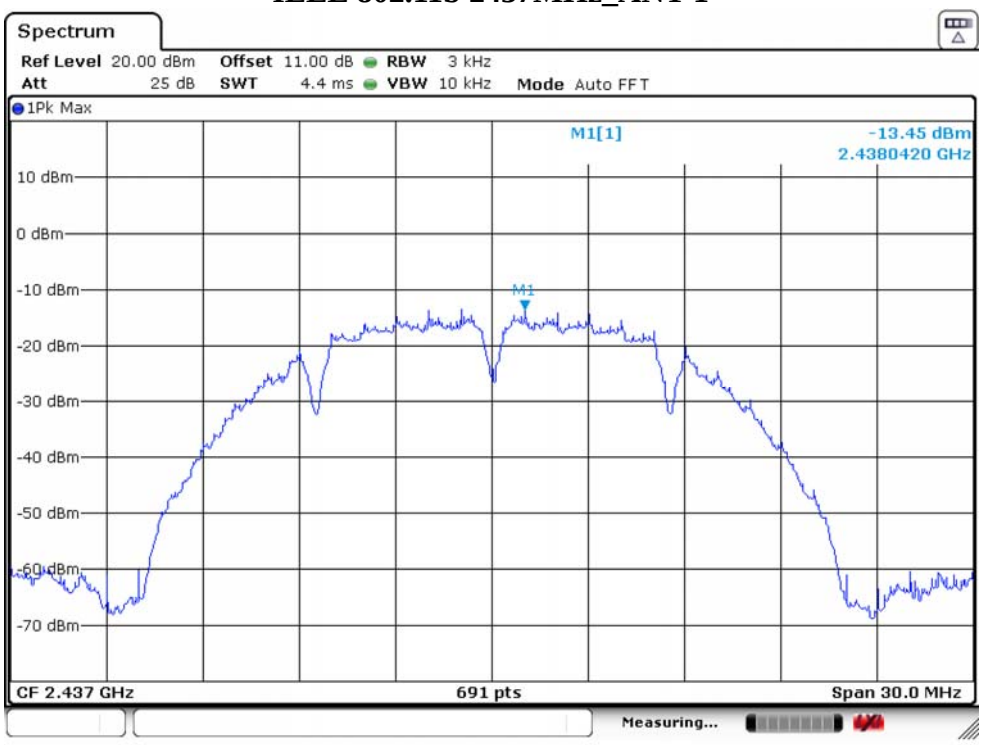
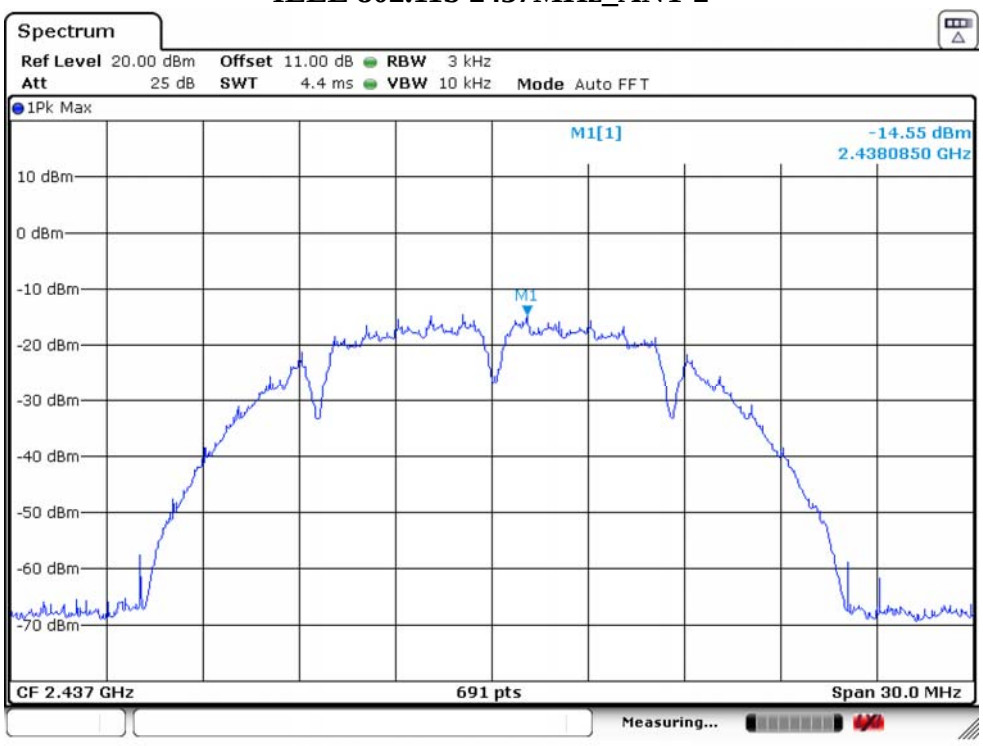
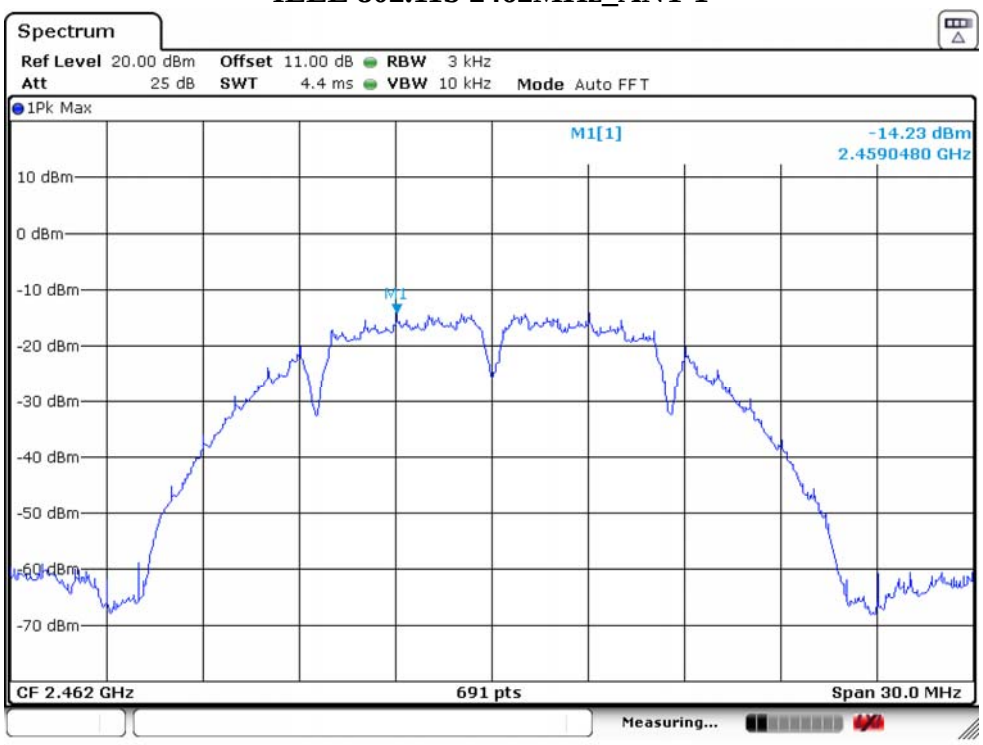
IEEE 802.11b 2437MHz_ANT 1



