

Dataplane Test

Fri Oct 24 16:19:56 IST 2025



Test Setup Information

Device Under Test

Objective

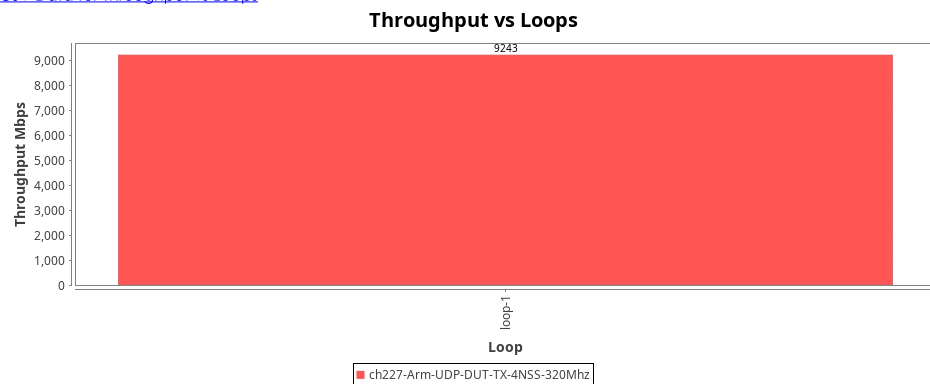
The Candela WiFi data plane test is designed to conduct an automatic testing of all combinations of station types, MIMO types, Channel Bandwidths, Traffic types, Traffic direction, Frame sizes etc... It will run a quick throughput test at every combination of these test variables and plot all the results in a set of charts to compare performance. The user is allowed to define an intended load as a percentage of the max theoretical PHY rate for every test combination. The expected behavior is that for every test combination the achieved throughput should be at least 70% of the theoretical max PHY rate under ideal test conditions. This test provides a way to go through hundreds of combinations in a fully automated fashion and very easily find patterns and problem areas which can be further debugged using more specific testing.

Test Results

Type	Result	Value	P/F Value	Notes
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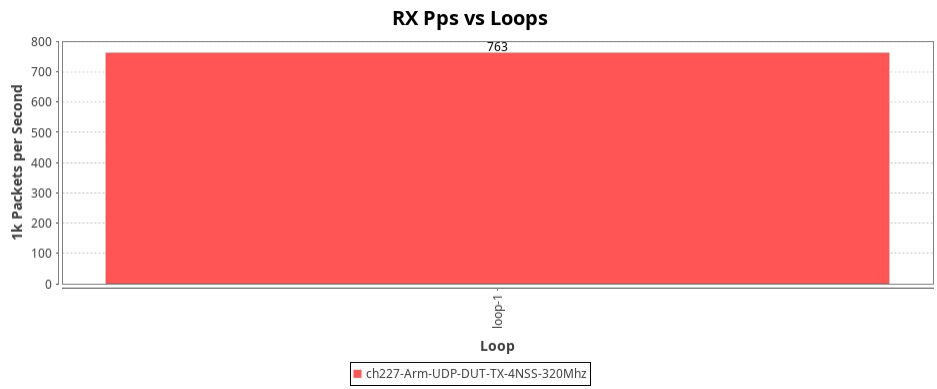
Throughput for each different traffic type. The throughput data shown is the average throughput for the related reporting interval (1-minute for normal and -LL, 3-seconds for -3s). Datasets with names containing '-LL' will include the IP, TCP, UDP and Ethernet header bytes in their calculation. For Armageddon traffic only, low-level throughput includes the Ethernet FCS and preamble. Other datasets report 'goodput' for the protocol. If 'Show Opposite Traffic' is enabled, download is represented by brown and upload is represented by purple, with the varying shades signifying 3s, 1m, and low-level throughput results.

