WIMEDIA EXPLORER 300 GENERATOR

WiMedia Traffic Generator with Wireless USB and Bluetooth UWB Capabilities

Reliability Enhancement and Stress Testing for Wireless USB, Bluetooth UWB and WiMedia Ultrawideband Systems

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WiMedia Explorer 300 Generator

Ellisys WiMedia Explorer 300 Generator

WiMedia Traffic Generator with Wireless USB and Bluetooth UWB Capabilities

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Reliable WiMedia Traffic Generator Simplifies Testing of Complex Scenarios

Overview

The Ellisys WiMedia Explorer 300 Generator is the world's first traffic generator for WiMedia Ultrawideband, Wireless USB and Bluetooth UWB protocols. It helps verify product and component reliability by generating reproducible traffic, timing and error scenarios.

Containing a specialized processor designed specifically for WiMedia-based protocols, the generator produces sequences of arbitrary frames with programmable inter-frame delay, and can then wait for any kind of response frame or event. The processor's instruction set enables you to emulate Wireless USB hosts and devices as well as various WiMedia equipment. Integrated with Ellisys' leading WiMedia protocol analysis software, you can reproduce previously-recorded scenarios, or modify them for testing corner cases and recovery mechanisms.

Based on the WiMedia Explorer 300 platform, the Generator provides a powerful new test methodology to maximize the quality of your protocol implementation and surpass your Ultrawideband R&D challenges.

Typical Applications

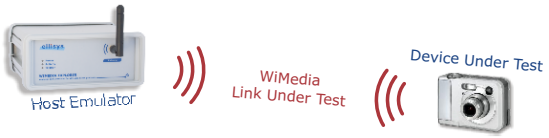
- ✓ Emulate most WiMedia equipment, including Wireless USB hosts and devices
- ✓ Test error recovery mechanisms by generating frames with incorrect content or timing
- ✓ Functional validation and stress testing of protocol stacks

Key Features

- ✓ Generates arbitrary frames with full control of the frame raw data down to the PHY layer
- ✓ Generates sequences of frames with programmable inter-frame delay
- ✓ Uses exported scripts from protocol analysis software to play back error scenarios

Wireless USB Host Emulation

The figure below shows a typical setup for emulating a Wireless USB host. A generator script is exported from a trace previously recorded by an Ellisys protocol analyzer and can be modified to include errors. You can also create a script from scratch for total control. The frame generator will execute the specified scenario, and the Device Under Test will react as if the original host was transmitting the data. This setup is very useful for testing corner cases and error recovery behavior of the Device Under Test.



Wireless USB Device Emulation

The figure below shows a typical setup for emulating a Wireless USB device. A Wireless USB device transmits frames at a precise time defined by the host, and provides the requested data. Ellisys' WiMedia specialized processor contains specific instructions to wait for Device Transmit and Device Notification Time Slots. The generator executes the script, and the Host Under Test receives data as if a real device was answering its requests. This setup is useful for testing protocol stacks and helping in host driver development.

