



## Appendix H for 5.2G WIFI RF Test Data

**Product Name: Smartphone**

**Test Model: KINGKONG AX**

### Environmental Conditions

Temperature:	25.1° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng





## H.1 Centre Frequencies

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	5179.97	-5.79	20	Pass
	ac20	5180	5179.96	-7.72	20	Pass
	ac40	5190	5190.04	7.71	20	Pass
	ac80	5210	5210.03	5.76	20	Pass
	n20	5180	5179.97	-5.79	20	Pass
	n40	5190	5190.02	3.85	20	Pass

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVLT	a	5180	5180.04	7.72	20	Pass
	ac20	5180	5180.02	3.86	20	Pass
	ac40	5190	5190.04	7.71	20	Pass
	ac80	5210	5209.96	-7.68	20	Pass
	n20	5180	5179.99	-1.93	20	Pass
	n40	5190	5189.97	-5.78	20	Pass

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVHT	a	5180	5180.02	3.86	20	Pass
	ac20	5180	5179.96	-7.72	20	Pass
	ac40	5190	5189.99	-1.93	20	Pass
	ac80	5210	5210.01	1.92	20	Pass
	n20	5180	5180.00	0.00	20	Pass
	n40	5190	5190.03	5.78	20	Pass



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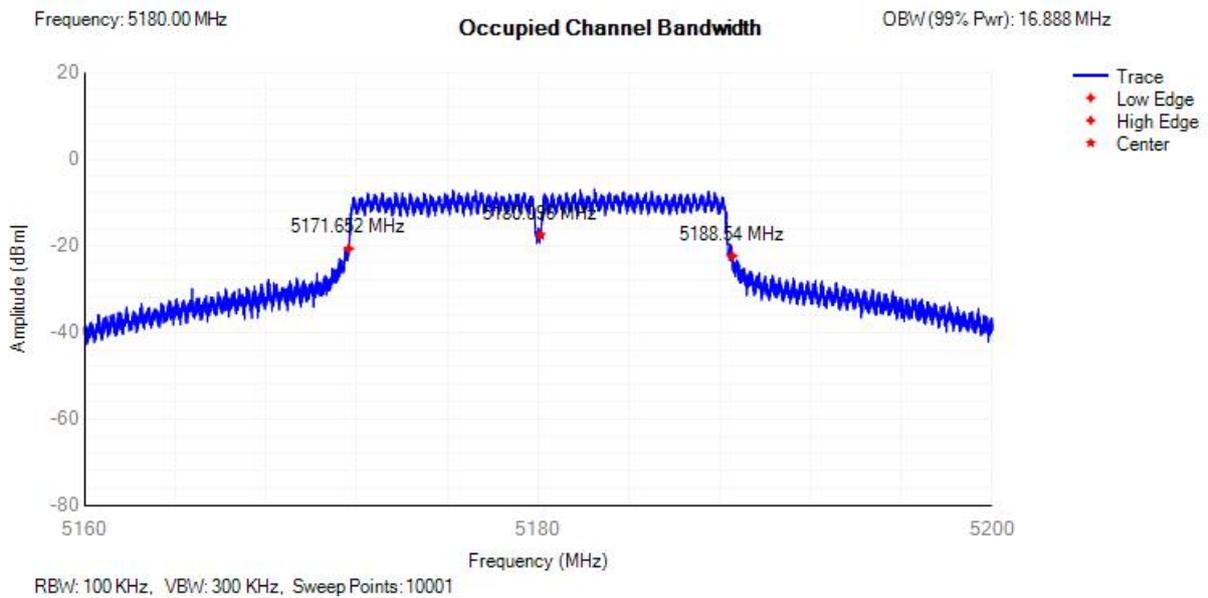
Scan code to check authenticity



# H.2 Nominal Channel Bandwidth and Occupied Channel Bandwidth

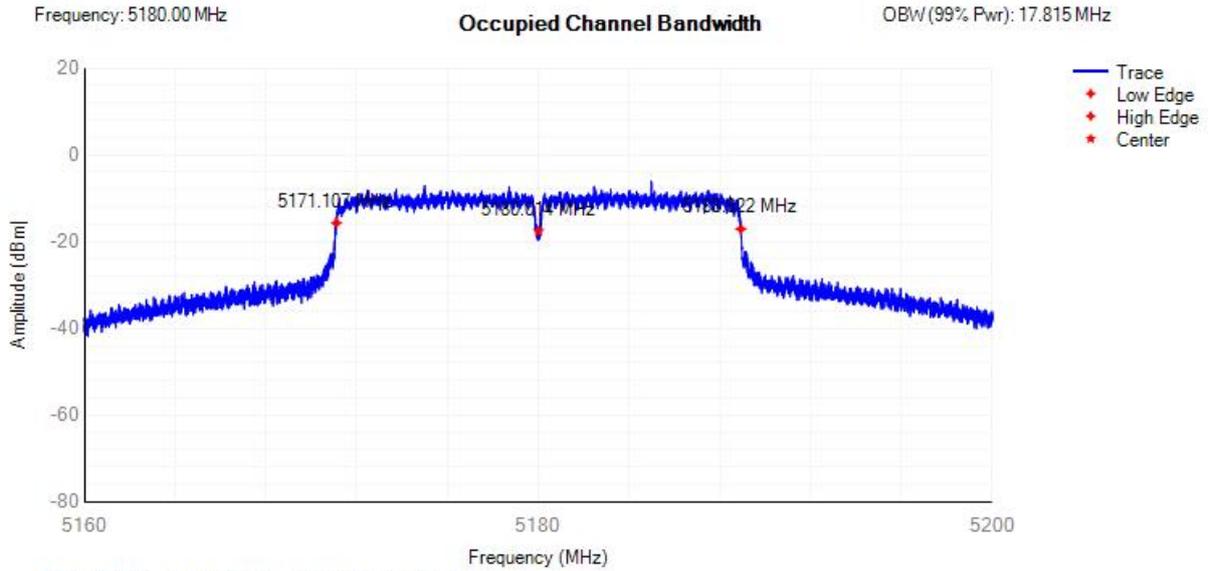
Condition	Mode	Frequency (MHz)	Center Frequency (MHz)	OBW (MHz)	Lower Limit (MHz)	Upper Limit(MHz)	Verdict
NVNT	a	5180	5180.096	16.888	16	20	Pass
NVNT	ac20	5180	5180.014	17.815	16	20	Pass
NVNT	ac40	5190	5190.026	36.48	32	40	Pass
NVNT	ac80	5210	5210.054	76.14	64	80	Pass
NVNT	n20	5180	5180.017	17.823	16	20	Pass
NVNT	n40	5190	5190.049	36.536	32	40	Pass

