



mA-1302/mA-1305
AXle Chassis
Operation Manual



mA-1302/mA-1305

AXIe Chassis

Operation Manual

Rev. D0



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About this Manual

This prefix explains how to use this manual. Topics discussed include the following:

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- Intended Audience ii
- Related Information ii
- Terminology ii
- Contact Information iii
- Safety and Compliance Information iv
- Safety Hazards v
- Connecting to Power Supply viii
- Equipment Usage ix
- Case/Cover Removal ix
- Electrostatic Discharge (ESD) x
- Ventilation Requirements x
- Electromagnetic Interference (EMI) xi

Purpose and Scope

This document describes how to setup and operate the mA-1302/mA-1305 AXIe Chassis.

Except as noted, information in this document pertains to all models found in the Configurable Modular Platform (CMP) AXIe Chassis family of products.

Intended Audience

This manual is intended for personnel who are familiar with AXIe systems and associated equipment and terminology.

Related Information

This document and other Configurable Modular Platform (CMP) publications can be found on the VIAVI website at <https://www.viavisolutions.com/en-us/products/modular-axie>.

The following publication is referenced in this document:

- mA-1302/mA-1305 AXIe Chassis Operation Manual, #141171

Terminology

The terms Chassis, AXIe Chassis and device are terms used in this document to refer to all Chassis models found in the CMP AXIe Chassis family of products.

When information pertains to a specific model, an AXIe Chassis will be referred to by the model number (i.e, mA-1302, mA-1305).

Contact Information

Contact Customer Service for technical support or with any questions regarding this or any other VIAVI products.

VIAVI

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Safety and Compliance Information

Symbols and Markings

The following symbols and markings are used throughout documentation and on the Chassis.

Table 1 Symbol Conventions









| | |
|---|--|
|  | This symbol indicates a note that includes important supplemental information or tips related to the main text. |
|  | This symbol represents a general hazard. It may be associated with either a DANGER, WARNING, CAUTION or ALERT message. Refer to accompanying information and/or documentation. |
|  | This symbol indicates a toxic hazard. Item should only be handled by Qualified Service Personnel. Dispose of item in accordance with local regulations. |
|  | This symbol indicates an item is sensitive to Electrostatic Discharge (ESD). An item identified as ESD sensitive should only be handled by Qualified Service Personnel. |
|  | This symbol indicates the item meets the requirements of the applicable European Directives. |
|  | This symbol indicates a terminal may supply or be supplied with AC Voltage. |
|  | This symbol indicates Chassis Ground. |
|  | This symbol indicates a fuse location (AC or DC). |

Table 2 Safety Definitions

| Term | Definition |
|----------------------|--|
| CAUTION | Identifies conditions or activities that, if ignored, can result in equipment or property damage, e.g., Fire. |
| Mise en Garde | Identifiez les conditions ou les activités qui, si ignorées, peuvent entraîner des dommages à l'équipement ou aux biens, p. ex. un incendie. |
| WARNING | Identifies conditions or activities that, if ignored, can result in personal injury or death. |
| Avertissement | Identifiez les conditions ou les activités qui, si ignorées, peuvent entraîner des blessures personnelles voire mortelles. |

Safety Hazards

Toxic Hazards

**WARNING**

Some of the components used in this device may include resins and other materials which give off toxic fumes if incinerated. Dispose of such items appropriately.

Avertissement

Certains des composants utilisés dans cet appareil peuvent comprendre des résines et d'autres matériaux qui produisent des émanations toxiques lorsqu'ils sont incinérés. Éliminez adéquatement de tels éléments.

Beryllia



Beryllia (beryllium oxide) is used in the construction of some of the components in this equipment.

This material, when in the form of fine dust or vapor and inhaled into the lungs, can cause a respiratory disease. In its solid form, as used here, it can be handled safely, however, avoid handling conditions which promote dust formation by surface abrasion.

Use care when removing and disposing of these components. Do not put them in the general industrial or domestic waste or dispatch them by post. They should be separately and securely packed and clearly identified to show the nature of the hazard and then disposed of in a safe manner by an authorized toxic waste contractor.

Beryllium Copper

**CAUTION**

Some mechanical components within this instrument are manufactured from beryllium copper. Beryllium copper represents no risk in normal use. The material should not be machined, welded or subjected to any process where heat is involved.

Beryllium copper must NOT be disposed of by incineration. Beryllium copper must be disposed of as "special waste" per local regulations.

Lithium



A Lithium battery is used in this equipment. Lithium is a toxic substance so the battery should in no circumstances be crushed, incinerated or disposed of in normal waste. Do not attempt to recharge this type of battery. Do not short circuit or force discharge since this might cause the battery to vent, overheat or explode.



CAUTION

This device contains a Lithium Battery and may require special packaging and external labeling when shipping. Contact Customer Service for packaging and labeling instructions.

Mise en Garde

Cet appareil contient une batterie au lithium et peut nécessiter un conditionnement spécial et un étiquetage externe lors de l'expédition. Communiquez avec le service à la clientèle pour les instructions d'emballage et d'étiquetage.

Electrical Hazards

Fuse Ratings



CAUTION

Only use fuses specifically recommended for the device. Refer to product Safety and Compliance Specifications or the product data sheet for recommended fuse current and voltage ratings.

Mise en Garde

Utilisez uniquement les fusibles recommandés pour l'appareil. Consultez les spécifications de sécurité et de conformité du produit ou la fiche technique du produit pour les caractéristiques de courant et de tension de fusible recommandées.

Grounding the Chassis

The Chassis is provided with a protective grounding lead that conforms with IEC Safety Class I. The supply lead must always be connected to the power supply via a grounded contact in order to maintain the grounding protection. The Chassis must be properly grounded to prevent damage to the device from electrostatic discharge (ESD).



WARNING

Improper grounding of equipment can result in electrical shock. To ensure proper grounding, this device should only be connected to a grounded AC Power Supply.

Avertissement

La mise à la terre inadéquate de l'équipement peut entraîner un choc électrique. Pour s'assurer d'une mise à la terre adéquate, cet appareil doit seulement être branché à une alimentation électrique CA mise à la terre.

Residual Current



WARNING

The supply filter contains capacitors that may remain charged after the device is disconnected from the power supply. The residual energy is within the approved safety requirements, however, a slight shock may be felt if the plug pins are touched immediately after removal.

Avertissement

Le filtre d'alimentation contient des condensateurs qui peuvent rester chargés une fois l'appareil débranché de l'alimentation électrique. L'énergie résiduelle est dans les limites des exigences de sécurité approuvées. Par contre, un léger choc électrique peut être ressenti si l'on touche les broches de la prise immédiatement après son débranchement.

Input Overload



CAUTION

Do not overload input connectors. Refer to product Safety and Compliance Specifications or the product data sheet for maximum input ratings.

Mise en Garde

Identifiez les conditions ou les activités qui, si ignorées, peuvent entraîner des dommages à l'équipement ou aux biens, p. ex. un incendie.

Connecting to Power Supply

Connect all peripheral equipment (i.e., External Host Controller) before connecting the Chassis to an AC power supply.

Grounded AC Power Supply

The Chassis should only be connected to a grounded AC Power Supply using the AC Power Cord included with the Chassis, or an appropriate replacement.

Class II, Ungrounded 2-Terminal Socket

To connect the Chassis to a Class II (ungrounded) 2-terminal socket outlet, fit the power cord with either a 3-pin Class I plug used in conjunction with an adapter incorporating a ground wire, or fit the power cord with a Class II plug containing an integral ground wire. The ground wire must be securely fastened to ground; grounding one terminal on a 2-terminal socket does not provide adequate protection.

**NOTE**

For use in Switzerland, Type 12 Plug should be used to connect the Chassis to a grounded power supply.

Power Cord Requirements

Use the AC Power Cord included with the Chassis to connect the Chassis to a grounded AC power supply. If the AC Power Cord that was shipped with the Chassis is not available, a replacement AC power cord that meets local regulations and power requirements may be used. Check with local standards and regulations to ensure the power cord being used meets all local safety regulations.

Power cords must be in good operating condition. Power cords must not be frayed or broken, nor expose bare wiring. Using a damaged power cord may expose the operator to hazardous voltage levels.

Equipment Usage

This product is designed and tested to comply with the requirements of IEC/EN 61010-1, 3rd Edition Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use' for Class I portable equipment and is for use in a pollution degree 2 environment.



WARNING

Operating this device in a manner not specified in accompanying documentation may impair the safety protection built into the device.

Avertissement

Utiliser cet appareil de manière non spécifiée dans la documentation d'accompagnement peut nuire au dispositif de protection de sécurité intégré dans l'appareil.

Case/Cover Removal



CAUTION

Do not operate this device with the case/cover open. Opening the case/cover exposes the operator to electrical hazards which can result in electrical shock or damage to the device.

Mise en Garde

N'utilisez pas cet appareil avec le boîtier/couvercle ouvert. L'ouverture du boîtier/couvercle expose l'utilisateur à des risques électriques qui peuvent entraîner un choc électrique ou des dommages à l'appareil.



CAUTION

This device does not contain user serviceable parts. Servicing should only be performed by Qualified Service Personnel.

Mise en Garde

Cet appareil ne contient pas de pièces pouvant être entretenues par l'utilisateur. L'entretien doit seulement être effectué par du personnel de service qualifié.

Electrostatic Discharge (ESD)



CAUTION

This device is ESD sensitive and should only be installed, removed and/or serviced by Qualified Service Personnel.

Mise en Garde

Cet appareil est sensible aux DES et ils doivent seulement être installés, enlevés ou entretenus par du personnel de service qualifié.

Ventilation Requirements

The Chassis is cooled by the unit's internal fans which pull air across the modules from right to left. Failure to provide proper ventilation may result in damage to the Chassis and any modules installed in the Chassis. Observe the following precautions when operating the Chassis:



CAUTION

Do not operate the Chassis with empty slots. Install Filler modules in empty slots to ensure proper airflow through the Chassis.

Do not obstruct air flow to the air vents.

Do not place the Chassis on or close to other heat-generating equipment.

Mise en Garde

N'utilisez pas le châssis avec des fentes vides. Installez des modules de remplissage dans les fentes vides afin d'assurer un écoulement d'air adéquat dans le châssis.

N'obstruez pas l'écoulement d'air vers les événements.

Ne placez pas le châssis sur ou près de tout autre équipement générant de la chaleur.

Electromagnetic Interference (EMI)

This product complies with Part 15 of the FCC Rules for a Class A device. Operation is subject to the following two conditions: (1) this product may not cause harmful interferences, and (2) this product must accept any interferences received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Use properly shielded and grounded cables and connectors in order to meet FCC emission limits.



CAUTION

Signal generators can be a source of Electromagnetic Interference (EMI) to communication receivers. Some transmitted signals can cause disruption and interference to communication services out to a distance of several miles. Users of this equipment should scrutinize any operation that results in radiation of a signal (directly or indirectly) and should take necessary precautions to avoid potential communication interference problems.

Mise en Garde

Les générateurs de signaux peuvent constituer une source d'interférences électromagnétiques (IME) pour les récepteurs radio. Certains signaux émis peuvent provoquer des interférences et des interruptions des communications sur une distance de plusieurs kilomètres. Les utilisateurs de cet équipement doivent examiner soigneusement tout fonctionnement provoquant le rayonnement d'un signal (direct ou indirect) et ils doivent prendre les dispositions nécessaires afin d'éviter des problèmes potentiels d'interférences sur les communications.

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mA-1302/mA-1305 Overview

This chapter provides a general description of the mA-1302/mA-1305. Topics discussed in this chapter include the following:

- About the mA-1302/mA-1305 1-2
- Principles of Operation..... 1-3
 - System Module 1-3
 - Power Entry Module (PEM)..... 1-3
 - Rear Transition Module (RTM) 1-3
 - Chassis Backplane 1-4

About the mA-1302/mA-1305

The mA-1302 and mA-1305 AXIe Chassis are flexible development platforms that comply to AXIe 1.0, Base Architecture Specification, Revision 3.0. The mA-1302 and mA-1305 can be used to create a wide range of test and development environments.

Figure 1-1 mA-1302 AXIe Chassis

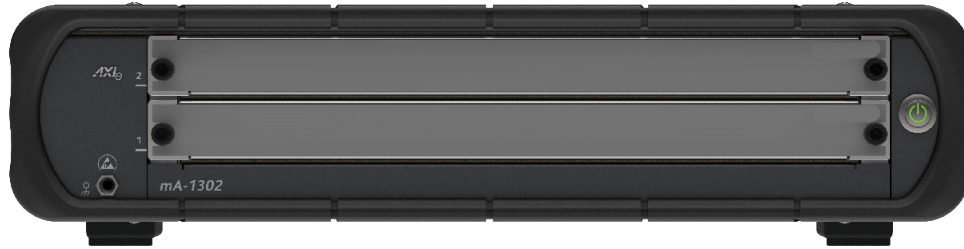


Figure 1-2 mA-1305 AXIe Chassis



Principles of Operation

Refer to [Figure 1-3, mA-1302/mA-1305 AXIe Chassis Interconnect Diagram on page 1-5](#) when reviewing content in this section.

The mA-1302 and mA-1305 AXIe Chassis are flexible development platforms that comply to AXIe 1.0, Base Architecture Specification, Revision 3.0. The mA-1302 contains two interchangeable instrument slots that accept AXIe modules; the mA-1305 contains five interchangeable instrument slots.

The mA-1302/mA-1305 AXIe Chassis are comprised of several modules with specific Chassis functionality as described in the following sections.

System Module

The Chassis System Module contains a System-on-Chip (SOC) that contains the Intelligent Platform Management Interface (IPMI) Shelf Management Controller (ShMC) which monitors and controls Chassis' functions. The System Module provides the PCIe and Ethernet switch fabric interface necessary for instrument slot communication and external user connectivity. The System Module also provides Slot Timing and Chassis configuration and shelf management functions via the Web Browser User Interface (Web UI).

Power Entry Module (PEM)

The PEM contains a programmable micro controller that manages the Chassis main power supply and fan trays. The PEM monitors for ON/OFF, Wake-on-LAN and Wake-on-PCIe power requests and is responsible for communicating power sequencing messages to the Chassis Shelf Management Controller (ShMC). The PEM runs on standby power and receives power continuously when the Chassis is connected to an AC Power Supply.

Rear Transition Module (RTM)

The RTM contains the Chassis Input/Output (I/O) connectors and reference clock. The I/O Connector interfaces include Gigabit Ethernet (GbE), external PCIe, USB 3.0, WiFi, and GPS antenna connections, programmable-threshold trigger I/O, and reference clock I/O. The Chassis reference clock provides standard timing accuracy and can also be disciplined by Global Navigation Satellite System (GNSS), IEEE-1588v2, Synchronous Ethernet recovered clock, or external 10 MHz/100 MHz input.

Chassis Backplane

The Chassis Backplane is largely a passive interconnect that provides power, timing, trigger and local bus inter-connectivity for Chassis and shelf modules. The Chassis Backplane provides Intelligent Platform Management Bus (IPMB) connectivity to all instrument slots and has an Intelligent Platform Management Controller (IPMC) to provide backplane connectivity information to the Chassis Shelf Manager. Additionally, the Chassis Backplane provides two distinct starfabrics originating from the System Module and driven to all instrument slots.

The Chassis Backplane expands upon the AXIe-1.0 Base Architecture specification by providing three additional full fabric channels from the system slot fabric hub, providing a total of sixteen transceiver lanes to each instrument slot. The System Module utilizes these transceiver lanes for PCIe switch fabric connectivity. The additional three fabric channels provides higher system bandwidths and/or protocol options beyond the base specification. The Chassis Backplane also provides connectivity for the full 62-signal pair local bus channels. The Chassis Backplane's operational functions include housing several signal buffers and identification memory devices.

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mA-1302/mA-1305 Controls and Connectors

This section identifies and describes the Chassis controls and connectors. Refer to Figure 2-3 and Figure 2-4 for connector locations.

| | |
|---|-----|
| • Front Panel Controls and Connectors | 2-2 |
| • Chassis Ground Connector (1) | 2-2 |
| • Chassis Instrument Slots (2) | 2-2 |
| • Chassis System Module (3) | 2-3 |
| • Power On/Standby Button (4) | 2-3 |
| • Rear Panel Controls and Connectors | 2-4 |
| • AC Power Input Connector (1) | 2-4 |
| • Fuse Holder (2) | 2-5 |
| • GNSS ANT Connector (3) | 2-5 |
| • PCIe Connector (4) | 2-5 |
| • Ethernet Connector (5) | 2-6 |
| • USB Connector (6) | 2-6 |
| • MultiShelf I/O Connector (7) | 2-6 |
| • Frequency Reference I/O Connector (8) | 2-6 |
| • System Trigger Connector (9) | 2-7 |
| • WiFi ANT (10) | 2-7 |



NOTE

Content does not include controls and connectors located on modules which may be installed in the Chassis. Refer to module user documentation for information about module controls and connectors.

Front Panel Controls and Connectors

This section identifies mA-1302/mA-1305 front panel controls and connectors.

Figure 2-1 mA-1302 Front Panel Controls and Connectors

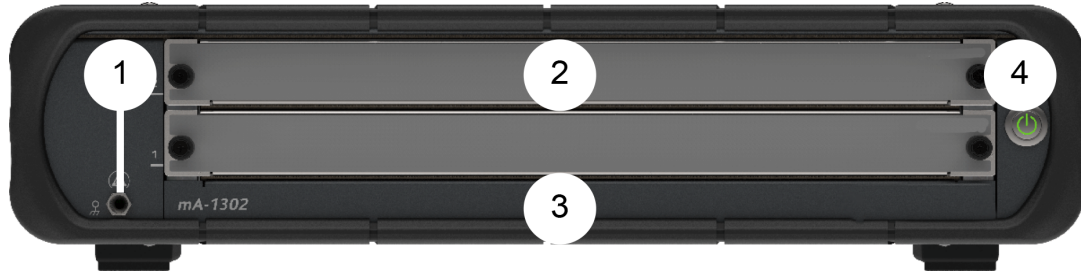


Figure 2-2 mA-1305 Front Panel Controls and Connectors



Chassis Ground Connector (1)

The Chassis Ground Connector is used to connect an ESD wrist strap to the Chassis to provide ESD protection.

Chassis Instrument Slots (2)

The mA-1302 contains two interchangeable instrument slots that accept AXIe modules; the mA-1305 contains five interchangeable instrument slots.

Chassis System Module (3)

The System Module is an integrated part of the Chassis. The System Module is not accessible to the user. See [“System Module” on page 1-3](#) for an overview of the module’s functionality.

Power On/Standby Button (4)

The On/Standby Button is located on the Chassis Front Panel. The On/Standby Button is used to initiate the Chassis power on and off sequences. The Chassis should be powered down using the On/Standby Button before the Chassis is disconnected from the AC Power Supply. Refer to the section titled [“Powering the Chassis” on page 5-3](#) for additional information.

The On/Standby Button has an LED Status Indicator that changes color to indicate operational status of the Chassis.



OFF

The Chassis is off and has been disconnected from an AC Power Supply; the On/Standby Button LED is not illuminated.



ON Mode

The Chassis is powered on and ready for use; the On/Standby Button LED is a constant green. The On/Standby Button LED flashes green during the power on sequence.



Standby Mode

The Chassis is powered off, but is still connected to an AC power supply: the On/Standby Button is amber. The On/Standby Button LED flashes amber during the power down process.

