820-013
Deep Space Mission System (DSMS)
External Interface Specification
JPL D-16765

0158-Monitor

Deep Space Mission System Interface for Mission Monitor Data

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Change Log

Revision	Issue Date	Pages / Sections Affected	Change Summary
New issue	04/30/2002	All	
Revision A	06/10/2003	1.5.2.3 section 2 section 3 Appendix A Appendix B	Added new monitor parameter format. Added additional description to the functional overview. Restructured SFDU description to reference CHDO descriptions in other DSMS documents. Restricted max SFDU size to 4500 bytes. Restricted channel source to 13. Added 26M monitor channels; added lots of new monitor channels for the 34M/70M subsystems; reformatted and reorganized tables of monitor channels. New.

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Introduction

Section 1
Introduction

1.1 Purpose and Scope

This module defines the format and distribution of the real-time, mission monitor data generated by the DSN ground data systems of the Deep Space Mission System (DSMS). The 0158-Monitor records are produced by the Monitor Interface Assembly (MIA) of the Network Monitor and Control Subsystem (NMC) and by the 26M Monitor and Control Processor (MCP). The 0158-Monitor record is generated for missions to analyze the quality of the telecom link and to confirm events and configuration for automated telemetry and command service operations.

1.1.1 Applicability of This Release

Revision A supercedes the original release of this module. Revision A adds additional monitor parameters which provide configuration, status, and performance information for the new subsystems delivered as part of the DSMS upgrade. Appendix A has been reorganized to provide more information about each monitor parameter and to more clearly indicate each parameter's origin and applicability. There are no changes to the data format, but section 3 has been reorganized to eliminate duplication of information contained in other DSMS documents.

1.2 Revision and Control

Revisions or changes to the information herein presented may be initiated according to the procedure specified in the *Introduction* to document 820-013.

1.3 Relationship to Other DSMS Documents

None.

1.4 Applicable Documents

813-109, D-17818	*Preparation Guidelines and Procedures for Deep Space Mission System (DSMS) Interface Specifications* (DSMS Internal Use Only*)*
810-047	*DSN Antenna and Facility Identifiers*
820-013, D-16765	*DSMS External Interface Specification*
	OPS-6-21 *Standard Code Assignments*
	*0171-Telecomm-NJPL JPL Created SFDU Structures (formerly known as SFOC-5-SYS-*DU-NJPL)*
	0172-Telecomm-CHDO DSMS Created CHDO Structures
	0172-Telecomm-CHDO-000 NULL Tertiary
	0172-Telecomm-CHDO-001 Aggregate
	0172-Telecomm-CHDO-002 Primary
	0172-Telecomm-CHDO-027 Channelized Data Quaternary
	0172-Telecomm-CHDO-028 Channelized Data Area
820-019	*DSN System Requirement, Detailed Interface Design Standards* (DSMS Internal Use Only*)*
	DFL-1-1 Network-Level Data Flow Standard (DSMS Internal Use Only*)*
ANSI/IEEE Std 754-1985	*IEEE Standard for Binary Floating Point Arithmetic*

1.5 Notation and Conventions

1.5.1 Notations

CHDO	A Compressed Header Data Object (CHDO) is a Type-Length-Value Object (TLVO) that has been specifically formatted to reduce the overhead introduced by the SFDU standard for structure within a single “logical” data object. For a more detailed explanation of CHDOs, please refer to the 820-013, 0171-Telecomm-NJPL software interface specification.
channel ID	An identifier for a monitor parameter consisting of a letter and a number. The channel ID for a monitor parameter is included in the monitor record along with the parameter value, making the monitor parameter self-identifying.

1.5.2 Conventions

1.5.2.1 Conventions for Figures

The following conventions are used in figures defining the format of a data record or piece of a data record.

- All byte offsets are assumed to be relative to the beginning of a structure or substructure. The first byte of a structure is called offset 0 (normally shown as the left byte of two); the second byte is at offset 1 (normally shown as the right byte of two), etc.

- If a field in the SFDU requires more than one byte, the most significant byte is at the lowest-number byte offset with each succeeding byte in the next higher byte offset so that the least significant byte is in the highest-number byte offset.

- Bits in a byte are labeled 0 through 7, where the 0th bit is the most-significant or sign bit (left-most bit) and the 7th bit is the least-significant bit (right-most bit). For fields using more than one byte, bits are labeled 0 - n correspondingly.

1.5.2.2 SFDU Field Formats

The formats of the fields in the 0158-Monitor SFDU are described in section 3.8, Field Types, in 820-013, 0172-Telecomm-CHDO.

1.5.2.3 Monitor Parameter Formats

In the list of monitor parameters in Appendix A, each monitor item's format is described as one of the following: *integer*, *float*, *modcomp*, *double*, or *string*. In the 0158-Monitor SFDU, the monitor parameter value will appear in the data CHDO in either the *length_value* or *lc_value* fields. (See 820-013, 0172-Telecomm-CHDO-028 for a description of these fields.) The format, units/precision, and range of values information in Appendix A allows the customer to correctly interpret the channel value in the 0158-Monitor SFDU. The following subsections describe the meaning of monitor parameter formats.

1.5.2.3.1 Integer

An integer format is used to to express integral quantities, using two's complement notation. In general, the range for an integer is $[-1 * (2^n/2)]$ to $[(2^n/2) - 1]$, where n is the number of bits and can be a maximum of 32.

When creating the 0158-Monitor SFDU, if a particular monitor parameter value will fit into less than 32 bits, then the monitor value will be stored in either the *length_value* field, which is always 8 bits long, or in the *lc_value* field using the least number of bits needed. For example, if a monitor parameter's value is 12, it will be stored in the *length_value* field and the *lc_value* field won't exist for that monitor parameter. If the monitor value is 300, the value will be stored in the *lc_value* field,

which will be 16 bits long (the minimum allowable size for *lc_value*). The maximum size for an integer value is 32 bits.

1.5.2.3.2 Float

Float is the 32-bit IEEE floating point format defined in document ANSI/IEEE Std 754-1985.

1.5.2.3.3 Modcomp

Modcomp is a 32-bit floating point format which can express quantities in the approximate range of -2^{255} (about -10^{76}) to $+2^{255}$ (about $+10^{76}$) with a precision of 22 bits (over six significant decimal digits). Floating point numbers will be expressed with a sign, a 9-bit exponent, and a 22-bit mantissa. The bits are arranged as follows:

Word 1	Bit 1:	Sign
	Bits 2-10:	Exponent
	Bits 11-16:	Mantissa
Word 2	Bits 1-16:	Mantissa (continued)

The exponent value is defined as follows:

Exponent Value (HEX)	Floating Point Value
000	2^{-256} x Fraction Value (1 > F > 0)
100	2^{0} x Fraction Value
1FF	2^{255} x Fraction Value

A negative number is represented as the two's complement of the entire 32-bit pattern.

1.5.2.3.4 Double

Double is the 64-bit IEEE floating point format defined in document ANSI/IEEE Std 754-1985.

1.5.2.3.5 String

A string is 1 or more ASCII characters. The maximum size for a string is 242 characters. If a DSN subsystem produces a monitor parameter of string format whose value is longer than 242 characters, it will be truncated to 242 when it is put into the 0158-Monitor SFDU. DSN subsystems can produce strings with 0 characters. In this case the corresponding channel value in the 0158-Monitor SFDU will be a single ASCII NULL character.

Similar to the integer format, the least number of bytes needed will be used when storing the monitor parameter value in the 0158-Monitor SFDU. So a 1 character string will appear in the *length_value* field and strings 2 or more characters long will appear in the *lc_value* field.

1.6 Abbreviations

Abbreviations used in this document are defined with the first textual use of the term. Abbreviations appearing in this module are:

AMMOS	Advanced Multimission Operations System
ASCII	American Standard Code for Information Interchange
CHDO	Compressed Header Data Object
DSMS	Deep Space Mission System
DSN	Deep Space Network
ID	Identifier
LVO	Label Value Object
MCP	Monitor and Control Processor
MIA	Monitor Interface Assembly
NMC	Network Monitor and Control
PDW	Parameter Descriptor Word
SFDU	Standard Formatted Data Unit

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Functional Overview

Section 2
Functional Overview

The 0158-Monitor SFDUs contain a collection of monitor data generated by the DSN subsystems. For each spacecraft being tracked, the latest available monitor data is periodically packaged into an SFDU and delivered to the customer. Monitor record generation can be set to on or off for each spacecraft supported by the DSMS. If on, the generation interval is 5 seconds. If off, no monitor records are created for that spacecraft.

The 0158-Monitor record is in a CHDO-structured SFDU format. Each SFDU consists of a fixed-length header and a variable-length data CHDO containing self-identifying monitor parameters. To understand this data format, it may be helpful to think of it as being like packet telemetry. The SFDU is the equivalent of the transfer frame. The SFDU label and CHDOs up to the data CHDO are like the transfer frame header and the data CHDO is like the transfer frame data field. Each monitor parameter is formatted into a little structure similar in concept to a packet. These "packets" consist of an identifier and the monitor data value. The data CHDO will contain one or more monitor "packets." Like packet telemetry, the monitor "packets" are not guaranteed to appear in every SFDU and the order in which they appear may vary from SFDU to SFDU. Unlike packet telemetry the monitor "packets" are not allowed to span SFDUs. Because the number of monitor "packets" can vary, the size of the data CHDO can vary, causing the overall SFDU size to vary from one record to the next.

The monitor parameter identifier is a channel ID. Channels and channel IDs are concepts borrowed from telemetry. In telemetry data, a channel is a single measurement taken by an instrument or sensor onboard a spacecraft. In the context of this document, a channel is equivalent to a monitor parameter. The channel identifier consists of a letter and number. For monitor data the letter is always M; the valid range for numbers is 0 - 4095. The set of monitor parameters, along with their channel IDs, are listed in Appendix A of this document. This set is used for all missions receiving 0158-Monitor records.

When interpreting the monitor data, the user should be aware that some channels have another channel associated with them that indicates the validity of the data. Whether a channel has an associated validity channel depends on the originating DSN subsystem and how it generates and outputs its monitor data. In Appendix A the description for validity channels will list the channels to which a validity channel applies.

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Detailed Interface Description

Section 3
Detailed Interface Description

1.7 Data Exchange

1.7.1 Data Transfer

The 0158-Monitor SFDUs contain a set of monitor data describing the current status, configuration, and performance of the DSN equipment supporting a spacecraft pass. The 0158-Monitor SFDUs are created at 5-second intervals, forming a monitor data stream. A separate stream is generated for each antenna providing support and for each spacecraft supported by that antenna.

1.7.2 Data Format

The 0158-Monitor record is delivered to the end user encapsulated in a Standard DSN Block (SDB). An SDB consists of a DSN Data Delivery (DDD) header, a data portion, and a DDD trailer. The data portion in this case is the 0158-Monitor SFDU described by this module. Module DFL-1-1 of document 820-019 defines the format of the DDD header and trailer.

1.7.2.1 0158-Monitor SFDU Format

The 0158-Monitor SFDU has a fixed format in the sense that an SFDU will always consist of the CHDOs defined below in Figure 3-1. The data CHDO will normally contain the list of monitor parameters documented in Appendix A. If the value for a monitor parameter is unavailable or invalid at the time a particular SFDU is being created, that monitor parameter will not be included in the data CHDO. Therefore, the length of the data CHDO, and thus the entire SFDU, can vary.

The 0158-Monitor SFDU is made up of the following components: an SFDU label, an aggregation CHDO, a primary CHDO, a secondary CHDO, a tertiary CHDO, a quaternary CHDO, and a data CHDO. Figure 3-1 shows the overall format of the 0158-Monitor SFDU. The SFDU label and the aggregation, primary, tertiary, quaternary, and data CHDOs are used in many SFDUs created by the DSMS so this document will only specify the field values contained within these components that are unique to the 0158-Monitor SFDU. The secondary CHDO is unique to the 0158-Monitor SFDU and its format and description are documented below.

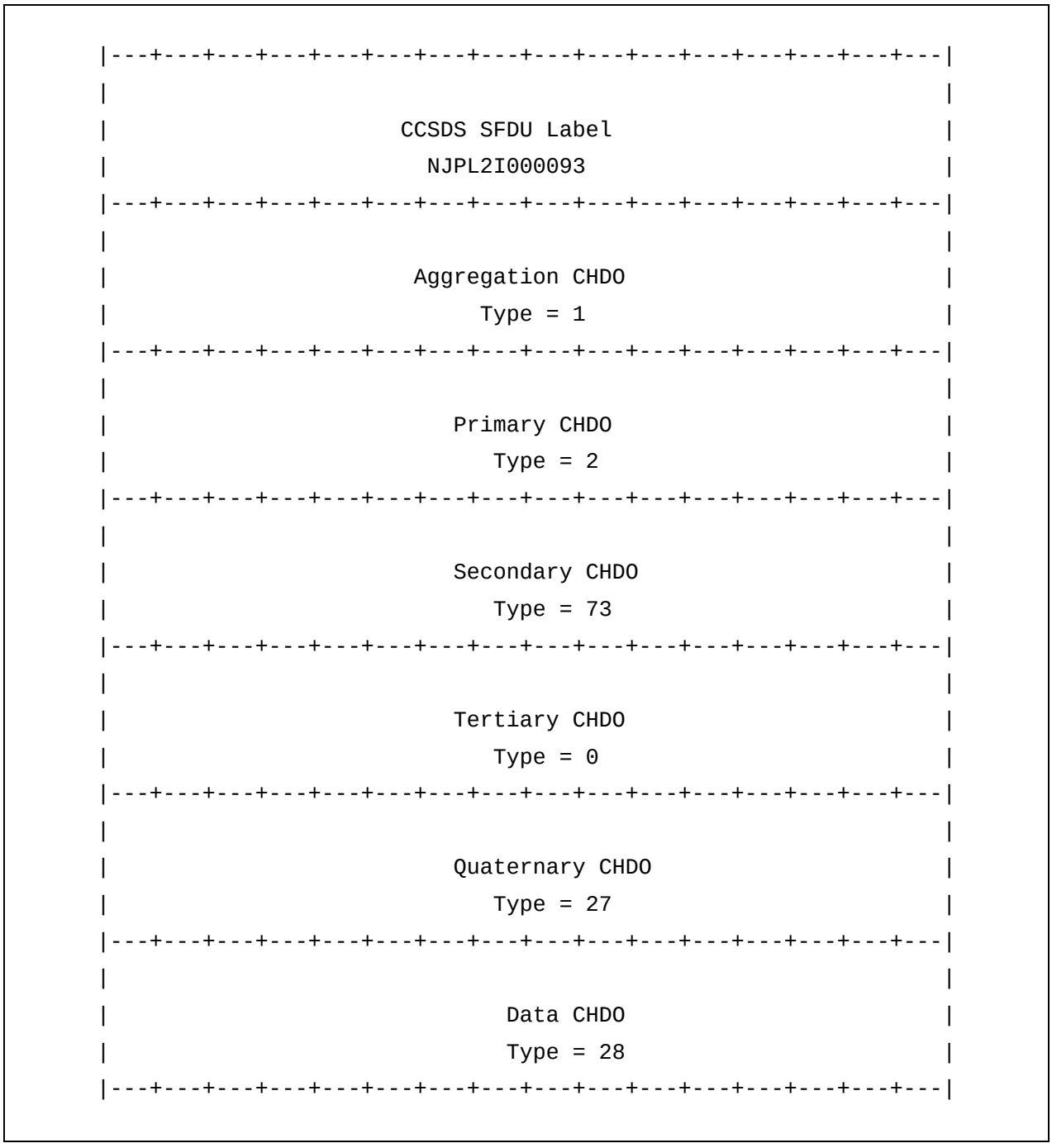

Figure 3-1 Format of 0158-Monitor SFDU

1.7.2.1.1 SFDU Label

The format of the SFDU label is documented in 820-013, 0171-Telecomm-NJPL. The following fields within the label will have these values in the 0158-Monitor SFDU.

Field Name	Value
control_authority_id	NJPL
version_id	2
class_id	I
ddp_id	0093
block_length	The maximum size is restricted to 4480 bytes in the 0158-Monitor SFDU.

1.7.2.1.2 Aggregation CHDO

The format of the aggregation CHDO is documented in 820-013, 0172-Telecomm-CHDO-001.

1.7.2.1.3 Primary CHDO

The format of the primary CHDO is documented in 820-013, 0172-Telecomm-CHDO-002. The following fields within the primary CHDO will have these values in the 0158-Monitor SFDU.

Field Name	Value
major	11
minor	2
mission	See table 3-4, Spacecraft Identifier Code Assignments, in 820-013, OPS-6-21.
format	5

1.7.2.1.4 Secondary CHDO

This CHDO is unique to the 0158-Monitor SFDU and is documented here. Figure 3-2 shows the CHDO format and Table 3-1 describes each field in the CHDO.

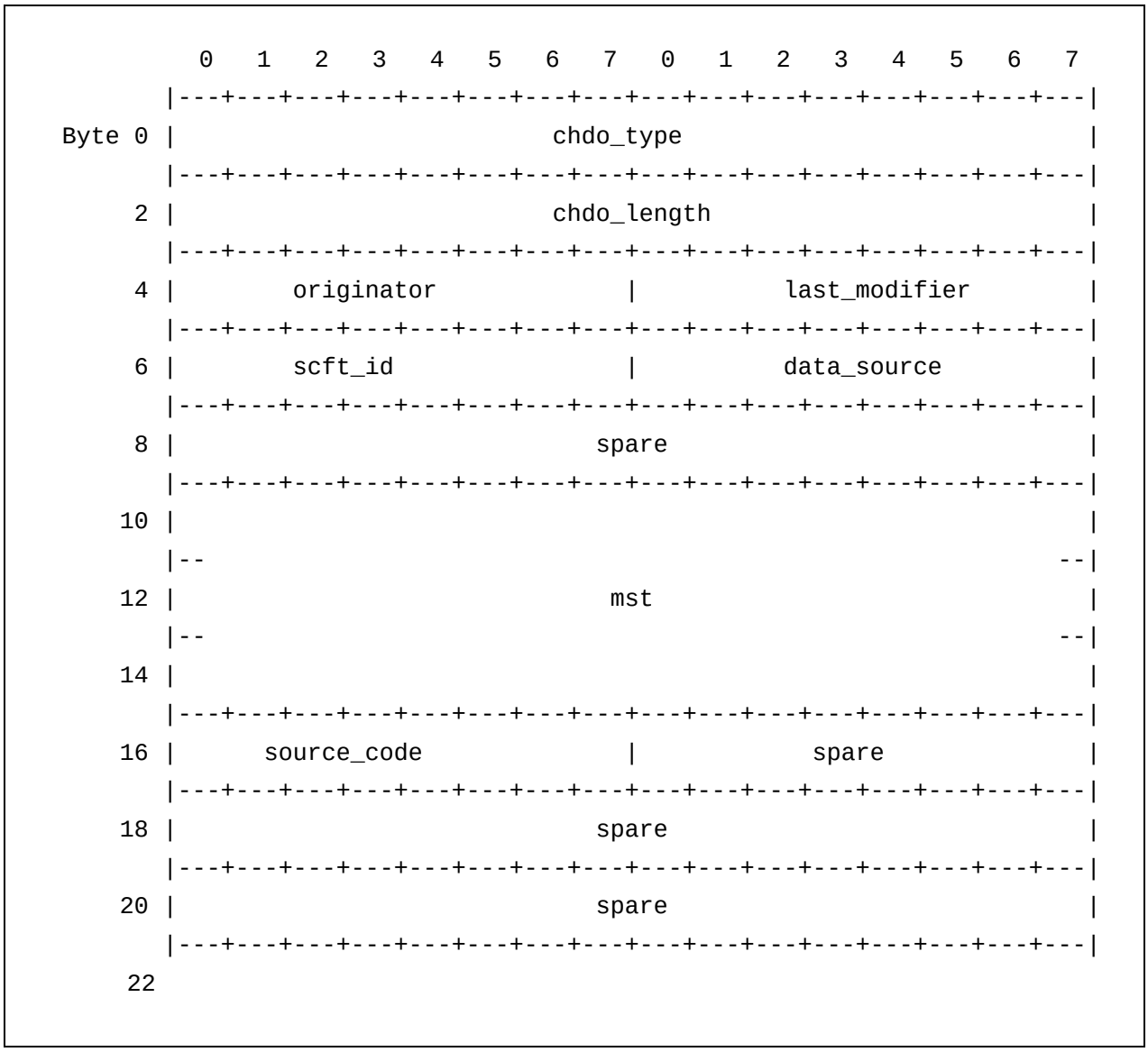

Figure 3-2. Format of 0158-Monitor Secondary CHDO (73)

Table 3-1. Format of 0158-Monitor Secondary CHDO (73)

Byte Offset	Item Name and Description	Format	Units/ Precision	Range
0-1	***chdo_type*** Secondary header CHDO type code.	Binary unsigned integer.	N/A	73
2-3	***chdo_length*** Length of CHDO value field (bytes 4 - 21).	Binary unsigned integer.	N/A	18
4	***originator*** Originator ID. See 820-013, 0172-Telecomm-CHDO for more information about this field.	Binary unsigned integer.	N/A	48
5	***last_modifier*** Last Modifier ID. See 820-013, 0172-Telecomm-CHDO for more information about this field.	Binary unsigned integer.	N/A	48
6	***scft_id*** Spacecraft identifier code.	Binary unsigned integer.	N/A	See 820-013, OPS-6-21 for values.
7	***data_source*** Antenna/Facility Identifier.	Binary unsigned integer.	N/A	See document 810-047 for values.
8-9	***spare***	Binary unsigned integer.	N/A	0
10-15	***mst*** Monitor sample time. This is the time the record was created. Bits 0 - 15 contain the number of days since 01 Jan 1958. (0 = 01 Jan 1958.) Bits 16 - 47 contain the milliseconds of the day.	Binary unsigned integer. Binary unsigned integer.	seconds milliseconds	0 - 65535 0 - 86399999
16	***source_code*** Source code.	Binary unsigned integer.	N/A	See table 3-3 in 820-013, OPS-6-21 for values.
17-21	***spare***	Binary unsigned integer.	N/A	0

1.7.2.1.5 Tertiary CHDO

The format of the tertiary CHDO is documented in 820-013, 0172-Telecomm-CHDO-000.

1.7.2.1.6 Quaternary CHDO

The format of the quaternary CHDO is documented in 820-013, 0172-Telecomm-CHDO-027. The following fields within the quaternary CHDO will have these values in the 0158-Monitor SFDU.

Field Name	**Value**
decom_flags	These flags are not used in the 0158-Monitor SFDU and should be ignored.
map_id	FFFF hexadecimal.

1.7.2.1.7 Data CHDO

The format of the data CHDO is documented in 820-013, 0172-Telecomm-CHDO-028. The following fields within the data CHDO will have these values in the 0158-Monitor SFDU.

Field Name	**Value**
source	13
bad_data	0
decom_error	0

Appendix A. List of Monitor Parameters

Appendix A
List of Monitor Parameters

Table A-1 lists all the monitor channels for the equipment associated with the 26M antennas. The data is sorted by section and by channel ID within each section. A section is a group of monitor data that apply to a particular functionality of the 26M equipment, e.g., antenna pointing.

Table A-1 26M Monitor Data

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Antenna Pointing	M-0654	Interpretation of Angle. Indicates the units of Angle 1 (M-0655) and Angle 2 (M-0656).	Integer	N/A	0 = Angle 1 is azimuth, Angle 2 is elevation. 1 = Angle 1 is hour angle, Angle 2 is declination. 2 = Angle 1 is x-angle, Angle 2 is y-angle, with +x pointing East. 3 = Angle 1 is x-angle, Angle 2 is y-angle, with +x pointing South.
Antenna Pointing	M-0655	Angle 1.	Integer	1/1024 degree increments	
Antenna Pointing	M-0656	Angle 2.	Integer	1/1024 degree increments	
Command Data Accountability	M-0541	Total number of command elements received.	Integer	N/A	0 to 65535
Command Data Accountability	M-0542	Confirmed Blocks. This is the number of command blocks received, verified, and radiated by the DSCC Command Subsystem.	Integer	N/A	0 to 65535
Command Status and Performance	M-0536	Carrier Suppression	String	dB	"x.yz", "xy.z", or "UNCL"
Command Status and Performance	M-0535	Command Modulation	String	N/A	"FM", "PM", "PSK", "FSK"

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Receiver Status	M-0100	TPA Channel 1 Receiver Number	Integer	N/A	
Receiver Status	M-0200	TPA Channel 2 Receiver Number	Integer	N/A	
Receiver Status	M-0349	Receiver 1 Signal Level	Modcomp	dBm	-170 to -50
Receiver Status	M-0379	Receiver 2 Signal Level	Modcomp	dBm	-170 to -50
Receiver Status	M-0961	Receiver Frequency.	String	MHz	2200.00 to 2299.99
Receiver Status	M-0962	Receiver AGC Mode (AGC Response).	String	milliseconds	"3", "30", "300", "3000", "MAN"
Support Description	M-0037	Spacecraft Number	Integer	N/A	1 to 255
Support Description	M-0049	Pass Number	Integer	N/A	-1 to 32767; -1 implies no pass number assigned.
Support Description	M-0064	Master Antenna ID	Integer	N/A	0 to 99
Telemetry Data Accountability, Channel 1	M-0182	Total Frames. Total number of telemetry frames output during this pass for DTM channel 1. For spacecraft which do not use variable-length Standard Format Data Units (SFDUs), this is the number of NASCOM blocks output.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0183	Sync-Mode Frames. This item reflects the number of telemetry transfer frames received in all frame synchronization modes (search, verify, in-lock, or flywheel) for all virtual channels for DTM channel 1.	Integer	frames	0 to 2147483647

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Telemetry Data Accountability, Channel 1	M-0190	Good Frames 0. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 0 and DTM channel 1. A "good" frame synchronization Status is defined as in-lock or flywheel, or with a bit slip or bit stuff of no more than 2 bits.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0191	Good Frames 1. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 1 and DTM channel 1.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0192	Good Frames 2. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 2 and DTM channel 1.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0193	Good Frames 3. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 3 and DTM channel 1.	Integer	frames	0 to 2147483647

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Telemetry Data Accountability, Channel 1	M-0194	Good Frames 4. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 4 and DTM channel 1.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0195	Good Frames 5. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 5 and DTM channel 1.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0196	Good Frames 6. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 6 and DTM channel 1.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 1	M-0197	Good Frames 7. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 7 and DTM channel 1.	Integer	frames	0 to 2147483647

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Telemetry Data Accountability, Channel 2	M-0282	Total Frames. Total number of telemetry frames output during this pass for DTM channel 2. For spacecraft which do not use variable-length Standard Format Data Units (SFDUs), this is the number of NASCOM blocks output.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0283	Sync-Mode Frames. This item reflects the number of telemetry transfer frames received in all frame synchronization modes (search, verify, in-lock, or flywheel) for all virtual channels for DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0290	Good Frames 0. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 0 and DTM channel 2. A "good" frame synchronization Status is defined as in-lock or flywheel, or with a bit slip or bit stuff of no more than 2 bits.	Integer	frames	0 to 2147483647

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Telemetry Data Accountability, Channel 2	M-0291	Good Frames 1. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 1 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0292	Good Frames 2. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 2 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0293	Good Frames 3. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 3 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0294	Good Frames 4. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 4 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0295	Good Frames 5. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 5 and DTM channel 2.	Integer	frames	0 to 2147483647

Section	Channel ID	Description	Format	Units/ Precision	Range of Values
Telemetry Data Accountability, Channel 2	M-0296	Good Frames 6. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 6 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Data Accountability, Channel 2	M-0297	Good Frames 7. Total number of telemetry frames with "good" frame synchronization Status processed during the pass for virtual channel 7 and DTM channel 2.	Integer	frames	0 to 2147483647
Telemetry Status and Performance	M-0104	Channel 1 telemetry bit rate	Float	bps	0 to 2.2e6
Telemetry Status and Performance	M-0147	Channel 1 Lock Status	Integer	N/A	0 = in lock (lock or flywheel), 1 = out of lock (search or verify)
Telemetry Status and Performance	M-0204	Channel 2 telemetry bit rate	Float	bps	0 to 2.2e6
Telemetry Status and Performance	M-0247	Channel 2 Lock Status	Integer	N/A	0 = in lock (lock or flywheel), 1 = out of lock (search or verify)
Tracking Status	M-0311	Doppler Mode Antenna 'A' Channel 1, S Band	String	N/A	"1" to "4" where "1" = one-way, "2" = two-way, "3" = three-way, "4" = three-way coherent
Tracking Status	M-0314	Doppler Mode Antenna 'A' Channel 2, X Band	String	N/A	"1" to "4" where "1" = one-way, "2" = two-way, "3" = three-way, "4" = three-way coherent
Transmitter Status	M-0524	Exciter Frequency	String	kHz	12 characters
Transmitter Status	M-0526	S-band Exciter Availability	String	N/A	"UNAV", "TEST", "OFF", "PROG", "ON", "FLT"
Transmitter Status	M-0527	S-band Exciter Composite Modulation Level	Integer	radians	

Table A-2 lists all the monitor channels for the subsystems associated with the 34M and 70M antennas. The monitor data is sorted by subsystem and by channel ID within each subsystem. Appendix B has definitions for each subsystem acronym and a brief description of what the subsystem does.

Table A-2 34M/70M Monitor Data

Subsystem	Channel ID	Description	Format	Units	Range of Values
apa	M-0301	PDW validity field for elevation angle (M-0324)	Integer	N/A	0 = valid, 1 = invalid
apa	M-0302	PDW analysis field for elevation angle	Integer	N/A	0 = disregard, the subsystem has not analyzed this field; 1 = normal, the parameter has a normal, reasonable, or expected value; 2 = high warning limit has been exceeded; 3 = high critical limit has been exceeded; 4 = low warning limit has been exceeded; 5 = low critical limit has been exceeded.
apa	M-0303	PDW source field for elevation angle	String	N/A	String containing the functional address of the observing subsystem
apa	M-0308	Conscan Drive Status	String	N/A	"ON", "OFF"
apa	M-0309	Conscan Loop Status	String	N/A	"OPEN", "CLOS"
apa	M-0324	Elevation angle for 34M HEF and 70M antennas. The elevation angle is expressed as degrees times 10,000.	Float	degrees * 10^4	0.0 to 999999.0
apa	M-0325	Azimuth angle for 34M HEF and 70M antennas. The azimuth angle is expressed as degrees times 10,000.	Float	degrees * 10^4	0.0 to 3599999.0
apa	M-0326	Azimuth angle residual for 34M HEF and 70M antennas. The azimuth angle residual is expressed as degrees times 10,000.	Float	degrees * 10^4	-1800000.0 to 1800000.0
apa	M-0327	Elevation angle residual for 34M HEF and 70M antennas. The elevation angle residual is expressed as degrees times 10,000.	Float	degrees * 10^4	-990000.0 to 990000.0
apc	M-0301	PDW validity field for elevation angle (M-0304)	Integer	N/A	0 = valid, 1 = invalid

apc	M-0302	PDW analysis field for elevation angle	Integer	N/A	0 = disregard, the subsystem has not analyzed this field; 1 = normal, the parameter has a normal, reasonable, or expected value; 2 = high warning limit has been exceeded; 3 = high critical limit has been exceeded; 4 = low warning limit has been exceeded; 5 = low critical limit has been exceeded.
apc	M-0303	PDW source field for elevation angle	String	N/A	String containing the functional address of the observing subsystem
apc	M-0304	Elevation angle for 34M BWG antennas	Double	degrees	0.0 to 99.9999
apc	M-0305	Azimuth angle for 34M BWG antennas	Double	degrees	0.0 to 359.999
apc	M-0306	Azimuth angle residual for 34M BWG antennas	Float	degrees	-180.0 to 180.0
apc	M-0307	Elevation angle residual for 34M BWG antennas	Float	degrees	-99.0 to 99.0
apc	M-0308	Conscan Drive Status	String	N/A	"ON", "OFF"
apc	M-0309	Conscan Loop Status	String	N/A	"OPEN", "CLOS"
apc	M-0804	Average monopulse receiver estimated azimuth error (first second)	Float	degrees	-0.1 to 0.1
apc	M-0805	Average monopulse receiver estimated elevation error (first second)	Float	degrees	-0.1 to 0.1
apc	M-0806	Average monopulse receiver estimated azimuth error (second second)	Float	degrees	-0.1 to 0.1
apc	M-0807	Average monopulse receiver estimated elevation error (second second)	Float	degrees	-0.1 to 0.1
apc	M-0808	Average monopulse receiver estimated azimuth error (third second)	Float	degrees	-0.1 to 0.1
apc	M-0809	Average monopulse receiver estimated elevation error (third second)	Float	degrees	-0.1 to 0.1
apc	M-0810	Average monopulse receiver estimated azimuth error (fourth second)	Float	degrees	-0.1 to 0.1

apc	M-0811	Average monopulse receiver estimated elevation error (fourth second)	Float	degrees	-0.1 to 0.1
apc	M-0812	Average monopulse receiver estimated azimuth error (fifth second)	Float	degrees	-0.1 to 0.1
apc	M-0813	Average monopulse receiver estimated elevation error (fifth second)	Float	degrees	-0.1 to 0.1
apc	M-0814	Accumulated azimuth correction	Float	degrees	-0.1 to 0.1
apc	M-0815	Accumulated elevation correction	Float	degrees	-0.1 to 0.1
apc	M-0816	Aberration angle off boresight	Float	degrees	0.0 to 1.0
apc	M-0817	Aberration clock angle of uplink beam	Float	degrees	0.0 to 360.0
apc	M-0818	Conscan type	String	N/A	"NONE", "CONICAL", "MONOPULSE"
apc	M-0819	Monopulse Receiver SNR	Float	dB	-300.0, 0.0 to 90.0; -300.0 indicates out of lock.
apc	M-0820	Aberration table x-position	Float	N/A	-150.0 to 150.0
apc	M-0821	Aberration table y-position	Float	N/A	-150.0 to 150.0
apc	M-0822	Aberration Correction	String	N/A	"ON", "OFF", "ERR"
ce	M-0037	Spacecraft Number. This is the spacecraft ID entered into the Network Monitor and Control (NMC) subsystem by the operator. During normal operations, this S/C ID is automatically sent by the NMC to the uplink and downlink subsystems when they are assigned to the connection.	Integer	N/A	1 to 255
ce	M-0042	DSS ID. This is the antenna ID entered into the NMC by the operator when configuring the connection.	Integer	N/A	0 to 99
cpa	M-0500	Transmitting Antenna ID	Integer	N/A	0 to 99
cpa	M-0534	CMA Mode	String	N/A	"C1", "C2", "I1", "I2", "AC", "AB"
cpa	M-0536	Carrier Suppression	String	N/A	"x.yz" dB, "xy.z" dB, or "UNCL"

cpa	M-0537	Command Bit Rate	String	bps	"1.0000" to "9999.9999"
dcc1 (Carrier Loop)	M-1290	Time tag of carrier performance data. This channel contains the seconds portion of the total time. Channels M-1290, M-1291, and M-1292 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Carrier Loop)	M-1291	Time tag of carrier performance data. This channel contains the nanoseconds portion of the total time. Channels M-1290, M-1291, and M-1292 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1290	>=0
dcc1 (Carrier Loop)	M-1292	Time tag of carrier performance data. This channel contains the leap seconds portion of the total time. Channels M-1290, M-1291, and M-1292 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Carrier Loop)	M-1293	Time that the last carrier acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1293, M-1294, and M-1295 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Carrier Loop)	M-1294	Time that the last carrier acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1293, M-1294, and M-1295 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1293	>=0
dcc1 (Carrier Loop)	M-1295	Time that the last carrier acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1293, M-1294, and M-1295 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc1 (Carrier Loop)	M-1296	Time that the carrier lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1296, M-1297, and M-1298 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Carrier Loop)	M-1297	Time that the carrier lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1296, M-1297, and M-1298 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1296	>=0
dcc1 (Carrier Loop)	M-1298	Time that the carrier lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1296, M-1297, and M-1298 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Carrier Loop)	M-1299	Carrier loop tracking bandwidth.	Float	Hz	0.100 to 1000.000
dcc1 (Carrier Loop)	M-1300	The carrier loop filter order.	Integer	N/A	1 to 3
dcc1 (Carrier Loop)	M-1301	Carrier tracking loop lock status. Status is out-of-lock unless the loop status (M-1302) is IN LOCK.	Integer	N/A	0 = Out of lock, 1 = In lock.
dcc1 (Carrier Loop)	M-1302	Carrier tracking loop status. This is the result of the acquisition command or enabling the loop.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc1 (Carrier Loop)	M-1303	Data tracking loop status (combined status of subcarrier and symbol loops).	Integer	N/A	0 = Out of lock, 1= In lock, 2 = Off (Idle), 3 = Acquiring, 4 = Open
dcc1 (Carrier Loop)	M-1304	The measured carrier frequency.	Double	Hz	2200000000.000 to 32300000000.000
dcc1 (Carrier Loop)	M-1305	Carrier frequency residual. The measured carrier frequency minus the predicted value.	Float	Hz	-1000000.000 to 1000000.000

dcc1 (Carrier Loop)	M-1306	The predicted carrier frequency minus the measured value. This is commonly called the doppler residual.	Float	Hz	-1000000.000 to 1000000.000
dcc1 (Carrier Loop)	M-1307	The measured carrier frequency rate (first derivative of the frequency).	Float	Hz/sec	-108000.0 to 108000.0
dcc1 (Carrier Loop)	M-1308	The measured carrier frequency acceleration (second derivative of the frequency).	Float	Hz/sec^2	-2600.0 to 2600.0
dcc1 (Carrier Loop)	M-1309	The standard deviation of the detrended frequency residuals. This is commonly called the doppler noise.	Float	Hz	0.000 to 1000.000
dcc1 (Carrier Loop)	M-1310	Carrier power at performance time tag (channels M-1290, M-1291, and M-1292). If value not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc1 (Carrier Loop)	M-1311	Carrier power residual. The estimated carrier power minus the predicted value.	Float	dB	-190.0 to 190.0
dcc1 (Carrier Loop)	M-1312	The measured data power. If value is not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc1 (Carrier Loop)	M-1313	Data power residual. The measured data power minus the predicted value.	Float	dBm	-190.0 to 190.0
dcc1 (Carrier Loop)	M-1314	The carrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc1 (Carrier Loop)	M-1315	The carrier power to noise spectral density ratio (Pc/NO). If the value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc1 (Carrier Loop)	M-1316	Pc/NO residual. The measured Pc/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc1 (Carrier Loop)	M-1317	Carrier tracking mode (source of carrier error signal).	String	N/A	"RESIDUAL", "SUPPRESSED", "SIDEBAND", "QPSK", "OQPSK", "OPEN"