OBW NVNT a 5180MHz

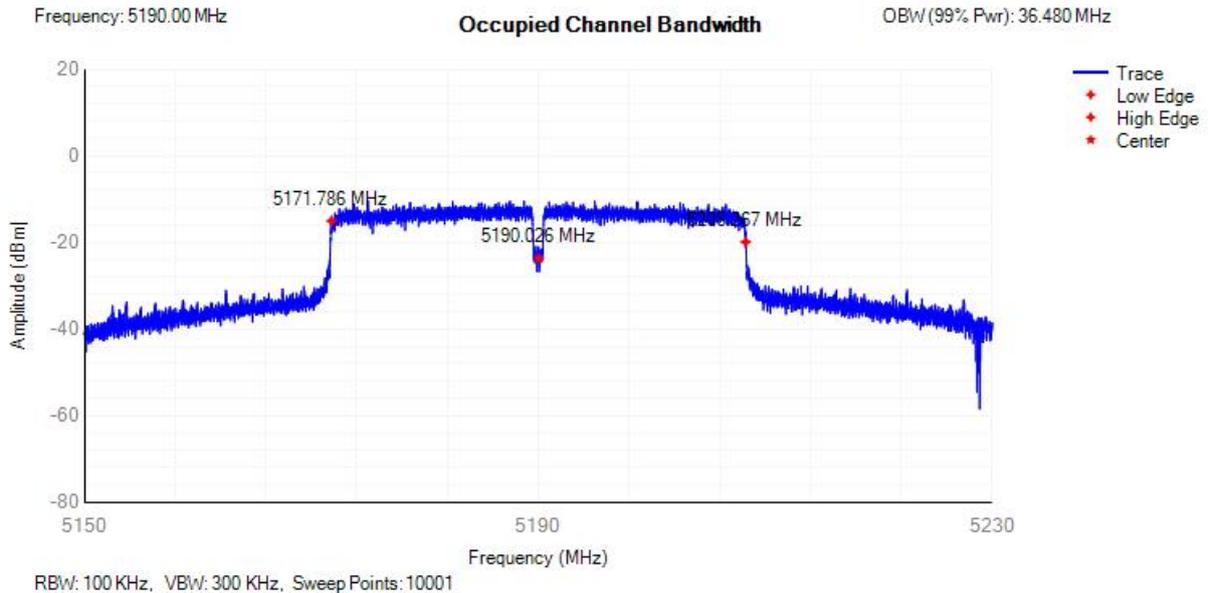




### OBW NVNT ac20 5180MHz

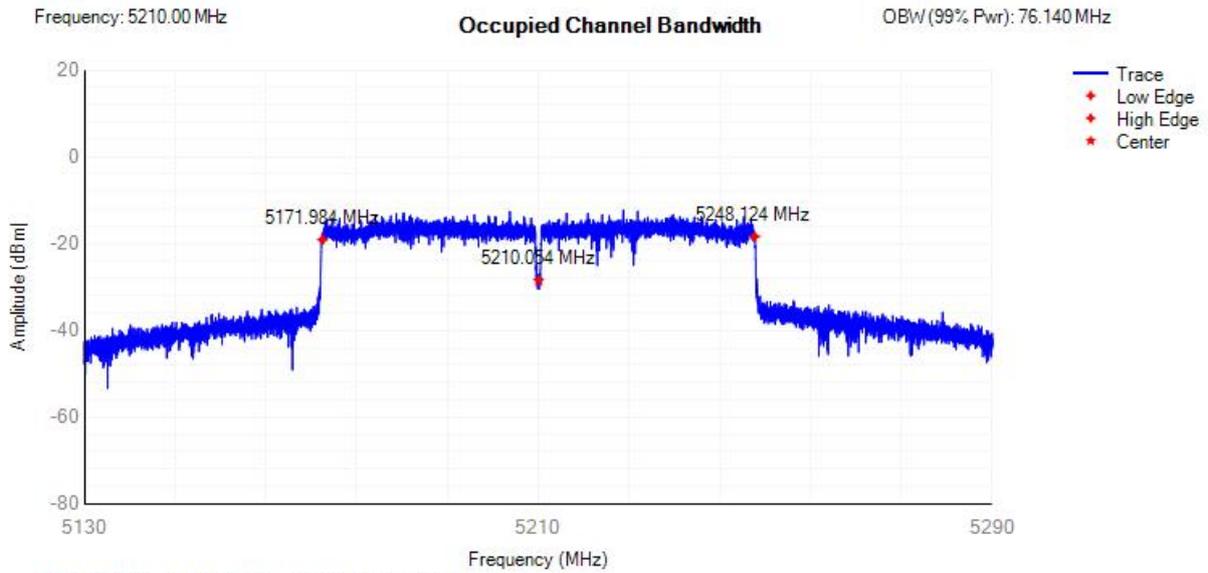


### OBW NVNT ac40 5190MHz

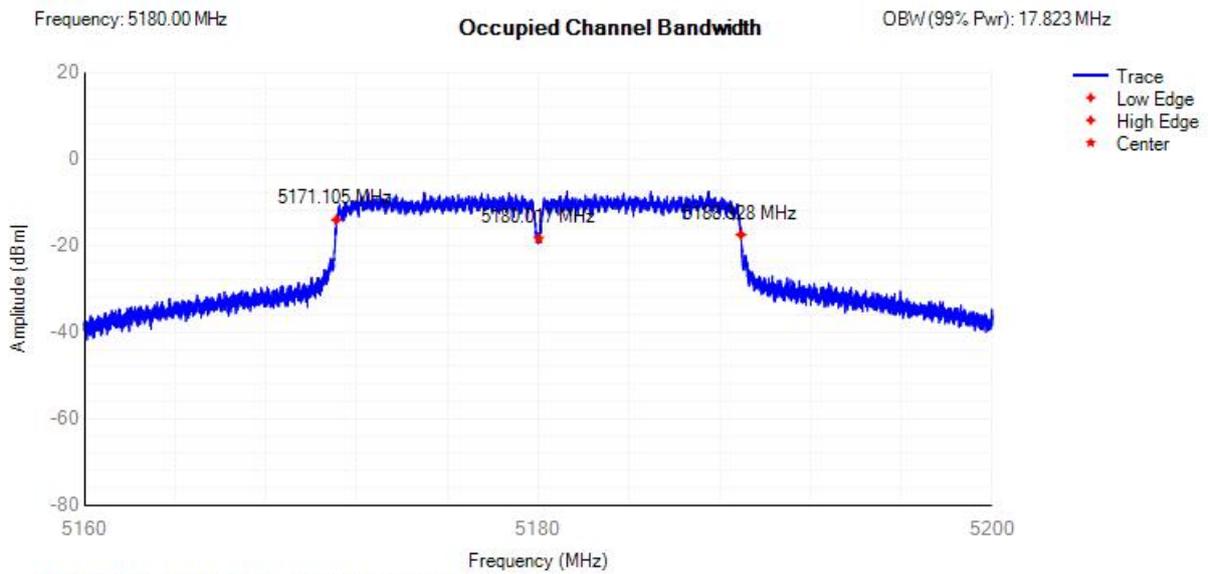




### OBW NVNT ac80 5210MHz



### OBW NVNT n20 5180MHz



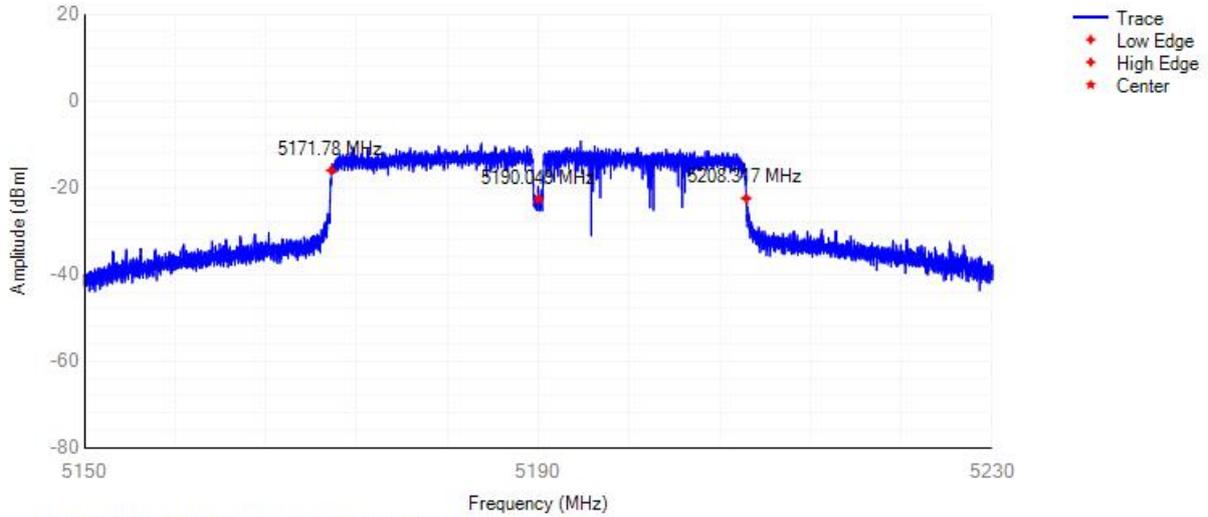


### OBW NVNT n40 5190MHz

Frequency: 5190.00 MHz

Occupied Channel Bandwidth

OBW (99% Pwr): 36.536 MHz





### H.3 RF Output Power

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	13.54	23	Pass
NVNT	ac20	5180	13.33	23	Pass
NVNT	ac40	5190	13.75	23	Pass
NVNT	ac80	5210	14.10	23	Pass
NVNT	n20	5180	13.42	23	Pass
NVNT	n40	5190	13.76	23	Pass

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVLT	a	5180	13.46	23	Pass
NVLT	ac20	5180	13.22	23	Pass
NVLT	ac40	5190	13.67	23	Pass
NVLT	ac80	5210	14.04	23	Pass
NVLT	n20	5180	13.38	23	Pass
NVLT	n40	5190	13.63	23	Pass

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVHT	a	5180	13.39	23	Pass
NVHT	ac20	5180	13.16	23	Pass
NVHT	ac40	5190	13.57	23	Pass
NVHT	ac80	5210	13.98	23	Pass
NVHT	n20	5180	13.33	23	Pass
NVHT	n40	5190	13.57	23	Pass

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

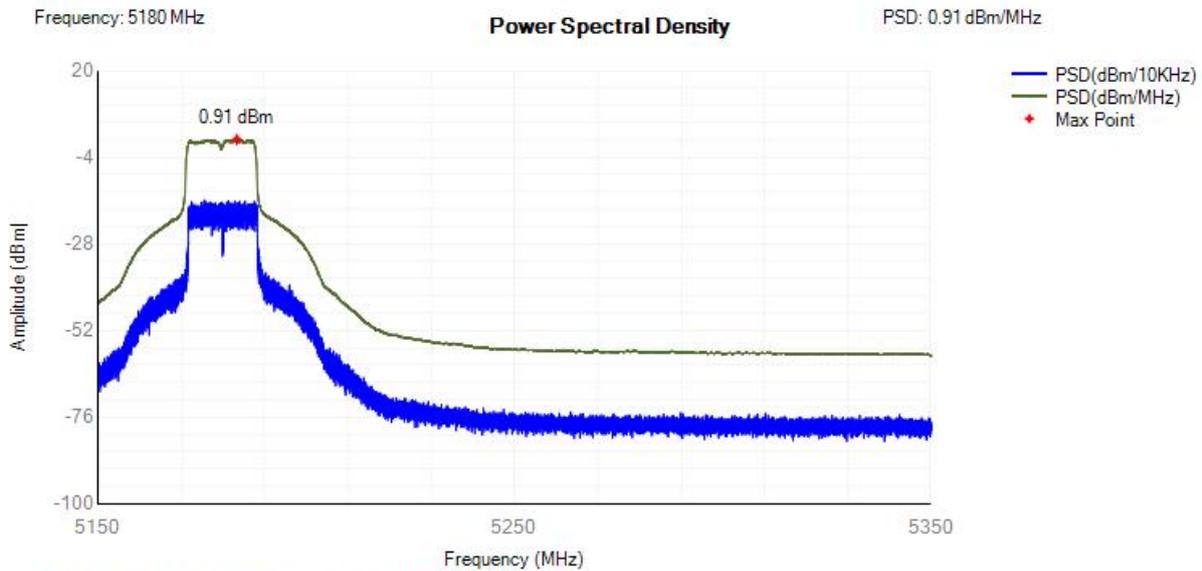




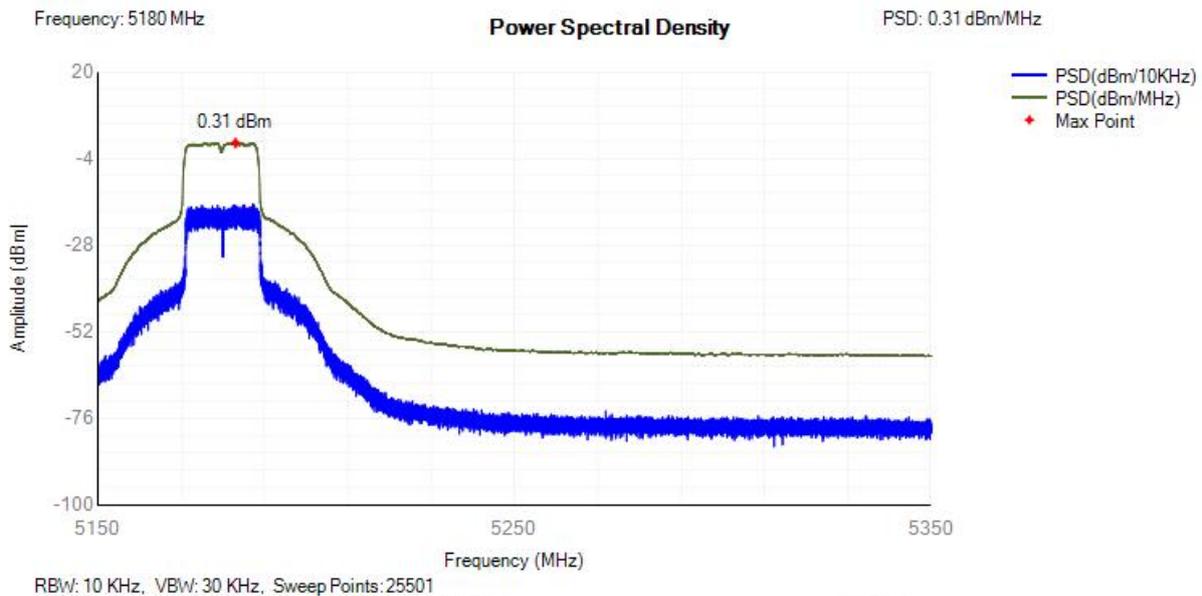
### H.4 Power Spectral Density

Condition	Mode	Frequency (MHz)	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	0.91	10	Pass
NVNT	ac20	5180	0.31	10	Pass
NVNT	ac40	5190	-1.87	10	Pass
NVNT	ac80	5210	-4.66	10	Pass
NVNT	n20	5180	0.46	10	Pass
NVNT	n40	5190	-1.9	10	Pass

