

# **ROSETTA ROSINA**

## **DPU – S/C Event Packets**

ROS-TUB-SP-05/2.3

Revision 2.3

04.07.2001

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## Document Change Record

Rev.	Date	Pages	Description
1.0	19.05.00	All	First Issue
1.1	22.06.00	4,5	Order in packet definition changed
2.0	19.03.01	All	FM Version, add Progress Report, Switch-Off Ready Alert
2.1	11.06.01	4 5 7 12	Add Boot Error in POST Report Change 48-bit parameter of PM/DM/EEPROM Test Report Add Table Setting Report Change parameter of COPS Pressure Alert
2.2	27.06.01	9,10	Change Description of Error Code and Flags
2.3	04.07.01	All	Add RSDB name column

## 1. Packet Types and EIDs

Sub Type	EID	RSDB	Packet Size (words)	Description
1	44001	YRNG3001	9	Power-On self test report
1	44002	YRNG3002	10	Program memory test report
1	44003	YRNG3003	10	Data memory test report
1	44004	YRNG3004	10	EEPROM test report (ground test only)
1	44005	YRNG3005	12	Operation mode change report
1	44006	YRNG3006	17	Sensor switch-on report
1	44007	YRNG3010	10	Progress report
1	44008	YRNG3011	28	Table Setting report
2	44100	YRNG3007	7	DPU latch-up report
2	44101	YRNG3008	13	DPU memory error report
2	44102	YRNG3009	11	DPU general error report
2	44103	YRNG300A	14	Sensor I/F error report
2	44104	YRNG300B	11	Sensor error report
3	44200			
4	44300	YRNG300C	3	COPS Pressure Alert
4	44301	YRNG300D	2	Switch-Off Ready Alert

## 2. Normal Event Packet Definitions, Sub Type 1

### 2.1 POST Report, EID = 44001, Length 9 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44001
002	NRNAG305	1		Unit	208
003		1		Spare	0
004	NRNAG307	4		Error Code	Hex value
008	NRNAG308	4		Error Position / Address	Hex value / Boot Err Cnt PM/DM
012	NRNAG306	1		DPU Self test status	
			7	Processor self test	0 = Ok, 1 = Error
			6	PM self test	0 = Ok, 1 = Error
			5	EEPROM self test	0 = Ok, 1 = Error
			4	SRAM 1 self test	0 = Ok, 1 = Error
			3	SRAM 2 self test	0 = Ok, 1 = Error
			2	Stat EEPROM self test	0 = Ok, 1 = Error
			1..0	Sensor I/F self test	0 = Ok, 1 = DFMS Error, 2 = RTOF Error, 3 = COPS Error
013		1		DPU Status	
			7	DPU power save	0 = Off, 1 = On
			6	LU detect	0 = Off, 1 = On
			5	Boot Err PM	0 = Off, 1 = On
			4	Boot Err DM	0 = Off, 1 = On
			3..0	Spare	
014	NRNAG309	2		DPU power status	
			15	Spare	
			14	Status SRAM 2	0 = Off, 1 = On
			13	Status SRAM 1	0 = Off, 1 = On
			12	Status Stat EEPROM	0 = Off, 1 = On
			11	Status I/F COPS	0 = Off, 1 = On
			10	Status I/F RTOF	0 = Off, 1 = On
			9	Status I/F DFMS	0 = Off, 1 = On
			8	Status EEPROM	0 = Off, 1 = On
			7	Sensitivity DSP	0 = Low, 1 = High
			6	Sensitivity SRAM 2	0 = Low, 1 = High
			5	Sensitivity SRAM 1	0 = Low, 1 = High
			4	Sensitivity Stat EEPROM	0 = Low, 1 = High
			3	Sensitivity I/F COPS	0 = Low, 1 = High
			2	Sensitivity I/F RTOF	0 = Low, 1 = High
			1	Sensitivity I/F DFMS	0 = Low, 1 = High
			0	Sensitivity EEPROM	0 = Low, 1 = High
016	NRNAG30A	2		DPU S/W status	Hex value

