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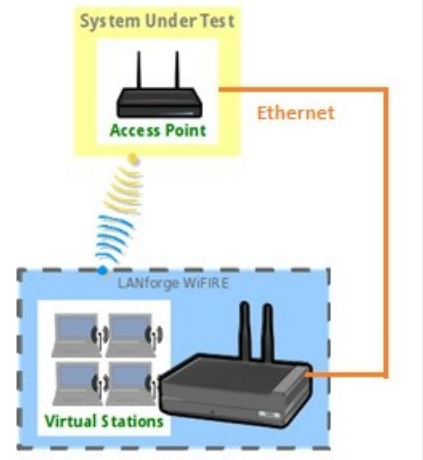
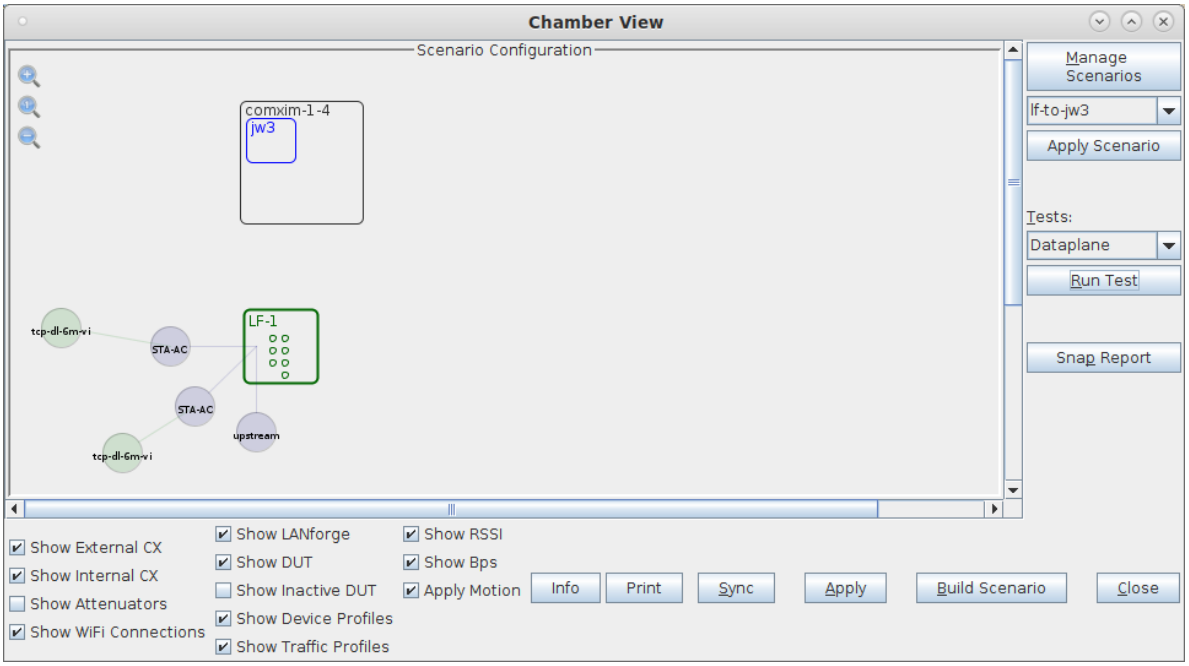
Testing AP Dataplane throughput at different orientation

Goal: Setup and run a Dataplane test for an AP using theLANforge CT522 or similar system in order to test how well the AP can handle sending and receiving packets at different rotations.

