COMPREHENSIVE SERVICES

We offer competitive repair and calibration services, as well as easily accessible documentation and free downloadable resources.

SELL YOUR SURPLUS

We buy new, used, decommissioned, and surplus parts from every NI series. We work out the best solution to suit your individual needs.

Sell For Cash Get Credit Receive a Trade-In Deal

OBSOLETE NI HARDWARE IN STOCK & READY TO SHIP

We stock **New, New Surplus, Refurbished,** and **Reconditioned** NI Hardware.

APEX WAVES

Bridging the gap *between the manufacturer and your legacy test system.*

1-800-915-6216

www.apexwaves.com

sales@apexwaves.com

Request a Quote CLICK HERE *NI-9220*

Manufacturer: National Instruments

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

Part Number and Revision	Description
153287B-0#L or later	**NI 9220, 16-Channel SSH Analog Input, Weidmuller**
143613A-0#L or later	**NI 9220 Spring Terminal, 16-Channel SSH Analog Input**
153289B-0#L or later	**NI 9220, 16-Channel SSH Analog Input, 37-PIN DSUB**

Volatile Memory

Target Data	*Type*	*Size*	*Battery Backup*	*User[1] Accessible*	*System Accessible*	*Sanitization Procedure*
Module configuration	CPLD RAM	16 bits	No	No	Yes	Cycle Power
Measurement data	CPLD RAM	256 bits	No	Yes	Yes	Cycle Power
Calibration data	CPLD RAM	64 bits	No	No	Yes	Cycle Power
ADC data	ADC RAM	16x 16 bits	No	No	No	Cycle Power

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

Target Data	*Type*	*Size*	*Battery Backup*	*User Accessible*	*System Accessible*	*Sanitization Procedure*
Device Configuration	EEPROM	1 KB	No			
• Calibration metadata				Yes	Yes	Procedure 2
• Calibration data[2]				No	Yes	None
• Device information				No	Yes	None
Module Operation	CPLD 1	128 Macrocells	No	No	No	None
Module Operation	CPLD 2	570 Macrocells	No	No	No	None
Isolation Common Mode compensation	Digital Potentiometer	1 byte	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:
To determine the Board Assembly Part Number and Revision, look for the white label at the bottom of the module. The Assembly Part Number should be formatted as "######<Rev Letter>-##L" (where '#' are numbers).

Procedure 2 - Device Configuration EEPROM (Calibration Metadata):
The user-accessible areas of the Device Configuration EEPROM are exposed through a calibration Applications Programming Interface (API) in LabVIEW. Follow the instructions in KB 4GHLANQE for changing the calibration password and clearing the user-defined information.

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.