Interactive Debugging

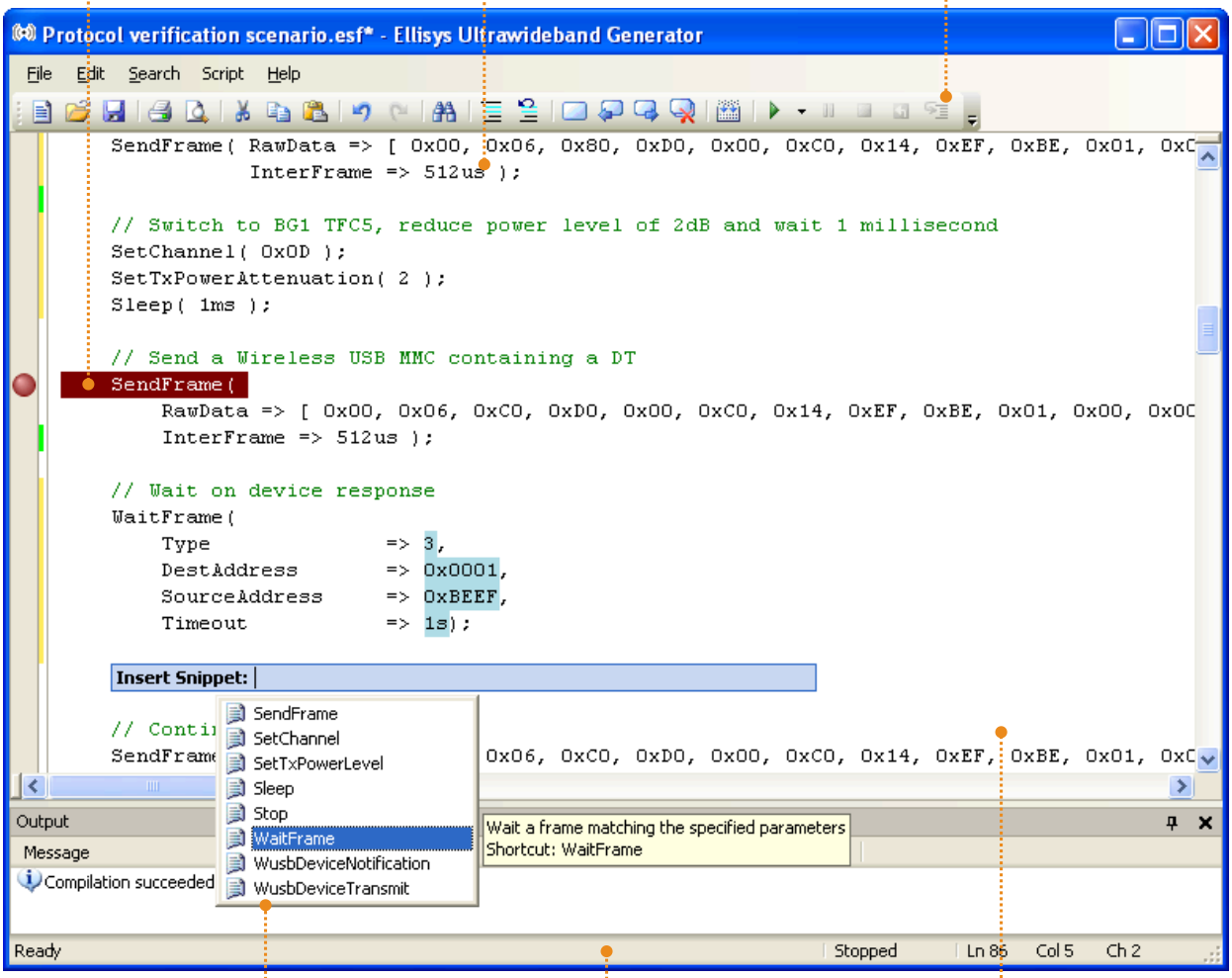
Set breakpoints at specific positions and execute instructions step-by-step to debug complex scripts.

Precise Timing

The generator is designed to respect the temporal aspect of the script. Timing can be adjusted with a precision of 15 ns to reproduce frames sequences with very high precision.

Integrated Development Environment

Ellisys WiMedia Generator Software helps you create, edit and debug scripts in a convenient manner. Scripts can also be run by a command line interface to perform automated testing.



Dedicated Ultrawideband Processor

With its specialized instructions set, the Ellisys' Ultrawideband processor generates any kind of WiMedia traffic with a byte-level control down to the PHY layer. You can create protocol errors to test corner cases and recovery mechanisms for your specific device.

Integration with Protocol Analysis

Protocol analyzers are very efficient at finding errors. Once identified, these errors can be reproduced by a generator. Traces previously recorded by an Ellisys' WiMedia Explorer 300 protocol analyzer can be exported to a script and played back by the generator. You will then be able to quickly understand and fix the issue.

Time-saving Script Editor

With its productivity-boosting features, the editor facilitates the creation of scripts in many ways. Ultrawideband instructions are intuitively added using predefined templates, helping you focus on your application.

Software and Documentation Download

http://www.ellisys.com/wex300g/download.php

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Features

Overview

- ✓ Generates arbitrary frames with full control on the data content down to the PHY layer
- ✓ Emulates most WiMedia UWB equipment, including Wireless USB hosts and devices
- ✓ Generates erroneous frames to investigate error recovery mechanisms
- ✓ Programmable inter-frame delay with a precision of 15 ns
- ✓ TX power control through a dedicated instruction

Software

- ✓ Graphical software for creating and editing scripts
- ✓ Interactive debugging with breakpoints and step-by-step execution capability
- ✓ Code snippets templates speed up repetitive tasks
- ✓ Direct script exportation from protocol analysis software
- ✓ Command line interface for automated testing
- ✓ 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
- ✓ 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

Program Memory

- 1 GByte of FIFO memory

Indicators

- Power: analyzer powered on
- Activity: transmission or reception
- 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)

Control 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

DS1635-300G-G