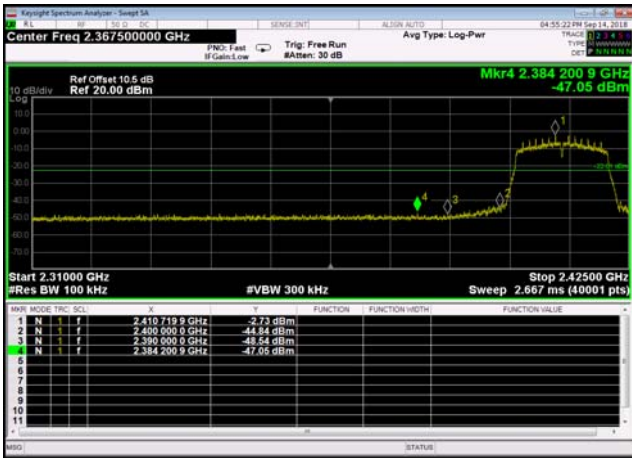
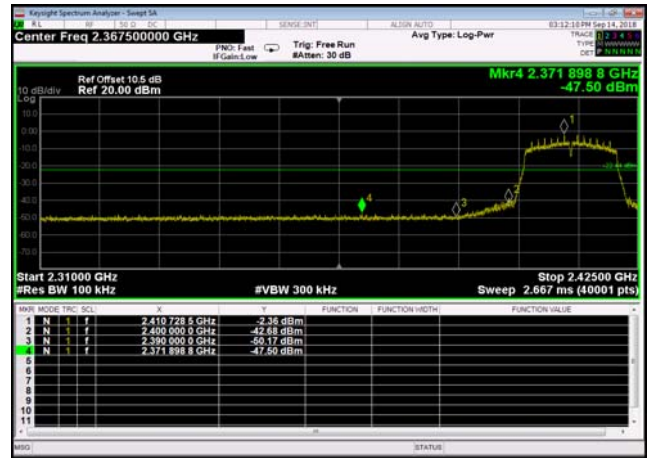




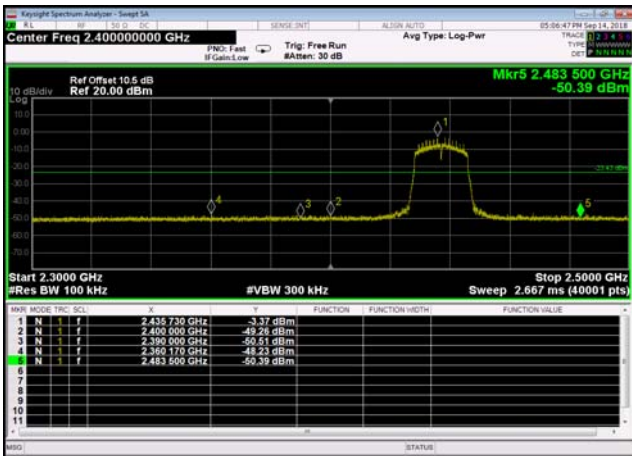
Band Edge-802.11n(HT20)
,2412MHz,Ant0



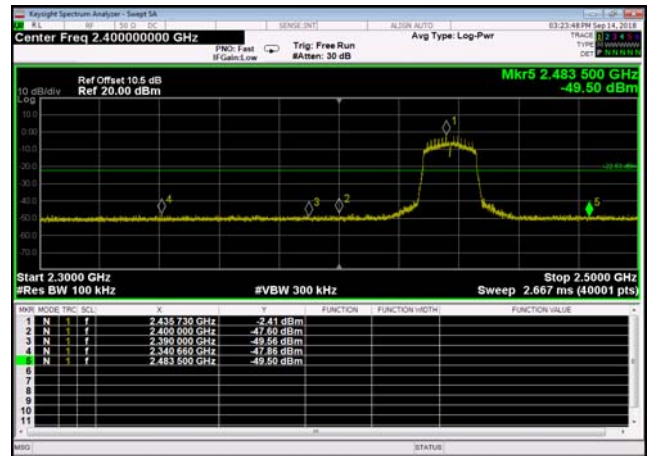
Band Edge-802.11n(HT20)
,2412MHz,Ant1



Band Edge-802.11n(HT20)
,2437MHz,Ant0



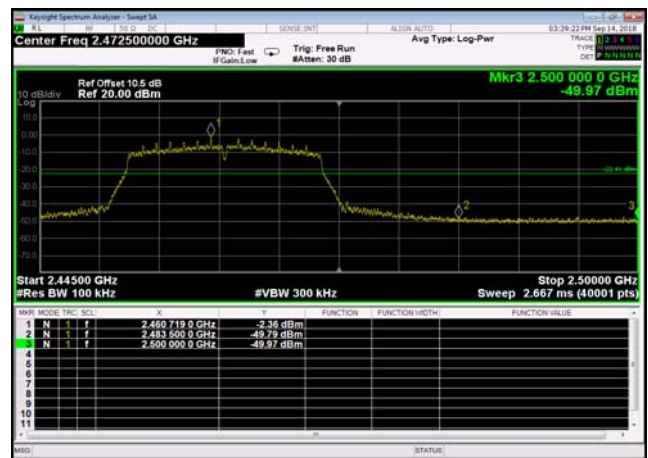
Band Edge-802.11n(HT20)
,2437MHz,Ant1



Band Edge-802.11n(HT20)
,2462MHz,Ant0

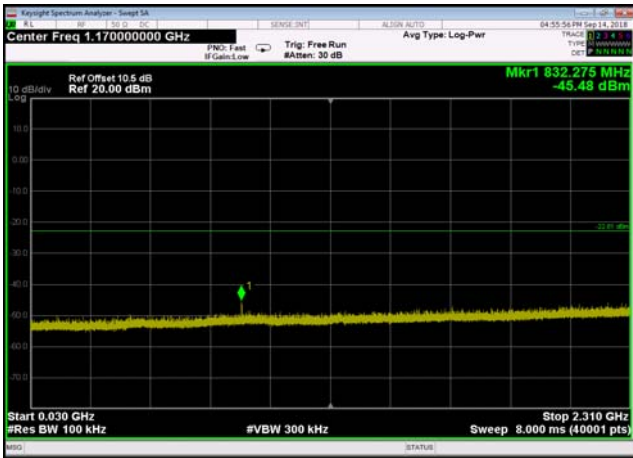


Band Edge-802.11n(HT20)
,2462MHz,Ant1

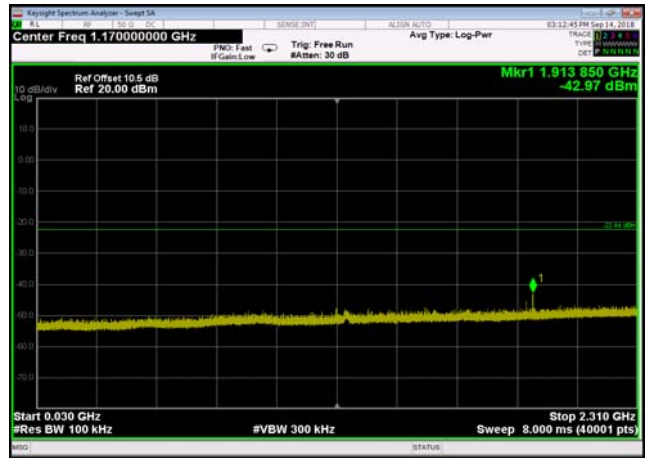




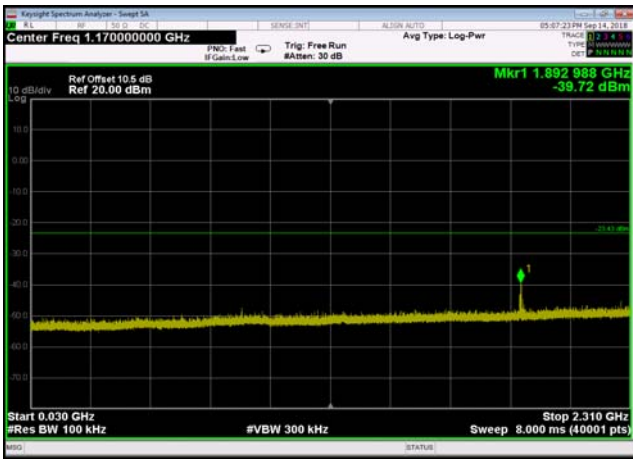
30MHz~2310MHz-802.11n(HT20)
,2412MHz,Ant0



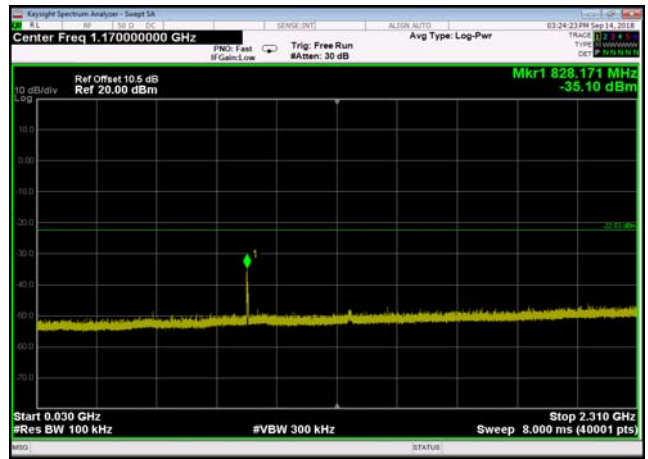
30MHz~2310MHz-802.11n(HT20)
,2412MHz,Ant1



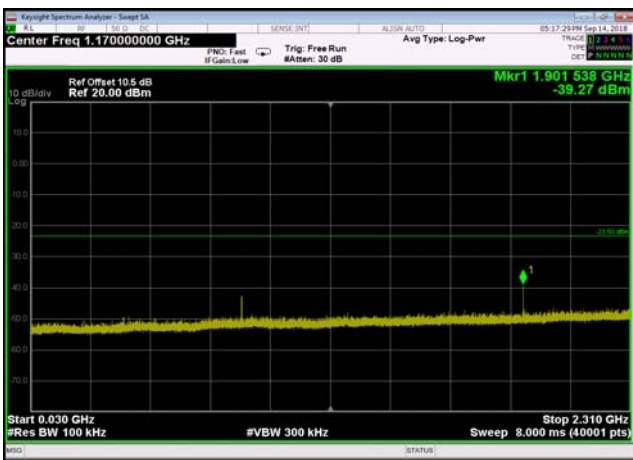
30MHz~2310MHz-802.11n(HT20)
,2437MHz,Ant0



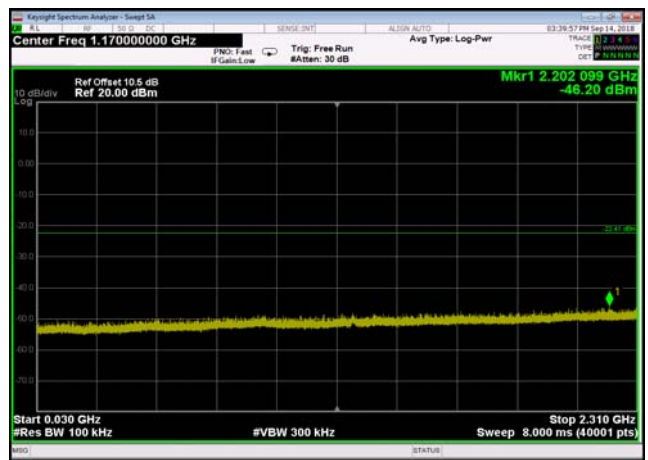
30MHz~2310MHz-802.11n(HT20)
,2437MHz,Ant1



30MHz~2310MHz-802.11n(HT20)
,2462MHz,Ant0

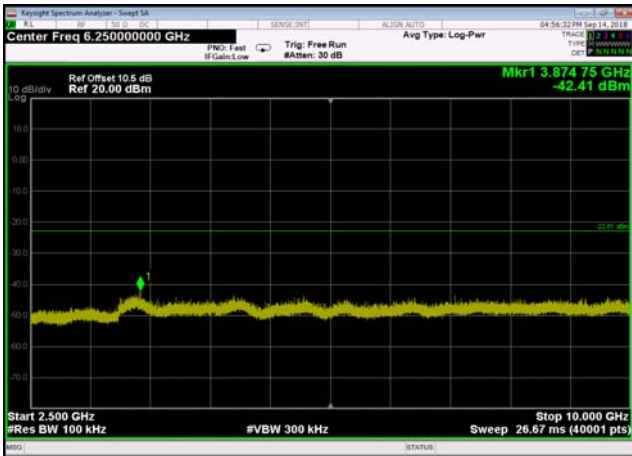


30MHz~2310MHz-802.11n(HT20)
,2462MHz,Ant1

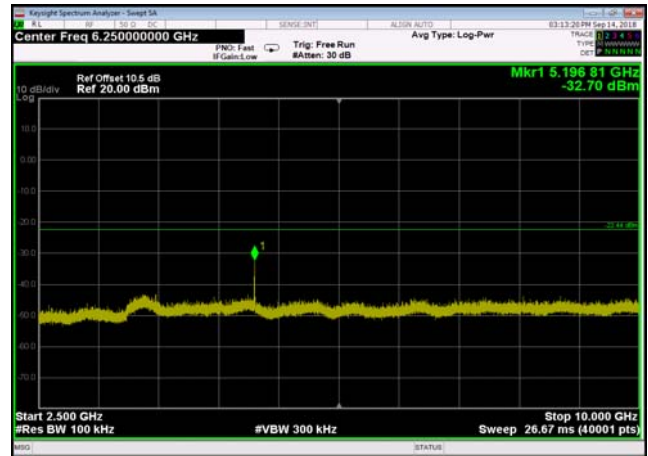




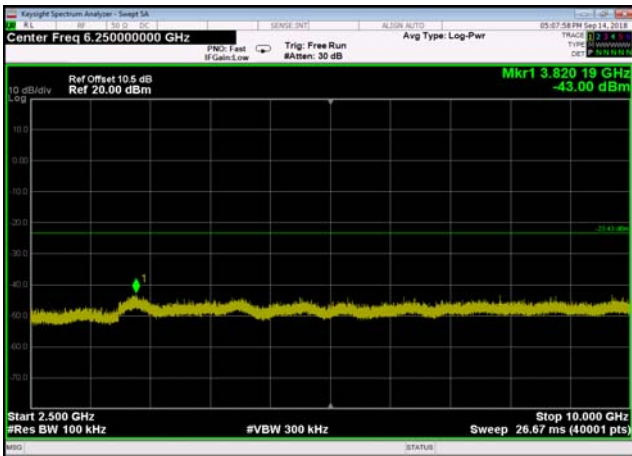
2500MHz~10000MHz-802.11n(HT20),2412MHz,Ant0



