



Appendix H for 5.2G WIFI RF Test Data

Product Name: Smartphone

Test Model: KINGKONG 8

Environmental Conditions

Temperature:	22.2° C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Ling Zhu





H.1 Centre Frequencies

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	5179.99	-1.93	20	Pass
	n20	5180	5179.97	-5.79	20	Pass
	n40	5190	5190.04	7.71	20	Pass
	ac20	5180	5180.02	3.86	20	Pass
	ac40	5190	5189.98	-3.85	20	Pass
	ac80	5210	5210.01	1.92	20	Pass

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVLT	a	5180	5179.99	-1.93	20	Pass
	n20	5180	5180.04	7.72	20	Pass
	n40	5190	5189.99	-1.93	20	Pass
	ac20	5180	5180.01	1.93	20	Pass
	ac40	5190	5189.99	-1.93	20	Pass
	ac80	5210	5210.04	7.68	20	Pass

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVHT	a	5180	5180.03	5.79	20	Pass
	n20	5180	5180.01	1.93	20	Pass
	n40	5190	5189.99	-1.93	20	Pass
	ac20	5180	5180.04	7.72	20	Pass
	ac40	5190	5189.96	-7.71	20	Pass
	ac80	5210	5210.00	0.00	20	Pass





H.2 Nominal Channel Bandwidth and Occupied Channel Bandwidth

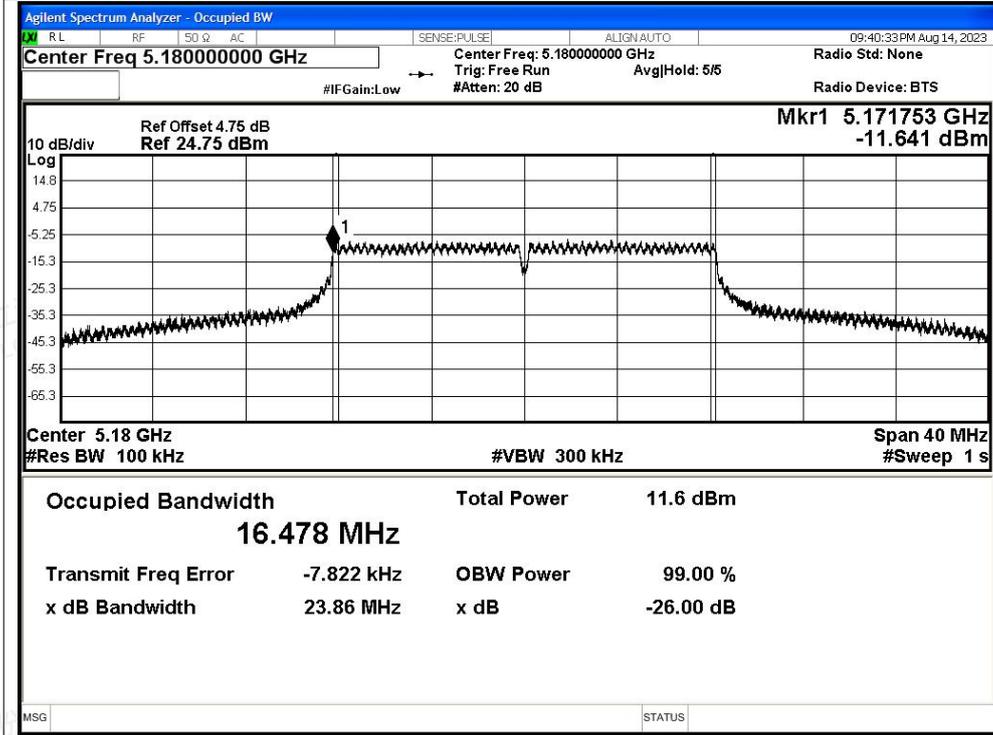
Condition	Mode	Frequency (MHz)	Antenna	Center Frequency (MHz)	OBW (MHz)	Verdict
NVNT	a	5180	Ant1	5179.992	16.478	Pass
NVNT	n20	5180	Ant1	5179.997	17.649	Pass
NVNT	n40	5190	Ant1	5189.995	36.183	Pass
NVNT	ac20	5180	Ant1	5179.994	17.645	Pass
NVNT	ac40	5190	Ant1	5189.993	36.168	Pass
NVNT	ac80	5210	Ant1	5210.004	75.778	Pass