**2.2 PM Test Report, EID = 44002, Length 10 words**

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44002
002	NRNAG30C	2		Spare	0
004		1		Unit	208
005		1		Type	Hex value
006	NRNAG30D	1		Symbol	Hex value
007		1		Value	Hex value
008	NRNAG30E	4		Correct Data high	Hex value
012		2		Correct Data low	Hex value
014	NRNAG30F	4		Read Data high	Hex value
018		2		Read Data low	Hex value

**2.3 DM Test Report, EID = 44003, Length 10 words**

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44003
002	NRNAG30C	2		Spare	0
004		1		Unit	208
005		1		Type	Hex value
006	NRNAG30D	1		Symbol	Hex value
007		1		Value	Hex value
008	NRNAG30E	4		Correct Data high	Hex value
012		2		Correct Data low	Hex value
014	NRNAG30F	4		Read Data high	Hex value
018		2		Read Data low	Hex value

**2.4 EEPROM Test Report, EID = 44004, Length 10 words**

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44004
002	NRNAG316	2		Spare	0
004		1		Unit	208
005		3		Address	Hex value
008	NRNAG30E	4		Correct Data high	Hex value
012		2		Correct Data low	Hex value
014	NRNAG30F	4		Read Data high	Hex value
018		2		Read Data low	Hex value

## 2.5 Operation Mode Change Report, EID = 44005, Length 12 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44005
002	NRNAG305	1		Unit	208
003		1		Spare	0
004	NRNAG31B	2		DPU Mode	Hex value
006	NRNAG3A0	2		DPU Status	Hex value
008	NRNAG31C	2		DFMS Mode	Hex value
010	NRNAG3A1	2		DFMS Status	Hex value
012	NRNAG31D	2		RTOF Mode	Hex value
014	NRNAG3A2	2		RTOF Status	Hex value
016	NRNAG31E	2		COPS Mode	Hex value
018	NRNAG3A3	2		COPS Status	Hex value
020	NRNAG31F	2		Mode Change ID	Hex value
022	NRNAG320	1		Active SID	Hex value
023		1		Spare	0

## 2.6 Sensor Switch-On Report, EID = 44006, Length 17 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44006
002	NRNAG322	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS
003		1		Flags	Hex value
004	NRNAG323	2		Power State 1	Hex value
006	NRNAG324	2		Power State 2	Hex value
008	NRNAG325	2		Power State 3	Hex value
010	NRNAG326	2		Voltage Value 1	$V = (\text{value} * X) + Y$
012	NRNAG327	2		Voltage Value 2	$V = (\text{value} * X) + Y$
014	NRNAG328	2		Voltage Value 3	$V = (\text{value} * X) + Y$
016	NRNAG329	2		Current Value 1	$A = (\text{value} * X) + Y$
018	NRNAG32A	2		Current Value 2	$A = (\text{value} * X) + Y$
020	NRNAG32B	2		Current Value 3	$A = (\text{value} * X) + Y$
022	NRNAG32C	2		Temperature Value 1	$^{\circ}\text{C} = (\text{value} * X) + Y$
024	NRNAG32D	2		Temperature Value 2	$^{\circ}\text{C} = (\text{value} * X) + Y$
026	NRNAG32E	2		Unit Mode	Hex value
028	NRNAG3A4	2		Unit Status	Hex value
030	NRNAG32F	2		Mode Change ID	Hex value
032	NRNAG330	2		Spare	0

### 2.7 Progress Report, EID = 44007, Length 10 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44007
002	NRNAG322	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS, 208 = DPU
003		1		Flags	Hex value
004	NRNAG3A5	2		Progress No.	Hex value
006	NRNAG3A6	2		Progress Code	Hex value
008	NRNAG3A7	4		Progress Position / Address	Hex value
012	NRNAG3A8	2		Command counter	Counter 0..65535
014	NRNAG32E	2		Unit Mode	Hex value
016	NRNAG3A4	2		Unit Status	Hex value
018	NRNAG330	2		Spare	0