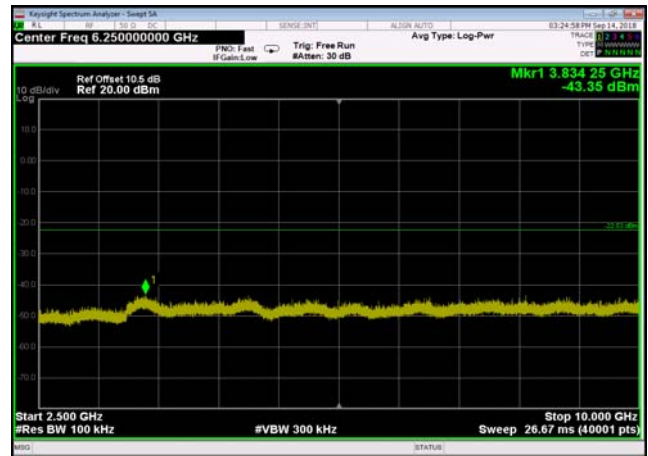
2500MHz~10000MHz-802.11n(HT20),2412MHz,Ant1



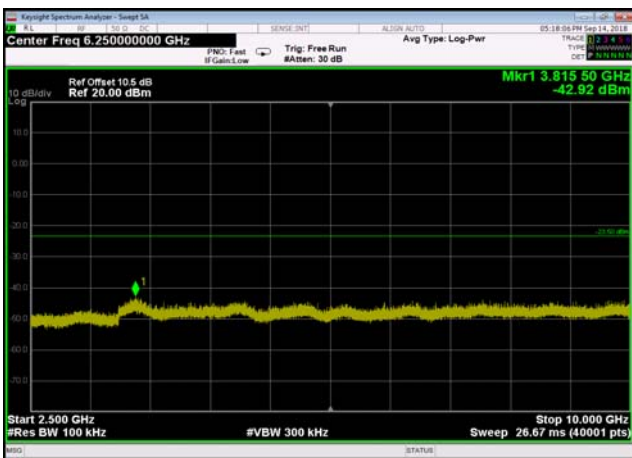
2500MHz~10000MHz-802.11n(HT20),2437MHz,Ant0



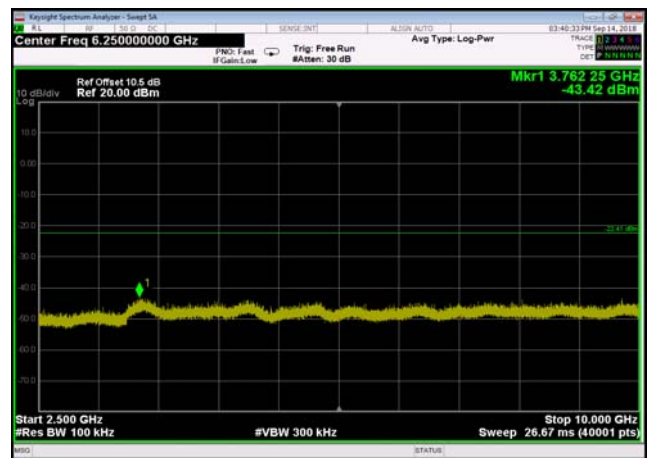
2500MHz~10000MHz-802.11n(HT20),2437MHz,Ant1



2500MHz~10000MHz-802.11n(HT20),2462MHz,Ant0

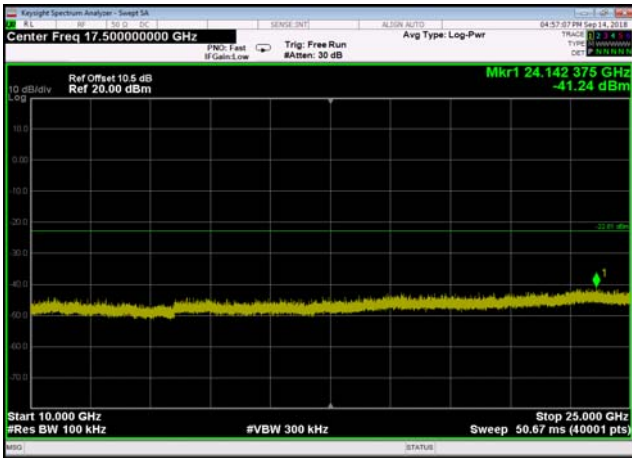


2500MHz~10000MHz-802.11n(HT20),2462MHz,Ant1

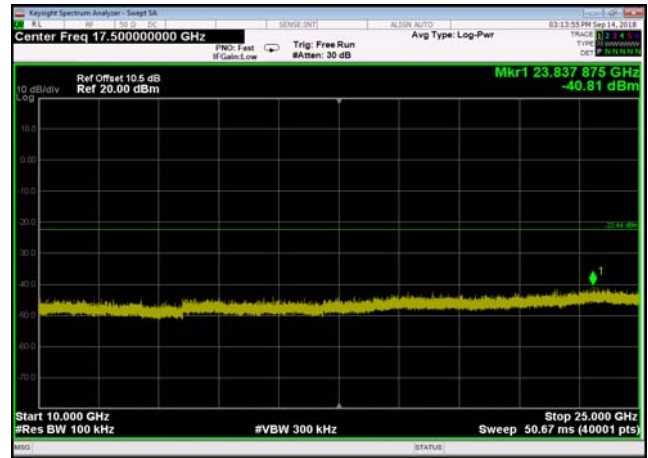




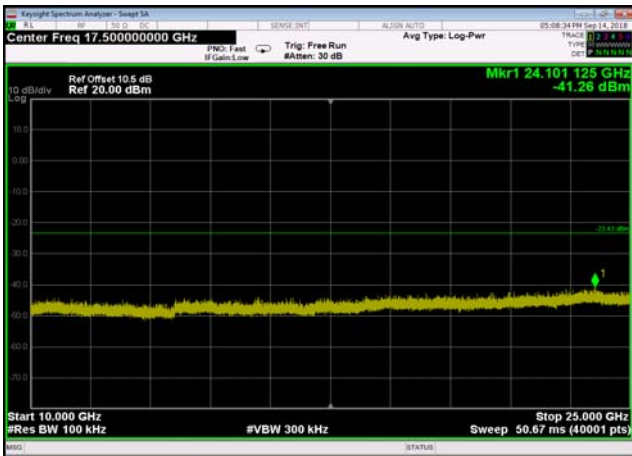
10000MHz~25000MHz-802.11n(HT2
0),2412MHz,Ant0



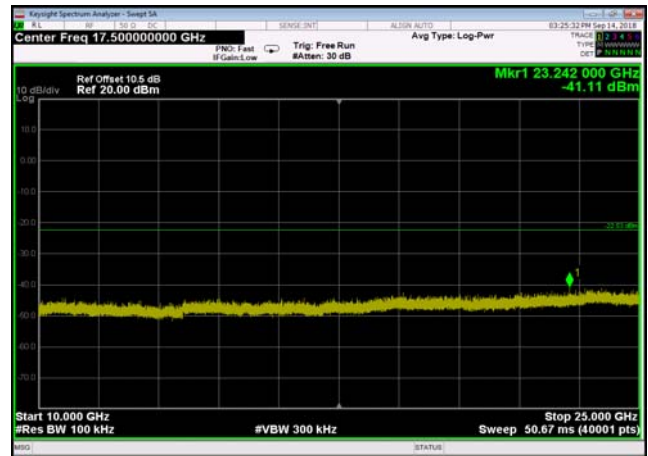
10000MHz~25000MHz-802.11n(HT2
0),2412MHz,Ant1



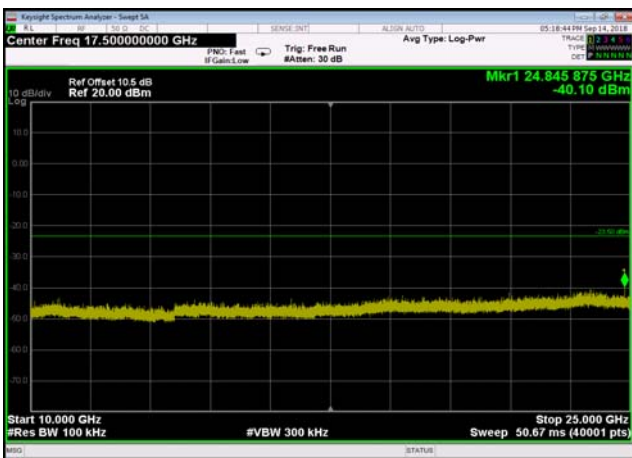
10000MHz~25000MHz-802.11n(HT2
0),2437MHz,Ant0



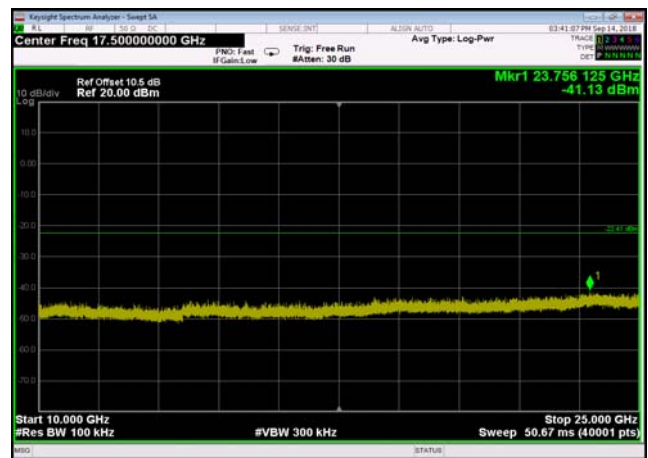
10000MHz~25000MHz-802.11n(HT2
0),2437MHz,Ant1



10000MHz~25000MHz-802.11n(HT2
0),2462MHz,Ant0

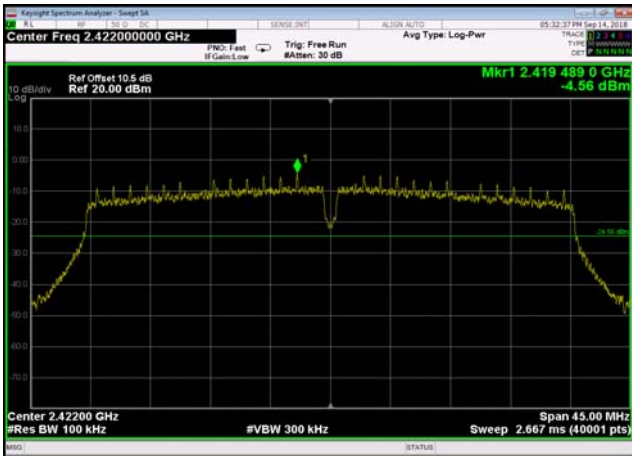


10000MHz~25000MHz-802.11n(HT2
0),2462MHz,Ant1

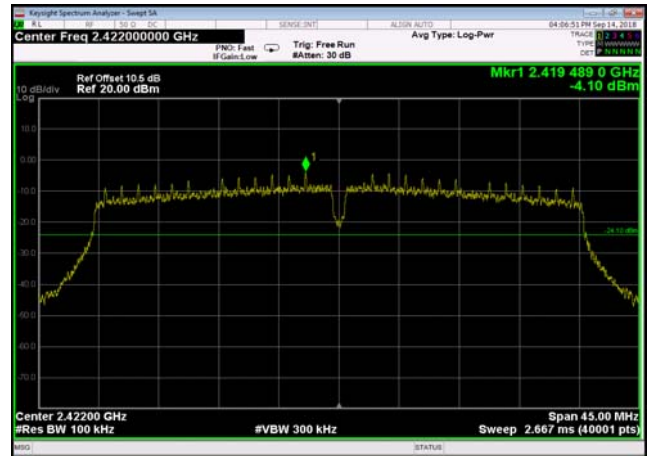




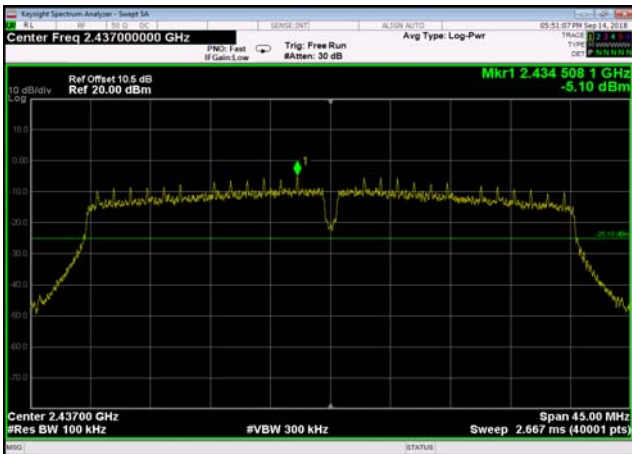
Reference Level-802.11n(HT40)
,2422MHz,Ant0



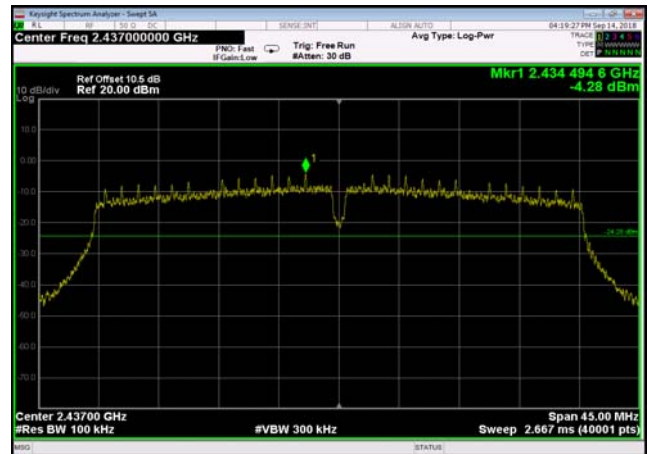
Reference Level-802.11n(HT40)
,2422MHz,Ant1



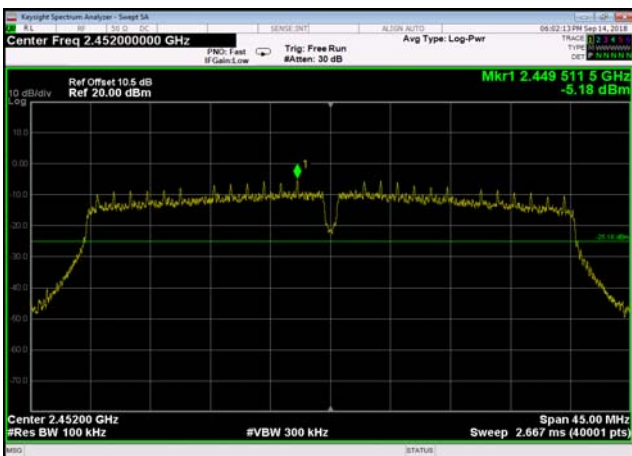
Reference Level-802.11n(HT40)
,2437MHz,Ant0



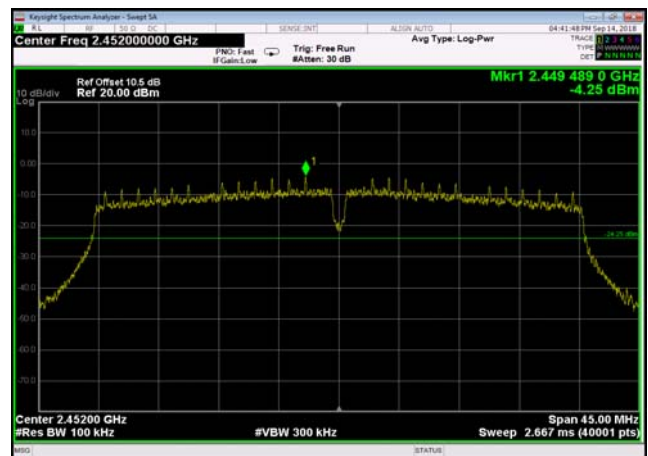
Reference Level-802.11n(HT40)
,2437MHz,Ant1



