

Rate vs Range Test



Sat Jun 01 10:01:31 PDT 2019

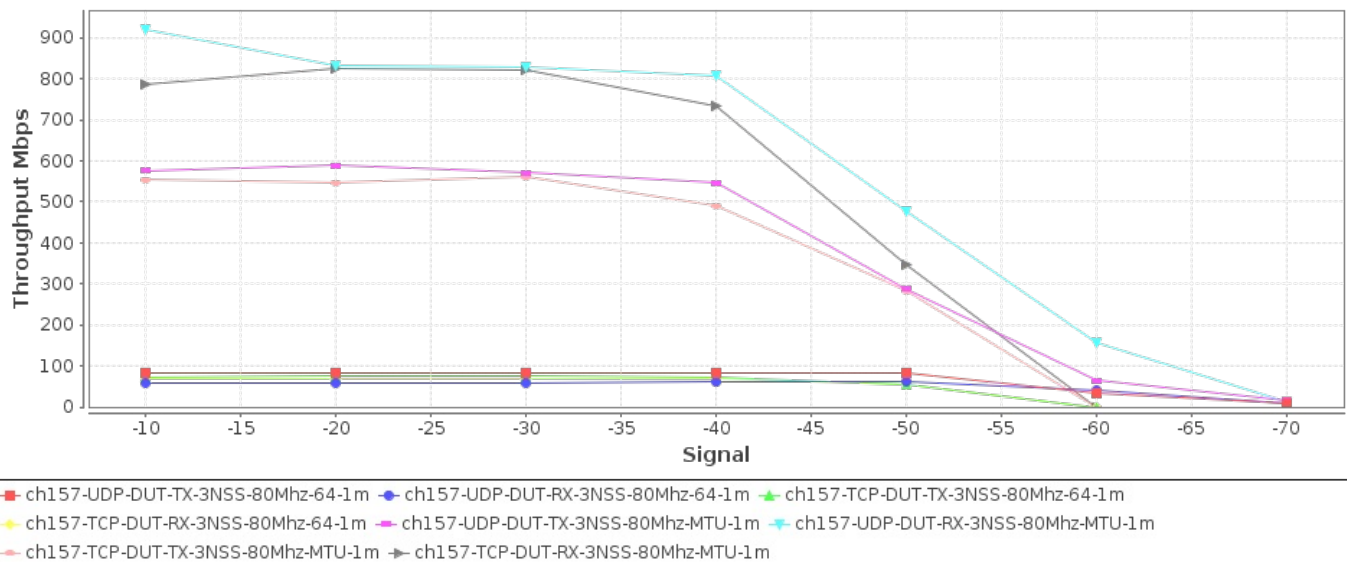
Test Setup Information				
Device Under Test	Name	APUT		
	Software Version	v5.62.1		
	Model Number	AP640	Serial Number	234-23-sd-35
	SSIDs	labap		
	BSSIDs	78:d2:94:bf:16:43		
Operator	[BLANK]			

Objective

This test measures the performance over distance of the Device Under Test. Distance is emulated using programmable attenuation and a throughput test is run at each distance/RSSI step and plotted on a chart. The test allows the user to plot RSSI curves both upstream and downstream for different types of traffic and different station types.