dcc1 (Carrier Loop)	M-1318	The system noise temperature (SNT).	Float	kelvin	10.0 to 2000.0
dcc1 (Carrier Loop)	M-1319	SNT residual. The measured system noise temperature minus the predicted value.	Float	kelvin	10.0 to 2000.0
dcc1 (Carrier Loop)	M-1320	The predicted carrier frequency.	Double	Hz	2200000000.000 to 32300000000.000
dcc1 (Carrier Loop)	M-1321	Count of the number of cycle slips detected during this pass.	Float	number of slips	0.0 to 10000.0
dcc1 (Carrier Loop)	M-1322	Carrier acquisition FFT usage switch. If enabled, the carrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Carrier Loop)	M-1323	Indicates whether or not the carrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1240	Downlink channel providing the data.	Integer	N/A	1 to 24
dcc1 (Configuration)	M-1241	Antenna being used from the perspective of the DTT (Downlink Tracking and Telemetry) subsystem. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	0 to 99
dcc1 (Configuration)	M-1242	Configured spacecraft ID from the perspective of the DTT. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	1 to 255
dcc1 (Configuration)	M-1243	Pass number.	Integer	N/A	0 to 9999
dcc1 (Configuration)	M-1244	Mission ID for spacecraft.	Integer	N/A	0 to 255
dcc1 (Configuration)	M-1245	Downlink carrier band.	String	N/A	"NONE", "L", "S", "X", "KA", "S26"

dcc1 (Configuration)	M-1246	Uplink carrier band used for the downlink processing. It is possible that this is not the actual uplink band.	String	N/A	"NONE", "L", "S", "X", "KA"
dcc1 (Configuration)	M-1247	Receiver-Telemetry configuration table name.	String	N/A	Any ASCII string, up to 242 characters long
dcc1 (Configuration)	M-1248	Receiver radiometrics (frequency) predicts mode. NPX => no predicts used, 1W => one-way, 2W => two-way, 3W => three-way.	String	N/A	"NPX", "1W", "2W", "3W"
dcc1 (Configuration)	M-1250	Uplink antenna for three-way predicts.	Integer	N/A	0 to 99
dcc1 (Configuration)	M-1251	Predicted carrier frequency	Double	Hz	2200000000.000 to 32300000000.000
dcc1 (Configuration)	M-1252	Predicted subcarrier frequency	Double	Hz	0.000 to 2000000.000
dcc1 (Configuration)	M-1253	Predicted symbol rate	Double	Hz	4.000 to 26400000.000
dcc1 (Configuration)	M-1254	SNT measurement switch. If the measurement is disabled, the value in M-1318 is the predicted value.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1255	Monopulse tracking processing switch. Used only when there is a Ka-band downlink (M-1245 is equal to "KA").	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1256	Name of the radiometric predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc1 (Configuration)	M-1257	Time that the last radiometric predict mode change was done. This channel contains the seconds portion of the total time. Channels M-1257, M-1258, and M-1259 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc1 (Configuration)	M-1258	Time that the last radiometric predict mode change was done. This channel contains the nanoseconds portion of the total time. Channels M-1257, M-1258, and M-1259 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1257	>=0
dcc1 (Configuration)	M-1259	Time that the last radiometric predict mode change was done. This channel contains the leap seconds portion of the total time. Channels M-1257, M-1258, and M-1259 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Configuration)	M-1260	Telemetry predicts usage mode. If enabled, telemetry predicts are used if the radiometric predict mode (M-1248) is not NPX.	String	N/A	"DISABLED", "ENABLED"
dcc1 (Configuration)	M-1261	Name of the telemetry predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc1 (Configuration)	M-1262	Range state	String	N/A	"Enable", "Disable"
dcc1 (Configuration)	M-1263	Carrier phase (tracking) data output switch. If enabled, carrier phase data is being sent (count of blocks given in M-1508).	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1264	Range data output switch. If enabled, range data is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1265	Telemetry data output switch. If enabled, telemetry is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Configuration)	M-1266	The LNA (Low Noise Amplifier) number from which the channel is receiving the signal.	String	N/A	"A1", "A2", "A3", "A4", "N/A"

dcc1 (Configuration)	M-1267	The polarization of the signal that the downlink channel is tracking.	String	N/A	"LCP", "RCP", "UNKN", "N/A"
dcc1 (Configuration)	M-1268	The configuration of the microwave for uplink. Possible configurations are low noise (LONO), diplexed (DPLX), radar configuration (RADR), and non-diplexed (NDPX, another name for low noise).	String	N/A	"LONO", "RADR", "DPLX", "NPDX", "UNKN", "N/A"
dcc1 (Ranging)	M-1500	Time that the ranging acquisition started. Also referred to as the T0 time.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc1 (Ranging)	M-1503*	Time that the correlation validity last changed. This channel contains the seconds portion of the total time. Channels M-1503, M-1504, and M-1505 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Ranging)	M-1504*	Time that the correlation validity last changed. This channel contains the nanoseconds portion of the total time. Channels M-1503, M-1504, and M-1505 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1503	>=0
dcc1 (Ranging)	M-1505*	Time that the correlation validity last changed. This channel contains the leap seconds portion of the total time. Channels M-1503, M-1504, and M-1505 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc1 (Ranging)	M-1506	Indicates whether or not the last ranging correlation was valid.	String	N/A	"OFF", "OUT OF LOCK", "IN LOCK"
dcc1 (Ranging)	M-1507	The number of range data blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc1 (Ranging)	M-1508	The number of carrier phase blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc1 (Ranging)	M-1509	Number of ranging points that have been measured. Value is reset to zero every time ranging acquisition is initiated.	Integer	N/A	0 to $(2^{31} - 1)$
dcc1 (Ranging)	M-1510	The Figure of Merit, expressed as a percentage, of the range measurement.	Float	percent	0.0 to 100.0
dcc1 (Ranging)	M-1511	Range residual. The measured range value minus the predicted value.	Double	range units	-2^{30} to 2^{30}
dcc1 (Ranging)	M-1512	Ranging power to noise spectral density ratio (Pr/NO).	Float	dB-Hz	-10.0 to 90.0
dcc1 (Ranging)	M-1513	Pr/NO residual. The measured Pr/N0 minus the predicted value.	Float	dB-Hz	-100.0 to 100.0
dcc1 (Ranging)	M-1514	Type of ranging being performed. SSIN => Sequential with sinewave clock, SSQ => Sequential with squarewave clock, PSIN => PN with sinewave clock, PSQ => PN with squarewave clock, PCON => PN, no clock.	String	N/A	"SSIN", "SSQ", "PSIN", "PSQ", "PCON"
dcc1 (Ranging)	M-1515	Round trip light time used. Valid only if ranging type (channel M-1514) is Sequential.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0

dcc1 (Ranging)	M-1516	Highest component of sequential ranging code (also called the clock component). Frequency is approximately $66*2^{-n}$ MHz, where n is the first component value. Valid only if ranging type (channel M-1514) is Sequential.	Integer	N/A	1 to 24
dcc1 (Ranging)	M-1517	Lowest component of sequential ranging code. Frequency is approximately $66*2^{-n}$ MHz, where n is the last component value. Valid only if ranging type (channel M-1514) is Sequential.	Integer	N/A	1 to 24
dcc1 (Ranging)	M-1518	Component value that is used for chopping the lower components at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-1514) is Sequential.	Integer	N/A	1 to 24
dcc1 (Ranging)	M-1519	Component value that the chopping starts at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-1514) is Sequential.	Integer	N/A	1 to 24
dcc1 (Ranging)	M-1520	Length of time that the first component is transmitted. Only valid if ranging type (channel M-1514) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc1 (Ranging)	M-1521	Length of time that the all components except the first are transmitted. Only valid if ranging type (channel M-1514) is Sequential.	Float	seconds	1.0 to 1.0e6

dcc1 (Ranging)	M-1522	Length of time that the first component is transmitted for each DRVID measurement. Only valid if ranging type (channel M-1514) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc1 (Ranging)	M-1523	Number of DRVID measurements per ranging cycle. Only valid if ranging type (channel M-1514) is Sequential.	Integer	N/A	0 to 255
dcc1 (Ranging)	M-1524	The integration time, in PN cycle periods, that the measurement was made. Valid only if ranging type (channel M-1514) is PN.	Integer	seconds	1 to $(2^{31} - 1)$
dcc1 (Ranging)	M-1525	The reference signal is divided by this value to get the modulation clock. Valid only if ranging type (channel M-1514) is PN.	Integer	N/A	1 to 64 (normally 64)
dcc1 (Ranging)	M-1526	Length of the 1st PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1527	The symbol (chip) pattern of the 1st PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc1 (Ranging)	M-1528	The Boolean operation associated with the 1st PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc1 (Ranging)	M-1529	Length of the 2nd PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1530	The symbol (chip) pattern of the 2nd PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc1 (Ranging)	M-1531	The Boolean operation associated with the 2nd PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"

dcc1 (Ranging)	M-1532	Length of the 3rd PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1533	The symbol (chip) pattern of the 3rd PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc1 (Ranging)	M-1534	The Boolean operation associated with the 3rd PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc1 (Ranging)	M-1535	Length of the 4th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1536	The symbol (chip) pattern of the 4th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc1 (Ranging)	M-1537	The Boolean operation associated with the 4th PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc1 (Ranging)	M-1538	Length of the 5th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1539	The symbol (chip) pattern of the 5th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc1 (Ranging)	M-1540	The Boolean operation associated with the 5th PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc1 (Ranging)	M-1541	Length of the 6th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	symbols (chips)	0 to 32
dcc1 (Ranging)	M-1542	The symbol (chip) pattern of the 6th PN sequence. Valid only if ranging type (channel M-1514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF

dcc1 (Ranging)	M-1543	The Boolean operation associated with the 6th PN sequence. Valid only if ranging type (channel M-1514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc1 (Ranging)	M-1544	Differenced Range versus Integrated Doppler (DRVID) measurement in Range Units.	Double	range units	-2^{30} to 2^{30}
dcc1 (Ranging)	M-1545	Current operational mode of the ranging process.	String	N/A	"IDLE", "TRK", "CAL", "DIAG"
dcc1 (Ranging)	M-1546	Time of the range and DRVID measurements.	String	N/A	"hh:mm:ss"
dcc1 (Ranging)	M-1547	Range measurement in Range Units.	Double	range units	0.00 to 2^{30}
dcc1 (Ranging)	M-1548	The desired ranging Figure of Merit.	Float	Percentage	0.0 to 100.0
dcc1 (Status)	M-1200	Status code for the overall downlink channel status.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1201	Status qualifier for the overall downlink channel status. This qualifies the status code (M-1200).	Integer	N/A	0 = None
dcc1 (Status)	M-1202	Status code for the overall receiver equipment controller status.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1203	Status qualifier for the overall receiver equipment controller status. This qualifies the status code (M-1202).	Integer	N/A	0 = None
dcc1 (Status)	M-1204	Status of the receiving function of the downlink channel. "Out of Service" indicates the receiving function is not installed.	Integer	N/A	0 = Out Of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1205	Status qualifier for the receiving function of the downlink channel. No qualifiers are used to qualify the status code (M-1204).	Integer	N/A	0 = None
dcc1 (Status)	M-1206	Status code for the status of the downlink channel controller of the downlink channel.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc1 (Status)	M-1207	Status qualifier for the status of the downlink channel controller of the downlink channel. No qualifiers are used to qualify the status code (M-1206).	Integer	N/A	0 = None
dcc1 (Status)	M-1208*	Status code for the status of the monopulse function of the downlink channel. "Out of Service" indicates the monopulse function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1209*	Status qualifier for the status of the monopulse function of the downlink channel. No qualifiers are used to qualify the status code (M-1208).	Integer	N/A	0 = None
dcc1 (Status)	M-1210	Status code for the status of the ranging function of the downlink channel. "Out of Service" indicates the ranging function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1211	Status qualifier for the status of the ranging function of the downlink channel. No qualifiers are used to qualify the status code (M-1210).	Integer	N/A	0 = None
dcc1 (Status)	M-1212	Status code for the status of the standard telemetry function of the downlink channel. "Out of Service" indicates the telemetry function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1213	Status qualifier for the status of the standard telemetry function of the downlink channel. No qualifiers are used to qualify the status code (M-1212).	Integer	N/A	0 = None
dcc1 (Status)	M-1214*	Status code for the status of the MCD3 decoder function of the downlink channel. "Out of Service" indicates the MCD3 function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc1 (Status)	M-1215*	Status qualifier for the status of the MCD3 decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-1214).	Integer	N/A	0 = None
dcc1 (Status)	M-1216*	Status code for the status of the turbo decoder function of the downlink channel. "Out of Service" indicates the turbo decoder function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc1 (Status)	M-1217*	Status qualifier for the status of the turbo decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-1216).	Integer	N/A	0 = None
dcc1 (Subcarrier Loop)	M-1340	The time of the last change in the predicted subcarrier frequency. This channel contains the seconds portion of the total time. Channels M-1340, M-1341, and M-1342 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Subcarrier Loop)	M-1341	The time of the last change in the predicted subcarrier frequency. This channel contains the nanoseconds portion of the total time. Channels M-1340, M-1341, and M-1342 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1340	>=0
dcc1 (Subcarrier Loop)	M-1342	The time of the last change in the predicted subcarrier frequency. This channel contains the leap seconds portion of the total time. Channels M-1340, M-1341, and M-1342 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Subcarrier Loop)	M-1343	The measured subcarrier frequency	Double	Hz	500.000 to 6000000.000
dcc1 (Subcarrier Loop)	M-1344	Subcarrier frequency residual. The measured subcarrier frequency minus the predicted value.	Float	Hz	-1.000e6 to 1.000e6

dcc1 (Subcarrier Loop)	M-1345	Subcarrier loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc1 (Subcarrier Loop)	M-1346	The subcarrier loop filter order.	Integer	N/A	1 to 3
dcc1 (Subcarrier Loop)	M-1347	The windowing on the subcarrier phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc1 (Subcarrier Loop)	M-1348	Subcarrier tracking loop lock status. Status is out-of-lock unless the loop status (M-1352) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc1 (Subcarrier Loop)	M-1349*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the seconds portion of the total time tag. Channels M-1349, M-1350, and M-1351 together contain the total time tag.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Subcarrier Loop)	M-1350*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time tag. Channels M-1349, M-1350, and M-1351 together contain the total time tag.	Integer	number of nanoseconds since the seconds value in M-1349	>=0
dcc1 (Subcarrier Loop)	M-1351*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time tag. Channels M-1349, M-1350, and M-1351 together contain the total time tag.	Integer	number of leap seconds in the time	>=0
dcc1 (Subcarrier Loop)	M-1352	Subcarrier tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"

dcc1 (Subcarrier Loop)	M-1353	The subcarrier data power to noise spectral density ratio (Pd/NO). If value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc1 (Subcarrier Loop)	M-1354	Pd/NO residual. The measured subcarrier Pd/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc1 (Subcarrier Loop)	M-1355	The subcarrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc1 (Subcarrier Loop)	M-1356	Subcarrier waveform.	String	N/A	“SIN”, “SQ”, “D”
dcc1 (Subcarrier Loop)	M-1357	Predicted subcarrier frequency (including predicted Doppler shifts).	Double	Hz	500.000 to 6000000.000
dcc1 (Subcarrier Loop)	M-1358	Subcarrier acquisition FFT usage switch. If enabled, the subcarrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Subcarrier Loop)	M-1359	Indicates whether or not the subcarrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Symbol Loop)	M-1380	The time of the last change in the predicted symbol frequency. This channel contains the seconds portion of the total time. Channels M-1380, M-1381, and M-1382 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Symbol Loop)	M-1381	The time of the last change in the predicted symbol frequency. This channel contains the nanoseconds portion of the total time. Channels M-1380, M-1381, and M-1382 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1380	>=0
dcc1 (Symbol Loop)	M-1382	The time of the last change in the predicted symbol frequency. This channel contains the leap seconds portion of the total time. Channels M-1380, M-1381, and M-1382 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc1 (Symbol Loop)	M-1383	The measured symbol rate	Double	sps	4.000 to 26400000.000
dcc1 (Symbol Loop)	M-1384	Symbol rate residual. The measured symbol rate minus the predicted value.	Float	sps	-26400000.000 to 26400000.000
dcc1 (Symbol Loop)	M-1385	Symbol loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc1 (Symbol Loop)	M-1386	The symbol loop filter order.	Integer	N/A	1 to 3
dcc1 (Symbol Loop)	M-1387	The windowing on the symbol phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc1 (Symbol Loop)	M-1388	Symbol tracking loop lock status. Status is out-of-lock unless the loop status (M-1392) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc1 (Symbol Loop)	M-1389*	Time that the symbol tracking loop lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1389, M-1390, and M-1391 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Symbol Loop)	M-1390*	Time that the symbol tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1389, M-1390, and M-1391 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1389	>=0
dcc1 (Symbol Loop)	M-1391*	Time that the symbol tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1389, M-1390, and M-1391 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc1 (Symbol Loop)	M-1392	Symbol tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc1 (Symbol Loop)	M-1393	The measured symbol signal to noise ratio (SSNR).	Float	dB	-10.0 to 50.0
dcc1 (Symbol Loop)	M-1394	SSNR residual. The measured SSNR minus the predicted value.	Float	dB	-50.0 to 50.0
dcc1 (Symbol Loop)	M-1395	The symbol tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc1 (Symbol Loop)	M-1396	Modulation format of the symbols.	String	N/A	“NRZL”, “NRZM”, “NRZS”, “BIPS”, “BIPL”, “BIPM”
dcc1 (Symbol Loop)	M-1397	Configuration of the symbol smoothing algorithm (low threshold telemetry mode).	String	N/A	“ENABLED”, “DISABLED”
dcc1 (Symbol Loop)	M-1398	Predicted symbol frequency (including predicted Doppler shifts).	Double	sps	4.000 to 26400000.000
dcc1 (Symbol Loop)	M-1399	Symbol acquisition FFT usage switch. If enabled, the symbol acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Symbol Loop)	M-1400	Indicates whether or not the symbol FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Telemetry)	M-0190	Number of Virtual Channel 0 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc1 (Telemetry)	M-0191	Number of Virtual Channel 1 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-0192	Number of Virtual Channel 2 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-0193	Number of Virtual Channel 3 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-0194	Number of Virtual Channel 4 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-0195	Number of Virtual Channel 5 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)

dcc1 (Telemetry)	M-0196	Number of Virtual Channel 6 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-0197	Number of Virtual Channel 7 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1415	Operational state of the Reed-Solomon decoder. In Primary (P) mode, the corrected bits are output to the end user. In Secondary (S) mode, the decoding statistics are provided for the operator, but the bit corrections are not output.	String	N/A	"D", “P”, “S”
dcc1 (Telemetry)	M-1416	Indicator of whether the input signal is an arrayed signal or not. A value of 0 indicates not arrayed; values of 1 and 2 correspond to the arraying equipment physical number.	Integer	N/A	0 = Unarrayed, 1 = Arrayed with FSPA1 as the source, 2 = Arrayed with FSPA2 as the source
dcc1 (Telemetry)	M-1417	Frame sync operational mode.	String	N/A	“D”, “P”
dcc1 (Telemetry)	M-1418	The pattern of bits of the frame sync word.	String	N/A	Any pattern expressed in hexadecimal
dcc1 (Telemetry)	M-1419	Length of the frame sync word.	Integer	bits	8 to 64
dcc1 (Telemetry)	M-1420	Predicted telemetry bit rate.	Double	bps	2.000 to 26.4e6
dcc1 (Telemetry)	M-1421	Measured bit rate.	Double	bps	2.000 to 26.4e6
dcc1 (Telemetry)	M-1422	Overall telemetry lock status (includes decoders and frame synchronizer).	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc1 (Telemetry)	M-1424	Telemetry processing operational status	String	N/A	"GO", "NOGO"

dcc1 (Telemetry)	M-1425*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1425, M-1426, and M-1427 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Telemetry)	M-1426*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1425, M-1426, and M-1427 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1425	>=0
dcc1 (Telemetry)	M-1427*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1425, M-1426, and M-1427 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Telemetry)	M-1428*	Time that the decoder lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1428, M-1429, and M-1430 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Telemetry)	M-1429*	Time that the decoder lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1428, M-1429, and M-1430 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1428	>=0
dcc1 (Telemetry)	M-1430*	Time that the decoder lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1428, M-1429, and M-1430 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Telemetry)	M-1431	Telemetry decoder lock status.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"

dcc1 (Telemetry)	M-1433	Type of decoder used.	String	N/A	"MCD2", "MCD3", "TURBO", "UNC", "SYMB", "GSSR"
dcc1 (Telemetry)	M-1434	The output bit signal to noise ratio for the decoder.	Double	dB	-10.0 to 50.0
dcc1 (Telemetry)	M-1436	In-lock threshold for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	Integer	N/A	1 to 255
dcc1 (Telemetry)	M-1437	Vector set for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	String	N/A	"CCSDS", "DSN"
dcc1 (Telemetry)	M-1438	In-lock threshold for MCD3 decoder. Only valid if decoder type is MCD3 decoder.	Integer	N/A	1 to 256
dcc1 (Telemetry)	M-1439	Vector set for the MCD3 decoder. Only valid if decoder type is MCD3 decoder.	String	N/A	"NONE", "CCSDS", "DSN", "A15R6", "CAS", "MAP"
dcc1 (Telemetry)	M-1440	Frame sync primary frame length	Integer	bits	8 to 65536
dcc1 (Telemetry)	M-1441	Frame sync in lock bit error tolerance. The number of bit errors allowed in the frame sync word while still being considered in lock.	Integer	bits	0 to 15
dcc1 (Telemetry)	M-1442	Frame sync out of lock bit error tolerance (the minimum number of bit errors required to declare out of lock).	Integer	bits	0 to 15
dcc1 (Telemetry)	M-1443	Frame sync in lock threshold (the number of consecutive in sync frames verified before lock is declared).	Integer	frames	1 to 15
dcc1 (Telemetry)	M-1444	Frame sync out of lock threshold (number of consecutive out of sync frames before out-of-lock is declared).	Integer	frames	1 to 15

dcc1 (Telemetry)	M-1445*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1445, M-1446, and M-1447 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Telemetry)	M-1446*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1445, M-1446, and M-1447 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1445	>=0
dcc1 (Telemetry)	M-1447*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1445, M-1446, and M-1447 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc1 (Telemetry)	M-1448*	Time that the frame sync lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1448, M-1449, and M-1450 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc1 (Telemetry)	M-1449*	Time that the frame sync lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1448, M-1449, and M-1450 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1448	>=0
dcc1 (Telemetry)	M-1450*	Time that the frame sync lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1448, M-1449, and M-1450 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc1 (Telemetry)	M-1451	Frame sync lock status.	String	N/A	"IDLE", "SEARCH", "VERIFY", "LOCK", "FLYWHEEL"
dcc1 (Telemetry)	M-1452	The number of bits the frame synchronizer processed in its last (if in-lock) or current (if out-of-lock) acquisition. When the frame sync goes to out-of-lock, the value is reset to zero.	Integer	bits	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1453	Number of telemetry blocks output since the start of the connection.	Integer	blocks	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1455	Count of total number of frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1456	Count of the number of good frames (verify, flywheel, and lock) since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1457	Count of the number of bad (search) frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1458	Lock status of the Cyclic Redundancy Code (CRC) check.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc1 (Telemetry)	M-1459	Configuration of the pseudo derandomizer.	String	N/A	"ENABLED", "DISABLED"
dcc1 (Telemetry)	M-1460	Count of total number of frames that have had the CRC checked since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1461	Count of the number of frames that have passed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc1 (Telemetry)	M-1462	Count of the number of frames that have failed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1463	Lock status of the Reed-Solomon decoder.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc1 (Telemetry)	M-1464	Count of total number of Reed-Solomon code words that have been checked since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1465	Count of the number of Reed-Solomon code words that have been decoded since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1466	Count of the number of Reed-Solomon code words that have failed to decode since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1467	Ratio of bad frames to total frames for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc1 (Telemetry)	M-1468	Ratio of bad code words to total code words for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc1 (Telemetry)	M-1469	Count of total number of locked (flywheel and lock) frames since start of connection. Count rolls over to zero.	Integer	frames	0 to (2^{31} - 1)

dcc1 (Telemetry)	M-1470	The number of frames with flywheel status in the last (or current) in-lock period. When lock is first acquired, the value is reset to zero.	Integer	frames	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1471	Name of the format table used by the default telemetry stream.	String	N/A	Any ASCII string, up to 242 characters long
dcc1 (Telemetry)	M-1474	Out-of-lock threshold for Viterbi decoder (7, _).	Integer	bits	1 to 65535
dcc1 (Telemetry)	M-1475	Out-of-lock threshold for the MCD3 decoder.	Integer	bits	1 to 255
dcc1 (Telemetry)	M-1476	Configuration of the differential decoder (disabled, mark, or space).	String	N/A	“D”, “NM”, "NS"
dcc1 (Telemetry)	M-1477	State of the Viterbi decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc1 (Telemetry)	M-1478	State of the MCD3 decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc1 (Telemetry)	M-1479	The number of times the metric normalization count exceeded the threshold since the TLP was put in the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1480	Percentage of symbol errors detected over the last accumulation period.	Double	Percentage	0.0 to 100.0
dcc1 (Telemetry)	M-1481	Viterbi decoder node sync change algorithm.	String	N/A	“D”, “SER”, “MNR”
dcc1 (Telemetry)	M-1482	Number of node sync changes since the TLP was put into the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc1 (Telemetry)	M-1483	Position that the MCD3 decoder has locked onto.	Integer	N/A	0 to 5
dcc1 (Telemetry)	M-1484	Frame sync secondary frame length (alternate frame length).	Integer	bits	0 to 65528
dcc1 (Telemetry)	M-1485	Detected frame size.	Integer	bits	8 to 65536
dcc1 (Telemetry)	M-1486	Status of the frame synchronizer hardware.	String	N/A	"GO", "NOGO"

dcc1 (Telemetry)	M-1487	The order of the sequence for searching for frame synchronization (e.g. left-to-right (MSB) or right-to-left (LSB)). Allows handling of spacecraft that transmit recorded data backwards. M => MSB, L => LSB, and B => Both.	String	N/A	“M”, “L”, “B”
dcc1 (Telemetry)	M-1488	Number of bits over or under the frame length the synchronizer will accept as a correct length frame.	Integer	bits	0 to 3
dcc1 (Telemetry)	M-1489	The bit error rate (BER) of the frame sync words for the in-lock frames.	Double	Percentage	0.0 to 100.0
dcc1 (Telemetry)	M-1490	The detected bit sequence.	String	N/A	“MSB”, “LSB”
dcc1 (Telemetry)	M-1491	The polarity of the input data to the frame synchronizer.	String	N/A	“NORMAL”, “INVERTED”
dcc1 (Telemetry)	M-1492	The number of bit slips detected since the start of processing. This count is the number of bits slipped, not the number of bit slip occurrences.	Integer	bits	0 to $(2^{31} - 1)$
dcc1 (Telemetry)	M-1493	The number of polarity changes detected since the start of processing.	Integer	N/A	0 to 65535
dcc1 (Telemetry)	M-1494	The number of times since the start of the processing that the frame synchronizer has transitioned to the LOCK state.	Integer	N/A	0 to 65535
dcc1 (Telemetry)	M-1495	Number of Reed-Solomon codewords interleaved into a transfer frame.	Integer	Codewords	0 to 5
dcc1 (Telemetry)	M-1496	Reed-Solomon decoding algorithm used (Berlekamp versus Conventional).	String	N/A	“B”, “C”
dcc1 (Telemetry)	M-1497	Number of zero pad symbols (bytes) used in the Reed-Solomon encoding. This is also known as the virtual fill.	Integer	Reed-Solomon symbols	0 to 223

dcc1 (Telemetry)	M-1498	The number of symbol errors detected divided by the number of symbols received. Codewords that cannot be corrected are not counted.	Double	Percentage	0.0 to 100.0
dcc1 (Telemetry)	M-1499	Reed-Solomon decoder hardware status.	String	N/A	“GO”, “NOGO”
dcc2 (Carrier Loop)	M-1790	Time tag of carrier performance data. This channel contains the seconds portion of the total time. Channels M-1790, M-1791, and M-1792 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Carrier Loop)	M-1791	Time tag of carrier performance data. This channel contains the nanoseconds portion of the total time. Channels M-1790, M-1791, and M-1792 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1790	>=0
dcc2 (Carrier Loop)	M-1792	Time tag of carrier performance data. This channel contains the leap seconds portion of the total time. Channels M-1790, M-1791, and M-1792 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Carrier Loop)	M-1793	Time that the last carrier acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1793, M-1794, and M-1795 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Carrier Loop)	M-1794	Time that the last carrier acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1793, M-1794, and M-1795 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1793	>=0

dcc2 (Carrier Loop)	M-1795	Time that the last carrier acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1793, M-1794, and M-1795 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Carrier Loop)	M-1796	Time that the carrier lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1796, M-1797, and M-1798 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Carrier Loop)	M-1797	Time that the carrier lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1796, M-1797, and M-1798 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1796	>=0
dcc2 (Carrier Loop)	M-1798	Time that the carrier lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1796, M-1797, and M-1798 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Carrier Loop)	M-1799	Carrier loop tracking bandwidth.	Float	Hz	0.100 to 1000.000
dcc2 (Carrier Loop)	M-1800	The carrier loop filter order.	Integer	N/A	1 to 3
dcc2 (Carrier Loop)	M-1801	Carrier tracking loop lock status. Status is out-of-lock unless the loop status (M-1802) is IN LOCK.	Integer	N/A	0 = Out of lock, 1 = In lock.
dcc2 (Carrier Loop)	M-1802	Carrier tracking loop status. This is the result of the acquisition command or enabling the loop.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"

dcc2 (Carrier Loop)	M-1803	Data tracking loop status (combined status of subcarrier and symbol loops).	Integer	N/A	0 = Out of lock, 1= In lock, 2 = Off (Idle), 3 = Acquiring, 4 = Open
dcc2 (Carrier Loop)	M-1804	The measured carrier frequency.	Double	Hz	2200000000.000 to 32,300,000,000.000
dcc2 (Carrier Loop)	M-1805	Carrier frequency residual. The measured carrier frequency minus the predicted value.	Float	Hz	-1000000.000 to 1000000.000
dcc2 (Carrier Loop)	M-1806	The predicted carrier frequency minus the measured value. This is commonly called the doppler residual.	Float	Hz	-1000000.000 to 1000000.000
dcc2 (Carrier Loop)	M-1807	The measured carrier frequency rate (first derivative of the frequency).	Float	Hz/sec	-108000.0 to 108000.0
dcc2 (Carrier Loop)	M-1808	The measured carrier frequency acceleration (second derivative of the frequency).	Float	Hz/sec^2	-2600.0 to 2600.0
dcc2 (Carrier Loop)	M-1809	The standard deviation of the detrended frequency residuals. This is commonly called the doppler noise.	Float	Hz	0.000 to 1000.000
dcc2 (Carrier Loop)	M-1810	Carrier power at performance time tag (channels M-1790, M-1791, and M-1792). If value not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc2 (Carrier Loop)	M-1811	Carrier power residual. The estimated carrier power minus the predicted value.	Float	dB	-190.0 to 190.0
dcc2 (Carrier Loop)	M-1812	The measured data power. If value is not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc2 (Carrier Loop)	M-1813	Data power residual. The measured data power minus the predicted value.	Float	dBm	-190.0 to 190.0
dcc2 (Carrier Loop)	M-1814	The carrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0

dcc2 (Carrier Loop)	M-1815	The carrier power to noise spectral density ratio (Pc/NO). If the value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc2 (Carrier Loop)	M-1816	Pc/NO residual. The measured Pc/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc2 (Carrier Loop)	M-1817	Carrier tracking mode (source of carrier error signal).	String	N/A	"RESIDUAL", "SUPPRESSED", "SIDEBAND", "QPSK", "OQPSK", "OPEN"
dcc2 (Carrier Loop)	M-1818	The system noise temperature (SNT).	Float	kelvin	10.0 to 2000.0
dcc2 (Carrier Loop)	M-1819	SNT residual. The measured system noise temperature minus the predicted value.	Float	kelvin	10.0 to 2000.0
dcc2 (Carrier Loop)	M-1820	The predicted carrier frequency.	Double	Hz	2200000000.000 to 32300000000.000
dcc2 (Carrier Loop)	M-1821	Count of the number of cycle slips detected during this pass.	Float	number of slips	0.0 to 10000.0
dcc2 (Carrier Loop)	M-1822	Carrier acquisition FFT usage switch. If enabled, the carrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Carrier Loop)	M-1823	Indicates whether or not the carrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Configuration)	M-1740	Downlink channel providing the data.	Integer	N/A	1 to 24
dcc2 (Configuration)	M-1741	Antenna being used from the perspective of the DTT (Downlink Tracking and Telemetry) subsystem. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	0 to 99

dcc2 (Configuration)	M-1742	Configured spacecraft ID from the perspective of the DTT. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	1 to 255
dcc2 (Configuration)	M-1743	Pass number.	Integer	N/A	0 to 9999
dcc2 (Configuration)	M-1744	Mission ID for spacecraft.	Integer	N/A	0 to 255
dcc2 (Configuration)	M-1745	Downlink carrier band.	String	N/A	"NONE", "L", "S", "X", "KA", "S26"
dcc2 (Configuration)	M-1746	Uplink carrier band used for the downlink processing. It is possible that this is not the actual uplink band.	String	N/A	"NONE", "L", "S", "X", "KA"
dcc2 (Configuration)	M-1747	Receiver-Telemetry configuration table name.	String	N/A	Any ASCII string, up to 242 characters long
dcc2 (Configuration)	M-1748	Receiver radiometrics (frequency) predicts mode. NPX => no predicts used, 1W => one-way, 2W => two-way, 3W => three-way.	String	N/A	"NPX", "1W", "2W", "3W"
dcc2 (Configuration)	M-1750	Uplink antenna for three-way predicts.	Integer	N/A	0 to 99
dcc2 (Configuration)	M-1751	Predicted carrier frequency	Double	Hz	2200000000.000 to 32300000000.000
dcc2 (Configuration)	M-1752	Predicted subcarrier frequency	Double	Hz	0.000 to 2000000.000
dcc2 (Configuration)	M-1753	Predicted symbol rate	Double	Hz	4.000 to 26400000.000
dcc2 (Configuration)	M-1754	SNT measurement switch. If the measurement is disabled, the value in M-1818 is the predicted value.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Configuration)	M-1755	Monopulse tracking processing switch. Used only when there is a Ka-band downlink (M-1745 is equal to "KA").	String	N/A	"ENABLED", "DISABLED"

dcc2 (Configuration)	M-1756	Name of the radiometric predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc2 (Configuration)	M-1757	Time that the last radiometric predict mode change was done. This channel contains the seconds portion of the total time. Channels M-1757, M-1758, and M-1759 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Configuration)	M-1758	Time that the last radiometric predict mode change was done. This channel contains the nanoseconds portion of the total time. Channels M-1757, M-1758, and M-1759 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1757	>=0
dcc2 (Configuration)	M-1759	Time that the last radiometric predict mode change was done. This channel contains the leap seconds portion of the total time. Channels M-1757, M-1758, and M-1759 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Configuration)	M-1760	Telemetry predicts usage mode. If enabled, telemetry predicts are used if the radiometric predict mode (M-1748) is not NPX.	String	N/A	"DISABLED", "ENABLED"
dcc2 (Configuration)	M-1761	Name of the telemetry predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc2 (Configuration)	M-1762	Range state	String	N/A	"Enable", "Disable"

dcc2 (Configuration)	M-1763	Carrier phase (tracking) data output switch. If enabled, carrier phase data is being sent (count of blocks given in M-2008).	String	N/A	"ENABLED", "DISABLED"
dcc2 (Configuration)	M-1764	Range data output switch. If enabled, range data is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Configuration)	M-1765	Telemetry data output switch. If enabled, telemetry is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Configuration)	M-1766	The LNA (Low Noise Amplifier) number from which the channel is receiving the signal.	String	N/A	"A1", "A2", "A3", "A4", "N/A"
dcc2 (Configuration)	M-1767	The polarization of the signal that the downlink channel is tracking.	String	N/A	"LCP", "RCP", "UNKN", "N/A"
dcc2 (Configuration)	M-1768	The configuration of the microwave for uplink. Possible configurations are low noise (LONO), diplexed (DPLX), radar configuration (RADR), and non-diplexed (NDPX, another name for low noise).	String	N/A	"LONO", "RADR", "DPLX", "NPDX", "UNKN", "N/A"
dcc2 (Ranging)	M-2000	Time that the ranging acquisition started. Also referred to as the T0 time.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc2 (Ranging)	M-2003*	Time that the correlation validity last changed. This channel contains the seconds portion of the total time. Channels M-2003, M-2004, and M-2005 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc2 (Ranging)	M-2004*	Time that the correlation validity last changed. This channel contains the nanoseconds portion of the total time. Channels M-2003, M-2004, and M-2005 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2003	>=0
dcc2 (Ranging)	M-2005*	Time that the correlation validity last changed. This channel contains the leap seconds portion of the total time. Channels M-2003, M-2004, and M-2005 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Ranging)	M-2006	Indicates whether or not the last ranging correlation was valid.	String	N/A	"OFF", "OUT OF LOCK", "IN LOCK"
dcc2 (Ranging)	M-2007	The number of range data blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc2 (Ranging)	M-2008	The number of carrier phase blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc2 (Ranging)	M-2009	Number of ranging points that have been measured. Value is reset to zero every time ranging acquisition is initiated.	Integer	N/A	0 to $(2^{31} - 1)$
dcc2 (Ranging)	M-2010	The Figure of Merit, expressed as a percentage, of the range measurement.	Float	percent	0.0 to 100.0
dcc2 (Ranging)	M-2011	Range residual. The measured range value minus the predicted value.	Double	range units	-2^{30} to 2^{30}
dcc2 (Ranging)	M-2012	Ranging power to noise spectral density ratio (Pr/NO).	Float	dB-Hz	-10.0 to 90.0
dcc2 (Ranging)	M-2013	Pr/NO residual. The measured Pr/N0 minus the predicted value.	Float	dB-Hz	-100.0 to 100.0

dcc2 (Ranging)	M-2014	Type of ranging being performed. SSIN => Sequential with sinewave clock, SSQ => Sequential with squarewave clock, PSIN => PN with sinewave clock, PSQ => PN with squarewave clock, PCON => PN, no clock.	String	N/A	"SSIN", "SSQ", "PSIN", "PSQ", "PCON"
dcc2 (Ranging)	M-2015	Round trip light time used. Valid only if ranging type (channel M-2014) is Sequential.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc2 (Ranging)	M-2016	Highest component of sequential ranging code (also called the clock component). Frequency is approximately $66*2^{-n}$ MHz, where n is the first component value. Valid only if ranging type (channel M-2014) is Sequential.	Integer	N/A	1 to 24
dcc2 (Ranging)	M-2017	Lowest component of sequential ranging code. Frequency is approximately $66*2^{-n}$ MHz, where n is the last component value. Valid only if ranging type (channel M-2014) is Sequential.	Integer	N/A	1 to 24
dcc2 (Ranging)	M-2018	Component value that is used for chopping the lower components at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-2014) is Sequential.	Integer	N/A	1 to 24