[CSV Data for Throughput vs Loops](#)



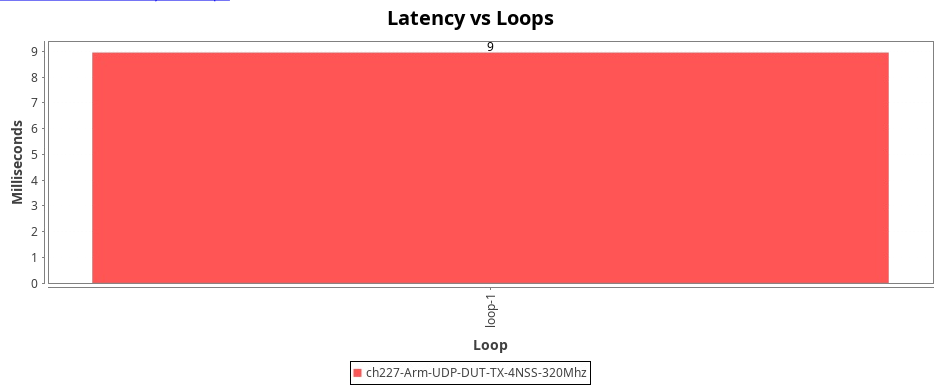
Pps throughput for each different traffic type. The values are estimated packets-per-second over the DUT, but some protocols such as TCP make this difficult to know for certain, so the value is extrapolated.

[CSV Data for RX Pps vs Loops](#)



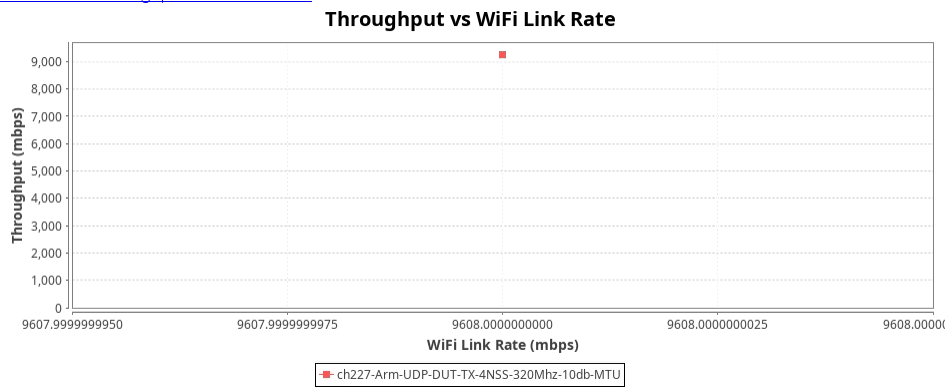
Latency for each different traffic type. If opposite-direction traffic is non-zero, then round-trip time will be reported. Otherwise, one-way latency will be reported.

[CSV Data for Latency vs Loops](#)



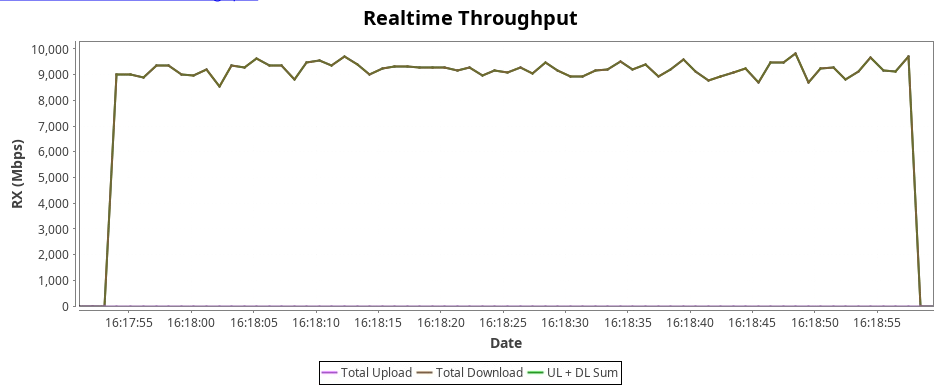
Throughput vs WiFi Link Rate (Phy Rate) for each different traffic type.

