WIMEDIA EXPLORER 300 ANALYZER

WiMedia UWB Protocol Analyzer with Wireless USB and Bluetooth UWB decoding

Protocol Analysis and Verification for Wireless USB, Bluetooth UWB and WiMedia Ultrawideband Systems

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Better Analysis.

Ellisys WiMedia Explorer 300 Analyzer

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Powerful Protocol Analyzer
Speeds Up Development of WiMedia-based Devices
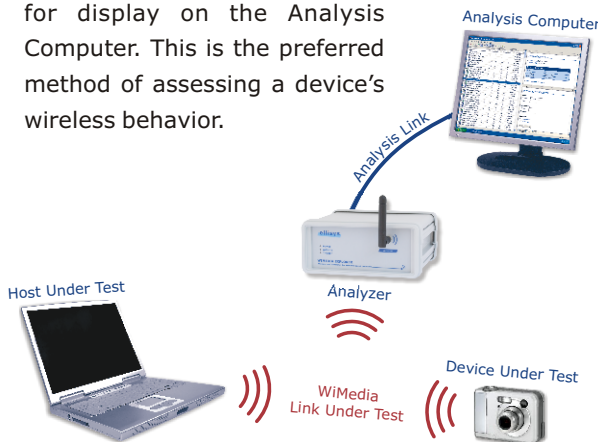
WiMedia Explorer 300 Analyzer

Overview

The Ellisys WiMedia Explorer 300 is the world's first over-the-air MB-OFDM protocol analyzer for WiMedia Alliance's Ultrawideband common radio platform and Wireless USB protocol.

Loaded with productivity-boosting features for hardware and software engineers, the Ellisys WiMedia Explorer 300 is ideal for peripheral development, protocol stacks verification, communication optimization, and other intricate development tasks. Its high-quality UWB RF front-end records traffic exchanged over the air between devices so you can display the resulting decoded information in your choice of several convenient formats.

Designed to evolve with specification updates, the Ellisys WiMedia Explorer 300 protocol analyzer will help you solve current and future WiMedia, Wireless USB and Bluetooth UWB challenges. Improving your time-to-market has never been so efficient!

Typical Applications

✓ Capture UWB traffic over the air to assist development of WiMedia-based devices

✓ Verify wireless encryption and 4-way handshake session key exchange

✓ Monitor wireless communication reliability and efficiency

Key Features

✓ Displays UWB and Wireless USB protocols in an easy-to-use hierarchical view

✓ Extensive protocol verification helps debug interoperability issues

✓ Displays traffic in real time with no need to set up complex triggers

Over the Air Analysis

The figure below shows the simple setup used with the WiMedia Explorer 300 to easily analyze the behavior of a WiMedia network. The analyzer is placed between wireless devices and records all traffic exchanged over the air. Analyzed data is then transmitted in real time for display on the Analysis Computer. This is the preferred method of assessing a device's wireless behavior.

Complex Setup with Generator

The figure below shows a setup stressing a Device Under Test with a WiMedia Explorer 300 Generator and sniffing the exchanged data with a protocol analyzer. The real-time display permits live debugging of beaconing protocol, DRP reservations, performance, etc. Errors can be tracked without the need to stop the recording, saving invaluable time during debugging.
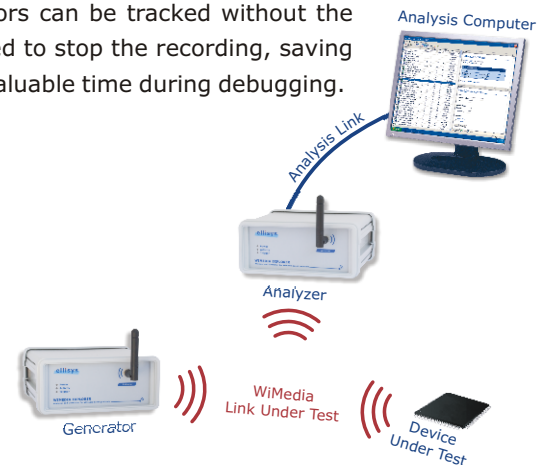
Market Leadership

Ellisys is committed to the design and marketing of leading protocol analysis solutions for USB, Wireless USB, Bluetooth and WiMedia. Devoted to these technologies, Ellisys is known to push markets toward success with innovative products and solutions. Building on Ellisys'

proven success, the WiMedia Explorer 300 is the world's first over-the-air WiMedia protocol analyzer for Wireless USB and Bluetooth protocols. By providing early adopters with the right tool at the right time, Ellisys helps ensure a rapid and wide acceptance of new interface technology.

User-friendly contextual filters

Contextual filters automatically appear when the software detects redundant protocol information that can be safely filtered out. These filters are convenient and simple to use.

All information within easy reach

Instant search enables you to find specific elements with power and ease by using simple text syntax.

High-level decoding of numeric values helps developers achieve intricate tasks

The analysis software decodes numerical values and clearly translates them for you. Bit fields are outlined to illustrate their relevant information contents.

Protocol levels are clearly defined on screen

Transfers, transactions and packets are visualized simultaneously. Useful information is available in a clear and concise fashion on screen. Within a split second you will grasp precisely what is happening on the bus.