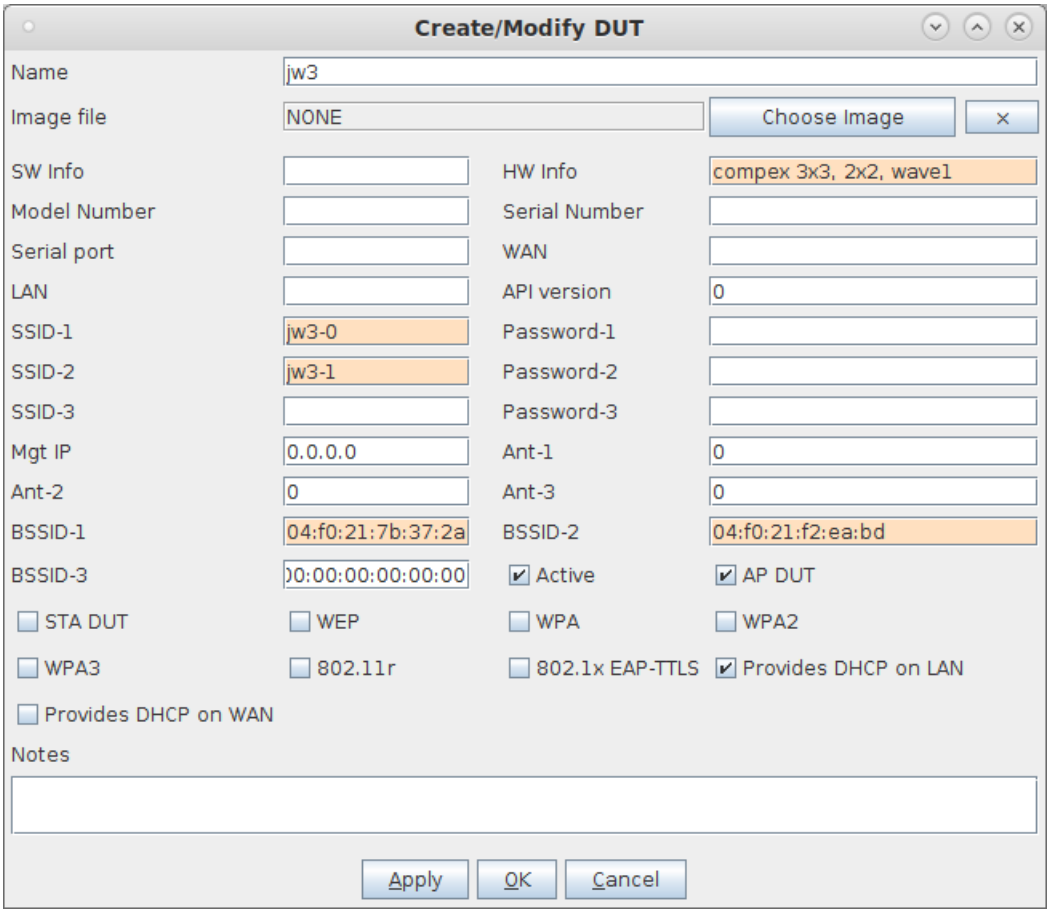
In this test scenario, the LANforge CT522 is used to generate packets in the upstream and downstream direction through an AP at different AP orientations. An affordable stand-alone turn-table is used to automatically rotate the AP to the desired orientation. This example assumes you have some experience with Chamber View, and that you have a LANforge system and turn-table. Using chambers will make the test perform more consistently, but is not required for this test. This feature requires LANforge version 5.4.1 or higher.



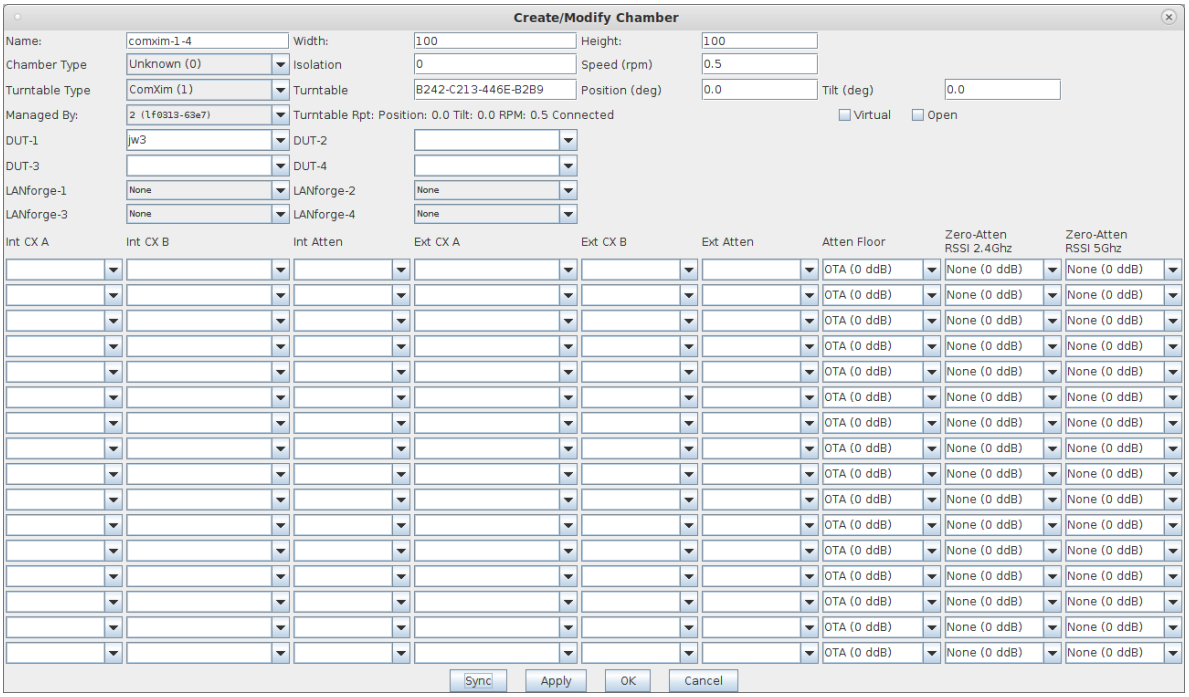
1. Configure Chamber View for Dataplane and Similar Tests.
   A. Open Chamber View by clicking on the 'Chamber View' button in the LANforge-GUI. If you have an appropriate scenario already created, then skip to the next section, otherwise you will need to build a scenario that matches your system. You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