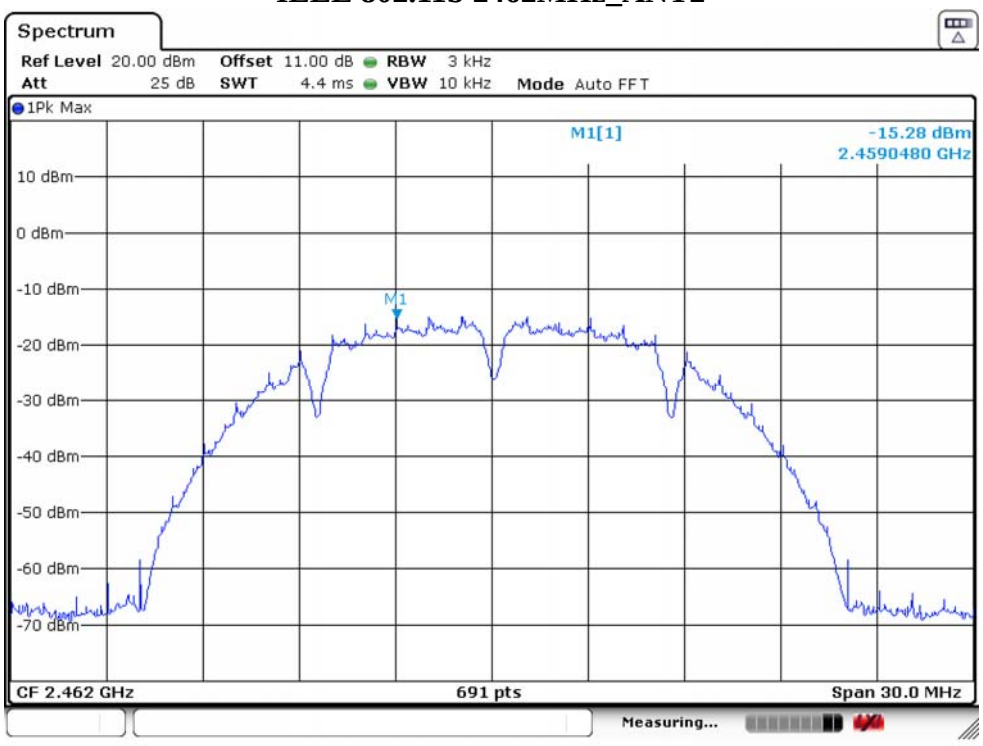
IEEE 802.11b 2437MHz_ANT 2



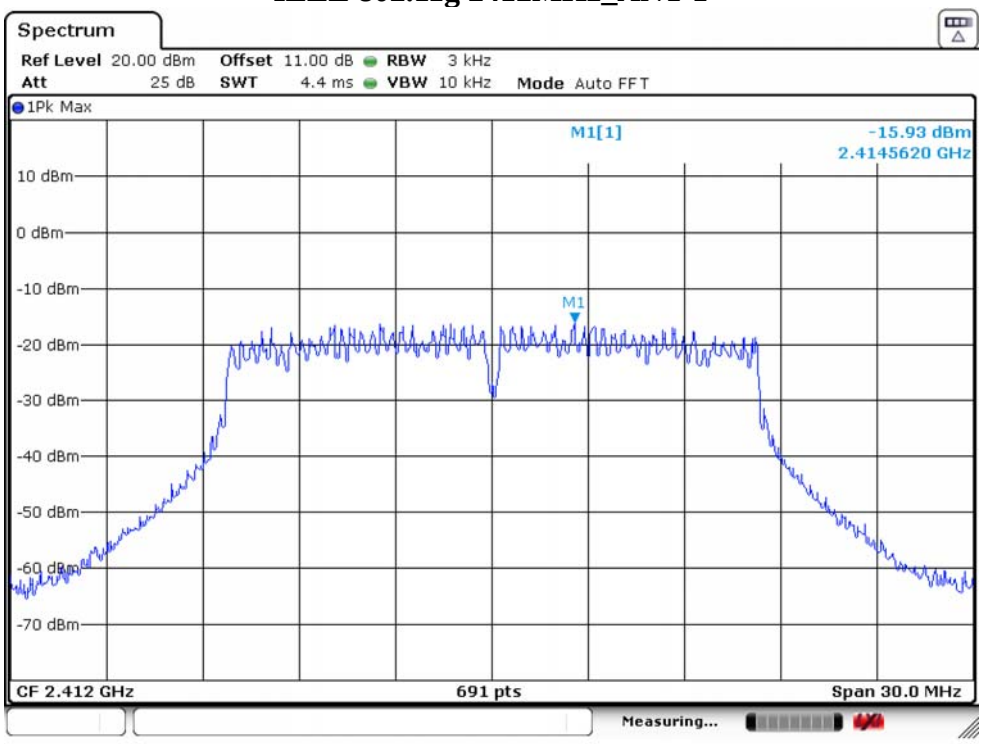
IEEE 802.11b 2462MHz_ANT 1



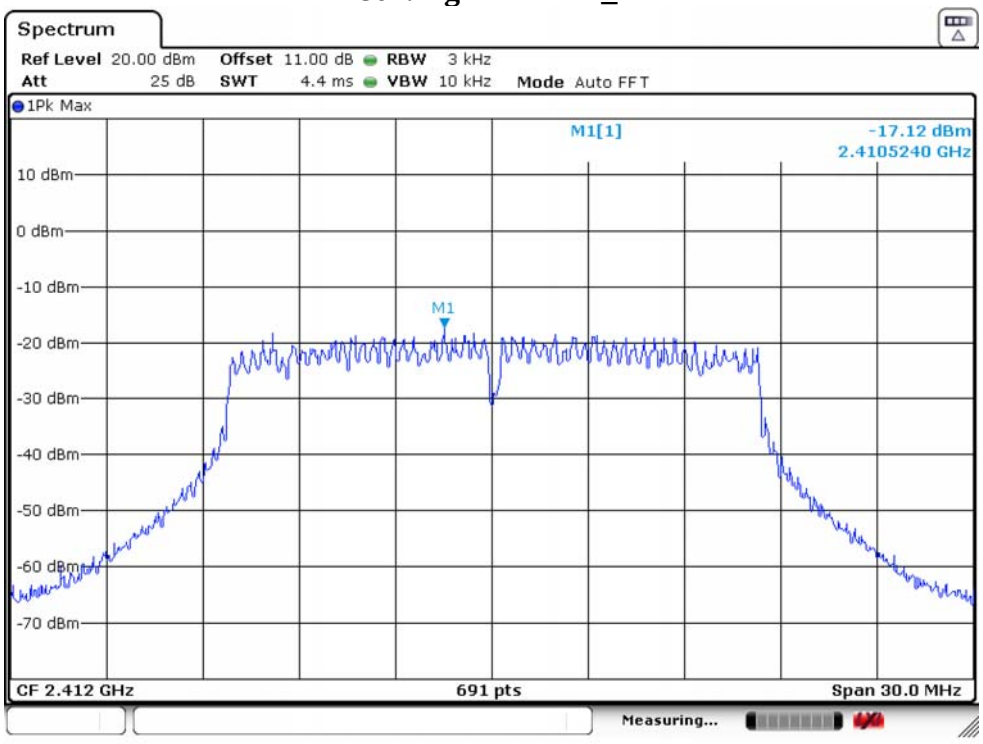
IEEE 802.11b 2462MHz_ANT2



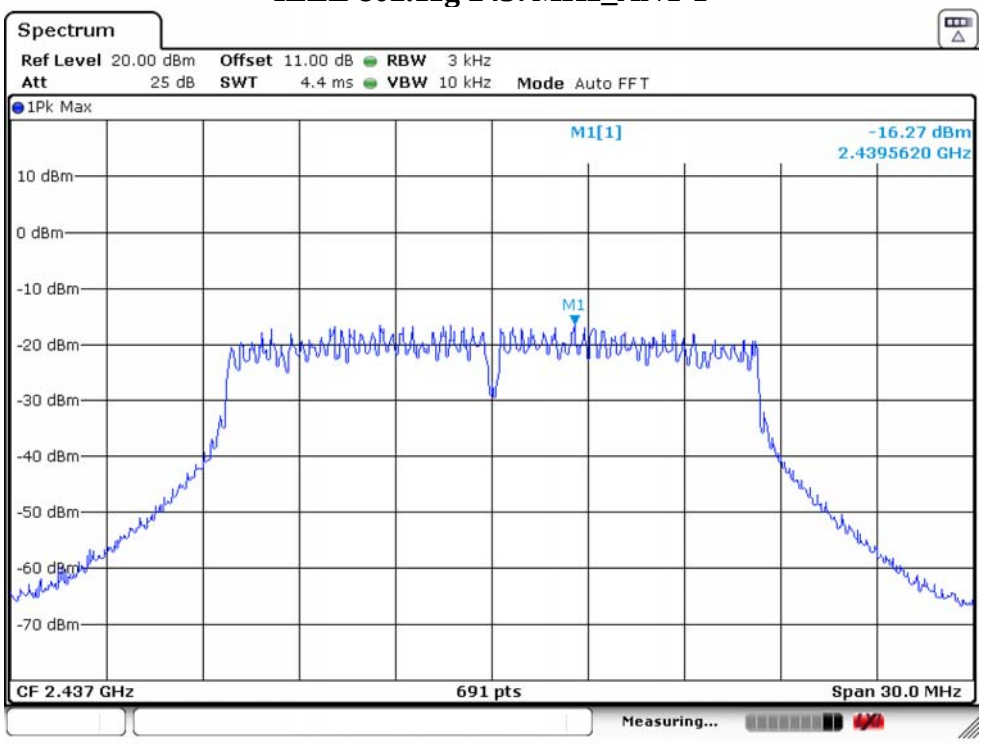
IEEE 802.11g 2412MHz_ANT 1



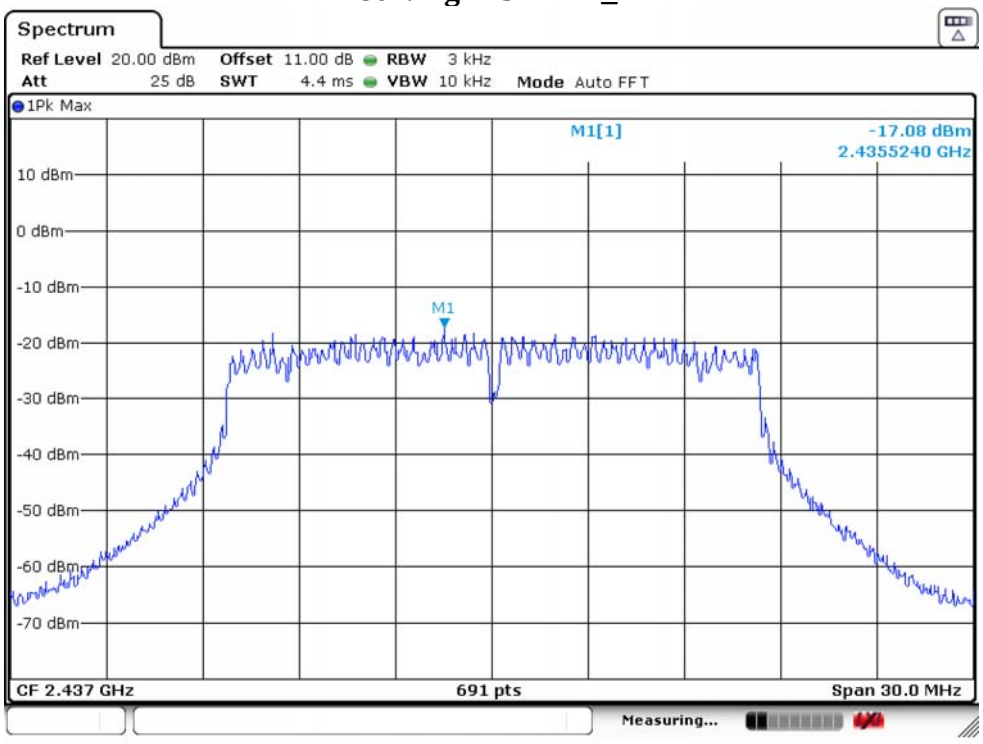
IEEE 802.11g 2412MHz_ANT 2



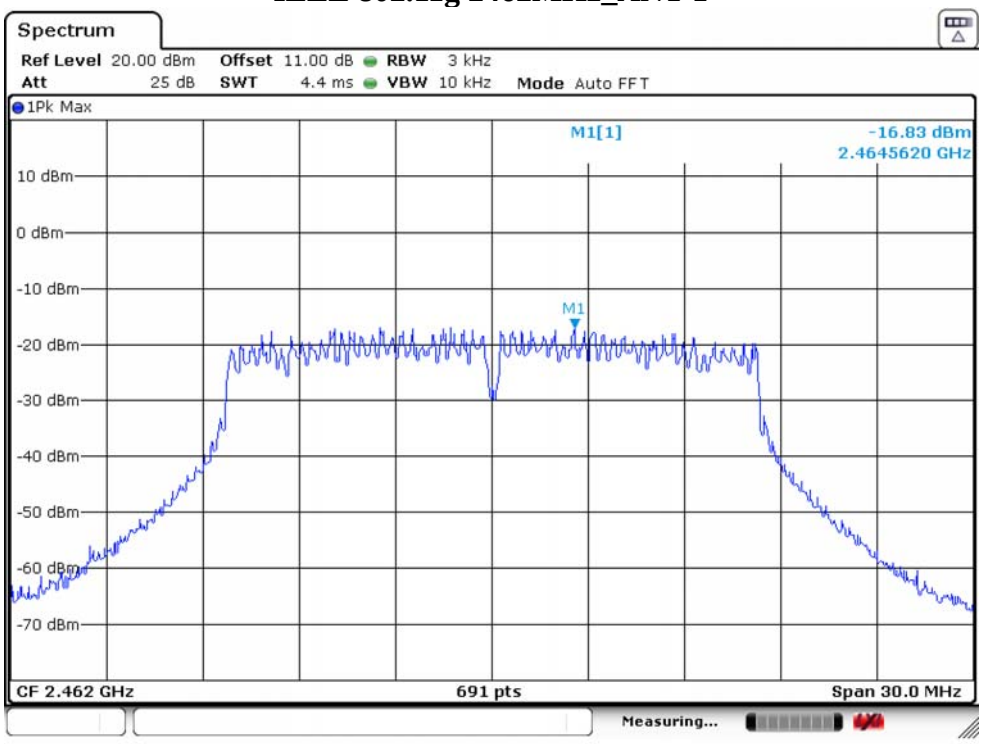
IEEE 802.11g 2437MHz_ANT 1



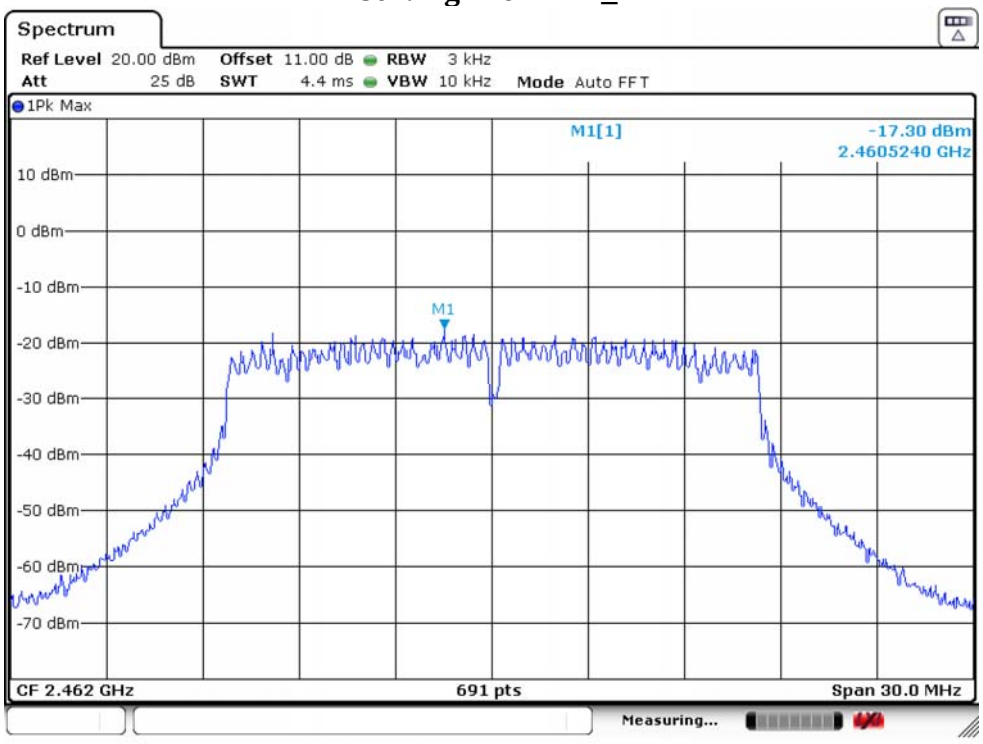
IEEE 802.11g 2437MHz_ANT 2



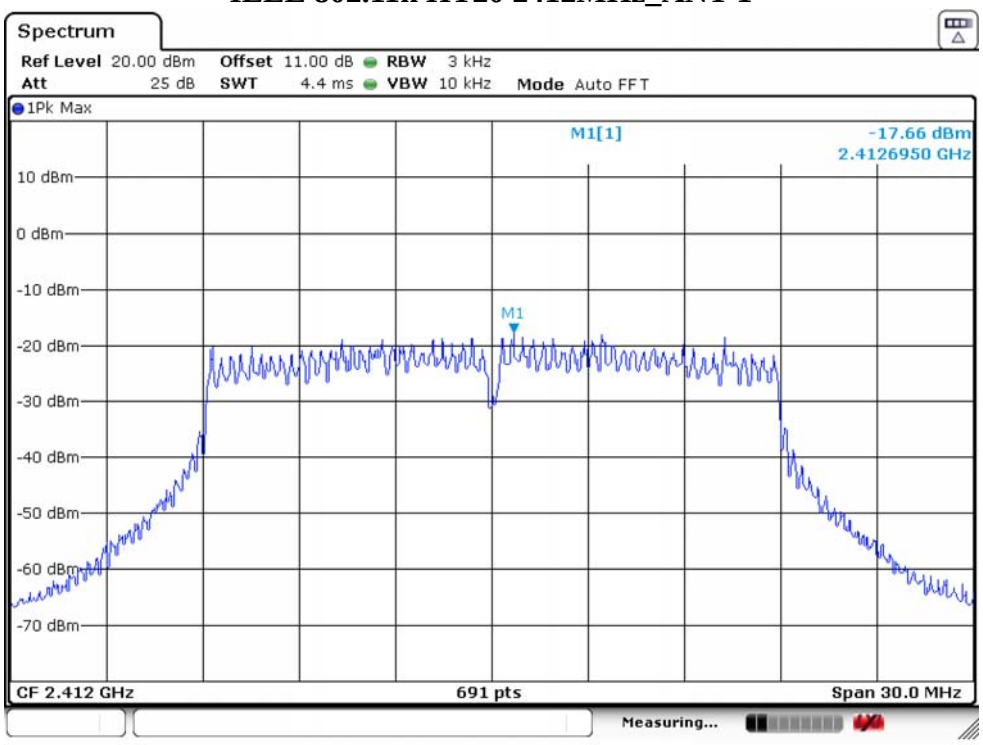
IEEE 802.11g 2462MHz_ANT 1



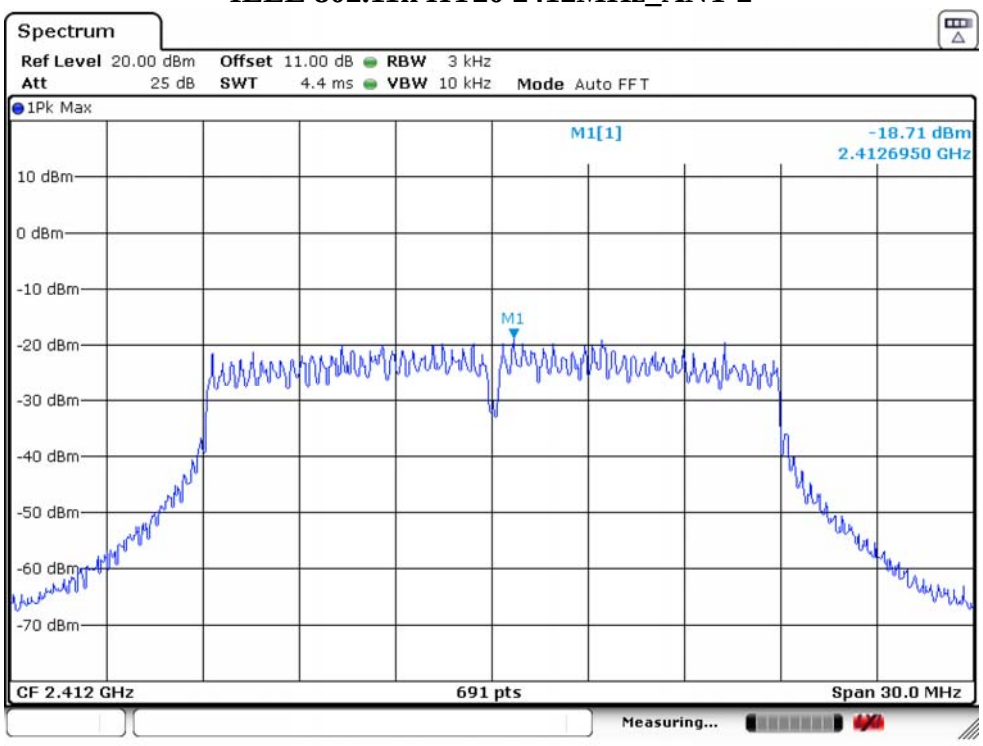
IEEE 802.11g 2462MHz_ANT 2



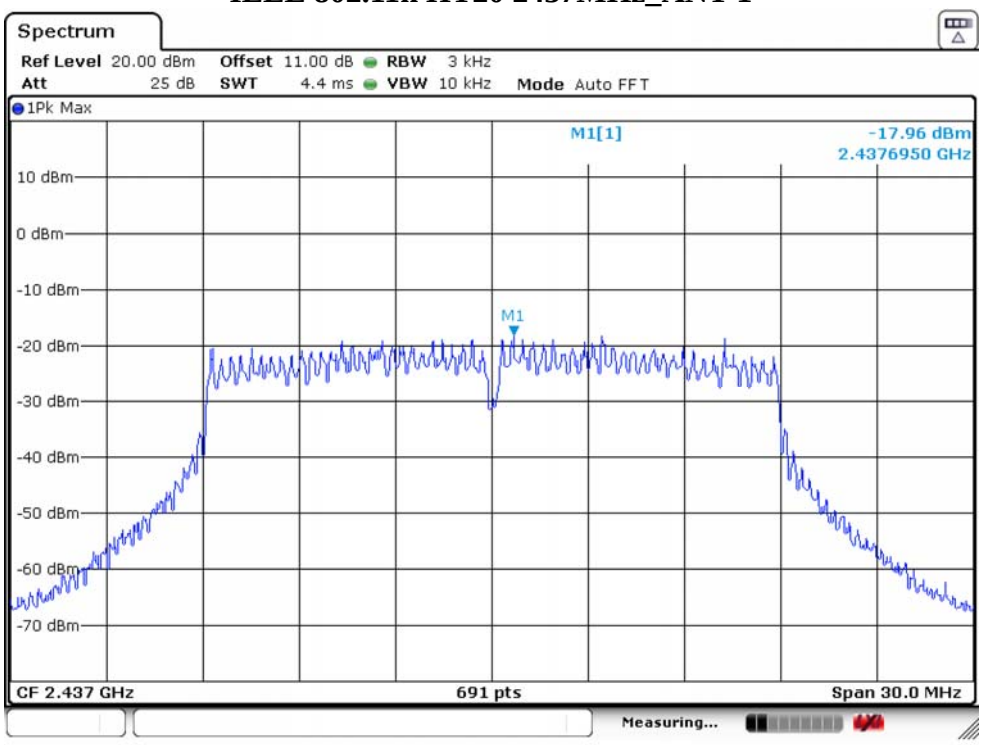
IEEE 802.11n HT20 2412MHz_ANT 1



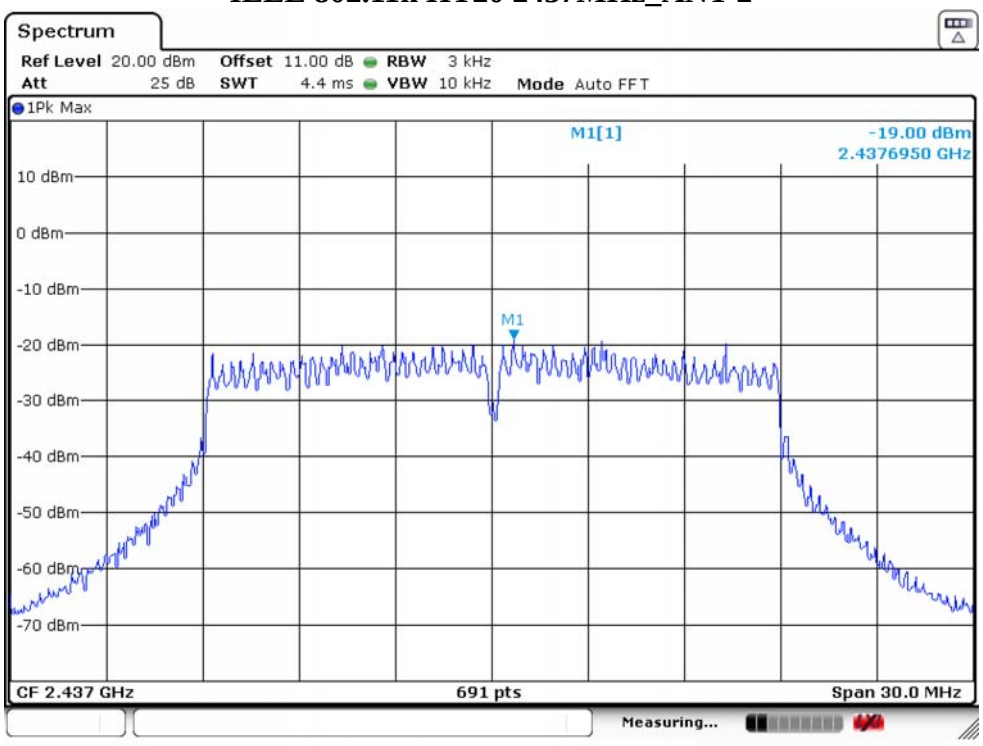
IEEE 802.11n HT20 2412MHz_ANT 2



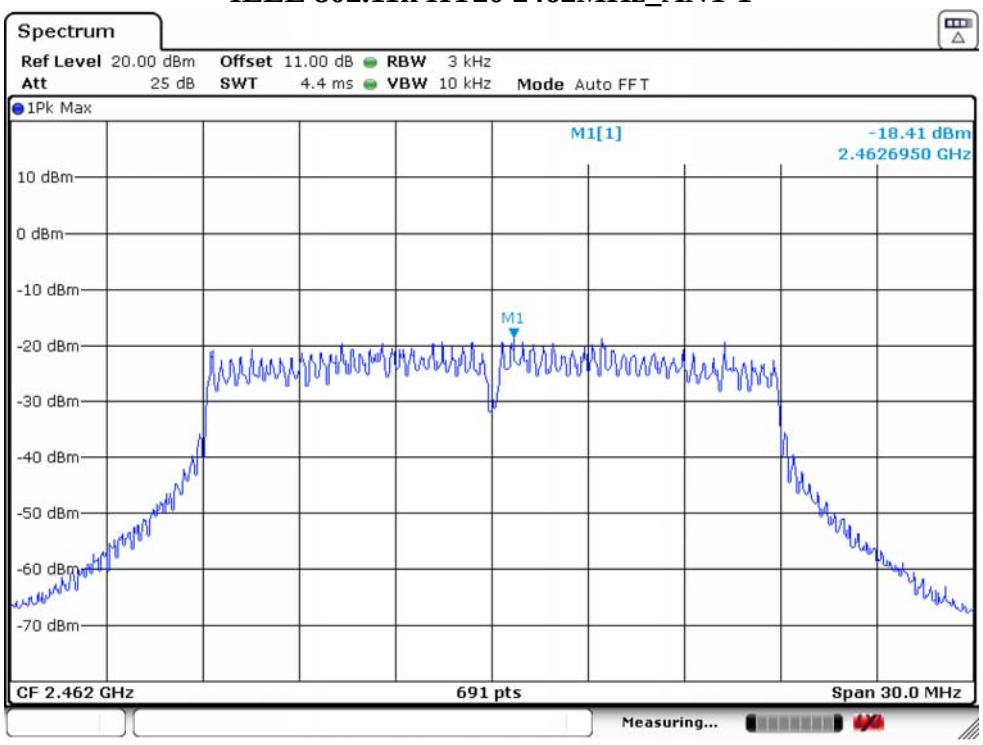
IEEE 802.11n HT20 2437MHz_ANT 1



