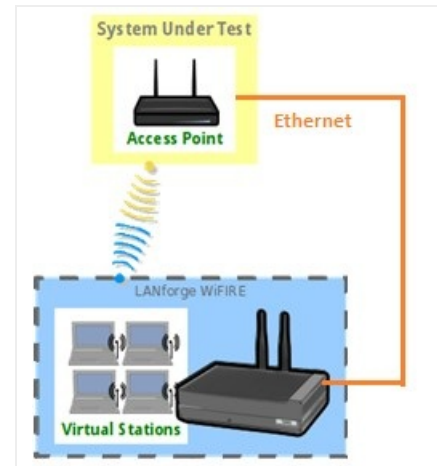


Testing AP Band Steering with the AP-Auto Automated Test Suite

Goal: Run an AP-Auto test for an AP using the LANforge CT523c or similar system in order to test how successfully an AP conducts band steering. The AP-Auto test is similar to the TR-398 test, but is designed to be functional with a minimum amount of test equipment. A 2-radio LANforge system and DUT is all that is required to run these tests.

In this test scenario, the LANforge CT523 is used to create stations and run the Band Steering test. This example assumes you have some experience with Chamber View, and that you have a LANforge system and a DUT AP. The AP and LANforge may be in chambers, but that is not required. This feature requires LANforge version 5.4.2 or higher.



1. If you haven't setup or performed AP-Auto tests on your LANforge system, please refer to the [AP-Auto Test Suite Setup](#) guide for quick setup.
2. Running the AP-Auto Band Steering Test:
 - A. Open the *AP-Auto Test* window.

AP Automated Test (cv-inst-1)

Settings | Advanced Configuration | Stability Configuration | Mode/NSS/BW Configuration | Pass/Fail Configuration | Report Configuration

Selected DUT 2G: TR-398_DUT asus-ax11000 f0:2f74:57:db:b0 (1) **1**

Selected DUT 5G: TR-398_DUT asus-ax11000 f0:2f74:57:db:b4 (2)

Selected DUT 5G-B: NA

Upstream Port: 1.1.3 eth3

2.4Ghz Radios: 1.1.4 wiphy0, 1.1.6 wiphy2 **2**

5Ghz-B Radios:

Dual-Band Radios: 1.1.6 wiphy2

Tests to run:

Estimated Test Duration: 10 m

☐ Basic Client Connectivity ☐ Throughput vs Pkt Size

☐ Multi Band Performance ☐ Capacity **3**

☐ Stability ☒ Band-Steering

☐ Multi-Station Throughput vs Pkt Size ☐ Long-Term

Start Skip ☐ Another Iteration ☐ Pause Cancel

B. In the AP-Auto *Settings* Tab:

- A. Select the **DUT 2G** and **DUT 5G** SSIDs. **This test requires that** each DUT use one shared SSID across all bands. Most DUTs will default to this behavior once they have been configured for band steering.
- B. Select the LANforge radios to be used in this test. You need at least one 2.4Ghz radio, one 5Ghz radio, and one Dual-Band radio for full functionality.
- C. At the bottom, select the **Band-Steering** test checkbox.

