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**USB-7856**

**Manufacturer:** National Instruments

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

| Part Number and Revision | Description   |
|--------------------------|---------------|
| 154803B-01L or later     | USB 7855R     |
| 154803B-02L or later     | USB 7856R     |
| 154803B-03L or later     | USB 7845R     |
| 154803B-04L or later     | USB 7846R     |
| 154803B-11L or later     | USB 7855R OEM |
| 154803B-12L or later     | USB 7856R OEM |
| 154803B-13L or later     | USB 7845R OEM |
| 154803B-14L or later     | USB 7846R OEM |

## Volatile Memory

| Target Data                      | Type           | Size   | Battery Backup | User <sup>1</sup> Accessible | System Accessible | Sanitization Procedure |
|----------------------------------|----------------|--|----------------|------------------------------|-------------------|------------------------|
| Data storage during VI Execution | FPGA Block RAM | 4860Kb (-03, -13)<br>4860Kb (-01, -11)<br>11700Kb (-04, -14)<br>11700Kb (-02, -12)   | No             | Yes                          | Yes               | Cycle Power            |
| FPGA firmware                    | FPGA           | 41000 LUTs (-03, -13)<br>41000 LUTs (-01, -11)<br>101400 LUTs (-04, -14)<br>101400 LUTs (-02, -12)<br>240 DSP (-03, -13)<br>240 DSP (-01, -11)<br>600 DSP (-04, -14)<br>600 DSP (-02, -12) | 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            | Flash | 128 Mb | No             |                 |                   |                        |
| • Device information            |       |        |                | No              | Yes               | None                   |
| • FPGA bitstream                |       |        |                | Yes             | Yes               | Procedure 2            |
| • Calibration metadata          |       |        |                | Yes             | Yes               | Procedure 3            |
| • Calibration data <sup>2</sup> |       |        |                | No              | Yes               | None                   |

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

<sup>2</sup> 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 - Device Configuration Flash (FPGA bitstream):**

You can use the NI-RIO Device Setup utility to erase the FPGA bitstream data. For more details, visit [ni.com/info](http://ni.com/info) and enter the infocode `fpgaflashclr`.

### **Procedure 3 - Device Configuration Flash (Calibration Metadata):**

The user-accessible areas of the Device Configuration Flash are exposed through a calibration Applications Programming Interface (API) in LabVIEW. For more details, visit [ni.com/info](http://ni.com/info) and enter the infocode `rseriescalclr`.

## 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.

### **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.