

# Spirent OCTOBOX Mesh

## OCTOBOX Mesh automation package

Mesh AP Systems are becoming an increasingly popular solution to deliver broadband internet throughout a home or an office. Currently, there is no performance testing standard that covers this space. Spirent has therefore created a Mesh automation package to address a unique set of test cases to help characterize the performance of a Mesh system.

The Mesh Automation Package characterizes the mesh in terms of the level of service that it delivers to the end user. The automation package simulates real, recorded homes in the lab. The testing is performed using a black box testing principle: no assumptions are taking how the mesh operates.

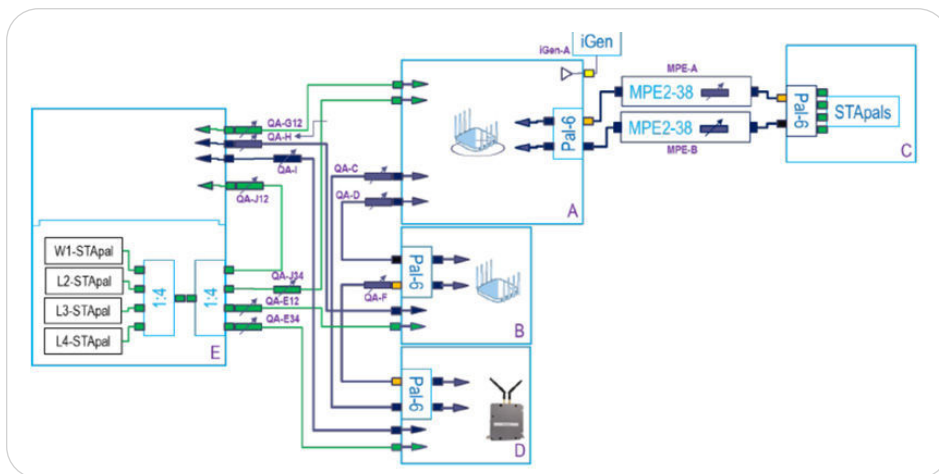


Figure 1: STACK-MAX

### Basic Mesh Operation

A set of tests are provided to measure the throughput and latency characteristics for each access radio in the mesh. This test is run for all the nodes in the mesh and all access radios on those nodes.

In this test, a simulation is performed of a user standing near a node and then walking away from the root node. Turntable in the testbed is used to average the performance measurement at a given distance.

### System Capacity

This test provides insight into the overall throughput performance of the mesh system. It simultaneously runs traffic to a station connected to each mesh node.

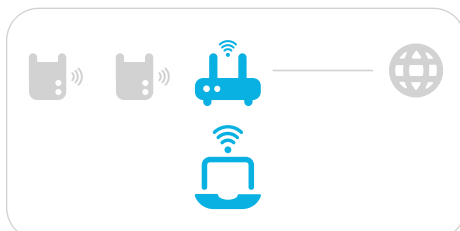


Figure 2: Four Stream Rate vs Range Root



Figure 3: System Capacity Test

## Features

- Basic mesh operation
- System capacity
- Optimal steering
- Band steering
- Roaming

## Benefits

- There is no standard yet that covers this space: hence a Spirent automation package
- Load the mesh with devices, measure maximum throughput and how that is distributed across the stations
- Emulate ten locations in three real home(s), verify that device is steered to the optimal node in all cases
- Measures user experience during roaming for a client not supporting v, and not supporting v under load conditions
- Emulate STA approaching a mesh from far away and check that the mesh steers the STA to 5GHz when STA is closer

## Optimal Steering test

The Optimal steering tests emulates a deployment of a mesh network in a number of pre-recorded homes. Inter node RF distance has been recorded in these homes, as well as 10 locations in those home and the RF distance from those locations to the mesh nodes.

The test consists of “placing” a kvr enabled but “sticky” device into the 10 locations of a home, and then measuring the “free association” throughput. That is then compared to the throughput available through each radio in the mesh.

