Report No.: RZA2009-1265_15C-WiFi

TESTING
No. L2264

Part 15C

TEST REPORT

Product Name	GSM/GPRS Mobile Phone
Model	W003
FCC ID	XUT-W003
Client	Shenzhen Hongjiayuan Communication Technology CO.,LTD.

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	GSM/GPRS Mobile Phone	**Model**	W003
FCC ID	XUT-W003	**Report No.**	RZA2009-1265_15C-WiFi
Client	Shenzhen Hongjiayuan Communication Technology CO.,LTD.		
Manufacturer	Shenzhen Hongjiayuan Communication Technology CO.,LTD.		
Reference Standard(s)	**FCC Part 15 Subpart C: (2008)** **15.205** Restricted bands of operation**;** **15.209** Radiated emission limits; general requirements; **15.247** Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz. **ANSI C63.4** Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz.(2003) **DA00-705** Filing and Frequency Measurement Guidelines For Frequency Hopping Spread Spectrum System.(2000)		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment: **Pass** (Stamp) **Date of issue: November 13th, 2009**		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中 Yang Weizhong **Revised by** 宋明 Song Ming **Performed by** 刘伟 Liu Wei

TABLE OF CONTENT

1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201210
Country: P. R. China
Contact: Yang Weizhong
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: http://www.ta-shanghai.com
E-mail: yangweizhong@ta-shanghai.com

1.3. Applicant Information

Company:	Shenzhen Hongjiayuan Communication Technology CO.,LTD.
Address:	Room 2406,Block A of Electronic Science and Technology Building,No.2070,Shennan Zhong Road,Futian District,Shenzhen City,Guangdong Province,China
City:	Shenzhen
Postal Code:	/
Country:	P.R. China
Contact:	Cong Chen
Telephone:	+86 755 33366555
Fax:	+86 755 33366565

1.4. Manufacturer Information

Company:	Shenzhen Hongjiayuan Communication Technology CO.,LTD.
Address:	Room 2406,Block A of Electronic Science and Technology Building,No.2070,Shennan Zhong Road,Futian District,Shenzhen City,Guangdong Province,China
City:	Shenzhen
Postal Code:	/
Country:	P.R. China
Telephone:	+86 755 33366555
Fax:	+86 755 33366565

1.5. Information of EUT

General information

Device type:	Portable device
Name of EUT:	GSM/GPRS Mobile Phone
Device operating configurations:	
IMEI or SN:	350039800027942
Network Standards:	IEEE802.11b, IEEE802.11g
Test modulation:	DSSS OFDM CCK
Antenna type:	Internal antenna
Power supply:	Battery or Charger (AC adaptor)
Date Rate:	802.11b: 1, 2, 5.5, 11Mbps 802.11g:6, 9, 12, 18, 24, 36, 48, 54 Mbps
Max Conducted Power	13.72 dBm
Extreme Voltage:	Minimum: 3.5V Maximum: 4.2V
Extreme Temperature:	Lowest: -10°C Highest: +55°C
Operating frequency range(s)	2400MHz~ 2483.5 MHz
Hardware version:	E709_V1.1
Software version:	E709_JJF1.01.0

Auxiliary equipment details

AE1:Battary	
Model:	W003
Manufacture:	Shenzhen Hongjiayuan Communication Technology CO.,LTD.
IMEI or SN:	/
AE2: Travel Adapter	
Model:	HY-SW0500500X
Manufacture:	Shenzhen HanYuXun Electronics CO.,LTD.
IMEI or SN:	/

Equipment Under Test (EUT) is GSM/GPRS Mobile Phone with integrated antenna. It consists of mobile phone, battery and adaptor (see ANNEX A) and the detail about these is in chapter 1.5 in this report. The EUT supports WIFI.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed from October 23, 2009 to November 11, 2009.

2. Test Information

2.1. Summary of test results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Peak Power Output –Conducted	15.247(b)(3)	PASS
2	Minimum 6dB bandwidth	15.247(a)(2)	PASS
3	Band Edges compliance	15.247(d)	PASS
4	Power spectral Density	15.247(e)	PASS
5	Conducted Spurious Emission	15.247	PASS
6	Conducted Emissions	15.207,15.107	PASS
7	Radiates Emission	15.247(d),15.205,15.209	PASS

2.2. Peak Power Output –Conducted

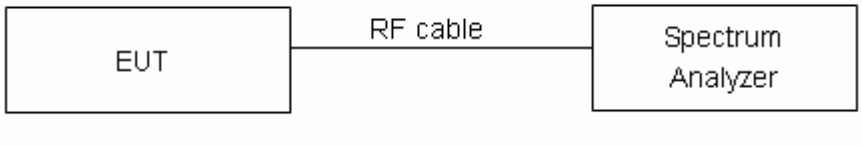
Ambient condition

Temperature	Relative humidity	Pressure
24°C	50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. These measurements have been tested at following channels: 1, 6, and 11.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.”

Peak Output Power	≤ 1W (30dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 2. U= 0.44 dB.

Test Results

Network Standards	Bit Rate	Carrier Frequency (MHz)	Peak Output Power (dBm)	Conclusion
802.11b	1 Mbps	2412	**12.90**	PASS
		2437	**13.45**	
		2462	**13.72**	
	2 Mbps	2412	12.70	
		2437	13.27	
		2462	13.52	
	5.5 Mbps	2412	12.55	
		2437	13.06	
		2462	13.36	
	11 Mbps	2412	12.40	
		2437	12.85	
		2462	13.13	
802.11g	6 Mbps	2412	**10.28**	PASS
		2437	**9.36**	
		2462	**9.64**	
	9 Mbps	2412	8.90	
		2437	7.96	
		2462	8.20	
	12 Mbps	2412	7.82	
		2437	6.85	
		2462	7.09	
	18 Mbps	2412	6.60	
		2437	5.60	
		2462	5.82	
	24 Mbps	2412	5.62	
		2437	4.50	
		2462	4.82	
	36 Mbps	2412	4.67	
		2437	3.67	
		2462	3.80	
	48 Mbps	2412	4.00	
		2437	2.98	
		2462	3.12	
	54 Mbps	2412	3.55	
		2437	2.52	
		2462	2.70	

2.3. Occupied Bandwidth (6dB)

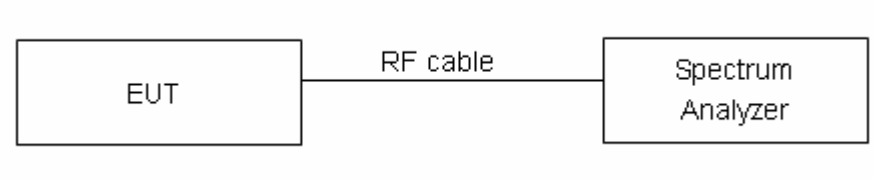
Ambient condition

Temperature	Relative humidity	Pressure
24°C	50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW and VBW are set to 100 kHz on spectrum analyzer.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

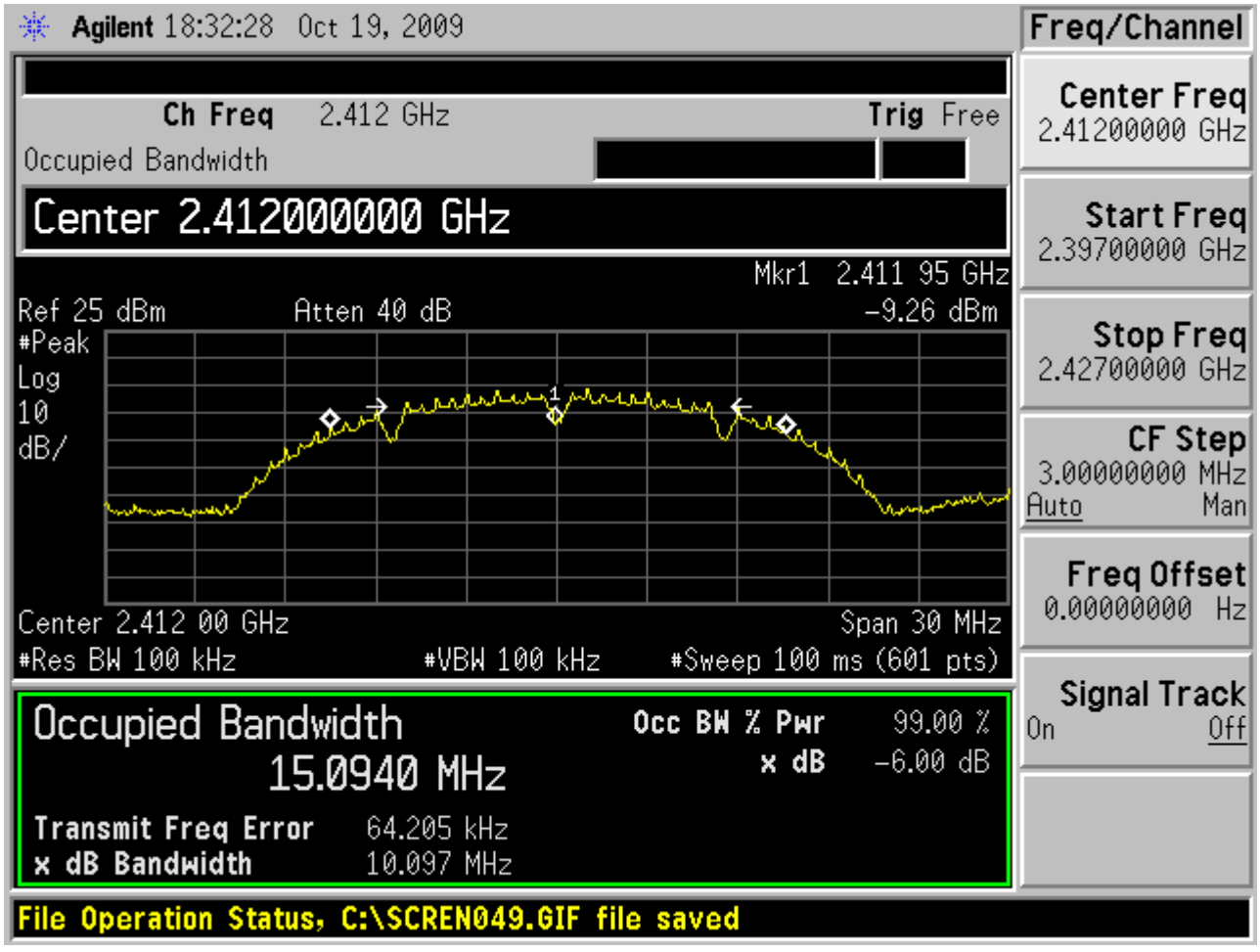
minimum 6 dB bandwidth	≥ 500 kHz

Measurement Uncertainty

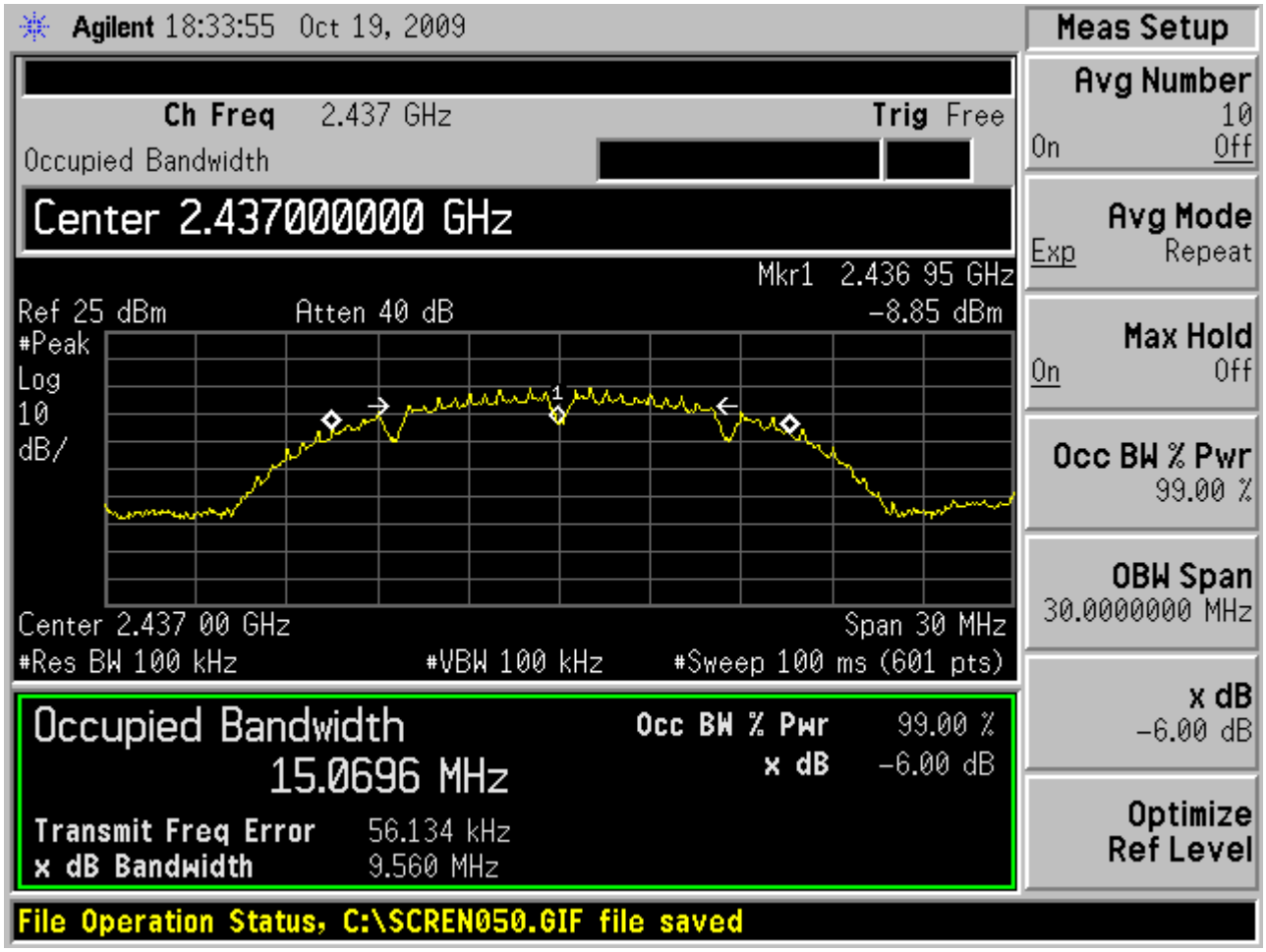
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2. U= 936 Hz.

Test Result

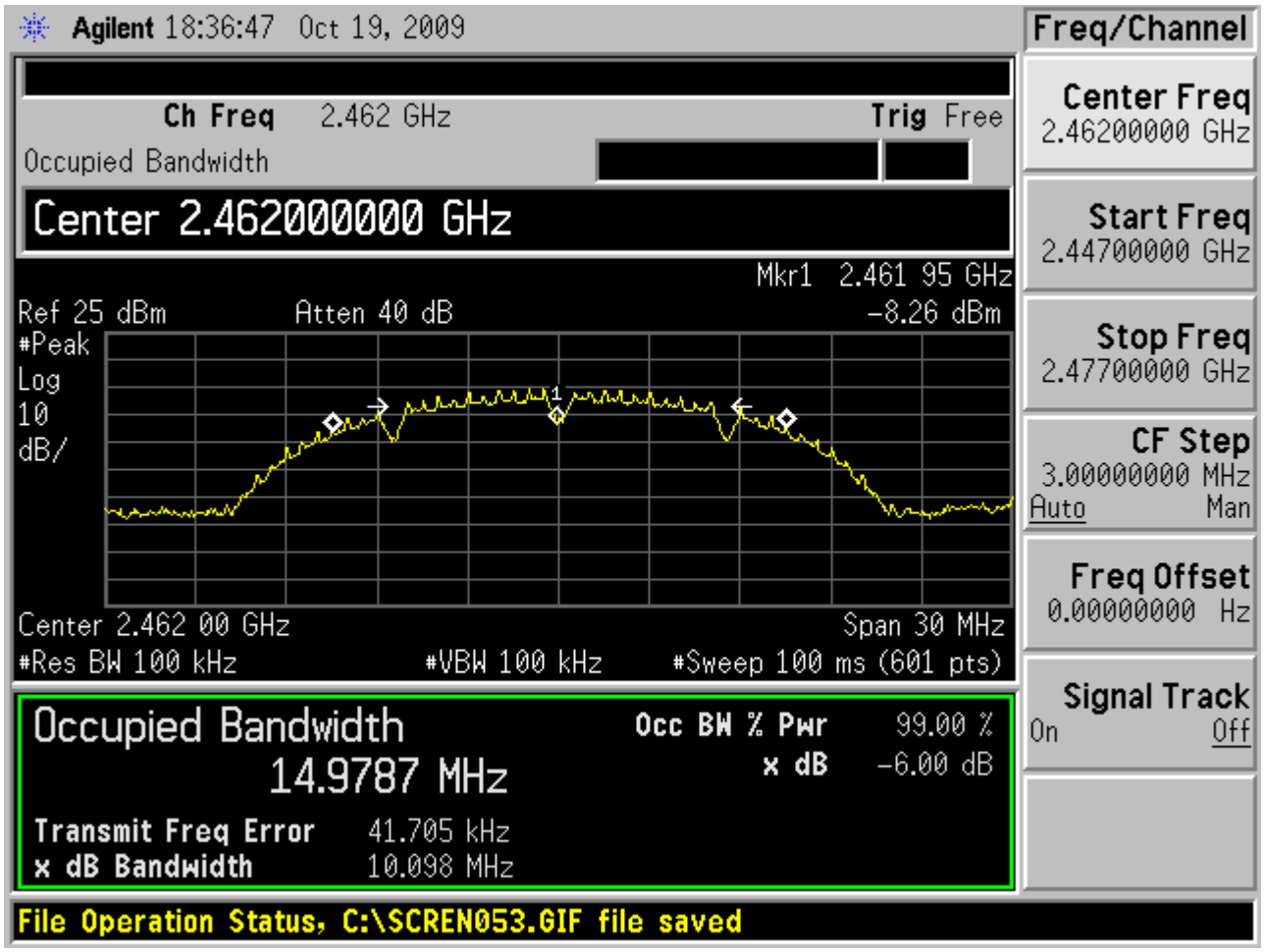
Network Standards	Bit Rate	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	1Mbps	2412	10.097	PASS
		2437	9.560	PASS
		2462	10.098	PASS
802.11g	6Mbps	2412	16.289	PASS
		2437	16.313	PASS
		2462	16.109	PASS



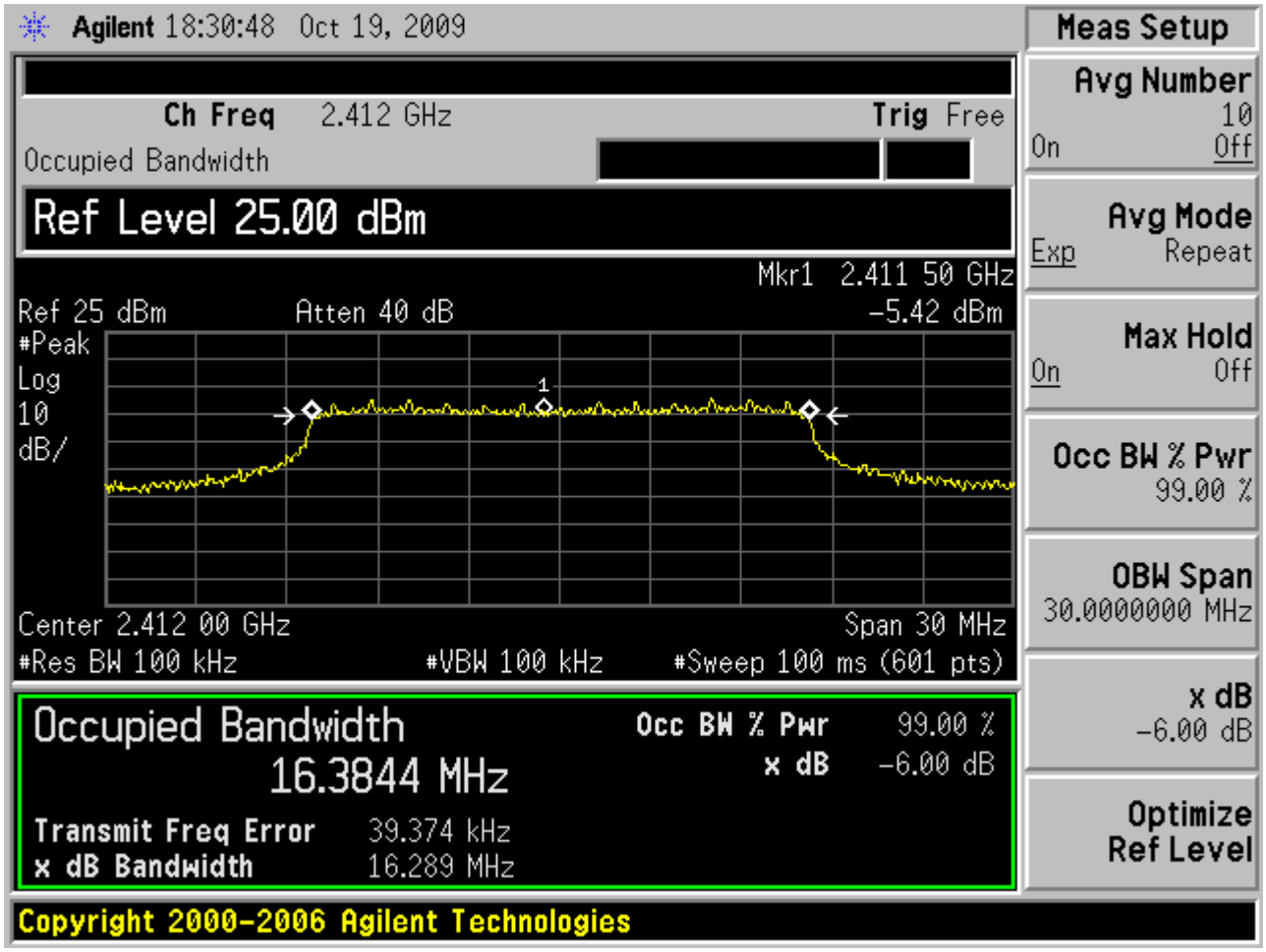
802.11b, Bit Rate 1 MHz, Carrier frequency (MHz): 2412



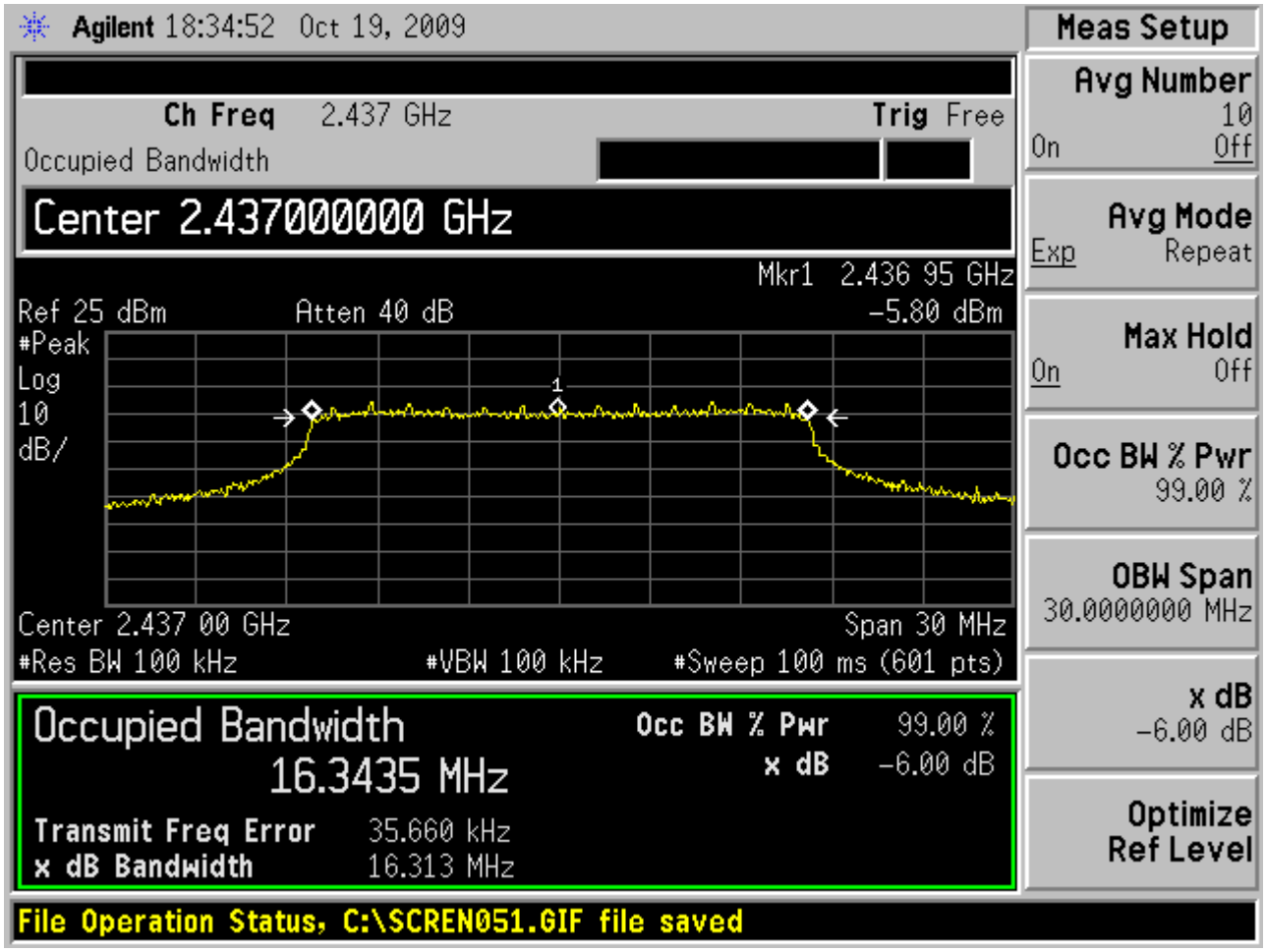
802.11b, Bit Rate 1 MHz, Carrier frequency (MHz): 2437



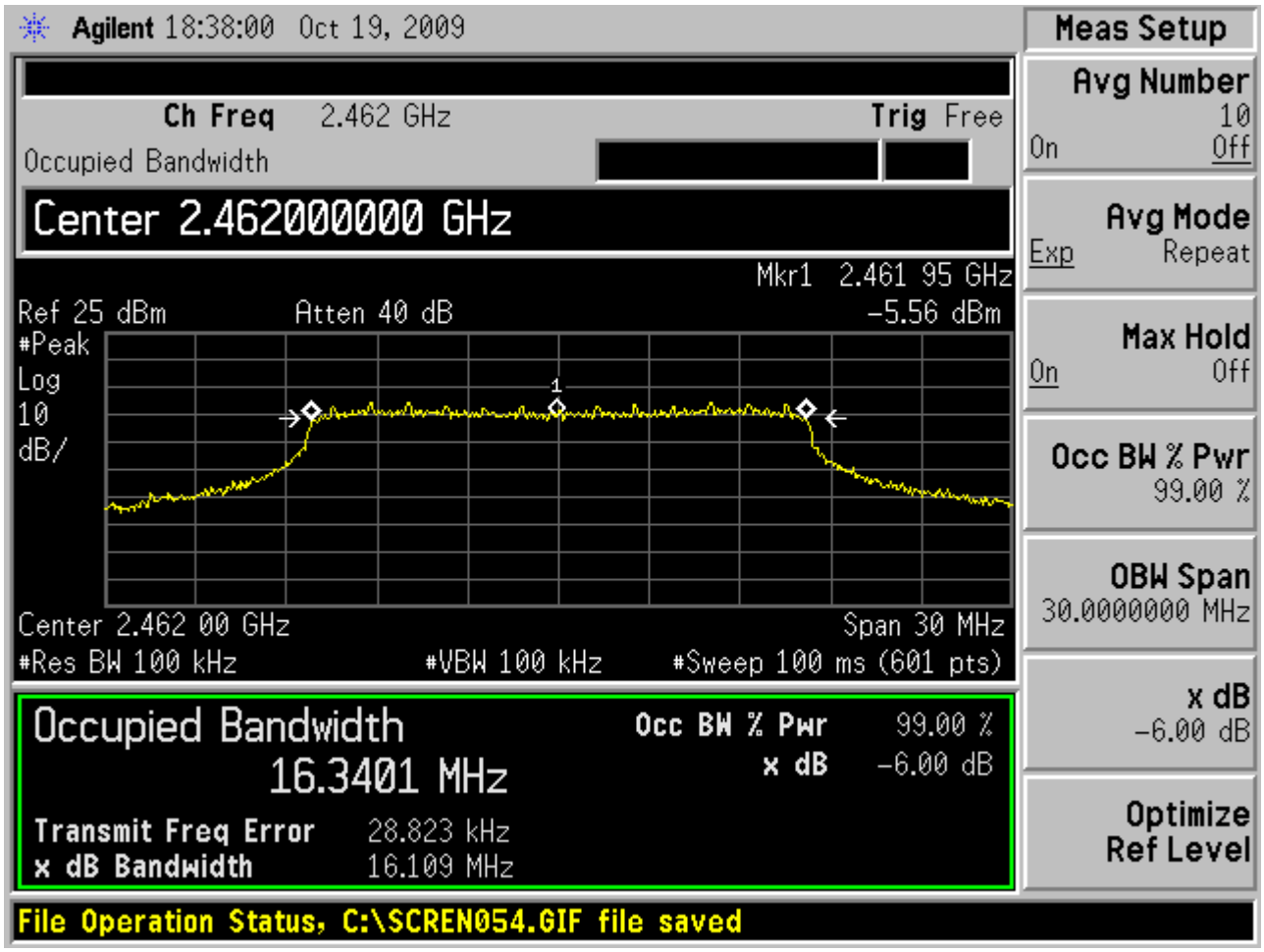
802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2462



802.11g, Bit Rate 6 MHz, Carrier frequency (MHz): 2412



802.11g, Bit Rate 6 MHz, Carrier frequency (MHz): 2437



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2462

2.4. Band Edge Compliance

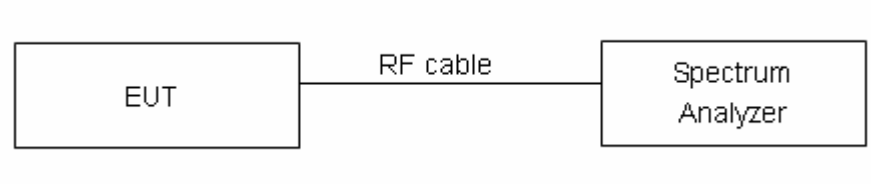
Ambient condition

Temperature	Relative humidity	Pressure
24°C	50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100k on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “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.”