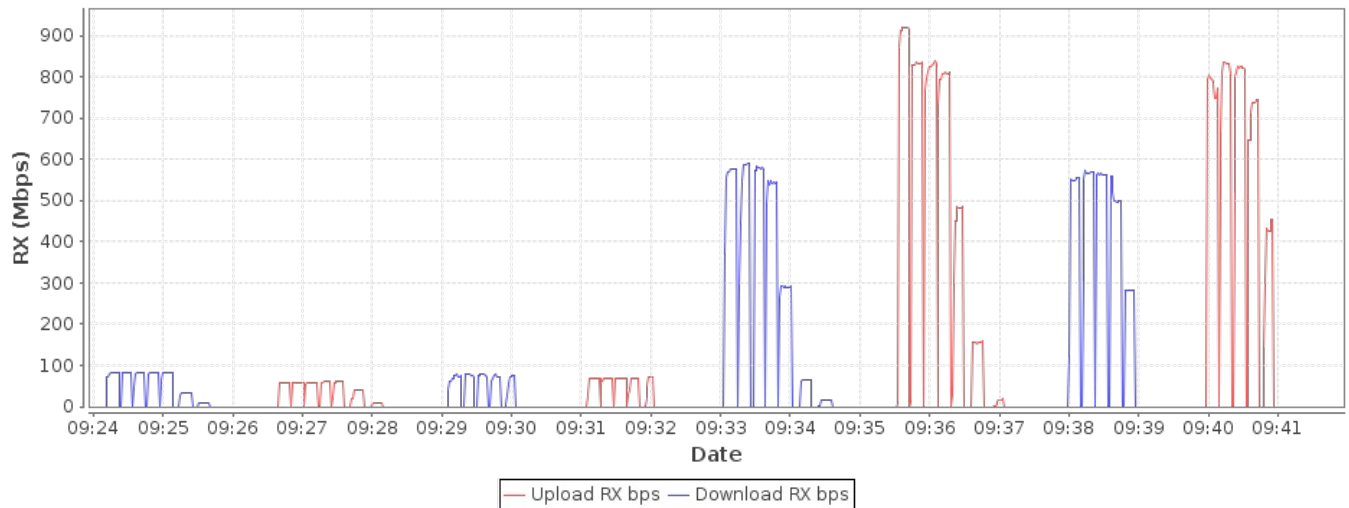
Throughput vs calculated RF Signal for each different traffic type. The signal is calculated based on the configured path-loss, transmit power, and attenuation.

Throughput vs Calculated Signal



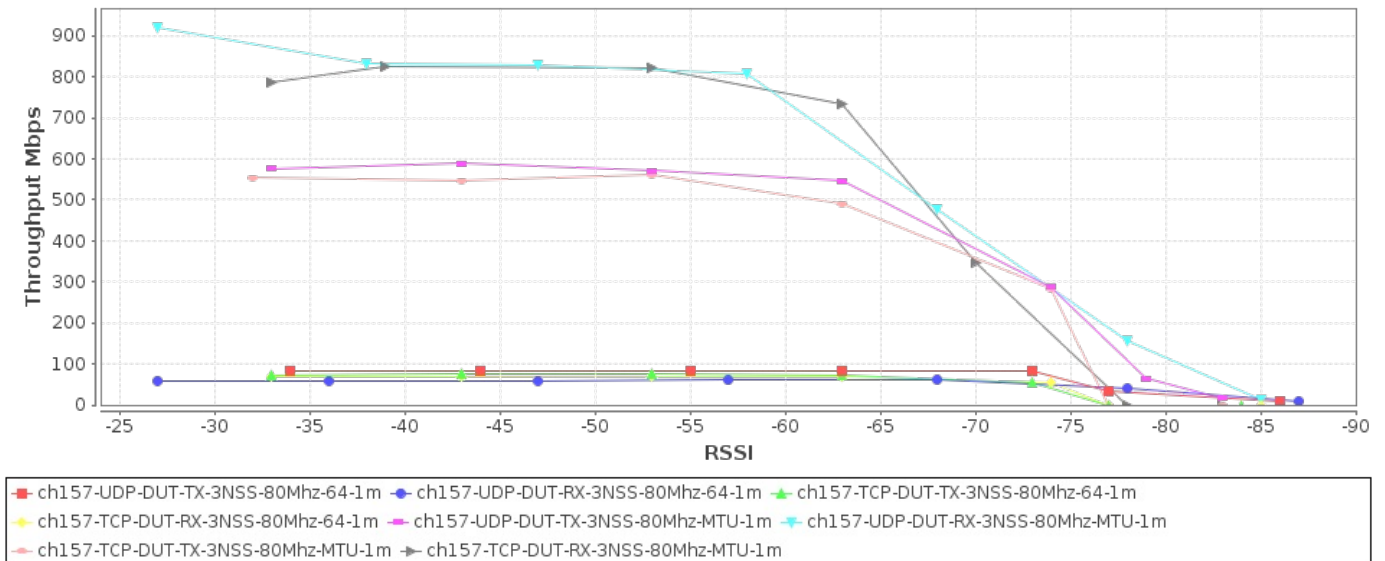
Realtime Graph shows summary download and upload RX bps of connections created by this test.