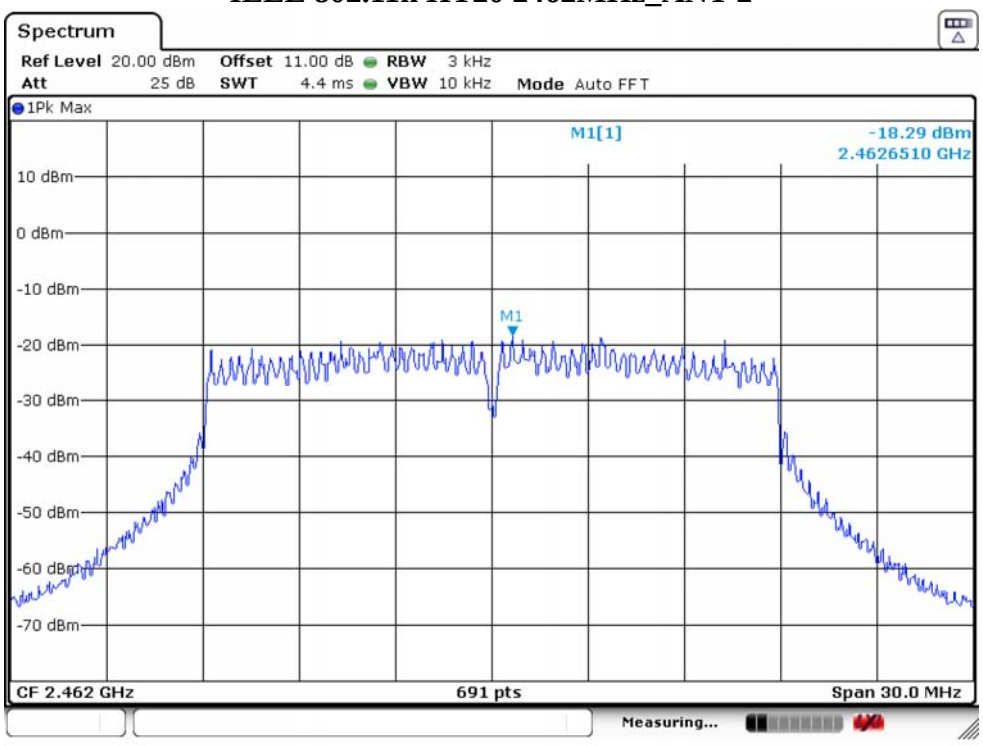
IEEE 802.11n HT20 2437MHz_ANT 2



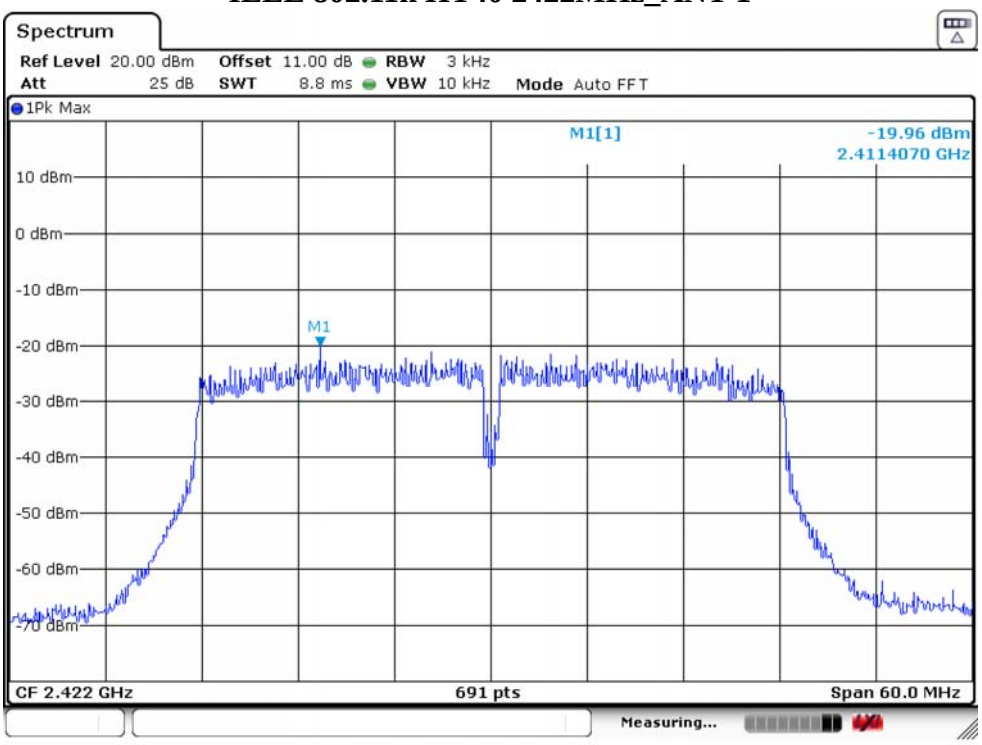
IEEE 802.11n HT20 2462MHz_ANT 1



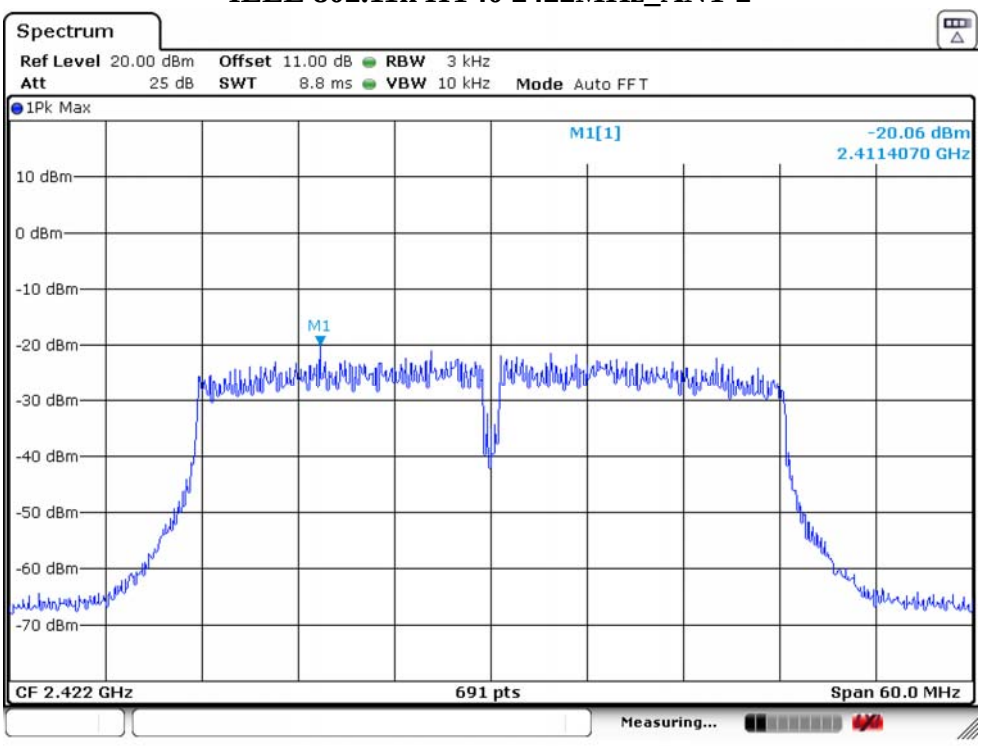
IEEE 802.11n HT20 2462MHz_ANT 2



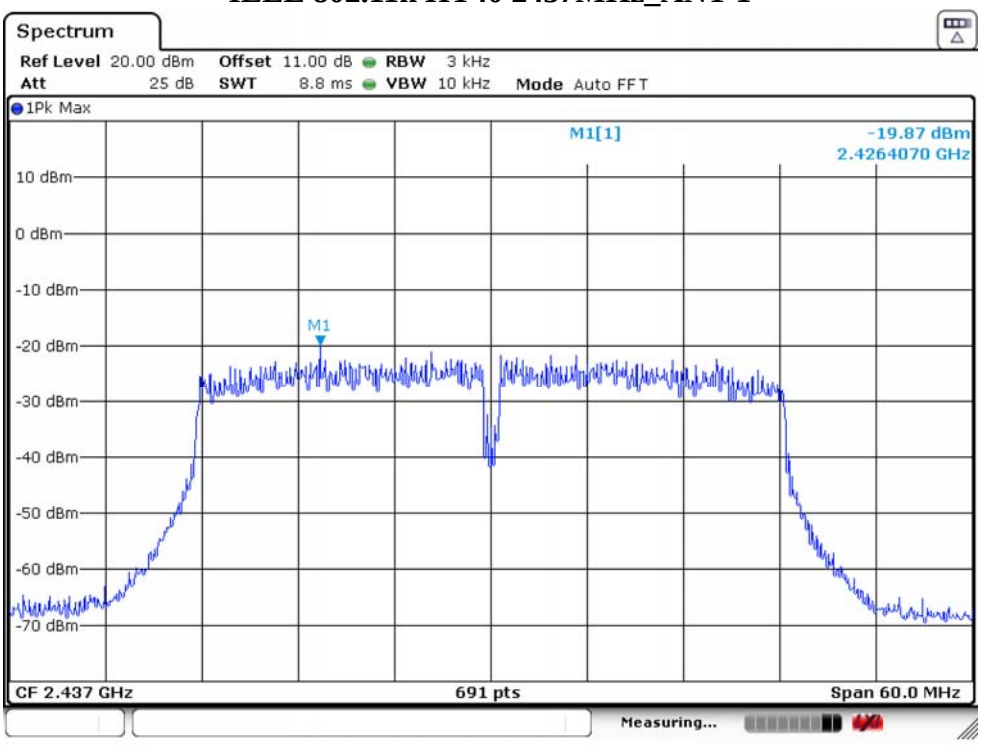
IEEE 802.11n HT40 2422MHz_ANT 1



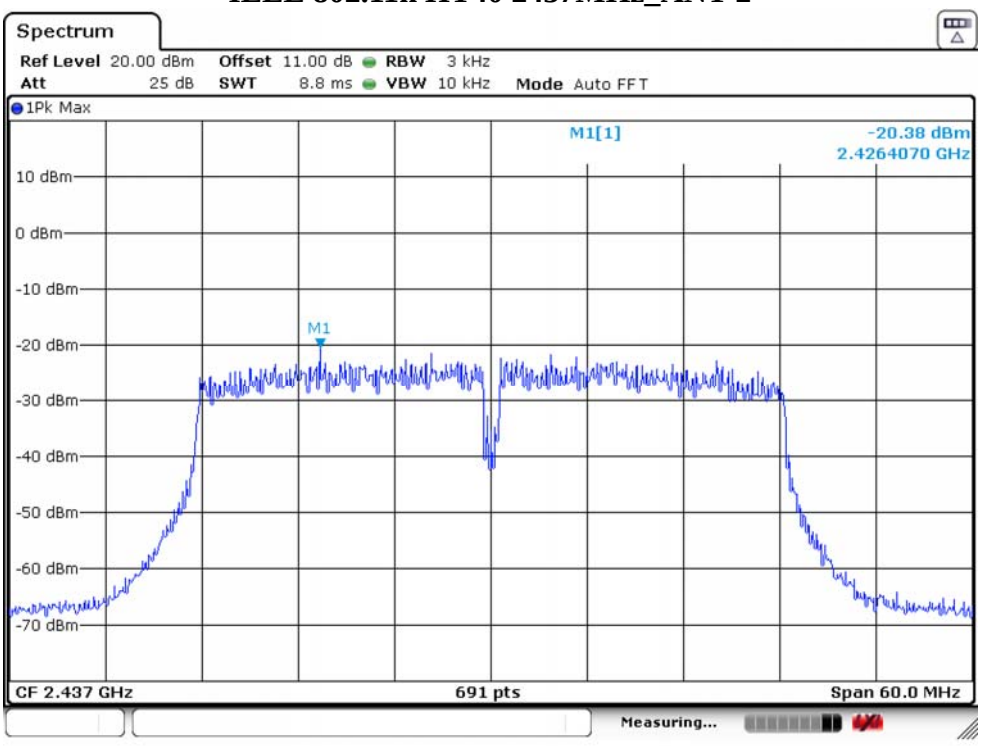
IEEE 802.11n HT40 2422MHz_ANT 2



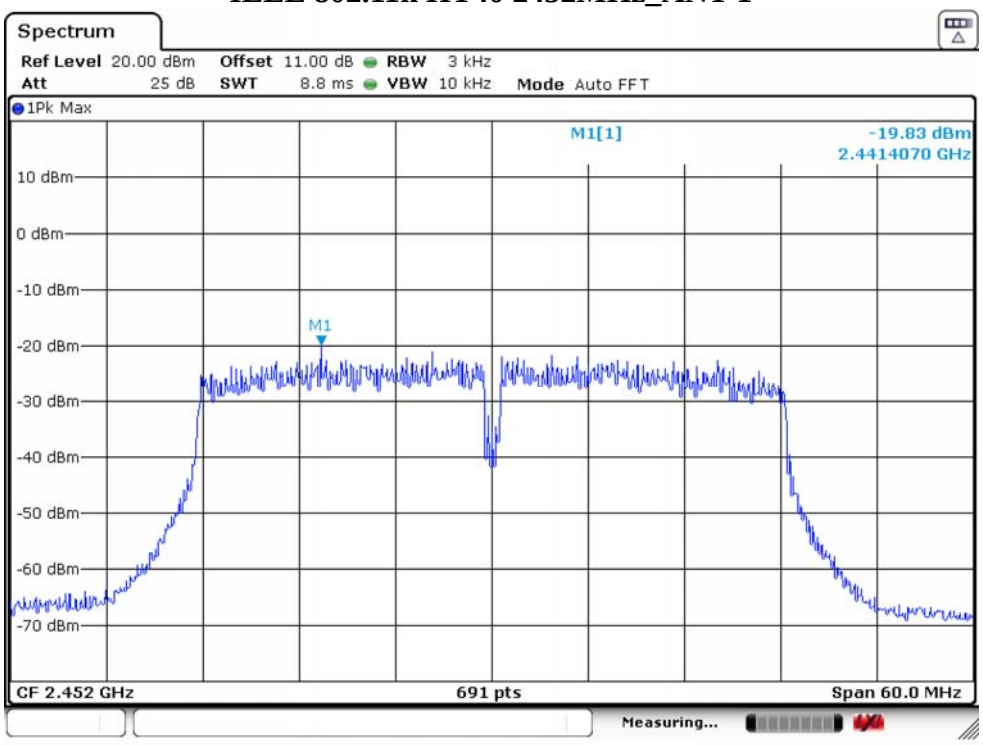
IEEE 802.11n HT40 2437MHz_ANT 1



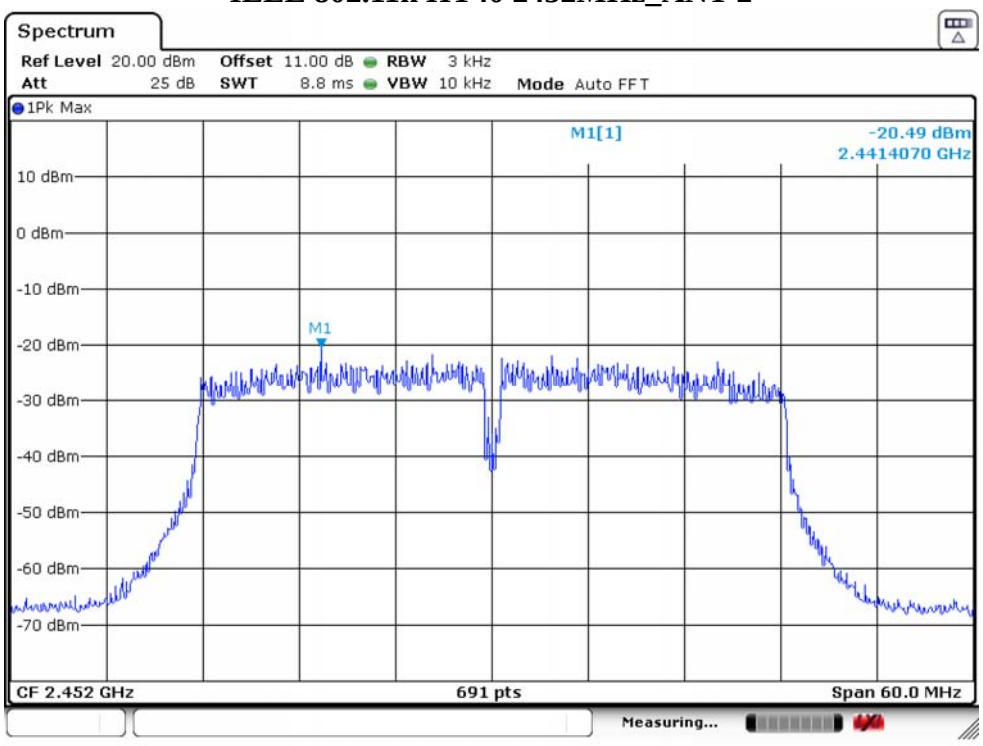
IEEE 802.11n HT40 2437MHz_ANT 2



IEEE 802.11n HT40 2452MHz_ANT 1



IEEE 802.11n HT40 2452MHz_ANT 2

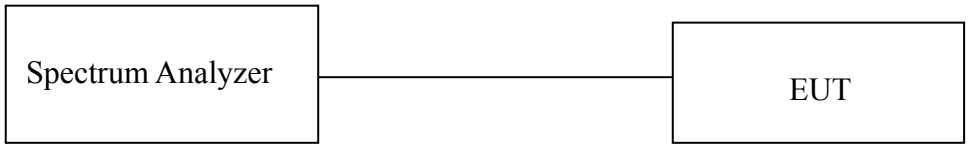


6. CONDUCTED BAND EDGE

6.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

6.2. Test Setup



6.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	100MHz(20MHz Bandwidth mode)/200MHz(40MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