Reference Level-802.11n(HT40)
,2452MHz,Ant0

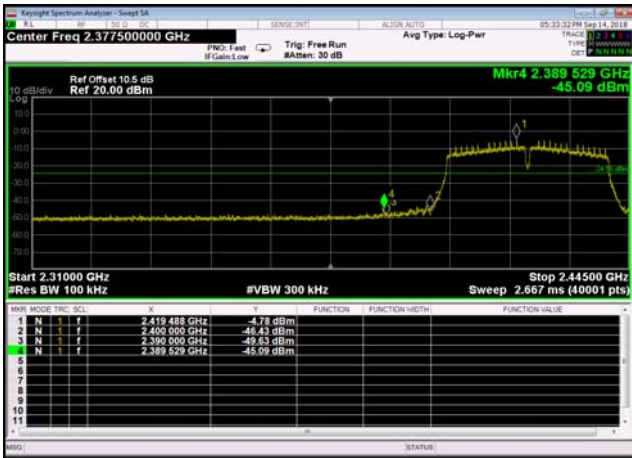


Reference Level-802.11n(HT40)
,2452MHz,Ant1

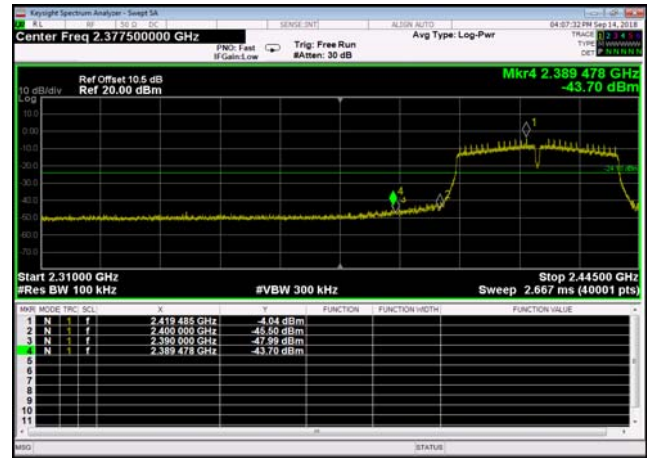




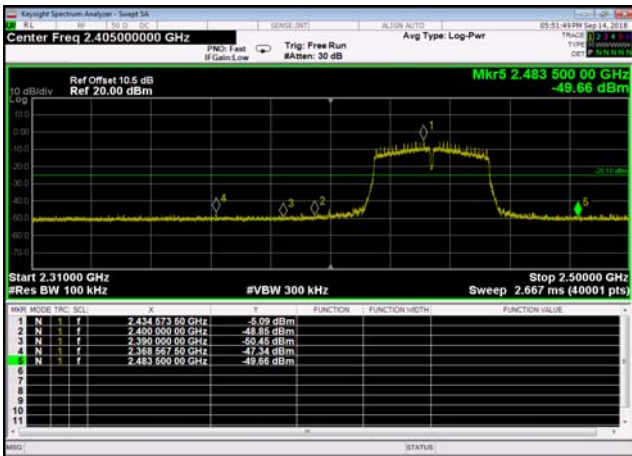
Band Edge-802.11n(HT40)
,2422MHz,Ant0



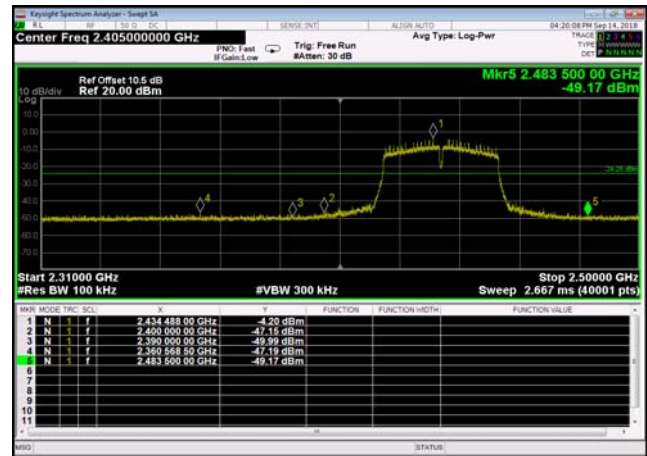
Band Edge-802.11n(HT40)
,2422MHz,Ant1



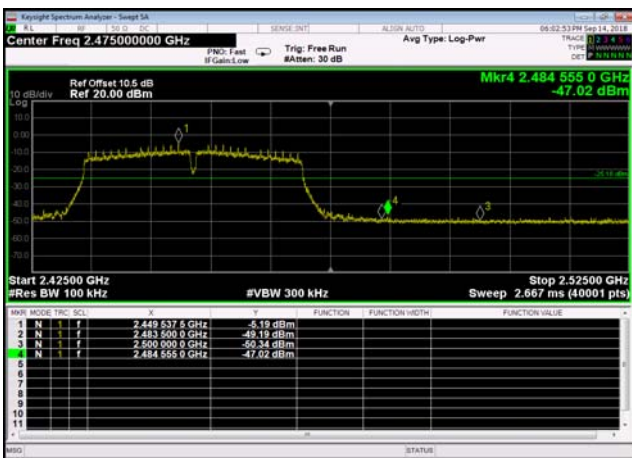
Band Edge-802.11n(HT40)
,2437MHz,Ant0



Band Edge-802.11n(HT40)
,2437MHz,Ant1



Band Edge-802.11n(HT40)
,2452MHz,Ant0

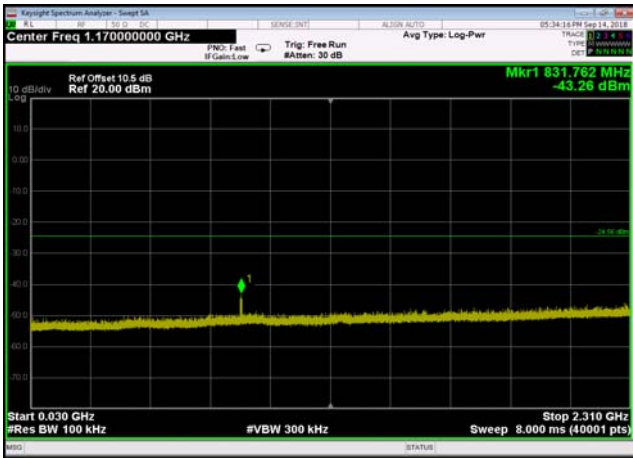


Band Edge-802.11n(HT40)
,2452MHz,Ant1

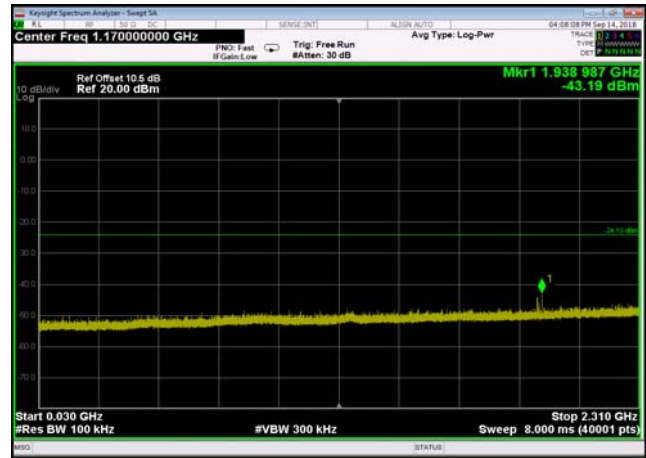




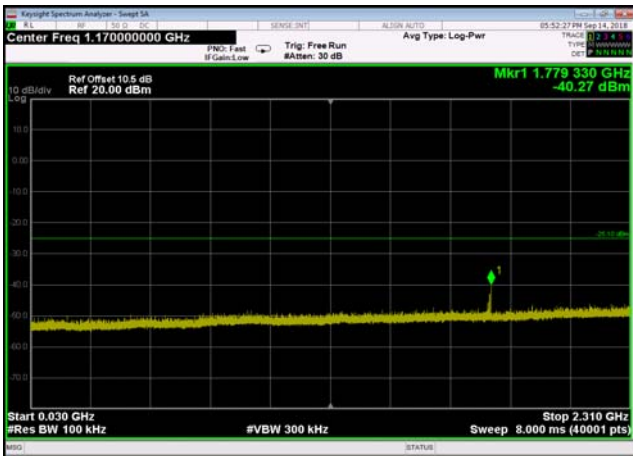
30MHz~2310MHz-802.11n(HT40)
,2422MHz,Ant0



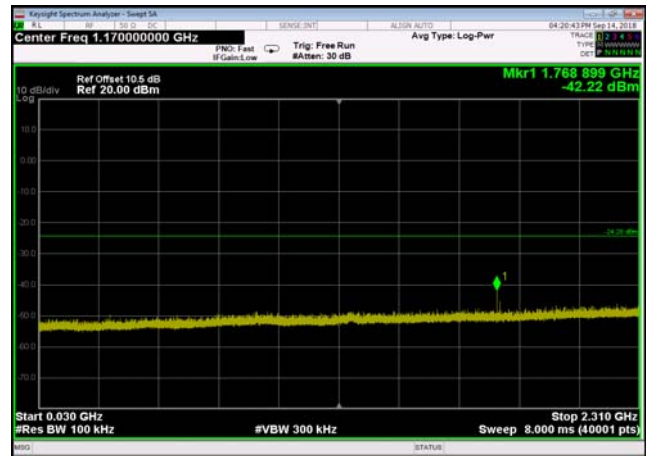
30MHz~2310MHz-802.11n(HT40)
,2422MHz,Ant1



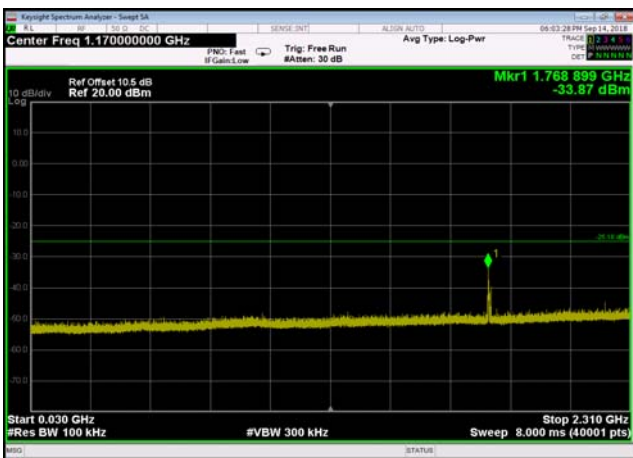
30MHz~2310MHz-802.11n(HT40)
,2437MHz,Ant0



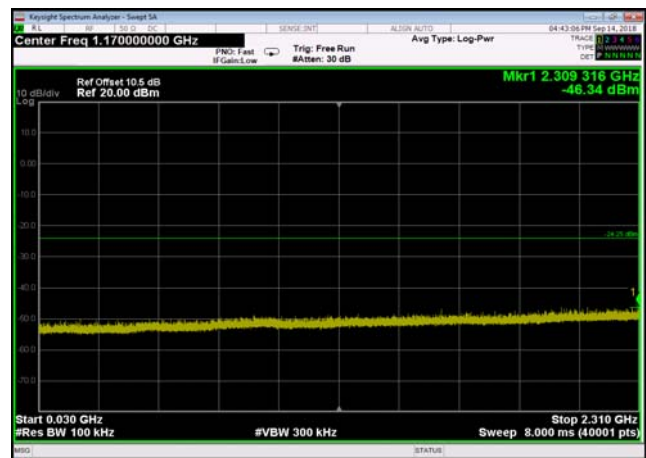
30MHz~2310MHz-802.11n(HT40)
,2437MHz,Ant1



30MHz~2310MHz-802.11n(HT40)
,2452MHz,Ant0

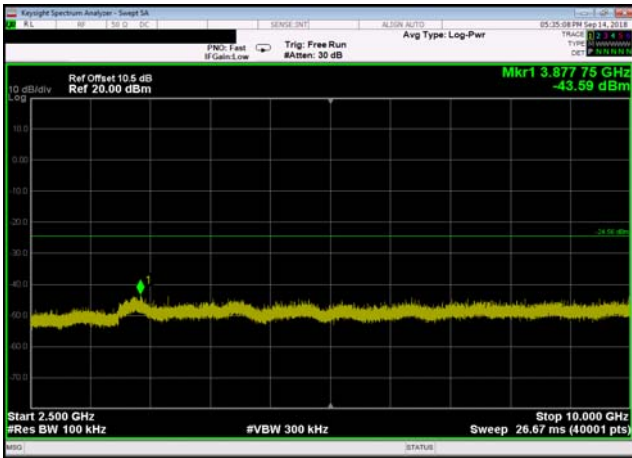


30MHz~2310MHz-802.11n(HT40)
,2452MHz,Ant1

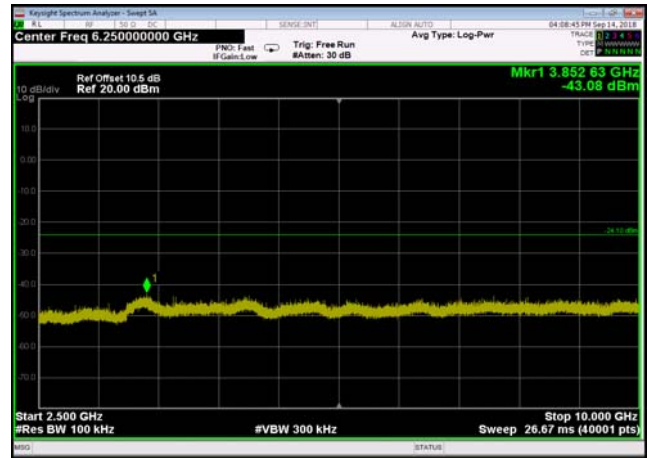




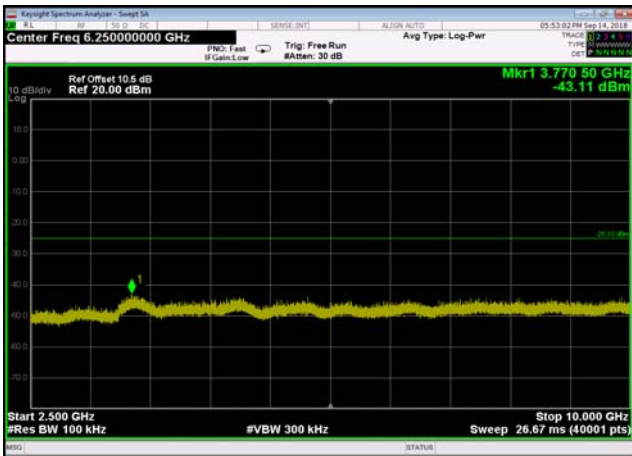
2500MHz~10000MHz-802.11n(HT40
) ,2422MHz,Ant0



