Manufacturer: National Instruments

Board Assembly Part Numbers (Refer to Procedure 1 for identification procedure):

Part Number and Revision	Description
158864A-01L or later	**DCM-2316, Multi Channel Direct Injector Slave**
158864A-02L or later	**DCM-2301, Single Channel Direct Injector Slave**

Volatile Memory

Target Data	*Type*	*Size*	*Battery Backup*	*User[1] Accessible*	*System Accessible*	*Clearing Procedure*
SoM System Memory	DRAM	4Gb (2Gbx2)	No	No	Yes	Cycle Power
SoM LabVIEW and User data	FPGA w/ Block RAM	560KB	No	Yes	Yes	Cycle Power
SoM CPLD Memory	CPLD	32bytes	No	No	Yes	Cycle Power
SoM Time Keeping	RTC	20 bytes	Yes	No	Yes	Procedure 2
CPLD Memory	Block RAM	18kbit	No	No	No	Cycle Power
FPGA Memory	Block RAM	234kbit	No	No	Yes	Cycle Power

Non-Volatile Memory (*incl. Media Storage*)

Target Data	*Type*	*Size*	*Battery Backup*	*User Accessible*	*System Accessible*	*Clearing Procedure*
SoM CPLD configuration	CPLD	0.17MB	No	No	No	None
SoM Primary storage	Flash	4GB	No			
• Firmware	Firmware			No	Yes	None
• OS	OS			No	Yes	Procedure 3
• User Data	User Data			Yes	Yes	Procedure 3
Device configuration	EEPROM	32 KB	No			
• User Data				Yes	Yes	Procedure 4
• ID and calibration[2]				No	Yes	None
CPLD image	Flash	24kb	No	No	Yes	None
FPGA boot image	Flash	512kB	No	No	Yes	None

[1] Refer to *Terms and Definitions* section for clarification of *User* and *System Accessible*
[2] Calibration constants that are stored on the device include information for the device's full operating range. Any implications resulting from partial self-calibration can be eliminated by running the full self-calibration procedure.

Procedures

Procedure 1 – Board Assembly Part Number identification:
To determine the Board Assembly Part Number and Revision, refer to the label applied to the surface of your product. The Assembly Part Number should be formatted as "P/N: #####A-##L.

Procedure 2 – SoM Time Keeping RTC:
To clear the battery-backed Time Keeping RTC, complete the following steps:

1. Remove the battery.
2. Unplug master power for at least 5 minutes.

Procedure 3 – SoM Primary Storage Flash (OS and User Data):
The Primary Storage Flash can be reformatted to clear the OS and User Data areas. The format operation is a "quick format" that re-initializes the file table, thereby making the existing files inaccessible. Format the drive for this VxWorks target by performing one of the following steps:

1. Right-click the controller in MAX and click on "Format Drive".
2. Write a .VI that invokes the Format VI using the System Configuration API for the controller.

Procedure 4 – Device Configuration EEPROM (User Data):
The user-accessible areas of the EEPROM are exposed through a user data API in LabVIEW and the DCM Calibration Utility. To clear the user data area, complete the following steps:

1. With the DCM Device Drivers installed launch the DCM calibration utility from Tools->DCM->DCM Calibration Utility. From the utility select the option to clear the user data.

Terms and Definitions

Cycle Power:
The process of completely removing power from the device and its components and allowing for adequate discharge. This process includes a complete shutdown of the PC and/or chassis containing the device; a reboot is not sufficient for the completion of this process.

Volatile Memory:
Requires power to maintain the stored information. When power is removed from this memory, its contents are lost. This type of memory typically contains application specific data such as capture waveforms.

Non-Volatile Memory:
Power is not required to maintain the stored information. Device retains its contents when power is removed. This type of memory typically contains information necessary to boot, configure, or calibrate the product or may include device power up states.

User Accessible:
The component is read and/or write addressable such that a user can store arbitrary information to the component from the host using a publicly distributed NI tool, such as a Driver API, the System Configuration API, or MAX.

System Accessible:
The component is read and/or write addressable from the host without the need to physically alter the product.

Clearing:
Per *NIST Special Publication 800-88 Revision 1*, "clearing" is a logical technique to sanitize data in all User Accessible storage locations for protection against simple non-invasive data recovery techniques using the same interface available to the user; typically applied through the standard read and write commands to the storage device.

Sanitization:
Per *NIST Special Publication 800-88 Revision 1*, "sanitization" is a process to render access to "Target Data" on the media infeasible for a given level of effort. In this document, clearing is the degree of sanitization described.

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