Dump memory area
File: H_CRP_DHS_3022.xls
Author: S. Manganelli

Procedure Summary

Objectives

This procedure describes the steps needed to dump the following
memory areas/registers.
- CPU RAM
- Communication RAM
- PM PROM
- PM EEPROM
- TTR RAM 0
- TTR EEPROM
- TTR PROM
- ERC 32 registers
- PM COCOS registers

SGM and TTR CROME registers are dumped via dedicated procedures.

Summary of Constraints

Memory areas/registers are dumped through TC(6,5); this TC will
be delayed when there is an ongoing:
- TC(6,2) Load Memory Using Absolute Addresses
- TC(6,5) Dump Memory Using Absolute Addresses
- TC(6,9) Check Memory Using Absolute Addresses
- TC(8,4,1,1) Copy Memory

Spacecraft Configuration

Start of Procedure

n/a

End of Procedure

n/a

Reference File(s)

Input Command Sequences

Output Command Sequences
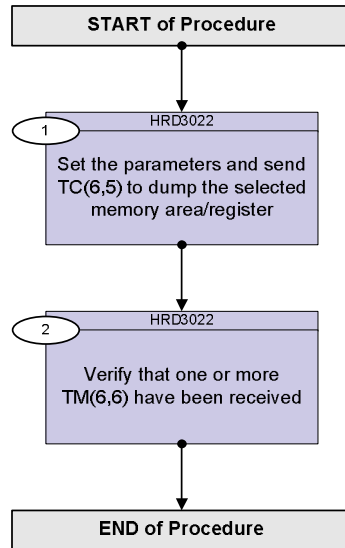
HRD3022

Referenced Displays

ANDs	GRDs	SLDs
		(None)

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
25/01/08	1	1	Created	cmevi-hp	
08/12/08		2	DB check against OBSW 3_6_2	S. Manganelli	
20/01/09	2	3	Modified Formal Param as per TAS comments	S. Manganelli	

Status   : Version 3 - Unchanged
Last Checkin: 20/01/09

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Procedure Flowchart Overview

```
        START of Procedure

              HRD3022
    ┌1┐  ┌──────────────────┐
    └─┘  │ Set the parameters and send
         │ TC(6,5) to dump the selected
         │ memory area/register
         └──────────────────┘

              HRD3022
    ┌2┐  ┌──────────────────┐
    └─┘  │ Verify that one or more
         │ TM(6,6) have been received
         └──────────────────┘

         END of Procedure
```

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HRD3022 (Dump memory area) *TimeTag Type: N* *Sub Schedule ID:* *Formal Parameter List :* Memory_ID Mem_ID= Start_Address StAddr= N Nr_SAU=	\<dec\> \<dec\> \<dec\>	
1		*Set the parameters and send TC(6,5) to dump the selected memory area/register*		Next Step: 2
		When the CDMU receives this request it shall read the memory block, generate one or several TMs(6,6) containing the contents of this area and send them to the downlink.		
		In the TC(6,5) it is necessary to set the following parameters: - <u>Memory ID:</u> identifier of the memory block of the on-board user from which data shall be dumped. - <u>Start Address:</u> start address (in SAUs, with the count starting from zero) within the memory block for dumping the data. - <u>N:</u> number of SAUs to be dumped.		
		The fields Memory ID and Start Address are treated as one 32-bit field where the 16 least significant bits of the address is stored in Start Address and the 16 most significant bit in the Memory ID field.		
		The length Smallest Addressable Unit (SAU) is always 8-bit.		
		<u>WARNING:</u> - The specified address range must not span over several types of memory. - For ERC32 or PM COCOS register accesses, no checking is performed that the provided address is a valid register or that register is readable. - For ERC32 only the mapped registers are accessible.		

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HERSCHEL PLANCK   **esa**

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch

		Execute Telecommand
		
		                                    DumpMem_AbsAddr
		
		Command Parameter(s) :
		                    Memory_ID DH003180
		                    Start_Address DH004180
		                                    N DH105180
		
		TC Control Flags :
		                                    GBM IL DSE
		                                    --Y -- YYY
		
		Subsch. ID : 10
		Det. descr. : Dump Memory Using Absolute Addresses
			DC602180
			
			Mem_ID
			StAddr
			Nr_SAU	

2		*Verify that one or more TM(6,6) have been received*		Next Step: END

		Verify Packet Reception
		        Memory Dump - Absolute Addresses - SAU 8
		Packet Details:
		                                    APID:
		                                    Type:
		                                Subtype:
		                                    PI1:
		                                    PI2:
			MemDmpAbsAdd
			
			16
			6
			6	

		Each TM packet contains the following parameters:		
		Verify Telemetry **Memory_ID DE060180**		(None)
		Verify Telemetry **Start_Address DE061180**		(None)
		Verify Telemetry **N DE062180**		(None)
		The following parameter is repeated N times		
		Verify Telemetry **Dumped_Byte DE063180**		(None)
		Verify Telemetry **CheckSum DE064180**		(None)

End of Procedure