



Report No.: RZA2010-0701_15C



Part 15C

TEST REPORT

Product Name GSM/GPRS Dual Band Mobile Phone

Model Lenovo A330

FCC ID YCNA330

Client Lenovo Mobile Communication Technology Ltd.

TA Technology (Shanghai) Co., Ltd.



GENERAL SUMMARY

Product Name	GSM/GPRS Dual Band Mobile Phone	Model	Lenovo A330
FCC ID	YCNA330	Report No.	RZA2010-0701_15C
Client	Lenovo Mobile Communication Technology Ltd.		
Manufacturer	Lenovo Mobile Communication Technology Ltd.		
Reference Standard(s)	<p>FCC Part 15 Subpart C: (December 17, 2009)</p> <p>15.205 Restricted bands of operation;</p> <p>15.207 Conducted limits;</p> <p>15.209 Radiated emission limits; general requirements;</p> <p>15.247 Operation within the bands 902-928 MHz,2400-2483.5 MHz, and 5725-5850MHz.</p> <p>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)</p> <p>DA00-705 Filing and Frequency Measurement Guidelines For Frequency Hopping Spread Spectrum System.(2000)</p>		
Conclusion	<p>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.</p> <p>General Judgment: Pass</p> <p style="text-align: right;">(Stamp) Date of issue: May 12th, 2010</p>		
Comment	The test result only responds to the measured sample.		



Approved by 杨伟中 Revised by 徐凯 Performed by 杜如蔚
 Yang Weizhong Xu Kai Du Ruwei

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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: 201201
Country: P. R. China
Contact: Yang Weizhong
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Website: <http://www.ta-shanghai.com>
E-mail: yangweizhong@ta-shanghai.com

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1.3. Applicant Information

Company: Lenovo Mobile Communication Technology Ltd.
Address: No.999,Qishan North 2nd Road,Information&Optoelectronics Park,Torch Hi-tech Indu
City: Xiamen
Postal Code: /
Country: P.R. China
Contact: Qiu shouyu
Telephone: 86-0592-2166651
Fax: 86-0592-2169999-6651

1.4. Manufacturer Information

Company: Lenovo Mobile Communication Technology Ltd.
Address: No.999,Qishan North 2nd Road,Information&Optoelectronics Park,Torch Hi-tech Indu
City: Xiamen
Postal Code: /
Country: P.R. China
Telephone: 86-0592-2166651
Fax: 86-0592-2169999-6651

1.5. Information of EUT

General information

Device type:	Portable device
Name of EUT:	GSM/GPRS Dual Band Mobile Phone
SN or IMEI:	910040160000654/910040160000803
Device operating configurations:	
Modulation	GFSK
Max Conducted Power	-0.2dBm
Antenna type:	internal antenna
Power supply:	Battery or Charger
Rated Power Supply Voltage:	3.8V
Extreme Voltage:	Minimum: 3.4V Maximum: 4.2V
Extreme Temperature:	Lowest: -15°C Highest: 55°C
Operating frequency range(s)	2400 ~ 2483.5 MHz
Hardware version:	V1.0
Software version:	A330_VE_S001_100424

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Auxiliary equipment details

AE1: Battery

Model: HBL801
Manufacture: ZHUHAISUNDA TECHNOLOGY CO.,LTD
IMEI or SN: /

AE2: Travel Adaptor

Model: ZT-668-01B2K
Manufacture: SHENZHEN ZHONGTIAN ELECTRONIC CO.,LTD
IMEI or SN: /

Equipment Under Test (EUT) is GSM/GPRS Dual Band Mobile Phone with internal antenna. It consists of mobile phone, battery and adaptor (see ANNEX A.1) and the detail about these is in chapter 1.5 in this report. The EUT supports Bluetooth.

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 May 5, 2010 to May 11, 2010.

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)(1)	PASS
2	Occupied Bandwidth (20dB)	15.247(a)(1)	PASS
3	Frequency Separation	15.247(a)(1)	PASS
4	Time of Occupancy (Dwell Time)	15.247(a)(1)(iii)	PASS
5	Band Edge Compliance	15.247(d)	PASS
6	Spurious Radiated Emissions in the restricted band	15.247(d),15.205,15.209	PASS
7	Number of Hopping Frequency	15.247(a)(1)(iii)	PASS
8	Spurious RF Conducted Emissions	15.247(d)	PASS
9	Radiates Emission	15.247(d),15.205,15.209	PASS
10	AC Power line Conducted Emission	15.207	PASS

2.2. Peak power output –conducted

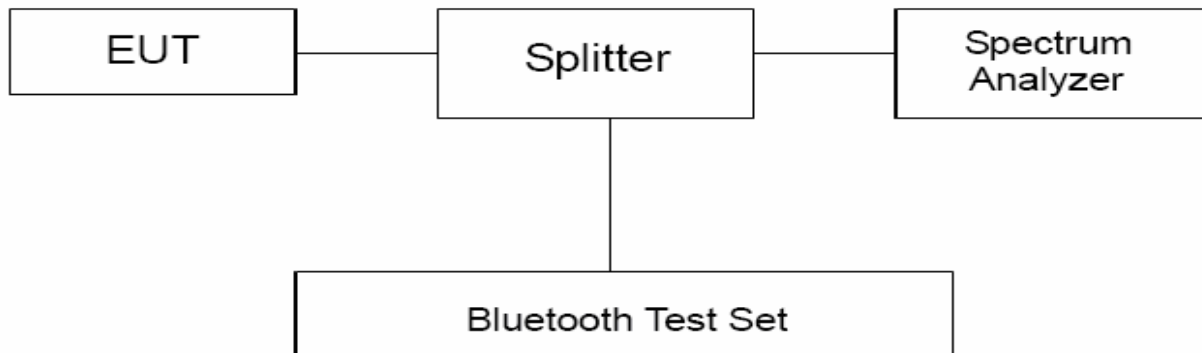
Ambient condition

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 and Bluetooth test set via a power splitter with a known loss. The EUT is controlled by the Bluetooth test set to ensure max power transmission with proper modulation. These measurements have been tested at following channels: 0, 39, and 78.

Test Setup



Limits

Rule Part 15.247 (b) (1) specifies that " For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts."

Peak Output Power	≤ 1W (30dBm)
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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.

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Test Results

Channel	Frequency (MHz)	Peak Output Power (dBm)	Conclusion
0	2402	-1.71	PASS
39	2441	-1.0	PASS
78	2480	-0.2	PASS

2.3. Occupied Bandwidth (20dB)

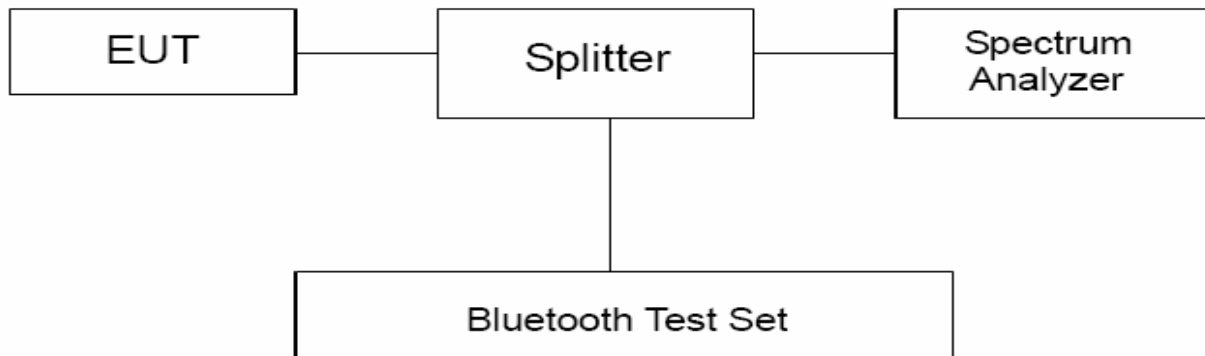
Ambient condition

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 occupied bandwidth is measured using spectrum analyzer. RBW is set to 10 kHz on spectrum analyzer. -20dB occupied bandwidths are recorded.

Test Setup



Limits

No specific occupied bandwidth requirements in part 15.247(a) (1).

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.

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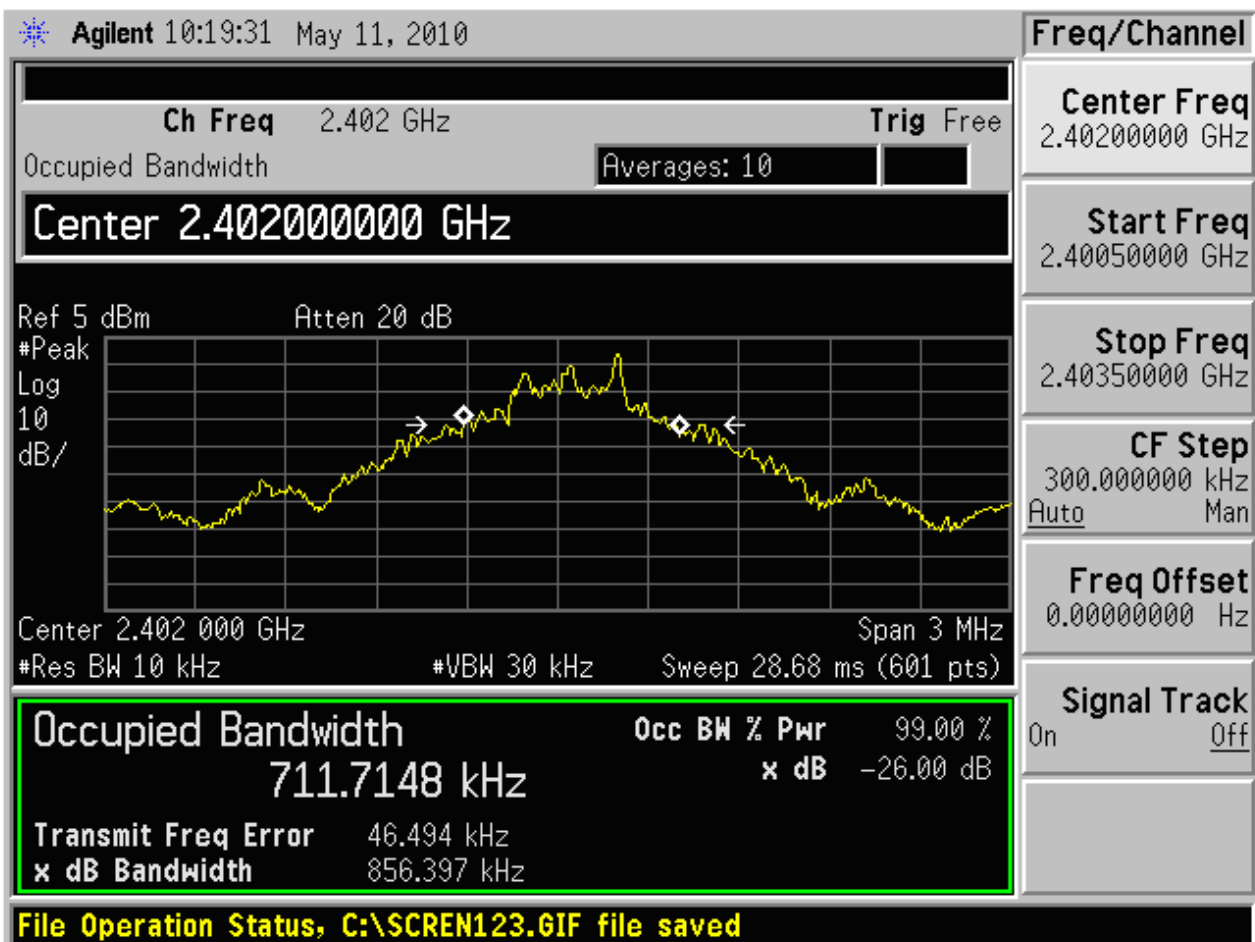
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Test Results

