NATIONAL INSTRUMENTS PCI-6731 Analog Output Device Instruction Manual

Contents

NATIONAL INSTRUMENTS PCI-6731 Analog Output Device

Product Information

- **Product Name:** PCI-6731
- **Manufacturer:** National Instruments

Board Assembly Part Numbers:

- 187992A-01(L) or later – PCI-6733
- 187992A-02(L) or later – PCI-6731
- 187995A-01(L) or later – PXI-6733

Volatile Memory:

- **Type:** FPGA
- **Size:** Xilinx XC2S100
- **Battery Backup:** No
- **User1 Accessible:** No
- **System Accessible:** Yes
- **Sanitization Procedure:** Cycle Power

Non-Volatile Memory (incl. Media Storage):

- **Type:** EEPROM
- **Size:** 8 kB for Device configuration, 512 B for Calibration information, Calibration metadata, and Calibration data2
- **Battery Backup:** No
- **User Accessible:** No
- **System Accessible:** Yes
- **Sanitization Procedure:** None

Product Usage Instructions

Volatile Memory:

The volatile memory in the PCI-6731 is a type of FPGA memory with a size of Xilinx XC2S100. It does not have battery backup and is not user-accessible. However, it is system-accessible. To sanitize the volatile memory, you need to cycle power by completely removing power from the device and allowing for adequate discharge. This process requires a complete shutdown of the PC and/or chassis containing the device. A reboot is not sufficient for the completion of this process.

Non-Volatile Memory (incl. Media Storage)

The non-volatile memory in the PCI-6731 is an EEPROM with different sizes for different types of information. The device configuration is stored in 8 kB, while calibration information, calibration metadata, and calibration data2 are stored in 512 B. The non-volatile memory does not have battery backup and is not user-accessible. However, it is system-accessible. There is no specific sanitization procedure for the non-volatile memory. To clear the calibration metadata area of the non-volatile memory, follow these steps:

1. Use the NI DAQmx API to clear the user-accessible areas of the Calibration Information EEPROM. For instructions, visit **www.ni.com/info** and enter info code DAQmxLOV.

Please note that the information provided in this document is subject to change without notice. For the most recent version of the user manual, visit **ni.com/manuals**. If you have any further questions or need support, you can contact National Instruments at 866-275-6964 or send an email to **support@ni.com**.

Board Assembly

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

Part Number and Revision	Description
187992A-01(L) or later	**PCI-6733**
187992A-02(L) or later	**PCI-6731**
187995A-01(L) or later	**PXI-6733**

Volatile Memory

Target Data	*Type*	*Size*	*Battery Backup*	*User[1] Accessible*	*System Accessible*	*Sanitization Procedure*
Glue logic	FPGA	Xilinx XC2S100	No	No	Yes	Cycle Power

