Cell-Emulator

WiFi Performance Test Plan

Wed May 07 13:33:50 PDT 2025

PDF Report | XLSX Report

Test Setup Information		
Device Under Test	Name	AP
	SSIDs	204-cell-emulator-ap 204-cell-emulator-ap 204-cell-emulator-ap
	Passwords	lanforge lanforge lanforge
	BSSIDs	38:f8:f6:75:ca:94 38:f8:f6:75:ca:9a 38:f8:f6:75:ca:96
	Notes	[BLANK]
Estimated Run Time	30 m	
Actual Run Time	6.063 m	

Objective

The Cell Emulator WiFi Performance test plan provides a comprehensive set of tests to qualify the performance of WiFi access points (APs) designed for residential and small office environments. This test plan currently covers fail over, performance testing for 2.4GHz, 5GHz, and 6GHz bands on cellular capable APs. The test plan is designed for service providers deploying in home WiFi APs to qualify the APs in the lab before deployment and for equipment makers to test during the development of the APs. Candela Technologies offers a fully automated cell emulator test system. The user can select from the list of tests available. Most tests can run fully automated, though some require user interaction. Measurements are made and compared to the specified PASS/FAIL criteria in the cell emulator test plan and this report will show the summary PASS/FAIL results followed by more detailed results for each test.

Summary Results

Test	Result				Candela Score	Elapsed	Info
6.1.1 Fail Over	BW	n/AC	AX	BE	0	5.978 m	
	2.4Ghz						
	5Ghz						
	6Ghz						
	MLO						

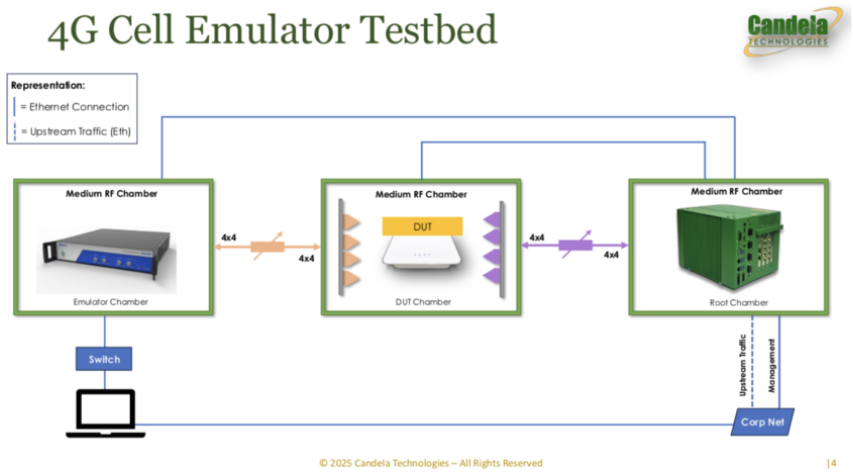
6.1.1 Fail Over

Summary

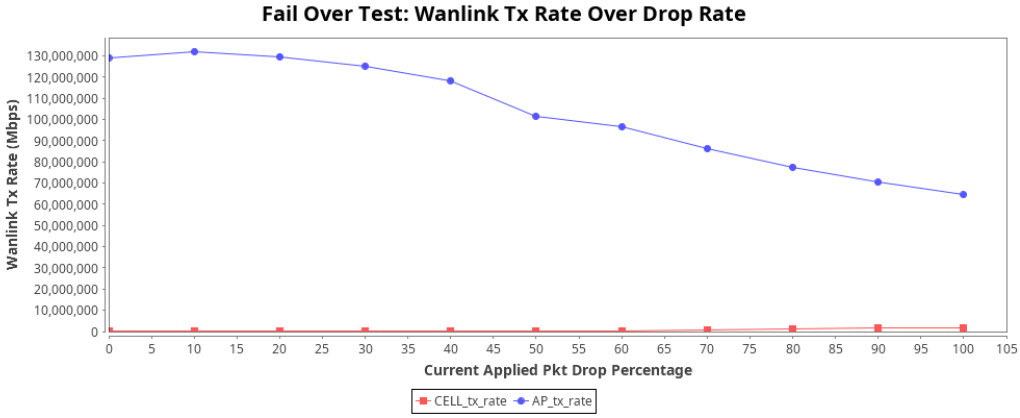
The objective of this test is to evaluate the failover capabilities of the Device Under Test (DUT), specificall its ability to seamlessly transition between its primary wired WAN interface and a secondary cellular WAN interface (e.g., LTE/5G) when a network disruption occurs. This test aims to validate the DUT's

responsiveness, stability, and ability to maintain active sessions during the failover process. The test also examines whether the DUT meets expected recovery times, correctly prioritizes upstream interfaces according to configuration, and automatically reverts to the primary WAN when connectivity is restored. Metrics such as downtime duration, session persistence, network reachability, and system logs will be captured to assess performance and adherence to expected behavior.

