Voyager™ M310C

USB Protocol Analyzer and Exerciser System for USB 3.1, 3.0, 2.0 and Power Delivery 2.0

Key Features

- **Supports USB Type-C™ Cables and Connectors**
  Capture and display all USB Type-C traffic
- **Support for USB Power Delivery 2.0**
  Analyzer and exerciser source & sink support for baseband PD and optional FSK PD
- **Integrated USB 3.1 Exerciser**
  Multifunction system (single box) with 3.1 and 2.0 analyzer and device or host traffic generation.
- **T.A.P.3™ Transparent Acquisition Probing**
  Fast signal locking, seamless state change detection and accurate LFPS detection
- **Up to 16 GB Recording Capacity**
  Capture long recording sessions for analysis and problem solving
- **USB 3.0 or GbE Upload**
  Fast access to captured data
- **Comprehensive Compliance Verification**
  Exerciser option allows PHY, Link, Protocol and Hub compliance testing
- **Power Tracker**
  vBus power analysis
- **CATC Trace™ Analysis Software System**
  Expand / Collapse transfer layer for faster interpretation of USB traffic
- **Raw Bit Recording**
  View and correlate low-level symbols to higher-level packet structures
- **2ns Timing Resolution**
  Extremely accurate timing resolution allows precise measurement of link layer handshaking
- **Full Support for SSC and Data Scrambling**
  Fast locking and accurate capture on 10 Gb/s signals
- **Hardware Triggering**
  Trigger on USB 2.0, 3.0, 3.1 and USB Type-C protocol events to isolate important traffic, specific errors or data patterns
- **Hardware Filtering**
  Automatically filter data packets or exclude redundant symbols including IDLEs, TS1, TS2, SKPs and LUPs ordered sets

The Voyager M310C is Teledyne LeCroy's USB protocol verification system designed for the latest evolution of universal serial bus, USB 3.1, USB Type-C and Power Delivery 2.0. Leveraging Teledyne LeCroy's extensive expertise in high-speed serial data analysis, the Voyager M310C provides traffic generation and recording of USB 3.1, 3.0 and 2.0 at data rates up to 10 Gb/s. Utilizing the USB industry's de facto standard CATC Trace™ display and loaded with innovative features that help uncover elusive protocol errors, the Voyager platform is the intelligent choice for any USB protocol validation application.

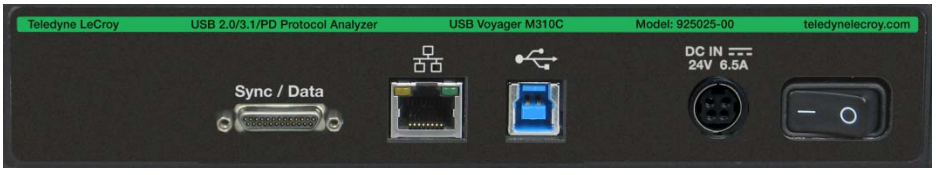
Unmatched Accuracy

The Voyager M310C features custom probe technology known as T.A.P.^{3} (Transparent Acquisition Probing) which has been field proven in Teledyne LeCroy's market-leading PCIe® 3.0 and SAS 12G analyzers. Designed to non-intrusively record both 5 and 10 Gb/s links, T.A.P.^{3} technology provides unprecedented accuracy and reliability without compromising link integrity.