All relevant information displayed without overloading the screen

The overview pane offers an intuitive overview of the protocol. There is no chance of missing vital information, which would otherwise be drowned in a mass of data. Every element detail remains available at hand.

Numerical values of each field are available at a mouse click

Numerical values are concealed by default in order to simplify presentation but are available in different formats with a mouse click.

Software and Documentation Download

http://www.ellisys.com/wex300a/download.php
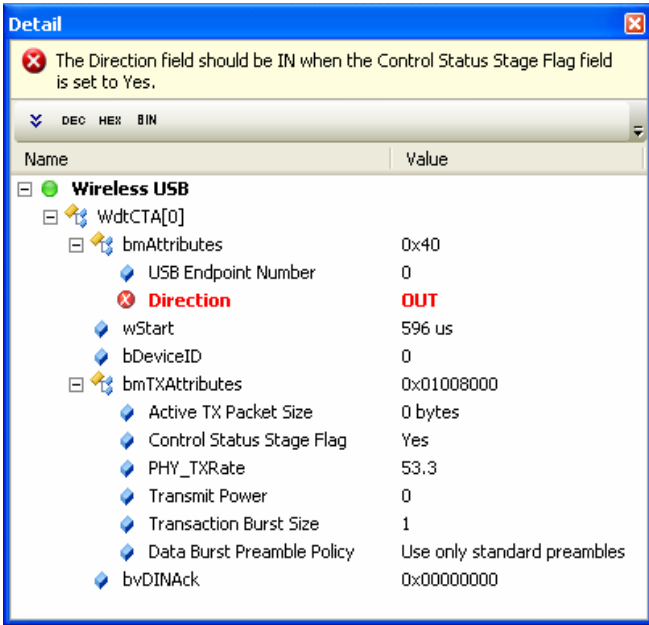
All protocol layers are analyzed for interoperability issues. Values, fields and structures are verified, and errors are clearly reported to the user.

Compliance Verification

The analysis software verifies interoperability issues on all protocol layers. Protocol elements are checked for validity and compliance against the specifications. Potential issues are clearly reported to the user and can thus be resolved at an early stage of the development project.

Protocol Layer Display

The WiMedia and Wireless USB protocol layers are clearly defined on screen. Each protocol has a dedicated


Users who already know wired USB can focus on the Wireless USB window that contains only high-level protocol elements. With this familiar context, users easily master the WiMedia and the Wireless USB protocols.

window to help you focus on your area of interest. Users who already know wired USB can view a Wireless USB window containing only high-level protocol elements. Others may prefer the Ultrawideband window to find low-level UWB protocol elements. For easier navigation, Wireless USB packets are automatically deduced from their equivalent WiMedia frames. Users easily master the WiMedia and Wireless USB protocols by using this convenient graphical interface.

Post-Analysis Capabilities

Post-analysis capabilities enable developers to take full advantage of the recorded data. The search functionality helps when seeking data patterns, discovering errors or finding sought information fast. With a straightforward syntax, textual filters enable users to filter out unwanted
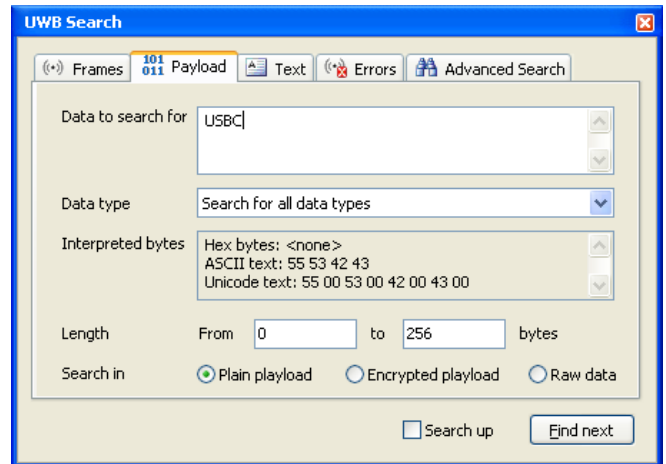
With the many user-friendly search modes, the comprehensive search dialog allows developers to find any sought information fast.

data to display only useful items. Ellisys software also includes a traffic summary pane offering a quick overview of the protocol data exchanged between devices. Users can check recorded traffic and quickly catch potential problems. With these user-friendly capabilities, navigating through large quantities of data is quick and efficient.
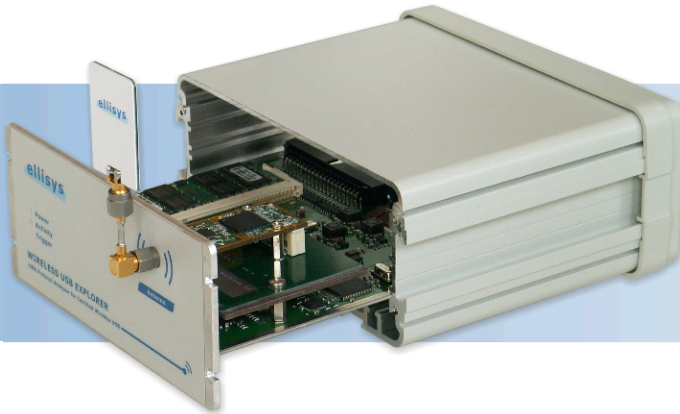
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Upgradeable as Specifications Evolve

The analyzer's modular hardware architecture is engineered to be upgradeable as the specifications evolve. The main board hardware is fully programmable and can effortlessly accommodate changes in the specification.