Error Indicators

The On/Standby Button LED turns red when an error has occurred during the power on sequence.

The On/Standby Button LED flashes red when the Chassis requires attention such as in the event of a thermal shutdown.

Rear Panel Controls and Connectors

This section identifies mA-1302/mA-1305 rear panel controls and connectors.

Figure 2-3 mA-1302 Rear Panel Controls and Connectors

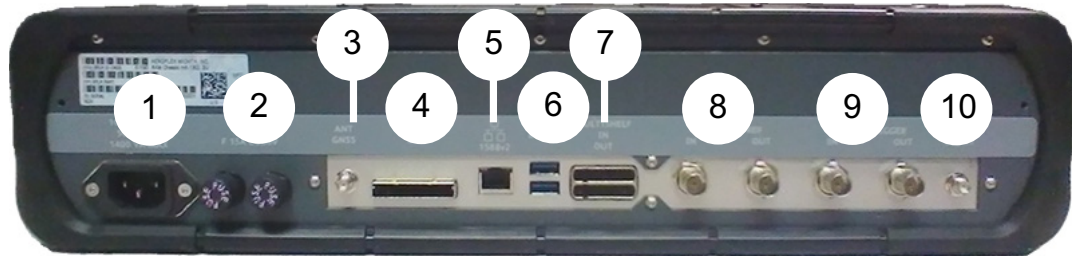


Figure 2-4 mA-1305 Rear Panel Controls and Connectors



AC Power Input Connector (1)

The AC Power Input Connector is used to connect the Chassis to a grounded AC Power Supply. When the Chassis is connected to an AC Power Supply the Power Entry Module (PEM) receives continuous power.



NOTE

The Chassis should only be connected to a grounded AC Power Supply. Refer to the section titled “Grounding the Chassis” for important safety information.

Fuse Holder (2)

The Fuse Holder is located on the Chassis Rear Panel. Fuses should only be replaced by Qualified Service Personnel.



CAUTION

Only use fuses specifically recommended for the Device. Refer to product Safety and Compliance Specifications or the product data sheet for recommended fuse current and voltage ratings.

Mise en Garde

Utilisez uniquement les fusibles recommandés pour l'appareil. Consultez les spécifications de sécurité et de conformité du produit ou la fiche technique du produit pour les caractéristiques de courant et de tension de fusible recommandées.

GNSS ANT Connector (3)

The GNSS ANT Connector is used to lock to a Global Networking Satellite System for timing and synchronization of the Chassis internal frequency reference. The Chassis Frequency Reference signal is routed using the Chassis Software Interface.

PCIe Connector (4)

A PCIe Connection between the Chassis and External Host Controller is recommended for tasks that require high speed data transfers between the Chassis and External Host Controller. Establishing a PCIe Connection between the Chassis and External Host Controller requires one of the following:

- External Host Controller with an operating system capable of PCIe slot enumeration.
- A computer fitted with a PCIe Adapter card and PCIe cable.
- A Laptop fitted with a PCIe ExpressCard Adapter and PCIe Adapter Cable

Ethernet Connector (5)

The Ethernet Connector is used for basic network connectivity and other functions such as Wake-on-LAN, Wake-on-Frame and timing synchronization. The Ethernet Connection is sufficient to perform low speed data transfers and system communication functions between the Chassis and Host Controller.

The Chassis' Ethernet signal is routed using the Chassis Software Interface.



NOTE

The Chassis identifies and configures LAN connections during the Power Up process. Reconfiguring LAN connections after the Chassis has been powered on may result in the Chassis not being able to locate external devices and network connections. Establish LAN connections before powering on the Chassis.

USB Connector (6)

The USB Connectors are 3.0, Type A connectors which can be used to perform high speed data transfers to and from the Chassis System Module.

MultiShelf I/O Connector (7)

Reserved for Future Implementation.

Frequency Reference I/O Connector (8)

The Frequency Reference Input Connector is used to connect the Chassis to an external frequency reference. The Frequency Reference Output Connector allows the Chassis to be used as a frequency reference by another device. The Chassis Frequency Reference Input/Output signals are routed and configured using the Chassis Web Browser User Interface ("[Configure Clock References](#)" on page 5-21).



NOTE

The Signal WorkShop™ Analysis Suite software application also contains user interface controls for configuring the Frequency Reference.

Refer to the AXIe Chassis Data Sheet for supported external frequency specifications.

System Trigger Connector (9)

The System Trigger In Connector provides the Chassis with an external trigger source to trigger Chassis events. The System Trigger Out Connector allows the Chassis generated signal to be used as a trigger source by another device.

The Chassis System Trigger Input/Output signals are routed and configured using one of the Chassis Web Browser User Interface. See the following sections for information:

- [Configure Chassis Triggers](#) 5-19
- [Triggers and Timing Configuration Pages](#) 4-10

WiFi ANT (10)

The WiFi Antenna is available to establish a wireless connection to the Chassis when a LAN connection is not available. A WiFi Connection is sufficient to perform low speed data transfers and system communication functions between the Chassis and Host Controller. WiFi connectivity is controlled by the embedded webserver; WiFi activity can also be controlled using an Embedded Host Module.

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mA-1302/mA-1305 Setup and Installation

This chapter describes how to setup and install the mA-1302/mA-1305. The topics discussed in this chapter are as follows:

| | |
|---|------|
| • Hardware requirements | 3-2 |
| • Network Caution Statement | 3-2 |
| • Embedded Host Module | 3-2 |
| • External Host Controller | 3-3 |
| • Upon Receipt | 3-4 |
| • Unpack the Chassis | 3-4 |
| • Inspect Equipment | 3-4 |
| • Verify Contents | 3-4 |
| • Setting up the Hardware | 3-5 |
| • Procedure Overview | 3-5 |
| • Chassis Operation Verification Procedure | 3-6 |
| • Chassis Work Environment | 3-6 |
| • Bench Top Installation | 3-6 |
| • Rack Mount Installation | 3-7 |
| • Module Installation | 3-8 |
| • Remove Filler Module | 3-9 |
| • Install Module | 3-9 |
| • Remove Module | 3-11 |
| • Connect External Host Controller to Chassis | 3-12 |
| • Desktop PCIe Connection Procedure | 3-12 |
| • Laptop PCIe Connection Procedure | 3-13 |
| • Wired LAN Connection Procedure | 3-13 |
| • Installing Software | 3-14 |

Hardware requirements

The Chassis is controlled by a Host Controller. The Host Controller can be an Embedded Host Module such as the mA-3011 AXIe Embedded Host Module or the host controller can be an External Host Controller such as a computer or tablet.

Network Caution Statement



NOTE

The Chassis ships from the factory with an assigned Static IP Address. Do not connect the Chassis to your local area network (LAN) without contacting your IT department to determine if the Chassis' default IP Address is already in use. If the Chassis' default IP Address is already in use by a device on the network, connecting the Chassis to the network will cause a network conflict.

It is recommended that the Chassis be reconfigured to use a Static IP address assigned by your IT department before connecting the Chassis to a LAN.

Embedded Host Module

The Chassis can be controlled using the mA-3011 AXIe Embedded Host Module or another AXIe Embedded Host Controller.

If an mA-3011 AXIe Embedded Host Module was purchased together with the Chassis, the Host Module was installed in the Chassis prior to shipment.

If an Embedded Host Module is being installed in the Chassis after the Chassis has been shipped from the factory, refer to the documentation included with the module, or refer to the section in this manual titled "[Module Installation](#)" on page 3-8 for instructions.

Figure 3-1 mA-3011 AXIe Embedded Host Module



External Host Controller

An External Host Controller can be a computer, laptop, or tablet that has the operating specifications necessary to support the functions being performed by the CMP System.

External Host Controller Connection Options

The Chassis can be connected to an External Host Controller (External Host Controller) using the Chassis PCIe Connector or via a LAN connection (wired or wireless). The type of connection used depends on the type of External Host Controller used and the connection speed required.

PCIe Connection

A PCIe Connection between the Chassis and External Host Controller is recommended for tasks that require high speed data transfers between the Chassis and External Host Controller. Establishing a PCIe Connection between the Chassis and External Host Controller requires one of the following:

- External Host Controller with an operating system capable of PCIe slot enumeration.
- A computer fitted with a PCIe Adapter card and PCIe cable.
- A Laptop fitted with a PCIe ExpressCard Adapter and PCIe Adapter Cable

LAN Connection

A LAN Connection is sufficient to perform low speed data transfers and system communication functions between the Chassis and External Host Controller. The Chassis can be connected to a LAN using the Ethernet Connector or a WiFi Connection.

Upon Receipt

The procedures outlined in this section should be performed when the Chassis is received from the factory.

Unpack the Chassis

Special design packing material provides maximum protection for the Chassis. Avoid damaging the shipping container and packing material when unpacking equipment; if necessary the shipping container and packing material can be reused to ship the Chassis.



CAUTION

This Device is ESD sensitive and should only be unpacked by qualified personnel.

Mise en Garde

Cet appareil est sensible aux DES et il doit seulement être déballé par un personnel qualifié.

How to Unpack the Chassis

- 1 Cut and remove sealing tape on top of shipping container.
- 2 Open shipping container and remove top packing mold.
- 3 Remove Chassis from bottom packing mold.
- 4 Remove Chassis from protective ESD packaging.
- 5 Store packing material and shipping container for possible future use.

Inspect Equipment

Inspect the Device for possible damage incurred during shipment. Report any damage to VIAVI Customer Service.

Verify Contents

Refer to packing list to verify shipment is complete. Report any discrepancies to VIAVI Customer Service.



NOTE

A Chassis that ships from the factory with modules installed in the instrument slots will include Filler Modules with the shipment. Store Filler Module(s) for future use. Refer to the section titled "[Module Installation](#)" on [page 3-8](#) for additional information.

Setting up the Hardware

Setting up a Chassis consists of several stages. Each stage contains different procedures depending on the following factors:

- The type of environment in which the Chassis will be operated (bench top or rack mount).
- The type of host controller that will be used.

Procedure Overview

The AXIe Chassis setup instructions are presented in a format which is intended to guide users through the process of setting up a new Chassis System. If you are reconfiguring an existing AXIe Chassis System, refer to the appropriate procedures in this section.

Step 1: Receive Chassis from the Factory

When the Chassis is received from the factory, complete the procedures in the following sections to verify shipment and Chassis operation:

- Upon Receipt
- Initial Setup Procedure (Chassis)
- Verify Chassis Operation

Step 2: Install Chassis in Work Environment

The Chassis is designed for bench top or rack mount use. Refer to the following sections for Chassis installation instructions.

- Bench Top Use
- Rack Mount Use

Step 3. Install Modules (if applicable)

If applicable, install Embedded Host Module or instrument modules in the Chassis.

Step 4: Connect External Host Controller

If applicable, refer to one of the following procedures to connect the Chassis to an External Host Controller.

- Desktop PCIe Connection Procedure
- Laptop PCIe Connection Procedure
- External Host Controller Wired LAN Connection Procedure
- External Host Controller WiFi Connection

Step 5: Install Software on Host Controller

Refer to the documentation provided with the Host Controller for information about installing or updating software.

Chassis Operation Verification Procedure

The following procedure is intended to verify basic Chassis operation. This procedure does not verify the Chassis is operating within product specifications.

Operation Verification Procedure

- 1 Complete Chassis setup and installation.
- 2 Complete power on procedure.
- 3 Complete Chassis Self Test Procedure (refer to “Self Test Procedure”).

Chassis Work Environment

The Chassis can be fitted for use on a work bench or in a rack environment. Refer to the product “[Electrical Specifications](#)” on [page A-3](#) for operating environment conditions.



NOTE

For first time use, complete the Chassis Operation Verification Procedure before installing the Chassis in its work environment.

Bench Top Installation

When used as a free-standing unit, the Chassis should be placed on a level work surface and connected to a grounded AC Power Supply.

Rack Mount Installation



CAUTION

The Chassis must be fitted with a Rack Mount Kit to properly install the Chassis in a test equipment rack. Failure to use the approved rack mount accessories may result in damage to the Chassis.

Mise en Garde

Le châssis doit être équipé d'une trousse de montage sur châssis pour installer correctement le châssis dans un châssis d'équipement de test. La non utilisation des accessoires de montage sur châssis approuvés peut entraîner des dommages au châssis.

How to Install Chassis in Test Rack

- 1 Complete the Chassis Operation Verification Procedure.
- 2 Disconnect the Chassis from the AC Power Supply.
- 3 Install the Rack Mount Kit on the Chassis. Refer to the Rack Mount Kit Installation Guide included with the Rack Mount Kit. The Rack Mount Kit Installation Guide is included with the Rack Mount Kit.
- 4 Install the Chassis in the equipment rack per the Rack Mount Kit Installation Guide.

Module Installation

The AXIe Chassis supports AXIe compliant modules. The Chassis is configured so that modules are interchangeable and are not slot specific.



NOTE

When installing modules, refer to the user documentation provided with the module for special instructions or connection requirements. As mentioned above, the Chassis is not slot-specific, however, module user documentation may contain other important installation requirements.

If an Embedded Host Module is being used in the Chassis, install the host module in the Chassis before proceeding with this section. Refer to the Module's user documentation for safety, installation and operating information.



CAUTION

Modules are ESD sensitive and should only be installed, removed and/or serviced by Qualified Service Personnel.

Mise en Garde

Les modules sont sensibles aux DES et ils doivent seulement être installés, enlevés ou entretenus par du personnel de service qualifié.



CAUTION

Modules are not "hot -swappable." The Chassis must be powered down before installing or removing modules from the Chassis.

Mise en Garde

Les modules ne peuvent pas être « changés lorsque sous tension. » Le châssis doit être mis hors tension avant d'installer ou d'enlever des modules du châssis.



CAUTION

Use care when installing modules to avoid damaging any modules already installed in the Chassis.

Mise en Garde

Faites attention lors de l'installation de modules afin d'éviter d'endommager les modules déjà installés dans le châssis.

Remove Filler Module



CAUTION

Do not operate the Chassis with empty slots. Install Filler modules in empty slots to ensure proper airflow through the Chassis.

Mise en Garde

N'utilisez pas le châssis avec des fentes vides. Installez des modules de remplissage dans les fentes vides afin d'assurer un écoulement d'air adéquat dans le châssis.

How to Remove Filler Module

- 1 Power down the Chassis to Standby Mode.
- 2 Loosen the Captive Screw on each side of the Filler Module. Loosen screws completely before trying to remove a module.
- 3 Grasp the captive screws and pull to remove the module from the Chassis.
- 4 Store Filler Module for future use.

Install Module



NOTE

Some modules require specific hardware configurations and connections which are not described in this document. Refer to the documentation included with each module for special configuration instructions.



CAUTION

Modules are ESD sensitive and should only be installed, removed and/or serviced by Qualified Service Personnel.

Mise en Garde

Les modules sont sensibles aux DES et ils doivent seulement être installés, enlevés ou entretenus par du personnel de service qualifié.

Verify the following before beginning installation:

- Slot does not contain foreign objects or debris.
- Backplane pins are not bent or damaged.

How to Install a Module

- 1 Power down the Chassis.
- 2 If the module has securing latches, position the latches at a 90° angle to the front of the module.



NOTE

The securing latch must be placed in the unlocked position - pulled out and away from the latch mechanism - or module cannot be properly inserted and seated with the Chassis backplane connectors.

Figure 3-2 Securing Latch - Locked Position



Figure 3-3 Securing Latch - Unlocked Position



Figure 3-4 Securing Latch - Unlocked and unlatched



- 3 Position the module on the Chassis Side Rails. Slide the module into the card cage.



NOTE

If the module does not slide smoothly along the side rails, remove the module, realign and reinsert the module.

- 4 Fully insert the module into Card Cage. Press firmly to securely connect module pins with Backplane Assembly Connectors.
- 5 Press the securing latches into the Locked Position.
- 6 Hand tighten the captive screw on each side of module. Securely tighten each captive screw to ensure module is properly grounded via the Chassis.

Remove Module



CAUTION

Modules are ESD sensitive and should only be installed, removed and/or serviced by Qualified Service Personnel.

Mise en Garde

Les modules sont sensibles aux DES et ils doivent seulement être installés, enlevés ou entretenus par du personnel de service qualifié.



CAUTION

Do not operate the Chassis with empty slots. Install Filler modules in empty slots to ensure proper airflow through the Chassis.

Mise en Garde

N'utilisez pas le châssis avec des fentes vides. Installez des modules de remplissage dans les fentes vides afin d'assurer un écoulement d'air adéquat dans le châssis.

How to Remove a Module

- 1 Power down the Chassis.
- 2 Fully loosen the captive screws on each side of the module.
- 3 Grasp the module Securing Latches and pull the Latches outwards and away from the module to disconnect the module from the Backplane Connectors.
- 4 Pull until the Securing Latches are at a 90° angle with the front of the module. See [Figure 3-3 on page 3-10](#).
- 5 Grasp the module and pull to remove the module from the Chassis.



NOTE

If the Module is being returned to the manufacturer, refer to the Module's user documentation for packaging and shipping instructions.

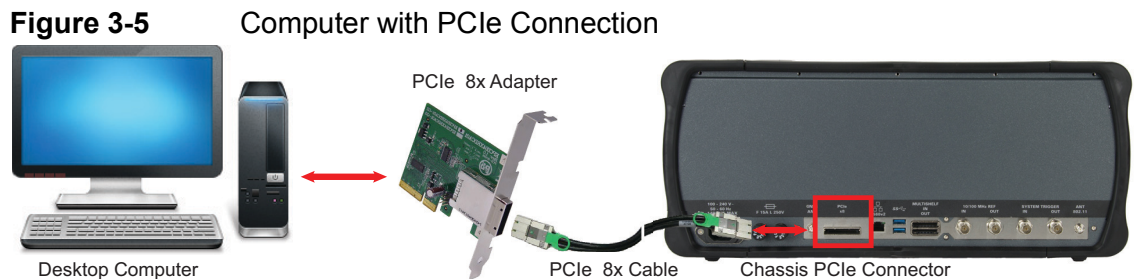
Connect External Host Controller to Chassis

This section contains setup diagrams and instructions for basic Chassis System configurations. Refer to the following sections for related information:

- Chassis Control and Operation 5-2
- External Host Controller Connection Options. 3-3

Desktop PCIe Connection Procedure

This procedure describes how to connect the Chassis to a Desktop Computer via a PCIe connection.



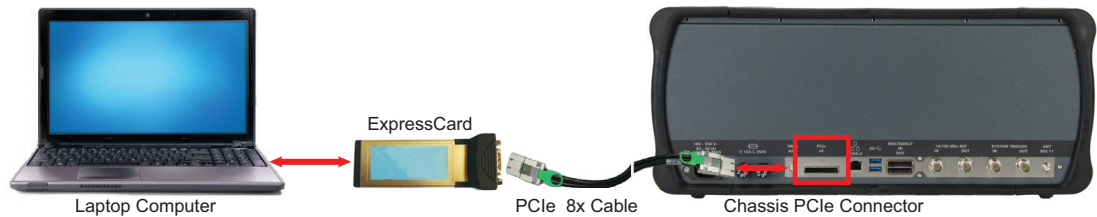
How to Establish Desktop PCIe Connection

- 1 Power down the Chassis to Standby Mode.
- 2 Install the PCIe Adapter in the computer.
- 3 Connect one end of the PCIe Cable to the PCIe Adapter Card.
- 4 Connect the other end of the PCIe Cable to the Chassis PCIe Connector.
- 5 Power on the Chassis. Wait while the Chassis completes the power up process.
- 6 Power on the computer.
- 7 Access the Chassis' UI via one of the Chassis Software UI Options.