[CSV Data for Throughput vs WiFi Link Rate](#)



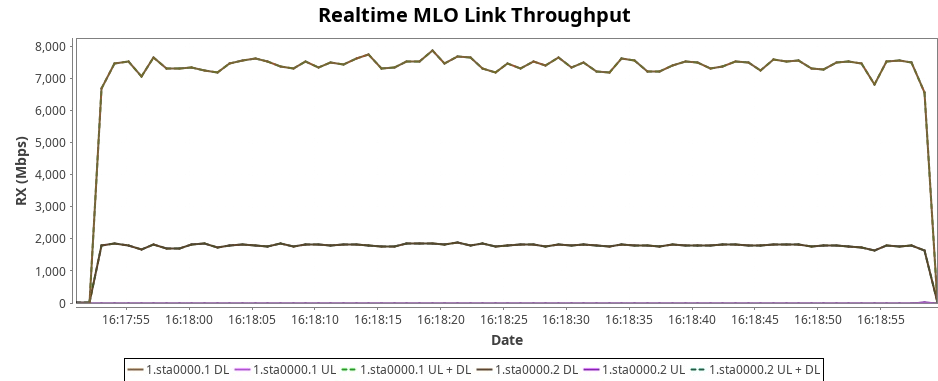
Realtime Graph shows summary download and upload RX Goodput rate of connections created by this test. Goodput does not include Ethernet, IP, UDP/TCP header overhead.

[CSV Data for Realtime Throughput](#)



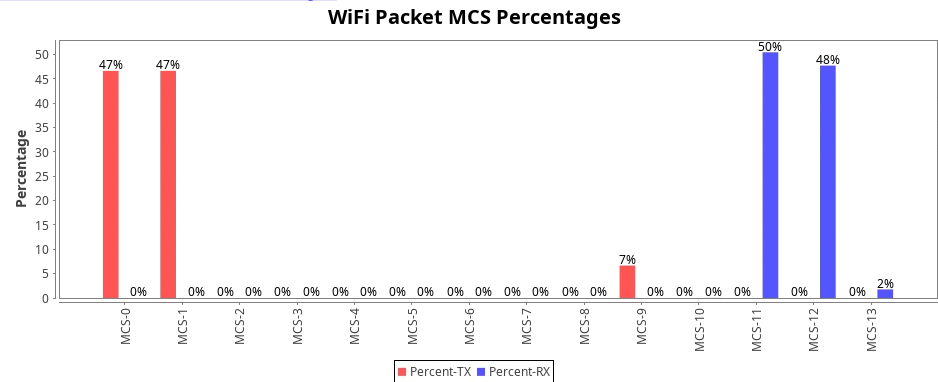
Realtime Link Graph shows summary download and upload RX rate for WiFi MLO Links.

[CSV Data for Realtime MLO Link Throughput](#)



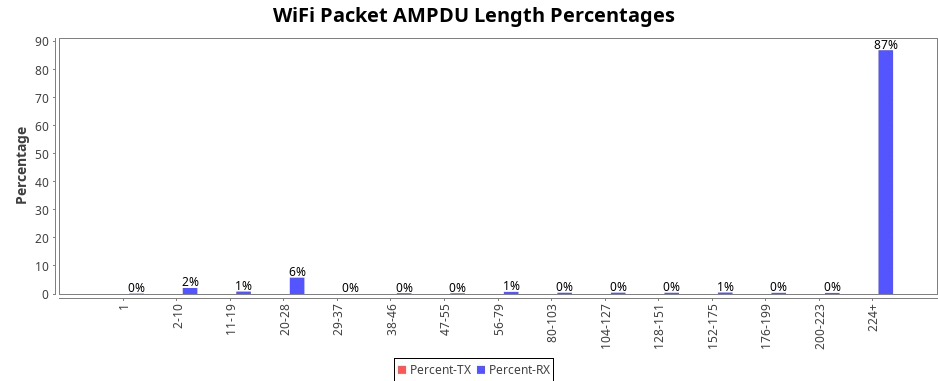
Histogram for WiFi MCS for packets sent and received by the wifi radios in the test.