Realtime Throughput



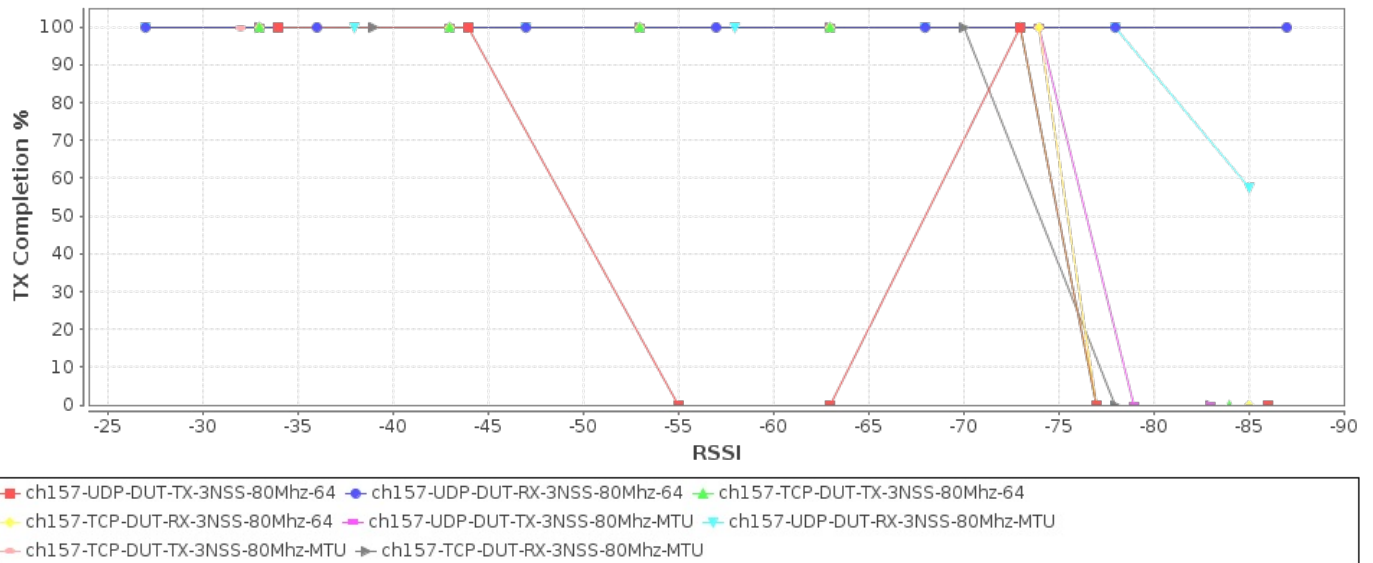
Throughput vs reported RSSI for each different traffic type. Please note that the LANforge RSSI may be similar to the remote Device Under Test RSSI but there is no guarantee of this. Differences in tx-power and RF splitter/combiners can cause different RSSI as reported by LANforge and the remote peer device.