### 2.8 Table Setting Report, EID = 44008, Length 28 words

Pos	RSDB	Byte	Bit	Name	Description
000	NRNAG304	2		EID	44008
002	NRNAG3A9	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS, 208 = DPU
003		1		Type	type of table
004	NRNAG3AA	2		Table No.	pointer to table
006	NRNAG3AB	2		Entry No.	pointer to parameter entry
008	NRNAG3AC	2		Function/Shift	function no. / shift parameter
010	NRNAG3AD	2		Mask	and mask
012	NRNAG3AE	4		Default	or mask
016	NRNAG3AF	4		Parameter Value 1	multiplier (floating point)
020	NRNAG3B0	4		Parameter Value 2	offset (floating point)
024	NRNAG3B1	2		Monitoring	monitoring function no.
026	NRNAG3B2	2		Wait	wait time for monitoring in ms
028	NRNAG3B3	4		Parameter Value 3	step width (floating point)
032	NRNAG3B4	4		Parameter Value 4	limit (floating point)
036	NRNAG3B5	4		Parameter Value 5	sleep time in ms
040	NRNAG3B6	4		HK Cmd 1	sensor cmd for hk read
044	NRNAG3B7	4		HK Cmd 2	sensor cmd for hk read
048	NRNAG3B8	4		HK Cmd 3	sensor cmd for hk read
052	NRNAG3B9	4		HK Cmd 4	sensor cmd for hk read

### 3. Anomalous Event Packet Definitions, Sub Type 2

#### 3.1 DPU Latch-up Report, EID = 44100, Length 7 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44100
002	NRNAG305	1		Unit	208
003		1		Spare	0
004	NRNAG333	2		Latch-up position	Hex value
006	NRNAG3BA	2		Latch-up counter	Counter
008	NRNAG309	2		DPU power status	
			15	Spare	
			14	Status SRAM 2	0 = Off, 1 = On
			13	Status SRAM 1	0 = Off, 1 = On
			12	Status Stat EEPROM	0 = Off, 1 = On
			11	Status I/F COPS	0 = Off, 1 = On
			10	Status I/F RTOF	0 = Off, 1 = On
			9	Status I/F DFMS	0 = Off, 1 = On
			8	Status EEPROM	0 = Off, 1 = On
			7	Sensitivity DSP	0 = Low, 1 = High
			6	Sensitivity SRAM 2	0 = Low, 1 = High
			5	Sensitivity SRAM 1	0 = Low, 1 = High
			4	Sensitivity Stat Eeprom	0 = Low, 1 = High
			3	Sensitivity I/F COPS	0 = Low, 1 = High
			2	Sensitivity I/F RTOF	0 = Low, 1 = High
			1	Sensitivity I/F DFMS	0 = Low, 1 = High
			0	Sensitivity EEPROM	0 = Low, 1 = High
010	NRNAG31B	2		DPU Mode	Hex value
012	NRNAG3A0	2		DPU Status	Hex value

#### 3.2 DPU Memory Error Report, EID = 44101, Length 13 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44101
002	NRNAG305	1		Unit	208
003		1		Spare	0
004	NRNAG338	1		PM Error Count 1 Symbol	Counter
005		1		PM Error Count 2 Symbols	Counter
006	NRNAG339	2		PM Error status	Hex value
008	NRNAG33A	4		PM Error address	Hex value
012	NRNAG33B	1		DM Error Count 1 Symbol	Counter
013		1		DM Error Count 2 Symbols	Counter
014	NRNAG33C	2		DM Error status	Hex value
016	NRNAG33D	4		DM Error address	Hex value
020	NRNAG3BB	1		EEPROM Error Count 1	Counter 0..255, 0xFF for Boot
021		1		EEPROM Error Count 2	Counter 0..255, 0xFF for Boot
022	NRNAG31B	2		DPU Mode / Boot CRC Cnt	Hex value
024	NRNAG3A0	2		DPU Status	Hex value