Testbed Diagram



CSV Data for Fail Over Test: Wanlink Tx Rate Over Drop Rate

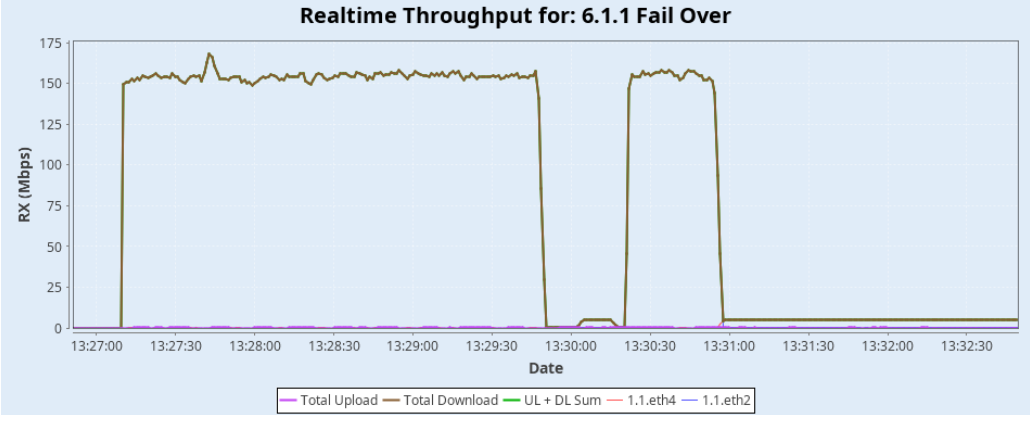


6.1.1 Fail Over Results

Type	Result	Value	P/F Value	Notes
Configuration NOTE	INFO			Packet Drop Test Selected to Run.
Configuration NOTE	INFO			Fail Over AP settle time is set to: 30 s.
Configuration NOTE	INFO			Fail Over min packet drop is set to 0.
Configuration NOTE	INFO			Fail Over max packet drop is set to 100.
Configuration NOTE	INFO			Fail Over drop freq step is set to 10.

Configuration NOTE	INFO			Fail Over min delay is set to 0.
Configuration NOTE	INFO			Fail Over max delay is set to 0.
Configuration NOTE	INFO			Fail Over delay step is set to 10.
Configuration NOTE	INFO			Fail Over min jitter is set to 0.
Configuration NOTE	INFO			Fail Over max jitter is set to 0.
Configuration NOTE	INFO			Fail Over jitter step is set to 10.
Topology Note	INFO			Topology Treated Successfully
Topology Note	INFO			ap_wl AP-Wanlink found
Topology Note	INFO			cell_wl CELL-Wanlink found
topology note	INFO			wanlink endpoints initialized
Testing Iter Note	INFO	Packet Drop Rate is: 0		ap_a_rx: 129527755, cell_a_rx: 852 ap_a_tx: 301, cell_a_tx: 643
Testing Iter Note	INFO	Packet Drop Rate is: 10		ap_a_rx: 153047864, cell_a_rx: 833 ap_a_tx: 257, cell_a_tx: 526
Testing Iter Note	INFO	Packet Drop Rate is: 20		ap_a_rx: 152928031, cell_a_rx: 805 ap_a_tx: 277, cell_a_tx: 519
Testing Iter Note	INFO	Packet Drop Rate is: 30		ap_a_rx: 153994938, cell_a_rx: 730 ap_a_tx: 201, cell_a_tx: 483
Testing Iter Note	INFO	Packet Drop Rate is: 40		ap_a_rx: 147652956, cell_a_rx: 643 ap_a_tx: 99, cell_a_tx: 518
Testing Iter Note	INFO	Packet Drop Rate is: 50		ap_a_rx: 72298256, cell_a_rx: 1174555 ap_a_tx: 134, cell_a_tx: 1017
Testing Iter Note	INFO	Packet Drop Rate is: 60		ap_a_rx: 76622605, cell_a_rx: 1177894 ap_a_tx: 137, cell_a_tx: 1238
Testing Iter Note	INFO	Packet Drop Rate is: 70		ap_a_rx: 87179269, cell_a_rx: 2161887 ap_a_tx: 126, cell_a_tx: 742
Testing Iter Note	INFO	Packet Drop Rate is: 80		ap_a_rx: 9501947, cell_a_rx: 4741634 ap_a_tx: 97, cell_a_tx: 372
Testing Iter Note	INFO	Packet Drop Rate is: 90		ap_a_rx: 1082, cell_a_rx: 5135397 ap_a_tx: 0, cell_a_tx: 269
Testing Iter Note	INFO	Packet Drop Rate is: 100		ap_a_rx: 919, cell_a_rx: 5134906 ap_a_tx: 0, cell_a_tx: 175

