

OCTOBOX® Triathlon

System for accurate physical Wi-Fi layer measurements

A well functioning Wi-Fi system needs good quality Wi-Fi transmitters which are free of distortions.

Spirent's OCTOBOX Triathlon is designed to generate physical layer measurements in Wi-Fi, such as distortion.

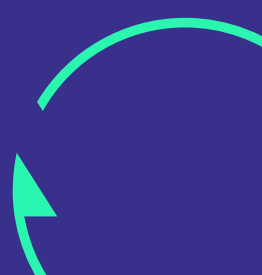
Triathlon consists of:

- Shielded chambers where the device under test is placed
- Litepoint device to capture various measurements such as EVM and the constellation
- Cabling and attenuators to connect the device under test to the Litepoint device
- OCTOBOX Pal-6E test instrument to act as the device with which the device under test is communicating when the measurement is made
- Traffic generator to generate traffic for the measurement. The traffic generator can be used to generate various traffic loads to characterize the performance of the transmitter across this load spectrum.
- Software to control the measurement
- Software to collect the results from the Litepoint device for further analysis on the OCTOBOX scriptMachine.
- An ability to cross probe of results between scriptMachine and Litepoint. This allows a user to view packets in Wireshark and by double clicking, view the same packets in Litepoint.

Features

- An environment for accurate physical layer measurements
- Shielding from external environment
- Traffic generation
- Attenuation for an RvR measurement

Benefits

- Measure physical layer properties of a transmitter across its performance range
 - Perform physical layer measurements under fully loaded conditions
 - All components of a system bundled together for ease of use
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About Spirent

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks. We help bring clarity to increasingly complex technological and business challenges. Spirent’s customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

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OCTOBOX Testbed Details

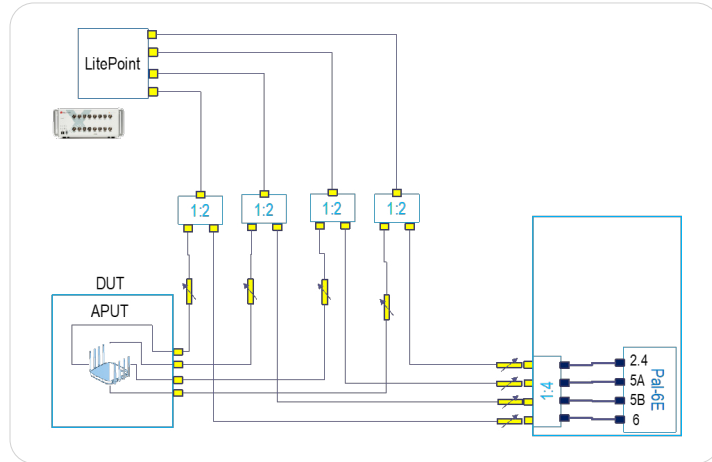


Figure 1. Testbed logical diagram

As seen in Figure 1, the system is designed to perform the measurement in conducted environment. It is important to place the device into a shielded chamber as devices are often poorly isolated from their environment (see chamber on the bottom left). Otherwise any noise from the environment could be captured by the device and impact in the measurement.

The device under test is configured in the OCTOBOX system to communicate with the Pal-6. See chamber on the bottom right.

Litepoint is placed in the “middle” of the device under test and the Pal-6E device. The attenuators between the DUT and Litepoint are used to tune the signal level to fit in the tight envelope appropriate for Litepoint. The attenuators between the Pal-6E and Litepoint are used to create RvR -like conditions so that measurements can be performed throughout the operational range of the device under test where EVM and constellation can be studied throughout the MCS values that it supports.

The testbed is controlled from an OCTOBOX scriptMachine. The scriptMachine uses APIs offered by the OCTOBOX server to generate traffic in between the DUT and the Pal-6E. Various kinds of traffic profiles can be used from lightly loaded conditions to fully loaded conditions to investigate whether the DUT transmitters quality is dependent on the loading.

The scriptMachine also controls the Litepoint device to make various measurements in synchronization with the RvR stepping so that a file or multiple files for each RvR step can be generated. The raw files are transported into the scriptMachine for further analysis.

Once the Litepoint raw files are in the scriptMachine various post processing can be performed, depending on customer interest.

scriptMachine will present the captured packets in Wireshark and will allow, by a simple UI interaction, the user to alternate analysis between the scriptMachine and Litepoint.