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	711.71
39	2441	719.51
78	2480	712.14



Carrier frequency (MHz): 2402

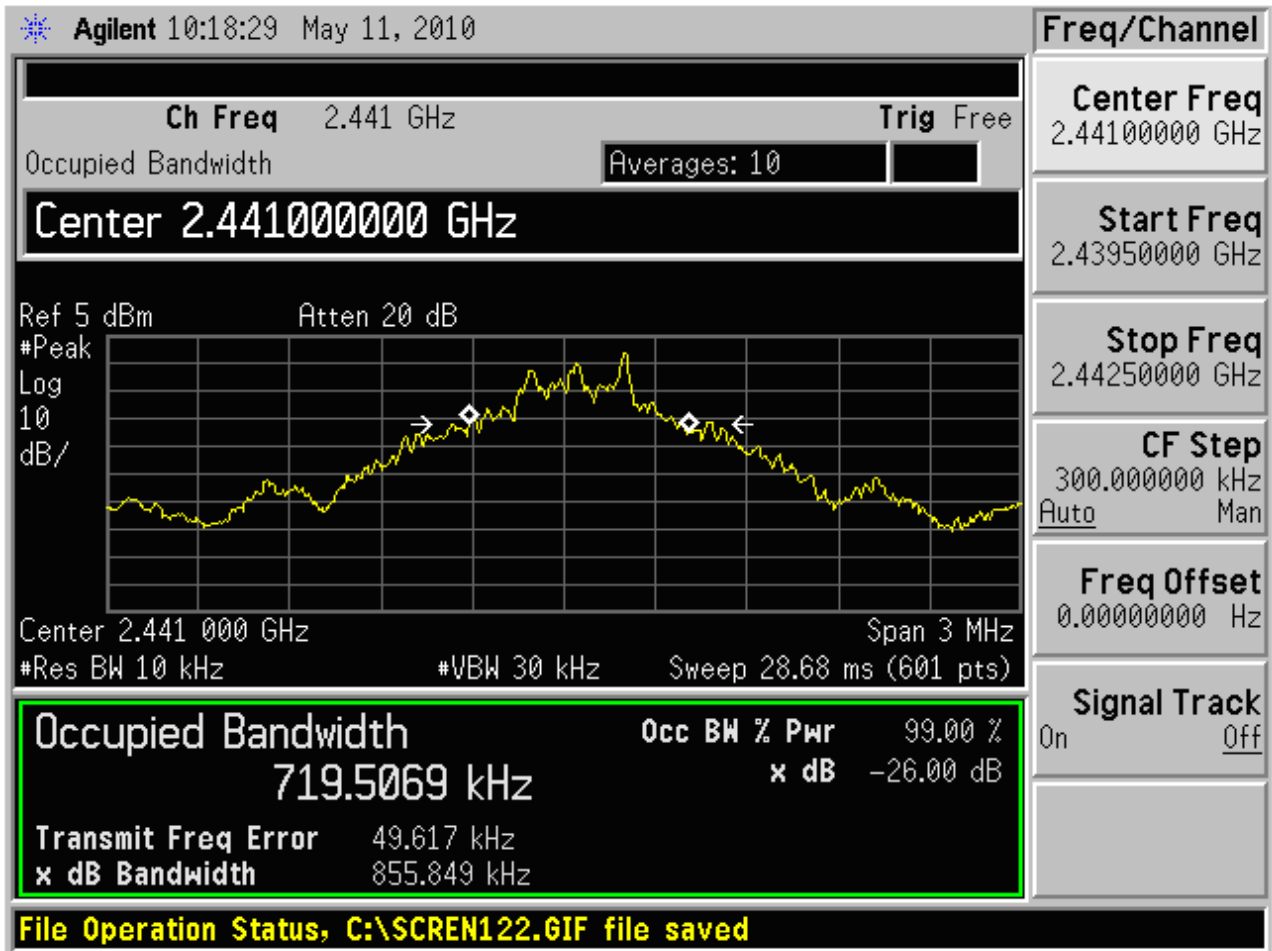
Channel No.:0

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Carrier frequency (MHz): 2441

Channel No.:39

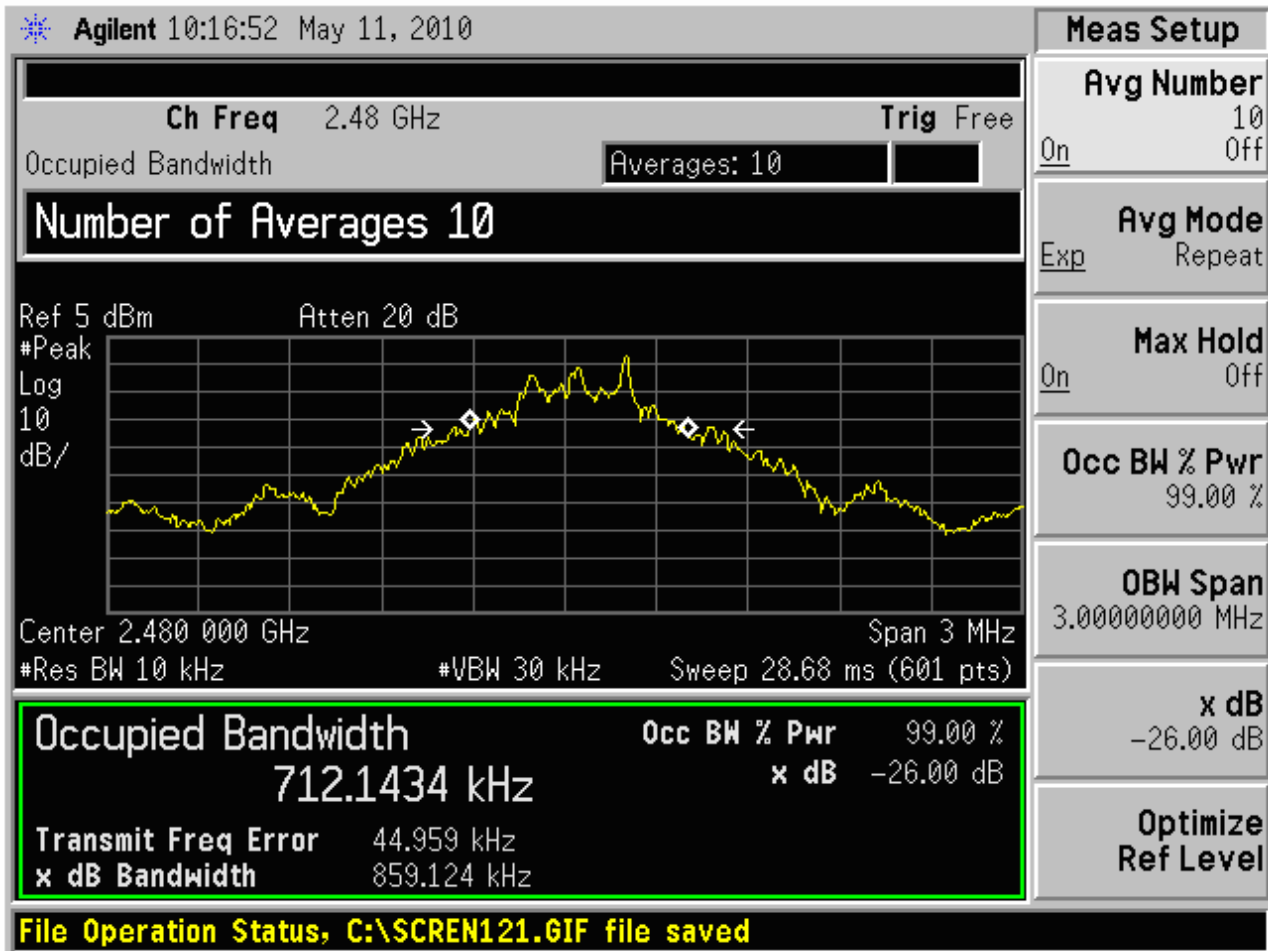
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Carrier frequency (MHz): 2480

Channel No.:78

2.4. Frequency Separation

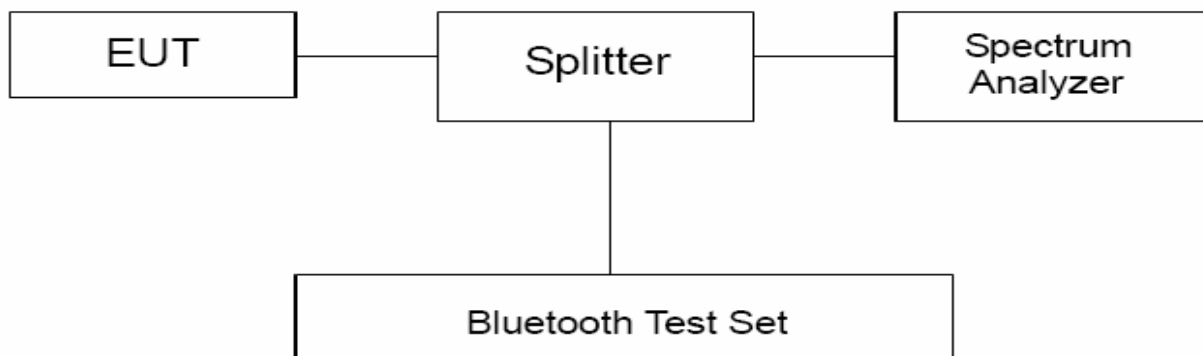
Ambient condition

Temperature	Relative humidity	Pressure
24°C	55%	101.5kPa

Method of Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. Set EUT ON Hopping on mode.