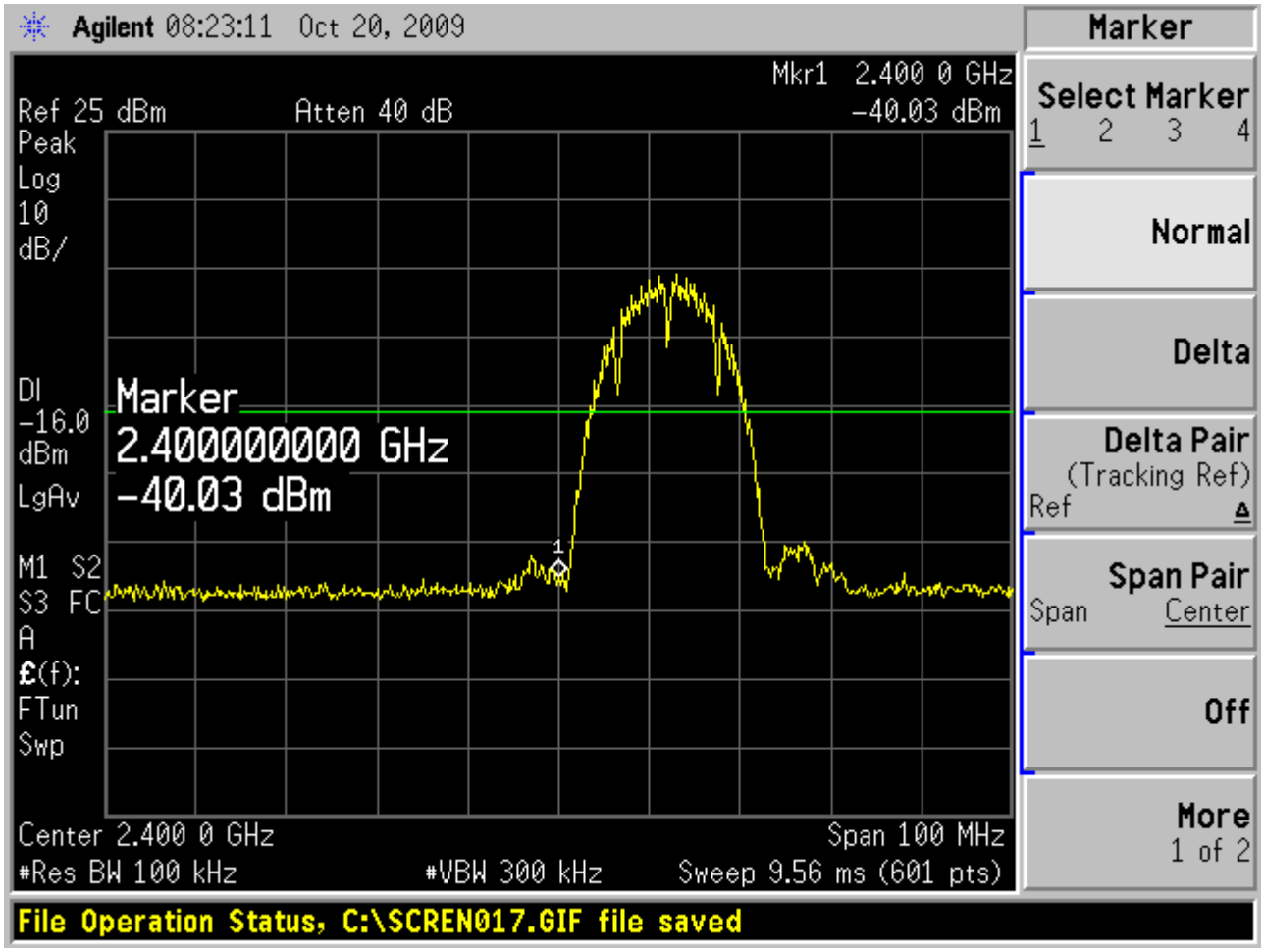
Limit	⩾20 dB

Measurement Uncertainty

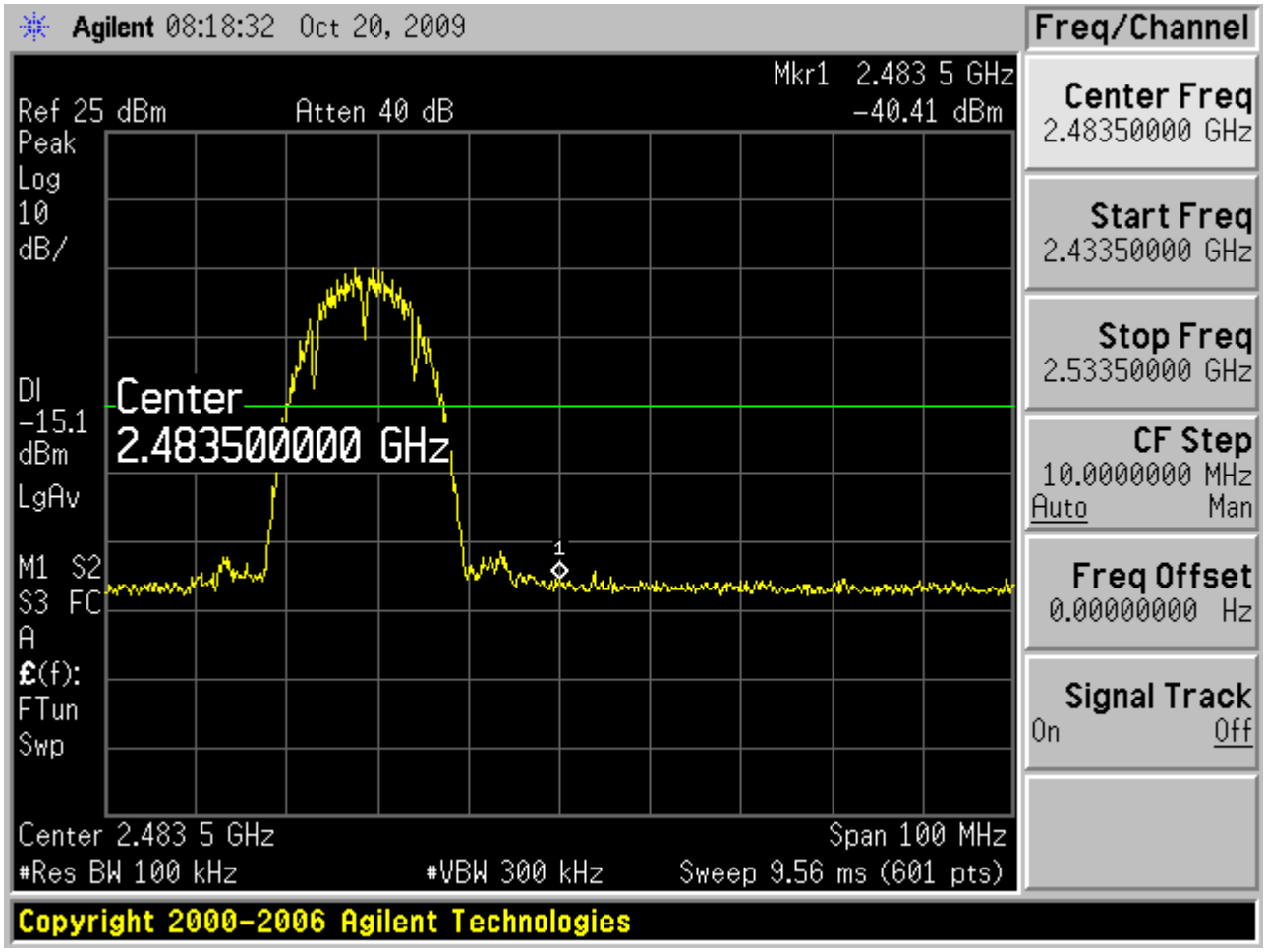
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Result

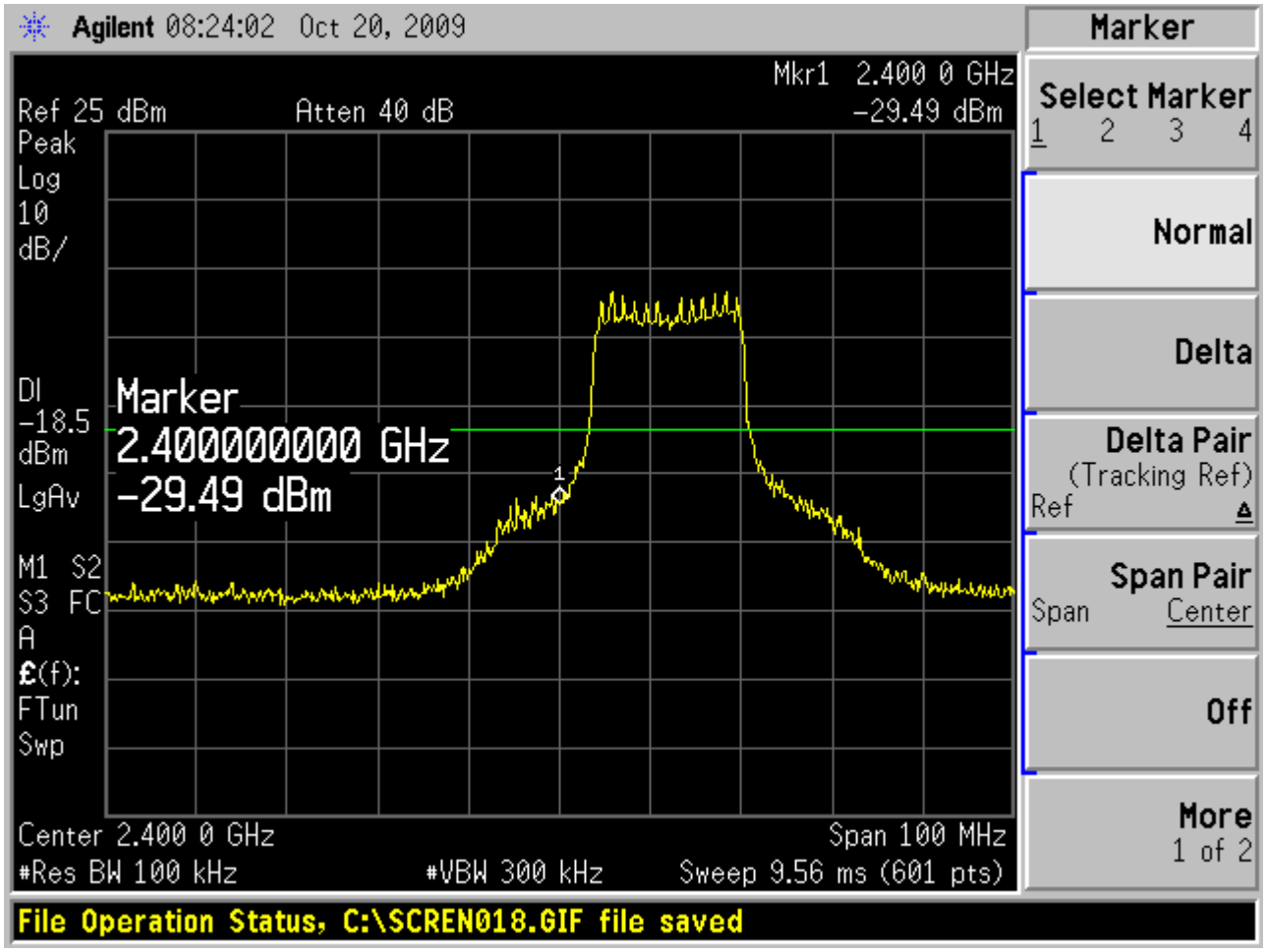


802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2412
Channel No.: 1



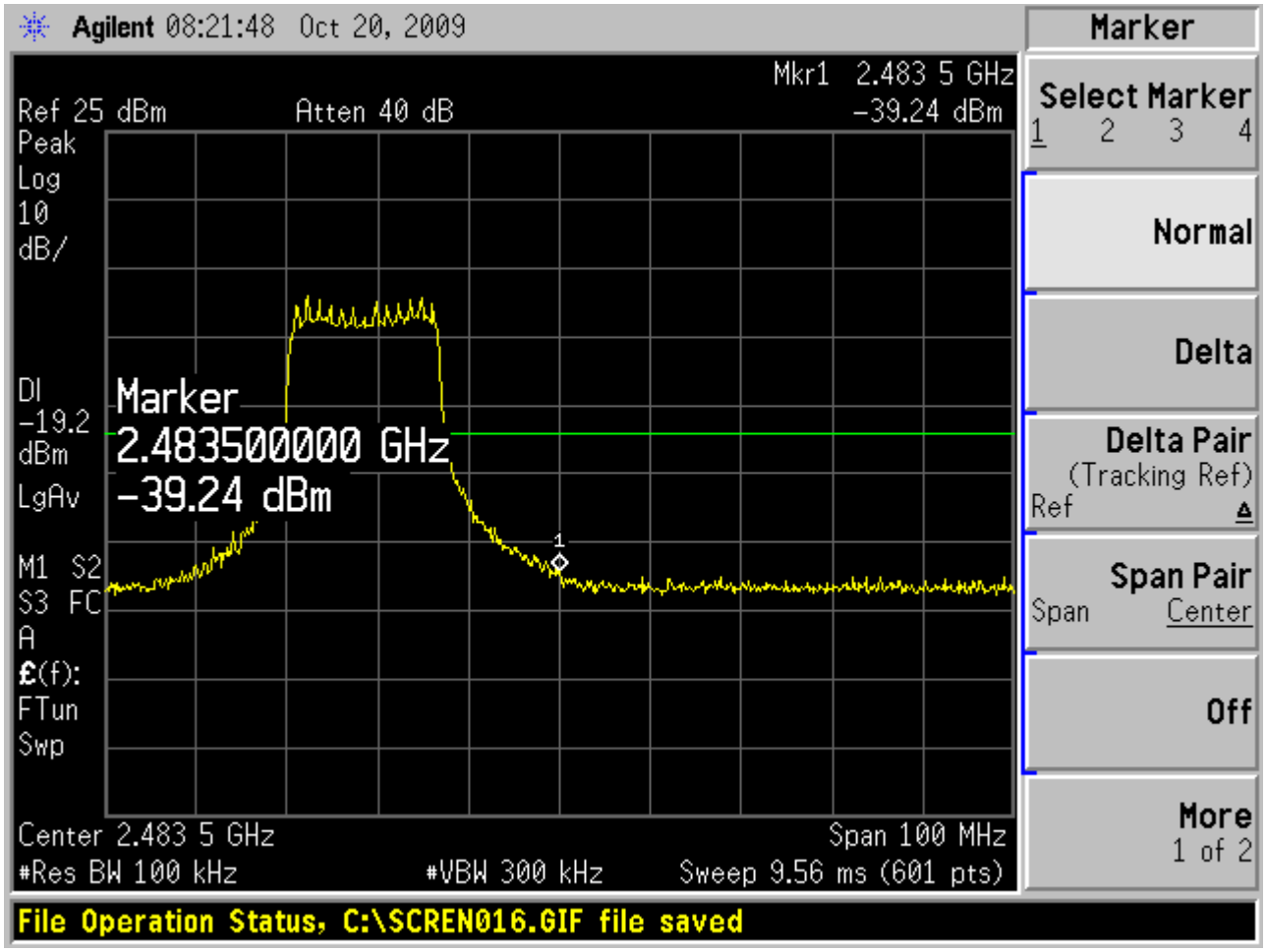
802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2462

Channel No.: 11



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2412

Channel No.: 1



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2462
Channel No.: 11

2.4 Power Spectral Density

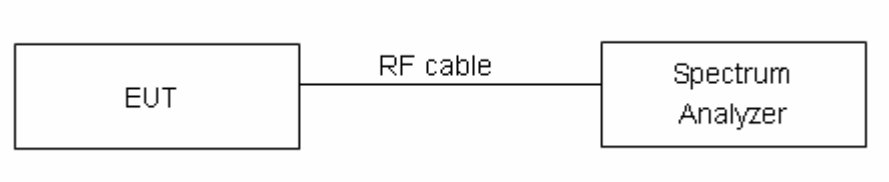
Ambient condition

Temperature	Relative humidity	Pressure
24°C	50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 3 kHz and VBW is set to 30 kHz on spectrum analyzer. Set the sweep time=span/3KHz. The peak power spectral density is recorded.

Test setup



Limits

Rule Part 15.247(e) specifies that" For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. ‘’

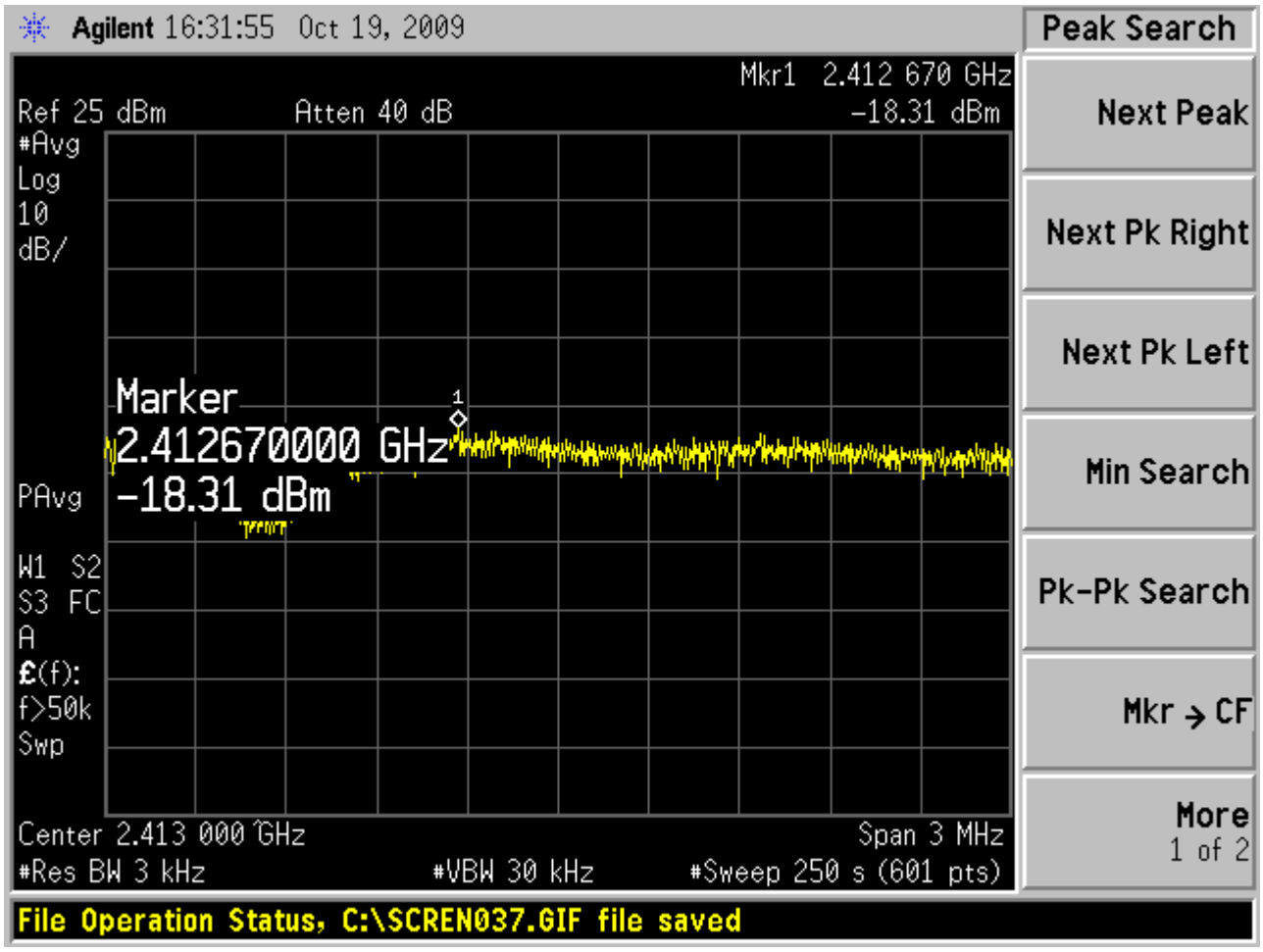
Limits	≤ 8 dBm / 3kHz

Measurement Uncertainty

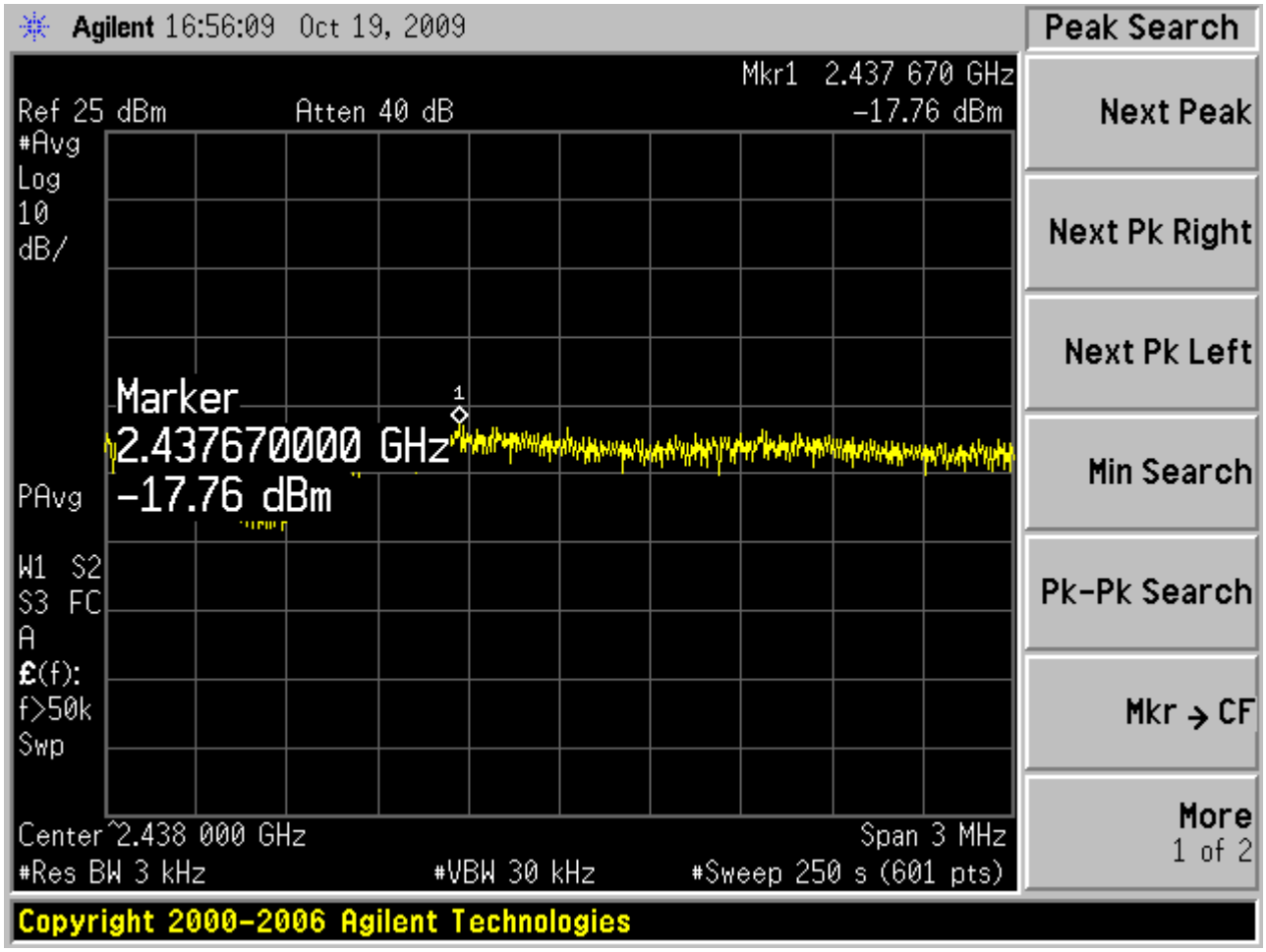
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 2. U= 0.75dB.

Test Result

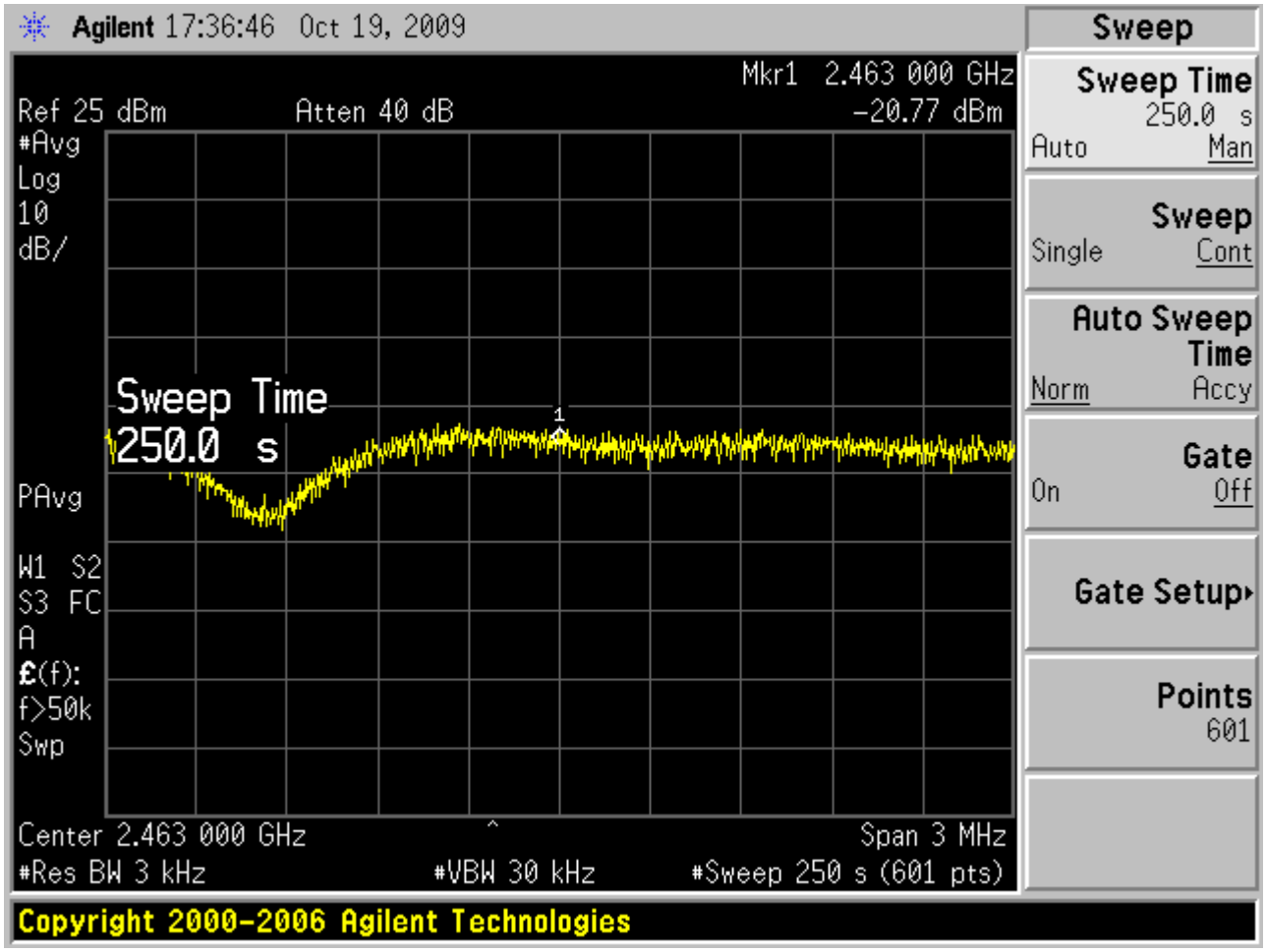
Network Standards	Bit Rate	Carrier frequency (MHz)	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1Mbps	2412	-18.31	PASS
		2437	-17.76	PASS
		2462	-20.77	PASS
802.11g	6Mbps	2412	-20.95	PASS
		2437	-21.64	PASS
		2462	-23.80	PASS



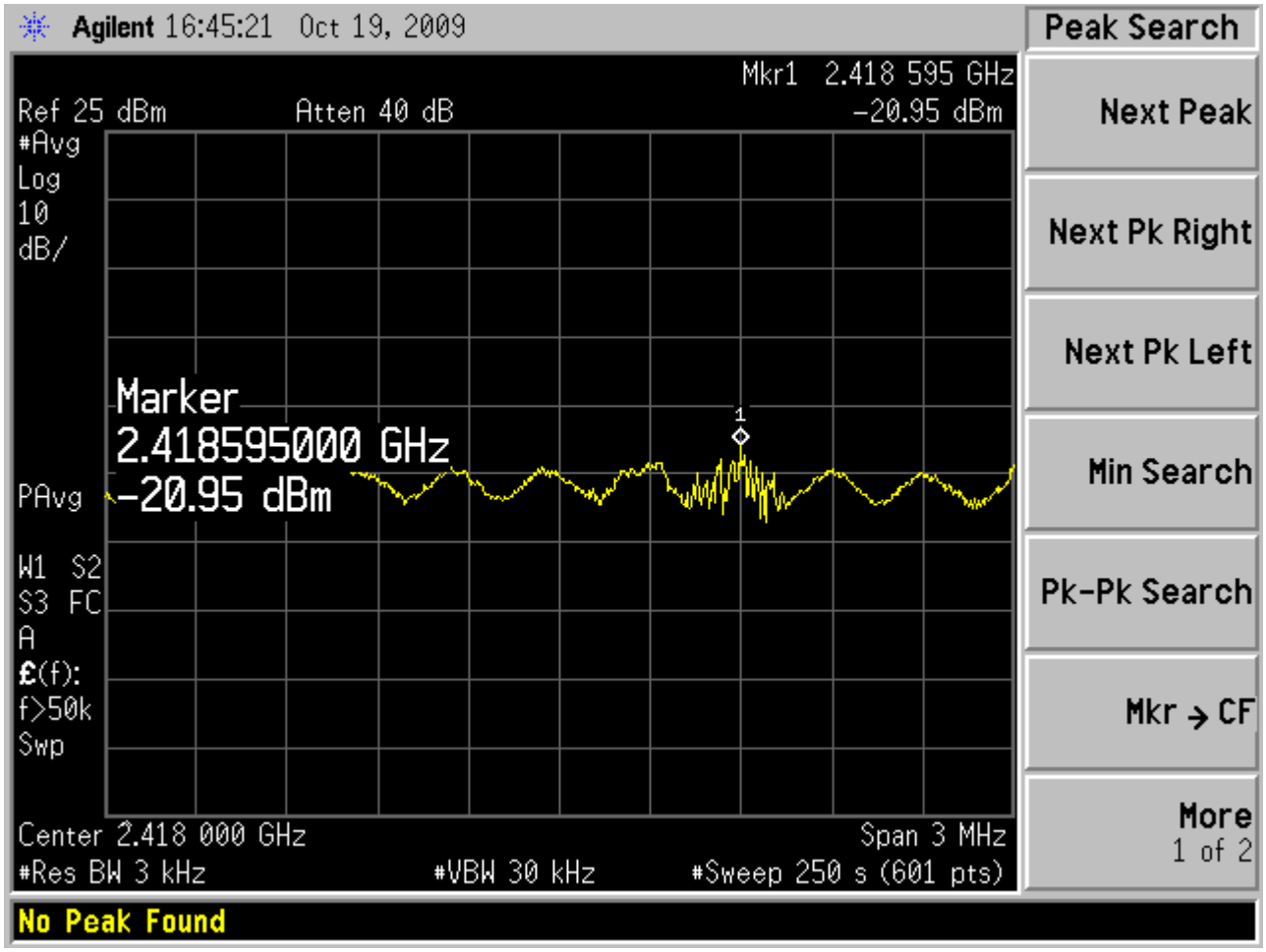
802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2412



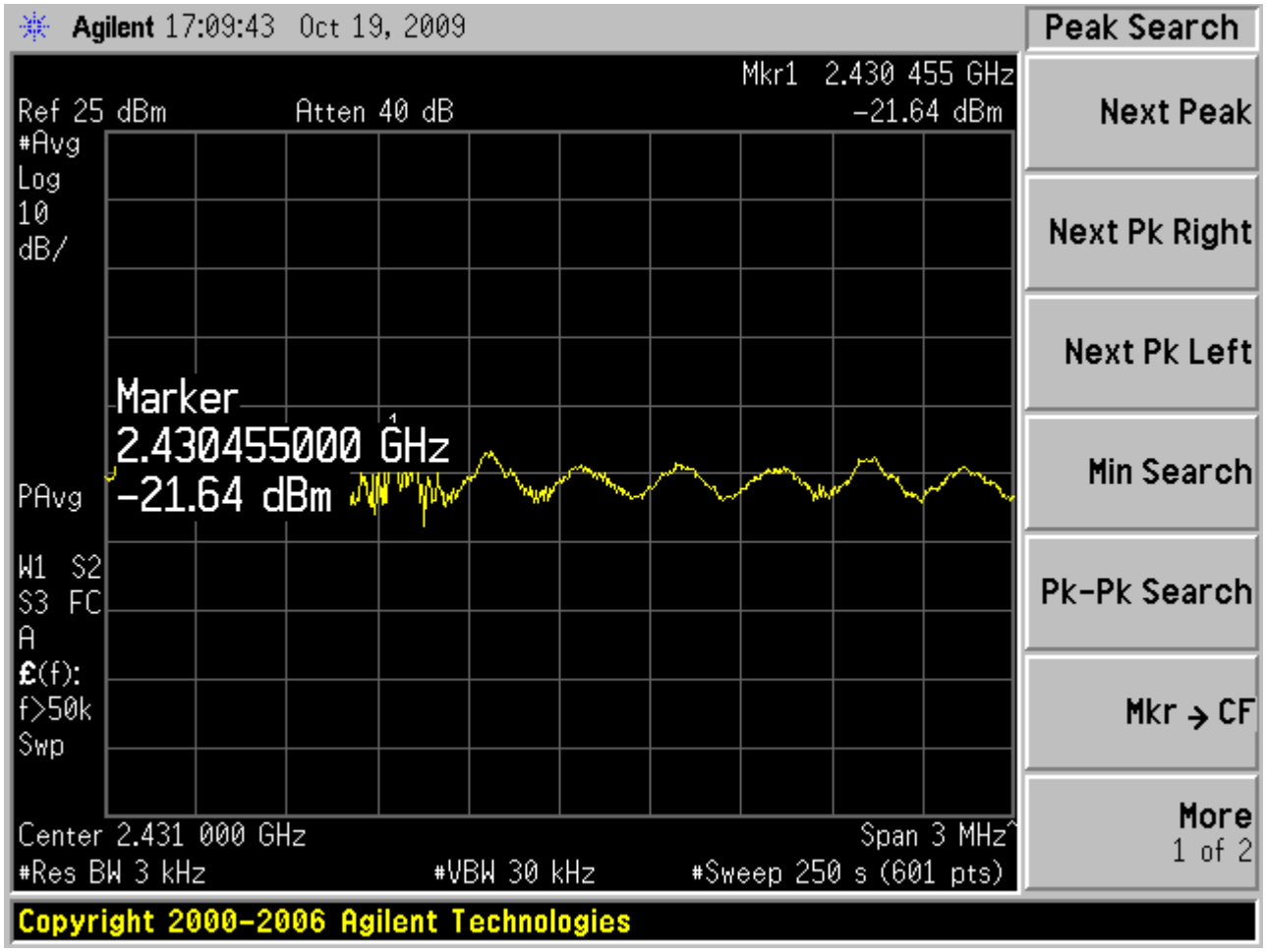
802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2437



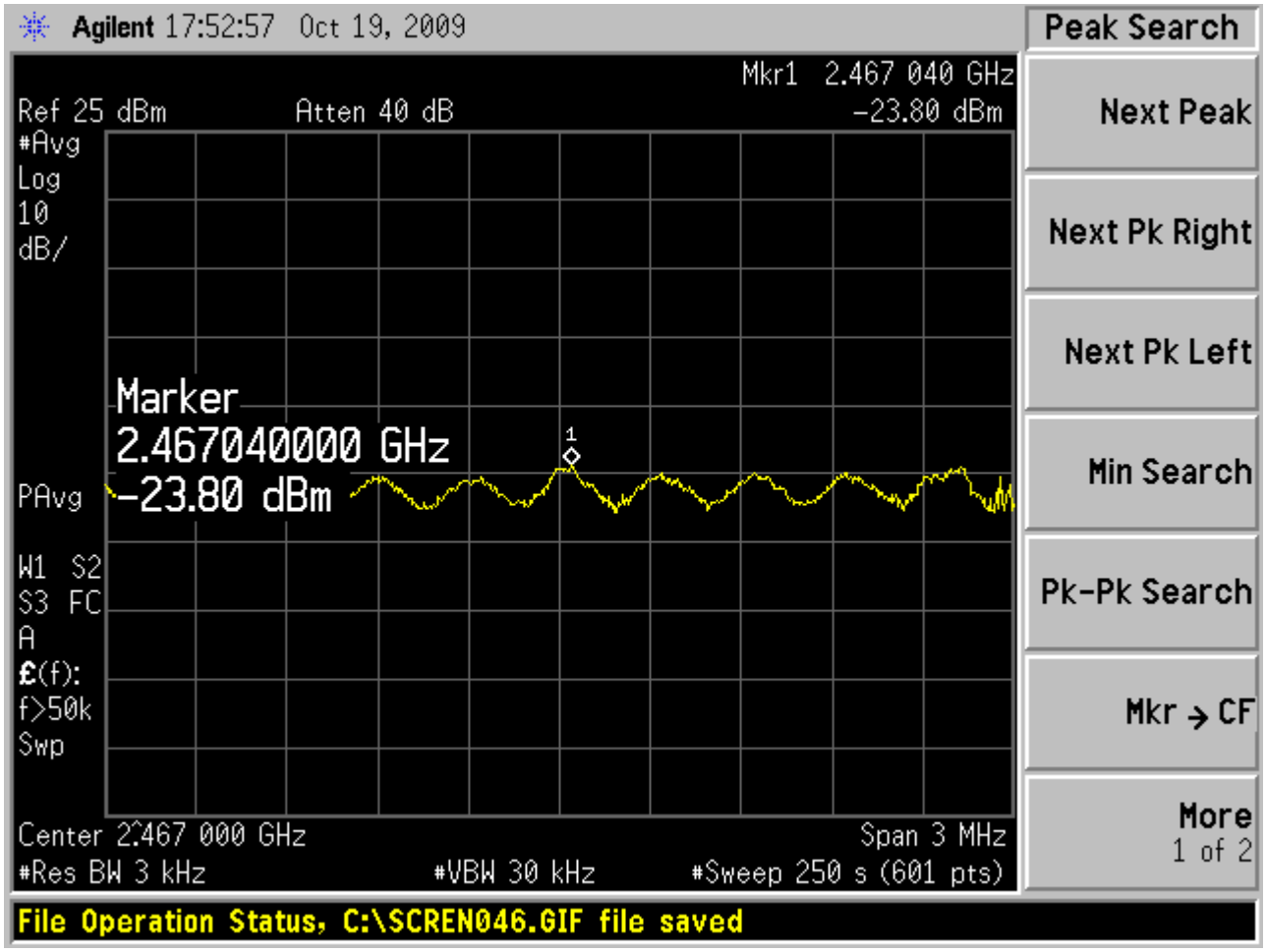
802.11b, Bit Rata 1 MHz, Carrier frequency (MHz):2462



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2412



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2437



802.11g, Bit Rata 6 MHz, Carrier frequency (MHz):2462

2.5 Spurious RF Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
24°C	55%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to 26.5GHz. The peak detector is used.