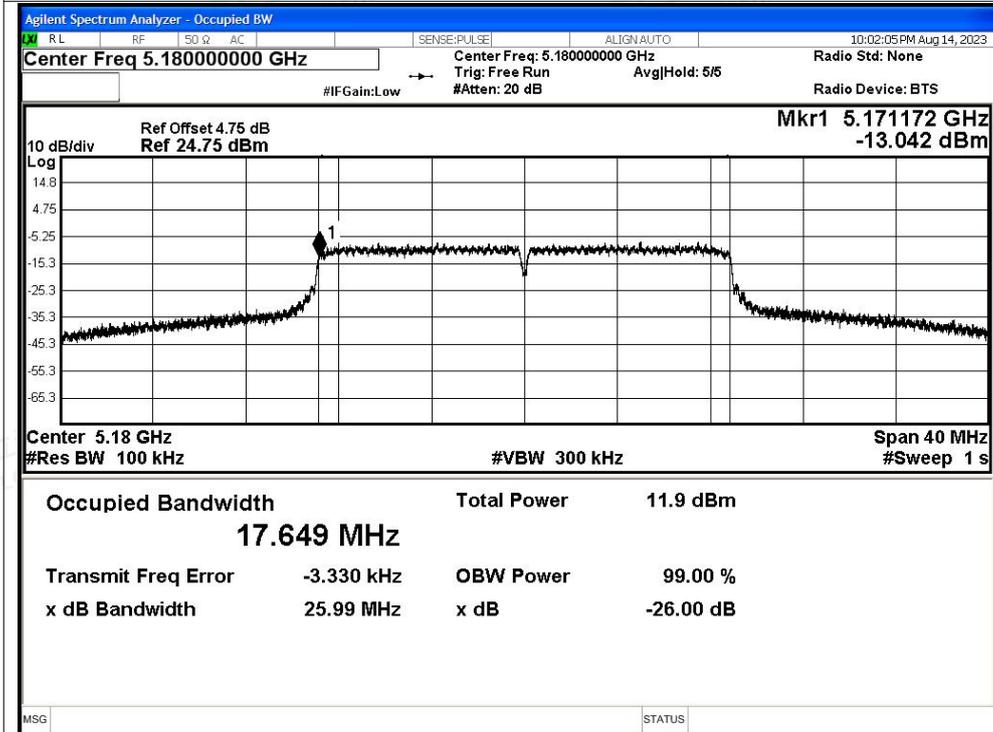


Test Graphs

OBW NVNT a 5180MHz Ant1

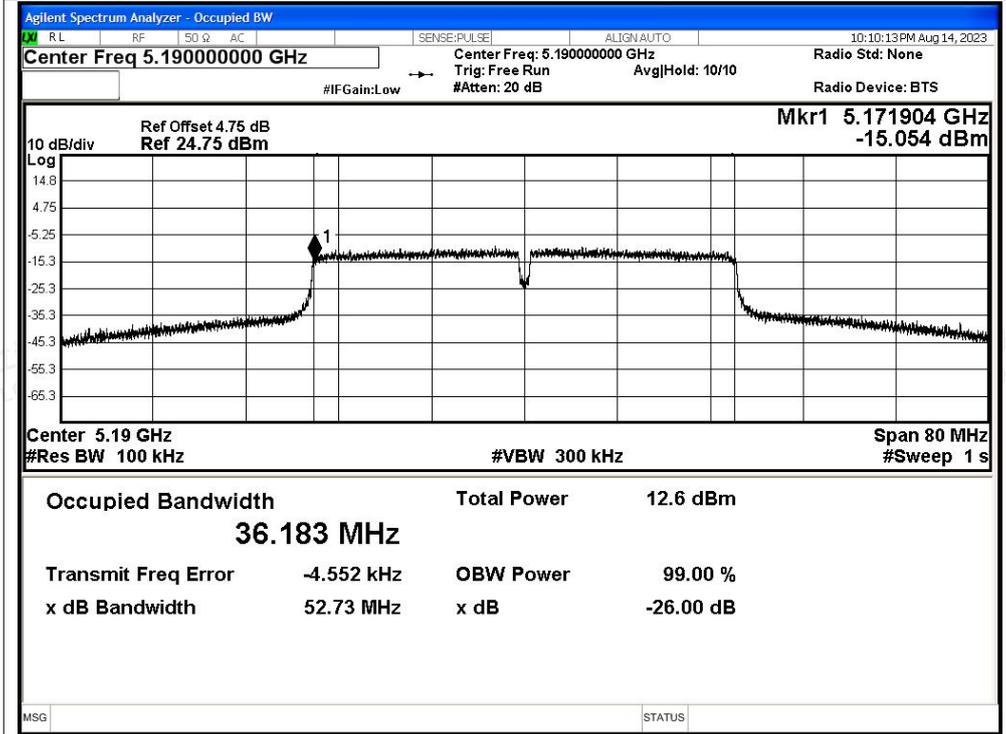


OBW NVNT n20 5180MHz Ant1

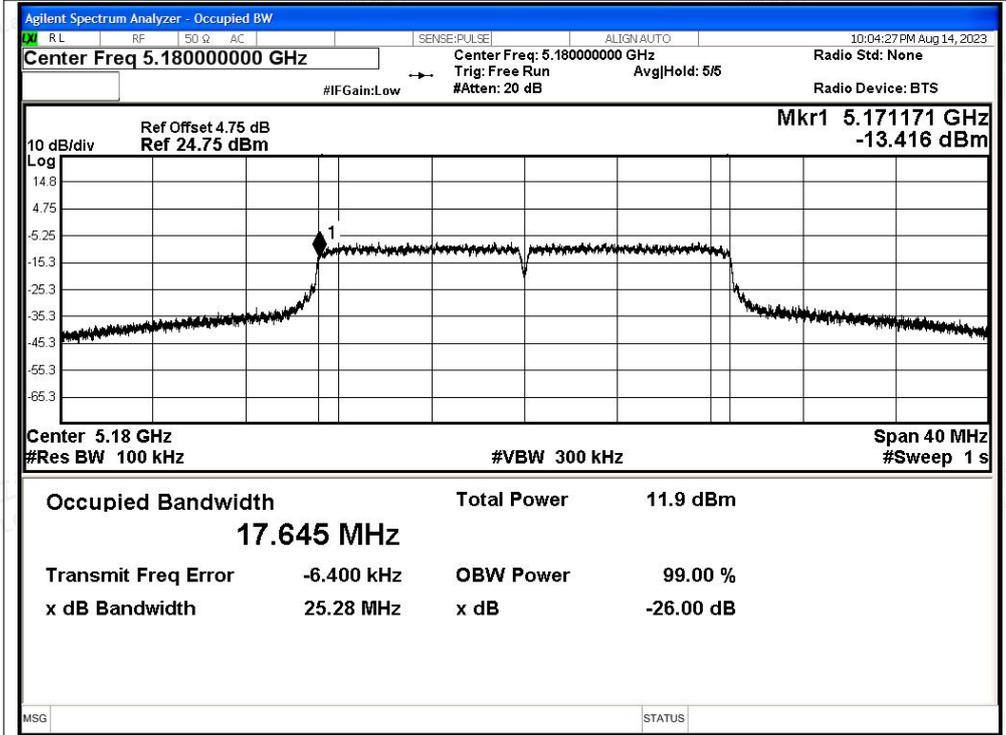




OBW NVNT n40 5190MHz Ant1

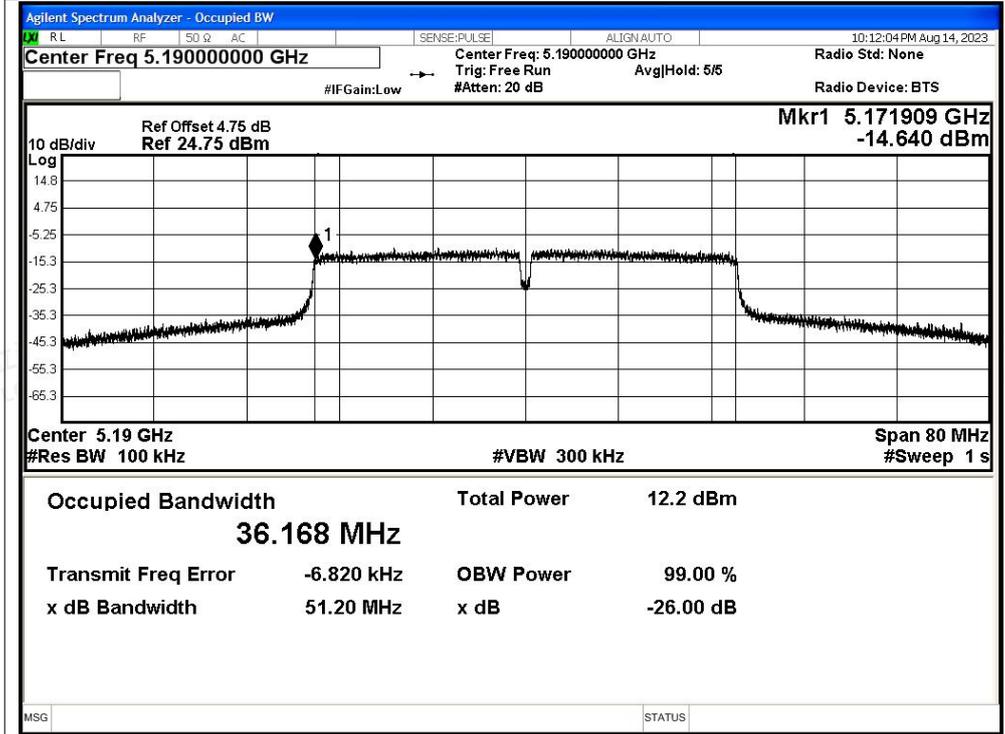


OBW NVNT ac20 5180MHz Ant1

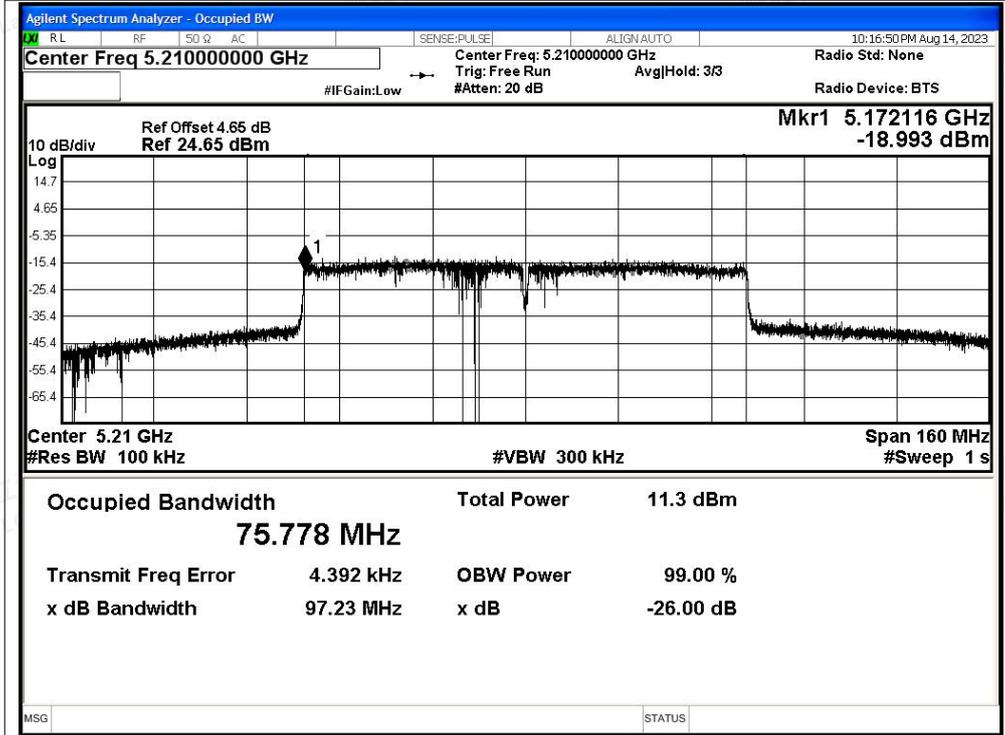




OBW NVNT ac40 5190MHz Ant1



OBW NVNT ac80 5210MHz Ant1





H.3 RF Output Power

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	10.21	23	Pass
NVNT	n20	5180	10.36	23	Pass
NVNT	n40	5190	10.83	23	Pass
NVNT	ac20	5180	10.3	23	Pass
NVNT	ac40	5190	10.78	23	Pass
NVNT	ac80	5210	10.62	23	Pass

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVLT	a	5180	10.11	23	Pass
NVLT	n20	5180	10.32	23	Pass
NVLT	n40	5190	10.80	23	Pass
NVLT	ac20	5180	10.23	23	Pass
NVLT	ac40	5190	10.72	23	Pass
NVLT	ac80	5210	10.51	23	Pass

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVHT	a	5180	10.05	23	Pass
NVHT	n20	5180	10.29	23	Pass
NVHT	n40	5190	10.70	23	Pass
NVHT	ac20	5180	10.11	23	Pass
NVHT	ac40	5190	10.68	23	Pass
NVHT	ac80	5210	10.46	23	Pass

***Note: 20 bursts had been captured for power measurement.

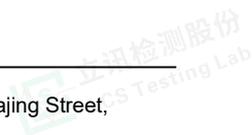
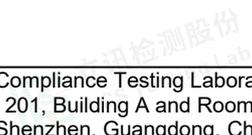
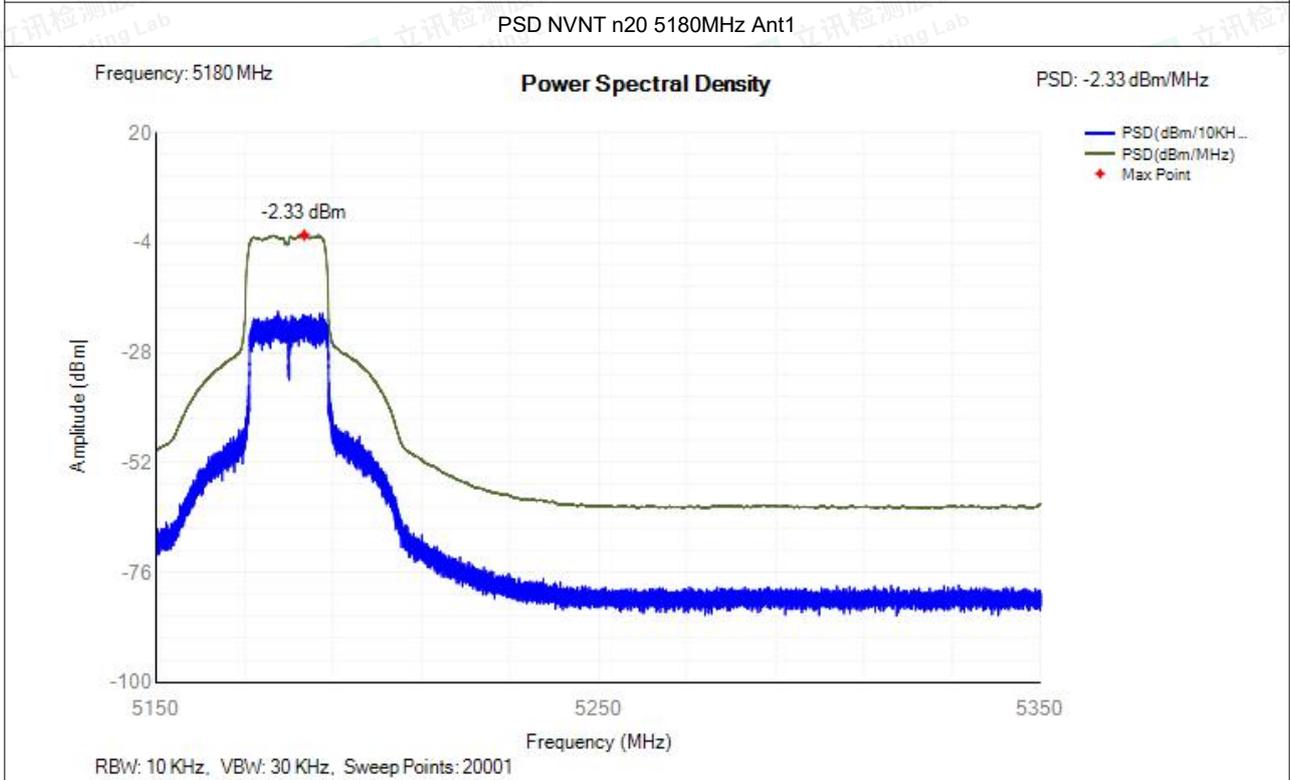
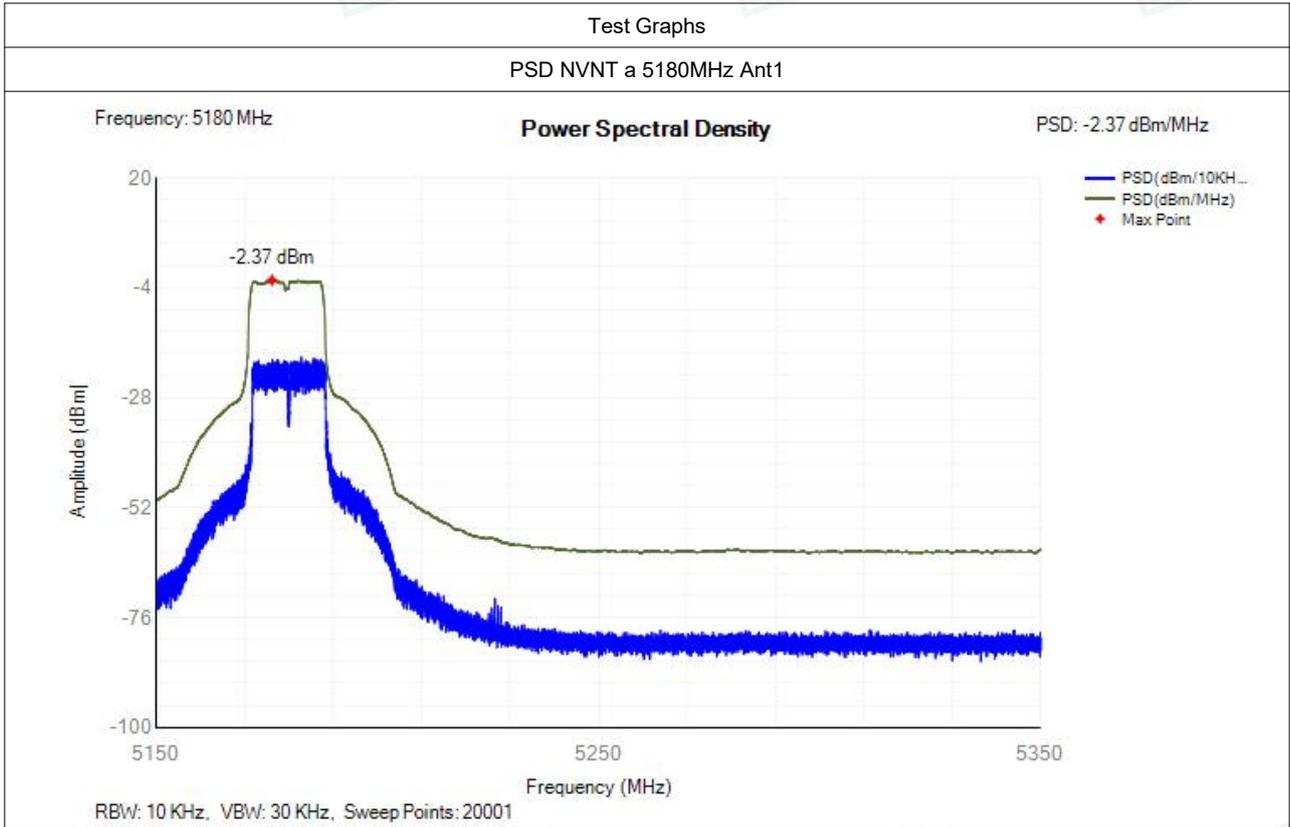




H.4 Power Spectral Density

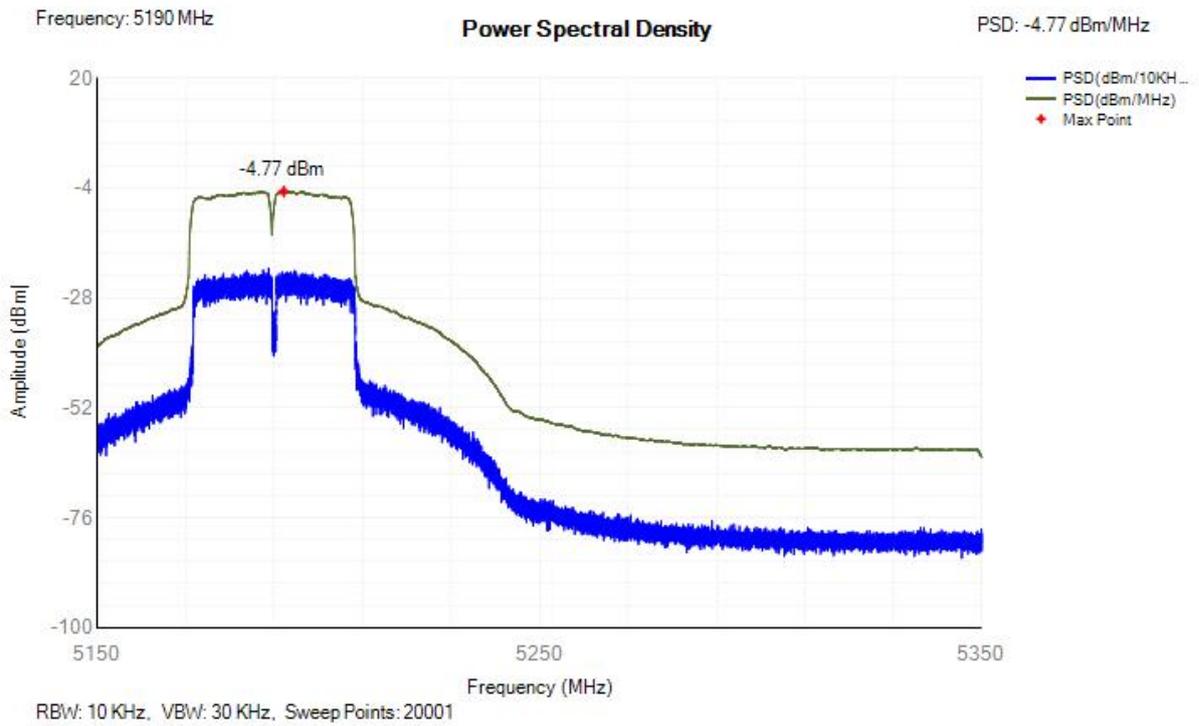
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	-2.37	10	Pass
NVNT	n20	5180	Ant1	-2.33	10	Pass
NVNT	n40	5190	Ant1	-4.77	10	Pass
NVNT	ac20	5180	Ant1	-2.48	10	Pass
NVNT	ac40	5190	Ant1	-4.83	10	Pass
NVNT	ac80	5210	Ant1	-7.43	10	Pass



