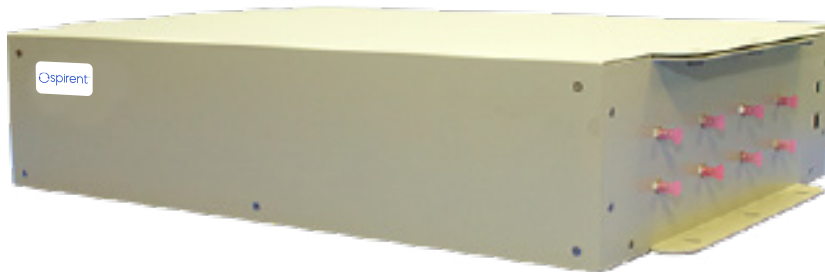# OCTOBOX® **OB-MPE2**

Broadband (DC – 7.5 GHz) multipath emulator

OCTOBOX multipath emulator (MPE) module uses innovative patented (US9130667) techniques to emulate indoor multipath in the RF domain keeping the signal pathwide-band and bi-directional. This low-cost yet powerful fader consists of passive circuitry and uses high grade cabling to accurately model the power delay profile (PDP)of IEEE 802.11n/ac model of a typical house, Model B.

The MPE stacks with OCTOBOXES and other testbed components to add realism to the testbed by emulating multipath reflections. Together with the OCTOBOX quadAtten module, the MPE can accurately model the house or office wireless channel environments according to the standards based models.

- Broadband (DC – 7.5 GHz) multipath emulator
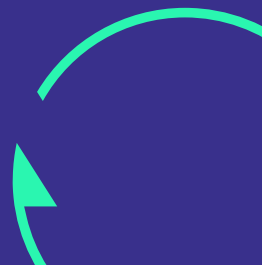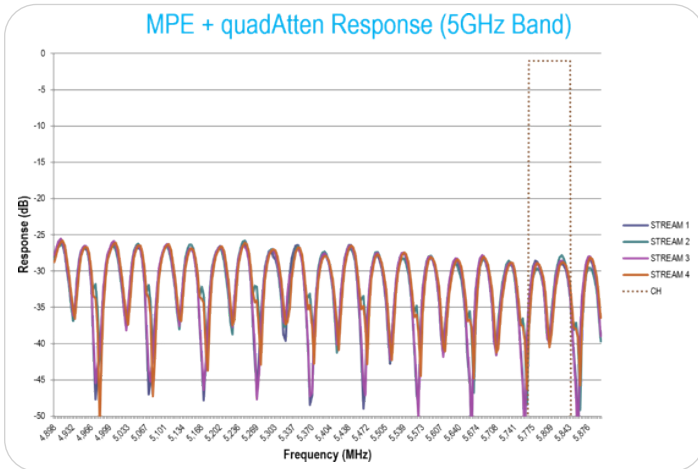- Accurately emulates a home channel model (IEEE802.11 model B)