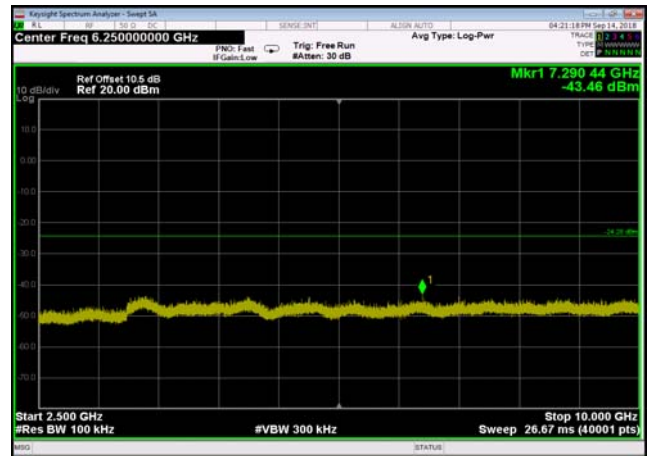
2500MHz~10000MHz-802.11n(HT40
) ,2422MHz,Ant1



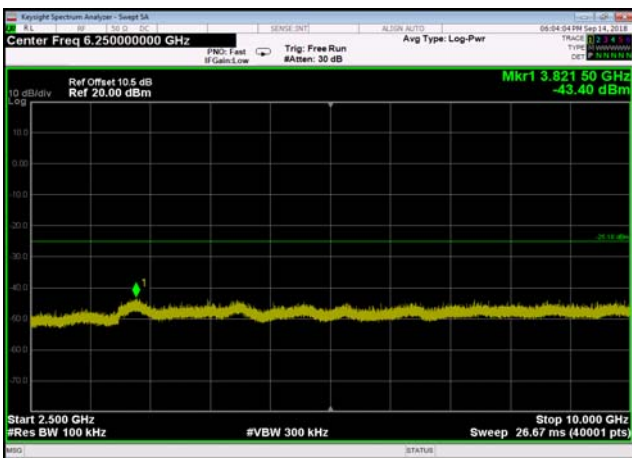
2500MHz~10000MHz-802.11n(HT40
) ,2437MHz,Ant0



2500MHz~10000MHz-802.11n(HT40
) ,2437MHz,Ant1



2500MHz~10000MHz-802.11n(HT40
) ,2452MHz,Ant0

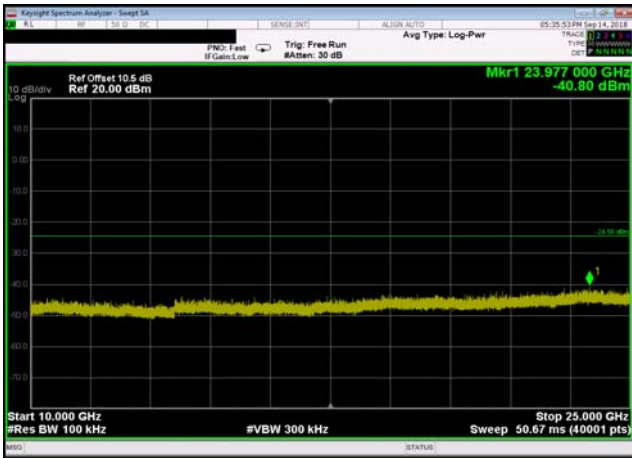


2500MHz~10000MHz-802.11n(HT40
) ,2452MHz,Ant1

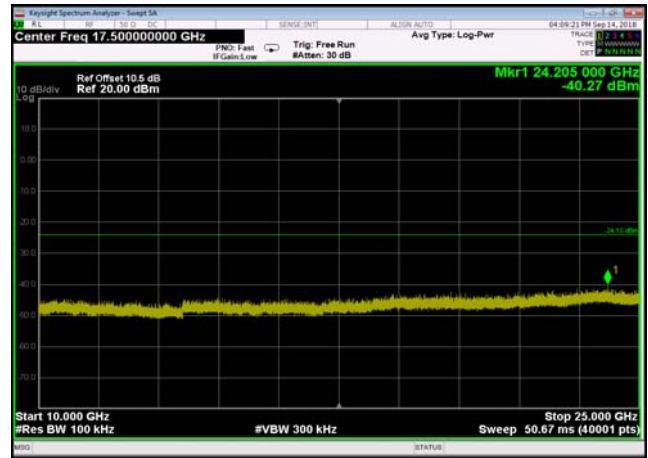




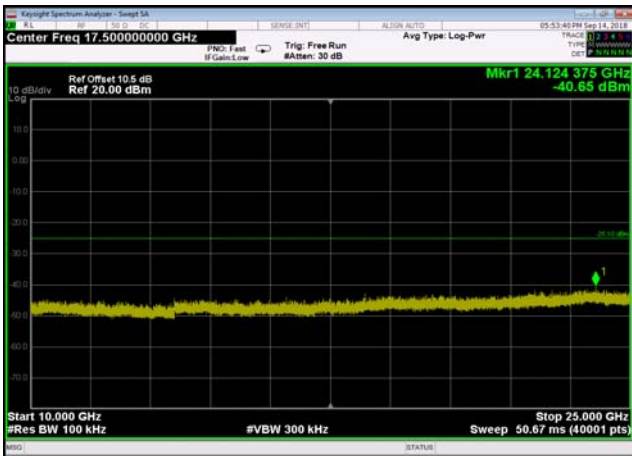
10000MHz~25000MHz-802.11n(HT4
0),2422MHz,Ant0



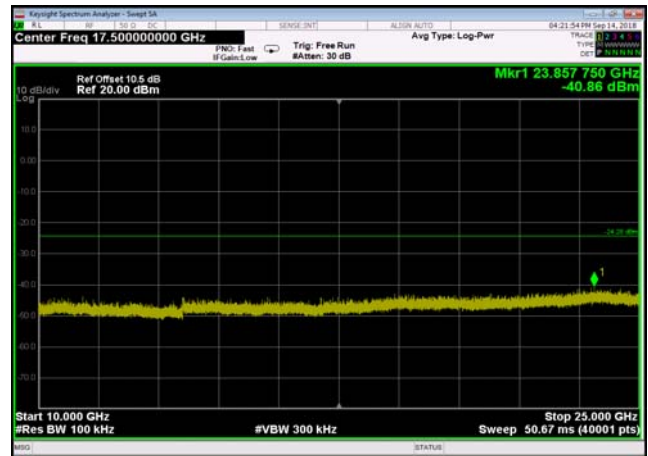
10000MHz~25000MHz-802.11n(HT4
0),2422MHz,Ant1



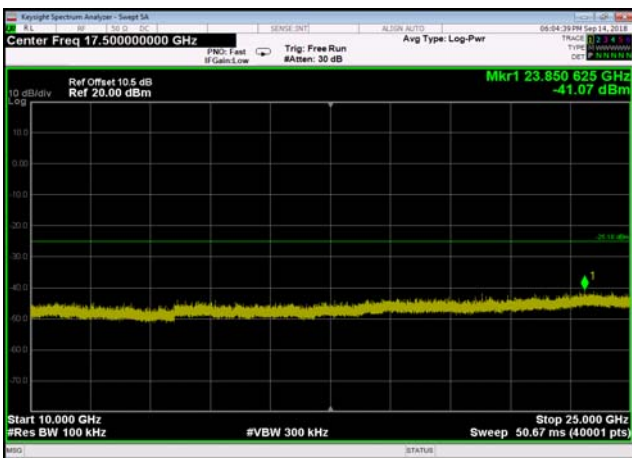
10000MHz~25000MHz-802.11n(HT4
0),2437MHz,Ant0



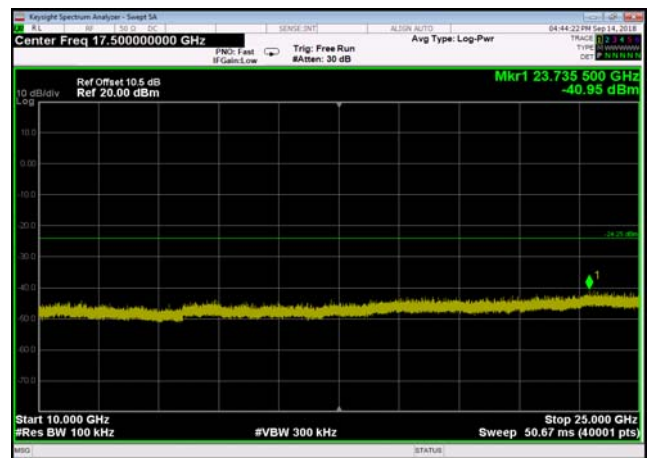
10000MHz~25000MHz-802.11n(HT4
0),2437MHz,Ant1



10000MHz~25000MHz-802.11n(HT4
0),2452MHz,Ant0



10000MHz~25000MHz-802.11n(HT4
0),2452MHz,Ant1



2.5. Power spectral density (PSD)

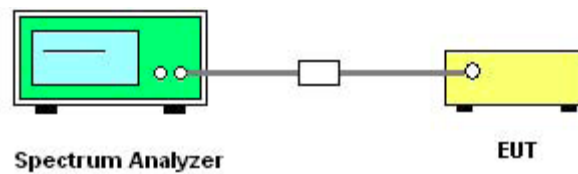
2.5.1. Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.5.3. Test Setup



2.5.4. Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB558074 D01 DTS Meas Guidance v05.

2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

3. Set to the maximum power setting and enable the EUT transmit continuously.

4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz.

Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)

5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.

6. Measure and record the results in the test report.

2.5.5. Test Results of Power spectral density

Spectral power density (dBm) (Ant. 0)					
Test mode	Channel	Frequency (MHz)	PSD/3kHz (dBm)	Limit (dBm/3kHz)	Verdict
802.11b	1	2412	-11.888	8	PASS
	6	2437	-11.708		PASS
	11	2462	-13.208		PASS
802.11g	1	2412	-17.358		PASS
	6	2437	-15.790		PASS
	11	2462	-17.023		PASS
802.11n20	1	2412	-17.174		PASS
	6	2437	-18.084		PASS
	11	2462	-18.727		PASS
802.11n40	3	2422	-20.167		PASS
	6	2437	-20.659		PASS
	9	2452	-20.155		PASS

Measurement uncertainty: ± 1.3 dB

Spectral power density (dBm) (Ant. 1)					
Test mode	Channel	Frequency (MHz)	PSD/3kHz (dBm)	Limit (dBm/3kHz)	Verdict
802.11b	1	2412	-12.844	8	PASS
	6	2437	-13.554		PASS
	11	2462	-13.652		PASS
802.11g	1	2412	-18.622		PASS
	6	2437	-17.979		PASS
	11	2462	-18.271		PASS
802.11n20	1	2412	-17.712		PASS
	6	2437	-17.212		PASS
	11	2462	-18.432		PASS
802.11n40	3	2422	-19.263		PASS
	6	2437	-20.177		PASS
	9	2452	-19.692		PASS

Measurement uncertainty: ± 1.3 dB



Spectral power density (dBm) (Ant. 0+1)					
Test mode	Channel	Frequency (MHz)	PSD/3kHz (dBm)	Limit (dBm/3kHz)	Verdict
802.11n20	1	2412	-14.42	5.99	PASS
	6	2437	-14.62		PASS
	11	2462	-15.57		PASS
802.11n40	3	2422	-16.68		PASS
	6	2437	-17.40		PASS
	9	2452	-16.91		PASS
Measurement uncertainty: ± 1.3 dB					

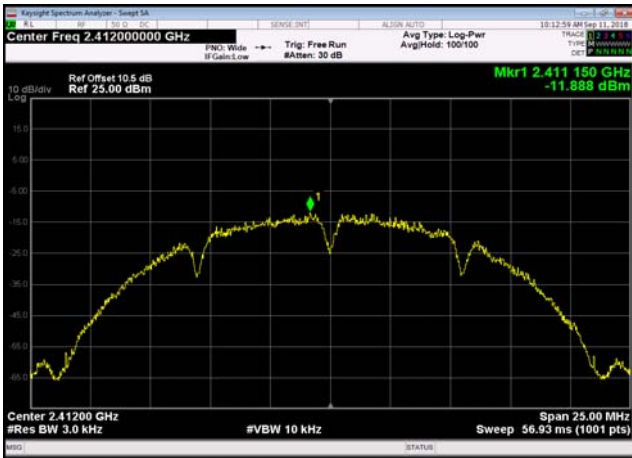
Note:1. Measured power density (dBm) has offset with cable loss.

Note 2.: For 802.11n20/n40 mode, antenna 1, 2 can transmit/receive simultaneously (MIMO mode), the directional gain of the transmitting antenna exceeds 6 dBi, the applicable Spectral power density limit shall be calculated as follows: $PSD_{limit}-(G_{TX}-6)=8-(8.01-6)=5.99$ dBm/3kHz