[CSV Data for WiFi Packet MCS Percentages](#)



Block-Ack allows a series of frames to be sent in one transmit opportunity. This series of packets is known as a series of AMPDU frames. Having more frames in each AMPDU series normally improves throughput, but may increase latency or decrease airtime fairness. This histogram provides some visibility into the AMPDU chain length used in this test.

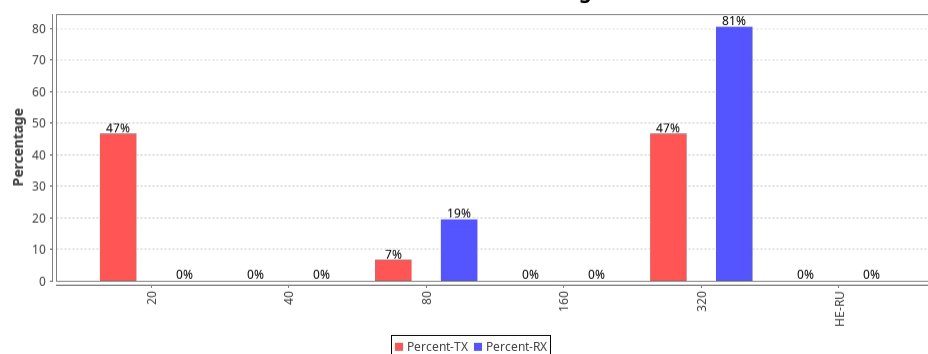
[CSV Data for WiFi Packet AMPDU Length Percentages](#)



Histogram for WiFi bandwidths for packets sent and received by the wifi radios in the test.

[CSV Data for WiFi Bandwidth Percentages](#)

WiFi Bandwidth Percentages



Test Information

Message
Starting dataplane test with: 1 iterations.

Constant values related to the table below.

Iteration-Duration	60s
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CSV data focused on throughput. The values reported are gathered at the end of the test iteration before traffic is stopped. The test iterations consider 'Received' traffic to be received in the dominant direction. So, if the iteration is DUT-TX, then Received traffic is traffic received on the Station from the AP. If the iteration is DUT-RX, then Received traffic is received on Ethernet port from DUT and sent by the station. Columns starting with RSSI are from the perspective of the Station, so Tx-Rate is the Station transmit Phy Rate, and Rx-Rate is the Phy Rate received by the station. The Rx-Bps column shows the throughput average of the entire test duration. The Rx-Bps-1m/LL/3s and related columns show the throughput average from the previous report interval of the test, 1-minute for -1m and -LL, 3-seconds for -3s. Rpt-Mode is negotiated mode, not necessarily Phy Rate mode.

Channel	Frequency	Security	NSS	Cfg-Mode	Bandwidth	Pkt	Traffic-Type	Direction	Atten	Rotation	Tilt	Offered-1m	Rx-Bps	Rx-Bps-1m	Rx-Bps-LL	Rx-Bps-3s	Rx-Bps-1m-DL	Rx-Bps-1m-UL	Rx-Bps-LL-DL	Rx-Bps-LL-UL	Rx-Bps-3s-DL	Rx-Bps-3s-UL	RSSI	Tx-Failed	Tx-Failed%	Tx-Rate	Rx-Rate	Rpt-Mode	Rpt-Mode-Brief
227	6135	WPA3	4	6 GHz	320	MTU	Arm-UDP	DUT-TX	NA	NA	NA	9.554 Gbps	9.223 Gbps	9.243 Gbps	9.389 Gbps	9.704 Gbps	9.243 Gbps	0 bps	9.389 Gbps	0 bps	9.704 Gbps	0 bps	-23	0 / 49546769	0	576.4 Mbps	9.608 Gbps	802.11an-BE	802.11be

CSV data focussed on TX and RX Link Rate and RSSI reports. The values reported are gathered at the end of the test iteration before traffic is stopped. The Phy Rate and RSSI are from the perspective of the Station, so Tx-MCS is MCS at which station is sending to the AP, and Rx-MCS is MCS at which the AP is sending to the station.