Laptop PCIe Connection Procedure

This procedure describes how to connect the Chassis to a Laptop Computer via a PCIe connection.

Figure 3-6 Laptop with PCIe Connection



How to Establish Laptop PCIe Connection

- 1 Power down the Chassis to Standby Mode.
- 2 Install the PCIe ExpressCard in the laptop.
- 3 Connect one end of the PCIe Cable to the PCIe ExpressCard .
- 4 Connect the other end of PCIe Cable to the Chassis PCIe Connector.
- 5 Power on the Chassis. Wait while the Chassis completes power up process.
- 6 Power on the laptop.
- 7 Access the Chassis' UI via one of the Chassis Software UI Options.

Wired LAN Connection Procedure

This procedure describes how to connect the Chassis to a computer or laptop via a Wired LAN connection.

How to Establish LAN Connection

- 1 Connect one end of an Ethernet Cable to the laptop or desktop computer.
- 2 Connect the other end of the Ethernet Cable to the Chassis Ethernet Connector.
- 3 Power on the Chassis. Wait while the Chassis completes the power up process.
- 4 Power on the desktop or laptop computer.
- 5 Access Chassis' UI via one of the Chassis Software UI Options.

Installing Software

The Chassis is shipped from the factory with the firmware and device drivers pre-loaded on the Embedded System Module. Regular checks should be performed to ensure that the Chassis and any installed AXIe Modules contain the most current firmware, software and/or drivers (whichever is applicable).

Contact VIAVI Customer Service to check for the latest version of software, firmware and/or drivers.

See [“Software/Firmware Updates”](#) on page 6-3 for information about updating system firmware, software and/or drivers.

Chassis Web User Interface (UI)

This chapter describes the UI controls and settings that you will encounter when using the Chassis Web Browser UI.

- Introduction 4-2
- Recommended Web Browsers 4-2
- Open the Chassis Web UI 4-3
- Web UI Layout 4-4
 - Header (1) 4-4
 - Instrument Slot Buttons (2) 4-5
 - Chassis Information Table (3) 4-5
- Web UI Pages 4-6
 - Chassis Management Page 4-6
 - Instrument Slots Page 4-9
 - Triggers and Timing Configuration Pages 4-10
 - Chassis Networking Page 4-17
 - System Update Page 4-19
 - Licensing Page 4-21
 - Self Test Page 4-22

Introduction

The Chassis Web Browser UI (Web UI) operates in a manner similar to software applications found in many of today's electronic devices. The Web UI is navigated using techniques native to the Host Controller on which the software is installed. For example, touchscreen devices are navigated using common techniques like pressing the touchscreen, swiping, pinching to zoom in and pushing to zoom out; desktop devices are controlled using a mouse and keyboard.

The Web UI layout auto-adjusts to portrait or landscape layout according to the width of the web browser window and to the device on which the Web UI is being viewed (i.e., desktop computer, laptop computer or tablet). Examples shown throughout this documentation include portrait and landscape layouts.

Recommended Web Browsers

Recommended browsers for viewing CMP AXIe Web Browser User Interfaces:

- Google Chrome Version 53.0.2785.116 m (64-bit) or later
- Firefox Version 48.0.1 or later
- Internet Explorer 11 or later

Open the Chassis Web UI



NOTE

If using a viewing application to manage your AXIe system, refer to the documentation provided with the application for instructions for accessing the AXIe Chassis Web Browser UI.

How to Open Web User Interface

- 1 Complete Chassis setup and installation.
- 2 Open a web browser (refer to section titled “Recommended Web Browsers” on page 4-2).
- 3 Enter the Chassis IP Address in the browser's URL window.
- 4 The AXIe Chassis Web Browser UI opens to the Home Page.



NOTE

For first time use, enter the Chassis default url which is `http://10.105.8.32`. Before connecting the Chassis to a local area network (LAN), refer to the “DEFAULT STATIC IP NOTICE” on page 5-9 for important information.

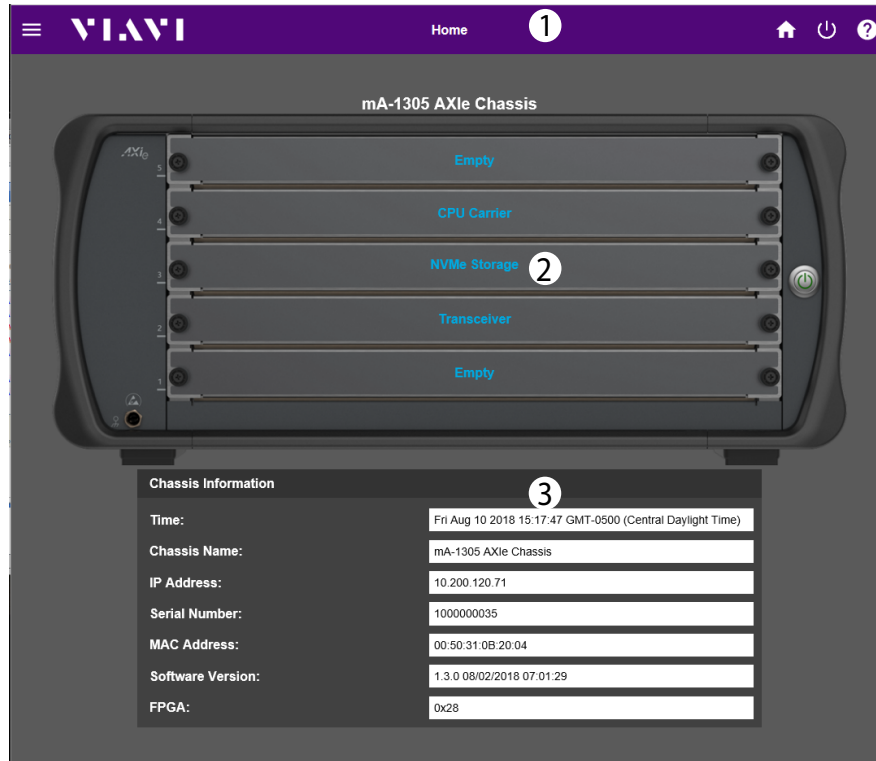
Figure 4-1 Web UI Home Page



Web UI Layout

This section describes the Chassis Web UI Layout.

Figure 4-2 Web UI Home Page Components



Header (1)

The Header is the purple bar located at the top of the Web UI. The Header contains the following:



Main Menu Button

The Main Menu Button opens and closes the Chassis Configuration Panel. The Chassis Configuration Panel contains buttons which access CMP system data and Chassis configuration pages.



Power Options Button

Selecting the Power Options Button displays a prompt which gives the user the option to restart the Chassis (cycle Chassis power) or turn the Chassis off.



Home Button

Pressing the Home Button returns to the Web UI Home Page.



Help Button

Press the Help Button opens the Chassis Help System. When the Help Button is pressed, the Help System opens to content for the Web UI Page that is currently displayed.

Instrument Slot Buttons (2)

The Instrument Slot Buttons represent a real-time view of the modules installed in the Chassis. When the Chassis is powered on, the Shelf Manager performs a standardized discovery routine which locates the modules that are installed in the Chassis. The Shelf Manager identifies each module and updates the label on the Instrument Slot Button to identify the module.

Selecting an Instrument Slot Button opens the [“Instrument Slots Page”](#) on page 4-9 and displays information for the selected module.

Chassis Information Table (3)

The Chassis Information Table displays hardware configuration information. This information is read only.

Web UI Pages

This section describes the pages of the Chassis Web Browser UI. Web UI pages display Chassis and Module data and operating status. Some pages contain read only content, other pages contain parameters that configure basic Chassis operations such as internal fan speed and network connection.

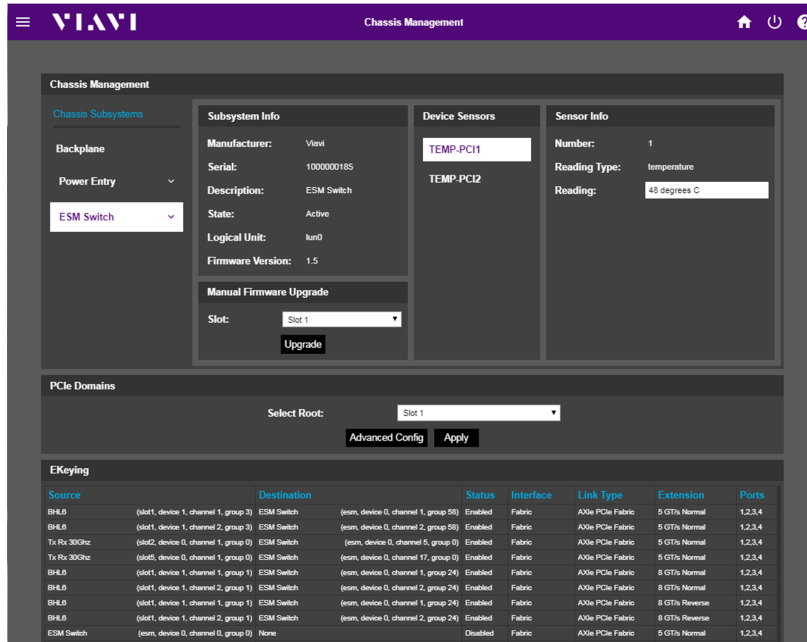
When the Chassis is powered on, the Shelf Manager performs a standardized discovery routine which locates the modules that are installed in the Chassis. The Shelf Manager identifies each module's manufacturer information as well as each module's power, cooling and backplane interface requirements. The Shelf Manager then populates Web UI pages with the information gathered during the discovery process.

Chassis Management Page

The Chassis Management Page contains data for the Chassis Backplane, Power Entry Module (PEM) and Embedded System Module (ESM). The Chassis Management Page accesses the following information or functions:

- SubSystem Identification
- SubSystem Status
- SubSystem Temperature Reading
- Fan Speed Management
- PCIe Domains Configuration
- E-Keying Information

Figure 4-3 Chassis Management Page



SubSystem Data Table

SubSystem Data Tables are populated by selecting a Chassis SubSystem button on the Chassis Management Page. When a SubSystem button is selected the SubSystem Data Table is populated with information for the selected SubSystem. SubSystem data includes information such as the SubSystem description, serial number and the SubSystem's operating temperature, fan speed and current operating status.

SubSystem Info

The Information section of the SubSystem Data Table contains read only data which identifies the SubSystem manufacturer and operating status.

SubSystem Sensors

When a SubSystem button is selected the Sensor section of the SubSystem Data Table is populated with a button for each sensor located on the selected SubSystem. If a SubSystem does not contain sensors this section of the SubSystem Data Table remains empty. Selecting a sensor button populates the Sensor Information section of the SubSystem Data Table.

SubSystem Sensor Information

The SubSystem Sensor Information section of the SubSystem Data Table is populated when a Sensor Button is selected. The type of sensor information displayed in the SubSystem Data Table depends on the SubSystem selected.

PCIe Domains Configuration

The PCIe Domains Configuration page is used to manage the system's PCIe domain "slot" assignments. A CMP system is shipped from the factory with instrument slot PCIe domains assigned according to factory system configuration. When the module configuration of a CMP Chassis changes (e.g. new modules are added or swapped between systems), PCIe domain configuration must be reviewed and reconfigured to ensure proper system operation.



CAUTION

Failure to evaluate, and if necessary, reconfigure the Chassis after changing instrument slot configuration may place the system in an inoperable state.

See [Appendix C "PCIe \(Slot\) Configuration Procedure"](#) for more detailed information about the system's PCIe domain configuration and step by step instructions to reconfigure PCIe domain "slot" assignments.

Select Root Menu

The Select Root menu defines the Chassis' PCIe root complex.

Auto

When Auto is selected the Chassis selects an available slot module as the PCIe root complex.



NOTE

The Chassis must contain at least one module that meets the operational capabilities necessary to be utilized as PCIe root complex.

Slot 1:n

Slot selections are available to support a Chassis that contains more than one Embedded Host Module. For example, if an Embedded Host Module is installed in Slot 2 and 3 of the mA-1305 Chassis, the user can select the Embedded Host Module in Slot 3 as the root port.

ESM

Selects the Chassis Embedded System Module (ESM) as the PCIe root complex.

IPASS

When IPASS is selected, the Chassis uses the external host controller as the root port. An external host controller, such as a laptop or desktop computer, must be connected to the Chassis via the Rear Panel PCIe x8 Connector to use IPASS.Signal Relay Switches



NOTE

When the Root is changed, the E-Keying table updates: the system must be rebooted twice for the new E-Keying table changes to take effect. The first reboot is initiated when the "Apply and Reboot" button is pressed; a second reboot must be performed by the user to finish applying the changes.

E-Keying Table

AXIe E-Keying (Electronic Keying) is an extension of the AdvancedTCA E-Keying process by which the Shelf Manager uses IPMI commands to enable/disable the AXIe Backplane interface ports to ensure fabric channel compatibility and to prevent damage and/or malfunction of boards. AXIe E-Keying information also includes shelf and module FRU information which describes the point-to-point connectivity of the AXIe timing and local bus interface as well as information about the PCIe channels.

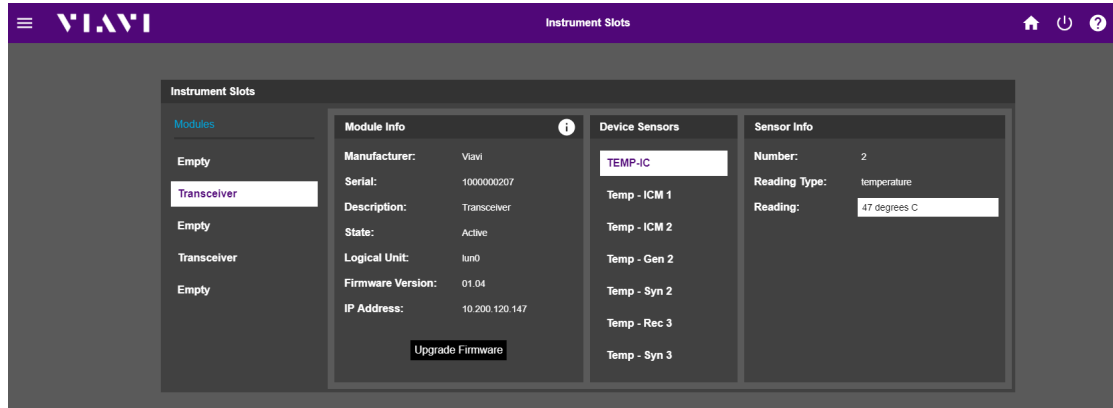
Chassis E-Keying functionality meets requirements of AXIe-1.0, Base Architecture Specification, Revision 3. Refer to the AXIe-1.0, Base Architecture Specification, Revision 3 for detailed information about electronic keying process and specifications.

Instrument Slots Page

The Instrument Slots Page contains data for each module installed in the Chassis. The Module Section on the left of the page identifies the modules that the Shelf Manager identifies during the power-on discovery process. When a Module Button is selected the Module Data Table updates to display information for the selected module. The Instrument Slots Page accesses the following module information:

- Module Identification
- Module Sensors
- Module Status
- Module Sensor Readings

Figure 4-4 Instrument Slots Page



Module Data Table

Module Data Table is populated by selecting a module button on the Instrument Slots Page. When a module button is selected the Module Data Table is populated with information for the selected module. Module data includes information such as the manufacturer's name, module description and serial number, the module's operating temperature and current operating status. The data displayed depends on the type of module.

Module Info

The Information section of the Module Data Table contains read only data which identifies the module manufacturer, configuration and status.

Module Sensors

When a Module button is selected the Sensor section of the Module Data Table is populated with a button for each sensor on the selected module: the Sensor Button label identifies the type of sensor. If a Module does not contain sensors this section of the Module Data Table remains empty. Selecting a sensor button populates the Sensor Information section of the Module Data Table.

Module Sensor Information

The Module Sensor Information section of the Module Data Table is populated when a Sensor Button is selected. The type of sensor information displayed in the Module Data Table depends on the module.

Triggers and Timing Configuration Pages

The Chassis provides several trigger and timing signals which allow the Chassis to be configured to support a variety of test and measurement configurations. The available trigger and timing signals allow for synchronous or asynchronous timing of instrument modules within a Chassis system.

Refer to the [Appendix B “Timing and Trigger Sources Signal Definitions”](#) for a description of Chassis trigger and timing signals.

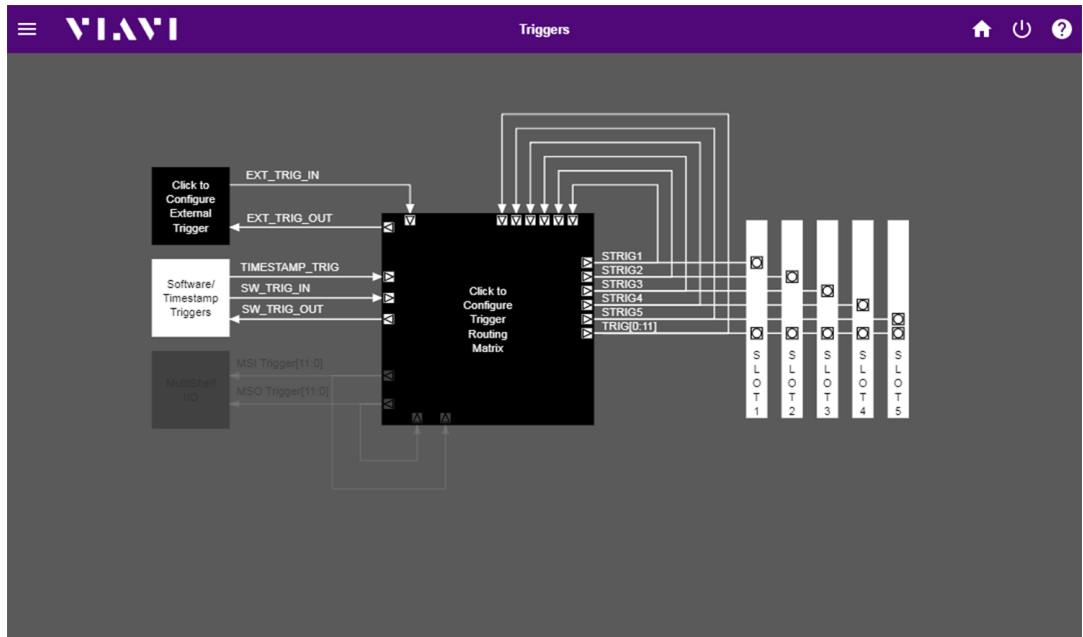
Refer to the following sections for detailed information and procedures for configuring Chassis triggers and timing:

- [Configure Chassis Triggers](#) 5-19
- [Configure Clock References](#) 5-21
- [Chassis Synchronization](#) 5-23

Triggers Page

The Triggers Page is the top-level diagram that accesses the interactive trigger routing diagrams. The black blocks on the Triggers Page open interactive signal routing diagrams for the selected group of signals. The trigger signals that are available depend on the input signals detected by the Chassis Shelf Manager during the bootup discovery process.

Figure 4-5 Triggers Page



* MultiShelf I/O signal paths are reserved for future development.