Applications

- Test any wireless devices including mobile phones and access points in a lab in conditions emulating a home
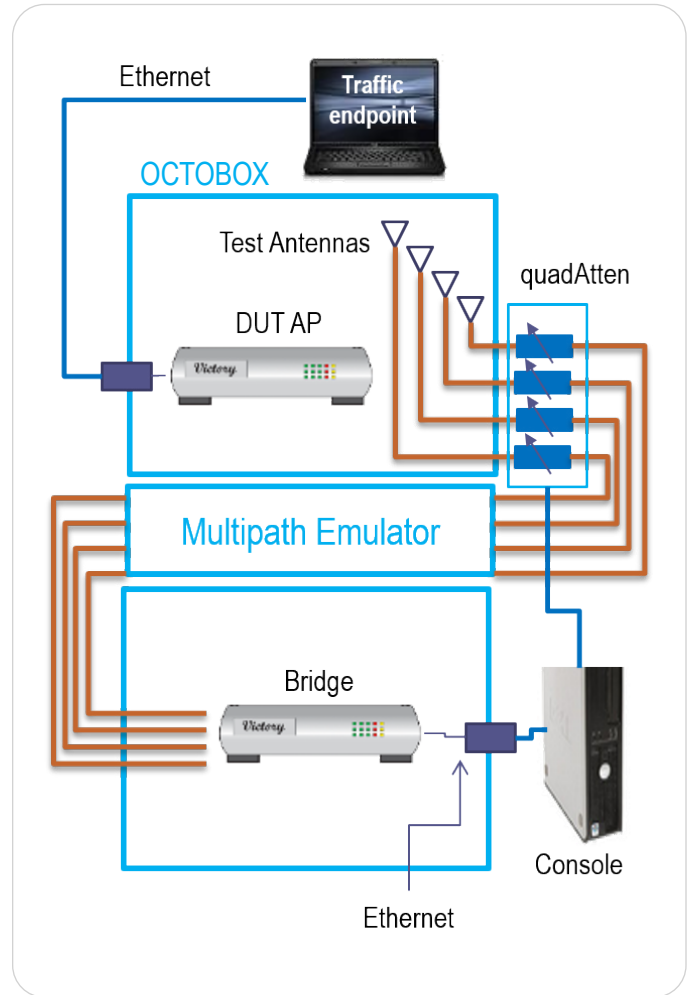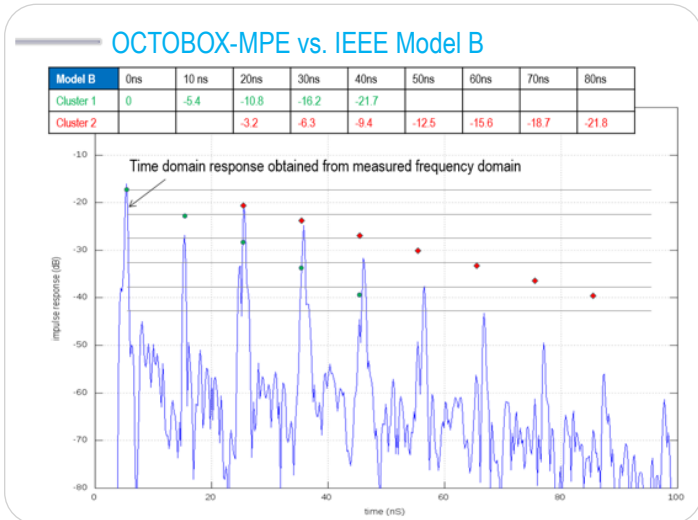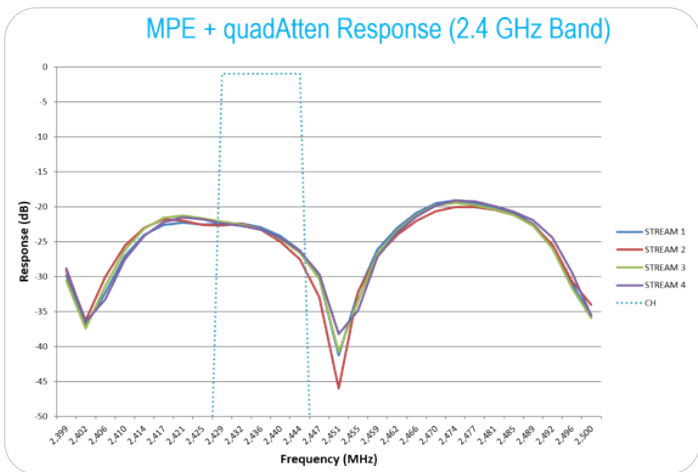
Benefits

- Allows emulation of multipath conditions typical of a home

- Shortens test time because product can be tested in a lab instead of in a real home
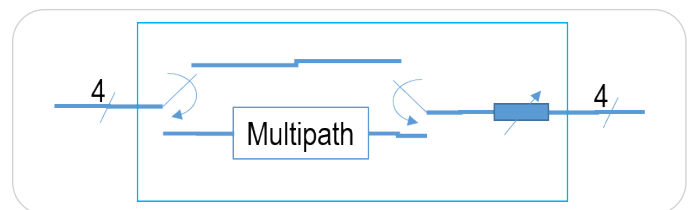
MPE + quadAtten Response (5GHz Band)

- Built-in bypass switch for LOS conditions
- Built-in programmable quadAtten programmable attenuators for range testing
- 4x4 MIMO link

MPE + quadAtten Response (2.4 GHz Band)

OCTOBOX-MPE vs. IEEE Model B

Model B	0ns	10 ns	20ns	30ns	40ns	50ns	60ns	70ns	80ns
Cluster 1	0	-5.4	-10.8	-16.2	-21.7				
Cluster 2			-3.2	-6.3	-9.4	-12.5	-15.6	-18.7	-21.8