Test setup

Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.”

Network Standards	Bit Rate	Carrier frequency (MHz)	Limit
802.11b	1Mbps	2412	≤-16.0
		2437	≤-15.7
		2462	≤-15.1
802.11g	6Mbps	2412	≤-18.5
		2437	≤-18.8
		2462	≤-19.2

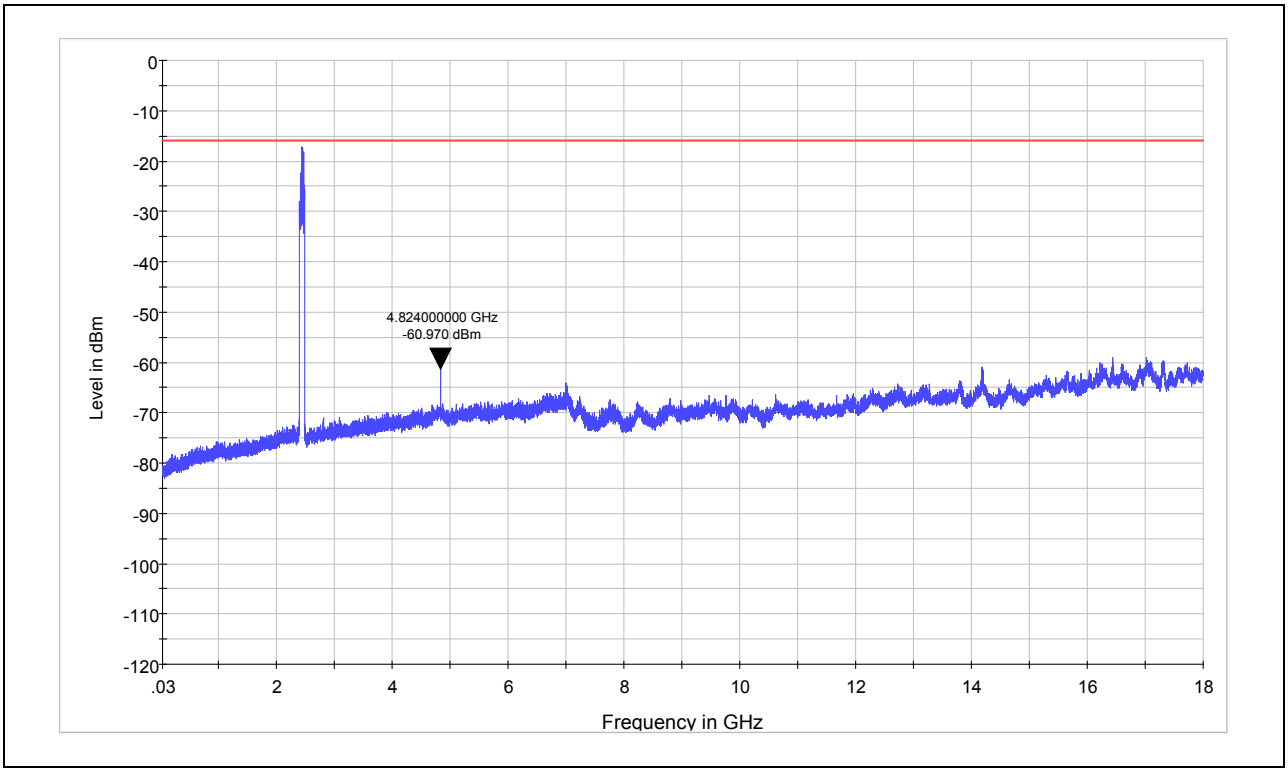
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26.5GHz	1.407 dB

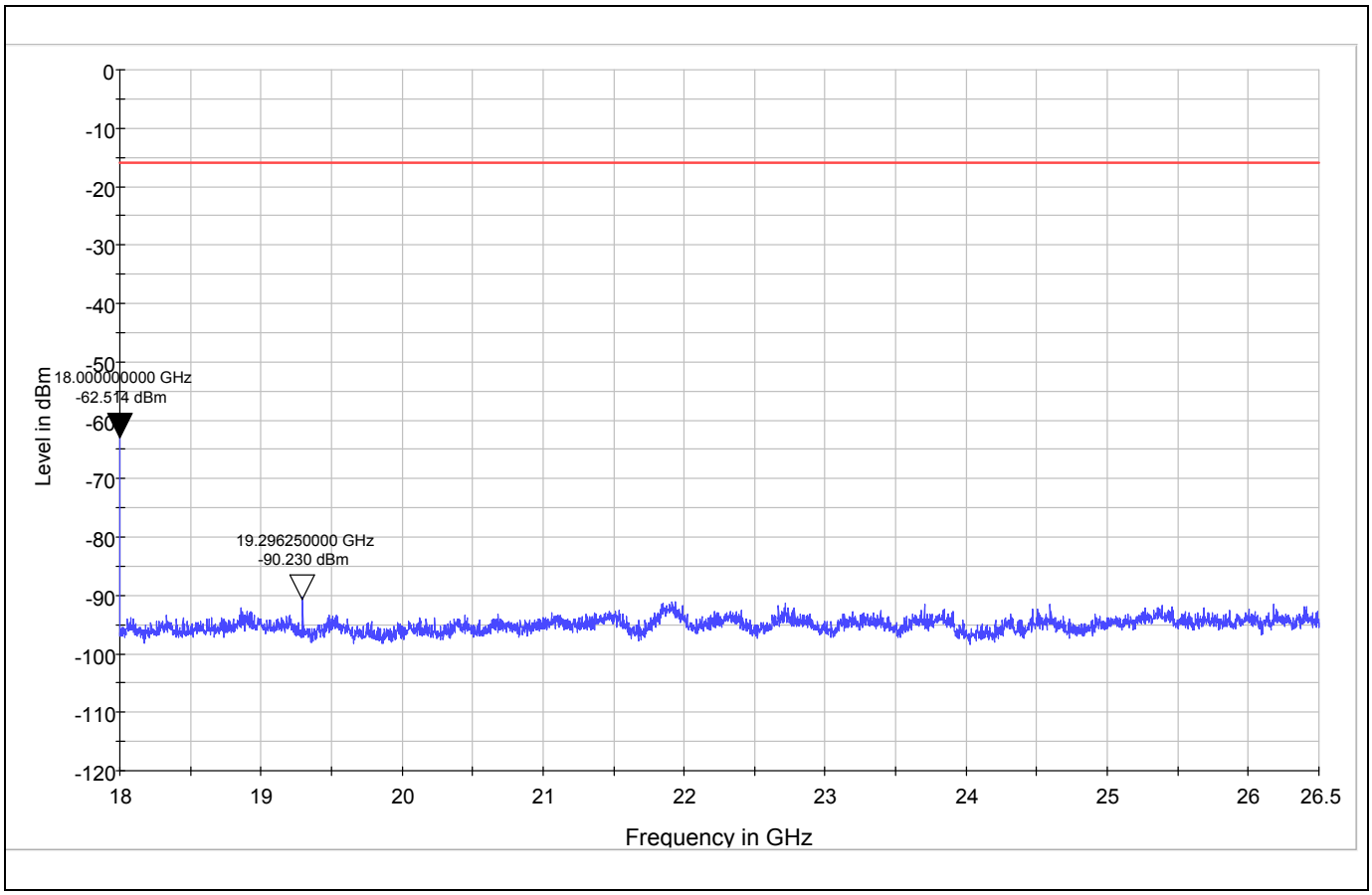
Test Result

802.11b CH1



Note: The carrier frequency is 2412MHz

Spurious RF conducted emissions from 30MHz to 18GHz

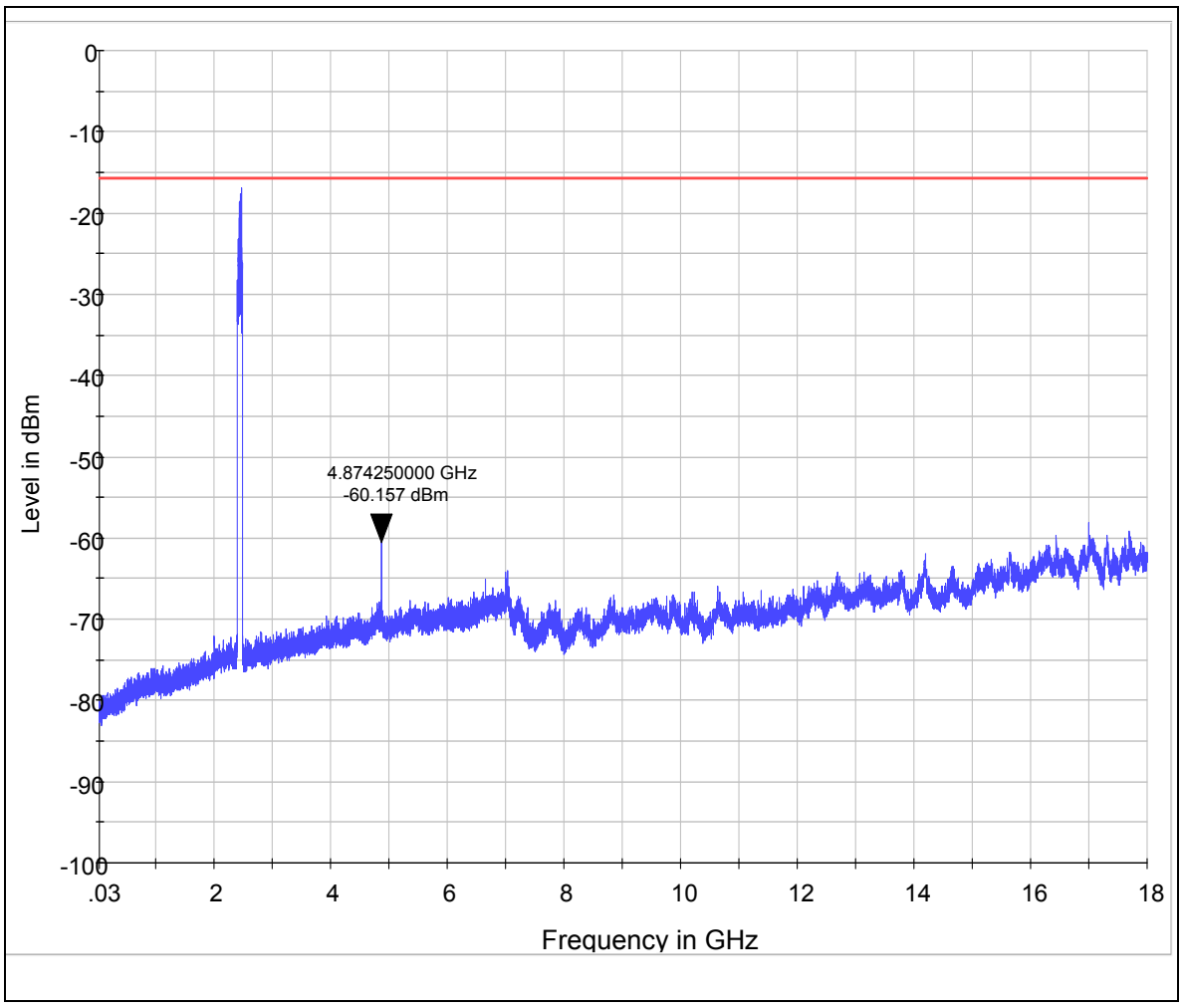


Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4824	-60.970	-16.0
3	7236	Nf	-16.0
4	9648	Nf	-16.0
5	12060	Nf	-16.0
6	14472	Nf	-16.0
7	16884	Nf	-16.0
8	19296.25	-90.230	-16.0
9	21708	Nf	-16.0
10	24120	Nf	-16.0
Nf: noise floor			

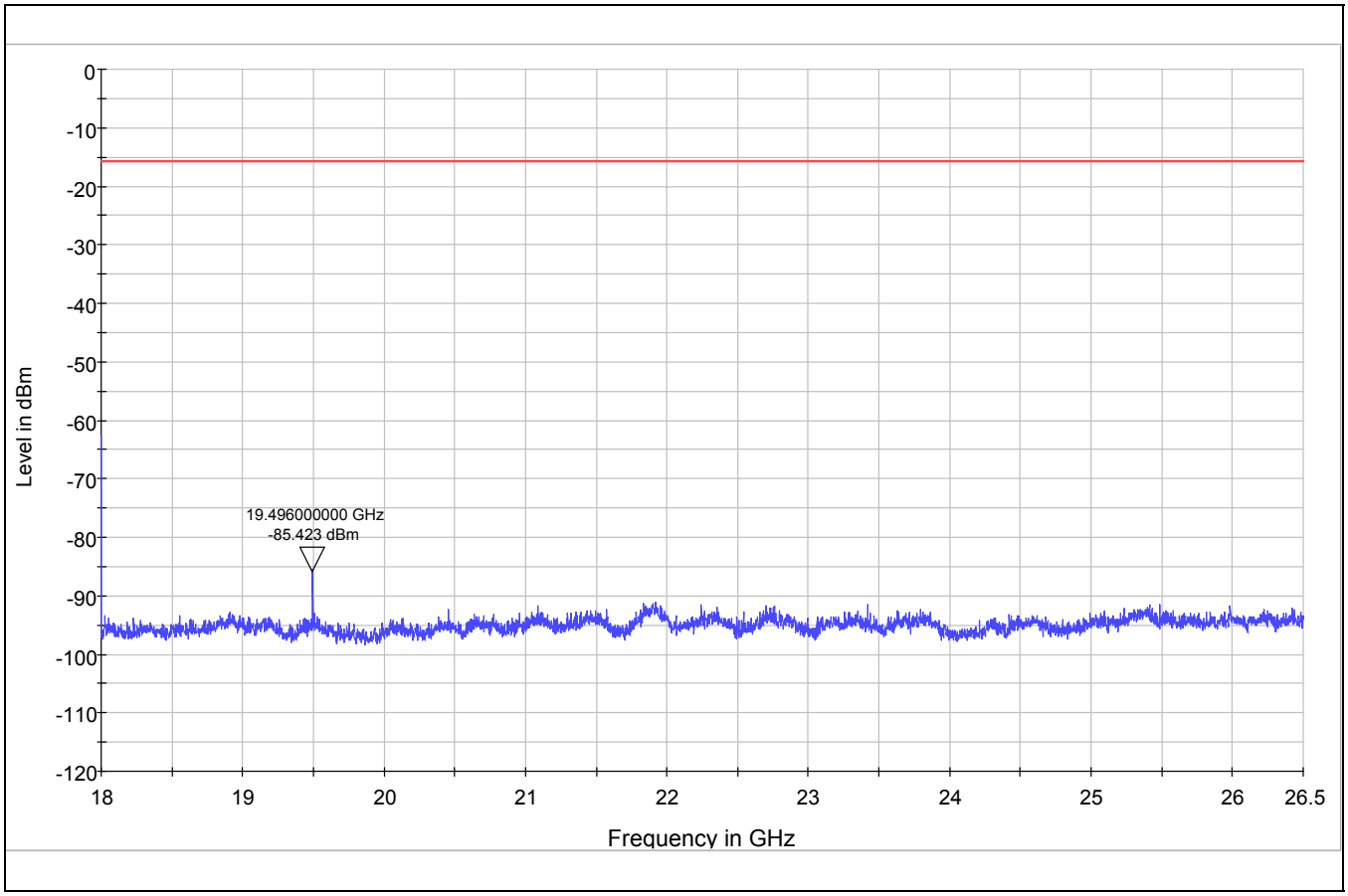
Note: The other Spurious RF conducted emissions level is no more than noise floor.

802.11b CH6



Note: The carrier frequency is 2437MHz

Spurious RF conducted emissions from 30MHz to 18GHz

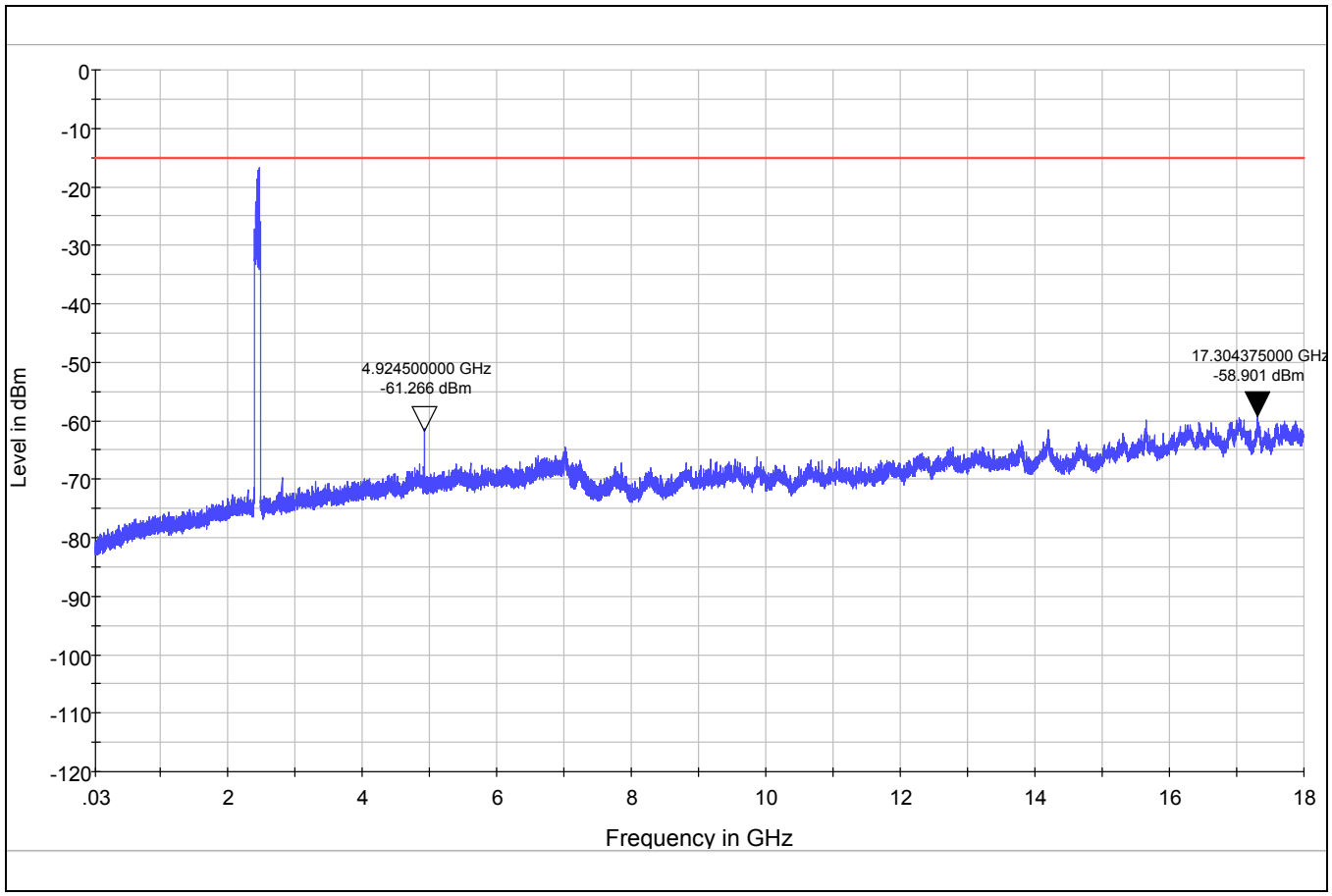


Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.6 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4874.25	-60.157	-15.7
3	7311	Nf	-15.7
4	9748	Nf	-15.7
5	12185	Nf	-15.7
6	14622	Nf	-15.7
7	17059	Nf	-15.7
8	19493.875	-80.241	-15.7
9	21933	Nf	-15.7
10	24370	Nf	-15.7
Nf: noise floor			

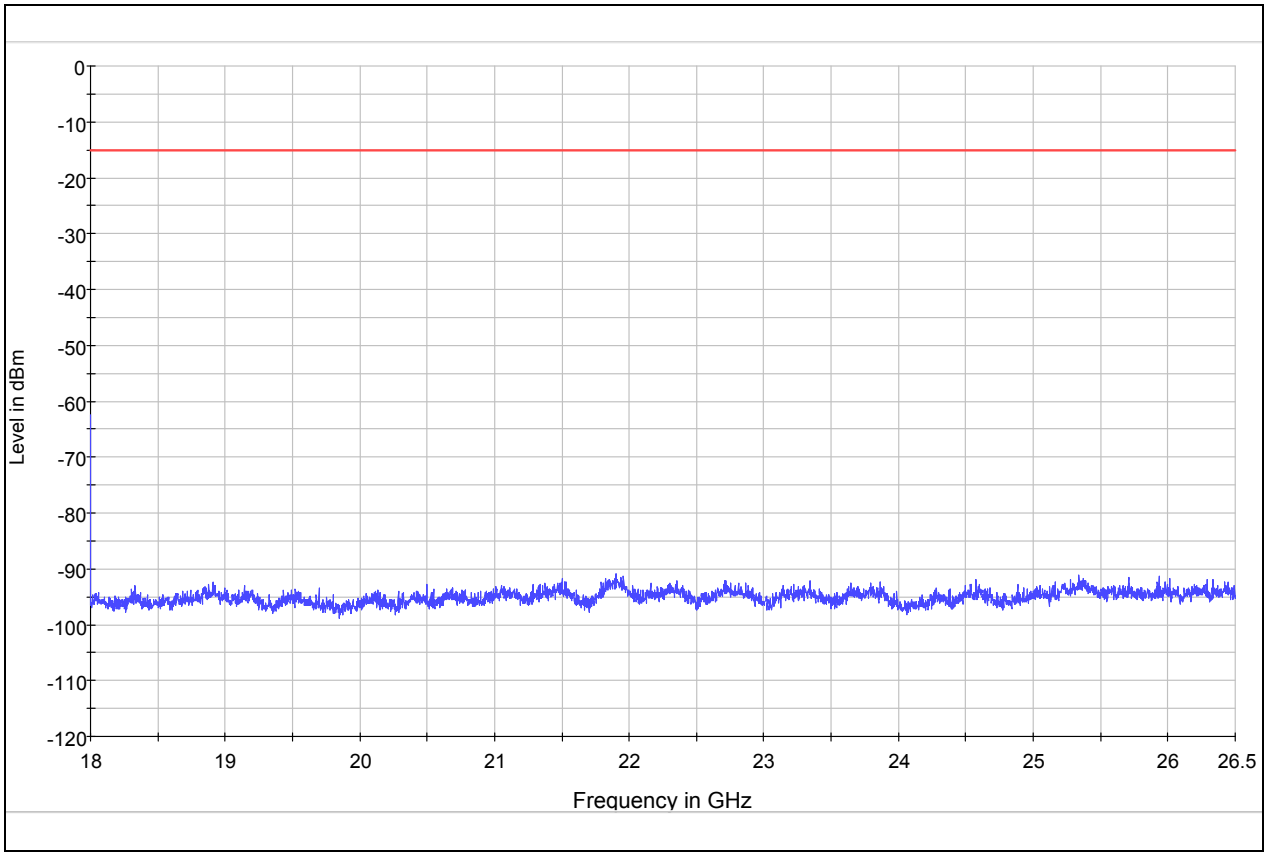
Note: The other Spurious RF conducted emissions level is no more than noise floor.

802.11b CH11



Note: The carrier frequency is 2462MHz

Spurious RF conducted emissions from 30MHz to 18GHz

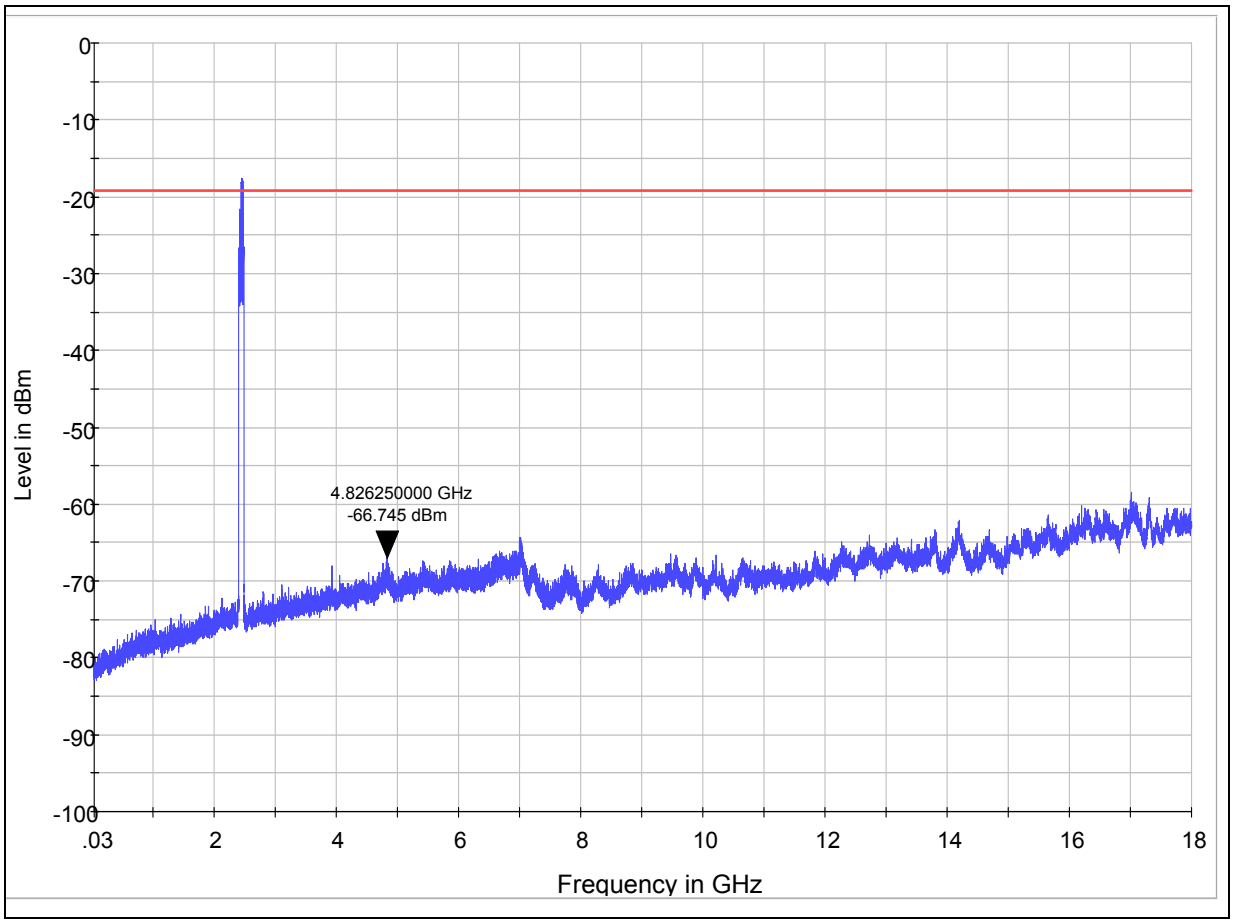


Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.11 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4924.5	-61.266	-15.1
3	7386	Nf	-15.1
4	9848	Nf	-15.1
5	12310	Nf	-15.1
6	14772	Nf	-15.1
7	17304.375	-58.901	-15.1
8	19696	Nf	-15.1
9	22158	Nf	-15.1
10	24620	Nf	-15.1
Nf: noise floor			

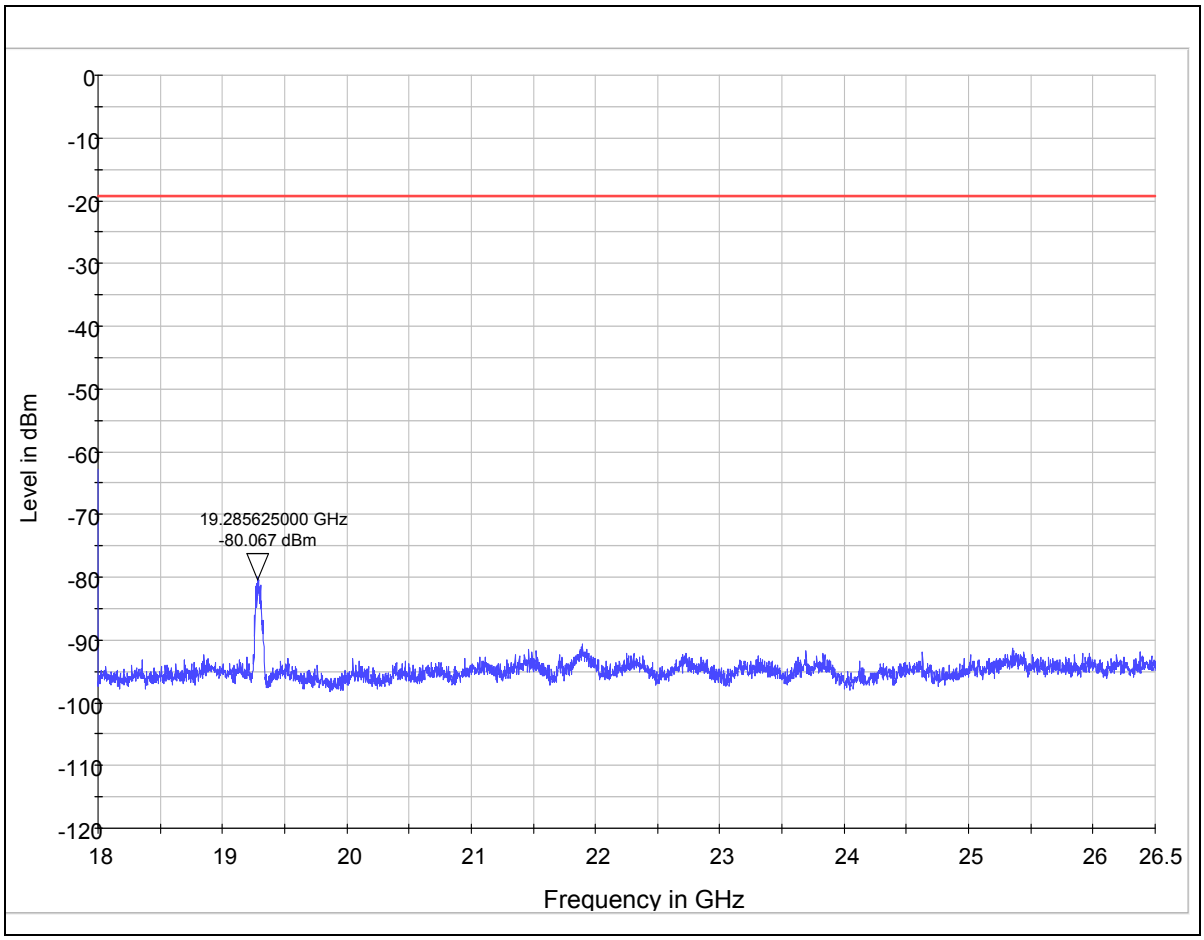
Note: The other Spurious RF conducted emissions level is no more than noise floor.