Signal Relay Switches

Signal paths are activated and de-activated at Signal Relay Switches.



A purple circle with a purple signal path indicates a Signal Relay Switch is selected.



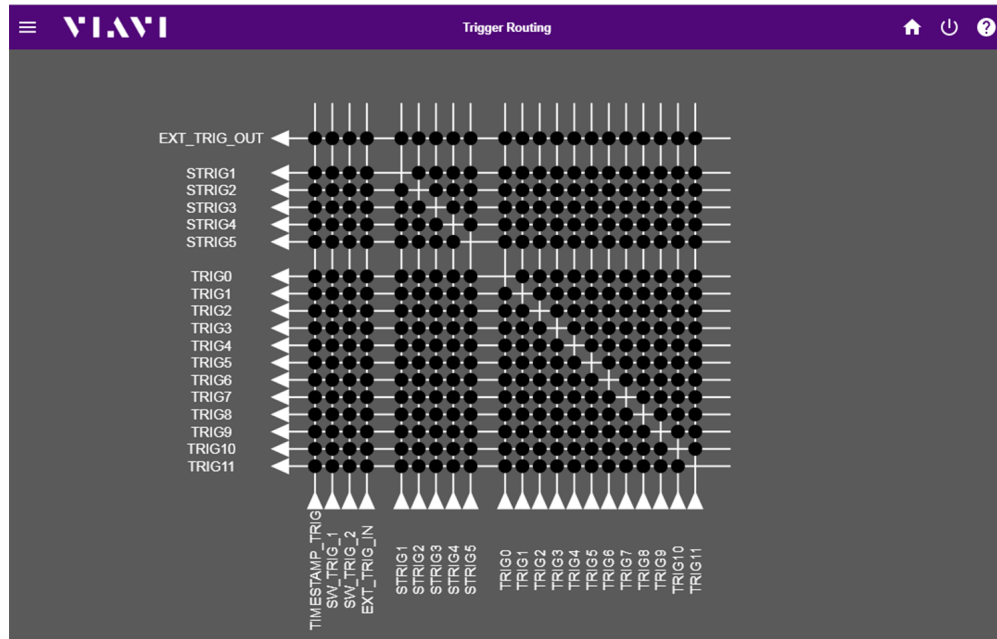
A black circle with a white signal path indicates a Signal Relay Switch is not selected.

Trigger Routing Diagram

The Trigger Routing Diagram is accessed by selecting the "Click to Configure Trigger Routing Matrix" block on the Triggers Page. The Trigger Routing Diagram is used to configure the Chassis' internal and external trigger signals.

Refer to the section titled [“Configure Chassis Triggers” on page 5-19](#) about how to configure internal and external trigger sources as well as how to configure the Chassis to output a trigger signal.

Figure 4-6 Trigger Routing Diagram “Matrix”

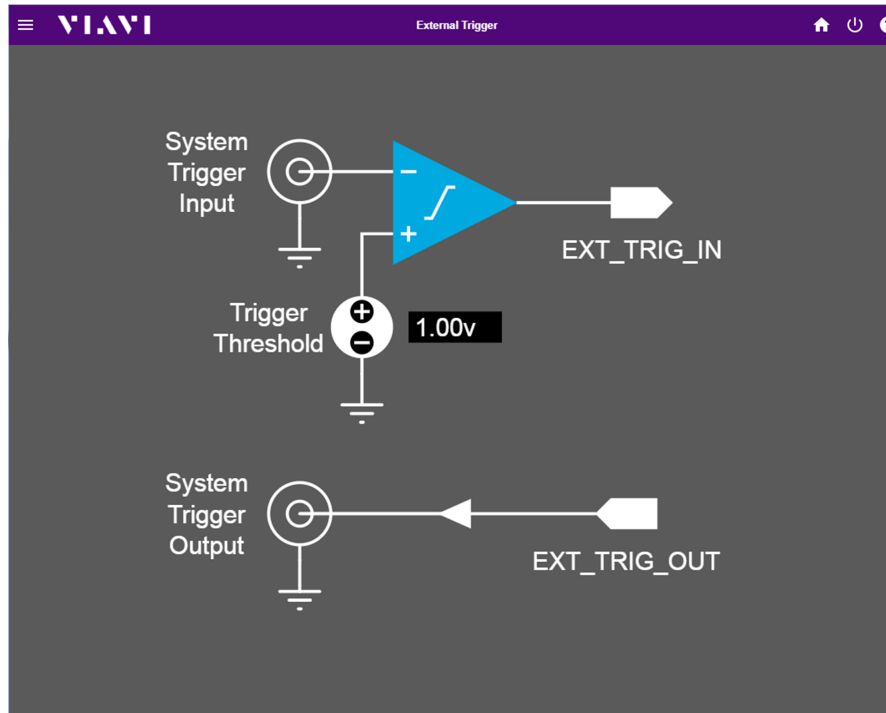


External Trigger Diagram

The External Trigger Diagram is accessed by selecting the "Click to Configure External Trigger" block on the Triggers Page. The External Trigger Diagram is used to configure the External Trigger Threshold.

Refer to the section titled "[Configure External Trigger Source](#)" on page 5-19 for information about how to configure the Chassis to use an external signal as a trigger source.

Figure 4-7 Triggers - External Trigger Diagram

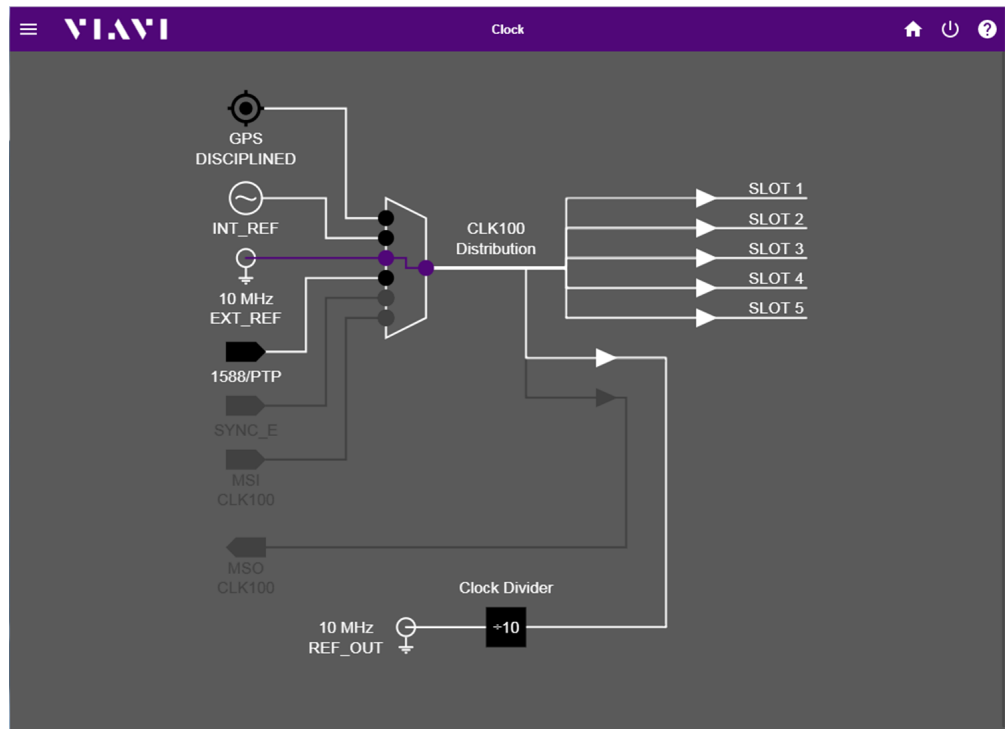


Clock (Timing) Configuration Page

The Clock Configuration Page routes the signals used to establish Chassis timing. The timing signals allow for synchronous or asynchronous timing of instrument modules within a Chassis system. Available timing signals depend on the following:

- Chassis timing defaults to the Chassis' Internal 10 MHz Frequency Reference (INT_REF) if a selected external reference is invalid.
- The Synchronous Recovered Ethernet Clock (SYNCE) is only available when the Chassis Shelf Manager detects an Ethernet connection that supports synchronous functionality.
- 10/100 MHz Frequency Reference (EXT_REF) is only available when the Chassis Shelf Manager detects a valid External Frequency Reference.

Figure 4-8 Clock Configuration Page



Signal Relay Switches

Signal Relay Switches route a signal along a desired path.



A purple circle with a purple signal path indicates a Relay Switch is selected.



A black circle with a white signal path indicates a Relay Switch is not selected.

Clock Divider

The Clock Divider selection defines the frequency of the reference output as either 10 MHz or 100 MHz.

Stored Clock Reference Settings

The manner in which the Shelf Manager sets the Chassis Timing Source depends on how the Chassis was configured when the system was powered down.

Last Configured for Internal Timing Reference

If the Chassis was using its internal reference as a timing source when the system was powered down, the Shelf Manager selects the Chassis internal frequency reference as the Chassis timing source.

Last Configured for External Timing Reference

If the Chassis was using an external frequency reference as a timing source when the system was powered down, the Shelf Manager will search for a valid external frequency reference.

If the Shelf Manager detects a valid external frequency reference at the Chassis' External Reference Input Connector, the Shelf Manager selects the External Frequency Reference as the Chassis timing source.

If the Shelf Manager does not detect a valid external frequency reference at the Chassis' External Reference Input Connector, the Shelf Manager selects the internal frequency reference as the Chassis timing source.



NOTE

In order for an external frequency reference to be valid the signal must be within the Chassis' lockable frequency range. Refer to the Chassis data sheet for valid frequency range.

Sync Configuration Page

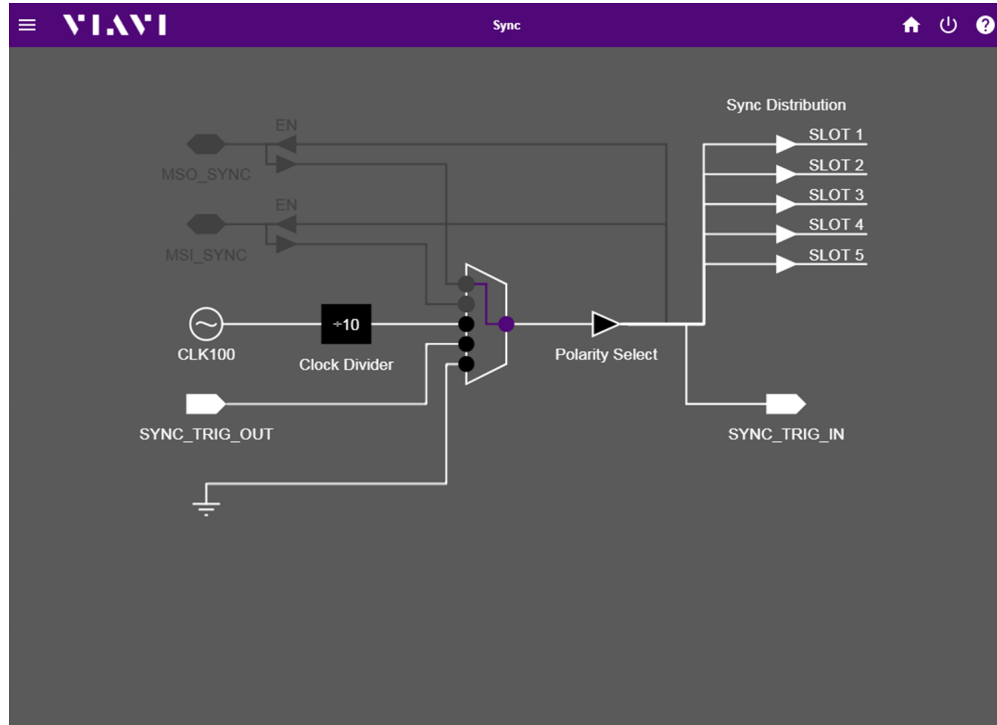
The Sync Configuration Page selects the signals that are used to synchronize system functions to the Chassis clock reference.



NOTE

MultiShelf I/O Paths are reserved for future development.

Figure 4-9 Sync Configuration Page



Signal Relay Switches

Signal Relay Switches route a signal along a desired path.



A purple circle with a purple signal path indicates a Relay Switch is selected.



A black circle with a white signal path indicates a Relay Switch is not selected.

Polarity Select

The Polarity selection inverts the polarity of the selected Sync Signal.

Chassis Networking Page



NOTE

The Chassis ships from the factory with an assigned Static IP Address. Do not connect the Chassis to your local area network (LAN) without contacting your IT department to determine if the Chassis' default IP Address is already in use. If the Chassis' default IP Address is already in use by a device on the network, connecting the Chassis to the network will cause a network conflict.

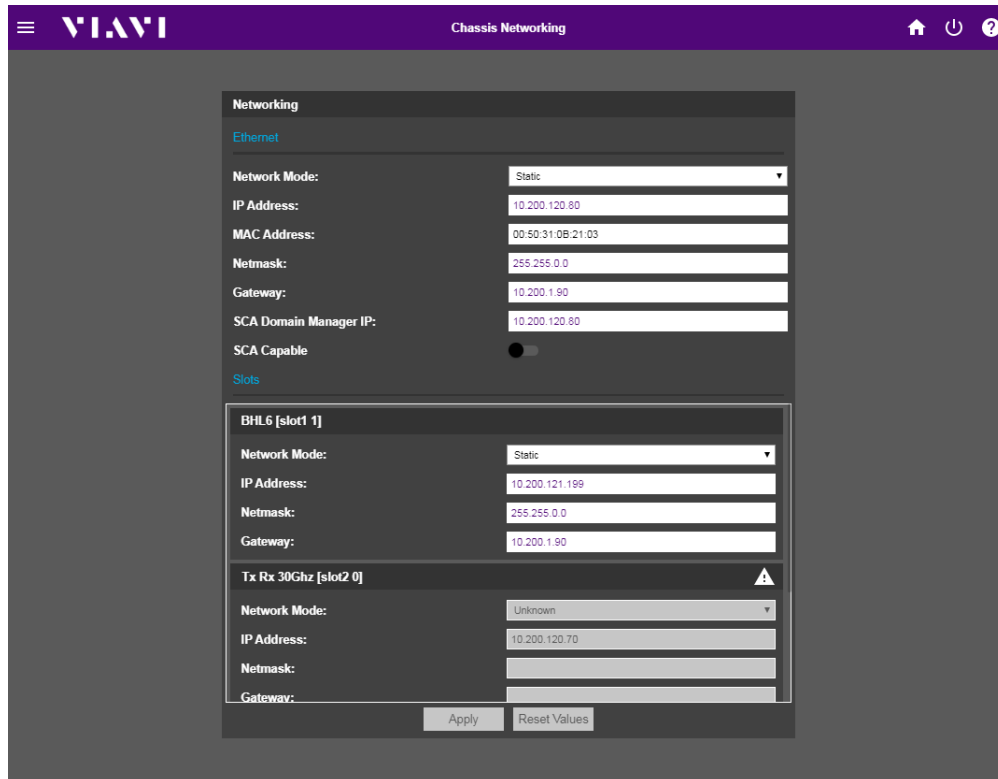
It is recommended that the Chassis be reconfigured to use a Static IP address assigned by your IT department before connecting the Chassis to a LAN.

The Chassis Rear Transition Module (RTM) provides standard 10/100/1000 Base-T Ethernet connectivity via an RJ-45 Connector for LAN Network connectivity.

The Chassis Networking Page identifies CMP system IP Addresses and is used to configure the system's network connectivity. This section provides a general overview of the controls and settings found on the Chassis Networking page.

Refer to [“Configure Network Connections” on page 5-9](#) for detailed instructions and important network configuration information as well as procedures for resetting or locating system IP Addresses.

Figure 4-10 Chassis Networking Page



Network Mode

The Chassis can be configured to operate on a DHCP server or to use a Static IP Address. See the section titled [“Configuring Network Mode of Operation” on page 5-10](#) for setup procedures.

IP Address

When operating in DHCP Network Mode, the IP Address field is a read only field that displays the network assigned IP Address.

When operating in Static IP Network Mode, the IP Address field is used to enter the IP Address being assigned to the Chassis.

Netmask

When operating in DHCP Network Mode, the Netmask field is a read only field that displays the network assigned Netmask.

When operating in Static IP Network Mode, the Netmask field is used to assign a user-defined Netmask to the Chassis.

Gateway

When operating in DHCP Network Mode, the Gateway field is a read only field that displays the network assigned Gateway Address.

When operating in Static IP Network Mode, the Gateway field is used to assign a user-defined Gateway Address to the Chassis.

Apply Button

The Apply Button is used to save the defined Networking parameters. A user prompt is displayed to validate the requested action.

Reset Values

Pressing the Reset Values clears any unsaved edits and reverts data fields to the most recent saved configuration.

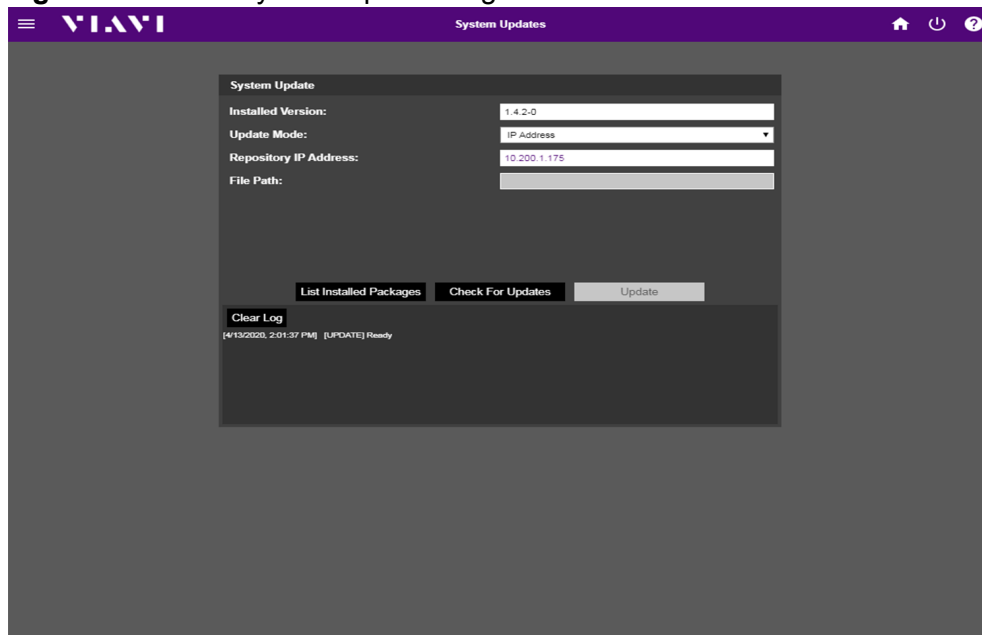
System Update Page

The Chassis is shipped from the factory with the firmware and device drivers pre-loaded on the Embedded System Module. Personnel should perform routine checks to determine if a firmware update is available.

The System Update Page displays and accesses the following information or functions:

- View current version of Chassis firmware
- Check for available Chassis firmware updates
- Update Chassis firmware

Figure 4-11 System Update Page



Installed Version

Identifies the current version of firmware installed in the Chassis.

Update Mode

The Update Mode drop-down menu allows the user to select the mode that will be used to download firmware.

Repository IP Address

This field is enabled when IP Address Update Mode is selected. The Repository IP Address field defines the IP Address from which firmware is downloaded.