PSD NVNT a 5180MHz

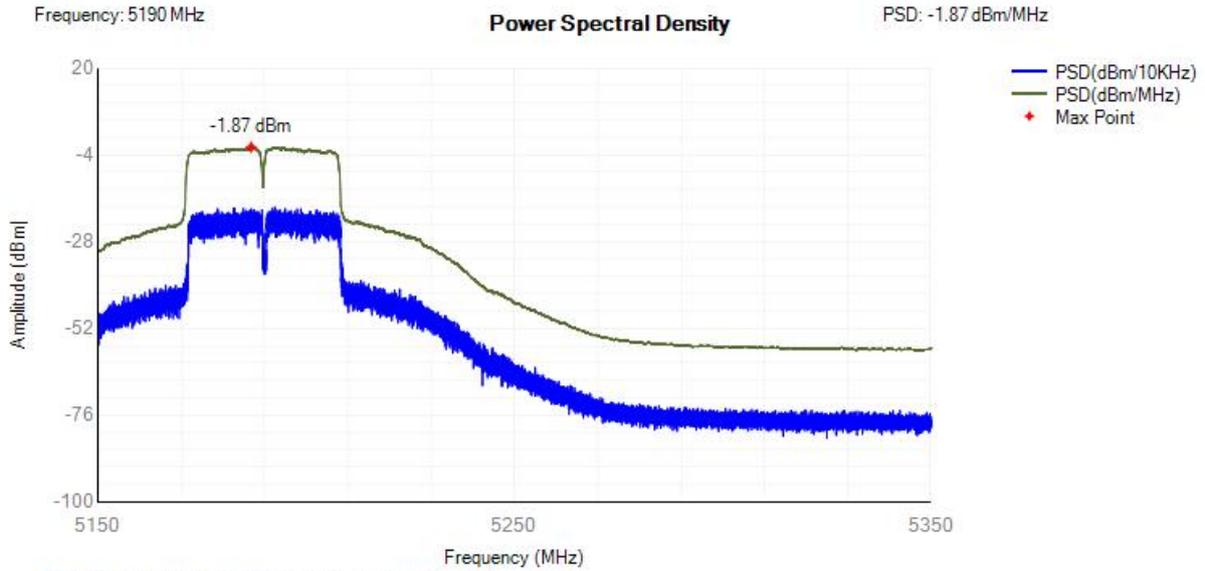


PSD NVNT ac20 5180MHz

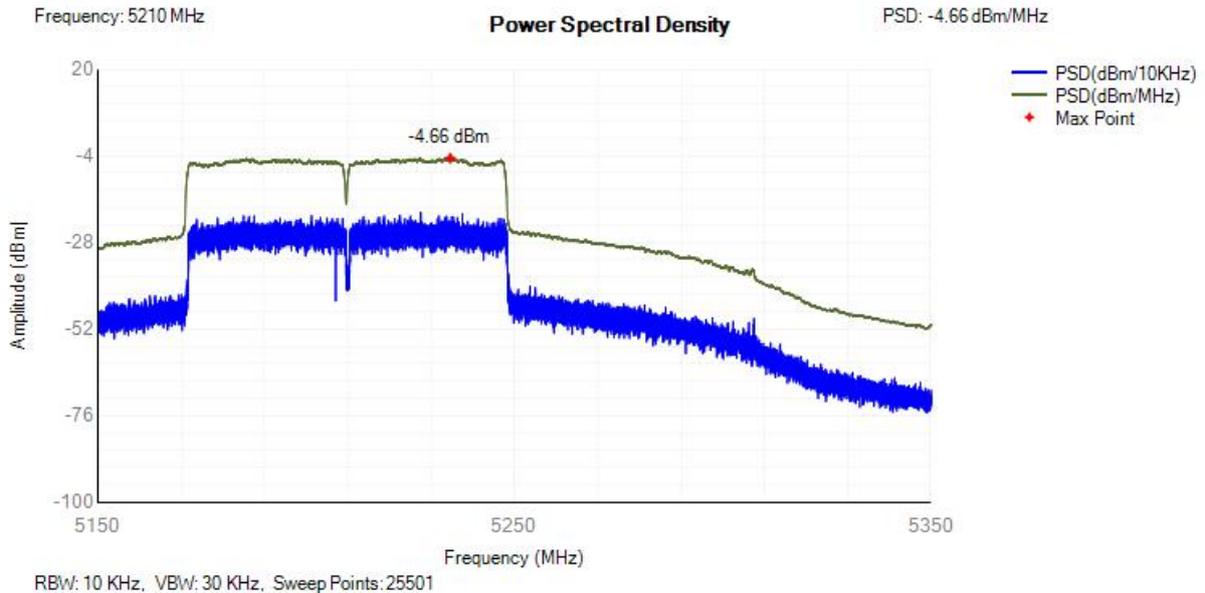




### PSD NVNT ac40 5190MHz

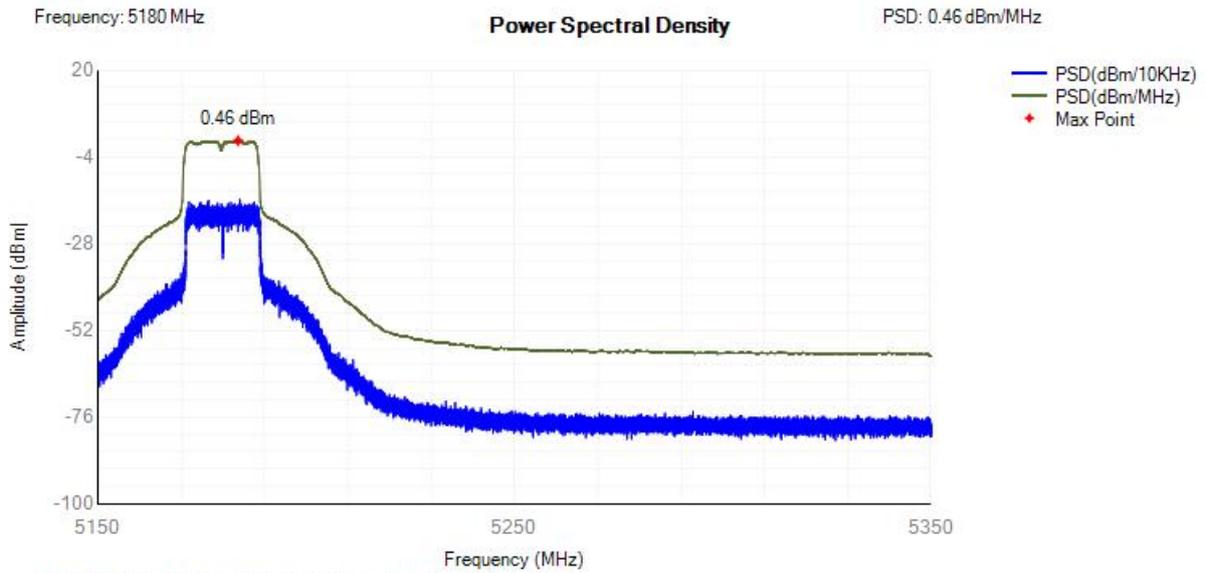


### PSD NVNT ac80 5210MHz

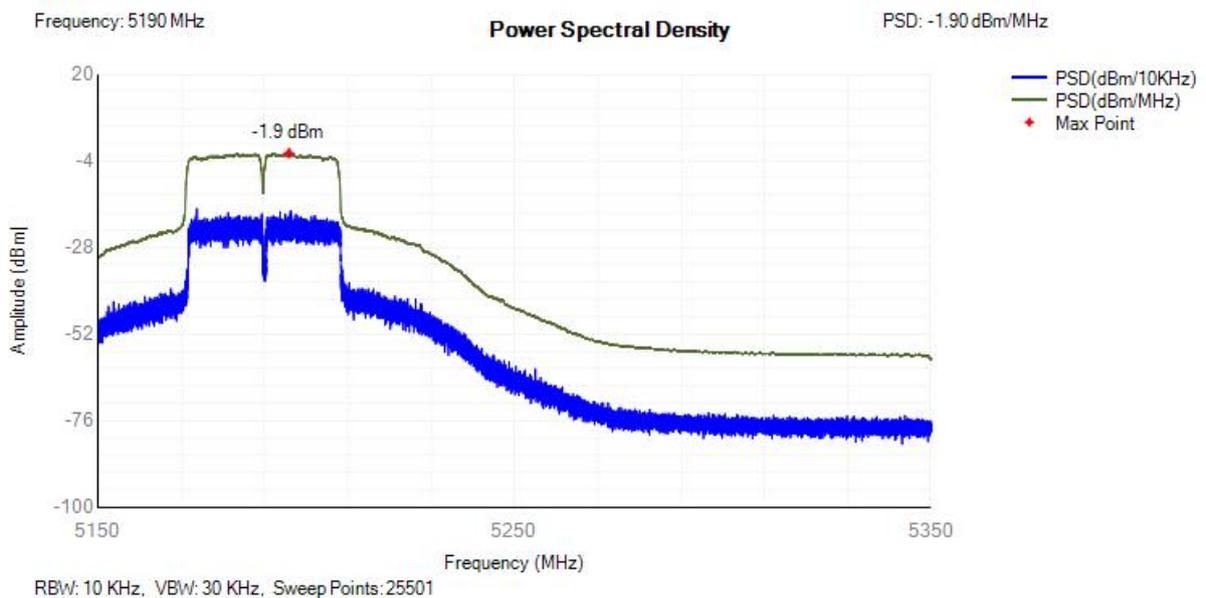




PSD NVNT n20 5180MHz



PSD NVNT n40 5190MHz





## 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)					
55.21	H	-84.95	-54.00	-30.95	PK
63.51	V	-75.06	-54.00	-21.06	PK
807.21	H	-77.84	-54.00	-23.84	PK
921.84	V	-75.78	-36.00	-39.78	PK
3477.34	H	-50.66	-30.00	-20.66	PK
3463.23	V	-61.94	-30.00	-31.94	PK
10360.07	H	-55.02	-30.00	-25.02	PK
10360.06	V	-51.74	-30.00	-21.74	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)					
60.69	H	-81.41	-54.00	-27.41	PK
67.48	V	-74.08	-54.00	-20.08	PK
807.17	H	-76.02	-54.00	-22.02	PK
926.37	V	-74.82	-36.00	-38.82	PK
3472.92	H	-49.17	-30.00	-19.17	PK
3482.95	V	-61.68	-30.00	-31.68	PK
10360.08	H	-52.83	-30.00	-22.83	PK
10360.07	V	-50.96	-30.00	-20.96	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)					
57.49	H	-80.83	-54.00	-26.83	PK
65.79	V	-74.13	-54.00	-20.13	PK
808.03	H	-75.91	-54.00	-21.91	PK
925.31	V	-74.41	-36.00	-38.41	PK
3502.07	H	-49.38	-30.00	-19.38	PK
3479.91	V	-61.28	-30.00	-31.28	PK
10360.00	H	-52.98	-30.00	-22.98	PK
10360.08	V	-50.36	-30.00	-20.36	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)					
59.60	H	-83.15	-54.00	-29.15	PK
66.65	V	-72.94	-54.00	-18.94	PK
809.48	H	-76.40	-54.00	-22.40	PK
925.87	V	-74.66	-36.00	-38.66	PK
3457.09	H	-48.63	-30.00	-18.63	PK
3477.67	V	-59.97	-30.00	-29.97	PK
10380.06	H	-53.70	-30.00	-23.70	PK
10380.08	V	-50.63	-30.00	-20.63	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)					
57.52	H	-83.37	-54.00	-29.37	PK
65.72	V	-73.24	-54.00	-19.24	PK
809.00	H	-76.15	-54.00	-22.15	PK
924.07	V	-74.09	-36.00	-38.09	PK
3498.42	H	-48.85	-30.00	-18.85	PK
3464.21	V	-59.76	-30.00	-29.76	PK
10380.07	H	-54.07	-30.00	-24.07	PK
10380.04	V	-50.71	-30.00	-20.71	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)					
56.63	H	-83.20	-54.00	-29.20	PK
65.67	V	-73.70	-54.00	-19.70	PK
811.49	H	-76.42	-54.00	-22.42	PK
921.42	V	-74.22	-36.00	-38.22	PK
3497.09	H	-49.23	-30.00	-19.23	PK
3485.78	V	-60.76	-30.00	-30.76	PK
10420.06	H	-53.78	-30.00	-23.78	PK
10420.10	V	-50.45	-30.00	-20.45	PK