Test setup



Limits

Rule Part 15.247(a)(1) specifies that “Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. ”

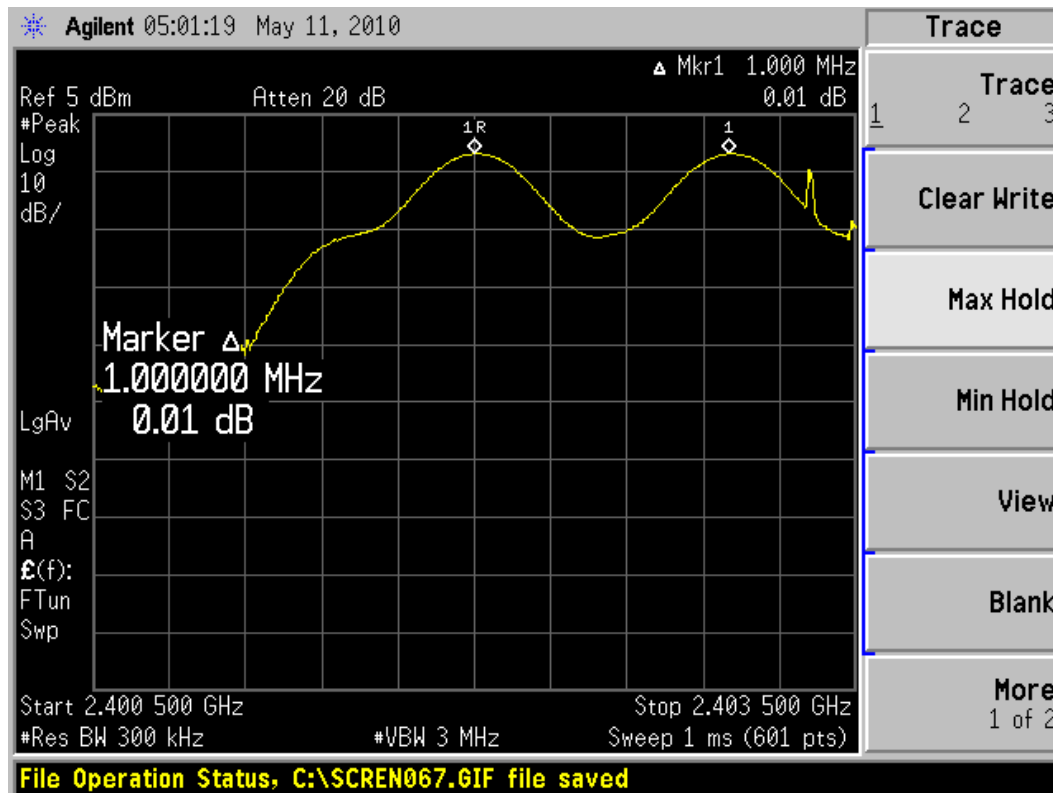
Note: The value of two-thirds of 20 dB bandwidth is always greater than 25 kHz.

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 Results:

Carrier frequency (MHz)	Carrier frequency separation(kHz)	Limit(kHz)	Conclusion
2402	1000	474.48	PASS
2441	1005	479.67	PASS
2480	995	474.76	PASS



Carrier frequency (MHz): 2402

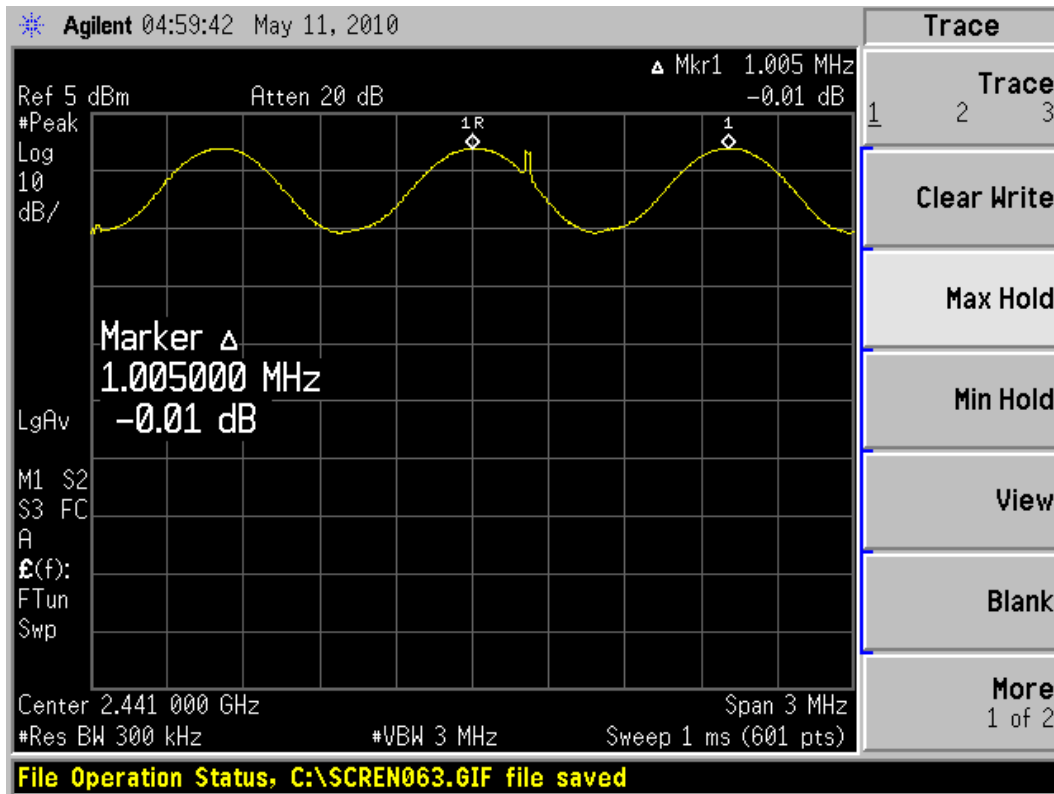
Channel No.:0

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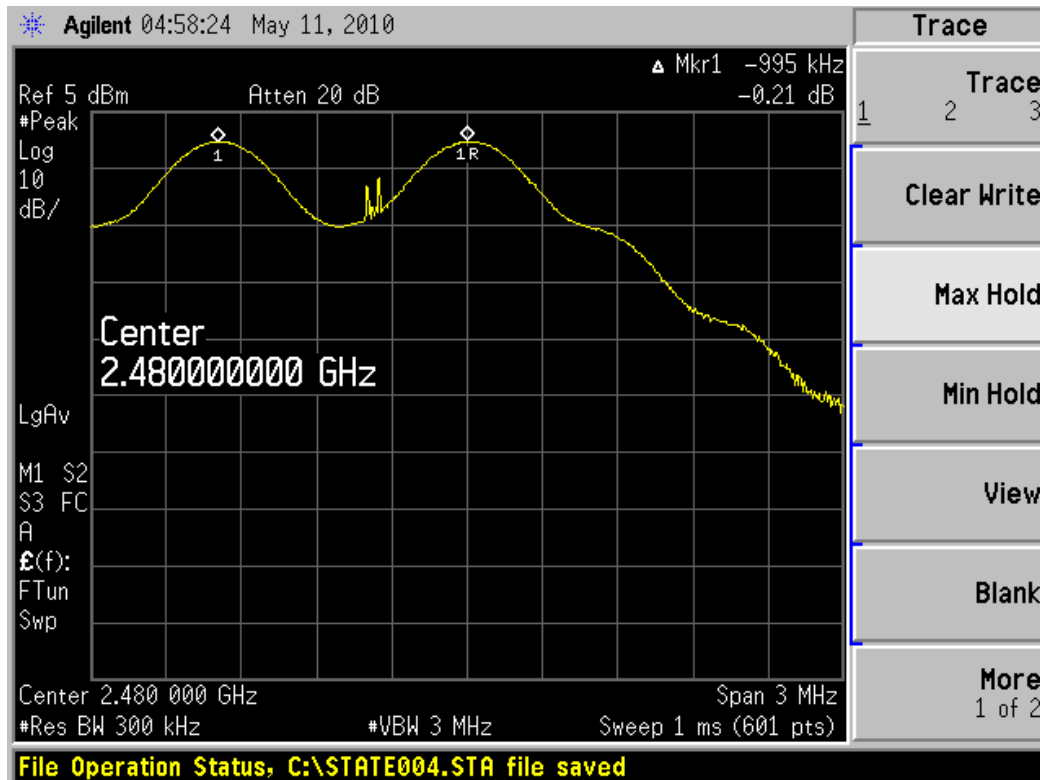
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Carrier frequency (MHz): 2441
Channel No.:39



Carrier frequency (MHz): 2480
Channel No.:78

2.5. Time of Occupancy (Dwell Time)

Ambient condition

Temperature	Relative humidity	Pressure
24°C	56%	101.5kPa

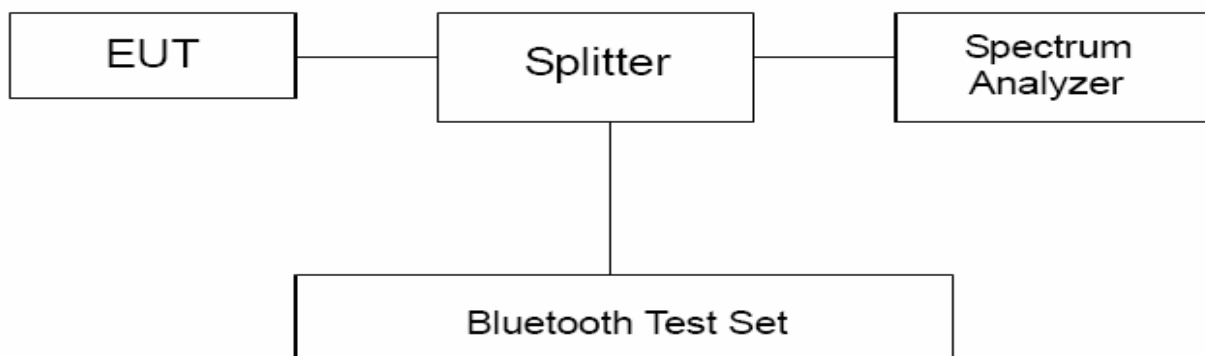
Methods of Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the dwell time measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The time slot length is measured of one packet type-DH5, which is available in the Bluetooth technology. The dwell time is calculated by:

Dwell time = time slot length * hop rate * 0.4s with:

- hop rate=1600/5 * 1/s for DH5 packets =320

Test Setup



Limits

Rule Part 22.913(a) specifies that " Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.."