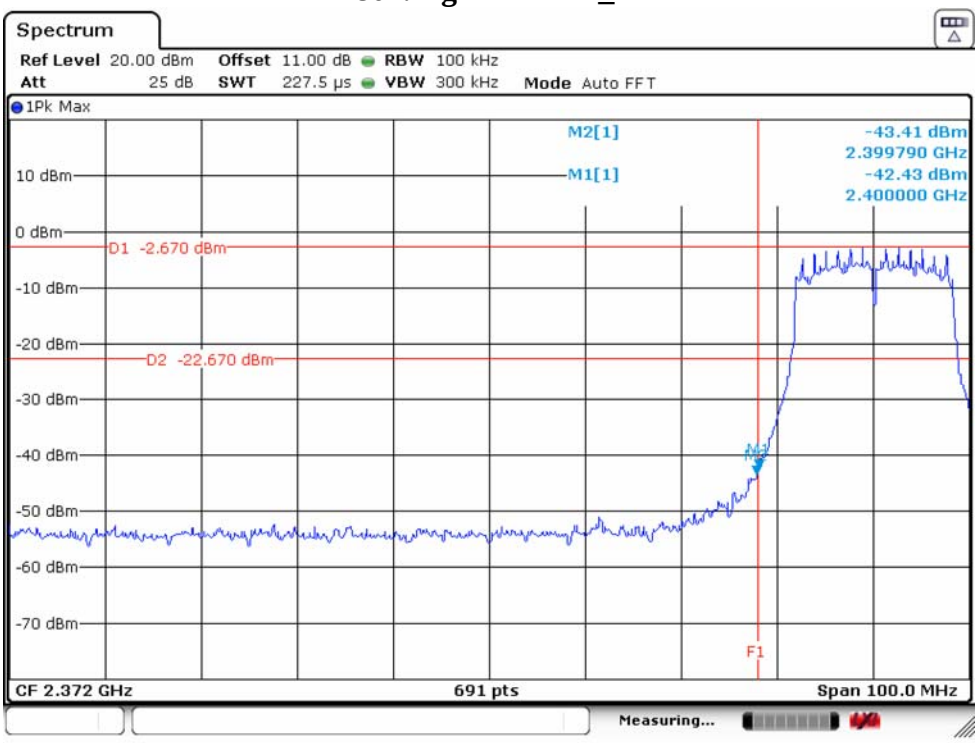
6.4. Test Procedure

a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
b. Spectrum analyzer setting parameters in accordance with section 6.3.
c. Set the EUT transmit continuously with maximum output power.
d. Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
e. Repeat above procedures until all modes and channels were measured.
f. Record the results in the test report
g. IEEE 802.11b, IEEE 802.11g, IEEE 802. 11nH20, IEEE 802. 11nH40 all have been tested, only worst case IEEE 802.11g is recorded. The antenna 1 test data is recorded in report.

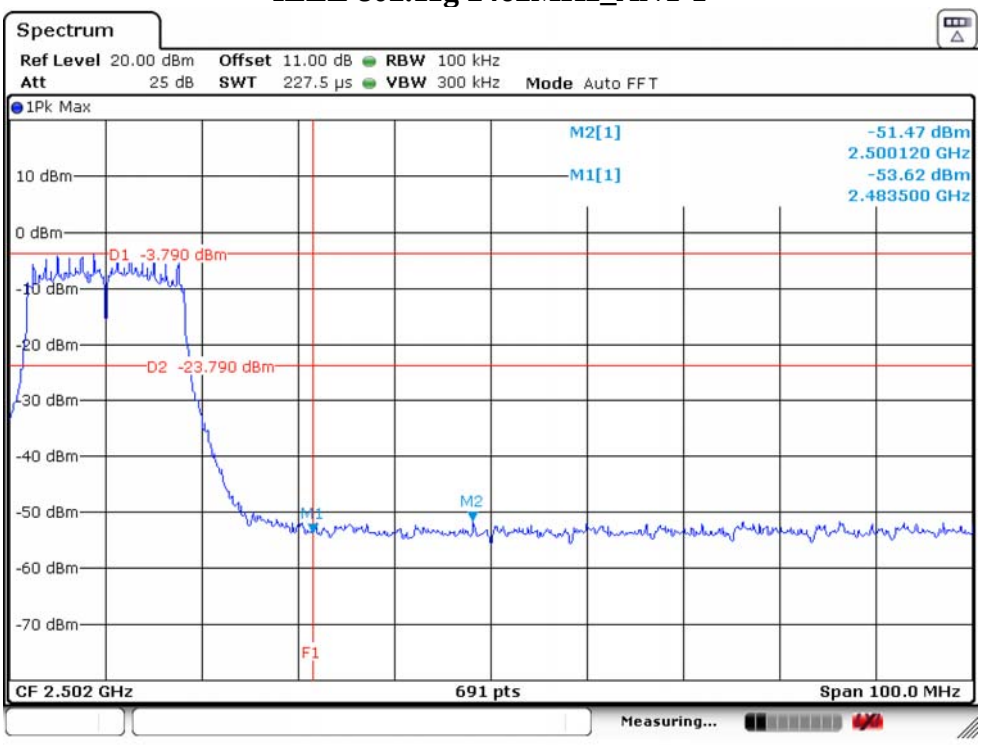
6.5. Test Result

Temperature	24.1℃	Relative Humidity	46.7%	Test Voltage	DC 3.3V
Result	PASS				

IEEE 802.11g 2412MHz_ANT 1



IEEE 802.11g 2462MHz_ANT 1

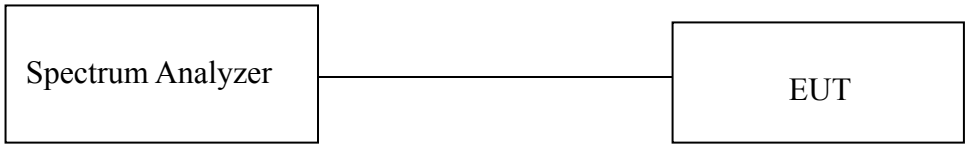


7. CONDUCTED SPURIOUS EMISSIONS

7.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.2. Test Setup



7.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	25GHz
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

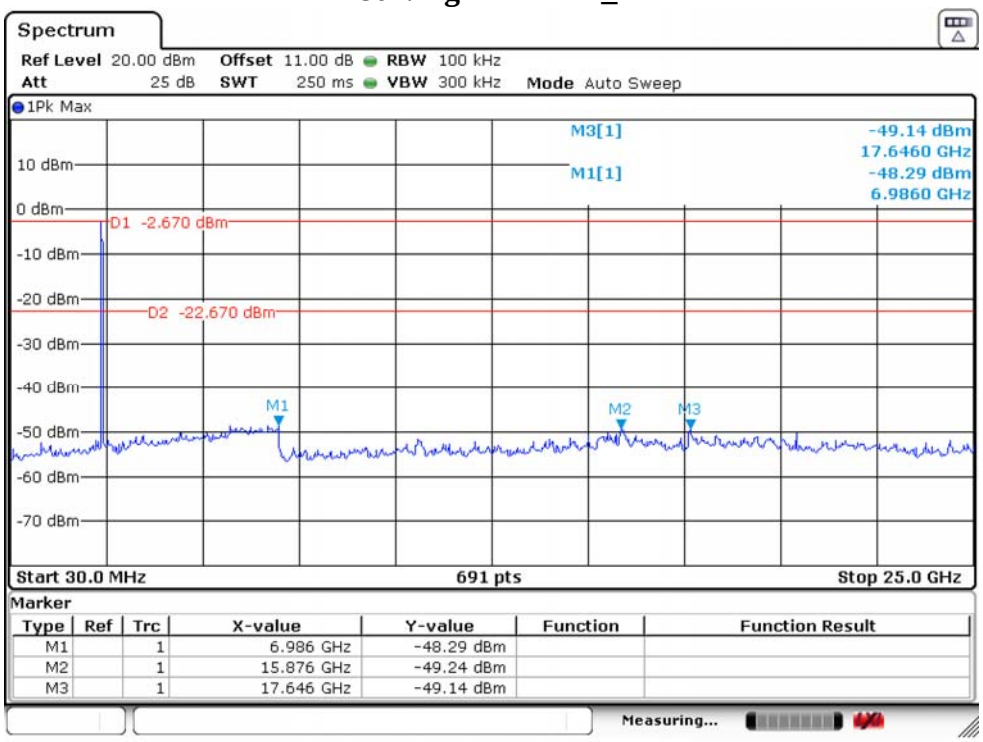
7.4. Test Procedure

a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
b. Spectrum analyzer setting parameters in accordance with section 7.3.
c. Set the EUT transmit continuously with maximum output power.
d. Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
e. Repeat above procedures until all modes and channels were measured.
f. Record the results in the test report.
g. IEEE 802.11b, IEEE 802.11g, IEEE 802. 11nH20, IEEE 802. 11nH40 all have been tested, only worst case IEEE 802.11g is recorded. The antenna 1 test data is recorded in report.

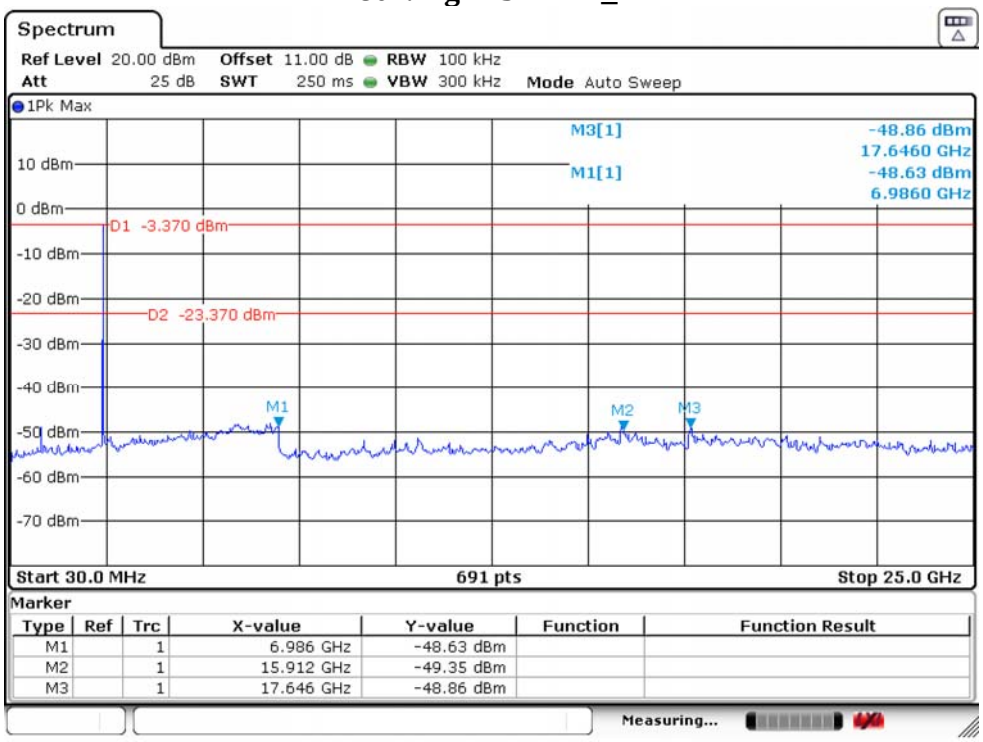
7.5. Test Result

Temperature	24.1℃	Relative Humidity	46.7%	Test Voltage	DC 3.3V
Result	PASS				

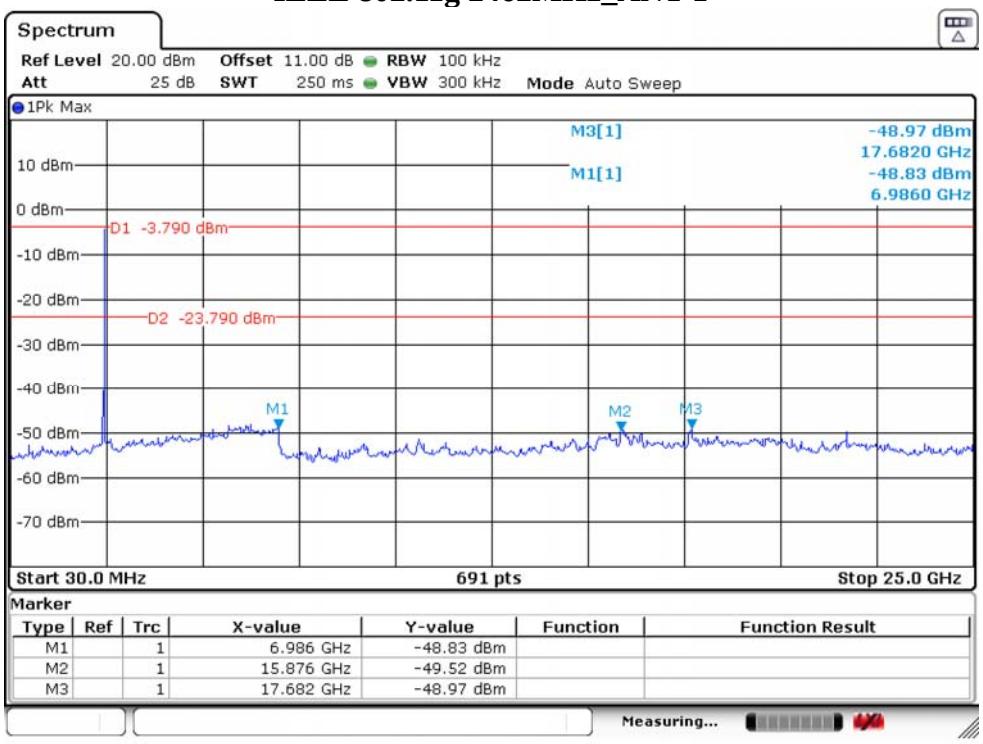
IEEE 802.11g 2412MHz_ANT 1



IEEE 802.11g 2437MHz_ANT 1



IEEE 802.11g 2462MHz_ANT 1



8. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

15.209 Limit

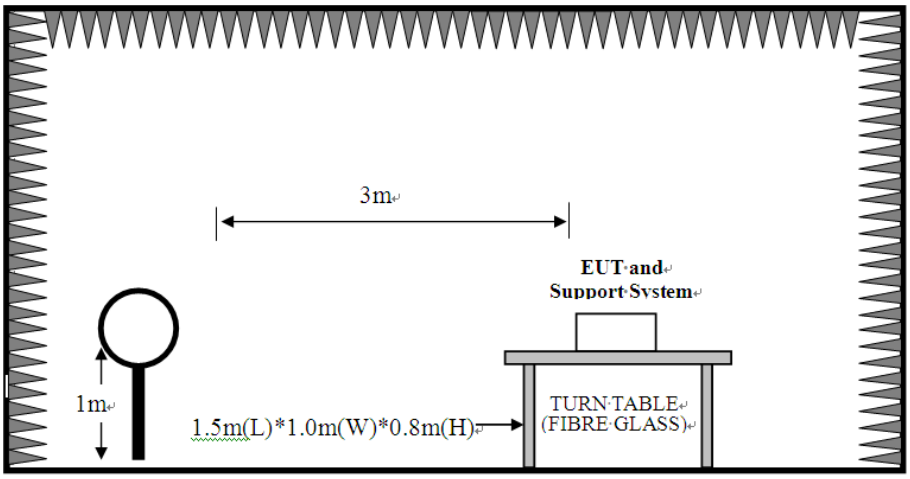
Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Note:

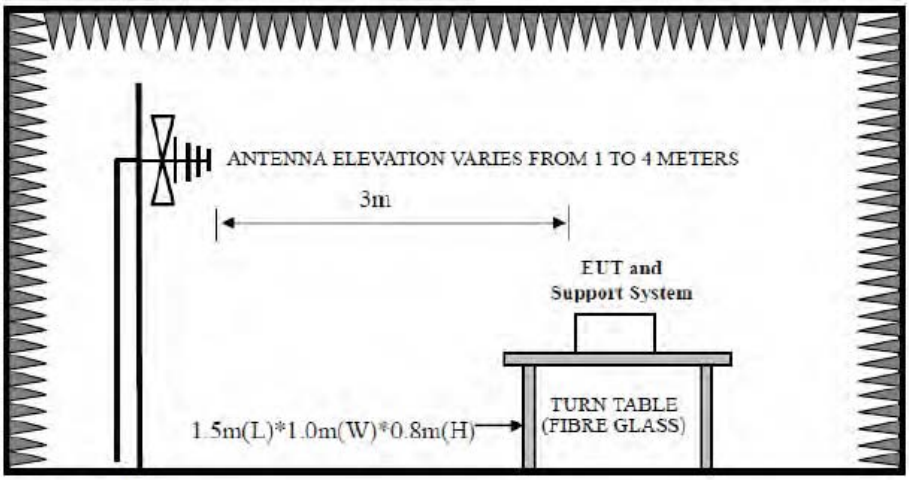
(1) Emission level dBμV = 20 log Emission level μV/m.
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument,antenna and the closest point of any part of the device or system.