802.11g CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz

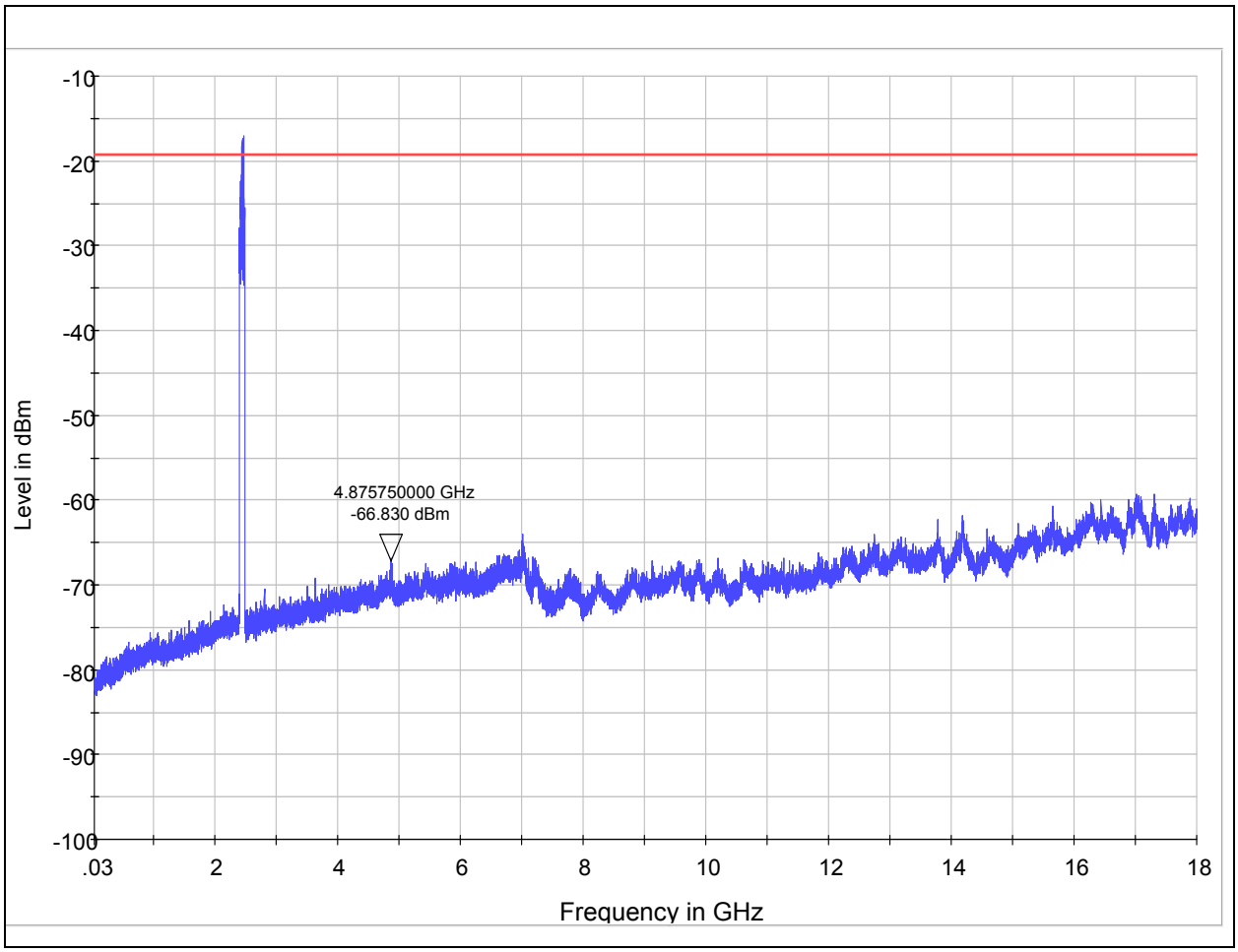


Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4826.25	-66.745	-18.5
3	7236	Nf	-18.5
4	9648	Nf	-18.5
5	12060	Nf	-18.5
6	14472	Nf	-18.5
7	16884	Nf	-18.5
8	19285.625	-80.067	-18.5
9	21708	Nf	-18.5
10	24120	Nf	-18.5
Nf: noise floor			

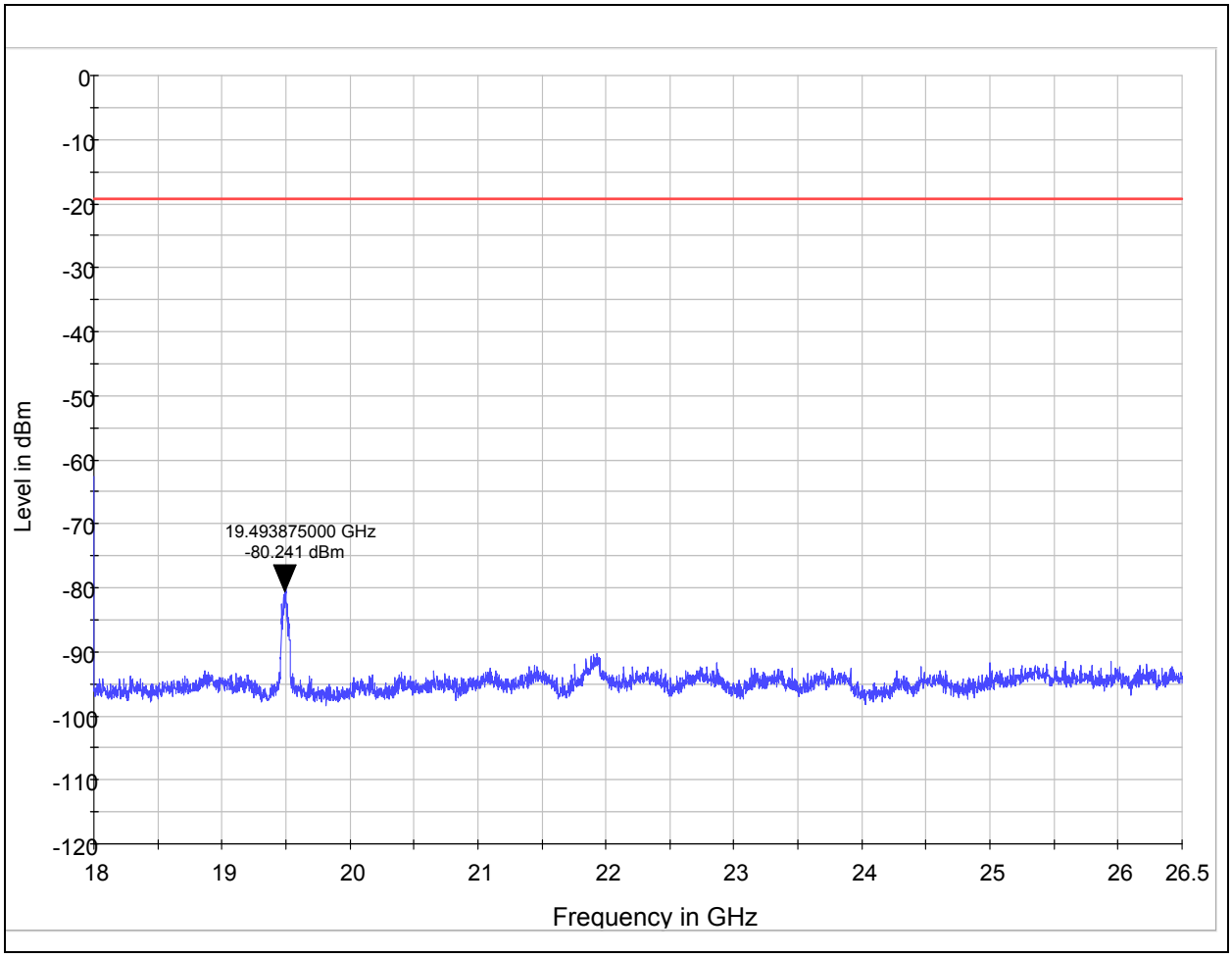
Note: The other Spurious RF conducted emissions level is no more than noise floor.

802.11g CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz

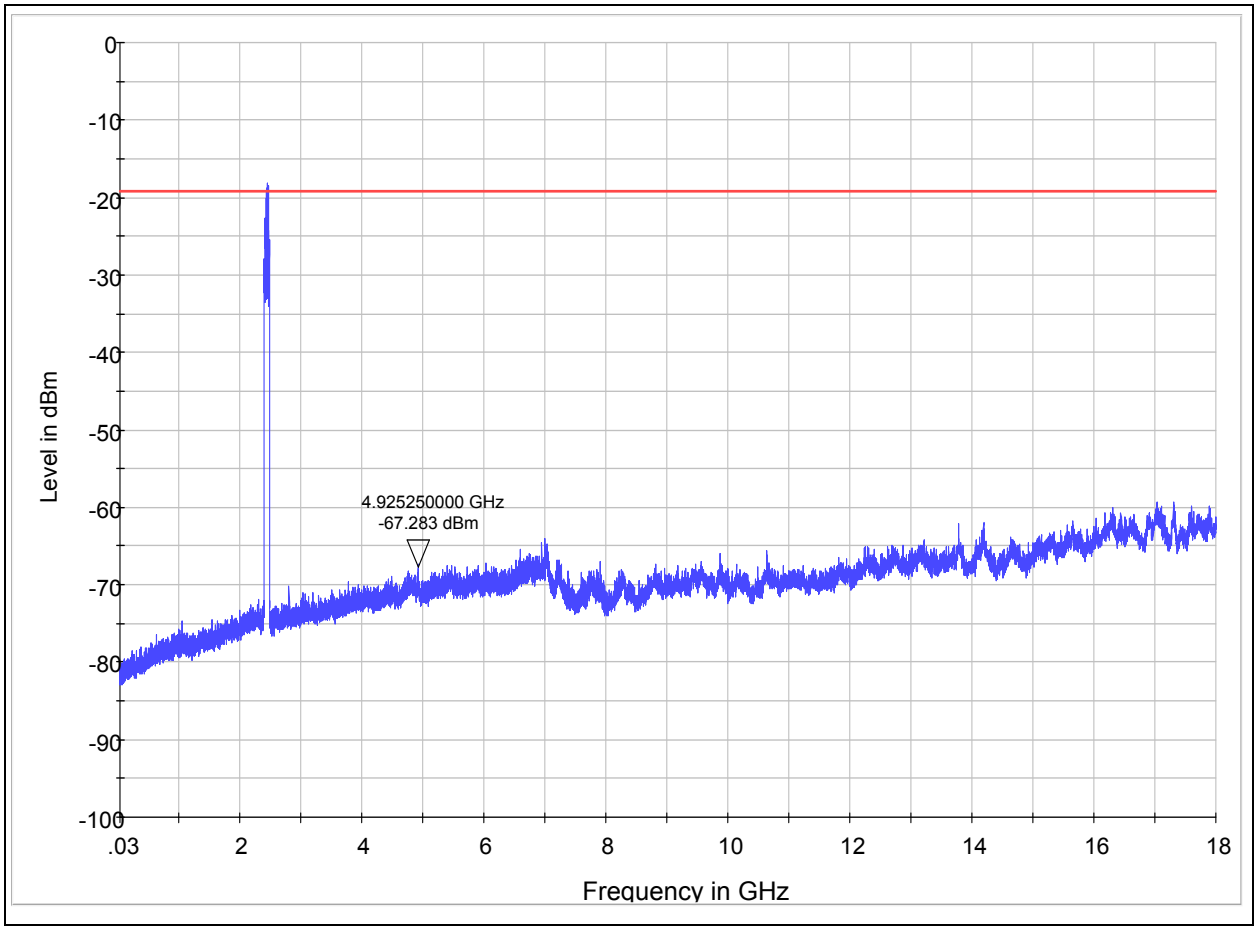


Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.6 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4875.75	-66.830	-18.8
3	7311	Nf	-18.8
4	9748	Nf	-18.8
5	12185	Nf	-18.8
6	14622	Nf	-18.8
7	17059	Nf	-18.8
8	19493.875	-80.241	-18.8
9	21933	Nf	-18.8
10	24370	Nf	-18.8
Nf: noise floor			

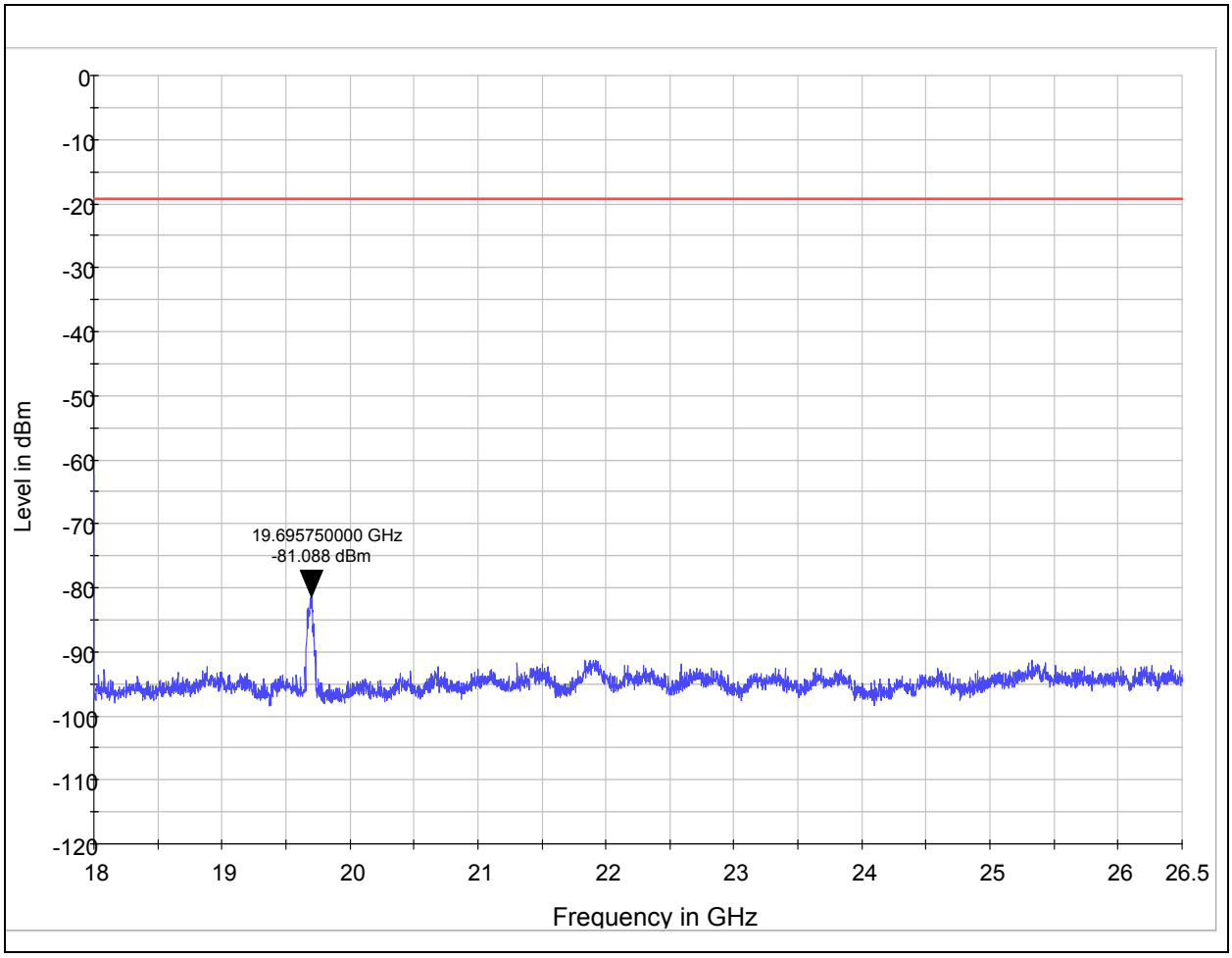
Note: The other Spurious RF conducted emissions level is no more than noise floor.

802.11g CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	TX ch.11 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4925.25	-67.283	-19.2
3	7386	Nf	-19.2
4	9848	Nf	-19.2
5	12310	Nf	-19.2
6	14772	Nf	-19.2
7	17234	Nf	-19.2
8	19695.75	-81.088	-19.2
9	22158	Nf	-19.2
10	24620	Nf	-19.2
Nf: noise floor			

Note: The other Spurious RF conducted emissions level is no more than noise floor.

2.6 Conducted Emissions

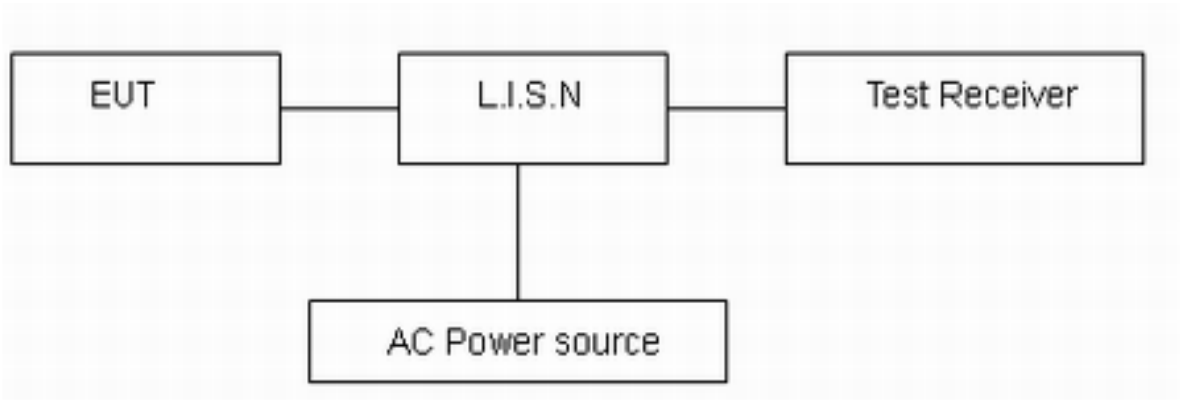
Ambient condition

Temperature	Relative humidity	Pressure
25°C	58%	101.5kPa

Method of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSIC63.4-2003.Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. The measurement result should include both L line and N line.

Test setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

Limits

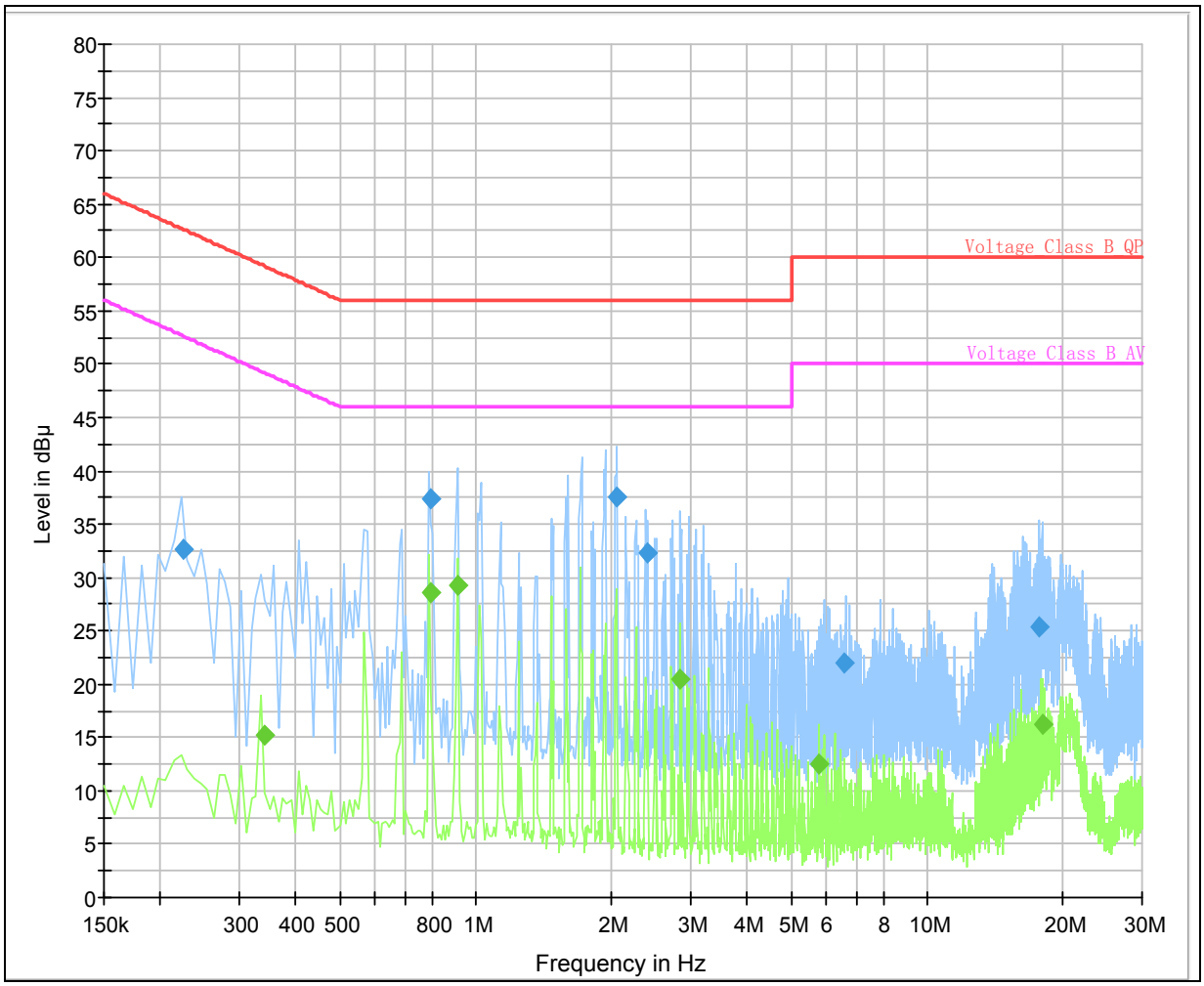
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

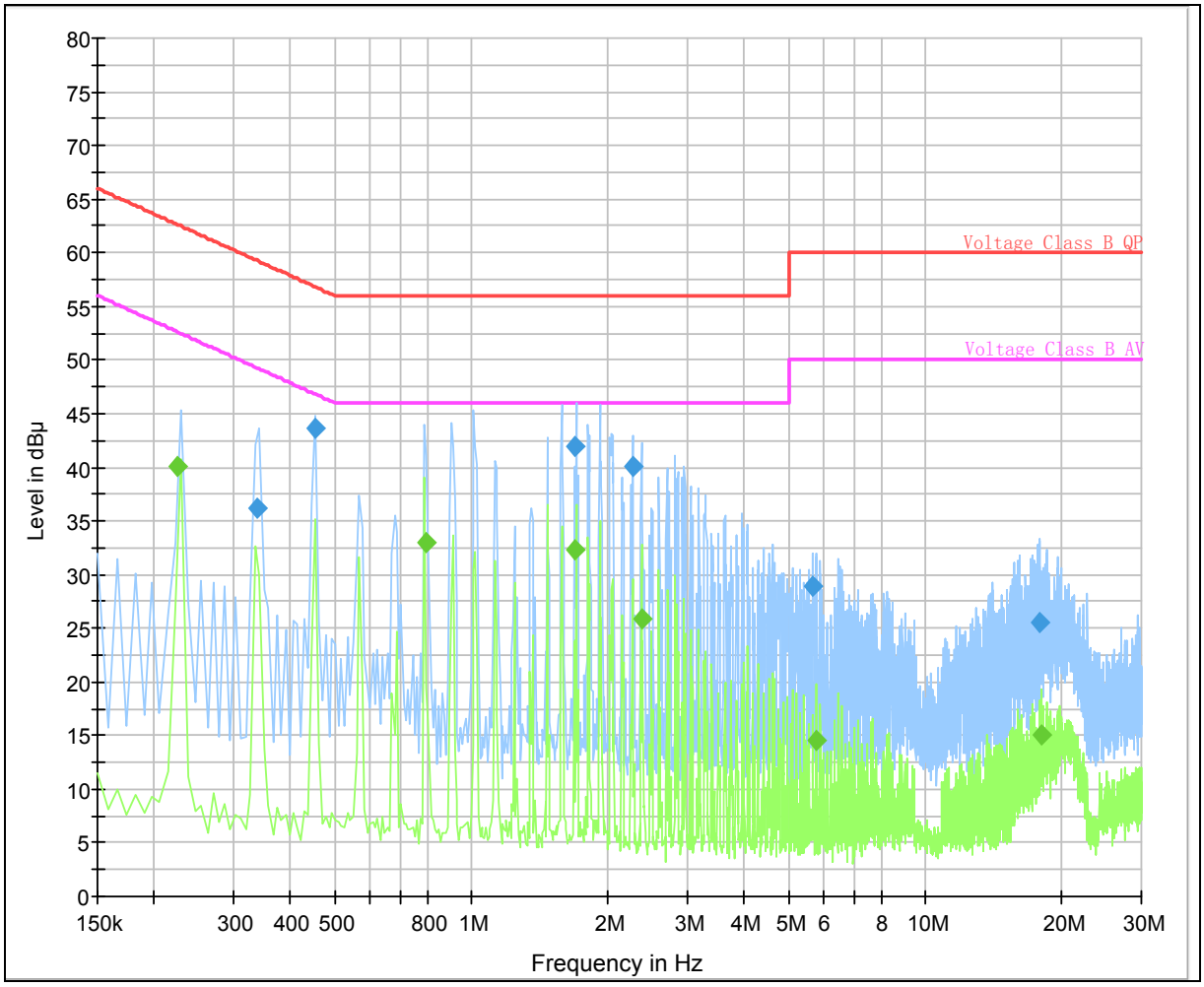
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96. U= 2.69 dB.

