⏀spectracom

NetClock® 9483

Time and Frequency Synchronization System

Option Card Installation Guide

1209-5000-0052 Rev A, December 2012

Contents

Section A: Introduction - NetClock 9483

The NetClock® 9483 combines Spectracom's precision Time Server / master clock technology and secure network-centric approach with a fully NENA-compliant, compact modular hardware design to bring you a powerful time & frequency reference system at the lowest cost of ownership.

NetClock 9483 is ideally suited for applications such as Emergency Communications Centers or environments that require extremely accurate timing and frequency synchronization for their mission-critical systems, networks, and devices. When using GPS as its timing reference, the UTC (Coordinated Universal Time) time standard is employed, thus allowing the NetClock 9483 to provide legally traceable time and frequency synchronization services for various related environments and equipment, such as the following:

- 9-1-1 and PSAP communication center telephony
- Computer network synchronization
- VOIP / voice and video recording
- CAD
- ANI / ALI controllers
- Radio consoles and communications equipment
- Display clocks
- Security & building access systems, fire alarm systems

The NetClock 9483 also includes backwards-compatibility support with all previous generation NetClock products; thus providing a bridge from legacy devices and equipment to network-based systems.

The NetClock 9483 series is a truly flexible Time Server / master clock, also supporting a variety of timecodes (including all NENA formats) and signals to synchronize specific devices. The built-in network port can be supplemented to include 3 additional Gigabit Ethernet (10/100/1000Base-T) ports for synchronizing isolated networks, or for restricting administration to a specific management network. Precise 10 MHz and 1 Pulse-per second (1PPS) signals are standard features, and additional optional features include support for T1/E1 signals are available for synchronizing Telecom systems and equipment, and Precision Timing Protocol (PTP) I/O support.

The unit is housed in a 19" rack unit chassis and offers an integrated power supply. DC power is available as back-up to AC power, or as the primary input power source.

About this Document

This *Option Card Installation Guide* contains information and instructions for installing option module cards in the NetClock 9483.

Installation Overview

Unpacking

On receipt of materials, unpack and inspect the contents and accessories (retain all original packaging for use in return shipments if necessary). The following additional items are included with the option card(s) at shipment and may be required for installation depending upon your card type:

Item	Quantity	Part Number
50-pin ribbon cable	1	CA20R-R200-0R21
Washers	2	H032-0440-0002
Screws	4	HM11R-03R5-0004
Standoffs	2	HM50R-03R5-0018
Cable ties	2	MP00000

Additional Equipment Needed For Installation

In addition to the parts supplied with your option card, the following items are required for installation:

- #1 Philips head screwdriver

Safety

Before beginning any type of option card installation, please carefully read the following safety statements and precautions to ensure that the NetClock unit has been safely and properly powered down (with all AC and DC power cords disconnected). All installation instructions detailed henceforth in this document assume that the NetClock unit has been powered down in this manner.

Always ensure that you adhere to any and all applicable safety warnings, guidelines, or precautions during the installation, operation, and maintenance of your product.

⚠️	**WARNING** ***The interior of this equipment does not have any user serviceable parts. Contact Spectracom Technical Support if this equipment needs to be serviced.*** *This unit will contain more than one power source if both the AC and DC power options are present. Turning off the rear panel power switch will not remove all power sources.* *Ensure all power sources are removed from the unit prior to installing any option cards by removing both the AC and DC power cords connected to the equipment.* *Never remove the cover or blank option card plates with power applied to this equipment.*

	This equipment has Double Pole/Neutral Line Fusing on AC power.
	CAUTION
	Electronic equipment is sensitive to Electrostatic Discharge (ESD). Observe all ESD precautions and safeguards when handling Spectracom equipment.

Slots / Option Module Bays Layout

Use the following figure as a reference of the rear panel slot layout of the NetClock 9483 unit.
The six option module bays are designated as **Slot 1** – **Slot 6**, as shown:
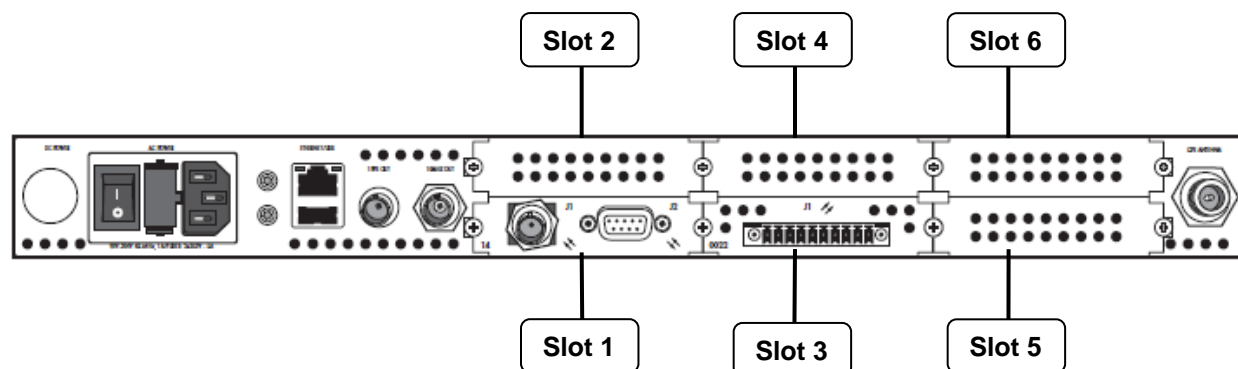
Figure 1: NetClock 9483 rear panel option module bay slots