8.2. Test Setup

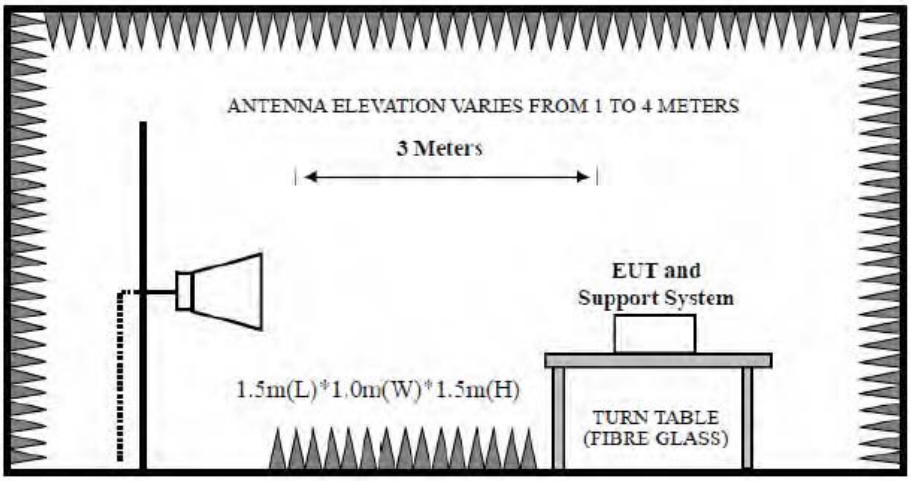
9kHz~30MHz



30~1000MHz



Above 1GHz



8.3. Spectrum Analyzer Setting

For 9KHz-150KHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9KHz
Stop frequency	150KHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

For 150KHz-30MHz

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For 30MHz-1GHz

Spectrum Parameters	Setting
RBW	120KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	1GHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For Above 1GHz

Spectrum Parameters	Setting	
RBW	1MHz	
VBW	PEAK Measurement	AVG Measurement
	3MHz	Duty cycle≥98%,VBW=10Hz
		Duty cycle＜98%,VBW≥1/T
Start frequency	1GHz	
Stop frequency	25GHz	
Sweep Time	Auto	
Detector	PEAK	
Trace Mode	Max Hold	

Note :

1. T is the on-time time of the duty cycle,when EUT transmit continuously with maximum output power,unit is seconds. reference section 2.8 for the on-time time.

8.4. Test Procedure

a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
c. Set the EUT transmit continuously with maximum output power.
d. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
f. Spectrum analyzer setting parameters in accordance with section 8.3.
g. Repeat above procedures until all channels were measured.
h. Record the results in the test report.

Note:

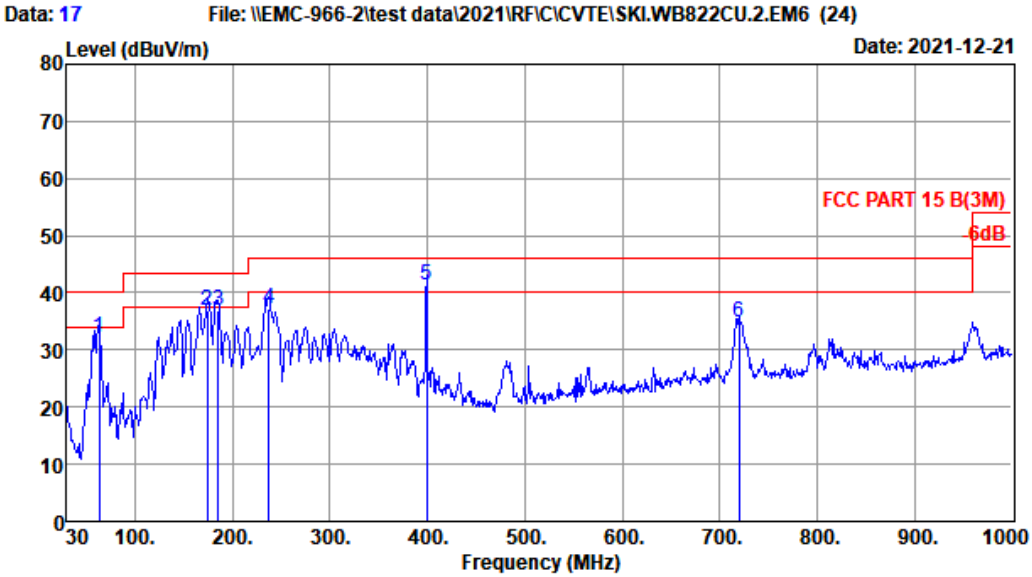
1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2. The frequency 2412MHz/2422MHz/2437MHz/2452MHz/2462MHz are fundamental frequency,which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.
3. IEEE 802.11b, IEEE 802.11g, IEEE 802. 11nH20, IEEE 802. 11nH40 all have been tested, only worst case 802.11n HT20 is recorded. The antenna 2 test data is recorded in report.

8.5. Test Result

Radiated Emissions Below 1GHz

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



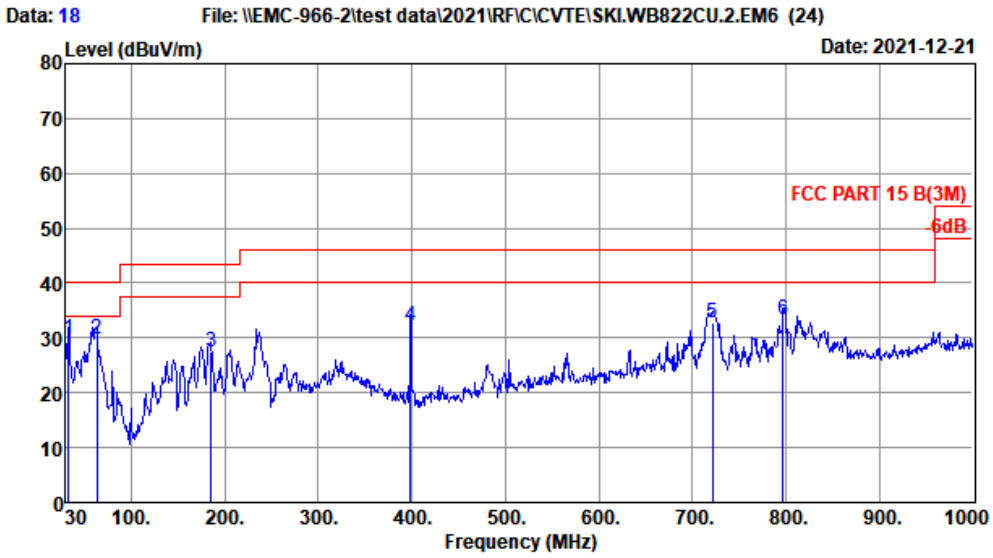
Site no. : 2# 966 chamber Data no. : 17
Dis. / Ant. : 3m 47018 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:24.1℃;Humi:46.7%;Press:101.52kPa
Engineer : XJ
EUT : IEEE802.11a/b/g/n/ac 2T2R USB WiFi Module Integrated Bluetooth 2.1/3.0/4.2/5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.98	5.24	0.42	26.60	32.26	40.00	7.74	QP
2	174.53	9.90	1.08	25.87	36.85	43.50	6.65	QP
3	185.20	9.40	1.12	26.27	36.79	43.50	6.71	QP
4	237.58	11.34	1.37	24.52	37.23	46.00	8.77	QP
5	399.57	16.20	1.83	23.18	41.21	46.00	4.79	QP
6	719.67	21.80	2.92	10.05	34.77	46.00	11.23	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



Site no. : 2# 966 chamber Data no. : 18
Dis. / Ant. : 3m 47018 Ant. pol. : VERTICAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:24.1°C;Humi:46.7%;Press:101.52kPa
Engineer : XJ
EUT : IEEE802.11a/b/g/n/ac 2T2R USB WiFi Module Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.91	16.35	0.22	13.24	29.81	40.00	10.19	QP
2	62.98	5.24	0.42	24.30	29.96	40.00	10.04	QP
3	185.20	9.40	1.12	16.80	27.32	43.50	16.18	QP
4	398.60	16.19	1.81	14.15	32.15	46.00	13.85	QP
5	721.61	21.80	2.93	8.18	32.91	46.00	13.09	QP
6	797.27	22.97	3.04	7.46	33.47	46.00	12.53	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

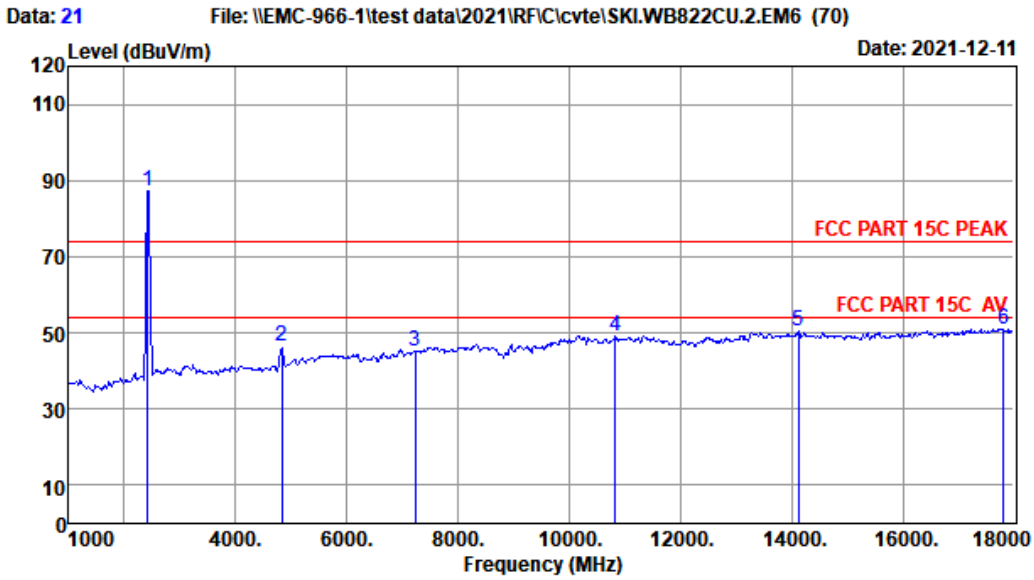
Note:

1. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
2. All channels had been pre-test,only the worst case was reported.

Radiated Emissions Above 1G

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



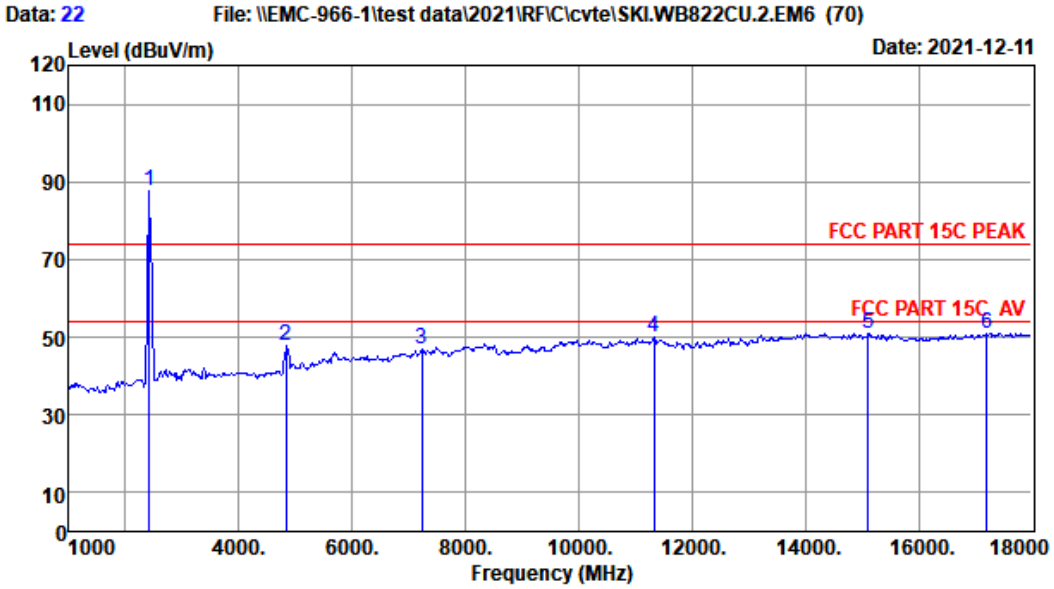
Site no. : 1# 966 Chamber Data no. : 21
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi ModuIe Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.28	1.46	34.64	93.27	87.37	74.00	-13.37	Peak
2	4824.00	31.18	3.26	34.67	46.55	46.32	74.00	27.68	Peak
3	7236.00	36.28	5.20	34.82	38.35	45.01	74.00	28.99	Peak
4	10826.00	39.73	6.08	34.45	37.93	49.29	74.00	24.71	Peak
5	14124.00	41.08	6.62	34.34	37.03	50.39	74.00	23.61	Peak
6	17813.00	47.41	8.12	34.32	29.88	51.09	74.00	22.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



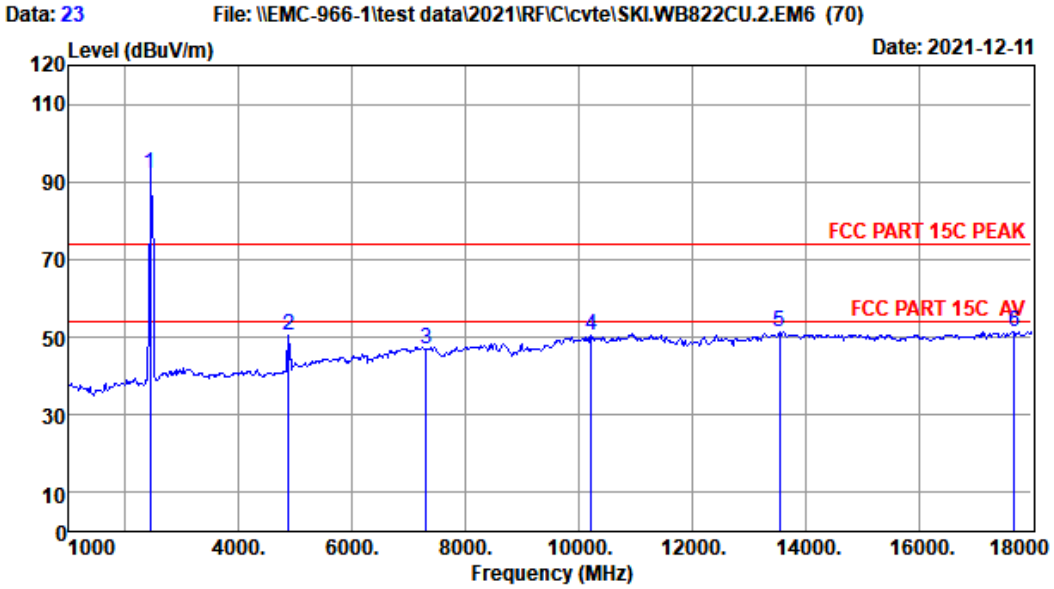
Site no. : 1# 966 Chamber Data no. : 22
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi
ModuIe Integrated Bluetooth 2.1/3.0/4.2/
5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.28	1.46	34.64	93.44	87.54	74.00	-13.54	Peak
2	4824.00	31.18	3.26	34.67	48.03	47.80	74.00	26.20	Peak
3	7236.00	36.28	5.20	34.82	40.44	47.10	74.00	26.90	Peak
4	11336.00	39.90	6.14	34.60	38.53	49.97	74.00	24.03	Peak
5	15110.00	40.79	6.73	34.56	38.08	51.04	74.00	22.96	Peak
6	17201.00	42.53	7.62	34.38	35.33	51.10	74.00	22.90	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



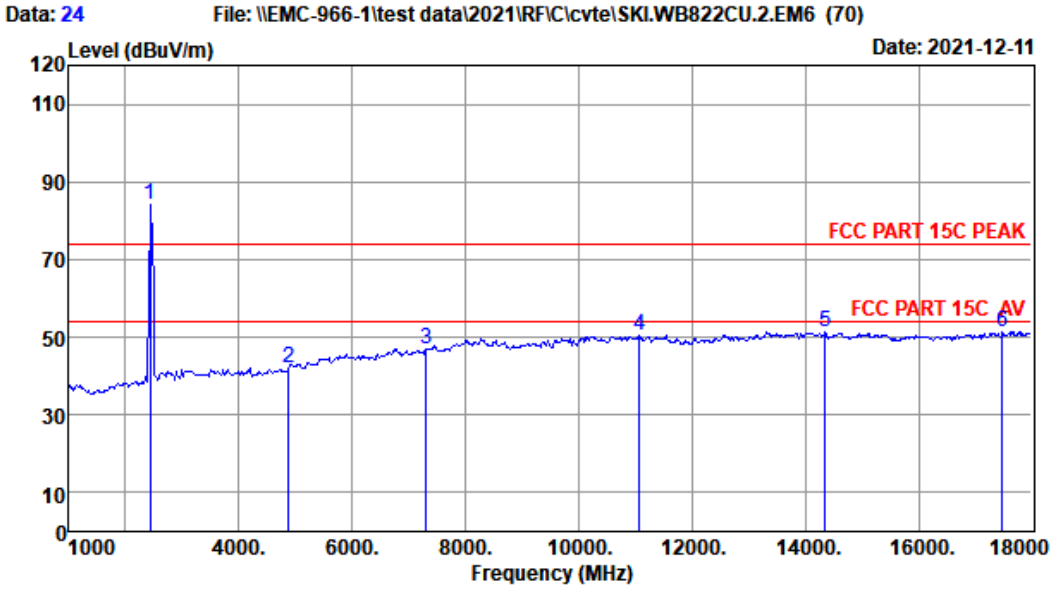
Site no. : 1# 966 Chamber Data no. : 23
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.33	1.47	34.62	97.72	91.90	74.00	-17.90	Peak
2	4874.00	31.37	3.31	34.68	50.48	50.48	74.00	23.52	Peak
3	7311.00	36.42	5.22	34.83	39.96	46.77	74.00	27.23	Peak
4	10214.00	39.12	5.95	34.27	39.61	50.41	74.00	23.59	Peak
5	13546.00	40.32	6.35	34.35	39.14	51.46	74.00	22.54	Peak
6	17694.00	46.46	8.04	34.33	31.21	51.38	74.00	22.62	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