Test Result

802.11b CH1



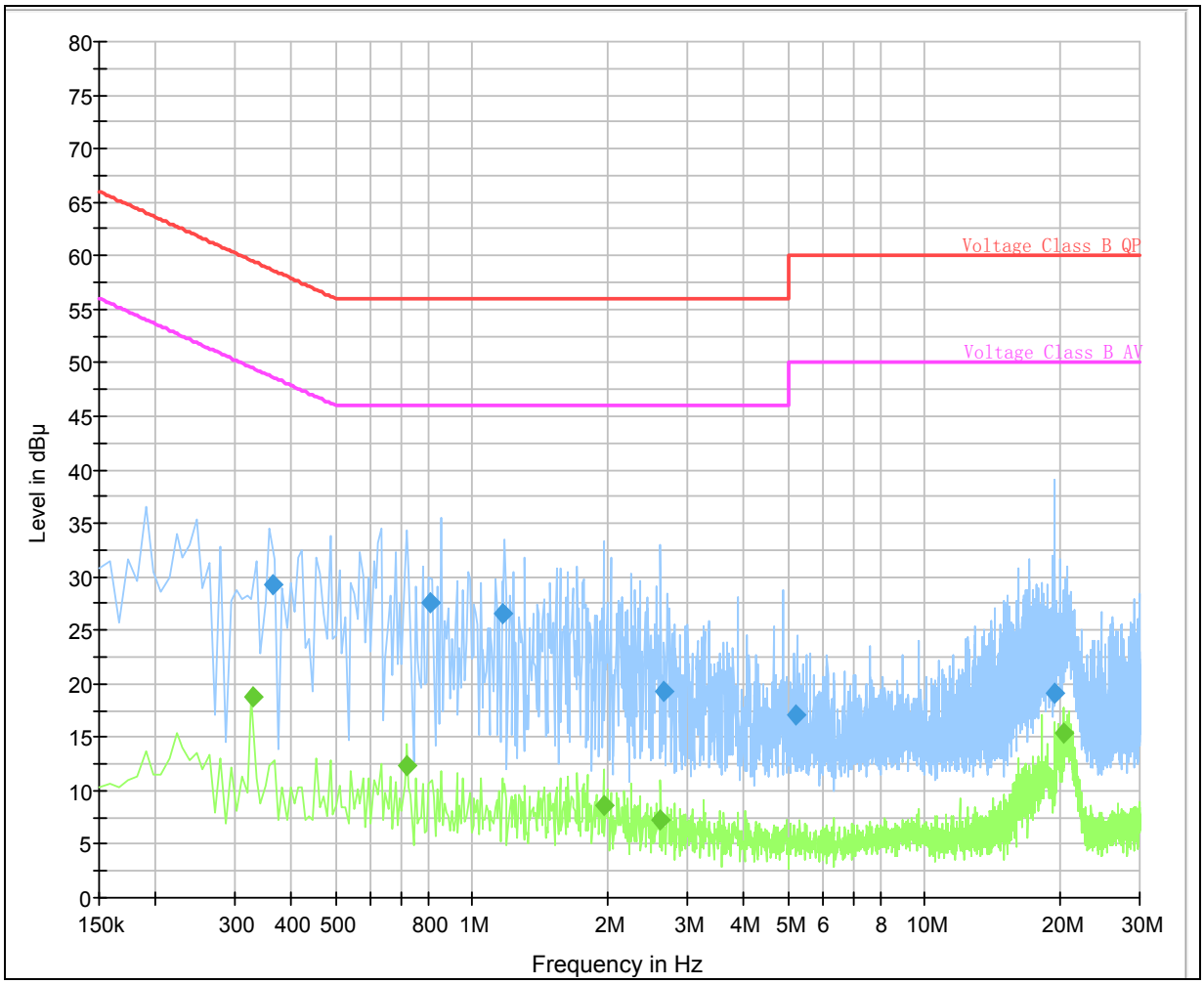
L Line



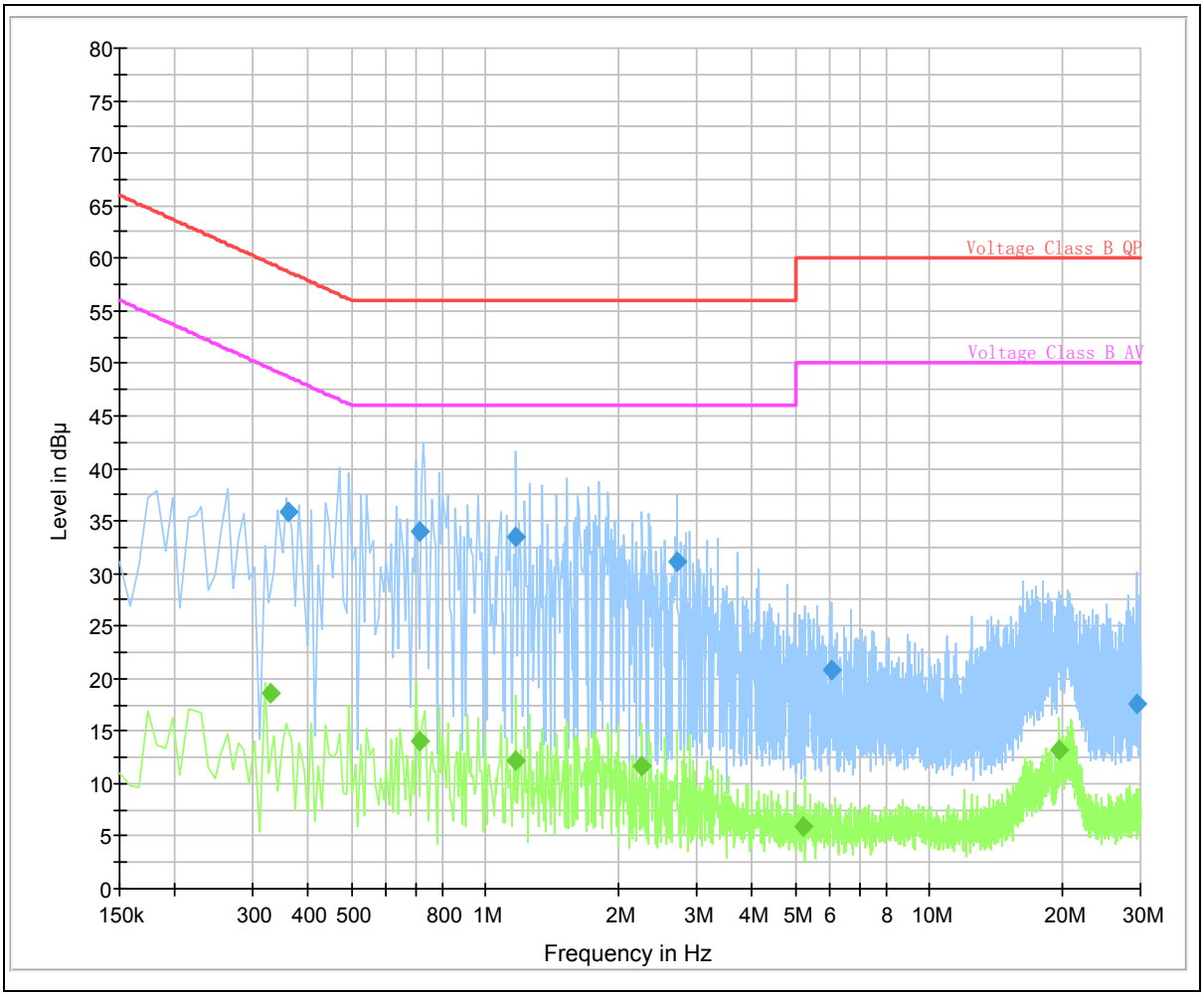
N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.225000	Average	N	40.1	52.6	12.5
0.341000	Average	L	15.3	49.2	15.9
0.793000	Average	N	33.0	46.0	13.0
0.795000	Average	L	28.6	46.0	17.4
0.909000	Average	L	29.3	46.0	16.7
1.697000	Average	N	32.3	46.0	13.7
0.225000	Quasi-peak	L	32.7	62.6	17.9
0.339000	Quasi-peak	N	36.1	59.2	13.1
0.453000	Quasi-peak	N	43.6	56.8	13.2
1.687000	Quasi-peak	N	41.9	56.0	14.1
2.053000	Quasi-peak	L	37.5	56.0	18.5
2.263000	Quasi-peak	N	40.1	56.0	15.9

802.11b CH6



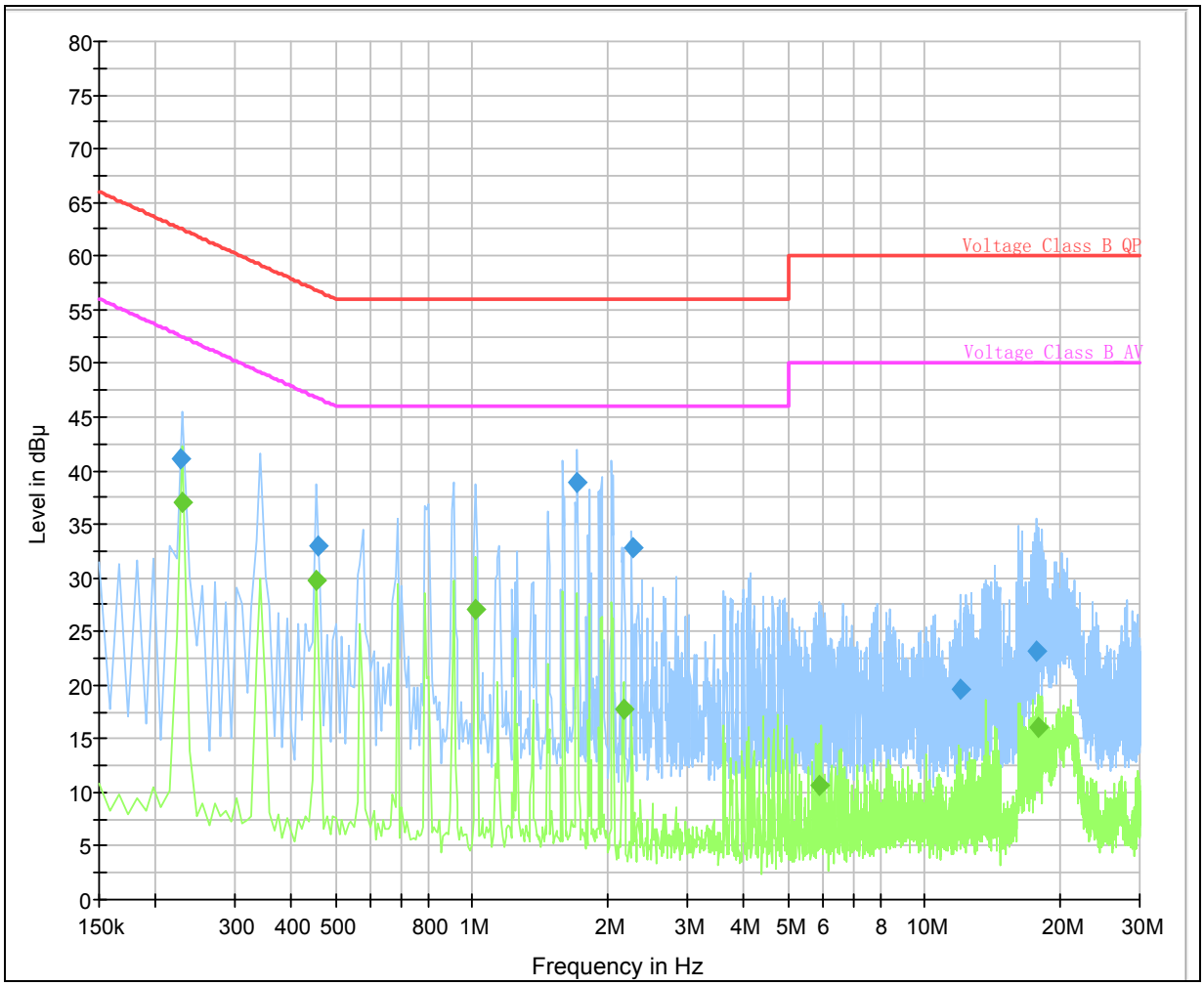
L Line



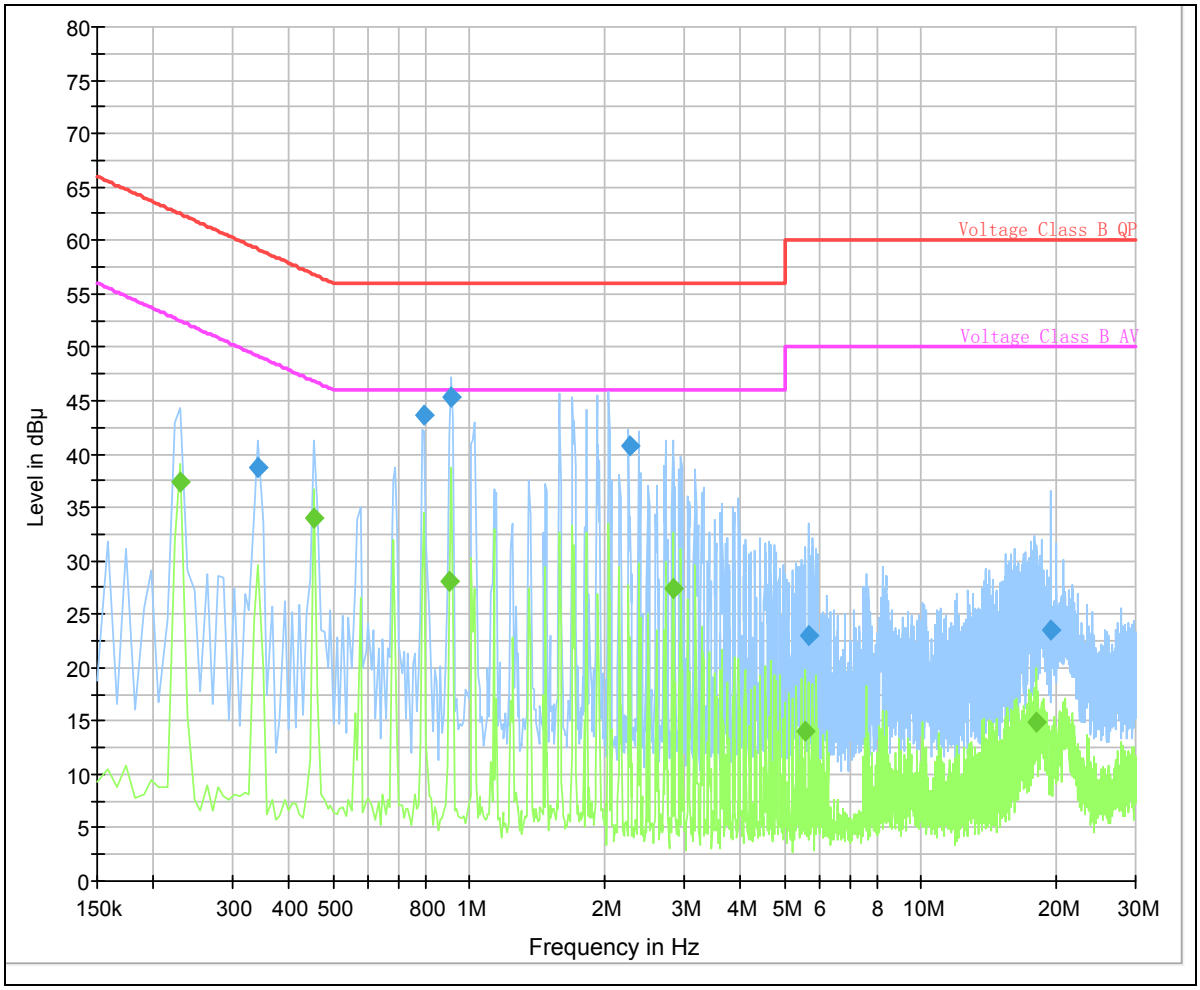
N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.327000	Average	N	18.6	49.5	26.9
0.329000	Average	L	18.8	49.5	30.7
0.715000	Average	N	14.1	46.0	31.9
0.719000	Average	L	12.3	46.0	33.7
1.175000	Average	N	12.1	46.0	33.9
2.259000	Average	N	11.6	46.0	34.4
0.361000	Quasi-peak	N	35.8	58.7	22.9
0.363000	Quasi-peak	L	29.3	58.7	29.4
0.715000	Quasi-peak	N	34.0	56.0	22.0
0.813000	Quasi-peak	L	27.6	56.0	28.4
1.175000	Quasi-peak	N	33.6	56.0	22.4
2.709000	Quasi-peak	N	31.2	56.0	24.8

802.11b CH11



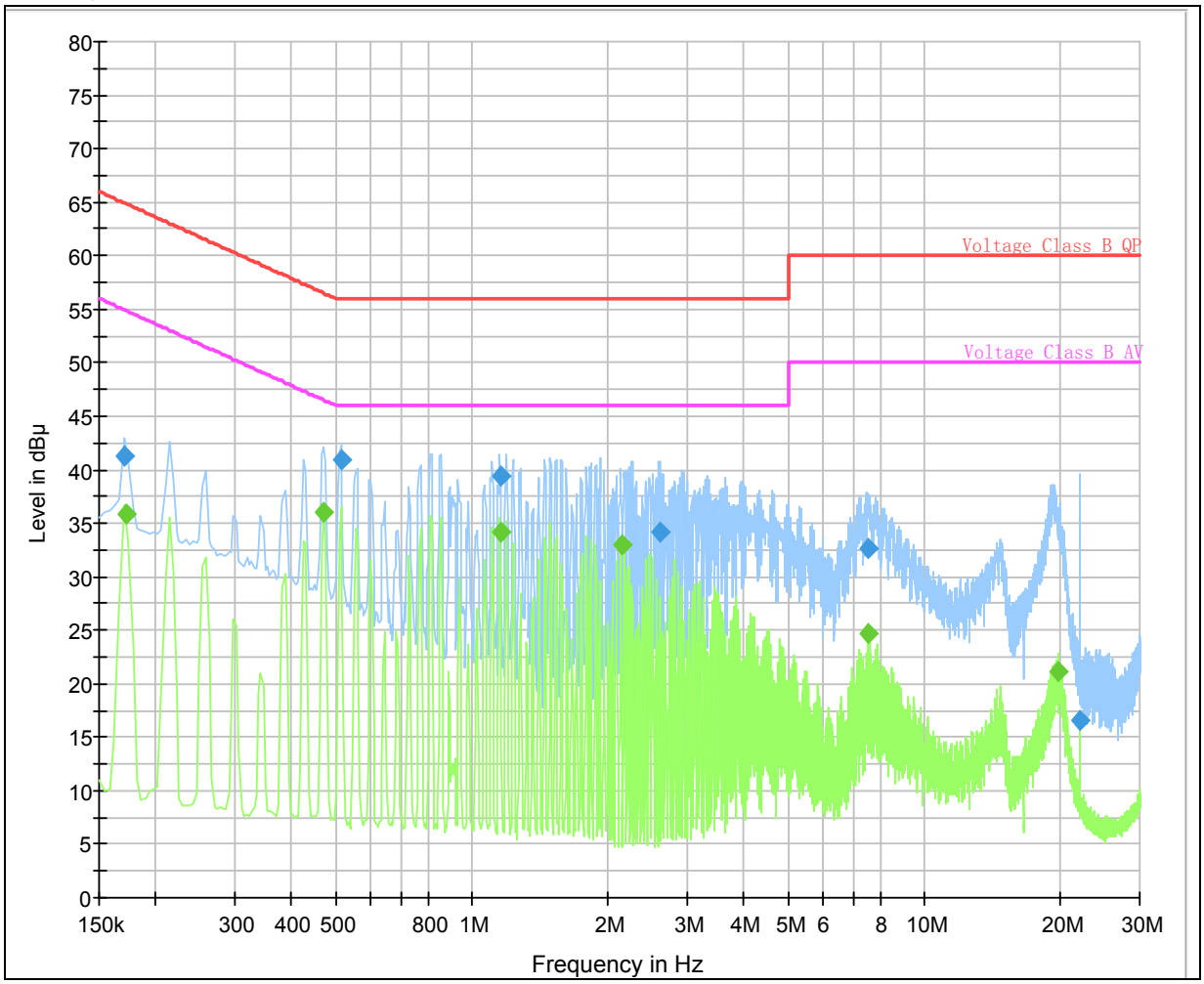
L Line



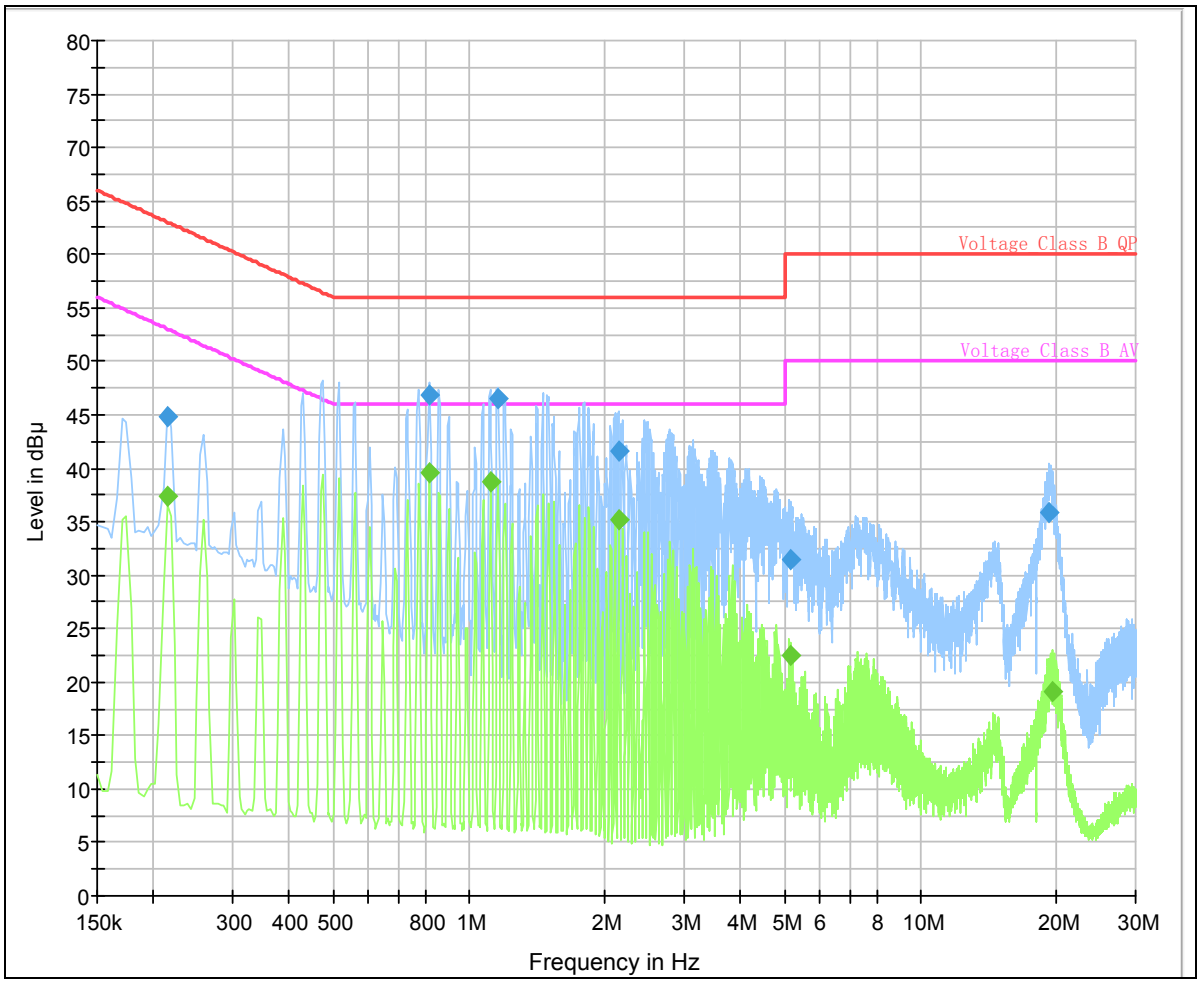
N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.229000	Average	N	37.4	52.5	13.1
0.229000	Average	L	37.1	52.5	13.4
0.455000	Average	N	34.1	46.8	12.8
0.455000	Average	L	29.8	46.8	17.0
0.901000	Average	N	28.1	46.0	17.9
2.833000	Average	N	27.4	46.0	18.6
0.227000	Quasi-peak	L	41.1	62.6	17.5
0.341000	Quasi-peak	N	38.7	59.2	15.5
0.795000	Quasi-peak	N	43.6	56.0	12.4
0.909000	Quasi-peak	N	45.3	56.0	10.7
1.713000	Quasi-peak	L	38.8	56.0	17.2
2.271000	Quasi-peak	N	40.8	56.0	15.2

802.11g CH1



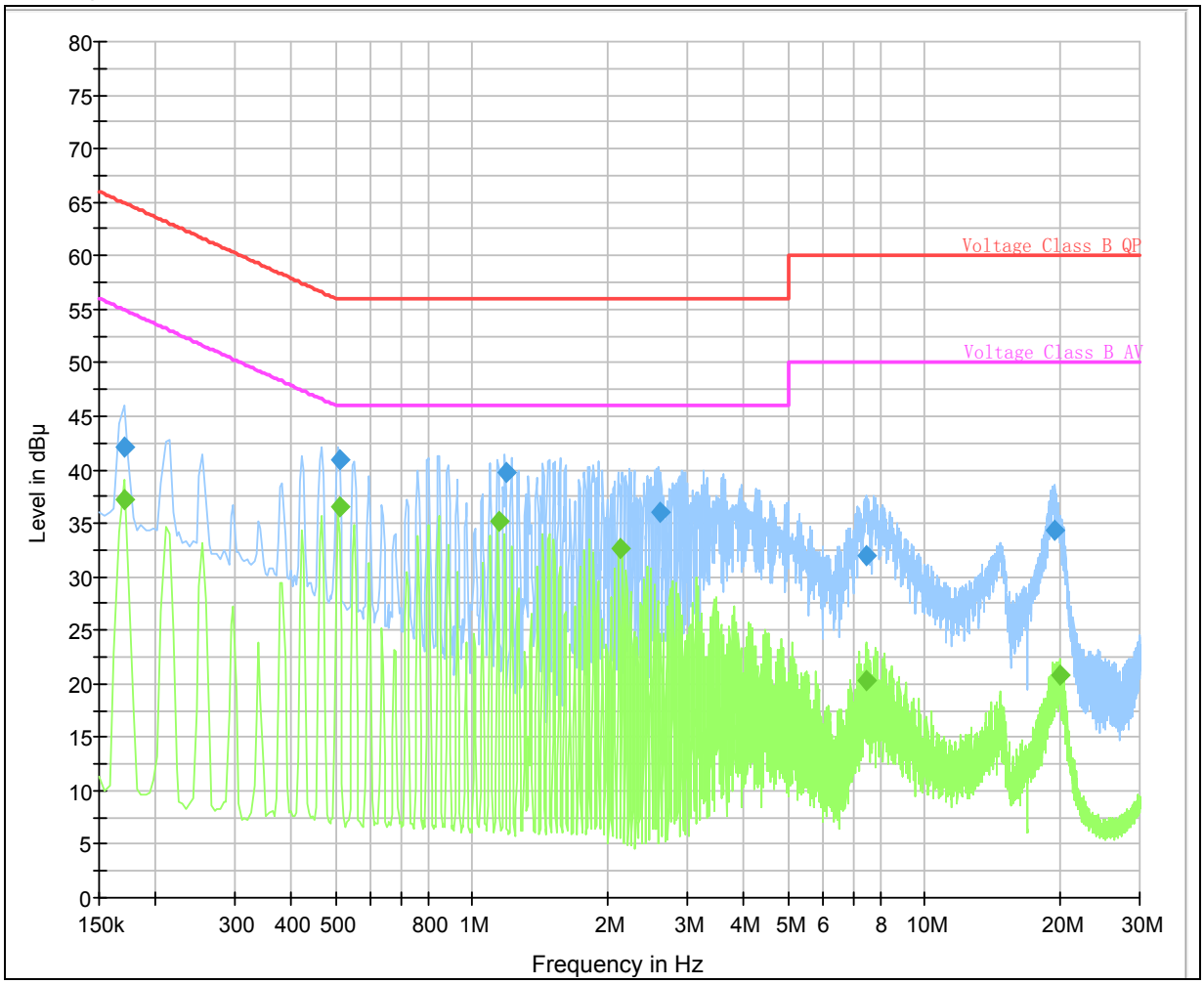
L Line



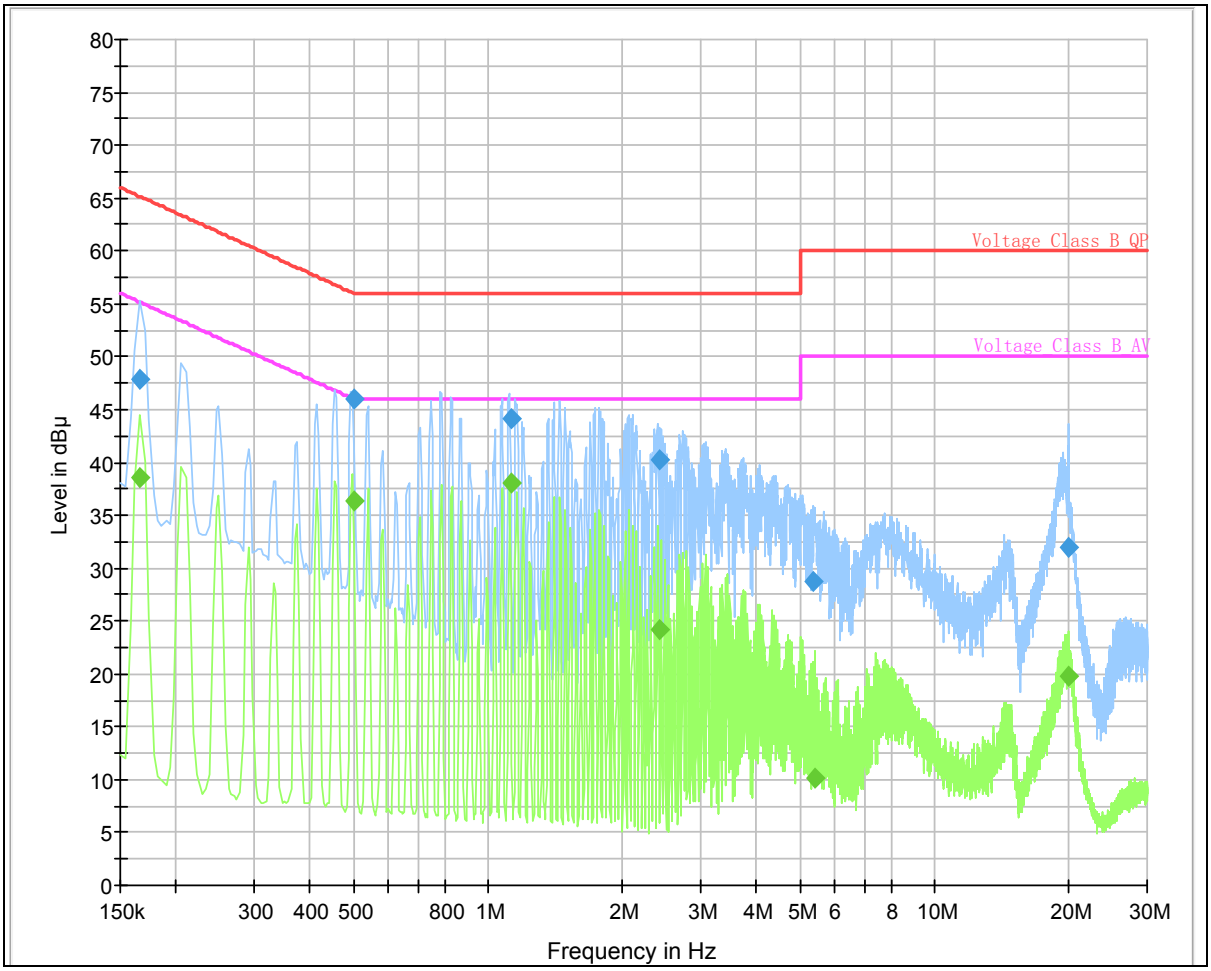
N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.471000	Average	L	36.1	46.5	10.4
0.817000	Average	N	39.5	46.0	6.5
1.119000	Average	N	38.8	46.0	7.2
1.157000	Average	L	34.2	46.0	11.8
2.147000	Average	L	33	46.0	13.0
2.153000	Average	N	35.2	46.0	10.8
0.215000	Quasi-peak	N	44.8	63.0	18.2
0.515000	Quasi-peak	L	40.9	56.0	15.1
0.817000	Quasi-peak	N	46.8	56.0	9.2
1.157000	Quasi-peak	L	39.4	56.0	16.6
1.161000	Quasi-peak	N	46.5	56.0	9.6
2.147000	Quasi-peak	N	41.7	56.0	14.3

802.11g CH6



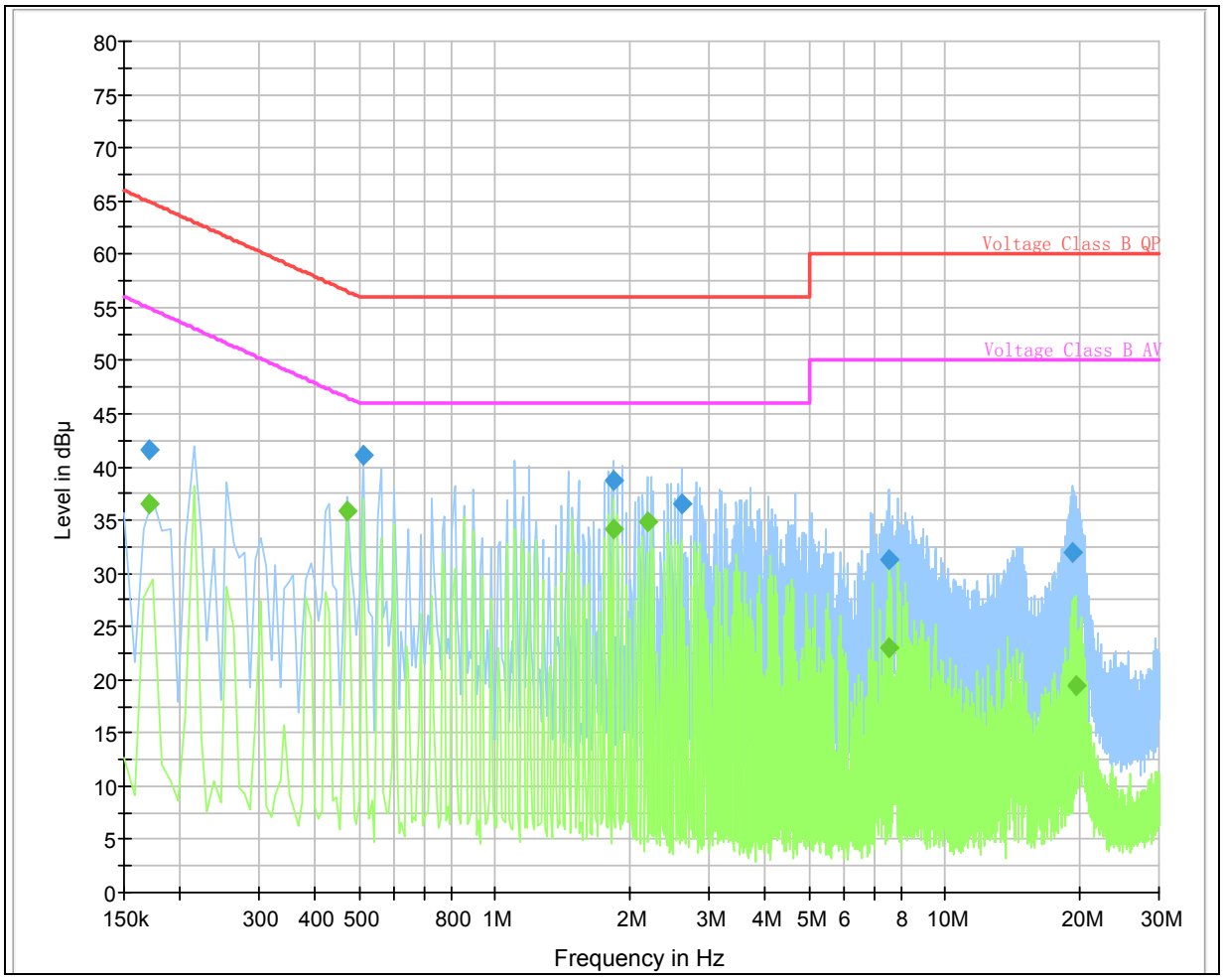
L Line



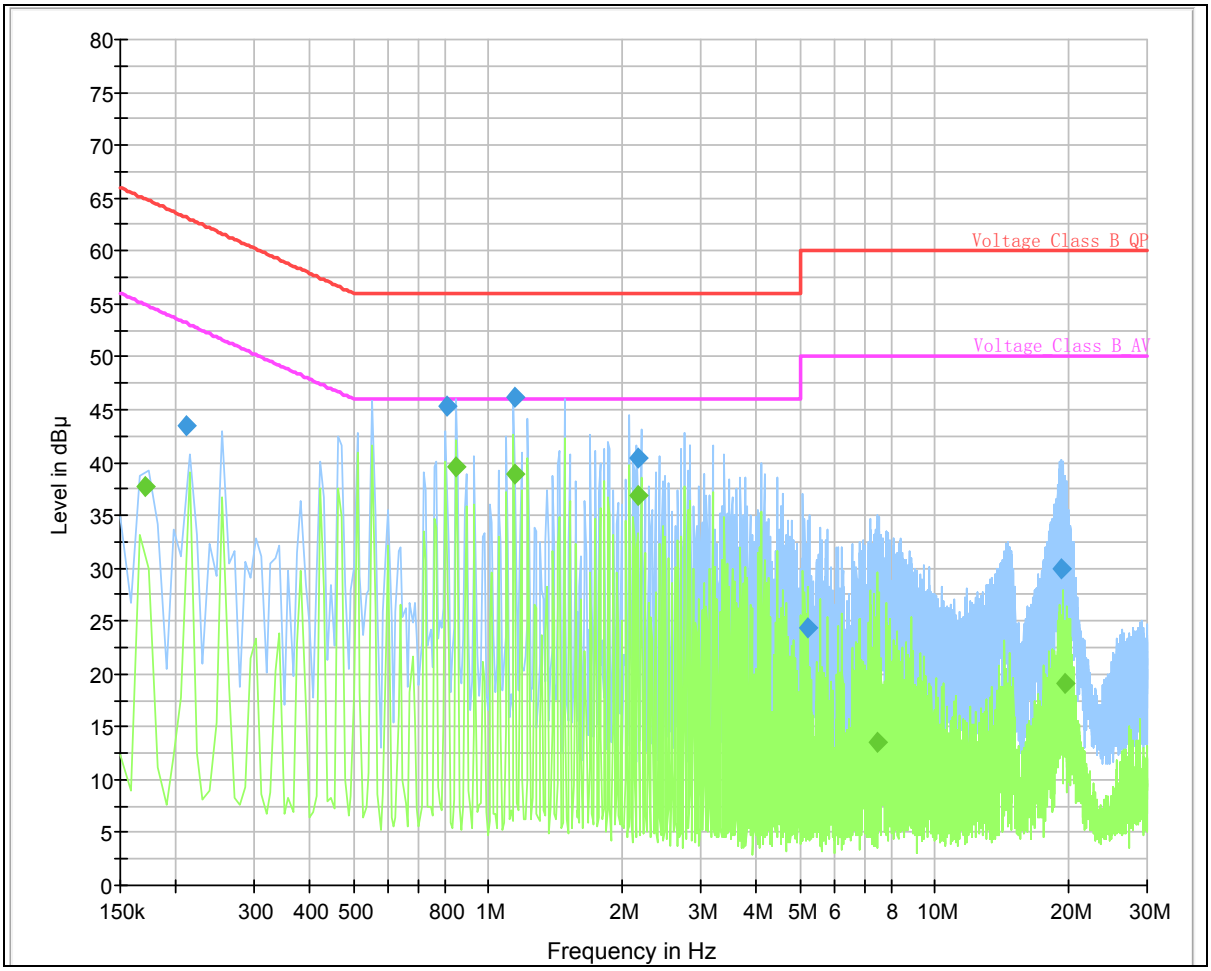
N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.166000	Average	N	38.6	55.2	16.6
0.501000	Average	N	36.3	46.0	9.7
0.511000	Average	L	36.5	46.0	9.5
1.133000	Average	N	38.0	46.0	8.0
1.151000	Average	L	35.2	46.0	10.8
2.131000	Average	L	32.6	46.0	13.4
0.166000	Quasi-peak	N	47.8	65.2	17.4
0.503000	Quasi-peak	N	46.0	56.0	10.0
0.511000	Quasi-peak	L	40.9	56.0	15.1
1.131000	Quasi-peak	N	44.1	56.0	11.9
1.193000	Quasi-peak	L	39.7	56.0	16.3
2.429000	Quasi-peak	N	40.2	56.0	15.8