C. Your *Advanced Configuration* tab should look similar to the following:

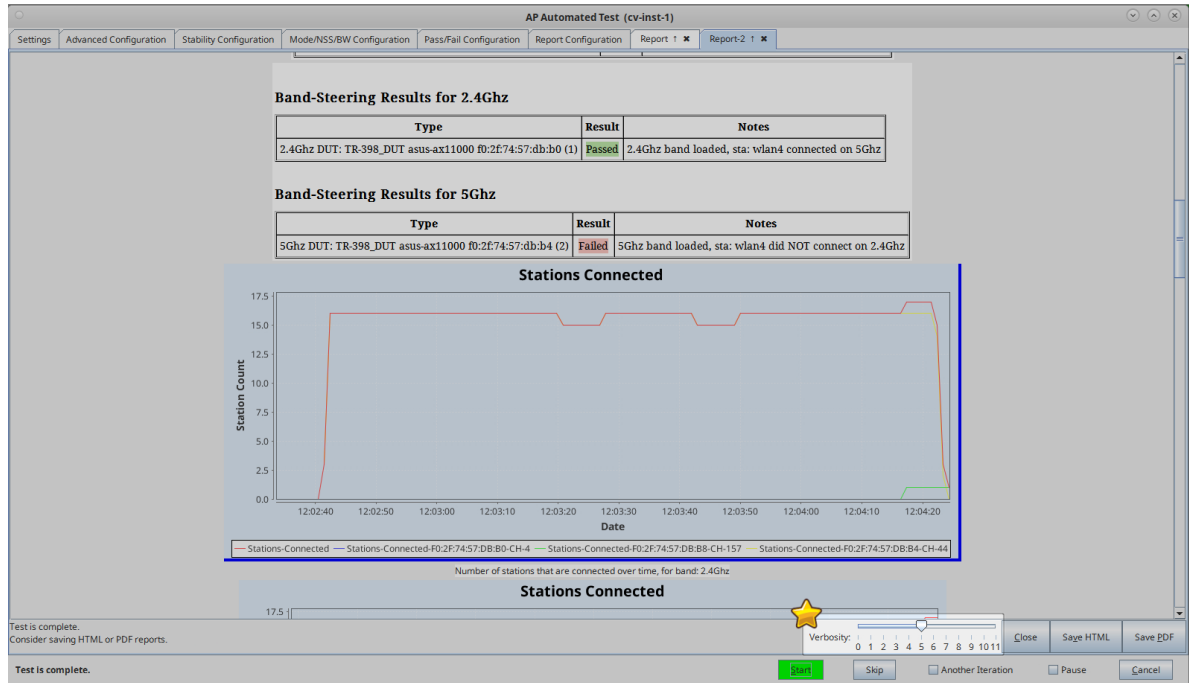
The screenshot displays the 'AP Automated Test (cv-inst-0)' window, specifically the 'Advanced Configuration' tab. The interface is organized into several sections:

- Buttons:** 'Show Config', 'Import Config', 'Save', 'Load', and 'Delete' are located at the top left.
- Configuration Fields:**
 - IP ToS:** Set to 'Best Effort (0)'.
 - Multi-Conn:** Set to 'One (1)'.
 - Auto-Helper:** Checked.
 - Skip Tests:** 'Skip 2.4Ghz Tests', 'Skip 5Ghz Tests', 'Skip Dual-Band Tests', 'Skip 5Ghz-B Tests', and 'Skip Tri-Band Tests' are all unchecked.
 - Use BSSID:** Checked.
 - Set Radio TxPower to Default:** Checked.
 - Loop Iterations:** Set to 'Single (1)'.
 - Station Counts:** '2.4Ghz Station Count' is 'Small (32)', '5Ghz Station Count' is 'Small (32)', 'Dual-Band Station Count' is 'Small (32)', '5Ghz-B Station Count' is 'Default (64)', and 'Tri-Band Station Count' is 'Default (64)'.
 - Duration:** Set to 'Default (20 sec)'.
 - Long-Term Download Rate:** Set to '85%'.
 - Long-Term Upload Rate:** Set to '85%'.
 - Long-Term Duration:** Set to '3600 (1 hr)'.
 - Long-Term Graph Interval:** Set to '30 (30 sec)'.
 - Long-Term Station Count:** Set to 'Two (Default) (2)'.
 - Hunt Retries:** Set to 'Default (1)'.
 - Maximum Hunt Iterations:** Set to '100'.
 - Packet Loss Threshold:** Set to '1% (1%)'.
 - Frame Sizes:** Set to '64, 128, 256, 512, 1024, MTU'.
 - Capacity Amounts (stations):** Set to '1, 5, 10, 20, 32'.
 - Multi-Station Throughput Options:** 'UDP' is unchecked, 'TCP' is checked, 'Download' is checked, and 'Upload' is unchecked.

At the bottom, the status 'Test is complete.' is displayed, along with buttons for 'Start', 'Skip', 'Another Iteration', 'Pause', and 'Cancel'.

- D. Modifying the band station count fields will have the most direct effect on the 'PASS/FAIL' results of this test (E.g. increasing station count on the loaded band might increase likelihood of DUT steering new clients to the less crowded band).

- 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 tab will be created and will be updated as the test runs.



- F. You can change the test result verbosity level by adjusting the **Verbsosity** slider. Maximizing it will show all generated figures and data. The verbosity also affects the length of the saved report.
- G. At the end of the test, 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 AP-Auto Band-Steering Report](#).