Dwell time	$\leq 400\text{ms}$
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$. $U_{DH1} = 0.64\text{ms}$, $U_{DH3} = 0.80\text{ms}$, $U_{DH5} = 0.70\text{ms}$.

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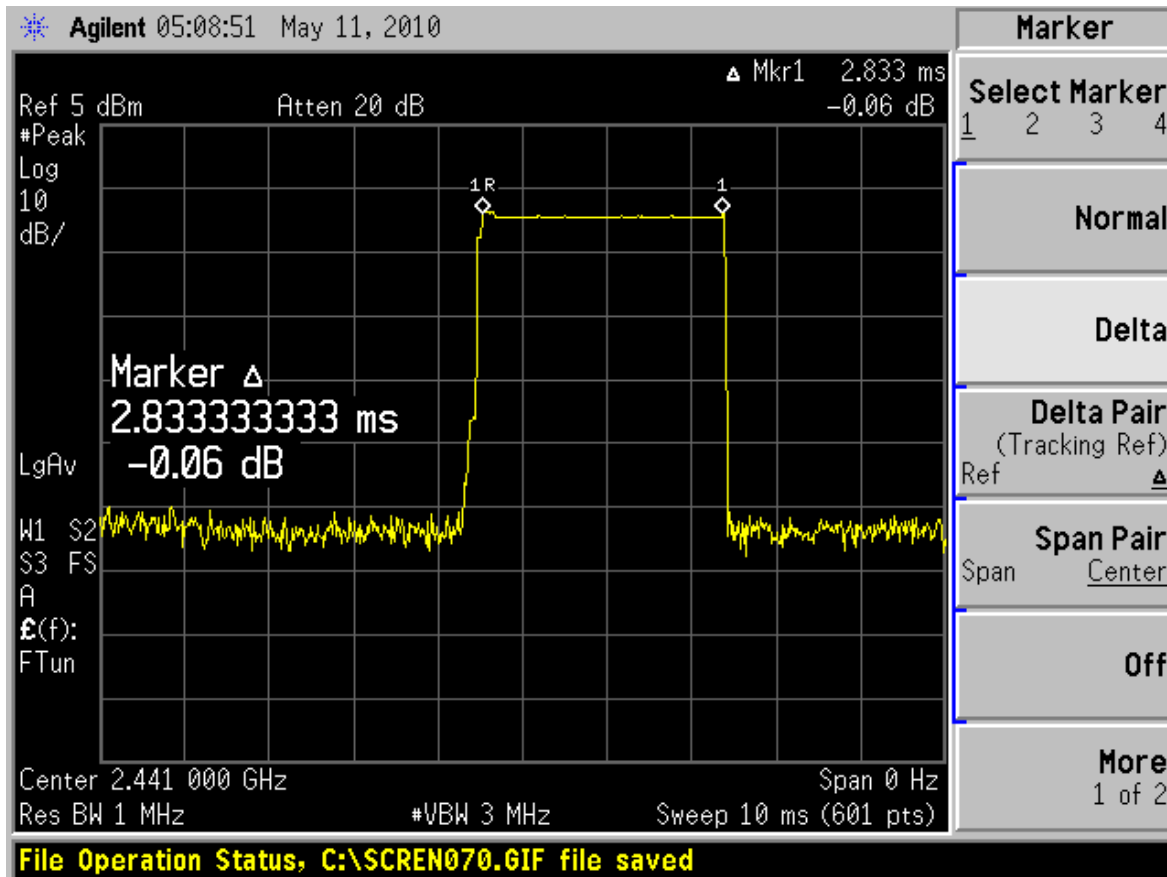
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Test Results:

CH 39

Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit	Conclusion
DH5	320	2.833	363	400ms	PASS

Note: Dwell time = time slot length * hop rate * 0.4s



Carrier frequency (MHz): 2441

Packet type: DH5

2.6. Band Edge Compliance

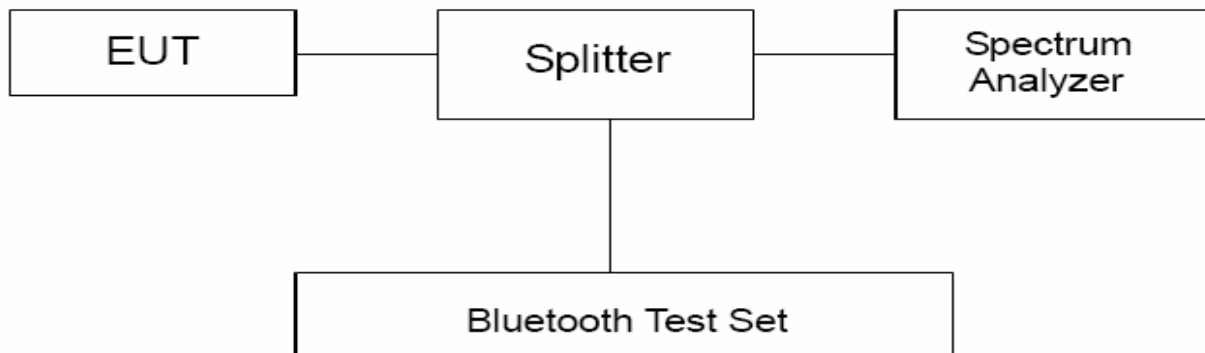
Ambient condition

Temperature	Relative humidity	Pressure
24°C	55%	101.5kPa

Method of Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 1MHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages. Set EUT on Hopping on mode.

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, provided the transmitter demonstrates compliance with the peak conducted power limits.”

Limit	≥ 20 dB
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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

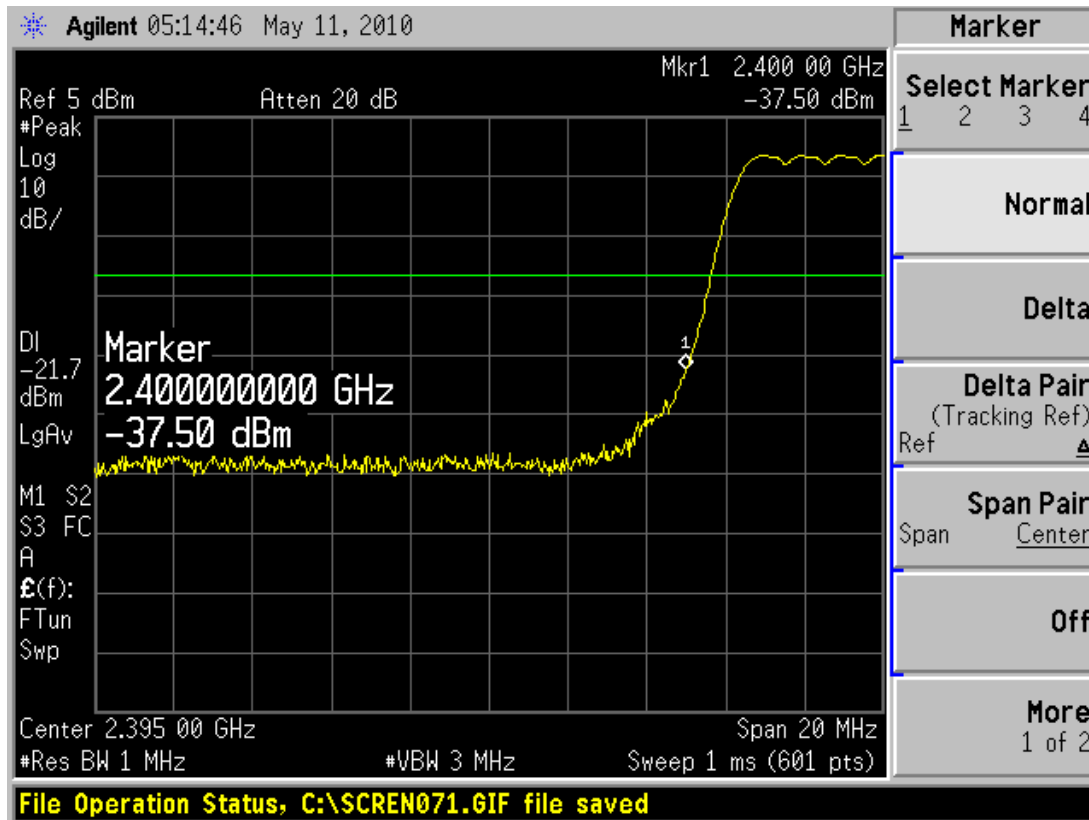
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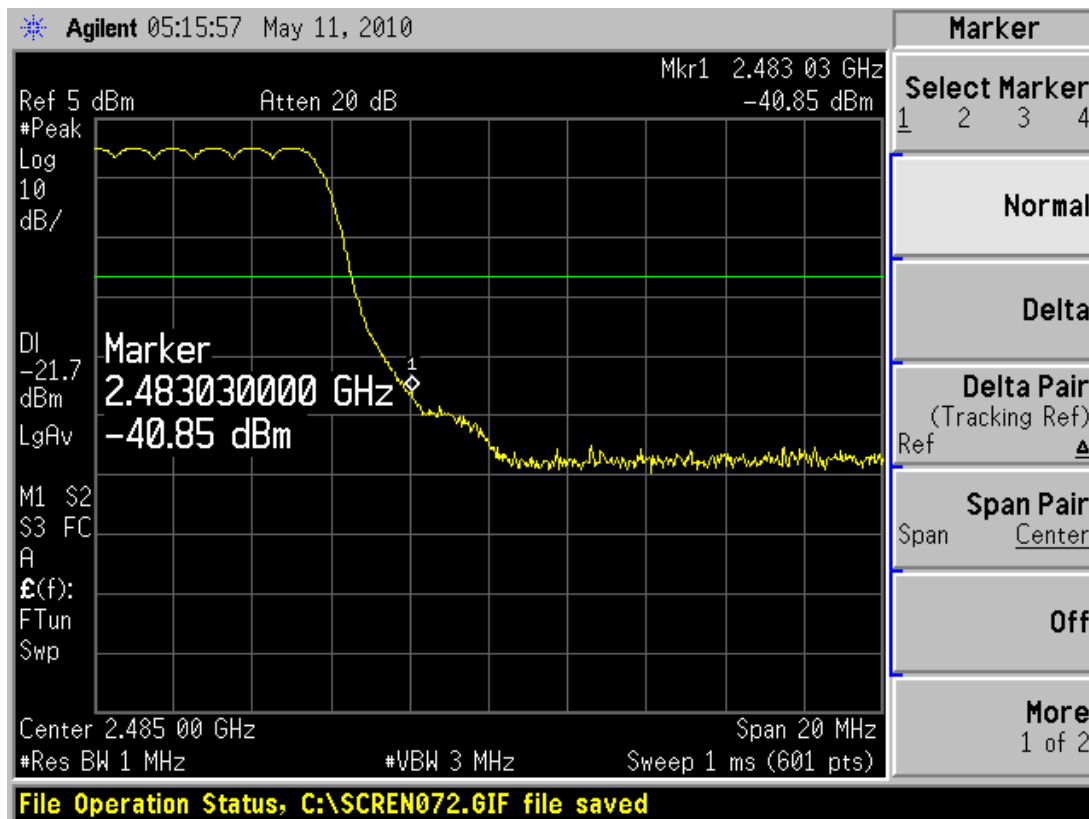
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Test Results: PASS