802.11g CH11



L Line



N Line

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.469000	Average	L	35.8	46.5	10.7
0.851000	Average	N	39.5	46.0	6.5
1.149000	Average	N	38.9	46.0	7.1
1.837000	Average	L	34.2	46.0	11.8
2.175000	Average	N	36.9	46.0	9.1
2.181000	Average	L	34.8	46.0	11.2
0.513000	Quasi-peak	L	41.0	56.0	15.0
0.807000	Quasi-peak	N	45.4	56.0	10.6
1.149000	Quasi-peak	N	46.2	56.0	9.8
1.837000	Quasi-peak	L	38.8	56.0	17.2
2.169000	Quasi-peak	N	40.3	56.0	15.7
2.611000	Quasi-peak	L	36.5	56.0	19.5

2.7 Radiates Emission

Ambient condition

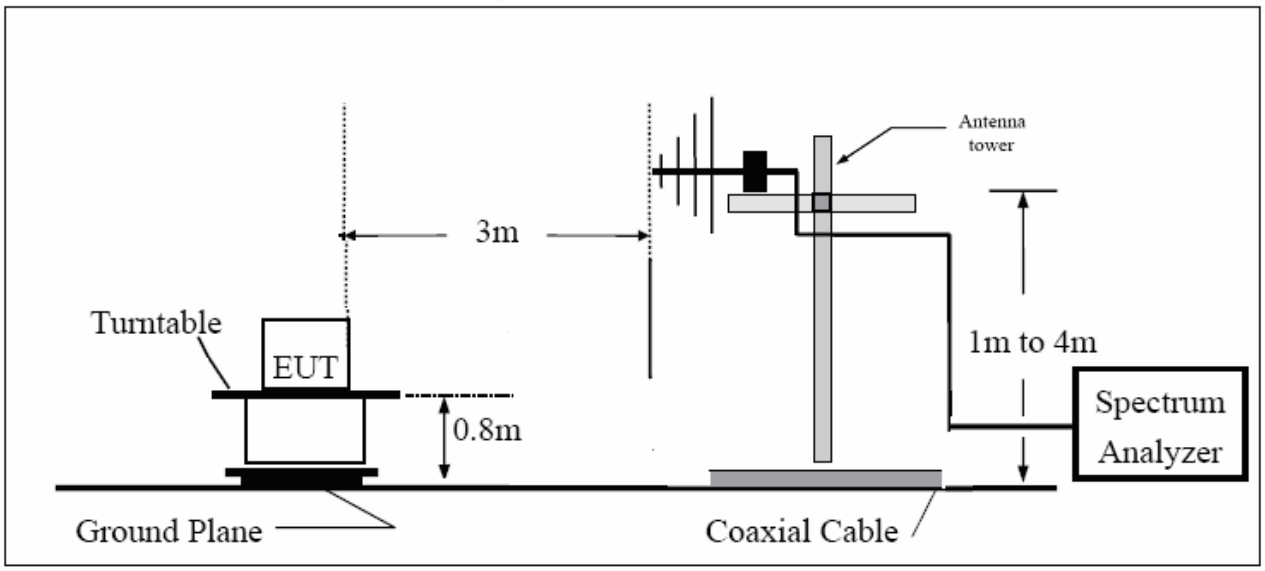
Temperature	Relative humidity	Pressure
25°C	58%	101.5kPa

Method of Measurement

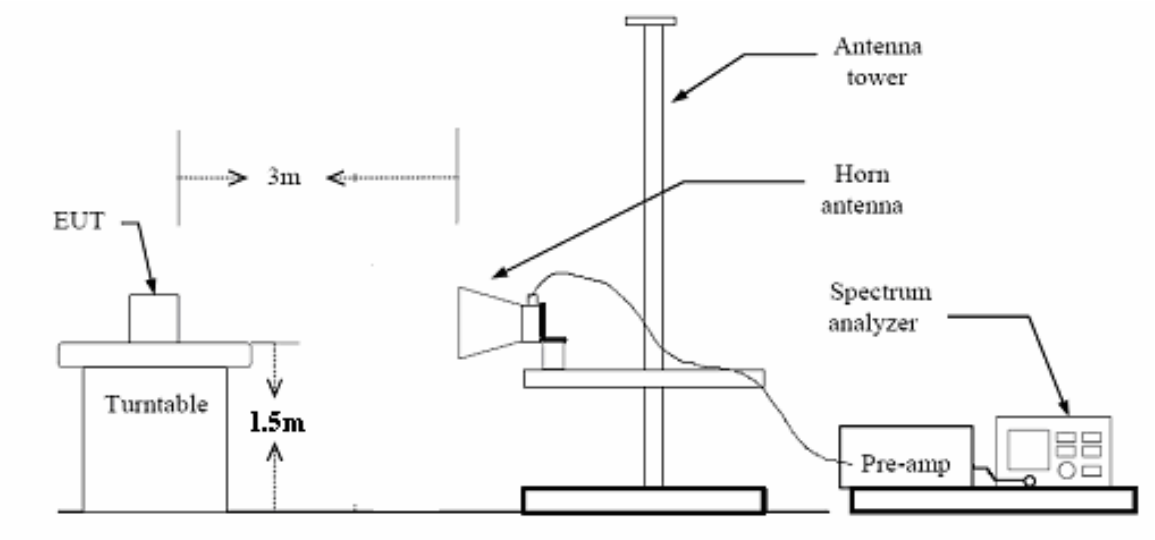
The test set-up was made in accordance to the general provisions of ANSI C63.4-2003. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 30MHz to 26GHz During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Test setup

Below 1GHz



Above 1GHz



Limits

Rule Part 15.247(d) specifies that “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)).”

Limit in restricted band

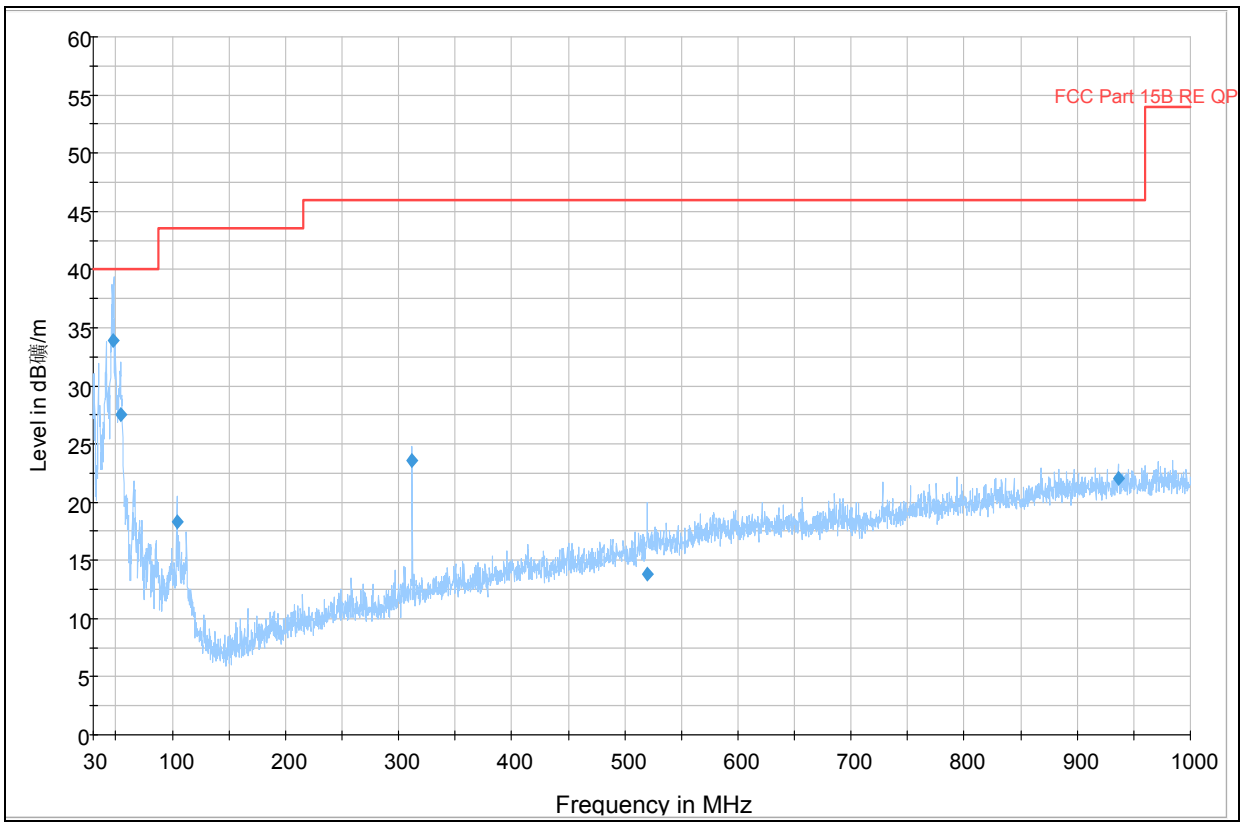
Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96. U=3.92 dB.

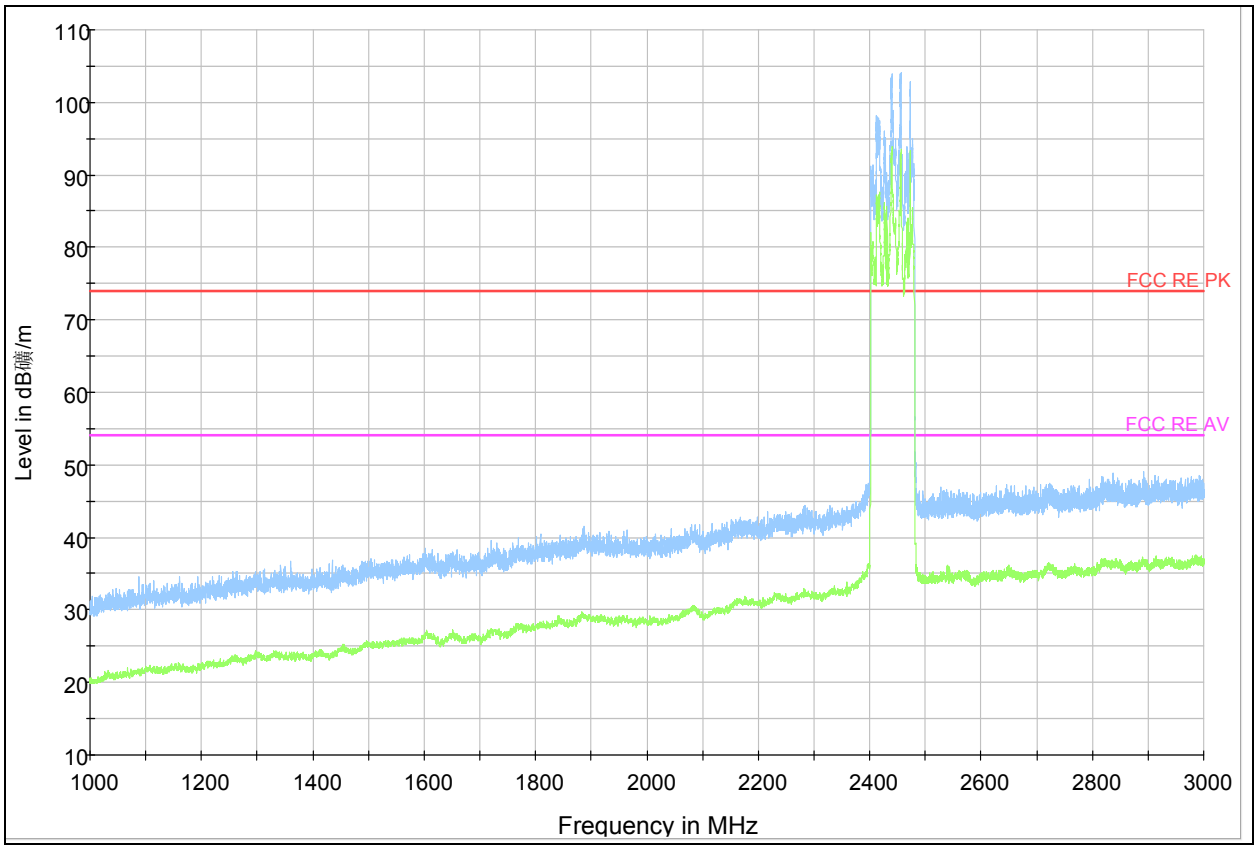
Test result

802.11b CH1



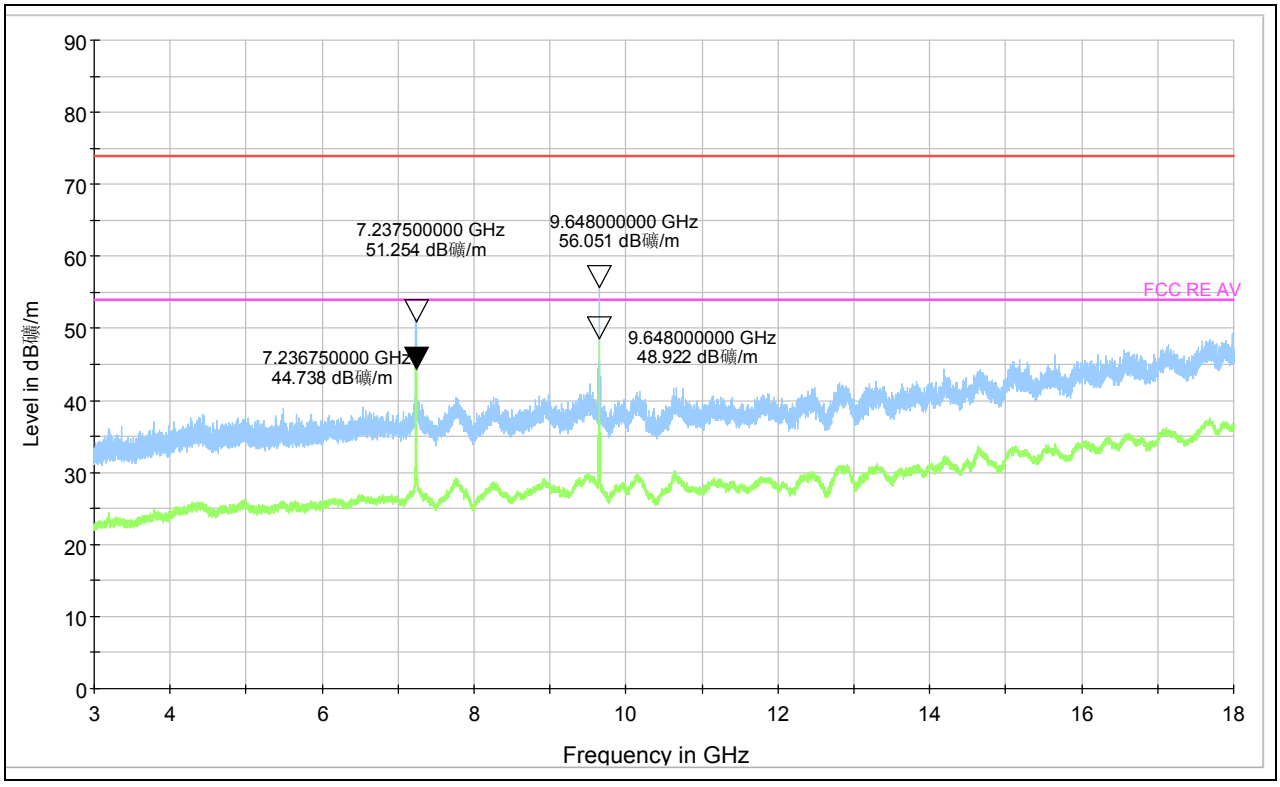
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
47.460000	33.9	175.0	Vertical	258.0	6.1	40.0
54.250000	27.6	125.0	Vertical	257.0	12.4	40.0
103.962500	18.3	175.0	Vertical	90.0	25.2	43.5
312.027500	23.6	191.0	Vertical	120.0	22.4	46.0
520.092500	13.8	123.0	Horizontal	106.0	32.2	46.0
935.980000	22.0	100.0	Horizontal	262.0	24.0	46.0

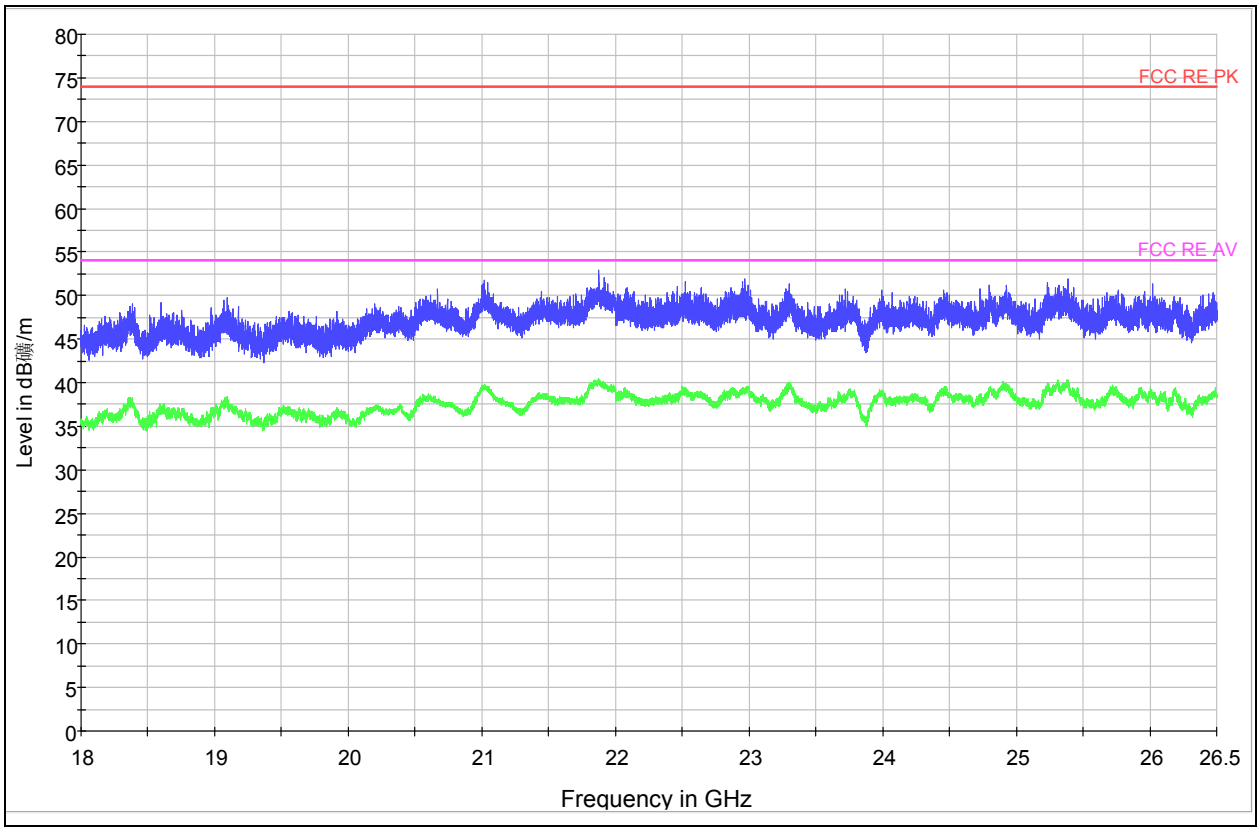


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



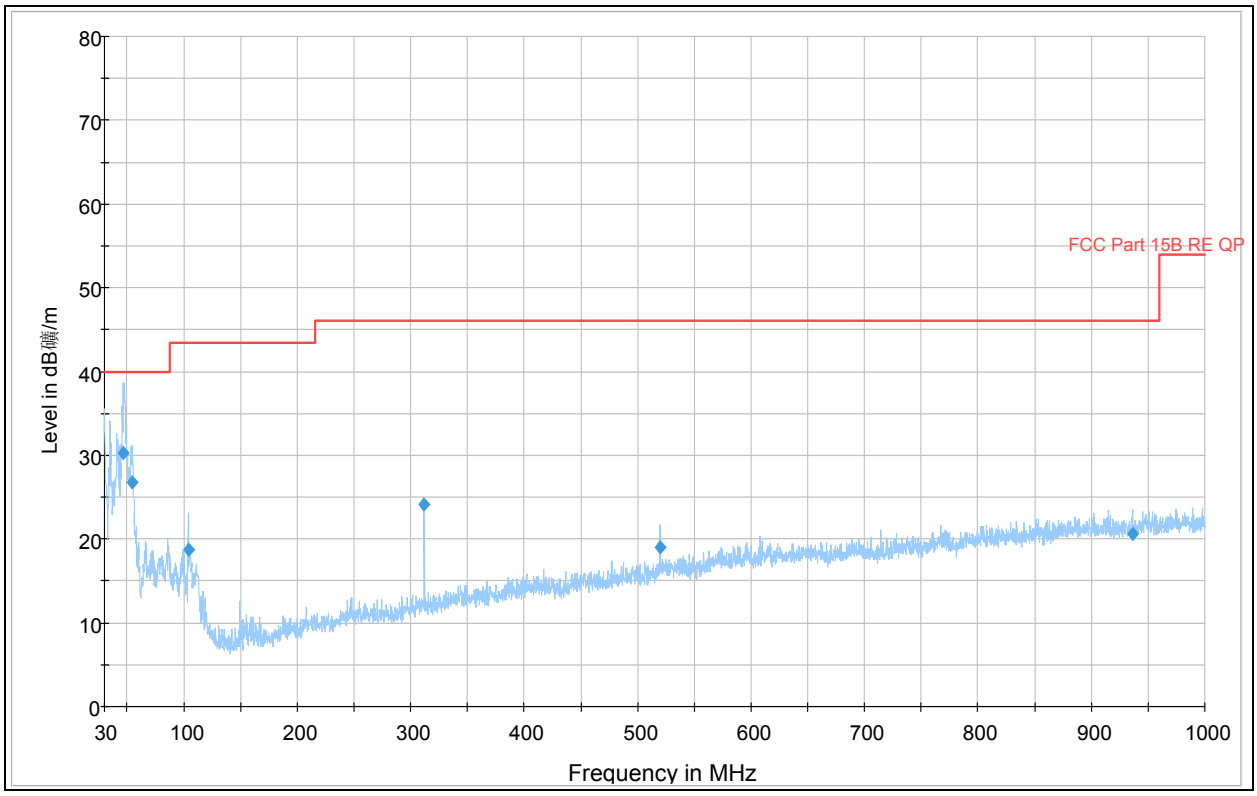
Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

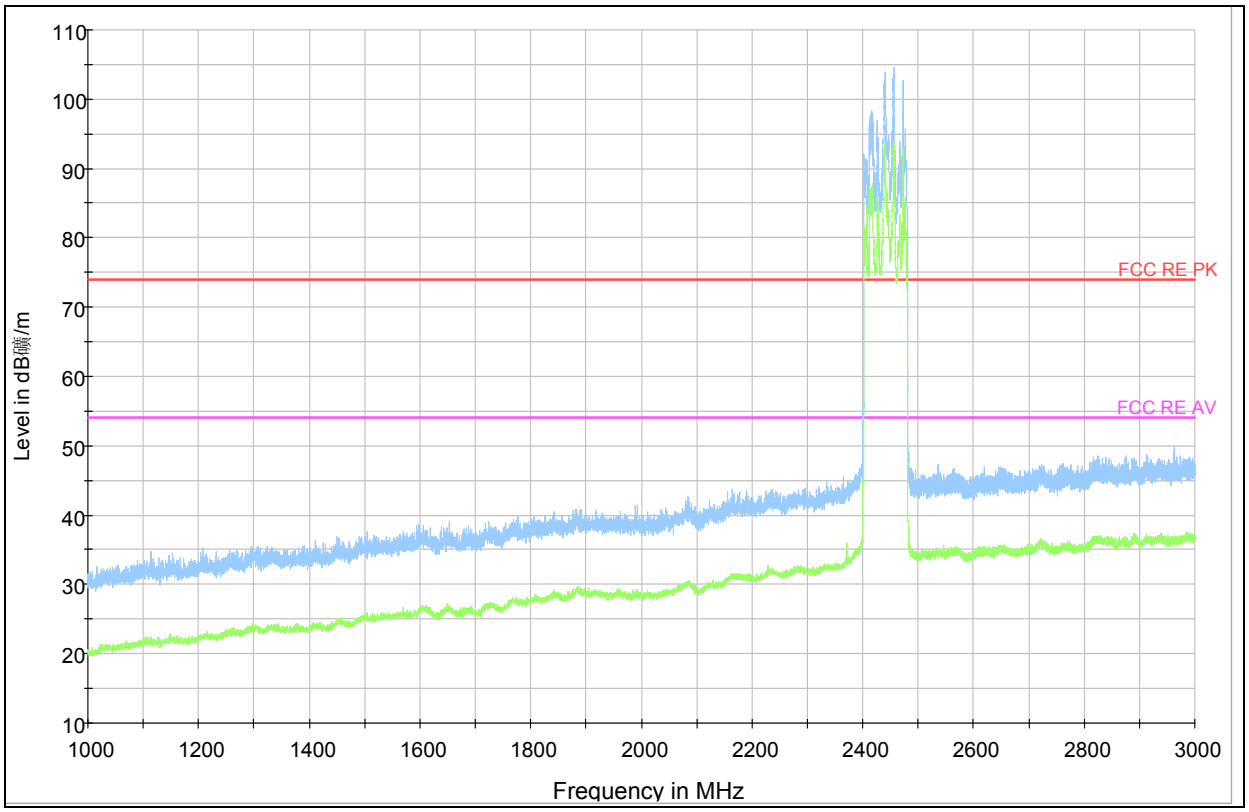
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7237.5	51.254	74.0	22.746	PK	180	Vertical
9648.0	56.051	74.0	17.949	PK	180	Vertical
7236.75	44.738	54.0	9.262	AV	180	Vertical
9648.00	48.922	54.0	5.078	AV	180	Vertical

