

SierraNet™ Product Family

Protocol Verification Systems

**Fast, Flexible
and Affordable!**

SierraNet M168
10 Gbps Ethernet and 16G Fibre Channel

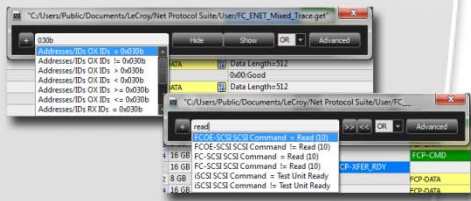
SierraNet M408
10/40 Gbps Ethernet and 16G Fibre Channel





Key Features

- 1U form-factor with rack mount kits
- Eight SFP+ FlexPorts supporting 10 Gbps Ethernet and 16G Fibre Channel over optical or copper connections
- Integrated 40 Gbps Ethernet QSFP ports (SierraNet M408)
- Advanced multi-state triggering and filtering
- Pass-through probe technology (not re-timed)
- Standard 32 GB or 64 GB recording buffers
- Dynamic memory allocation
- Extensive Ethernet protocols supported including FCoE and iSCSI
- Multiple trace view formats
- Seamless WireShark integration
- USB 3.0 & Gigabit Ethernet host interfaces for fast upload and easy management



Zero Time™ Search and Filter

Teledyne LeCroy's unique Zero Time search and filter capabilities save time by only showing options that actually exist in the recorded trace.

The SierraNet M408 and M168 are the most cost-effective, advanced and fully integrated 10/40 Gbps Ethernet and 16G Fibre Channel data capture and protocol verification systems available for developers and protocol test engineers. The SierraNet M168 is an 8-port multi-function protocol analyzer and error injector supporting up to 16G Fibre Channel and 10 Gbps Ethernet protocols in a single platform. The SierraNet M408 has all the capabilities of the SierraNet M168 and adds 40 Gbps Ethernet protocol analysis and error injection capabilities in a single platform. Both protocol analysis systems provide engineers with 100% recording of all Fibre Channel and Ethernet-related traffic at full line rates on all ports, while maintaining the link integrity through non-retimed pass-through probe technology.

Flexibility to Meet Any Debug Challenge

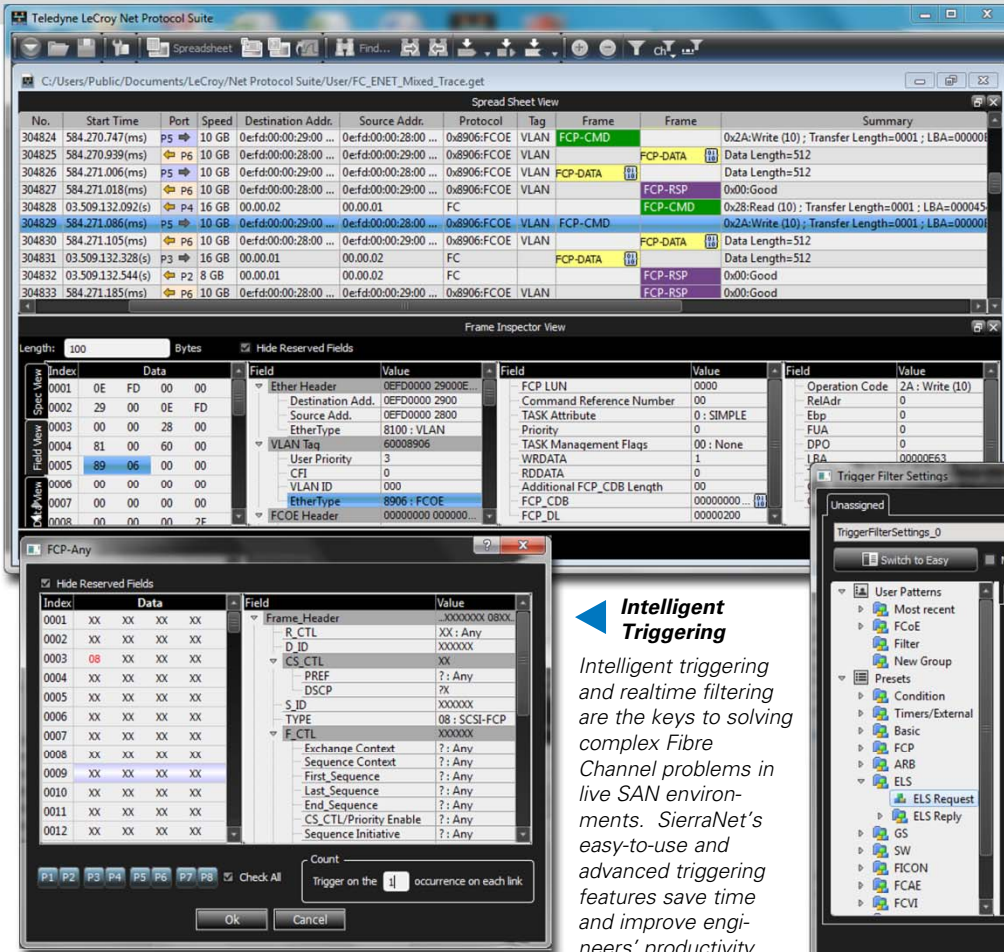
The SierraNet M408 and M168 hardware platforms and graphical user interface provide the highest level of performance and flexibility available in the market.