Channel	Frequency	Security	NSS	Cfg-Mode	Bandwidth	Pkt	Traffic-Type	Direction	Tx-Mode-Rpt	Tx-NSS-Rpt	Tx-MCS	Tx-BW-Rpt	Rx-Mode-Rpt	Rx-NSS-Rpt	Rx-MCS	Rx-BW-Rpt	RSSI-dBm	Tx-Phy-Rate	Rx-Phy-Rate
227	6135	WPA3	4	6 GHz	320	MTU	Arm-UDP	DUT-TX	EHT	4	9	80	EHT	4	11	80	-23 [-31, -26, -27, -38]	1921.5 MB/s 80MHz EHT-MCS 9 EHT-NSS 4 EHT-GI 0	2401.9 MB/s 80MHz EHT-MCS 11 EHT-NSS 4 EHT-GI 0

Brief csv report, may be imported into third-party tools.

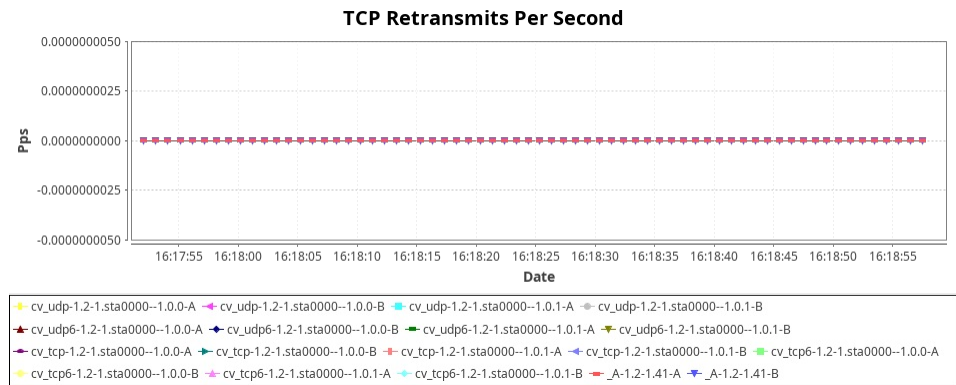
Step Index	Position [Deg]	Tilt [Deg]	Attenuation [dB]	Throughput [Mbps]	Beacon RSSI [dBm]	Data RSSI [dBm]
0	NA	NA	0	9,222.52	-32	-23

Throughput metrics csv report, may be imported into third-party tools.

Loop Iteration	Attenuation [dB]	Minimum Tput [Mbps]	Avg Throughput [Mbps]	Maximum Tput [Mbps]
0	0	9,222.52	9,222.52	9,222.52

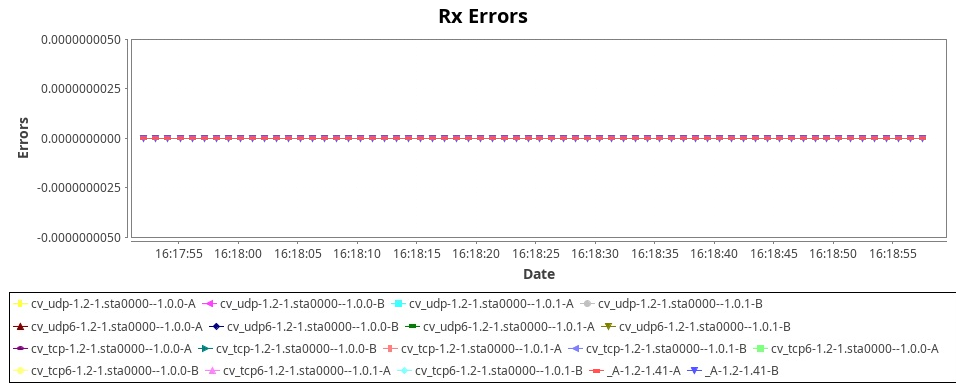
Retransmit Graph shows occurrences of retransmitted packets.

