| BYTES | = 10 | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I10" | | |
| DESCRIPTION | = "SESAME High Resolution Time at star | t of record | ding |
| | with a resolution of 1/1024 s" | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TIME_TRIGGER" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 113 | | |
| BYTES | = 10 | | |
| FORMAT | = "I10" | | |
| UNIT | = "N/A" | | |
| DESCRIPTION | = "SESAME High Resolution Time when t | rigger | |
| END_OBJECT = COLUM | event occurred with a resolution on N | of 1/1024 s' | " |
| OBJECT | = COLUMN | | |
| NAME | = "TIME_BURST_OFF" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| | = 124 | | |
| BYTES | = 10 | | |
| UNIT | = "N/A" | | |
| FORMAT | = "110" | | |
| DESCRIPTION | = "SESAME High Resolution Time when re | cording | |

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was stopped with a resolution of 1/1024 s" END OBJECT = COLUMN OBJECT = COLUMN = "FIFO TRIGGER" NAME DATA TYPE = CHARACTER START BYTE = 136 = 8 BYTES FORMAT = "A8" DESCRIPTION = "FIFO RAM address when trigger occurred (hex value, 4 bytes)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "FIFO_BURST_OFF" DATA TYPE = CHARACTER START_BYTE = 147 BYTES = 8 UNIT = "N/A" FORMAT = "A8" DESCRIPTION = "FIFO RAM address when recording stopped (hex value, 4 bytes)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "FIFO FIRST DAT" DATA_TYPE = CHARACTER START_BYTE = 158 BYTES = 8 = "N/A" UNIT FORMAT = "A8" DESCRIPTION = "FIFO RAM address of very first channel data (hex value, 4 bytes)" END OBJECT = COLUMN OBJECT = COLUMN = "NSAMP" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 168 = 10 BYTES = "I10" FORMAT = "N/A" UNIT DESCRIPTION = "Number of samples per channel in telemetry" END OBJECT = COLUMN OBJECT = COLUMN = "TEMP_FOOT-Y TRM" NAME DATA TYPE = ASCII REAL START BYTE = 179 BYTES = 6 = "F6.2" FORMAT UNIT = "KELVIN" DESCRIPTION = "Sensor temperature before measurement"

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END OBJECT = COLUMN OBJECT = COLUMN = "TEMP FOOT-Y ACC" NAME DATA_TYPE = ASCII_REAL START_BYTE = 186 BYTES = 6 = "F6.2" FORMAT UNIT = "KELVIN" DESCRIPTION = "Sensor temperature before measurement" END_OBJECT = COLUMN = "KELVIN" OBJECT = COLUMN = "TEMP_FOOT+X_TRM" NAME DATA_TYPE = ASC: START_BYTE = 193 = ASCII REAL = 6 BYTES = "F6.2" = "KELVIN" FORMAT ONIT= "KELVIN"DESCRIPTION= "Sensor temperature before measurement"END_OBJECT= COLUMN UNIT OBJECT = COLUMN NAME = "TEMP_FOOT+X ACC" DATA TYPE = ASCII REAL START_BYTE = 200 BYTES = 6 = "F6.2" FORMAT UNIT = "KELVIN" DESCRIPTION = "Sensor temperature before measurement" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "TEMP FOOT+Y TRM" DATA_TYPE START_BYTE = ASCII_REAL = 207 = 6 BYTES = "F6.2" = "KELVIN" FORMAT UNIT ONII= "KELVIN"DESCRIPTION= "Sensor temperature before measurement"END_OBJECT= COLUMN OBJECT = COLUMN NAME = "TEMP FOOT+Y ACC" DATA_TYPE = ASCII_REAL START_BYTE = 214 BYTES = 6 = "F6.2" FORMAT FORMAT = "F6.2" UNIT = "KELVIN" DESCRIPTION = "Sensor temperature before measurement" END_OBJECT = COLUMN OBJECT = COLUMN

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| NAME | = "CASSE_PCB_TEMP" |
|--|---|
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 221 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "CASSE PCB temperature" |
| END_OBJECT | = COLUMN |
| | |
| | |
| OBJECT | = COLUMN |
| OBJECT NAME | = COLUMN = "RADFET_VOLTAGE" |
| | |
| NAME | = "RADFET_VOLTAGE" |
| NAME DATA_TYPE | = "RADFET_VOLTAGE" = ASCII_REAL |
| NAME DATA_TYPE START_BYTE | <pre>= "RADFET_VOLTAGE" = ASCII_REAL = 228</pre> |
| NAME DATA_TYPE START_BYTE BYTES | <pre>= "RADFET_VOLTAGE" = ASCII_REAL = 228 = 6</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT | <pre>= "RADFET_VOLTAGE" = ASCII_REAL = 228 = 6 = "F6.3" = "MILLIVOLT"</pre> |
| NAME DATA_TYPE START_BYTE BYTES FORMAT UNIT | <pre>= "RADFET_VOLTAGE" = ASCII_REAL = 228 = 6 = "F6.3" = "MILLIVOLT"</pre> |

4.3.3.4.1.4 CASSE Data definition

The data produced in sounding or listening modes are described by the following TABLE object.

| OBJECT | = DATA |
|--------------------|---------------|
| NAME | = DATA |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = |
| COLUMNS | = |
| ROW_BYTES | = |
| ^STRUCTURE | = "DATA3.FMT" |
| END_OBJECT | = ACC |

The format of the table object for CASSE sounding and listening modes is described in the file DATA3.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Measurement ID in the current sequence" |

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END OBJECT = COLUMN OBJECT = COLUMN = "RELATIVE TIME 1" NAME DATA_TYPE = ASCII REAL START BYTE = 15 BYTES = 10 = "MILLISECOND" UNIT = "F10.3" FORMAT MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 1 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 1" NAME DATA_TYPE = ASCII_REAL START_BYTE = 26 BYTES = 9 = "F9.4" FORMAT = "METER PER SECOND SQUARED" UNIT MISSING_CONSTANT = 9999.9999 DESCRIPTION = "Acceleration data" END OBJECT = COLUMN DATA_TYPE = ASCII_REAL START_BYTE = 36 BYTES OBJECT BYTES = 10 = "MILLISECOND" UNIT FORMAT = "F10.3" MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 2 time relative to start time of the measurement" END OBJECT = COLUMN = COLUMN OBJECT = "CHANNEL 2" NAME DATA_TYPE = ASCII REAL START_BYTE = 47 = 9 BYTES = "F9.4" FORMAT = "METER PER SECOND SQUARED" UNIT MISSING_CONSTANT = 99999.9999 DESCRIPTION = "Acceleration data" END_OBJECT = COLUMN OBJECT = COLUMN = "RELATIVE TIME 3" NAME DATA TYPE = ASCII REAL START BYTE = 57 BYTES = 10

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| UNIT | = "MILLISECOND" |
|------------------|-----------------------------------|
| | = "F10.3" |
| MISSING_CONSTANT | |
| | = "Channel 3 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_3" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 68 |
| BYTES | = 9 |
| FORMAT | = "F9.4" |
| UNIT | = "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | = 9999.9999 |
| DESCRIPTION | = "Acceleration data" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE_TIME_4" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 78 |
| BYTES | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Channel 4 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "CHANNEL_4" |
| DATA_TYPE | |
| START_BYTE | = 89 |
| BYTES | = 9 = "F9.4" |
| | |
| | = "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | |
| | = "Acceleration data" = COLUMN |
| END_ODOECI | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE TIME 5" |
| DATA_TYPE | |
| START BYTE | — |
| — | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING_CONSTANT | |
| — | = "Channel 5 time relative to |
| | start time of the measurement" |
| END OBJECT | = COLUMN |
| _ | |

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| OBJECT | = | COLUMN |
|------------------|---|--------------------------------|
| NAME | = | "CHANNEL 5" |
| DATA_TYPE | | - |
| | | — |
| — | = | |
| FORMAT | = | "F9.4" |
| UNIT | | "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | | |
| | | "Acceleration data" |
| END OBJECT | | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | = | "RELATIVE_TIME_6" |
| DATA TYPE | = | ASCII REAL |
| START BYTE | = | 120 |
| BYTES | = | 10 |
| UNIT | = | "MILLISECOND" |
| FORMAT | = | "F10.3" |
| MISSING CONSTANT | = | 99999.999 |
| — | | "Channel 6 time relative to |
| | | start time of the measurement" |
| END OBJECT | = | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | = | "CHANNEL_6" |
| DATA_TYPE | = | ASCII REAL |
| | = | 131 |
| BYTES | = | 9 |
| FORMAT | = | "F9.4" |
| UNIT | = | "METER PER SECOND SQUARED" |
| MISSING CONSTANT | | |
| — | | "Acceleration data" |
| | | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | = | "RELATIVE_TIME_7" |
| DATA_TYPE | = | ASCII_REAL |
| START_BYTE | = | 141 |
| BYTES | = | 10 |
| UNIT | = | "MILLISECOND" |
| FORMAT | = | "F10.3" |
| MISSING CONSTANT | = | 99999.999 |
| — | | "Channel 7 time relative to |
| | | start time of the measurement" |
| END OBJECT | = | COLUMN |
| _ | | |
| OBJECT | = | COLUMN |
| NAME | = | "CHANNEL_7" |
| DATA_TYPE | = | ASCII_REAL |
| START_BYTE | = | 152 |
| BYTES | = | 9 |
| FORMAT | = | "F9.4" |
| UNIT | = | "METER PER SECOND SQUARED" |
| | | |

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MISSING CONSTANT = 9999.9999 DESCRIPTION = "Acceleration data" END OBJECT = COLUMN OBJECT = COLUMN NAME = "RELATIVE TIME 8" = ASCII REAL DATA TYPE START_BYTE = 162 BYTES = 10 UNIT = "MILLISECOND" = "F10.3" FORMAT MISSING CONSTANT = 99999.999 DESCRIPTION = "Channel 8 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 8" NAME DATA TYPE = ASCII REAL START_BYTE = 173 BYTES = 9 FORMAT = "F9.4" UNIT = "METER PER SECOND SQUARED" MISSING CONSTANT = 9999.9999 DESCRIPTION = "Acceleration data" END OBJECT = COLUMN OBJECT = COLUMN = "RELATIVE TIME 9" NAME = ASCII_REAL DATA_TYPE START_BYTE = 183 BYTES = 10 UNIT = "MILLISECOND" FORMAT = "F10.3" MISSING_CONSTANT = 99999.999 DESCRIPTION = "Channel 9 time relative to start time of the measurement" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 9" NAME DATA_TYPE = ASCII_REAL START_BYTE = 194 BYTES = 9 = "F9.4" FORMAT UNIT = "METER PER SECOND SQUARED" MISSING_CONSTANT = 9999.9999 DESCRIPTION = "Acceleration data" END OBJECT = COLUMN OBJECT = COLUMN NAME = "RELATIVE TIME 10" DATA TYPE = ASCII REAL

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| START_BYTE | = 204 |
|------------------|--------------------------------|
| — | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING CONSTANT | = 99999.999 |
| DESCRIPTION | = "Channel 10 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_10" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 215 |
| BYTES | = 9 |
| | = "F9.4" |
| UNIT | = "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | = 9999.9999 |
| DESCRIPTION | = "Acceleration data" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RELATIVE_TIME_11" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 225 |
| | = 10 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F10.3" |
| MISSING_CONSTANT | = 99999.999 |
| DESCRIPTION | = "Channel 11 time relative to |
| | start time of the measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_11" |
| DATA_TYPE | — |
| _ | = 236 |
| BYTES | = 9 |
| FORMAT | = "F9.4" |
| | = "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | |
| | = "Acceleration data" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "RELATIVE TIME 12" |
| DATA TYPE | |
| START BYTE | = 246 |
| — | = 10 |
| | = "MILLISECOND" |
| FORMAT | |
| MISSING_CONSTANT | |
| — | = "Channel 12 time relative to |
| | start time of the measurement" |
| | Start time of the measurement |

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END_OBJECT

= COLUMN

| OBJECT | = | COLUMN |
|------------------|---|----------------------------|
| NAME | = | "CHANNEL_12" |
| DATA_TYPE | = | ASCII_REAL |
| START_BYTE | = | 257 |
| BYTES | = | 9 |
| FORMAT | = | "F9.4" |
| UNIT | = | "METER PER SECOND SQUARED" |
| MISSING_CONSTANT | = | 9999.9999 |
| DESCRIPTION | = | "Acceleration data" |
| END_OBJECT | = | COLUMN |

4.3.3.4.1.5 CASSE temperatures after measurement (level 3)

The feet temperatures (accelerometers and transmitters) can be acquired also after a measurement (sounding or listening). They will be stored in ASCII table described by a TABLE object.

| = TAFT |
|---------------|
| = TAFT |
| = ASCII |
| = |
| = |
| = |
| = "TAFT3.FMT" |
| = TAFT |
| |

The structure of the "after measurement temperatures" TABLE object for FM2 is defined in the file TAFT3.FMT-

| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE = AS | SCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Measurement ID in the current sequence" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_TRM" |
| DATA_TYPE | = ASCII_REAL |
| | |