Check for Updates Button

Pressing the Check for Updates Button queries the selected Update Source for newer versions of Chassis firmware.



NOTE

The Check for Updates process only checks for new versions of Chassis firmware; the process does not check the status of firmware, software and/or drivers installed on modules. Refer to the user documentation provided with each module for information about how to update module firmware, software and/or drivers.

Update Button

The Update Button is enabled when the Check for Updates query locates and identifies more current firmware than the firmware currently installed on the Chassis Embedded System Module. Pressing the Update Button initiates the firmware update.

Update Status

The Update Status box displays status information and update progress of a firmware update. The status of a firmware update is indicated by a percentage complete progress indicator bar.



NOTE

Do not interrupt the firmware update process; doing so may result in corrupting the Chassis operating system.

Licensing Page

The Chassis supports a variety of optional functions which are enabled by installing a software license in the Chassis System Module. The Licensing Page is used to install, update or remove Chassis option licenses.

When an option is purchased, an option license is generated for the product using the product's serial number and unique identifier (UID). The generated option license is distributed in a file named option.new. The option.new file must be installed in the Chassis in order to enable the optional function.

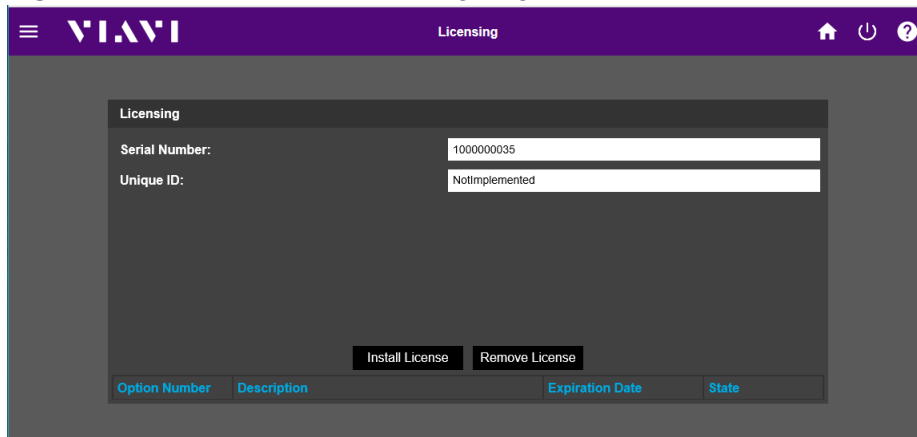


NOTE

An option license can only be installed in the product for which the option was purchased. Attempts to install a license in a product other than the one for which the license file was issued generates a system error message.

The option.new file may contain multiple software licenses for different Chassis, or other CMP products (i.e., modules that are installed in the Chassis).

Figure 4-12 Chassis Licensing Page



NOTE

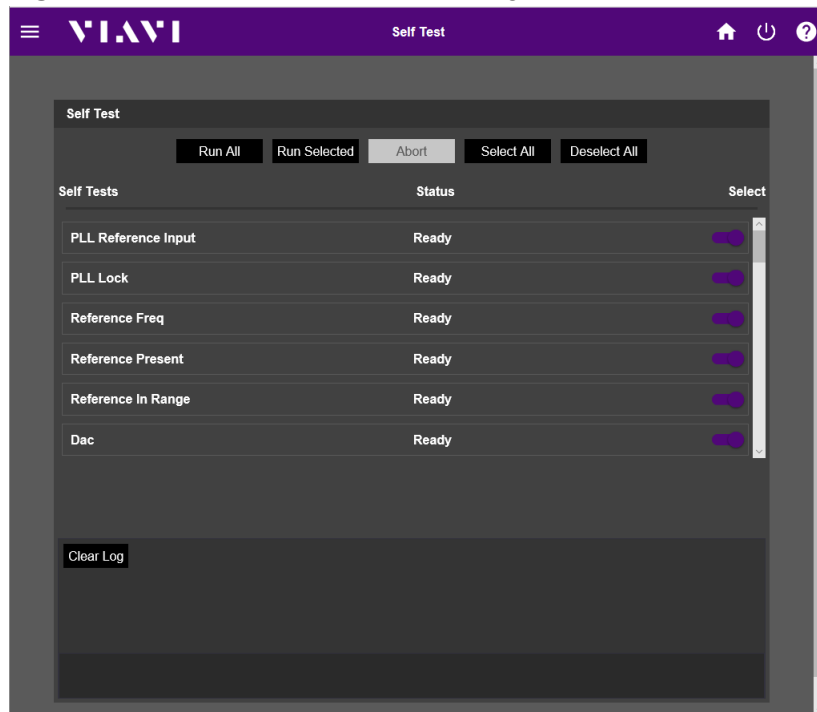
License Files are password protected to prevent users from accidentally removing option licenses; contact Customer Service to obtain the password.

Self Test Page

The Self Test Page accesses the Chassis Self Test procedures. The Chassis Self Test is an automated process that evaluates the Chassis' operational status to verify the following:

- Verifies Chassis temperature and power readings are within tolerance;
- Verifies Chassis fan speeds are operating above minimum tolerance;
- Checks for presence of an internal frequency reference and verifies the internal frequency reference is within tolerance;
- Checks for the presence of trigger signal and verifies signal is within threshold;
- Checks for the presence of a host controller module and verifies module temperature and voltage readings are within tolerance.
- Verifies communication and data exchange (when applicable) between Chassis Backplane, Chassis Modules and Chassis data I/O ports.

Figure 4-13 Chassis Self Test Page



Self Test status is updated throughout the procedure: green indicates a test has passed; red indicates a test has failed (as shown in the example below).

Refer to the section titled [“Self Test Procedure”](#) on page 6-7 for instructions for running the Chassis Self Test.

Self Test Controls

Run All Button

Pressing the Run All Button enables and runs all Self Test procedures.

Run Selected Button

The Run Selected Button runs the selected Self Test procedures.

Abort Button

The Abort Button is enabled when a Self Test Procedure is initiated. When running multiple Self Tests, pressing the Abort Button will stop the series of Self Test procedures as soon as the test that is in process is completed.

Select All Button

The Select All Button enables all Self Test procedures. Use case: to select all but one or two test procedures by enabling all procedures, then deselecting the one or two test procedures that you do not wish to run, then press the Run Selected Button.

Deselect All Button

The Deselect All Button disables all Self Test procedures. Use case: to select only one or two test procedures by disabling all procedures, then selecting the one or two test procedures that you wish to run, then press the Run Selected Button.

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mA-1302/mA-1305 Control and Operation

This chapter describes how to operate and configure the Chassis. Content includes the following:

- Chassis Control and Operation 5-2
 - Web Browser User Interface (UI) 5-2
 - External Software Applications 5-2
- Powering the Chassis 5-3
 - Power on the Chassis 5-3
 - Power off the Chassis 5-3
 - Forced Power Down 5-4
- Configuring the Chassis 5-5
 - View Temperature Data 5-5
 - Manage Fans 5-7
- Configure Network Connections 5-9
 - Chassis Default Network Settings 5-10
 - Configuring Network Mode of Operation 5-10
 - Managing Chassis IP Address 5-13
- Configure Chassis Triggers 5-19
 - Configure Internal Trigger Source 5-19
 - Configure External Trigger Source 5-19
- Configure Clock References 5-21
 - Internal Reference Timing Source 5-21
 - External Reference Timing Source 5-21
 - Use Chassis as a Timing Source 5-22
 - Use GPS as a Timing Source 5-22
- Chassis Synchronization 5-23
 - Reference Clock for Chassis Synchronization 5-23
 - Sync Trigger Input for Chassis Synchronization 5-23

Chassis Control and Operation

The Chassis is controlled by a Host Controller. The Host Controller can be an Embedded Host Module such as the mA-3011 AXIe Embedded Host Module or the host controller can be an External Host Controller such as a computer or tablet. Refer to the section titled [“Hardware requirements” on page 3-2](#) for additional information.

The method used to configure and operate the Chassis depends on the software applications installed in the host controller.

Web Browser User Interface (UI)

The Chassis Web Browser User Interface (UI) is packaged and delivered as part of the Chassis operating software. The System Module supports a Web Browser User Interface (Web UI) which allows the user to monitor and control Chassis configuration. Retrievable information includes Chassis manufacturing information (model number, serial number, etc.), Chassis fabric configurations including Ethernet configuration and PCIe virtual switches and/or ExpressFabric™ configuration, shelf module information, trigger bus control and routing, reference clock control (internal/external, GNSS lock, IEEE 1588v2 lock, Sync-E lock, etc.), and Chassis status (temperature, fan speed, power supply voltage/current).

Refer to the section titled [“Open the Chassis Web UI” on page 4-3](#) for instructions to open and use the Web Browser UI.

External Software Applications

Chassis and module information can be accessed using an external software application such as National Instruments LabVIEW™. If using an external software application, refer to the user documentation provided with the software application for instructions and user information.

Powering the Chassis

Power on the Chassis

This section describes how to power on the Chassis.



NOTE

If the Chassis is connected to a External Host Controller via a PCIe Connection, the External Host Controller should be off before powering on the Chassis.

How to turn on the Chassis

- 1 Complete Chassis setup and installation (refer to [“Setting up the Hardware” on page 3-5](#)).
- 2 Press and release the Chassis On/Standby Button to initiate the power up process. Verify the Chassis On/Standby Button LED flashes green.
- 3 Wait while the Chassis runs the Self Test Procedure.
- 4 The Chassis On/Standby Button LED stays green when the power up process is complete.

Power off the Chassis

This procedure should be used to routinely power down the Chassis. In the event the Chassis is in an unresponsive state perform a “Forced Power Down”.

How to turn off the Chassis

- 1 Press and release the Chassis Power On/Standby Button to initiate the power down process. The Chassis Power On/Standby Button LED flashes amber.
- 2 Wait while the Chassis completes the power down process.
- 3 The Chassis On/Standby Button LED turns amber when the power down process is complete.

Forced Power Down

This section describes how to perform a “hard shut-down”. This procedure should not be used for routinely powering down the Chassis.



NOTE

A Forced Power Down should only be used in the event the Chassis is in an unresponsive state.

How to perform a forced shut down

- 1 Press and hold the Chassis On/Standby Button for approximately 5 seconds. Release the On/Standby Button when the Chassis On/Standby Button LED flashes amber.
- 2 If the Chassis On/Standby Button LED flashes red, press the On/Standby Button again.
- 3 Wait while the Chassis completes the power down process.
- 4 When the Chassis completes the power down process the On/Standby Button LED turns amber.

Configuring the Chassis

This section contains procedures for managing and configuring the Chassis using the Web Browser User Interface. Refer to [Chapter 4 “Chassis Web User Interface \(UI\)”](#) for descriptions of the Web Browser pages and parameters.

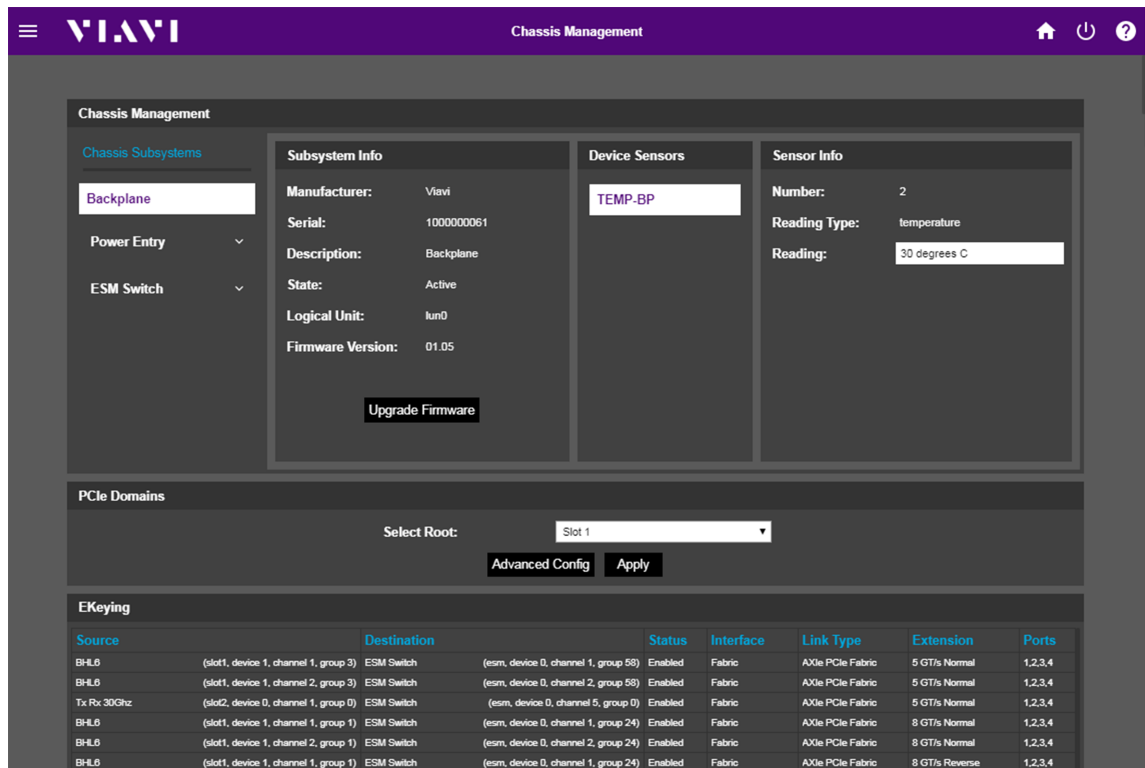
View Temperature Data

Chassis Subsystem Temperature Data

Chassis Subsystem Temperature Data is accessed by selecting the Backplane Subsystem temperature sensor.

- Access: Main Menu > Chassis Management > SubSystem Button > Backplane

Figure 5-1 Chassis SubSystem Temperature Data

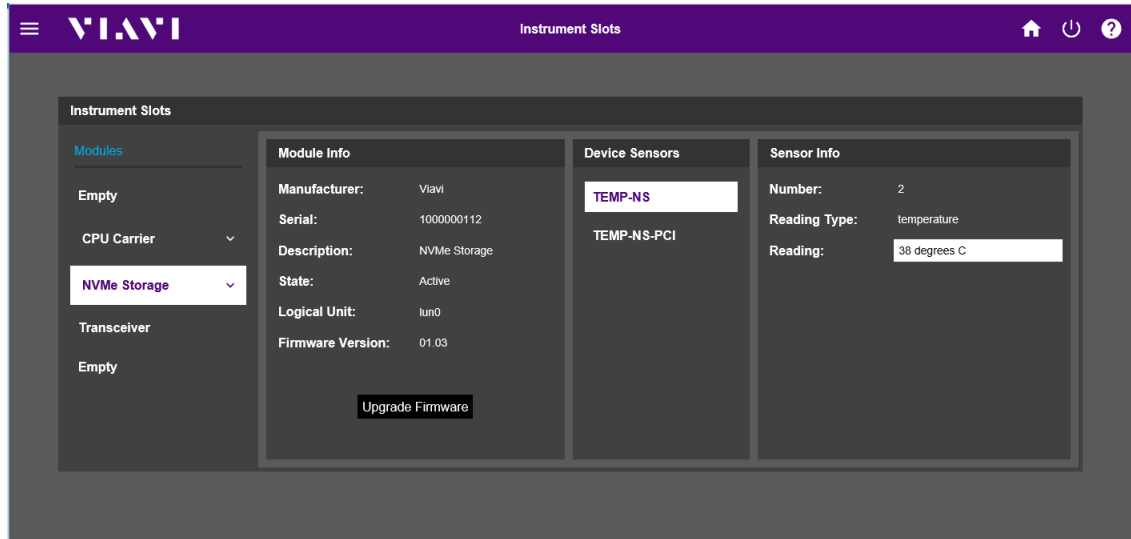


Chassis Module Temperature Data

Chassis Module temperature data is accessed by selecting a Chassis Module temperature sensor on the Instrument Slots Page.

- Access: Main Menu > Instrument Slot > Module > Module Temperature Sensor

Figure 5-2 Chassis Module - Example Temperature Data



Manage Fans

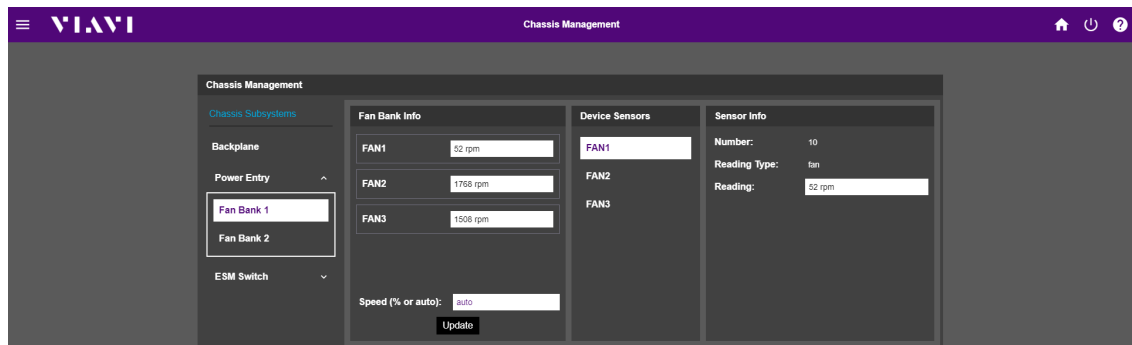
Chassis fan management is a continuous process of monitoring Chassis fans and temperature data to maintain optimal operating temperatures inside the Chassis. The Chassis Power Entry Module (PEM) monitors the fans and sends Sensor Data Reports to the Shelf Manager. The Shelf Manager evaluates the data received from the PEM with temperature data received from other Chassis sensors and adjusts fan speeds as needed to ensure the Chassis and Chassis Modules are operating within OEM temperature specifications.

Access Chassis Fan Data and Settings

Chassis fans data and settings are accessed on the Power Entry Page.

- Access: Main Menu > Chassis Management > Chassis SubSystems > Power Entry > Fan Bank 1 or Fan Bank 2

Figure 5-3 Chassis Fan Data and Settings



Fan Readings

Fan Readings display the current speed at which the fan is turning in revolutions per minute (RPMs). The Shelf Manager adjusts fan speed as needed to maintain the internal temperature requirements of the modules installed in the Chassis. Fan speeds can be set manually by the user (see [“Set Fan Speed” on page 5-8](#)), however, the Shelf Manager overrides manual settings when conditions require (see [“Fan Setting Overrides” on page 5-8](#)).

Set Fan Speed

By default, fan speed is set to AUTO and the Shelf manager auto adjusts the speed of the fans to ensure the system is operating at optimal performance levels.

How to Set Fan Speed

- 1 Navigate to the Power Entry Module Data Table of the Chassis Web UI.
- 2 Select the desired Sensor Fan Button.
- 3 Set Fan Speed to the desired percentage. Refer to Chassis specifications for valid fan range in RPMs.
- 4 Press Update to enable the new setting.



NOTE

Fans speeds can be set manually by the user, however, the Shelf Manager overrides manual settings when conditions require (refer to section titled “Fan Setting Overrides”).

Fan Setting Overrides

In the event the Shelf Manager determines the temperature reading of a module exceeds the manufacturer specification, the Shelf Manager performs the following actions:

- A message is sent to the PEM to increase fan speed (overrides any manual settings).
- The Shelf Manager continues to monitor the Sensor Data Reports received from the PEM and other system sensors.
- When the module reaches an acceptable operating temperature the Shelf Manager gradually reduces fan speed while the Shelf Manager continues to monitor module temperature.
- If the module temperature does not decrease, the Shelf Manager powers-down the module.