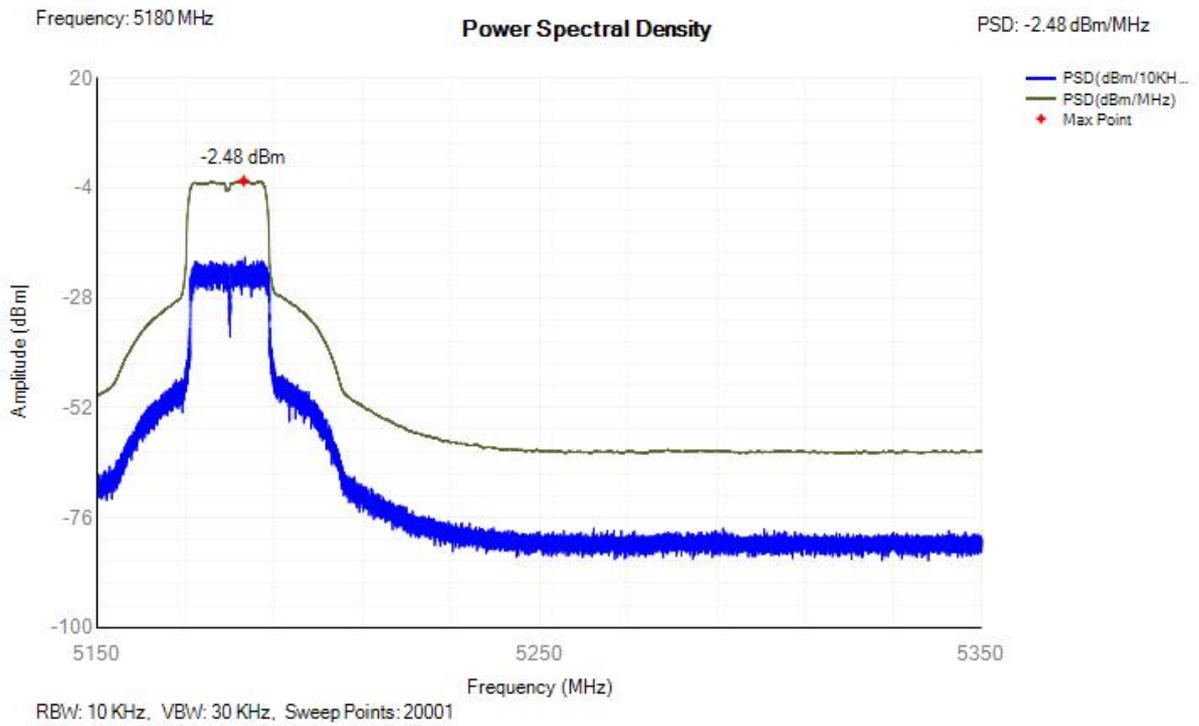


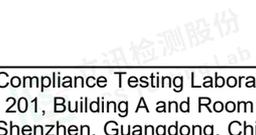
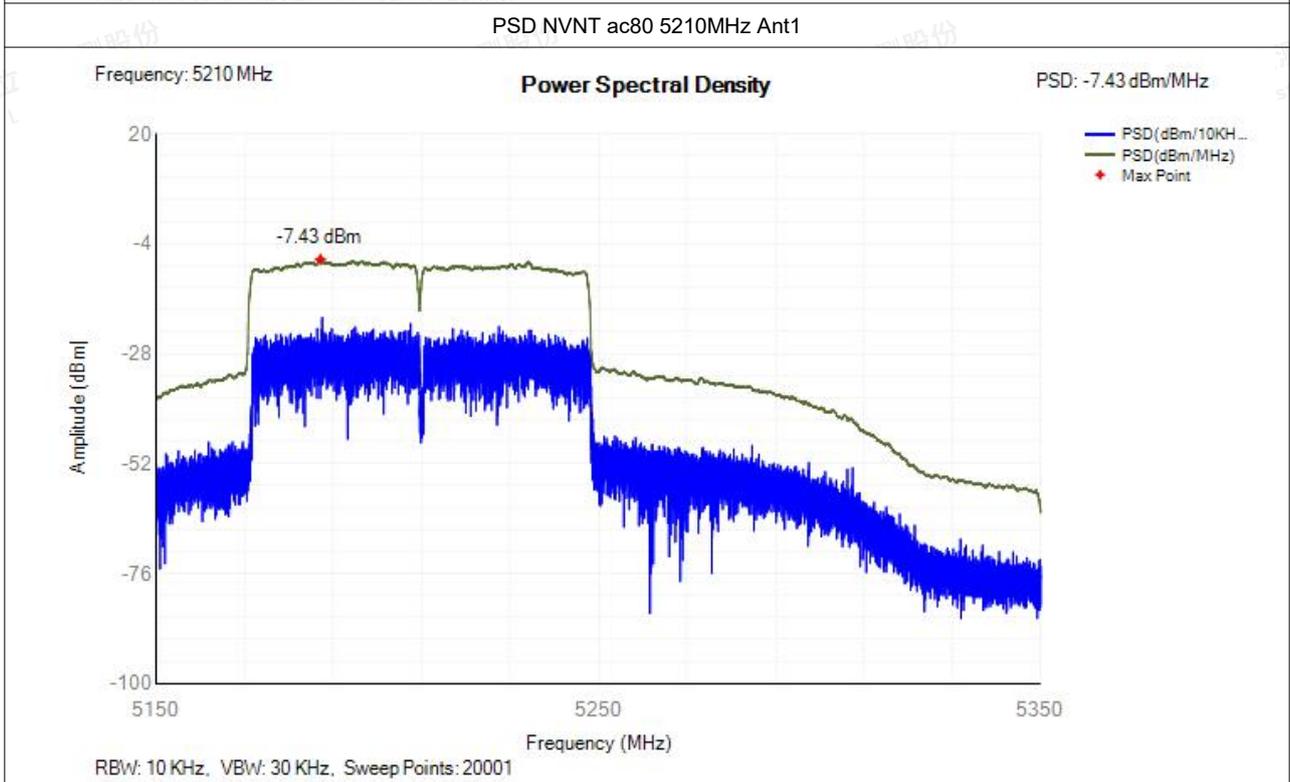
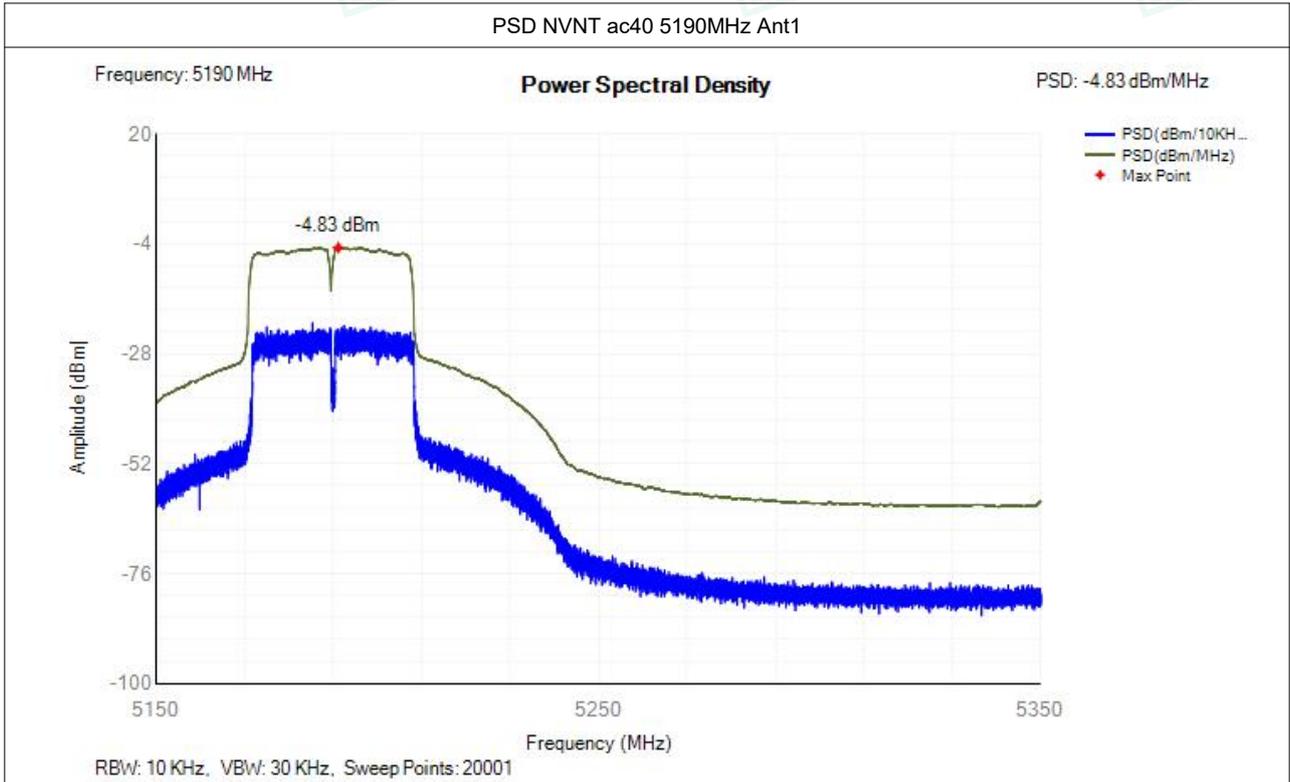


PSD NVNT n40 5190MHz Ant1



PSD NVNT ac20 5180MHz Ant1







H.5 Transmitter unwanted emissions in the spurious domain

The Worst Test Result For 802.11a					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
59.25	H	-85.23	-54.00	-31.23	PK
62.89	V	-75.29	-54.00	-21.29	PK
809.00	H	-77.82	-54.00	-23.82	PK
924.45	V	-75.89	-36.00	-39.89	PK
3500.70	H	-50.60	-30.00	-20.60	PK
3462.73	V	-61.75	-30.00	-31.75	PK
10360.03	H	-55.19	-30.00	-25.19	PK
10360.04	V	-51.35	-30.00	-21.35	PK

The Worst Test Result For 802.11n(20MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
60.77	H	-81.75	-54.00	-27.75	PK
66.66	V	-73.66	-54.00	-19.66	PK
810.88	H	-75.63	-54.00	-21.63	PK
926.41	V	-73.98	-36.00	-37.98	PK
3492.83	H	-49.42	-30.00	-19.42	PK
3481.01	V	-61.50	-30.00	-31.50	PK
10360.04	H	-52.40	-30.00	-22.40	PK
10360.01	V	-50.57	-30.00	-20.57	PK



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Scan code to check authenticity



The Worst Test Result For 802.11ac(20MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
59.12	H	-81.10	-54.00	-27.10	PK
65.21	V	-73.46	-54.00	-19.46	PK
807.93	H	-75.44	-54.00	-21.44	PK
927.38	V	-73.98	-36.00	-37.98	PK
3491.55	H	-49.69	-30.00	-19.69	PK
3469.10	V	-61.26	-30.00	-31.26	PK
10360.05	H	-53.22	-30.00	-23.22	PK
10360.09	V	-50.52	-30.00	-20.52	PK

The Worst Test Result For 802.11n(40MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 38 (5190MHz)					
57.52	H	-83.08	-54.00	-29.08	PK
66.45	V	-73.70	-54.00	-19.70	PK
809.96	H	-76.28	-54.00	-22.28	PK
922.36	V	-74.60	-36.00	-38.60	PK
3469.44	H	-48.66	-30.00	-18.66	PK
3480.51	V	-60.24	-30.00	-30.24	PK
10380.04	H	-53.39	-30.00	-23.39	PK
10380.07	V	-50.47	-30.00	-20.47	PK





The Worst Test Result For 802.11ac(40MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 38 (5190MHz)					
60.55	H	-83.31	-54.00	-29.31	PK
68.19	V	-73.04	-54.00	-19.04	PK
810.96	H	-76.07	-54.00	-22.07	PK
925.81	V	-74.20	-36.00	-38.20	PK
3494.59	H	-49.27	-30.00	-19.27	PK
3501.71	V	-59.85	-30.00	-29.85	PK
10380.04	H	-53.11	-30.00	-23.11	PK
10380.06	V	-50.64	-30.00	-20.64	PK

The Worst Test Result For 802.11ac(80MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 42(5210MHz)					
58.00	H	-82.56	-54.00	-28.56	PK
64.63	V	-73.13	-54.00	-19.13	PK
809.53	H	-75.95	-54.00	-21.95	PK
925.75	V	-74.46	-36.00	-38.46	PK
3504.88	H	-49.59	-30.00	-19.59	PK
3502.01	V	-60.49	-30.00	-30.49	PK
10420.02	H	-54.37	-30.00	-24.37	PK
10420.06	V	-51.09	-30.00	-21.09	PK

Note: All test modes were tested, but we only recorded the worst (Low Channel) case in this report.