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| START_BYTE | = 15 |
|--|---|
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| | = "KELVIN" |
| | = "Foot temperature before measurement" |
| | |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA_TYPE | = ASCII REAL |
| | |
| BYTES | |
| FORMAT | |
| | |
| | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP FOOT+X TRM" |
| | |
| DATA_TYPE | |
| START_BYTE | |
| BYTES | |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| | |
| | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | |
| START_BYTE | = 36 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Foot temperature before measurement" |
| END OBJECT | = COLUMN |
| | 002011 |
| | - COLUMN |
| OBJECT | = COLUMN |
| | = "TEMP_FOOT+Y_TRM" |
| DATA_TYPE | |
| START_BYTE | = 43 |
| BYTES | |
| | = 6 |
| FORMAT | |
| | |
| UNIT | = "F6.2" = "KELVIN" |
| UNIT DESCRIPTION | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement"</pre> |
| UNIT | = "F6.2" = "KELVIN" |
| UNIT DESCRIPTION END_OBJECT | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = COLUMN</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT NAME | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = "TEMP_FOOT+Y_ACC"</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = "TEMP_FOOT+Y_ACC"</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT NAME | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = COLUMN = "TEMP_FOOT+Y_ACC" = ASCII_REAL</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = COLUMN = "TEMP_FOOT+Y_ACC" = ASCII_REAL</pre> |
| UNIT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE START_BYTE | <pre>= "F6.2" = "KELVIN" = "Foot temperature before measurement" = COLUMN = "TEMP_FOOT+Y_ACC" = ASCII_REAL = 50</pre> |

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UNIT DESCRIPTION END_OBJECT

= "Foot temperature before measurement"

= COLUMN

= "KELVIN"

The structure of the "after measurement temperatures" TABLE object for FM3 is defined in the file TAFT3_FM3.FMT-

| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "SESAME_SEQ_ID" |
| | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| | = "MEAS_ID" |
| DATA_TYPE = AS | |
| START_BYTE | |
| BYTES | |
| | = "I6" |
| | = "N/A" |
| | = "Measurement ID in the current sequence" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "TEMP_FOOT-Y_TRM" |
| DATA_TYPE | |
| START_BYTE | |
| BYTES | |
| FORMAT | |
| UNIT | = "KELVIN" |
| | = "Sensor temperature after measurement" |
| END OBJECT | |
| | 002011 |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT-Y_ACC" |
| DATA_TYPE | |
| START_BYTE | = 22 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Sensor temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_TRM" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | |
| FORMAT | = "F6.2" |

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| UNIT | = "KELVIN" |
|---------------------|--|
| DESCRIPTION | = "Sensor temperature after measurement" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+X_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 36 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Sensor temperature after measurement" |
| | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_TRM" |
| | = ASCII_REAL |
| — | — |
| START_BYTE BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| | |
| | = "Sensor temperature after measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TEMP_FOOT+Y_ACC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 50 |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "Sensor temperature after measurement" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "CASSE_PCB_TEMP" |
| DATA TYPE | = ASCII_REAL |
| | — |
| BYTES | = 6 |
| FORMAT | = "F6.2" |
| UNIT | = "KELVIN" |
| DESCRIPTION | = "CASSE PCB temperature" |
| | = COLUMN |
| OBJECT | |
| NAME | = COLUMN = "BADEET VOLTACE" |
| | = "RADFET_VOLTAGE" = ASCII_REAL |
| START_BYTE | _ |
| BYTES | - 64 = 6 |
| | = 6 = "F6.3" |
| FORMAT | |
| UNIT | = "VOLT" |
| | = "RadFET voltage" |
| END_OBJECT | = COLUMN |
| | |

4.3.3.4.1.6 Structure of FM-3 Statistics data (level 3)

The channel statistics data are described by a TABLE object.

| OBJECT | = | STAT |
|--------------------|---|-------------------|
| NAME | | = STAT |
| INTERCHANGE_FORMAT | | = ASCII |
| ROWS | | = |
| COLUMNS | | = |
| ROW_BYTES | | = |
| ^STRUCTURE | | = "STAT2_FM3.FMT" |
| END_OBJECT | | = STAT |

The structure of the Sequence parameters TABLE object is defined in the file STAT2_FM3.FMT.

| OBJECT | = COLUMN |
|--------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "MEAS_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 8 |
| BYTES | = 6 |
| FORMAT | = "I6" |
| UNIT | = "N/A" |
| DESCRIPTION | = "Measurement ID in the current sequence" |
| END_OBJECT | |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_1_MIN" |
| — | = ASCII_INTEGER |
| START_BYTE | = 15 |
| BYTES | = 4 |
| FORMAT | = "I4" |
| UNIT | = "N/A" |
| MISSING_CONS | |
| DESCRIPTION | = "Channel 1 minimal sample value in |
| | ADC non-linear format" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "CHANNEL_1_MAX" |
| _ | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 4 |
| | |

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= "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 1 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_1_MEAN" NAME DATA TYPE = ASCII REAL START_BYTE = 25 = 6 BYTES = "F6.1" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 1 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL_2_MIN" DATA TYPE = ASCII INTEGER START BYTE = 32 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 2 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 2 MAX" DATA TYPE = ASCII INTEGER START BYTE = 37 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 2 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 2 MEAN" NAME DATA_TYPE = ASCII_REAL = 42 START_BYTE BYTES = 6 = "F6.1" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 2 mean of linearized ADC sample values" END OBJECT = COLUMN

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OBJECT = COLUMN NAME = "CHANNEL_3_MIN" DATA TYPE = ASCII INTEGER START BYTE = 49 BYTES = 4 = "I4" FORMAT UNIT = "N/A" MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 3 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_3_MAX" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 54 = 4 BYTES = "I4" FORMAT UNIT = "N/A" MISSING CONSTANT = 9999 DESCRIPTION = "Channel 3 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 3 MEAN" NAME = ASCII REAL DATA TYPE START_BYTE = 59 = 6 BYTES = "F6.1" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999.9 DESCRIPTION = "Channel 3 mean of linearized ADC sample values" = COLUMN END OBJECT OBJECT = COLUMN NAME = "CHANNEL_4_MIN" DATA_TYPE = ASCII_INTEGER START BYTE = 66 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 4 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 4 MAX" DATA TYPE = ASCII INTEGER START_BYTE = 71 = 4 BYTES = "I4" FORMAT

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= "N/A" UNTT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 4 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_4_MEAN" NAME DATA_TYPE = AS START_BYTE = 76 = ASCII_REAL BYTES = 6 = "F6.1" FORMAT UNIT = "N/A" MISSING_CONSTANT = 9999.9 DESCRIPTION = "Channel 4 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_5_MIN" NAME DATA TYPE = ASCII INTEGER START BYTE = 83 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 5 minimal sample value in ADC non-linear format" END_OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 5 MAX" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 88 = 4 BYTES = "I4" FORMAT UNIT = "N/A" MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 5 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_5_MEAN" NAME = ASCII REAL DATA TYPE START_BYTE = 93 = 6 BYTES = "F6.1" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 5 mean of linearized ADC sample values" END_OBJECT = COLUMN OBJECT = COLUMN

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= "CHANNEL_6_MIN" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 100 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 6 minimal sample value in ADC non-linear format" = COLUMN END OBJECT OBJECT = COLUMN NAME = "CHANNEL 6 MAX" DATA TYPE = ASCII_INTEGER START_BYTE = 105 BYTES = 4 FORMAT = "I4" UNIT = "N/A" MISSING CONSTANT = 9999 DESCRIPTION = "Channel 6 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_6_MEAN" NAME DATA_TYPE START_BYTE = ASCII REAL = 110 = 6 BYTES FORMAT = "F6.1" UNIT = "N/A" MISSING_CONSTANT = 9999.9 DESCRIPTION = "Channel 6 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 7 MIN" DATA TYPE = ASCII INTEGER START_BYTE = 117 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 7 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 7 MAX" NAME DATA_TYPE = ASCII_INTEGER START_BYTE = 122 BYTES = 4 FORMAT = "I4" UNIT = "N/A"

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MISSING CONSTANT = 9999 DESCRIPTION = "Channel 7 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 7 MEAN" NAME DATA_TYPE = ASCII_REAL START_BYTE = 127 BYTES = 6 = "F6.1" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 7 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 8 MIN" NAME DATA TYPE = ASCII INTEGER START BYTE = 134 BYTES = 4 FORMAT = "I4" UNIT = "N/A" MISSING CONSTANT = 9999 DESCRIPTION = "Channel 8 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 8 MAX" DATA TYPE = ASCII INTEGER START_BYTE = 139 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 8 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_8_MEAN" NAME DATA_TYPE = ASC START_BYTE = 144 = ASCII_REAL BYTES = 6 = "F6.1" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 8 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 9 MIN"

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DATA TYPE = ASCII INTEGER START BYTE = 151 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 9 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 9 MAX" DATA TYPE = ASCII INTEGER START BYTE = 156 = 4 BYTES = "I4" FORMAT UNIT = "N/A" MISSING_CONSTANT = 9999 DESCRIPTION = "Channel 9 maximal sample value in ADC non-linear format" END OBJECT = COLUMN = COLUMN OBJECT = "CHANNEL 9 MEAN" NAME DATA_TYPE = ASCII REAL _ ----START_BYTE = 161 BYTES = 6 FORMAT = "F6.1" UNIT = "N/A" MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 9 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 10 MIN" DATA TYPE = ASCII INTEGER START BYTE = 168 BYTES = 4 FORMAT = "I4" = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 10 minimal sample value in ADC non-linear format" = COLUMN END OBJECT OBJECT = COLUMN = "CHANNEL 10 MAX" NAME DATA TYPE = ASCII INTEGER START BYTE = 173 BYTES = 4 = "I4" FORMAT UNIT = "N/A" MISSING CONSTANT = 9999

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= "Channel 10 maximal sample value in DESCRIPTION ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 10 MEAN" NAME DATA TYPE = ASCII REAL START BYTE = 178 = 6 BYTES = "F6.1" FORMAT UNIT = "N/A" MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 10 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 11 MIN" DATA_TYPE = ASCII_INTEGER START BYTE = 185 BYTES = 4 FORMAT = "14" = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 11 minimal sample value in ADC non-linear format" = COLUMN END OBJECT OBJECT = COLUMN = "CHANNEL 11 MAX" NAME DATA TYPE = ASCII INTEGER START BYTE = 190 = 4 BYTES = "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 11 maximal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL 11 MEAN" NAME DATA_TYPE = ASCII REAL START BYTE = 195 = 6 BYTES = "F6.1" FORMAT = "N/A" UNIT MISSING_CONSTANT = 9999.9 DESCRIPTION = "Channel 11 mean of linearized ADC sample values" END OBJECT = COLUMN OBJECT = COLUMN NAME = "CHANNEL 12 MIN" DATA TYPE = ASCII INTEGER

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START BYTE = 202 BYTES = 4 = "I4" FORMAT = "N/A" UNIT MISSING CONSTANT = 9999 DESCRIPTION = "Channel 12 minimal sample value in ADC non-linear format" END OBJECT = COLUMN OBJECT = COLUMN = "CHANNEL_12_MAX" NAME DATA_TYPE = ASCII_INTEGER START BYTE = 207 = 4 BYTES FORMAT = "I4" UNIT = "N/A" MISSING CONSTANT = 9999 DESCRIPTION = "Channel 12 maximal sample value in ADC non-linear format" = COLUMN END OBJECT OBJECT = COLUMN = "CHANNEL 12 MEAN" NAME DATA TYPE = ASCII REAL START BYTE = 212 BYTES = 6 = "F6.1" FORMAT UNIT = "N/A" MISSING CONSTANT = 9999.9 DESCRIPTION = "Channel 12 mean of linearized ADC sample values" END_OBJECT = COLUMN

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4.3.3.4.2 PP Data object definition (level 3)

4.3.3.4.2.1 PP Active mode test

During an active mode test, one active PP measurement is performed. Adjusted and measured values (DAC table read back from PP memory, time series of transmitter current and receiver voltage samples) are sent to ground. Telemetry concludes with the results of the on-board data evaluation. Adjustable parameters of command active mode test are the configuration of electrodes, the transmitting frequency and the number of sine waves. Parameters are calibrated to voltages and currents where possible. For time series the relative offset from the first sample is given as fractions of a second.

The PP AMTEST data are organized as tables containing parameters, the DAC table read back from PP memory, transmitter and receiver time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to four data files.

Following is an example of PDS files corresponding to an AMTEST measurement.

SES_FS3_PAM_070929214512_TEST.LBL (label) SES_FS3_PAM_070929214512_TPAR.TAB (parameters) SES_FS3_PAM_070929214512_TDAC.TAB (DAC table) SES_FS3_PAM_070929214512_TTX.TAB (transmitter time series) SES_FS3_PAM_070929214512_TRX.TAB (receiver time series)

The parameters are described by the following TABLE object.