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

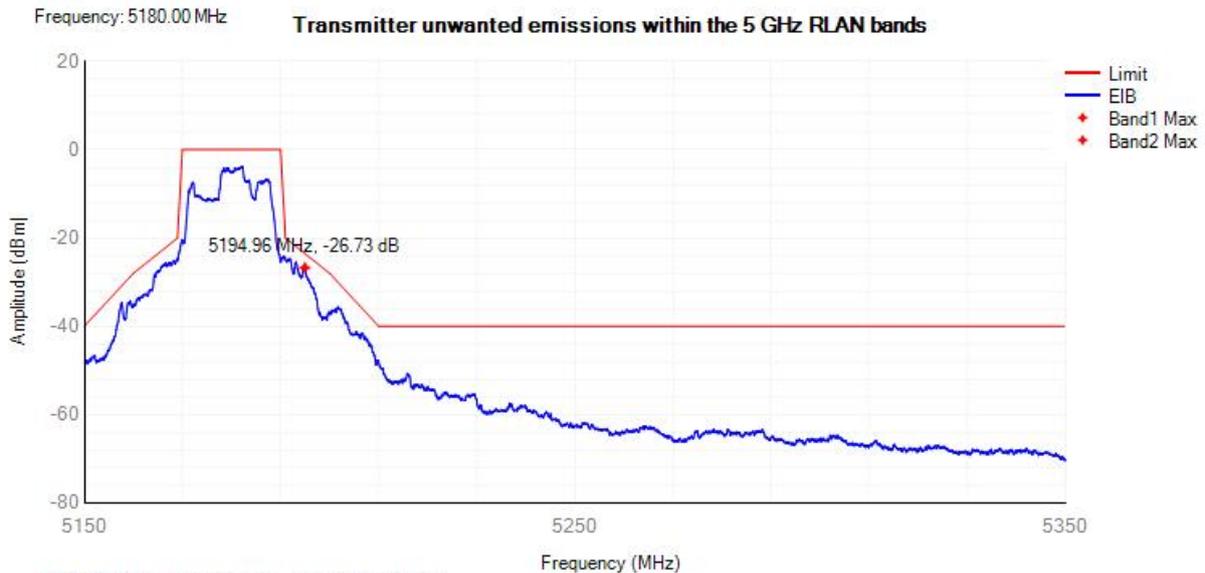




# H.6 Transmitter unwanted emissions within the 5 GHz RLAN bands

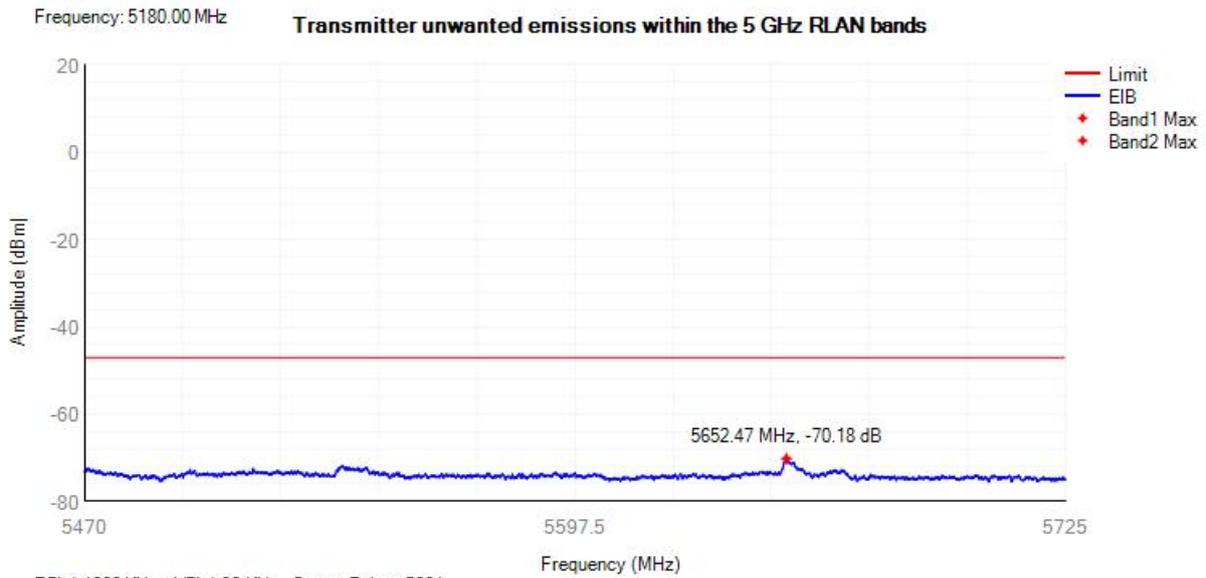
Condition	Mode	Frequency (MHz)	Sub Band	Worst EIB Frequency (MHz)	Level (dB)	Limit (dB)	Verdict
NVNT	a	5180	Band1	5194.96	-26.73	-23.52	Pass
NVNT	a	5180	Band2	5652.47	-70.18	-47	Pass
NVNT	ac20	5180	Band1	5157.32	-32.51	-31.21	Pass
NVNT	ac20	5180	Band2	5651.86	-70.38	-47	Pass
NVNT	ac40	5190	Band1	5236.8	-32.73	-32.08	Pass
NVNT	ac40	5190	Band2	5657.62	-67.92	-47	Pass
NVNT	ac80	5210	Band1	5303.67	-33.47	-32.1	Pass
NVNT	ac80	5210	Band2	5476.57	-63.29	-40	Pass
NVNT	n20	5180	Band1	5168.63	-22.04	-20.32	Pass
NVNT	n20	5180	Band2	5652.07	-70.32	-47	Pass
NVNT	n40	5190	Band1	5248.84	-42.09	-39.3	Pass
NVNT	n40	5190	Band2	5655.02	-67.17	-47	Pass

