TELEDYNE LECROY
Everywhere**you**look™

Frontline® X500
Wireless Protocol Analyzer

Key Features and Benefits

- Powerful Protocol Test Solution for high accuracy capture performance

- One-Box solution for simultaneous time-correlated capture of Bluetooth (BR/EDR), Low Energy, 802.11 ax, 802.15.4 and wired technologies

- Unrivalled Wi-Fi coverage of 802.11 a/b/g/n ac with 4x4 MIMO (Wi-Fi 5) and 802.11 ax 2x2 MU-MIMO (Wi-Fi 6 and 6E)

- Two (2) independent Bluetooth radios for superior capture performance

- Logic Analysis via highly user-configurable PODs supports up to 24-channels via three 8-channel PODs

- Capture and decode of HCI USB, HCI SPI and HCI UART (H4/H5/BCSP and WCI-2)

- Supports Teledyne LeCroy's comprehensive Wireless Protocol Suite software

- Faster root cause analysis of audio issues with the integrated Bluetooth Audio Expert System

- Live or post-capture decryption and analysis

- Raw RF spectrum view helps identify potential RF conflicts

- Optional battery pack available for in-field applications

- Excursion mode allows for one-button PC-free captures

- Manual and automatic gain controls for easy adaptations to every test environment

- All released Bluetooth profiles and protocols supported along with early access for pre-released features

- Support for latest Bluetooth Mesh technology

- Easy integration into automation setup using extensive APIs

Teledyne LeCroy's Frontline X500 Wireless Protocol Analyzer is a powerful one-box test solution for wireless product developers. The X500 supports simultaneous capture and decode of Bluetooth® Basic Rate (BR), Enhanced Data Rate (EDR), Low Energy (LE), Wi-Fi 5/6/6E, Zigbee, Thread and wired technologies in a time-correlated co-existence view.

Coupled with Teledyne LeCroy's Wireless Protocol Suite software, the X500 delivers unparalleled capture performance for complex multi-technology test environments, including market-leading support for the latest Wi-Fi technologies.

The Right Tool for EVERY Job

The Frontline X500 Wireless Protocol Analyzer is the most versatile wireless analysis tool in the industry, boasting support not just for all released Bluetooth BR/EDR and Low Energy profiles and protocols, but for 802.15.4-based protocols like Zigbee and Thread, and all of the latest Wi-Fi technologies including Wi-Fi 5, Wi-Fi 6 and Wi-Fi 6E, which extends Wi-Fi technology into the 6GHz ISM band.

With RF spectrum analysis, mesh analysis, support for 24 channel logic analysis and Bluetooth antenna-diversity capability, the X500 is truly the right tool for EVERY wireless analysis job.

The Frontline X500 comes equipped with Excursion Mode, which allows the user to capture everything in the air at the push of a button, without any PC attached. The system also supports time-correlated operation and capture with other Teledyne LeCroy Protocol Analyzer industry leading tools, using the proprietary CATC Sync connectivity and CrossSync Software.

The integrated Bluetooth Audio Expert System is the first and only analysis tool on the market to combine audio analysis with Bluetooth protocol analysis, allowing developers to quickly pinpoint the root cause of a wide array of Bluetooth protocol-related audio problems.

Specifications

- **Power**
  Power Supply: AC-DC Desktop adaptor - 15V 6A

- **Optional Battery Pack**
  X500 Battery

- **Dimensions and Weight**
  278 x 242 x 45 mm (11" x 9.5" x 1.77")
  2.3kg (5 lbs)

- **Connection to Host Computer**
  USB-C
  Ethernet (10, 100, 1000 Mbps)

- **Operating Frequency of SDR used for Bluetooth and 802.15.4**
  2395MHz - 2485MHz

- **Operating Frequency of WiFi Module**
  802.11 a/b/g/n/ax (2.400GHz-2.4835GHz)
  802.11 n/ac/ax (5.150GHz to 5.825GHz)
  802.11 ax 6E (5.925GHz-7.125GHz)

- **Sensitivity Range**
  -90dBm to +10 dBm

- **Supported Demodulators**
  BR/EDR and LE (GFSK, π/4 DQPSK, 8DPSK)
  802.15.4 (O-QPSK)

- **Logic Analyzer Timestamp Resolution**
  5ns

- **Operating Temperature**
  0° to 50°C (32° to 122°F)

- **Humidity**
  Operating: 10% to 90% RH (noncondensing)

- **Regulatory Compliance**
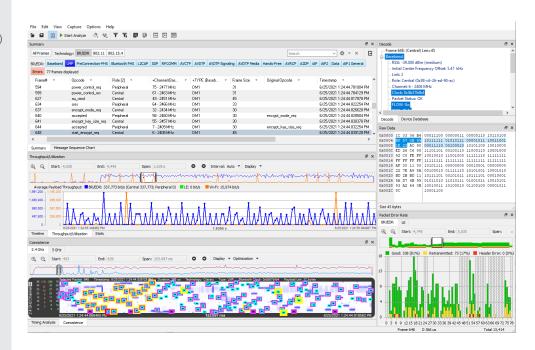 FCC part 15 B   CE   PSE
  IEC60950   UKCA   EMC
  NRTL   ARIB T-66   WPC

- **Host Computer OS Supported**
  Windows 10, 11

- **USB Host Communications Port**
  USB 2.0, USB 3.0

Intuitive Industry-Leading Software to Accelerate Your Tests

Teledyne LeCroy's Wireless Protocol Suite combines all the power and maturity of Frontline's protocol analysis software with a fresh streamlined interface that brings all analysis tools into a single docking framework window which you can customize to your own preferred way of working.

It's all there; message sequence charts, packet error rate statistics, throughput graphs, timelines, and all of the other views into these complex technologies are now available as dockable windows, and are supported by the mature and robust decodes that come from the decades of experience in wireless protocol analysis embodied by Teledyne LeCroy's Frontline brand of protocol analyzers.

Ordering Information

Product Description	Product Code
Frontline X500 Base: Bluetooth LE/BR/EDR, Excursion mode	2014-50000-000
Frontline X500 Advanced: Bluetooth LE/BR/EDR, Excursion mode, Spectrum Analysis, two 8-Channel Pods	2014-50000-001
Frontline X500 Elite: Bluetooth LE/BR/EDR, Wi-Fi 5, 802.15.4, Excursion mode, Spectrum Analysis, two 8-Channel Pods	2014-50000-002
Frontline X500 Upgrade License: for Wi-Fi 6 and Wi-Fi 6E (Requires Elite configuration 2014-50000-002)	2013-50000-001
Frontline X500 Upgrade License: From Base to Advanced	2013-50000-002
Frontline X500 Upgrade License: From Base to Elite	2013-50000-003
Frontline X500 Upgrade License: From Advanced to Elite	2013-50000-004
Logic POD	2300-00036-000
CrossSync Cable Kit	2300-00037-000
Frontline X500 Battery Pack	2300-50000-000
1 Year HW warranty	2016-50000-000

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