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| OBJECT | = AMTESTPARC_TABLE |
|--------------------|---------------------|
| NAME | = AMTESTPARC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 9 |
| ROW_BYTES | = 90 |
| ^STRUCTURE | = "PP_AMT_PARC.FMT" |
| END_OBJECT | = AMTESTPAR_TABLE |

The structure of the parameters table is described in the file PP_AMT_PARC.FMT.

```
/* PP AMTEST sensor settings / calibrated, version 2, 2015-11-14 */
OBJECT
           = COLUMN
   NAME = "SESAME SEQ ID"
   DATA_TYPE
                 = ASCII INTEGER
   START BYTE
                 = 1
             = 6
   BYTES
             = "N/A"
   UNIT
   FORMAT = "I6"
   DESCRIPTION = "Sequence ID in the current data file"
END OBJECT
               = COLUMN
OBJECT
           = COLUMN
 NAME
            = "UTC"
 NAME
DATA_TYPE = TIL
= 8
              = TIME
 BYTES
             = 23
 DESCRIPTION = "Measurement start time (UTC in PDS standard
   format YYYY-MM-DDThh:mm:ss.sss)"
              = COLUMN
END OBJECT
OBJECT
            = COLUMN
   NAME = "SESAME LOCAL TIME"
   DATA TYPE
                = ASCII_INTEGER
   START_BYTE
                   = 32
   BYTES
              = 15
   FORMAT = "I15"
   DESCRIPTION = "Measurement start time. SESAME local time
   (SLT) runs with a resolution of 1/32 seconds.
    SLT represents the least significant 32 bits
    of LOBT. The most significant 5 bits are in
    CDMS RSST (see SESAME Ready Message)"
END OBJECT = COLUMN
OBJECT
           = COLUMN
   NAME = "SENSOR_SETTINGS"
   DATA TYPE
               = ASCII INTEGER
   START BYTE
                  = 48
              = 7
   BYTES
   UNIT = "N/A"
   DESCRIPTION = "Commanded (echoed) electrode combination
    as 3-digit hexadecimal code 16#abi#
```

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with the following meaning: a: electrode connected to the TX A output. Possible values: 0 [none], 1 [+X leg], 2 [MUPUS PEN] b: electrode connected to the TX B output. Possible values: 0 [none], 2 [MUPUS PEN], 3 [APXS] i: input channel Possible values: 0 [potential difference] 1 [current at +X leg] 2 [current at MUPUS PEN] 3 [current at APXS] 4 [direct measurement at +Y foot] 5 [direct measurement at -Y foot] 6 [reference voltage -2.5 V] 7 [reference voltage +2.5 V] " END OBJECT = COLUMN OBJECT = COLUMN = "NOMINAL FREQUENCY" NAME = ASCII_INTEGER DATA TYPE START BYTE = 56 BYTES = 5 UNIT = "HZ" FORMAT = "I5" = "Nominal transmitter frequency " DESCRIPTION END OBJECT = COLUMN OBJECT = COLUMN NAME = "CORRECTED_FREQUENCY" DATA TYPE = ASCII_REAL = 62 START_BYTE = 8 BYTES = "HZ" UNIT FORMAT = "F8.2" DESCRIPTION = "Corrected transmitter frequency" END OBJECT = COLUMN = COLUMN OBJECT = "NUMBER_OF_WAVES" NAME DATA TYPE = ASCII_INTEGER = 71 START BYTE = 2 BYTES = "N/A" UNIT FORMAT = I2 DESCRIPTION = "Number of generated transmitter sine waves " END OBJECT = COLUMN

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OBJECT = COLUMN = "NUMBER_OF_SAMPLES" NAME DATA TYPE = ASCII INTEGER START BYTE = 74 BYTES = 5 = "N/A" UNIT FORMAT = "I5" = "Number of transmitter current and receiver voltage DESCRIPTION samples " END OBJECT = COLUMN = COLUMN OBJECT NAME = "ERROR CODE" = ASCII_INTEGER DATA TYPE START BYTE = 80 BYTES = 8 UNIT = "N/A" MISSING_CONSTANT = 16#0000# DESCRIPTION = "Active mode results Hex value as 16#xxxx#. The possible values are: 8001 Invalid register address. 8002 Error verifying register write. 8004 Error accessing power register. 8008 MUX setting not allowed. 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement is already running. 0040 Error during writing to instrument. 0080 Error during reading from instrument. 0100 Error using ADC of C-DPU. 0200 Error during DAC table generation. 0400 Calculated number of samples > N SAMP MAX. 8800 C-DPU memory exhausted. 9000 Measurement time out. 2000 Invalid command parameter. 8000 Flag indicates fatal error. " END OBJECT = COLUMN

The DAC table is described by the following TABLE object.

| OBJECT | = AMTESTDAC_TABLE |
|--------------------|---------------------|
| NAME | = AMTESTDAC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 256 |
| COLUMNS | = 5 |
| ROW_BYTES | = 60 |
| ^STRUCTURE | = "PP_AMT_DACC.FMT" |
| END_OBJECT | = AMTESTDAC_TABLE |

The structure of the DAC table is described in the file PP_AMT_DACC.FMT.

OBJECT = COLUMN

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| NAME | = "SESAME SEQ ID" |
|-------------|--|
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "DAC TIME OFFSET" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 48 |
| BYTES | = 7 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F7.3" |
| DESCRIPTION | = "DAC time offset from start of wave" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "DAC_VOLTAGE" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 56 |
| BYTES | = 7 |
| UNIT | = "VOLT" |
| FORMAT | = "F7.3" |
| DESCRIPTION | = "Transmitter electrode difference voltage " |
| END_OBJECT | = COLUMN |
| | |

The receiver time series is described by the following TABLE object.

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| OBJECT | = AMTESTRX_TABLE |
|--------------------|--------------------|
| NAME | = AMTESTRX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 77 |
| ^STRUCTURE | = "PP_AMT_RXC.FMT" |
| END_OBJECT | = AMT_RX_TABLE |

The structure of the receiver time series table is described in the file PP_AMT_RXC.FMT.

| | - 00111001 |
|-------------|---|
| OBJECT | = COLUMN |
| NAME | = "SESAME_SEQ_ID" |
| — | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | — |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RX_TIME " |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 48 |
| BYTES | = 8 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F8.3" |
| DESCRIPTION | = "Relative to start time" |
| END_OBJECT | = COLUMN |
| | |

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| OBJECT | = COLUMN |
|-------------|------------------------------|
| NAME | = "RX_POTENTIAL_DIFFERENCE" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 57 |
| BYTES | = 8 |
| UNIT | = "VOLT" |
| FORMAT | = "F8.3" |
| DESCRIPTION | = "RX potential difference " |
| END_OBJECT | = COLUMN |

The transmitter time series is described by the following TABLE object.

| OBJECT | = AMTESTTX_TABLE |
|--------------------|--------------------|
| NAME | = AMTESTTX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 68 |
| ^STRUCTURE | = "PP_AMT_TXC.FMT" |
| END_OBJECT | = AMTESTTX_TABLE |

The structure of the transmitter TABLE object is defined in the file PP_AMT_TXC.FMT.

| OBJECT | = COLUMN |
|-----------------|--|
| NAME | = "SESAME SEQ ID" |
| DATA_TYPE | |
| START BYTE | — |
| _ | = 6 |
| UNIT | = "N/A" |
| | = "I6" |
| | = "Sequence ID in the current data file" |
| END OBJECT | = Sequence ID In the cultent data life = COLUMN |
| END_OBJECT | - COLOMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| START_BYTE | = 8 |
| — | = 2.3 |
| | = "Measurement start time (UTC in PDS standard |
| DESCRIPTION | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| END_OBJECT | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA TYPE | = ASCII INTEGER |
| _ START_BYTE | — |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | |

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|----------------------------|--------------------------------------|-----------------|---|
| | CDMS RSST (see SESAME Ready Messa | ige)" | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TX_TIME " | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 48 | | |
| BYTES | = 8 | | |
| UNIT | = "MILLISECOND" | | |
| FORMAT | = "F8.3" | | |
| DESCRIPTION | = "Relative to start time" | | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "TX_CURRENT" | | |
| DATA_TYPE | = ASCII_REAL | | |
| START_BYTE | = 57 | | |
| BYTES | = 9 | | |
| UNIT | = "MILLIAMPERE" | | |
| FORMAT | = "F9.6" | | |
| DESCRIPTION | = "Tx current at electronics' transr | nitter outpu | it " |
| END_OBJECT | = COLUMN | | |

4.3.3.4.2.2 PP Health Check (HC) data

Following is an example of PDS files corresponding to an HC measurement.

SES_FS3_PHC_070929214512_HC.LBL (label) SES_FS3_PHC_070929214512_HC.TAB (parameters)

The HC data are described in the following TABLE object (simple detached label). All values are given as voltages or currents.

| OBJECT | = SES_PHC_TABLE |
|--------------------|-----------------|
| NAME | = "SES_PHC" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 14 |
| ROW_BYTES | = 144 |
| ^STRUCTURE | = "PP_HCC.FMT" |
| END_OBJECT | = SES_PHC_TABLE |

The structure of the TABLE object is defined in the file PP_HCC.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| START BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LP_VALUE" |
| | = ASCII INTEGER |
| DATA_TYPE | = 48 |
| START_BYTE | = 40 |
| BYTES | = 5 = "N/A" |
| UNIT FORMAT | |
| | = "I5" |
| DESCRIPTION | <pre>= "Result count of Langmuir probe measurement/not calibrated "</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "ADC_OFFSET" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 54 |
| BYTES | = 7 |
| UNIT | = "VOLT" |
| FORMAT | = "F7.4" |
| DESCRIPTION | = "Should be close to 0 V" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "-2.5V REF" |
| DATA TYPE | = ASCII REAL |
| | — |
| - BYTES | = 7 |
| UNIT | = "VOLT" |
| FORMAT | = "F7.4" |
| DESCRIPTION | = "-2.5V REF and +2.5V REF should be nearly |
| END OBJECT | symmetrical to ADC offset" = COLUMN |
| | - 00100100 |

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| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "+2.5V_REF" |
| DATA_TYPE | |
| START_BYTE | = 70 |
| BYTES | = 7 |
| UNIT | = "VOLT" |
| FORMAT | = "F7.4" |
| DESCRIPTION | = "-2.5V REF and +2.5V REF should be nearly |
| | symmetrical to ADC offset" |
| END_OBJECT | = COLUMN |
| | |
| | = COLUMN |
| | = "DELTA" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 78 |
| BYTES | = 7 |
| UNIT | = "VOLT" |
| FORMAT | = "F7.4" |
| DESCRIPTION | = "Differential value -Y foot - +Y foot" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LEG+Y_RX1" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 86 |
| BYTES | = 8 |
| UNIT | = "MILLIVOLT" |
| | = "F8.3" |
| DESCRIPTION | = "Direct voltage from receiver 1 at +Y leg (at 20C)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LEG-Y_RX2" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 95 |
| BYTES | = 8 |
| UNIT | = "MILLIVOLT" |
| FORMAT | = "F8.3" |
| DESCRIPTION | = "Direct voltage from receiver 2 at -Y leg (at 20C)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LEG+X_TX1" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 104 |
| BYTES | = 9 |
| UNIT | = "MILLIAMPERE" |
| FORMAT | = "F9.6" |
| DESCRIPTION | = "Transmitter current at electrode 1. |
| | No voltage applied. |
| | Should be close to 0 mA" |
| END_OBJECT | = COLUMN |
| — | |

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| OBJECT | = COLUMN |
|------------------|--|
| NAME | = "MUPUS PEN TX2" |
| DATA TYPE | |
| — | = 114 |
| BYTES | = 9 |
| | = "MILLIAMPERE" |
| FORMAT | |
| | = "Transmitter current at electrode 2. |
| | No voltage applied. |
| | Should be close to 0 mA" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "APXS_TX3" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 124 |
| BYTES | = 9 |
| | = "MILLIAMPERE" |
| | = "F9.6" |
| DESCRIPTION | = "Transmitter current at electrode 3. |
| | No voltage applied. |
| | Should be close to 0 mA" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "ERROR_CODE" |
| DATA TYPE | — |
| - START BYTE | — |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 16#0000# |
| | = "Hex value as 16#xxxx#. The possible values are: |
| | 8001 Invalid register address. |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. |
| | 8020 Tried to start measurement but a measurement |
| | is already running. |
| | 0040 Error during writing to instrument. |
| | 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples > N_SAMP_MAX. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END_OBJECT | = COLUMN |

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This measurement sequence is mainly used for ground tests and is not a regular flight measurement. Following is an example of PDS files corresponding to an LM measurement.

SES_FS3_PLM_070929214512_LM.LBL (label)

SES_FS3_PLM_070929214512_LM.TAB (parameters)

The LM data are described in the following TABLE object (simple detached label).

| OBJECT | = SES_PLM_TABLE |
|--------------------|-----------------|
| NAME | = "SES_LM" |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 17 |
| COLUMNS | = 5 |
| ROW_BYTES | = 64 |
| ^STRUCTURE | = "PP_LMC.FMT" |
| END_OBJECT | = SES_PLM_TABLE |

The structure of the TABLE object is defined in the file PP_LMC.FMT.

