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Ellisys Introduces Groundbreaking Bluetooth® Analyzer Supporting Wi-Fi 11ac and WPAN

Next-Generation Bluetooth Vanguard™ Addresses Evolving IoT and Wireless Connectivity Advancements

Geneva, Switzerland — May 25, 2018 — Ellisys, a leading provider of test, certification, and analysis solutions for Bluetooth®, Universal Serial Bus (USB), Wi-Fi®, and other technologies, today introduced its latest and most advanced Bluetooth analysis solution, the Bluetooth Vanguard™. Vanguard builds on a rich legacy of innovation from Ellisys, adding features that address the recent, rapid evolution of Bluetooth technology and related development complexities, including feature additions for Wi-Fi and WPAN coexistence analysis. Vanguard is an all-in-one, fully integrated system supporting wideband (all channels) capture and analysis of Bluetooth Classic (BR/EDR), Bluetooth Low Energy (LE), plus concurrent Wi-Fi 3x3 11ac, all 16 WPAN (IEEE 802.15.4) 2.4 GHz channels, raw ISM spectrum capture, Bluetooth host controller interface (HCI) protocols (USB, UART, and SPI), Audio I2S, WCI-2, and generic protocols including UART, SPI, I2C and SWD, all visualized over the widely adopted Ellisys software suite.

Bluetooth Vanguard will be on Display at the Bluetooth Asia 2018, Shenzhen Convention & Exhibition Center, Shenzhen, China, booth 31, May 30-31, 2018.

"The introduction of the Bluetooth Vanguard further solidifies our position as the leading innovator in this space," stated Mario Pasquali, Ellisys president and CEO. "As Bluetooth technology continues to redefine itself with new features designed to expand into new markets, products, and applications, we have to think a few steps ahead and deliver the right tools at the right time. Vanguard's deep feature set gives developers a powerful solution designed to meet the broad array of design and testing challenges presented by the latest in wireless technologies, such as mesh technology, increased security features, IoT applications, multi-protocol radios, and coexistence challenges."

Comprehensive Design Approach

A recognized hallmark of Ellisys Bluetooth protocol analyzer products is comprehensive hardware integration, borne of properly considered initial design requirements. Such tight integration provides not just user conveniences, but also results in unrivalled precision and predictability for timing synchronization among the multitude of wired and wireless communications captured. Stack and hardware behaviors are dependent on myriad timing relationships, and the ability to precisely characterize these timings is paramount for Bluetooth design and validation teams. For example, characterizations of Bluetooth packet timings relative to Wi-Fi or to HCI traffic can be critical to developers seeking to optimize designs for certification requirements, interoperability, and performance criteria.

A Broad Array of Coexistence Capabilities

One of the biggest challenges facing Bluetooth developers is understanding the busy 2.4 GHz ISM (Industrial Scientific-Medical) band associated with Bluetooth communications and other emitters, including Wi-Fi. The Bluetooth specification provides an adaptive channel avoidance feature that can be used to optimize communications

by avoiding channels where packets are experiencing a higher error rate, often due to the emissions of other wireless devices, even co-resident radios (on the same SoC). Bluetooth Vanguard provides various features to enable precise understandings of spectrum and channel usage by devices and a host of other features specific to coexistence testing. These features include a raw RF capture of the ISM spectrum that provides precision time and power indications of Bluetooth packets and all other emissions, an Ellisys innovation. Additional features include GPIO logic capture, Wi-Fi protocol capture (IEEE 802.11 a/b/g/n/ac 3x3), WPAN capture (IEEE 802.15.4, all 16 channels), and support for the Wireless Coexistence Interface (WCI-2) Transport standard, all tightly synchronized to Bluetooth and host controller interface (HCI) packets and concurrently captured.

Powerful Hardware-Accelerated Wi-Fi Capture

Central to wireless coexistence testing and characterization are various correlations of Wi-Fi traffic to Bluetooth traffic, including the ability to manage streams of incoming traffic without loss. With implementations that use a software-based capture, such as those that can be done with just about any computer, the Wi-Fi capture is done with a processor involved. This limits the speed and accuracy of the capture – packets can be missed when the processor is outmatched by the incoming streams. With Vanguard, the capture is driven directly with a powerful hardware-accelerated protocol engine, to guarantee throughput and minimize latency.

Cutting-Edge Feature Support

The Ellisys Bluetooth Vanguard is designed with a reconfigurable capture engine, an Ellisys innovation introduced with the Bluetooth Explorer™ model in 2010. This feature allows for very early addition of analyzer support for emerging Bluetooth features, well ahead of official releases in the Bluetooth specifications. For example, features peculiar to Bluetooth 5, including 2Mbps speed and LE Coded PHY extended range enhancements, were released 18 months prior to the public release of that specification. This approach enables design teams to test and perfect new Bluetooth features at an early stage, allowing for improved development cycle efficiencies and increased confidence in product quality on roll out of new radios and stacks. As the Bluetooth Special Interest Group (www.bluetooth.com) celebrates the 20-year mark from its inception in May 1998, the release of Vanguard offers a solid endorsement of the state of the technology and its future, with hardware and software configured to support both current and next-generation Bluetooth features.

Major Features

Bluetooth Vanguard supports one-click concurrent, synchronous capture of the wired and wireless communications technologies listed below. Vanguard is sold in several field-upgradable configurations to meet customer requirements and budgets.

Wireless Capture

- Bluetooth Low Energy (125kbps, 500kbps, 1Mbps, 2Mbps, all 40 channels concurrently)
- Bluetooth Classic (BR, EDR2, EDR3, all 79 channels concurrently)
- Wi-Fi IEEE 802.11a/b/g/n/ac (3x3, 20 / 40 / 80 MHz)
- WPAN IEEE 802.15.4 (all 16 2.4GHz channels concurrently)
- 2.4 GHz Raw Spectrum Energy

Wired Capture

- Bluetooth Host Controller Interface Communications (UART, USB, SPI)

- General Purpose Logic Signals
- Audio I2S
- Wireless Coexistence Interface 2 (WCI-2)
- Generic Communications –UART, SPI, I2C, SWD

Connectivity (Power and Control)

- USB Power Delivery (30W)
- SuperSpeed USB 3.1 (5Gbps)
- Ethernet 1GbE
- Power Over Ethernet+ (30W)

For more information on features in each configuration, visit: http://www.ellisys.com/bv1/purchase.php

Availability, Product Photos, and Information

Bluetooth Vanguard is available for immediate purchase with shipments 2-4 weeks from order placement. Various configurations are provided to meet a variety of customer price and feature requirements. These configurations are provided in a series of editions, including *Standard*, *Professional*, and *Enterprise*. For more information, including software downloads, please contact sales@ellisys.com or visit http://www.ellisys.com/bv1

A high-resolution picture of the product is available at the following link:

http://www.ellisys.com/bv1/images/bv1_unit.png

About Ellisys

Ellisys is a leading worldwide supplier of advanced protocol test solutions for Bluetooth®, Wi-Fi®, USB 2.0, SuperSpeed USB 3.1, USB Power Delivery, USB Type-C™, DisplayPort™, and Thunderbolt™ technologies. More information is available on www.ellisys.com.

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World Class Protocol Test Solutions for Bluetooth, USB, and Wi-Fi

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