1 S/C Telemetry specification

Sub-Addr.	Byte 3								Byte 2								Byte 1								Byte 0								Description and scale factor
	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
0x47																									OBD_MODE / ._OBC_1								See Table 1
0x48	OBD_EQUIPMENT_STATUS / AMS_OBC_HK_OBC_2																																See Table 2
0x49	Unused																								OBD_WD_RESET_COUNT/._3								Number of watchdog resets (from 0 to 255)
0x4A	Unused																								STX_TEMP_$/._OBC_4								See Table 2
0x4B	ACS_OMEGA_P/AMS_OBC_HK_AOCS_1																																Roll angular velocity [deg/sec] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x4C	ACS_OMEGA_Q/AMS_OBC_HK_AOCS_2																																Pitch angular velocity [deg/sec] as float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x4D	ACS_OMEGA_R/AMS_OBC_HK_AOCS_3																																Yaw angular velocity [deg/sec] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x4E	ACS_ORBIT_x/AMS_OBC_HK_AOCS_4																																SGP4 x component [km] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x4F	ACS_ORBIT_y/AMS_OBC_HK_AOCS_5																																SGP4 y component [km] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x50	ACS_ORBIT_z/AMS_OBC_HK_AOCS_6																																SGP4 z component [km] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x51	ACS_ORBIT_Vx/AMS_OBC_HK_AOCS_7																																SGP4 vx component [km/sec] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x52	ACS_ORBIT_Vy/AMS_OBC_HK_AOCS_8																																SGP4 vy component [km/sec] float 32 type (ANSI/IEEE Std 754-1985 see section 1)

0x53	ACS_ORBIT_Vz/AMS_OBC_HK_AOCS_9		SGP4 vz component [km/sec] float 32 type (ANSI/IEEE Std 754-1985 see section 1)
0x54	Unused	MWM_VOLTAGE / AMS_OBC_HK_AOCS_10	MWM Voltage [0.01*V]
0x55	Unused	MWM_CURRENT / AMS_OBC_HK_AOCS_11	MWM Current [0.001*A]
0x56	MWM_OMEGAMESURED/ AMS_OBC_HK_AOCS_12		MWM angular velocity measured [0.0004875*rpm]
0x57	Unused	MPS_HPT01/AMS_OBC_HK_AOCS_13	Tank pressure [*kPa]
0x58	Unused	PMM_TEMP_SP1_SENS_1/AMS_OBC_HK_EPS_1	Solar Panel 1 Temperature [0.1*C]
0x59	Unused	PMM_TEMP_SP2_SENS_1/AMS_OBC_HK_EPS_2	Solar Panel 2 Temperature [0.1*C]
0x5A	Unused	PMM_TEMP_SP3_SENS_1/AMS_OBC_HK_EPS_3	Solar Panel 3 Temperature [0.1*C]
0x5B	Unused	PMM_CURRENT_BP1/AMS_OBC_HK_EPS_4	Current of the battery pack 1 [mA]
0x5C	Unused	PMM_CURRENT_BP4/AMS_OBC_HK_EPS_5	Current of the battery pack 4 [mA]
0x5D	Unused	PMM_TEMP_BP1_SENS_1/AMS_OBC_HK_EPS_6	Battery Pack 1 Temperature [0.1*C]
0x5E	Unused	PMM_AMSAT_CURRENT/AMS_OBC_HK_EPS_7	AMSAT Current consumption [mA]
0x5F	Unused	PMM_VOLTAGE_MB/AMS_OBC_HK_EPS_8	Main Bus voltage [mV]
0x60	Unused	PPM_VOLTAGE_SP1 /AMS_OBC_HK_EPS_9	String 1 and 2 voltage of solar panel 1 [mV]
0x61	Unused	PPM_VOLTAGE_SP2 /AMS_OBC_HK_EPS_10	String 1 and 2 voltage of solar panel 2 [mV]
0x62	Unused	PPM_VOLTAGE_SP3 /AMS_OBC_HK_EPS_11	String 1 and 2 voltage of solar panel 3 [mV]

OBD_MODE value	OBD_MODE and OBD_OLD_MODE definition
0x00	EGSE mode
0x01	OBDH power up
0x02	AOCS initialization
0x03	AOCS damping
0x04	AOCS nominal SUN/ECLIPSE
0xF0	Re-entry mode (TBC)
0xF1	Safe mode S1: minor main bus power down
0xF2	Safe mode S2: sever main bus power down
0xF3	Safe mode S3: major main bus power down
0xF4	Safe mode S4: silent main bus power down

Table 1: OBDH OBD_MODE and OBDH_OLD_MODE definition

Bit	OBD_EQUIPMENT_SATUS
0	Reserved (OBDH)
1	Reserved (AOCS)
2	Power Management Unit main ON/OFF
3	Power Management Unit redundant ON/OFF
4	TMTC main ON/OFF
5	TMTC redundant ON/OFF
6	Sun sensor main ON/OFF
7	Sun sensor redundant ON/OFF
8	Earth sensor ON/OFF
9	Momentum Wheel main ON/OFF
10	Momentum Wheel redundant ON/OFF
11	Micropropulsion ON/OFF
12	Magnetometer main ON/OFF
13	Magnetometer redundant ON/OFF
14	Magnetic Torquer main ON/OFF
15	Magnetic Torquer redundant ON/OFF
16	TRITEL ON/OFF
17	Langmuir Probe ON/OFF
18	PCAM ON/OFF
19	AMSAT-UK ON/OFF
20	S-Band ON/OFF
21	GPS receiver ON/OFF
22	ADE
23	SCAM
24	De-orbit mechanism ON/OFF
25	Reserved
26	Reserved
27	Reserved
28	Reserved
29	Reserved
30	Reserved
31	Reserved

Table 2: OBDH OBD_EQUIPMENT_STATUS definition

2 ANSI/IEEE Std 754-1985