dcc2 (Ranging)	M-2019	Component value that the chopping starts at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-2014) is Sequential.	Integer	N/A	1 to 24
dcc2 (Ranging)	M-2020	Length of time that the first component is transmitted. Only valid if ranging type (channel M-2014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc2 (Ranging)	M-2021	Length of time that the all components except the first are transmitted. Only valid if ranging type (channel M-2014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc2 (Ranging)	M-2022	Length of time that the first component is transmitted for each DRVID measurement. Only valid if ranging type (channel M-2014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc2 (Ranging)	M-2023	Number of DRVID measurements per ranging cycle. Only valid if ranging type (channel M-2014) is Sequential.	Integer	N/A	0 to 255
dcc2 (Ranging)	M-2024	The integration time, in PN cycle periods, that the measurement was made. Valid only if ranging type (channel M-2014) is PN.	Integer	seconds	1 to $(2^{31} - 1)$
dcc2 (Ranging)	M-2025	The reference signal is divided by this value to get the modulation clock. Valid only if ranging type (channel M-2014) is PN.	Integer	N/A	1 to 64 (normally 64)
dcc2 (Ranging)	M-2026	Length of the 1st PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32
dcc2 (Ranging)	M-2027	The symbol (chip) pattern of the 1st PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF

dcc2 (Ranging)	M-2028	The Boolean operation associated with the 1st PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2029	Length of the 2nd PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32
dcc2 (Ranging)	M-2030	The symbol (chip) pattern of the 2nd PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc2 (Ranging)	M-2031	The Boolean operation associated with the 2nd PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2032	Length of the 3rd PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32
dcc2 (Ranging)	M-2033	The symbol (chip) pattern of the 3rd PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc2 (Ranging)	M-2034	The Boolean operation associated with the 3rd PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2035	Length of the 4th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32
dcc2 (Ranging)	M-2036	The symbol (chip) pattern of the 4th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc2 (Ranging)	M-2037	The Boolean operation associated with the 4th PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2038	Length of the 5th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32

dcc2 (Ranging)	M-2039	The symbol (chip) pattern of the 5th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc2 (Ranging)	M-2040	The Boolean operation associated with the 5th PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2041	Length of the 6th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	symbols (chips)	0 to 32
dcc2 (Ranging)	M-2042	The symbol (chip) pattern of the 6th PN sequence. Valid only if ranging type (channel M-2014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc2 (Ranging)	M-2043	The Boolean operation associated with the 6th PN sequence. Valid only if ranging type (channel M-2014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc2 (Ranging)	M-2044	Differenced Range versus Integrated Doppler (DRVID) measurement in Range Units.	Double	range units	-2^{30} to 2^{30}
dcc2 (Ranging)	M-2045	Current operational mode of the ranging process.	String	N/A	"IDLE", "TRK", "CAL", "DIAG"
dcc2 (Ranging)	M-2046	Time of the range and DRVID measurements.	String	N/A	"hh:mm:ss"
dcc2 (Ranging)	M-2047	Range measurement in Range Units.	Double	range units	0.00 to 2^{30}
dcc2 (Ranging)	M-2048	The desired ranging Figure of Merit.	Float	Percentage	0.0 to 100.0
dcc2 (Status)	M-1700	Status code for the overall downlink channel status.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1701	Status qualifier for the overall downlink channel status. This qualifies the status code (M-1700).	Integer	N/A	0 = None
dcc2 (Status)	M-1702	Status code for the overall receiver equipment controller status.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc2 (Status)	M-1703	Status qualifier for the overall receiver equipment controller status. This qualifies the status code (M-1702).	Integer	N/A	0 = None
dcc2 (Status)	M-1704	Status of the receiving function of the downlink channel. "Out of Service" indicates the receiving function is not installed.	Integer	N/A	0 = Out Of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1705	Status qualifier for the receiving function of the downlink channel. No qualifiers are used to qualify the status code (M-1704).	Integer	N/A	0 = None
dcc2 (Status)	M-1706	Status code for the status of the downlink channel controller of the downlink channel.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1707	Status qualifier for the status of the downlink channel controller of the downlink channel. No qualifiers are used to qualify the status code (M-1706).	Integer	N/A	0 = None
dcc2 (Status)	M-1708*	Status code for the status of the monopulse function of the downlink channel. "Out of Service" indicates the monopulse function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1709*	Status qualifier for the status of the monopulse function of the downlink channel. No qualifiers are used to qualify the status code (M-1708).	Integer	N/A	0 = None
dcc2 (Status)	M-1710	Status code for the status of the ranging function of the downlink channel. "Out of Service" indicates the ranging function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc2 (Status)	M-1711	Status qualifier for the status of the ranging function of the downlink channel. No qualifiers are used to qualify the status code (M-1710).	Integer	N/A	0 = None
dcc2 (Status)	M-1712	Status code for the status of the standard telemetry function of the downlink channel. "Out of Service" indicates the telemetry function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1713	Status qualifier for the status of the standard telemetry function of the downlink channel. No qualifiers are used to qualify the status code (M-1712).	Integer	N/A	0 = None
dcc2 (Status)	M-1714*	Status code for the status of the MCD3 decoder function of the downlink channel. "Out of Service" indicates the MCD3 function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1715*	Status qualifier for the status of the MCD3 decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-1714).	Integer	N/A	0 = None
dcc2 (Status)	M-1716*	Status code for the status of the turbo decoder function of the downlink channel. "Out of Service" indicates the turbo decoder function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc2 (Status)	M-1717*	Status qualifier for the status of the turbo decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-1716).	Integer	N/A	0 = None

dcc2 (Subcarrier Loop)	M-1840	The time of the last change in the predicted subcarrier frequency. This channel contains the seconds portion of the total time. Channels M-1840, M-1841, and M-1842 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Subcarrier Loop)	M-1841	The time of the last change in the predicted subcarrier frequency. This channel contains the nanoseconds portion of the total time. Channels M-1840, M-1841, and M-1842 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1840	>=0
dcc2 (Subcarrier Loop)	M-1842	The time of the last change in the predicted subcarrier frequency. This channel contains the leap seconds portion of the total time. Channels M-1840, M-1841, and M-1842 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Subcarrier Loop)	M-1843	The measured subcarrier frequency	Double	Hz	500.000 to 6000000.000
dcc2 (Subcarrier Loop)	M-1844	Subcarrier frequency residual. The measured subcarrier frequency minus the predicted value.	Float	Hz	-1.000e6 to 1.000e6
dcc2 (Subcarrier Loop)	M-1845	Subcarrier loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc2 (Subcarrier Loop)	M-1846	The subcarrier loop filter order.	Integer	N/A	1 to 3
dcc2 (Subcarrier Loop)	M-1847	The windowing on the subcarrier phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc2 (Subcarrier Loop)	M-1848	Subcarrier tracking loop lock status. Status is out-of-lock unless the loop status (M-1852) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock

dcc2 (Subcarrier Loop)	M-1849*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the seconds portion of the total time tag. Channels M-1849, M-1850, and M-1851 together contain the total time tag.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Subcarrier Loop)	M-1850*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time tag. Channels M-1849, M-1850, and M-1851 together contain the total time tag.	Integer	number of nanoseconds since the seconds value in M-1849	>=0
dcc2 (Subcarrier Loop)	M-1851*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time tag. Channels M-1849, M-1850, and M-1851 together contain the total time tag.	Integer	number of leap seconds in the time	>=0
dcc2 (Subcarrier Loop)	M-1852	Subcarrier tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc2 (Subcarrier Loop)	M-1853	The subcarrier data power to noise spectral density ratio (Pd/NO). If value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc2 (Subcarrier Loop)	M-1854	Pd/NO residual. The measured subcarrier Pd/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc2 (Subcarrier Loop)	M-1855	The subcarrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc2 (Subcarrier Loop)	M-1856	Subcarrier waveform.	String	N/A	“SIN”, “SQ”, “D”
dcc2 (Subcarrier Loop)	M-1857	Predicted subcarrier frequency (including predicted Doppler shifts).	Double	Hz	500.000 to 6000000.000

dcc2 (Subcarrier Loop)	M-1858	Subcarrier acquisition FFT usage switch. If enabled, the subcarrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Subcarrier Loop)	M-1859	Indicates whether or not the subcarrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Symbol Loop)	M-1880	The time of the last change in the predicted symbol frequency. This channel contains the seconds portion of the total time. Channels M-1880, M-1881, and M-1882 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Symbol Loop)	M-1881	The time of the last change in the predicted symbol frequency. This channel contains the nanoseconds portion of the total time. Channels M-1880, M-1881, and M-1882 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1880	>=0
dcc2 (Symbol Loop)	M-1882	The time of the last change in the predicted symbol frequency. This channel contains the leap seconds portion of the total time. Channels M-1880, M-1881, and M-1882 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Symbol Loop)	M-1883	The measured symbol rate	Double	sps	4.000 to 26400000.000
dcc2 (Symbol Loop)	M-1884	Symbol rate residual. The measured symbol rate minus the predicted value.	Float	sps	-26400000.000 to 26400000.000
dcc2 (Symbol Loop)	M-1885	Symbol loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc2 (Symbol Loop)	M-1886	The symbol loop filter order.	Integer	N/A	1 to 3
dcc2 (Symbol Loop)	M-1887	The windowing on the symbol phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15

dcc2 (Symbol Loop)	M-1888	Symbol tracking loop lock status. Status is out-of-lock unless the loop status (M-1892) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc2 (Symbol Loop)	M-1889*	Time that the symbol tracking loop lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1889, M-1890, and M-1891 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Symbol Loop)	M-1890*	Time that the symbol tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1889, M-1890, and M-1891 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1889	>=0
dcc2 (Symbol Loop)	M-1891*	Time that the symbol tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1889, M-1890, and M-1891 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Symbol Loop)	M-1892	Symbol tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc2 (Symbol Loop)	M-1893	The measured symbol signal to noise ratio (SSNR).	Float	dB	-10.0 to 50.0
dcc2 (Symbol Loop)	M-1894	SSNR residual. The measured SSNR minus the predicted value.	Float	dB	-50.0 to 50.0
dcc2 (Symbol Loop)	M-1895	The symbol tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc2 (Symbol Loop)	M-1896	Modulation format of the symbols.	String	N/A	“NRZL”, “NRZM”, “NRZS”, “BIPS”, “BIPL”, “BIPM”

dcc2 (Symbol Loop)	M-1897	Configuration of the symbol smoothing algorithm (low threshold telemetry mode).	String	N/A	“ENABLED”, “DISABLED”
dcc2 (Symbol Loop)	M-1898	Predicted symbol frequency (including predicted Doppler shifts).	Double	sps	4.000 to 26400000.000
dcc2 (Symbol Loop)	M-1899	Symbol acquisition FFT usage switch. If enabled, the symbol acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Symbol Loop)	M-1900	Indicates whether or not the symbol FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Telemetry)	M-0290	Number of Virtual Channel 0 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc2 (Telemetry)	M-0291	Number of Virtual Channel 1 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc2 (Telemetry)	M-0292	Number of Virtual Channel 2 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc2 (Telemetry)	M-0293	Number of Virtual Channel 3 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-0294	Number of Virtual Channel 4 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-0295	Number of Virtual Channel 5 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-0296	Number of Virtual Channel 6 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-0297	Number of Virtual Channel 7 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)

dcc2 (Telemetry)	M-1915	Operational state of the Reed-Solomon decoder. In Primary (P) mode, the corrected bits are output to the end user. In Secondary (S) mode, the decoding statistics are provided for the operator, but the bit corrections are not output.	String	N/A	"D", “P”, “S”
dcc2 (Telemetry)	M-1916	Indicator of whether the input signal is an arrayed signal or not. A value of 0 indicates not arrayed; values of 1 and 2 correspond to the arraying equipment physical number.	Integer	N/A	0 = Unarrayed, 1 = Arrayed with FSPA1 as the source, 2 = Arrayed with FSPA2 as the source
dcc2 (Telemetry)	M-1917	Frame sync operational mode.	String	N/A	“D”, “P”
dcc2 (Telemetry)	M-1918	The pattern of bits of the frame sync word.	String	N/A	Any pattern expressed in hexadecimal
dcc2 (Telemetry)	M-1919	Length of the frame sync word.	Integer	bits	8 to 64
dcc2 (Telemetry)	M-1920	Predicted telemetry bit rate.	Double	bps	2.000 to 26.4e6
dcc2 (Telemetry)	M-1921	Measured bit rate.	Double	bps	2.000 to 26.4e6
dcc2 (Telemetry)	M-1922	Overall telemetry lock status (includes decoders and frame synchronizer).	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc2 (Telemetry)	M-1924	Telemetry processing operational status	String	N/A	"GO", "NOGO"
dcc2 (Telemetry)	M-1925*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1925, M-1926, and M-1927 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Telemetry)	M-1926*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1925, M-1926, and M-1927 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1925	>=0

dcc2 (Telemetry)	M-1927*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1925, M-1926, and M-1927 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Telemetry)	M-1928*	Time that the decoder lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1928, M-1929, and M-1930 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Telemetry)	M-1929*	Time that the decoder lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1928, M-1929, and M-1930 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1928	>=0
dcc2 (Telemetry)	M-1930*	Time that the decoder lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1928, M-1929, and M-1930 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Telemetry)	M-1931	Telemetry decoder lock status.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc2 (Telemetry)	M-1933	Type of decoder used.	String	N/A	"MCD2", "MCD3", "TURBO", "UNC", "SYMB", "GSSR"
dcc2 (Telemetry)	M-1934	The output bit signal to noise ratio for the decoder.	Double	dB	-10.0 to 50.0
dcc2 (Telemetry)	M-1936	In-lock threshold for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	Integer	N/A	1 to 255
dcc2 (Telemetry)	M-1937	Vector set for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	String	N/A	"CCSDS", "DSN"

dcc2 (Telemetry)	M-1938	In-lock threshold for MCD3 decoder. Only valid if decoder type is MCD3 decoder.	Integer	N/A	1 to 256
dcc2 (Telemetry)	M-1939	Vector set for the MCD3 decoder. Only valid if decoder type is MCD3 decoder.	String	N/A	"NONE", "CCSDS", "DSN", "A15R6", "CAS", "MAP"
dcc2 (Telemetry)	M-1940	Frame sync primary frame length	Integer	bits	8 to 65536
dcc2 (Telemetry)	M-1941	Frame sync in lock bit error tolerance. The number of bit errors allowed in the frame sync word while still being considered in lock.	Integer	bits	0 to 15
dcc2 (Telemetry)	M-1942	Frame sync out of lock bit error tolerance (the minimum number of bit errors required to declare out of lock).	Integer	bits	0 to 15
dcc2 (Telemetry)	M-1943	Frame sync in lock threshold (the number of consecutive in sync frames verified before lock is declared).	Integer	frames	1 to 15
dcc2 (Telemetry)	M-1944	Frame sync out of lock threshold (number of consecutive out of sync frames before out-of-lock is declared).	Integer	frames	1 to 15
dcc2 (Telemetry)	M-1945*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-1945, M-1946, and M-1947 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Telemetry)	M-1946*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-1945, M-1946, and M-1947 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1945	>=0

dcc2 (Telemetry)	M-1947*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-1945, M-1946, and M-1947 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Telemetry)	M-1948*	Time that the frame sync lock status was last changed. This channel contains the seconds portion of the total time. Channels M-1948, M-1949, and M-1950 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc2 (Telemetry)	M-1949*	Time that the frame sync lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-1948, M-1949, and M-1950 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-1948	>=0
dcc2 (Telemetry)	M-1950*	Time that the frame sync lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-1948, M-1949, and M-1950 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc2 (Telemetry)	M-1951	Frame sync lock status.	String	N/A	"IDLE", "SEARCH", "VERIFY", "LOCK", "FLYWHEEL"
dcc2 (Telemetry)	M-1952	The number of bits the frame synchronizer processed in its last (if in-lock) or current (if out-of-lock) acquisition. When the frame sync goes to out-of-lock, the value is reset to zero.	Integer	bits	0 to $(2^{31} - 1)$
dcc2 (Telemetry)	M-1953	Number of telemetry blocks output since the start of the connection.	Integer	blocks	0 to $(2^{31} - 1)$

dcc2 (Telemetry)	M-1955	Count of total number of frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1956	Count of the number of good frames (verify, flywheel, and lock) since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1957	Count of the number of bad (search) frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1958	Lock status of the Cyclic Redundancy Code (CRC) check.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc2 (Telemetry)	M-1959	Configuration of the pseudo derandomizer.	String	N/A	"ENABLED", "DISABLED"
dcc2 (Telemetry)	M-1960	Count of total number of frames that have had the CRC checked since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1961	Count of the number of frames that have passed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1962	Count of the number of frames that have failed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1963	Lock status of the Reed-Solomon decoder.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"

dcc2 (Telemetry)	M-1964	Count of total number of Reed-Solomon code words that have been checked since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1965	Count of the number of Reed-Solomon code words that have been decoded since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1966	Count of the number of Reed-Solomon code words that have failed to decode since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1967	Ratio of bad frames to total frames for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc2 (Telemetry)	M-1968	Ratio of bad code words to total code words for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc2 (Telemetry)	M-1969	Count of total number of locked (flywheel and lock) frames since start of connection. Count rolls over to zero.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1970	The number of frames with flywheel status in the last (or current) in-lock period. When lock is first acquired, the value is reset to zero.	Integer	frames	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1971	Name of the format table used by the default telemetry stream.	String	N/A	Any ASCII string, up to 242 characters long
dcc2 (Telemetry)	M-1974	Out-of-lock threshold for Viterbi decoder (7, _).	Integer	bits	1 to 65535

dcc2 (Telemetry)	M-1975	Out-of-lock threshold for the MCD3 decoder.	Integer	bits	1 to 255
dcc2 (Telemetry)	M-1976	Configuration of the differential decoder (disabled, mark, or space).	String	N/A	“D”, “NM”, "NS"
dcc2 (Telemetry)	M-1977	State of the Viterbi decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc2 (Telemetry)	M-1978	State of the MCD3 decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc2 (Telemetry)	M-1979	The number of times the metric normalization count exceeded the threshold since the TLP was put in the active state.	Integer	N/A	0 to $(2^{31} - 1)$
dcc2 (Telemetry)	M-1980	Percentage of symbol errors detected over the last accumulation period.	Double	Percentage	0.0 to 100.0
dcc2 (Telemetry)	M-1981	Viterbi decoder node sync change algorithm.	String	N/A	“D”, “SER”, “MNR”
dcc2 (Telemetry)	M-1982	Number of node sync changes since the TLP was put into the active state.	Integer	N/A	0 to $(2^{31} - 1)$
dcc2 (Telemetry)	M-1983	Position that the MCD3 decoder has locked onto.	Integer	N/A	0 to 5
dcc2 (Telemetry)	M-1984	Frame sync secondary frame length (alternate frame length).	Integer	bits	0 to 65528
dcc2 (Telemetry)	M-1985	Detected frame size.	Integer	bits	8 to 65536
dcc2 (Telemetry)	M-1986	Status of the frame synchronizer hardware.	String	N/A	"GO", "NOGO"
dcc2 (Telemetry)	M-1987	The order of the sequence for searching for frame synchronization (e.g. left-to-right (MSB) or right-to-left (LSB)). Allows handling of spacecraft that transmit recorded data backwards. M => MSB, L => LSB, and B => Both.	String	N/A	“M”, “L”, “B”
dcc2 (Telemetry)	M-1988	Number of bits over or under the frame length the synchronizer will accept as a correct length frame.	Integer	bits	0 to 3
dcc2 (Telemetry)	M-1989	The bit error rate (BER) of the frame sync words for the in-lock frames.	Double	Percentage	0.0 to 100.0
dcc2 (Telemetry)	M-1990	The detected bit sequence.	String	N/A	“MSB”, “LSB”

dcc2 (Telemetry)	M-1991	The polarity of the input data to the frame synchronizer.	String	N/A	“NORMAL”, “INVERTED”
dcc2 (Telemetry)	M-1992	The number of bit slips detected since the start of processing. This count is the number of bits slipped, not the number of bit slip occurrences.	Integer	bits	0 to (2^{31} - 1)
dcc2 (Telemetry)	M-1993	The number of polarity changes detected since the start of processing.	Integer	N/A	0 to 65535
dcc2 (Telemetry)	M-1994	The number of times since the start of the processing that the frame synchronizer has transitioned to the LOCK state.	Integer	N/A	0 to 65535
dcc2 (Telemetry)	M-1995	Number of Reed-Solomon codewords interleaved into a transfer frame.	Integer	Codewords	0 to 5
dcc2 (Telemetry)	M-1996	Reed-Solomon decoding algorithm used (Berlekamp versus Conventional).	String	N/A	“B”, “C”
dcc2 (Telemetry)	M-1997	Number of zero pad symbols (bytes) used in the Reed-Solomon encoding. This is also known as the virtual fill.	Integer	Reed-Solomon symbols	0 to 223
dcc2 (Telemetry)	M-1998	The number of symbol errors detected divided by the number of symbols received. Codewords that cannot be corrected are not counted.	Double	Percentage	0.0 to 100.0
dcc2 (Telemetry)	M-1999	Reed-Solomon decoder hardware status.	String	N/A	“GO”, “NOGO”
dcc3 (Carrier Loop)	M-2290	Time tag of carrier performance data. This channel contains the seconds portion of the total time. Channels M-2290, M-2291, and M-2292 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc3 (Carrier Loop)	M-2291	Time tag of carrier performance data. This channel contains the nanoseconds portion of the total time. Channels M-2290, M-2291, and M-2292 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2290	>=0
dcc3 (Carrier Loop)	M-2292	Time tag of carrier performance data. This channel contains the leap seconds portion of the total time. Channels M-2290, M-2291, and M-2292 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Carrier Loop)	M-2293	Time that the last carrier acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2293, M-2294, and M-2295 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Carrier Loop)	M-2294	Time that the last carrier acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2293, M-2294, and M-2295 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2293	>=0
dcc3 (Carrier Loop)	M-2295	Time that the last carrier acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2293, M-2294, and M-2295 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Carrier Loop)	M-2296	Time that the carrier lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2296, M-2297, and M-2298 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc3 (Carrier Loop)	M-2297	Time that the carrier lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2296, M-2297, and M-2298 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2296	>=0
dcc3 (Carrier Loop)	M-2298	Time that the carrier lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2296, M-2297, and M-2298 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Carrier Loop)	M-2299	Carrier loop tracking bandwidth.	Float	Hz	0.100 to 1000.000
dcc3 (Carrier Loop)	M-2300	The carrier loop filter order.	Integer	N/A	1 to 3
dcc3 (Carrier Loop)	M-2301	Carrier tracking loop lock status. Status is out-of-lock unless the loop status (M-2302) is IN LOCK.	Integer	N/A	0 = Out of lock, 1 = In lock.
dcc3 (Carrier Loop)	M-2302	Carrier tracking loop status. This is the result of the acquisition command or enabling the loop.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc3 (Carrier Loop)	M-2303	Data tracking loop status (combined status of subcarrier and symbol loops).	Integer	N/A	0 = Out of lock, 1= In lock, 2 = Off (Idle), 3 = Acquiring, 4 = Open
dcc3 (Carrier Loop)	M-2304	The measured carrier frequency.	Double	Hz	2200000000.000 to 32,300,000,000.000
dcc3 (Carrier Loop)	M-2305	Carrier frequency residual. The measured carrier frequency minus the predicted value.	Float	Hz	-1000000.000 to 1000000.000
dcc3 (Carrier Loop)	M-2306	The predicted carrier frequency minus the measured value. This is commonly called the doppler residual.	Float	Hz	-1000000.000 to 1000000.000

dcc3 (Carrier Loop)	M-2307	The measured carrier frequency rate (first derivative of the frequency).	Float	Hz/sec	-108000.0 to 108000.0
dcc3 (Carrier Loop)	M-2308	The measured carrier frequency acceleration (second derivative of the frequency).	Float	Hz/sec^2	-2600.0 to 2600.0
dcc3 (Carrier Loop)	M-2309	The standard deviation of the detrended frequency residuals. This is commonly called the doppler noise.	Float	Hz	0.000 to 1000.000
dcc3 (Carrier Loop)	M-2310	Carrier power at performance time tag (channels M-2290, M-2291, and M-2292). If value not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc3 (Carrier Loop)	M-2311	Carrier power residual. The estimated carrier power minus the predicted value.	Float	dB	-190.0 to 190.0
dcc3 (Carrier Loop)	M-2312	The measured data power. If value is not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc3 (Carrier Loop)	M-2313	Data power residual. The measured data power minus the predicted value.	Float	dBm	-190.0 to 190.0
dcc3 (Carrier Loop)	M-2314	The carrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc3 (Carrier Loop)	M-2315	The carrier power to noise spectral density ratio (Pc/NO). If the value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc3 (Carrier Loop)	M-2316	Pc/NO residual. The measured Pc/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc3 (Carrier Loop)	M-2317	Carrier tracking mode (source of carrier error signal).	String	N/A	"RESIDUAL", "SUPPRESSED", "SIDEBAND", "QPSK", "OQPSK", "OPEN"
dcc3 (Carrier Loop)	M-2318	The system noise temperature (SNT).	Float	kelvin	10.0 to 2000.0
dcc3 (Carrier Loop)	M-2319	SNT residual. The measured system noise temperature minus the predicted value.	Float	kelvin	10.0 to 2000.0

dcc3 (Carrier Loop)	M-2320	The predicted carrier frequency.	Double	Hz	2200000000.000 to 32300000000.000
dcc3 (Carrier Loop)	M-2321	Count of the number of cycle slips detected during this pass.	Float	number of slips	0.0 to 10000.0
dcc3 (Carrier Loop)	M-2322	Carrier acquisition FFT usage switch. If enabled, the carrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Carrier Loop)	M-2323	Indicates whether or not the carrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2240	Downlink channel providing the data.	Integer	N/A	1 to 24
dcc3 (Configuration)	M-2241	Antenna being used from the perspective of the DTT (Downlink Tracking and Telemetry) subsystem. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	0 to 99
dcc3 (Configuration)	M-2242	Configured spacecraft ID from the perspective of the DTT. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	1 to 255
dcc3 (Configuration)	M-2243	Pass number.	Integer	N/A	0 to 9999
dcc3 (Configuration)	M-2244	Mission ID for spacecraft.	Integer	N/A	0 to 255
dcc3 (Configuration)	M-2245	Downlink carrier band.	String	N/A	"NONE", "L", "S", "X", "KA", "S26"
dcc3 (Configuration)	M-2246	Uplink carrier band used for the downlink processing. It is possible that this is not the actual uplink band.	String	N/A	"NONE", "L", "S", "X", "KA"
dcc3 (Configuration)	M-2247	Receiver-Telemetry configuration table name.	String	N/A	Any ASCII string, up to 242 characters long

dcc3 (Configuration)	M-2248	Receiver radiometrics (frequency) predicts mode. NPX => no predicts used, 1W => one-way, 2W => two-way, 3W => three-way.	String	N/A	"NPX", "1W", "2W", "3W"
dcc3 (Configuration)	M-2250	Uplink antenna for three-way predicts.	Integer	N/A	0 to 99
dcc3 (Configuration)	M-2251	Predicted carrier frequency	Double	Hz	2200000000.000 to 32300000000.000
dcc3 (Configuration)	M-2252	Predicted subcarrier frequency	Double	Hz	0.000 to 2000000.000
dcc3 (Configuration)	M-2253	Predicted symbol rate	Double	Hz	4.000 to 26400000.000
dcc3 (Configuration)	M-2254	SNT measurement switch. If the measurement is disabled, the value in M-2318 is the predicted value.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2255	Monopulse tracking processing switch. Used only when there is a Ka-band downlink (M-2245 is equal to "KA").	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2256	Name of the radiometric predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc3 (Configuration)	M-2257	Time that the last radiometric predict mode change was done. This channel contains the seconds portion of the total time. Channels M-2257, M-2258, and M-2259 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Configuration)	M-2258	Time that the last radiometric predict mode change was done. This channel contains the nanoseconds portion of the total time. Channels M-2257, M-2258, and M-2259 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2257	>=0

dcc3 (Configuration)	M-2259	Time that the last radiometric predict mode change was done. This channel contains the leap seconds portion of the total time. Channels M-2257, M-2258, and M-2259 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Configuration)	M-2260	Telemetry predicts usage mode. If enabled, telemetry predicts are used if the radiometric predict mode (M-2248) is not NPX.	String	N/A	"DISABLED", "ENABLED"
dcc3 (Configuration)	M-2261	Name of the telemetry predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc3 (Configuration)	M-2262	Range state	String	N/A	"Enable", "Disable"
dcc3 (Configuration)	M-2263	Carrier phase (tracking) data output switch. If enabled, carrier phase data is being sent (count of blocks given in M-2508).	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2264	Range data output switch. If enabled, range data is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2265	Telemetry data output switch. If enabled, telemetry is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Configuration)	M-2266	The LNA (Low Noise Amplifier) number from which the channel is receiving the signal.	String	N/A	"A1", "A2", "A3", "A4", "N/A"
dcc3 (Configuration)	M-2267	The polarization of the signal that the downlink channel is tracking.	String	N/A	"LCP", "RCP", "UNKN", "N/A"

dcc3 (Configuration)	M-2268	The configuration of the microwave for uplink. Possible configurations are low noise (LONO), diplexed (DPLX), radar configuration (RADR), and non-diplexed (NDPX, another name for low noise).	String	N/A	"LONO", "RADR", "DPLX", "NPDX", "UNKN", "N/A"
dcc3 (Ranging)	M-2500	Time that the ranging acquisition started. Also referred to as the T0 time.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc3 (Ranging)	M-2503*	Time that the correlation validity last changed. This channel contains the seconds portion of the total time. Channels M-2503, M-2504, and M-2505 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Ranging)	M-2504*	Time that the correlation validity last changed. This channel contains the nanoseconds portion of the total time. Channels M-2503, M-2504, and M-2505 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2503	>=0
dcc3 (Ranging)	M-2505*	Time that the correlation validity last changed. This channel contains the leap seconds portion of the total time. Channels M-2503, M-2504, and M-2505 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Ranging)	M-2506	Indicates whether or not the last ranging correlation was valid.	String	N/A	"OFF", "OUT OF LOCK", "IN LOCK"

dcc3 (Ranging)	M-2507	The number of range data blocks sent out by the DTT.	Integer	blocks	0 to (2^{31} - 1)
dcc3 (Ranging)	M-2508	The number of carrier phase blocks sent out by the DTT.	Integer	blocks	0 to (2^{31} - 1)
dcc3 (Ranging)	M-2509	Number of ranging points that have been measured. Value is reset to zero every time ranging acquisition is initiated.	Integer	N/A	0 to (2^{31} - 1)
dcc3 (Ranging)	M-2510	The Figure of Merit, expressed as a percentage, of the range measurement.	Float	percent	0.0 to 100.0
dcc3 (Ranging)	M-2511	Range residual. The measured range value minus the predicted value.	Double	range units	-2^{30} to 2^{30}
dcc3 (Ranging)	M-2512	Ranging power to noise spectral density ratio (Pr/NO).	Float	dB-Hz	-10.0 to 90.0
dcc3 (Ranging)	M-2513	Pr/NO residual. The measured Pr/N0 minus the predicted value.	Float	dB-Hz	-100.0 to 100.0
dcc3 (Ranging)	M-2514	Type of ranging being performed. SSIN => Sequential with sinewave clock, SSQ => Sequential with squarewave clock, PSIN => PN with sinewave clock, PSQ => PN with squarewave clock, PCON => PN, no clock.	String	N/A	"SSIN", "SSQ", "PSIN", "PSQ", "PCON"
dcc3 (Ranging)	M-2515	Round trip light time used. Valid only if ranging type (channel M-2514) is Sequential.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0

dcc3 (Ranging)	M-2516	Highest component of sequential ranging code (also called the clock component). Frequency is approximately $66*2^{-n}$ MHz, where n is the first component value. Valid only if ranging type (channel M-2514) is Sequential.	Integer	N/A	1 to 24
dcc3 (Ranging)	M-2517	Lowest component of sequential ranging code. Frequency is approximately $66*2^{-n}$ MHz, where n is the last component value. Valid only if ranging type (channel M-2514) is Sequential.	Integer	N/A	1 to 24
dcc3 (Ranging)	M-2518	Component value that is used for chopping the lower components at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-2514) is Sequential.	Integer	N/A	1 to 24
dcc3 (Ranging)	M-2519	Component value that the chopping starts at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-2514) is Sequential.	Integer	N/A	1 to 24
dcc3 (Ranging)	M-2520	Length of time that the first component is transmitted. Only valid if ranging type (channel M-2514) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc3 (Ranging)	M-2521	Length of time that the all components except the first are transmitted. Only valid if ranging type (channel M-2514) is Sequential.	Float	seconds	1.0 to 1.0e6

dcc3 (Ranging)	M-2522	Length of time that the first component is transmitted for each DRVID measurement. Only valid if ranging type (channel M-2514) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc3 (Ranging)	M-2523	Number of DRVID measurements per ranging cycle. Only valid if ranging type (channel M-2514) is Sequential.	Integer	N/A	0 to 255
dcc3 (Ranging)	M-2524	The integration time, in PN cycle periods, that the measurement was made. Valid only if ranging type (channel M-2514) is PN.	Integer	seconds	1 to $(2^{31} - 1)$
dcc3 (Ranging)	M-2525	The reference signal is divided by this value to get the modulation clock. Valid only if ranging type (channel M-2514) is PN.	Integer	N/A	1 to 64 (normally 64)
dcc3 (Ranging)	M-2526	Length of the 1st PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2527	The symbol (chip) pattern of the 1st PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc3 (Ranging)	M-2528	The Boolean operation associated with the 1st PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc3 (Ranging)	M-2529	Length of the 2nd PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2530	The symbol (chip) pattern of the 2nd PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc3 (Ranging)	M-2531	The Boolean operation associated with the 2nd PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"

dcc3 (Ranging)	M-2532	Length of the 3rd PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2533	The symbol (chip) pattern of the 3rd PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc3 (Ranging)	M-2534	The Boolean operation associated with the 3rd PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc3 (Ranging)	M-2535	Length of the 4th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2536	The symbol (chip) pattern of the 4th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc3 (Ranging)	M-2537	The Boolean operation associated with the 4th PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc3 (Ranging)	M-2538	Length of the 5th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2539	The symbol (chip) pattern of the 5th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc3 (Ranging)	M-2540	The Boolean operation associated with the 5th PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc3 (Ranging)	M-2541	Length of the 6th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	symbols (chips)	0 to 32
dcc3 (Ranging)	M-2542	The symbol (chip) pattern of the 6th PN sequence. Valid only if ranging type (channel M-2514) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF

dcc3 (Ranging)	M-2543	The Boolean operation associated with the 6th PN sequence. Valid only if ranging type (channel M-2514) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc3 (Ranging)	M-2544	Differenced Range versus Integrated Doppler (DRVID) measurement in Range Units.	Double	range units	-2^{30} to 2^{30}
dcc3 (Ranging)	M-2545	Current operational mode of the ranging process.	String	N/A	"IDLE", "TRK", "CAL", "DIAG"
dcc3 (Ranging)	M-2546	Time of the range and DRVID measurements.	String	N/A	"hh:mm:ss"
dcc3 (Ranging)	M-2547	Range measurement in Range Units.	Double	range units	0.00 to 2^{30}
dcc3 (Ranging)	M-2548	The desired ranging Figure of Merit.	Float	Percentage	0.0 to 100.0
dcc3 (Status)	M-2200	Status code for the overall downlink channel status.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2201	Status qualifier for the overall downlink channel status. This qualifies the status code (M-2200).	Integer	N/A	0 = None
dcc3 (Status)	M-2202	Status code for the overall receiver equipment controller status.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2203	Status qualifier for the overall receiver equipment controller status. This qualifies the status code (M-2202).	Integer	N/A	0 = None
dcc3 (Status)	M-2204	Status of the receiving function of the downlink channel. "Out of Service" indicates the receiving function is not installed.	Integer	N/A	0 = Out Of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2205	Status qualifier for the receiving function of the downlink channel. No qualifiers are used to qualify the status code (M-2204).	Integer	N/A	0 = None
dcc3 (Status)	M-2206	Status code for the status of the downlink channel controller of the downlink channel.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc3 (Status)	M-2207	Status qualifier for the status of the downlink channel controller of the downlink channel. No qualifiers are used to qualify the status code (M-2206).	Integer	N/A	0 = None
dcc3 (Status)	M-2208*	Status code for the status of the monopulse function of the downlink channel. "Out of Service" indicates the monopulse function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2209*	Status qualifier for the status of the monopulse function of the downlink channel. No qualifiers are used to qualify the status code (M-2208).	Integer	N/A	0 = None
dcc3 (Status)	M-2210	Status code for the status of the ranging function of the downlink channel. "Out of Service" indicates the ranging function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2211	Status qualifier for the status of the ranging function of the downlink channel. No qualifiers are used to qualify the status code (M-2210).	Integer	N/A	0 = None
dcc3 (Status)	M-2212	Status code for the status of the standard telemetry function of the downlink channel. "Out of Service" indicates the telemetry function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2213	Status qualifier for the status of the standard telemetry function of the downlink channel. No qualifiers are used to qualify the status code (M-2212).	Integer	N/A	0 = None
dcc3 (Status)	M-2214*	Status code for the status of the MCD3 decoder function of the downlink channel. "Out of Service" indicates the MCD3 function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc3 (Status)	M-2215*	Status qualifier for the status of the MCD3 decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-2214).	Integer	N/A	0 = None
dcc3 (Status)	M-2216*	Status code for the status of the turbo decoder function of the downlink channel. "Out of Service" indicates the turbo decoder function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc3 (Status)	M-2217*	Status qualifier for the status of the turbo decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-2216).	Integer	N/A	0 = None
dcc3 (Subcarrier Loop)	M-2340	The time of the last change in the predicted subcarrier frequency. This channel contains the seconds portion of the total time. Channels M-2340, M-2341, and M-2342 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Subcarrier Loop)	M-2341	The time of the last change in the predicted subcarrier frequency. This channel contains the nanoseconds portion of the total time. Channels M-2340, M-2341, and M-2342 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2340	>=0
dcc3 (Subcarrier Loop)	M-2342	The time of the last change in the predicted subcarrier frequency. This channel contains the leap seconds portion of the total time. Channels M-2340, M-2341, and M-2342 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Subcarrier Loop)	M-2343	The measured subcarrier frequency	Double	Hz	500.000 to 6000000.000
dcc3 (Subcarrier Loop)	M-2344	Subcarrier frequency residual. The measured subcarrier frequency minus the predicted value.	Float	Hz	-1.000e6 to 1.000e6