Throughput vs LANforge RSSI



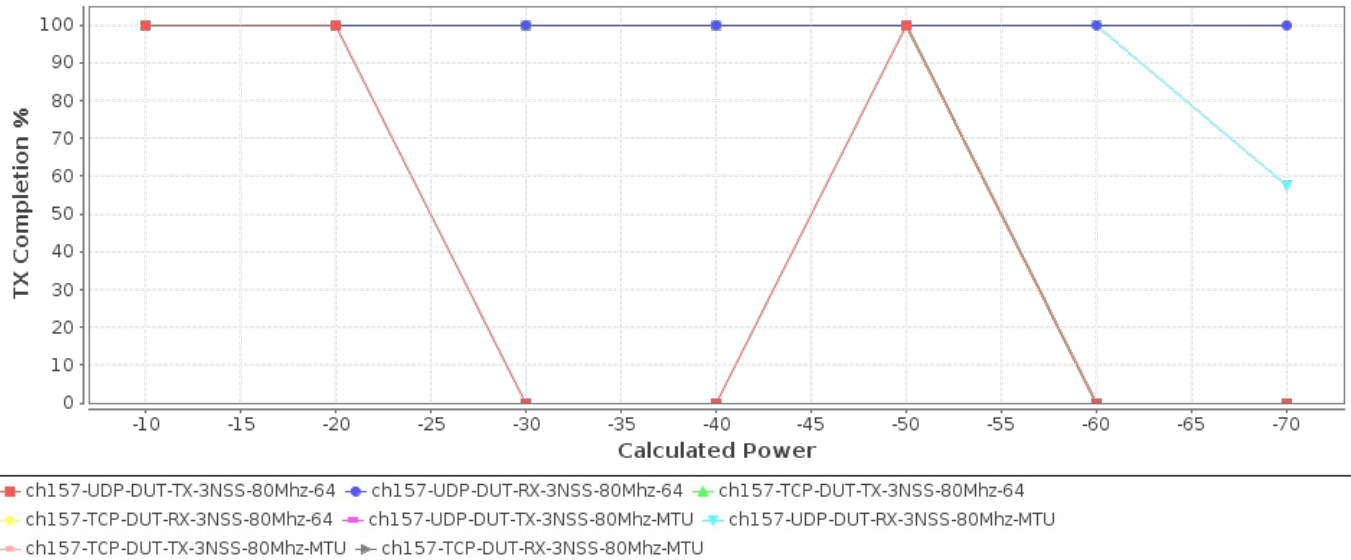
TX Completion vs LANforge RSSI for each MCS Encoding Rate. Please note that the LANforge RSSI may be similar to the remote Device Under Test RSSI but there is no guarantee of this. Differences in tx-power and RF splitter/combiners can cause different RSSI as reported by LANforge and the remote peer device.

TX Completion vs LANforge RSSI



TX Completion vs Calculated Signal Power for each MCS Encoding Rate.