Tx. Emissions EIB NVNT a 5180MHz Sub Band1

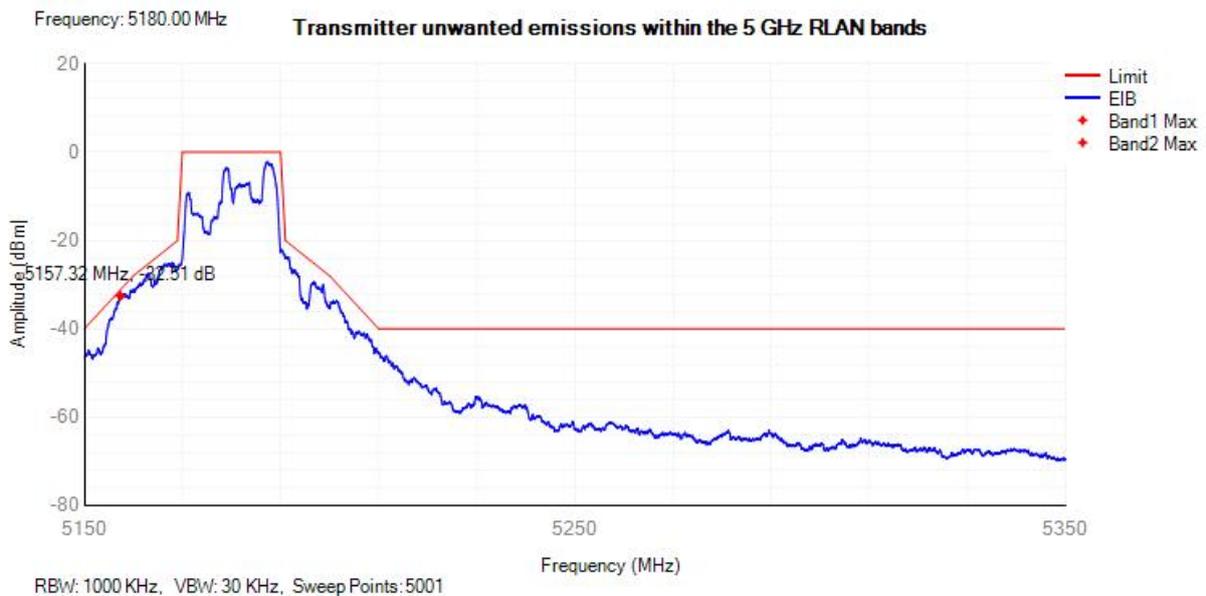




### Tx. Emissions EIB NVNT a 5180MHz Sub Band2

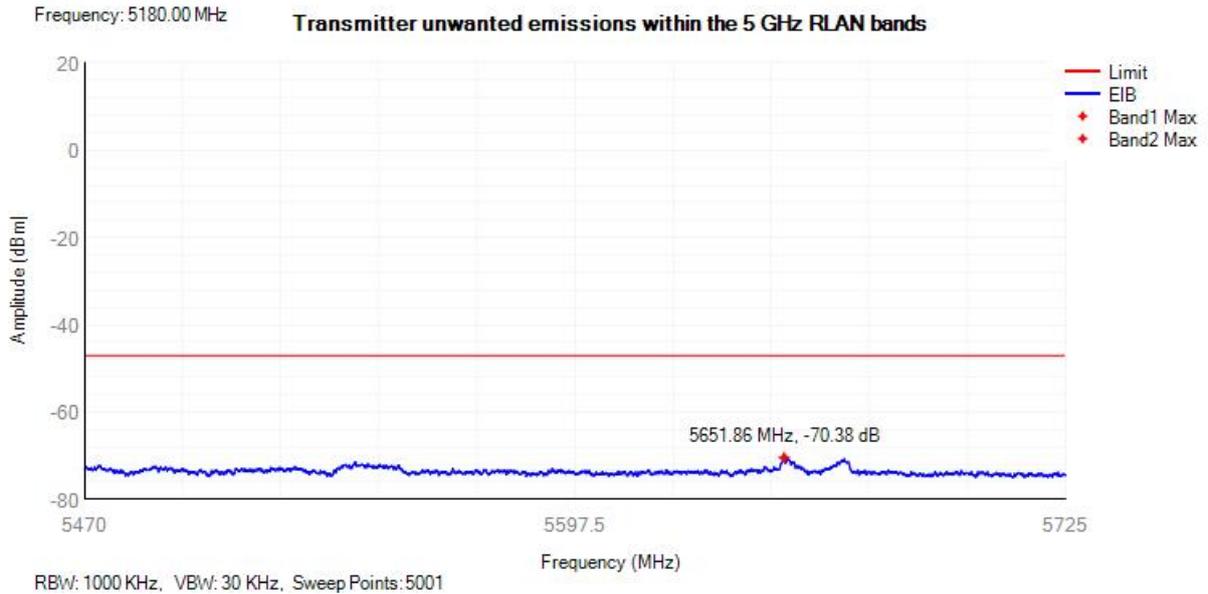


### Tx. Emissions EIB NVNT ac20 5180MHz Sub Band1

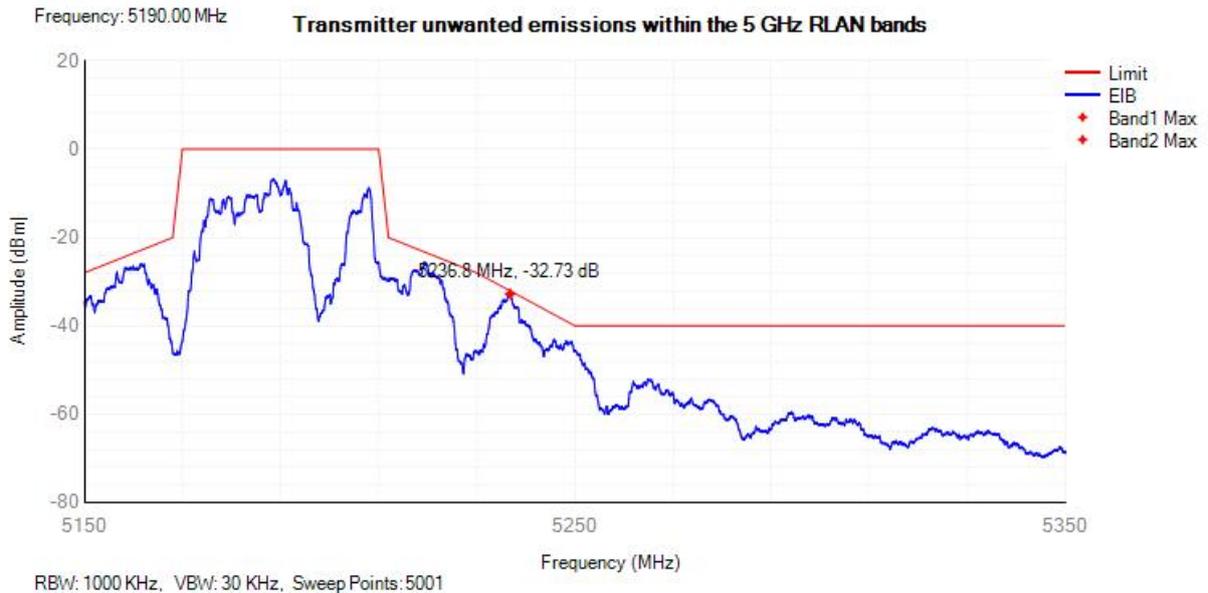




Tx. Emissions EIB NVNT ac20 5180MHz Sub Band2

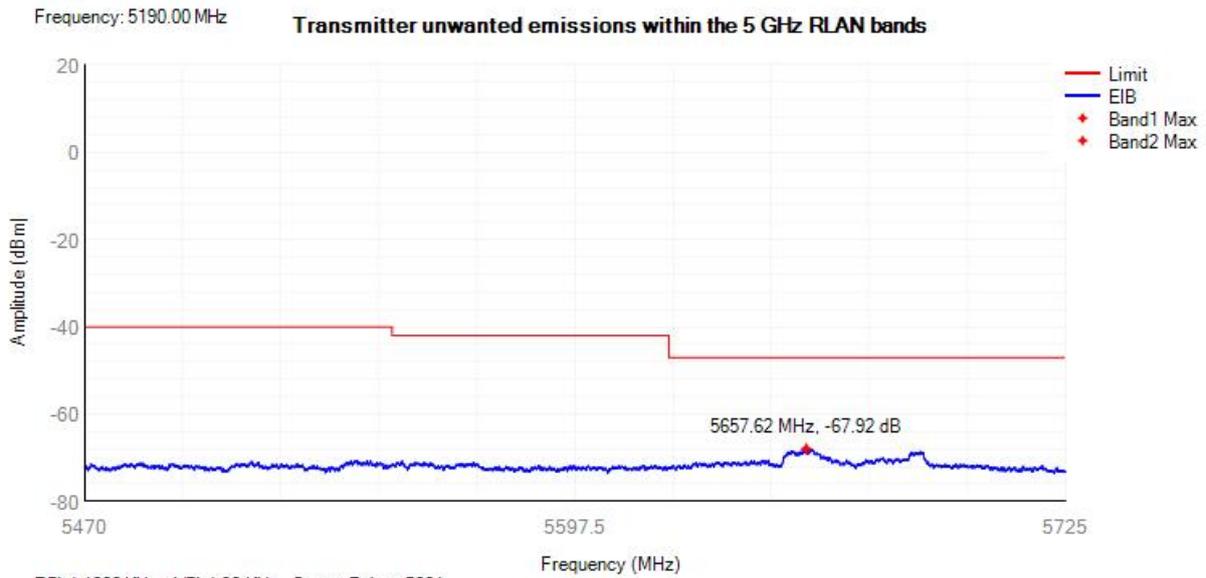


Tx. Emissions EIB NVNT ac40 5190MHz Sub Band1

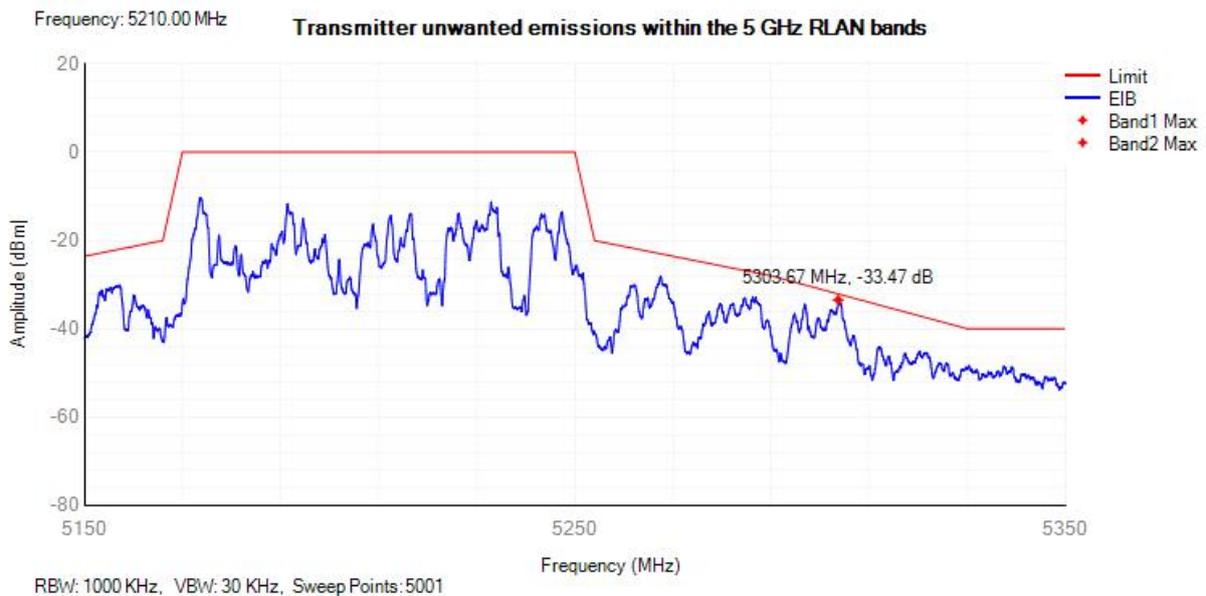




### Tx. Emissions EIB NVNT ac40 5190MHz Sub Band2

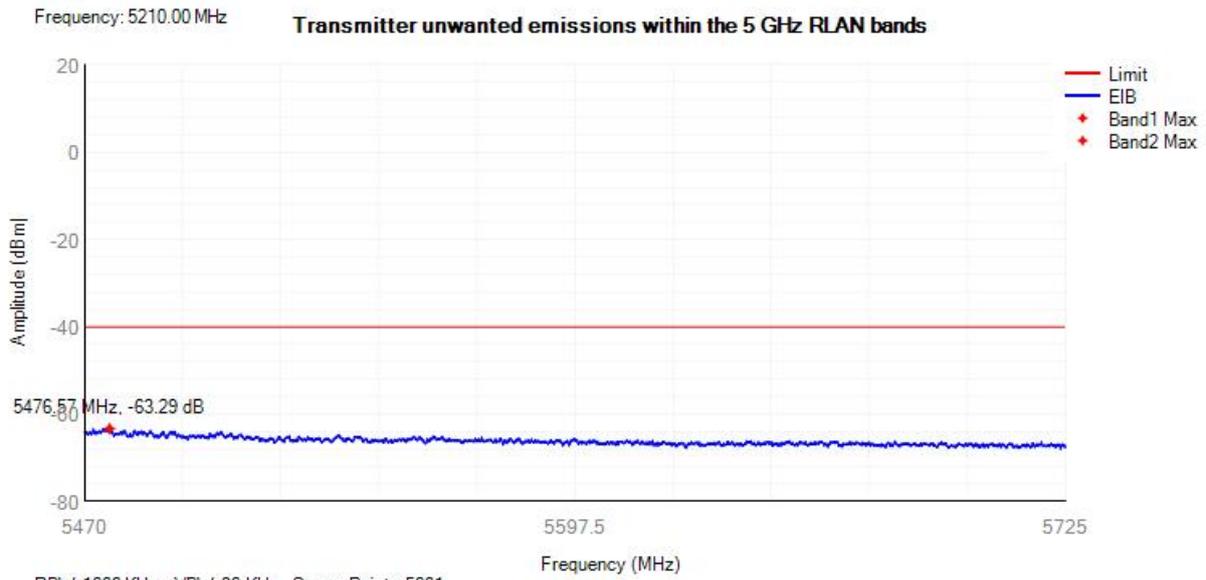


### Tx. Emissions EIB NVNT ac80 5210MHz Sub Band1

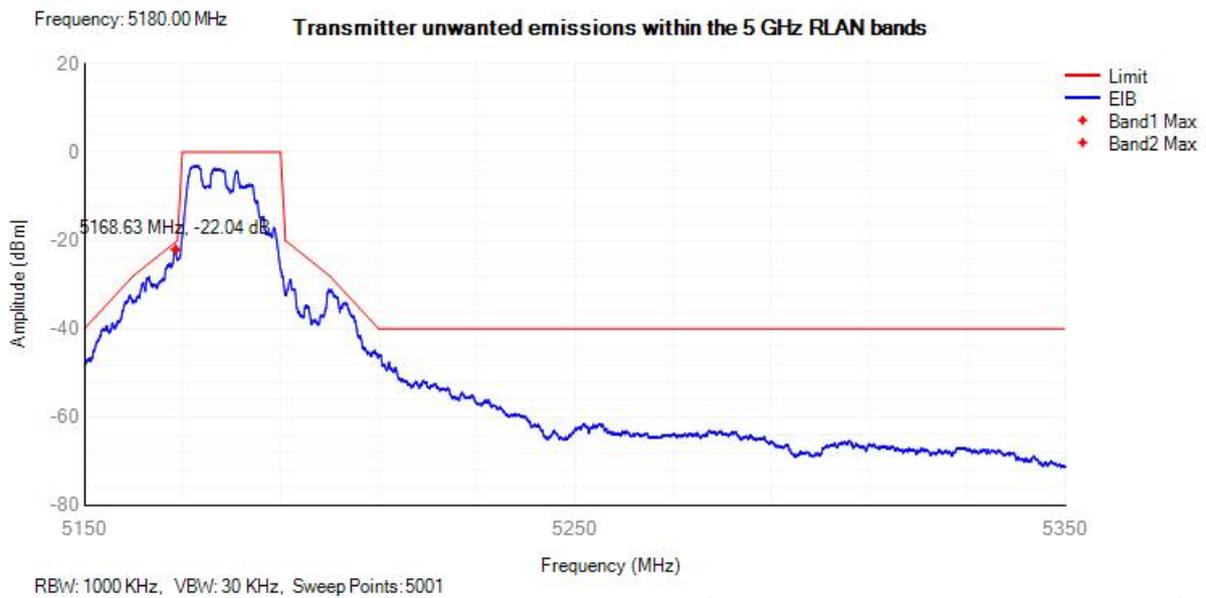




Tx. Emissions EIB NVNT ac80 5210MHz Sub Band2

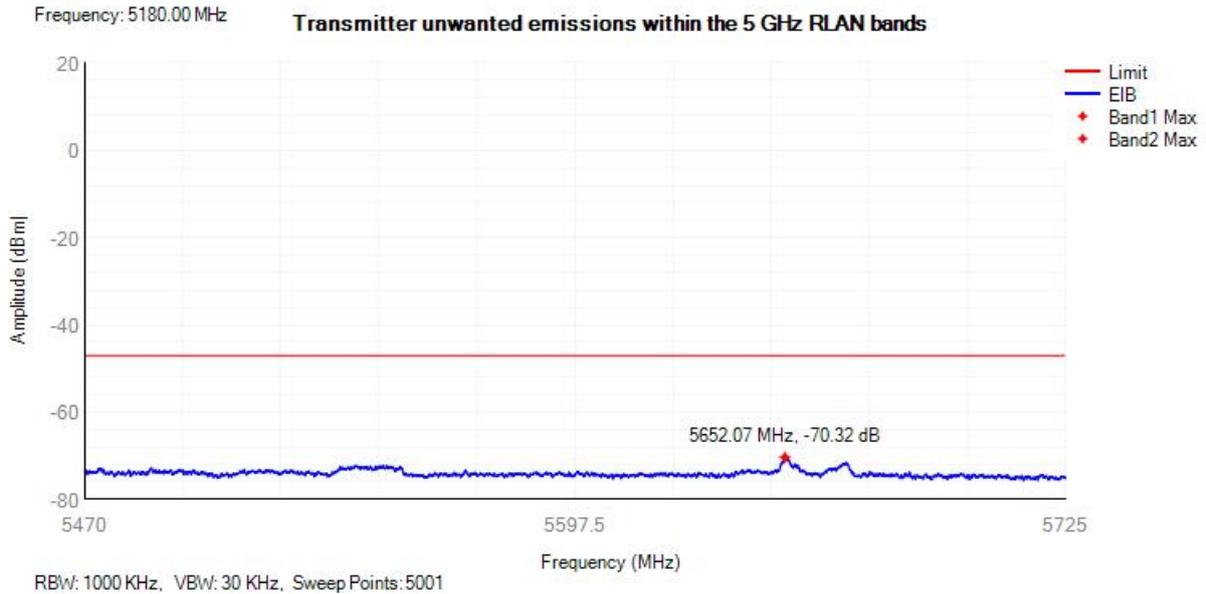


Tx. Emissions EIB NVNT n20 5180MHz Sub Band1

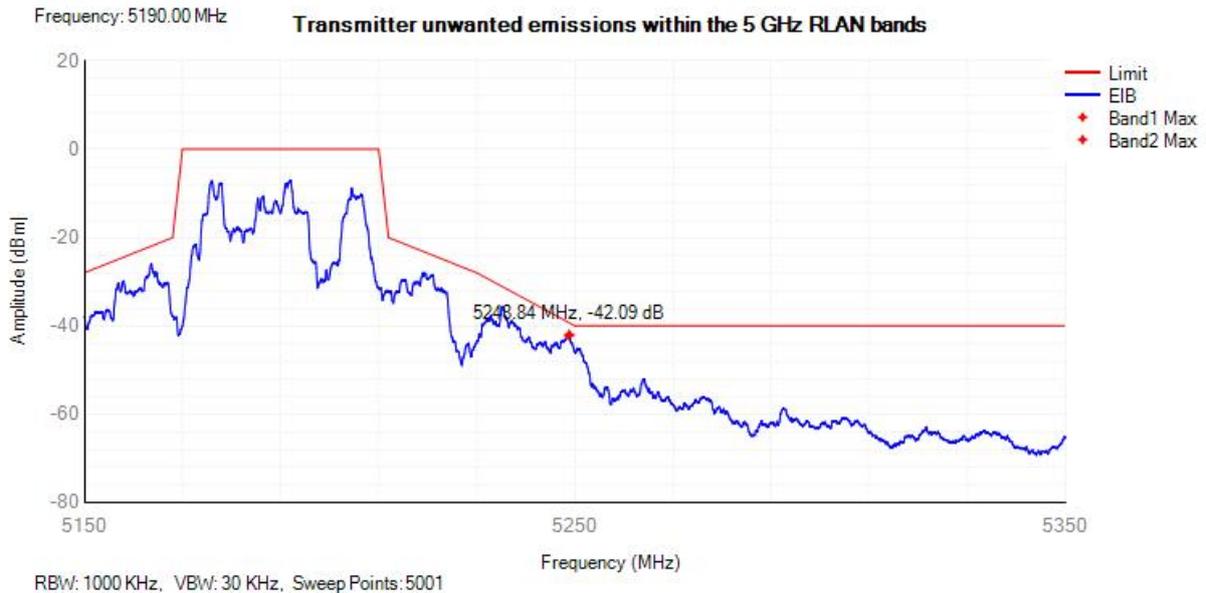




Tx. Emissions EIB NVNT n20 5180MHz Sub Band2

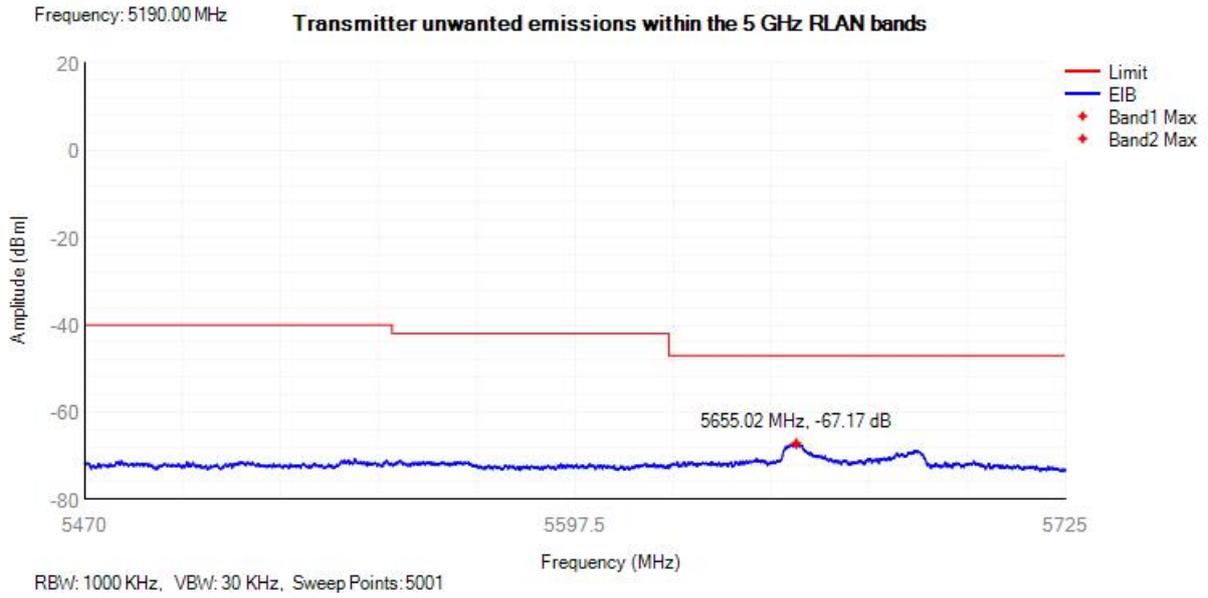


Tx. Emissions EIB NVNT n40 5190MHz Sub Band1





Tx. Emissions EIB NVNT n40 5190MHz 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)					
60.25	H	-81.29	-57.00	-24.29	PK
71.93	V	-73.12	-57.00	-16.12	PK
812.35	H	-72.48	-57.00	-15.48	PK
929.15	V	-72.67	-57.00	-15.67	PK
3484.56	H	-61.53	-47.00	-14.53	PK
3466.57	V	-62.44	-47.00	-15.44	PK
10360.01	H	-57.38	-47.00	-10.38	PK
10360.05	V	-57.48	-47.00	-10.48	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)					
59.33	H	-82.76	-57.00	-25.76	PK
68.46	V	-74.07	-57.00	-17.07	PK
811.10	H	-74.71	-57.00	-17.71	PK
