NATIONAL INSTRUMENTS PXIe-4162 Precision with SourceAdapt PXI Source Measure Unit Instructions

Contents

NATIONAL INSTRUMENTS PXIe-4162 Precision with SourceAdapt PXI Source Measure

Product Information

Product Name	PXIe-4163
Manufacturer	National Instruments
Board Assembly Part Numbers	140185E-01L or later (PXIe-4163) 140185E-02L or later (PXIe-4162)
Volatile Memory	**Device operation**: Device operation (x4) **Type**: FPGA **Size**: Xilinx XC7K160T (x4) **Battery Backup**: No **User Accessible**: Yes **System Accessible**: Yes
Non-Volatile Memory (incl. Media Storage)	**Device operation**: Device operation (x4) **Type**: Flash **Size**: 8 MB **Battery Backup**: No **User Accessible**: No **System Accessible**: Yes

Product Usage Instructions

To clear the calibration meta-data from the Device Configuration Flash, follow the steps below:

1. **Using the calibration API:**
    - Use the “niDCPower Change Ext Cal Password. vi” function in the NI-DCPower Calibration palette in LabVIEW (or equivalent functions in C, C#, or other supported languages) to overwrite the current calibration password of the device you wish to clear.
    - Use the “niDCPower Set Cal User Defined Info. vi” function (or equivalent) to overwrite the current user-defined information of the device you wish to clear.
2. **In Measurement & Automation Explorer (MAX):**
    - Select the product in MAX.
    - Change the dates in the External Calibration section and then press Save to clear the calibration date and calibration due date. You will be asked to confirm the calibration password for the changes to take effect.

Note: Cycle Power refers to 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.

Board Assembly

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

Part Number and Revision	**Description**
140185E-01L or later	**PXIe-4163**
140185E-02L or later	**PXIe-4162**

Volatile Memory						
Target Data	***Type***	***Size***	***Battery Backup***	***User[1] Accessible***	***System Accessible***	***Sanitization Procedure***
Device operation	FPGA	Xilinx XC7K160T	No	Yes	Yes	Cycle Power
Device operation	FPGA	Xilinx XC7A100T	No	Yes	Yes	Cycle Power
Device operation (x4)	FPGA	Intel 10M04SAU (x4)	No	Yes	Yes	Cycle Power

Non-Volatile Memory (incl. Media Storage)

Target Data	*Type*	*Size*	*Battery Backup*	*User Accessible*	*System Accessible*	*Sanitization Procedure*
Device configuration · Device information	Flash	8 MB	No	No	Yes	None
· Calibration metadata · Calibration data[2]				Yes No	Yes Yes	Procedure 2 None
ASIC configuration	Flash	512 kB	No	No	Yes	None
Power-up configuration (x4)	FPGA	Intel	No	No	Yes	None
		10M04SAU				
		(x4)				

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.

Notice: This document is subject to change without notice. For the most recent version, visit **ni.com/manuals**.

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" where "a" is the letter revision of the assembly (e.g. E, F, G…).
Procedure 2 – Device Configuration Flash (Calibration Metadata):
The user-accessible areas of the Device Configuration Flash are exposed in part through a calibration Applications Programming Interface (API) and in part through Measurement & Automation Explorer (MAX). To clear the calibration meta-data, complete all the following steps:

With the calibration API:

1. To clear the calibration password, use niDCPower Change Ext Cal Password.vi in the NI-DCPower Calibration palette in LabVIEW (or equivalent functions in C, C#, or other supported languages) to overwrite the current password of the device you wish to clear.
2. To clear the user-defined information, use niDCPower Set Cal User Defined Info.vi (or equivalent) to overwrite the current user-defined information of the device you wish to clear.

In MAX:

1. To clear the calibration date and calibration due date, select the product in MAX. Change the dates in the External Calibration section and then press Save. You will be asked to confirm the calibration password for the

changes to take effect.

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. The 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 about 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.

Contact

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- January 2018
- 377412A-01 Rev 001
- Letter of Volatility PXIe-4162/4163
- **Manufacturer:** National Instruments

Documents / Resources

	NATIONAL INSTRUMENTS PXIe-4162 Precision with SourceAdapt PXI Source Measure Unit [pdf] Instructions PXIe-4163, PXIe-4162, PXIe-4162 Precision with SourceAdapt PXI Source Measure Unit, Precision with SourceAdapt PXI Source Measure Unit, SourceAdapt PXI Source Measure Unit, PXI Source Measure Unit, Measure Unit

References

- Product Documentation - NI
- PXIe-4163 National Instruments PXI Source Measure Unit | Apex Waves