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**Manufacturer:** National Instruments

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

| Part Number and Revision | Description |
|---|---|
| **198755x-01L** | **USB-4431** |
| **198755x-02L** | **USB-4432** |

## Volatile Memory

| *Target Data* | *Type* | *Size* | *Battery Backup* | *User[1] Accessible* | *System Accessible* | *Sanitization Procedure* |
|---|---|---|---|---|---|---|
| Waveform Buffer | FPGA | Xilinx XC3S200-4FTG256I | No | Yes | Yes | Cycle Power |
| USB Controller program code | On Chip | 16 kB | 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 | 4 kb | No | | | |
| • Device information | | | | No | Yes | None |
| • Calibration metadata | | | | Yes | Yes | Procedure 2 |
| • Calibration data[2] | | | | No | Yes | None |
| FPGA Configuration | EEPROM | 8 kB | No | No | No | 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:**
Refer to the label applied to the surface of your product. The Assembly Part Number should be formatted as "P/N: 198755x-01L (USB-4431) and 198755x-02L (USB-4432).

**Procedure 2 - Device Configuration EEPROM (Calibration Metadata):**
The only section of the EEPROM modifiable by users is the calibration metadata area. To clear this area, do one of the following:

- Overwrite the existing User-Defined Information TWICE IN A ROW with non-sensitive information using the User-Defined Information property in the NI-DAQmx Calibration API.
- Overwrite the existing Calibration Password TWICE IN A ROW with a non-sensitive password using the DAQmx Change External Calibration Password function in the NI-DAQmx Calibration API.

## 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.