The SierraNet M408 and SierraNet M168 both employ Teledyne LeCroy's new FlexPort™ technology providing ultimate flexibility in analysis of traditional or converged Ethernet and Fibre Channel products

in a single platform and the flexibility to add protocol specific features, functionality and data rates supported either at the time of purchase or at a later time by simply adding more license keys. Each FlexPort pair can probe both Fibre Channel and Ethernet links at speeds up to 10 Gbps for Ethernet and/or 16G Fibre Channel on copper or optical cabling and eliminates the need for separate "single function" blades, pods or adapters found in competitive products—providing a highly compact, extremely flexible, multi-function protocol analyzer.

In addition to FlexPort technology, the SierraNet M408 and M168's new sophisticated analysis software, the Net Protocol Suite, provides unmatched flexibility with customized data displays that easily identify and navigate quickly to specific events of interest. The Net Protocol Suite's multiple trace views provide superior visibility for troubleshooting low level to application layer issues and decode per the supported specifications and their associated encoding schemes. The Zero Time search and filter capabilities easily find Ethernet and Fibre Channel events in a contextual and intuitive way. In a multi-protocol environment, Teledyne LeCroy can also synchronize and correlate traces with our other

SOFTWARE OVERVIEW

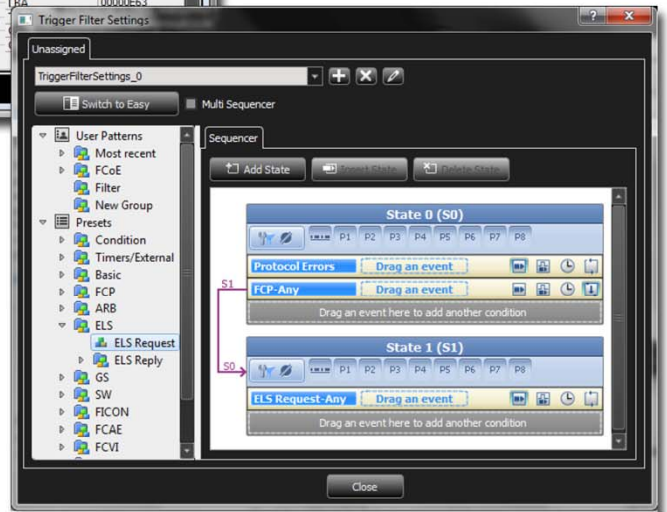


Spreadsheet View

The familiar spreadsheet view offers users an easy-to-understand columnar format that can be customized, add or delete columns, and mark frame and event types with user-defined colors to speed the eye through complex traces. An important adjunct to the Spreadsheet View is the Frame Inspector View which provides a detailed view into each frame and ordered set in several helpful formats. Spec View shows frame frames in the same format as you would see them in the technical specification documents.

Intelligent Triggering

Intelligent triggering and realtime filtering are the keys to solving complex Fibre Channel problems in live SAN environments. SierraNet's easy-to-use and advanced triggering features save time and improve engineers' productivity with the ability to capture precise traffic conditions such as timing between events or changes in link state.



Graphical State Machine

The Graphical State Machine view of the advanced triggering dialog makes it easy for users to visually construct and follow even the most complex scenarios.

leading protocol analysis tools, such as the PCI Express® Gen3 Summit™ analyzers, to understand how traffic, stimulus and/or errors propagate across bridges or adapters.

Versatile, Cost-effective Platform

Both the SierraNet M408 and M168 platforms are compact, portable and lightweight. The SierraNet is currently the smallest (1U) and lightest (9.5 lbs) Fibre Channel and Ethernet protocol analyzer platform in the market, saving valuable real estate and rack space in customer labs and providing the best portable solution for engineers on the move. The SierraNet M408 is also the only analyzer in the market with

integrated 40 Gbps QSFP ports, eliminating the complexity of external "octopus" cables used in some competitive products. The integrated QSFP ports ensure reliable analysis and error injection by eliminating the risk and associated cost of the additional eight potential failure points that "octopus" cables create in a test environment.