H.6 Transmitter unwanted emissions within the 5 GHz RLAN bands

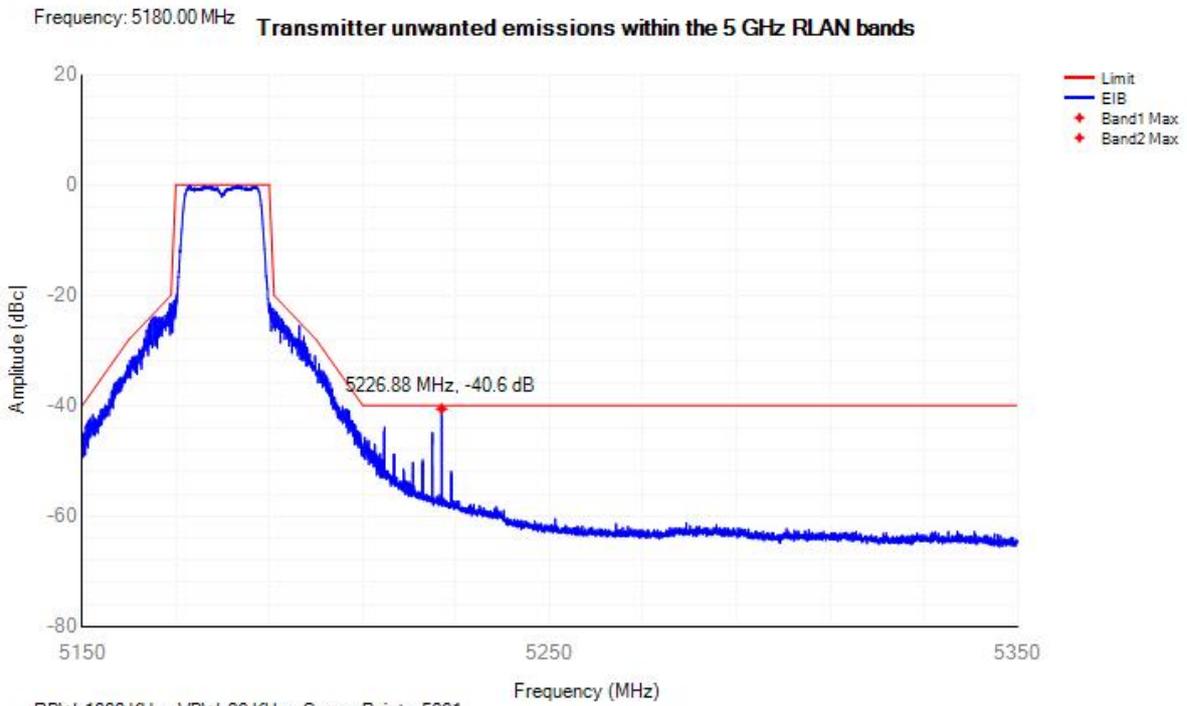
Condition	Mode	Frequency (MHz)	Antenna	Sub Band	Worst EIB Frequency (MHz)	Level (dB)	Limit (dB)	Verdict
NVNT	a	5180	Ant1	Band1	5226.88	-40.6	-40	Pass
NVNT	a	5180	Ant1	Band2	5473.47	-65.43	-47	Pass
NVNT	n20	5180	Ant1	Band1	5194.6	-24.65	-23.19	Pass
NVNT	n20	5180	Ant1	Band2	5512.08	-64.04	-47	Pass
NVNT	n40	5190	Ant1	Band1	5214.12	-26.05	-20.94	Pass
NVNT	n40	5190	Ant1	Band2	5653.55	-61.09	-47	Pass
NVNT	ac20	5180	Ant1	Band1	5197.16	-26.39	-25.47	Pass
NVNT	ac20	5180	Ant1	Band2	5497.9	-63.94	-47	Pass
NVNT	ac40	5190	Ant1	Band1	5214.12	-25.72	-20.94	Pass
NVNT	ac40	5190	Ant1	Band2	5653.5	-61.39	-47	Pass
NVNT	ac80	5210	Ant1	Band1	5307	-40.52	-33.1	Pass
NVNT	ac80	5210	Ant1	Band2	5471.38	-60.58	-40	Pass



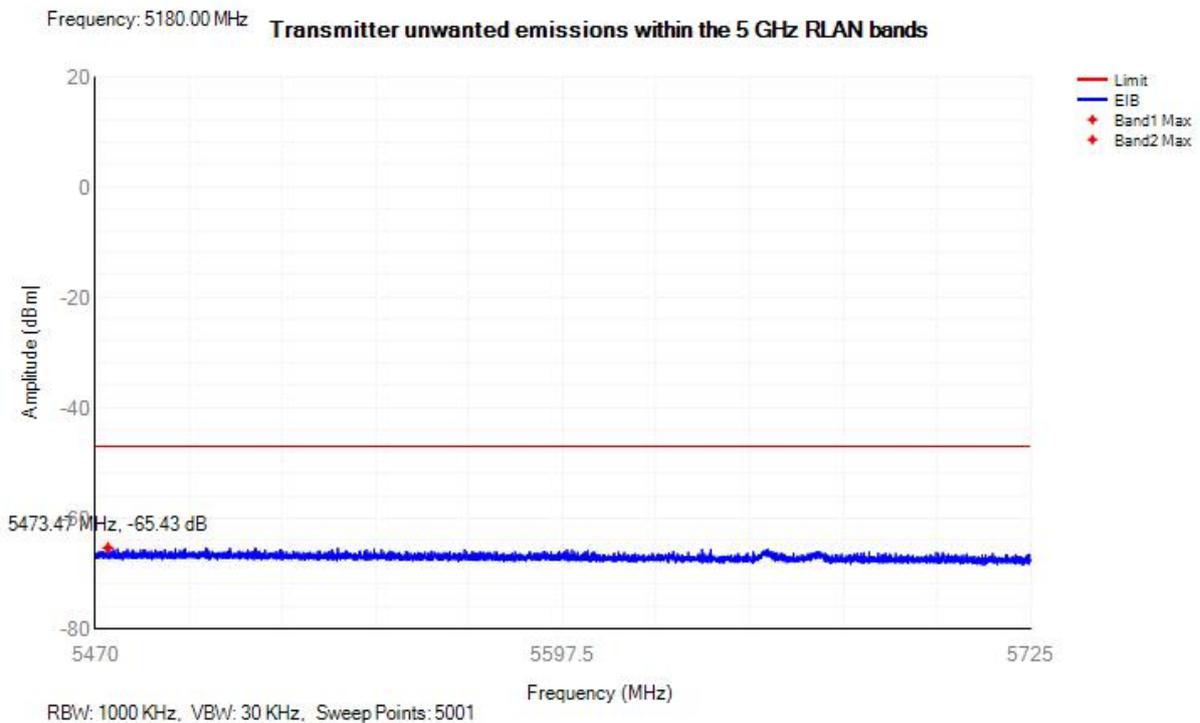


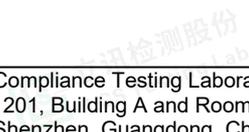
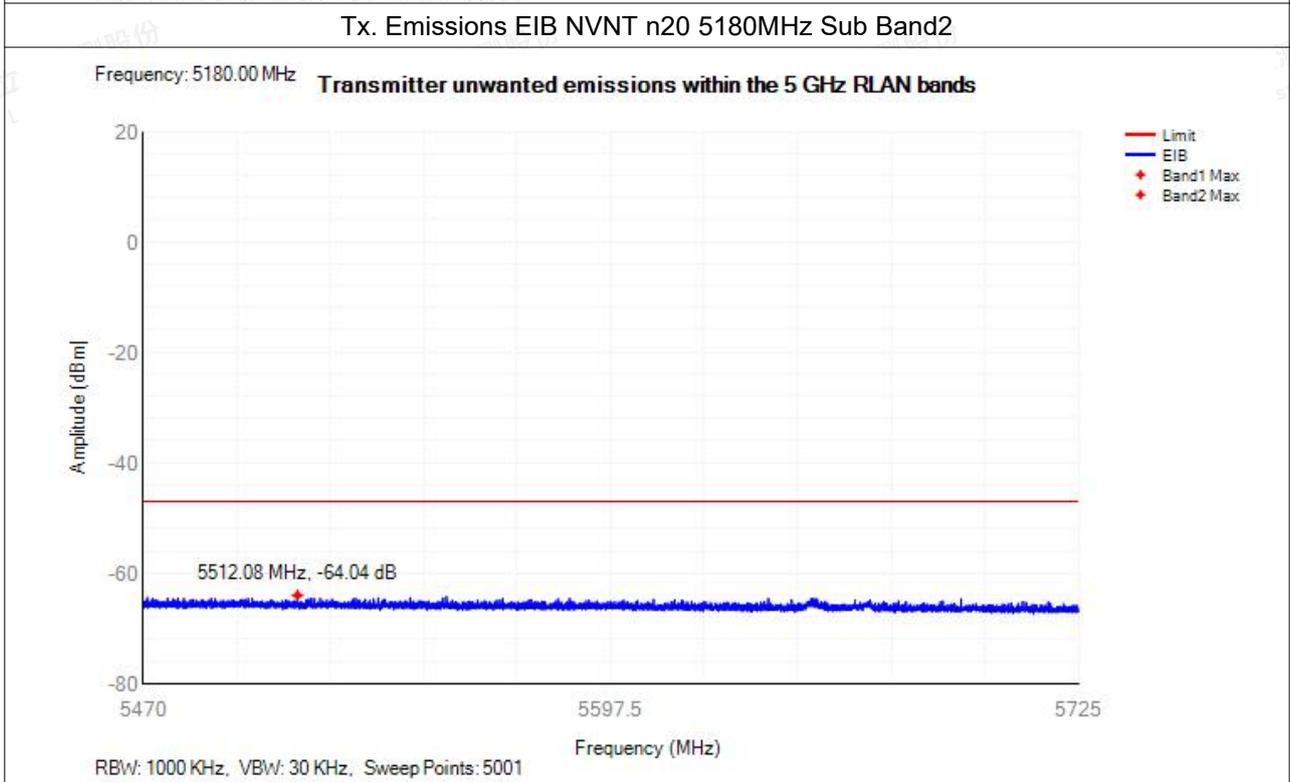
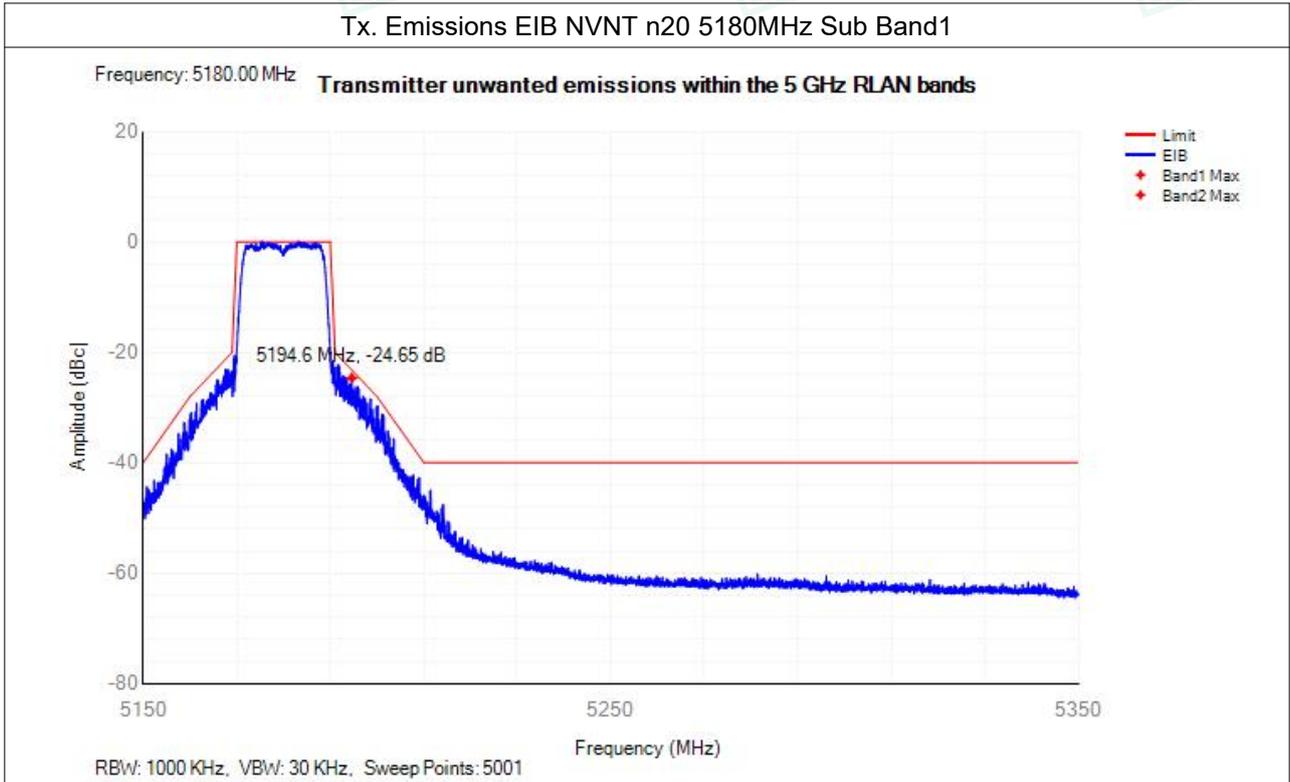
Test Graphs