Carrier frequency (MHz): 2402

Channel No.:0



Carrier frequency (MHz): 2480

Channel No.:78

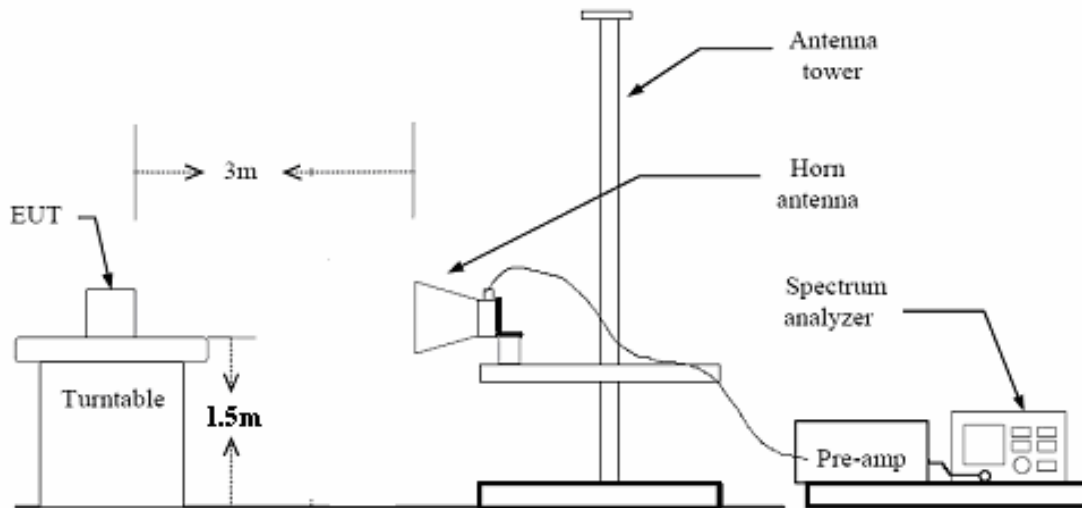
2.7. Spurious Radiated Emissions in the restricted band

Ambient condition

Temperature	Relative humidity	Pressure
24°C	55%	101.5kPa

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 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



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

§15.35(b)

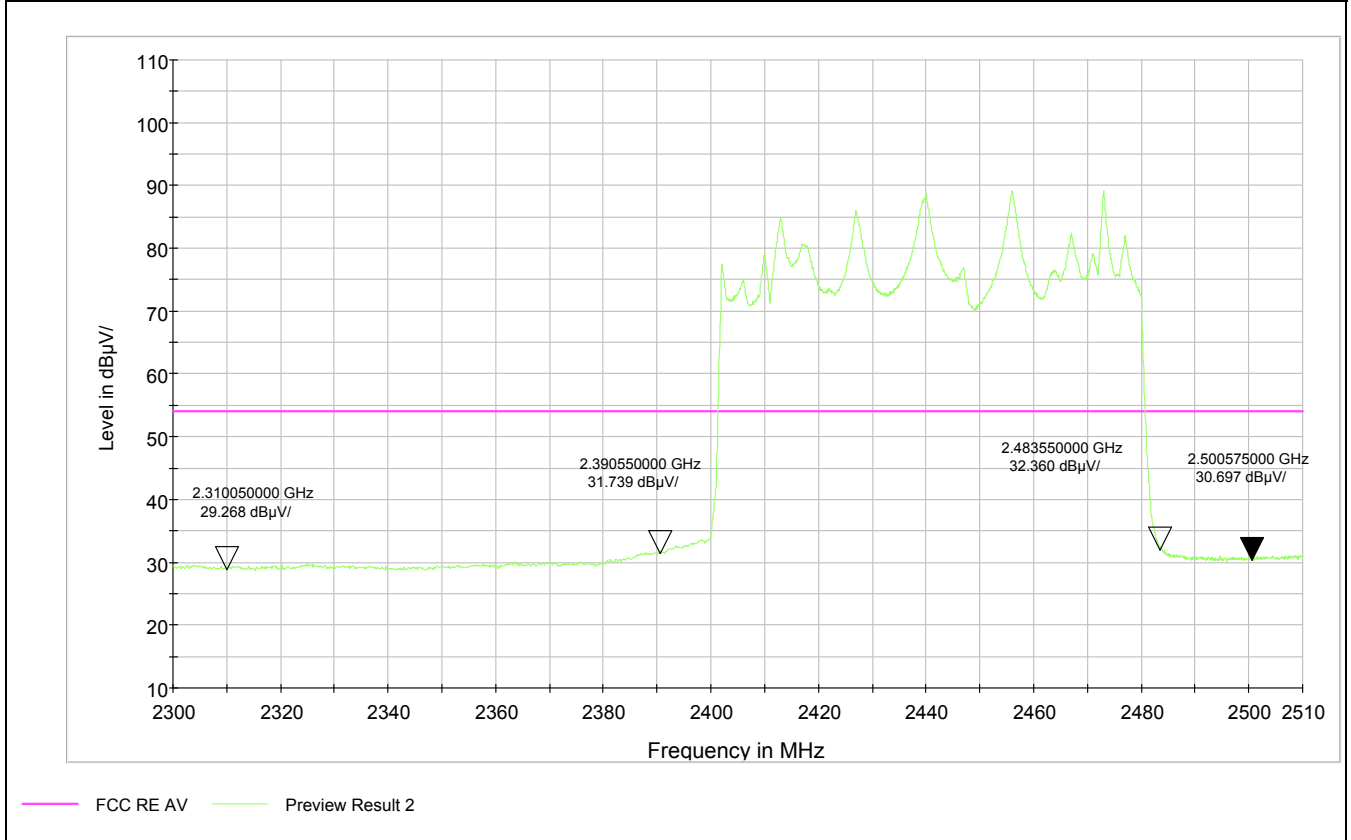
There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

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 Results:

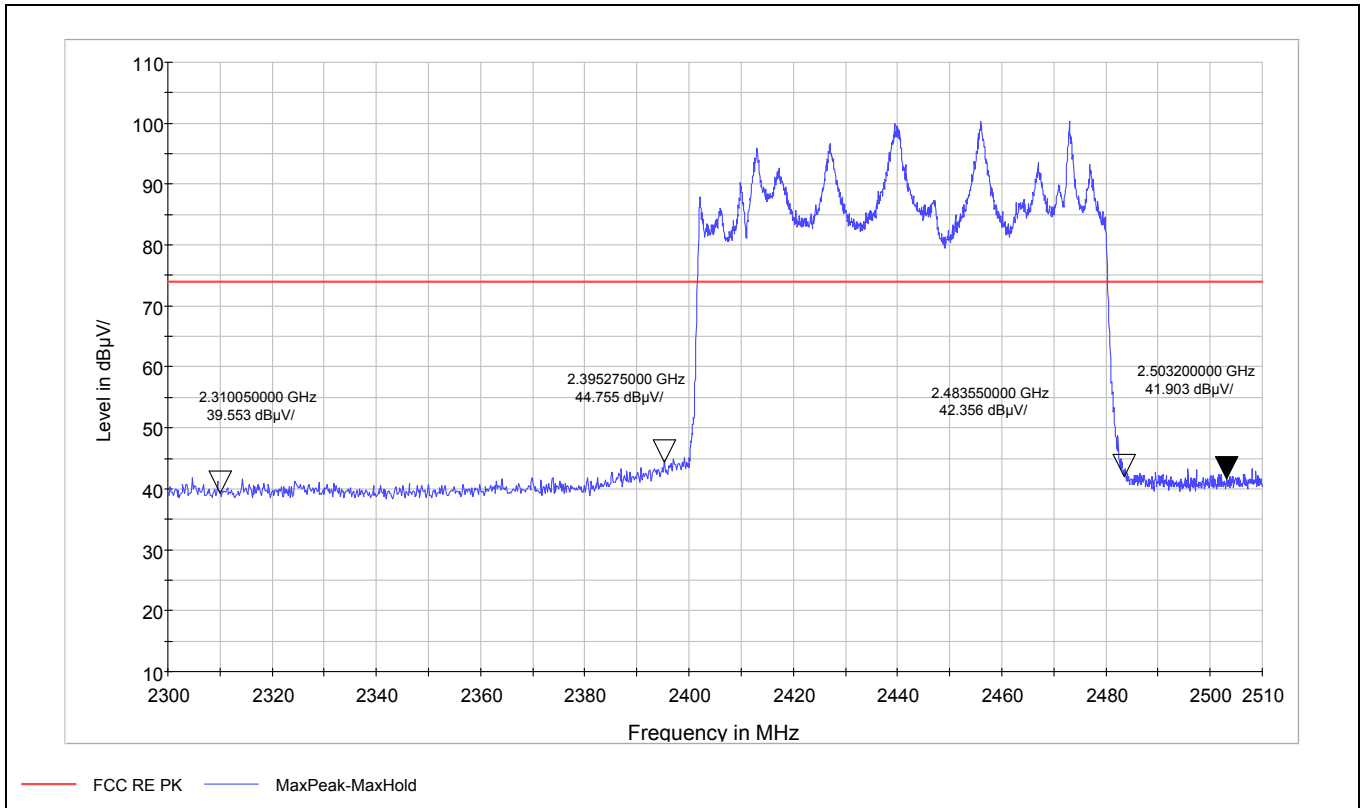
Channel 0



Note: The signal beyond the limit is carrier

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2310.050000	29.3	150.0	Vertical	45.0	24.7	54
2390.55000	31.74	150.0	Vertical	180.0	22.26	54
2483.550000	32.36	150.0	Vertical	135.0	21.64	54
2500.057500	30.70	150.0	Vertical	90.0	23.30	54