Configure Network Connections

The Chassis can be connected to a network using the Ethernet Connector for a wired LAN connection. Chassis network connections are managed from the Chassis Networking Page (see [“Chassis Networking Page” on page 4-17](#)).



IMPORTANT NETWORK CONFIGURATION INFORMATION

Read this section in its entirety before making any changes to the CMP System's network settings. Failure to comply with all information provided in this section may cause system network communication problems. If you are not familiar with the terminology in this section, VIAVI recommends that you contact your network administrator before proceeding.

The information in this section only applies to VIAVI CMP AXIe Modules; refer to OEM user documentation for non-VIAVI products.

All VIAVI modules in a CMP System must be configured to use the same network mode of operation (DHCP or Static).

The IP address of each module in a CMP System must be within range of the other modules in the system or the modules will not be able to communicate with each other.

In the event you lose IP system connectivity, perform the Chassis IP reset procedure ([“How to Reset the Chassis IP Address” on page 5-15](#)) to restore system communication. Once you restore connectivity with the Chassis, refer to the Chassis Networking page for the IP address of the modules located in the Chassis. The Chassis Networking Page is also used to reset the IP addresses for all CMP modules located in the Chassis.



DEFAULT STATIC IP NOTICE

The Chassis ships from the factory with an assigned Static IP Address. Do not connect the Chassis to your local area network (LAN) without contacting your IT department to determine if the Chassis' default IP Address is already in use. If the Chassis' default IP Address is already in use by a device on the network, connecting the Chassis to the network will cause a network conflict.

It is recommended that the Chassis be reconfigured to use a Static IP address assigned by your IT department before connecting the Chassis to a LAN.

Chassis Default Network Settings

Chassis default Network Settings:

- Network Mode: Static IP
- Static IP Address: 10.105.8.32.



NOTE

When Chassis Network Settings are restored to factory default settings, any active network connections are terminated and must be re-established using the factory default settings.

Configuring Network Mode of Operation

This section provides instructions to configure the Chassis and instrument trays for DHCP or Static network mode of operation.



Network Configuration Statement

All VIAVI modules in a CMP System must be configured to use the same network mode of operation (DHCP or Static).

The IP address of each module in a CMP System must be within range of the other modules in the system or the modules will not be able to communicate with each other.

DHCP Mode of Operation

This procedure explains how to configure the Chassis and instrument modules to use DHCP IP Addresses.



NOTE

The Chassis IP Address is required to perform this procedure. If you do not know the Chassis IP address, refer to [“Locate Chassis and Module IP Addresses” on page 5-13](#). Changing the Chassis IP terminates any active network connections; network connections must be re-established using the newly assigned IP Address.

To Set Chassis and Module(s) to Use DHCP IP Addresses:

- 1 Power on the CMP System.
- 2 Open a web browser window.
- 3 Enter the Chassis IP address in the web browser URL field.
- 4 Navigate to the Chassis Networking page.
 - Access: Main Menu > Chassis Networking
- 5 Set the Chassis Network Mode to **DHCP**.
 - Chassis Network Mode menu: Ethernet section of the Network Settings Table
- 6 To set a module to use a DHCP IP Address, select the module instrument slot and set the module Network Mode to **DHCP**.
 - Module Network Mode menu: Slots section of the Network Settings Table
- 7 Select the Apply button. At user prompt, select the Apply and Reboot button.



NOTE

The system will initiate an auto reboot sequence that takes approximately 10 to 15 seconds. If the system does not auto reboot within one minute, press the Power On/Standby button and refer to the following:

- If the Power On/Standby button turns green, the system has initiated the reboot sequence. Wait while the system completes the power up process.
- If the Power On/Standby button turns yellow, the system failed to initiate the power on sequence. Press the Power On/Standby button again to initiate the power on sequence and wait while the systems completes the power up process.

Static Network Mode of Operation

This procedure explains how to configure the Chassis and instrument modules to use Static IP Addresses.



NOTE

In order for the Chassis and instrument trays that comprise a CMP system to communicate with each other, the IP address assignments assigned to the Chassis and instrument trays must be in range of each other, netmasks must agree, gateways must match, etc.

As such, when setting the Chassis to a static IP address, verify that the IP address is compatible with the IP addresses assigned to the instrument trays that are in the Chassis, or after changing the Chassis IP address, update the IP address(s) of the instrument trays in the Chassis.

To Set Chassis and Module to Static IP Addresses:

- 1 Power on the CMP System.
- 2 Open a web browser window.
- 3 Enter the Chassis IP address in the web browser URL field.
- 4 Navigate to the Chassis Networking page.
 - Access: Main Menu > Chassis Networking
- 5 Set the Chassis Network Mode to **Static**.
 - Chassis Network Mode menu: Ethernet section of the Network Settings Table
- 6 Enter desired IP addresses for the Chassis (see [“IMPORTANT NETWORK CONFIGURATION INFORMATION”](#) on page 5-9).
- 7 To set a module to a Static IP Address, select the module instrument slot and set the module Network Mode to **Static**.
 - Module Network Mode menu: Slots section of the Network Settings Table
- 8 Enter the desired IP Address for the module. Repeat step 7 and 8 to configure the IP Address for other modules.
- 9 Select the Apply button. At user prompt, select the Apply and Reboot button.



NOTE

The system will initiate an auto reboot sequence that takes approximately 10 to 15 seconds. If the system does not auto reboot within one minute, press the Power On/Standby button and refer to the following:

- If the Power On/Standby button turns green, the system has initiated the reboot sequence. Wait while the system completes the power up process.
- If the Power On/Standby button turns yellow, the system failed to initiate the power on sequence. Press the Power On/Standby button again to initiate the power on sequence and wait while the systems completes the power up process.

Managing Chassis IP Address

This section provides instructions for locating and resetting system IP Addresses.

Locate Chassis and Module IP Addresses



NOTE

This procedure applies to a CMP Chassis that contains an mA-3011 AXIe Embedded Host Module.

If the system does NOT contain an mA-3011 AXIe Embedded Host Module, and the Chassis IP Address is unknown, refer to [“How to Reset the Chassis IP Address”](#) on page 5-15.

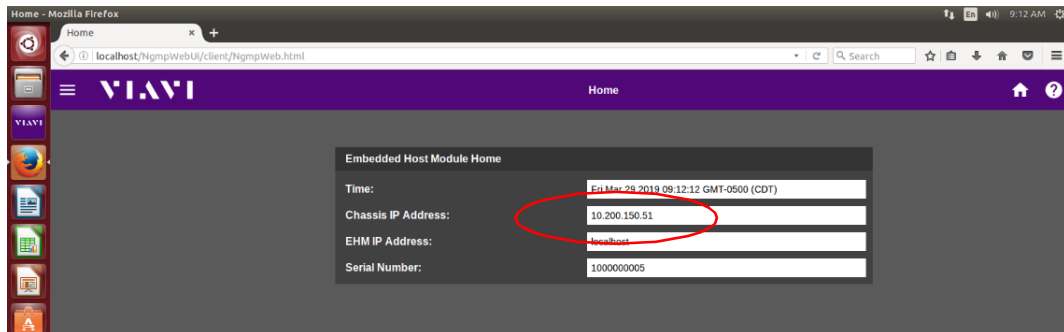
Scope of Procedure

This procedure applies the Chassis and Instrument Modules.

Procedure

- 1 Power on the CMP System.
- 2 Open a web browser window.
- 3 Enter "localhost" into the web browser URL field. This will display the Embedded Host Module Web Browser User Interface (Web UI).

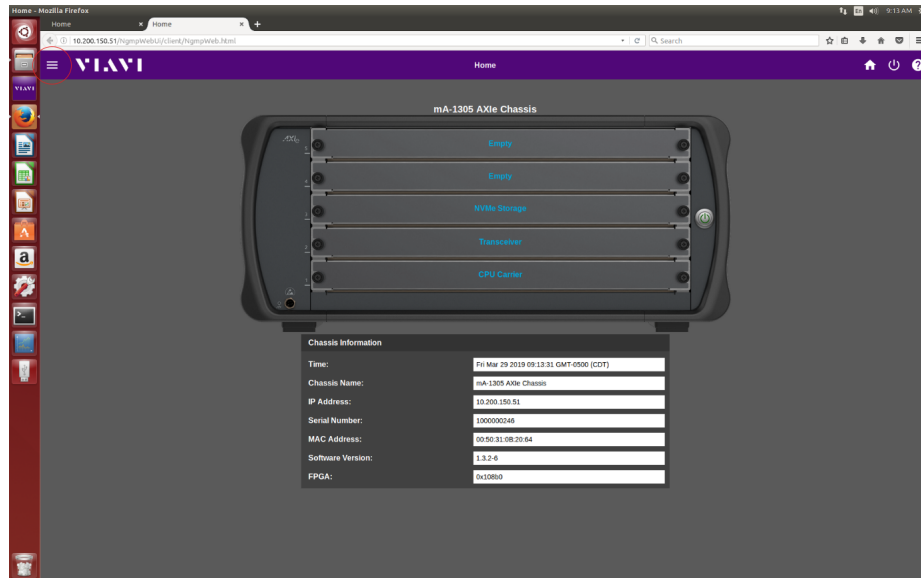
Figure 5-4 Local Host Homepage



- 4 Enter the Chassis IP address in the web browser URL field.

- The Chassis Web UI Homepage will be displayed. The Homepage should resemble the example shown in Figure 5-5.

Figure 5-5 Chassis Web UI Homepage



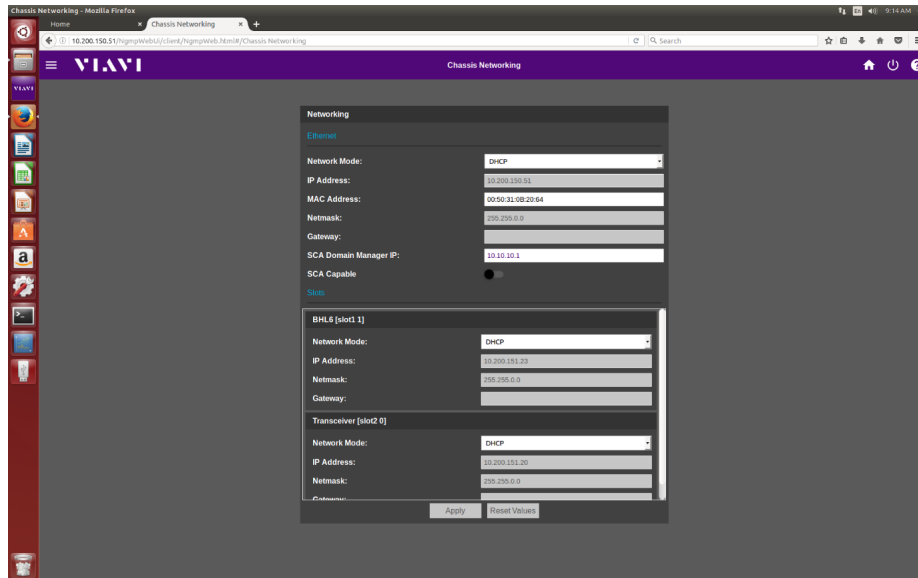
- From the Chassis Homepage, open the Main Menu and select the Chassis Networking button.

Figure 5-6 Chassis Web UI Navigation



- 7 The Chassis Networking page displays the IP address for each module in the system.

Figure 5-7 Chassis Web UI Networking Page



How to Reset the Chassis IP Address

Scope of Procedure

This procedure applies to mA-1305 Chassis running software 1.2.0 or higher.

This procedure is used to recover and reset the Chassis IP Address when the IP Address is unknown.



NOTE

To ensure that all steps are performed properly, read this procedure in its entirety before performing this procedure.

Restore Chassis Default IP

- 1 Connect one end of an Ethernet cable to the host controller.
- 2 Connect the other end of the Ethernet cable to one of the Ethernet connectors on the CMP System.
- 3 Navigate to the host controller's network settings window; record the host controller's network settings for use later in this procedure.
- 4 Set the host controller's IP to the Chassis Recovery IP Address (169.254.11.11).
- 5 Set the host controller's Netmask to 255.0.0.0.
- 6 Power cycle (reboot) the Chassis.

- 7 Rebooting the Chassis temporarily resets the Chassis to the Chassis Default IP address (10.105.8.32).



NOTE

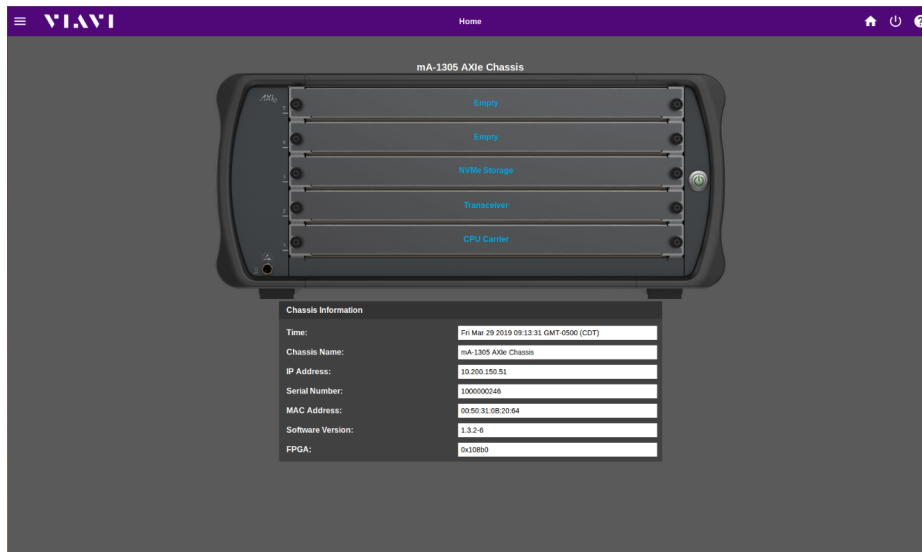
At this stage in the procedure, the Chassis IP Address must be changed to a different IP Address. If the IP Address is not changed, when the Chassis is rebooted the system will revert to the last stored IP Address (the IP Address to which the Chassis was set prior to starting this reset procedure).

Proceed to the next step to change the Chassis IP Address.

Change Chassis to a Static IP Address

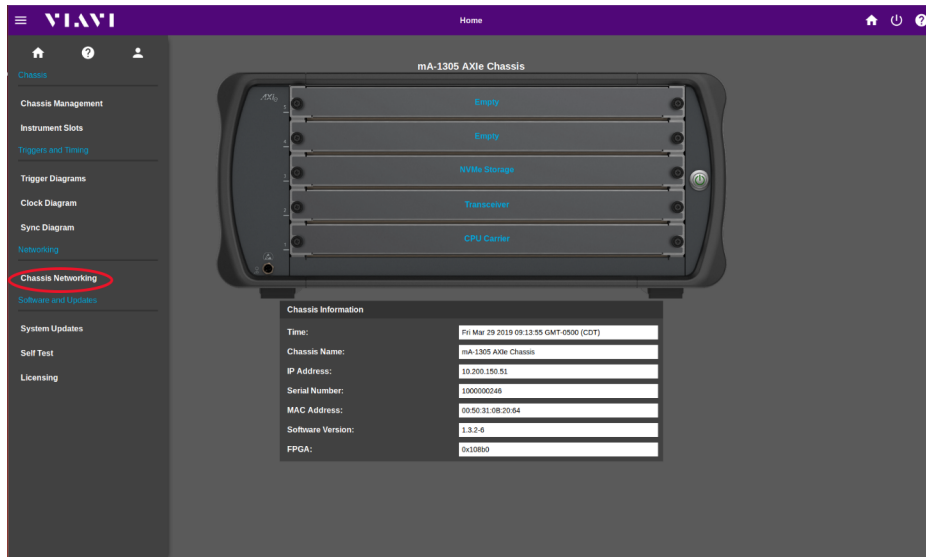
- 8 Open a browser window on the host controller.
- 9 Enter the Chassis Default IP Address (10.105.8.32) in the browser URL field to open the Chassis Web Browser UI.

Figure 5-8 Chassis Web Browser UI Homepage



- 10 Select Chassis Networking from the configuration menu.

Figure 5-9 Chassis Web Browser UI Networking



- 11 Select the Chassis IP Address field and enter the desired IP address.
- 12 Navigate to the host controller's network settings window and restore the host controller's network settings to the values recorded earlier in this procedure.
- 13 Power cycle (reboot) the Chassis to activate and store the new IP address.



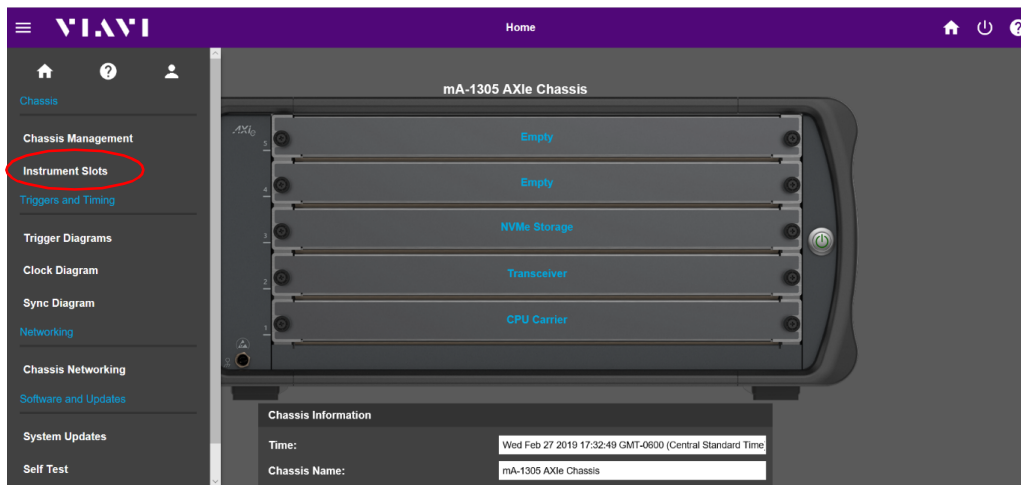
NOTE

When the Chassis is rebooted, the web browser connection to the Chassis Default IP address will be lost; the Web Browser UI connection will need to be re-established using the newly assigned Chassis IP address.

- 14 Navigate to the browser window on the Host Controller. Enter the newly assigned Chassis IP address in the browser window URL field.