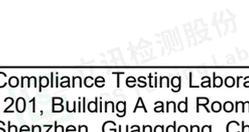
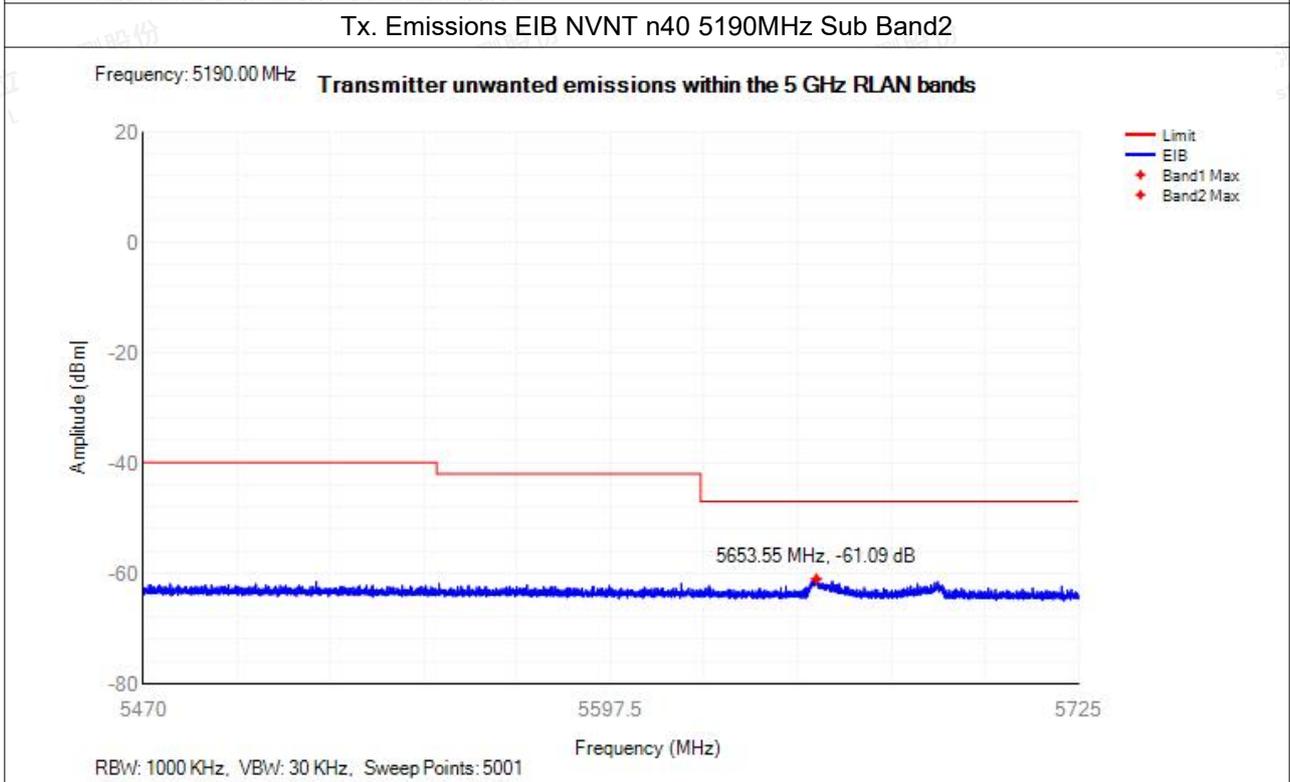
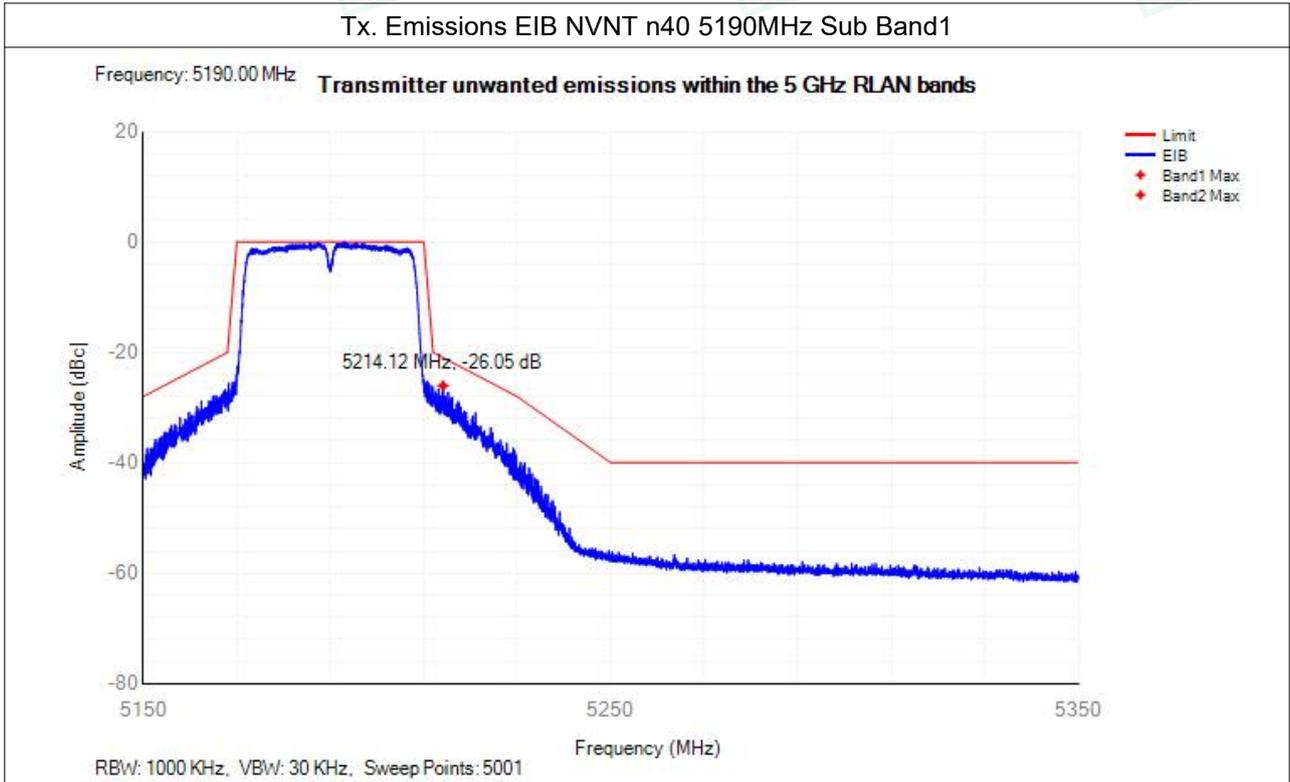
Tx. Emissions EIB NVNT a 5180MHz Sub Band1

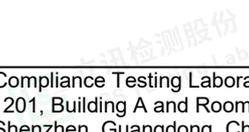
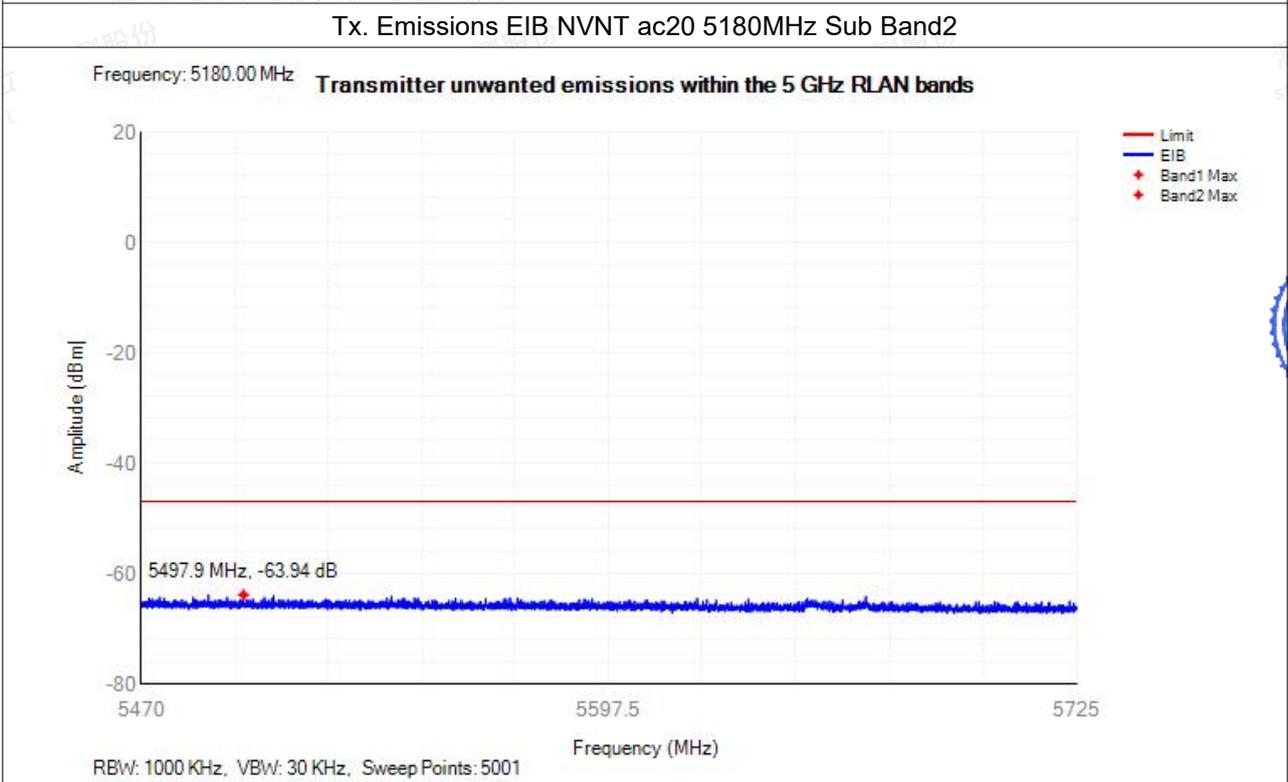
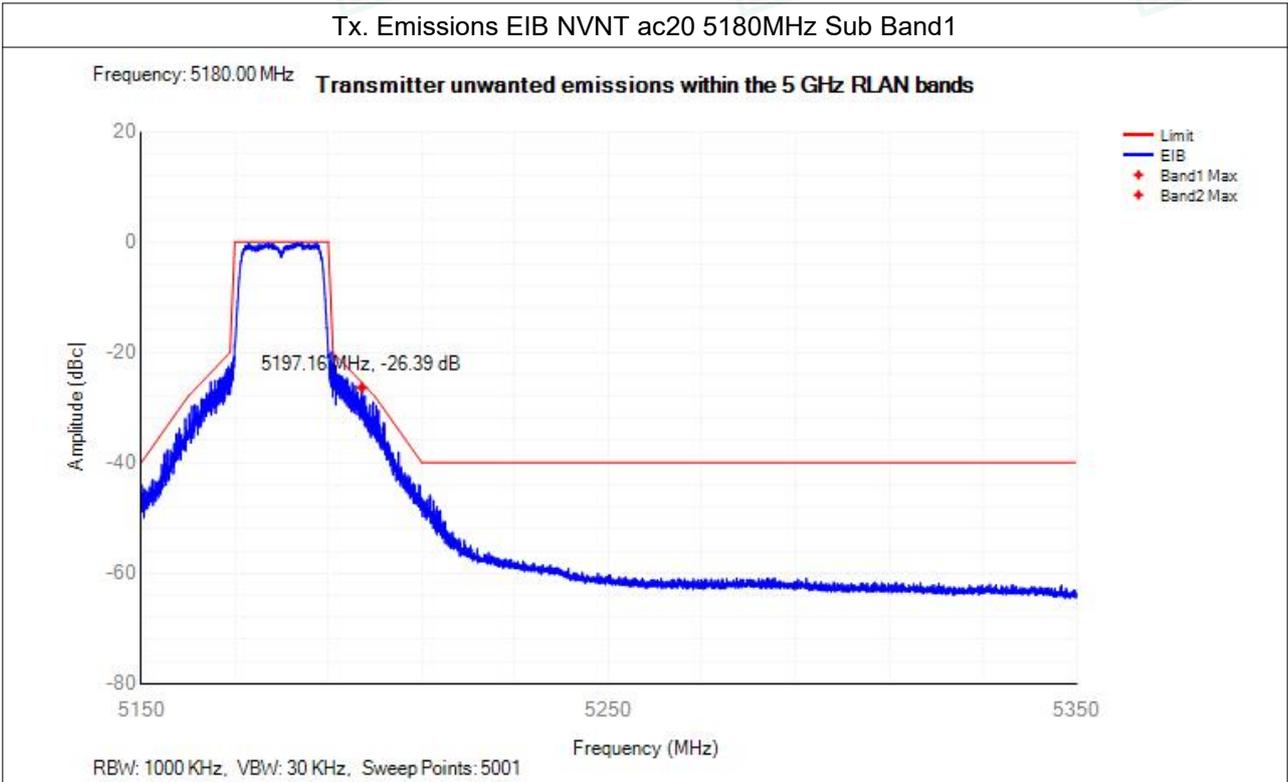