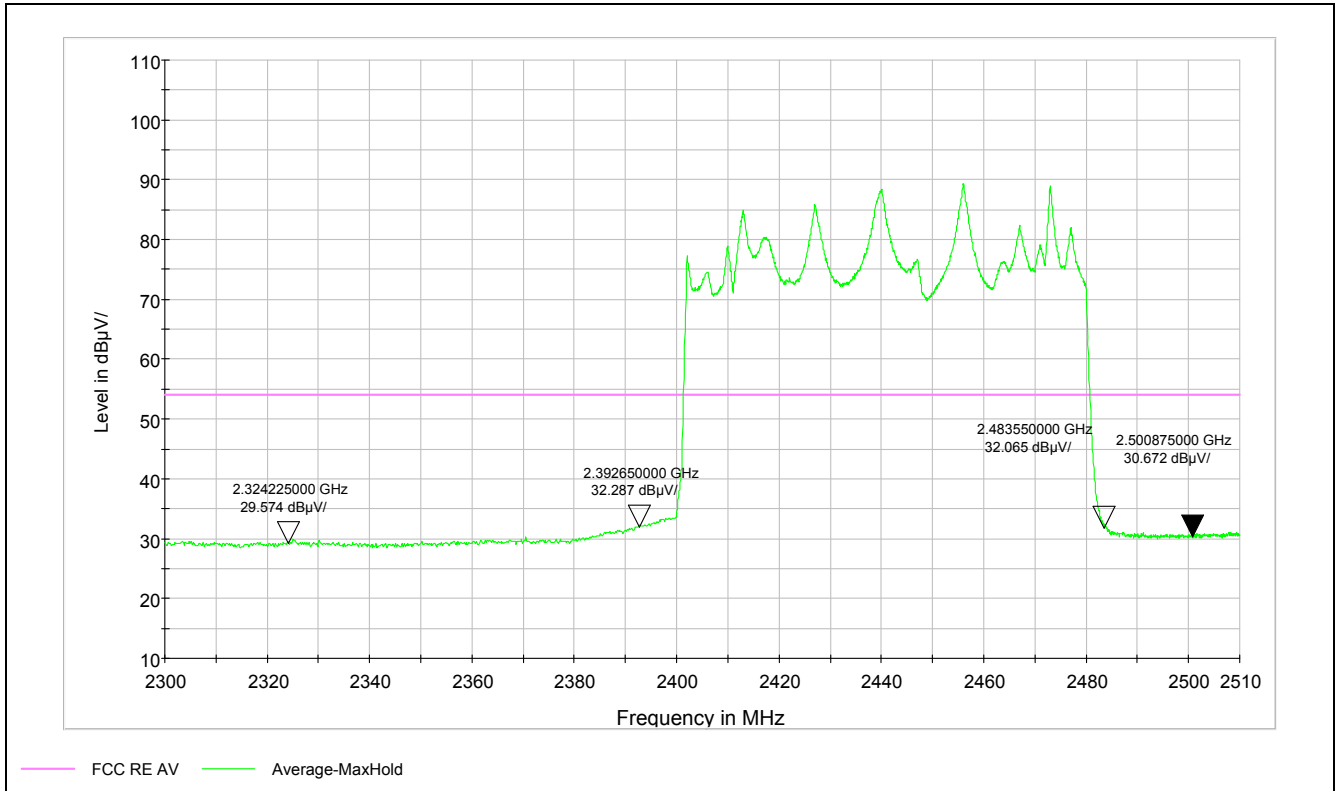
Channel 0



Note: The signal beyond the limit is carrier

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2310.050000	39.55	150.0	Vertical	0.0	34.45	74
2395.275000	44.76	150.0	Vertical	90.0	29.24	74
2483.550000	42.36	150.0	Vertical	135.0	31.64	74
2503.200000	41.90	150.0	Vertical	270.0	32.10	74

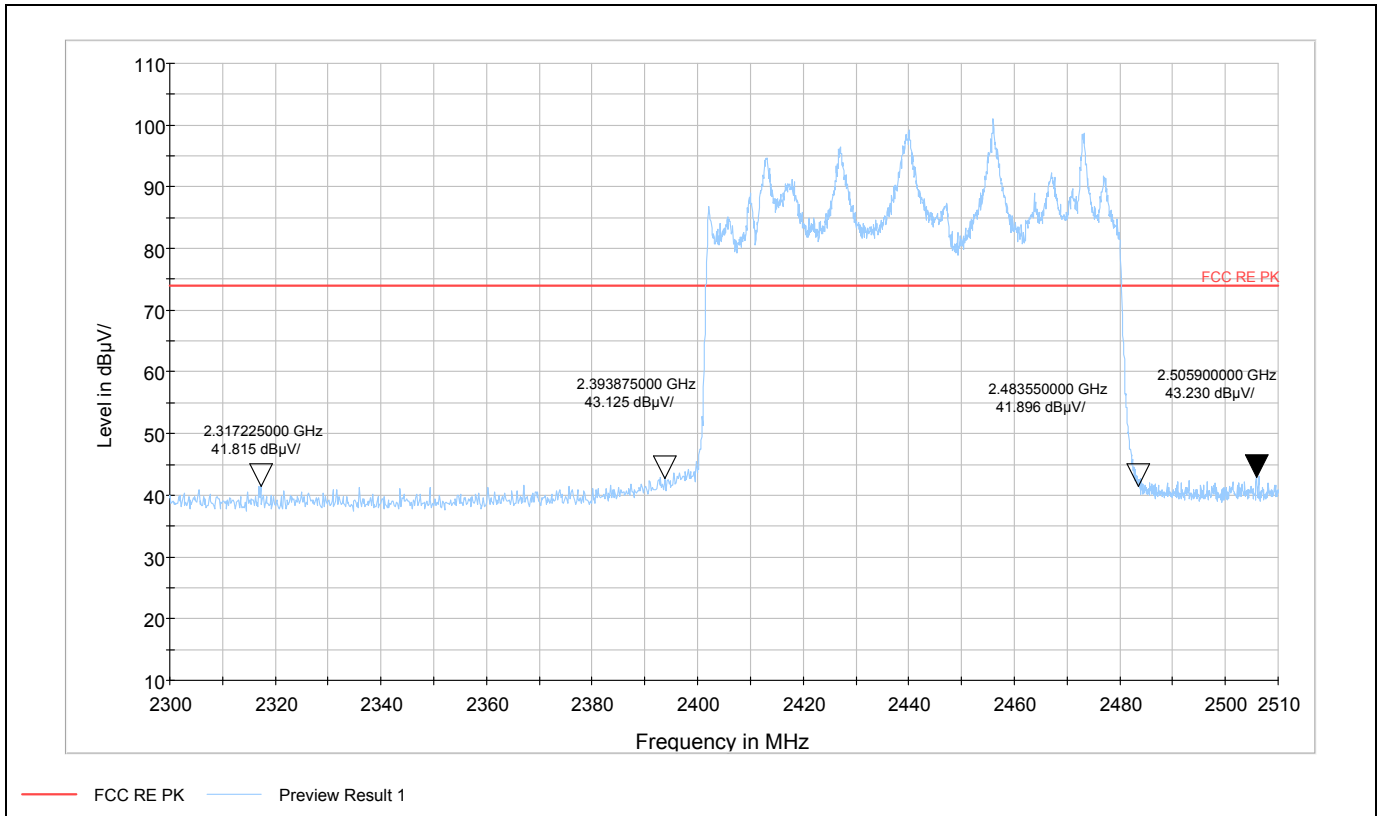
Channel 39



Note: The signal beyond the limit is carrier

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2324.550000	29.57	150.0	Vertical	90.0	24.43	54
2392.650000	32.29	150.0	Vertical	180.0	21.71	54
2483.550000	32.07	150.0	Vertical	225.0	21.93	54
2500.875000	30.67	150.0	Vertical	90.0	23.33	54

Channel 39



Note: The signal beyond the limit is carrier

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2317.225000	41.82	150.0	Vertical	90.0	32.18	74
2393.875000	43.13	150.0	Vertical	180.0	30.87	74
2483.550000	41.90	150.0	Vertical	225.0	32.10	74
2505.900000	43.23	150.0	Vertical	90.0	30.77	74