dcc3 (Subcarrier Loop)	M-2345	Subcarrier loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc3 (Subcarrier Loop)	M-2346	The subcarrier loop filter order.	Integer	N/A	1 to 3
dcc3 (Subcarrier Loop)	M-2347	The windowing on the subcarrier phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc3 (Subcarrier Loop)	M-2348	Subcarrier tracking loop lock status. Status is out-of-lock unless the loop status (M-2352) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc3 (Subcarrier Loop)	M-2349*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the seconds portion of the total time tag. Channels M-2349, M-2350, and M-2351 together contain the total time tag.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Subcarrier Loop)	M-2350*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time tag. Channels M-2349, M-2350, and M-2351 together contain the total time tag.	Integer	number of nanoseconds since the seconds value in M-2349	>=0
dcc3 (Subcarrier Loop)	M-2351*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time tag. Channels M-2349, M-2350, and M-2351 together contain the total time tag.	Integer	number of leap seconds in the time	>=0
dcc3 (Subcarrier Loop)	M-2352	Subcarrier tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"

dcc3 (Subcarrier Loop)	M-2353	The subcarrier data power to noise spectral density ratio (Pd/NO). If value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc3 (Subcarrier Loop)	M-2354	Pd/NO residual. The measured subcarrier Pd/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc3 (Subcarrier Loop)	M-2355	The subcarrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc3 (Subcarrier Loop)	M-2356	Subcarrier waveform.	String	N/A	“SIN”, “SQ”, “D”
dcc3 (Subcarrier Loop)	M-2357	Predicted subcarrier frequency (including predicted Doppler shifts).	Double	Hz	500.000 to 6000000.000
dcc3 (Subcarrier Loop)	M-2358	Subcarrier acquisition FFT usage switch. If enabled, the subcarrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Subcarrier Loop)	M-2359	Indicates whether or not the subcarrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Symbol Loop)	M-2380	The time of the last change in the predicted symbol frequency. This channel contains the seconds portion of the total time. Channels M-2380, M-2381, and M-2382 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Symbol Loop)	M-2381	The time of the last change in the predicted symbol frequency. This channel contains the nanoseconds portion of the total time. Channels M-2380, M-2381, and M-2382 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2380	>=0
dcc3 (Symbol Loop)	M-2382	The time of the last change in the predicted symbol frequency. This channel contains the leap seconds portion of the total time. Channels M-2380, M-2381, and M-2382 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc3 (Symbol Loop)	M-2383	The measured symbol rate	Double	sps	4.000 to 26400000.000
dcc3 (Symbol Loop)	M-2384	Symbol rate residual. The measured symbol rate minus the predicted value.	Float	sps	-26400000.000 to 26400000.000
dcc3 (Symbol Loop)	M-2385	Symbol loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc3 (Symbol Loop)	M-2386	The symbol loop filter order.	Integer	N/A	1 to 3
dcc3 (Symbol Loop)	M-2387	The windowing on the symbol phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc3 (Symbol Loop)	M-2388	Symbol tracking loop lock status. Status is out-of-lock unless the loop status (M-2392) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc3 (Symbol Loop)	M-2389*	Time that the symbol tracking loop lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2389, M-2390, and M-2391 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Symbol Loop)	M-2390*	Time that the symbol tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2389, M-2390, and M-2391 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2389	>=0
dcc3 (Symbol Loop)	M-2391*	Time that the symbol tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2389, M-2390, and M-2391 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc3 (Symbol Loop)	M-2392	Symbol tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc3 (Symbol Loop)	M-2393	The measured symbol signal to noise ratio (SSNR).	Float	dB	-10.0 to 50.0
dcc3 (Symbol Loop)	M-2394	SSNR residual. The measured SSNR minus the predicted value.	Float	dB	-50.0 to 50.0
dcc3 (Symbol Loop)	M-2395	The symbol tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc3 (Symbol Loop)	M-2396	Modulation format of the symbols.	String	N/A	“NRZL”, “NRZM”, “NRZS”, “BIPS”, “BIPL”, “BIPM”
dcc3 (Symbol Loop)	M-2397	Configuration of the symbol smoothing algorithm (low threshold telemetry mode).	String	N/A	“ENABLED”, “DISABLED”
dcc3 (Symbol Loop)	M-2398	Predicted symbol frequency (including predicted Doppler shifts).	Double	sps	4.000 to 26400000.000
dcc3 (Symbol Loop)	M-2399	Symbol acquisition FFT usage switch. If enabled, the symbol acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Symbol Loop)	M-2400	Indicates whether or not the symbol FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc3 (Telemetry)	M-2407	Number of Virtual Channel 0 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc3 (Telemetry)	M-2408	Number of Virtual Channel 1 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc3 (Telemetry)	M-2409	Number of Virtual Channel 2 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc3 (Telemetry)	M-2410	Number of Virtual Channel 3 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2411	Number of Virtual Channel 4 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2412	Number of Virtual Channel 5 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2413	Number of Virtual Channel 6 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2414	Number of Virtual Channel 7 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2415	Operational state of the Reed-Solomon decoder. In Primary (P) mode, the corrected bits are output to the end user. In Secondary (S) mode, the decoding statistics are provided for the operator, but the bit corrections are not output.	String	N/A	"D", “P”, “S”
dcc3 (Telemetry)	M-2416	Indicator of whether the input signal is an arrayed signal or not. A value of 0 indicates not arrayed; values of 1 and 2 correspond to the arraying equipment physical number.	Integer	N/A	0 = Unarrayed, 1 = Arrayed with FSPA1 as the source, 2 = Arrayed with FSPA2 as the source
dcc3 (Telemetry)	M-2417	Frame sync operational mode.	String	N/A	“D”, “P”
dcc3 (Telemetry)	M-2418	The pattern of bits of the frame sync word.	String	N/A	Any pattern expressed in hexadecimal
dcc3 (Telemetry)	M-2419	Length of the frame sync word.	Integer	bits	8 to 64

dcc3 (Telemetry)	M-2420	Predicted telemetry bit rate.	Double	bps	2.000 to 26.4e6
dcc3 (Telemetry)	M-2421	Measured bit rate.	Double	bps	2.000 to 26.4e6
dcc3 (Telemetry)	M-2422	Overall telemetry lock status (includes decoders and frame synchronizer).	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc3 (Telemetry)	M-2424	Telemetry processing operational status	String	N/A	"GO", "NOGO"
dcc3 (Telemetry)	M-2425*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2425, M-2426, and M-2427 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Telemetry)	M-2426*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2425, M-2426, and M-2427 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2425	>=0
dcc3 (Telemetry)	M-2427*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2425, M-2426, and M-2427 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Telemetry)	M-2428*	Time that the decoder lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2428, M-2429, and M-2430 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Telemetry)	M-2429*	Time that the decoder lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2428, M-2429, and M-2430 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2428	>=0

dcc3 (Telemetry)	M-2430*	Time that the decoder lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2428, M-2429, and M-2430 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Telemetry)	M-2431	Telemetry decoder lock status.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc3 (Telemetry)	M-2433	Type of decoder used.	String	N/A	"MCD2", "MCD3", "TURBO", "UNC", "SYMB", "GSSR"
dcc3 (Telemetry)	M-2434	The output bit signal to noise ratio for the decoder.	Double	dB	-10.0 to 50.0
dcc3 (Telemetry)	M-2436	In-lock threshold for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	Integer	N/A	1 to 255
dcc3 (Telemetry)	M-2437	Vector set for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	String	N/A	"CCSDS", "DSN"
dcc3 (Telemetry)	M-2438	In-lock threshold for MCD3 decoder. Only valid if decoder type is MCD3 decoder.	Integer	N/A	1 to 256
dcc3 (Telemetry)	M-2439	Vector set for the MCD3 decoder. Only valid if decoder type is MCD3 decoder.	String	N/A	"NONE", "CCSDS", "DSN", "A15R6", "CAS", "MAP"
dcc3 (Telemetry)	M-2440	Frame sync primary frame length	Integer	bits	8 to 65536
dcc3 (Telemetry)	M-2441	Frame sync in lock bit error tolerance. The number of bit errors allowed in the frame sync word while still being considered in lock.	Integer	bits	0 to 15
dcc3 (Telemetry)	M-2442	Frame sync out of lock bit error tolerance (the minimum number of bit errors required to declare out of lock).	Integer	bits	0 to 15
dcc3 (Telemetry)	M-2443	Frame sync in lock threshold (the number of consecutive in sync frames verified before lock is declared).	Integer	frames	1 to 15

dcc3 (Telemetry)	M-2444	Frame sync out of lock threshold (number of consecutive out of sync frames before out-of-lock is declared).	Integer	frames	1 to 15
dcc3 (Telemetry)	M-2445*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2445, M-2446, and M-2447 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Telemetry)	M-2446*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2445, M-2446, and M-2447 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2445	>=0
dcc3 (Telemetry)	M-2447*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2445, M-2446, and M-2447 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Telemetry)	M-2448*	Time that the frame sync lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2448, M-2449, and M-2450 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc3 (Telemetry)	M-2449*	Time that the frame sync lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2448, M-2449, and M-2450 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2448	>=0

dcc3 (Telemetry)	M-2450*	Time that the frame sync lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2448, M-2449, and M-2450 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc3 (Telemetry)	M-2451	Frame sync lock status.	String	N/A	"IDLE", "SEARCH", "VERIFY", "LOCK", "FLYWHEEL"
dcc3 (Telemetry)	M-2452	The number of bits the frame synchronizer processed in its last (if in-lock) or current (if out-of-lock) acquisition. When the frame sync goes to out-of-lock, the value is reset to zero.	Integer	bits	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2453	Number of telemetry blocks output since the start of the connection.	Integer	blocks	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2455	Count of total number of frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2456	Count of the number of good frames (verify, flywheel, and lock) since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2457	Count of the number of bad (search) frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2458	Lock status of the Cyclic Redundancy Code (CRC) check.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc3 (Telemetry)	M-2459	Configuration of the pseudo derandomizer.	String	N/A	"ENABLED", "DISABLED"

dcc3 (Telemetry)	M-2460	Count of total number of frames that have had the CRC checked since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2461	Count of the number of frames that have passed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2462	Count of the number of frames that have failed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2463	Lock status of the Reed-Solomon decoder.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc3 (Telemetry)	M-2464	Count of total number of Reed-Solomon code words that have been checked since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2465	Count of the number of Reed-Solomon code words that have been decoded since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2466	Count of the number of Reed-Solomon code words that have failed to decode since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2467	Ratio of bad frames to total frames for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00

dcc3 (Telemetry)	M-2468	Ratio of bad code words to total code words for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc3 (Telemetry)	M-2469	Count of total number of locked (flywheel and lock) frames since start of connection. Count rolls over to zero.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2470	The number of frames with flywheel status in the last (or current) in-lock period. When lock is first acquired, the value is reset to zero.	Integer	frames	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2471	Name of the format table used by the default telemetry stream.	String	N/A	Any ASCII string, up to 242 characters long
dcc3 (Telemetry)	M-2474	Out-of-lock threshold for Viterbi decoder (7, _).	Integer	bits	1 to 65535
dcc3 (Telemetry)	M-2475	Out-of-lock threshold for the MCD3 decoder.	Integer	bits	1 to 255
dcc3 (Telemetry)	M-2476	Configuration of the differential decoder (disabled, mark, or space).	String	N/A	“D”, “NM”, "NS"
dcc3 (Telemetry)	M-2477	State of the Viterbi decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc3 (Telemetry)	M-2478	State of the MCD3 decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc3 (Telemetry)	M-2479	The number of times the metric normalization count exceeded the threshold since the TLP was put in the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2480	Percentage of symbol errors detected over the last accumulation period.	Double	Percentage	0.0 to 100.0
dcc3 (Telemetry)	M-2481	Viterbi decoder node sync change algorithm.	String	N/A	“D”, “SER”, “MNR”
dcc3 (Telemetry)	M-2482	Number of node sync changes since the TLP was put into the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc3 (Telemetry)	M-2483	Position that the MCD3 decoder has locked onto.	Integer	N/A	0 to 5
dcc3 (Telemetry)	M-2484	Frame sync secondary frame length (alternate frame length).	Integer	bits	0 to 65528

dcc3 (Telemetry)	M-2485	Detected frame size.	Integer	bits	8 to 65536
dcc3 (Telemetry)	M-2486	Status of the frame synchronizer hardware.	String	N/A	"GO", "NOGO"
dcc3 (Telemetry)	M-2487	The order of the sequence for searching for frame synchronization (e.g. left-to-right (MSB) or right-to-left (LSB)). Allows handling of spacecraft that transmit recorded data backwards. M => MSB, L => LSB, and B => Both.	String	N/A	“M”, “L”, “B”
dcc3 (Telemetry)	M-2488	Number of bits over or under the frame length the synchronizer will accept as a correct length frame.	Integer	bits	0 to 3
dcc3 (Telemetry)	M-2489	The bit error rate (BER) of the frame sync words for the in-lock frames.	Double	Percentage	0.0 to 100.0
dcc3 (Telemetry)	M-2490	The detected bit sequence.	String	N/A	“MSB”, “LSB”
dcc3 (Telemetry)	M-2491	The polarity of the input data to the frame synchronizer.	String	N/A	“NORMAL”, “INVERTED”
dcc3 (Telemetry)	M-2492	The number of bit slips detected since the start of processing. This count is the number of bits slipped, not the number of bit slip occurrences.	Integer	bits	0 to $(2^{31} - 1)$
dcc3 (Telemetry)	M-2493	The number of polarity changes detected since the start of processing.	Integer	N/A	0 to 65535
dcc3 (Telemetry)	M-2494	The number of times since the start of the processing that the frame synchronizer has transitioned to the LOCK state.	Integer	N/A	0 to 65535
dcc3 (Telemetry)	M-2495	Number of Reed-Solomon codewords interleaved into a transfer frame.	Integer	Codewords	0 to 5
dcc3 (Telemetry)	M-2496	Reed-Solomon decoding algorithm used (Berlekamp versus Conventional).	String	N/A	“B”, “C”

dcc3 (Telemetry)	M-2497	Number of zero pad symbols (bytes) used in the Reed-Solomon encoding. This is also known as the virtual fill.	Integer	Reed-Solomon symbols	0 to 223
dcc3 (Telemetry)	M-2498	The number of symbol errors detected divided by the number of symbols received. Codewords that cannot be corrected are not counted.	Double	Percentage	0.0 to 100.0
dcc3 (Telemetry)	M-2499	Reed-Solomon decoder hardware status.	String	N/A	“GO”, “NOGO”
dcc4 (Carrier Loop)	M-2790	Time tag of carrier performance data. This channel contains the seconds portion of the total time. Channels M-2790, M-2791, and M-2792 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Carrier Loop)	M-2791	Time tag of carrier performance data. This channel contains the nanoseconds portion of the total time. Channels M-2790, M-2791, and M-2792 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2790	>=0
dcc4 (Carrier Loop)	M-2792	Time tag of carrier performance data. This channel contains the leap seconds portion of the total time. Channels M-2790, M-2791, and M-2792 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Carrier Loop)	M-2793	Time that the last carrier acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2793, M-2794, and M-2795 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc4 (Carrier Loop)	M-2794	Time that the last carrier acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2793, M-2794, and M-2795 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2793	>=0
dcc4 (Carrier Loop)	M-2795	Time that the last carrier acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2793, M-2794, and M-2795 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Carrier Loop)	M-2796	Time that the carrier lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2796, M-2797, and M-2798 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Carrier Loop)	M-2797	Time that the carrier lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2796, M-2797, and M-2798 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2796	>=0
dcc4 (Carrier Loop)	M-2798	Time that the carrier lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2796, M-2797, and M-2798 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Carrier Loop)	M-2799	Carrier loop tracking bandwidth.	Float	Hz	0.100 to 1000.000
dcc4 (Carrier Loop)	M-2800	The carrier loop filter order.	Integer	N/A	1 to 3
dcc4 (Carrier Loop)	M-2801	Carrier tracking loop lock status. Status is out-of-lock unless the loop status (M-2802) is IN LOCK.	Integer	N/A	0 = Out of lock, 1 = In lock.

dcc4 (Carrier Loop)	M-2802	Carrier tracking loop status. This is the result of the acquisition command or enabling the loop.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc4 (Carrier Loop)	M-2803	Data tracking loop status (combined status of subcarrier and symbol loops).	Integer	N/A	0 = Out of lock, 1= In lock, 2 = Off (Idle), 3 = Acquiring, 4 = Open
dcc4 (Carrier Loop)	M-2804	The measured carrier frequency.	Double	Hz	2200000000.000 to 32,300,000,000.000
dcc4 (Carrier Loop)	M-2805	Carrier frequency residual. The measured carrier frequency minus the predicted value.	Float	Hz	-1000000.000 to 1000000.000
dcc4 (Carrier Loop)	M-2806	The predicted carrier frequency minus the measured value. This is commonly called the doppler residual.	Float	Hz	-1000000.000 to 1000000.000
dcc4 (Carrier Loop)	M-2807	The measured carrier frequency rate (first derivative of the frequency).	Float	Hz/sec	-108000.0 to 108000.0
dcc4 (Carrier Loop)	M-2808	The measured carrier frequency acceleration (second derivative of the frequency).	Float	Hz/sec^2	-2600.0 to 2600.0
dcc4 (Carrier Loop)	M-2809	The standard deviation of the detrended frequency residuals. This is commonly called the doppler noise.	Float	Hz	0.000 to 1000.000
dcc4 (Carrier Loop)	M-2810	Carrier power at performance time tag (channels M-2790, M-2791, and M-2792). If value not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc4 (Carrier Loop)	M-2811	Carrier power residual. The estimated carrier power minus the predicted value.	Float	dB	-190.0 to 190.0
dcc4 (Carrier Loop)	M-2812	The measured data power. If value is not valid, -300.0 is output.	Float	dBm	-300.0, -190.0 to 85.0
dcc4 (Carrier Loop)	M-2813	Data power residual. The measured data power minus the predicted value.	Float	dBm	-190.0 to 190.0

dcc4 (Carrier Loop)	M-2814	The carrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc4 (Carrier Loop)	M-2815	The carrier power to noise spectral density ratio (Pc/NO). If the value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc4 (Carrier Loop)	M-2816	Pc/NO residual. The measured Pc/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc4 (Carrier Loop)	M-2817	Carrier tracking mode (source of carrier error signal).	String	N/A	"RESIDUAL", "SUPPRESSED", "SIDEBAND", "QPSK", "OQPSK", "OPEN"
dcc4 (Carrier Loop)	M-2818	The system noise temperature (SNT).	Float	kelvin	10.0 to 2000.0
dcc4 (Carrier Loop)	M-2819	SNT residual. The measured system noise temperature minus the predicted value.	Float	kelvin	10.0 to 2000.0
dcc4 (Carrier Loop)	M-2820	The predicted carrier frequency.	Double	Hz	2200000000.000 to 32300000000.000
dcc4 (Carrier Loop)	M-2821	Count of the number of cycle slips detected during this pass.	Float	number of slips	0.0 to 10000.0
dcc4 (Carrier Loop)	M-2822	Carrier acquisition FFT usage switch. If enabled, the carrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Carrier Loop)	M-2823	Indicates whether or not the carrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Configuration)	M-2740	Downlink channel providing the data.	Integer	N/A	1 to 24
dcc4 (Configuration)	M-2741	Antenna being used from the perspective of the DTT (Downlink Tracking and Telemetry) subsystem. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	0 to 99

dcc4 (Configuration)	M-2742	Configured spacecraft ID from the perspective of the DTT. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	1 to 255
dcc4 (Configuration)	M-2743	Pass number.	Integer	N/A	0 to 9999
dcc4 (Configuration)	M-2744	Mission ID for spacecraft.	Integer	N/A	0 to 255
dcc4 (Configuration)	M-2745	Downlink carrier band.	String	N/A	"NONE", "L", "S", "X", "KA", "S26"
dcc4 (Configuration)	M-2746	Uplink carrier band used for the downlink processing. It is possible that this is not the actual uplink band.	String	N/A	"NONE", "L", "S", "X", "KA"
dcc4 (Configuration)	M-2747	Receiver-Telemetry configuration table name.	String	N/A	Any ASCII string, up to 242 characters long
dcc4 (Configuration)	M-2748	Receiver radiometrics (frequency) predicts mode. NPX => no predicts used, 1W => one-way, 2W => two-way, 3W => three-way.	String	N/A	"NPX", "1W", "2W", "3W"
dcc4 (Configuration)	M-2750	Uplink antenna for three-way predicts.	Integer	N/A	0 to 99
dcc4 (Configuration)	M-2751	Predicted carrier frequency	Double	Hz	2200000000.000 to 32300000000.000
dcc4 (Configuration)	M-2752	Predicted subcarrier frequency	Double	Hz	0.000 to 2000000.000
dcc4 (Configuration)	M-2753	Predicted symbol rate	Double	Hz	4.000 to 26400000.000
dcc4 (Configuration)	M-2754	SNT measurement switch. If the measurement is disabled, the value in M-2818 is the predicted value.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Configuration)	M-2755	Monopulse tracking processing switch. Used only when there is a Ka-band downlink (M-2745 is equal to "KA").	String	N/A	"ENABLED", "DISABLED"

dcc4 (Configuration)	M-2756	Name of the radiometric predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc4 (Configuration)	M-2757	Time that the last radiometric predict mode change was done. This channel contains the seconds portion of the total time. Channels M-2757, M-2758, and M-2759 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Configuration)	M-2758	Time that the last radiometric predict mode change was done. This channel contains the nanoseconds portion of the total time. Channels M-2757, M-2758, and M-2759 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2757	>=0
dcc4 (Configuration)	M-2759	Time that the last radiometric predict mode change was done. This channel contains the leap seconds portion of the total time. Channels M-2757, M-2758, and M-2759 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Configuration)	M-2760	Telemetry predicts usage mode. If enabled, telemetry predicts are used if the radiometric predict mode (M-2748) is not NPX.	String	N/A	"DISABLED", "ENABLED"
dcc4 (Configuration)	M-2761	Name of the telemetry predict set being used. The name is composed of the Franz code plus the revision level.	String	N/A	Any ASCII string, up to 242 characters long
dcc4 (Configuration)	M-2762	Range state	String	N/A	"Enable", "Disable"

dcc4 (Configuration)	M-2763	Carrier phase (tracking) data output switch. If enabled, carrier phase data is being sent (count of blocks given in M-3008).	String	N/A	"ENABLED", "DISABLED"
dcc4 (Configuration)	M-2764	Range data output switch. If enabled, range data is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Configuration)	M-2765	Telemetry data output switch. If enabled, telemetry is being sent by the DTT.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Configuration)	M-2766	The LNA (Low Noise Amplifier) number from which the channel is receiving the signal.	String	N/A	"A1", "A2", "A3", "A4", "N/A"
dcc4 (Configuration)	M-2767	The polarization of the signal that the downlink channel is tracking.	String	N/A	"LCP", "RCP", "UNKN", "N/A"
dcc4 (Configuration)	M-2768	The configuration of the microwave for uplink. Possible configurations are low noise (LONO), diplexed (DPLX), radar configuration (RADR), and non-diplexed (NDPX, another name for low noise).	String	N/A	"LONO", "RADR", "DPLX", "NPDX", "UNKN", "N/A"
dcc4 (Ranging)	M-3000	Time that the ranging acquisition started. Also referred to as the T0 time.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc4 (Ranging)	M-3003*	Time that the correlation validity last changed. This channel contains the seconds portion of the total time. Channels M-3003, M-3004, and M-3005 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0

dcc4 (Ranging)	M-3004*	Time that the correlation validity last changed. This channel contains the nanoseconds portion of the total time. Channels M-3003, M-3004, and M-3005 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-3003	>=0
dcc4 (Ranging)	M-3005*	Time that the correlation validity last changed. This channel contains the leap seconds portion of the total time. Channels M-3003, M-3004, and M-3005 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Ranging)	M-3006	Indicates whether or not the last ranging correlation was valid.	String	N/A	"OFF", "OUT OF LOCK", "IN LOCK"
dcc4 (Ranging)	M-3007	The number of range data blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc4 (Ranging)	M-3008	The number of carrier phase blocks sent out by the DTT.	Integer	blocks	0 to $(2^{31} - 1)$
dcc4 (Ranging)	M-3009	Number of ranging points that have been measured. Value is reset to zero every time ranging acquisition is initiated.	Integer	N/A	0 to $(2^{31} - 1)$
dcc4 (Ranging)	M-3010	The Figure of Merit, expressed as a percentage, of the range measurement.	Float	percent	0.0 to 100.0
dcc4 (Ranging)	M-3011	Range residual. The measured range value minus the predicted value.	Double	range units	-2^{30} to 2^{30}
dcc4 (Ranging)	M-3012	Ranging power to noise spectral density ratio (Pr/NO).	Float	dB-Hz	-10.0 to 90.0
dcc4 (Ranging)	M-3013	Pr/NO residual. The measured Pr/N0 minus the predicted value.	Float	dB-Hz	-100.0 to 100.0

dcc4 (Ranging)	M-3014	Type of ranging being performed. SSIN => Sequential with sinewave clock, SSQ => Sequential with squarewave clock, PSIN => PN with sinewave clock, PSQ => PN with squarewave clock, PCON => PN, no clock.	String	N/A	"SSIN", "SSQ", "PSIN", "PSQ", "PCON"
dcc4 (Ranging)	M-3015	Round trip light time used. Valid only if ranging type (channel M-3014) is Sequential.	Integer	The time is expressed in the following format: HH * 10000 + MM * 100 + SS, where HH is 0 to 23, MM is 0 to 59, and SS is 0 to 60.	>=0
dcc4 (Ranging)	M-3016	Highest component of sequential ranging code (also called the clock component). Frequency is approximately $66*2^{-n}$ MHz, where n is the first component value. Valid only if ranging type (channel M-3014) is Sequential.	Integer	N/A	1 to 24
dcc4 (Ranging)	M-3017	Lowest component of sequential ranging code. Frequency is approximately $66*2^{-n}$ MHz, where n is the last component value. Valid only if ranging type (channel M-3014) is Sequential.	Integer	N/A	1 to 24
dcc4 (Ranging)	M-3018	Component value that is used for chopping the lower components at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-3014) is Sequential.	Integer	N/A	1 to 24

dcc4 (Ranging)	M-3019	Component value that the chopping starts at. Frequency is approximately $66*2^{-n}$ MHz, where n is the chop component value. Valid only if ranging type (channel M-3014) is Sequential.	Integer	N/A	1 to 24
dcc4 (Ranging)	M-3020	Length of time that the first component is transmitted. Only valid if ranging type (channel M-3014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc4 (Ranging)	M-3021	Length of time that the all components except the first are transmitted. Only valid if ranging type (channel M-3014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc4 (Ranging)	M-3022	Length of time that the first component is transmitted for each DRVID measurement. Only valid if ranging type (channel M-3014) is Sequential.	Float	seconds	1.0 to 1.0e6
dcc4 (Ranging)	M-3023	Number of DRVID measurements per ranging cycle. Only valid if ranging type (channel M-3014) is Sequential.	Integer	N/A	0 to 255
dcc4 (Ranging)	M-3024	The integration time, in PN cycle periods, that the measurement was made. Valid only if ranging type (channel M-3014) is PN.	Integer	seconds	1 to $(2^{31} - 1)$
dcc4 (Ranging)	M-3025	The reference signal is divided by this value to get the modulation clock. Valid only if ranging type (channel M-3014) is PN.	Integer	N/A	1 to 64 (normally 64)
dcc4 (Ranging)	M-3026	Length of the 1st PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32
dcc4 (Ranging)	M-3027	The symbol (chip) pattern of the 1st PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF

dcc4 (Ranging)	M-3028	The Boolean operation associated with the 1st PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3029	Length of the 2nd PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32
dcc4 (Ranging)	M-3030	The symbol (chip) pattern of the 2nd PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc4 (Ranging)	M-3031	The Boolean operation associated with the 2nd PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3032	Length of the 3rd PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32
dcc4 (Ranging)	M-3033	The symbol (chip) pattern of the 3rd PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc4 (Ranging)	M-3034	The Boolean operation associated with the 3rd PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3035	Length of the 4th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32
dcc4 (Ranging)	M-3036	The symbol (chip) pattern of the 4th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc4 (Ranging)	M-3037	The Boolean operation associated with the 4th PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3038	Length of the 5th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32

dcc4 (Ranging)	M-3039	The symbol (chip) pattern of the 5th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc4 (Ranging)	M-3040	The Boolean operation associated with the 5th PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3041	Length of the 6th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	symbols (chips)	0 to 32
dcc4 (Ranging)	M-3042	The symbol (chip) pattern of the 6th PN sequence. Valid only if ranging type (channel M-3014) is PN.	Integer	Symbols in 32-bit binary	0 to 0xFFFF
dcc4 (Ranging)	M-3043	The Boolean operation associated with the 6th PN sequence. Valid only if ranging type (channel M-3014) is PN.	String	N/A	"AND", "OR", "XOR", "MVT"
dcc4 (Ranging)	M-3044	Differenced Range versus Integrated Doppler (DRVID) measurement in Range Units.	Double	range units	-2^{30} to 2^{30}
dcc4 (Ranging)	M-3045	Current operational mode of the ranging process.	String	N/A	"IDLE", "TRK", "CAL", "DIAG"
dcc4 (Ranging)	M-3046	Time of the range and DRVID measurements.	String	N/A	"hh:mm:ss"
dcc4 (Ranging)	M-3047	Range measurement in Range Units.	Double	range units	0.00 to 2^{30}
dcc4 (Ranging)	M-3048	The desired ranging Figure of Merit.	Float	Percentage	0.0 to 100.0
dcc4 (Status)	M-2700	Status code for the overall downlink channel status.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2701	Status qualifier for the overall downlink channel status. This qualifies the status code (M-2700).	Integer	N/A	0 = None
dcc4 (Status)	M-2702	Status code for the overall receiver equipment controller status.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc4 (Status)	M-2703	Status qualifier for the overall receiver equipment controller status. This qualifies the status code (M-2702).	Integer	N/A	0 = None
dcc4 (Status)	M-2704	Status of the receiving function of the downlink channel. "Out of Service" indicates the receiving function is not installed.	Integer	N/A	0 = Out Of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2705	Status qualifier for the receiving function of the downlink channel. No qualifiers are used to qualify the status code (M-2704).	Integer	N/A	0 = None
dcc4 (Status)	M-2706	Status code for the status of the downlink channel controller of the downlink channel.	Integer	N/A	1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2707	Status qualifier for the status of the downlink channel controller of the downlink channel. No qualifiers are used to qualify the status code (M-2706).	Integer	N/A	0 = None
dcc4 (Status)	M-2708*	Status code for the status of the monopulse function of the downlink channel. "Out of Service" indicates the monopulse function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2709*	Status qualifier for the status of the monopulse function of the downlink channel. No qualifiers are used to qualify the status code (M-2708).	Integer	N/A	0 = None
dcc4 (Status)	M-2710	Status code for the status of the ranging function of the downlink channel. "Out of Service" indicates the ranging function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical

dcc4 (Status)	M-2711	Status qualifier for the status of the ranging function of the downlink channel. No qualifiers are used to qualify the status code (M-2710).	Integer	N/A	0 = None
dcc4 (Status)	M-2712	Status code for the status of the standard telemetry function of the downlink channel. "Out of Service" indicates the telemetry function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2713	Status qualifier for the status of the standard telemetry function of the downlink channel. No qualifiers are used to qualify the status code (M-2712).	Integer	N/A	0 = None
dcc4 (Status)	M-2714*	Status code for the status of the MCD3 decoder function of the downlink channel. "Out of Service" indicates the MCD3 function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2715*	Status qualifier for the status of the MCD3 decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-2714).	Integer	N/A	0 = None
dcc4 (Status)	M-2716*	Status code for the status of the turbo decoder function of the downlink channel. "Out of Service" indicates the turbo decoder function is not installed.	Integer	N/A	0 = Out of Service, 1 = Operational, 3 = Deviation, 4 = Marginal, 5 = Critical
dcc4 (Status)	M-2717*	Status qualifier for the status of the turbo decoder function of the downlink channel. No qualifiers are used to qualify the status code (M-2716).	Integer	N/A	0 = None

dcc4 (Subcarrier Loop)	M-2840	The time of the last change in the predicted subcarrier frequency. This channel contains the seconds portion of the total time. Channels M-2840, M-2841, and M-2842 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Subcarrier Loop)	M-2841	The time of the last change in the predicted subcarrier frequency. This channel contains the nanoseconds portion of the total time. Channels M-2840, M-2841, and M-2842 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2840	>=0
dcc4 (Subcarrier Loop)	M-2842	The time of the last change in the predicted subcarrier frequency. This channel contains the leap seconds portion of the total time. Channels M-2840, M-2841, and M-2842 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Subcarrier Loop)	M-2843	The measured subcarrier frequency	Double	Hz	500.000 to 6000000.000
dcc4 (Subcarrier Loop)	M-2844	Subcarrier frequency residual. The measured subcarrier frequency minus the predicted value.	Float	Hz	-1.000e6 to 1.000e6
dcc4 (Subcarrier Loop)	M-2845	Subcarrier loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc4 (Subcarrier Loop)	M-2846	The subcarrier loop filter order.	Integer	N/A	1 to 3
dcc4 (Subcarrier Loop)	M-2847	The windowing on the subcarrier phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15
dcc4 (Subcarrier Loop)	M-2848	Subcarrier tracking loop lock status. Status is out-of-lock unless the loop status (M-2852) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock

dcc4 (Subcarrier Loop)	M-2849*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the seconds portion of the total time tag. Channels M-2849, M-2850, and M-2851 together contain the total time tag.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Subcarrier Loop)	M-2850*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time tag. Channels M-2849, M-2850, and M-2851 together contain the total time tag.	Integer	number of nanoseconds since the seconds value in M-2849	>=0
dcc4 (Subcarrier Loop)	M-2851*	Time that the subcarrier tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time tag. Channels M-2849, M-2850, and M-2851 together contain the total time tag.	Integer	number of leap seconds in the time	>=0
dcc4 (Subcarrier Loop)	M-2852	Subcarrier tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc4 (Subcarrier Loop)	M-2853	The subcarrier data power to noise spectral density ratio (Pd/NO). If value is not valid, -300.0 is output.	Float	dB-Hz	-300.0, 0.0 to 90.0
dcc4 (Subcarrier Loop)	M-2854	Pd/NO residual. The measured subcarrier Pd/N0 minus the predicted value.	Float	dB	-90.0 to 90.0
dcc4 (Subcarrier Loop)	M-2855	The subcarrier tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc4 (Subcarrier Loop)	M-2856	Subcarrier waveform.	String	N/A	“SIN”, “SQ”, “D”
dcc4 (Subcarrier Loop)	M-2857	Predicted subcarrier frequency (including predicted Doppler shifts).	Double	Hz	500.000 to 6000000.000

dcc4 (Subcarrier Loop)	M-2858	Subcarrier acquisition FFT usage switch. If enabled, the subcarrier acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Subcarrier Loop)	M-2859	Indicates whether or not the subcarrier FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Symbol Loop)	M-2880	The time of the last change in the predicted symbol frequency. This channel contains the seconds portion of the total time. Channels M-2880, M-2881, and M-2882 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Symbol Loop)	M-2881	The time of the last change in the predicted symbol frequency. This channel contains the nanoseconds portion of the total time. Channels M-2880, M-2881, and M-2882 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2880	>=0
dcc4 (Symbol Loop)	M-2882	The time of the last change in the predicted symbol frequency. This channel contains the leap seconds portion of the total time. Channels M-2880, M-2881, and M-2882 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Symbol Loop)	M-2883	The measured symbol rate	Double	sps	4.000 to 26400000.000
dcc4 (Symbol Loop)	M-2884	Symbol rate residual. The measured symbol rate minus the predicted value.	Float	sps	-26400000.000 to 26400000.000
dcc4 (Symbol Loop)	M-2885	Symbol loop tracking bandwidth.	Float	Hz	0.001 to 25.000
dcc4 (Symbol Loop)	M-2886	The symbol loop filter order.	Integer	N/A	1 to 3
dcc4 (Symbol Loop)	M-2887	The windowing on the symbol phase data. The windowing value is 2^{-n}, where n is the value reported.	Integer	N/A	0 to 15

dcc4 (Symbol Loop)	M-2888	Symbol tracking loop lock status. Status is out-of-lock unless the loop status (M-2892) is IN LOCK.	Integer	N/A	0 = Out of Lock, 1 = In Lock
dcc4 (Symbol Loop)	M-2889*	Time that the symbol tracking loop lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2889, M-2890, and M-2891 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Symbol Loop)	M-2890*	Time that the symbol tracking loop lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2889, M-2890, and M-2891 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2889	>=0
dcc4 (Symbol Loop)	M-2891*	Time that the symbol tracking loop lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2889, M-2890, and M-2891 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Symbol Loop)	M-2892	Symbol tracking loop status.	String	N/A	"OFF", "OPEN", "FREQ SEARCH", "LOOP OPT", "WAIT FOR LOCK", "OUT OF LOCK", "IN LOCK"
dcc4 (Symbol Loop)	M-2893	The measured symbol signal to noise ratio (SSNR).	Float	dB	-10.0 to 50.0
dcc4 (Symbol Loop)	M-2894	SSNR residual. The measured SSNR minus the predicted value.	Float	dB	-50.0 to 50.0
dcc4 (Symbol Loop)	M-2895	The symbol tracking loop static phase error.	Float	degrees	-90.0 to 90.0
dcc4 (Symbol Loop)	M-2896	Modulation format of the symbols.	String	N/A	“NRZL”, “NRZM”, “NRZS”, “BIPS”, “BIPL”, “BIPM”

dcc4 (Symbol Loop)	M-2897	Configuration of the symbol smoothing algorithm (low threshold telemetry mode).	String	N/A	“ENABLED”, “DISABLED”
dcc4 (Symbol Loop)	M-2898	Predicted symbol frequency (including predicted Doppler shifts).	Double	sps	4.000 to 26400000.000
dcc4 (Symbol Loop)	M-2899	Symbol acquisition FFT usage switch. If enabled, the symbol acquisition will use an FFT as part of the acquisition process.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Symbol Loop)	M-2900	Indicates whether or not the symbol FFT is currently running.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Telemetry)	M-2907	Number of Virtual Channel 0 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2908	Number of Virtual Channel 1 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2909	Number of Virtual Channel 2 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2910	Number of Virtual Channel 3 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2911	Number of Virtual Channel 4 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2912	Number of Virtual Channel 5 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc4 (Telemetry)	M-2913	Number of Virtual Channel 6 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2914	Number of Virtual Channel 7 frames detected. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2915	Operational state of the Reed-Solomon decoder. In Primary (P) mode, the corrected bits are output to the end user. In Secondary (S) mode, the decoding statistics are provided for the operator, but the bit corrections are not output.	String	N/A	"D", “P”, “S”
dcc4 (Telemetry)	M-2916	Indicator of whether the input signal is an arrayed signal or not. A value of 0 indicates not arrayed; values of 1 and 2 correspond to the arraying equipment physical number.	Integer	N/A	0 = Unarrayed, 1 = Arrayed with FSPA1 as the source, 2 = Arrayed with FSPA2 as the source
dcc4 (Telemetry)	M-2917	Frame sync operational mode.	String	N/A	“D”, “P”
dcc4 (Telemetry)	M-2918	The pattern of bits of the frame sync word.	String	N/A	Any pattern expressed in hexadecimal
dcc4 (Telemetry)	M-2919	Length of the frame sync word.	Integer	bits	8 to 64
dcc4 (Telemetry)	M-2920	Predicted telemetry bit rate.	Double	bps	2.000 to 26.4e6
dcc4 (Telemetry)	M-2921	Measured bit rate.	Double	bps	2.000 to 26.4e6
dcc4 (Telemetry)	M-2922	Overall telemetry lock status (includes decoders and frame synchronizer).	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc4 (Telemetry)	M-2924	Telemetry processing operational status	String	N/A	"GO", "NOGO"