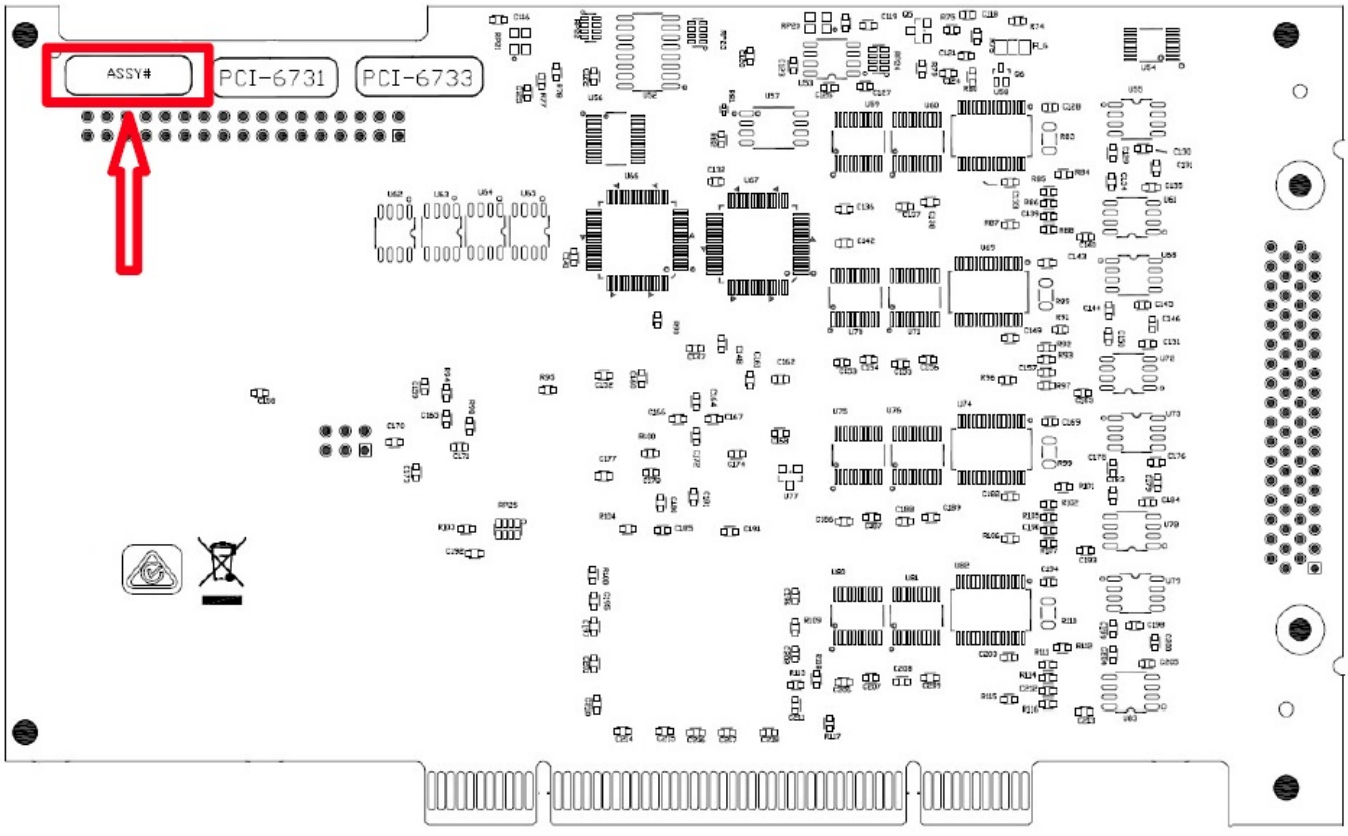
Non-Volatile Memory (incl. Media Storage)

Target Data	*Type*	*Size*	*Battery Backup*	*User Accessible*	*System Accessible*	*Sanitization Procedure*
Device configuration	EEPROM	8 kB	No	No	Yes	None
Calibration information · Calibration metadata	EEPROM	512 B	No	Yes	Yes	Procedure 2
· Calibration data[2]				No	Yes	None