TX Completion vs Calculated Power

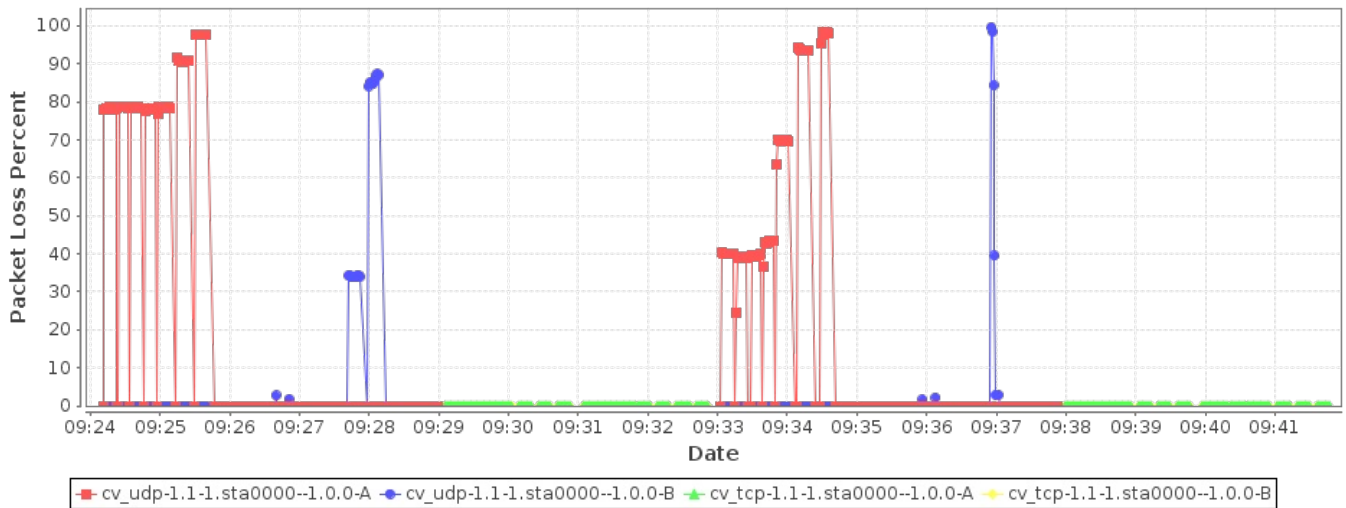


Channel	Security	NSS	Mode	Bandwidth	PDU	Traffic-Type	Direction	Atten	Duration	Offered-1m	Rx-Bps	Rx-Bps-1m	Rx-Bps-3s	Theoretical	RSSI	Tx-Failed	Tx-Failed%	Tx-Rate	Rx-Rate	Mode
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	0	10	377613286	82096940	82324705	82117637	1299900000	-34	0 / 8	0	780 Mbps	1.3 Gbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	100	10	382808451	81682369	82006293	82070024	1299900000	-44	0 / 2	0	780 Mbps	1.3 Gbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	200	10	379959178	81599027	82013804	81719472	1299900000	-55	0 / 0	FAILED	1170 Mbps	1.3 Gbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	300	10	364959926	82012484	82637776	82031109	1299900000	-63	0 / 0	FAILED	975 Mbps	975 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	400	10	381683391	81577314	82210333	81522976	1299900000	-73	0 / 2	0	585 Mbps	468 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	500	10	374693472	34136978	34169380	34251568	1299900000	-77	1 / 1	100	780 Mbps	78 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-TX	600	10	370967317	8640492	8654483	8588186	1299900000	-86	0 / 0	FAILED	585 Mbps	26 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-TX	700	10	371840849	0	0	0	1299900000	0	4 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-TX	800	10	420181237	0	0	0	1299900000	0	3 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-TX	900	10	361874038	0	0	0	1299900000	0	5 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	0	10	57718823	58717410	58911818	58561117	1299900000	-27	0 / 1159428	0	1300 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	100	10	55730114	58528751	58818924	58528064	1299900000	-36	0 / 1220197	0	1300 Mbps	1.17 Gbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	200	10	58682700	58531121	58926913	58558557	1299900000	-47	0 / 1146757	0	1300 Mbps	1.3 Gbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	300	10	59983406	59881247	60200309	59947757	1299900000	-57	0 / 1094070	0	975 Mbps	975 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	400	10	59482533	61563617	62047588	61587144	1299900000	-68	0 / 1171915	0	585 Mbps	526.6 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	500	10	60586153	39785816	39928879	39940480	1299900000	-78	0 / 1220189	0	195 Mbps	526.6 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	UDP	DUT-RX	600	10	60030992	8240503	8289828	7618000	1299900000	-87	0 / 1157851	0	21.7 Mbps	526.6 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-RX	700	10	535658021	0	0	0	1299900000	0	0 / 220025	0	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-RX	800	10	654358161	0	0	0	1299900000	0	5 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	64	UDP	DUT-RX	900	10	662852505	0	0	0	1299900000	0	6 / 1	600	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	0	10	73274121	73362088	73387774	74828802	1299900000	-33	0 / 20697	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	100	10	77260942	76148536	76330456	73376458	1299900000	-43	4 / 21177	0.019	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	200	10	75572688	75196893	75572234	70925898	1299900000	-53	0 / 21807	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	300	10	73890810	70414323	70720779	67493304	1299900000	-63	0 / 18961	0	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	400	10	59311522	53688244	53729436	73884021	1299900000	-73	1 / 20021	0.005	585 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	500	10	0	0	0	0	1299900000	-77	4 / 4	100	468 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-TX	600	10	0	0	0	0	1299900000	-84	3 / 3	100	6 Mbps	351 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	64	TCP	DUT-TX	700	10	0	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	0	10	67612203	68724145	69086529	68756992	1299900000	-33	189 / 1267458	0.015	975 Mbps	702 Mbps	802.11an-AC

