



Bluetooth Tracker™

Ultra-Portable Bluetooth®
Low Energy Protocol Analyzer

Portable ■ Easy ■ Efficient

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Powerful Ellisys Features

- **All-in-One:** Concurrent capture of Bluetooth Low Energy, Wi-Fi® 1x1, raw spectrum, HCI and logic, generic UART, SWD, SPI and I2C, all synchronized to nanoseconds precision
- **Wideband Capture:** Rock-solid capture of all Bluetooth Low Energy channels
- **Widely Acclaimed Software:** The Ellisys software application provides intuitive understandings of complex protocol and RF behaviors, and flexible configuration and control to give engineers the insights they need
- **Extremely Compact:** Pocket-sized at 75 x 75 x 17 mm (2.9 x 2.9 x 0.7")
- **USB Powered:** Ultimately portable, convenient and environmentally friendly
- **Reprogrammable Digital Radio:** Evolvable by software to protect your investment
- **Wi-Fi:** Debug your Wi-Fi a/b/g/n and Bluetooth LE connections simultaneously, as well as coexistence
- **Mesh Support:** Includes full support for Bluetooth Mesh network topologies
- **LC3 Auto-Detect:** Proprietary technology to detect and decode LC3 traffic even without capture of configuration parameters
- **Raw RF Spectrum Capture:** Characterize the raw wireless environment and visualize co-ex issues
- **All Protocols and Profiles:** Best-of-breed protocol decoding
- **Logic Analysis:** Visualize digital signals such as GPIOs, interrupts, debug ports, etc, concurrently and perfectly synchronized with your Bluetooth LE and Wi-Fi traffic
- **Free Maintenance:** Hassle-free, no-cost lifetime software updates

Technical Specifications

Bluetooth Capture Characteristics

- Ellisys Rainbow™: Wideband, concurrent capture of all Bluetooth LE channels
- Frequency band: 2.402-2.480 GHz
- Sensitivity range: From -90 to +15 dBm
- Gain: Programmable from -30 to +15 dB
- Modulations: All Bluetooth LE modulations (GFSK 1 Mbps and 2 Mbps)
- Baseband: Support of Bluetooth 5.x, upgradeable by software

Wi-Fi Capture Characteristics

- 802.11 a/b/g/n
- Channel width 2.4GHz: 20 MHz
- Channel width 5GHz: 20 MHz
- 11n MCS 2.4 GHz 20 MHz channel: 0 to 7
- 11n MCS 5 GHz 20 MHz channel: 0 to 7

Logic Capture Characteristics

- Maximum bandwidth: 20 MHz
- Sampling precision: 5 ns
- Supported input voltage: 1.8 to 3.3V

HCI Capture Characteristics

- UART/SPI transports: Up to 8 Mbit/s, automatic detection of all parameters

Embedded Memory

- 128 MB of FIFO memory
- Data is stored in highly optimized format
- Analyzed data is uploaded in real time through USB 2.0 connection

Timing

- Clock: ±10 ppm frequency accuracy over -10 to +60 degrees Celsius range
- Bluetooth LE timestamp accuracy: 125 ns
- Wi-Fi timestamp accuracy: 1 us
- Logic timestamp accuracy: 5 ns

Connectors

- Capture: Standard SMA female
- Logic: 16 logic signals
- Sync: Multi-unit synchronization ports
- Control: USB 2.0 connection to control PC
- Power: Optional 5V power input, max 3W

Enclosure

- 75 x 75 x 17 mm (2.9 x 2.9 x 0.7")
- 100 g (0.2 lbs)

Hardware Upgrade

- The Ellisys Rainbow™ engine is automatically updated with each software release (no user intervention required)

Maintenance and Licensing

- Free lifetime updates – no maintenance fees
- Free full-featured viewer application
- Use Ellisys hardware on any computer – no additional licenses needed

Warranty

- Two-year limited warranty for Professional and Enterprise editions
- One-year limited warranty for Basic and Standard editions

Minimum Requirements

- Intel Pentium 4, 1 GHz or compatible processor
- 1 GBytes of RAM
- 1280 x 1024 display resolution with at least 65,536 colors
- USB 2.0 EHCI host controller
- Windows® 7 or higher .net framework 4.6.1

Ordering Information

| Description | Code |
|-------------------------------------------------------------------------------------------|-------------|
| Ellisys Bluetooth Tracker Basic Hardware unit with Basic features set | BTR1-LE-BAS |
| Ellisys Bluetooth Tracker Standard Hardware unit with Standard features set | BTR1-LE-STD |
| Ellisys Bluetooth Tracker Pro Hardware unit with Pro features set | BTR1-LE-PRO |
| Ellisys Bluetooth Tracker Enterprise Hardware unit with Enterprise features set | BTR1-LE-ENT |

Configurations

| Editions | BAS | STD | PRO | ENT |
|-----------------------------------------|--------|--------|---------|---------|
| Wideband Bluetooth LE Capture | X | X | X | X |
| Bluetooth LE 1 Mbps | X | X | X | X |
| Bluetooth LE 2 Mbps | | | X | X |
| Bluetooth Long Range | | | X | X |
| Bluetooth Advertising Extension | | | X | X |
| Wi-Fi 11n 1x1 | | | | X |
| Spectrum Capture | | | | X |
| HCI Capture (UART, SPI) | | | X | X |
| Logic Capture | | | X | X |
| WCI-2 Capture | | | | X |
| Audio I2S Capture | | | | X |
| Protocol Decoding | | X | X | X |
| Advanced Software Features ¹ | X | X | X | X |
| Warranty | 1 year | 1 year | 2 years | 2 years |

1. Instant Timing, Instant Piconet, Instant Channels, Instant Throughput, and Instant Audio features

More information at: www.ellisys.com/btr1