/* PP Langmuir Probe measurement /calibrated, version 2, 2015-11-14*/ OBJECT = COLUMN = "SESAME_SEQ_ID" NAME DATA TYPE = ASCII INTEGER START BYTE = 1 = 6 BYTES FORMAT = "N/A" FORMAT = "I6" DESCRIPTION = "Sequence ID in the current data file" OBJECT = COLUMN END OBJECT = COLUMN OBJECT = COLUMN = "UTC" NAME = TIME DATA TYPE START BYTE = 8 BYTES = 23 = "Measurement start time (UTC in PDS standard DESCRIPTION format YYYY-MM-DDThh:mm:ss.sss)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "SESAME LOCAL TIME" DATA_TYPE = ASCII_INTEGER START BYTE = 32 BYTES = 15 FORMAT = "I15" DESCRIPTION = "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END OBJECT = COLUMN

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| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "INTEGRATION_TIME" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 48 |
| BYTES | = 8 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F8.4" |
| DESCRIPTION | = "Integration time until trigger limit reached" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "PLASMA_WAVE_AMPLITUDE" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 57 |
| BYTES | = 5 |
| | |
| UNIT | = "MILLIVOLT" |
| UNIT FORMAT | = "MILLIVOLT" = "F5.2" |
| | = "F5.2" |
| FORMAT | = "F5.2" = "99.99" |

4.3.3.4.2.4 PP Passive Mode Test (PMTEST)

The PP PMTEST data are organized as tables containing parameters, selectable analog channel time series and receiver (Rx) time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to three data files. The parameters are given as calibrated voltages or frequencies where possible, the time series are given with a time offset relative to the first sample and voltages for each time series values, calibrated for pre-amplifier temperatures of +20°C. For actual temperatures the values have to be reduced according to the ratio of the preamplifier amplification, nominally 8.1, but at temperatures of -160°C close to 6.

Following is an example of PDS files corresponding to a PMTEST measurement.

```
SES_FS3_PPM_070929214512_TEST.LBL (label)
SES_FS3_PPM_070929214512_TPAR.TAB (parameters)
SES_FS3_PPM_070929214512_TCH.TAB (parameters)
SES_FS3_PPM_070929214512_TRX.TAB (receiver time series)
```

The PMTEST parameters are described in the following TABLE object (simple detached label).

| OBJECT | = PMTEST_PAR_TABLE |
|-----------------|----------------------|
| NAME | = "PMTEST_PAR" |
| INTERCHANGE_FOF | RMAT = ASCII |
| ROWS | = 12 |
| COLUMNS | = 11 |
| ROW_BYTES | = 114 |
| ^STRUCTURE | = "PP_PMT2_PARC.FMT" |
| END_OBJECT | = PMTEST_PAR_TABLE |

The structure of the parameters table is described in the file PP_PMT2_PARC.FMT.

OBJECT = COLUMN NAME = "SESAME_SEQ_ID"

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"

| | 5 |
|-----------------------|---|
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | |
| BYTES | = 23 |
| DESCRIPTION | <pre>= "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)"</pre> |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| — | = ASCII_INTEGER |
| START_BYTE | |
| BYTES | = 15 |
| FORMAT DESCRIPTION | |
| | (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LP_INT_INC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 48 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Time increment duration per integrator unit " |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LP_VALUE" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 58 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Integration time of Langmuir probe measurement |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "LP_MEAS_ERR" |
| DATA TYPE | |
| _ | - |

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| | - (0 |
|------------------|---|
| START_BYTE | |
| BYTES | - |
| | = "N/A" |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Error code for LP measurement. |
| | Hex value as 16#xxxx#. The possible values are: |
| | 8001 Invalid register address. |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. |
| | 8020 Tried to start measurement but a measurement is already running. |
| | 0040 Error during writing to instrument. |
| | 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples > N SAMP MAX. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END OBJECT | = COLUMN |
| — | |
| OBJECT | = COLUMN |
| NAME | = "TIME INC" |
| DATA TYPE | = ASCII REAL |
| - | = 77 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Time increment between samples" |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "NB SAMPLES" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 87 |
| BYTES | = 5 |
| UNIT | = "N/A" |
| FORMAT | = "I5" |
| DESCRIPTION | = "Number of used samples (excluding skipped samples) " |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "ERROR_CODE" |
| DATA_TYPE | = ASCII_INTEGER |
| START BYTE | = 93 |
| _ BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING_CONSTANT | = 16#0000# |
| DESCRIPTION | |
| | 8001 Invalid register address. |
| | |

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|----------------------------|---------------|--|--|---|
| | 8002 Errc | or verifying register wr | cite. | |
| | 8004 Errc | or accessing power regis | ster. | |
| | | setting not allowed. | | |
| | | or accessing PP RAM. | 1 | |
| | | ed to start measurement already running. | but a measu | irement |
| | | or during writing to ins | trument | |
| | | or during reading from i | | |
| | | or using ADC of C-DPU. | | |
| | 0200 Errc | or during DAC table gene | eration. | |
| | 0400 Calc | culated number of sample | es > N_SAMP_ | MAX. |
| | 8800 C-DF | PU memory exhausted. | | |
| | 9000 Meas | surement time out. | | |
| | 2000 Inva | alid command parameter. | | |
| | - | g indicates fatal error. | " | |
| END_OBJECT | = COLUMN | | | |
| OBJECT | = COLUMN | | | |
| NAME | = "NB_FREQ_BI | INS" | | |
| DATA TYPE | = ASCII INTEG | | | |
| - START BYTE | = 102 | | | |
| BYTES | = 2 | | | |
| UNIT | = "N/A" | | | |
| FORMAT | = "12" | | | |
| DESCRIPTION | = "Number of | frequency bins " | | |
| END_OBJECT | = COLUMN | | | |
| OBJECT | = COLUMN | | | |
| NAME | = "MATH ERR C | 'ODE." | | |
| DATA TYPE | = ASCII INTEG | | | |
| - START BYTE | = 105 | | | |
| - BYTES | = 8 | | | |
| UNIT | = "N/A" | | | |
| MISSING_CONSTANT | = 16#0000# | | | |
| DESCRIPTION | = "Indicates | errors, which can only | occur durir | ıg |
| | on-board d | lata reduction (hex valu | ie as 16#xxx | <x#).< td=""></x#).<> |
| | 0001 Redu | ace: number of vector el | ements odd | or less |
| | | n 2; fatal. | | |
| | | and: less than four elem | ents in ing | put |
| | | much data for analysis; | truncating | 1. |
| | | few data for analysis; | | |
| | | l number of waves is not | | |
| | trur | ncated. | | |
| | | the expected number of the ered arrays; fatal. | elements ir | 1 |
| | | ment for sine table() r | ot in valio | l range |
| | | deg2 <=720. | ICC III VAII(| a runge |
| | 0080 Over | flow in divsin() or res | sult inexact | Ξ. |
| | | few data for trimmed me alar mean used. | ean calculat | cion; |
| | - | lata for warr.mean; part | cicular: and | alysis |
| | | ds no data. | | |
| | | | | |



END OBJECT

The PMTEST receiver data are described in the following TABLE object (simple detached label).

| OBJECT | = PMT_RX_TABLE |
|--------------------|---------------------|
| NAME | = PMT_RX |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 66 |
| ^STRUCTURE | = "PP_PMT2_RXC.FMT" |
| END_OBJECT | = PMT_RX_TABLE |

The structure of the receiver time series table is described in the file PP_PMT2_RXC.FMT.

| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | = ASCII INTEGER |
| | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| - | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of $1/32$ seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_OFFSET " |
| DATA_TYPE | = ASCII_REAL |
| | |

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| START_BYTE | = 48 |
|-------------|--|
| BYTES | = 7 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F7.3" |
| DESCRIPTION | = "Time offset from first sample" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "POTENTIAL_DIFF" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 56 |
| BYTES | = 8 |
| UNIT | = "MILLIVOLT" |
| FORMAT | = "F8.3" |
| DESCRIPTION | = "Potential Difference between +Y and -Y foot " |
| END_OBJECT | = COLUMN |
| | |

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4.3.3.4.3.1 PP Active mode test

During an active mode test, one active PP measurement is performed. Adjusted and measured values (DAC table read back from PP memory, time series of transmitter current and receiver voltage samples) are sent to ground. All values are calibrated according to frequencies or voltages where possible. Telemetry concludes with the results of the on-board data evaluation. Adjustable parameters of command active mode test are the configuration of electrodes, the transmitting frequency and amplitude and the number of sine waves. Because telemetry contains the raw time series data and the results of the on-board evaluation it is possible to check both, details of the time series and the correct working of the data evaluation.

The PP AMTEST2 data are organized as tables containing parameters including the on-board evaluation results, the DAC table read back from PP memory, transmitter and receiver time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to four data files.

Following is an example of PDS files corresponding to an AMTEST2 measurement.

SES_FS3_PAM_070929214512_TEST.LBL (label)

SES_FS3_PAM_070929214512_TPAR.TAB (parameters) SES_FS3_PAM_070929214512_TDAC.TAB (DAC table) SES_FS3_PAM_070929214512_TTX.TAB (transmitter time series) SES_FS3_PAM_070929214512_TRX.TAB (receiver time series)

The parameters are described by the following TABLE object.

| OBJECT | = AMT2_PARC_TABLE |
|--------------------|----------------------|
| NAME | = AMT2_PARC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 13 |
| ROW_BYTES | = 111 |
| ^STRUCTURE | = "PP_AMT2_PARC.FMT" |
| END_OBJECT | = AMT2_PARC_TABLE |

The structure of the parameters table is described in the file PP_AMT2_PARC.FMT.

/* PP AMTEST2 parameter settings / calibrated, version 3, 2015-12-16 */

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| OBJECT | = COLUMN |
|-----------------------|---|
| NAME | = "SESAME SEQ ID" |
| | = ASCII INTEGER |
| | — |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| | = "Sequence ID in the current data file" |
| END OBJECT | - |
| THP_OPOPEL | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| START BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| DESCRIPTION | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| | = ASCII INTEGER |
| START BYTE | — |
| BYTES | = 52 |
| | = "15" = "115" |
| FORMAT DESCRIPTION | |
| END_OBJECT | <pre>(SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" = COLUMN</pre> |
| | |
| OBJECT | = COLUMN |
| NAME | = "SENSOR_SETTINGS_USED" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 48 |
| BYTES | = 7 |
| UNIT | = "N/A" |
| DESCRIPTION | <pre>= "Used electrode combination as 3-digit hexadecimal code 16#abi# with the following meaning: a: electrode connected to the TX A output. Possible values: 0 [none], 1 [+X leg], 2 [MUPUS PEN] b: electrode connected to the TX B output. Possible values: 0 [none], 2 [MUPUS PEN], 3 [APX]</pre> |
| | i: input channel Possible values: |
| | |

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| | | | 0 [potential difference] |
|--------------|-------------|---|--|
| | | | 1 [current at +X leg] |
| | | | 2 [current at MUPUS PEN] |
| | | | 3 [current at APX] |
| | | | <pre>4 [direct measurement at +Y foot]</pre> |
| | | | 5 [direct measurement at - foot] |
| | | | 6 [reference voltage -2.5 V] |
| | | | 7 [reference voltage +2.5 V] " |
| END_ | OBJECT | = | COLUMN |
| 0 D T | | | ~~~~~~~ |
| OBJE | | | COLUMN |
| | | | "NOMINAL_FREQUENCY" |
| | DATA_TYPE | | |
| | START_BYTE | | |
| | BYTES | = | 5 |
| | UNIT | = | "HZ" |
| | FORMAT | = | "15" |
| | DESCRIPTION | = | "Nominal transmitter frequency" |
| END_ | OBJECT | = | COLUMN |
| | | | |
| OBJE | CT | = | COLUMN |
| | NAME | = | "CORRECTED_FREQUENCY" |
| | DATA_TYPE | | — |
| | START_BYTE | | — |
| | — | = | |
| | | | "HZ" |
| | | | |
| | | | "F8.2" |
| | | | "Corrected transmitter frequency" |
| END_OBJECT = | | = | COLUMN |
| OBJE | CT | = | COLUMN |
| | NAME | = | "NUMBER_OF_WAVES" |
| | DATA_TYPE | = | ASCII INTEGER |
| | START BYTE | | 71 |
| | BYTES | = | 2 |
| | UNIT | = | "N/A" |
| | FORMAT | = | "12" |
| | | | "Number of generated transmitter sine waves" |
| END | | | COLUMN |
| | - | | |
| OBJE | СТ | = | COLUMN |
| | NAME | | "RX SAMPLING FREQUENCY" |
| | DATA TYPE | | |
| | START BYTE | | — |
| | — | | |
| | - | | |
| | | | "HZ" |
| | FORMAT | | "F8.1" |
| | | | "Receiver sampling frequency" |
| END_ | OBJECT | = | COLUMN |
| OBJE | СТ | = | COLUMN |
| | NAME | | "RX SAMPLING FREQUENCY" |
| | DATA TYPE | | ASCII REAL |
| | | - | |