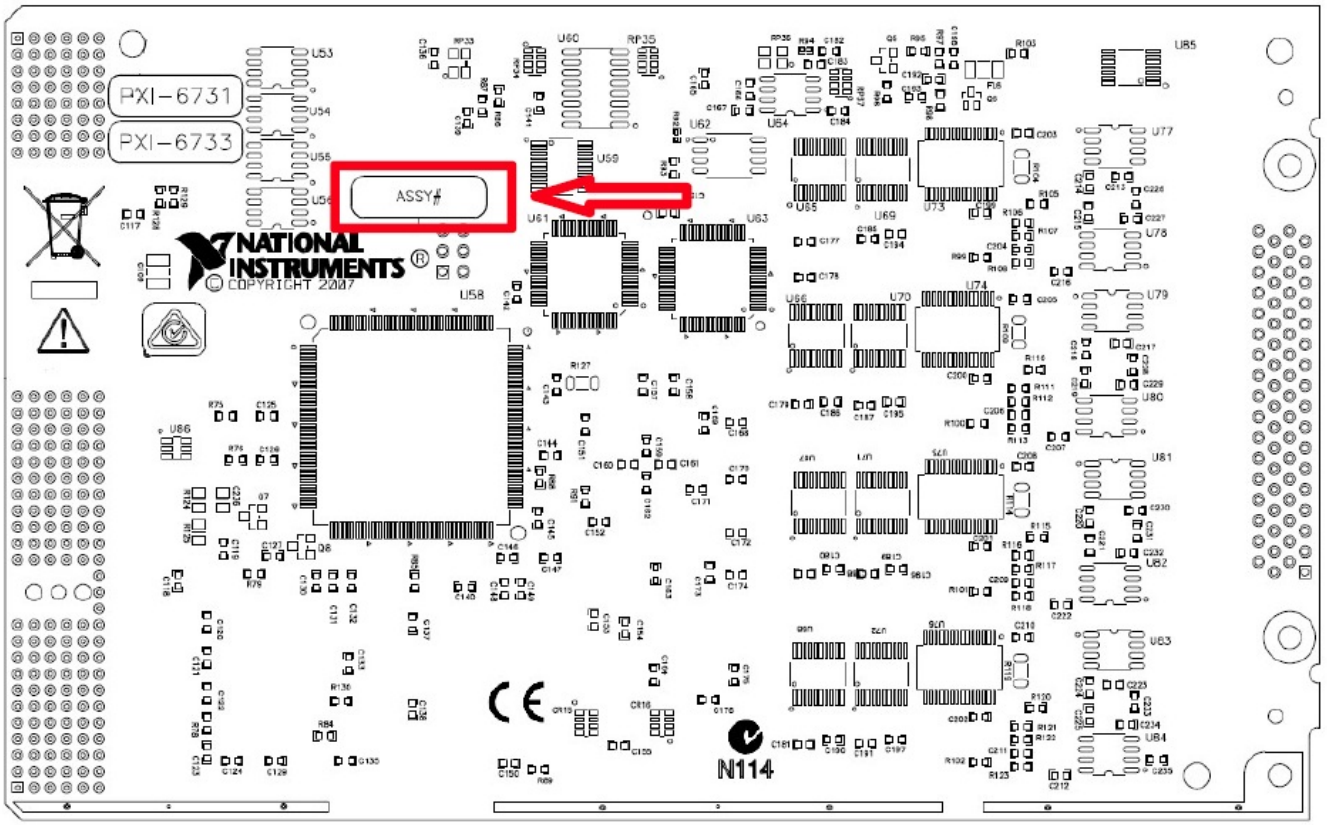
Procedures

Procedure 1 – Board Assembly Part Number identification:
To determine the Board Assembly Part Number and Revision, refer to the “P/N” label applied to the surface of your product as shown below. The Assembly Part Number should be formatted as “P/N: ######a-vvL” where “a” is the letter revision of the Board Assembly (eg. A, B, C…) and the “vv” is the type identifier. If the product is RoHS compliant, “L” can be found at the end of the part number.

PCI – Secondary Side



PXI – Secondary Side



Procedure 2 – Calibration Information EEPROM (Calibration Metadata):
The user-accessible areas of the Calibration Information EEPROM are exposed through a calibration Applications Programming Interface (API) in LabVIEW. To clear the calibration metadata area, complete the following steps:

1. The user-accessible areas of the Calibration Information EEPROM can be cleared using the NI DAQmxAPI. For instructions on how to clear these areas, go to www.ni.com/info and enter info code DAQmxLOV

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 the 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 written 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.

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

Contact

- 866-275-6964
- **support@ni.com**.
- December 2017
- 377447A-01 Rev 001
- Letter of Volatility NI 673x

Documents / Resources

	**NATIONAL INSTRUMENTS PCI-6731 Analog Output Device** [pdf] Instruction Manual PCI-6731, PCI-6733, PXI-6733, PCI-6731 Analog Output Device, Analog Output Device, Output Device, Device
	**NATIONAL INSTRUMENTS PCI-6731 Analog Output Device** [pdf] Instruction Manual PCI-6731, NI 6703, NI 6704, PCI-6731 Analog Output Device, Analog Output Device, Output Device, Device
	**NATIONAL INSTRUMENTS PCI-6731 Analog Output Device** [pdf] Installation Guide PCI-6731, PCI-6731 Analog Output Device, Analog Output Device, Output Device, Device
	**NATIONAL INSTRUMENTS PCI-6731 Analog Output Device** [pdf] User Guide PCI-6731, PCI-6731 Analog Output Device, Analog Output Device, Output Device, Device
	**NATIONAL INSTRUMENTS PCI-6731 Analog Output Device** [pdf] User Guide PCI-6731, PCI-6731 Analog Output Device, Analog Output Device, Output Device, Device

References

- **Engineer Ambitiously - NI**
- **Engineer Ambitiously - NI**
- **Calibration Services - NI**
- **Contact Us - NI**
- **Software and Driver Downloads - NI**
- **Example Programs - NI Community**
- **NI Learning Center - NI**
- **Using Info Codes - NI**
- **Search Results - NI**
- **Legal Information - NI**
- **Trade Compliance - NI**
- **Product Documentation - NI**
- **Contact Us - NI**
- **National Instruments Patents - NI**

- Shop - NI
- Log In - National Instruments
- Shop - NI
- NI Services - NI
- Support - NI
- Support - NI
- NI-DAQ™mx Download - NI
- Shop - NI
- NI Trademarks and Logo Guidelines - NI
- Education Services - NI
- Support - NI
- Example Programs - NI Community
- NI Learning Center - NI
- Using Info Codes - NI
- Search Results - NI
- Product Documentation - NI
- Contact Us - NI
- Shop - NI
- Log In - National Instruments
- NI Services - NI
- Support - NI