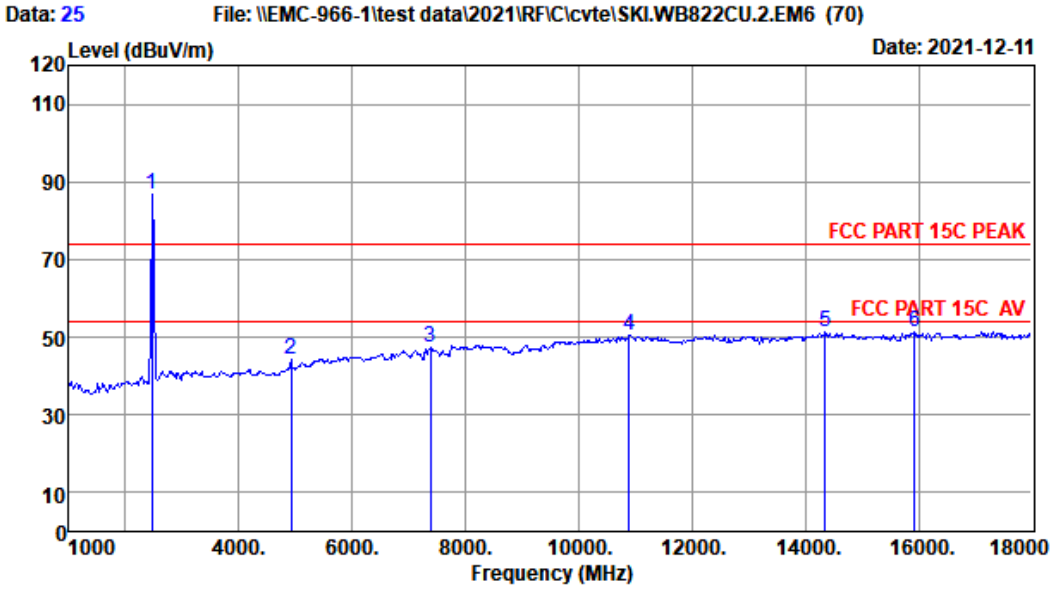
Site no. : 1# 966 Chamber Data no. : 24
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi
ModuIe Integrated Bluetooth 2.1/3.0/4.2/
5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.33	1.47	34.62	89.87	84.05	74.00	-10.05	Peak
2	4874.00	31.37	3.31	34.68	41.98	41.98	74.00	32.02	Peak
3	7311.00	36.42	5.22	34.83	40.09	46.90	74.00	27.10	Peak
4	11064.00	39.90	6.12	34.52	38.90	50.40	74.00	23.60	Peak
5	14345.00	41.03	6.79	34.40	37.92	51.34	74.00	22.66	Peak
6	17473.00	44.70	7.89	34.35	33.27	51.51	74.00	22.49	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