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| START_BYTE | = 83 |
|------------------|---|
| BYTES | = 8 |
| UNIT | = "HZ" |
| FORMAT | = "F8.1" |
| DESCRIPTION | = "Transmitter DAC sampling frequency" |
| | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "NO_OF_DAC_VALUES" |
| DATA_TYPE | = ASCII_INTEGER |
| | = 92 |
| BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| DESCRIPTION | = "DAC vector length" |
| | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "TX OUT DAMPING" |
| DATA TYPE | |
| START BYTE | _ |
| — | = 1 |
| UNIT | = "N/A" |
| FORMAT | = "I1" |
| DESCRIPTION | = "TX Voltage Amplitude Reduction. |
| | The possible values are: |
| | 0 maximum amplitude. |
| | 1 half amplitude. |
| | 2 quarter amplitude. |
| | 3 1/8 amplitude. |
| | 4 1/16 amplitude." |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "POINTS PER WAVE" |
| DATA TYPE | |
| - START BYTE | = 98 |
| _ BYTES | = 3 |
| UNIT | = "N/A" |
| FORMAT | = "I3" |
| MISSING_CONSTANT | |
| | = "Number of points per wave used by receiver " |
| END OBJECT | = COLUMN |
| | |

The DAC table is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMT_DACC_TABLE |
|--------------------|---------------------|
| NAME | = AMTESTDACC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 256 |
| COLUMNS | = 5 |
| ROW_BYTES | = 65 |
| ^STRUCTURE | = "PP_AMT_DACC.FMT" |
| | |

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END_OBJECT

= AMT_DACC_TABLE

The structure of the DAC table is described in the file PP_AMT_DACC.FMT.

/* PP AMTEST / AMTEST2 DAC table entry, version 2, 2015-11-14 */ OBJECT = COLUMN = "SESAME SEQ ID" NAME DATA TYPE = ASCII INTEGER START BYTE = 1 BYTES = 6 UNIT = "N/A" = "I6" FORMAT DESCRIPTION = "Sequence ID in the current data file" END OBJECT = COLUMN OBJECT = COLUMN = "UTC" NAME DATA TYPE = TIME START BYTE = 8 BYTES = 23 DESCRIPTION = "Measurement start time (UTC in PDS standard format YYYY-MM-DDThh:mm:ss.sss)" = COLUMN END OBJECT OBJECT = COLUMN = "SESAME LOCAL TIME" NAME DATA TYPE = ASCII INTEGER START BYTE = 32 = 15 BYTES FORMAT = "I15" = "Measurement start time. SESAME local time DESCRIPTION (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" END OBJECT = COLUMN OBJECT = COLUMN NAME = "DAC TIME OFFSET" = ASCII_REAL DATA_TYPE START BYTE = 48 BYTES = 7 = "MILLISECOND" UNIT = "F7.3" FORMAT DESCRIPTION = "DAC time offset from start of wave" END_OBJECT = COLUMN OBJECT = COLUMN = "DAC VOLTAGE" NAME = ASCII_REAL DATA_TYPE START BYTE = 56 = 7 BYTES

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|----------------------------|-------------------------------------|--|---|
| UNIT | = "VOLT" | | |
| FORMAT | = "F7.3" | | |
| DESCRIPTION | = "Transmitter electrode difference | voltage " | |
| END_OBJECT | = COLUMN | | |

The receiver time series is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMT_RXC_TABLE |
|--------------------|--------------------|
| NAME | = AMTESTRXC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 67 |
| ^STRUCTURE | = "PP_AMT_RXC.FMT" |
| END_OBJECT | = AMT_RXC_TABLE |

The structure of the receiver time series table is described in the file PP_AMT_RXC.FMT.

| OBJECT | = COLUMN |
|---------------------|--|
| NAME | = "SESAME SEQ ID" |
| DATA TYPE | = SESAME_SEQ_ID = ASCII INTEGER |
| - | = 1 |
| START_BYTE BYTES | - 1 = 6 |
| - | = 0 = "N/A" |
| UNIT | |
| FORMAT | = "I6" |
| | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| | |
| DATA_TYPE | = TIME = 8 |
| START_BYTE | - |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| DATA TYPE | |
| | = 32 |
| _ BYTES | = 15 |
| FORMAT | = "115" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "RX_TIME " |
| | - |

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| DATA_TYPE | = | ASCII_REAL |
|-------------|---|----------------------------|
| START_BYTE | = | 48 |
| BYTES | = | 8 |
| UNIT | = | "MILLISECOND" |
| FORMAT | = | "F8.3" |
| DESCRIPTION | = | "Relative to start time" |
| END_OBJECT | = | COLUMN |
| | | |
| OBJECT | = | COLUMN |
| NAME | = | "RX_POTENTIAL_DIFFERENCE" |
| DATA_TYPE | = | ASCII_REAL |
| START_BYTE | = | 57 |
| BYTES | = | 8 |
| UNIT | = | "VOLT" |
| FORMAT | = | "F8.3" |
| DESCRIPTION | = | "RX potential difference " |
| END_OBJECT | = | COLUMN |
| | | |

The transmitter time series is identical to the FM1 version and is described by the following TABLE object.

| OBJECT | = AMT_TX_TABLE |
|--------------------|--------------------|
| NAME | = AMT_TXC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 68 |
| ^STRUCTURE | = "PP_AMT_TXC.FMT" |
| END_OBJECT | = AMT_TX_TABLE |
| | |

The structure of the transmitter TABLE object is defined in the file PP_AMT_TXC.FMT.

/* PP AMTEST2 Tx table entry, version 2, 2015-11-14 */

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| — | |

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| OBJECT | = COLUMN |
|-------------|---|
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | — |
| START_BYTE | |
| BYTES | |
| | = "I15" |
| DESCRIPTION | "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TX_TIME " |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 48 |
| BYTES | = 8 |
| UNIT | = "MILLISECOND" |
| FORMAT | = "F8.3" |
| DESCRIPTION | = "Relative to start time" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TX_CURRENT" |
| DATA_TYPE | = ASCII_REAL |
| | = 57 |
| BYTES | = 9 |
| UNIT | = "MILLIAMPERE" |
| FORMAT | = "F9.6" |
| DESCRIPTION | = "Tx current at electronics' transmitter output " |
| END_OBJECT | |
| | |

4.3.3.4.3.2 PP Health Check (HC) data

Same as FM1

4.3.3.4.3.3 PP Langmuir Probe Test (LM) data

Same as FM1

4.3.3.4.3.4 PP Passive Mode (PM) data

The PP PM data are organized as tables containing parameters and power spectra. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to two data files.

Following is an example of PDS files corresponding to a PM measurement.

SES_FS3_PPM_070929214512_PM.LBL (label) SES_FS3_PPM_070929214512_PAR.TAB (parameters) SES_FS3_PPM_070929214512_POW.TAB (power spectrum)

The parameters are described by the following TABLE object.

| OBJECT | = PM2_PAR_TABLE |
|--------|-----------------|
| NAME | = PM2PAR |

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| INTERCHANGE_FORMAT | = ASCII |
|--------------------|---------------------|
| ROWS | = 1 |
| COLUMNS | = 11 |
| ROW_BYTES | = 115 |
| ^STRUCTURE | = "PP_PM2_PARC.FMT" |
| END_OBJECT | = PM2_PAR_TABLE |

The structure of the parameters TABLE object is described in the file PP_PM2_PARC.FMT.

| OBJECT | = COLUMN |
|-------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "16" |
| | = "Sequence ID in the current data file" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA TYPE | = TIME |
| - | = 8 |
| BYTES | = 23 |
| | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME LOCAL TIME" |
| DATA TYPE | |
| | — |
| — | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | = "Measurement start time. SESAME local time |
| | (SLT) runs with a resolution of 1/32 seconds. |
| | SLT represents the least significant 32 bits |
| | of LOBT. The most significant 5 bits are in |
| | CDMS RSST (see SESAME Ready Message)" |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LP_INT_INC" |
| DATA_TYPE | = ASCII_REAL |
| START BYTE | = 48 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Time increment duration per integrator unit " |
| END_OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| NAME | = "LP_VALUE" |
| | |

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| DATA TYPE | = ASCII REAL |
|------------------|---|
| | = 58 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Integration time of Langmuir probe measurement " |
| END OBJECT | = COLUMN |
| _ | |
| OBJECT | = COLUMN |
| | = "LP MEAS ERR" |
| DATA TYPE | |
| — | = 68 |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING CONSTANT | |
| DESCRIPTION | = "Error code for LP measurement as |
| | Hex value 16#xxxx#. The possible values are: |
| | 8001 Invalid register address. |
| | 5 |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. |
| | 8020 Tried to start measurement but a measurement |
| | is already running. |
| | 0040 Error during writing to instrument. |
| | 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples $> N_SAMP_MAX$. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_INC" |
| DATA_TYPE | |
| START_BYTE | = 77 |
| BYTES | |
| UNIT | |
| FORMAT | |
| DESCRIPTION | = "Time increment between samples" |
| END_OBJECT | |
| | |
| OBJECT | = COLUMN |
| NAME | = "NB_SAMPLES" |
| DATA_TYPE | = ASCII_INTEGER |
| _ START_BYTE | — |
| BYTES | |
| UNIT | |
| FORMAT | |
| | = "Number of used samples (excluding skipped samples) " |
| | |

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| END_OBJECT | = COLUMN |
|------------------|--|
| OBJECT | = COLUMN |
| | = "ERROR CODE" |
| DATA TYPE | _ |
| START_BYTE | — |
| BYTES | = 8 |
| UNIT | |
| | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Hex value AS 16#XXXX#. The possible values are: |
| | 8001 Invalid register address. |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. |
| | 8020 Tried to start measurement but a measurement |
| | is already running. |
| | 0040 Error during writing to instrument. |
| | 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples > N_SAMP_MAX. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | = "NB FREQ BINS" |
| DATA TYPE | |
| — | = 102 |
| START_BYTE | |
| BYTES | = 2 |
| UNIT | = "N/A" |
| FORMAT | = "I2" |
| DESCRIPTION | = "Number of frequency bins " |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| NAME | = "MATH ERR CODE" |
| DATA TYPE | = ASCII INTEGER |
| START BYTE | = 105 |
| BYTES | = 8 |
| UNIT | = "N/A" |
| MISSING CONSTANT | |
| DESCRIPTION | = "Indicates errors, which can only occur during |
| | on-board data reduction (hex value). |
| | 0001 Reduce: number of vector elements odd or less |
| | than 2; fatal. |
| | 0002 Expand: less than four elements in input |
| | vector; fatal. |
| | 0004 Too much data for analysis; truncating. |
| | 0004 Too few data for analysis; padding with '128' |
| | toto for acta for analysis, padding with 120 |

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|----------------------------|----------|-----------------------------|--|---|
| | 0010 | Used number of waves is not | a power of | 2; |
| | | truncated. | | |
| | 0020 | Not the expected number of | elements ir | 1 |
| | | filtered arrays; fatal. | | |
| | 0040 | Argument for sine_table() n | ot in valio | l range |
| | | 0<= deg2 <=720. | | |
| | 0080 | Overflow in divsin() or res | ult inexact | |
| | 0100 | Too few data for trimmed me | an calculat | tion; |
| | | regular mean used. | | |
| | 0200 | No data for warr.mean; part | icular: and | alysis |
| | | yields no data. | | |
| | 0400 | Passive mode: not enough da | ta in bin. | |
| | 0800 | Not enough memory for data | reduction.' | 1 |
| END_OBJECT | = COLUMN | | | |

The power spectrum is described by the following TABLE object.

| OBJECT | = PM2_POWC_TABLE |
|--------------------|---------------------|
| NAME | = PM2_POWC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 10 |
| COLUMNS | = 5 |
| ROW_BYTES | = 68 |
| ^STRUCTURE | = "PP_PM2_POWC.FMT" |
| END_OBJECT | = PM2_POWC_TABLE |

The structure of the power spectrum TABLE object is described in the file PP_PM2_POWC.FMT

```
/* PP calibrated power values, version 2, 2015-11-14 */
OBJECT = COLUMN
NAME = "SESAME_SEQ_ID"
   DATA_TYPE
                = ASCII_INTEGER
   _
START_BYTE
                    = 1
   BYTES = 6
UNIT = "N/A"
   UNIT
   UNIT = "N/A"
FORMAT = "I6"
DESCRIPTION = "Sequence ID in the current data file"
END_OBJECT = COLUMN
OBJECT = COLUMN
NAME = "UTC"
 DATA_TYPE = TIME
 START BYTE
                 = 8
 BYTES = 23
 DESCRIPTION = "Measurement start time (UTC in PDS standard
   format YYYY-MM-DDThh:mm:ss.sss)"
END OBJECT
               = COLUMN
OBJECT = COLUMN
   NAME = "SESAME LOCAL TIME"
   DATA_TYPE = ASCII_INTEGER
START_BYTE = 32
```

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```
BYTES
               = 15
              = "I15"
   FORMAT
   DESCRIPTION
                    = "Measurement start time. SESAME local time
   (SLT) runs with a resolution of 1/32 seconds.
    SLT represents the least significant 32 bits
    of LOBT. The most significant 5 bits are in
    CDMS RSST (see SESAME Ready Message)"
END_OBJECT
              = COLUMN
           = COLUMN
OBJECT
   NAME = "CENTER FREQ"
              = ASCII_REAL
   DATA TYPE
   START BYTE
                 = 48
   BYTES
          = 7
   FORMAT
              = "F7.1"
   UNIT = "Hz"
   DESCRIPTION = "Frequency bins Center Frequency +/- 1/3"
END_OBJECT
              = COLUMN
OBJECT
           = COLUMN
   NAME = "VOLTAGE_DENSITY"
   DATA_TYPE = ASCII_REAL
START_BYTE = 56
   BYTES = 10
              = "F10.2"
   FORMAT
   UNIT = "<mV*(Hz**-1/2)>"
   DESCRIPTION = "Voltage Density"
END OBJECT = COLUMN
```

4.3.3.4.3.5 PP Passive Mode Test (PMTEST) data

The PP PMTEST2 data are organized as tables containing parameters, power spectra and receiver (Rx) time series. The tables are kept in separate data files (combined detached labels). Consequently there will be one PDS label pointing to three data files.

Following is an example of PDS files corresponding to an PMTEST measurement.