Performance

The SierraNet M408 and M168 offer the fastest and most convenient access to the data that engineers need. A USB 3.0 host interface

provides the fastest upload speeds available, delivering more than a 5x transfer rate improvement over any other Fibre Channel or Ethernet protocol analyzer. Since USB is Plug and Play, this is particularly useful when capturing large amounts of data is necessary but a quick connection to the analyzer is required, such as at a customer site. In addition to the performance and ease-of-use of the USB 3.0 interface, a Gigabit Ethernet host interface is also standard on the SierraNet platforms and the IP address set-up

menus on the front panel eliminate the time and complexity required to configure an analyzer via a null-modem cable and hyper-terminal interface used on competitive products.

The SierraNet M408 and M168 offer the best time-stamp resolution. The SierraNet family has been enhanced with a 1 ns time-stamp resolution/accuracy, setting a new industry standard for trace analysis and for timing measurements required for

testing high performance SAN products, particularly where latency is a key metric of success. Additionally, the SierraNet family's advanced state machines are easy to use and help engineers trigger, filter and inject errors with surgical precision. With up to 4 sequencers and up to 24 states per sequencer, they concisely target areas of interest and save precious time. When the user cannot accurately define the conditions associated with

a problem and needs to capture a broad swath of traffic to identify a cause of an issue, the SierraNet can also dynamically assign up to 50% (or up to 32 GB) of the largest and most flexible recording memory in the industry to one port or spread the memory use across all eight ports, based on the traffic profile.

Specifications

Host Machine Minimum Requirements	Microsoft® Windows® 8, Windows 7, Windows XP, Windows Server 2012, Windows Server 2008R2; 2 GB of RAM; Storage with at least 200 MB of free space for the installation of the software and additional space for recorded data; display with resolution of at least 1024x768 with at least 16-bit color depth; USB 2.0 port and/or 100/1000 Mbps Ethernet network interface. For optimal performance, please refer to our recommended configuration in the product documentation
Recording Memory Size	Up to 64 GB
Data Rates Supported	1, 2, 4, 8 and 16G Fibre Channel; and 10/40 Gbps Ethernet
No. of Ports Supported	8 SFP+ FlexPorts per system; 2 QSFP ports per system*
Cascade Capability	Up to 64 SFP+ FlexPorts (8 SierraNet systems); Up to 16 QSFP ports (8 SierraNet systems)*
Host Machine Interface	USB 2.0, USB 3.0 and 10/100/1000BaseT Ethernet
Front Panel Connectors	Eight SFP+ FlexPorts; Two QSFP Ports*; External Trigger IN/OUT
Front Panel Indicators	Three LEDs (Link, Speed, Status) for each TX & RX pair, Status LCD Panel, Power LED
Front Panel Controls	Power ON/OFF, Menu Navigation and Selection Wheel
Rear Panel Connectors	AC Power, Expansion Port (Expansion cards are optional)
Dimensions (H x W x D)	Chassis: 44 x 432 x 358 mm (1.75" x 17" x 14.1") With Bumpers: 52 x 455 x 367 mm (2" x 17.9" x 14.5")
Weight	4.3 Kg (9.5 lb)
Power Requirements	100-240 VAC, 50-60 Hz, 100W
Environmental Requirements	Operating: 0 to 55C (32 to 131F) Non-operating: -20 to 80C (-4 to 176F) Humidity: 10 to 90% RH (non-condensing)

* SierraNet M408 only

Ordering Information

Product Description	Product Code
SierraNet M168 Platform (16 GB memory, includes one license option from list below)	NET-T016-168-X
SierraNet M168 Platform (32 GB memory, includes one license option from list below)	NET-T016-328-X
SierraNet M408 Platform (32 GB memory, includes one license option from list below)	NET-T010-328-X
License Options	
SierraNet Fibre Channel Protocol Analysis—License for 4 ports	NET-T016-004-A
SierraNet Fibre Channel Protocol Analysis—Upgrade from 4-port to 8-port license	NET-T016-008-U
SierraNet 10G Ethernet/FCoE/iSCSI Analysis—License for 4 ports	NET-T010-004-A
SierraNet Ethernet Protocol Analysis—Upgrade from 4-port to 8-port license	NET-T010-008-U
SierraNet 40G Ethernet/FCoE/iSCSI Analysis—Prerequisite: Licenses for 8 ports of 10G Ethernet	NET-T040-002-A
SierraNet 10G Ethernet InFusion (Jammer)—License for 2 ports	NET-J010-002-A
SierraNet Fibre Channel InFusion (Jammer)—License for 2 ports	NET-J016-002-A



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Local sales offices are located throughout the world.
Visit our website to find the most convenient location.