

SierraNet™ M1288

Quick Start

Before Starting

Use this document for quick installation and setup. If you experience problems or need more information, see the *Net Protocol Suite User Manual* or at the Teledyne LeCroy web site <https://teledynelecroy.com/sw/netprotocolsuite/>



1 Introduction

The Teledyne LeCroy SierraNet™ M1288 is a highly advanced, fully integrated Ethernet and Fibre Channel protocol analysis and impairment system. SierraNet M1288 supports examination of Ethernet and Fibre Channel links utilizing both Pulse Amplitude Modulation 4 (PAM4) and legacy Non-Return to Zero (NRZ) technologies. It has four SFP-112 ports and four QSFP-DD ports. Up to 256 GB capture memory for capturing extensive line-speed data. The analyzer is controlled either via a one (1) Gigabit Ethernet connection to the local network or via a USB-C connection.

The SierraNet M1288 has an easy-to-understand control panel with LED indicators. Major features of the M1288 include:

- ◆ triggering on back-to-back events,
- ◆ counters within trigger conditions, and
- ◆ multi-state (up to 24) triggering and filtering state machines, with four transitions per state.

The Net Protocol Suite™ software, which controls the analyzer and displays the captured data, installs on the latest Microsoft® Windows® version. See the Readme file for the latest information on host-machine requirements.

2 Components

The analyzer package includes the following components:

- ◆ SierraNet M1288 Analysis platform
- ◆ USB-C 3.0 cable, 1 meter
- ◆ Gigabit Ethernet cable, 10 feet
- ◆ 2 QSFP-DD to QSFP-DD direct attach cables 30AWG, 1 meter
- ◆ DB9M to DB9F Sync cable, 6 feet
- ◆ C13-C14 10A power cord, 2 meter
- ◆ This Quick Start guide

Please see the *SierraNet M1288 User Manual* at the website <https://teledynelecroy.com/sw/netprotocolsuite/> for further details.

3 Unpacking the Analyzer

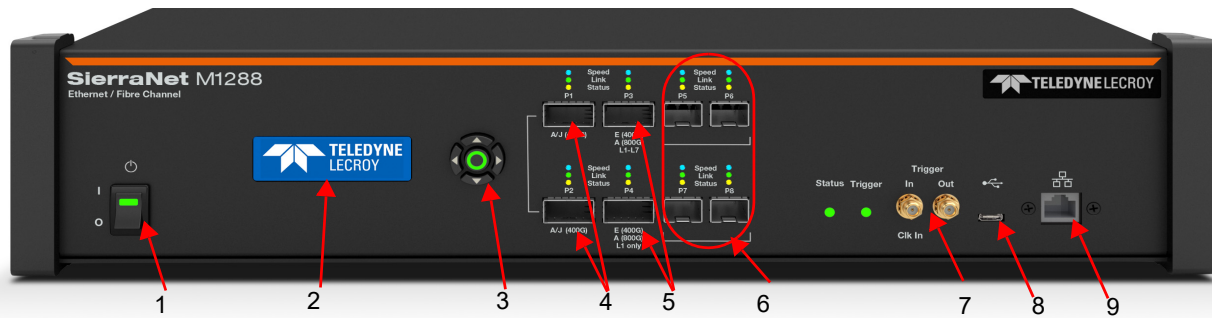
[1] Inspect the received shipping container for any damage.

[2] Unpack the container and account for each of the system components listed on the accompanying packing list.

[3] Visually inspect each component for absence of damage.

NOTE: In the event of damage, notify the shipper and Teledyne LeCroy. Retain all shipping materials for shipper's inspection.

4 Front Panel Description



- [1] Power Switch
- [2] Status and Configuration LCD display
- [3] Front Panel 5-button keypad
- [4] QSFP-DD connectors for ports P1-P2 for digitally-retimed analysis and/or jamming up to 400GbE
- [5] QSFP-DD connectors for P3-P4, for 800GbE L1 (on single unit) or 800GbE L2-L7 (on 2 units). Requires the M1288 Analog Probe
- [6] SFP112 connectors for ports P5-P8, for up to 128G FC analysis and/or jamming
- [7] External trigger input and output (Trigger In/Trigger Out)
- [8] USB-C port for host connectivity
- [9] Ethernet port for network connectivity

LED Indicators for ports P1- P2, P3-P4, P5-P6, P7-P8 for Speed, Link and Status:
Speed LEDs

	Ethernet	Fibre Channel
Yellow	Legacy GbE NRZ	Legacy FC NRZ
Green	50GbE PAM4	64G FC PAM4
Blue	100GbE PAM4	128G FC PAM4

Link Activity LEDs

Green	Network activity Detected
Yellow	Link up, no activity
No Color	No link

Status LEDs

Yellow Blinking	Waiting for trigger
Yellow Solid	Triggered
Red	Error detected
No Color	No Activity

Please see the *SierraNet M1288 User Manual* at the website <https://teledynelecroy.com/sw/netprotocolsuite/> for further details.