The Ultrawideband radio analysis hardware module plugs into the main board and can be replaced with future hardware modules to support new features such as higher data rates, international compliance or new services. Furthermore, the analyzer's Auxiliary Equipment connector can host additional external extensions to preserve your investment.

Non-Intrusive analysis

The Ellisys WiMedia Explorer 300 Analyzer silently listens to WiMedia Ultrawideband communications for capturing, assembling, analyzing and verifying traffic transmitted between a host and multiple devices. This non-intrusive design enables developers to seamlessly integrate the protocol analyzer in their development environment without perturbing the devices participating in the cluster under test.

Worldwide Solution for Ultrawideband Analysis

Wireless information is transmitted over the air between devices through electromagnetic fields. These fields must stay within certain limits that have already been defined and accepted in some countries but regulations are still in progress in many other countries.

The analyzer's modular hardware architecture accommodates change in the specifications. The front end can be replaced to support future PHY evolution.

By connecting UWB devices to the equipment using the Wired Ultrawideband Kit, Ellisys eliminates emissions to ensure governmental regulations are met. The kit can also be used to avoid interference between unrelated nearby UWB systems, for example in development labs or trade shows.

Wired USB Analysis

Wireless USB devices often use a classical wired USB connection for charging their batteries, first time association or backward compatibility with wired USB. In addition to Wireless USB challenges, developers also face wired and wireless USB integration issues. Ellisys anticipates developers' needs and suggests that you consider Ellisys' complete wired and wireless USB protocol analysis solution. This solution bundles a wired and a wireless USB analyzer unit so that developers can analyze their devices from all perspectives.

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Features

General

✓ Displays UWB, Wireless USB and Bluetooth protocols in an easy-to-use hierarchical view

✓ Non-intrusively captures traffic from any MB-OFDM UWB link

✓ Automatically determines the speed of each UWB frame and decodes it accordingly

✓ Displays traffic in real time with no need to set up complex triggers

✓ Records traffic to the hard disk for virtually unlimited recording time

Software

✓ Highlights protocol errors and interoperability issues

✓ Efficiently decodes all standard requests and data structures

✓ Hides redundant fields to reduce information burden

✓ Automatically deciphers encrypted data payload

✓ Supports the latest WiMedia specifications

✓ Free viewer software to exchange recorded traffic with others

✓ Free lifetime software maintenance

Hardware

✓ Engineered to evolve as specifications change

✓ Powered by USB, no need for a bulky external power supply

✓ Communication over USB 2.0 allows the use of a notebook computer

✓ Scalable hardware design helps adding new features when needed

✓ Instant-on

✓ Small, portable and robust enclosure

✓ No fan for noiseless operation

Technical Specifications

PHY Characteristics

- Current WiMedia PHY specification support: PHY 1.2
- Frequency band: 3.1 – 8.0 GHz
- Data rate support: all data rates from 53.3 to 480 Mbps
- Channels: BG1/BG3, TFC 1 to 10
- Adjustable RX sensitivity: yes
- Clock accuracy: 1 ppm
- RF connector type: SMA

Memory

- 1 GByte of FIFO memory
- Memory is downloaded in real time

Indicators

- Power: analyzer powered on
- Activity: traffic detected
- Trigger: trigger event detected

Power Supply

- No external power supply needed (USB bus powered)
- 500 mA during normal operation
- 500 µA when suspended

Enclosure

- 150 x 120 x 65 mm (5.91 x 4.72 x 2.56'')
- 850 g (1.9 lbs)

Analysis Computer Connector

- USB 2.0 high speed (480 Mbps)

Auxiliary Equipment Connector

- Supports connection of an extension board for future expansion

Hardware Upgrade

- The decoding engine is automatically updated with each software release

Product Warranty

- Two years warranty

Ordering Information

Description	Code
WiMedia Explorer 300 Analyzer (includes 1 hardware unit with analyzer license, 1 ultrawideband antenna, 1 software and documentation CD-ROM, 1 USB cable and 1 carrying bag)	WEX300A
WiMedia Explorer 300 Generator (includes 1 hardware unit with generator license, 1 ultrawideband antenna, 1 software and documentation CD-ROM, 1 USB cable and 1 carrying bag)	WEX300G
WiMedia Explorer 300 Duo (includes 2 hardware units with full analyzer and generator licenses, 2 ultrawideband antennas, 2 software and documentation CD-ROMs, 2 USB cables and 2 carrying bags)	WEX300DUO
Wired Ultrawideband Kit option (eliminates unauthorized Ultrawideband emissions in countries where the regulation process is still pending)	WEX300-WIREKIT