[CSV Data for TCP Retransmits Per Second](#)



Error Graph shows occurrences of packet errors.

CSV Data for Rx Errors



Snapshot Payload: MTU Arm-UDP DUT-TX after test step completed.

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.41 sta0000	13.029 Kbps	5.829 Gbps	0	576.4 Mbps	9.608 Gbps	802.11an-BE 320 4x4	227	194	-23	78:8C:B5:48:D3:89	192.168.0.136	38:f8:f6:2f:53:14
MLO 1.1.sta0000.1	1.934 Kbps	1.108 Gbps	9.086	576.40 Mbps	9,607.70 Mbps	802.11-BE 320 4x4	37e		-23	5e:8c:b5:48:d3:89		38:f8:f6:2f:55:14
MLO 1.1.sta0000.2	795 bps	293.266 Mbps	14.392	1,921.50 Mbps	2,401.90 Mbps	802.11-BE 80 4x4	36		-26	ca:8c:b5:48:d3:87		38:f8:f6:2f:56:14

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.2 eth2	7,124 Gbps	14,203 Kbps	10 Gbps	192.168.0.8	9c:69:b4:63:16:ac

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Lat (ms)	RT Lat (ms)	Jitter	Rx Pkt Loss %	Rx OOO %	Rx DUP	Rx Seq Drop
_A-1.2-1.41-A	0 bps	9,243 Gbps	0	48837783	8	8	6	3.302	0	0	1,675,991
_A-1.2-1.41-B	9,554 Gbps	0 bps	50505568	0	0	8	0	0	0	0	0

Key Performance Indicators CSV

Test configuration and LANforge software version	
AP Tx Power:	0
Path Loss	10
Requested Speed	10Gbps
Requested Opposite Speed	0Kbps
Multi-Conn	1
Multi-Cx	2
Armageddon Multi-Pkt	1000
Stop After Failures:	3

ToS	0
Station Bringup Wait:	30 sec (30 s)
First Byte Wait:	30 sec (30 s)
Duration:	1 min (1 m)
Settle Time:	1 sec (1 s)
Send Buffer Size:	OS Default
Receive Buffer Size:	OS Default
RvR Helper Script:	
P2P App:	
Channels	AUTO
Spatial Streams	AUTO
Bandwidth	AUTO
Attenuator-1	0
Attenuation-1	0..+50..950
Attenuator-2	0
Attenuation-2	0..+50..950
Turntable Chamber	0
Turntable Angles	0..+45..359
Modes	No-Change
Packet Size	MTU
Security	AUTO
Traffic Type	Arm-UDP
Direction	DUT Transmit
Upstream Port	1.1.eth2 Firmware: 0x80000aef, 1.1876.0 Resource: ct523c-0bdd
WiFi Port	1.1.sta0000 Resource: ct523c-0bdd
Continuous Traffic	false
Maximize Unused Attenuators	true
Admin Down Other Ports	false
Admin Down Test Ports	false
DUT Connects to Mgt Port	false
UDP-Burst	true
UDP-GRO	false
Use Iperf3	false
Modify Interop WiFi	false
No DHCP Lease Expected	false
No Station Expected	false
Pause on WiFi Errors	false
Outer Loop is Attenuation	false
Show Events	true
Auto Save Report	false
Ignore Upstream RSSI	false
Pass-Fail Tput Criteria	
Build Date	Wed Oct 15 04:26:44 PM PDT 2025
Build Version	5.5.1.1
Git Version	4af85f85b1f4e35952164da96a2d0d52e703cae9