```
SES_FS3_PPM_070929214512_TEST.LBL (label)
SES FS3 PPM 070929214512 TPAR.TAB (parameters)
SES_FS3_PPM_070929214512_TPOW.TAB (power spectrum)
SES_FS3_PPM_070929214512_TRX.TAB (receiver time series)
```

The parameters are described by the following TABLE object.

| OBJECT | = PMT2_PARC_TABLE |
|--------------------|----------------------|
| NAME | = PMT2_PARC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 1 |
| COLUMNS | = 11 |
| ROW_BYTES | = 115 |
| ^STRUCTURE | = "PP_PMT2_PACR.FMT" |
| END_OBJECT | = PMT2_PARC_TABLE |

The structure of the parameters TABLE object is described in the file PP PMT2 PARC.FMT.

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/* PP PM2 calibrated parameters, version 2, 2015-11-14 */

| OBJECT | = COLUMN |
|----------------|--|
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | |
| START_BYTE | = 1 |
| - | = 6 |
| | = "N/A" |
| | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| | = 23 |
| DESCRIPTION | = "Measurement start time (UTC in PDS standard |
| | format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "SESAME_LOCAL_TIME" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 32 |
| BYTES | = 15 |
| FORMAT | = "I15" |
| DESCRIPTION | <pre>= "Measurement start time. SESAME local time (SLT) runs with a resolution of 1/32 seconds. SLT represents the least significant 32 bits of LOBT. The most significant 5 bits are in CDMS RSST (see SESAME Ready Message)"</pre> |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "LP_INT_INC" |
| DATA_TYPE | _ |
| - | = 48 = 9 |
| BYTES | = "SECOND" |
| UNIT FORMAT | |
| | = "J." = "Time increment duration per integrator unit " |
| | |
| END_OBJECT | = COLUMN |
| OBJECT | = COLUMN |
| | |
| DATA TYPE | = "LP_VALUE" = ascii real |
| — | — |
| - | = 58 |
| BYTES | = 9 - "SECOND" |
| UNIT FORMAT | = "SECOND" - "FQ 7" |
| | |
| | = "Integration time of Langmuir probe measurement " |
| END_OBJECT | = COLUMN |

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| OBJECT | = COLUMN |
|--|--|
| NAME | = "LP_MEAS_ERR" |
| DATA_TYPE | = ASCII_INTEGER = 68 |
| START_BYTE | = 8 |
| BYTES UNIT | |
| | |
| MISSING_CONSTANT | |
| DESCRIPTION | = "Error code for LP measurement. Hex value as 16#xxxx#. The possible values are: |
| | - |
| | 8001 Invalid register address. |
| | 8002 Error verifying register write. |
| | 8004 Error accessing power register. |
| | 8008 MUX setting not allowed. |
| | 8010 Error accessing PP RAM. 8020 Tried to start measurement but a measurement |
| | is already running. |
| | |
| | 0040 Error during writing to instrument. 0080 Error during reading from instrument. |
| | 0100 Error using ADC of C-DPU. |
| | 0200 Error during DAC table generation. |
| | 0400 Calculated number of samples > N SAMP MAX. |
| | 8800 C-DPU memory exhausted. |
| | 9000 Measurement time out. |
| | 2000 Invalid command parameter. |
| | 8000 Flag indicates fatal error. " |
| END OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "TIME_INC" |
| DATA_TYPE | = ASCII_REAL |
| START_BYTE | = 77 |
| BYTES | = 9 |
| UNIT | = "SECOND" |
| FORMAT | = "F9.7" |
| DESCRIPTION | = "Time increment between samples" |
| END_OBJECT | = COLUMN |
| | |
| | |
| OBJECT | = COLUMN |
| NAME | = "NB_SAMPLES" |
| NAME DATA_TYPE | = "NB_SAMPLES" = ASCII_INTEGER |
| NAME DATA_TYPE START_BYTE | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87</pre> |
| NAME DATA_TYPE START_BYTE BYTES | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) "</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) "</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) " = COLUMN</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) " = COLUMN</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT NAME | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) " = COLUMN = "ERROR_CODE"</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT OBJECT NAME DATA_TYPE | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) " = COLUMN = COLUMN = "ERROR_CODE" = ASCII_INTEGER</pre> |
| NAME DATA_TYPE START_BYTE BYTES UNIT FORMAT DESCRIPTION END_OBJECT NAME | <pre>= "NB_SAMPLES" = ASCII_INTEGER = 87 = 5 = "N/A" = "I5" = "Number of used samples (excluding skipped samples) " = COLUMN = COLUMN = "ERROR_CODE" = ASCII_INTEGER</pre> |

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|---------------------------------|---|--|---|
| UNIT | = "N/A" | | |
| MISSING CONSTANT | = 16#0000# | | |
| DESCRIPTION | = "Hex value as 16#xxxx#. The possi | ble values | are: |
| | 8001 Invalid register address. | | |
| | 8002 Error verifying register wr | ite. | |
| | 8004 Error accessing power regis | ter. | |
| | 8008 MUX setting not allowed. | | |
| | 8010 Error accessing PP RAM. | | |
| | 8020 Tried to start measurement | but a measu | urement |
| | is already running. | | |
| | 0040 Error during writing to ins | trument. | |
| | 0080 Error during reading from i | nstrument. | |
| | 0100 Error using ADC of C-DPU. | | |
| | 0200 Error during DAC table gene | | |
| | 0400 Calculated number of sample | s > N_SAMP | _MAX. |
| | 8800 C-DPU memory exhausted. | | |
| | 9000 Measurement time out. | | |
| | 2000 Invalid command parameter. | | |
| | 8000 Flag indicates fatal error. | " | |
| END_OBJECT | = COLUMN | | |
| OBJECT | = COLUMN | | |
| NAME | = "NB_FREQ_BINS" | | |
| DATA_TYPE | = ASCII INTEGER | | |
| _ START BYTE | = 102 | | |
| BYTES | = 2 | | |
| UNIT | = "N/A" | | |
| FORMAT | = "I2" | | |
| DESCRIPTION | = "Number of frequency bins " | | |
| END_OBJECT | = COLUMN | | |
| | | | |
| OBJECT | = COLUMN | | |
| NAME | = "MATH_ERR_CODE" | | |
| DATA_TYPE | = ASCII_INTEGER | | |
| START_BYTE | = 105 = 8 | | |
| BYTES | = ° = "N/A" | | |
| UNIT MISSING CONSTANT | | | |
| MISSING_CONSTANT DESCRIPTION | <pre>= 16#0000# = "Indicates errors, which can only</pre> | occur duri | o.a. |
| DESCRIPTION | on-board data reduction (hex valu | | - |
| | 0001 Reduce: number of vector el | | ·· • |
| | than 2; fatal. | ellencs oud | 01 1835 |
| | 0002 Expand: less than four elem | ente in in | |
| | vector; fatal. | | Juc |
| | 0004 Too much data for analysis; | truncatin | r |
| | 0008 Too few data for analysis; | | - |
| | 0010 Used number of waves is not | | |
| | truncated. | 1 1 1 1 1 1 1 | |
| | 0020 Not the expected number of | elements in | n |
| | filtered arrays; fatal. | | |
| | 0040 Argument for sine table() n | ot in valid | d range |
| | 0<= deg2 <=720. | | - |
| | 0080 Overflow in divsin() or res | ult inexac [†] | t. |
| | | | |

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|----------------------------|----------|--|--|---|
| | 0100 | Too few data for trimmed me regular mean used. | an calculat | cion; |
| | 0200 | No data for warr.mean; part yields no data. | icular: ana | alysis |
| | 0400 | Passive mode: not enough da | ta in bin. | |
| | 0800 | Not enough memory for data | reduction.' | 1 |
| END_OBJECT | = COLUMN | | | |

The calibrated power spectrum is described by the following TABLE object.

| OBJECT | = PMT2_POWC_TABLE |
|--------------------|---------------------|
| NAME | = PMT2_POWC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 10 |
| COLUMNS | = 5 |
| ROW_BYTES | = 68 |
| ^STRUCTURE | = "PP_PM2_POWC.FMT" |
| END_OBJECT | = PMT2_POWC_TABLE |

The structure of the power TABLE object is identical to PM2C and is described in the file PP_PM2_POWC.FMT

| /* PP calibrated power values, version 2, 2015-11-14 */ |
|---|
| OBJECT = COLUMN |
| NAME = "SESAME_SEQ_ID" |
| DATA_TYPE = ASCII_INTEGER |
| START BYTE = 1 |
| BYTES = 6 |
| UNIT = "N/A" |
| FORMAT = "I6" |
| DESCRIPTION = "Sequence ID in the current data file" END_OBJECT = COLUMN |
| END_OBJECT = COLUMN |
| |
| OBJECT = COLUMN |
| NAME = "UTC" |
| DATA_TYPE = TIME |
| START_BYTE = 8 |
| BYTES = 23 |
| DESCRIPTION = "Measurement start time (UTC in PDS standard |
| format YYYY-MM-DDThh:mm:ss.sss)" |
| END_OBJECT = COLUMN |
| |
| OBJECT = COLUMN |
| NAME = "SESAME_LOCAL_TIME" |
| DATA_TYPE = ASCII_INTEGER |
| START_BYTE = 32 |
| BYTES = 15 |
| FORMAT = "I15" |
| DESCRIPTION = "Measurement start time. SESAME local time |
| (SLT) runs with a resolution of $1/32$ seconds. |
| SLT represents the least significant 32 bits |
| of LOBT. The most significant 5 bits are in |

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CDMS RSST (see SESAME Ready Message)" END_OBJECT = COLUMN OBJECT = COLUMN NAME = "CENTER FREQ"

| | 1111111 | |
|-----|-------------|--|
| | DATA_TYPE | = ASCII_REAL |
| | START_BYTE | = 48 |
| | BYTES | = 7 |
| | FORMAT | = "F7.1" |
| | UNIT | = "Hz" |
| | DESCRIPTION | <pre>s = "Frequency bins Center Frequency +/- 1/3"</pre> |
| END | _OBJECT | = COLUMN |
| | | |
| OBJ | ECT | = COLUMN |
| | NAME | = "VOLTAGE_DENSITY" |
| | DATA_TYPE | = ASCII_REAL |
| | START_BYTE | = 56 |
| | BYTES | = 10 |
| | FORMAT | = "F10.2" |
| | UNIT | = " <mv*(hz**-1 2)="">"</mv*(hz**-1> |
| | DESCRIPTION | <pre>N = "Voltage Density"</pre> |
| END | _OBJECT | = COLUMN |
| | | |

The receiver data are described by the following TABLE object.

| OBJECT | = PMT2RXC_TABLE |
|--------------------|---------------------|
| NAME | = PM2TRXC |
| INTERCHANGE_FORMAT | = ASCII |
| ROWS | = 8192 |
| COLUMNS | = 5 |
| ROW_BYTES | = 66 |
| ^STRUCTURE | = "PP_PMT2_RXC.FMT" |
| END_OBJECT | = PMT2RX_TABLE |

The structure of the receiver data TABLE object is described in the file PP_PMT2_RXC.FMT.

/* PP AMTEST2 Calibrated Rx table entry, version 2, 2015-11-14 */

| OBJECT | = COLUMN |