dcc4 (Telemetry)	M-2925*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2925, M-2926, and M-2927 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Telemetry)	M-2926*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2925, M-2926, and M-2927 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2925	>=0
dcc4 (Telemetry)	M-2927*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2925, M-2926, and M-2927 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Telemetry)	M-2928*	Time that the decoder lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2928, M-2929, and M-2930 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Telemetry)	M-2929*	Time that the decoder lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2928, M-2929, and M-2930 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2928	>=0
dcc4 (Telemetry)	M-2930*	Time that the decoder lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2928, M-2929, and M-2930 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Telemetry)	M-2931	Telemetry decoder lock status.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"

dcc4 (Telemetry)	M-2933	Type of decoder used.	String	N/A	"MCD2", "MCD3", "TURBO", "UNC", "SYMB", "GSSR"
dcc4 (Telemetry)	M-2934	The output bit signal to noise ratio for the decoder.	Double	dB	-10.0 to 50.0
dcc4 (Telemetry)	M-2936	In-lock threshold for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	Integer	N/A	1 to 255
dcc4 (Telemetry)	M-2937	Vector set for the Viterbi decoder. Only valid if decoder type is Viterbi decoder.	String	N/A	"CCSDS", "DSN"
dcc4 (Telemetry)	M-2938	In-lock threshold for MCD3 decoder. Only valid if decoder type is MCD3 decoder.	Integer	N/A	1 to 256
dcc4 (Telemetry)	M-2939	Vector set for the MCD3 decoder. Only valid if decoder type is MCD3 decoder.	String	N/A	"NONE", "CCSDS", "DSN", "A15R6", "CAS", "MAP"
dcc4 (Telemetry)	M-2940	Frame sync primary frame length	Integer	bits	8 to 65536
dcc4 (Telemetry)	M-2941	Frame sync in lock bit error tolerance. The number of bit errors allowed in the frame sync word while still being considered in lock.	Integer	bits	0 to 15
dcc4 (Telemetry)	M-2942	Frame sync out of lock bit error tolerance (the minimum number of bit errors required to declare out of lock).	Integer	bits	0 to 15
dcc4 (Telemetry)	M-2943	Frame sync in lock threshold (the number of consecutive in sync frames verified before lock is declared).	Integer	frames	1 to 15
dcc4 (Telemetry)	M-2944	Frame sync out of lock threshold (number of consecutive out of sync frames before out-of-lock is declared).	Integer	frames	1 to 15

dcc4 (Telemetry)	M-2945*	Time that the last decoder acquisition command was issued. This channel contains the seconds portion of the total time. Channels M-2945, M-2946, and M-2947 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Telemetry)	M-2946*	Time that the last decoder acquisition command was issued. This channel contains the nanoseconds portion of the total time. Channels M-2945, M-2946, and M-2947 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2945	>=0
dcc4 (Telemetry)	M-2947*	Time that the last decoder acquisition command was issued. This channel contains the leap seconds portion of the total time. Channels M-2945, M-2946, and M-2947 together contain the total time.	Integer	number of leap seconds in the time	>=0
dcc4 (Telemetry)	M-2948*	Time that the frame sync lock status was last changed. This channel contains the seconds portion of the total time. Channels M-2948, M-2949, and M-2950 together contain the total time.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
dcc4 (Telemetry)	M-2949*	Time that the frame sync lock status was last changed. This channel contains the nanoseconds portion of the total time. Channels M-2948, M-2949, and M-2950 together contain the total time.	Integer	number of nanoseconds since the seconds value in M-2948	>=0
dcc4 (Telemetry)	M-2950*	Time that the frame sync lock status was last changed. This channel contains the leap seconds portion of the total time. Channels M-2948, M-2949, and M-2950 together contain the total time.	Integer	number of leap seconds in the time	>=0

dcc4 (Telemetry)	M-2951	Frame sync lock status.	String	N/A	"IDLE", "SEARCH", "VERIFY", "LOCK", "FLYWHEEL"
dcc4 (Telemetry)	M-2952	The number of bits the frame synchronizer processed in its last (if in-lock) or current (if out-of-lock) acquisition. When the frame sync goes to out-of-lock, the value is reset to zero.	Integer	bits	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2953	Number of telemetry blocks output since the start of the connection.	Integer	blocks	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2955	Count of total number of frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2956	Count of the number of good frames (verify, flywheel, and lock) since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2957	Count of the number of bad (search) frames since the start of connection. Count rolls over to zero. Only valid if frame sync is enabled.	Integer	frames	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2958	Lock status of the Cyclic Redundancy Code (CRC) check.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc4 (Telemetry)	M-2959	Configuration of the pseudo derandomizer.	String	N/A	"ENABLED", "DISABLED"
dcc4 (Telemetry)	M-2960	Count of total number of frames that have had the CRC checked since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to $(2^{31} - 1)$

dcc4 (Telemetry)	M-2961	Count of the number of frames that have passed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2962	Count of the number of frames that have failed the CRC check since the start of connection. Count rolls over to zero. Only valid if CRC check is enabled.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2963	Lock status of the Reed-Solomon decoder.	String	N/A	"IDLE", "IN LOCK", "OUT OF LOCK"
dcc4 (Telemetry)	M-2964	Count of total number of Reed-Solomon code words that have been checked since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2965	Count of the number of Reed-Solomon code words that have been decoded since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2966	Count of the number of Reed-Solomon code words that have failed to decode since the start of connection. Count rolls over to zero. Only valid if Reed-Solomon decoder is enabled.	Integer	code words	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2967	Ratio of bad frames to total frames for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00
dcc4 (Telemetry)	M-2968	Ratio of bad code words to total code words for Reed-Solomon decoder. Only valid if Reed-Solomon decoder is enabled.	Double	Percentage	0.00 to 100.00

dcc4 (Telemetry)	M-2969	Count of total number of locked (flywheel and lock) frames since start of connection. Count rolls over to zero.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2970	The number of frames with flywheel status in the last (or current) in-lock period. When lock is first acquired, the value is reset to zero.	Integer	frames	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2971	Name of the format table used by the default telemetry stream.	String	N/A	Any ASCII string, up to 242 characters long
dcc4 (Telemetry)	M-2974	Out-of-lock threshold for Viterbi decoder (7, _).	Integer	bits	1 to 65535
dcc4 (Telemetry)	M-2975	Out-of-lock threshold for the MCD3 decoder.	Integer	bits	1 to 255
dcc4 (Telemetry)	M-2976	Configuration of the differential decoder (disabled, mark, or space).	String	N/A	“D”, “NM”, "NS"
dcc4 (Telemetry)	M-2977	State of the Viterbi decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc4 (Telemetry)	M-2978	State of the MCD3 decoder alternate symbol inversion.	String	N/A	“ENABLED”, “DISABLED”
dcc4 (Telemetry)	M-2979	The number of times the metric normalization count exceeded the threshold since the TLP was put in the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2980	Percentage of symbol errors detected over the last accumulation period.	Double	Percentage	0.0 to 100.0
dcc4 (Telemetry)	M-2981	Viterbi decoder node sync change algorithm.	String	N/A	“D”, “SER”, “MNR”
dcc4 (Telemetry)	M-2982	Number of node sync changes since the TLP was put into the active state.	Integer	N/A	0 to (2^{31} - 1)
dcc4 (Telemetry)	M-2983	Position that the MCD3 decoder has locked onto.	Integer	N/A	0 to 5
dcc4 (Telemetry)	M-2984	Frame sync secondary frame length (alternate frame length).	Integer	bits	0 to 65528
dcc4 (Telemetry)	M-2985	Detected frame size.	Integer	bits	8 to 65536
dcc4 (Telemetry)	M-2986	Status of the frame synchronizer hardware.	String	N/A	"GO", "NOGO"

dcc4 (Telemetry)	M-2987	The order of the sequence for searching for frame synchronization (e.g. left-to-right (MSB) or right-to-left (LSB)). Allows handling of spacecraft that transmit recorded data backwards. M => MSB, L => LSB, and B => Both.	String	N/A	“M”, “L”, “B”
dcc4 (Telemetry)	M-2988	Number of bits over or under the frame length the synchronizer will accept as a correct length frame.	Integer	bits	0 to 3
dcc4 (Telemetry)	M-2989	The bit error rate (BER) of the frame sync words for the in-lock frames.	Double	Percentage	0.0 to 100.0
dcc4 (Telemetry)	M-2990	The detected bit sequence.	String	N/A	“MSB”, “LSB”
dcc4 (Telemetry)	M-2991	The polarity of the input data to the frame synchronizer.	String	N/A	“NORMAL”, “INVERTED”
dcc4 (Telemetry)	M-2992	The number of bit slips detected since the start of processing. This count is the number of bits slipped, not the number of bit slip occurrences.	Integer	bits	0 to $(2^{31} - 1)$
dcc4 (Telemetry)	M-2993	The number of polarity changes detected since the start of processing.	Integer	N/A	0 to 65535
dcc4 (Telemetry)	M-2994	The number of times since the start of the processing that the frame synchronizer has transitioned to the LOCK state.	Integer	N/A	0 to 65535
dcc4 (Telemetry)	M-2995	Number of Reed-Solomon codewords interleaved into a transfer frame.	Integer	Codewords	0 to 5
dcc4 (Telemetry)	M-2996	Reed-Solomon decoding algorithm used (Berlekamp versus Conventional).	String	N/A	“B”, “C”
dcc4 (Telemetry)	M-2997	Number of zero pad symbols (bytes) used in the Reed-Solomon encoding. This is also known as the virtual fill.	Integer	Reed-Solomon symbols	0 to 223

dcc4 (Telemetry)	M-2998	The number of symbol errors detected divided by the number of symbols received. Codewords that cannot be corrected are not counted.	Double	Percentage	0.0 to 100.0
dcc4 (Telemetry)	M-2999	Reed-Solomon decoder hardware status.	String	N/A	“GO”, “NOGO”
etc	M-0504	ID of transmitter #1	String	N/A	"S20K", "X4K", "X20K", "S400K", "S200W", "S2K", "N/A"
etc	M-0505	Transmitter #1 beam	String	N/A	"ON", "OFF", "SAFE"
etc	M-0509	Transmitter #1 power level	Float	watts	0 to 600000
etc	M-0535	Command Modulation	String	N/A	"OFF", "MOD1", "MOD2", "MOD3", "UNKN"
etc	M-0543	Transmitter in use.	Integer	N/A	0, 1, 2, 3. 0 means not in use.
etc	M-0544	ID of transmitter #2	String	N/A	"S20K", "X4K", "X20K", "S400K", "S200W", "S2K", "N/A"
etc	M-0545	Transmitter #2 beam	String	N/A	"ON", "OFF", "SAFE"
etc	M-0546	Transmitter #2 power level	Float	watts	0 to 600000
etc	M-0547	ID of transmitter #3	String	N/A	"S20K", "X4K", "X20K", "S400K", "S200W", "S2K", "N/A"
etc	M-0548	Transmitter #3 beam	String	N/A	"ON", "OFF", "SAFE"
etc	M-0549	Transmitter #3 power level	Float	watts	0 to 600000
etc	M-0616	Ranging Modulation Status	String	N/A	"OFF", "MOD1", "MOD2", "UNKN"
etc	M-0640	Tuning Configuration, Tuning Rate.	Double	Hz/sec	0 to 80000
etc	M-0641	Tuning Configuration, Sweep Range.	Double	Hz	0 to 6000000
etc	M-0642	Tuning Configuration, Dwell Time 0.	Integer	seconds	0 to 999
etc	M-0643	Tuning Configuration, Dwell Time 1.	Integer	seconds	0 to 999
etc	M-0644	Tuning Configuration, Dwell Time 2.	Integer	seconds	0 to 999

etc	M-0645	Tuning Configuration, T0 for template. Set to 0 if no data and not valid. This channel contains the seconds portion of the time. Channels M-0645, M-0646, and M-0647 contain the total time tag.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
etc	M-0646	Tuning Configuration, T0 for template. Set to 0 if no data and not valid. This channel contains the nanoseconds portion of the time. Channels M-0645, M-0646, and M-0647 contain the total time tag.	Integer	number of nanoseconds since the seconds value in M-0645	>=0
etc	M-0647	Tuning Configuration, T0 for template. Set to 0 if no data and not valid. This channel contains the leap seconds portion of the time. Channels M-0645, M-0646, and M-0647 contain the total time tag.	Integer	number of leap seconds in the time	>=0
etc	M-0885	Uplink carrier frequency	Double	Hz	0 to 35e9
mda	M-0311	Doppler Mode Antenna 'A' Channel 1, S Band	String	N/A	"1" to "4" where "1" = one-way, "2" = two-way, "3" = three-way, "4" = three-way coherent
mda	M-0314	Doppler Mode Antenna 'A' Channel 2, X Band	String	N/A	"1" to "4" where "1" = one-way, "2" = two-way, "3" = three-way, "4" = three-way coherent
mda	M-0611	Channel 1 Doppler noise	Float	Hz	
mda	M-0614	Channel 1 Doppler residual	Float	Hz	
mda	M-0615	Channel 1 Range residual	Integer	Range Units	
mda	M-0617	Channel 1 Uplink Carrier suppression	Float	dB	
mda	M-0618	Channel 1 Range Power Over Noise Ratio	Float	N/A	
mda	M-0619	Channel 1 Last ranging component	Integer	N/A	2 to 24
mda	M-0620	Channel 1 T1 clock integration time	Integer	seconds	
mda	M-0621	Channel 1 T2 component integration time	Integer	seconds	
mda	M-0622	Channel 1 T3 DRVID integration time	Integer	seconds	

mda	M-0623	Channel 1 Doppler Frequency	Double	Hz	
rcc	M-0346	Downlink band for logical receiver 1	String	N/A	"S", "X", "Ka", "L"
rcc	M-0373	Loop Status qualifier for logical receiver 2. M-0373 and M-0374 together give the loop Status for logical receiver 2.	Integer	N/A	0 = None, 1 = Off line, 5 = In-lock, 6 = Out-of-lock, 17 = Acquiring
rcc	M-0374	Loop Status code for logical receiver 2. M-0373 and M-0374 together give the loop Status for logical receiver 2.	Integer	N/A	0 = Out of service, 1 = Operational, 5 = Critical
rcc	M-0376	Downlink band for logical receiver 2	String	N/A	"S", "X", "Ka", "L"
rcc	M-0714	Loop Status qualifier for logical receiver 1. M-0714 and M-0716 together give the loop Status for logical receiver 1.	Integer	N/A	0 = None, 1 = Off line, 5 = In-lock, 6 = Out-of-lock, 17 = Acquiring
rcc	M-0716	Loop Status code for logical receiver 1. M-0714 and M-0716 together give the loop Status for logical receiver 1.	Integer	N/A	0 = Out of service, 1 = Operational, 5 = Critical
rcc	M-0717	Carrier loop lock Status for logical receiver 1	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0718	Subcarrier loop #1 lock Status for logical receiver 1	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0719	Symbol stream #1 lock Status for logical receiver 1	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0720	Subcarrier loop #2 lock Status for logical receiver 1	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0721	Symbol stream #2 lock Status for logical receiver 1	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0723	Channel Carrier Power to Noise ratio for logical receiver 1	Float	dB-Hz	0 to 90
rcc	M-0724	PDW validity field for SNT from logical receiver 1 (M-0725)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0725	System noise temperature (SNT) for logical receiver 1	Float	kelvin	10 to 2000
rcc	M-0727	Carrier Power for logical receiver 1	Float	dBm	-185 to -45

rcc	M-0729	Subcarrier #1 Data Power to Noise Ratio, Pd/N0, for logical receiver #1	Float	dB-Hz	0 to 90
rcc	M-0730	PDW validity field for symbol stream #1 SNR from logical receiver 1 (M-0731)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0731	Symbol Stream #1 SNR for logical receiver 1	Float	dB	-20 to 20
rcc	M-0733	Subcarrier #2 Data Power to Noise Ratio, Pd/N0, for logical receiver 1	Float	dB-Hz	0 to 90
rcc	M-0734	PDW validity field for symbol stream #2 SNR from logical receiver 1 (M-0735)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0735	Symbol Stream #2 SNR for logical receiver 1	Float	dB	-20 to 20
rcc	M-0737	Carrier Static Phase Error for logical receiver 1	Float	degrees	-90 to 90
rcc	M-0739	Carrier loop bandwidth for logical receiver 1	Float	Hz	0.01 to 500
rcc	M-0741	Carrier loop noise bandwidth for logical receiver 1	Float	Hz	0.01 to 500
rcc	M-0742	Subcarrier #1 loop noise bandwidth for logical receiver 1	Float	Hz	0.001 to 10
rcc	M-0743	Symbol stream #1 loop noise bandwidth for logical receiver 1	Float	Hz	0.001 to 10
rcc	M-0744	Subcarrier #2 loop noise bandwidth for logical receiver 1	Float	Hz	0.001 to 10
rcc	M-0745	Symbol stream #2 loop noise bandwidth for logical receiver 1	Float	Hz	0.001 to 10
rcc	M-0746	Carrier frequency for logical receiver 1	Double	Hz	0.0 to 32.3e9
rcc	M-0748	Symbol stream #1 rate for logical receiver 1	Double	N/A	4 sps to 26.4 Msps
rcc	M-0749	Symbol stream #2 rate for logical receiver 1	Double	N/A	4 sps to 26.4 Msps
rcc	M-0767	Carrier loop lock Status for logical receiver 2	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0768	Subcarrier loop #1 lock Status for logical receiver 2	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0769	Symbol stream #1 lock Status for logical receiver 2	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"

rcc	M-0770	Subcarrier loop #2 lock Status for logical receiver 2	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0771	Symbol stream #2 lock Status for logical receiver 2	String	N/A	"OFF", "ON", "OPEN", "ACQ", "IN", "OUT"
rcc	M-0773	Channel Carrier Power to Noise ratio for logical receiver 2	Float	dB-Hz	0 to 90
rcc	M-0774	PDW validity field for SNT from logical receiver 2 (M-0775)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0775	System noise temperature (SNT) for logical receiver 2	Float	kelvin	10 to 2000
rcc	M-0777	Carrier Power for logical receiver 2	Float	dBm	-185 to -45
rcc	M-0779	Subcarrier #1 Data Power to Noise Ratio, Pd/N0, for logical receiver #2	Float	dB-Hz	0 to 90
rcc	M-0780	PDW validity field for symbol stream #1 SNR from logical receiver 2 (M-0781)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0781	Symbol Stream #1 SNR for logical receiver 2	Float	dB	-20 to 20
rcc	M-0783	Subcarrier #2 Data Power to Noise Ratio, Pd/N0, for logical receiver 2	Float	dB-Hz	0 to 90
rcc	M-0784	PDW validity field for symbol stream #2 SNR from logical receiver 2 (M-0785)	Integer	N/A	0 = valid, 1 = invalid
rcc	M-0785	Symbol Stream #2 SNR for logical receiver 2	Float	dB	-20 to 20
rcc	M-0787	Carrier Static Phase Error for logical receiver 2	Float	degrees	-90 to 90
rcc	M-0789	Carrier loop bandwidth for logical receiver 2	Float	Hz	0.01 to 500
rcc	M-0791	Carrier loop noise bandwidth for logical receiver 2	Float	Hz	0.01 to 500
rcc	M-0792	Subcarrier #1 loop noise bandwidth for logical receiver 2	Float	Hz	0.001 to 10
rcc	M-0793	Symbol stream #1 loop noise bandwidth for logical receiver 2	Float	Hz	0.001 to 10
rcc	M-0794	Subcarrier #2 loop noise bandwidth for logical receiver 2	Float	Hz	0.001 to 10

rcc	M-0795	Symbol stream #2 loop noise bandwidth for logical receiver 2	Float	Hz	0.001 to 10
rcc	M-0796	Carrier frequency for logical receiver 2	Double	Hz	0.0 to 32.3e9
rcc	M-0798	Symbol stream #1 rate for logical receiver 2	Double	N/A	4 sps to 26.4 Msps
rcc	M-0799	Symbol stream #2 rate for logical receiver 2	Double	N/A	4 sps to 26.4 Msps
rcc	M-0800	Receiver Channel Processor #1 Predicts Mode	String	N/A	"1W", "2W", "3Wxx", "NPX" (xx => uplink DSS, NPX => no predicts)
rcc	M-0801	Receiver Channel Processor #2 Predicts Mode	String	N/A	"1W", "2W", "3Wxx", "NPX" (xx => uplink DSS, NPX => no predicts)
rcc	M-0802	Receiver Channel Processor #1 Configuration Table ID	String	N/A	valid table label (up to 8 characters)
rcc	M-0803	Receiver Channel Processor #2 Configuration Table ID	String	N/A	valid table label (up to 8 characters)
tgc	M-0101	PDW validity field for channel 1 bit rate and subcarrier frequency (M-0104 and M-0109)	Integer	N/A	0 = valid, 1 = invalid
tgc	M-0104	Channel 1 telemetry bit rate	Float	bps	0 to 2.2e6
tgc	M-0109	Channel 1 subcarrier frequency	Double	Hz	6.0 to 4.0e6
tgc	M-0115	Real-time telemetry combiner (RTC) channel 1 Status qualifier. M-0115 and M-0116 together give the RTC channel 1 Status.	Integer	N/A	0 = none, 5 = in lock, 6 = out of lock
tgc	M-0116	Real-time telemetry combiner (RTC) channel 1 Status code. M-0115 and M-0116 together give the RTC channel 1 Status.	Integer	N/A	0 = Out of Service, 1 = Operational, 5 = Critical
tgc	M-0125	MCD channel 1 lock Status qualifier. M-0125 and M-0126 together give the MCD channel 1 Status.	Integer	N/A	0 = none, 5 = in lock, 6 = out of lock
tgc	M-0126	MCD channel 1 lock Status code. M-0125 and M-0126 together give the MCD channel 1 Status.	Integer	N/A	0 = Out of Service, 1 = Operational, 5 = Critical

tgc	M-0130	MCD channel 1 bit SNR	Double	N/A	0.0 to 30.0
tgc	M-0140	Channel 1 In-lock bit error tolerance	Integer	N/A	0 to 15
tgc	M-0141	Channel 1 Out-of-lock bit error tolerance	Integer	N/A	0 to 15
tgc	M-0142	Channel 1 in-lock threshold	Integer	N/A	1 to 15
tgc	M-0143	Channel 1 Out-of-lock threshold	Integer	N/A	1 to 15
tgc	M-0144	PDW validity field for channel 1 FSS Status data (M-0147, M-0148, M-0149, M-0152, and M-0153)	Integer	N/A	0 = valid, 1 = invalid
tgc	M-0147	Channel 1 Lock Status	Integer	N/A	0 = in lock (lock or flywheel), 1 = out of lock (search or verify)
tgc	M-0148	Channel 1 FSS Out of Lock Reason	Integer	N/A	0 = Not out-of-lock, 1 = Flywheel threshold expired (or never in-lock), 2 = Forced into Search, 3 = both 1 and 2
tgc	M-0149	Channel 1 In-lock frame count	Integer	frames	0 to 65535
tgc	M-0152	Channel 1 Bits to acquire	Integer	bits	0 to 4294967295
tgc	M-0153	Channel 1 Flywheel frame count	Integer	frames	0 to 65535
tgc	M-0169	Channel 1 Reed-Solomon input bit SNR	Float	decibels	0.00 to 40.00
tgc	M-0201	PDW validity field for channel 2 bit rate and subcarrier frequency (M-0204 and M-0209)	Integer	N/A	0 = valid, 1 = invalid
tgc	M-0204	Channel 2 telemetry bit rate	Float	bps	0 to 2.2e6
tgc	M-0209	Channel 2 subcarrier frequency	Double	Hz	6.0 to 4.0e6
tgc	M-0215	Real-time telemetry combiner (RTC) channel 2 Status qualifier. M-0215 and M-0216 together give the RTC channel 2 Status.	Integer	N/A	0 = none, 5 = in lock, 6 = out of lock
tgc	M-0216	Real-time telemetry combiner (RTC) channel 2 Status code. M-0215 and M-0216 together give the RTC channel 2 Status.	Integer	N/A	0 = Out of Service, 1 = Operational, 5 = Critical

tgc	M-0225	MCD channel 2 lock Status qualifier. M-0225 and M-0226 together give the MCD channel 2 Status.	Integer	N/A	0 = none, 5 = in lock, 6 = out of lock
tgc	M-0226	MCD channel 2 lock Status code. M-0225 and M-0226 together give the MCD channel 2 Status.	Integer	N/A	0 = Out of Service, 1 = Operational, 5 = Critical
tgc	M-0230	MCD channel 2 bit SNR	Double	N/A	0.0 to 30.0
tgc	M-0240	Channel 2 In-lock bit error tolerance	Integer	N/A	0 to 15
tgc	M-0241	Channel 2 Out-of-lock bit error tolerance	Integer	N/A	0 to 15
tgc	M-0242	Channel 2 in-lock threshold	Integer	N/A	1 to 15
tgc	M-0243	Channel 2 Out-of-lock threshold	Integer	N/A	1 to 15
tgc	M-0244	PDW validity field for channel 2 FSS Status data (M-0247, M-0248, M-0249, M-0252, and M-0253)	Integer	N/A	0 = valid, 1 = invalid
tgc	M-0247	Channel 2 Lock Status	Integer	N/A	0 = in lock (lock or flywheel), 1 = out of lock (search or verify)
tgc	M-0248	Channel 2 FSS Out of Lock Reason	Integer	N/A	0 = Not out-of-lock, 1 = Flywheel threshold expired (or never in-lock), 2 = Forced into Search, 3 = both 1 and 2
tgc	M-0249	Channel 2 In-lock frame count	Integer	frames	0 to 65535
tgc	M-0252	Channel 2 Bits to acquire	Integer	bits	0 to 4294967295
tgc	M-0253	Channel 2 Flywheel frame count	Integer	frames	0 to 65535
tgc	M-0269	Channel 2 Reed-Solomon input bit SNR	Float	decibels	0.00 to 40.00
tx_hp	M-0514	High Power Transmitter ID	String	N/A	"SIM", "SNNN", "RDRS", "RDRX"
tx_hp	M-0515	High Power Transmitter Beam	String	N/A	"OFF", "ON", "SAFE"
tx_hp	M-0519	High Power Transmitter Power	String	kW	up to 12 characters
ulc	M-0969	Subsystem version ID. This is the software version of the uplink subsystem.	String	N/A	"aVx.y.z" where a is a letter identifying the operational revision and x.y.z is a number indicating the program version.

ulc	M-0970	Subsystem Status code. Overall subsystem Status, based on assembly Status and current activities. This monitor item is only available when using the UPL-6167-OPCV3.2.0 version of uplink.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical, 6 = Emergency
ulc	M-0971	Subsystem Status qualifier. Overall subsystem Status, based on assembly Status and current activities. This monitor item is only available when using the UPL-6167-OPCV3.2.0 version of uplink.	Integer	N/A	0 = None
ulc	M-0972	This item is a human-readable text string that says why the overall Status (channels M-0970 and M-0971) has the value it has. If the situation is nominal, its value is the empty string. This monitor item is only available when using the UPL-6167-OPCV3.2.0 version of uplink.	String	N/A	up to 242 characters long
ulc	M-0973	The uplink assembly providing data.	Integer	N/A	0 = Invalid/Unknown, 1 = S-/X-band uplink, 2 = Ka-band uplink
ulc	M-0974	When the subsystem is "In Service", the spacecraft number for which the subsystem is configured; otherwise 0. Note that due to manual configuration by the operator, this may be different than the NMC settings.	Integer	N/A	1 to 255, 0 when not configured.
ulc	M-0975	When the subsystem is "In Service", the pass number for which the subsystem is configured; otherwise 0.	Integer	N/A	>=1, 0 when not configured.
ulc/ccp	M-0850	Source of abort directive (SLE)	String	N/A	"POCC", "Controller", "None"

ulc/ccp	M-0851	ETX Command Modulation. Indicates whether the CCP thinks the Exciter command modulation is on or off for the port to which the CMG is attached.	String	N/A	"Off", "On"
ulc/ccp	M-0852	CSMC Control Mode. For UPL-6167-OPBV2.0.1, the control mode is either remote or local. For UPL-6167-OPCV3.2.0, the CMD function operates in one of these four modes: normal radiation (RAD), configuration (CNF), emergency file radiation (EFRAD), or emergency file recording (EFREC).	String	N/A	For UPL-6167-OPBV2.0.1: "Remote", "Local" For UPL-6167-OPCV3.2.0: "CNF", "RAD", "EFREC", "EFRAD"
ulc/ccp	M-0853	Front end monitoring Status code. Indicates whether monitoring of the front end (exciter/transmitter) is enabled from the exciter onwards. This flag is controlled by the FEM directive. M-0853 and M-0854 together give the front end monitoring status.	Integer	N/A	1 = Operational, 3 = Deviation
ulc/ccp	M-0854	Front end monitoring Status qualifier. Indicates whether monitoring of the front end (exciter/transmitter) is enabled from the exciter onwards. This flag is controlled by the FEM directive. M-0853 and M-0854 together give the front end monitoring status.	Integer	N/A	11 = Enabled, 12 = Disabled

ulc/ccp	M-0855	Transmitter monitoring Status code. Indicates whether or not monitoring of the front end is enabled from the transmitter onwards. If exciter monitoring (M-0853 and M-0854) is disabled, then this will be disabled as well. M-0855 and M-0856 give the transmitter monitoring status.	Integer	N/A	1 = Operational, 3 = Deviation
ulc/ccp	M-0856	Transmitter monitoring Status qualifier. Indicates whether or not monitoring of the front end is enabled from the transmitter onwards. If exciter monitoring (M-0853 and M-0854) is disabled, then this will be disabled, too. M-0855 and M-0856 give the transmitter monitoring status.	Integer	N/A	11 = Enabled, 12 = Disabled
ulc/ccp	M-0857	Transmitter Output State. This value is received from the exciter and indicates whether a carrier signal is going out the horn ("On"), into a water load ("Water"), or not being produced ("Off"). The CMD function uses this to determine whether or not commands can be radiated by the transmitter.	String	N/A	"Off", "On", "Water"
ulc/ccp	M-0858	The number of CLTUs successfully radiated during the current support. Note that Throughput Command blocks are reformatted as CLTUs by the CCP prior to radiation by the CMG. This statistic is computed for all command services.	Integer	N/A	>=0

ulc/ccp	M-0859	Total number of Throughput command blocks received and validated during the current support (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0860	Total number of Throughput command blocks received during the current support (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0861	Total number of Throughput blocks rejected during the current support (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0862	Number of times that radiation of a command block was aborted during the current support (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0863	Number of command blocks flushed from the queue due to aborts during the current support. Note that the flushed blocks (M-0863) plus the aborted blocks (M-0862) is the number of command blocks accepted but not completely radiated. (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0864	Warning alarm sent by the CCP when the queue reaches a certain percentage capacity. Only applies to Throughput service mode (CMD-4-9).	Integer	percent	0 to 100
ulc/ccp	M-0865	Percentage of the queue presently in use. Only applies to the Throughput service mode (CMD-4-9).	Integer	percent	0 to 100
ulc/ccp	M-0882	The SLE Initiator ID of the CLTU service user. This is used to generate security credential to check against incoming PDUs.	String	N/A	up to 72 characters long
ulc/ccp	M-0883	The SLE Responder ID of the CLTU service provider. This is used to generate security credential for PDUs sent to the user.	String	N/A	up to 72 characters long

ulc/ccp	M-0884	Configured service mode. Indicates the service mode for which the CCP is configured, if any.	String	N/A	For UPL-6167-OPBV2.0.1: "Throughput", "CLTU", "File", "Packet", "Unknown" For UPL-6167-OPCV3.2.0: "Throughput", "CLTU", "Unknown"
ulc/ccp	M-0886	The number of CLTUs which were aborted at the CCP/CMG during the CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0887	The number of CLTUs accepted by the CCP during this CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0888	The number of CLTUs which expired at the CCP/CMG during this CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0889	The number of CLTUs flushed from the queue due to aborts during the current CLTU support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0890	The number of CLTUs processed by the CCP during this CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0891	The number of CLTUs received from the CLTU user during this CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0892	The number of CLTUs rejected by the CCP during this CLTU service support. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0893	The number of CLTUs in the queue. (SLE)	Integer	N/A	>=0
ulc/ccp	M-0894	Total number of Throughput test blocks received during the current support. (CMD-4-9)	Integer	N/A	>=0
ulc/ccp	M-0895	The total number of valid Throughput blocks (including both command and test blocks) received during the current support. (CMD-4-9)	Integer	N/A	>=0

ulc/ccp	M-1014	Command Modulation Change Time. Gives the time when the exciter command modulation (M-0851) monitor data item last changed. This channel contains the number of seconds since January 1, 1970 UTC, in the time. The total time tag is contained in M-1014, M-1015, and M-1016. This monitor data item is only available when using the UPL-6167-OPCV3.2.0 version of the uplink subsystem.	Integer	number of seconds since January 1, 1970 UTC, excluding leap seconds	>=0
ulc/ccp	M-1015	Command Modulation Change Time. Gives the time when the exciter command modulation (M-0851) monitor data item last changed. This channel contains the the number nanoseconds since the seconds value (M-1014) in the time. The total time tag is contained in M-1014, M-1015, and M-1016. This monitor data item is only available when using the UPL-6167-OPCV3.2.0 version of the uplink subsystem.	Integer	number of nanoseconds since the seconds value in M-1014	>=0
ulc/ccp	M-1016	Command Modulation Change Time. Gives the time when the exciter command modulation (M-0851) monitor data item last changed. This channel contains the count of leap seconds in the time. The total time tag is contained in M-1014, M-1015, and M-1016. This monitor data item is only available when using the UPL-6167-OPCV3.2.0 version of the uplink subsystem.	Integer	number of leap seconds in the time	>=0

ulc/ccp	M-1017	Indicates if a CLTU is currently being radiated by the CMG. This monitor item is only available when using the UPL-6167-OPCV3.2.0 version of the uplink subsystem.	String	N/A	"Radiating", "Not Radiating"
ulc/ccp	M-1018	Name of the service table used to configure the subsystem.	String	N/A	up to 242 characters long
ulc/ccp	M-1019	Service Instance Id used for CLTU configuration. A period-delimited list of the service instance Id. This string needs to match the user service instance Id before CCP will accept the BIND request.	String	N/A	up to 242 characters long
ulc/ccp	M-1020	CLTU Authentication Trigger. The CLTU user must send a password for authentication; this item indicates when the password will be checked.	String	N/A	For UPL-6167-OPBV2.0.1: "Never", "On Bind", "Always" For UPL-6167-OPCV3.2.0: "NONE", "BIND", "ALL"
ulc/ccp	M-1021	The configuration set name of the service table.	String	N/A	up to 242 characters long
ulc/ccp	M-1022	For UPL-6167-OPBV2.0.1: This is the Status code for the overall Status of the Command subsystem. For UPL-6167-OPCV3.2.0: This is the Status code for the overall Status of the CCP assembly.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical, 6 = Emergency
ulc/ccp	M-1023	For UPL-6167-OPBV2.0.1: This is the Status qualifier for the overall Status of the Command subsystem. For UPL-6167-OPCV3.2.0: This is the Status qualifier for the overall Status of the CCP assembly.	Integer	N/A	0 = None

ulc/ccp	M-1024	This item is a human-readable text string that says why the overall Status (channels M-1022 and M-1023) has the value it has. If the situation is nominal, its value is the empty string.	String	N/A	up to 242 characters long
ulc/ccp	M-1025	Status code for the CCP Configuration Status.	Integer	N/A	1 = Operational
ulc/ccp	M-1026	Status qualifier for the CCP Configuration Status. Offline indicates the CCP is not configured for commanding. Awaiting operator indicates command service has been requested, but configuration failed due to a configuration error or a lack of configuration information. Online indicates command service has been requested, and configuration is proceeding normally (or is complete).	Integer	N/A	1 = Offline, 2 = Online, 9 = Awaiting operator
ulc/ccp	M-1027	Text explanation of CCP configuration Status (channels M-1025 and M-1026). This item is a human-readable text string that explains and amplifies CCP configuration Status. It may describe the current configuration activity; if configuration failed, it explains why.	String	N/A	up to 242 characters long
ulc/ccp	M-1028	Status code of command service Status. Indicates the health of the command service.	Integer	N/A	1 = Operational, 3 = Deviation, 5 = Critical
ulc/ccp	M-1029	Status qualifier of command service Status. Indicates the health of the command service.	Integer	N/A	0 = None

ulc/ccp	M-1030	Text explanation of command service Status (channels M-1028 and M-1029). A human-readable string that explains why the command service Status has the value it has. If Status is nominal, this string is empty.	String	N/A	up to 242 characters long
ulc/ccp	M-1031	CLTU Service State. The current state of the SLE service provider.	String	N/A	"Unbound", "Bind pending", "Ready", "Unbind pending", "Start pending", "Active", "Stop pending"
ulc/ccp	M-1032	CLTU Production State. The current production state of the SLE service provider.	String	N/A	"Waiting", "Active", "Halted"
ulc/ccp	M-1033	Acquisition Sequence Trigger. When the acquisition sequence should be sent to the spacecraft.	String	N/A	"Never", "When Configured", "When Ready", "When Active"
ulc/ccp	M-1034	Maximum CLTU size. The maximum command block (CLTU) size, in bytes.	Integer	bytes	>=0
ulc/ccp	M-1035	Minimum CLTU size. The minimum command block (CLTU) size, in bytes.	Integer	bytes	>=0
ulc/ccp	M-1036	The ID of the latest CLTU received during this CLTU service support.	Integer	N/A	>=0
ulc/ccp	M-1037	The ID of the latest CLTU accepted by the CCP during this CLTU service support.	Integer	N/A	>=0
ulc/ccp	M-1038	The ID of the latest CLTU radiated during this CLTU service support.	Integer	N/A	>=0