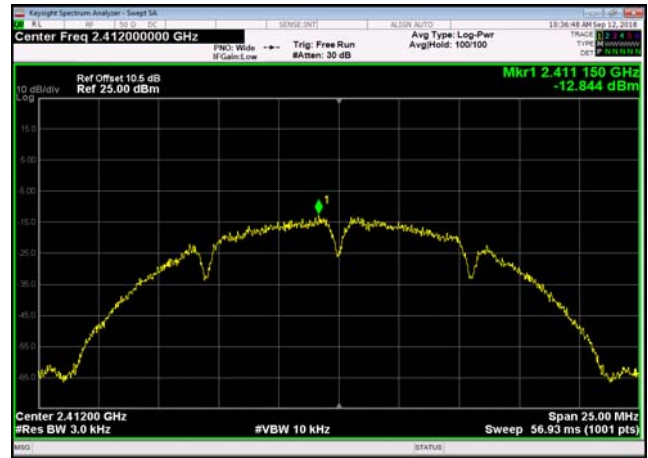


Test Results (plots) of Power spectral density

Power spectral density-802.11b
,2412MHz,Ant0



Power spectral density-802.11b
,2412MHz,Ant1



Power spectral density-802.11b
,2437MHz,Ant0



Power spectral density-802.11b
,2437MHz,Ant1



Power spectral density-802.11b
,2462MHz,Ant0

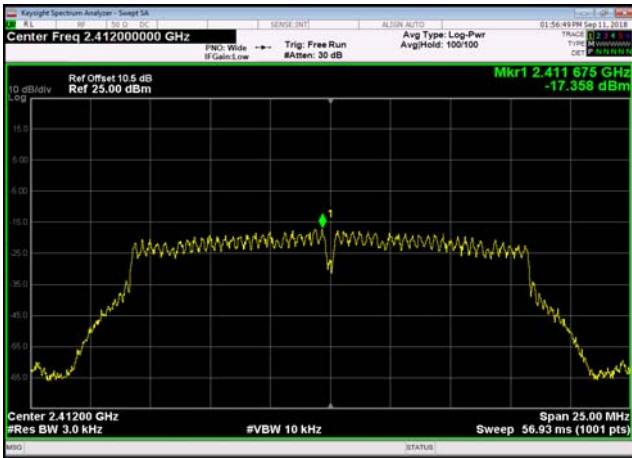


Power spectral density-802.11b
,2462MHz,Ant1

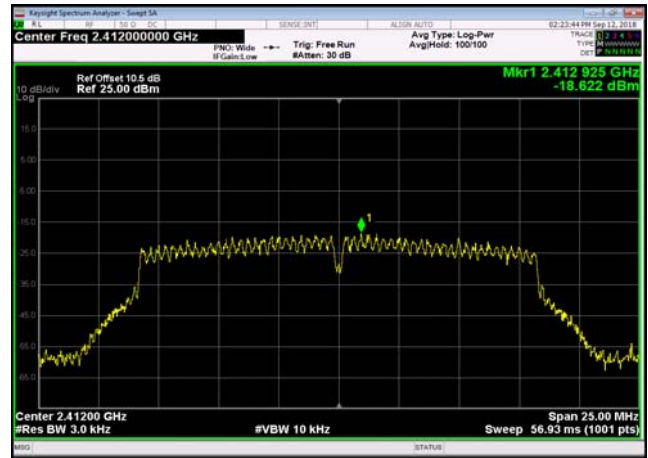




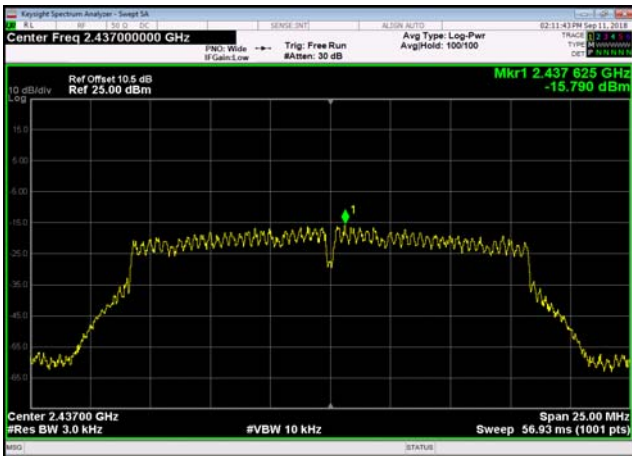
Power spectral density-802.11g
,2412MHz,Ant0



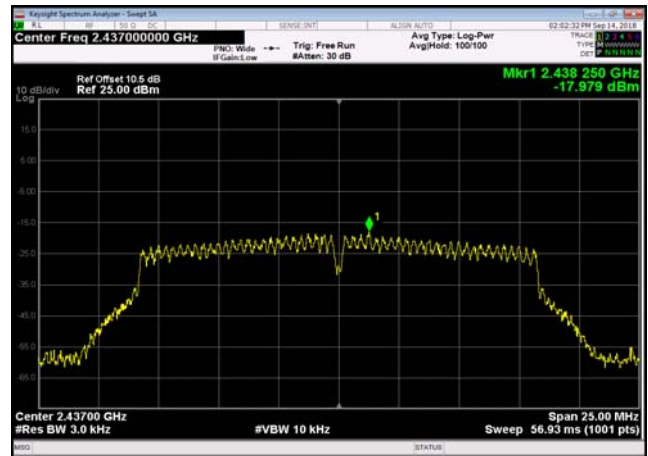
Power spectral density-802.11g
,2412MHz,Ant1



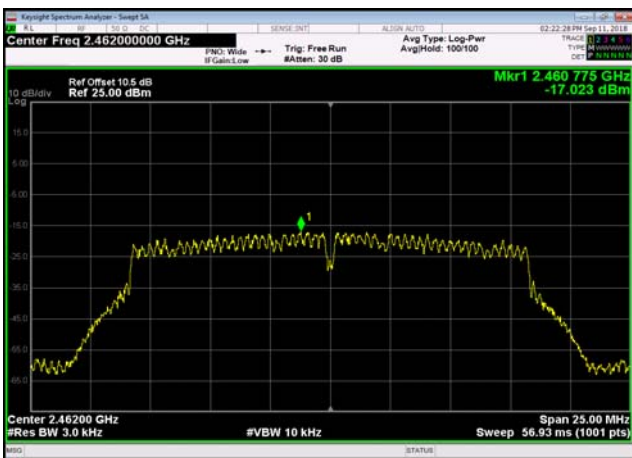
Power spectral density-802.11g
,2437MHz,Ant0



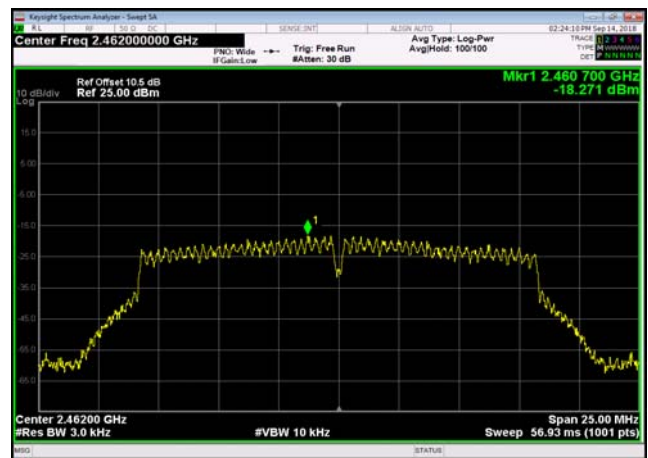
Power spectral density-802.11g
,2437MHz,Ant1



Power spectral density-802.11g
,2462MHz,Ant0

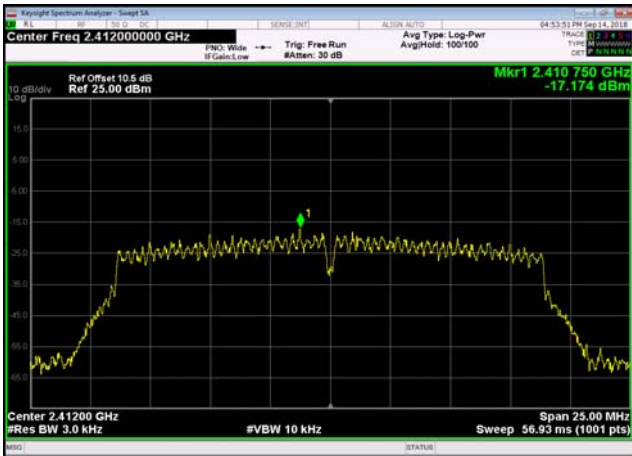


Power spectral density-802.11g
,2462MHz,Ant1

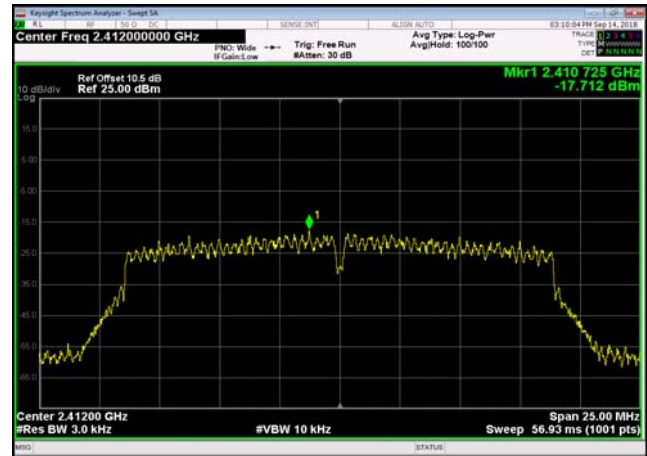




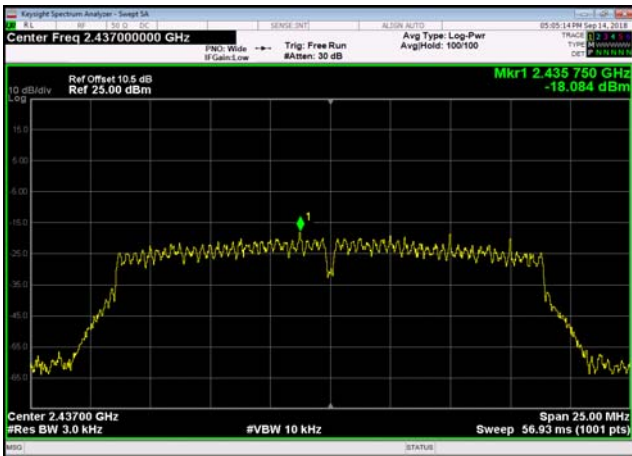
Power spectral density-802.11n(HT20)
,2412MHz,Ant0



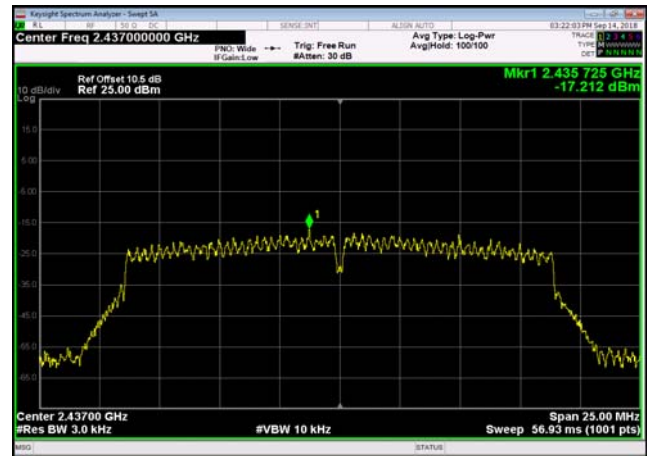
Power spectral density-802.11n(HT20)
,2412MHz,Ant1



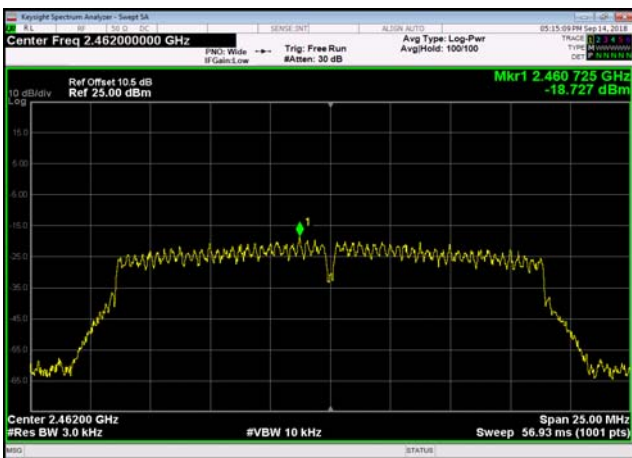
Power spectral density-802.11n(HT20)
,2437MHz,Ant0



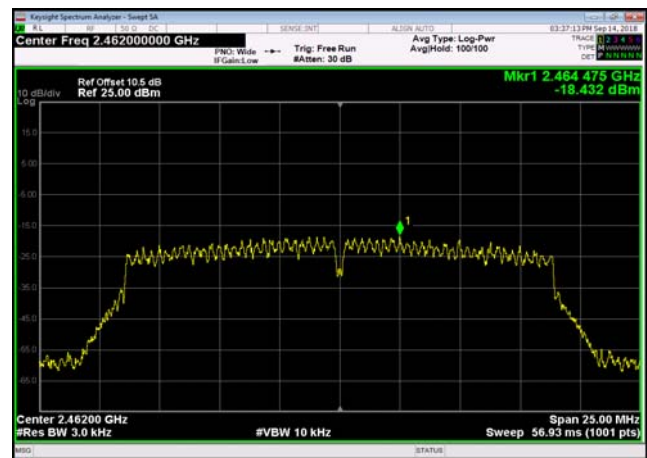
Power spectral density-802.11n(HT20)
,2437MHz,Ant1



Power spectral density-802.11n(HT20)
,2462MHz,Ant0

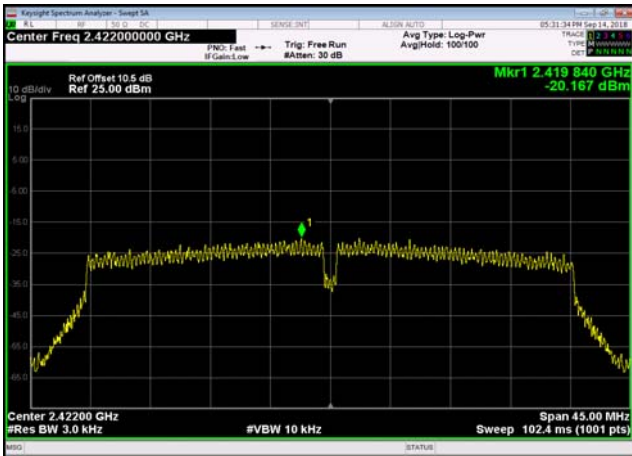


Power spectral density-802.11n(HT20)
,2462MHz,Ant1

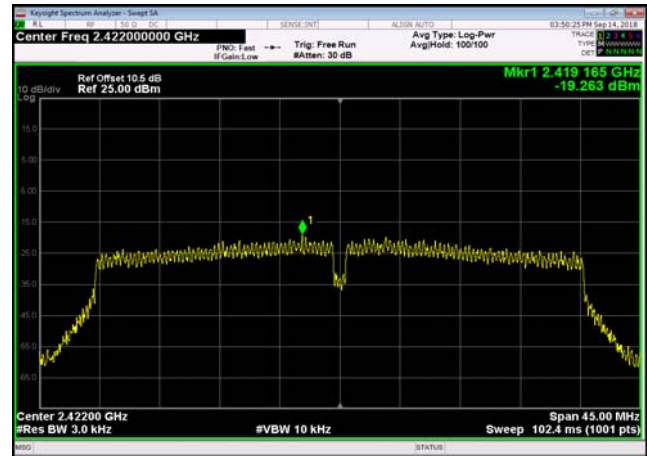




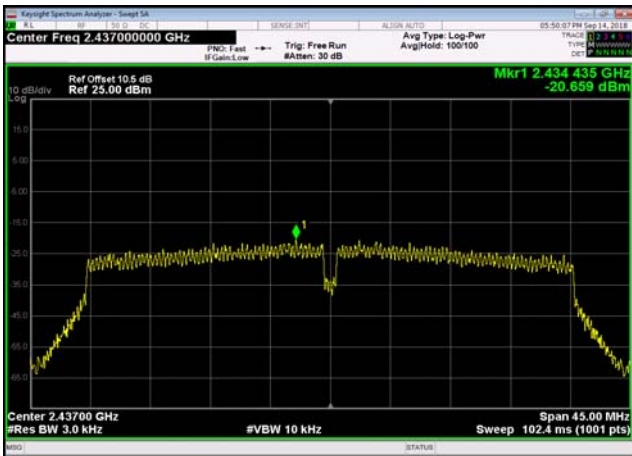
Power spectral density-802.11n(HT40)
,2422MHz,Ant0