|-------------|--|
| | |
| NAME | = "SESAME_SEQ_ID" |
| DATA_TYPE | = ASCII_INTEGER |
| START_BYTE | = 1 |
| BYTES | = 6 |
| UNIT | = "N/A" |
| FORMAT | = "I6" |
| DESCRIPTION | = "Sequence ID in the current data file" |
| END_OBJECT | = COLUMN |
| | |
| OBJECT | = COLUMN |
| NAME | = "UTC" |
| DATA_TYPE | = TIME |
| START_BYTE | = 8 |
| BYTES | = 23 |

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|-----------------------------|---|--|---------------|
| DESCRIPTION | = "Measurement start time (UTC in PD format YYYY-MM-DDThh:mm:ss.sss)" | S standard | |
| END_OBJECT | = COLUMN | | |
| OBJECT NAME | <pre>= COLUMN = "SESAME_LOCAL_TIME"</pre> | | |
| DATA_TYPE START_BYTE | = ASCII_INTEGER = 32 | | |
| BYTES FORMAT | = 15 = "I15" | | |
| DESCRIPTION | "Measurement start time. SESAME lo (SLT) runs with a resolution of 1/ SLT represents the least signific of LOBT. The most significant 5 b CDMS RSST (see SESAME Ready Messa | 32 seconds. ant 32 bits its are in | |
| END_OBJECT | = COLUMN | - | |
| OBJECT | = COLUMN | | |
| NAME DATA_TYPE | = "TIME_OFFSET " = ASCII_REAL | | |
| START_BYTE BYTES | = 48 = 7 | | |
| UNIT FORMAT | = "MILLISECOND" = "F7.3" | | |
| DESCRIPTION END_OBJECT | <pre>= "Time offset from first sample" = COLUMN</pre> | | |
| OBJECT | = COLUMN | | |
| NAME DATA_TYPE | = "POTENTIAL_DIFF" = ASCII_REAL | | |
| START_BYTE BYTES UNIT | = 56 = 8 = "MILLIVOLT" | | |
| FORMAT DESCRIPTION | <pre>= "F8.3" = "Potential Difference between +Y a</pre> | nd -Y foot | " |
| END_OBJECT | = COLUMN | | |

4.3.3.4.4 SESAME common data object definition

Same as level 2 (see §4.3.2.7.5).

4.3.3.5 Description of Instrument

The description of the instrument can be found in chapter 2.2 and as a brief overview in the INST.CAT catalogue file.

4.3.3.6 Parameters Index File Definition N/A

4.3.3.7 Mission Specific Keywords

N/A

4.3.3.8 Data quality definition (level 3)

4.3.3.8.1 CASSE

Same definition as for level 2 (see §4.3.2.7.1)

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4.3.3.8.2 DIM

Same definition as for level 2 (see 4.3.2.7.2)

4.3.3.8.3 PP

The DATA_QUALITY_ID for PP is defined according to the operating mode as follows.

4.3.3.8.3.1 PP Health Check

DATA_QUALITY_DESC = -1: NOT QUALIFIED

0: Data complete; no errors

- 1: At least one value is replaced by placeholder due to distorted raw data (= "0" or "255")
- 2: N/A
- 3: N/A
- 4: N/A

4.3.3.8.3.2 PP Active Mode and Active Mode Test (PP_AM2, PP_AMTEST2)

- DATA_QUALITY_DESC = -1: NOT QUALIFIED
 - 0: Data complete; no errors
 - 1: <50% QUAL-flags = 0x0F, a few errors
 - 2: 50% to 100% QUAL-flags = 0x0F, many errors
 - 3: N/A
 - 4: N/A

4.3.3.8.3.3 PP Passive Mode and Passive Mode Test (PP_PM2, PP_PMTEST2)

- DATA_QUALITY_DESC = -1: NOT QUALIFIED
 - 0: Data complete; no errors
 - 1: Data distorted; level 2: ID = "1"
 - 2: N/A
 - 3: N/A
 - 4: N/A

4.3.3.8.4 SESAME Health-Check

Same definition as for level 2 (see § 4.3.2.7.4)

5 Appendix

5.1 SESAME and PDS Glossary

- Archive An archive consists of one or more data sets along with all the documentation and ancillary information needed to understand and use the data. An archive is a logical construct independent of the medium on which it is stored.
- Archive Volume, Archive Volume Set A volume is a unit of media on which data products are stored; for example, one CD-ROM or DVD-ROM. An *archive volume* is a volume containing all or part of an archive; that is, data products plus documentation and ancillary files. When an archive spans multiple volumes, they are called an *archive volume set*. Usually the documentation and some ancillary files are repeated on each volume of the set, so that a single volume can be used alone.
- **Catalog Information** Descriptive information about a data set (e.g. mission description, spacecraft description, instrument description), expressed in Object Description Language (ODL), which is suitable for loading into a PDS catalog.
- **Central Electronics (CE)** Complete SESAME electronics in E-Box: *Common Electronics* and the 3 instrument PCBs
- **Common Electronics** Common SESAME electronics in E-Box: Interface board, Common DPU and SESAME Experiment bus.

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- **Data Product** A labeled grouping of data resulting from a scientific observation, usually stored in one file. A product label identifies, describes, and defines the structure of the data. An example of a data product is a planetary image, a spectrum table, or a time series table.
- **Data Set –** An accumulation of data products. A data set together with supporting documentation and ancillary files is an archive.
- E-Box Common container for the PCBs of most ROSETTA Lander sub-units and experiments
- **Experiment** The SESAME experiment set-up, consisting of Common Electronics and the three instruments (CASSE, DIM and PP)
- **Health-Check** Procedure to check the status of a SESAME instrument by dedicated tests, calibrations, and measurements of health-relevant parameters. Health-Checks are solely controlled by the Common DPU. The time duration of health data acquisition is not critical. The whole parameter set may be determined in one cycle within milliseconds or more. The resulting parameter values are fed into the science data stream.
- **Housekeeping** Procedure to check the status of a SESAME instrument by periodic calls of the CDMS, asking SESAME to read out single health-relevant key parameters in a pre-defined cycle. The resulting parameter value is delivered to the CDMS and included in the Lander housekeeping data stream.

A subset of the SESAME housekeeping parameters is extracted by the CDMS to form part of the Lander "Health Status Report" provided for Mission Control. The set of housekeeping parameters form a subset of the health-check parameters.

- **Instrument** The SESAME sub-units CASSE, DIM and PP, each with its own sensor / actuator assembly, the harness and a PCB within the *Central Electronics* (CE).
- **Jobcard, Job Card** Data structure of 32 byte length, especially developed for the CASSE instrument to completely control a CASSE measurement. A CASSE *Jobcard* contains all necessary parameter values (e.g. sampling frequency, "ping" frequency and duration, etc.) defining the complete performance of a measurement.

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5.2 Example of PDS label for CASSE level 2 data product

PDS VERSION ID = PDS3LABEL REVISION NOTE = "2017-02-13, SONC, version 1.0" /* Edited SC data from CASSE Sounding Mode (SONC Level 2) */ DATA SET ID = "RL-C-SESAME-2-FSS-V1.0" DATA_SET_NAME = "ROSETTA-LANDER 67P SESAME 2 FSS V1.0" PRODUCT_ID = "SES_FS2_CSN_1411140016" PRODUCT_CREATION_TIME = 2017-02-13T17:41:41 MISSION_NAME = "INTERNATIONAL ROSETTA MISSION" MISSION_PHASE_NAME = "FIRST SCIENCE SEQUENCE" MISSION ID = ROSETTA INSTRUMENT HOST NAME = "ROSETTA-LANDER" INSTRUMENT_HOST_ID = RL PRODUCT_TYPE = EDR START TIME = 2014-11-14T00:16:05.068 STOP TIME = 2014-11-14T00:25:42.381 SPACECRAFT CLOCK START COUNT = "3/374544893.26" SPACECRAFT CLOCK STOP COUNT = "3/374545471.04" PRODUCER ID = "SONC" PRODUCER FULL NAME = "SCIENCE OPERATIONS AND NAVIGATION CENTER" PRODUCER INSTITUTION NAME = "CNES" INSTRUMENT ID = SESAME = "SURFACE ELECTRIC SOUNDING AND INSTRUMENT_NAME ACOUSTIC MONITORING EXPERIMENT" INSTRUMENT_TYPE = {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "PERMITTIVITY PROBE"} TARGET_NAME = "67P/CHURYUMOV-GERASIMENKO 1 (1969 R1)" = "COMET" TARGET TYPE PROCESSING_LEVEL_ID = "2" DATA_QUALITY_ID = "-1" DATA_QUALITY_DESC = "-1 : NOT QUALIFIED" /* DATA OBJECT DEFINITION */ OBJECT = FILE RECORD_TYPE RECORD_BYTES = FIXED_LENGTH = 176 FILE RECORDS = 2 ^JOBC_TABLE = "SES_FS2_CSN_1411140016_JOBC.TAB"
= JOBC_TABLE OBJECT NAME = "JOB CARD" INTERCHANGE FORMAT = ASCII ROWS COLUMNS = 2 = 29 ROW_BYTES = 176

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^STRUCTURE = "JOB CARD FM3.FMT" END_OBJECT = JOBC_TABLE D_OBJECT = FILE END OBJECT OBJECT = FILE RECORD_TYPE = FIXED LENGTH RECORD BYTES = 189 = 2 ^SEQ_PARAM_TABLE = "SES_FS2_CSN_1411140016_SEQP.TAB" OBJECT = SEQ PARAM TABLE NAME = "SEQ PARAM" INTERCHANGE_FORMAT = ASCII ROWS = 2 = 22 COLUMNS ROW_BYTES = 189 ^STRUCTURE = "SEQ_PARAM_BURS END_OBJECT = SEQ_PARAM_TABLE END_OBJECT = FILE = "SEQ PARAM BURST2 FM3.FMT" OBJECT = FILE RECORD TYPE = FIXED_LENGTH RECORD BYTES = 231 = 42144 FILE RECORDS = "SES FS2 CSN 1411140016 DATA.TAB" ^DATA TABLE = DATA TABLE OBJECT = "DATA" NAME = ASCII INTERCHANGE_FORMAT ROWS = 42144 COLUMNS = 26 ROW BYTES = 231 = "DATA2.FMT" ^STRUCTURE END OBJECT = DATA TABLE END OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD BYTES = 219 FILE_RECORDS = 2 = 2 = "SES_FS2_CSN_1411140016_STAT.TAB" = STAT_TABLE ^STAT TABLE OBJECT = "STAT" NAME INTERCHANGE FORMAT = ASCII ROWS = 2 = 38 COLUMNS ROW BYTES = 219 ^STRUCTURE = "STAT2 FM3.FMT" = STAT_TABLE END OBJECT = FILE END OBJECT

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5.3 Example of PDS label for DIM BC level 2 data product