Time domain response obtained from measured frequency domain
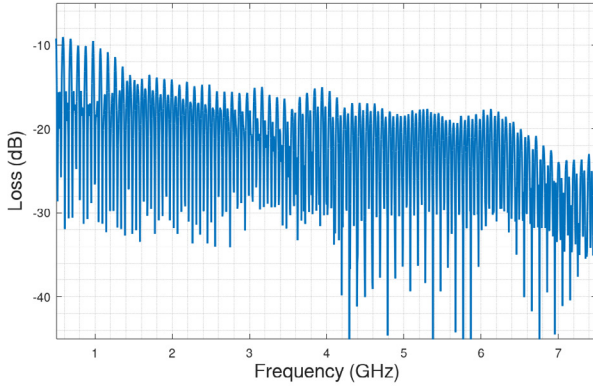

The OCTOBOX testbed frequency response measurements shown above are for the four conducted paths between the RF connectors in the lower chamber and the RF connectors in the upper chamber.

The path over which path loss is measured is represented by the red lines in the STACK-TT-MPE diagram on the left. The path includes the MPE and quadAtten modules.
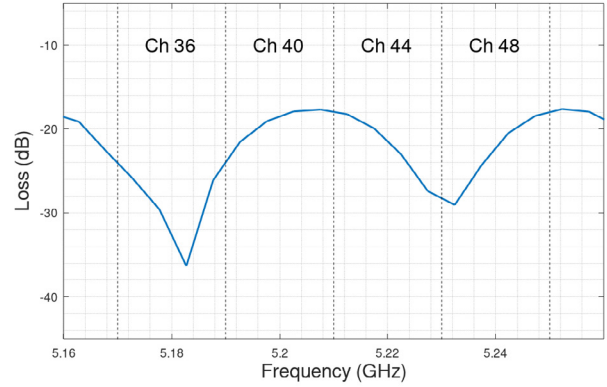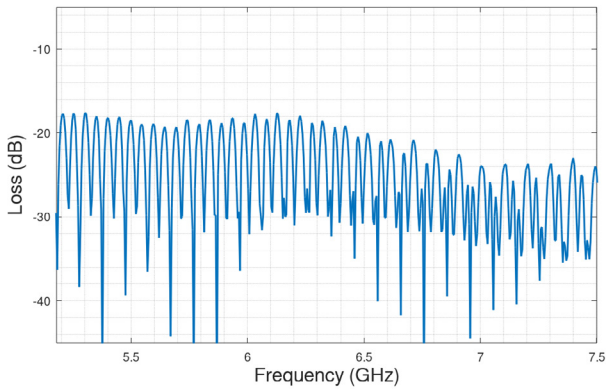
Frequency Charts

Typical channel response for MPE NLOS
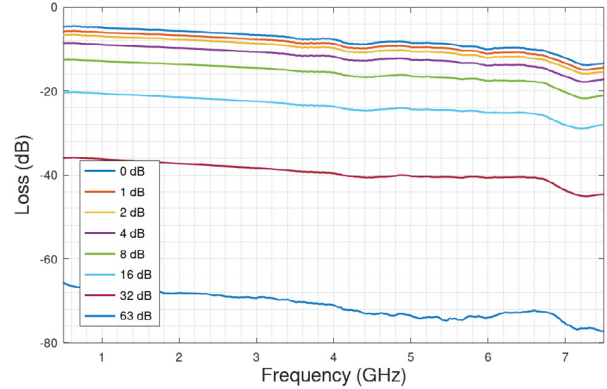### IEEE channel model B - full bandwidth

Typical channel response for MPE NLOS
IEEE channel model B - channel 36 - 48
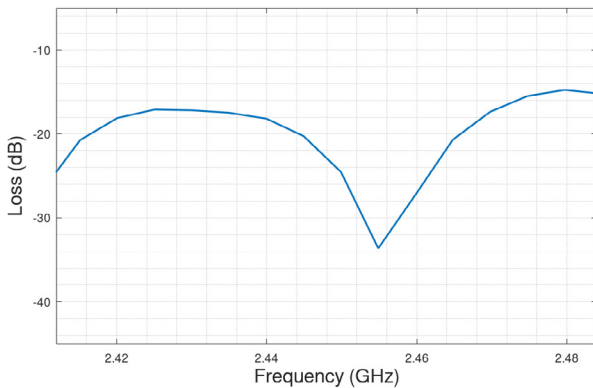

