

**Manufacturer:** National Instruments

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

Part Number and Revision	Description
152751A-01 or CCN: 12701 or later	PXI-1410
152752A-01 or CCN: 12801 or later	PXI-1420
152753A-01 or CCN: 14501 or later	PXI-1430B
152754A-01 or CCN: 13001 or later	PXI-1440
152755A-01 or CCN: 14401 or later	PXI-1450B

**Volatile Memory**

<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>
Device Operation	FPGA	Actel A3P250	No	Yes	Yes	Cycle Power

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

<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>
Device configuration	EEPROM	2 KB	No	No	Yes	None
Calibration Data <sup>2</sup>	Flash	64 MB	No	Yes	Yes	Procedure 2
FPGA	Flash	128 B	No	No	Yes	None

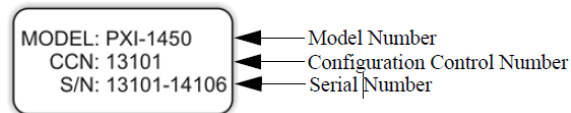
<sup>1</sup> Refer to *Terms and Definitions* section for clarification of *User* and *System Accessible*

<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 or Configuration Control Number identification:

Each PXI module is identified by three sets of numbers: the model number (PXI-1450 is shown in this example), a configuration-control number (CCN), and a serial number (S/N). These numbers are located on a label affixed to the frame on the side of the PXI module (some units may have separate CCN and serial-number labels); an example is shown below.



### Procedure 2 – Calibration Data:

 **Caution:** This sanitization procedure renders the module inoperable. The driver will report a fatal error if any configuration is attempted with a sanitized Flash. If you want to use a module again after erasing the Calibration Flash, contact National Instruments for information about costs and procedures to return the module to the factory for repair.

LabVIEW 8.6, or other versions supporting PM Libraries (available from [www.phasematrix.net](http://www.phasematrix.net)), must be used to execute the following procedures. The necessary library is located at <LabVIEW\_DIR>\instr.lib\PM14X0. Examples for the procedure, are shown in the figures in this document.

1. Open a new LabVIEW VI
2. Add PM14x0Initialize VI to open a driver session where “x” in 14x0 is from the product name (e.g. 1410); this naming convention applies throughout the rest of this procedure for VI naming.
  - a. Provide the resource name from Measurement and Automation Explorer (NI MAX)
3. Add PM14x0 Cal Store Misc Data to Memory VI
  - a. Create a constant at the “String Length” port and enter a value of ‘2048’.
  - b. Create an empty constant at the “Misc Data” port.
4. Inside a “For loop”, Add PM14x0 Cal Store Cal Data to Memory VI.
  - a. Connect the “Visa Resource Out” port from PM14x0 Cal Store Misc Data to Memory VI to the “Visa Resource In” and add a shift register on the For Loop.
  - b. Connect the “Error Out” from the PM14x0 Cal Store Misc Data to Memory VI to “Error In” and add a shift register on the For Loop.
  - c. Create a constant at the “Correction Type” port and add to a new array constant. Set the array constant to contain all possible values in the array; note that these values will be different based on the module type. Connect the array constant to the For Loop and wire to the “Correction Type” port.
  - d. Create a constant at the “String Length” port and enter a value of ‘0’.
  - e. Create a constant at the “Calibration Data” port and leave it empty.
5. Add PM14x0 Close VI
  - a. Connect the Connect the “Visa Resource Out” port from the for loop to the “Visa Resource In”
  - b. Connect the “Error Out” from the for loop to “Error In”.
  - c. Create a “Error Out” indicator.
6. Examples for other products in the series below.

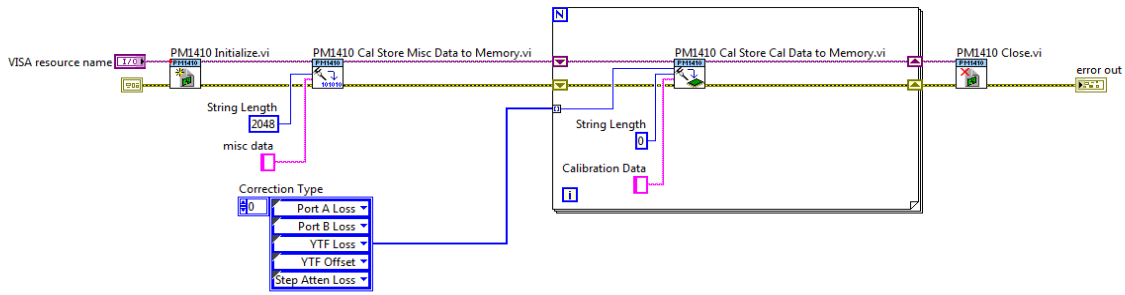


Figure 1: LabVIEW Block Diagram for Clearing the Flash Contents (PXI-1410 shown)

