ellisys
Better Analysis

ADVANCED PROTOCOL SOLUTIONS

FOR USB, BLUETOOTH, AND WI-FI 802.11 TECHNOLOGIES

ABOUT ELLISYS

Ellisys is a leading worldwide supplier of advanced protocol test, analysis, and standards compliance solutions for Bluetooth®, Wi-Fi®, USB 2.0, SuperSpeed USB 3.1, USB Power Delivery, USB Type-C™, DisplayPort™ and Thunderbolt™. Ellisys is a long-time contributor to the development of a broad range of products using these technologies, from silicon to end devices, and has introduced many innovative features that improve and assure quality and performance, and accelerate time-to-market cycles.

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TEST SOLUTIONS

Bluetooth & Wi-Fi

Bluetooth Vanguard™
Advanced Wireless Protocol Analysis System

Bluetooth Explorer™
Dual-Mode Bluetooth Protocol Analysis System

Bluetooth Tracker™
Ultra-Portable Bluetooth Low Energy Protocol Analyzer

USB

Type-C Tracker™
Protocol and Electrical Analysis Tool for Type-C Communications Standards

USB Explorer™ 350
USB 3.1, PD 3.0, and Type-C Protocol Test Platform

USB Explorer™ 280
USB 3.0 and 2.0 Protocol Test Platform

USB Explorer™ 260
Multifunction USB 2.0 Protocol Test System

Industry's First All-in-One Sniffer

Capturing wireless traffic is a very important aspect of Bluetooth debugging, but other information is equally important for understanding the big picture. This is where the Ellisys sniffers excel. These fully integrated, industry-leading tools support one-click concurrent, tightly synchronized capture of a variety of wired and wireless communications:

- Classic Bluetooth BR/EDR
- Bluetooth Low Energy (BLE)
- Wi-Fi 802.11
- WPAN 802.15.4
- 2.4 GHz Spectrum
- Logic signals

- USB HCI , UART HCI (2 ports) and SPI HCI (2 ports)
- Audio I2S
- Wireless Coexistence Interface 2 (WCI-2)
- Generic UART, SPI, SWD, and I2C

Note: supported features vary by model and configuration.

Industry's First Reconfigurable Bluetooth Digital Radio

Ellisys pioneered the use of a reconfigurable wideband digital radio on Bluetooth sniffers. One of many Ellisys innovations, this feature allows the sniffer to be updated by software to support changes in the Bluetooth specification, without any change to the hardware and without any interaction from the user. Bluetooth is a rapidly evolving technology, and the ability to have your sniffer pace or even lead changes in the specification is economical for the user and a major benefit for the entire Bluetooth developer ecosystem.

Ellisys Bluetooth Analyzers Comparison Chart

	Bluetooth Vanguard	Bluetooth Explorer	Bluetooth Tracker
Radio Capabilities			
Bluetooth Classic (BR/EDR)	2x[1]	1x	
Bluetooth Low Energy	2x[1]	1x	1x
Dual-Mode Capability	Full	Partial[2]	
Wi-Fi 802.11	11ac 3x3	11n 2x2	11n 1x1
WPAN 802.15.4	2.4GHz 16 ch		
Spectrum Analysis	✓	✓	✓
Emerging Specifications	✓	✓	
Wired Capabilities			
USB 2.0 HCI	✓	✓	
UART HCI	✓	✓	✓
SPI HCI	✓	✓	✓
Logic Analysis	✓	✓	✓
UART, SPI, I2C, SWD	✓	✓	✓
Other Characteristics			
USB Upload	USB 3.1	USB 2.0	USB 2.0
USB Bus-Powered	PD		✓
USB Ethernet Upload	1GbE		
Power Over Ethernet	PoE+		
Backup Battery	✓		

1. Bluetooth Capture Diversity   2. Bluetooth 5 BLE 2Mbps capture disables BR/EDR capture

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Ellisys Bluetooth Protocol Testing Revolution

Until Ellisys arrived in the Bluetooth world in 2010, Bluetooth over-the-air sniffing was less than ideal. The capabilities of legacy sniffing tools lagged the overall technology, as they were not able to be field-updated in advance of the specifications, generally relying on off-the-shelf radios. These tools channel-hopped, like any other Bluetooth device would do, which resulted in major drawbacks that made them unreliable or unusable in some circumstances.

Ellisys engineers worked many years to develop a radical, groundbreaking Bluetooth protocol analysis system that would overcome those legacy drawbacks, and after several years of R&D, released the revolutionary Ellisys *Rainbow* capture technology, enabling synchronous, concurrent, full-spectrum capture of all Bluetooth BR/EDR channels and Bluetooth Low Energy channels, in addition to HCI channels. The rest is Bluetooth history...

USB Protocol Analysis

Ellisys has been a leading provider of USB solutions since 2000. Our USB protocol solutions provide a wide range of capabilities, from protocol and electrical analyses to traffic generation and industry-approved compliance testing. Ellisys engineers participate in all USB compliance workshops and are key contributors in the development of many USB test and operational specifications. Ellisys USB products provide coverage for legacy USB specifications as well as the newest iterations, including USB Type-C, SuperSpeed USB 3.1, alternate mode (ALT Mode) operation for DisplayPort, DisplayPort Auxiliary (AUX) traffic, Thunderbolt control, USB Power Delivery with electrical signals capture, and more. Conveniently, most of our USB solutions also provide ancillary support for concurrent capture of I2C, UART, SWD, SPI, and integrated logic analysis.

New Challenges for Developers

The latest connectivity standard for USB is Type-C, which is far more than simply a physical change at the connector. Type-C enables the use of a single connector to support technologies such as DisplayPort, MHL, Thunderbolt, and other modern communications standards. This fantastic flexibility opens whole world of new challenges for design, development, and validation teams. In addition, Type-C is the conveyance for USB Power Delivery, an intricate electrical and protocol model that delivers up to 100W of power to devices for operations and charging. With our USB Explorer and USB Tracker models, Ellisys meets these challenges by delivering the industry's most advanced USB protocol test systems.
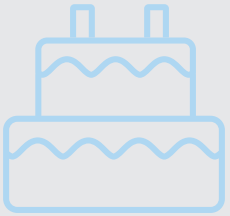
Ellisys USB Analyzers Comparison Chart

	USB Explorer 200	USB Explorer 260	USB Explorer 280	USB Explorer 350	Type-C Tracker
Characteristics					
Analyzer	✓	✓	✓	✓	✓
Generator		✓	✓	✓	
Compliance Test		✓	✓	✓	
Hardware Filters		✓	✓	✓	✓
Logic Analysis				✓	✓
Supported Protocols					
USB PD 2.0/3.0				✓	✓
USB 3.1 (5/10Gbps)				✓	
USB 3.0 (5Gbps)			✓	✓	
USB 2.0	✓	✓	✓	✓	✓
USB 1.X	✓	✓	✓	✓	✓
USB OTG	✓	✓	✓	✓	✓
Inter-chip USB		✓	✓	✓	✓
DisplayPort AUX & ALT Mode					✓
Thunderbolt Control					✓
HDMI ALT Mode					✓
TCPCI					✓
I2C/SPI/UART/SWD					✓

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