Typical channel response for MPE NLOS
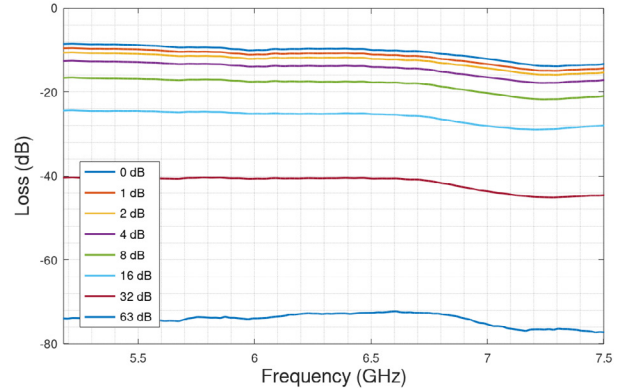### IEEE channel model B - 5 & 6 GHz bands

Typical Insertion loss for MPE LOS mode
IEEE Channel model A - full bandwidth

Typical channel response for MPE NLOS
IEEE channel model B - 2.4 GHz ISM Band

Typical Insertion loss for MPE LOS mode
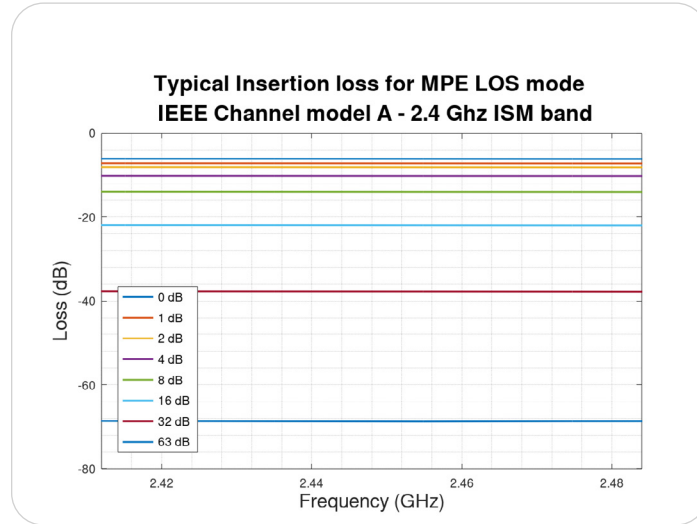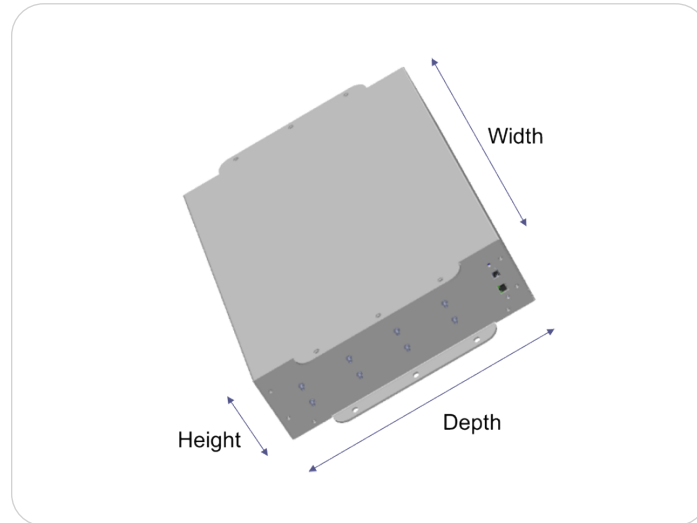### IEEE Channel model A - 5 & 6 Ghz bands

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.

For more information visit: www.spirent.com

Frequency Charts (cont'd)

Typical Insertion loss for MPE LOS mode
IEEE Channel model A - 2.4 Ghz ISM band

Dimensions

	American	Metric
OB-MPE2-26	26"W x 18"D x 5.5"H	66 x 46 x 14 cm
OB-MPE2-38	38"W x 24"D x 5.5"H	96 x 61 x 14 cm