**3.3 DPU General Error Report, EID = 44102, Length 11 words**

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44102
002	NRNAG305	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS, 208 = DPU
003		1		Spare	0
004	NRNAG307	4		Error Code	Hex value
008	NRNAG308	4		Error Position / Address	Hex value
012	NRNAG3A8	2		Cmd/HK counter	Counter 0..65535
014	NRNAG345	1		DPU Processor load	1..100 Percent
015		1		Used memory PM	1..100 Percent
016	NRNAG346	1		Used memory DM	1..100 Percent
017		1		Spare	0
018	NRNAG31B	2		DPU Mode	Hex value
020	NRNAG3A0	2		DPU Status	Hex value

**3.4 Sensor I/F Error Report, EID = 44103, Length 14 words**

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44103
002	NRNAG322	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS
003		1		Flags	Hex value
004	NRNAG34A	2		Sensor HK & power status	
			15	COPS HK Status	0 = Off, 1 = On
			14	RTOF HK Status	0 = Off, 1 = On
			13	DFMS HK Status	0 = Off, 1 = On
			12..9	Spare	
			8	COPS Transc. Enable	0 = Disabled, 1 = Enabled
			7	COPS Main Power	0 = Off, 1 = On
			6	COPS Red. Power	0 = Off, 1 = On
			5	RTOF Transc. Enable	0 = Disabled, 1 = Enabled
			4	RTOF Main Power	0 = Off, 1 = On
			3	RTOF Red. Power	0 = Off, 1 = On
			2	DFMS Transc. Enable	0 = Disabled, 1 = Enabled
			1	DFMS Main Power	0 = Off, 1 = On
			0	DFMS Red. Power	0 = Off, 1 = On
006	NRNAG34B	2		Sensor HK counter	Counter 0..65535
008	NRNAG34C	2		Sensor Cmd counter	Counter 0..65535
010	NRNAG34D	2		Sensor Cmd Error counter	Counter 0..65535
012	NRNAG34E	2		Sensor Cmd Error position	Hex value
014	NRNAG34F	2		Sensor Science counter	Counter 0..65535
016	NRNAG350	2		Sensor Science Error cnt	Counter 0..65535
018	NRNAG351	2		Sensor Science Error pos	Hex value
020	NRNAG31B	2		DPU Mode	Hex value
022	NRNAG3A0	2		DPU Status	Hex value
024	NRNAG32E	2		Sensor Mode	Hex value
026	NRNAG3A4	2		Sensor Status	Hex value

**3.5 Sensor Error Report, EID = 44104, Length 11 words**

<b>Pos</b>	<b>RSDB</b>	<b>Byte</b>	<b>Bit</b>	<b>Name</b>	<b>Data</b>
000	NRNAG304	2		EID	44104
002	NRNAG322	1		Unit	196 = DFMS, 200 = RTOF, 204 = COPS
003		1		Flags	Hex value
004	NRNAG3BC	2		Error No.	Hex value
006	NRNAG356	2		Table ID	Hex value
008	NRNAG357	2		Limit ID	Hex value
010	NRNAG358	2		Value No.	Hex value
012	NRNAG359	2		Expected Value	Hex value
014	NRNAG35A	2		Read Value	Hex value
016	NRNAG32E	2		Sensor Mode	Hex value
018	NRNAG3A4	2		Sensor Status	Hex value
020	NRNAG330	2		Spare	0

## **4. Ground Action Event Packet Definitions, Sub Type 3**

## 5. On-board Action Event Packet Definitions, Sub Type 4

### 5.1 COPS Pressure Alert, EID = 44300, Length 3 words

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44300
002	NRNAG305	1		Unit	204
003		1		Spare	0
004	NRNAG35F	1		COPS Pressure	mmmmeeee mbar
005		1		COPS Pressure Gradient	mmmmeeee mbar/s

### 5.2 Switch-Off Ready Alert, EID = 44301, Length 2 word

Pos	RSDB	Byte	Bit	Name	Data
000	NRNAG304	2		EID	44301
002	NRNAG305	1		Unit	208
003		1		Spare	0