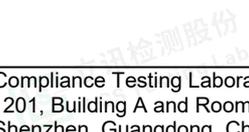
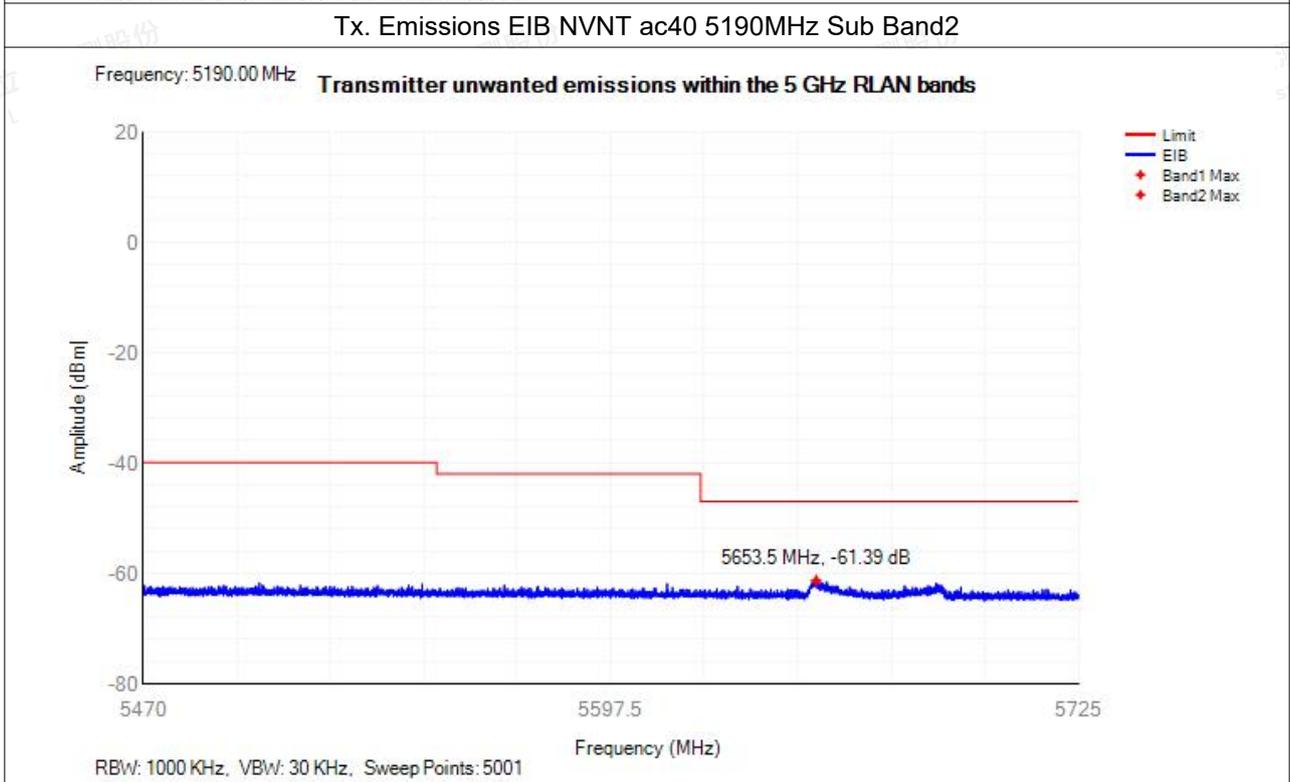
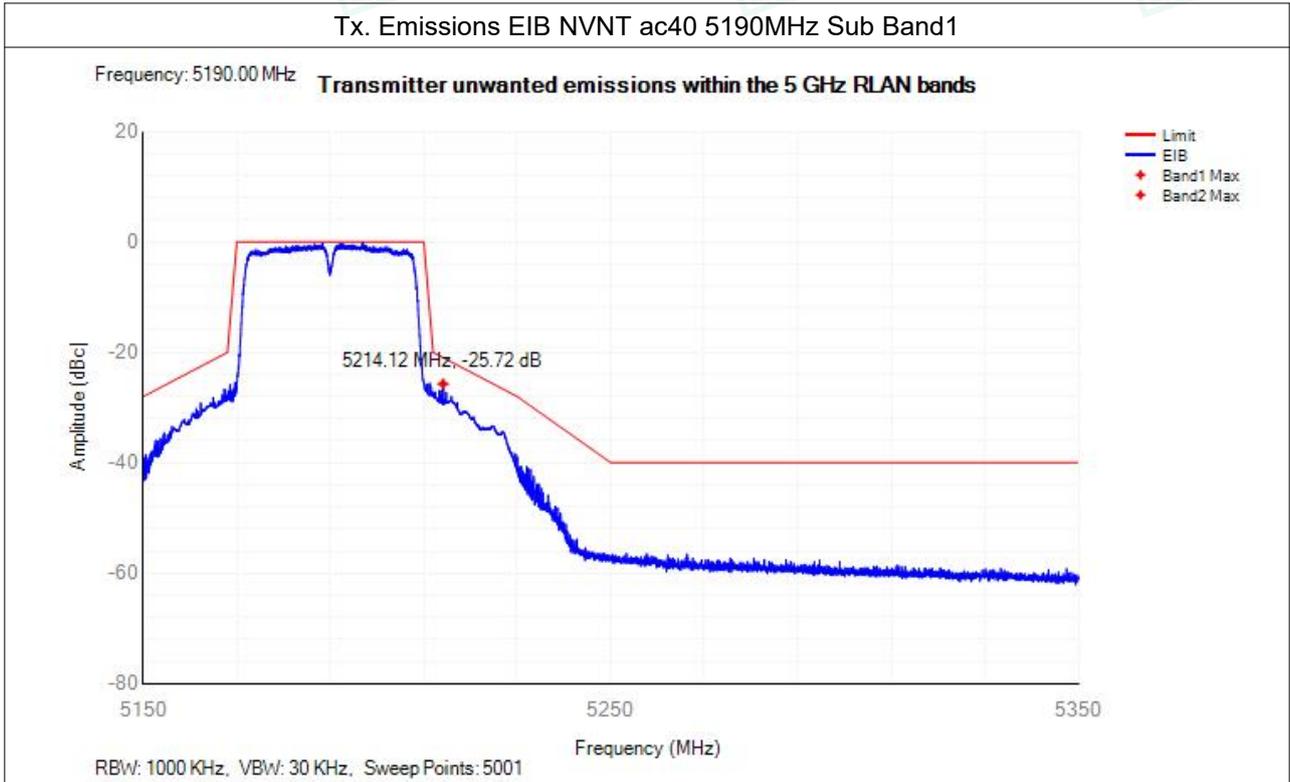
Tx. Emissions EIB NVNT a 5180MHz Sub Band2

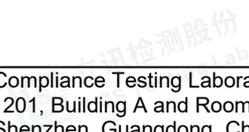
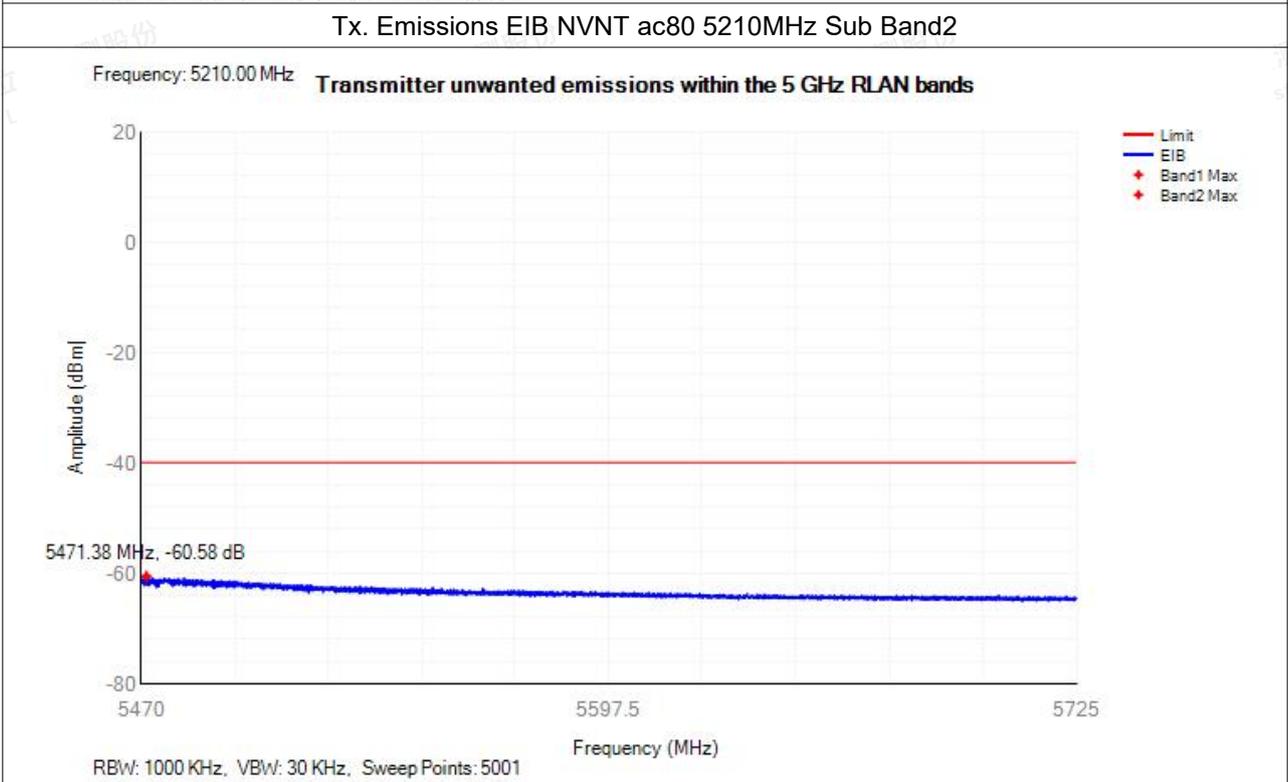
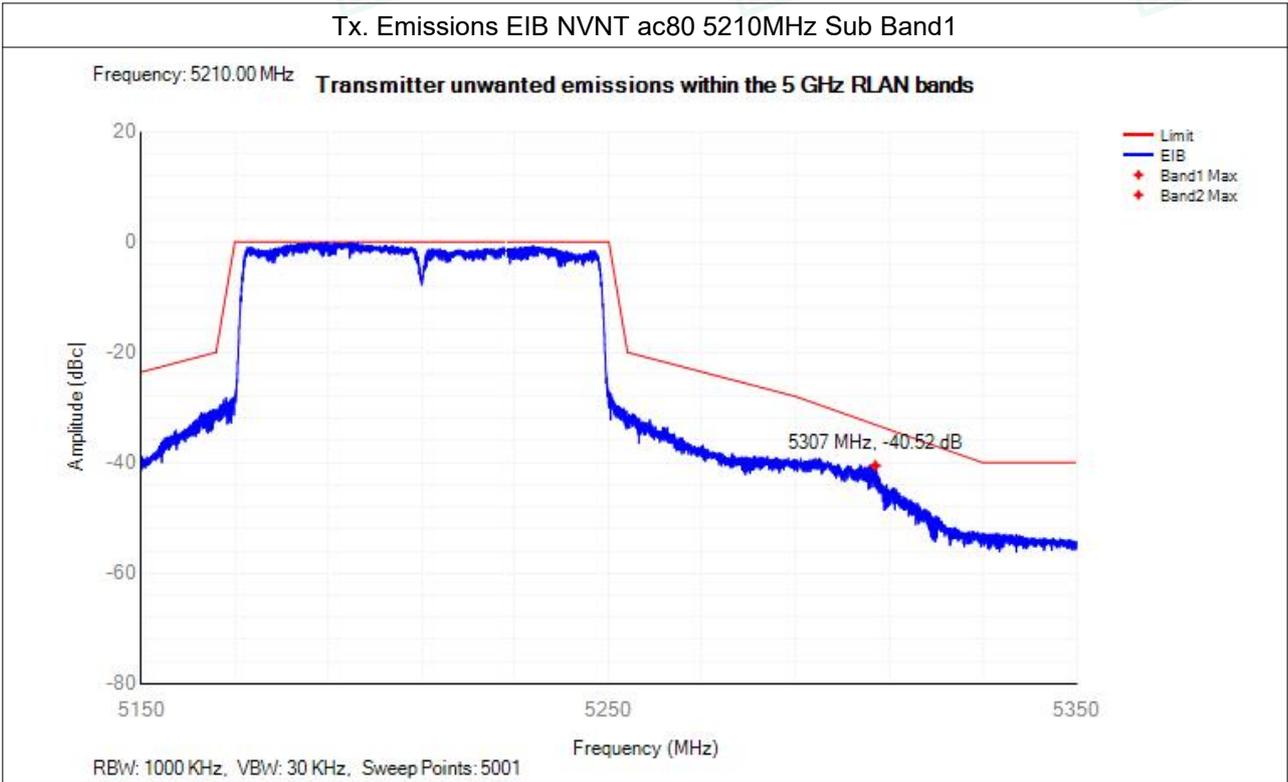