General Option Card Installation Instructions

IMPORTANT NOTE: Each of the available option cards must be installed into a specific Slot in the NetClock 9483 unit in order to function properly (either **Slot 2**, or **Slot 4**). Refer to the table below to determine the required installation Slot number for your option card, and then follow the installation instructions outlined in the appropriate section for your option card.

Option Card Type:	Required Installation Slot:
Multi-port Gigabit Ethernet (Option 16 / PN 1209-06)	**Slot 2**
T1 / E1 Outputs (Option 13 / PN 1209-0A)	**Slot 4**
PTP Input / Output (Option 12 / PN 1209-12)	**Slot 4**

The following general instructions describe the steps required to install an option module card into **Slot 2** or **Slot 4** of a NetClock 9483 unit:

- Safely power down NetClock unit and remove chassis cover.
- Remove blank panel, or if existing option card already installed in top **Slot 2** or **4**, use screwdriver to unscrew and remove the card from standoffs.
- If standoffs are not already installed, screw standoffs into the corners of the option cards populating the bottom Slots.
- Insert your option card into the appropriate top **Slot 2** or **4** depending upon option card type, lining up the screw holes with the standoffs.
- Using the supplied screws, screw option card into the standoffs.
- Connect any required cables and secure option card into place.
- Replace chassis cover, power on the unit.
- Log in to NetClock web interface; verify the installed option card is identified by the NetClock.

Section B: Specific Option Card Installation Instructions

This section includes detailed instructions and additional information specific to each individual option card for installation.

Multi-Gigabit Ethernet Option Card Installation

NOTE: The Multi-Gigabit Ethernet option card must be installed in **Slot 2**. Also note that this card has its own ancillary kit provided for installation.

- Safely power down NetClock unit and remove chassis cover.
- If standoffs are not already installed, screw standoffs into the corners of the module populating bottom **Slot 1**.
- Insert the Multi-Gigabit option card into **Slot 2** (lining up the card screw holes with the standoffs), and using screwdriver, screw the option card into the standoffs.
- Connect any required cables and secure option card into place.
- Replace chassis cover, power on the unit.
- Log in to NetClock web interface; verify the installed option card is identified by the NetClock.

T1 / E1 – 120 Ohm Option Card Installation

NOTE: The T1 / E1 option card must be installed in **Slot 4**.

- Safely power down NetClock unit and remove chassis cover.
- If standoffs are not already installed, screw standoffs into the corners of the module populating bottom **Slot 3**.
- Insert the T1 / E1 option card into **Slot 4** (lining up the card screw holes with the standoffs), and using screwdriver, screw the option card into the standoffs.
- Connect any required cables and secure option card into place.
- Replace chassis cover, power on the unit.
- Log in to NetClock web interface; verify the installed option card is identified by the NetClock.

PTP Option Card Installation

NOTE: The PTP option card must be installed in **Slot 4**.

IMPORTANT NOTE: If installing the PTP option card, additional steps may be desired, depending upon the NetClock's Reference Priority Input configuration – refer to the following section.

Reference Priority Input Configuration

IMPORTANT NOTE: Adding or removing option module cards impacts the Reference Priority Input configuration of the NetClock in the following manner:

When adding or removing option module cards with configured Input References, any user-defined Reference Priority Input setup configuration will be reset. It is recommended to avoid this by taking the following steps:

1. Save your current NetClock configuration.
2. Power down NetClock unit and install option card (outlined below).
3. Power up NetClock unit.
4. Restore the previously backed up NetClock configuration.

If these steps are *not* taken, the NetClock's Reference Priority table will be reset back to the factory default state for the NetClock hardware configuration, and the user / operator will need to reconfigure the Reference Priority Table. For additional information on managing the Reference Priority Table, refer to the *NetClock 9400 Series Instruction Manual*.

- Safely power down NetClock unit and remove chassis cover.
- If standoffs are not already installed, screw standoffs into the corners of the module populating bottom **Slot 3**.
- Insert the PTP option card into **Slot 4** (lining up the card screw holes with the standoffs), and using screwdriver, screw the option card into the standoffs.
- Connect any required cables and secure option card into place.
- Replace chassis cover, power on the unit.
- Login to the NetClock web interface; verify the installed option card is identified by the NetClock.
- If you had backed up your NetClock configuration, optionally restore the previously saved configuration (as previously noted).

Verifying Successful Installation

After the option module card has been installed, you can begin managing any features or functionality provided by it.

