

**Manufacturer:** National Instruments

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

Part Number and Revision	Description
199129A-02L or later	NI 9159

### Volatile Memory

<i>Target Data</i>	<i>Type</i>	<i>Size</i>	<i>Battery Backup</i>	<i>User<sup>1</sup> Accessible</i>	<i>System Accessible</i>	<i>Sanitization Procedure</i>
FPGA Block RAM	RAM	4608 kb	No	Yes	Yes	Cycle Power
CPLD Distributed RAM	RAM	6 kb	No	No	No	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>
EEPROM	EEPROM	16 kB	No	No	No	None
EEPROM	EEPROM	8 kB	No	No	No	None
CPLD	CPLD	320 MacroCells	No	No	No	None
FPGA Storage	Flash	32 Mb	No			
• FPGA Firmware				No	Yes	None
• User FPGA Bitstream				Yes	Yes	Procedure 2

<sup>1</sup> Refer to *Terms and Definitions* section for clarification of *User* and *System Accessible*

## Procedures

### **Procedure 1 – Board Assembly Part Number identification:**

To determine the Board Assembly Part Number and Revision, check the top left corner of the white label on the bottom of the module (199129a-02L, where ‘a’ is a capital letter indicating the revision).

### **Procedure 2 – Primary Storage Flash (FPGA Startup):**

The User FPGA Bitstream in the FPGA Storage Flash can be cleared using NI-RIO Device Setup. To clear the bitstream from the flash, perform the following steps:

1. Add the cRIO target to your LabVIEW project by right-clicking on the project and selecting New » Targets and Devices and selecting your cRIO.
2. Right-click on the FPGA project item and select RIO Device Setup.
3. In the *Advanced* section, select *Erase Bitfile on Flash*.

## 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.