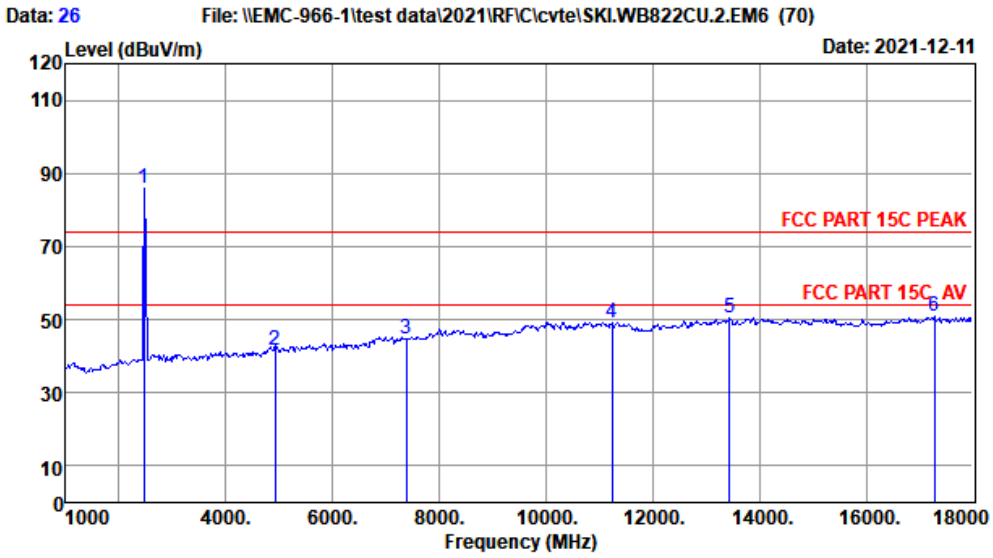
Site no. : 1# 966 Chamber Data no. : 25
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.35	1.48	34.62	92.51	86.72	74.00	-12.72	Peak
2	4924.00	31.55	3.35	34.69	44.05	44.26	74.00	29.74	Peak
3	7386.00	36.59	5.24	34.84	40.22	47.21	74.00	26.79	Peak
4	10894.00	39.80	6.09	34.47	39.03	50.45	74.00	23.55	Peak
5	14345.00	41.03	6.79	34.40	37.73	51.15	74.00	22.85	Peak
6	15926.00	39.88	6.84	34.23	38.70	51.19	74.00	22.81	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878




```
Site no.      : 1# 966 Chamber              Data no.  : 26
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer      : JBR
EUT           : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi
                ModuIe Integrated Bluetooth 2.1/3.0/4.2/
                5.0
Power         : DC 3.3V
M/N           : SKI.WB822CU.2
Test Mode     : IEEE 802.11n HT20 TX 2462MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.35	1.48	34.62	91.80	86.01	74.00	-12.01	Peak
2	4924.00	31.55	3.35	34.69	41.54	41.75	74.00	32.25	Peak
3	7386.00	36.59	5.24	34.84	37.87	44.86	74.00	29.14	Peak
4	11234.00	39.90	6.13	34.57	37.79	49.25	74.00	24.75	Peak
5	13444.00	40.15	6.32	34.36	38.38	50.49	74.00	23.51	Peak
6	17286.00	43.21	7.70	34.37	34.25	50.79	74.00	23.21	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

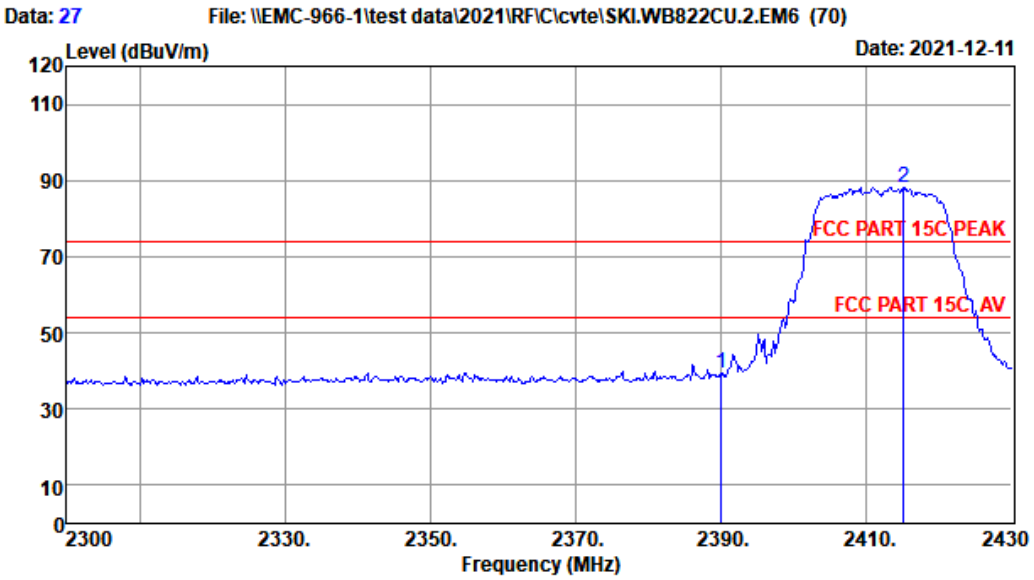
Note:

1. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Radiated Band Edge

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



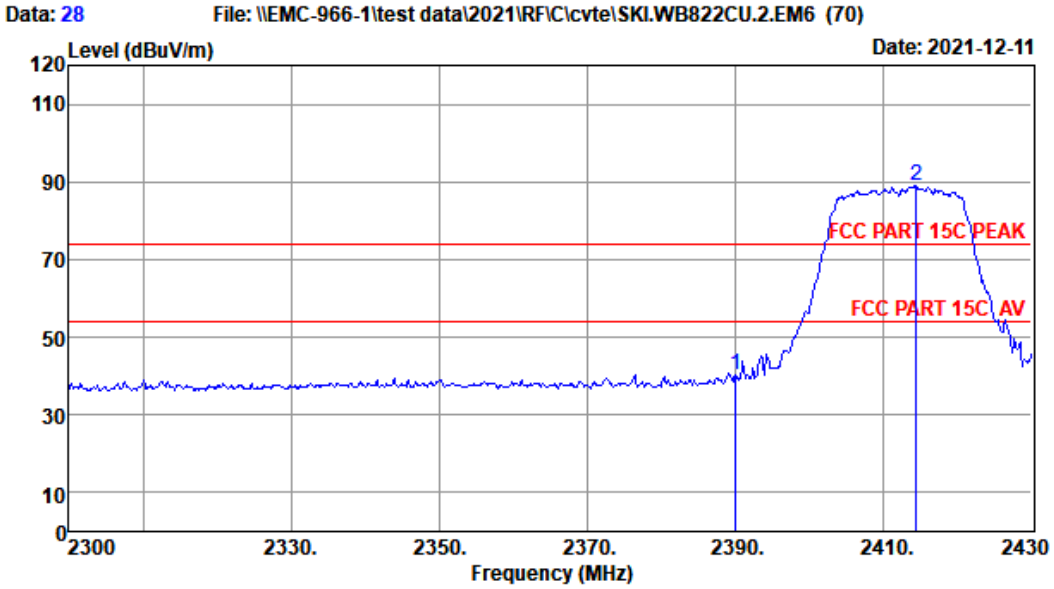
Site no. : 1# 966 Chamber Data no. : 27
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi ModuIe Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.26	1.45	34.64	45.36	39.43	74.00	34.57	Peak
2	2415.05	27.28	1.46	34.64	94.01	88.11	74.00	-14.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



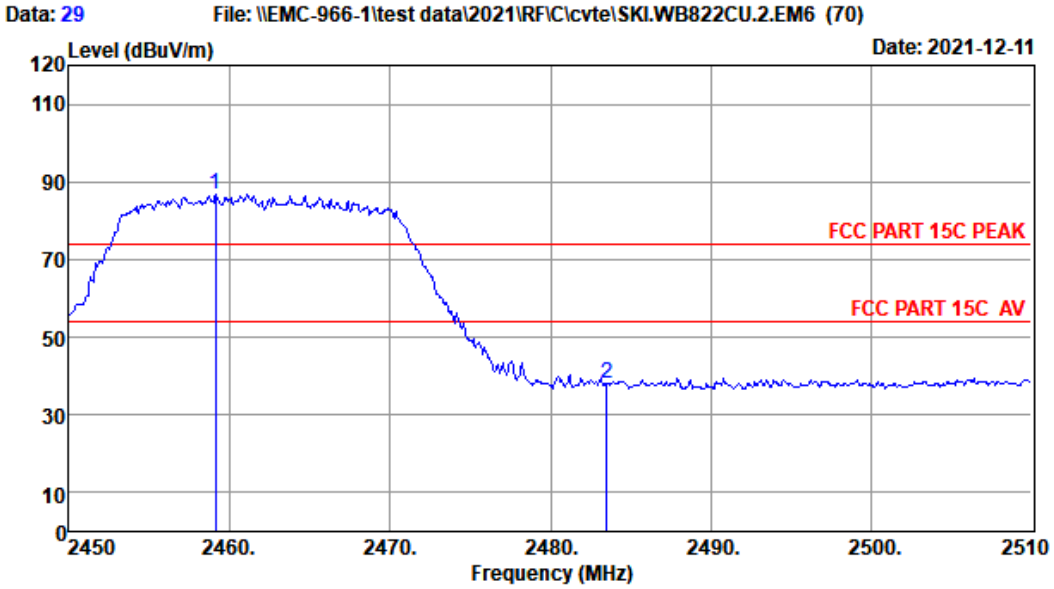
Site no. : 1# 966 Chamber Data no. : 28
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi
ModuIe Integrated Bluetooth 2.1/3.0/4.2/
5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.26	1.45	34.64	46.18	40.25	74.00	33.75	Peak
2	2414.40	27.28	1.46	34.64	94.89	88.99	74.00	-14.99	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



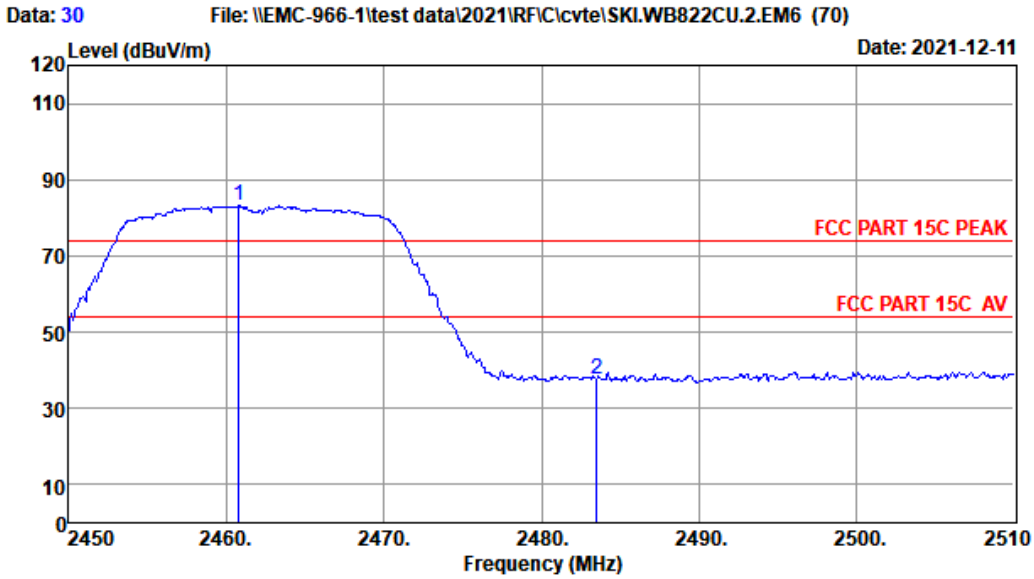
Site no. : 1# 966 Chamber Data no. : 29
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi
ModuIe Integrated Bluetooth 2.1/3.0/4.2/
5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.12	27.35	1.48	34.62	92.42	86.63	74.00	-12.63	Peak
2	2483.50	27.38	1.48	34.61	43.84	38.09	74.00	35.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 30
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:20.7';Humi:50.3%;Press:101.52kPa
Engineer : JBR
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi ModuIe Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V
M/N : SKI.WB822CU.2
Test Mode : IEEE 802.11n HT20 TX 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.80	27.35	1.48	34.62	89.07	83.28	74.00	-9.28	Peak
2	2483.50	27.38	1.48	34.61	43.46	37.71	74.00	36.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Note:

1. All channels had been pre-test,only of the worst case channels were reported.

9. AC POWER LINE CONDUCTED EMISSIONS

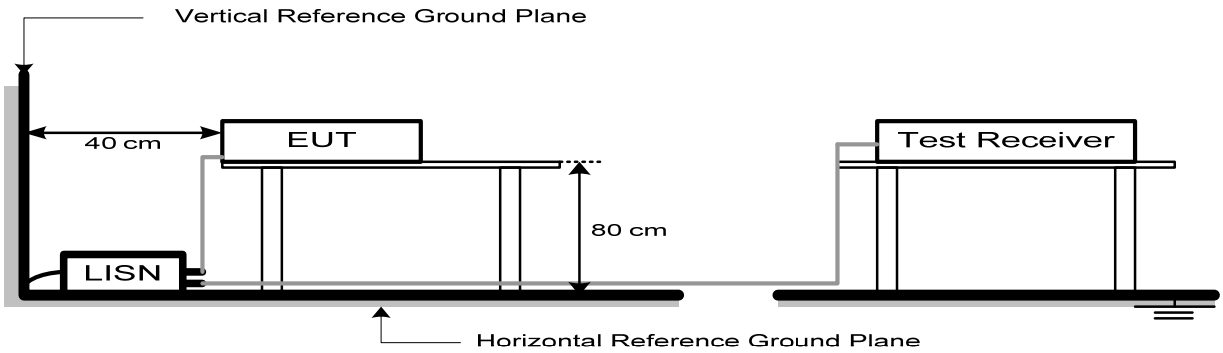
9.1. Limit

Frequency			Maximum RF Line Voltage	
			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Note:

1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

9.2. Test Setup



9.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP/AVG
Trace Mode	Max Hold

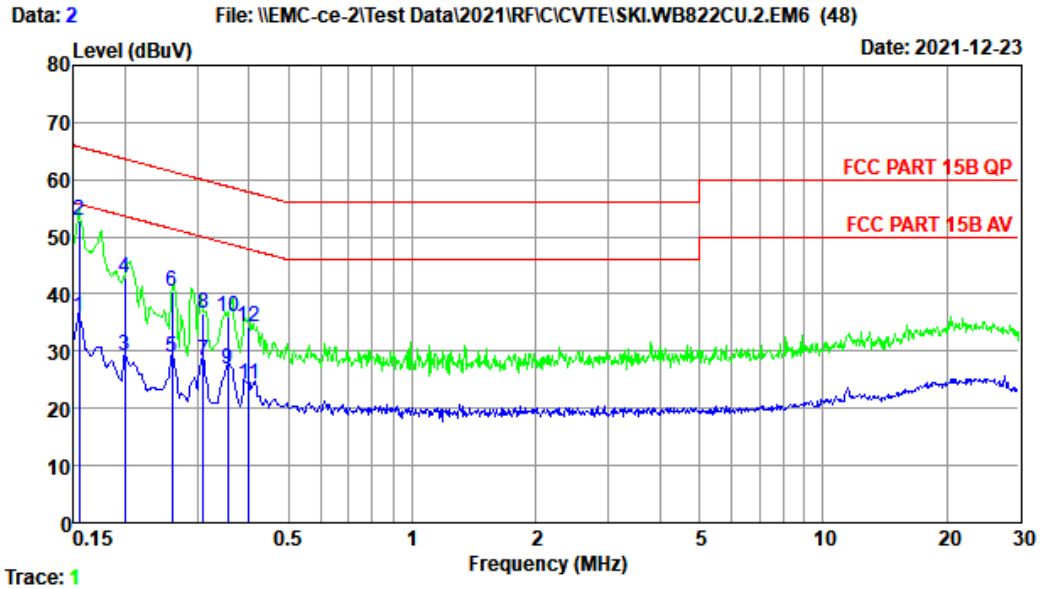
9.4. Test Procedure

a. The EUT was placed on a non-metallic table, 80cm above the ground plane.
b. The EUT Power connected to the power mains through a line impedance stabilization network.
c. Provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs).
d. Set the EUT transmit continuously with maximum output power.
e. Spectrum analyzer setting parameters in accordance with section 9.3.
f. The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.
g. Record the results in the test report.

9.5. Test Result

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



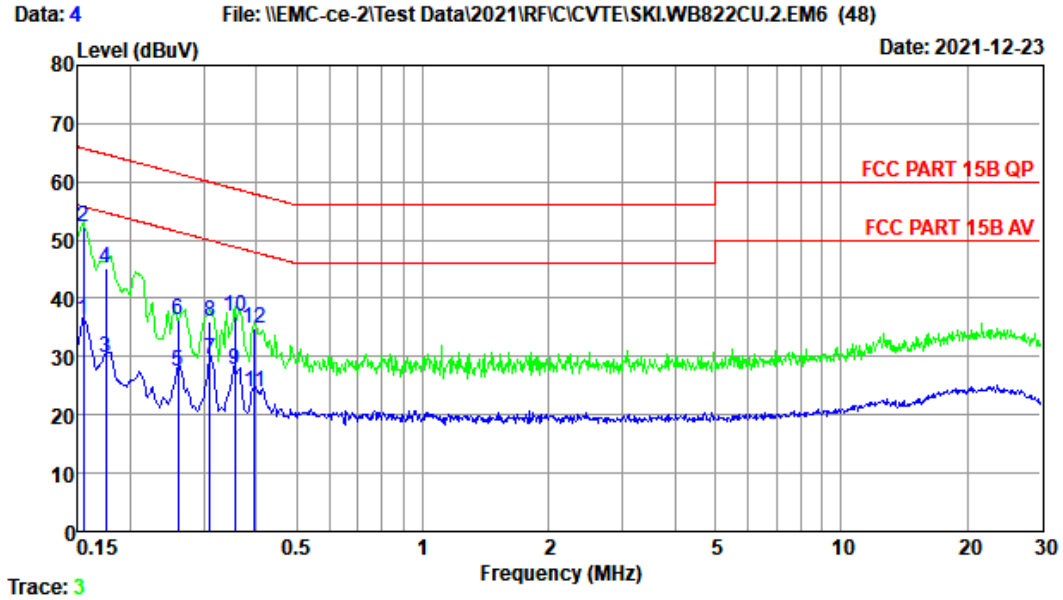
Site no. : 2#CE Shield Room Data no. : 2
Env. / Ins. : Temp:22.8℃ Humi:58% Press:101.30kPa. : NEUTRAL
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi ModuIe Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V From PC Input AC 120V/60Hz