To verify that the option card has been installed successfully and is being correctly recognized by the NetClock:

Open a web browser, log in to the NetClock product web interface and navigate to the **Status** / **Inputs** and/or **Status** / **Outputs** pages. Information displayed on these pages will vary depending upon your option module card or NetClock configuration (for example, the Multi-Gigabit Ethernet option module card has both input and output functionality, and so is displayed in both pages).

NOTE:	*If after an installation the option card does not appear to be properly identified, it may be necessary to update the NetClock system software to the latest available version.*
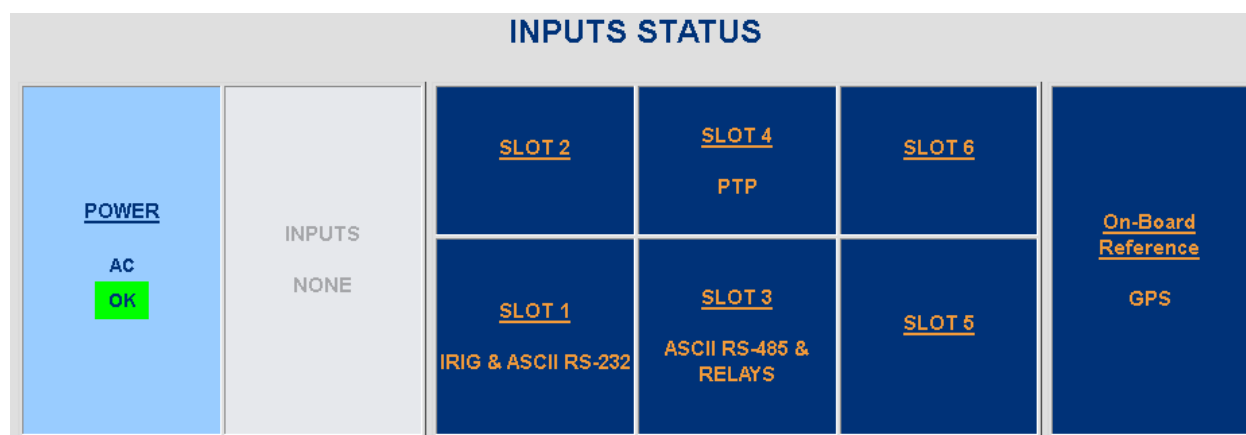
Example Status / Inputs page - NetClock Web Interface
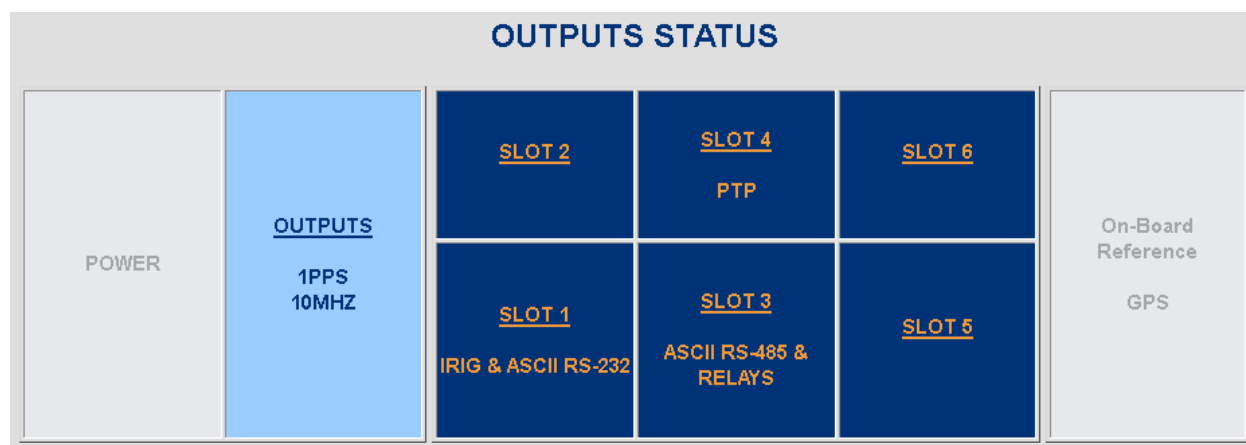
Example Status / Outputs page – NetClock 9483 Web Interface

Technical and Customer Support

If you require further assistance with the configuration or operation of your product, or have questions or issues that cannot be resolved using the information in this document, please contact Spectracom Technical and Customer Support at either our North American or European service centers, or visit the Spectracom website at www.spectracomcorp.com:

NOTE: Premium Support Customers can refer to their service contracts for emergency 24 hour support.

North America		
Phone	+1 585.321.5800	
email	techsupport@spectracomcorp.com	
Europe		
France		**United Kingdom**
Phone	+33 (0)1 6453 3980	44 (0)1256 303630
email	techsupport-france@spectracom.orolia.com	techsupport@spectracom.co.uk

Document Revision History			
Rev	**ECN**	**Description**	**Date**
A	3103	*Initial document release.*	December 2012