



Manufacturer: NI

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

Part Number and Revision	Description
136354A-01L or later	PXIe-5633
136354A-08L or later	PXIe-5633 VNA add-on for VST, 8 GHz
136354A-12L or later	PXIe-5633 VNA add-on for VST, 12 GHz
136354A-18L or later	PXIe-5633 VNA add-on for VST, 18 GHz
136354A-26L or later	PXIe-5633 VNA add-on for VST, 26 GHz

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>
FPGA Image Memory	DRAM	128 MB	No	Yes	Yes	Cycle Power
Device Operation	FPGA	Xilinx XCKU025	No	Yes	Yes	Cycle Power
<ul style="list-style-type: none"> Raw data buffer 		64 KB		No	Yes	Cycle Power
<ul style="list-style-type: none"> Measurement FIFO 		8 KB		No	Yes	Cycle Power
Device Operation	FPGA	Intel 10M16DCU324I7G	No	No	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 Accessible</i>	<i>System Accessible</i>	<i>Sanitization Procedure</i>
Device configuration	Flash	256 MB	No			
<ul style="list-style-type: none"> Device information 				No	Yes	None
<ul style="list-style-type: none"> FPGA bitstream 				No	Yes	None
Calibration Storage	Flash	4 GB	No			
<ul style="list-style-type: none"> Calibration metadata 				Yes	Yes	Procedure 2
<ul style="list-style-type: none"> Calibration data² 				No	Yes	None
Device Settings	EEPROM	32 KB	No	No	Yes	None
Power Up Configuration	FPGA	Intel 10M16DCU324I7G	No	No	Yes	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:

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 one of the following:

- “P/N: 136354#-01L”
- “P/N: 136354#-08L”
- “P/N: 136354#-12L”
- “P/N: 136354#-18L”
- “P/N: 136354#-26L”

where “#” is the letter revision of the assembly (e.g. A, B, C...).

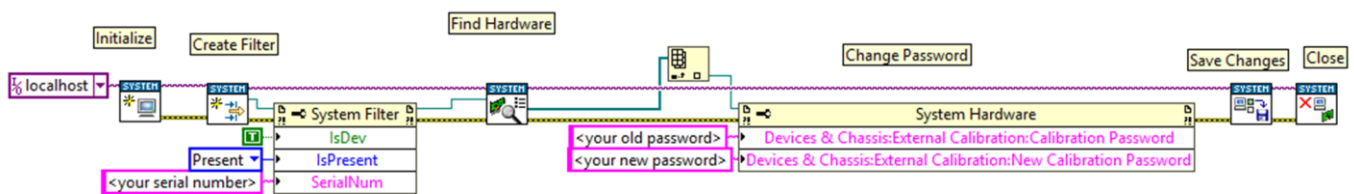
Procedure 2 - Calibration Storage Flash (Calibration Metadata):

Requirements: LabVIEW version 2020 or later

The user-accessible portion of the Calibration Storage Flash is limited to a programmable calibration password, which can be programmed through the system configuration API in the LabVIEW application. To clear the calibration password, complete the following steps in an empty LabVIEW VI and then run the VI:

1. Open a syscfg session to localhost.
2. Create a filter to locate your 5633 device. Suggestion is to include “Is Device”, “Is Present”, and the serial number of the device you want to clear the password on.
3. Pass the filter into find hardware and select the first result.
4. To clear/reset the calibration password, use a Hardware Property Node which includes the following:
 - a. Input the current password as a string into the “Devices & Chassis:External Calibration:Calibration Password” property node.
 - b. Input an empty string (blank password) into the “Devices & Chassis:External Calibration:New Calibration Password” property node.
5. Save the changes and close the syscfg session.

Refer to the block diagram below on how to overwrite the existing Calibration Password.





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.