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	9.78	9.69	16.50	35.97	55.74	19.77	Average
2	0.15	9.78	9.69	33.26	52.73	65.74	13.01	QP
3	0.20	9.72	9.77	9.62	29.11	53.62	24.51	Average
4	0.20	9.72	9.77	23.25	42.74	63.62	20.88	QP
5	0.26	9.84	9.92	9.06	28.82	51.42	22.60	Average
6	0.26	9.84	9.92	20.60	40.36	61.42	21.06	QP
7	0.31	9.83	9.92	8.49	28.24	49.97	21.73	Average
8	0.31	9.83	9.92	16.86	36.61	59.97	23.36	QP
9	0.36	9.74	9.92	7.23	26.89	48.83	21.94	Average
10	0.36	9.74	9.92	16.36	36.02	58.83	22.81	QP
11	0.40	9.72	9.92	4.54	24.18	47.86	23.68	Average
12	0.40	9.72	9.92	14.61	34.25	57.86	23.61	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



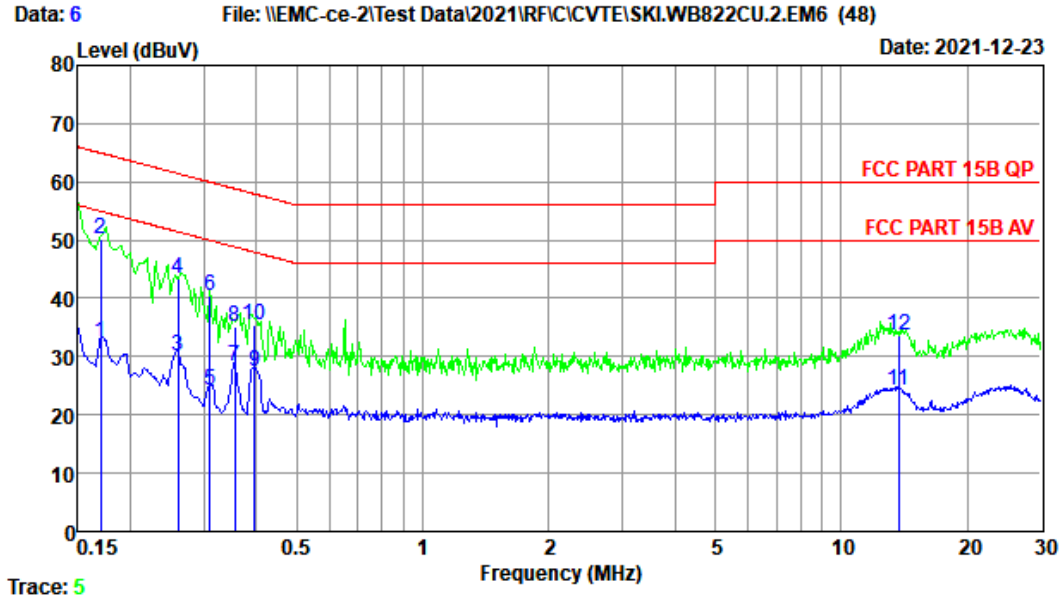
Site no. : 2#CE Shield Room Data no. : 4
Env. / Ins. : Temp:22.8°C Humi:58% Press:101.30kPa. : LINE
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/5.0
Power : DC 3.3V From PC Input AC 120V/60Hz
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	9.82	9.69	16.68	36.19	55.74	19.55	Average
2	0.15	9.82	9.69	32.83	52.34	65.74	13.40	QP
3	0.17	9.84	9.77	10.16	29.77	54.72	24.95	Average
4	0.17	9.84	9.77	25.64	45.25	64.72	19.47	QP
5	0.26	9.73	9.92	7.89	27.54	51.42	23.88	Average
6	0.26	9.73	9.92	16.57	36.22	61.42	25.20	QP
7	0.31	9.81	9.92	9.93	29.66	49.97	20.31	Average
8	0.31	9.81	9.92	16.39	36.12	59.97	23.85	QP
9	0.36	9.81	9.92	8.15	27.88	48.83	20.95	Average
10	0.36	9.81	9.92	17.16	36.89	58.83	21.94	QP
11	0.40	9.85	9.92	4.11	23.88	47.95	24.07	Average
12	0.40	9.85	9.92	15.19	34.96	57.95	22.99	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



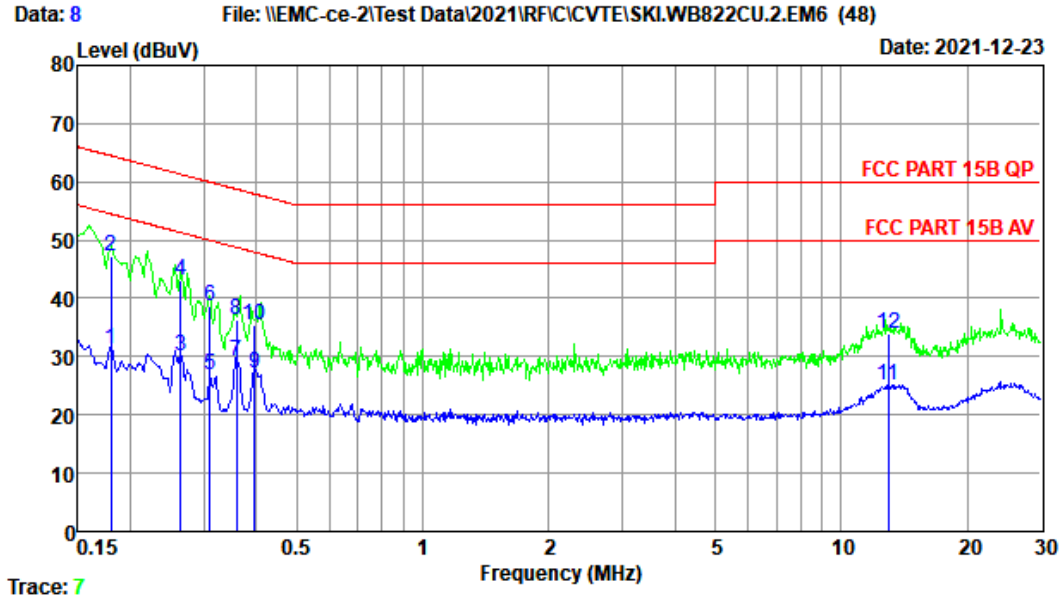
Site no. : 2#CE Shield Room Data no. : 6
Env. / Ins. : Temp:22.8°C Humi:58% Press:101.30kPa. : LINE
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi ModuIe Integrated Bluetooth 2.1/3.0/4.2/ 5.0
Power : DC 3.3V From PC Input AC 240V/60Hz
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.17	9.82	9.69	13.00	32.51	54.94	22.43	Average
2	0.17	9.82	9.69	30.57	50.08	64.94	14.86	QP
3	0.26	9.73	9.92	10.56	30.21	51.42	21.21	Average
4	0.26	9.73	9.92	23.62	43.27	61.42	18.15	QP
5	0.31	9.81	9.92	4.45	24.18	49.97	25.79	Average
6	0.31	9.81	9.92	20.60	40.33	59.97	19.64	QP
7	0.36	9.81	9.92	8.52	28.25	48.83	20.58	Average
8	0.36	9.81	9.92	15.29	35.02	58.83	23.81	QP
9	0.40	9.85	9.92	7.58	27.35	47.95	20.60	Average
10	0.40	9.85	9.92	15.77	35.54	57.95	22.41	QP
11	13.70	9.85	10.11	4.37	24.33	50.00	25.67	Average
12	13.70	9.85	10.11	13.62	33.58	60.00	26.42	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan,Guangdong,China
Tel:+86-769-83081888
Fax:+86-769-83081878



Site no. : 2#CE Shield Room Data no. : 8
Env. / Ins. : Temp:22.8°C Humi:58% Press:101.30kPa. : NEUTRAL
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : IEEE802.11a/b/g/n/ac 2T2R USB Wi-Fi Module Integrated Bluetooth 2.1/3.0/4.2/5.0
Power : DC 3.3V From PC Input AC 240V/60Hz
M/N : SKI.WB822CU.2
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18	9.72	9.77	11.77	31.26	54.50	23.24	Average
2	0.18	9.72	9.77	27.76	47.25	64.50	17.25	QP
3	0.26	9.84	9.92	10.24	30.00	51.29	21.29	Average
4	0.26	9.84	9.92	23.43	43.19	61.29	18.10	QP
5	0.31	9.83	9.92	6.98	26.73	49.97	23.24	Average
6	0.31	9.83	9.92	18.84	38.59	59.97	21.38	QP
7	0.36	9.74	9.92	9.66	29.32	48.74	19.42	Average
8	0.36	9.74	9.92	16.63	36.29	58.74	22.45	QP
9	0.40	9.72	9.92	7.48	27.12	47.95	20.83	Average
10	0.40	9.72	9.92	15.85	35.49	57.95	22.46	QP
11	12.99	10.11	10.10	4.99	25.20	50.00	24.80	Average
12	12.99	10.11	10.10	13.81	34.02	60.00	25.98	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

10. ANTENNA REQUIREMENTS

10.1. Limit

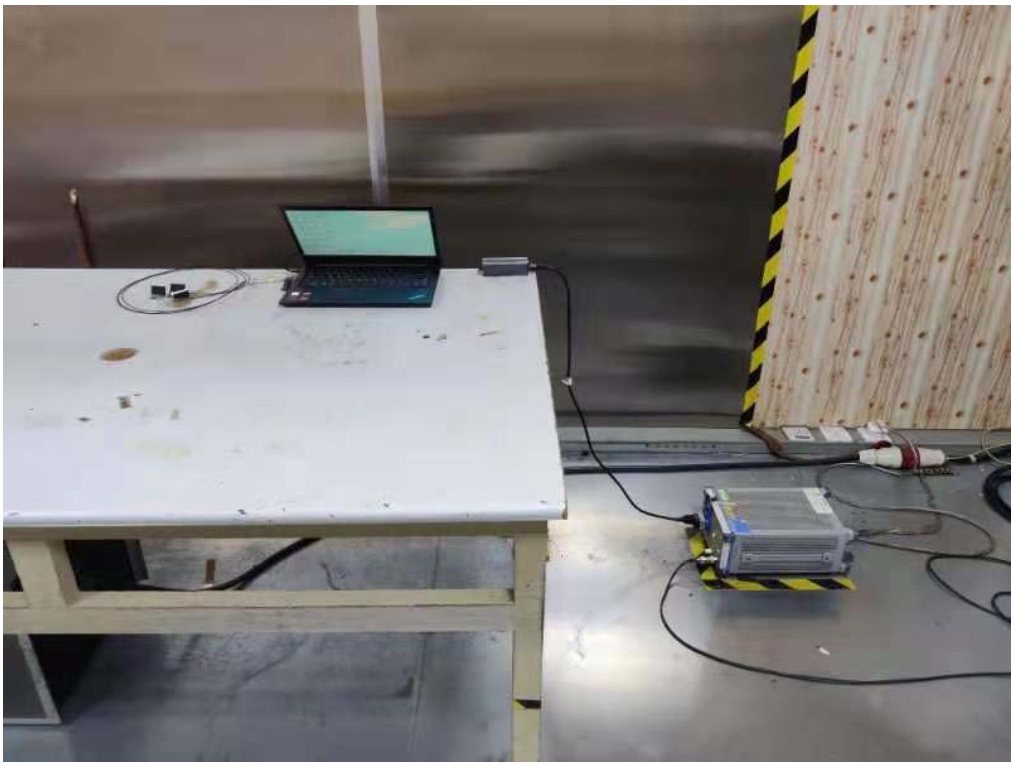
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

10.2. Test Result

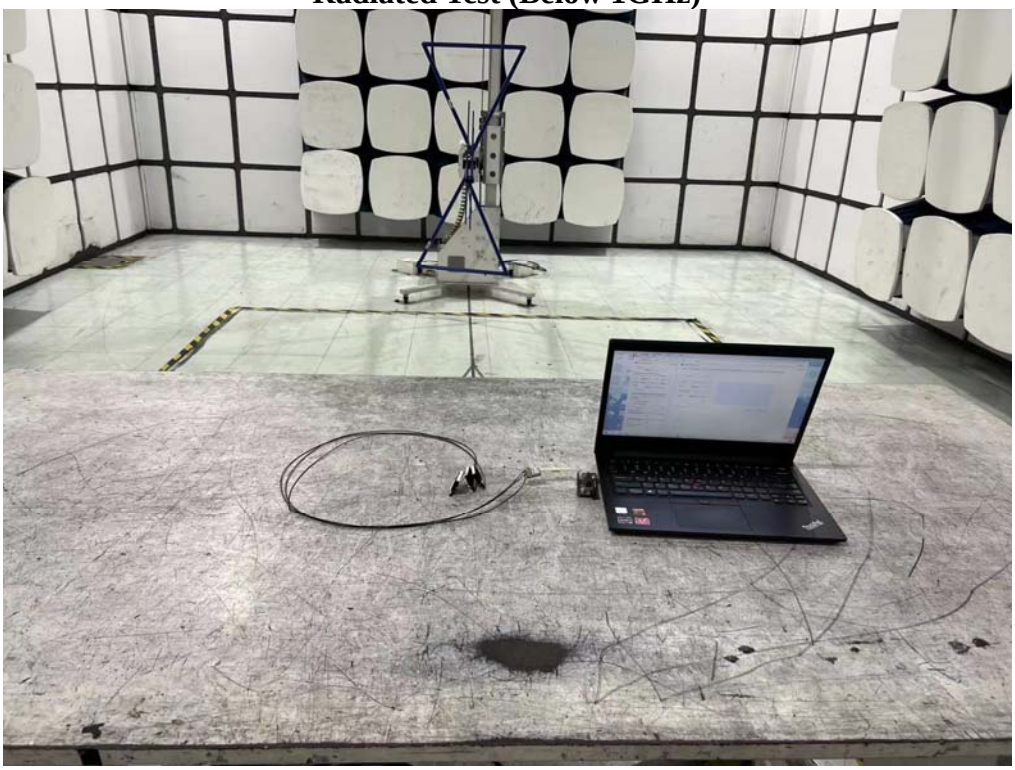
The antennas used for this product is External antenna ,so compliance with antenna requirements.
(Please refer to the EUT photo for details)

11. TEST SETUP PHOTO

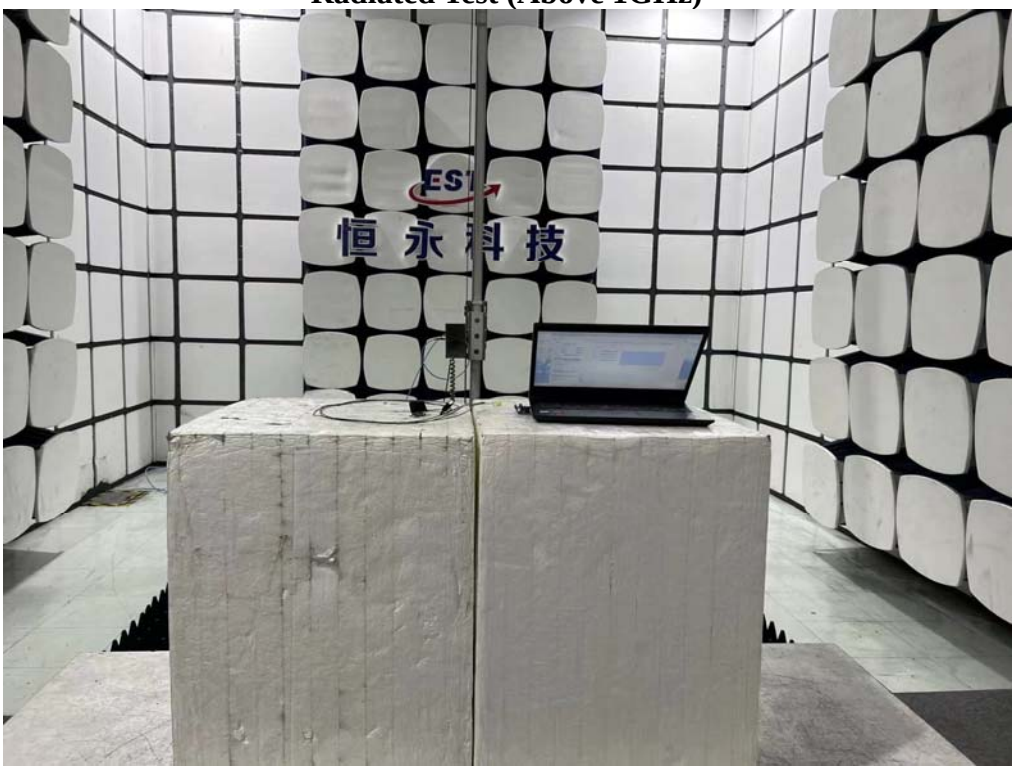
Conducted Test



Radiated Test (Below 1GHz)



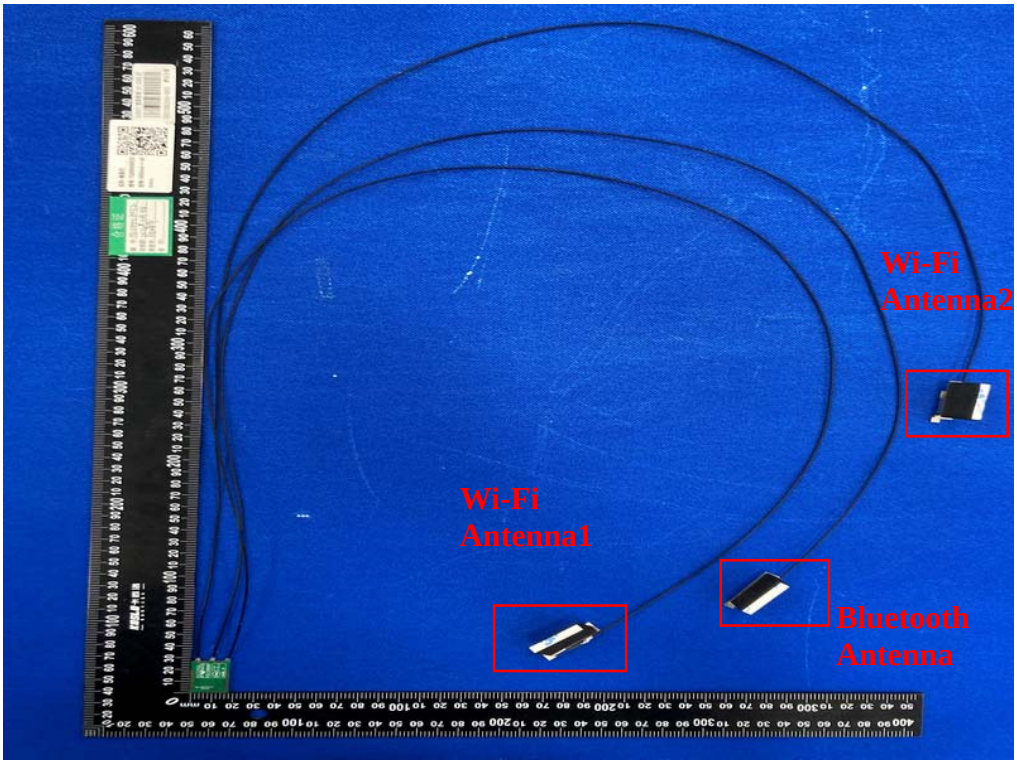
Radiated Test (Above 1GHz)

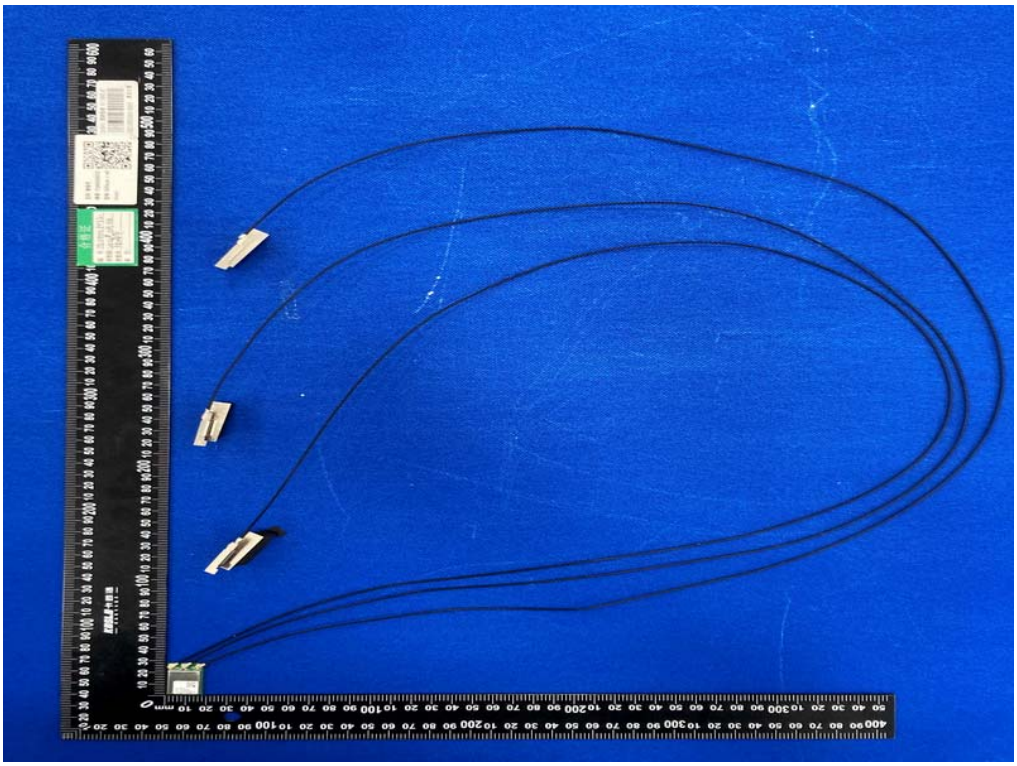


12. EUT PHOTO

External Photos

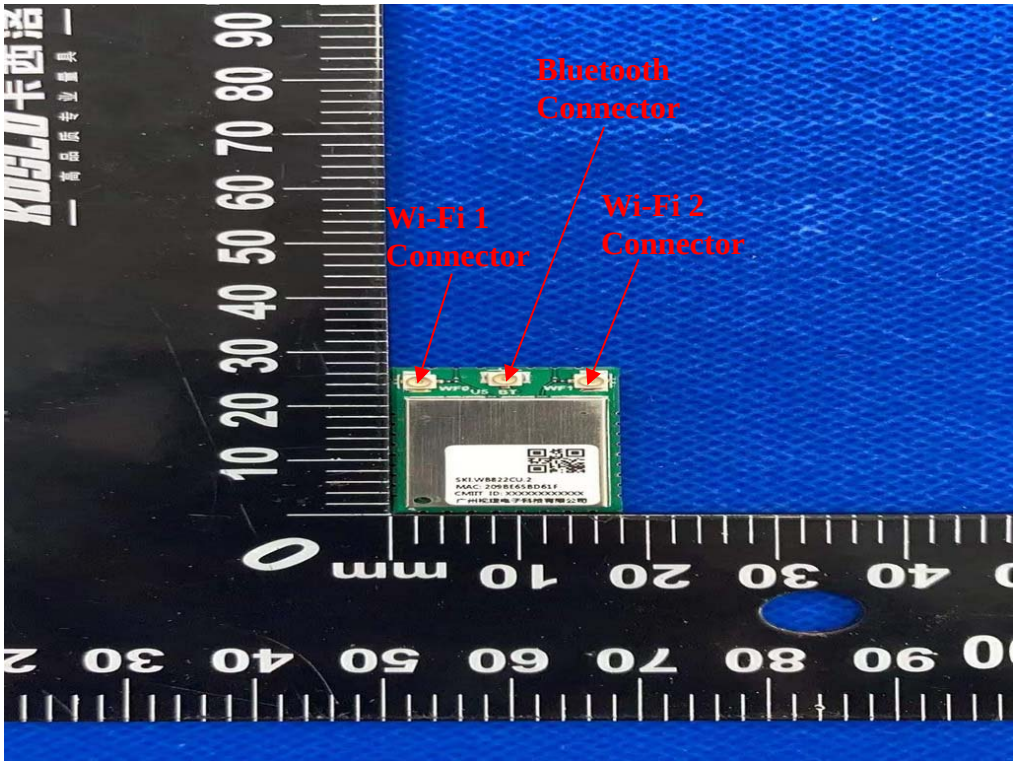
M/N: SKI.WB822CU.2

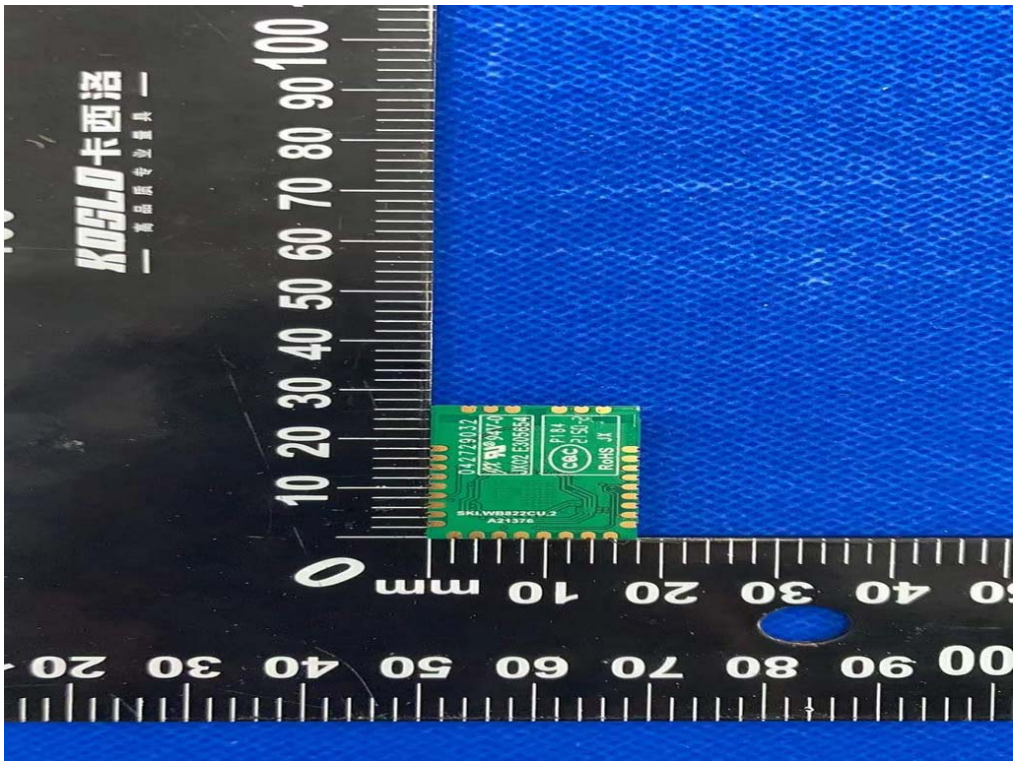




External Photos

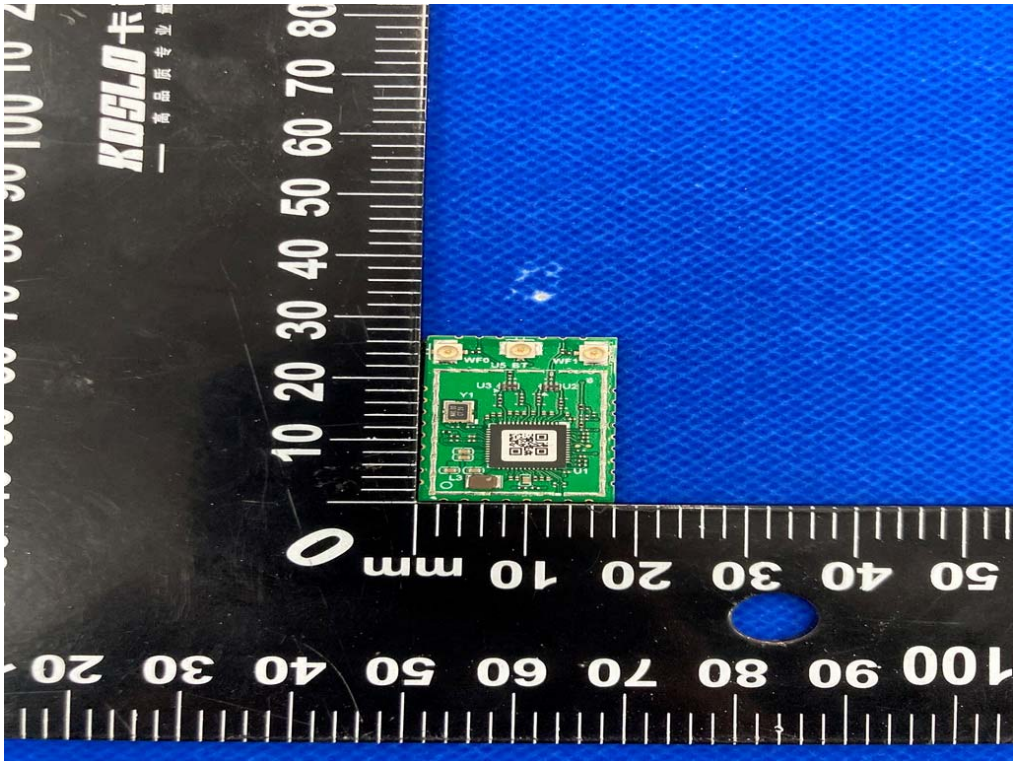
M/N: SKI.WB822CU.2

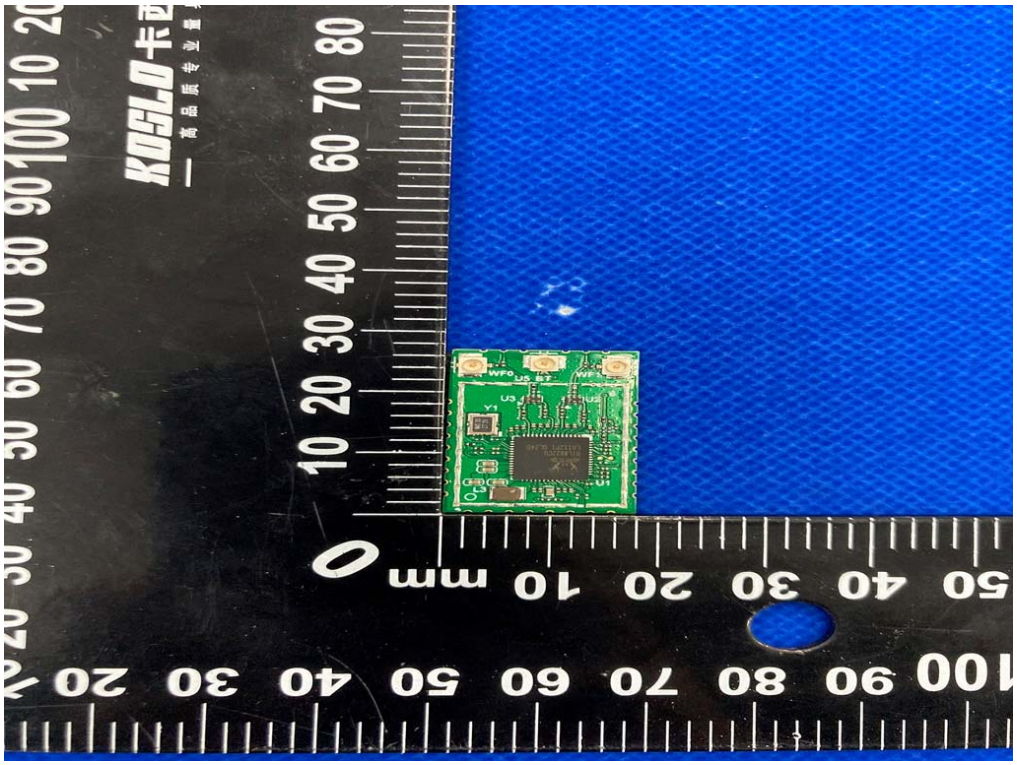




Internal Photos

M/N: SKI.WB822CU.2





End of Test Report