923.23	V	-73.92	-57.00	-16.92	PK
3469.45	H	-63.36	-47.00	-16.36	PK
3498.78	V	-63.95	-47.00	-16.95	PK
10360.06	H	-58.19	-47.00	-11.19	PK
10360.02	V	-59.72	-47.00	-12.72	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)					
59.56	H	-83.01	-57.00	-26.01	PK
68.12	V	-74.43	-57.00	-17.43	PK
811.06	H	-74.96	-57.00	-17.96	PK
923.50	V	-74.39	-57.00	-17.39	PK
3499.26	H	-63.34	-47.00	-16.34	PK
3472.83	V	-63.74	-47.00	-16.74	PK
10360.07	H	-58.12	-47.00	-11.12	PK
10360.08	V	-59.68	-47.00	-12.68	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)					
56.66	H	-82.31	-57.00	-25.31	PK
66.11	V	-75.00	-57.00	-18.00	PK
810.90	H	-75.05	-57.00	-18.05	PK
922.04	V	-74.24	-57.00	-17.24	PK
3488.50	H	-63.45	-47.00	-16.45	PK
3470.82	V	-63.01	-47.00	-16.01	PK
10380.01	H	-58.31	-47.00	-11.31	PK
10380.01	V	-60.12	-47.00	-13.12	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)					
59.87	H	-82.21	-57.00	-25.21	PK
66.17	V	-74.79	-57.00	-17.79	PK
809.92	H	-74.40	-57.00	-17.40	PK
924.68	V	-74.12	-57.00	-17.12	PK
3492.59	H	-63.38	-47.00	-16.38	PK
3467.82	V	-63.40	-47.00	-16.40	PK
10380.06	H	-59.08	-47.00	-12.08	PK
10380.09	V	-59.44	-47.00	-12.44	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)					
56.37	H	-82.43	-57.00	-25.43	PK
68.01	V	-74.98	-57.00	-17.98	PK
809.57	H	-74.64	-57.00	-17.64	PK
926.96	V	-74.59	-57.00	-17.59	PK
3512.88	H	-63.34	-47.00	-16.34	PK
3475.48	V	-63.54	-47.00	-16.54	PK
10420.03	H	-58.55	-47.00	-11.55	PK
10420.05	V	-60.24	-47.00	-13.24	PK