157	AUTO	3	AUTO	80	64	TCP	DUT-RX	100	10	67112794	67814190	68318609	68216904	1299900000	-43	0 / 1105107	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	200	10	70352418	67975647	68513228	68173498	1299900000	-53	0 / 1186614	0	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	300	10	69409312	68651552	68736326	68721365	1299900000	-63	0 / 1141140	0	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	400	10	60620801	52860392	53107341	71427701	1299900000	-74	1 / 919285	0	585 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	500	10	0	0	0	0	1299900000	-77	4 / 4	100	351 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	64	TCP	DUT-RX	600	10	0	0	0	0	1299900000	-85	3 / 3	100	6 Mbps	351 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	64	TCP	DUT-RX	700	10	0	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	0	10	938723661	575454427	576357387	574799293	1299900000	-33	0 / 2	0	390 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	100	10	956607201	586782779	589593173	586841264	1299900000	-43	0 / 1	0	650 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	200	10	968709593	567425434	570879253	577265293	1299900000	-53	0 / 1	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	300	10	967501719	543445856	547322725	545045965	1299900000	-63	0 / 1	0	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	400	10	964709315	285647727	286962973	291555610	1299900000	-74	0 / 1	0	585 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	500	10	961598708	63829223	64347218	63844352	1299900000	-79	2 / 2	100	0 Mbps	78 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	600	10	967847954	16758110	16883895	16517192	1299900000	-83	2 / 2	100	390 Mbps	26 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	700	10	960228798	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	800	10	923687779	0	0	0	1299900000	0	4 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-TX	900	10	1179703118	0	0	0	1299900000	0	2 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	0	10	918165759	915386015	921962682	913406109	1299900000	-27	0 / 781993	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	100	10	836571045	831665552	831873521	834468197	1299900000	-38	0 / 772417	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	200	10	826398511	825606325	828778583	833662973	1299900000	-47	0 / 723030	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	300	10	810951828	808581914	809576272	810115098	1299900000	-58	0 / 742634	0	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	400	10	472625512	477406359	477963983	484144269	1299900000	-68	0 / 411510	0	585 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	500	10	155844671	155110480	155848161	158492538	1299900000	-78	0 / 143001	0	195 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	600	10	19421903	11534762	11536877	18011506	1299900000	-85	6993 / 16501	42.379	39 Mbps	526.6 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	700	10	1088494306	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	800	10	1289825737	0	0	0	1299900000	0	5 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	UDP	DUT-RX	900	10	1277843898	0	0	0	1299900000	0	3 / 1	300	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	0	10	558292498	552463136	553759740	555938922	1299900000	-32	47 / 21481	0.219	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	100	10	572039369	544495222	546929056	567798514	1299900000	-43	0 / 23729	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	200	10	565719276	560068489	561030914	562252746	1299900000	-53	0 / 22304	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	300	10	507173057	489440377	490847473	500051680	1299900000	-63	51 / 17967	0.284	975 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	400	10	282345699	280999215	283208240	283285704	1299900000	-74	31 / 14302	0.217	585 Mbps	351 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	500	10	0	0	0	0	1299900000	-77	3 / 3	100	526.6 Mbps	526.6 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	600	10	0	0	0	0	1299900000	-83	4 / 4	100	292.7 Mbps	526.6 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	TCP	DUT-TX	700	10	0	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	0	10	786823941	783196872	787357861	773769229	1299900000	-33	128 / 635043	0.02	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	100	10	831385142	820507354	825226442	807058954	1299900000	-39	0 / 724320	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	200	10	831956750	821758448	823340487	816594306	1299900000	-53	0 / 736811	0	1170 Mbps	702 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	300	10	754194900	732371009	733863197	744795373	1299900000	-63	0 / 629371	0	975 Mbps	650 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	400	10	374124658	346586553	347873685	453635352	1299900000	-70	385 / 329213	0.117	585 Mbps	300 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	500	10	0	0	0	0	1299900000	-78	5 / 5	100	390 Mbps	300 Mbps	802.11an-AC
157	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	600	10	0	0	0	0	1299900000	-83	4 / 4	100	292.5 Mbps	300 Mbps	802.11an-AC
0	AUTO	3	AUTO	80	MTU	TCP	DUT-RX	700	10	0	0	0	0	1299900000	0	0 / 0	FAILED	0 Mbps	0 bps	802.11an-AC