ulc/ccp	M-1077	Status code for the transmitter output status. This value is received from the exciter. Critical means no carrier signal is being produced. Operational means a carrier signal is going out the horn. Marginal indicates a carrier signal is going into a water load.	Integer	N/A	1 = Operational, 4 = Marginal, 5 = Critical
ulc/ccp	M-1078	Status qualifier for the transmitter output status. This qualifies the status code (M-1077).	Integer	N/A	0 = None
ulc/ccp	M-1079	Transmitter Output Diagnostic Text. This value explains why M-0857 has the value it does. If the state is nominal, this item's value is the empty string.	String	N/A	up to 242 characters long
ulc/cmg	M-0866	The command carrier suppression in dBs. This value derives from the modulation index.	Double	dB	0.2 to 6.0 (Sine Wave), 0.4 to 12.0 (Square Wave)
ulc/cmg	M-0867	Actual radiation data rate in bits per second.	Double	bps	1.0 to 4120
ulc/cmg	M-0868	Reason for failure to load a CLTU. If not blank, then the CCP failed to load a CLTU into the CMG. The CLTU ID is included in this message. (SLE)	String	N/A	"", "Expired Time, CLTU n", "Checksum Error, CLTU n", "Invalid Size, CLTU n", "Buffer Exceeded, CLTU n", "Unknown Reason, CLTU n" In the above messages, n is the CLTU ID number.
ulc/cmg	M-0869	Whether the CMG is currently modulating or not, i.e., sending a signal to the ETC. Note that the CMG is only told to modulate when ETC command modulation is enabled.	String	N/A	"Off", "On"

ulc/cmg	M-0870	The CMG's current operating mode. Test means the CMG is performing a pre-cal test to verify communications with the ETC; Ready means the CMG is sending idle pattern if idle is defined for this spacecraft; Active means the CMG is sending CLTUs.	String	N/A	"Test", "Off", "Ready", "Active"
ulc/cmg	M-0871	Loss of Reference Signal by CMG. This item is non-blank when the CMG notifies the CCP that it has lost its 10 MHz reference signal from the FTS.	String	N/A	"", "10MHz Reference Signal Failure on CMG"
ulc/cmg	M-0872	Overall CMG Status code. This is the overall Status of the CMG assembly. M-0872 and M-0873 together give the overall CMG Status.	Integer	N/A	1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical
ulc/cmg	M-0873	Overall CMG Status qualifier. This is the overall Status of the CMG assembly. M-0872 and M-0873 together give the overall CMG Status.	Integer	N/A	0 = None
ulc/cmg	M-0874	TCT Error. This item is non-blank when the CMG notifies the CCP that it has detected a TCT failure.	String	N/A	"", "TCT Failure Reported by CMG"
ulc/cmg	M-0875	This item is non-blank when the CMG notifies the CCP that the verification feedback signal failed to match the transmitted signal.	String	N/A	"", "Out of Tolerance"
ulc/cmg	M-0876	This item is non-blank when the CMG fails to communicate to the CCP within a predetermined time period.	String	N/A	"", "Watch dog timer expired"

ulc/cmg	M-0877	Command subcarrier phase angle to be applied to the command subcarrier in degrees. Note: the modulation index for X-band carriers must be limited to 80.21 degrees peak (1.40 radians) if verification feedback from the Exciter to the CMG is used.	Double	degrees	For UPL-6167-OPBV2.0.1: 20 to 85. For UPL-6167-OPCV3.2.0: 17.18 to 89.95
ulc/cmg	M-0878	CMG subcarrier frequency	Double	Hz	sine wave: 999 to 250075. square wave: 100 to 1000.
ulc/cmg	M-0879	Status of CMG amplitude verification. The status will always be operational if verify mode is disabled. If verify mode is enabled, the status is critical if the verify amplitude is outside of the range, and operational otherwise.	Integer	N/A	1 = operational, 5 = critical
ulc/cmg	M-0880	Status qualifier of CMG amplitude verification.	Integer	N/A	0 = none
ulc/cmg	M-0881	Command subcarrier phase angle to be applied to the command subcarrier in radians. Note that the modulation index for X-band carriers must be limited to 1.40 radians (80.21 degrees) if verification feedback from the Exciter to the CMG is used.	Double	radians	For UPL-6167-OPBV2.0.1: 0.35 to 1.48. For UPL-6167-OPCV3.2.0: 0.30 to 1.57.
ulc/cmg	M-1039	Radiation bit format.	String	N/A	"NRZ_L", "NRZ_M", "NRZ_S", "BIP_L", "BIP_M", "BIP_S"
ulc/cmg	M-1040	This is the currently configured CMG subcarrier waveform.	String	N/A	"Sine", "Square"
ulc/cmg	M-1041	The requested radiation data rate in bits per second.	Double	bps	
ulc/cmg	M-1042	Intercommand Modulation type. What to radiate when there are no command bits to radiate.	String	N/A	"Idle", "Subcarrier Only", "No Output"

ulc/cmg	M-1043	Idle sequence bit pattern. Bit pattern to radiate when there are no command bits to radiate and intercommand modulation type (M-1042) is "Idle".	Integer	N/A	0 to 255
ulc/cmg	M-1044	Text explanation of overall CMG Status (channels M-0872 and M-0873). This item is a human-readable text string that says why overall CMG Status has the value it has. If the situation is nominal, its value is the empty string.	String	N/A	up to 242 characters long
ulc/etc	M-1045	This is the Status code for the Exciter/Transmitter function Status. This is the status of the ETC hardware and software.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical, 6 = Emergency
ulc/etc	M-1046	This is the Status qualifier for the Exciter/Transmitter function Status.	Integer	N/A	0 = None
ulc/etc	M-1047	Text explanation of the Exciter/Transmitter function Status (channels M-1045 and M-1046). This item is a human-readable text string that says why Exciter/Transmitter function Status has the value it has. If the situation is nominal, its value is the empty string.	String	N/A	up to 242 characters long
ulc/etc	M-1049	Current Carrier Ramping Frequency. This is the current ramp frequency being generated by the Exciter.	Double	Hz	0 to 35000000000
ulc/etc	M-1050	Command Port on OS2 set to receive command data. This is the hardware port between the exciter and the CMG.	String	N/A	"OFF", "MOD1", "MOD2", "MOD3", "UNKN"

ulc/etc	M-1051	This is the current status from the ETC of the exciter command modulation connection telling if the command signal can be modulated onto the exciter carrier.	Integer	N/A	0 = Off, 1 = On
ulc/etc	M-1052	Time at which the modulation Status (M-1051) value last changed.	String	N/A	"hh:mm:ss"
ulc/etc	M-1053	Ranging port on OS2 set to receive ranging data.	String	N/A	"OFF", "MOD1", "MOD2", "UNKN"
ulc/etc	M-1054	This is the current Status of the exciter range modulation connection telling if the ranging signal can be modulated onto the exciter carrier.	Integer	N/A	0 = Off, 1 = On
ulc/etc	M-1055	Time at which the Exciter Range Modulation Status (channel M-1054) last changed.	String	N/A	"hh:mm:ss"
ulc/etc	M-1056	Current tuning frequency rate. This is the current tuning frequency rate.	Double	Hz/sec	0.0 to 80000.0
ulc/etc	M-1057	Current tuning frequency sweep range. This is the current tuning frequency sweep range.	Double	Hz	0 to 6000000
ulc/etc	M-1058	Dwell 0 value. This is the first Dwell time setting.	Integer	seconds	0 to 999
ulc/etc	M-1059	Dwell 1 value. This is the second Dwell time setting.	Integer	seconds	0 to 999
ulc/etc	M-1060	Dwell 2 value. This is the third Dwell time setting.	Integer	seconds	0 to 999
ulc/etc	M-1061	This is the day of year the first ramp starts. The effect on downlink will occur one Round-Trip Light Time (RTLT) later.	Integer	day of year	0 to 366
ulc/etc	M-1062	This is the seconds of day (channel M-1061 gives the day of year) the first ramp starts. The effect on downlink will occur one Round-Trip Light Time (RTLT) later.	Integer	seconds	0 to 86401

ulc/etc	M-1063	The Day of Year that the last ramp ends. The effect on downlink will occur one Round Trip Light Time (RTLT) later.	Integer	day of year	0 to 366
ulc/etc	M-1064	This is the seconds of day (channel M-1063 give the day of year) the last ramp ends. The effect on downlink will occur one Round Trip Light Time (RTLT) later.	Integer	seconds	0 to 86401
ulc/etc	M-1065	Identifier of the current transmitter. Contains the name of the currently scheduled transmitter.	String	N/A	"X4K", "S400K", "K800W", "S20K", "X20K", "TXR20K", "N/A"
ulc/etc	M-1066	Indicates whether the transmitter amplifier is on or not. ON means the beam is on and the transmitter has the capability to amplify the drive signal. OFF means there is no high voltage power to the amplifier. In this state, the beam can be turned on by the network operator. SAFE means the beam is off and the transmitter is locked into the safe mode. In this state the beam cannot be turned on by the network operator. This state occurs when technicians/maintenance personnel are working on or near the transmitter hardware.	String	N/A	"OFF", "ON", "SAFE"
ulc/etc	M-1067	Scheduled transmitter power output to antenna horn. Contains the measured power output to the antenna horn of the scheduled transmitter.	Float	kW	0 to 500
ulc/etc	M-1068	Current State of the Scheduled Transmitter. Current State of the Scheduled Transmitter.	String	N/A	"OFF", "WARM", "CALIBRATE", "STANDBY", "TUNE", "OPERATE"

ulc/etc	M-1069	Numerical indication of which transmitter is in use.	Integer	N/A	0 = No transmitter is selected, 1 = Transmitter #1 is selected, 2 = Transmitter #2 is selected, 3 = Transmitter #3 is selected.
ulc/etc	M-1070	This is the current Status of the transmitter. It indicates whether the carrier is going out of the horn.	Integer	N/A	0 = Off, 1 = On
ulc/etc	M-1071	Time at which the transmitter Status (M-1070) last changed.	String	N/A	"hh:mm:ss"
ulc/etc	M-1072	This indicator shows the Status of the current ramps.	Integer	N/A	0 = Off (no ramps scheduled),1 = On (ramps are scheduled)
ulc/etc	M-1073	Day of year of the uplink carrier phase data time tag.	Integer	day of year	0 to 366
ulc/etc	M-1074	Seconds of day (channel M-1073 is the day of year) of the uplink carrier phase data time tag.	Integer	seconds	0 to 86401
ulc/etc	M-1076	This is the band that the Uplink carrier is currently set for.	Integer	N/A	0 = Unknown, 1 = S-band, 2 = X-band, 3 = Ka-band
ulc/etc	M-1080	Scheduled transmitter current output switch setting. This indicates whether the exciter is configured to send the signal out the antenna or to a water load.	String	N/A	"ANT", "WTR", "ERR"
ulc/etc	M-1081	File name of the uplink predicts file being used.	String	N/A	any ASCII string up to 242 characters
ulc/etc	M-1082	Current Exciter Template File. This contains the file name for the current Template File that is loaded on the UPL.	String	N/A	any ASCII string up to 242 characters
ulc/etc	M-1083	Exciter Drive Setting. This is the current exciter drive setting.	String	N/A	"OFF", "ON", "UNKNOWN"
ulc/etc	M-1084	This is the nominal spacecraft frequency setting generated by the Exciter hardware (at T0).	Double	Hz	0 to 35000000000
ulc/etc	M-1085	This is the frequency offset added to the frequency predicts.	Float	Hz	-10000000.0 to 10000000.0

ulc/urc	M-0976	This is the Status code for the Uplink Ranging function Status.	Integer	N/A	0 = Out of Service, 1 = Operational, 2 = Busy, 3 = Deviation, 4 = Marginal, 5 = Critical, 6 = Emergency
ulc/urc	M-0977	This is the Status qualifier for the Uplink Ranging function Status.	Integer	N/A	0 = None
ulc/urc	M-0978	Text explanation of the Uplink Ranging function Status (channels M-0976 and M-0977). This item is a human-readable text string that says why Uplink Ranging function Status has the value it has. If the situation is nominal, its value is the empty string.	String	N/A	up to 242 characters long
ulc/urc	M-0979	Day of year the ranging modulation was started; the first range transmit T0.	Integer	day of year	0 to 366
ulc/urc	M-0980	Seconds of day (channel M-0979 contains the day of year) the ranging modulation was started; the first range transmit T0.	Integer	seconds	0 to 86401
ulc/urc	M-0981	Current mode of the uplink ranging function.	String	N/A	"IDLE", "TRK", "CAL", "DIAG"
ulc/urc	M-0982	Type of ranging modulation. SSIN = Sequential, Sinewave clock. SSQ = Sequential, Squarewave clock. PSIN = Pseudo-Noise, Sinewave clock. PSQ = Pseudo-Noise, Squarewave clock. PCON = Pseudo-Noise, No clock. This has a continuous spread spectrum modulation.	String	N/A	"SSIN", "SSQ", "PSIN", "PSQ", "PCON"
ulc/urc	M-0983	Spacecraft ID from the support data ranging configuration file. There is one configuration file per spacecraft so the spacecraft ID indicates which configuration file is being used.	Integer	N/A	0 to 255

ulc/urc	M-0984	The polarity of the uplink ranging modulation. PLUS = plus, same polarity as a +sinewave. MINUS = minus, same polarity as a -sinewave.	String	N/A	"PLUS", "MINUS"
ulc/urc	M-0985	Suppression of carrier by ranging modulation, from ranging configuration table.	Float	dB	0.0 to 9.0
ulc/urc	M-0986	T1 setting. T1 is the time duration for the clock or highest frequency tone. It is the first segment of sequential tone ranging.	Float	seconds	0.0 to 9999.9
ulc/urc	M-0987	T2 setting. T2 is the time duration for each succession of lower and lower frequency tones transmitted. It is the second segment of sequential tone ranging.	Float	seconds	0.0 to 9999.9
ulc/urc	M-0988	T3 setting. T3 is the time duration for the clock segment again and is the last portion of the sequential tone ranging.	Float	seconds	0.0 to 9999.9
ulc/urc	M-0989	Clock component number.	Integer	N/A	1 to 24
ulc/urc	M-0990	Last component number.	Integer	N/A	1 to 24
ulc/urc	M-0991	Chop component number.	Integer	N/A	1 to 24
ulc/urc	M-0992	Component number where the chopping starts being applied.	Integer	N/A	1 to 25
ulc/urc	M-0993	Number of DRVID measurements.	Integer	N/A	0 to 999
ulc/urc	M-0994	The reference signal is divided by this value to get the modulation clock.	Integer	N/A	1 to 64 (normally 64)
ulc/urc	M-0995	Length of the 1st PN sequence.	Integer	symbols (chips)	0 to 32
ulc/urc	M-0996	The symbol (chip) pattern of the 1st PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-0997	The Boolean operation associated with the 1st PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-0998	Length of the 2nd PN sequence.	Integer	symbols (chips)	0 to 32

ulc/urc	M-0999	The symbol (chip) pattern of the 2nd PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-1000	The Boolean operation associated with the 2nd PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-1001	Length of the 3rd PN sequence.	Integer	symbols (chips)	0 to 32
ulc/urc	M-1002	The symbol (chip) pattern of the 3rd PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-1003	The Boolean operation associated with the 3rd PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-1004	Length of the 4th PN sequence.	Integer	symbols (chips)	0 to 32
ulc/urc	M-1005	The symbol (chip) pattern of the 4th PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-1006	The Boolean operation associated with the 4th PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-1007	Length of the 5th PN sequence.	Integer	symbols (chips)	0 to 32
ulc/urc	M-1008	The symbol (chip) pattern of the 5th PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-1009	The Boolean operation associated with the 5th PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-1010	Length of the 6th PN sequence.	Integer	symbols (chips)	0 to 32
ulc/urc	M-1011	The symbol (chip) pattern of the 6th PN sequence.	Integer	N/A	0 to 0xffff
ulc/urc	M-1012	The Boolean operation associated with the 6th PN sequence.	String	N/A	"AND", "OR", "XOR", "MVT"
ulc/urc	M-1013	1 = ON, the exciter ranging port is set to the URC, and the URC is producing range tones. 0 = OFF, no range tones being modulated on the carrier (the default).	Integer	N/A	0, 1
ulc/urc	M-1086	Ranging state. Indicates whether uplink ranging is enabled or disabled.	String	N/A	"DISABLED","ENABLED"
ulc/urc	M-1087	Ranging data output switch. If enabled, range data is being sent out.	String	N/A	"DISABLED", "ENABLED"
ulc/urc	M-1088	Number of range blocks sent by the ranging assembly of uplink.	Integer	blocks	0 to $(2^{31} - 1)$

ulc/urc	M-1089	Carrier data output switch. If enabled, carrier data is being sent out.	String	N/A	"DISABLED", "ENABLED"
ulc/urc	M-1090	Number of carrier blocks sent by the ranging assembly of uplink.	Integer	blocks	0 to (2^{31} - 1)
uwv	M-3300	Rainblower water pressure sensors for 34M HEF antennas.	String	N/A	"ON", "OFF", "N/A", "UNKN"
uwv	M-3301	Rainblower air pressure for 34M HEF antennas.	String	N/A	"ON", "OFF", "N/A", "UNKN"
uwv	M-3302	Rainblower water pressure sensors for 70M antennas.	String	N/A	"ON", "OFF", "N/A", "UNKN"
uwv	M-3303	Rainblower air pressure for 70M antennas.	String	N/A	"ON", "OFF", "N/A", "UNKN"
uwv	M-3304	The polarization of the transmission signal for S-band.	String	N/A	"RCP", "LCP", "N/A", "UNKN"
uwv	M-3305	The polarization of the transmission signal for X-band.	String	N/A	"RCP", "LCP", "N/A", "UNKN"
uwv	M-3306	The polarization of the transmission signal for Ka-band.	String	N/A	"RCP", "LCP", "N/A", "UNKN"
uwv	M-3307	The polarization of the transmission signal for L-band.	String	N/A	"RCP", "LCP", "N/A", "UNKN"

[*]The monitor data in these channels have not yet been implemented by the originating DSN subsystem. The next delivery of the subsystem should include these items. Until that time, though, these channels will not appear in the 0158-Monitor SFDUs.

Table A-3 lists the monitor channel IDs in channel ID order and shows the origin of the channel: a 34M/70M subsystem, the 26M equipment, or both. This table is meant as an aid to the user who knows a channel ID and wants to look up its description in tables A-1 and/or A-2.

Table A-3 Channel ID Lookup

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0037	ce	Support Description	SpacecraftNumber
M-0042	ce		DssList
M-0049		Support Description	
M-0064		Support Description	
M-0100		Receiver Status	
M-0101	tgc		C1PDW
M-0104	tgc	Telemetry Status and Performance	C1RATE
M-0109	tgc		C1SCFR1
M-0115	tgc		C1BCSTS
M-0116	tgc		C1BCSTS
M-0125	tgc		C1MCSTS
M-0126	tgc		C1MCSTS
M-0130	tgc		C1MCSNR
M-0140	tgc		C1ILBET
M-0141	tgc		C1OLBET
M-0142	tgc		C1ILTH
M-0143	tgc		C1OLTH
M-0144	tgc		C1FSSSTV
M-0147	tgc	Telemetry Status and Performance	C1FSSSTS
M-0148	tgc		C1OLCODE
M-0149	tgc		C1ILFRMS
M-0152	tgc		C1BITSAQ
M-0153	tgc		C1FLYWHS
M-0169	tgc		C1RSSNR
M-0182		Telemetry Data Accountability, Channel 1	
M-0183		Telemetry Data Accountability, Channel 1	

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0190	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount1
M-0191	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount2
M-0192	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount3
M-0193	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount4
M-0194	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount5
M-0195	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount6
M-0196	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount7
M-0197	dcc1 (Telemetry)	Telemetry Data Accountability, Channel 1	tlm.perf.fmt.vcCount8
M-0200		Receiver Status	
M-0201	tgc		C2PDW
M-0204	tgc	Telemetry Status and Performance	C2RATE
M-0209	tgc		C2SCFR1
M-0215	tgc		C2BCSTS
M-0216	tgc		C2BCSTS

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0225	tgc		C2MCSTS
M-0226	tgc		C2MCSTS
M-0230	tgc		C2MCSNR
M-0240	tgc		C2ILBET
M-0241	tgc		C2OLBET
M-0242	tgc		C2ILTH
M-0243	tgc		C2OLTH
M-0244	tgc		C2FSSSTV
M-0247	tgc	Telemetry Status and Performance	C2FSSSTS
M-0248	tgc		C2OLCODE
M-0249	tgc		C2ILFRMS
M-0252	tgc		C2BITSAQ
M-0253	tgc		C2FLYWHS
M-0269	tgc		C2RSSNR
M-0282		Telemetry Data Accountability, Channel 2	
M-0283		Telemetry Data Accountability, Channel 2	
M-0290	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount1
M-0291	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount2
M-0292	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount3
M-0293	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount4

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0294	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount5
M-0295	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount6
M-0296	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount7
M-0297	dcc2 (Telemetry)	Telemetry Data Accountability, Channel 2	tlm.perf.fmt.vcCount8
M-0301	apa, apc		apa: ELAPD70, ELAPDHE; apc: ELAPD
M-0302	apa, apc		apa: ELAPD70, ELAPDHE; apc: ELAPD
M-0303	apa, apc		apa: ELAPD70, ELAPDHE; apc: ELAPD
M-0304	apc		ELANG
M-0305	apc		AZANG
M-0306	apc		AZRES
M-0307	apc		ELRES
M-0308	apa, apc		apa: CNSCN70, CNSCNHE; apc: CNSCNDRV
M-0309	apa, apc		apa: LPSTAT70, LPSTATHE; apc: LPSTAT
M-0311	mda	Tracking Status	WAY1
M-0314	mda	Tracking Status	WAY2
M-0324	apa		ELANG70, ELANGHE
M-0325	apa		AZANG70, AZANGHE
M-0326	apa		AZRES70, AZRESHE
M-0327	apa		ELRES70, ELRESHE
M-0346	rcc		BAND1
M-0349		Receiver Status	
M-0373	rcc		CLSTAT2
M-0374	rcc		CLSTAT2
M-0376	rcc		BAND2

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0379		Receiver Status	
M-0500	cpa		DSSID
M-0504	etc		TXR1
M-0505	etc		TBEAM1
M-0509	etc		TXPWR1
M-0514	tx_hp		HITXRID
M-0515	tx_hp		HIBEAM
M-0519	tx_hp		HIPWR
M-0524		Transmitter Status	
M-0526		Transmitter Status	
M-0527		Transmitter Status	
M-0534	cpa		CMAMDE
M-0535	etc	Command Status and Performance	CMDMOD
M-0536	cpa	Command Status and Performance	CARSUP
M-0537	cpa		DRATE
M-0541		Command Data Accountability	
M-0542		Command Data Accountability	
M-0543	etc		TXROP
M-0544	etc		TXR2
M-0545	etc		TBEAM2
M-0546	etc		TXPWR2
M-0547	etc		TXR3
M-0548	etc		TBEAM3
M-0549	etc		TXPWR3
M-0611	mda		DOPNS1
M-0614	mda		DOPRS1
M-0615	mda		RNGRS1
M-0616	etc		RNGMOD
M-0617	mda		RNGSUP1
M-0618	mda		PRNO1
M-0619	mda		LAST1
M-0620	mda		RNGT1_1

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0621	mda		RNGT2_1
M-0622	mda		RNGT3_1
M-0623	mda		DOPFRQ1
M-0640	etc		TR
M-0641	etc		SR
M-0642	etc		DWL0
M-0643	etc		DWL1
M-0644	etc		DWL2
M-0645	etc		T0
M-0646	etc		T0
M-0647	etc		T0
M-0654		Antenna Pointing	
M-0655		Antenna Pointing	
M-0656		Antenna Pointing	
M-0714	rcc		CLSTAT1
M-0716	rcc		CLSTAT1
M-0717	rcc		CARRLST1
M-0718	rcc		SUB1LST1
M-0719	rcc		SYM1LST1
M-0720	rcc		SUB2LST1
M-0721	rcc		SYM2LST1
M-0723	rcc		PCNO1
M-0724	rcc		SNTPD1
M-0725	rcc		SNT1
M-0727	rcc		PC1
M-0729	rcc		PDNO11
M-0730	rcc		SS1SNPD1
M-0731	rcc		SSNR11
M-0733	rcc		PDNO21
M-0734	rcc		SS2SNPD1
M-0735	rcc		SSNR21
M-0737	rcc		SPE1
M-0739	rcc		CARRLPB1
M-0741	rcc		CARRBW1
M-0742	rcc		SUB1BW1
M-0743	rcc		SYM1BW1
M-0744	rcc		SUB2BW1
M-0745	rcc		SYM2BW1
M-0746	rcc		FC1
M-0748	rcc		SYM1RAT1
M-0749	rcc		SYM2RAT1

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0767	rcc		CARRLST2
M-0768	rcc		SUB1LST2
M-0769	rcc		SYM1LST2
M-0770	rcc		SUB2LST2
M-0771	rcc		SYM2LST2
M-0773	rcc		PCNO2
M-0774	rcc		SNTPD2
M-0775	rcc		SNT2
M-0777	rcc		PC2
M-0779	rcc		PDNO12
M-0780	rcc		SS1SNPD2
M-0781	rcc		SSNR12
M-0783	rcc		PDNO22
M-0784	rcc		SS2SNPD2
M-0785	rcc		SSNR22
M-0787	rcc		SPE2
M-0789	rcc		CARRLPB2
M-0791	rcc		CARRBW2
M-0792	rcc		SUB1BW2
M-0793	rcc		SYM1BW2
M-0794	rcc		SUB2BW2
M-0795	rcc		SYM2BW2
M-0796	rcc		FC2
M-0798	rcc		SYM1RAT2
M-0799	rcc		SYM2RAT2
M-0800	rcc		R1PDXMOD
M-0801	rcc		R2PDXMOD
M-0802	rcc		R1TBLID
M-0803	rcc		R2TBLID
M-0804	apc		AZESTMP1
M-0805	apc		ELESTMP1
M-0806	apc		AZESTMP2
M-0807	apc		ELESTMP2
M-0808	apc		AZESTMP3
M-0809	apc		ELESTMP3
M-0810	apc		AZESTMP4
M-0811	apc		ELESTMP4
M-0812	apc		AZESTMP5
M-0813	apc		ELESTMP5
M-0814	apc		AZCORMP
M-0815	apc		ELCORMP
M-0816	apc		AALPHA
M-0817	apc		ABETA

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0818	apc		CNSCNTYP
M-0819	apc		RCVSNR
M-0820	apc		ABCX
M-0821	apc		ABCY
M-0822	apc		ABER
M-0850	ulc/ccp		CltuAbortSource
M-0851	ulc/ccp		CmdMod
M-0852	ulc/ccp		ControlMode
M-0853	ulc/ccp		ExcMonitoring, FrontEndMonitoring
M-0854	ulc/ccp		ExcMonitoring, FrontEndMonitoring
M-0855	ulc/ccp		TxrMonitoring
M-0856	ulc/ccp		TxrMonitoring
M-0857	ulc/ccp		TxrOutput
M-0858	ulc/ccp		TotalCltusRadiated
M-0859	ulc/ccp		TpBlocksCmd
M-0860	ulc/ccp		TpBlocksReceived
M-0861	ulc/ccp		TpBlocksRejected
M-0862	ulc/ccp		TpCltusAborted
M-0863	ulc/ccp		TpCltusFlushed
M-0864	ulc/ccp		TpOverflowWarning
M-0865	ulc/ccp		TpPctQueueFull
M-0866	ulc/cmg		CarrierSup
M-0867	ulc/cmg		ActualDataRate
M-0868	ulc/cmg		CmgCltuLoadError
M-0869	ulc/cmg		Modulation
M-0870	ulc/cmg		Mode
M-0871	ulc/cmg		ReferenceSignalFailure
M-0872	ulc/cmg		Status
M-0873	ulc/cmg		Status
M-0874	ulc/cmg		TctError
M-0875	ulc/cmg		VerificationSignalError
M-0876	ulc/cmg		WatchDogError
M-0877	ulc/cmg		ModIndexDegrees
M-0878	ulc/cmg		SubcarFrequency
M-0879	ulc/cmg		VerifyTolStatus
M-0880	ulc/cmg		VerifyTolStatus
M-0881	ulc/cmg		ModIndexRadians
M-0882	ulc/ccp		CltuInitiatorId
M-0883	ulc/ccp		CltuResponderId
M-0884	ulc/ccp		ServiceMode
M-0885	etc		UPFRQ
M-0886	ulc/ccp		CltuCltusAborted

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-0887	ulc/ccp		CltuCltusAccepted
M-0888	ulc/ccp		CltuCltusExpired
M-0889	ulc/ccp		CltuCltusFlushed
M-0890	ulc/ccp		CltuCltusProcessed
M-0891	ulc/ccp		CltuCltusReceived
M-0892	ulc/ccp		CltuCltusRejected
M-0893	ulc/ccp		CltuNumInQueue
M-0894	ulc/ccp		TpBlocksTest
M-0895	ulc/ccp		TpBlocksValid
M-0961		Receiver Status	
M-0962		Receiver Status	
M-0969	ulc		VersionID
M-0970	ulc		Status
M-0971	ulc		Status
M-0972	ulc		StatusText
M-0973	ulc		uplinkAssemblyNumber
M-0974	ulc		ConfiguredSpacecraft
M-0975	ulc		ConfiguredPass
M-0976	ulc/urc		Status
M-0977	ulc/urc		Status
M-0978	ulc/urc		StatusText
M-0979	ulc/urc		upRngStartDay
M-0980	ulc/urc		upRngStartSec
M-0981	ulc/urc		rng.perf.currentMode
M-0982	ulc/urc		rng.config.patternType
M-0983	ulc/urc		rng.config.scId
M-0984	ulc/urc		rng.config.modPolarity
M-0985	ulc/urc		rng.config.csv
M-0986	ulc/urc		rng.config.t1Xmit
M-0987	ulc/urc		rng.config.t2Xmit
M-0988	ulc/urc		rng.config.t3Xmit
M-0989	ulc/urc		rng.config.clock
M-0990	ulc/urc		rng.config.last
M-0991	ulc/urc		rng.config.chop
M-0992	ulc/urc		rng.config.chopStrt
M-0993	ulc/urc		rng.config.drvn
M-0994	ulc/urc		rng.config.clockDiv
M-0995	ulc/urc		rng.config.comp1Len
M-0996	ulc/urc		rng.config.comp1Def
M-0997	ulc/urc		rng.config.comp1Bool
M-0998	ulc/urc		rng.config.comp2Len
M-0999	ulc/urc		rng.config.comp2Def

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1000	ulc/urc		rng.config.comp2Bool
M-1001	ulc/urc		rng.config.comp3Len
M-1002	ulc/urc		rng.config.comp3Def
M-1003	ulc/urc		rng.config.comp3Bool
M-1004	ulc/urc		rng.config.comp4Len
M-1005	ulc/urc		rng.config.comp4Def
M-1006	ulc/urc		rng.config.comp4Bool
M-1007	ulc/urc		rng.config.comp5Len
M-1008	ulc/urc		rng.config.comp5Def
M-1009	ulc/urc		rng.config.comp5Bool
M-1010	ulc/urc		rng.config.comp6Len
M-1011	ulc/urc		rng.config.comp6Def
M-1012	ulc/urc		rng.config.comp6Bool
M-1013	ulc/urc		rng.config.rngModTones
M-1014	ulc/ccp		CmdModChangeTime
M-1015	ulc/ccp		CmdModChangeTime
M-1016	ulc/ccp		CmdModChangeTime
M-1017	ulc/ccp		RadiationStatus
M-1018	ulc/ccp		ServiceTableFile
M-1019	ulc/ccp		CltuServiceInstanceId
M-1020	ulc/ccp		CltuCheckCredential
M-1021	ulc/ccp		ConfiguredSet
M-1022	ulc/ccp		Status
M-1023	ulc/ccp		Status
M-1024	ulc/ccp		StatusText
M-1025	ulc/ccp		ConfigStatus
M-1026	ulc/ccp		ConfigStatus
M-1027	ulc/ccp		ConfigStatusText
M-1028	ulc/ccp		ServiceStatus
M-1029	ulc/ccp		ServiceStatus
M-1030	ulc/ccp		ServiceStatusText
M-1031	ulc/ccp		CltuServiceState
M-1032	ulc/ccp		CltuProductionState
M-1033	ulc/ccp		CltuSendAcqSeq
M-1034	ulc/ccp		MaxCltuSize
M-1035	ulc/ccp		MinCltuSize
M-1036	ulc/ccp		CltuLastCltuReceived
M-1037	ulc/ccp		CltuLastCltuAccepted
M-1038	ulc/ccp		CltuLastCltuRadiated
M-1039	ulc/cmg		BitFormat
M-1040	ulc/cmg		SubcarWaveForm
M-1041	ulc/cmg		RequestedDataRate
M-1042	ulc/cmg		InterModulationType

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1043	ulc/cmg		IdleSequence
M-1044	ulc/cmg		StatusText
M-1045	ulc/etc		Status
M-1046	ulc/etc		Status
M-1047	ulc/etc		StatusText
M-1049	ulc/etc		CarrierFrequency
M-1050	ulc/etc		CommandModulation
M-1051	ulc/etc		CmdModStatus
M-1052	ulc/etc		CmdModStatusTime
M-1053	ulc/etc		RangeModulation
M-1054	ulc/etc		RngModStatus
M-1055	ulc/etc		RngModStatusTime
M-1056	ulc/etc		TuningRate
M-1057	ulc/etc		SweepRange
M-1058	ulc/etc		Dwell0
M-1059	ulc/etc		Dwell1
M-1060	ulc/etc		Dwell2
M-1061	ulc/etc		tuneStartDay
M-1062	ulc/etc		tuneStartSec
M-1063	ulc/etc		tuneEndDay
M-1064	ulc/etc		tuneEndSec
M-1065	ulc/etc		TransmitterName
M-1066	ulc/etc		TransmitterBeamSetting
M-1067	ulc/etc		TransmitterPowerOutput
M-1068	ulc/etc		TransmitterState
M-1069	ulc/etc		txrOper
M-1070	ulc/etc		TxrOutputStatus
M-1071	ulc/etc		TxrOutputStatusTime
M-1072	ulc/etc		upAcqIndicator
M-1073	ulc/etc		upCarDay
M-1074	ulc/etc		upCarSec
M-1076	ulc/etc		uplinkBand
M-1077	ulc/ccp		TxrOutputStatus
M-1078	ulc/ccp		TxrOutputStatus
M-1079	ulc/ccp		TxrOutputText
M-1080	ulc/etc		TransmitterSwitch
M-1081	ulc/etc		upPredictsID
M-1082	ulc/etc		ExciterTemplateId
M-1083	ulc/etc		ExciterDrive
M-1084	ulc/etc		SpacecraftFrequency
M-1085	ulc/etc		upPredictsFrequencyOffset
M-1086	ulc/urc		rng.config.state
M-1087	ulc/urc		rng.config.rangeOutput

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1088	ulc/urc		rng.perf.blocksSent
M-1089	ulc/urc		rng.config.trkDataOutput
M-1090	ulc/urc		rng.perf.carBlocksSent
M-1200	dcc1 (Status)		smon.status.sum.sys.status
M-1201	dcc1 (Status)		smon.status.sum.sys.status
M-1202	dcc1 (Status)		smon.status.sum.rec.general
M-1203	dcc1 (Status)		smon.status.sum.rec.general
M-1204	dcc1 (Status)		smon.status.sum.rrp.general
M-1205	dcc1 (Status)		smon.status.sum.rrp.general
M-1206	dcc1 (Status)		smon.status.sum.dcc.general
M-1207	dcc1 (Status)		smon.status.sum.dcc.general
M-1208*	dcc1 (Status)		smon.status.sum.rrp.mp.general
M-1209*	dcc1 (Status)		smon.status.sum.rrp.mp.general
M-1210	dcc1 (Status)		smon.status.sum.rng.general
M-1211	dcc1 (Status)		smon.status.sum.rng.general
M-1212	dcc1 (Status)		smon.status.sum.tlp.general
M-1213	dcc1 (Status)		smon.status.sum.tlp.general
M-1214*	dcc1 (Status)		smon.status.sum.tlp.mcd3.general
M-1215*	dcc1 (Status)		smon.status.sum.tlp.mcd3.general
M-1216*	dcc1 (Status)		smon.status.sum.tlp.turbo.general
M-1217*	dcc1 (Status)		smon.status.sum.tlp.turbo.general
M-1240	dcc1 (Configuration)		DccChannel
M-1241	dcc1 (Configuration)		ChannelDss
M-1242	dcc1 (Configuration)		rcv.config.scDep.scId

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1243	dcc1 (Configuration)		ChannelPass
M-1244	dcc1 (Configuration)		dc.perf.missionId
M-1245	dcc1 (Configuration)		rcv.config.scDep.downBand
M-1246	dcc1 (Configuration)		rcv.config.scDep.upBand
M-1247	dcc1 (Configuration)		rcv.config.tableId
M-1248	dcc1 (Configuration)		rcv.config.scDep.pdxMode
M-1250	dcc1 (Configuration)		rcv.config.scDep.uplinkDss
M-1251	dcc1 (Configuration)		rcv.config.car.freqPred
M-1252	dcc1 (Configuration)		rcv.config.sub.freqPred
M-1253	dcc1 (Configuration)		rcv.config.sym.ratePredicts
M-1254	dcc1 (Configuration)		rcv.config.nar.sntMode
M-1255	dcc1 (Configuration)		rcv.config.rxDep.mpSwitch
M-1256	dcc1 (Configuration)		dc.config.trkSetName
M-1257	dcc1 (Configuration)		dc.perf.autom.rpdxChangeTime
M-1258	dcc1 (Configuration)		dc.perf.autom.rpdxChangeTime
M-1259	dcc1 (Configuration)		dc.perf.autom.rpdxChangeTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1260	dcc1 (Configuration)		rcv.config.rxDep.useTpdx
M-1261	dcc1 (Configuration)		dc.config.tlmSetName
M-1262	dcc1 (Configuration)		rng.config.state
M-1263	dcc1 (Configuration)		rng.config.trkDataOutput
M-1264	dcc1 (Configuration)		rng.config.rangeOutput
M-1265	dcc1 (Configuration)		tlm.config.gen.output
M-1266	dcc1 (Configuration)		dc.perf.signal.lnaId
M-1267	dcc1 (Configuration)		dc.perf.signal.polarization
M-1268	dcc1 (Configuration)		dc.perf.signal.path
M-1290	dcc1 (Carrier Loop)		rcv.perf.car.timeTag
M-1291	dcc1 (Carrier Loop)		rcv.perf.car.timeTag
M-1292	dcc1 (Carrier Loop)		rcv.perf.car.timeTag
M-1293	dcc1 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1294	dcc1 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1295	dcc1 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1296	dcc1 (Carrier Loop)		dc.perf.autom.carLockStatusTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1297	dcc1 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-1298	dcc1 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-1299	dcc1 (Carrier Loop)		rcv.perf.car.loopBw
M-1300	dcc1 (Carrier Loop)		rcv.config.car.loopType
M-1301	dcc1 (Carrier Loop)		dc.perf.autom.carLockStatus
M-1302	dcc1 (Carrier Loop)		rcv.perf.car.loopStatus
M-1303	dcc1 (Carrier Loop)		dc.perf.autom.dataLockStatus
M-1304	dcc1 (Carrier Loop)		rcv.perf.car.freqEst
M-1305	dcc1 (Carrier Loop)		dc.perf.resid.carFreq
M-1306	dcc1 (Carrier Loop)		dc.perf.resid.dopp
M-1307	dcc1 (Carrier Loop)		rcv.perf.car.rateEst
M-1308	dcc1 (Carrier Loop)		rcv.perf.car.accelEst
M-1309	dcc1 (Carrier Loop)		rng.perf.dopNoise
M-1310	dcc1 (Carrier Loop)		rcv.perf.car.carPwrEst
M-1311	dcc1 (Carrier Loop)		dc.perf.resid.pc
M-1312	dcc1 (Carrier Loop)		rcv.perf.sub.pdEst