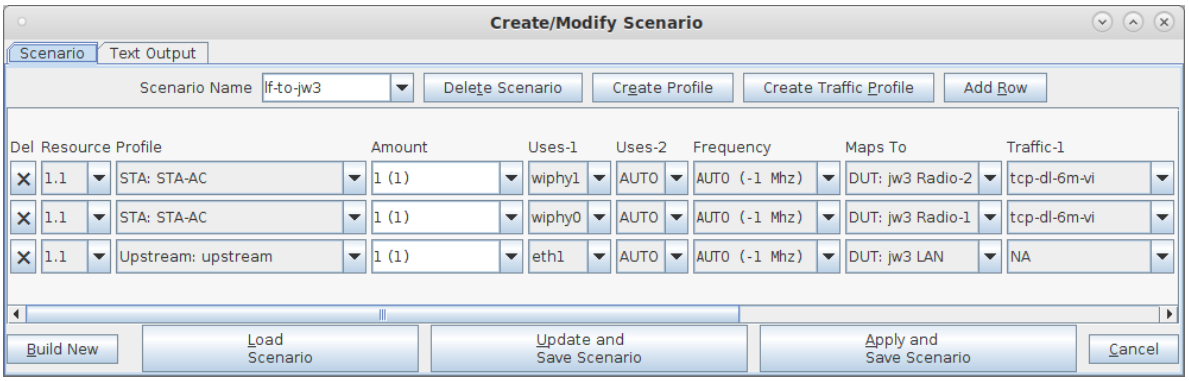
B. Create a Device Under Test (DUT) Profile that matches your AP. The BSSID is important to configured so that LANforge knows when it is connected to the correct AP.



C. If using the 'comxim' stand-alone turn-table, the chamber object should automatically be created. For other real chambers, you may have to create the chamber object and configure it to be able to communicate to the chamber control API. This example uses the stand-alone turntable configured with a fake chamber object:

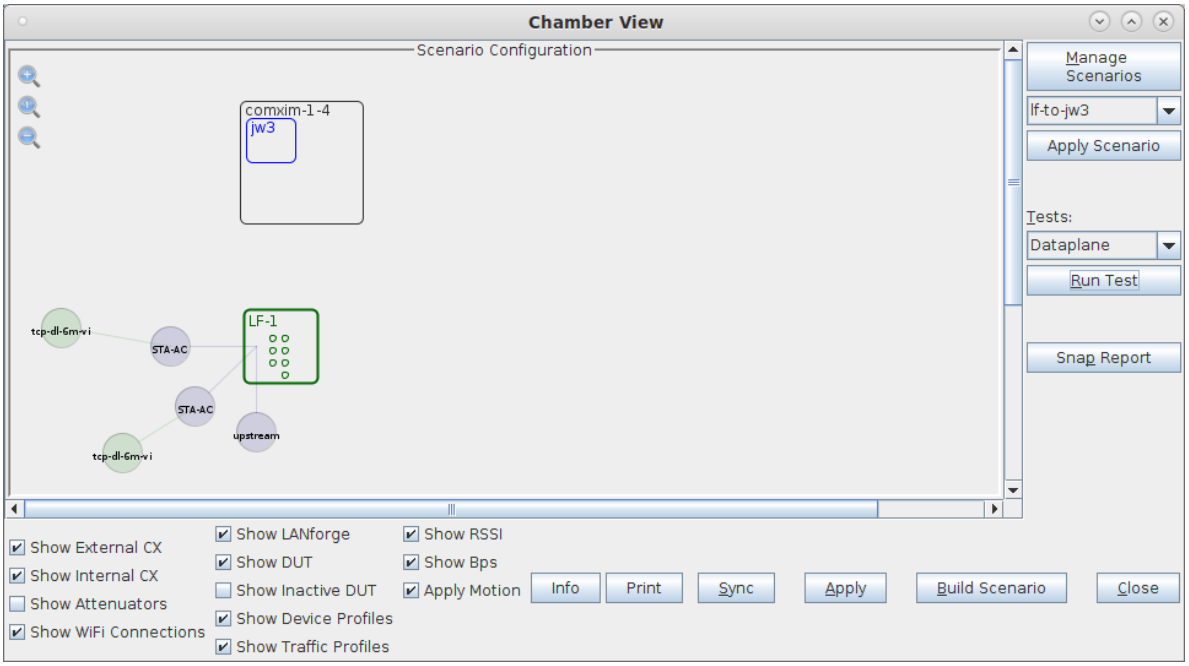


D. Configure a Chamber View Scenario and add the STA profile (mapped to desired wiphyX radio and DUT). Add an upstream profile mapped to DUT LAN side (or possibly WAN side if that is more appropriate for your DUT).