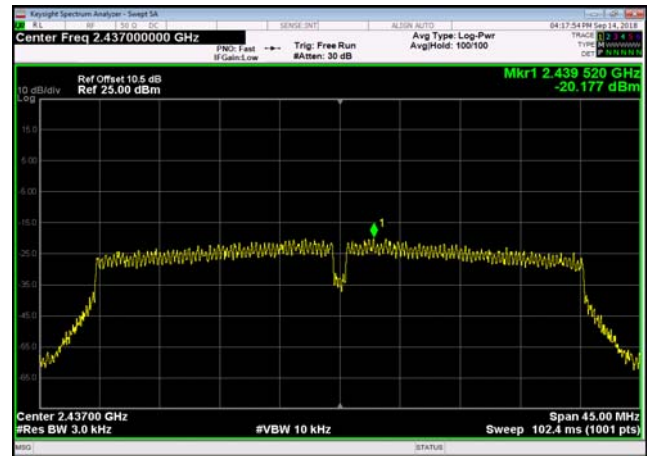
Power spectral density-802.11n(HT40)
,2422MHz,Ant1



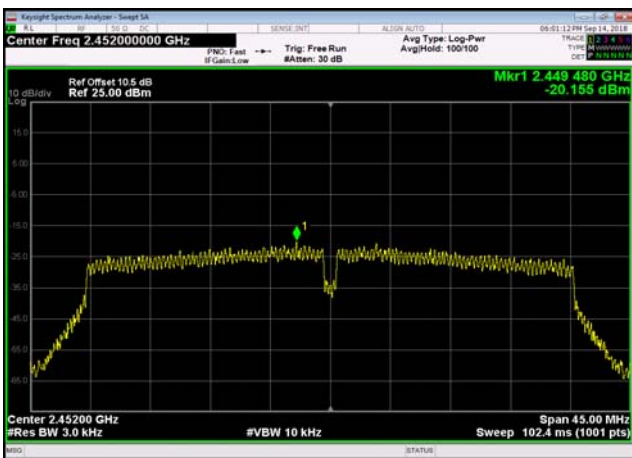
Power spectral density-802.11n(HT40)
,2437MHz,Ant0



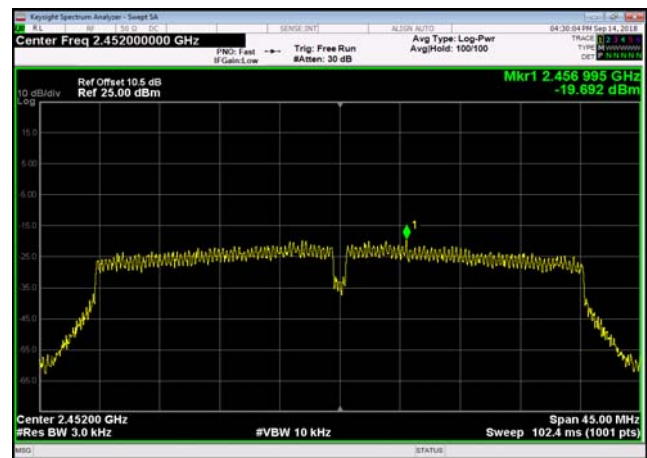
Power spectral density-802.11n(HT40)
,2437MHz,Ant1



Power spectral density-802.11n(HT40)
,2452MHz,Ant0



Power spectral density-802.11n(HT40)
,2452MHz,Ant1



2.6. Radiated Band Edge and Spurious Emission

2.6.1. Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Note: Wireless charger configuration was evaluated.

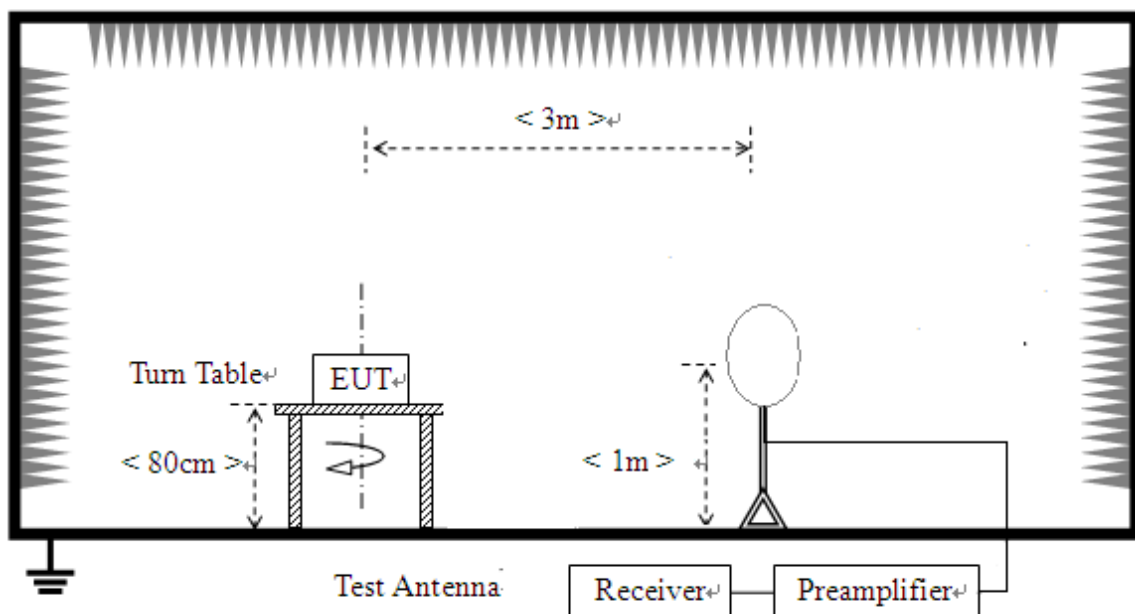
Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

2.6.2. Measuring Instruments

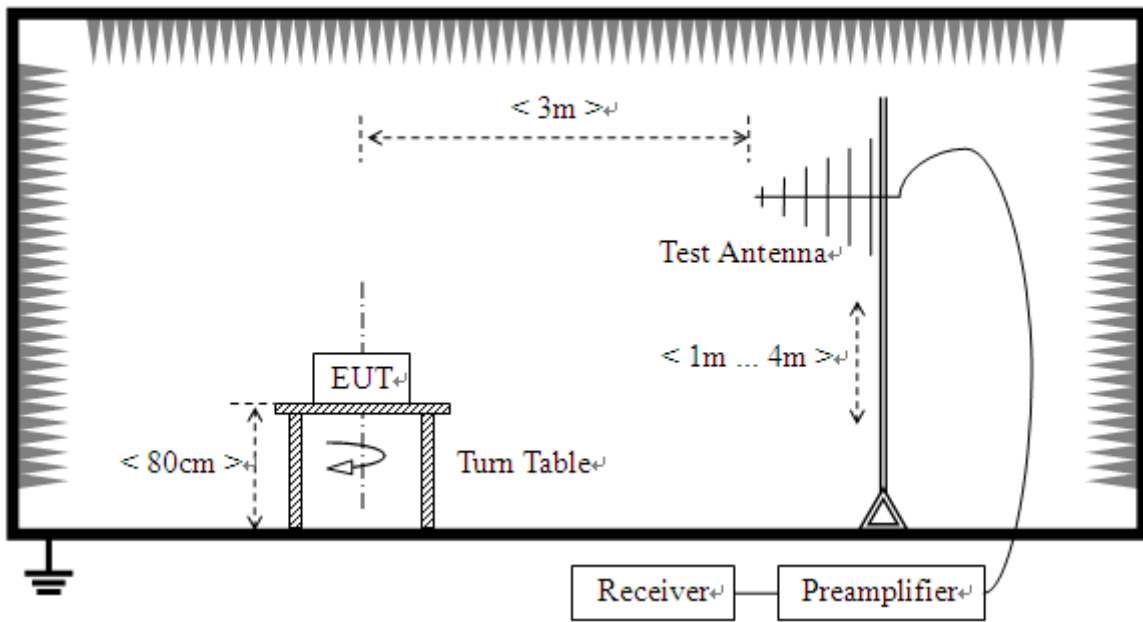
The measuring equipment is listed in the section 3 of this test report.

2.6.3. Test Setup

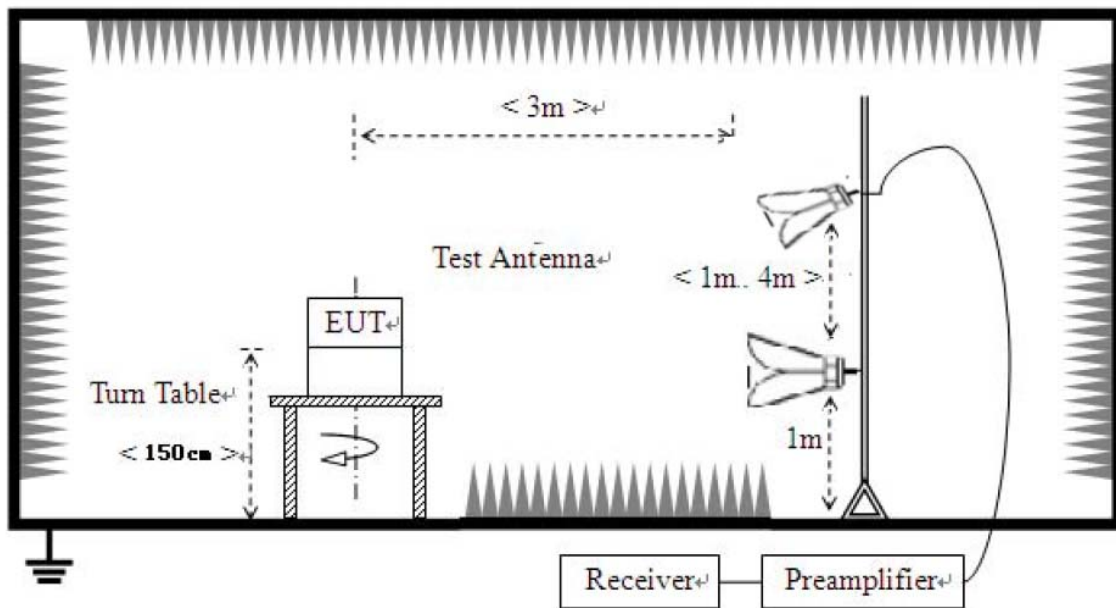
For radiated emissions from 9 KHz to 30 MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.6.4. Test Procedures

1. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported.

Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

NOTE:

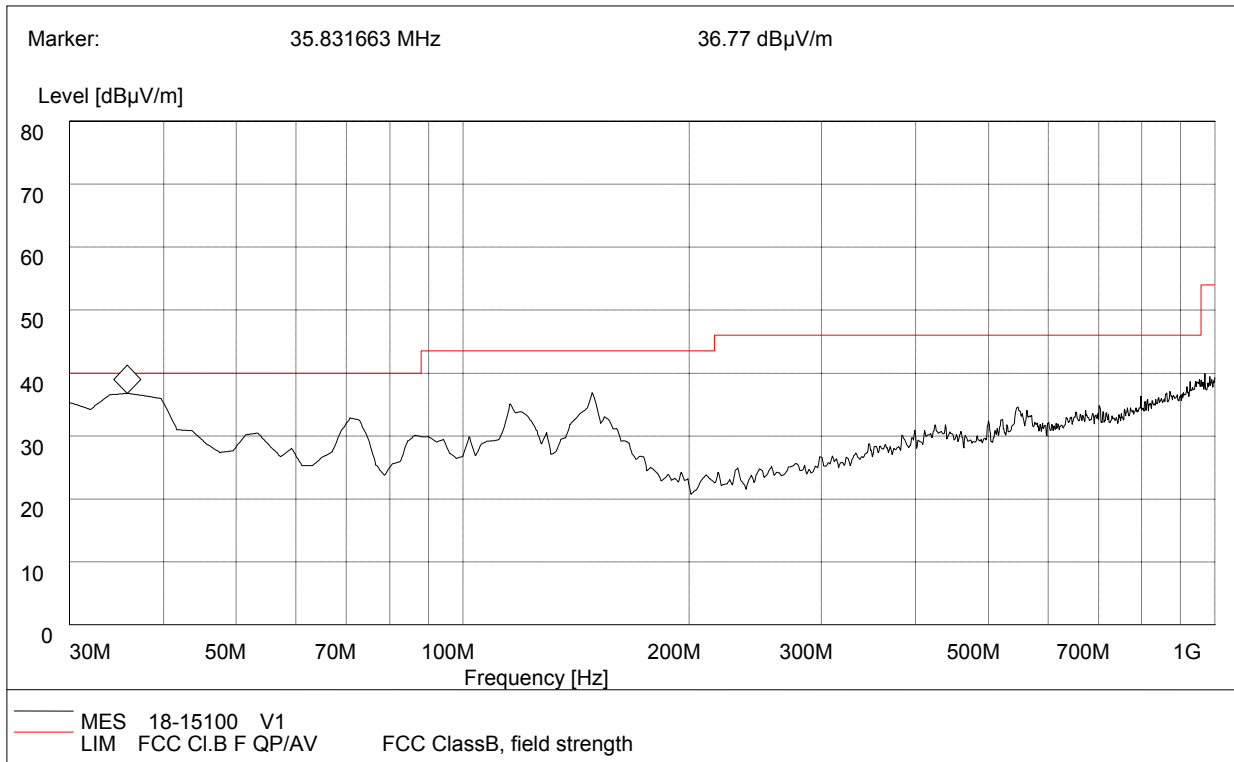
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
5. For 11B and 11G mode the worst mode of antenna 0 reported only, for 11N mode the mimo mode was the worst mode reported only.