Flexible Hardware

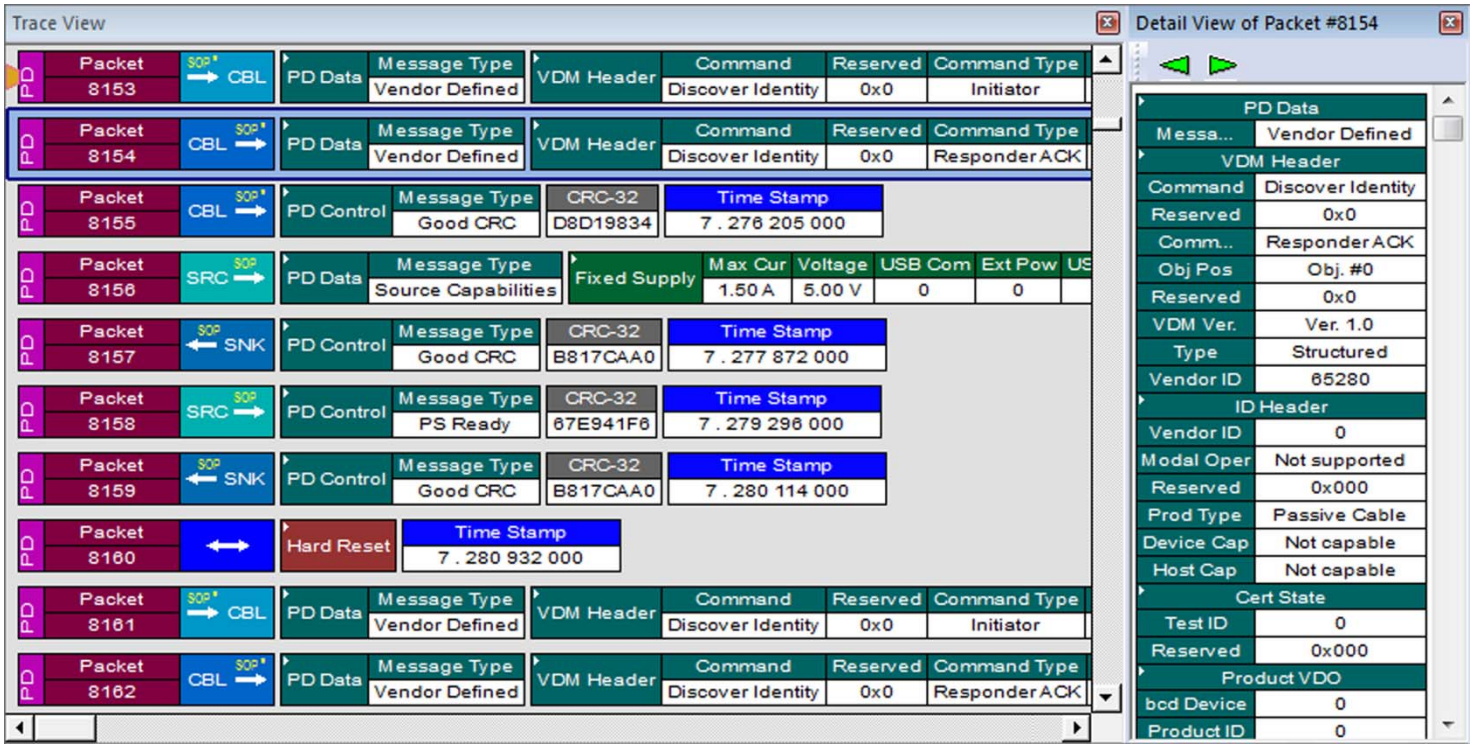
The Voyager M310C is a true multifunction platform capable of protocol verification of USB 3.1, 3.0 and 2.0 at data rates up to 10 Gb/s. There is an integrated exerciser option supporting both host and device emulation that allows error injection functionality and compliance verification.

The Voyager M310C platform has up to 16 GB of recording memory plus both GbE and USB 3.0 data upload ports for fast access to captured traffic. It is also available in USB 3.0 configurations (upgradeable later to USB 3.1).



The Voyager M310C rear panel includes a Sync/Data port (used to cascade multiple systems, to CrossSync to other protocols and/or as an external signal input); 100BASE-T Ethernet and USB 3.0 ports (either of which can be used to connect to the host machine); a 24V DC input for power (from supplied adapter); and a power switch.

CATC Trace Display



This trace shows Baseband Power Delivery Sink and Source capabilities exchange

Specifications

Protocols Supported	USB 1.0, 1.1, 2.0, 3.0, 3.1 and Power Delivery 2.0 (Baseband and FSK)
Minimum Host Machine Requirements	Microsoft Windows® 8, Windows 7, Windows Server 2012, Server 2008R2, Windows XP; 2 GB of RAM; storage with at least 600 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.
Data Rates Supported	1.5 Mb/s—10 Gb/s
Data Bus Interface	Half Duplex differential (USB 2.0); Dual Simplex differential (USB 3.1)
Front Panel Connectors	Two USB Type-C (use both for analyzer mode, use only one for exerciser mode), PD Load (from DUT), External Trigger IN and Trigger OUT
Front Panel Indicators	Power, Status, Analyzer/Generator, Recording, Trigger Detect 3 Data Rate LEDs: 2.0 (High Speed 480 Mb/s), 3.0 (SuperSpeed 5 Gb/s), 3.1 (SuperSpeed+ 10Gb/s)
Rear Panel Connectors	Sync/Data, 1000BASE-T Ethernet, USB 3.0 (to host machine), 12V DC Power In, Power Switch
Dimensions (W x H x D)	215 x 43 x 304 mm (8.5” x 1.7” x 12.0”)
Weight	1.48 Kg (3.25 lbs)
Environmental	Operating Temperature: 0°C to 50°C (32°F to 122°F) Non-Operating Temperature: -10°C to 80°C (14°F to 176°F) Humidity: 10% to 90% RH (non-condensing)

Ordering Information

Product Description	Product Code
Voyager M310C USB Type-C Analyzer/Exerciser (for USB 3.1 at 10 Gb/s)	USB-TZP3-V06-X
Voyager M310C USB Type-C Analyzer System (for USB 3.1 at 10 Gb/s)	USB-T0P3-V06-X
Voyager M310C USB Type-C Analyzer/Exerciser (for USB 3.0 at 5 Gb/s)	USB-TZA3-V06-X
Voyager M310C USB Type-C Analyzer System (for USB 3.0 at 5 Gb/s)	USB-T0A3-V06-X

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Visit our website to find the most convenient location.

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