Testing Receiver Sensitivity for a WiFi Device

**Goal:** Setup and run a Receiver Sensitivity test for an AP using the LANforge CT523c or similar system in order to test how well the AP can receive packets with different MCS at different RF Signal levels.

In this test scenario, the LANforge CT523c is used to generate packets at specific MCS and spatial streams at a range of attenuation. This example assumes you are familiar with Chamber View, and that you have a LANforge system with a wave-2 WiFi Card, a programmable attenuator like the CT704b and two isolation chambers like the CT820a. The AP should be in one chamber, the LANforge system is in the other chamber, and the Attenuator is cabled between them. This feature is in LANforge version 5.3.9 and higher.

1. Configure Chamber View for Dataplane and Similar Tests.
A. Open Chamber View by clicking on the ‘Chamber View’ button in the LANforge-GUI. If you have an appropriate scenario already created, then skip to the next section, otherwise you will need to build a scenario that matches your system. You can right-click in Chamber-View to create various objects.

B. Create a Device Under Test (DUT) Profile that matches your AP. The BSSID is important to configure so that LANforge knows when it is connected to the correct AP.
C. Create a chamber object to hold the DUT, and add the DUT to that chamber. If you have no chambers, you can create a fake chamber, but your test will not be isolated and may not function as desired.

D. Create a chamber object to hold the LANforge system, and add the LANforge to it. Add connections from this chamber to the DUT chamber, specifying the proper Attenuator modules.
E. Configure an Upstream profile using eth1 on the LANforge system.

F. Configure an STA profile on the LANforge system.

G. Configure a Chamber View Scenario and add the STA profile (mapped to desired wiphyX radio and DUT). Add an upstream profile mapped to DUT LAN side (or possibly WAN side if that is more appropriate for your DUT).

2. Use Chamber View to run a Receiver Sensitivity test.
A. Open Chamber View by clicking on the ‘Chamber View’ button in the LANforge-GUI. Load appropriate scenario or create a new scenario as needed. Apply the Scenario, then Build the scenario.
B. Select the RX Sensitivity test and click Run Test. You should see the RX Sensitivity Test configuration window pop up. It will remember the last configuration for most fields. Select the DUT and WiFi station device, and select the combinations of traffic types you wish to send.
C. When the configuration is complete, click the Start button (which will change to 'Stop' once start is clicked) to start the test. An interactive report window will be created and will be updated as the test runs.

D. When the test is complete, click the Save HTML button to save an HTML report and generate the PDF. The PDF file will be linked from the HTML page. You can also click 'Save PDF' and the browser will be directed to open the pdf file directly. Please see this example RX Sensitivity Report