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PXIe-6556

Manufacturer: National Instruments

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

Part Number and Revision	Description
152124A-02L or later	PXIe-6556
152124A-03L or later	PXIe-6556

Volatile Memory

<i>Target Data</i>	<i>Type</i>	<i>Size</i>	<i>Battery Backup</i>	<i>User¹ Accessible</i>	<i>System Accessible</i>	<i>Sanitization Procedure</i>
Waveform storage – Bank 1	DRAM	256 MB	No	Yes	Yes	Cycle Power
Waveform storage – Bank 2	DRAM	256 MB	No	Yes	Yes	Cycle Power
Buffering Data	FPGA	Altera EP2S130	No	Yes	Yes	Cycle Power
Buffering Data and DRAM Memory Control	FPGA	Xilinx XC5VLX85	No	Yes	Yes	Cycle Power

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

<i>Target Data</i>	<i>Type</i>	<i>Size</i>	<i>Battery Backup</i>	<i>User Accessible</i>	<i>System Accessible</i>	<i>Sanitization Procedure</i>
Device configuration	Flash	256 MB	No			
<ul style="list-style-type: none"> • Device information • FPGA bitstream • Calibration metadata • Calibration data² 				No	Yes	None
<ul style="list-style-type: none"> • Device configuration 				No	Yes	None
Programmable Quad Clock	RAM	SI5338	No	No	Yes	None
<ul style="list-style-type: none"> • Device configuration 				No	No	None
Spread Spectrum Clock	Flash	CY25100	No	No	No	None
<ul style="list-style-type: none"> • Device configuration 				No	No	None
FPGA Configuration	CPLD	192 Macrocells	No	No	No	None
Device identification	EEPROM	512 kbits	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-0#L”.

Procedure 2 – Device Information Flash (Calibration Metadata):

The user-accessible areas of the Device Configuration Flash are exposed through a calibration Applications Programming Interface (API) in LabVIEW. To clear the calibration meta-data area, complete the following steps:

1. Use function niHSDIO_InitExtCal to create and initialize a special NI-HSDIO external calibration session. The ViSession returned is an NI-HSDIO session that can be used during the calibration session.
2. Call function niHSDIO_ChangeExtCalPassword to clear the calibration password that is required to initialize an external calibration session.
3. Call function niHSDIO_CalAdjustChannelVoltage to clear the user-defined information of the selected channel(s).
4. Finally, call the function niHSDIO_CloseExtCal with the calibration action set to ‘Commit’, in order to store the new calibration constants and data in the onboard Flash and to close the calibration session.

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.