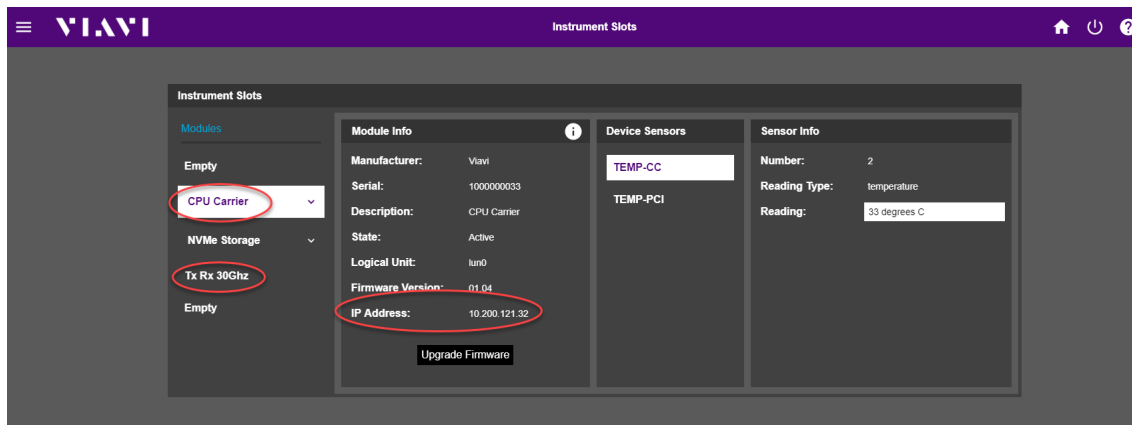
- 15 Select Instrument Slots from the menu to view the instruments that are available in the Chassis.

Figure 5-10 Chassis Web Browser UI Instrument Slot Navigation



- 16 Select an instrument to view the instrument’s IP address.

Figure 5-11 Chassis Web Browser UI Instrument Slot Page



Configure Chassis Triggers

Chassis trigger signals are routed using the interactive Trigger Routing Diagram. Refer to the section titled Triggers and Timing Signal Definition for a description of available signals. Refer to the section titled "[Trigger Routing Diagram](#)" on page 4-12 for a description of trigger routing pages.

Configure Internal Trigger Source

This procedure provides instructions to configure a Chassis to use an internal signal as a trigger source.

How to Configure Internal Trigger Source

- 1 Navigate to the Trigger Routing Matrix page.
 - Access: Main Menu > Trigger Diagrams
- 2 Select the **Click to Configure Trigger Routing Matrix** box from the Trigger Diagrams page.
- 3 Enable the Signal Relay Switch for the desired TRIGN (0:11) to the desired TRIGN (0:11).

Configure External Trigger Source

This procedure explains how to configure a Chassis to use an external signal as a trigger source.

How to Configure External Trigger Source

- 1 Connect a valid signal source to Chassis Trigger Input Connector.
- 2 Navigate to the Trigger Routing Matrix page of the Chassis Web UI
 - Access: Main Menu > Trigger Diagrams
- 3 Select the **Click to Configure Trigger Routing Matrix** box from the Trigger Diagrams page.
- 4 Enable the Signal Relay Switch for EXT_TRIG_IN to the desired TRIGN (0:11).
- 5 Return to the Trigger Diagrams page. Select the **Click to Configure Trigger External Trigger** box from the Trigger Diagrams page.
- 6 Configure the System Trigger Threshold.

Configure Chassis as Trigger Source

This procedure provides instructions to configure a Chassis to output a signal to be used by other equipment as a trigger source.

How to Configure Chassis as Trigger Source

- 1 Connect coaxial cable to Chassis External Trigger Out Connector.
- 2 Navigate to the Trigger Routing Matrix page.
 - Access: Main Menu > Trigger Diagrams
- 3 Select the **Click to Configure Trigger Routing Matrix** box from the Trigger Diagrams page.
- 4 Enable the Signal Relay Switch for the desired TRIGn (0:11) signal to EXT_TRIG_OUT.

Configure Clock References

Refer to the section titled “Clock (Timing) Configuration Page” for details about Chassis Clock references and settings.

Internal Reference Timing Source

This procedure provides instructions to manually configure a Chassis to use the system's internal 100 MHz reference as a timing source.

How to Configure Internal Reference Timing Source

- 1 Navigate to the Clock Routing Diagram of the Chassis Web UI.
 - Access: Main Menu > Clock Diagram
- 2 Select the INT_REF Signal Relay Switch.

External Reference Timing Source

When the Chassis is powered on, the Shelf Manager performs a standardized discovery routine which identifies Chassis Input/Output signal connections. The Shelf Manager must detect a valid external frequency reference signal at the Chassis External Reference Input Connector in order to configure the Chassis to use an external reference as a timing source.



NOTE

In order for an external frequency reference to be valid the signal must be within the Chassis' lockable frequency range. Refer to the Chassis data sheet for valid frequency range.

This procedure provides instructions to configure a Chassis to use an External Reference as a timing source.

How to Configure External Reference Timing Source

- 1 Connect an external 10 MHz or 100 MHz frequency reference to the Chassis' External 10/100 MHz Reference Input Connector.
- 2 Navigate to the Clock Routing Diagram of the Chassis Web UI.
 - Access: Main Menu > Clock Diagram
- 3 Select the 10/100 MHz EXT_REF Signal Relay Switch.



NOTE

If a 10/100 MHz External Frequency Reference is not available an error message is displayed and the system defaults to the Internal Frequency Reference.

Use Chassis as a Timing Source

This procedure explains how to configure a Chassis to be used as a timing source.

How to Configure Chassis as Timing Source

- 1 Connect a coaxial cable to the Chassis Reference Output Connector.
- 2 Navigate to the Clock Routing Diagram of the Chassis Web UI.
 - Access: Main Menu > Clock Diagram
- 3 Configure the Chassis timing source (INT_REF or 10/100 MHz EXT_REF).
- 4 By design, a portion of the Chassis reference Clock is routed to the Reference Output Connector.
- 5 Configure the Clock Divider setting.

Use GPS as a Timing Source

This procedure explains how to configure a Chassis to use the system's GNSS Input Connector as a timing source.



NOTE

If a GNSS Signal is not available at the GNSS Input Connector, an error message is displayed and the system defaults to the Internal Frequency Reference.

How to Configure GPS Timing Source

- 1 Connect a coaxial cable from a GNSS antenna to the Chassis GNSS Input Connector.
- 2 Navigate to the Clock Routing Diagram of the Chassis Web UI.
 - Access: Main Menu > Clock Diagram
- 3 Select the GPS Disciplined Signal Relay Switch.

Chassis Synchronization

The Chassis offers several timing signals that are used to achieve synchronous or asynchronous timing in a Chassis system. Clock Synchronization is configured using the Sync Routing Diagram.

Reference Clock for Chassis Synchronization

This procedure provides instructions to configure a Chassis to use a divided version of the Reference Clock for system synchronization.

How to Configure Reference Clock for Chassis Synchronization

- 1 Configure Chassis Clock Source (refer to section titled “Configure Clock References”).
- 2 Navigate to the Sync Routing Diagram of the Chassis Web UI.
 - Access: Main Menu > Sync Diagram
- 3 Select the CLK100 Signal Relay Switch.
- 4 Configure the Sync Clock Divider.

Sync Trigger Input for Chassis Synchronization

This procedure provides instructions to configure a Chassis to use the Trigger Input Signal for system synchronization. This procedure involves routing a signal from the Chassis Trigger Input Connector to the Chassis internal trigger.



NOTE

The Chassis synchronization signal can be driven by any applicable signal from the Trigger Routing Matrix, not just the External Trigger Input Connector.

How to Configure Sync Trigger Input for Chassis Synchronization

- 1 Connect a valid input signal to Chassis Trigger Input Connector.
- 2 Configure Chassis Trigger Routing.
 - Main Menu > Triggers Diagram
- 3 Select the **Click to Configure Trigger Routing Matrix** box from the Trigger Diagrams page.
- 4 Navigate to the Sync Routing Diagram.
 - Main Menu > Sync Diagram
- 5 Select the SYNC_TRIG_OUT Signal Relay Switch.

Care and Maintenance

This chapter contains instructions for the care and maintenance of the mA-1302/mA-1305. Instructions cover the following topics:

- Maintaining the Chassis 6-2
 - Storing the Chassis 6-2
 - Visual Inspections 6-2
 - External Cleaning 6-3
- Software/Firmware Updates 6-3
 - Firmware/Software Distribution Methods 6-3
 - Updating Chassis Firmware/Software 6-4
 - Chassis Self Test 6-7
- Shipping the Chassis 6-9
 - Return Material Authorization (RMA) 6-9
 - Tagging Equipment 6-9
 - Shipping Containers 6-9
 - Freight Costs 6-10
 - Packing Procedure 6-10

Maintaining the Chassis

The following procedures may be performed by the Operator. All other service must be performed by Qualified Service Personnel.



CAUTION

This Device does not contain user serviceable parts. Servicing should only be performed by Qualified Service Personnel.

Mise en Garde

Cet appareil ne contient pas de pièces pouvant être entretenues par l'utilisateur. L'entretien doit seulement être effectué par du personnel de service qualifié.

Storing the Chassis

To prepare the Chassis for long-term storage:

- 1 Disconnect the Chassis from AC Power Supply.



NOTE

Wait until the Chassis fans stop running before disconnecting the Chassis from the AC Power Supply.

- 2 Disconnect all accessory cords from the Chassis.
- 3 Refer to the [Appendix A “Safety and Compliance Specifications”](#) or the Chassis data sheet for proper storage environment.

Visual Inspections

Visual inspections should be performed periodically depending on operating environment, maintenance and use.

- Ensure that AC Power Cord and supply connector are in good condition.
- Examine the stability and condition of covers and handles.
- Check the presence and condition of all warning labels and markings and supplied safety information.

External Cleaning

The following procedure contains routine instructions for cleaning the exterior of the Chassis.

- Remove grease, fungus and ground-in dirt from surfaces with soft lint-free cloth dampened (not soaked) with isopropyl alcohol.
- Remove dust and dirt from connectors with soft-bristled brush.
- When not in use, cover the connectors with suitable dust cover to prevent tarnishing of connector contacts.

Software/Firmware Updates

The Chassis is shipped from the factory with the firmware and device drivers pre-loaded on the Embedded System Module (ESM). Users should perform routine checks to determine if a newer version of Chassis firmware and/or device drivers is available. Contact VIAVI Customer Service to check for the latest version of software, firmware and/or drivers.

Firmware/Software Distribution Methods

Firmware and software update distribution methods vary based on the export classification of the software as well as customer requirements. System firmware and software updates are distributed in the form of an ISO image.

- The ISO image will be distributed to customer on a USB device or CD.
- OR -
- An email will be sent to the end user with a link to download the ISO image from a secure file exchange server.



NOTE

The distributed ISO image will contain the latest version of software and firmware for the CMP system.

Updating Chassis Firmware/Software



NOTE

The information in this section pertains to updating a CMP Chassis that is being controlled by an mA-3011 AXIe Embedded Host Module.

This procedure is not applicable to a CMP Chassis that is being controlled by an external controller or by an embedded host module from another manufacturer.

If the system does NOT contain an mA-3011 AXIe Embedded Host Module, or if the Chassis is being controlled by an embedded host module from another manufacturer, refer to [Appendix D “External Host Controller Update Procedure”](#).

Scope of Procedure

This procedure is the recommended method of updating the firmware and software in VIAVI CMP Systems. This procedure applies to CMP Systems that contain, at minimum, an mA-1302/mA-1305 AXIe Chassis and an mA-3011 AXIe Embedded Host Module.

VIAVI configuration controlled CMP Systems, such as Ranger, may also contain in some combination the mA-6806 AXIe 6 GHz VST, the mA-6A30 AXIe VST with 30 GHz Downconverter and the mA-3A01 AXIe Mass Storage Module.

The procedure described in this section is used to update all VIAVI CMP AXIe modules that are contained in the mA-1302/mA-1305 AXIe Chassis.

Firmware/Software Update Tool

CMP system software/firmware is updated using the VIAVI Software Upgrade Tool. The Software Upgrade tool is a software update package/application that will scan the CMP system to determine which modules have updates available. The VIAVI Software Upgrade Tool is distributed as part of the update ISO image.

Preliminary Procedure

If the ISO image has been received on a USB device or CD, proceed to the Firmware/Software Upgrade Procedure (page 6-5).

If the ISO image has been downloaded from a secured file exchange server, the ISO image must be burned to a USB device or a CD.



NOTE

There are various tools and applications available to burn an ISO image to a USB device or CD/DVD. This manual does not provide instructions for using these external tools or applications. VIAVI recommends the following tool for burning ISO images to USB devices: <https://rufus.ie/>.

Firmware/Software Upgrade Procedure

- 1 Connect the USB Device to an mA-3011 front panel USB connector.



USE OF USB to CD-ROM DEVICE

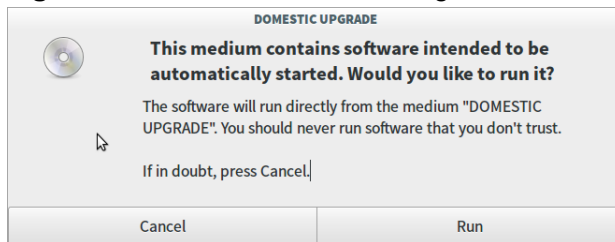
A Y-cable or dual USB connectors is required to draw enough current to power the external CD-ROM device.

Connect external CD-ROM device to mA-3011 Embedded Host module, via a Y-Cable or cable with 2 USB connectors.

If using a high-powered USB device, only use the top two mA-3011 USB connectors.

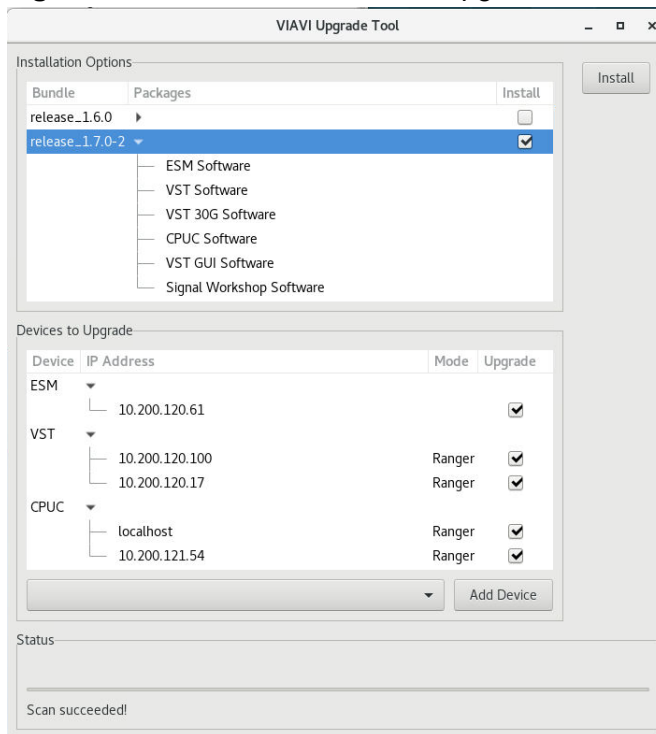
- 2 When the USB device is connected, the operating system displays a prompt. Review the user prompt message and select the Run button to proceed.

Figure 6-1 Auto-Run Dialog Box



- 3 After the upgrade is confirmed, the software upgrade tool window is displayed (Figure 6-2).

Figure 6-2 VIAVI Software Upgrade Tool Window



- 4 The Installation Options section of the window shows software that is contained in the upgrade tool as well as devices that have pending upgrades.
- 5 If a device is not auto-detected, select the device from the Devices to Upgrade section of the window and press the Add Device button.



NOTE

Double click on the IP Address of new device to edit the device's IP Address.

- 6 Select the Install button to continue.
- 7 Wait while the system performs a series of automated processes. This will take several minutes.



NOTE

Do not interrupt the upgrade process or the upgrade will not be completed properly.

- 8 When the upgrade process is complete, the user will be prompted to power cycle the system.
- 9 Power cycle the Chassis to apply the new changes.

Chassis Self Test

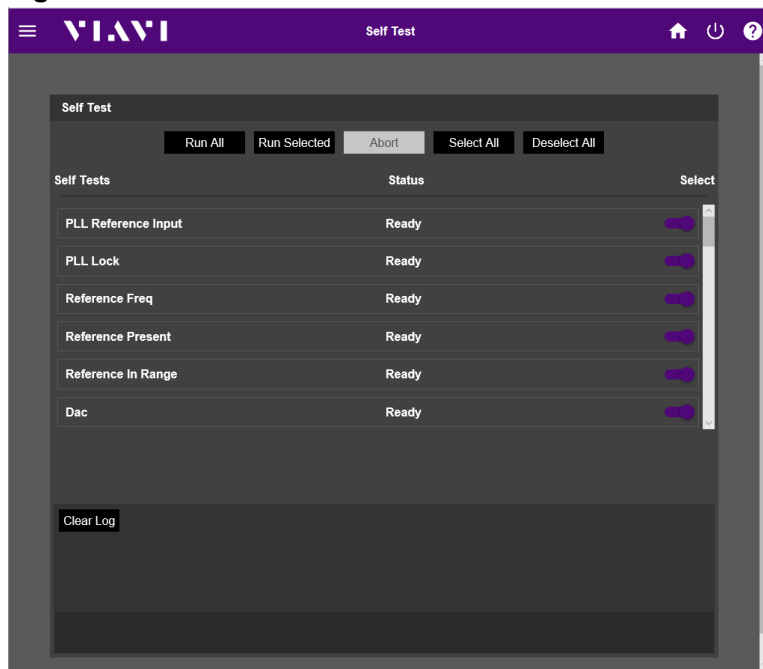
The Chassis Self Test is an automated process that evaluates the Chassis' operational status. Refer to the section titled “Self Test Page” on page 4-22 for details about the fields and settings located on the Self Test Page.

Self Test Procedure

Run All Self Test Procedures

- 1 Open the Chassis Web Browser UI.
- 2 Navigate to the Self Test Page.
- 3 Press the Run All Button.

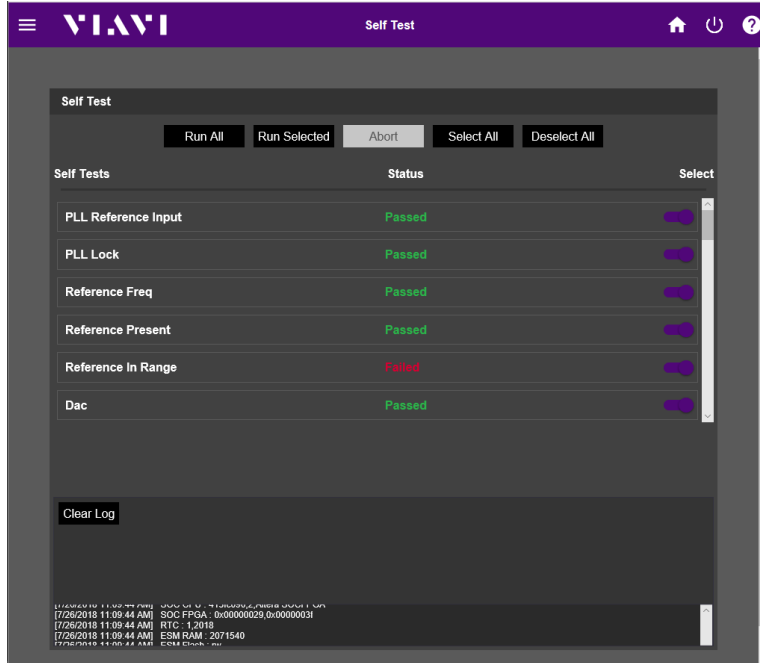
Figure 6-3 Chassis Self Test



To run a specific self test procedure

- 1 Open the Chassis Web Browser UI.
- 2 Navigate to the Self Test Page.
- 3 Select the test(s) to be performed, then press the Run Selected Button.