802.11b CH6

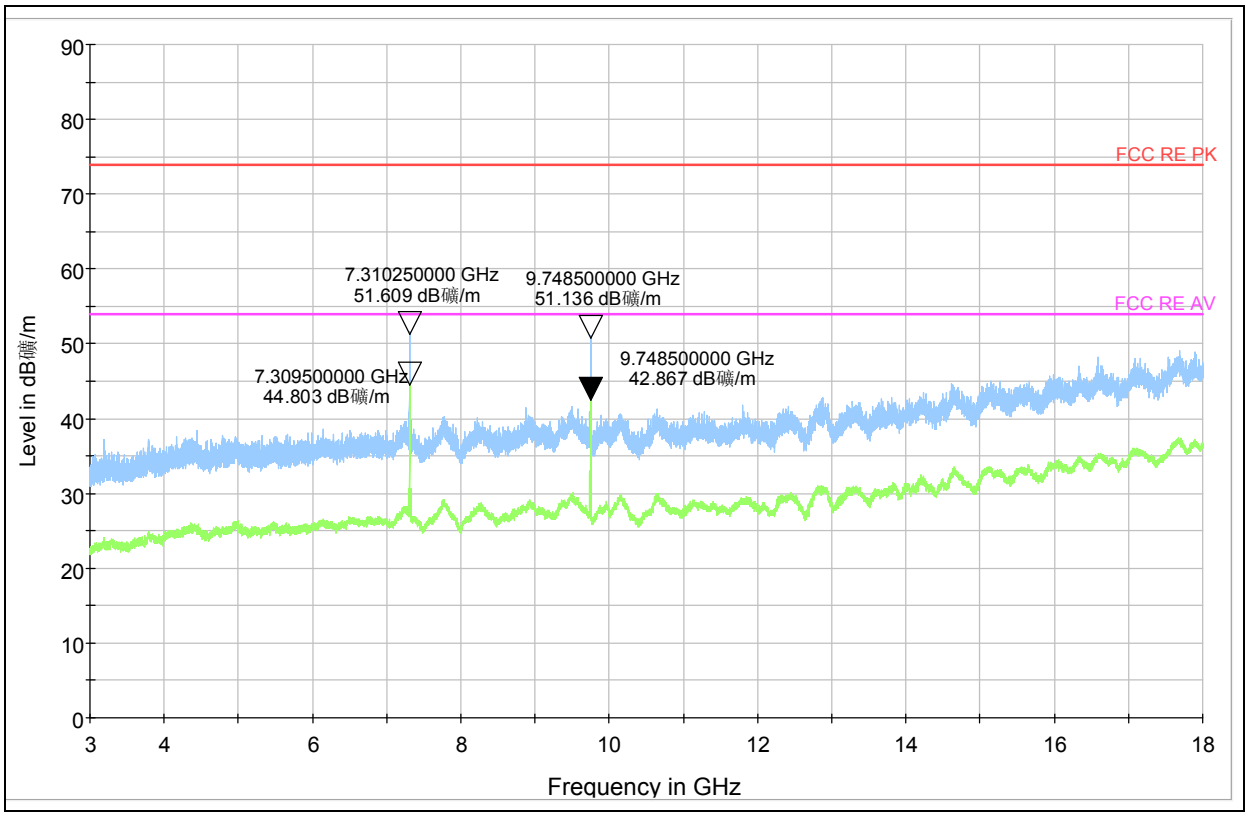


Radiates Emission from 30MHz to 1GHz

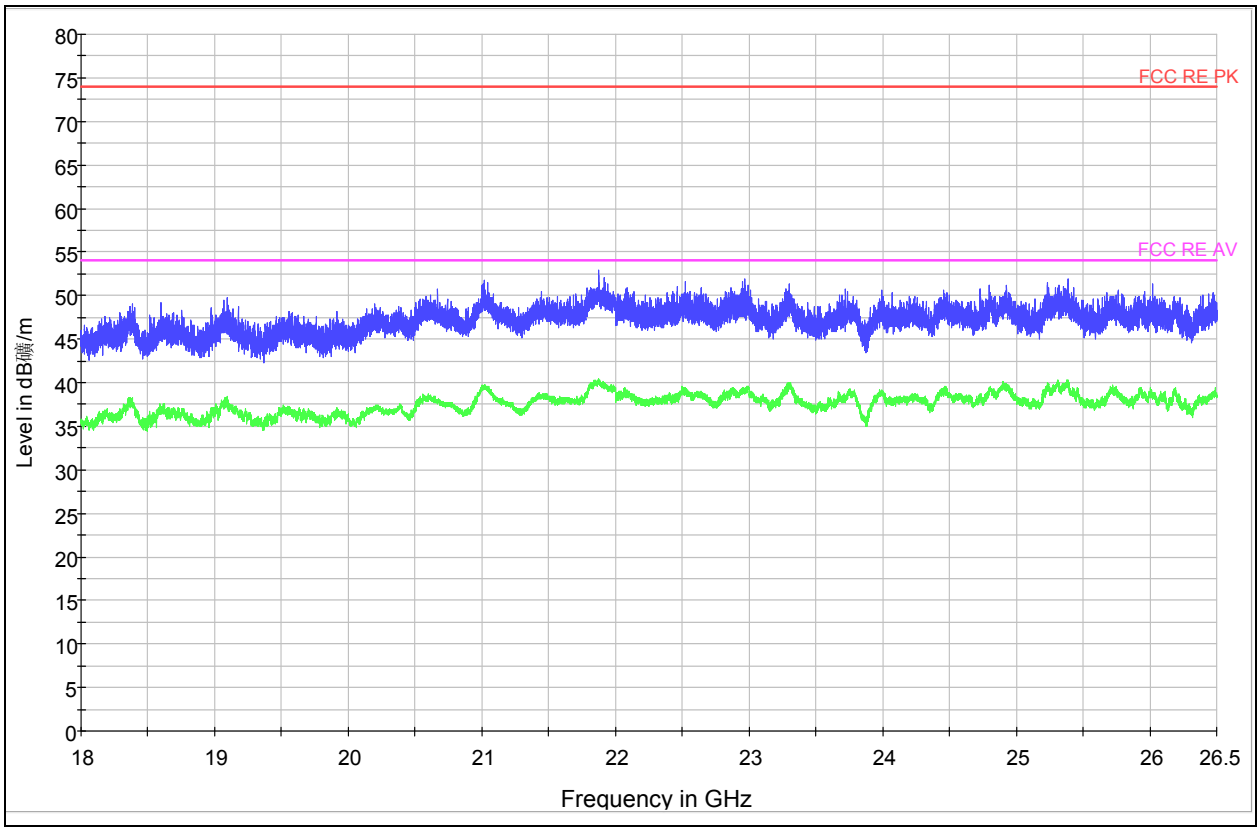
Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
46.490000	30.3	100.0	Vertical	109.0	9.7	40.0
54.250000	26.8	125.0	Vertical	80.0	13.2	40.0
103.962500	18.7	116.0	Horizontal	118.0	24.8	43.5
312.027500	24.2	175.0	Vertical	61.0	21.8	46.0
520.092500	19.1	206.0	Vertical	92.0	26.9	46.0
935.980000	20.6	175.0	Horizontal	38.0	25.4	46.0



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



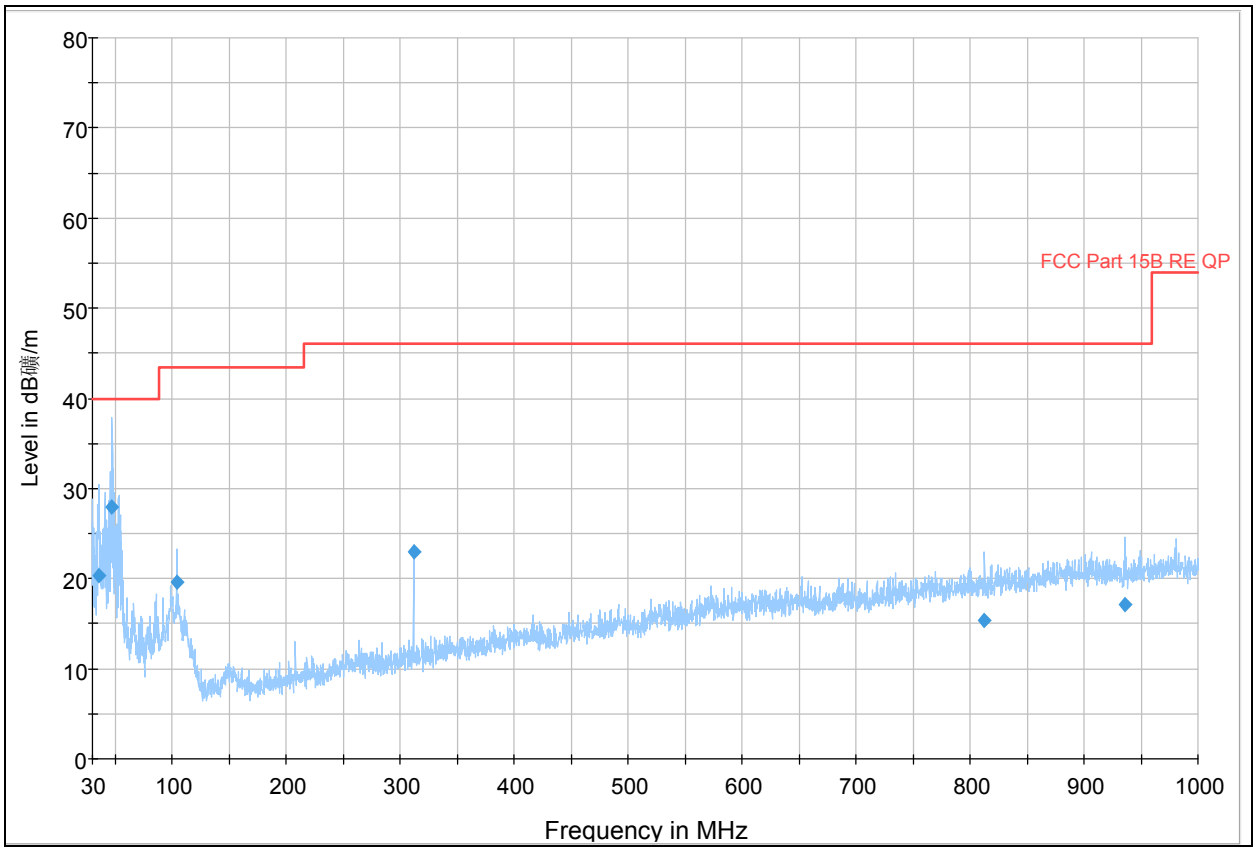
Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

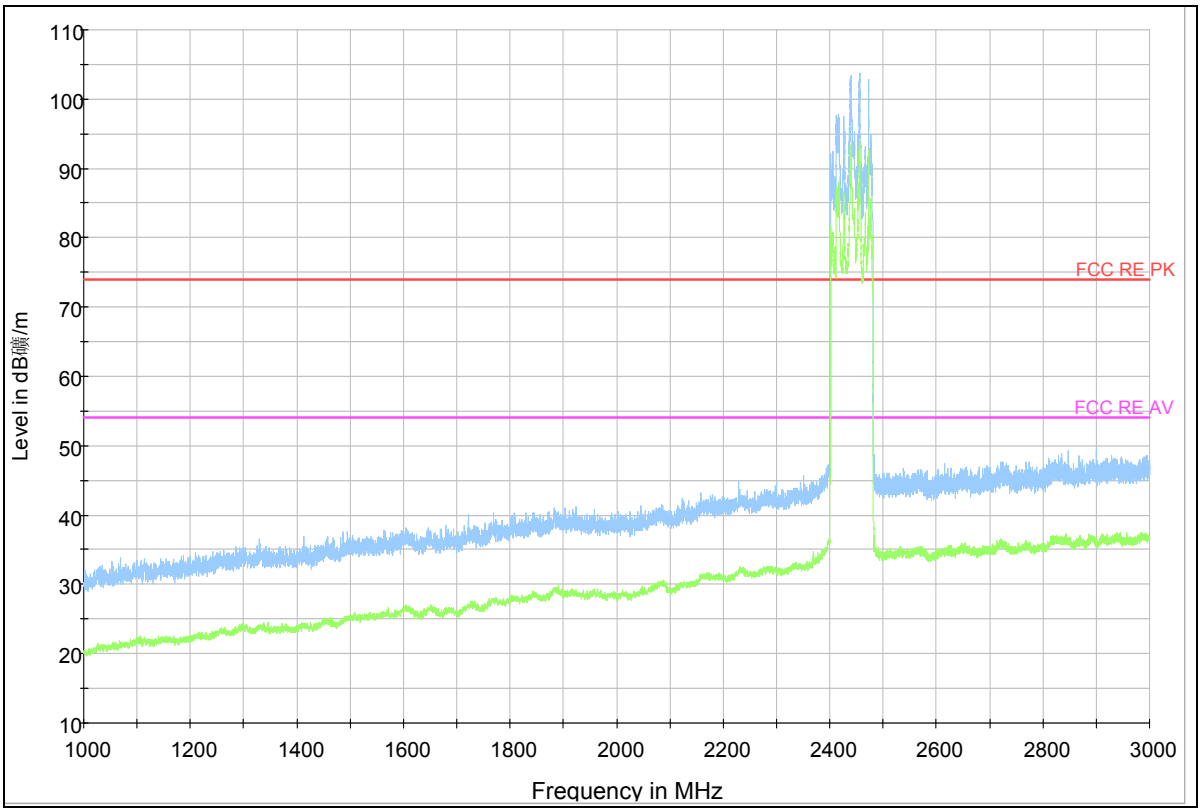
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7310.25	51.609	74.0	22.391	PK	180	Vertical
9748.5	51.136	74.0	22.864	PK	180	Vertical
7309.5	44.803	54.0	9.197	AV	180	Vertical
9748.5	42.867	54.0	11.133	AV	180	Vertical

802.11b CH11

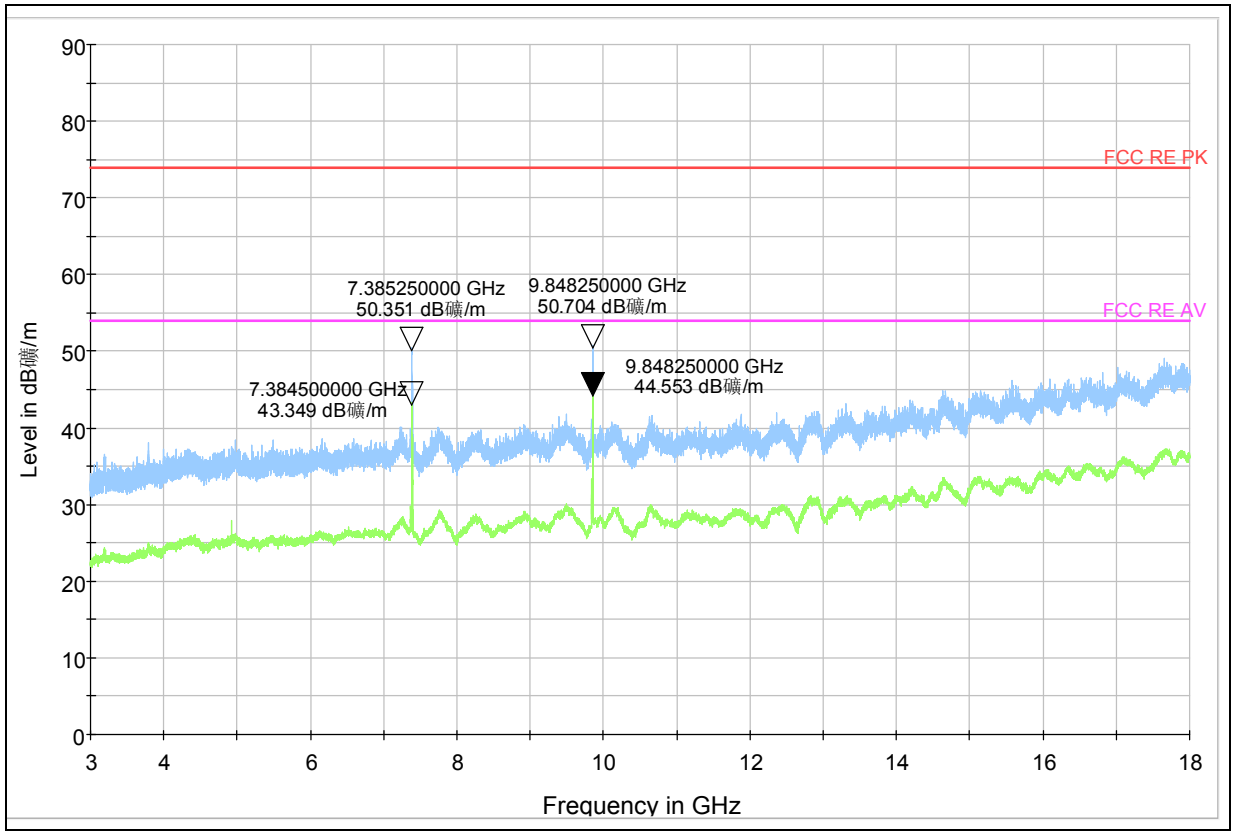


Radiates Emission from 30MHz to 1GHz

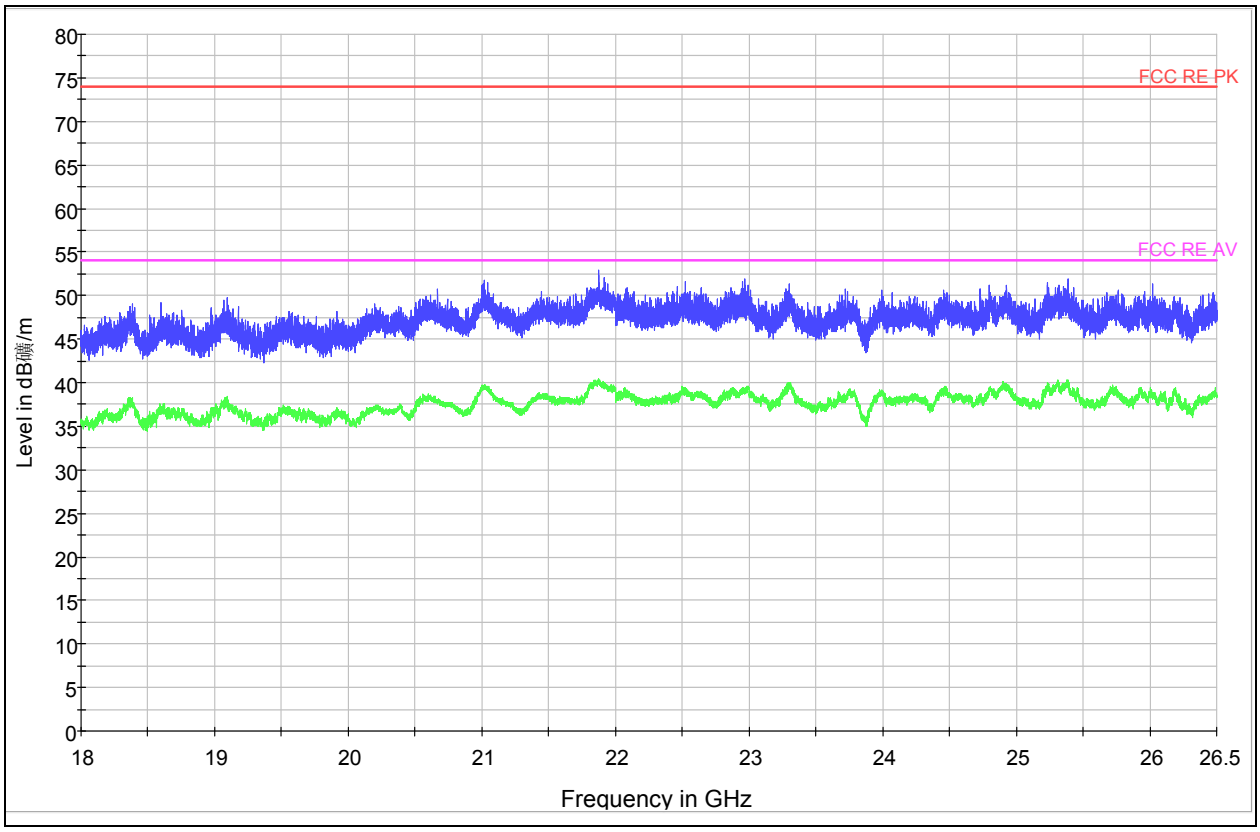
Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
35.335000	20.4	175.0	Vertical	18.0	19.6	40.0
47.217500	27.9	200.0	Vertical	41.0	12.1	40.0
103.962500	19.5	100.0	Vertical	228.0	24.0	43.5
312.027500	23.0	125.0	Vertical	23.0	23.0	46.0
812.790000	15.4	100.0	Horizontal	131.0	30.6	46.0
936.222500	17.1	216.0	Horizontal	20.0	28.9	46.0



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



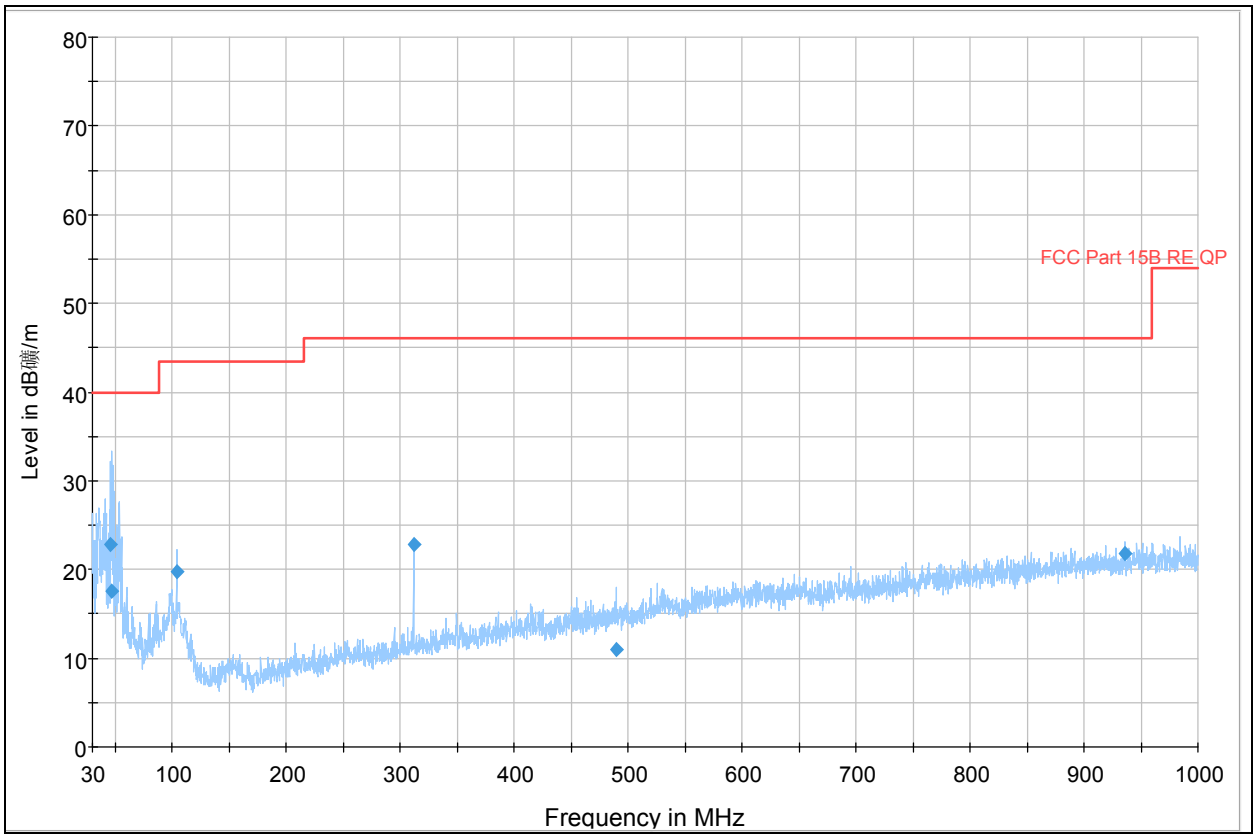
Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

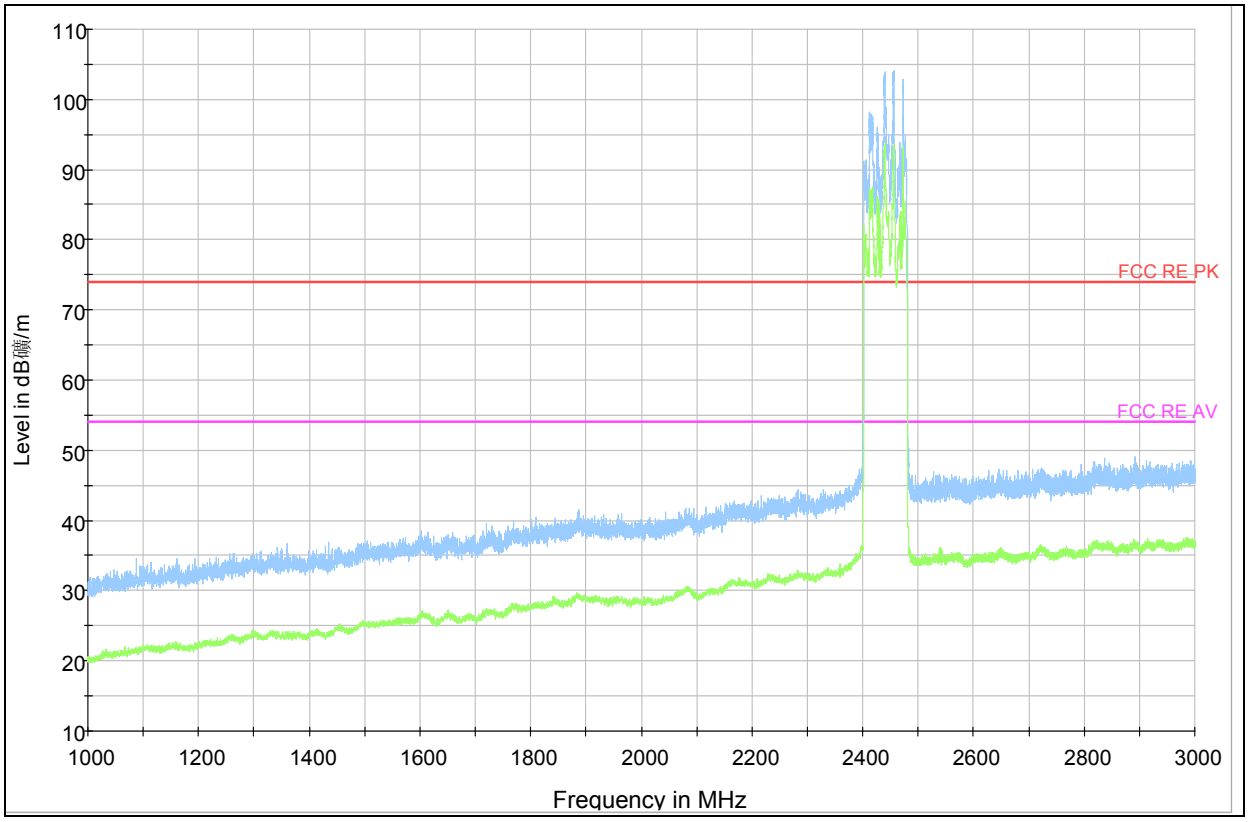
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7385.25	50.351	74	23.649	PK	180	Vertical
9848.25	50.704	74	23.296	PK	180	Vertical
7384.5	43.349	54	10.651	AV	180	Vertical
9848.25	44.553	54	9.447	AV	180	Vertical

802.11g CH1

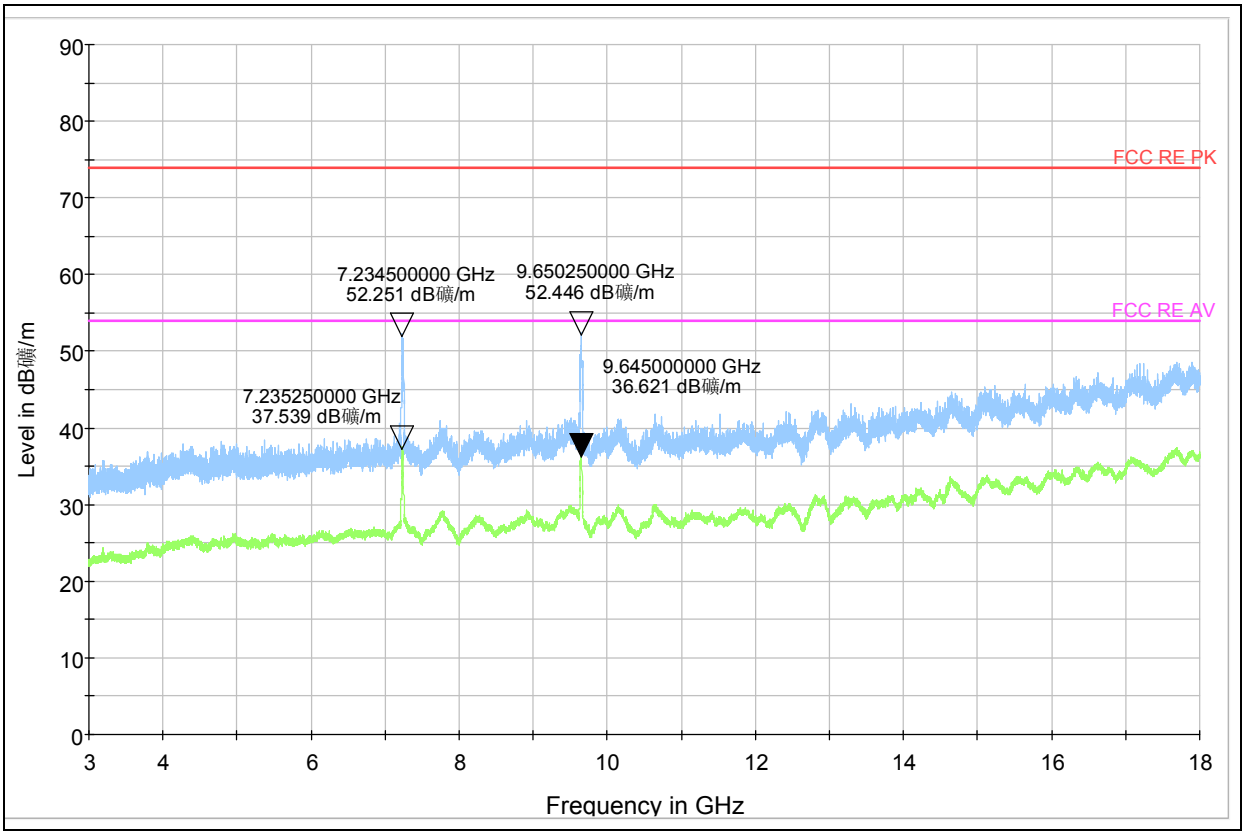


Radiates Emission from 30MHz to 1GHz

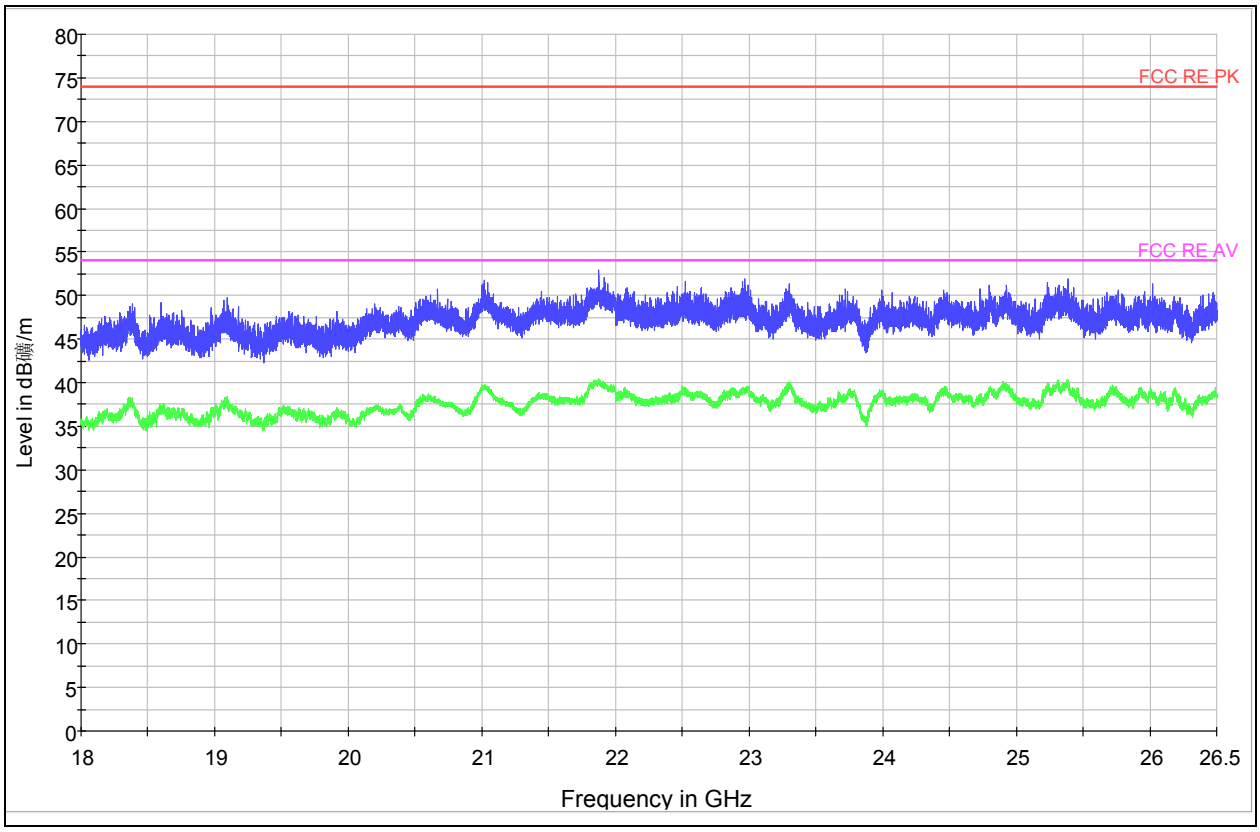
Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
45.520000	22.9	134.0	Vertical	45.0	17.1	40.0
47.217500	17.5	154.0	Vertical	116.0	22.5	40.0
103.962500	19.8	175.0	Vertical	98.0	23.7	43.5
312.027500	22.8	125.0	Vertical	223.0	23.2	46.0
489.537500	10.9	300.0	Horizontal	215.0	35.1	46.0
935.980000	21.8	240.0	Horizontal	270.0	24.2	46.0