5 Front Panel Parameters/Configurations

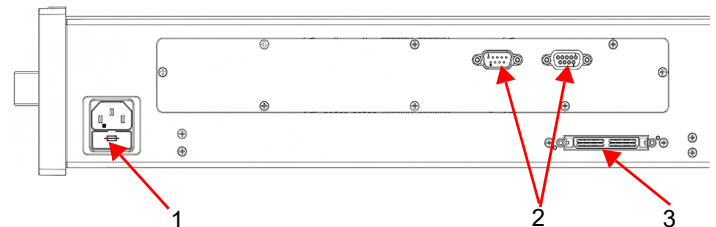
The following parameters can be viewed on the screen and/or configured directly on the front panel using the 5-button keypad.

- ◆ IP address displayed
- ◆ Model name: "SierraNet M1288" displayed
- ◆ Connection status
- ◆ Unit name displayed
- ◆ IP configuration
 - IP mode dynamic, or
 - IP mode static

6 Rear Panel Description

- [1] 100-240V, 50-60Hz, 1000W AC connector with a 6.3 A, 250 V fuse.
- [2] SYNC OUT / SYNC IN connectors: To daisy-chain multiple analysis systems.
- [3] Expansion connector: Connect (2) M1288 units for full stack (L2-L7) recording of 800GbE.

NOTE: Do not open. No user serviceable parts inside.



7 Installing the Software

- [1] Download the latest software from the website <https://teledynelecroy.com/sw/netprotocolsuite/> and click on the **Setup** file. Follow the instructions to complete the installation.

- [2] Restart the computer before using the software.

NOTE: If you get an error message during installation of the drivers, consult your system administrator.

8 Setting Up and Connecting

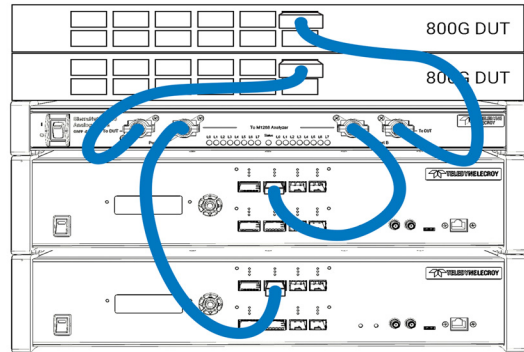
NOTE: You must install the Net Protocol Suite software (Section 7) before connecting the analyzer to the host machine for the first time.

To set up the analyzer:

- [1] Connect the Ethernet cable between the SierraNet M1288 Analyzer's Ethernet Port and an Ethernet Port on the host machine, an Ethernet switch or Gigabit Ethernet interface. Alternatively, connect a USB cable from the USB port on the analyzer to the host machine. After the analyzer is turned on, the host machine will detect the analyzer and load the driver files.
- [2] Connect the analyzer to a 100V–240V, 50Hz–60Hz, power outlet and turn on the Power switch. At power on, the analyzer will go through initialization as shown on the LCD display.
- [3] Connect your devices under test using either optical modules and fibre cables or appropriate copper cabling, suitable for your configuration.
- [4] Connect your devices under test to port pairs P1/P2, P3/P4, P5/P6, or P7/P8.

The diagram shows the connectivity for recording 800GbE full stack (L1-L7), using 2 SierraNet M1288 units. The M1288 Probe is required in order to close the loop between the 2 DUTs. For this configuration, connect the two M1288 units using an expansion cable. The cable connects through the back panels of devices. See section 6, above.