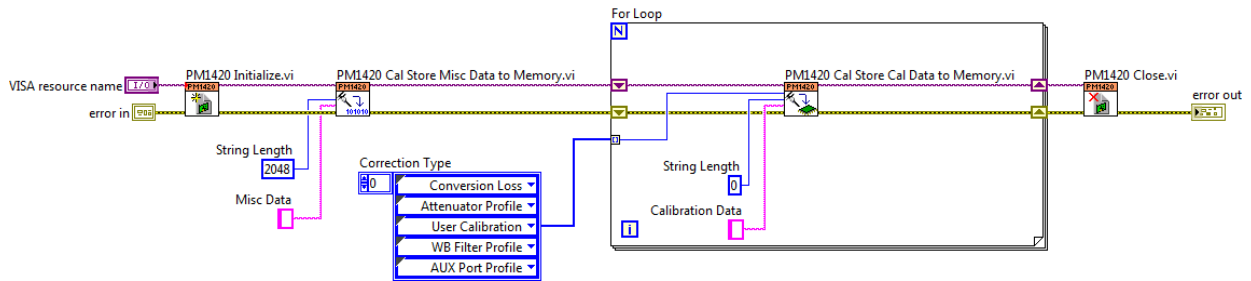


Figure 2: LabVIEW Block Diagram for Clearing the flash contents (PMI - 1420)

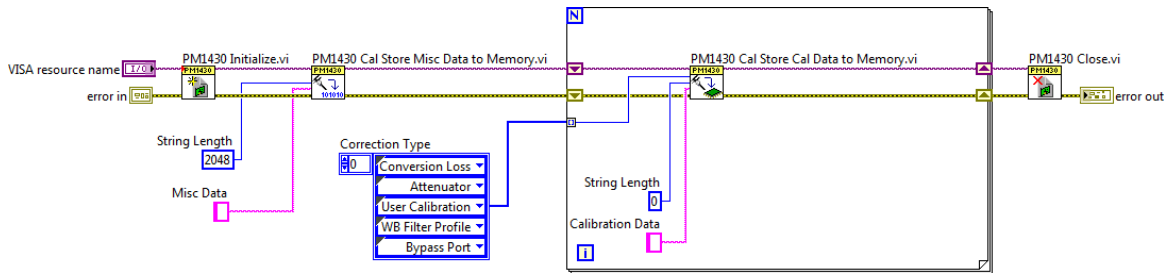


Figure 3: LabVIEW Block Diagram for Clearing the flash contents (PMI - 1430)

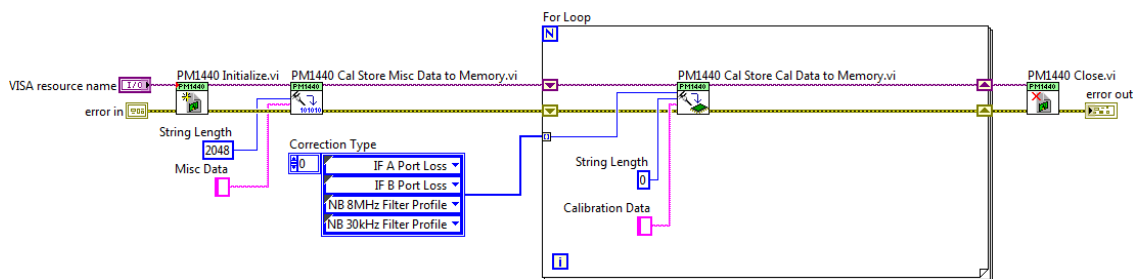


Figure 4: LabVIEW Block Diagram for Clearing the flash contents (PMI - 1440)

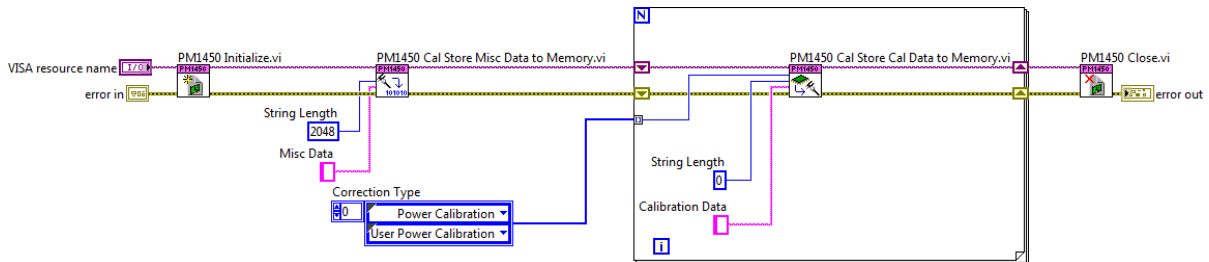


Figure 5: LabVIEW Block Diagram for Clearing the flash contents (PMI - 1450)

**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.