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

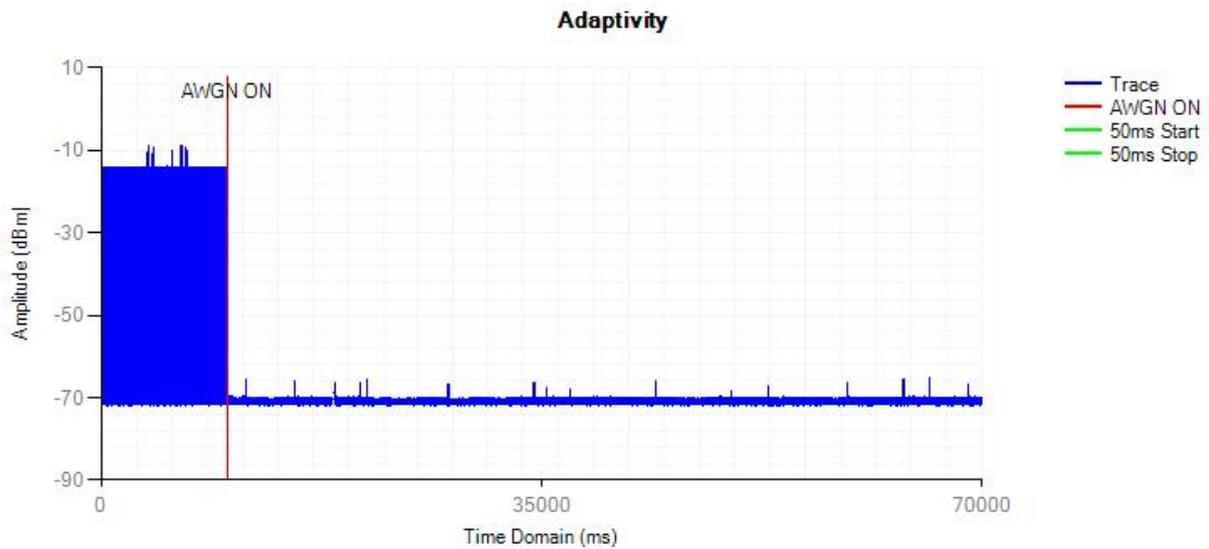




### H.8 Adaptivity (Channel Access Mechanism)

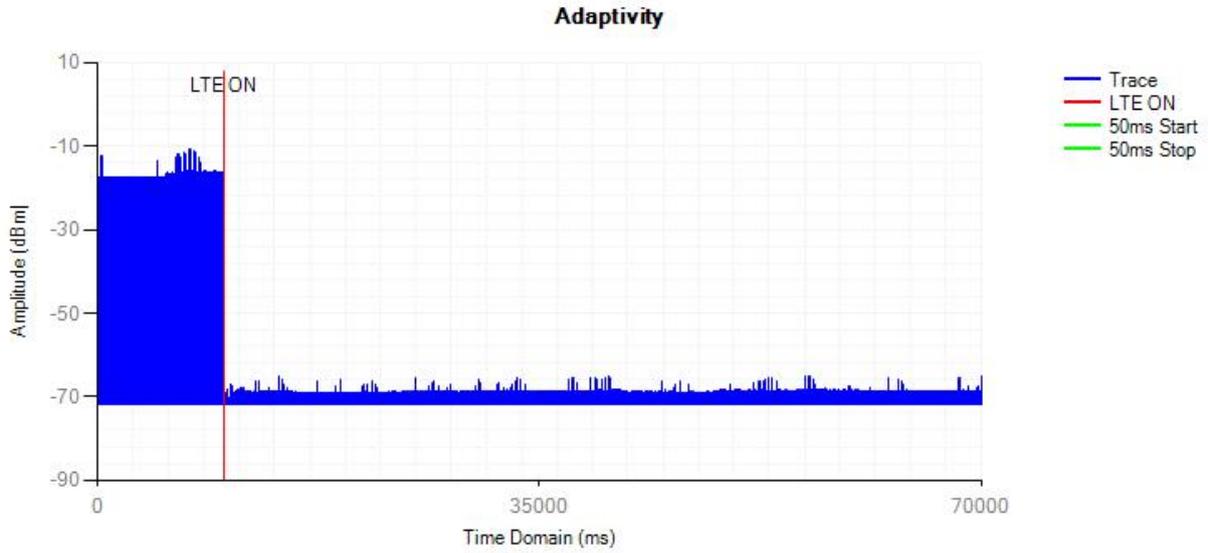
Condition	Mode	Frequency (MHz)	Interfer Type	Short Control (ms)	Limit (ms)	Short Control (n)	Limit (n)	Verdict
NVNT	ac20	5180	AWGN	0.42	<=2.5	9	<=50	Pass
NVNT	ac20	5180	LTE	0.31	<=2.5	6	<=50	Pass
NVNT	ac20	5180	OFDM	0.64	<=2.5	3	<=50	Pass
NVNT	ac40	5190	AWGN	0.33	<=2.5	8	<=50	Pass
NVNT	ac40	5190	LTE	0.75	<=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	0.23	<=2.5	13	<=50	Pass
NVNT	ac80	5210	OFDM	0.36	<=2.5	12	<=50	Pass

Adaptivity NVNT ac20 5180MHz AWGN

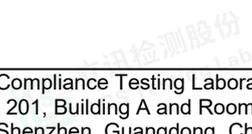
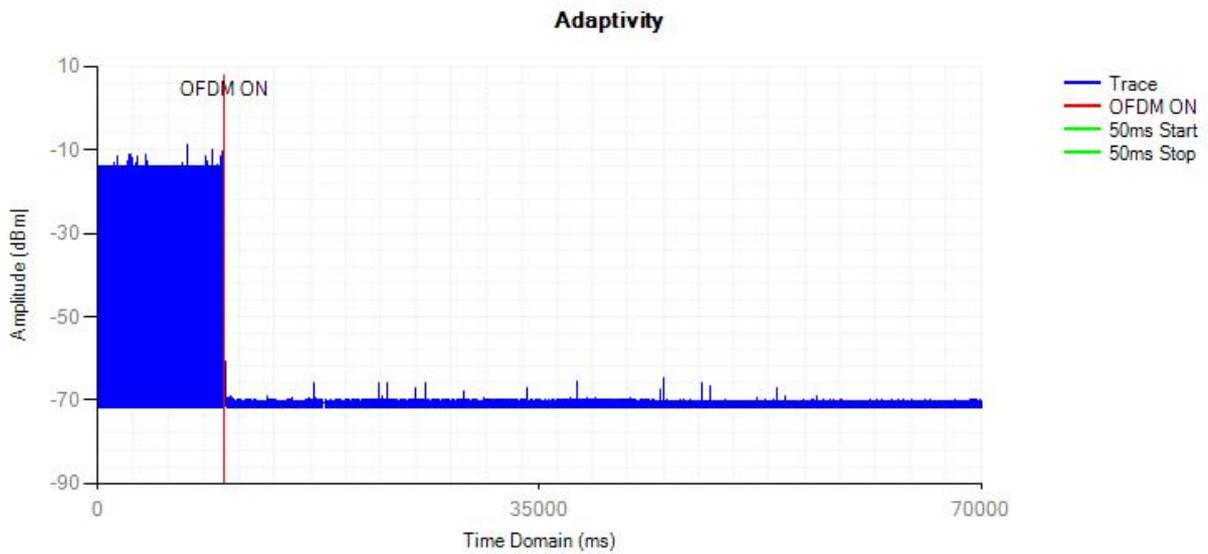