H.7 Receiver Spurious Emissions

The Worst Test Result For 802.11a					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
59.46	H	-81.76	-57.00	-24.76	PK
67.96	V	-73.34	-57.00	-16.34	PK
813.17	H	-72.36	-57.00	-15.36	PK
924.77	V	-72.61	-57.00	-15.61	PK
3482.49	H	-61.21	-47.00	-14.21	PK
3472.83	V	-62.40	-47.00	-15.40	PK
10360.09	H	-57.00	-47.00	-10.00	PK
10360.08	V	-58.12	-47.00	-11.12	PK

The Worst Test Result For 802.11n(20MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
59.45	H	-82.14	-57.00	-25.14	PK
68.50	V	-74.32	-57.00	-17.32	PK
809.82	H	-74.44	-57.00	-17.44	PK
924.97	V	-74.51	-57.00	-17.51	PK
3497.43	H	-62.88	-47.00	-15.88	PK
3489.07	V	-63.66	-47.00	-16.66	PK
10360.08	H	-58.21	-47.00	-11.21	PK
10360.01	V	-59.91	-47.00	-12.91	PK





The Worst Test Result For 802.11ac(20MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 36 (5180MHz)					
60.26	H	-82.58	-57.00	-25.58	PK
67.59	V	-73.69	-57.00	-16.69	PK
812.33	H	-74.32	-57.00	-17.32	PK
922.93	V	-74.29	-57.00	-17.29	PK
3478.77	H	-63.58	-47.00	-16.58	PK
3484.77	V	-64.23	-47.00	-17.23	PK
10360.07	H	-58.69	-47.00	-11.69	PK
10360.01	V	-59.55	-47.00	-12.55	PK

The Worst Test Result For 802.11n(40MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 38 (5190MHz)					
58.55	H	-82.52	-57.00	-25.52	PK
65.75	V	-74.32	-57.00	-17.32	PK
813.12	H	-75.24	-57.00	-18.24	PK
921.45	V	-73.68	-57.00	-16.68	PK
3491.26	H	-63.47	-47.00	-16.47	PK
3490.37	V	-63.05	-47.00	-16.05	PK
10380.05	H	-58.34	-47.00	-11.34	PK
10380.07	V	-59.78	-47.00	-12.78	PK





The Worst Test Result For 802.11ac(40MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 38 (5190MHz)					
56.92	H	-82.05	-57.00	-25.05	PK
66.31	V	-74.42	-57.00	-17.42	PK
810.97	H	-74.84	-57.00	-17.84	PK
921.66	V	-73.38	-57.00	-16.38	PK
3462.45	H	-63.06	-47.00	-16.06	PK
3466.29	V	-63.06	-47.00	-16.06	PK
10380.04	H	-58.41	-47.00	-11.41	PK
10380.07	V	-59.97	-47.00	-12.97	PK

The Worst Test Result For 802.11ac(80MHz)					
Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 42 (5210MHz)					
59.30	H	-83.09	-57.00	-26.09	PK
63.74	V	-74.08	-57.00	-17.08	PK
810.48	H	-74.42	-57.00	-17.42	PK
923.25	V	-74.16	-57.00	-17.16	PK
3514.43	H	-63.89	-47.00	-16.89	PK
3478.50	V	-64.01	-47.00	-17.01	PK
10420.05	H	-58.60	-47.00	-11.60	PK
10420.04	V	-60.40	-47.00	-13.40	PK

Note: All test modes were tested, but we only recorded the worst case (Low Channel) in this report.

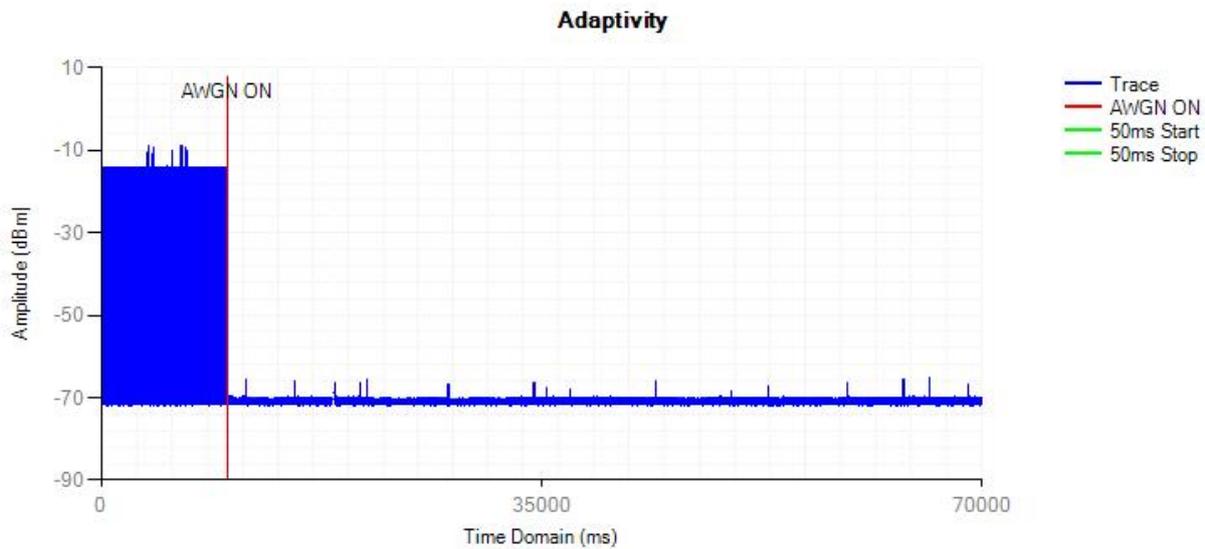




H.8 Adaptivity (Channel Access Mechanism)

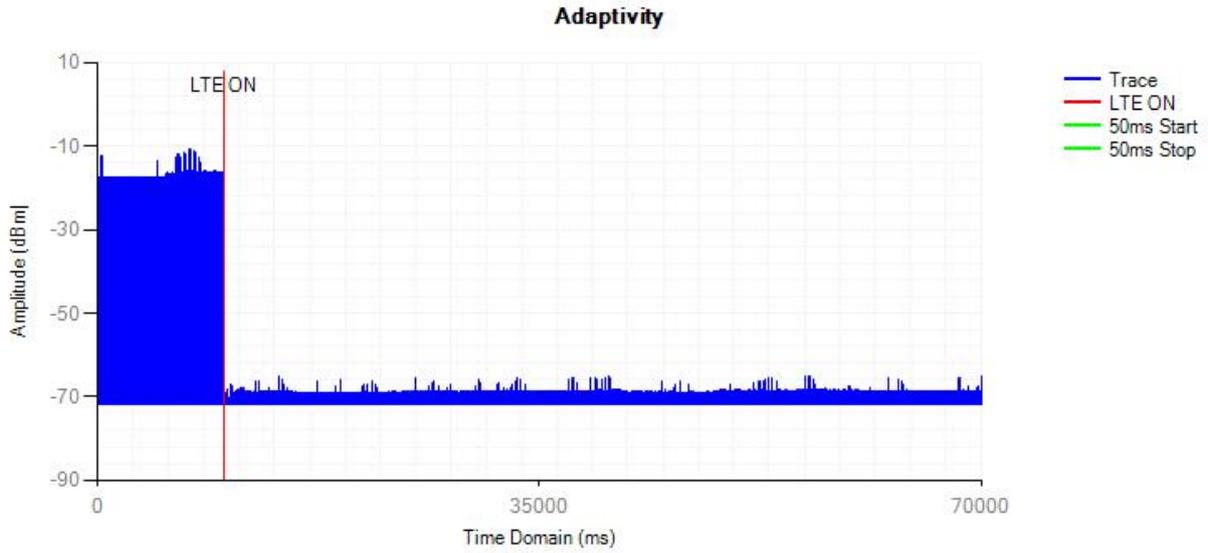
Condition	Mode	Frequency (MHz)	Interfer Type	Short Control (ms)	Limit (ms)	Short Control (n)	Limit (n)	Verdict
NVNT	ac20	5180	AWGN	0.29	<=2.5	9	<=50	Pass
NVNT	ac20	5180	LTE	0.34	<=2.5	6	<=50	Pass
NVNT	ac20	5180	OFDM	0.71	<=2.5	3	<=50	Pass
NVNT	ac40	5190	AWGN	0.27	<=2.5	8	<=50	Pass
NVNT	ac40	5190	LTE	0.79	<=2.5	5	<=50	Pass
NVNT	ac40	5190	OFDM	0.63	<=2.5	14	<=50	Pass
NVNT	ac80	5210	AWGN	0.14	<=2.5	7	<=50	Pass
NVNT	ac80	5210	LTE	0.16	<=2.5	13	<=50	Pass
NVNT	ac80	5210	OFDM	0.32	<=2.5	12	<=50	Pass

Adaptivity NVNT ac20 5180MHz AWGN

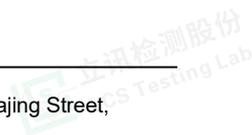
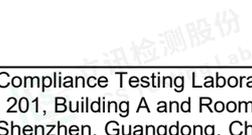
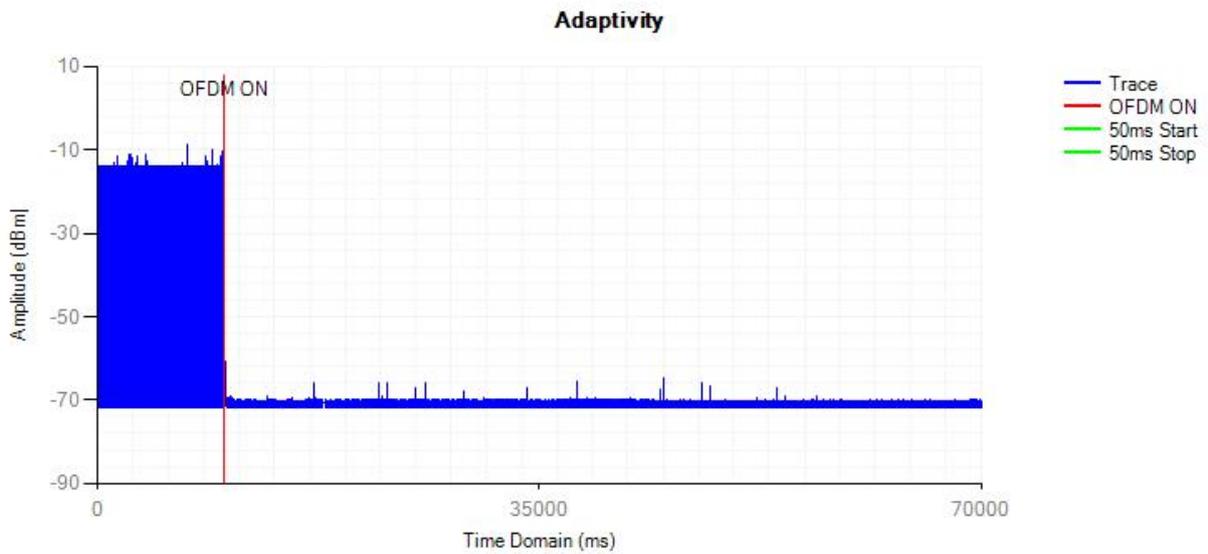




