



ROSINA Mode Change Commands

B. Fiethe

Institut für Datentechnik
 TU Braunschweig

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1. Introduction

The scope of this document is to provide the inputs to a general Mode Change control file for system level tests of the ROSINA experiment.

1.1 Applicable Documents

AD1	RO-EST-RS-3001/EID A Issue 2	ROSETTA Experiment Interface Document Part A
AD2	RO-EST-RS-3013/EID B Issue 1	ROSETTA – ROSINA Experiment Interface Document Part B
AD3	RO-ALS-TN-4003	EID-C Part 9, Payload Test Specification

1.2 Reference Documents

RD1	ROS-TP-1016	ROSINA-DFMS Bench Test Procedure
RD2	ROS-TP-1020	ROSINA-COPS Bench Test Procedure
RD3	ROS-TP-1012	ROSINA-RTOF Bench Test Procedure
RD4	ROS-TP-1019	ROSINA Bench Test Procedure
RD5	ROS-TP-1023	ROSINA IST Inputs
RD6	ROS-TP-1021	ROSINA Input to I&T and UFT



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2. FM Mode Change Procedure

Project: ROSINA Model: EQM	Test Procedure Name: R0.1.1 Mode Change Pass/Fail criteria(a): Execution and Verification of general mode change command		
Test Step	Nominal value	Actual value	Remarks
1			<p>Get current Mode (HK parameter NRNDP116) and set parameters.</p> <p>Mode: <i>HK1:</i> <i>PARA3:</i> DPU D4 YRNP1001 0xD400 DPU D2 YRNP1001 0xD200 COPS G5 YRNC1001 0xF500 COPS S5 YRNC1001 0xA500 DFMS G2 YRND1001 0xF200 RTOF G1 YRNR1001 0xF100 RTOF S1 YRNG1003 0xA100 RTOF 1G YRNG1003 0x0100 ALL G4 YRNG1005 0xF400 ALL S4 YRNG1005 0xA400 ALL 4 YRNG1005 0x0400</p>
2			<p>Get new Mode and set parameters.</p> <p>Mode: <i>PARA1:</i> <i>PARA2:</i> DPU D4 0x80D4 0xD400 DPU D2 0x80D2 0xD200 COPS G5 0x80F5 0xF500 COPS S5 0x80A5 0xA500 DFMS G2 0x80F2 0xF200 RTOF G1 0x80F1 0xF100 RTOF S1 0x80A1 0xA100 RTOF 1G 0x8201 0x0100 ALL G4 0x80F4 0xF400 ALL S4 0x80A4 0xA400 ALL 4 0x8004 0x0400</p>
3			<p>Send "Set Mode" command to DPU (ZRNP4001) with PRNGP401 = <i>PARA1</i>, PRNGP402 = 0, PRNGP403 = 0, PRNGP404 = 0, PRNGP405 = 0)</p>
4		Passed:	Verify that command was accepted and executed
		Acceptance & Execution Report	
5		Passed: NRNAP103 = + 1, NRNAP104 = 0	Verify that DPU Cmd Counter increases in HK report (<i>HK1:</i> NRNAP103 incremented by 1, NRNAP104 still 0)



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Project: ROSINA	Test Procedure Name: R0.1.1 Mode Change			
Model: EQM	Pass/Fail criteria(a): Execution and Verification of general mode change command			
Test Step		Nominal value	Actual value	Remarks
6	Verify that operation mode change event report (EID 44005) was generated (YRNG3005 with NRNAG304 = 0xABE5, NRNAG305 = 0xD000, NRNAG31B = <i>PARA2</i> , NRNAG3A0 = 0XXXXX, NRNAG31C = 0XXXXX, NRNAG3A1 = 0XXXXX, NRNAG31D = 0XXXXX, NRNAG3A2 = 0XXXXX, NRNAG31E = 0XXXXX, NRNAG3A3 = 0XXXXX, NRNAG31F = <i>PARA3</i> , NRNAG320 = 0XX00)	Passed: YRNG3005 Event Packet		
7	If current Mode = DPU D4, DPU D2 AND if new Mode = COPS G5, COPS S5, RTOF S1, ALL G4, ALL S4: (YRNG3006 with NRNAG304 = 0xABE6, NRNAG322 = 0xCC40, NRNAG323 = 0, NRNAG324 = 0, NRNAG325 = 0, NRNAG326 ≈ 0, NRNAG327 ≈ 0x001C, NRNAG328 ≈ 0x0019, NRNAG329 ≈ 0x018F, NRNAG32A ≈ 0x0018, NRNAG32B ≈ 0x000B, NRNAG32C = 0x022B..0x031A, NRNAG32D = 0x022B..0x031A, NRNAG32E = 0x0100, NRNAG3A4 = 0, NRNAG32F = <i>PARA2</i> , NRNAG330 = 0)	Passed: YRNG3006 Event Packet		



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Project: ROSINA Model: EQM	Test Procedure Name: R0.1.1 Mode Change Pass/Fail criteria(a): Execution and Verification of general mode change command			
Test Step		Nominal value	Actual value	Remarks
8	<p>If current Mode = DPU D4, DPU D2, COPS S5 AND if new Mode = DFMS G2, ALL G4, ALL S4: (YRNG3006 with NRNAG304 = 0xABE6, NRNAG322 = 0xC441, NRNAG323 = 0, NRNAG324 = 0, NRNAG325 = 0, NRNAG326 ≈ 0, NRNAG327 ≈ 7, NRNAG328 ≈ 11, NRNAG329 ≈ 0x3770, NRNAG32A ≈ 0x3585, NRNAG32B ≈ 0x3fff, NRNAG32C ≈ 0x1FFF, NRNAG32D = 0..0x0100, NRNAG32E = 0x0100, NRNAG3A4 = 0..2, NRNAG32F = <i>PARA2</i>, NRNAG330 = 0)</p>	Passed: YRNG3006 Event Packet		
9	<p>If current Mode = DPU D4, DPU D2, COPS S5 AND if new Mode = RTOF G1, RTOF S1, ALL G4, ALL S4: (YRNG3006 with NRNAG304 = 0xABE6, NRNAG322 = 0xC801, NRNAG323 = 0, NRNAG324 = 0, NRNAG325 = 0, NRNAG326 ≈ 0, NRNAG327 ≈ 0x324A, NRNAG328 ≈ 0x31F8, NRNAG329 = 0x3EC4..0x3FAC, NRNAG32A = 0x00XX or 0x3FXX, NRNAG32B ≈ 0x3FF7, NRNAG32C = 0x2888..0x3DDE, NRNAG32D = 0x1D88..0x24A0, NRNAG32E = 0x0100, NRNAG3A4 = 0, NRNAG32F = <i>PARA2</i>, NRNAG330 = 0)</p>	Passed: YRNG3006 Event Packet		

The allowed range for the verification of the analog parameters (≈) is +-16.