### Adaptivity NVNT ac20 5180MHz LTE

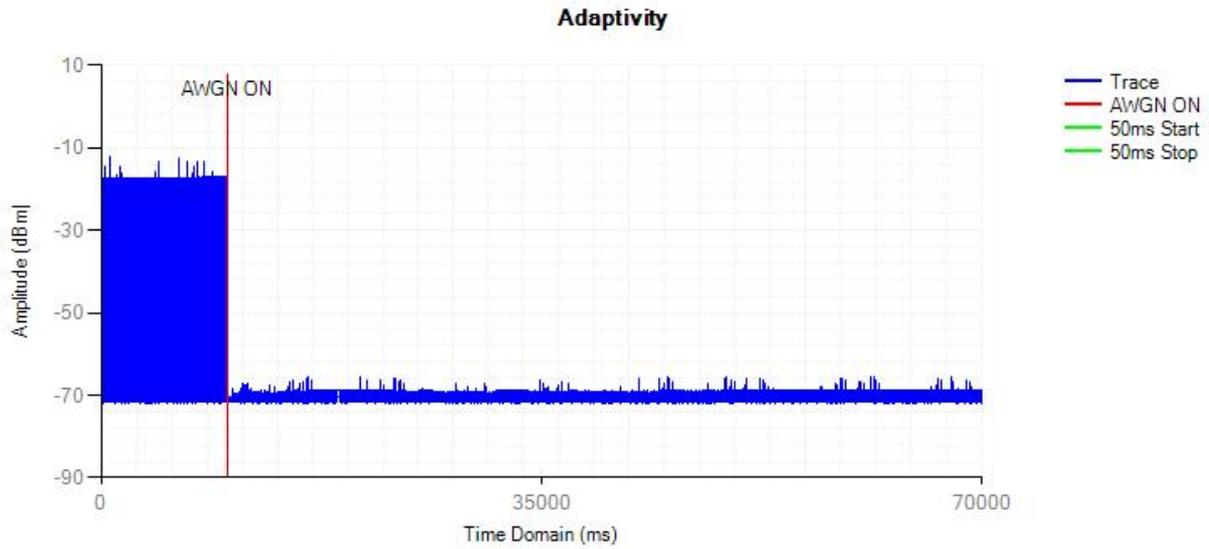


### Adaptivity NVNT ac20 5180MHz OFDM

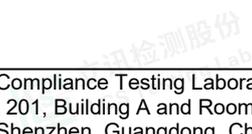
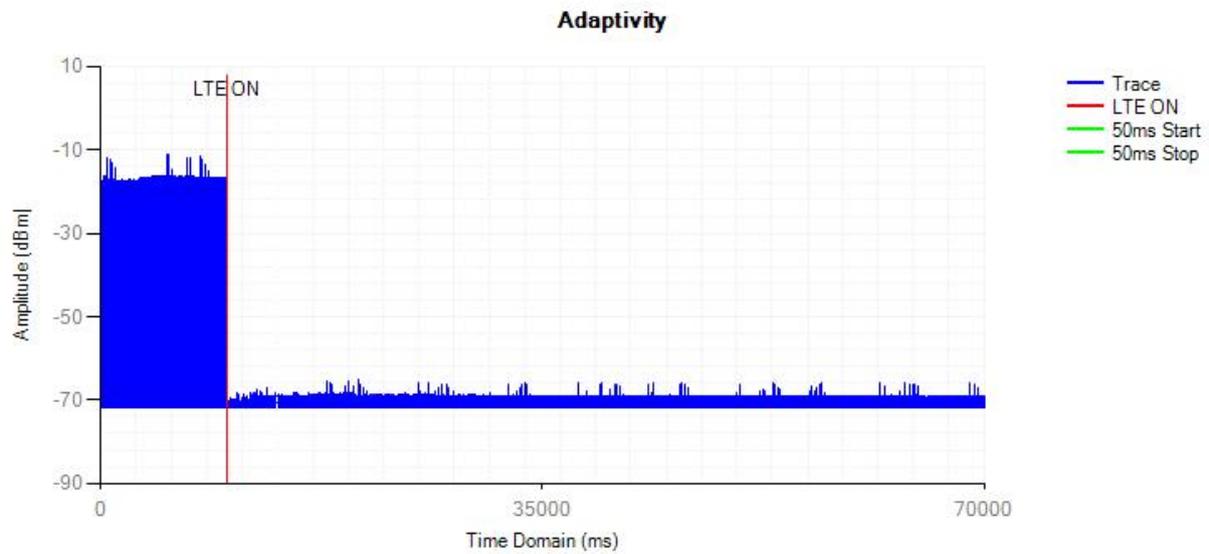




### Adaptivity NVNT ac40 5190MHz AWGN

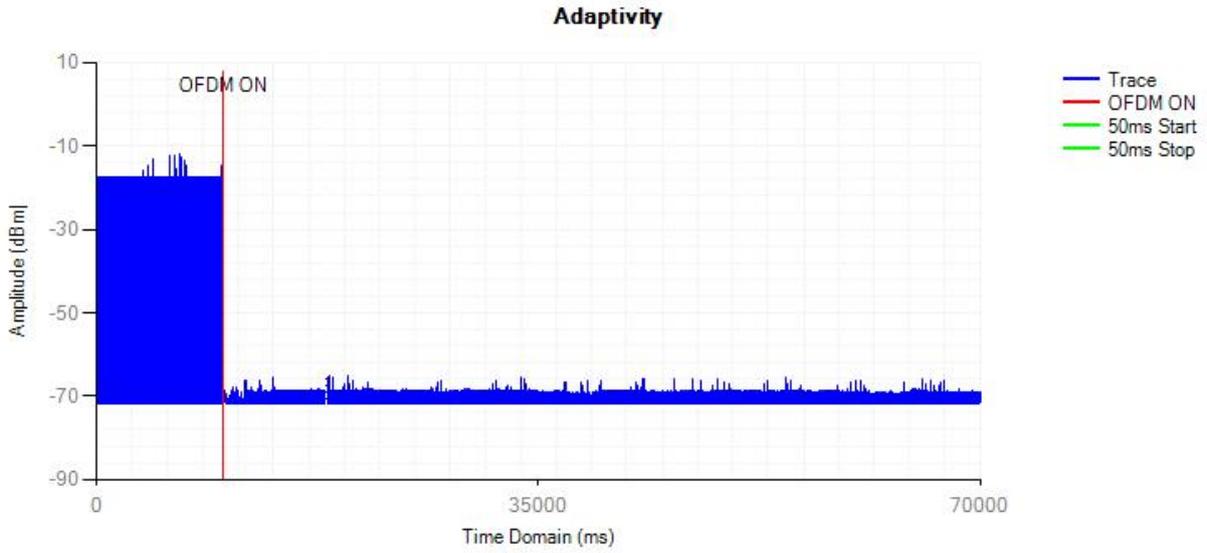


### Adaptivity NVNT ac40 5190MHz LTE

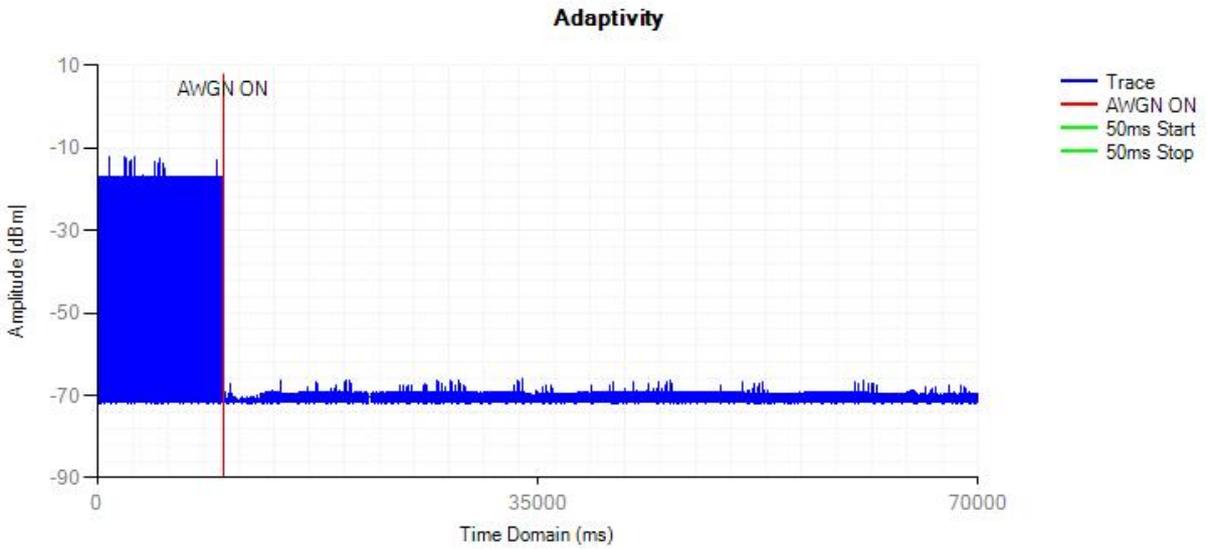




Adaptivity NVNT ac40 5190MHz OFDM

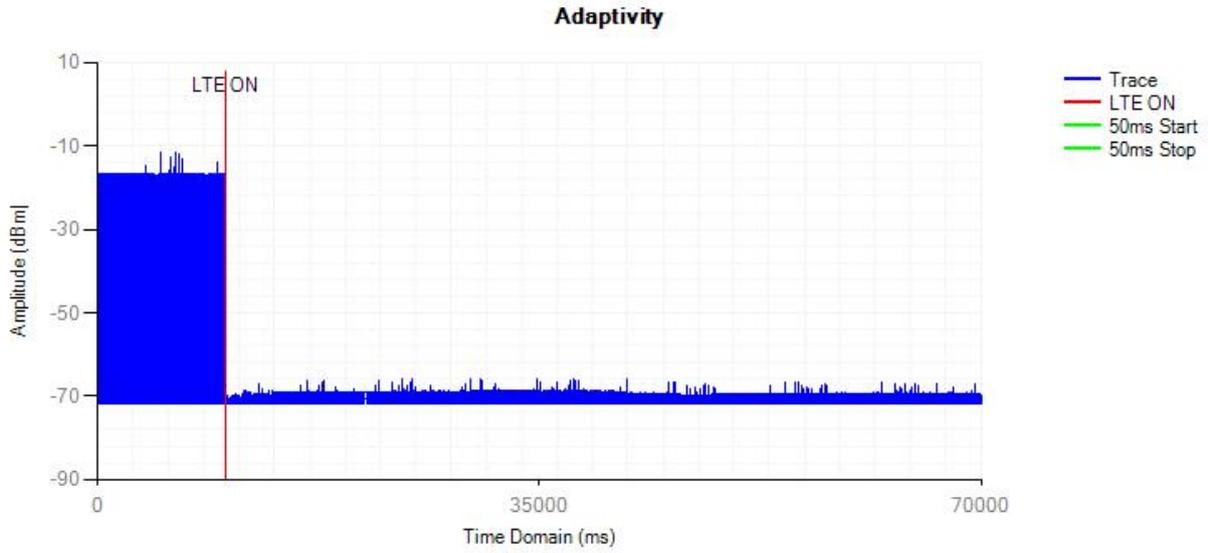


Adaptivity NVNT ac80 5210MHz AWGN

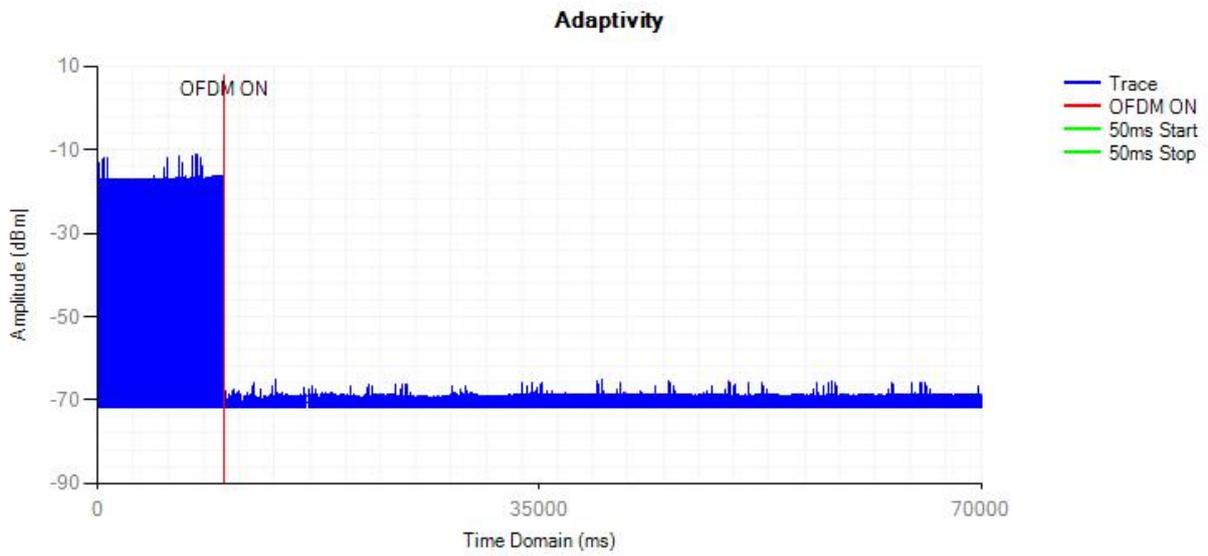




Adaptivity NVNT ac80 5210MHz LTE



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	-52	≥-59	CW	2.09	10	Pass
	4900	-45	≥-53	CW	3.26	10	Pass
	5000	-42	≥-53	CW	1.23	10	Pass
	5975	-43	≥-53	CW	1.14	10	Pass