Adaptivity NVNT ac20 5180MHz LTE

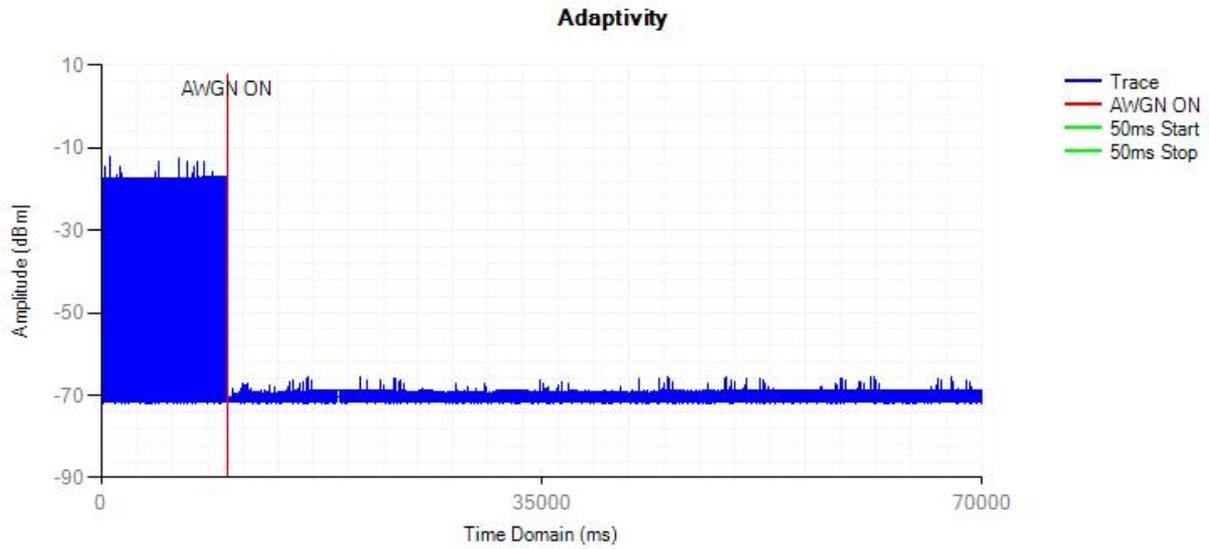


Adaptivity NVNT ac20 5180MHz OFDM

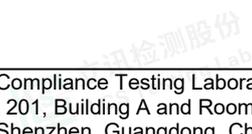
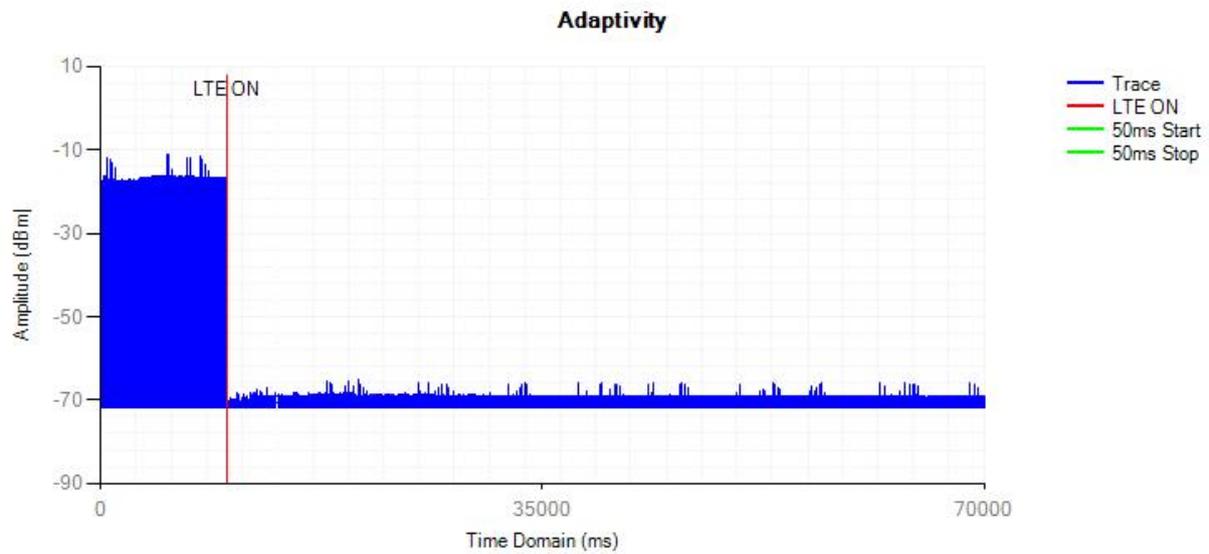




Adaptivity NVNT ac40 5190MHz AWGN

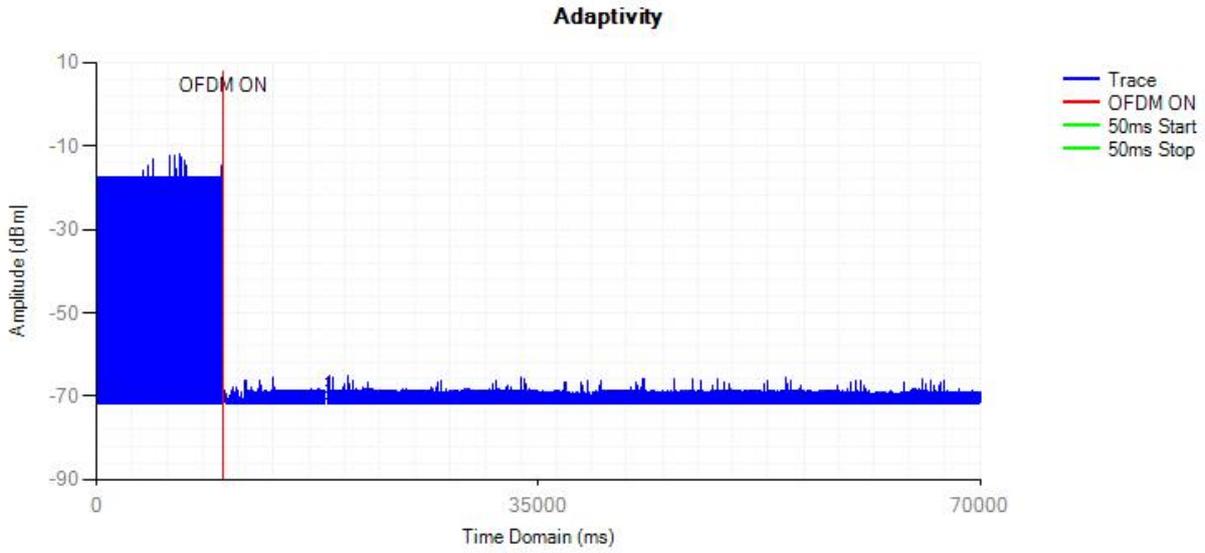


Adaptivity NVNT ac40 5190MHz LTE

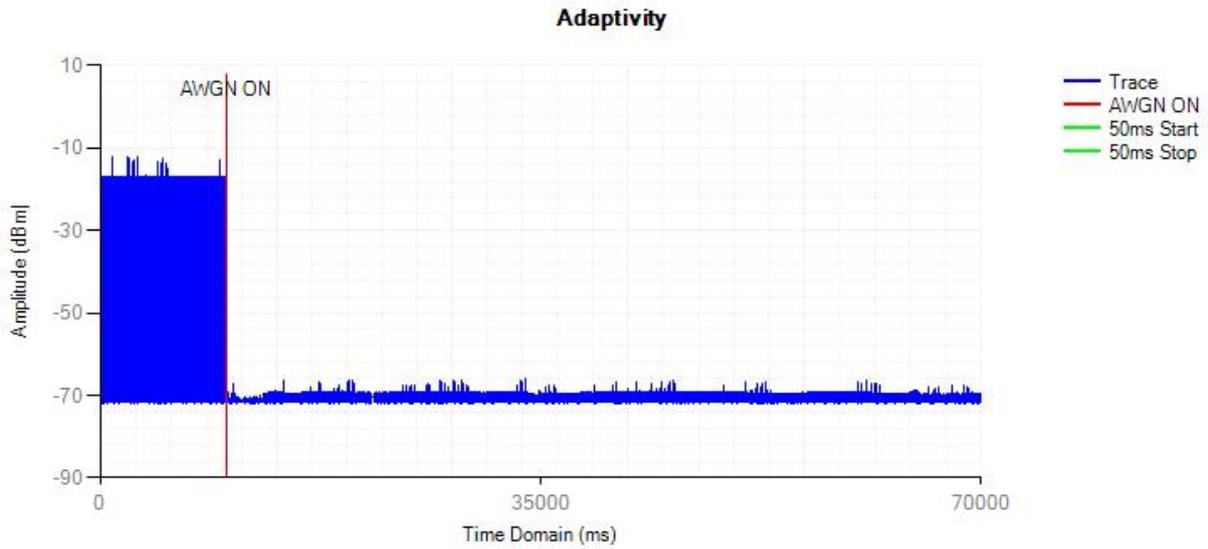




Adaptivity NVNT ac40 5190MHz OFDM

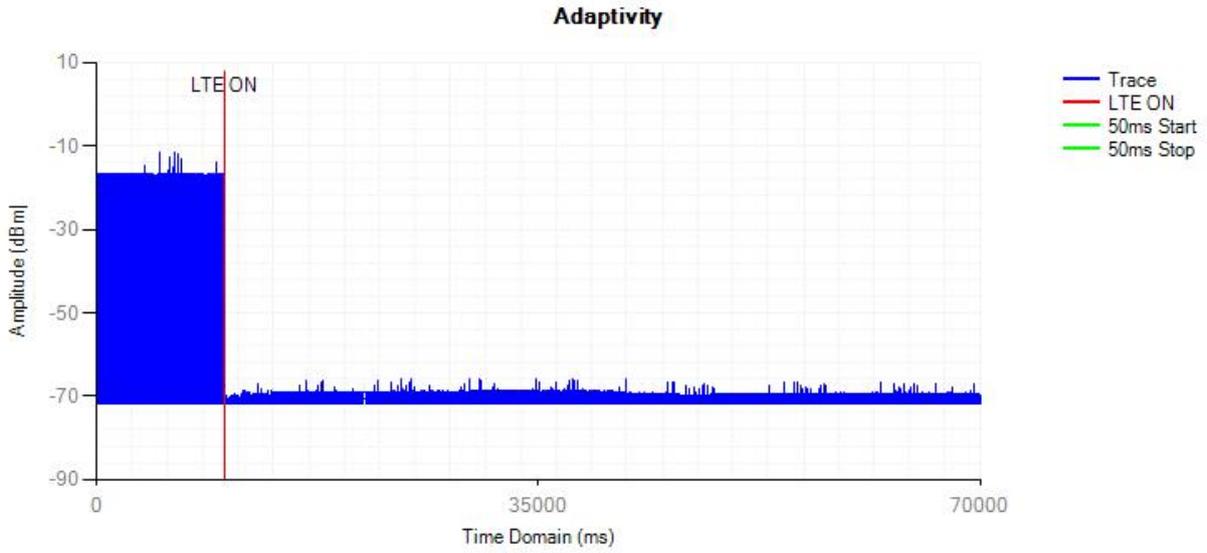


Adaptivity NVNT ac80 5210MHz AWGN

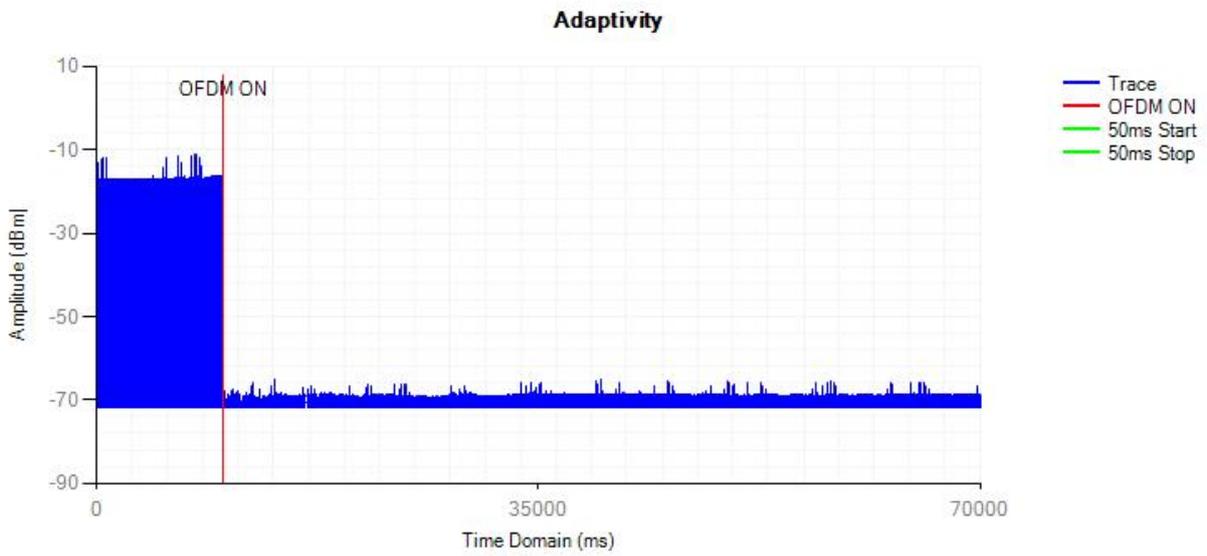




Adaptivity NVNT ac80 5210MHz LTE



Adaptivity NVNT ac80 5210MHz OFDM





H.9 Receiver Blocking

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)		Type of blocking signal	PER(%)		Test Result
		Test Value	Limit		Test Value	Limit	
Pmin + 6 dB	5100	-54	≥-59	CW	2.43	10	Pass
	4900	-45	≥-53	CW	1.46	10	Pass
	5000	-44	≥-53	CW	1.37	10	Pass
	5975	-49	≥-53	CW	1.68	10	Pass