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1313	dcc1 (Carrier Loop)		dc.perf.resid.pd
M-1314	dcc1 (Carrier Loop)		rcv.perf.car.spe
M-1315	dcc1 (Carrier Loop)		rcv.perf.car.pcnoEst
M-1316	dcc1 (Carrier Loop)		dc.perf.resid.pcno
M-1317	dcc1 (Carrier Loop)		rcv.perf.car.trackingMode
M-1318	dcc1 (Carrier Loop)		rcv.perf.car.snt
M-1319	dcc1 (Carrier Loop)		dc.perf.resid.snt
M-1320	dcc1 (Carrier Loop)		rcv.perf.car.freqPredicts
M-1321	dcc1 (Carrier Loop)		rng.perf.cycleSlips
M-1322	dcc1 (Carrier Loop)		rcv.config.carAcq.useFft
M-1323	dcc1 (Carrier Loop)		rcv.perf.state.carFft
M-1340	dcc1 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1341	dcc1 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1342	dcc1 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1343	dcc1 (Subcarrier Loop)		rcv.perf.sub.freqEst
M-1344	dcc1 (Subcarrier Loop)		dc.perf.resid.subFreq

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1345	dcc1 (Subcarrier Loop)		rcv.perf.sub.loopBandwidth
M-1346	dcc1 (Subcarrier Loop)		rcv.config.sub.loopType
M-1347	dcc1 (Subcarrier Loop)		rcv.perf.sub.currentWindowWidth
M-1348	dcc1 (Subcarrier Loop)		dc.perf.autom.subLockStatus
M-1349*	dcc1 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-1350*	dcc1 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-1351*	dcc1 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-1352	dcc1 (Subcarrier Loop)		rcv.perf.sub.loopStatus
M-1353	dcc1 (Subcarrier Loop)		rcv.perf.sub.pdnoEst
M-1354	dcc1 (Subcarrier Loop)		dc.perf.resid.pdno
M-1355	dcc1 (Subcarrier Loop)		rcv.perf.sub.spe
M-1356	dcc1 (Subcarrier Loop)		rcv.config.sub.waveForm
M-1357	dcc1 (Subcarrier Loop)		rcv.perf.sub.freqPredicts
M-1358	dcc1 (Subcarrier Loop)		rcv.config.subAcq.useFft
M-1359	dcc1 (Subcarrier Loop)		rcv.perf.state.subFft

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1380	dcc1 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1381	dcc1 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1382	dcc1 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1383	dcc1 (Symbol Loop)		rcv.perf.sym.rateEst
M-1384	dcc1 (Symbol Loop)		dc.perf.resid.symRate
M-1385	dcc1 (Symbol Loop)		rcv.perf.sym.loopBandwidth
M-1386	dcc1 (Symbol Loop)		rcv.config.sym.loopType
M-1387	dcc1 (Symbol Loop)		rcv.perf.sym.currentWindowWidth
M-1388	dcc1 (Symbol Loop)		dc.perf.autom.symLockStatus
M-1389*	dcc1 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1390*	dcc1 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1391*	dcc1 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1392	dcc1 (Symbol Loop)		rcv.perf.sym.loopStatus
M-1393	dcc1 (Symbol Loop)		rcv.perf.sym.snrEst
M-1394	dcc1 (Symbol Loop)		dc.perf.resid.symSnr
M-1395	dcc1 (Symbol Loop)		rcv.perf.sym.spe

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1396	dcc1 (Symbol Loop)		rcv.config.sym.format
M-1397	dcc1 (Symbol Loop)		rcv.config.sym.smoothing
M-1398	dcc1 (Symbol Loop)		rcv.perf.sym.ratePred
M-1399	dcc1 (Symbol Loop)		rcv.config.symAcq.useFft
M-1400	dcc1 (Symbol Loop)		rcv.perf.state.symFft
M-1415	dcc1 (Telemetry)		tlm.config.fan.frameMode
M-1416	dcc1 (Telemetry)		tlm.perf.gen.rrpArrayStatus
M-1417	dcc1 (Telemetry)		tlm.config.fs.mode
M-1418	dcc1 (Telemetry)		tlm.config.fs.pattern
M-1419	dcc1 (Telemetry)		tlm.config.fs.patternLength
M-1420	dcc1 (Telemetry)		tlm.perf.fs.predictedBitRate
M-1421	dcc1 (Telemetry)		tlm.perf.fs.dataRate
M-1422	dcc1 (Telemetry)		tlm.perf.gen.tlpLockStatus
M-1424	dcc1 (Telemetry)		tlm.perf.gen.chanStatus
M-1425*	dcc1 (Telemetry)		dc.perf.autom.decoderStartTime
M-1426*	dcc1 (Telemetry)		dc.perf.autom.decoderStartTime
M-1427*	dcc1 (Telemetry)		dc.perf.autom.decoderStartTime
M-1428*	dcc1 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1429*	dcc1 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1430*	dcc1 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1431	dcc1 (Telemetry)		tlm.perf.gen.decoderLockStatus

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1433	dcc1 (Telemetry)		tlm.config.gen.decoderType
M-1434	dcc1 (Telemetry)		tlm.perf.gen.decoderSNR
M-1436	dcc1 (Telemetry)		tlm.config.b2cd.ilThreshold
M-1437	dcc1 (Telemetry)		tlm.config.b2cd.vecSet
M-1438	dcc1 (Telemetry)		tlm.config.b3cd.ilThreshold
M-1439	dcc1 (Telemetry)		tlm.config.b3cd.vecSet
M-1440	dcc1 (Telemetry)		tlm.config.fs.frameLengthPrimary
M-1441	dcc1 (Telemetry)		tlm.config.fs.ilBitErrorThreshold
M-1442	dcc1 (Telemetry)		tlm.config.fs.oolBitErrorThreshold
M-1443	dcc1 (Telemetry)		tlm.config.fs.ilThreshold
M-1444	dcc1 (Telemetry)		tlm.config.fs.oolThreshold
M-1445*	dcc1 (Telemetry)		dc.perf.autom.fsStartTime
M-1446*	dcc1 (Telemetry)		dc.perf.autom.fsStartTime
M-1447*	dcc1 (Telemetry)		dc.perf.autom.fsStartTime
M-1448*	dcc1 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1449*	dcc1 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1450*	dcc1 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1451	dcc1 (Telemetry)		tlm.perf.fs.lockStatus
M-1452	dcc1 (Telemetry)		tlm.perf.fs.bitToAcquire
M-1453	dcc1 (Telemetry)		tlm.perf.gen.blocksOutput
M-1455	dcc1 (Telemetry)		tlm.perf.fs.frameTotalCount
M-1456	dcc1 (Telemetry)		tlm.perf.fs.frameGoodCount
M-1457	dcc1 (Telemetry)		tlm.perf.fs.frameBadCount

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1458	dcc1 (Telemetry)		tlm.perf.crc.crcLockStatus
M-1459	dcc1 (Telemetry)		tlm.config.fan.pnDecode
M-1460	dcc1 (Telemetry)		tlm.perf.crc.crcTotalFrameCount
M-1461	dcc1 (Telemetry)		tlm.perf.crc.crcGoodFrameCount
M-1462	dcc1 (Telemetry)		tlm.perf.crc.crcBadFrameCount
M-1463	dcc1 (Telemetry)		tlm.perf.rsd.lockStatus
M-1464	dcc1 (Telemetry)		tlm.perf.rsd.totalCodeWordCount
M-1465	dcc1 (Telemetry)		tlm.perf.rsd.goodCodeWordCount
M-1466	dcc1 (Telemetry)		tlm.perf.rsd.badCodeWordCount
M-1467	dcc1 (Telemetry)		tlm.perf.rsd.frameErrorRate
M-1468	dcc1 (Telemetry)		tlm.perf.rsd.codeWordErrorRate
M-1469	dcc1 (Telemetry)		tlm.perf.fs.totalInLockFrameCount
M-1470	dcc1 (Telemetry)		tlm.perf.fs.flywheelFrameCount
M-1471	dcc1 (Telemetry)		tlm.config.dft.formatTable
M-1474	dcc1 (Telemetry)		tlm.config.b2cd.oolThreshold
M-1475	dcc1 (Telemetry)		tlm.config.b3cd.oolThreshold
M-1476	dcc1 (Telemetry)		tlm.config.gen.diffDecoder
M-1477	dcc1 (Telemetry)		tlm.config.b2cd.altSymInv
M-1478	dcc1 (Telemetry)		tlm.config.b3cd.symSignInversion
M-1479	dcc1 (Telemetry)		tlm.perf.b2cd.metricNormalization
M-1480	dcc1 (Telemetry)		tlm.perf.b2cd.estimatedSymbolErrorRate
M-1481	dcc1 (Telemetry)		tlm.config.b2cd.nodeSyncChange
M-1482	dcc1 (Telemetry)		tlm.perf.b2cd.nodeSyncChangeCount

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1483	dcc1 (Telemetry)		tlm.perf.b3cd.nodeSyncPosition
M-1484	dcc1 (Telemetry)		tlm.config.fs.frameLengthSecondary
M-1485	dcc1 (Telemetry)		tlm.perf.fs.correctFrameLength
M-1486	dcc1 (Telemetry)		tlm.perf.fs.selfTestResult
M-1487	dcc1 (Telemetry)		tlm.config.fs.bitSequence
M-1488	dcc1 (Telemetry)		tlm.config.fs.bitSlipWindow
M-1489	dcc1 (Telemetry)		tlm.perf.fs.inLockBer
M-1490	dcc1 (Telemetry)		tlm.perf.fs.syncDirection
M-1491	dcc1 (Telemetry)		tlm.perf.fs.currentPolarity
M-1492	dcc1 (Telemetry)		tlm.perf.fs.bitSlip
M-1493	dcc1 (Telemetry)		tlm.perf.fs.polarityChange
M-1494	dcc1 (Telemetry)		tlm.perf.fs.acquisitionCount
M-1495	dcc1 (Telemetry)		tlm.config.fan.interleave
M-1496	dcc1 (Telemetry)		tlm.config.fan.algorithm
M-1497	dcc1 (Telemetry)		tlm.perf.rsd.virtualFill
M-1498	dcc1 (Telemetry)		tlm.perf.rsd.symbolErrorRate
M-1499	dcc1 (Telemetry)		tlm.perf.rsd.selfTestResult
M-1500	dcc1 (Ranging)		rng.config.t0Trk
M-1503*	dcc1 (Ranging)		dc.perf.autom.correlValidTime
M-1504*	dcc1 (Ranging)		dc.perf.autom.correlValidTime
M-1505*	dcc1 (Ranging)		dc.perf.autom.correlValidTime
M-1506	dcc1 (Ranging)		rng.perf.rangeLock
M-1507	dcc1 (Ranging)		rng.perf.blocksSent

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1508	dcc1 (Ranging)		rng.perf.carBlocksSent
M-1509	dcc1 (Ranging)		rng.perf.totalAcqCompleted
M-1510	dcc1 (Ranging)		rng.perf.rangeConfidence
M-1511	dcc1 (Ranging)		rng.perf.residRuValue
M-1512	dcc1 (Ranging)		rng.perf.rangePwrToNoise
M-1513	dcc1 (Ranging)		rng.perf.pwrNoiseResidual
M-1514	dcc1 (Ranging)		rng.config.patternType
M-1515	dcc1 (Ranging)		rng.config.rtlt
M-1516	dcc1 (Ranging)		rng.config.clock
M-1517	dcc1 (Ranging)		rng.config.last
M-1518	dcc1 (Ranging)		rng.config.chop
M-1519	dcc1 (Ranging)		rng.config.chopStrt
M-1520	dcc1 (Ranging)		rng.config.t1Xmit
M-1521	dcc1 (Ranging)		rng.config.t2Xmit
M-1522	dcc1 (Ranging)		rng.config.t3Xmit
M-1523	dcc1 (Ranging)		rng.config.drvn
M-1524	dcc1 (Ranging)		rng.config.intTime
M-1525	dcc1 (Ranging)		rng.config.clockDiv
M-1526	dcc1 (Ranging)		rng.config.comp1Len
M-1527	dcc1 (Ranging)		rng.config.comp1Def
M-1528	dcc1 (Ranging)		rng.config.comp1Bool
M-1529	dcc1 (Ranging)		rng.config.comp2Len
M-1530	dcc1 (Ranging)		rng.config.comp2Def
M-1531	dcc1 (Ranging)		rng.config.comp2Bool

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1532	dcc1 (Ranging)		rng.config.comp3Len
M-1533	dcc1 (Ranging)		rng.config.comp3Def
M-1534	dcc1 (Ranging)		rng.config.comp3Bool
M-1535	dcc1 (Ranging)		rng.config.comp4Len
M-1536	dcc1 (Ranging)		rng.config.comp4Def
M-1537	dcc1 (Ranging)		rng.config.comp4Bool
M-1538	dcc1 (Ranging)		rng.config.comp5Len
M-1539	dcc1 (Ranging)		rng.config.comp5Def
M-1540	dcc1 (Ranging)		rng.config.comp5Bool
M-1541	dcc1 (Ranging)		rng.config.comp6Len
M-1542	dcc1 (Ranging)		rng.config.comp6Def
M-1543	dcc1 (Ranging)		rng.config.comp6Bool
M-1544	dcc1 (Ranging)		rng.perf.drvidRuValue
M-1545	dcc1 (Ranging)		rng.perf.currentMode
M-1546	dcc1 (Ranging)		rng.perf.acquisitionTime
M-1547	dcc1 (Ranging)		rng.perf.rangeRuValue
M-1548	dcc1 (Ranging)		rng.config.tolerance
M-1700	dcc2 (Status)		smon.status.sum.sys.status
M-1701	dcc2 (Status)		smon.status.sum.sys.status
M-1702	dcc2 (Status)		smon.status.sum.rec.general
M-1703	dcc2 (Status)		smon.status.sum.rec.general
M-1704	dcc2 (Status)		smon.status.sum.rrp.general
M-1705	dcc2 (Status)		smon.status.sum.rrp.general
M-1706	dcc2 (Status)		smon.status.sum.dcc.general

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1707	dcc2 (Status)		smon.status.sum.dcc.general
M-1708*	dcc2 (Status)		smon.status.sum.rrp.mp.general
M-1709*	dcc2 (Status)		smon.status.sum.rrp.mp.general
M-1710	dcc2 (Status)		smon.status.sum.rng.general
M-1711	dcc2 (Status)		smon.status.sum.rng.general
M-1712	dcc2 (Status)		smon.status.sum.tlp.general
M-1713	dcc2 (Status)		smon.status.sum.tlp.general
M-1714*	dcc2 (Status)		smon.status.sum.tlp.mcd3.general
M-1715*	dcc2 (Status)		smon.status.sum.tlp.mcd3.general
M-1716*	dcc2 (Status)		smon.status.sum.tlp.turbo.general
M-1717*	dcc2 (Status)		smon.status.sum.tlp.turbo.general
M-1740	dcc2 (Configuration)		DccChannel
M-1741	dcc2 (Configuration)		ChannelDss
M-1742	dcc2 (Configuration)		rcv.config.scDep.scId
M-1743	dcc2 (Configuration)		ChannelPass
M-1744	dcc2 (Configuration)		dc.perf.missionId
M-1745	dcc2 (Configuration)		rcv.config.scDep.downBand
M-1746	dcc2 (Configuration)		rcv.config.scDep.upBand
M-1747	dcc2 (Configuration)		rcv.config.tableId
M-1748	dcc2 (Configuration)		rcv.config.scDep.pdxMode

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1750	dcc2 (Configuration)		rcv.config.scDep.uplinkDss
M-1751	dcc2 (Configuration)		rcv.config.car.freqPred
M-1752	dcc2 (Configuration)		rcv.config.sub.freqPred
M-1753	dcc2 (Configuration)		rcv.config.sym.ratePredicts
M-1754	dcc2 (Configuration)		rcv.config.nar.sntMode
M-1755	dcc2 (Configuration)		rcv.config.rxDep.mpSwitch
M-1756	dcc2 (Configuration)		dc.config.trkSetName
M-1757	dcc2 (Configuration)		dc.perf.autom.rpdxChangeTime
M-1758	dcc2 (Configuration)		dc.perf.autom.rpdxChangeTime
M-1759	dcc2 (Configuration)		dc.perf.autom.rpdxChangeTime
M-1760	dcc2 (Configuration)		rcv.config.rxDep.useTpdx
M-1761	dcc2 (Configuration)		dc.config.tlmSetName
M-1762	dcc2 (Configuration)		rng.config.state
M-1763	dcc2 (Configuration)		rng.config.trkDataOutput
M-1764	dcc2 (Configuration)		rng.config.rangeOutput
M-1765	dcc2 (Configuration)		tlm.config.gen.output

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1766	dcc2 (Configuration)		dc.perf.signal.lnaId
M-1767	dcc2 (Configuration)		dc.perf.signal.polarization
M-1768	dcc2 (Configuration)		dc.perf.signal.path
M-1790	dcc2 (Carrier Loop)		rcv.perf.car.timeTag
M-1791	dcc2 (Carrier Loop)		rcv.perf.car.timeTag
M-1792	dcc2 (Carrier Loop)		rcv.perf.car.timeTag
M-1793	dcc2 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1794	dcc2 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1795	dcc2 (Carrier Loop)		dc.perf.autom.acqStartTime
M-1796	dcc2 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-1797	dcc2 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-1798	dcc2 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-1799	dcc2 (Carrier Loop)		rcv.perf.car.loopBw
M-1800	dcc2 (Carrier Loop)		rcv.config.car.loopType
M-1801	dcc2 (Carrier Loop)		dc.perf.autom.carLockStatus
M-1802	dcc2 (Carrier Loop)		rcv.perf.car.loopStatus

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1803	dcc2 (Carrier Loop)		dc.perf.autom.dataLockStatus
M-1804	dcc2 (Carrier Loop)		rcv.perf.car.freqEst
M-1805	dcc2 (Carrier Loop)		dc.perf.resid.carFreq
M-1806	dcc2 (Carrier Loop)		dc.perf.resid.dopp
M-1807	dcc2 (Carrier Loop)		rcv.perf.car.rateEst
M-1808	dcc2 (Carrier Loop)		rcv.perf.car.accelEst
M-1809	dcc2 (Carrier Loop)		rng.perf.dopNoise
M-1810	dcc2 (Carrier Loop)		rcv.perf.car.carPwrEst
M-1811	dcc2 (Carrier Loop)		dc.perf.resid.pc
M-1812	dcc2 (Carrier Loop)		rcv.perf.sub.pdEst
M-1813	dcc2 (Carrier Loop)		dc.perf.resid.pd
M-1814	dcc2 (Carrier Loop)		rcv.perf.car.spe
M-1815	dcc2 (Carrier Loop)		rcv.perf.car.pcnoEst
M-1816	dcc2 (Carrier Loop)		dc.perf.resid.pcno
M-1817	dcc2 (Carrier Loop)		rcv.perf.car.trackingMode
M-1818	dcc2 (Carrier Loop)		rcv.perf.car.snt

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1819	dcc2 (Carrier Loop)		dc.perf.resid.snt
M-1820	dcc2 (Carrier Loop)		rcv.perf.car.freqPredicts
M-1821	dcc2 (Carrier Loop)		rng.perf.cycleSlips
M-1822	dcc2 (Carrier Loop)		rcv.config.carAcq.useFft
M-1823	dcc2 (Carrier Loop)		rcv.perf.state.carFft
M-1840	dcc2 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1841	dcc2 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1842	dcc2 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-1843	dcc2 (Subcarrier Loop)		rcv.perf.sub.freqEst
M-1844	dcc2 (Subcarrier Loop)		dc.perf.resid.subFreq
M-1845	dcc2 (Subcarrier Loop)		rcv.perf.sub.loopBandwidth
M-1846	dcc2 (Subcarrier Loop)		rcv.config.sub.loopType
M-1847	dcc2 (Subcarrier Loop)		rcv.perf.sub.currentWindowWidth
M-1848	dcc2 (Subcarrier Loop)		dc.perf.autom.subLockStatus
M-1849*	dcc2 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-1850*	dcc2 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1851*	dcc2 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-1852	dcc2 (Subcarrier Loop)		rcv.perf.sub.loopStatus
M-1853	dcc2 (Subcarrier Loop)		rcv.perf.sub.pdnoEst
M-1854	dcc2 (Subcarrier Loop)		dc.perf.resid.pdno
M-1855	dcc2 (Subcarrier Loop)		rcv.perf.sub.spe
M-1856	dcc2 (Subcarrier Loop)		rcv.config.sub.waveForm
M-1857	dcc2 (Subcarrier Loop)		rcv.perf.sub.freqPredicts
M-1858	dcc2 (Subcarrier Loop)		rcv.config.subAcq.useFft
M-1859	dcc2 (Subcarrier Loop)		rcv.perf.state.subFft
M-1880	dcc2 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1881	dcc2 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1882	dcc2 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-1883	dcc2 (Symbol Loop)		rcv.perf.sym.rateEst
M-1884	dcc2 (Symbol Loop)		dc.perf.resid.symRate
M-1885	dcc2 (Symbol Loop)		rcv.perf.sym.loopBandwidth
M-1886	dcc2 (Symbol Loop)		rcv.config.sym.loopType

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1887	dcc2 (Symbol Loop)		rcv.perf.sym.currentWindowWidth
M-1888	dcc2 (Symbol Loop)		dc.perf.autom.symLockStatus
M-1889*	dcc2 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1890*	dcc2 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1891*	dcc2 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-1892	dcc2 (Symbol Loop)		rcv.perf.sym.loopStatus
M-1893	dcc2 (Symbol Loop)		rcv.perf.sym.snrEst
M-1894	dcc2 (Symbol Loop)		dc.perf.resid.symSnr
M-1895	dcc2 (Symbol Loop)		rcv.perf.sym.spe
M-1896	dcc2 (Symbol Loop)		rcv.config.sym.format
M-1897	dcc2 (Symbol Loop)		rcv.config.sym.smoothing
M-1898	dcc2 (Symbol Loop)		rcv.perf.sym.ratePred
M-1899	dcc2 (Symbol Loop)		rcv.config.symAcq.useFft
M-1900	dcc2 (Symbol Loop)		rcv.perf.state.symFft
M-1915	dcc2 (Telemetry)		tlm.config.fan.frameMode
M-1916	dcc2 (Telemetry)		tlm.perf.gen.rrpArrayStatus
M-1917	dcc2 (Telemetry)		tlm.config.fs.mode

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1918	dcc2 (Telemetry)		tlm.config.fs.pattern
M-1919	dcc2 (Telemetry)		tlm.config.fs.patternLength
M-1920	dcc2 (Telemetry)		tlm.perf.fs.predictedBitRate
M-1921	dcc2 (Telemetry)		tlm.perf.fs.dataRate
M-1922	dcc2 (Telemetry)		tlm.perf.gen.tlpLockStatus
M-1924	dcc2 (Telemetry)		tlm.perf.gen.chanStatus
M-1925*	dcc2 (Telemetry)		dc.perf.autom.decoderStartTime
M-1926*	dcc2 (Telemetry)		dc.perf.autom.decoderStartTime
M-1927*	dcc2 (Telemetry)		dc.perf.autom.decoderStartTime
M-1928*	dcc2 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1929*	dcc2 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1930*	dcc2 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-1931	dcc2 (Telemetry)		tlm.perf.gen.decoderLockStatus
M-1933	dcc2 (Telemetry)		tlm.config.gen.decoderType
M-1934	dcc2 (Telemetry)		tlm.perf.gen.decoderSNR
M-1936	dcc2 (Telemetry)		tlm.config.b2cd.ilThreshold
M-1937	dcc2 (Telemetry)		tlm.config.b2cd.vecSet
M-1938	dcc2 (Telemetry)		tlm.config.b3cd.ilThreshold
M-1939	dcc2 (Telemetry)		tlm.config.b3cd.vecSet
M-1940	dcc2 (Telemetry)		tlm.config.fs.frameLengthPrimary
M-1941	dcc2 (Telemetry)		tlm.config.fs.ilBitErrorThreshold
M-1942	dcc2 (Telemetry)		tlm.config.fs.oolBitErrorThreshold
M-1943	dcc2 (Telemetry)		tlm.config.fs.ilThreshold

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1944	dcc2 (Telemetry)		tlm.config.fs.oolThreshold
M-1945*	dcc2 (Telemetry)		dc.perf.autom.fsStartTime
M-1946*	dcc2 (Telemetry)		dc.perf.autom.fsStartTime
M-1947*	dcc2 (Telemetry)		dc.perf.autom.fsStartTime
M-1948*	dcc2 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1949*	dcc2 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1950*	dcc2 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-1951	dcc2 (Telemetry)		tlm.perf.fs.lockStatus
M-1952	dcc2 (Telemetry)		tlm.perf.fs.bitToAcquire
M-1953	dcc2 (Telemetry)		tlm.perf.gen.blocksOutput
M-1955	dcc2 (Telemetry)		tlm.perf.fs.frameTotalCount
M-1956	dcc2 (Telemetry)		tlm.perf.fs.frameGoodCount
M-1957	dcc2 (Telemetry)		tlm.perf.fs.frameBadCount
M-1958	dcc2 (Telemetry)		tlm.perf.crc.crcLockStatus
M-1959	dcc2 (Telemetry)		tlm.config.fan.pnDecode
M-1960	dcc2 (Telemetry)		tlm.perf.crc.crcTotalFrameCount
M-1961	dcc2 (Telemetry)		tlm.perf.crc.crcGoodFrameCount
M-1962	dcc2 (Telemetry)		tlm.perf.crc.crcBadFrameCount
M-1963	dcc2 (Telemetry)		tlm.perf.rsd.lockStatus
M-1964	dcc2 (Telemetry)		tlm.perf.rsd.totalCodeWordCount
M-1965	dcc2 (Telemetry)		tlm.perf.rsd.goodCodeWordCount
M-1966	dcc2 (Telemetry)		tlm.perf.rsd.badCodeWordCount
M-1967	dcc2 (Telemetry)		tlm.perf.rsd.frameErrorRate

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1968	dcc2 (Telemetry)		tlm.perf.rsd.codeWordErrorRate
M-1969	dcc2 (Telemetry)		tlm.perf.fs.totalInLockFrameCount
M-1970	dcc2 (Telemetry)		tlm.perf.fs.flywheelFrameCount
M-1971	dcc2 (Telemetry)		tlm.config.dft.formatTable
M-1974	dcc2 (Telemetry)		tlm.config.b2cd.oolThreshold
M-1975	dcc2 (Telemetry)		tlm.config.b3cd.oolThreshold
M-1976	dcc2 (Telemetry)		tlm.config.gen.diffDecoder
M-1977	dcc2 (Telemetry)		tlm.config.b2cd.altSymInv
M-1978	dcc2 (Telemetry)		tlm.config.b3cd.symSignInversion
M-1979	dcc2 (Telemetry)		tlm.perf.b2cd.metricNormalization
M-1980	dcc2 (Telemetry)		tlm.perf.b2cd.estimatedSymbolErrorRate
M-1981	dcc2 (Telemetry)		tlm.config.b2cd.nodeSyncChange
M-1982	dcc2 (Telemetry)		tlm.perf.b2cd.nodeSyncChangeCount
M-1983	dcc2 (Telemetry)		tlm.perf.b3cd.nodeSyncPosition
M-1984	dcc2 (Telemetry)		tlm.config.fs.frameLengthSecondary
M-1985	dcc2 (Telemetry)		tlm.perf.fs.correctFrameLength
M-1986	dcc2 (Telemetry)		tlm.perf.fs.selfTestResult
M-1987	dcc2 (Telemetry)		tlm.config.fs.bitSequence
M-1988	dcc2 (Telemetry)		tlm.config.fs.bitSlipWindow
M-1989	dcc2 (Telemetry)		tlm.perf.fs.inLockBer
M-1990	dcc2 (Telemetry)		tlm.perf.fs.syncDirection
M-1991	dcc2 (Telemetry)		tlm.perf.fs.currentPolarity
M-1992	dcc2 (Telemetry)		tlm.perf.fs.bitSlip

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-1993	dcc2 (Telemetry)		tlm.perf.fs.polarityChange
M-1994	dcc2 (Telemetry)		tlm.perf.fs.acquisitionCount
M-1995	dcc2 (Telemetry)		tlm.config.fan.interleave
M-1996	dcc2 (Telemetry)		tlm.config.fan.algorithm
M-1997	dcc2 (Telemetry)		tlm.perf.rsd.virtualFill
M-1998	dcc2 (Telemetry)		tlm.perf.rsd.symbolErrorRate
M-1999	dcc2 (Telemetry)		tlm.perf.rsd.selfTestResult
M-2000	dcc2 (Ranging)		rng.config.t0Trk
M-2003*	dcc2 (Ranging)		dc.perf.autom.correlValidTime
M-2004*	dcc2 (Ranging)		dc.perf.autom.correlValidTime
M-2005*	dcc2 (Ranging)		dc.perf.autom.correlValidTime
M-2006	dcc2 (Ranging)		rng.perf.rangeLock
M-2007	dcc2 (Ranging)		rng.perf.blocksSent
M-2008	dcc2 (Ranging)		rng.perf.carBlocksSent
M-2009	dcc2 (Ranging)		rng.perf.totalAcqCompleted
M-2010	dcc2 (Ranging)		rng.perf.rangeConfidence
M-2011	dcc2 (Ranging)		rng.perf.residRuValue
M-2012	dcc2 (Ranging)		rng.perf.rangePwrToNoise
M-2013	dcc2 (Ranging)		rng.perf.pwrNoiseResidual
M-2014	dcc2 (Ranging)		rng.config.patternType
M-2015	dcc2 (Ranging)		rng.config.rtlt
M-2016	dcc2 (Ranging)		rng.config.clock
M-2017	dcc2 (Ranging)		rng.config.last
M-2018	dcc2 (Ranging)		rng.config.chop

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2019	dcc2 (Ranging)		rng.config.chopStrt
M-2020	dcc2 (Ranging)		rng.config.t1Xmit
M-2021	dcc2 (Ranging)		rng.config.t2Xmit
M-2022	dcc2 (Ranging)		rng.config.t3Xmit
M-2023	dcc2 (Ranging)		rng.config.drvn
M-2024	dcc2 (Ranging)		rng.config.intTime
M-2025	dcc2 (Ranging)		rng.config.clockDiv
M-2026	dcc2 (Ranging)		rng.config.comp1Len
M-2027	dcc2 (Ranging)		rng.config.comp1Def
M-2028	dcc2 (Ranging)		rng.config.comp1Bool
M-2029	dcc2 (Ranging)		rng.config.comp2Len
M-2030	dcc2 (Ranging)		rng.config.comp2Def
M-2031	dcc2 (Ranging)		rng.config.comp2Bool
M-2032	dcc2 (Ranging)		rng.config.comp3Len
M-2033	dcc2 (Ranging)		rng.config.comp3Def
M-2034	dcc2 (Ranging)		rng.config.comp3Bool
M-2035	dcc2 (Ranging)		rng.config.comp4Len
M-2036	dcc2 (Ranging)		rng.config.comp4Def
M-2037	dcc2 (Ranging)		rng.config.comp4Bool
M-2038	dcc2 (Ranging)		rng.config.comp5Len
M-2039	dcc2 (Ranging)		rng.config.comp5Def
M-2040	dcc2 (Ranging)		rng.config.comp5Bool
M-2041	dcc2 (Ranging)		rng.config.comp6Len
M-2042	dcc2 (Ranging)		rng.config.comp6Def

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2043	dcc2 (Ranging)		rng.config.comp6Bool
M-2044	dcc2 (Ranging)		rng.perf.drvidRuValue
M-2045	dcc2 (Ranging)		rng.perf.currentMode
M-2046	dcc2 (Ranging)		rng.perf.acquisitionTime
M-2047	dcc2 (Ranging)		rng.perf.rangeRuValue
M-2048	dcc2 (Ranging)		rng.config.tolerance
M-2200	dcc3 (Status)		smon.status.sum.sys.status
M-2201	dcc3 (Status)		smon.status.sum.sys.status
M-2202	dcc3 (Status)		smon.status.sum.rec.general
M-2203	dcc3 (Status)		smon.status.sum.rec.general
M-2204	dcc3 (Status)		smon.status.sum.rrp.general
M-2205	dcc3 (Status)		smon.status.sum.rrp.general
M-2206	dcc3 (Status)		smon.status.sum.dcc.general
M-2207	dcc3 (Status)		smon.status.sum.dcc.general
M-2208*	dcc3 (Status)		smon.status.sum.rrp.mp.general
M-2209*	dcc3 (Status)		smon.status.sum.rrp.mp.general
M-2210	dcc3 (Status)		smon.status.sum.rng.general
M-2211	dcc3 (Status)		smon.status.sum.rng.general
M-2212	dcc3 (Status)		smon.status.sum.tlp.general
M-2213	dcc3 (Status)		smon.status.sum.tlp.general
M-2214*	dcc3 (Status)		smon.status.sum.tlp.mcd3.general
M-2215*	dcc3 (Status)		smon.status.sum.tlp.mcd3.general
M-2216*	dcc3 (Status)		smon.status.sum.tlp.turbo.general
M-2217*	dcc3 (Status)		smon.status.sum.tlp.turbo.general

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2240	dcc3 (Configuration)		DccChannel
M-2241	dcc3 (Configuration)		ChannelDss
M-2242	dcc3 (Configuration)		rcv.config.scDep.scId
M-2243	dcc3 (Configuration)		ChannelPass
M-2244	dcc3 (Configuration)		dc.perf.missionId
M-2245	dcc3 (Configuration)		rcv.config.scDep.downBand
M-2246	dcc3 (Configuration)		rcv.config.scDep.upBand
M-2247	dcc3 (Configuration)		rcv.config.tableId
M-2248	dcc3 (Configuration)		rcv.config.scDep.pdxMode
M-2250	dcc3 (Configuration)		rcv.config.scDep.uplinkDss
M-2251	dcc3 (Configuration)		rcv.config.car.freqPred
M-2252	dcc3 (Configuration)		rcv.config.sub.freqPred
M-2253	dcc3 (Configuration)		rcv.config.sym.ratePredicts
M-2254	dcc3 (Configuration)		rcv.config.nar.sntMode
M-2255	dcc3 (Configuration)		rcv.config.rxDep.mpSwitch
M-2256	dcc3 (Configuration)		dc.config.trkSetName

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2257	dcc3 (Configuration)		dc.perf.autom.rpdxChangeTime
M-2258	dcc3 (Configuration)		dc.perf.autom.rpdxChangeTime
M-2259	dcc3 (Configuration)		dc.perf.autom.rpdxChangeTime
M-2260	dcc3 (Configuration)		rcv.config.rxDep.useTpdx
M-2261	dcc3 (Configuration)		dc.config.tlmSetName
M-2262	dcc3 (Configuration)		rng.config.state
M-2263	dcc3 (Configuration)		rng.config.trkDataOutput
M-2264	dcc3 (Configuration)		rng.config.rangeOutput
M-2265	dcc3 (Configuration)		tlm.config.gen.output
M-2266	dcc3 (Configuration)		dc.perf.signal.lnaId
M-2267	dcc3 (Configuration)		dc.perf.signal.polarization
M-2268	dcc3 (Configuration)		dc.perf.signal.path
M-2290	dcc3 (Carrier Loop)		rcv.perf.car.timeTag
M-2291	dcc3 (Carrier Loop)		rcv.perf.car.timeTag
M-2292	dcc3 (Carrier Loop)		rcv.perf.car.timeTag
M-2293	dcc3 (Carrier Loop)		dc.perf.autom.acqStartTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2294	dcc3 (Carrier Loop)		dc.perf.autom.acqStartTime
M-2295	dcc3 (Carrier Loop)		dc.perf.autom.acqStartTime
M-2296	dcc3 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2297	dcc3 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2298	dcc3 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2299	dcc3 (Carrier Loop)		rcv.perf.car.loopBw
M-2300	dcc3 (Carrier Loop)		rcv.config.car.loopType
M-2301	dcc3 (Carrier Loop)		dc.perf.autom.carLockStatus
M-2302	dcc3 (Carrier Loop)		rcv.perf.car.loopStatus
M-2303	dcc3 (Carrier Loop)		dc.perf.autom.dataLockStatus
M-2304	dcc3 (Carrier Loop)		rcv.perf.car.freqEst
M-2305	dcc3 (Carrier Loop)		dc.perf.resid.carFreq
M-2306	dcc3 (Carrier Loop)		dc.perf.resid.dopp
M-2307	dcc3 (Carrier Loop)		rcv.perf.car.rateEst
M-2308	dcc3 (Carrier Loop)		rcv.perf.car.accelEst
M-2309	dcc3 (Carrier Loop)		rng.perf.dopNoise

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2310	dcc3 (Carrier Loop)		rcv.perf.car.carPwrEst
M-2311	dcc3 (Carrier Loop)		dc.perf.resid.pc
M-2312	dcc3 (Carrier Loop)		rcv.perf.sub.pdEst
M-2313	dcc3 (Carrier Loop)		dc.perf.resid.pd
M-2314	dcc3 (Carrier Loop)		rcv.perf.car.spe
M-2315	dcc3 (Carrier Loop)		rcv.perf.car.pcnoEst
M-2316	dcc3 (Carrier Loop)		dc.perf.resid.pcno
M-2317	dcc3 (Carrier Loop)		rcv.perf.car.trackingMode
M-2318	dcc3 (Carrier Loop)		rcv.perf.car.snt
M-2319	dcc3 (Carrier Loop)		dc.perf.resid.snt
M-2320	dcc3 (Carrier Loop)		rcv.perf.car.freqPredicts
M-2321	dcc3 (Carrier Loop)		rng.perf.cycleSlips
M-2322	dcc3 (Carrier Loop)		rcv.config.carAcq.useFft
M-2323	dcc3 (Carrier Loop)		rcv.perf.state.carFft
M-2340	dcc3 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-2341	dcc3 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2342	dcc3 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-2343	dcc3 (Subcarrier Loop)		rcv.perf.sub.freqEst
M-2344	dcc3 (Subcarrier Loop)		dc.perf.resid.subFreq
M-2345	dcc3 (Subcarrier Loop)		rcv.perf.sub.loopBandwidth
M-2346	dcc3 (Subcarrier Loop)		rcv.config.sub.loopType
M-2347	dcc3 (Subcarrier Loop)		rcv.perf.sub.currentWindowWidth
M-2348	dcc3 (Subcarrier Loop)		dc.perf.autom.subLockStatus
M-2349*	dcc3 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2350*	dcc3 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2351*	dcc3 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2352	dcc3 (Subcarrier Loop)		rcv.perf.sub.loopStatus
M-2353	dcc3 (Subcarrier Loop)		rcv.perf.sub.pdnoEst
M-2354	dcc3 (Subcarrier Loop)		dc.perf.resid.pdno
M-2355	dcc3 (Subcarrier Loop)		rcv.perf.sub.spe
M-2356	dcc3 (Subcarrier Loop)		rcv.config.sub.waveForm