2.6.5. Test Results of Radiated Band Edge and Spurious Emission

For 9 kHz to 30MHz

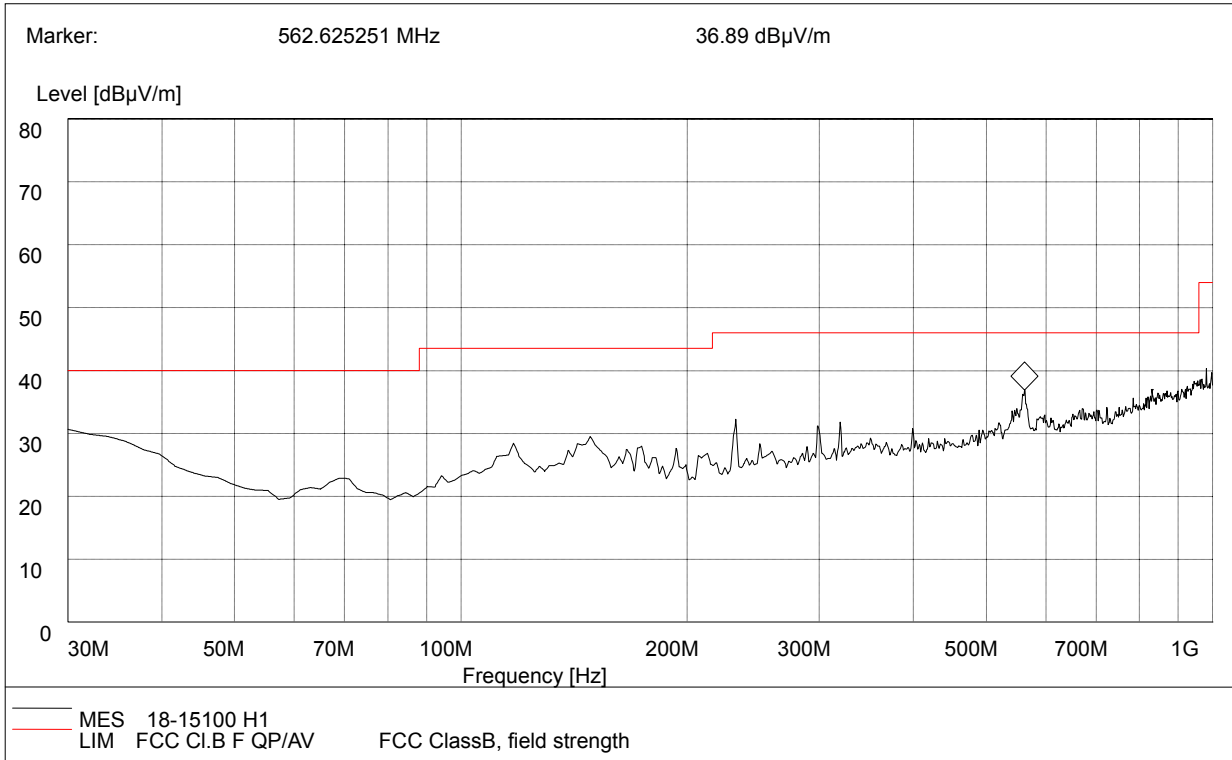
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

For 30MHz to 1000 MHz



30MHz to 1GHz, Antenna Vertical

Frequency (MHz)	QuasiPeak (dB µ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB µ V/m)	Antenna	Verdict
37.880000	34.64	120.000	100.0	40.0	Vertical	Pass
72.760000	31.52	120.000	100.0	40.0	Vertical	Pass
116.120000	33.51	120.000	100.0	43.5	Vertical	Pass
148.530000	34.86	120.000	100.0	43.5	Vertical	Pass
545.130000	34.49	120.000	100.0	46.0	Vertical	Pass
797.840000	36.37	120.000	100.0	46.0	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Antenna	Verdict
30.000000	30.63	120.000	100.0	40.0	Horizontal	Pass
117.470000	28.42	120.000	100.0	43.5	Horizontal	Pass
148.570000	29.48	120.000	100.0	43.5	Horizontal	Pass
232.160000	32.25	120.000	100.0	46.0	Horizontal	Pass
319.640000	31.77	120.000	100.0	46.0	Horizontal	Pass
562.630000	36.89	120.000	100.0	46.0	Horizontal	Pass



For 1GHz to 25 GHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b_2412MHz)

No.	Fre. (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	51.38	PK	74.00	-22.62	1.50	100.00	50.08	5.20	28.60	32.50	1.30
2	2390.00	41.32	AV	54.00	-12.68	1.50	100.00	40.02	5.20	28.60	32.50	1.30
3	4824.00	47.65	PK	74.00	-26.35	2.00	180.00	41.25	7.40	30.40	31.40	6.40
4	4824.00	37.51	AV	54.00	-16.49	2.00	180.00	31.11	7.40	30.40	31.40	6.40
5	7236.00	49.35	PK	74.00	-24.65	1.80	360.00	38.85	11.50	31.20	32.20	10.50
6	7236.00	38.81	AV	54.00	-15.19	1.80	360.00	28.31	11.50	31.20	32.20	10.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b_2412MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	52.08	PK	74.00	-21.92	1.50	180.00	50.78	5.20	28.60	32.50	1.30
2	2390.00	42.10	AV	54.00	-11.90	1.50	180.00	40.80	5.20	28.60	32.50	1.30
3	4824.00	48.24	PK	74.00	-25.76	1.20	360.00	41.84	7.40	30.40	31.40	6.40
4	4824.00	38.39	AV	54.00	-15.61	1.20	360.00	31.99	7.40	30.40	31.40	6.40
5	7236.00	49.25	PK	74.00	-24.75	1.50	360.00	38.75	11.50	31.20	32.20	10.50
6	7236.00	39.13	AV	54.00	-14.87	1.50	360.00	28.63	11.50	31.20	32.20	10.50



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b_2437MHz)

No.	Fre. (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	48.47	PK	74.00	-25.53	1.50	0.00	42.07	6.70	30.40	31.30	6.40
2	4874.00	38.42	AV	54.00	-15.58	1.50	0.00	32.02	6.70	30.40	31.30	6.40
3	7311.00	50.14	PK	74.00	-23.86	1.50	360.00	39.34	11.80	31.20	32.20	10.80
4	7311.00	40.44	AV	54.00	-13.56	1.50	360.00	29.64	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	48.87	PK	74.00	-25.13	1.50	40.00	42.47	6.70	30.40	31.30	6.40
2	4874.00	39.17	AV	54.00	-14.83	1.50	40.00	32.77	6.70	30.40	31.30	6.40
3	7311.00	49.57	PK	74.00	-24.43	1.00	50.00	38.77	11.80	31.20	32.20	10.80
4	7311.00	39.77	AV	54.00	-14.23	1.00	50.00	28.97	11.80	31.20	32.20	10.80

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b_2462MHz)**

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	53.62	PK	74.00	-20.38	1.50	100.00	52.02	5.30	28.70	32.40	1.60
2	2483.50	43.92	AV	54.00	-10.08	1.50	100.00	42.32	5.30	28.70	32.40	1.60
3	4924.00	48.85	PK	74.00	-25.15	1.50	180.00	43.15	6.70	30.50	31.50	5.70
4	4924.00	39.03	AV	54.00	-14.97	1.50	180.00	33.33	6.70	30.50	31.50	5.70
5	7386.00	49.07	PK	74.00	-24.93	1.50	360.00	38.27	11.80	31.20	32.20	10.80
6	7386.00	39.12	AV	54.00	-14.88	1.50	360.00	28.32	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b_2462MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	53.26	PK	74.00	-21.54	1.20	320.00	51.66	5.30	28.70	32.40	1.60
2	2483.50	43.47	AV	54.00	-11.60	1.20	320.00	41.87	5.30	28.70	32.40	1.60
3	4924.00	48.47	PK	74.00	-25.53	1.50	200.00	42.77	6.70	30.50	31.50	5.70
4	4924.00	38.67	AV	54.00	-15.33	1.50	200.00	32.97	6.70	30.50	31.50	5.70
5	7386.00	49.17	PK	74.00	-24.83	2.00	200.00	38.37	11.80	31.20	32.20	10.80
6	7386.00	39.39	AV	54.00	-14.61	2.00	200.00	28.59	11.80	31.20	32.20	10.80



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g_2412MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	50.24	PK	74.00	-23.76	1.50	36.00	48.94	5.20	28.60	32.50	1.30
2	2390.00	40.59	AV	54.00	-13.41	1.50	36.00	39.29	5.20	28.60	32.50	1.30
3	4824.00	48.75	PK	74.00	-25.25	1.50	50.00	42.35	7.40	30.40	31.40	6.40
4	4824.00	39.00	AV	54.00	-15.00	1.50	50.00	32.60	7.40	30.40	31.40	6.40
5	7236.00	49.35	PK	74.00	-24.65	1.20	250.00	38.85	11.50	31.20	32.20	10.50
6	7236.00	39.53	AV	54.00	-14.47	1.20	250.00	29.03	11.50	31.20	32.20	10.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g_2412MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	55.29	PK	74.00	-18.71	1.50	36.00	53.99	5.20	28.60	32.50	1.30
2	2390.00	45.63	AV	54.00	-8.37	1.50	36.00	44.33	5.20	28.60	32.50	1.30
3	4824.00	49.87	PK	74.00	-24.13	1.50	40.00	43.47	7.40	30.40	31.40	6.40
4	4824.00	40.23	AV	54.00	-13.77	1.50	40.00	33.83	7.40	30.40	31.40	6.40
5	7236.00	50.14	PK	74.00	-23.86	1.50	320.00	39.94	11.50	31.20	32.20	10.20
6	7236.00	40.72	AV	54.00	-13.28	1.50	320.00	30.52	11.50	31.20	32.20	10.20

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g_2437MHz)**

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	49.00	PK	74.00	-25.00	1.50	52.00	43.20	6.70	30.40	31.30	5.80
2	4874.00	39.93	AV	54.00	-14.07	1.50	52.00	34.13	6.70	30.40	31.30	5.80
3	7311.00	50.32	PK	74.00	-23.68	1.60	360.00	39.52	11.80	31.20	32.20	10.80
4	7311.00	41.15	AV	54.00	-12.85	1.60	360.00	30.35	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	48.87	PK	74.00	-25.13	1.50	180.00	43.07	6.70	30.40	31.30	5.80
2	4874.00	40.72	AV	54.00	-13.28	1.50	180.00	34.92	6.70	30.40	31.30	5.80
3	7311.00	50.00	PK	74.00	-24.00	1.00	0.00	39.20	11.80	31.20	32.20	10.80
4	7311.00	40.75	AV	54.00	-13.25	1.00	0.00	29.95	11.80	31.20	32.20	10.80



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g_2462MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	53.42	PK	74.00	-20.58	1.50	150.00	51.82	5.30	28.70	32.40	1.60
2	2483.50	45.28	AV	54.00	-8.72	1.50	150.00	43.68	5.30	28.70	32.40	1.60
3	4924.00	49.35	PK	74.00	-24.65	1.00	150.00	43.65	6.70	30.50	31.50	5.70
4	4924.00	41.20	AV	54.00	-12.80	1.00	150.00	35.50	6.70	30.50	31.50	5.70
5	7386.00	49.97	PK	74.00	-24.03	1.50	360.00	39.17	11.80	31.20	32.20	10.80
6	7386.00	41.52	AV	54.00	-12.48	1.50	360.00	30.72	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g_2462MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	53.58	PK	74.00	-20.42	1.00	180.00	51.98	5.30	28.70	32.40	1.60
2	2483.50	44.44	AV	54.00	-9.56	1.00	180.00	42.84	5.30	28.70	32.40	1.60
3	4924.00	49.27	PK	74.00	-24.73	1.50	0.00	43.57	6.70	30.50	31.50	5.70
4	4924.00	40.19	AV	54.00	-13.81	1.50	0.00	34.49	6.70	30.50	31.50	5.70
5	7386.00	50.32	PK	74.00	-23.68	1.80	360.00	39.52	11.80	31.20	32.20	10.80
6	7386.00	41.12	AV	54.00	-12.88	1.80	360.00	30.32	11.80	31.20	32.20	10.80



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20_2412MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	52.11	PK	74.00	-21.89	1.30	100.00	50.81	5.20	28.60	32.50	1.30
2	2390.00	43.46	AV	54.00	-10.54	1.30	100.00	42.16	5.20	28.60	32.50	1.30
3	4824.00	48.14	PK	74.00	-25.86	1.50	180.00	41.74	7.40	30.40	31.40	6.40
4	4824.00	39.89	AV	54.00	-14.11	1.50	180.00	33.49	7.40	30.40	31.40	6.40
5	7236.00	48.87	PK	74.00	-25.13	1.20	250.00	38.37	11.50	31.20	32.20	10.50
6	7236.00	40.75	AV	54.00	-13.25	1.20	250.00	30.25	11.50	31.20	32.20	10.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20_2412MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	52.60	PK	74.00	-21.40	1.30	150.00	51.30	5.20	28.60	32.50	1.30
2	2390.00	44.26	AV	54.00	-9.74	1.30	150.00	42.96	5.20	28.60	32.50	1.30
3	4824.00	49.58	PK	74.00	-24.42	1.50	360.00	43.18	7.40	30.40	31.40	6.40
4	4824.00	41.23	AV	54.00	-12.77	1.50	360.00	34.83	7.40	30.40	31.40	6.40
5	7236.00	48.87	PK	74.00	-25.13	1.50	200.00	38.37	11.50	31.20	32.20	10.50
6	7236.00	40.40	AV	54.00	-13.60	1.50	200.00	29.90	11.50	31.20	32.20	10.50



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	48.87	PK	74.00	-25.13	1.50	180.00	43.07	6.70	30.40	31.30	5.80
2	4874.00	40.92	AV	54.00	-13.08	1.50	180.00	35.12	6.70	30.40	31.30	5.80
3	7311.00	49.05	PK	74.00	-24.95	1.60	320.00	38.25	11.80	31.20	32.20	10.80
4	7311.00	40.69	AV	54.00	-13.31	1.60	320.00	29.89	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	49.03	PK	74.00	-24.97	2.00	100.00	42.63	6.70	31.20	31.50	6.40
2	4874.00	40.76	AV	54.00	-13.24	2.00	100.00	34.36	6.70	31.20	31.50	6.40
3	7311.00	50.01	PK	74.00	-23.99	1.00	180.00	39.21	11.80	31.20	32.20	10.80
4	7311.00	41.66	AV	54.00	-12.34	1.00	180.00	30.86	11.80	31.20	32.20	10.80



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20_2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	54.32	PK	74.00	-19.68	2.00	120.00	52.72	5.30	28.70	32.40	1.60
2	2483.50	45.96	AV	54.00	-8.04	2.00	120.00	44.36	5.30	28.70	32.40	1.60
3	4924.00	48.88	PK	74.00	-25.12	1.00	200.00	43.18	6.70	30.50	31.50	5.70
4	4924.00	40.53	AV	54.00	-13.47	1.00	200.00	34.83	6.70	30.50	31.50	5.70
5	7386.00	46.36	PK	74.00	-27.64	1.50	360.00	35.56	11.80	31.20	32.20	10.80
6	7386.00	38.11	AV	54.00	-15.89	1.50	360.00	27.31	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20_2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	54.26	PK	74.00	-19.74	1.50	180.00	52.66	5.30	28.70	32.40	1.60
2	2483.50	46.02	AV	54.00	-7.98	1.50	180.00	44.42	5.30	28.70	32.40	1.60
3	4924.00	49.33	PK	74.00	-24.67	1.50	100.00	43.63	6.70	30.50	31.50	5.70
4	4924.00	40.94	AV	54.00	-13.06	1.50	100.00	35.24	6.70	30.50	31.50	5.70
5	7386.00	50.14	PK	74.00	-23.86	1.80	180.00	39.34	11.80	31.20	32.20	10.80
6	7386.00	41.32	AV	54.00	-12.68	1.80	180.00	30.52	11.80	31.20	32.20	10.80



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40_2422MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	51.18	PK	74.00	-22.82	1.50	180.00	49.88	5.20	28.60	32.50	1.30
2	2390.00	42.93	AV	54.00	-11.07	1.50	180.00	41.63	5.20	28.60	32.50	1.30
3	4844.00	49.35	PK	74.00	-24.65	1.50	200.00	42.95	7.40	30.40	31.40	6.40
4	4844.00	41.21	AV	54.00	-12.79	1.50	200.00	34.81	7.40	30.40	31.40	6.40
5	7266.00	50.32	PK	74.00	-23.68	1.20	250.00	39.82	11.50	31.20	32.20	10.50
6	7266.00	40.78	AV	54.00	-13.22	1.20	250.00	30.28	11.50	31.20	32.20	10.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40_2422MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390.00	57.15	PK	74.00	-16.85	1.50	180.00	55.85	5.20	28.60	32.50	1.30
2	2390.00	48.92	AV	54.00	-5.08	1.50	180.00	47.62	5.20	28.60	32.50	1.30
3	4824.00	48.87	PK	74.00	-25.13	1.50	360.00	42.47	7.40	30.40	31.40	6.40
4	4824.00	40.58	AV	54.00	-13.42	1.50	360.00	34.18	7.40	30.40	31.40	6.40
5	7266.00	49.78	PK	74.00	-24.22	1.50	320.00	39.28	11.50	31.20	32.20	10.50
6	7266.00	41.43	AV	54.00	-12.57	1.50	320.00	30.93	11.50	31.20	32.20	10.50



ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	48.99	PK	74.00	-25.01	1.50	40.00	42.59	6.70	31.20	31.50	6.40
2	4874.00	40.56	AV	54.00	-13.44	1.50	40.00	34.16	6.70	31.20	31.50	6.40
3	7311.00	49.71	PK	74.00	-24.29	1.60	230.00	38.91	11.80	31.20	32.20	10.80
4	7311.00	41.51	AV	54.00	-12.49	1.60	230.00	30.71	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40_2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4874.00	49.36	PK	74.00	-24.64	1.50	180.00	42.96	6.70	31.20	31.50	6.40
2	4874.00	41.13	AV	54.00	-12.87	1.50	180.00	34.73	6.70	31.20	31.50	6.40
3	7311.00	50.17	PK	74.00	-23.83	1.00	260.00	39.37	11.80	31.20	32.20	10.80
4	7311.00	42.09	AV	54.00	-11.91	1.00	260.00	31.29	11.80	31.20	32.20	10.80

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40_2452MHz)**

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	55.04	PK	74.00	-18.96	2.00	100.00	53.44	5.30	28.70	32.40	1.60
2	2483.50	46.70	AV	54.00	-7.30	2.00	100.00	45.10	5.30	28.70	32.40	1.60
3	4904.00	48.87	PK	74.00	-25.13	1.50	120.00	43.17	6.70	30.50	31.50	5.70
4	4904.00	40.75	AV	54.00	-13.25	1.50	120.00	35.05	6.70	30.50	31.50	5.70
5	7356.00	49.33	PK	74.00	-24.67	1.50	360.00	38.53	11.80	31.20	32.20	10.80
6	7356.00	41.03	AV	54.00	-12.97	1.50	360.00	30.23	11.80	31.20	32.20	10.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40_2452MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.50	55.03	PK	74.00	-18.97	1.50	180.00	53.43	5.30	28.70	32.40	1.60
2	2483.50	47.05	AV	54.00	-6.95	1.50	180.00	45.45	5.30	28.70	32.40	1.60
3	4904.00	49.54	PK	74.00	-24.46	1.50	360.00	43.84	6.70	30.50	31.50	5.70
4	4904.00	41.19	AV	54.00	-12.81	1.50	360.00	35.49	6.70	30.50	31.50	5.70
5	7356.00	51.03	PK	74.00	-22.97	1.50	180.00	40.23	11.80	31.20	32.20	10.80
6	7356.00	43.04	AV	54.00	-10.96	1.50	180.00	32.24	11.80	31.20	32.20	10.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
- Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level - Limit value
5. " * ": Fundamental frequency.

2.7. Conducted Emission

2.7.1. Limit of Conducted Emission

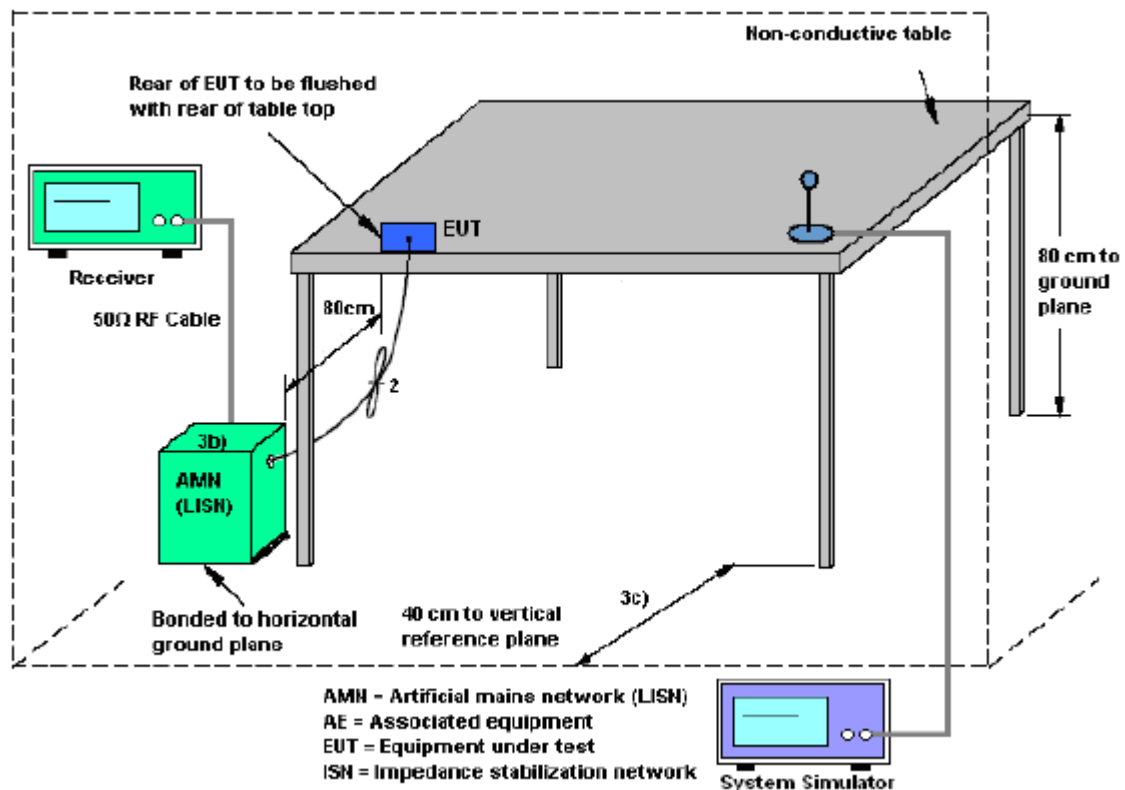
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.7.3. Test Setup

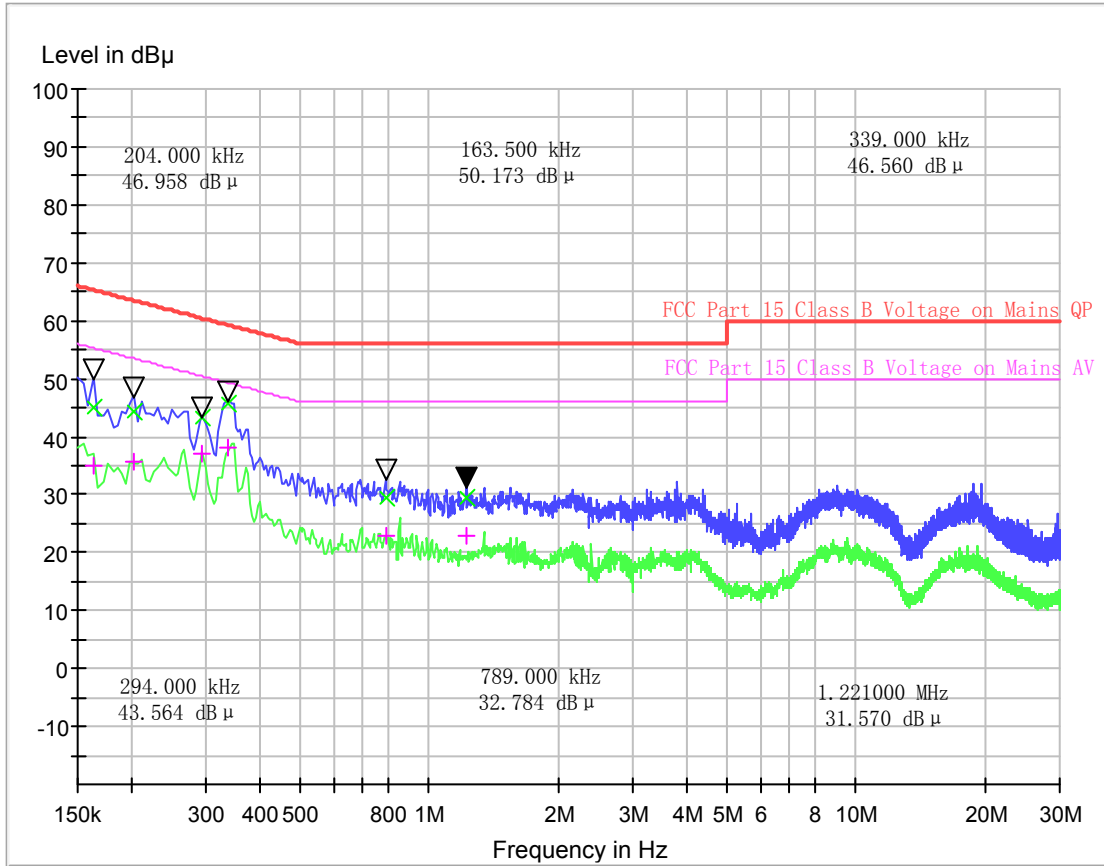


2.7.4. Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 micrometry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

2.7.5. Test Results of Conducted Emission

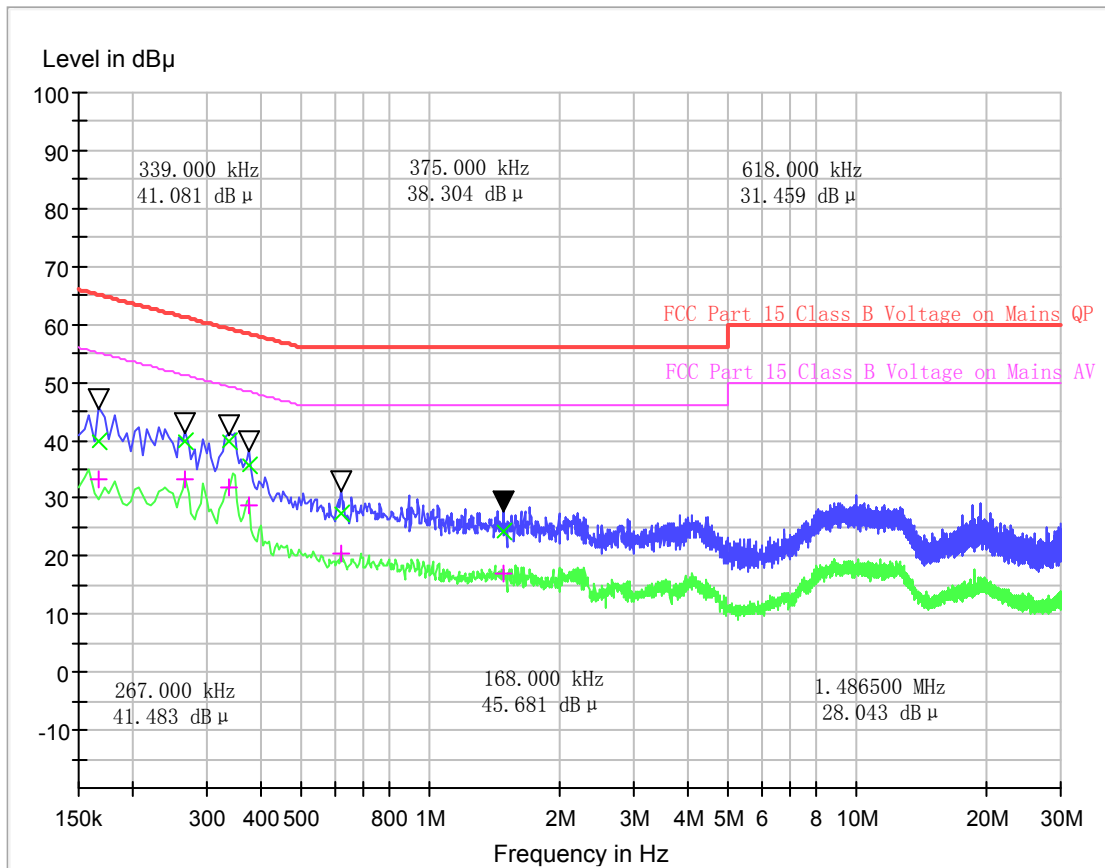
1. The EUT configuration of the emission tests is 2.4G WLAN Link + Adapter



(Plot A: L Phase)

Conducted Disturbance at Mains Terminals					
L Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.163500	65.3	44.88	0.163500	55.3	35.10
0.204000	63.4	44.30	0.204000	53.4	35.76
0.294000	60.4	43.32	0.294000	50.4	37.11
0.339000	59.2	45.71	0.339000	49.2	38.25
0.789000	56.0	29.62	0.789000	46.0	23.02
1.221000	56.0	29.62	1.221000	46.0	23.05

Test Result: PASS



(Plot B: N Phase)

Conducted Disturbance at Mains Terminals					
N Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.168000	65.1	39.88	0.168000	55.1	33.28
0.267000	61.2	39.92	0.267000	51.2	33.25
0.339000	59.2	39.90	0.339000	49.2	32.02
0.375000	58.4	35.59	0.375000	48.4	28.91
0.618000	56.0	27.49	0.618000	46.0	20.52
1.486500	56.0	24.29	1.486500	46.0	17.10

Test Result: PASS



3. List of measuring equipment

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	11/12/2017
2	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	11/12/2017
3	EMI TEST Software	Audix	E3	N/A	N/A
4	TURNTABLE	ETS	2088	2149	N/A
5	ANTENNA MAST	ETS	2075	2346	N/A
6	EMI TEST Software	Rohde&Schwarz	ESK1	N/A	N/A
7	HORNANTENNA	ShwarzBeck	9120D	1011	11/12/2017
8	Amplifer	Sonoma	310N	E009-13	11/12/2017
9	JS amplifer	Rohde&Schwarz	JS4-00101800-28 -5A	F201504	11/12/2017
10	High pass filter	Compliance Direction systems	BSU-6	34202	11/12/2017
11	HORNANTENNA	ShwarzBeck	9120D	1012	11/12/2017
12	Amplifer	Compliance Direction systems	PAP1-4060	120	11/12/2017
13	Loop Antenna	Rohde&Schwarz	HFH2-Z2	100020	11/12/2017
14	TURNTABLE	MATURO	TT2.0	----	N/A
15	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
16	Horn Antenna	SCHWARZBECK	BBHA9170	25841	11/12/2017
17	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	11/12/2017

Maximum Peak Output Power / Power Spectral Density / 6dB Bandwidth / Band Edge Compliance of RF Emission / Spurious RF Conducted Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Spectrum Analyzer	Rohde&Schwarz	FSP	1164.4391.40	11/12/2017
2	Spectrum Analyzer	Keysight	N9030A	ATO-67098	10/09/2017
3	Power Meter	Anritsu	ML2480B	100798	11/12/2017
4	Power Sensor	Anritsu	MA2411B	100258	11/12/2017

The calibration interval was one year.

**** END OF REPORT ****