Figure 6-4 Chassis Self Test Complete



Shipping the Chassis



NOTE

If the Chassis contains AXIe modules not manufactured by VIAVI Solutions, contact VIAVI Solutions Customer Service for shipping instructions. Do not send AXIe modules not manufactured by VIAVI Solutions with the Chassis unless instructed to do so by VIAVI Customer Service.

Refer to the following link for additional information for shipping equipment:
<https://www.viavisolutions.com/en-us/general-shipping-instructions-avionics-radio-test-rmas>.

Return Material Authorization (RMA)

Do not return any products to the factory without prior authorization from VIAVI Customer Service. Visit the following link to request an RMA number:
<https://www.viavisolutions.com/en-us/services/instrument-services/return-material-authorization-rma/rma-request-avionics-radio-test>.

Tagging Equipment

All items shipped to VIAVI must be tagged with:

- Owner's Identification and contact information
- Nature of service or repair needed
- Model Number and Serial Number
- Return Authorization (RA) Number

Shipping Containers

Devices must be repackaged in original shipping containers using VIAVI packing materials. If original shipping containers and materials are not available, contact VIAVI Customer Service for shipping instructions.



NOTE

VIAVI is not responsible for the cost of repairs for damages that occur during shipment on warranty or non-warranty items.

Freight Costs

All freight costs on non-warranty shipments are assumed by the customer. VIAVI recommends that customers obtain freight insurance with the freight carrier when shipping the Device.



NOTE

VIAVI is not responsible for the cost of repairs for damages that occur during shipment on warranty or non-warranty items.

Packing Procedure

How to Package Chassis

- 1 Contact Customer Service to obtain a Return Authorization number, return address and for questions about proper packaging.
- 2 Tag the device.
- 3 Insert bottom packing mold in shipping container.
- 4 Place top packing mold securely on top of Chassis.
- 5 Seal shipping container with tape.
- 6 Include Return Authorization number on the packaging label.

Safety and Compliance Specifications

This section contains safety and compliance specifications for the mA-1302 and mA-1305. These specifications apply to both models except as noted. Refer to the mA-1302/mA-1305 AXIe Chassis Data Sheet located on the VIAVI Solutions website for complete product specifications.

- [Unit Specifications](#) [A-2](#)
- [Electrical Specifications](#) [A-3](#)
 - [Environmental Specifications](#) [A-3](#)
- [Regulatory and Compliance Standards](#) [A-4](#)

Unit Specifications

Weights indicated are for Chassis, no modules installed. When multiple modules are installed in the Chassis, evaluate total weight as possible two-person lift.

Table A-1 Rack Units

| Model | Specification |
|---------|---------------|
| mA-1302 | 2U x 19" |
| mA-1305 | 4U x 19" |

Table A-2 mA-1302 Physical specifications

| Parameter | Specification |
|-----------|---------------|
| Height | 88.1 mm |
| Width | 432 mm |
| Depth | 436 mm |
| Weight | 10.5 kg |

Table A-3 mA-1305 Physical specifications

| Parameter | Specification |
|-----------|---------------|
| Height | 177 mm |
| Width | 432 mm |
| Depth | 436 mm |
| Weight | 12.2 kg |

Table A-4 Operating and storage environment

| Parameter | Specification |
|-----------------------|---------------------------------|
| Operating Temperature | 0 to 50°C |
| Storage Temperature | -40 to 71°C |
| Humidity | 95% up to 40°C (non-condensing) |
| Vibration | 5-500 Hz |
| Shock | 30 G Shock |

Electrical Specifications

Table A-5 Power supply

| Parameter | Specification |
|-------------------|---|
| AC Voltage | 100 to 240 VAC 50/60 Hz |
| Power Consumption | mA-1302: 800 W max (200 W allocated to each of 2 slots) mA-1305: 1400 W max (200 W allocated to each of 5 slots) |
| Fuse Requirements | Dual 15A, 250 V, Type F |

Environmental Specifications

Table A-6 Environmental Specifications

| Parameter | Specification |
|-----------------------|---------------------------------|
| Operating Temperature | 0°C to 50°C |
| Storage Temperature | -40°C to 71°C |
| Warm-up Time | 30 minutes |
| Relative Humidity | 95% up to 40°C (non-condensing) |
| Altitude | 4600 m (15091 ft) |
| Functional Shock | 30 G |
| Random Vibration | 5 to 500 Hz |

Regulatory and Compliance Standards

Table A-7 EMC Compliance

| |
|------------------------------------|
| European EMC Directive 2004/108/EC |
| IEC/EN 61326-1 |
| AS/NZS CISPR 11 |
| IECS/NNM-001 |

Table A-8 Safety Standards

| |
|---|
| European Low Voltage Directive 2006/95/EC |
| IEC/EN 61010-1, 2nd Edition |
| Canada: CSA C22.2 No. 61010-1-04 |
| USA: UL Std No. 61010-1 2nd Edition |

Timing and Trigger Sources Signal Definitions

This appendices describes the trigger and timing signals that are available for single Chassis systems.

- [Trigger Signal Definitions](#) B-2
- [Clock Signal Definitions](#) B-3
- [Synchronization Signal Definitions](#) B-3

Trigger Signal Definitions

Table B-1 Trigger Signals

| Trigger Label | Trigger Definition |
|--------------------------|---|
| EXT_TRIG_IN | The System Trigger Input is a 3.3V, adjustable threshold, LVCMOS (Low Voltage Complementary Metal Oxide Semiconductor) signal that is externally driven from the Chassis Trigger Input Connector to the Trigger Routing Matrix. |
| EXT_TRIG_OUT | The System Trigger Output is a 3.3V LVCMOS signal driven from the Trigger Routing Matrix to the Chassis Trigger Output Connector. |
| TIMESTAMP_TRIG | API Programmable trigger: trigger is programmed via API to occur at specified time events. |
| TRIG# (0:11) | Bidirectional MLVDS (MultiPoint Low Voltage Differential Signal) trigger pairs that are shared between backplane instruments and the Trigger Routing Matrix. |
| STRIG# (1:5) | LVDS Star Trigger pairs driven by the Embedded System Module (ESM) to individual instrument slots. |
| SYNC_TRIGGER | A low skew Trigger signal that can be used for trigger and timing synchronization purposes. |
| SW_TRIG_IN / SW_TRIG_OUT | The Software Trigger signal is driven by the ESM via API commands. |

Clock Signal Definitions

Table B-2 Clock Signals

| Trigger Label | Trigger Definition |
|-------------------------------|--|
| GPS_DISCIPLINED | The Chassis Internal Frequency Reference may be frequency synchronized when an incoming GPS signal is present on the Chassis GNSS Antenna Input Connector. |
| INT_REF | The Chassis Internal Frequency Reference is used as a reference clock. |
| 10/100 MHz EXT_REF | The Frequency Reference Input Connector may use an external 10 MHz or 100 MHz reference signal as a reference clock input. |
| SYNCE (Recovered Ethernet) | The Chassis Internal Frequency Reference may be frequency synchronized when connected to an appropriate IEEE 1588/802.1 or Sync E signal network. |
| 10/100 MHz REF_OUT | The External Reference Output Connector can be switched between a 10 MHz or 100 MHz signal. |

Synchronization Signal Definitions

Table B-3 Synchronization Signals

| Trigger Label | Trigger Definition |
|---------------|--|
| CLK100 | Internal Clock Reference which can be used to drive Chassis synchronization for timing purposes. |
| SYNC_TRIG_OUT | Trigger Output signal routed from the Trigger Routing Matrix that can drive the Chassis Backplane synchronization trigger. |
| SYNC_TRIG_IN | Trigger Input signal routed from the Chassis Backplane synchronization trigger to the Trigger Routing Matrix. |

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PCIe (Slot) Configuration Procedure

This appendices provides detailed information about the systems PCIe domain configuration and instrument Chassis slot assignments.

- [PCIe Domain Configuration Overview](#) C-2
- [Viewing and Managing PCIe Domain Configuration](#) C-2
- [PCIe Configuration Procedure](#) C-4
 - [System Hardware Configuration](#) C-4
 - [Prerequisites](#) C-4
 - [Procedure](#) C-5

Terms

The following terms are using in this appendices:

- The term “root device” refers to a device such as the COM Express CPU on an mA-3011 Host Module.
- The term “Endpoint” refers to an instrument module that is installed in a CMP Chassis. For example, the mA-6806 AXIe 6 GHz VST module or mA-3A01 AXIe Mass Storage module.
- The term “target hardware” refers to instrument trays that are installed in the CMP Chassis.

PCIe Domain Configuration Overview

The CMP mA-1305 Chassis supports up to four PCIe domains, each domain with its own “Root”, or master device, such as a COM Express CPU or other PCIe master capable device. Root devices MUST NOT be configured to use the same PCIe domain. If more than one root device is assigned the same PCIe domain (“slot”), the system will not be able to differentiate between the two root devices, preventing the Chassis from booting up, leaving the system inoperable.

For example, an mA-3011 Dual Host Module contains two COM Express CPU modules; each COM Express module is considered a “Root” device. Each COM Express CPU must be assigned to a different PCIe domain. Each PCIe domain must have one and only one Root, with zero or more Endpoints. An Endpoint may only belong to one device (e.g., mA-6806).

Viewing and Managing PCIe Domain Configuration

Chassis PCIe domain assignments are viewed and managed on the Chassis Management page in the PCIe Domain panel. Press the Advanced Config button to display PCIe Domain settings. Figure C-2 shows an example of how the PCIe Domain Advanced Settings page will look.

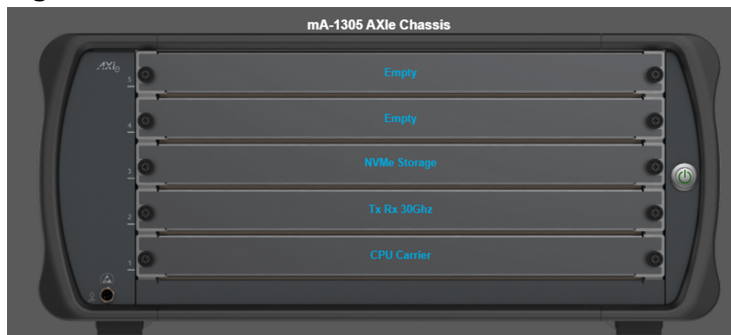
The settings on this page allow users to specify one “Root” for each domain, and assign multiple “Endpoints” to be controlled by that root. Roots and endpoints are specified by the slot number in which the module is inserted, and the device (or “FRU”) within that slot.

For example, an mA-3011 Dual Host Module contains two CPUs, the first, or “primary” CPU is designated “Device: 1”, and the secondary is “Device: 2”. If the mA-3011 contains only one COM Express CPU, the CPU is identified as Device 1.

Any module without sub-sections (or “FRU” devices) has only “Device: 0”, such as the Tx Rx 30GHz and NVMe in Figure C-2.

Figure C-1 shows an example of the Chassis Web UI Instrument Slot page which shows the slot location of the modules in an mA-1305 Chassis. Figure C-2 shows an example of the PCIe Domains configuration tables for the same system.

Figure C-1 Chassis Instrument Slot Contents



In the example, Domain 1 is the Embedded System Module (ESM).

Domain 0 is the CPU Carrier (mA-3011 Embedded Host) located in Slot 1. The CPU Carrier is the root device for the following Endpoints (“target hardware”):

- Tx Rx 30GHz (mA-6A30 AXIe 6 GHz VST with 30 GHz Downconverter)
- NVMe Storage (mA-3A01 AXIe Mass Storage Module)

Figure C-2 Chassis Management - PCIe Domain/Slot Configuration Tables

The screenshot displays the 'PCIe Domains' configuration interface, divided into 'Active Configuration' and 'Saved Configuration' panels. Red arrows indicate the mapping between the two panels.

Active Configuration:

- Domain 0:** Root device. Name: BHL6, Slot: slot1, Device: 1. Endpoints include: USB Controller (Slot: esm, Device: 1), WiFi Controller (Slot: esm, Device: 2), Tx Rx 30Ghz (Slot: esm2, Device: 0), and NVMe Storage (Slot: esm3, Device: 0).
- Domain 1:** Root device. Name: ESM SoC, Slot: esm, Device: 5.

Saved Configuration:

- Domain 0:** Root device. Known Device: BHL6 [slot1 1], Slot: Slot 1, Device: 1. Includes an 'Add Endpoint' button.
- Domain 1:** Root device. Known Device: ESM SoC [esm 5], Slot: ESM, Device: 5. Includes an 'Add Endpoint' button.
- Domain 2:** Partially visible at the bottom.

An 'Apply' button is located at the bottom right of the Saved Configuration panel.

PCIe Configuration Procedure



NOTE

Read this procedure in its entirety before proceeding. If you have any questions regarding this procedure, contact VIAVI Customer Service with any questions **BEFORE** proceeding.

System Hardware Configuration

This system that is used in this procedure consists of the following hardware configuration:

- mA-1305 AXIe Chassis
- mA-3A01 AXIe Mass Storage Module (Slot 3 and 5)
- mA-6806 AXIe 6 GHz VST Module (Slot 2 and 4)
- mA-3011 AXIe Dual Embedded Host Module (Slot 1)

Contact VIAVI customer service if you need assistance with modifying this procedure for use on systems with different hardware configurations.

Prerequisites

This procedure requires the following:

- LAN connection
- Chassis IP Address.

Procedure

This section explains how to sync each mA-3011 (“root device”) to instrument trays (“target hardware”) in the Chassis. Refer to [“System Hardware Configuration” on page C-4](#) when needed to reference hardware slot locations.

- 1 Power on the Chassis.
- 2 Open a browser window.
- 3 Enter the Chassis IP address in the browser URL field.
- 4 Navigate to the Chassis Management page.
- 5 Select Root menu: Select Slot 1 (location of the mA-3011 Dual Embedded Host).
- 6 Select the Advanced Config Button.
- 7 Go to the Saved Configuration section of the PCIe Domains page.

Figure C-3 PCIe Saved Configuration Settings Example

The screenshot shows a web interface titled "Saved Configuration". It is divided into two sections: "Domain 0" and "Domain 1". Under "Domain 0", there is a "Root" section with three dropdown menus: "Known Device:" set to "BHL6 [slot1 1]", "Slot:" set to "Slot 1", and "Device:" set to "1". Below these is an "Endpoints:" section with an "Add Endpoint" button. The "Domain 1" section is partially visible below, also showing a "Root" section. At the bottom of the interface is an "Apply" button.

- 8 Set the following Endpoint parameters for Domain 0.
 - a Known Device: Manual
 - b Slot: Slot 3
 - c Device: 1
- 9 Press the Add Endpoint button.

- 10** Set the following Add parameters for Domain 0:
 - a Known Device: Manual
 - b Slot: Slot 5
 - c Device: 1
- 11** Press the Add Endpoint button.
- 12** Set the following Endpoint parameters for Domain 0:
 - a Known Device: Manual
 - b Slot: Slot 2
 - c Device 2
- 13** Press the Add Endpoint button.
- 14** Set the following Endpoint parameters for Domain 1:
 - a Known Device: Manual
 - b Slot: Slot 4
 - c Device 2
- 15** Press the Add Endpoint button.
- 16** Select the Apply Button. At prompt, select the Apply and Reboot button.



NOTE

The system must be rebooted twice for the new settings to take effect. The first reboot is initiated when the “Apply and Reboot” button is pressed; a second reboot must be performed by the user to finish applying the changes.

External Host Controller Update Procedure

The following procedure is used to update the mA-1302/mA-1305 AXIe Chassis when the Chassis is being controlled by an External Host Controller (the Chassis does not contain a VIAVI CMP mA-3011 AXIe Embedded Host Module).

Read this procedure in its entirety before proceeding.

- [Firmware/Software Distribution Methods](#) D-2
- [Procedure Requirements](#) D-2
- [Directory Update Procedure](#) D-3
- [USB Device Update Procedure](#) D-4

Firmware/Software Distribution Methods

Firmware and software update distribution methods vary based on the export classification of the software as well as customer requirements. Firmware and software updates are distributed as a tar.gz file.

- The tar.gz file will be distributed to customers on a USB device or CD.
-OR-
- An email will be sent to the end user with a link to download the tar.gz file from a secure file exchange server.



NOTE

The distributed tar.gz file will contain the latest version of software and firmware for the Chassis.

Procedure Requirements

The Chassis IP Address is required to perform the update procedure.

If you do not know the Chassis IP Address, refer to the section titled [“Locate Chassis and Module IP Addresses” on page 5-13](#)) for instructions.

Directory Update Procedure

This procedure describes how to update the Chassis from a directory on the External Host Controller.

To update via Host Controller Directory

- 1** Copy or download the tar.gz file to the desired directory on the External Host Controller.
- 2** Open a web browser on the External Host Controller.
- 3** Enter the Chassis IP Address in the web browser URL field to display the Chassis Web UI.
- 4** Navigate to System Update Page of the Chassis Web UI.
 - Access: Main Menu > System Update
- 5** Change Update Mode to File Path.
- 6** Update the file path to point to the External Host Controller directory that contains the tar.gz file.
- 7** Press the Check for Update Button. Wait while the module shelf manager queries the software source location.
- 8** If a more current version of software is identified, the Update Button is enabled. Press the Update Button.
- 9** Wait while the Chassis Shelf Manager performs the update. Do not interrupt this process.
- 10** When the update is complete, reboot the system.

USB Device Update Procedure

This procedure describes how to update that Chassis using a USB memory device or USB to CD-ROM device.

To update via USB Device

- 1** Copy or download the tar.gz file to the USB Device.
 - If using a USB to CD-ROM device, burn the tar.gz file to CD.
- 2** Connect the USB device to the External Host Controller.
- 3** Open a web browser on the External Host Controller.
- 4** Enter the Chassis IP Address in the web browser URL field to display the Chassis Web UI.
- 5** Navigate to System Update Page of the Chassis Web UI.
 - Access: Main Menu > System Update
- 6** Change Update Mode to File Path.
- 7** Update the file path to point to the USB device.
- 8** Press the Check for Update Button. Wait while the module shelf manager queries the software source location.
- 9** If a more current version of software is identified, the Update Button is enabled. Press the Update Button.
- 10** Wait while the Chassis Shelf Manager performs the update. Do not interrupt this process.
- 11** When the update is complete, disconnect the USB device and reboot the system.



Glossary

A - C **API** — Application Programming Interface

CMP — Configurable Modular Platform

D - E **DAC** — Digital to Analog Converter

dB — decibel

DHCP — Dynamic Host Configuration Protocol

EMI — Electromagnetic Interference

ESD — Electrostatic Discharge

G - I **GB** — gigabyte

GbE — Gigabit Ethernet

GHZ — gigahertz

ICM — Instrument Carrier Module

IF — Intermediate Frequency

IPMB — Intelligent Platform Management Bus

IMPC — Intelligent Platform Management Controller (IPMC)

L - M

- LAN** — Local Area Network
- LED** — Light Emitting Diode
- LO** — Local Oscillator
- LVDS** — Low-voltage Differential Signaling
- MHz** — megahertz

P - S

- PCIe** — Peripheral Component Interconnect Express
- PEM** — Power Entry Module
- RA** — Return Authorization
- RTM** — Rear Transition Module
- RF** — Radio Frequency
- SPI** — Serial Peripheral Interface
- SoC** — System-on-Chip
- ShMC** — Shelf Management Controller
- SYNCE** — Synchronous Recovered Ethernet Clock

T - U

- UI** — User Interface



**141171 Rev. D0
May 2020
English**

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