Catalyst AirCom UWB Analyzer
Model: SWAE10
Theory of Operation

The Catalyst AirCom Ultra Wideband (UWB) Analyzer is capable of capturing and analyzing UWB traffic. The analyzer supports the following:

- Capture and trigger of UWB events such as transactions and packets
- Pre and post trigger pattern capture
- Real time protocol error detection
- Integrated frame generator to send user defined UWB frames over the air
- Comprehensive statistical report.

Before initiating the capture session, the user must address the following items.

- Place the AirCom analyzer close to host/device and ensure the distance between the AirCom unit and host/device is less than 10 meters.
- Define WiMedia channel and band group on AirCom analyzer.
- Configure the AirCom analyzer software to capture the needed data.

The AirCom UWB Analyzer incorporates WisAir 532 chipset and technology based on the WiMedia MB-OFDM standard. In WiMedia MB-OFDM there are 14 band groups and 30 channels. The AirCom implements only the lower three bands and seven channels of the standard with the center frequencies at 3432MHz, 3960MHz and 4488MHz. Each band is 528 MHz in bandwidth and composed of 128 OFDM tones. Each OFDM tone is 4.125 MHz in bandwidth and is QPSK modulated. The data rate is limited to 100Mbps total for uplink and downlink. The Catalyst AirCom analyzer is designed to meet the appropriate FCC part 15 rules and regulations.

The AirCom analyzer configures PHY to work on a user-defined channel and capture each valid frame transmitted on this channel. The AirCom analyzer tracks Host/Device traffic and when host changes the channel, it changes capturing channel like a real device. Then AirCom extracts and shows the captured WiMedia and WUSB frames in a graphical view. The user can then search for specific pattern, filter undesired traffic or get statistical report.

In ciphering connection, the AirCom could capture and decode WUSB traffic. Each device has a CDID and each Host has a CHID and each secure connection needs a CK (Connection key). The AirCom analyzer needs CDID, CHID and CK for each secure connection to decipher data transferring.