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= PDS3 PDS VERSION ID LABEL REVISION NOTE = "2017-02-13, SONC, version 1.0" /* Edited SC data from DIM Burst Continuous Mode (SONC Level 2) */ = "RL-C-SESAME-2-FSS-V1.0" DATA SET ID DATA_SET_NAME = "ROSETTA-LANDER 67P SESAME 2 FSS V1.0" PRODUCT_ID = "SES_FS2_DBC_1411130702" PRODUCT CREATION TIME = 2017-02-13T17:41:17 MISSION_NAME = "INTERNATIONAL ROSETTA MISSION" MISSION_PHASE_NAME = "FIRST SCIENCE SEQUENCE" MISSION ID = ROSETTA INSTRUMENT_HOST_NAME = "ROSETTA-LANDER" INSTRUMENT HOST ID = RL = EDR = 2014-11-13T07:02:21.677 PRODUCT TYPE START_TIME STOP TIME = 2014-11-13T07:53:08.397 SPACECRAFT CLOCK START COUNT = "3/374482870.14" SPACECRAFT_CLOCK_STOP_COUNT = "3/374485917.05" = "SONC" PRODUCER ID PRODUCER FULL NAME = "SCIENCE OPERATIONS AND NAVIGATION CENTER" PRODUCER INSTITUTION NAME = "CNES" INSTRUMENT ID = SESAME INSTRUMENT_NAME = "SURFACE ELECTRIC SOUNDING AND ACOUSTIC MONITORING EXPERIMENT" INSTRUMENT_TYPE = {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "PERMITTIVITY PROBE" } = "67P/CHURYUMOV-GERASIMENKO 1 (1969 R1)" TARGET NAME TARGET TYPE = "COMET" PROCESSING LEVEL ID = "2" DATA_QUALITY_ID = "-1" DATA_QUALITY_DESC = "-1 : NOT QUALIFIED" /* DATA OBJECT DEFINITION */ OBJECT = FILE RECORD_TYPE = FIXED LENGTH RECORD BYTES = 71 FILE RECORDS = 6 = v = "SES_FS2_DBC_1411130702_PAR.TAB" = BC_PAR_TABLE ^BC_PAR_TABLE OBJECT NAME = "BC PAR" INTERCHANGE_FORMAT = ASCII ROWS COLUMNS = 6 = 11 ROW_BYTES = 71

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| ^STRUCTURE | = "DIM_BC_PAR.FMT" |
|-------------------|-----------------------------------|
| END_OBJECT | = BC_PAR_TABLE |
| END_OBJECT | = FILE |
| | |
| OBJECT | = FILE |
| RECORD_TYPE | = FIXED_LENGTH |
| RECORD_BYTES | = 16 |
| FILE_RECORDS | = 60 |
| ^BC_AM_TABLE | = "SES_FS2_DBC_1411130702_AM.TAB" |
| OBJECT | = BC_AM_TABLE |
| NAME | = "BC_AM" |
| INTERCHANGE_FORMA | T = ASCII |
| ROWS | = 60 |
| COLUMNS | = 3 |
| ROW_BYTES | = 16 |
| ^STRUCTURE | = "DIM_BC_AM.FMT" |
| END_OBJECT | = BC_AM_TABLE |
| END_OBJECT | = FILE |
| | |
| OBJECT | = FILE |
| RECORD_TYPE | = FIXED_LENGTH |
| RECORD_BYTES | = 318 |
| FILE_RECORDS | = 540 |
| ^BC_BM_TABLE | = "SES_FS2_DBC_1411130702_BM.TAB" |
| OBJECT | = BC_BM_TABLE |
| NAME | = "BC_BM" |
| INTERCHANGE_FORMA | T = ASCII |
| ROWS | = 540 |
| COLUMNS | = 62 |
| ROW_BYTES | = 318 |
| ^STRUCTURE | = "DIM_BC_BM.FMT" |
| END_OBJECT | = BC_BM_TABLE |
| END_OBJECT | = FILE |
| | |

END

5.4 Example of PDS label for PP PM level 2 data product

| PDS_VERSION_ID | = PDS3 |
|------------------------|--|
| LABEL_REVISION_NOTE | = "2017-02-13, SONC, version 1.0" |
| | |
| /* Edited SC data from | m PP Passive Mode (SONC Level 2) */ |
| | |
| DATA_SET_ID | = "RL-C-SESAME-2-FSS-V1.0" |
| DATA_SET_NAME | = "ROSETTA-LANDER 67P SESAME 2 FSS V1.0" |
| PRODUCT_ID | = "SES_FS2_PPM_1411130810" |
| PRODUCT_CREATION_TIME | = 2017-02-13T17:41:35 |
| MISSION_NAME | = "INTERNATIONAL ROSETTA MISSION" |
| MISSION_PHASE_NAME | = "FIRST SCIENCE SEQUENCE" |
| MISSION_ID | = ROSETTA |
| INSTRUMENT_HOST_NAME | = "ROSETTA-LANDER" |
| INSTRUMENT_HOST_ID | = RL |
| | |

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PRODUCT_TYPE = EDR START TIME = 2014-11-13T08:10:28.554 STOP TIME = 2014-11-13T08:13:40.085 SPACECRAFT CLOCK START COUNT = "3/374486957.10" SPACECRAFT CLOCK STOP_COUNT = "3/374487148.27" PRODUCER ID = "SONC" PRODUCER_FULL_NAME = "SCIENCE OPERATIONS AND NAVIGATION CENTER" PRODUCER INSTITUTION NAME = "CNES" INSTRUMENT_ID = SESAME
INSTRUMENT_NAME = "SURFACE ELECTRIC SOUNDING AND ACOUSTIC MONITORING EXPERIMENT" INSTRUMENT_TYPE = {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "DEDMINETULEW_DECODE") "PERMITTIVITY PROBE"} TARGET_NAME TARGET_TYPE = "67P/CHURYUMOV-GERASIMENKO 1 (1969 R1)"
= "COMET" PROCESSING LEVEL ID = "2" DATA_QUALITY_ID = "-1" DATA_QUALITY_DESC = "-1 : NOT QUALIFIED" /* DATA OBJECT DEFINITION */ OBJECT = FILE = FIXED_LENGTH RECORD_TYPE RECORD BYTES = 99 FILE RECORDS = 2 = "SES FS2 PPM 1411130810 PAR.TAB" ^PM PAR TABLE OBJECT = PM PAR TABLE NAME = "PM PAR" INTERCHANGE_FORMAT = ASCII ROWS = 2 COLUMNS = 11 ROW_BYTES = 99 ^STRUCTURE = "PP_PM2_PAR.FMT" END_OBJECT = PM_PAR_TABLE END OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD BYTES = 62 FILE RECORDS = 20 = "SES_FS2_PPM_1411130810_POW.TAB" ^PM POW TABLE OBJECT = PM_POW_TABLE NAME = "PM_POW" INTERCHANGE_FORMAT = ASCII ROWS = 20 = 5 COLUMNS ROW_BYTES = 62 ^STRUCTURE = "PP PM2 POW.FMT"



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END OBJECT END_OBJECT

= PM POW TABLE = FILE

END

Example of PDS label for CASSE level 3 data product 5.5

PDS VERSION ID = PDS3 LABEL REVISION NOTE = "2017-02-13, SONC, version 1.0" /* Edited SC data from CASSE Sounding Mode (SONC Level 3) */ DATA_SET_ID = "RL-C-SESAME-3-FSS-V1.0" DATA SET NAME = "ROSETTA-LANDER 67P SESAME 3 FSS V1.0" PRODUCT ID = "SES_FS3_CSN_1411140016" PRODUCT CREATION TIME = 2017-02-13T17:42:29 MISSION NAME = "INTERNATIONAL ROSETTA MISSION" MISSION_PHASE_NAME = "FIRST SCIENCE SEQUENCE" MISSION ID = ROSETTA INSTRUMENT_HOST_NAME = "ROSETTA-LANDER" INSTRUMENT_HOST_ID = RL PRODUCT TYPE = RDR START TIME = 2014-11-14T00:16:05.068 STOP TIME = 2014-11-14T00:25:42.381 SPACECRAFT CLOCK START COUNT = "3/374544893.26" SPACECRAFT CLOCK STOP COUNT = "3/374545471.04" PRODUCER ID = "SONC" PRODUCER FULL NAME = "SCIENCE OPERATIONS AND NAVIGATION CENTER" PRODUCER INSTITUTION NAME = "CNES" INSTRUMENT_ID = SESAME
INSTRUMENT_NAME = "SURFACE ELECTRIC SOUNDING AND ACOUSTIC MONITORING EXPERIMENT" INSTRUMENT_TYPE = {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "PERMITTIVITY PROBE" } TARGET NAME = "67P/CHURYUMOV-GERASIMENKO 1 (1969 R1)" = "COMET" TARGET TYPE PROCESSING_LEVEL_ID = "3" DATA_QUALITY_ID = "-1" DATA_QUALITY_DESC = "-1 : NOT QUALIFIED" /* DATA OBJECT DEFINITION */ OBJECT = FILE = FIXED_LENGTH = 176 RECORD_TYPE RECORD_BYTES FILE_RECORDS = 2 ^JOBC TABLE = "SES_FS3_CSN_1411140016_JOBC.TAB"

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OBJECT = JOBC TABLE NAME = "JOB_CARD" INTERCHANGE FORMAT = ASCII ROWS = 2 COLUMNS = 29 COLUMNS ROW_BYTES = 176 ^STRUCTURE = "JOB_CARD_FM3.FMT" ID OBJECT = JOBC_TABLE END_OBJECT END OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD BYTES = 198 = 2 FILE RECORDS ^SEQ_PARAM_TABLE = "SES_FS3_CSN_1411140016_SEQP.TAB" OBJECT = SEQ_PARAM_TAI NAME = "SEQ_PARAM" = SEQ PARAM TABLE INTERCHANGE_FORMAT = ASCII ROWS = 2 COLUMNS = 22 COLORINGROW_BYTES= 198^STRUCTURE= "SEQ_PARAM_BURST3_FM3.FMT"ND OBJECT= SEQ_PARAM_TABLE ^STRUCIC. END_OBJECT = SE ~ = FILE END OBJECT OBJECT = FILE RECORD TYPE = FIXED LENGTH = 267 RECORD_BYTES = 42144 FILE RECORDS = "SES_FS3_CSN_1411140016_DATA.TAB" ^DATA TABLE OBJECT = DATA TABLE NAME = "DATA" INTERCHANGE_FORMAT = ASCII ROWS = 42144 COLUMNS = 26 ROW BYTES = 267 ^STRUCTURE = DATA_TABLE = "DATA3.FMT" END OBJECT END OBJECT = FILE OBJECT = FILE RECORD_TYPE = FIXED LENGTH RECORD BYTES = 219 FILE RECORDS = 2 ^STAT TABLE = "SES_FS3_CSN_1411140016_STAT.TAB" = STAT_TABLE OBJECT = "STAT" NAME = ASCII INTERCHANGE FORMAT ROWS = 2 = 38 COLUMNS ROW BYTES = 219 = "STAT2_FM3.FMT" = STAT_TABLE ^STRUCTURE END OBJECT

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END OBJECT

= FILE

END

5.6 Example of PDS label for PP level 3 data product

PDS VERSION ID = PDS3 LABEL REVISION NOTE = "2017-02-13, SONC, version 1.0" /* Edited SC data from PP Active Test Mode (SONC Level 3) */ = "RL-C-SESAME-3-FSS-V1.0" DATA SET ID = "ROSETTA-LANDER 67P SESAME 3 FSS V1.0" DATA_SET_NAME = "ROSETTA-LANDER 67P SESAN PRODUCT_ID = "SES_FS3_PAT_1411130810" PRODUCT CREATION TIME = 2017-02-13T17:42:48 MISSION_NAME = "INTERNATIONAL ROSETTA MISSION" MISSION PHASE NAME = "FIRST SCIENCE SEQUENCE" MISSION_ID = ROSETTA INSTRUMENT HOST NAME = "ROSETTA-LANDER" INSTRUMENT HOST ID = RL PRODUCT_TYPE = RDR START TIME = 2014-11-13T08:10:49.054 = 2014-11-13T08:13:07.335 STOP TIME SPACECRAFT_CLOCK_START_COUNT = "3/374486977.26" SPACECRAFT_CLOCK_STOP_COUNT = "3/374487116.03" PRODUCER_ID = "SONC" PRODUCER_FULL_NAME = "SCIENCE OPERATIONS AND NAVIGATION CENTER" PRODUCER INSTITUTION NAME = "CNES" = SESAME = "SURFACE ELECTRIC SOUNDING AND INSTRUMENT ID INSTRUMENT NAME = {"ACOUSTIC SENSOR", "DUST IMPACT DETECTOR", "PERMITTIVITY PROPE": INSTRUMENT TYPE "PERMITTIVITY PROBE"} TARGET NAME = "67P/CHURYUMOV-GERASIMENKO 1 (1969 R1)" TARGET TYPE = "COMET" PROCESSING_LEVEL_ID = "3" DATA QUALITY ID = "-1" DATA_QUALITY_DESC = "-1 : NOT QUALIFIED" /* DATA OBJECT DEFINITION */ OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD BYTES = 102 FILE RECORDS = 11 ^AMT PAR TABLE = "SES FS3 PAT 1411130810 PARC.TAB" = AMT_PAR_TABLE OBJECT

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= "AMT PAR" NAME INTERCHANGE_FORMAT = ASCII ROWS = 11 = 12 COLUMNS ROW_BYTES ^STRUCTURE = 102 = "PP_AMT2_PARC.FMT" = AMT_PAR_TABLE END OBJECT END_OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD_BYTES = 64 FILE RECORDS = 2161 ^AMT_DAC_TABLE = "SES_FS3_PAT_1411130810_DACC.TAB" = AMT_DAC_TABLE OBJECT NAME = "AMT DAC" INTERCHANGE_FORMAT = ASCII ROWS = 2161 COLUMNS = 5 ROW_BYTES = 64 ^STRUCTURE = "PP_AMT_DACC END_OBJECT = AMT_DAC_TABLE = "PP AMT DACC.FMT" END OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH RECORD BYTES = 67 = 9792 FILE_RECORDS = "SES FS3_PAT_1411130810_TXC.TAB" ^AMT TX TABLE OBJECT = AMT_TX_TABLE = "AMT TX" NAME INTERCHANGE_FORMAT = ASCII ROWS = 9792 COLUMNS = 5 ROW_BYTES = 67 ^STRUCTURE = "PP AMT TXC.FMT" = AMT_TX_TABLE END OBJECT END_OBJECT = FILE OBJECT = FILE RECORD TYPE = FIXED LENGTH = 66 RECORD_BYTES = 9792 FILE RECORDS ^AMT RX TABLE = "SES FS3 PAT 1411130810 RXC.TAB" OBJECT = AMT_RX_TAX NAME = "AMT_RX" = AMT_RX_TABLE INTERCHANGE_FORMAT = ASCII ROWS = 9792 COLUMNS = 5 ROW_BYTES ^STRUCTURE = 66 = "Pr_rand_ = AMT_RX_TABLE - FTLE = "PP AMT RXC.FMT" END_OBJECT END OBJECT



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END