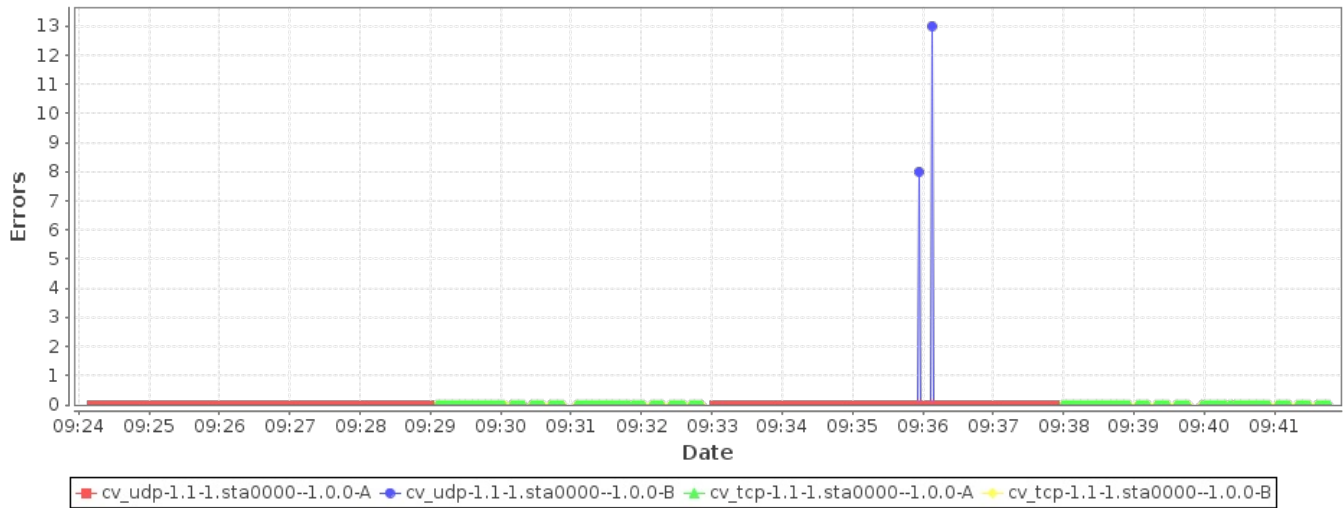
Packet Loss Percentage graph shows the percentage of lost packets as detected by the receiving endpoint due to packet gaps. If there is full packet loss, then this will not report any loss since there will be no gap to detect.

Endpoint RX Packet Loss Percentage



Error Graph shows occurrences of packet errors.

Rx Errors



Test configuration and LANforge software version	
Path Loss	10
Requested Speed	100%
ToS	0
Duration:	10 sec (10 s)
Upstream Port	1.1.1 eth1 Firmware: 0. 6-1 Resource: MobileStations
WiFi Port	1.1.12 sta0000 Firmware: 10.4b-ct-9984-xtH-012-f6434814c Resource: MobileStations
Show Events	true
Build Date	Sat Jun 1 07:25:09 PDT 2019
Build Version	5.3.9