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



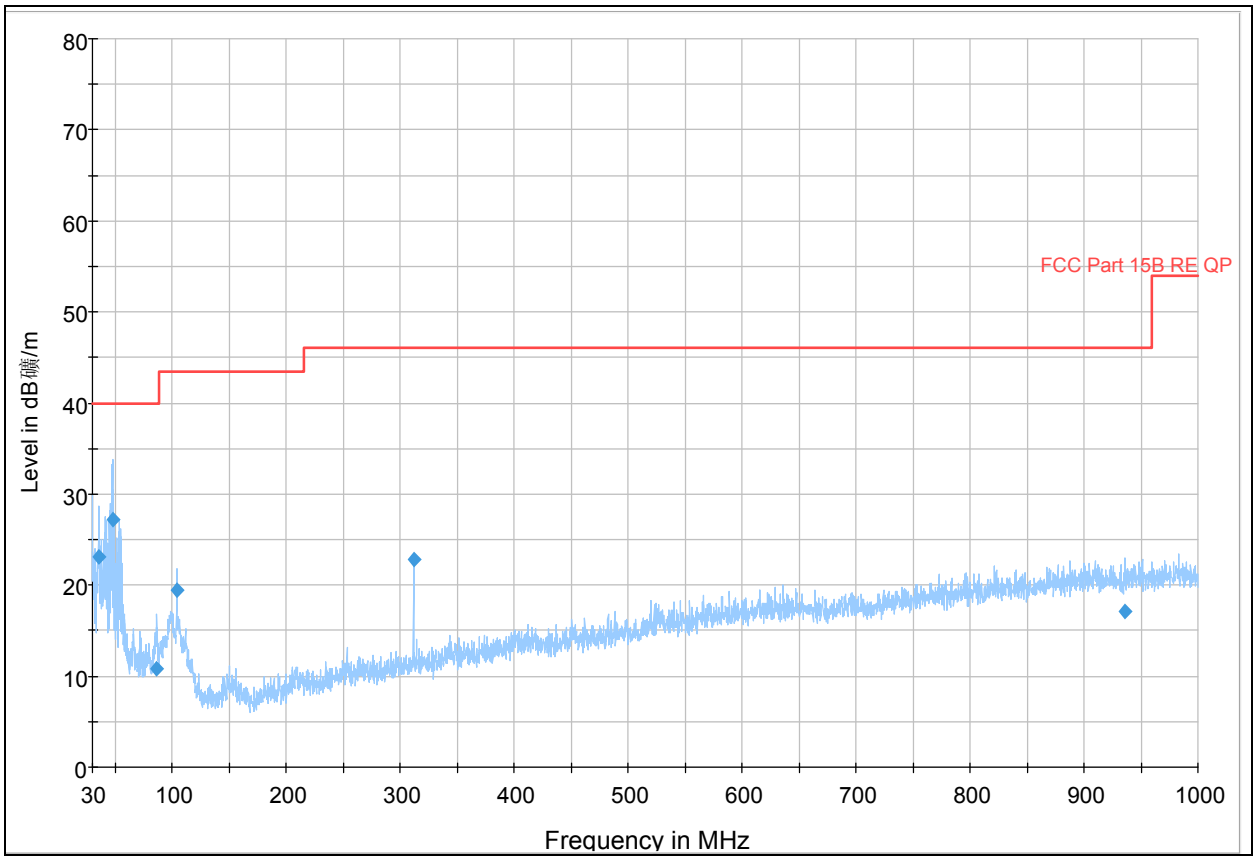
Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

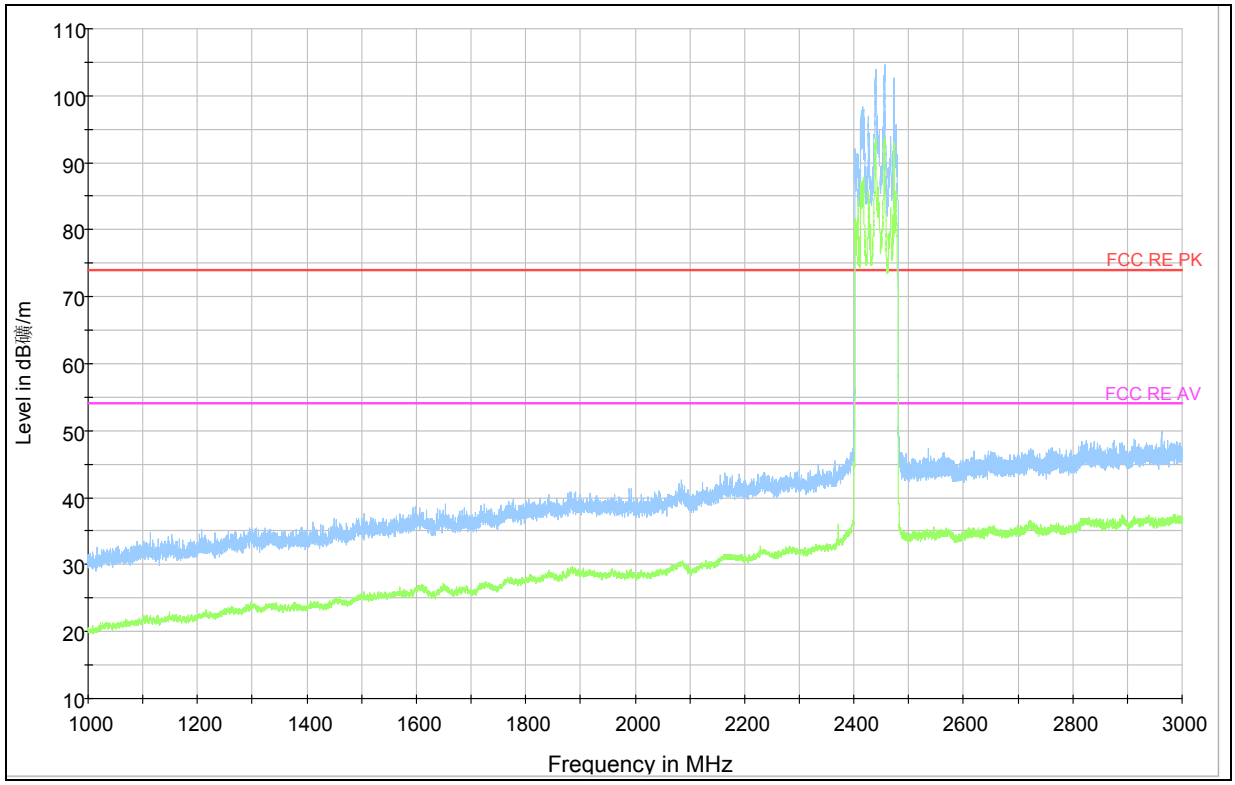
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7234.5	52.251	74	21.749	PK	180	Vertical
9650.25	52.446	74	21.554	PK	180	Vertical
7235.25	37.539	54	16.461	AV	180	Vertical
9645.00	36.621	54	17.379	AV	180	Vertical

802.11g CH6



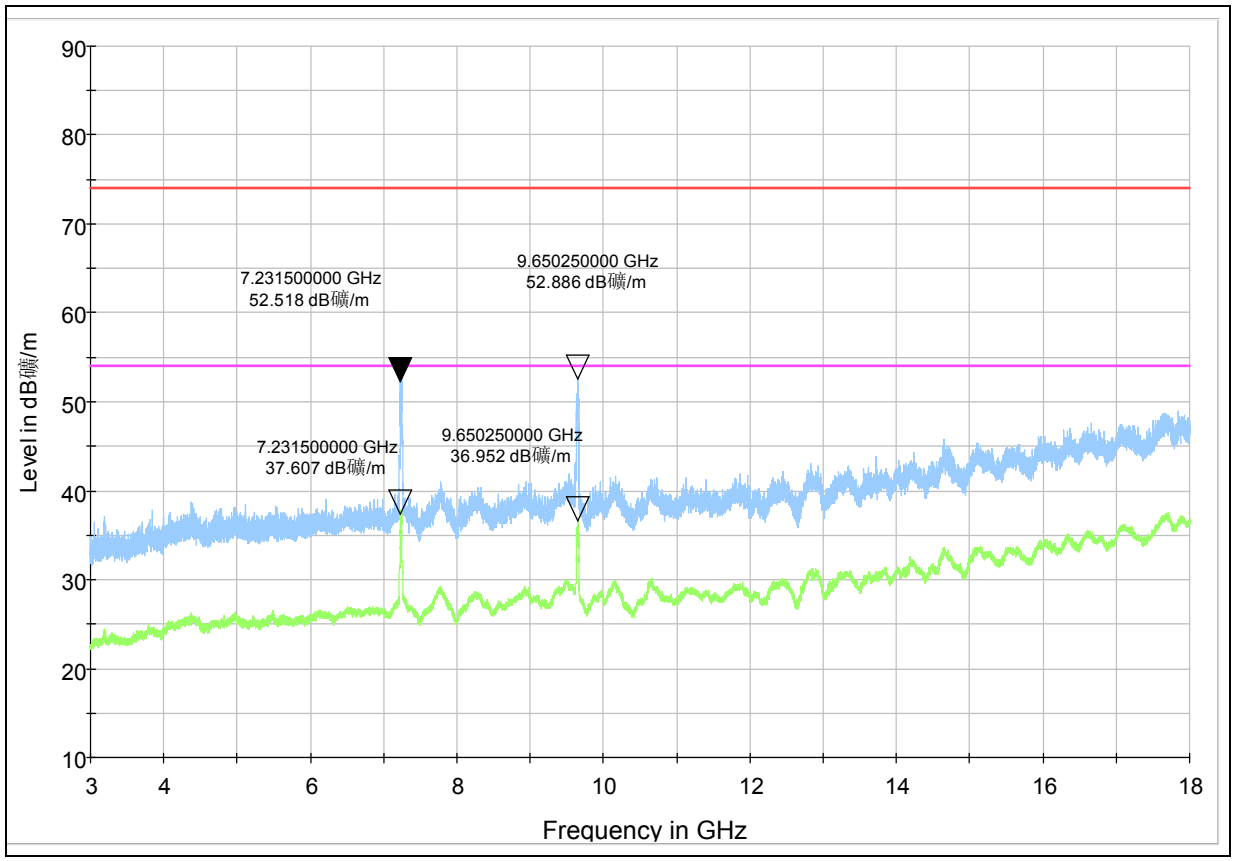
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
35.577500	23.1	100.0	Vertical	20.0	16.9	40.0
47.460000	27.2	116.0	Vertical	145.0	12.8	40.0
86.745000	10.9	225.0	Horizontal	12.0	29.1	40.0
103.962500	19.5	135.0	Vertical	95.0	24.0	43.5
312.027500	22.8	125.0	Vertical	123.0	23.2	46.0
936.222500	17.1	215.0	Horizontal	212.0	28.9	46.0

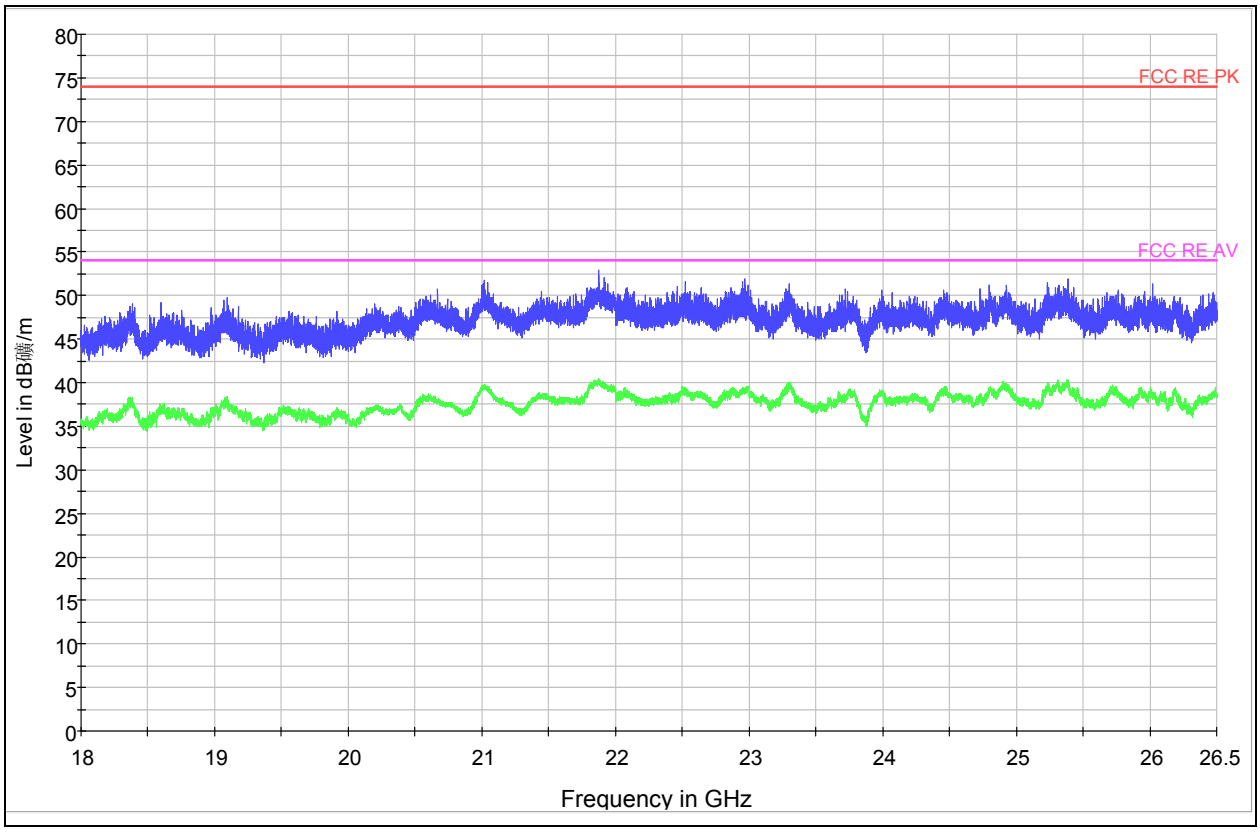


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



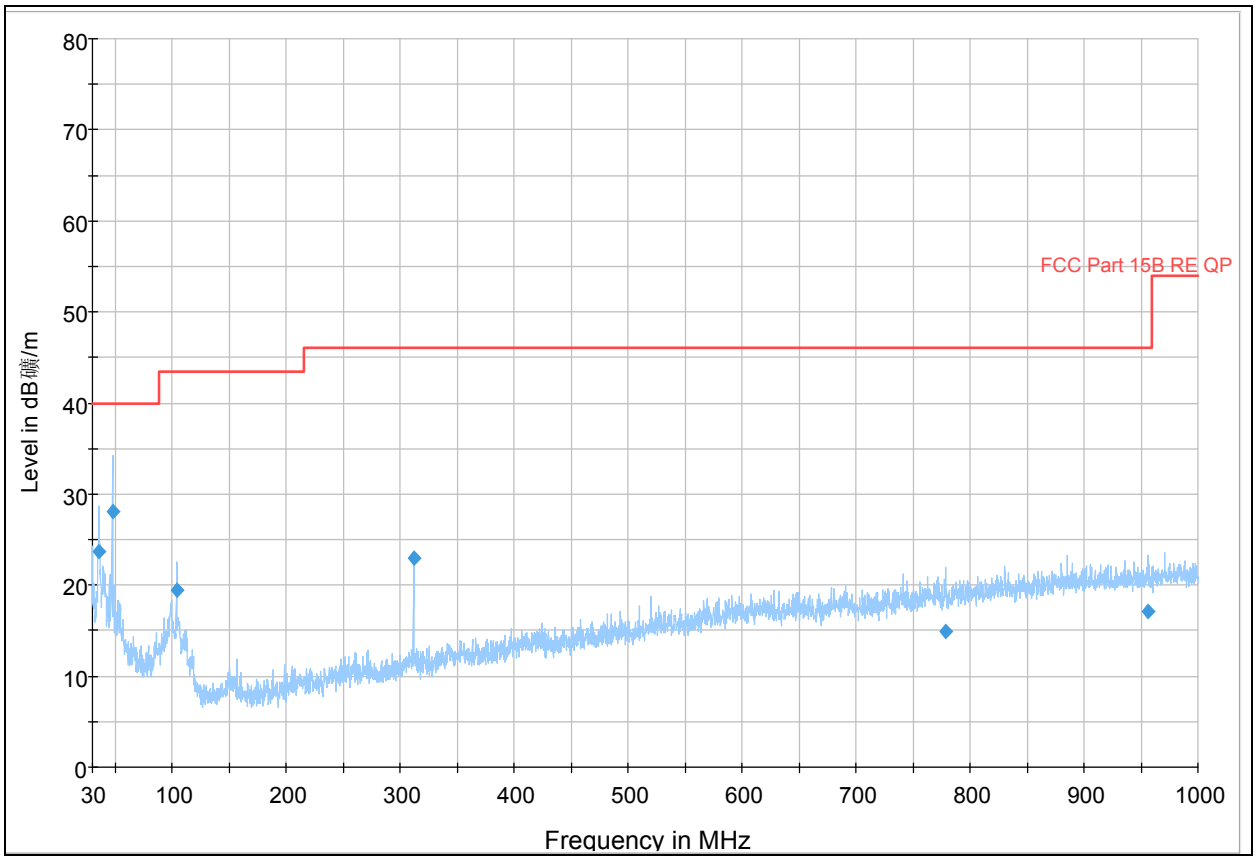
Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

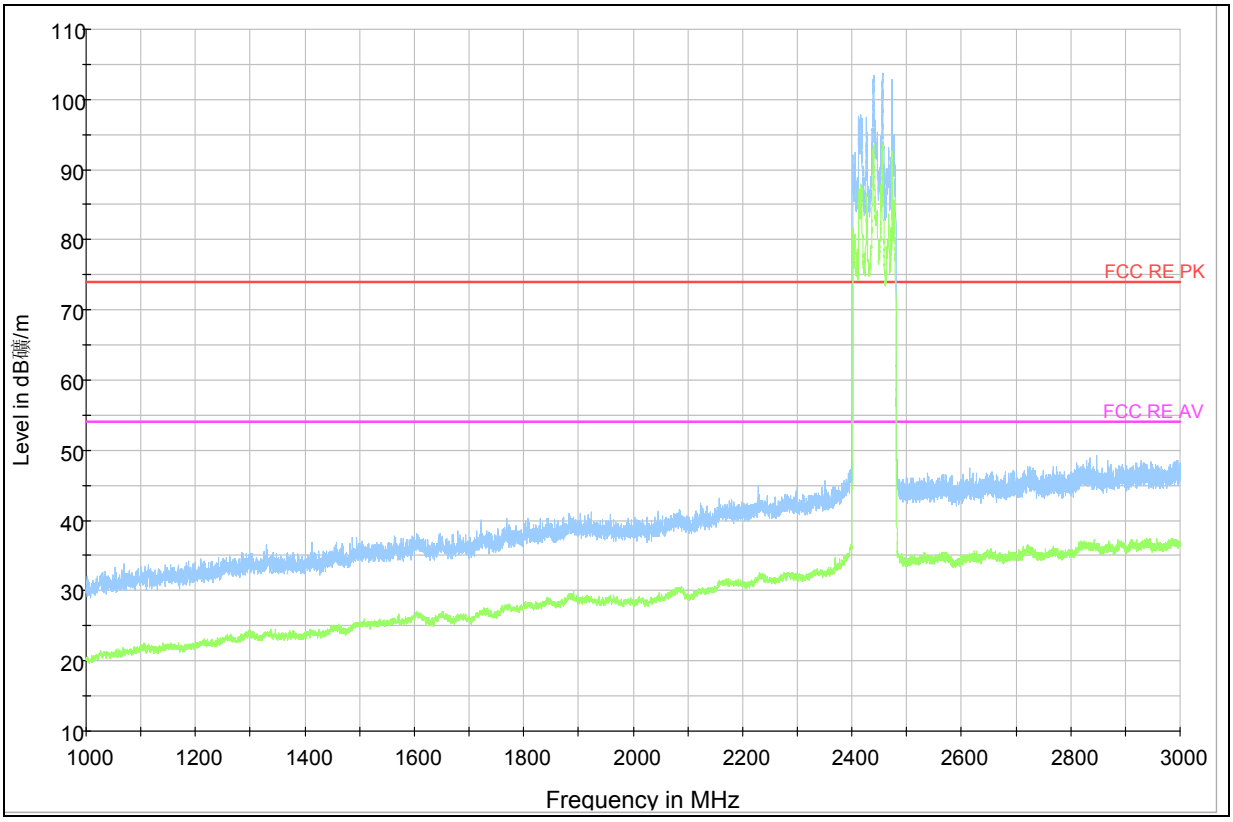
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7231.5	52.518	74	21.482	PK	180	Vertical
9650.25	52.886	74	21.114	PK	180	Vertical
7231.5	37.607	54	16.393	AV	180	Vertical
9650.25	36.952	54	17.048	AV	180	Vertical

802.11g CH11

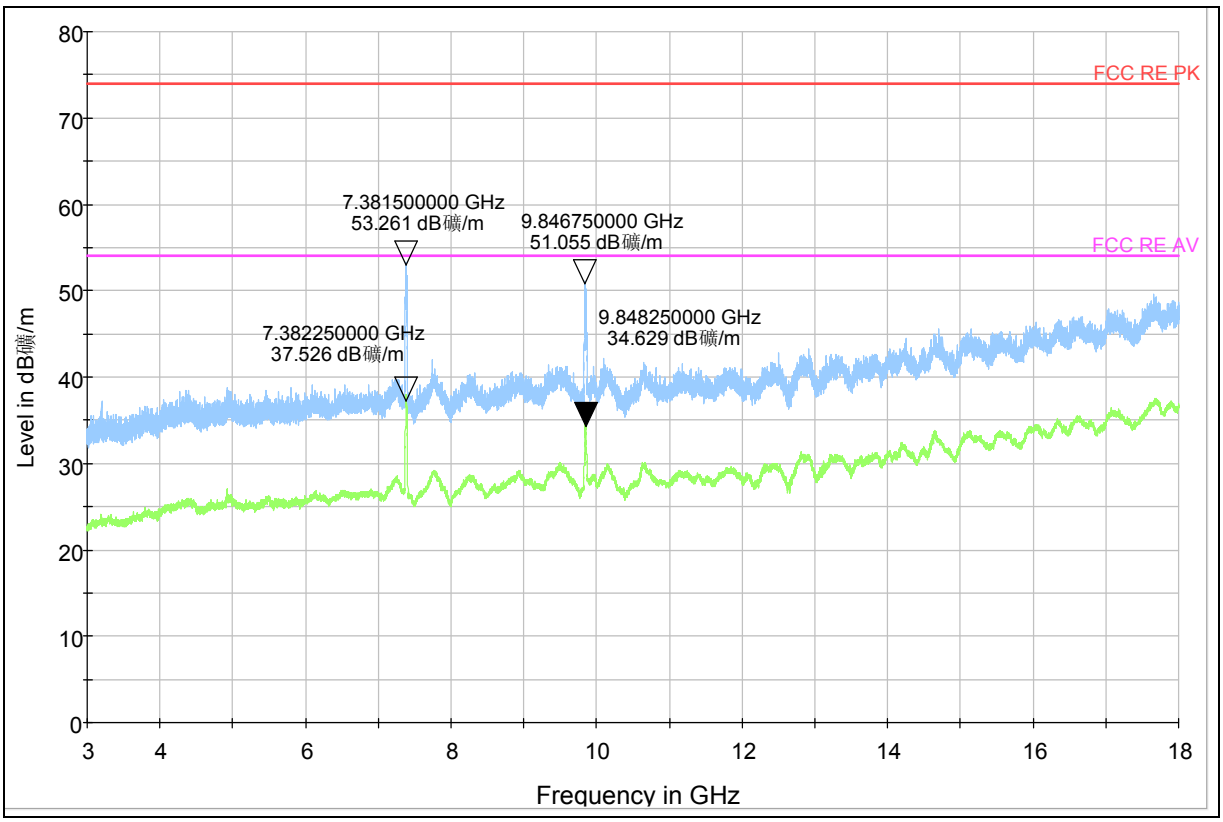


Radiates Emission from 30MHz to 1GHz

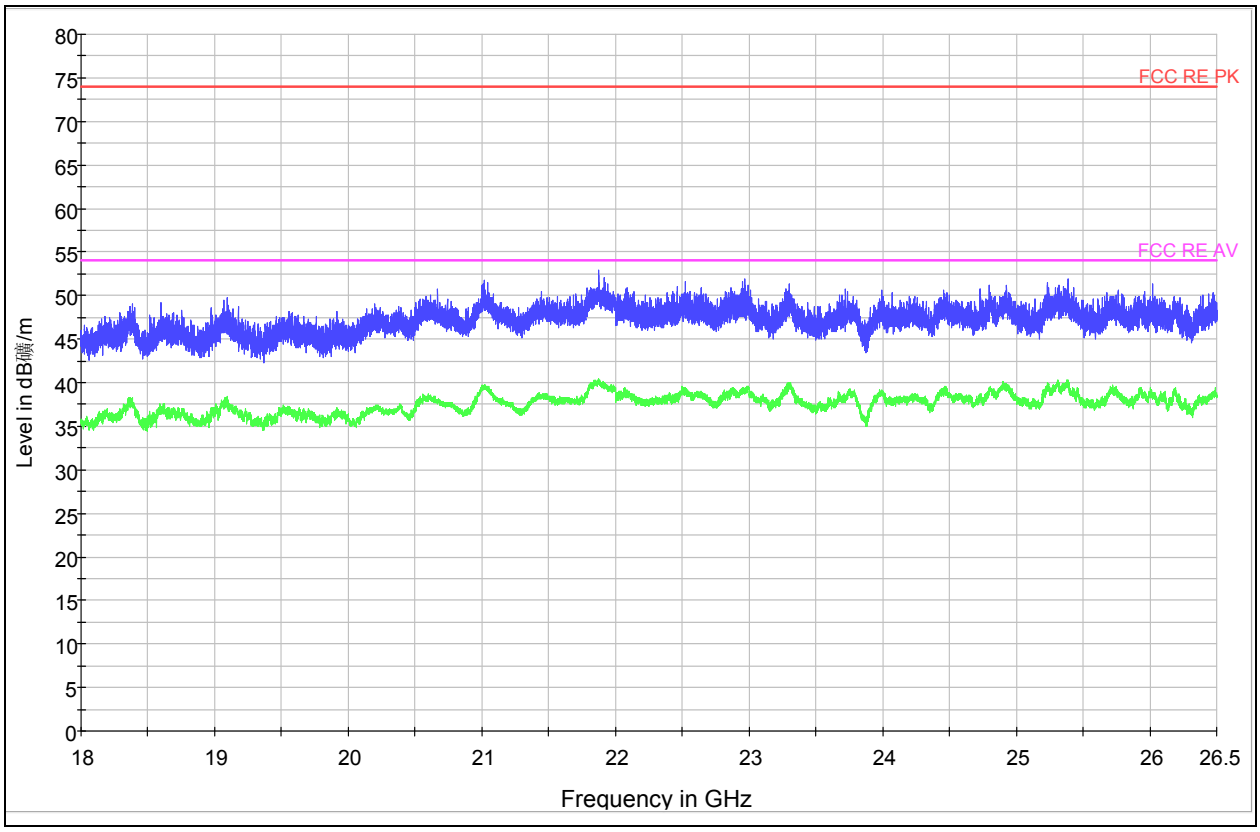
Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
35.577500	23.6	150.0	Vertical	0.0	16.4	40.0
47.460000	28.0	125.0	Vertical	130.0	12.0	40.0
103.962500	19.4	100.0	Vertical	219.0	24.1	43.5
312.027500	22.9	175.0	Vertical	23.0	23.1	46.0
778.355000	14.9	300.0	Horizontal	145.0	31.1	46.0
956.592500	17.0	225.0	Horizontal	236.0	29.0	46.0



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Turntable Azimuth(degree)	Polarization
7381.5	53.261	74	20.739	PK	180	Vertical
9846.75	51.055	74	22.945	PK	180	Vertical
7382.25	37.526	54	16.474	AV	180	Vertical
9848.25	34.629	54	19.371	AV	180	Vertical

3 Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	Signal Analyzer	FSV	R&S	100815	2009-06-29	One year
02	Signal generator	SMR27	R&S	1606.6000.02	2009-06-29	One year
04	Spectrum Analyzer	E4445A	Agilent	MY46181146	2009-06-08	One year
05	EMI Test Receiver	ESCI	R&S	100948	2009-07-02	One year
06	Trilog Antenna	VULB 9163	SCHWARZBECK	9163-391	2009-05-14	One year
07	Horn Antenna	HF907	R&S	100125	2009-07-20	One year
08	AC Power Source	AFC-11005G	APC	F309040118	2009-07-25	One year
09	Power Splitter	11667A	Agilent	52960	NA	NA
10	Semi-Anechoic Chamber	9.6*6.7*6.6m	ETS-Lindgren	NA	NA	NA
11	EMI test software	ES-K1	R&S	NA	NA	NA

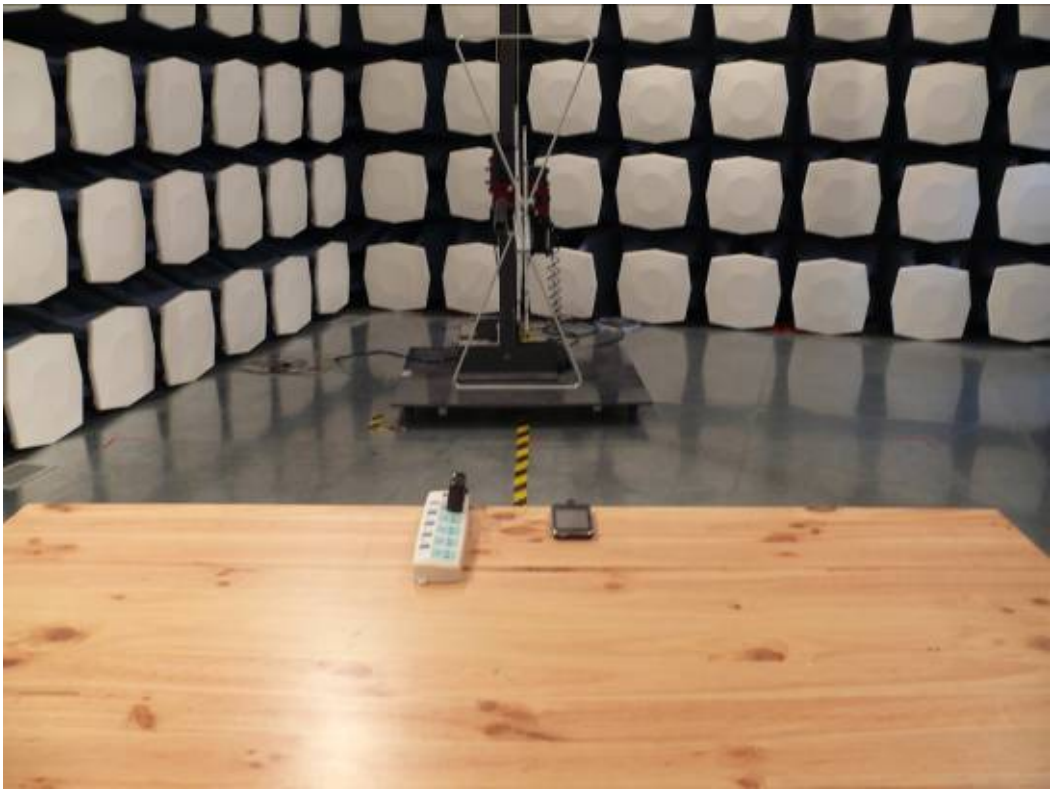
*******END OF REPORT BODY*******

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance

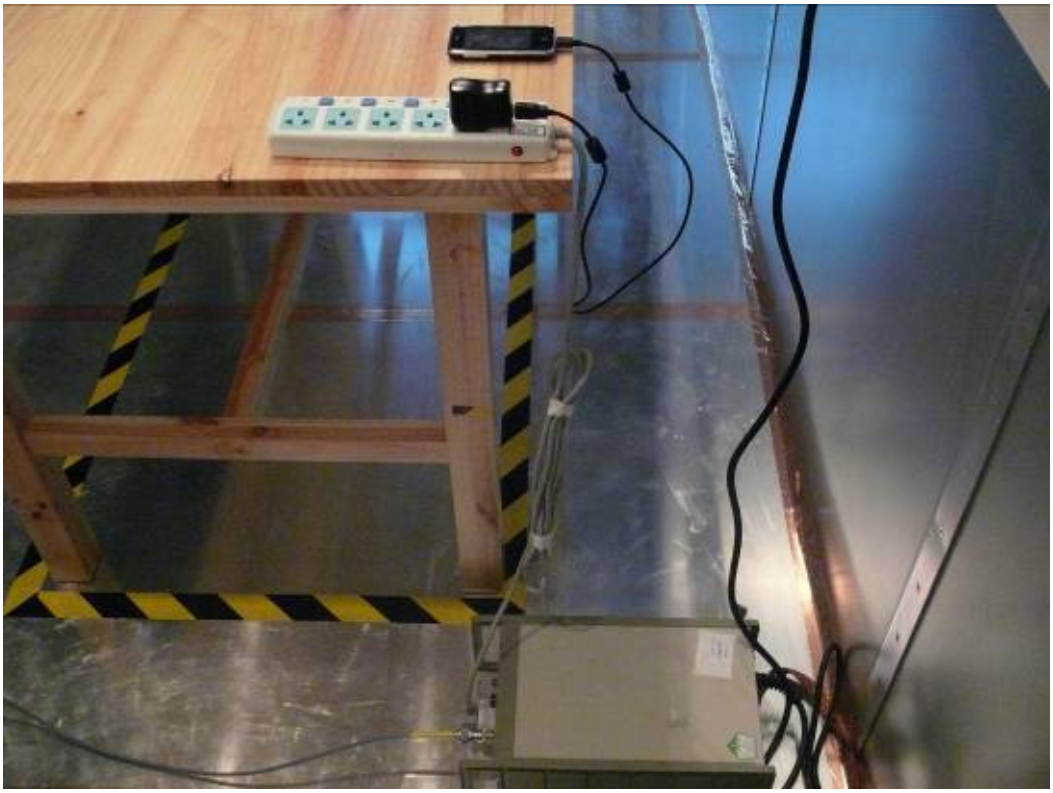
Picture 1 EUT and Auxiliary

A.2 Test Setup



Picture 2 Radiated Emission Test Setup

Picture 3-1



Picture 3-2

Picture 3 Conducted Emission Test Setup