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2357	dcc3 (Subcarrier Loop)		rcv.perf.sub.freqPredicts
M-2358	dcc3 (Subcarrier Loop)		rcv.config.subAcq.useFft
M-2359	dcc3 (Subcarrier Loop)		rcv.perf.state.subFft
M-2380	dcc3 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2381	dcc3 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2382	dcc3 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2383	dcc3 (Symbol Loop)		rcv.perf.sym.rateEst
M-2384	dcc3 (Symbol Loop)		dc.perf.resid.symRate
M-2385	dcc3 (Symbol Loop)		rcv.perf.sym.loopBandwidth
M-2386	dcc3 (Symbol Loop)		rcv.config.sym.loopType
M-2387	dcc3 (Symbol Loop)		rcv.perf.sym.currentWindowWidth
M-2388	dcc3 (Symbol Loop)		dc.perf.autom.symLockStatus
M-2389*	dcc3 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2390*	dcc3 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2391*	dcc3 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2392	dcc3 (Symbol Loop)		rcv.perf.sym.loopStatus

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2393	dcc3 (Symbol Loop)		rcv.perf.sym.snrEst
M-2394	dcc3 (Symbol Loop)		dc.perf.resid.symSnr
M-2395	dcc3 (Symbol Loop)		rcv.perf.sym.spe
M-2396	dcc3 (Symbol Loop)		rcv.config.sym.format
M-2397	dcc3 (Symbol Loop)		rcv.config.sym.smoothing
M-2398	dcc3 (Symbol Loop)		rcv.perf.sym.ratePred
M-2399	dcc3 (Symbol Loop)		rcv.config.symAcq.useFft
M-2400	dcc3 (Symbol Loop)		rcv.perf.state.symFft
M-2407	dcc3 (Telemetry)		tlm.perf.fmt.vcCount1
M-2408	dcc3 (Telemetry)		tlm.perf.fmt.vcCount2
M-2409	dcc3 (Telemetry)		tlm.perf.fmt.vcCount3
M-2410	dcc3 (Telemetry)		tlm.perf.fmt.vcCount4
M-2411	dcc3 (Telemetry)		tlm.perf.fmt.vcCount5
M-2412	dcc3 (Telemetry)		tlm.perf.fmt.vcCount6
M-2413	dcc3 (Telemetry)		tlm.perf.fmt.vcCount7
M-2414	dcc3 (Telemetry)		tlm.perf.fmt.vcCount8
M-2415	dcc3 (Telemetry)		tlm.config.fan.frameMode
M-2416	dcc3 (Telemetry)		tlm.perf.gen.rrpArrayStatus
M-2417	dcc3 (Telemetry)		tlm.config.fs.mode
M-2418	dcc3 (Telemetry)		tlm.config.fs.pattern

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2419	dcc3 (Telemetry)		tlm.config.fs.patternLength
M-2420	dcc3 (Telemetry)		tlm.perf.fs.predictedBitRate
M-2421	dcc3 (Telemetry)		tlm.perf.fs.dataRate
M-2422	dcc3 (Telemetry)		tlm.perf.gen.tlpLockStatus
M-2424	dcc3 (Telemetry)		tlm.perf.gen.chanStatus
M-2425*	dcc3 (Telemetry)		dc.perf.autom.decoderStartTime
M-2426*	dcc3 (Telemetry)		dc.perf.autom.decoderStartTime
M-2427*	dcc3 (Telemetry)		dc.perf.autom.decoderStartTime
M-2428*	dcc3 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2429*	dcc3 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2430*	dcc3 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2431	dcc3 (Telemetry)		tlm.perf.gen.decoderLockStatus
M-2433	dcc3 (Telemetry)		tlm.config.gen.decoderType
M-2434	dcc3 (Telemetry)		tlm.perf.gen.decoderSNR
M-2436	dcc3 (Telemetry)		tlm.config.b2cd.ilThreshold
M-2437	dcc3 (Telemetry)		tlm.config.b2cd.vecSet
M-2438	dcc3 (Telemetry)		tlm.config.b3cd.ilThreshold
M-2439	dcc3 (Telemetry)		tlm.config.b3cd.vecSet
M-2440	dcc3 (Telemetry)		tlm.config.fs.frameLengthPrimary
M-2441	dcc3 (Telemetry)		tlm.config.fs.ilBitErrorThreshold
M-2442	dcc3 (Telemetry)		tlm.config.fs.oolBitErrorThreshold
M-2443	dcc3 (Telemetry)		tlm.config.fs.ilThreshold
M-2444	dcc3 (Telemetry)		tlm.config.fs.oolThreshold

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2445*	dcc3 (Telemetry)		dc.perf.autom.fsStartTime
M-2446*	dcc3 (Telemetry)		dc.perf.autom.fsStartTime
M-2447*	dcc3 (Telemetry)		dc.perf.autom.fsStartTime
M-2448*	dcc3 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2449*	dcc3 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2450*	dcc3 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2451	dcc3 (Telemetry)		tlm.perf.fs.lockStatus
M-2452	dcc3 (Telemetry)		tlm.perf.fs.bitToAcquire
M-2453	dcc3 (Telemetry)		tlm.perf.gen.blocksOutput
M-2455	dcc3 (Telemetry)		tlm.perf.fs.frameTotalCount
M-2456	dcc3 (Telemetry)		tlm.perf.fs.frameGoodCount
M-2457	dcc3 (Telemetry)		tlm.perf.fs.frameBadCount
M-2458	dcc3 (Telemetry)		tlm.perf.crc.crcLockStatus
M-2459	dcc3 (Telemetry)		tlm.config.fan.pnDecode
M-2460	dcc3 (Telemetry)		tlm.perf.crc.crcTotalFrameCount
M-2461	dcc3 (Telemetry)		tlm.perf.crc.crcGoodFrameCount
M-2462	dcc3 (Telemetry)		tlm.perf.crc.crcBadFrameCount
M-2463	dcc3 (Telemetry)		tlm.perf.rsd.lockStatus
M-2464	dcc3 (Telemetry)		tlm.perf.rsd.totalCodeWordCount
M-2465	dcc3 (Telemetry)		tlm.perf.rsd.goodCodeWordCount
M-2466	dcc3 (Telemetry)		tlm.perf.rsd.badCodeWordCount
M-2467	dcc3 (Telemetry)		tlm.perf.rsd.frameErrorRate
M-2468	dcc3 (Telemetry)		tlm.perf.rsd.codeWordErrorRate

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2469	dcc3 (Telemetry)		tlm.perf.fs.totalInLockFrameCount
M-2470	dcc3 (Telemetry)		tlm.perf.fs.flywheelFrameCount
M-2471	dcc3 (Telemetry)		tlm.config.dft.formatTable
M-2474	dcc3 (Telemetry)		tlm.config.b2cd.oolThreshold
M-2475	dcc3 (Telemetry)		tlm.config.b3cd.oolThreshold
M-2476	dcc3 (Telemetry)		tlm.config.gen.diffDecoder
M-2477	dcc3 (Telemetry)		tlm.config.b2cd.altSymInv
M-2478	dcc3 (Telemetry)		tlm.config.b3cd.symSignInversion
M-2479	dcc3 (Telemetry)		tlm.perf.b2cd.metricNormalization
M-2480	dcc3 (Telemetry)		tlm.perf.b2cd.estimatedSymbolErrorRate
M-2481	dcc3 (Telemetry)		tlm.config.b2cd.nodeSyncChange
M-2482	dcc3 (Telemetry)		tlm.perf.b2cd.nodeSyncChangeCount
M-2483	dcc3 (Telemetry)		tlm.perf.b3cd.nodeSyncPosition
M-2484	dcc3 (Telemetry)		tlm.config.fs.frameLengthSecondary
M-2485	dcc3 (Telemetry)		tlm.perf.fs.correctFrameLength
M-2486	dcc3 (Telemetry)		tlm.perf.fs.selfTestResult
M-2487	dcc3 (Telemetry)		tlm.config.fs.bitSequence
M-2488	dcc3 (Telemetry)		tlm.config.fs.bitSlipWindow
M-2489	dcc3 (Telemetry)		tlm.perf.fs.inLockBer
M-2490	dcc3 (Telemetry)		tlm.perf.fs.syncDirection
M-2491	dcc3 (Telemetry)		tlm.perf.fs.currentPolarity
M-2492	dcc3 (Telemetry)		tlm.perf.fs.bitSlip
M-2493	dcc3 (Telemetry)		tlm.perf.fs.polarityChange

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2494	dcc3 (Telemetry)		tlm.perf.fs.acquisitionCount
M-2495	dcc3 (Telemetry)		tlm.config.fan.interleave
M-2496	dcc3 (Telemetry)		tlm.config.fan.algorithm
M-2497	dcc3 (Telemetry)		tlm.perf.rsd.virtualFill
M-2498	dcc3 (Telemetry)		tlm.perf.rsd.symbolErrorRate
M-2499	dcc3 (Telemetry)		tlm.perf.rsd.selfTestResult
M-2500	dcc3 (Ranging)		rng.config.t0Trk
M-2503*	dcc3 (Ranging)		dc.perf.autom.correlValidTime
M-2504*	dcc3 (Ranging)		dc.perf.autom.correlValidTime
M-2505*	dcc3 (Ranging)		dc.perf.autom.correlValidTime
M-2506	dcc3 (Ranging)		rng.perf.rangeLock
M-2507	dcc3 (Ranging)		rng.perf.blocksSent
M-2508	dcc3 (Ranging)		rng.perf.carBlocksSent
M-2509	dcc3 (Ranging)		rng.perf.totalAcqCompleted
M-2510	dcc3 (Ranging)		rng.perf.rangeConfidence
M-2511	dcc3 (Ranging)		rng.perf.residRuValue
M-2512	dcc3 (Ranging)		rng.perf.rangePwrToNoise
M-2513	dcc3 (Ranging)		rng.perf.pwrNoiseResidual
M-2514	dcc3 (Ranging)		rng.config.patternType
M-2515	dcc3 (Ranging)		rng.config.rtlt
M-2516	dcc3 (Ranging)		rng.config.clock
M-2517	dcc3 (Ranging)		rng.config.last
M-2518	dcc3 (Ranging)		rng.config.chop
M-2519	dcc3 (Ranging)		rng.config.chopStrt

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2520	dcc3 (Ranging)		rng.config.t1Xmit
M-2521	dcc3 (Ranging)		rng.config.t2Xmit
M-2522	dcc3 (Ranging)		rng.config.t3Xmit
M-2523	dcc3 (Ranging)		rng.config.drvn
M-2524	dcc3 (Ranging)		rng.config.intTime
M-2525	dcc3 (Ranging)		rng.config.clockDiv
M-2526	dcc3 (Ranging)		rng.config.comp1Len
M-2527	dcc3 (Ranging)		rng.config.comp1Def
M-2528	dcc3 (Ranging)		rng.config.comp1Bool
M-2529	dcc3 (Ranging)		rng.config.comp2Len
M-2530	dcc3 (Ranging)		rng.config.comp2Def
M-2531	dcc3 (Ranging)		rng.config.comp2Bool
M-2532	dcc3 (Ranging)		rng.config.comp3Len
M-2533	dcc3 (Ranging)		rng.config.comp3Def
M-2534	dcc3 (Ranging)		rng.config.comp3Bool
M-2535	dcc3 (Ranging)		rng.config.comp4Len
M-2536	dcc3 (Ranging)		rng.config.comp4Def
M-2537	dcc3 (Ranging)		rng.config.comp4Bool
M-2538	dcc3 (Ranging)		rng.config.comp5Len
M-2539	dcc3 (Ranging)		rng.config.comp5Def
M-2540	dcc3 (Ranging)		rng.config.comp5Bool
M-2541	dcc3 (Ranging)		rng.config.comp6Len
M-2542	dcc3 (Ranging)		rng.config.comp6Def
M-2543	dcc3 (Ranging)		rng.config.comp6Bool

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2544	dcc3 (Ranging)		rng.perf.drvidRuValue
M-2545	dcc3 (Ranging)		rng.perf.currentMode
M-2546	dcc3 (Ranging)		rng.perf.acquisitionTime
M-2547	dcc3 (Ranging)		rng.perf.rangeRuValue
M-2548	dcc3 (Ranging)		rng.config.tolerance
M-2700	dcc4 (Status)		smon.status.sum.sys.status
M-2701	dcc4 (Status)		smon.status.sum.sys.status
M-2702	dcc4 (Status)		smon.status.sum.rec.general
M-2703	dcc4 (Status)		smon.status.sum.rec.general
M-2704	dcc4 (Status)		smon.status.sum.rrp.general
M-2705	dcc4 (Status)		smon.status.sum.rrp.general
M-2706	dcc4 (Status)		smon.status.sum.dcc.general
M-2707	dcc4 (Status)		smon.status.sum.dcc.general
M-2708*	dcc4 (Status)		smon.status.sum.rrp.mp.general
M-2709*	dcc4 (Status)		smon.status.sum.rrp.mp.general
M-2710	dcc4 (Status)		smon.status.sum.rng.general
M-2711	dcc4 (Status)		smon.status.sum.rng.general
M-2712	dcc4 (Status)		smon.status.sum.tlp.general
M-2713	dcc4 (Status)		smon.status.sum.tlp.general
M-2714*	dcc4 (Status)		smon.status.sum.tlp.mcd3.general
M-2715*	dcc4 (Status)		smon.status.sum.tlp.mcd3.general
M-2716*	dcc4 (Status)		smon.status.sum.tlp.turbo.general
M-2717*	dcc4 (Status)		smon.status.sum.tlp.turbo.general
M-2740	dcc4 (Configuration)		DccChannel

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2741	dcc4 (Configuration)		ChannelDss
M-2742	dcc4 (Configuration)		rcv.config.scDep.scId
M-2743	dcc4 (Configuration)		ChannelPass
M-2744	dcc4 (Configuration)		dc.perf.missionId
M-2745	dcc4 (Configuration)		rcv.config.scDep.downBand
M-2746	dcc4 (Configuration)		rcv.config.scDep.upBand
M-2747	dcc4 (Configuration)		rcv.config.tableId
M-2748	dcc4 (Configuration)		rcv.config.scDep.pdxMode
M-2750	dcc4 (Configuration)		rcv.config.scDep.uplinkDss
M-2751	dcc4 (Configuration)		rcv.config.car.freqPred
M-2752	dcc4 (Configuration)		rcv.config.sub.freqPred
M-2753	dcc4 (Configuration)		rcv.config.sym.ratePredicts
M-2754	dcc4 (Configuration)		rcv.config.nar.sntMode
M-2755	dcc4 (Configuration)		rcv.config.rxDep.mpSwitch
M-2756	dcc4 (Configuration)		dc.config.trkSetName
M-2757	dcc4 (Configuration)		dc.perf.autom.rpdxChangeTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2758	dcc4 (Configuration)		dc.perf.autom.rpdxChangeTime
M-2759	dcc4 (Configuration)		dc.perf.autom.rpdxChangeTime
M-2760	dcc4 (Configuration)		rcv.config.rxDep.useTpdx
M-2761	dcc4 (Configuration)		dc.config.tlmSetName
M-2762	dcc4 (Configuration)		rng.config.state
M-2763	dcc4 (Configuration)		rng.config.trkDataOutput
M-2764	dcc4 (Configuration)		rng.config.rangeOutput
M-2765	dcc4 (Configuration)		tlm.config.gen.output
M-2766	dcc4 (Configuration)		dc.perf.signal.lnaId
M-2767	dcc4 (Configuration)		dc.perf.signal.polarization
M-2768	dcc4 (Configuration)		dc.perf.signal.path
M-2790	dcc4 (Carrier Loop)		rcv.perf.car.timeTag
M-2791	dcc4 (Carrier Loop)		rcv.perf.car.timeTag
M-2792	dcc4 (Carrier Loop)		rcv.perf.car.timeTag
M-2793	dcc4 (Carrier Loop)		dc.perf.autom.acqStartTime
M-2794	dcc4 (Carrier Loop)		dc.perf.autom.acqStartTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2795	dcc4 (Carrier Loop)		dc.perf.autom.acqStartTime
M-2796	dcc4 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2797	dcc4 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2798	dcc4 (Carrier Loop)		dc.perf.autom.carLockStatusTime
M-2799	dcc4 (Carrier Loop)		rcv.perf.car.loopBw
M-2800	dcc4 (Carrier Loop)		rcv.config.car.loopType
M-2801	dcc4 (Carrier Loop)		dc.perf.autom.carLockStatus
M-2802	dcc4 (Carrier Loop)		rcv.perf.car.loopStatus
M-2803	dcc4 (Carrier Loop)		dc.perf.autom.dataLockStatus
M-2804	dcc4 (Carrier Loop)		rcv.perf.car.freqEst
M-2805	dcc4 (Carrier Loop)		dc.perf.resid.carFreq
M-2806	dcc4 (Carrier Loop)		dc.perf.resid.dopp
M-2807	dcc4 (Carrier Loop)		rcv.perf.car.rateEst
M-2808	dcc4 (Carrier Loop)		rcv.perf.car.accelEst
M-2809	dcc4 (Carrier Loop)		rng.perf.dopNoise
M-2810	dcc4 (Carrier Loop)		rcv.perf.car.carPwrEst

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2811	dcc4 (Carrier Loop)		dc.perf.resid.pc
M-2812	dcc4 (Carrier Loop)		rcv.perf.sub.pdEst
M-2813	dcc4 (Carrier Loop)		dc.perf.resid.pd
M-2814	dcc4 (Carrier Loop)		rcv.perf.car.spe
M-2815	dcc4 (Carrier Loop)		rcv.perf.car.pcnoEst
M-2816	dcc4 (Carrier Loop)		dc.perf.resid.pcno
M-2817	dcc4 (Carrier Loop)		rcv.perf.car.trackingMode
M-2818	dcc4 (Carrier Loop)		rcv.perf.car.snt
M-2819	dcc4 (Carrier Loop)		dc.perf.resid.snt
M-2820	dcc4 (Carrier Loop)		rcv.perf.car.freqPredicts
M-2821	dcc4 (Carrier Loop)		rng.perf.cycleSlips
M-2822	dcc4 (Carrier Loop)		rcv.config.carAcq.useFft
M-2823	dcc4 (Carrier Loop)		rcv.perf.state.carFft
M-2840	dcc4 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-2841	dcc4 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime
M-2842	dcc4 (Subcarrier Loop)		dc.perf.autom.subFreqChangeTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2843	dcc4 (Subcarrier Loop)		rcv.perf.sub.freqEst
M-2844	dcc4 (Subcarrier Loop)		dc.perf.resid.subFreq
M-2845	dcc4 (Subcarrier Loop)		rcv.perf.sub.loopBandwidth
M-2846	dcc4 (Subcarrier Loop)		rcv.config.sub.loopType
M-2847	dcc4 (Subcarrier Loop)		rcv.perf.sub.currentWindowWidth
M-2848	dcc4 (Subcarrier Loop)		dc.perf.autom.subLockStatus
M-2849*	dcc4 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2850*	dcc4 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2851*	dcc4 (Subcarrier Loop)		dc.perf.autom.subLockStatusTime
M-2852	dcc4 (Subcarrier Loop)		rcv.perf.sub.loopStatus
M-2853	dcc4 (Subcarrier Loop)		rcv.perf.sub.pdnoEst
M-2854	dcc4 (Subcarrier Loop)		dc.perf.resid.pdno
M-2855	dcc4 (Subcarrier Loop)		rcv.perf.sub.spe
M-2856	dcc4 (Subcarrier Loop)		rcv.config.sub.waveForm
M-2857	dcc4 (Subcarrier Loop)		rcv.perf.sub.freqPredicts

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2858	dcc4 (Subcarrier Loop)		rcv.config.subAcq.useFft
M-2859	dcc4 (Subcarrier Loop)		rcv.perf.state.subFft
M-2880	dcc4 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2881	dcc4 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2882	dcc4 (Symbol Loop)		dc.perf.autom.symRateChangeTime
M-2883	dcc4 (Symbol Loop)		rcv.perf.sym.rateEst
M-2884	dcc4 (Symbol Loop)		dc.perf.resid.symRate
M-2885	dcc4 (Symbol Loop)		rcv.perf.sym.loopBandwidth
M-2886	dcc4 (Symbol Loop)		rcv.config.sym.loopType
M-2887	dcc4 (Symbol Loop)		rcv.perf.sym.currentWindowWidth
M-2888	dcc4 (Symbol Loop)		dc.perf.autom.symLockStatus
M-2889*	dcc4 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2890*	dcc4 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2891*	dcc4 (Symbol Loop)		dc.perf.autom.symLockStatusTime
M-2892	dcc4 (Symbol Loop)		rcv.perf.sym.loopStatus
M-2893	dcc4 (Symbol Loop)		rcv.perf.sym.snrEst

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2894	dcc4 (Symbol Loop)		dc.perf.resid.symSnr
M-2895	dcc4 (Symbol Loop)		rcv.perf.sym.spe
M-2896	dcc4 (Symbol Loop)		rcv.config.sym.format
M-2897	dcc4 (Symbol Loop)		rcv.config.sym.smoothing
M-2898	dcc4 (Symbol Loop)		rcv.perf.sym.ratePred
M-2899	dcc4 (Symbol Loop)		rcv.config.symAcq.useFft
M-2900	dcc4 (Symbol Loop)		rcv.perf.state.symFft
M-2907	dcc4 (Telemetry)		tlm.perf.fmt.vcCount1
M-2908	dcc4 (Telemetry)		tlm.perf.fmt.vcCount2
M-2909	dcc4 (Telemetry)		tlm.perf.fmt.vcCount3
M-2910	dcc4 (Telemetry)		tlm.perf.fmt.vcCount4
M-2911	dcc4 (Telemetry)		tlm.perf.fmt.vcCount5
M-2912	dcc4 (Telemetry)		tlm.perf.fmt.vcCount6
M-2913	dcc4 (Telemetry)		tlm.perf.fmt.vcCount7
M-2914	dcc4 (Telemetry)		tlm.perf.fmt.vcCount8
M-2915	dcc4 (Telemetry)		tlm.config.fan.frameMode
M-2916	dcc4 (Telemetry)		tlm.perf.gen.rrpArrayStatus
M-2917	dcc4 (Telemetry)		tlm.config.fs.mode
M-2918	dcc4 (Telemetry)		tlm.config.fs.pattern
M-2919	dcc4 (Telemetry)		tlm.config.fs.patternLength

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2920	dcc4 (Telemetry)		tlm.perf.fs.predictedBitRate
M-2921	dcc4 (Telemetry)		tlm.perf.fs.dataRate
M-2922	dcc4 (Telemetry)		tlm.perf.gen.tlpLockStatus
M-2924	dcc4 (Telemetry)		tlm.perf.gen.chanStatus
M-2925*	dcc4 (Telemetry)		dc.perf.autom.decoderStartTime
M-2926*	dcc4 (Telemetry)		dc.perf.autom.decoderStartTime
M-2927*	dcc4 (Telemetry)		dc.perf.autom.decoderStartTime
M-2928*	dcc4 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2929*	dcc4 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2930*	dcc4 (Telemetry)		dc.perf.autom.decoderLockStatusTime
M-2931	dcc4 (Telemetry)		tlm.perf.gen.decoderLockStatus
M-2933	dcc4 (Telemetry)		tlm.config.gen.decoderType
M-2934	dcc4 (Telemetry)		tlm.perf.gen.decoderSNR
M-2936	dcc4 (Telemetry)		tlm.config.b2cd.ilThreshold
M-2937	dcc4 (Telemetry)		tlm.config.b2cd.vecSet
M-2938	dcc4 (Telemetry)		tlm.config.b3cd.ilThreshold
M-2939	dcc4 (Telemetry)		tlm.config.b3cd.vecSet
M-2940	dcc4 (Telemetry)		tlm.config.fs.frameLengthPrimary
M-2941	dcc4 (Telemetry)		tlm.config.fs.ilBitErrorThreshold
M-2942	dcc4 (Telemetry)		tlm.config.fs.oolBitErrorThreshold
M-2943	dcc4 (Telemetry)		tlm.config.fs.ilThreshold
M-2944	dcc4 (Telemetry)		tlm.config.fs.oolThreshold
M-2945*	dcc4 (Telemetry)		dc.perf.autom.fsStartTime

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2946*	dcc4 (Telemetry)		dc.perf.autom.fsStartTime
M-2947*	dcc4 (Telemetry)		dc.perf.autom.fsStartTime
M-2948*	dcc4 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2949*	dcc4 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2950*	dcc4 (Telemetry)		dc.perf.autom.fsLockStatusTime
M-2951	dcc4 (Telemetry)		tlm.perf.fs.lockStatus
M-2952	dcc4 (Telemetry)		tlm.perf.fs.bitToAcquire
M-2953	dcc4 (Telemetry)		tlm.perf.gen.blocksOutput
M-2955	dcc4 (Telemetry)		tlm.perf.fs.frameTotalCount
M-2956	dcc4 (Telemetry)		tlm.perf.fs.frameGoodCount
M-2957	dcc4 (Telemetry)		tlm.perf.fs.frameBadCount
M-2958	dcc4 (Telemetry)		tlm.perf.crc.crcLockStatus
M-2959	dcc4 (Telemetry)		tlm.config.fan.pnDecode
M-2960	dcc4 (Telemetry)		tlm.perf.crc.crcTotalFrameCount
M-2961	dcc4 (Telemetry)		tlm.perf.crc.crcGoodFrameCount
M-2962	dcc4 (Telemetry)		tlm.perf.crc.crcBadFrameCount
M-2963	dcc4 (Telemetry)		tlm.perf.rsd.lockStatus
M-2964	dcc4 (Telemetry)		tlm.perf.rsd.totalCodeWordCount
M-2965	dcc4 (Telemetry)		tlm.perf.rsd.goodCodeWordCount
M-2966	dcc4 (Telemetry)		tlm.perf.rsd.badCodeWordCount
M-2967	dcc4 (Telemetry)		tlm.perf.rsd.frameErrorRate
M-2968	dcc4 (Telemetry)		tlm.perf.rsd.codeWordErrorRate
M-2969	dcc4 (Telemetry)		tlm.perf.fs.totalInLockFrameCount

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2970	dcc4 (Telemetry)		tlm.perf.fs.flywheelFrameCount
M-2971	dcc4 (Telemetry)		tlm.config.dft.formatTable
M-2974	dcc4 (Telemetry)		tlm.config.b2cd.oolThreshold
M-2975	dcc4 (Telemetry)		tlm.config.b3cd.oolThreshold
M-2976	dcc4 (Telemetry)		tlm.config.gen.diffDecoder
M-2977	dcc4 (Telemetry)		tlm.config.b2cd.altSymInv
M-2978	dcc4 (Telemetry)		tlm.config.b3cd.symSignInversion
M-2979	dcc4 (Telemetry)		tlm.perf.b2cd.metricNormalization
M-2980	dcc4 (Telemetry)		tlm.perf.b2cd.estimatedSymbolErrorRate
M-2981	dcc4 (Telemetry)		tlm.config.b2cd.nodeSyncChange
M-2982	dcc4 (Telemetry)		tlm.perf.b2cd.nodeSyncChangeCount
M-2983	dcc4 (Telemetry)		tlm.perf.b3cd.nodeSyncPosition
M-2984	dcc4 (Telemetry)		tlm.config.fs.frameLengthSecondary
M-2985	dcc4 (Telemetry)		tlm.perf.fs.correctFrameLength
M-2986	dcc4 (Telemetry)		tlm.perf.fs.selfTestResult
M-2987	dcc4 (Telemetry)		tlm.config.fs.bitSequence
M-2988	dcc4 (Telemetry)		tlm.config.fs.bitSlipWindow
M-2989	dcc4 (Telemetry)		tlm.perf.fs.inLockBer
M-2990	dcc4 (Telemetry)		tlm.perf.fs.syncDirection
M-2991	dcc4 (Telemetry)		tlm.perf.fs.currentPolarity
M-2992	dcc4 (Telemetry)		tlm.perf.fs.bitSlip
M-2993	dcc4 (Telemetry)		tlm.perf.fs.polarityChange
M-2994	dcc4 (Telemetry)		tlm.perf.fs.acquisitionCount

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-2995	dcc4 (Telemetry)		tlm.config.fan.interleave
M-2996	dcc4 (Telemetry)		tlm.config.fan.algorithm
M-2997	dcc4 (Telemetry)		tlm.perf.rsd.virtualFill
M-2998	dcc4 (Telemetry)		tlm.perf.rsd.symbolErrorRate
M-2999	dcc4 (Telemetry)		tlm.perf.rsd.selfTestResult
M-3000	dcc4 (Ranging)		rng.config.t0Trk
M-3003*	dcc4 (Ranging)		dc.perf.autom.correlValidTime
M-3004*	dcc4 (Ranging)		dc.perf.autom.correlValidTime
M-3005*	dcc4 (Ranging)		dc.perf.autom.correlValidTime
M-3006	dcc4 (Ranging)		rng.perf.rangeLock
M-3007	dcc4 (Ranging)		rng.perf.blocksSent
M-3008	dcc4 (Ranging)		rng.perf.carBlocksSent
M-3009	dcc4 (Ranging)		rng.perf.totalAcqCompleted
M-3010	dcc4 (Ranging)		rng.perf.rangeConfidence
M-3011	dcc4 (Ranging)		rng.perf.residRuValue
M-3012	dcc4 (Ranging)		rng.perf.rangePwrToNoise
M-3013	dcc4 (Ranging)		rng.perf.pwrNoiseResidual
M-3014	dcc4 (Ranging)		rng.config.patternType
M-3015	dcc4 (Ranging)		rng.config.rtlt
M-3016	dcc4 (Ranging)		rng.config.clock
M-3017	dcc4 (Ranging)		rng.config.last
M-3018	dcc4 (Ranging)		rng.config.chop
M-3019	dcc4 (Ranging)		rng.config.chopStrt
M-3020	dcc4 (Ranging)		rng.config.t1Xmit

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-3021	dcc4 (Ranging)		rng.config.t2Xmit
M-3022	dcc4 (Ranging)		rng.config.t3Xmit
M-3023	dcc4 (Ranging)		rng.config.drvn
M-3024	dcc4 (Ranging)		rng.config.intTime
M-3025	dcc4 (Ranging)		rng.config.clockDiv
M-3026	dcc4 (Ranging)		rng.config.comp1Len
M-3027	dcc4 (Ranging)		rng.config.comp1Def
M-3028	dcc4 (Ranging)		rng.config.comp1Bool
M-3029	dcc4 (Ranging)		rng.config.comp2Len
M-3030	dcc4 (Ranging)		rng.config.comp2Def
M-3031	dcc4 (Ranging)		rng.config.comp2Bool
M-3032	dcc4 (Ranging)		rng.config.comp3Len
M-3033	dcc4 (Ranging)		rng.config.comp3Def
M-3034	dcc4 (Ranging)		rng.config.comp3Bool
M-3035	dcc4 (Ranging)		rng.config.comp4Len
M-3036	dcc4 (Ranging)		rng.config.comp4Def
M-3037	dcc4 (Ranging)		rng.config.comp4Bool
M-3038	dcc4 (Ranging)		rng.config.comp5Len
M-3039	dcc4 (Ranging)		rng.config.comp5Def
M-3040	dcc4 (Ranging)		rng.config.comp5Bool
M-3041	dcc4 (Ranging)		rng.config.comp6Len
M-3042	dcc4 (Ranging)		rng.config.comp6Def
M-3043	dcc4 (Ranging)		rng.config.comp6Bool
M-3044	dcc4 (Ranging)		rng.perf.drvidRuValue

Channel ID	34M/70M Subsystem	26M Subsystem	34M/70M DSN Parameter Name
M-3045	dcc4 (Ranging)		rng.perf.currentMode
M-3046	dcc4 (Ranging)		rng.perf.acquisitionTime
M-3047	dcc4 (Ranging)		rng.perf.rangeRuValue
M-3048	dcc4 (Ranging)		rng.config.tolerance
M-3300	uwv		HEFRBLR
M-3301	uwv		HEFAIRP
M-3302	uwv		RAINBLR
M-3303	uwv		AIRPRES
M-3304	uwv		SXMITPOL
M-3305	uwv		XXMITPOL
M-3306	uwv		KXMITPOL
M-3307	uwv		LXMITPOL

*The monitor data in these channels have not yet been implemented by the originating DSN subsystem. The next delivery of the subsystem should include these items. Until that time, though, these channels will not appear in the 0158-Monitor SFDUs.

Appendix B Guide to the 34M/70M Subsystems

Appendix B
Guide to the 34M/70M Subsystems

This appendix provides definitions for the subsystem acronyms used in Table A-2, 34M/70M Monitor Data, along with a brief description of what each subsystem does. Starting in October, 2002, the DSMS will begin upgrading and replacing equipment at each antenna in the 34M/70M network. The new subsystems, referred to as NSP subsystems because they've been developed as part of the Network Simplification Project, will be replacing some of the old subsystems, referred to as legacy subsystems. Other legacy subsystems will remain in service after the upgrade is complete.

The upgrade, also known as the NSP rollout, will occur on an antenna by antenna basis. Once an antenna is upgraded, the monitor data will be from the NSP subsystems and the legacy subsystems which are not being replaced. Before the upgrade the monitor data will be from the legacy subsystems. So during the transition period you will need to be prepared to get monitor data from all the subsystems listed in Table A-2. Once the upgrade is complete, the legacy subsystems which are being replaced will be obselete and you will no longer receive monitor data from those subsystems. The first antenna is scheduled to go operational with the NSP equipment in December, 2002, and the upgrade will be complete in November, 2003. The subsystem descriptions in this appendix will identify which subsystems are legacy and which are NSP. For the legacy subsystems the description will indicate whether the subsystem will be replaced by an NSP subsystem.

apa Antenna Pointing Assembly. The apa is part of the Antenna Mechanical (ANT) Subsystem. The apa controls the antenna pointing for the 34M HEF and 70M antennas. The apa uses predicts or feedback from the receiver to point the antenna at the spacecraft. The apa is a legacy subsystem. It will eventually be replaced by the apc, but that won't occur until 2004 or 2005 at the earliest.

apc Antenna Pointing Controller. The apc is the antenna pointing controller for the Antenna Mechanical (ANT) Subsystem. The apc controls the antenna pointing for the 34M BWG antennas. The apc uses predicts or feedback from the receiver to point the antenna at the spacecraft. The apc is a legacy subsystem which will remain in service after the NSP rollout is complete. It is not being replaced by an NSP subsystem. Eventually, the apc will replace the apa at the 34M HEF and 70M antennas.

ce Connection Engine. The connection engine is an assembly of the Network Monitor and Control subsystem, which is an NSP subsystem. The connection engine receives directives from the NMC operator and sends directives to other the subsystems, assigning them to the connection/link and configuring them to support a spacecraft pass.

cpa Command Processor Assembly. The cpa is the subsystem controller for the DSCC Command (DCD) subsystem. The CPA receives the command data and passes it to the command modulation assembly, which generates the subcarrier and modulates the command data onto the subcarrier. The DCD is a legacy subsystem which will be replaced by the UPL.

dcc Downlink Channel Controller. This is the Downlink Tracking and Telemetry (DTT) subsystem. The DTT consists of receiver, telemetry processor, and downlink ranging assemblies controlled by the dcc, which is the subsystem controller. The DTT demodulates the carrier, the subcarrier, and the symbol stream. It converts the symbols to bits and performs frame synchronization and decoding. It transmits the processed telemetry to the projects. It also performs ranging correlation and provides downlink carrier phase data for Doppler measurements. It is an NSP subsystem which will replace the BVR, DTM, and MDA subsystems. A single DTT provides all the processing capabilities for one downlink channel. Up to 4 DTTs can be assigned to a single connection/link to provide 4 downlink channels. In the 0158-Monitor data there are 4 sets of DTT channels defined, one set for each logical downlink channel.

etc Exciter-Transmitter Controller. The etc is the subsystem controller for the Exciter-Transmitter (ETX) subsystem. The ETX receives the subcarrier, modulates the subcarrier onto the carrier, and transmits it to the spacecraft. The ETX is a legacy subsystem which will be replaced by the UPL.

mda Metric Data Assembly. The MDA receives the downlink carrier frequency from the BVR and compares it to the predicted frequency, generating Doppler residuals. It also receives ranging data from the SRA (Sequential Ranging Assembly), packages it for output, and sends it out. This is a legacy subsystem which will be replaced by the DTT and the UPL.

rcc Receiver Control Computer. The rcc is the subsystem controller for the Block V Receiver (BVR) subsystem. The BVR demodulates the carrier, the subcarrier, and the symbol stream and converts the symbols to bits. The BVR is a legacy subsystem which will be replaced by the DTT.

tgc Telemetry Group Controller. The tgc is the subsystem controller for the DSCC Telemetry (DTM) subsystem. The DTM performs frame synchronization and decoding and sends the processed telemetry data to the projects. The DTM is a legacy subsystem which will be replaced by the DTT.

tx_hp High Power Transmitter. The high power transmitter receives the subcarrier, and modulates it onto the carrier, and transmits it to the spacecraft.

ulc Uplink Control. The ulc is the subsystem controller for the Uplink (UPL) subsystem. The UPL consists of the following assemblies, which are controlled by the ulc: the Command Control Processor (ccp), the Command Modulation Generator (cmg), the Exciter-Transmitter Controller (etc), and the Uplink Ranging Controller (urc). The UPL receives directives and command data from the end user, modulates the uplink carrier with the command data and ranging modulation, amplifies the modulated carrier for transmission, and provides uplink carrier phase data for Doppler measurement and ranging phase data for ranging measurement.

There are currently two versions of the UPL subsystem. UPL-6167-OPBV2.0.1 (a.k.a. Delivery 2 or D2) is the first operational version. It is already deployed. UPL-6167-OPCV3.2.0 (a.k.a Delivery 3 or D3) will be deployed during the NSP rollout, replacing UPL-6167-OPBV2.0.1. Delivery 2 of the UPL consists only of the ccp and cmg assemblies. It is used with the legacy ETX subsystem. Delivery 3 adds the etc and urc assemblies, which replace the legacy ETX and the MDA subsystems.

The UPL is an NSP subsystem which will replace the DCD, ETX, and MDA subsystems.

uwv Antenna Microwave Subsystem. The antenna microwave subsystem consists of the feed equipment group and the low noise amplifiers. It controls the connections between the low noise amplifiers and the receivers.