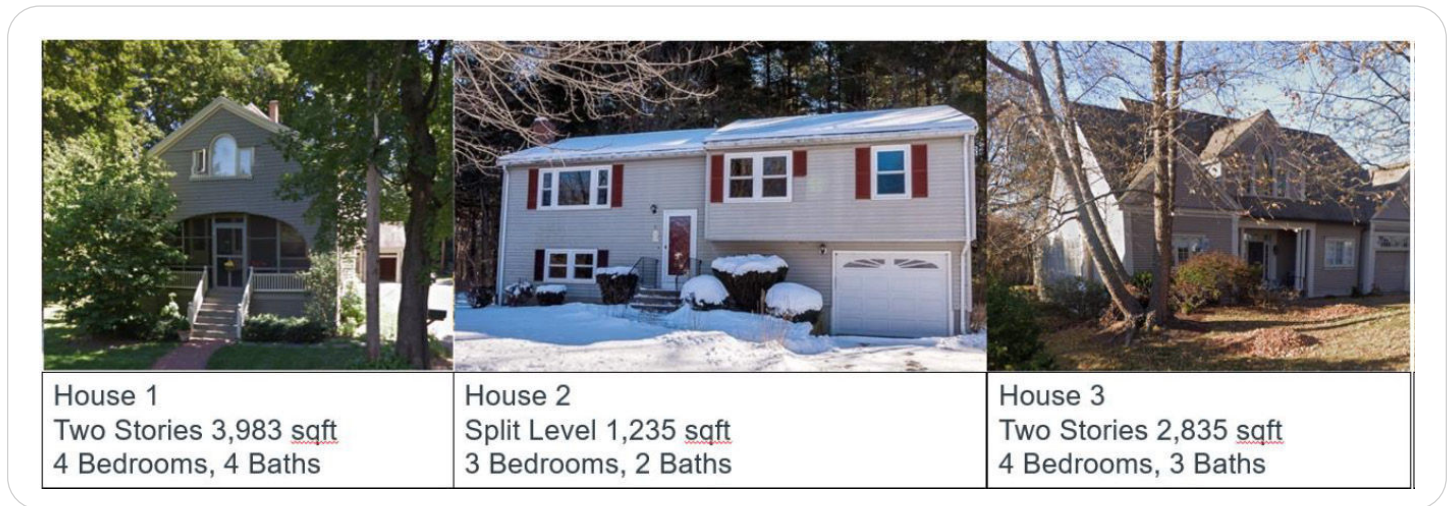


Figure 4: Modeled Homes

## Roaming

Roaming (with and without 802.11v, with and without load) In this test, the user walking along the mesh is emulated to understand the roaming behavior as he moves from one node in the mesh to another.

OCTOBOX Mesh automation package is also available as a TaaS service. [Contact Spirent Representative and Reference testbed configurations.](#)

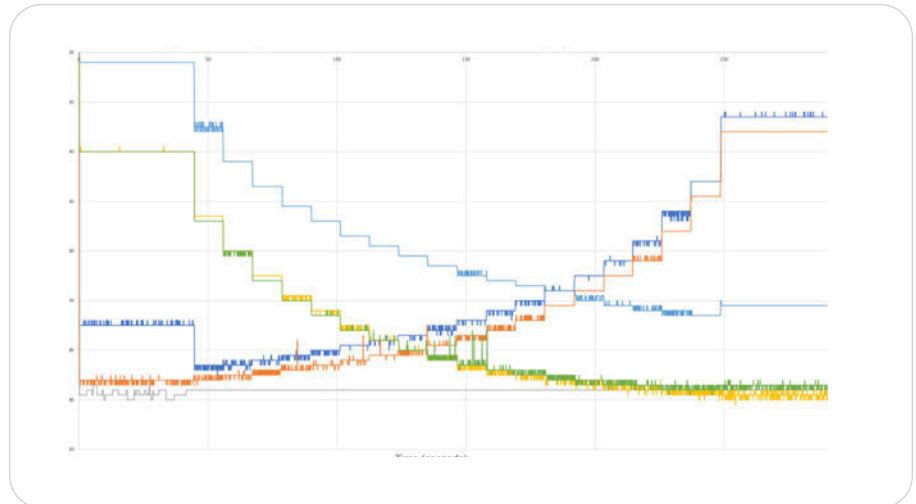


Figure 5: Example of Cross Ramp

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