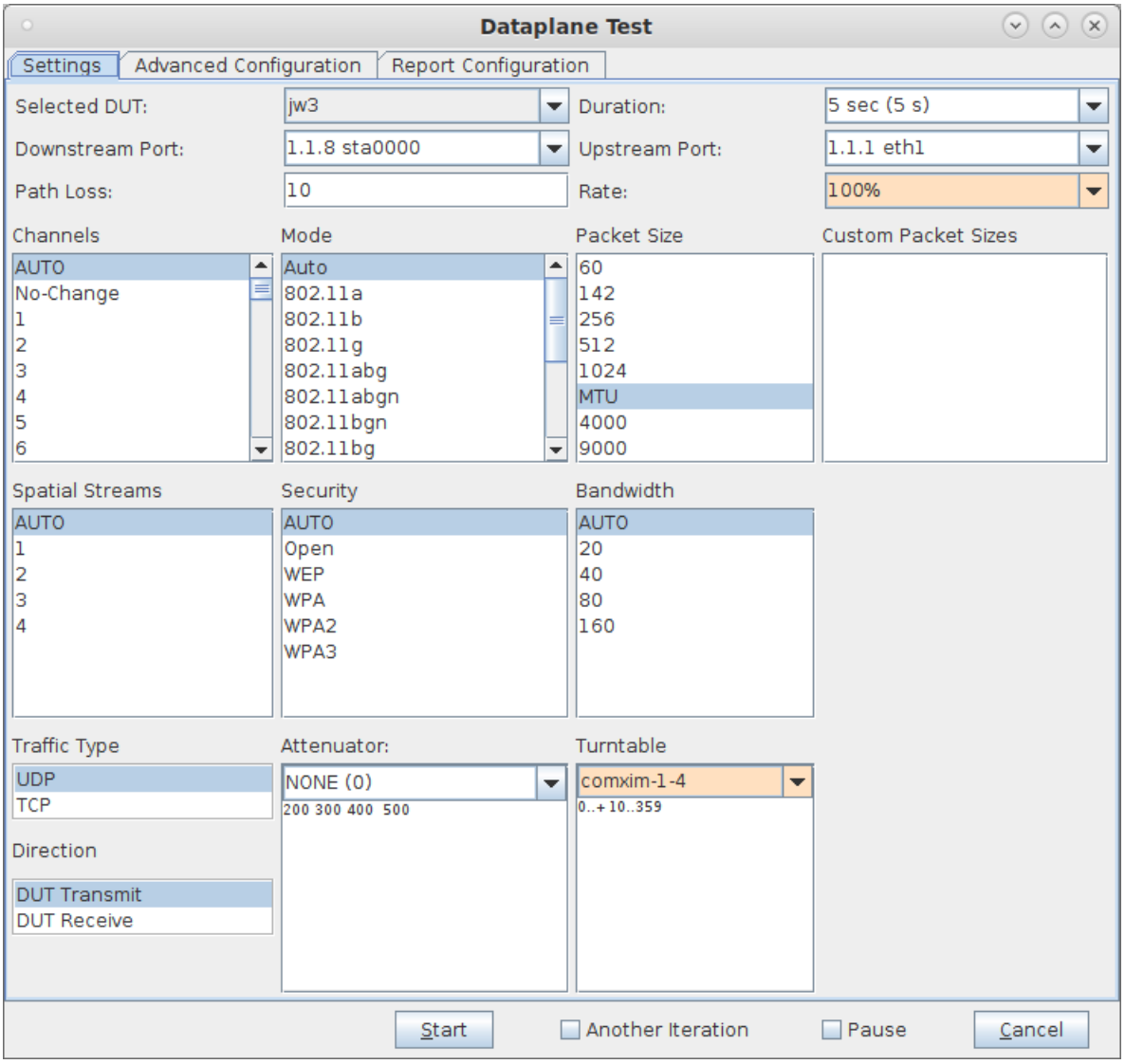


2. Use Chamber View for Dataplane test.

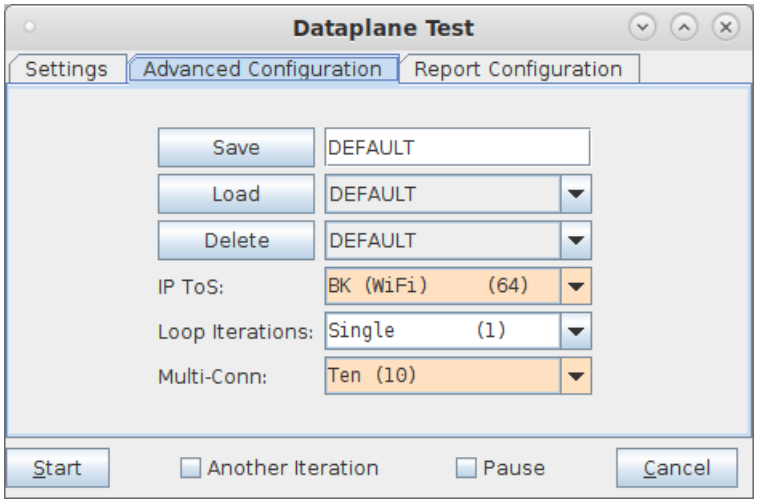
A. Open Chamber View by clicking on the 'Chamber View' button in the LANforge-GUI. Load appropriate scenario. Apply the Scenario, then Build the scenario.



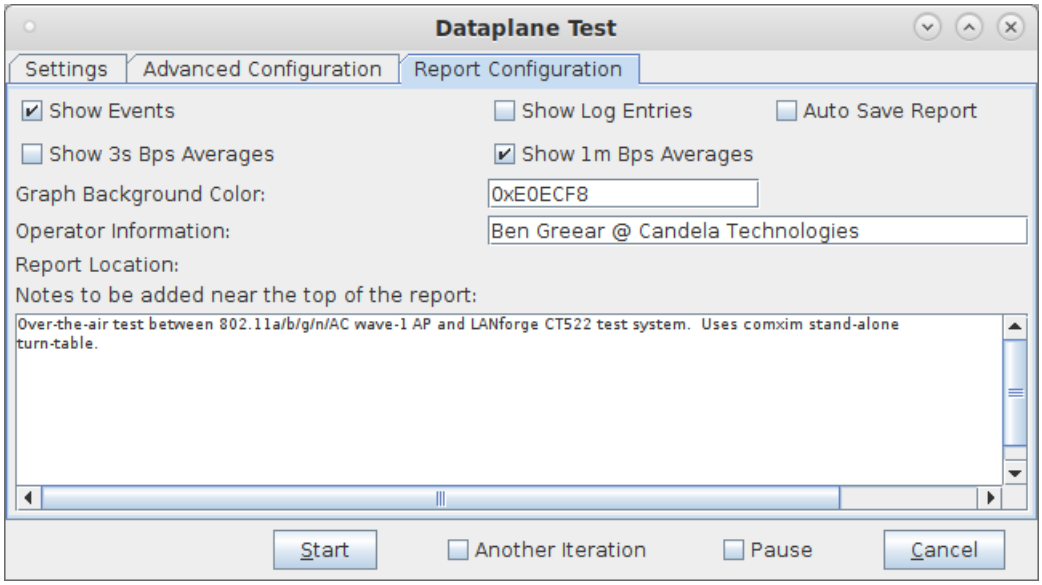
B. Select the **Dataplane** test and click **Run Test**. You should see the Dataplane Test configuration window pop up. It will remember the last configuration for most fields. Select the DUT and WiFi station device, and select the combinations of traffic types and turn-table degrees that you wish to test. The degrees show in this image will go from zero to 359 in steps of 10 degrees. The mouse-over tooltip for the turntable configuration entry field has the details on the available syntax.:



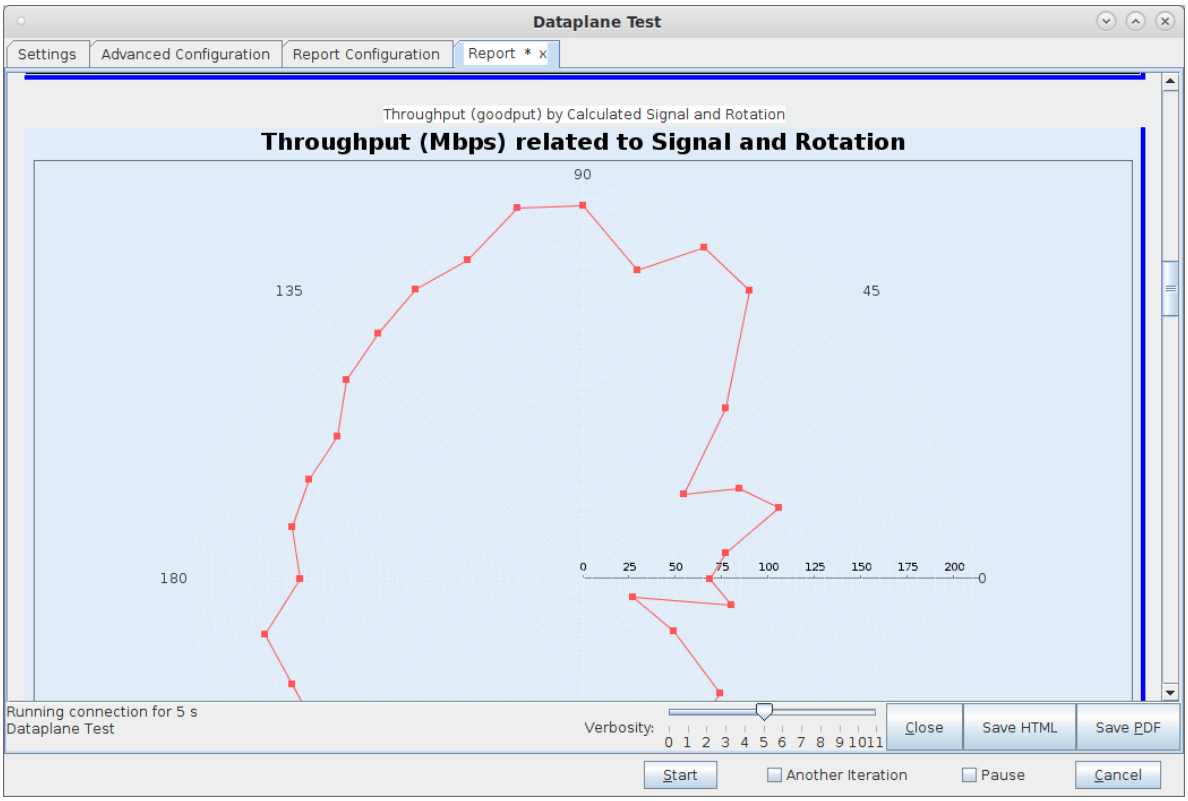
C. You may wish to save/restore configurations or make some advanced configuration on the 'Advanced Configuration' tab.



D. The Report Configuration tab lets you input the operator information, notes about this test setup, and more.



E. 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.



F. 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 Dataplane Rotation Test Report.

3. Stand-alone Turn Table Information.

A. We built a cable stand for the stand-alone turn-table to help keep cables out of the way while rotating.