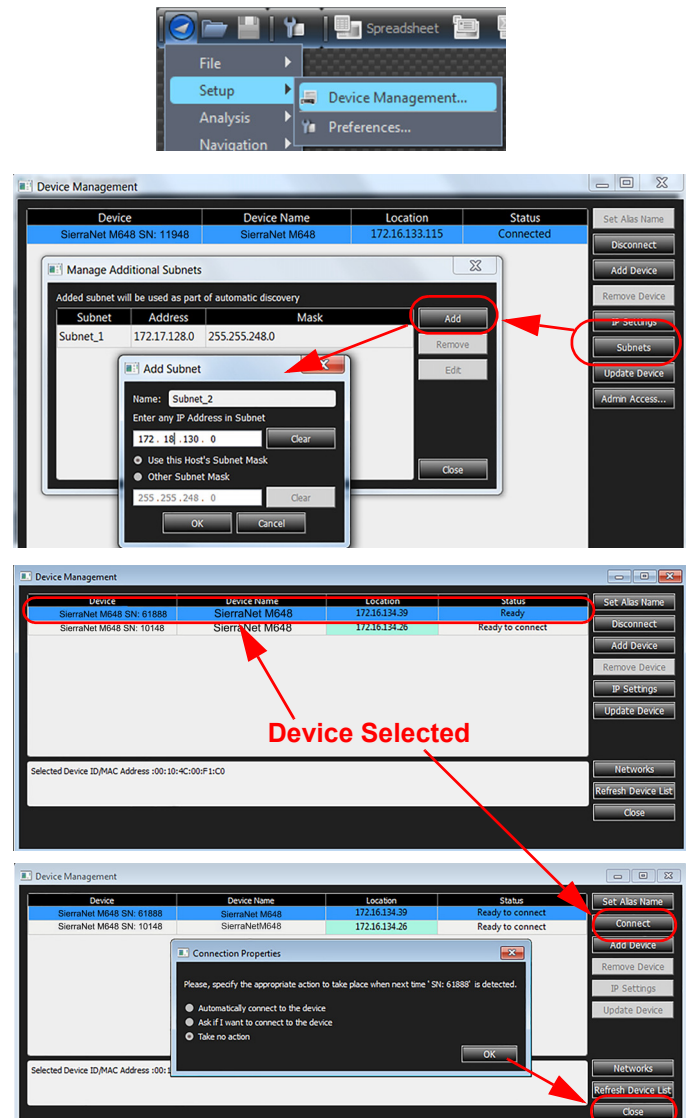
For more information, see the Introduction chapter of the *Net Protocol Suite User Manual*.



9 Connecting the Analyzer to the Application

- [1] To launch the analyzer's application software, select **Start > All Programs > LeCroy > Net Protocol Suite**.
- [2] Select **Menu > Setup > Device Management** (see screenshot) to display the Device Management dialog.
 - a. **Connecting via USB:** The application automatically detects USB-connected analyzers. No further setup actions are needed.
 - b. **Connecting via Ethernet:** To connect to the network, the SierraNet M1288 must be assigned an IP address. Typically, the IP address will be assigned automatically, if the network has a DHCP server.
 - c. **Same Subnets:** Once the IP Address is assigned, the SierraNet M1288 analyzer is automatically detected by the application if the analyzer and the host machine are on the same subnet.
 - d. **Different Subnets:** If the analyzer and the host machine are located on different subnets, then the IP address of the analyzer's subnet needs to be configured manually by the user. Use the **Manage Additional Subnets -> Add Subnet** feature by clicking the **Subnet** button in the **Device Management** dialog (see screenshots).
 - e. are located on different subnets, then the IP address of the analyzer's subnet needs to be configured manually by the user. Use the **Manage Additional Subnets -> Add Subnet** feature by clicking the **Subnet** button in the **Device Management** dialog (see screenshots).
- [3] Click **Refresh Device List** (see screenshots) to display all the devices on the network. Select a device and click **Connect**.

NOTE: To start using the protocol analyzer and software, see the S/W and H/W Installation and Setup chapter of the *Net Protocol Suite User Manual*.

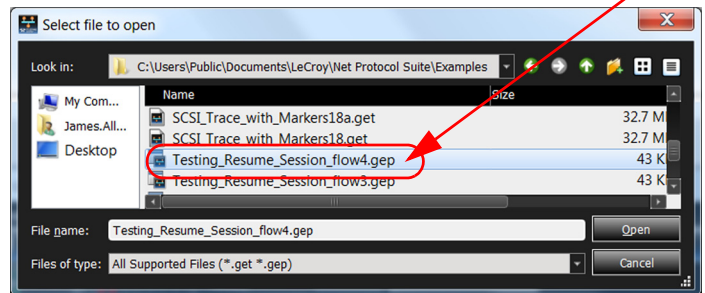
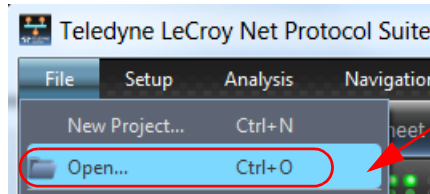
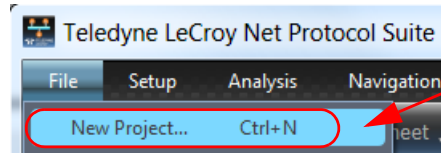


10 Operating the SierraNet M1288 System

Before operating the system, review the Net Protocol Suite User Manual (accessible from the application's Help menu) to get familiar with the capabilities and settings. The default capture mode is 'Easy Mode' on the Analyzer's Triggering/Filtering Settings.

Getting Started with Protocol Analysis

To use the SierraNet M1288 software for protocol analysis, select **File > New Project** for a new protocol analyzer project or open one of the sample projects from the Examples folder (look for a .gep file).



Teledyne LeCroy Customer Support

Online Download

Periodically check the Teledyne LeCroy Protocol Solutions web site for software updates and other support related to this product.

Web: teledyneleeroy.com/tm/software/PSG

E-mail: psgsupport@teledyne.com

Support: teledyneleeroy.com/support/contact



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