Realtime Throughput for: 6.1.1 Fail Over



CSV For Graph Above	Key Performance Indicators CSV

Test configuration and LANforge software version	
Auto-Helper	true
Allow-11w (MFP/PMF)	false
SAE-PWE	2
Disable-MLO	false
TXS All	false
Skip 2.4Ghz Tests	false
Skip 5Ghz Tests	false
Duration-120	120
Duration-60	60
Channel 2GHz	AUTO
Channel 5GHz	AUTO
Channel 6GHz	AUTO
Calibrate against LANforge AP	true
LANforge Calibration TxPower-2.4G	20
LANforge Calibration TxPower-5G	20
Multi-Conn	10
Use-IPv6	false
UDP-Burst	false
UDP-GRO	false
Multiple Endpoints:	1
ToS	0
Pld Pattern	RANDOM_FIXED
UDP Send Buffer Size:	0
UDP Receive Buffer Size:	0
TCP Send Buffer Size:	0
TCP Receive Buffer Size:	0
Upstream Port	1.1.5 WAN-UPSTREAM Firmware: 0x80000760, 1.1313.0 Resource: cellemulatorLF
Alien Upstream Port	
Turn-Table Chamber	
Prefer Virtual STA Radios	false
Opposite-Speed:	0
1Gbps Throughput Limit:	925000000
2.5Gbps Throughput Limit:	2300000000
5Gbps Throughput Limit:	4600000000
Prefer Group 0	true
Prefer Group 1	false
Prefer Group 2	false
Extra TxStatus	false

Extra RxStatus	false
TXS All	false
Adjust UL Atten with STA TxPower	true
Adjust UL Atten with DUT TxPower	false
2.4GHz Channel	-1
5GHz Channel	-1
6GHz Channel	-1
Default NSS	2
2.4GHz 2m RSSI	-25
5GHz 2m RSSI	-30
Attenuation Adjustment	0
Extra Download Path-loss	0
STA TX Power:	20
DUT AP Expected TX Power-2.4G:	30
DUT AP Expected TX Power-5G:	30
Virt-Sta Rotation 2.4GHz	0
Virt-Sta Rotation 5GHz	0
Virt-Sta Rotation 6GHz	0
AX Rotation 2.4GHz	0
AX Rotation 5GHz	0
AX Rotation 6GHz	0
6.1.1 Fail Over	
AP Settle Time:	30
Max Packet Drop:	100
Min Packet Drop:	0
Packet Drop Step Interval:	10
Max Delay:	0
Min Delay:	0
Delay Step Interval:	10
Max Jitter:	0
Min Jitter:	0
Jitter Step Interval:	10
Test Packet Drop	true
Test Delay	false
Test Jitter	false
Test Repeat Fail Over	false
Repeat Fail Over Iterations:	5
Details for Resource: 1.1	Hostname: cellemulatorLF LANforge ver: 5.5.1 64bit Kernel-Version: 6.11.12+
Show Events	true
Build Date	Wed May 7 01:23:32 PM PDT 2025

Git Version	65dc6003cef7f73a7d0e07ed42cf0469a65770ca

CSV Data

META Information for Cell-Emulator