



Manufacturer: NI

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

| Part Number and Revision | Description |
|--------------------------|--|
| 146767A-02L or later | PXIE-6593, FLEXRIO HIGH-SPEED SERIAL MODULE, KU040 |
| 146767A-05L or later | PXIE-6593, FLEXRIO HIGH-SPEED SERIAL MODULE, KU060 |

Volatile and Non-Volatile Memory of Component Models

This device is composed of independent hardware models. Refer to the Letter of Volatility for each individual model listed below by going to ni.com/info and typing in the appropriate Info Code.

Volatile Memory

| <i>Target Data</i> | <i>Type</i> | <i>Size</i> | <i>Battery Backup</i> | <i>User¹ Accessible</i> | <i>System Accessible</i> | <i>Sanitization Procedure</i> |
|---------------------------|--------------------|----------------------|-----------------------|------------------------------------|--------------------------|-------------------------------|
| Waveform storage – Bank1 | DRAM | 4 GB | No | Yes | Yes | Cycle Power |
| User FPGA Bitfile Storage | SDRAM | 256 MB | No | Yes | Yes | Cycle Power |
| Custom Program | UltraScale FPGA | KU040 or KU060 | No | Yes | Yes | Cycle Power |

Non-Volatile Memory (*incl. Media Storage*)

| <i>Target Data</i> | | | | | | |
|--------------------------------|--------|--------|----|-----|-----|-------------|
| Adapter Module Configuration | EEPROM | 32KB | No | No | Yes | None |
| FPGA Configuration Logic | CPLD | 10M04 | No | No | Yes | None |
| I/O Module Configuration Logic | CPLD | 5M570Z | No | No | Yes | None |
| Calibration Constants | Flash | 512Mb | No | Yes | Yes | Procedure 2 |

¹ 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, refer to the label applied to the surface of your product. The Assembly Part Number should be formatted as "P/N:146767a-xxL where a is the letter revision of the assembly (e.g. A, B, C...) and x is the dash number (e.g. -02, -05).

Procedure 2 - Device Configuration Flash (Calibration Metadata):

Requirements: LabVIEW version 2019 or later, FlexRIO with Integrated IO, version 19.6 or later that supports this model

The Calibration Constants Flash can be cleared by using the FlexRIO API to overwrite the memory space with arbitrary values. To clear the flash storage with this method, complete the following steps:

1. Find and open the example LabVIEW Project “Read-Write Calibration Data” at “C:\Program Files (x86)\National Instruments\<LabVIEW>\examples\FlexRIO\System Calibration\” (replace <LabVIEW> with version of LabVIEW running on system).
 - a. Alternatively, create a new VI and drop the “Write Calibration Data” VI from the FlexRIO API palette.
2. Select your FlexRIO device from **FPGA Resource** dropdown and set **Calibration Operation** to **Write**.
3. Run VI with **Calibration Data** set to 0, or other arbitrary value, to clear values in flash memory.
4. Repeat Step 3 for entire memory space to clear entire flash memory. Set the **Read** option for the **Calibration Operation** to verify data has been cleared or to check sections of memory for other unintended values.



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.