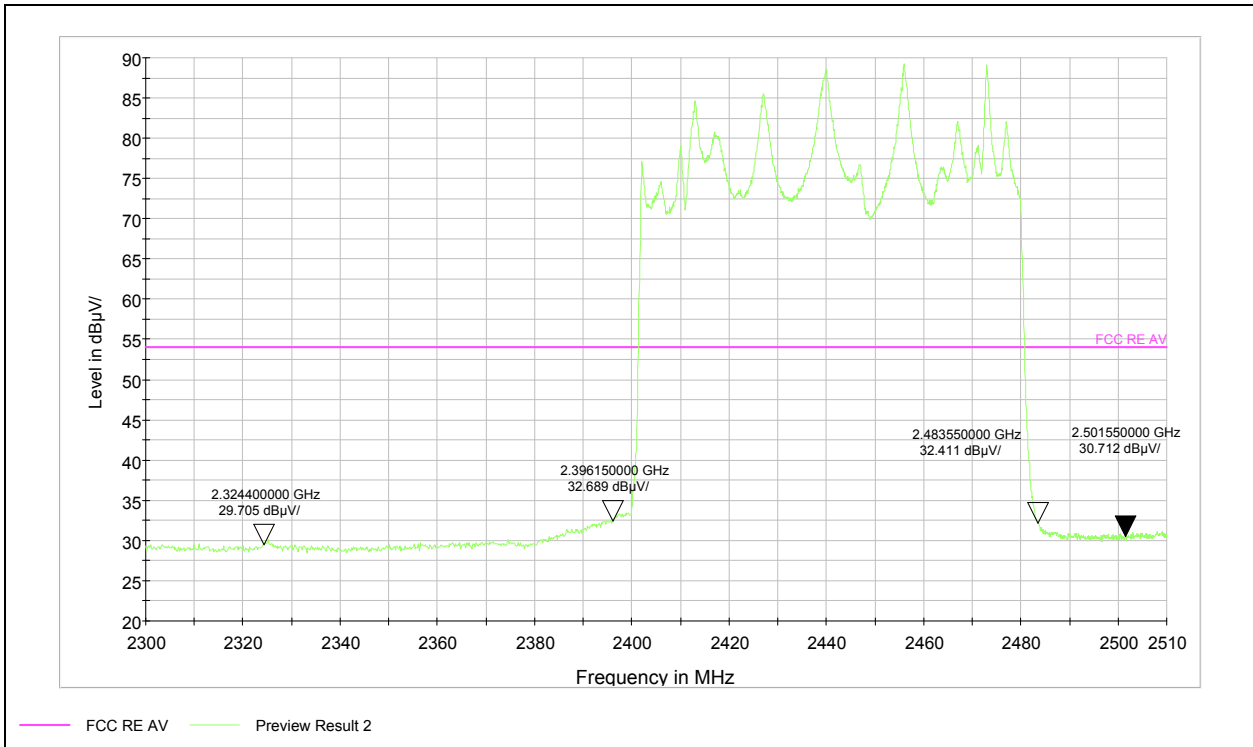
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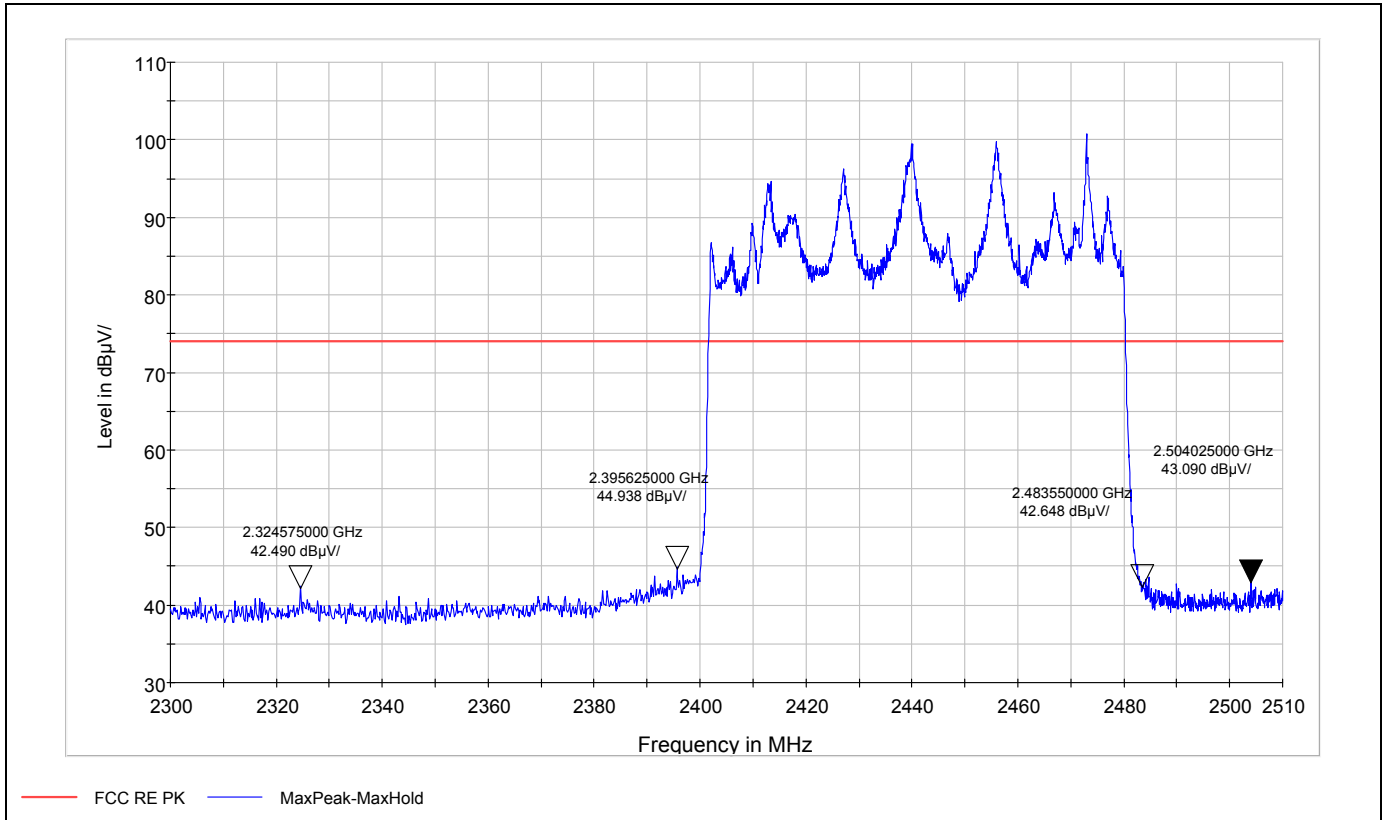
Channel 78



Note: The signal beyond the limit is carrier

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2324.400000	29.71	150.0	Vertical	90.0	24.29	54
2396.150000	32.69	150.0	Vertical	135.0	21.31	54
2483.550000	32.41	150.0	Vertical	180.0	21.59	54
2501.550000	30.71	150.0	Vertical	225.0	23.29	54

Channel 78



Note: The signal beyond the limit is carrier

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
2324.575000	42.49	150.0	Vertical	45.0	31.51	74
2395.625000	44.94	150.0	Vertical	135.0	29.06	74
2483.550000	42.65	150.0	Vertical	180.0	31.35	74
2504.025000	43.09	150.0	Vertical	135.0	30.91	74

2.8. Number of hopping Frequency

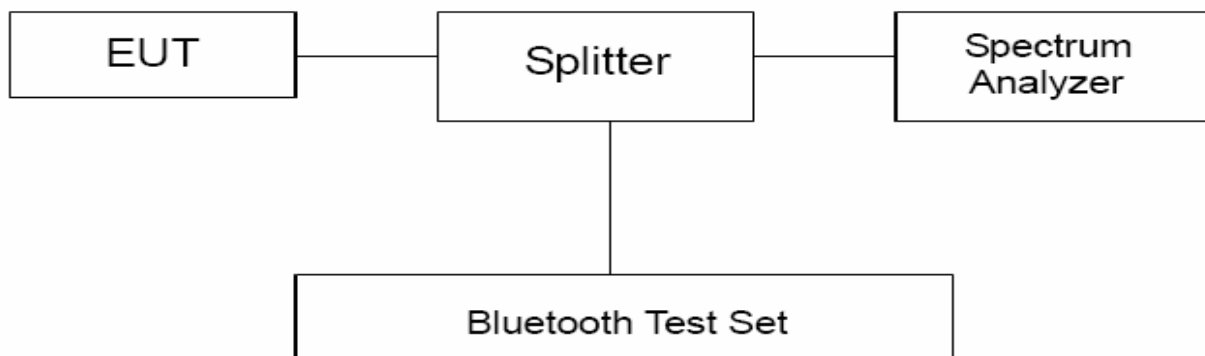
Ambient condition

Temperature	Relative humidity	Pressure
24°C	55%	101.5kPa

Method of Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. Set EUT ON Hopping on mode.

Test setup



Limits

Rule Part 15.247(a) (1) (iii) specifies that” Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels..”.

Limits	≥ 75 channels
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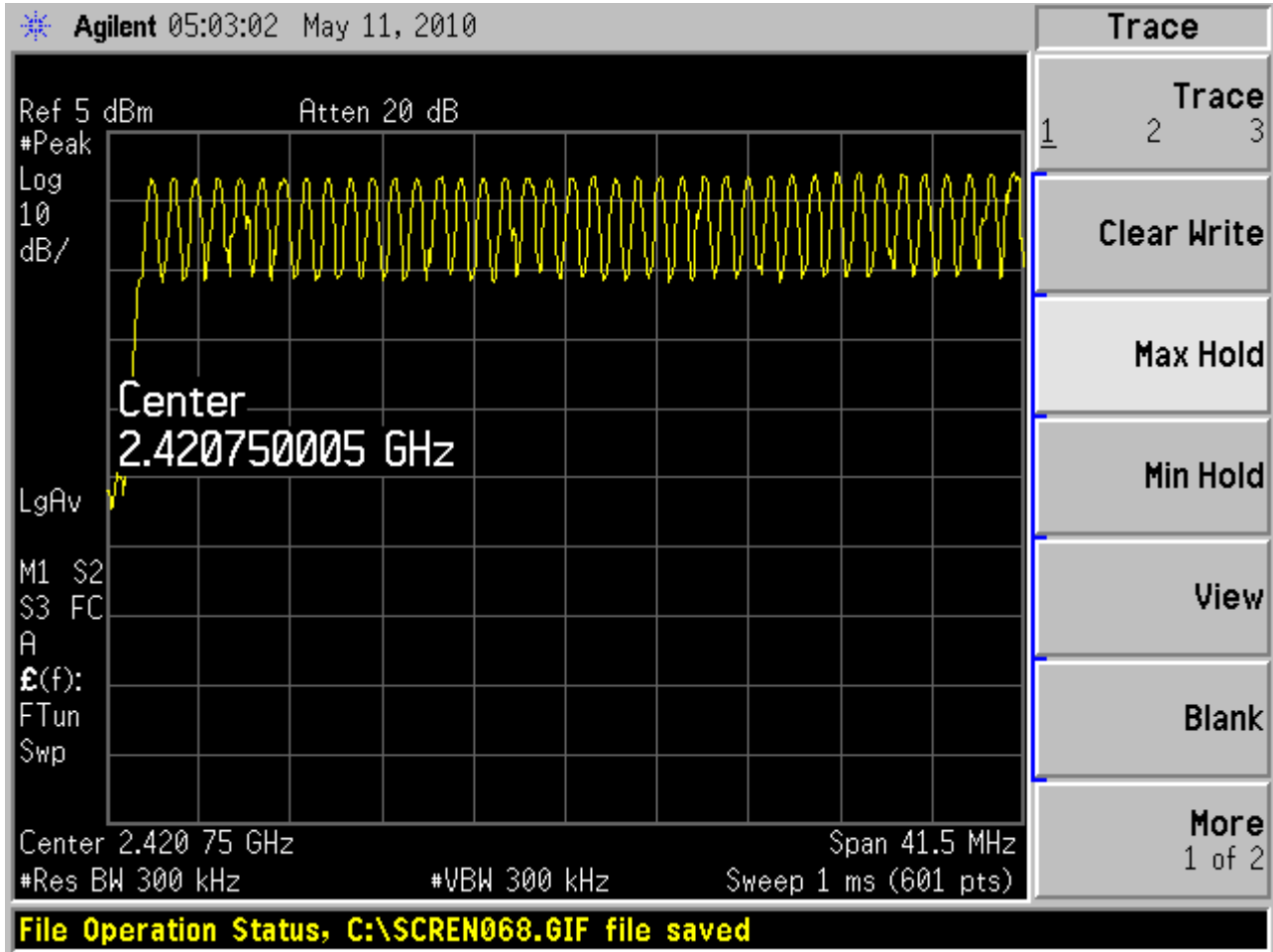
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Test Results:

Carrier frequency MHz	Number of hopping channels	conclusion
2441	79	PASS



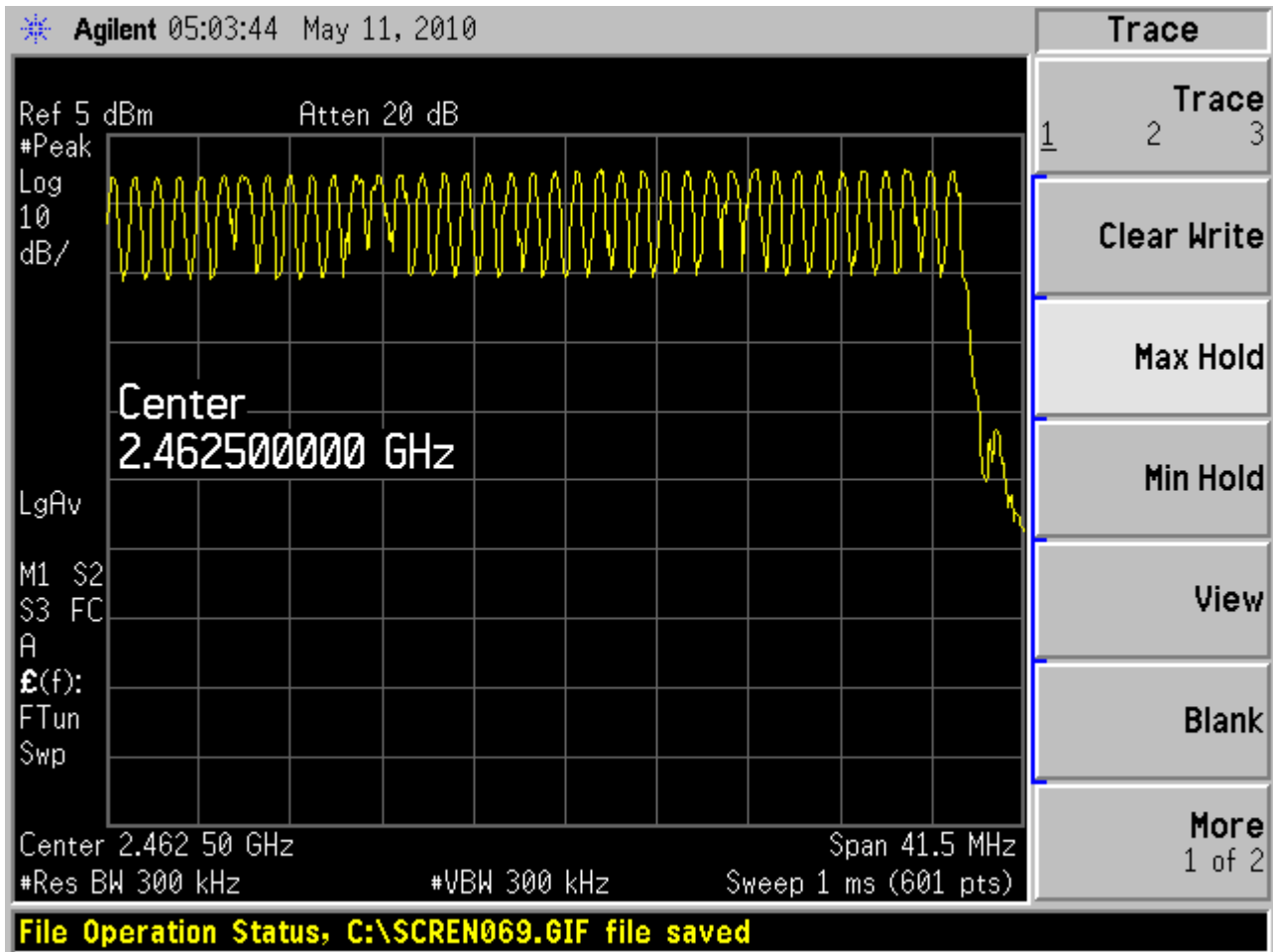
2400 MHz – 2441 MHz

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2441 MHz – 2483.5 MHz

2.9. Spurious RF Conducted Emissions

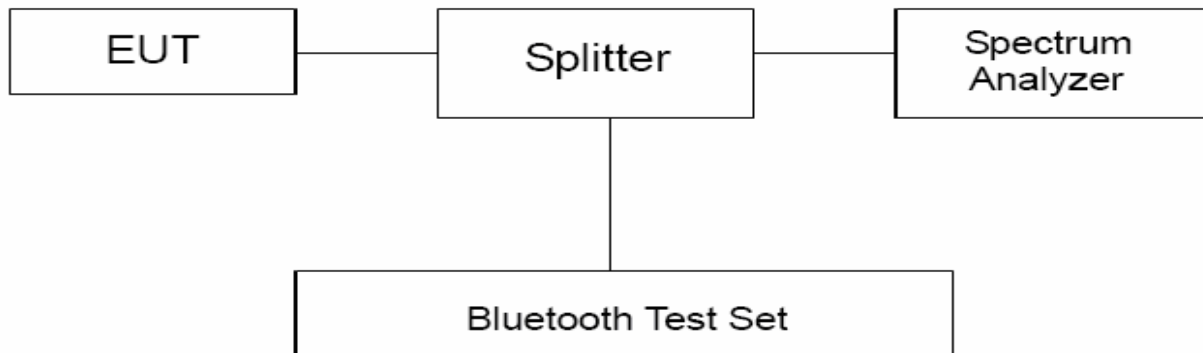
Ambient condition

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 26GHz. The peak detector is used and RBW is set to 100 kHz on spectrum analyzer.

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.”

Carrier frequency (MHz)	Reference value (dBm)	Limit
2402	-1.71	≤-21.71
2441	-1.0	≤-21
2480	-0.2	≤-20.2

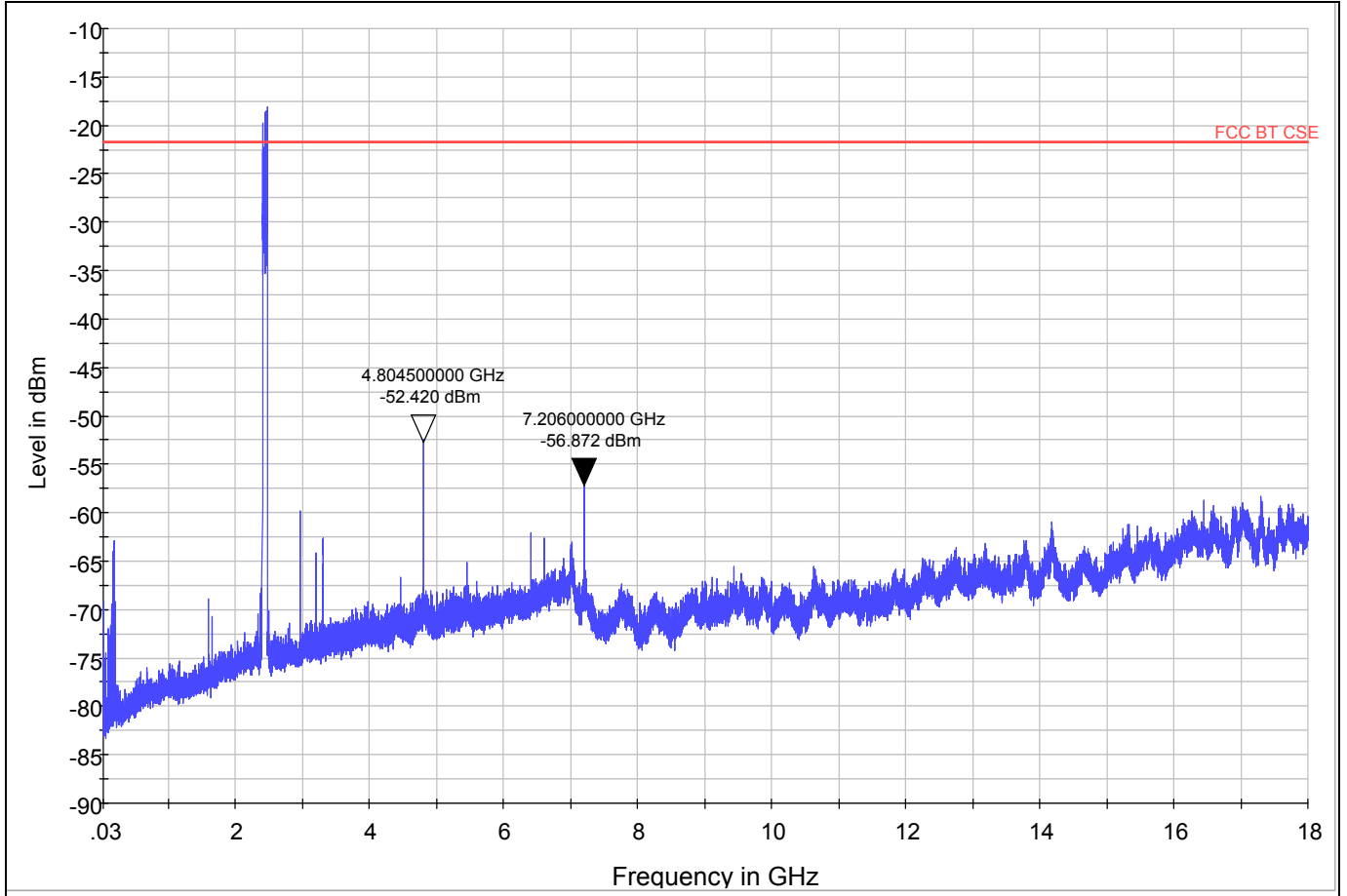
Measurement Uncertainty

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

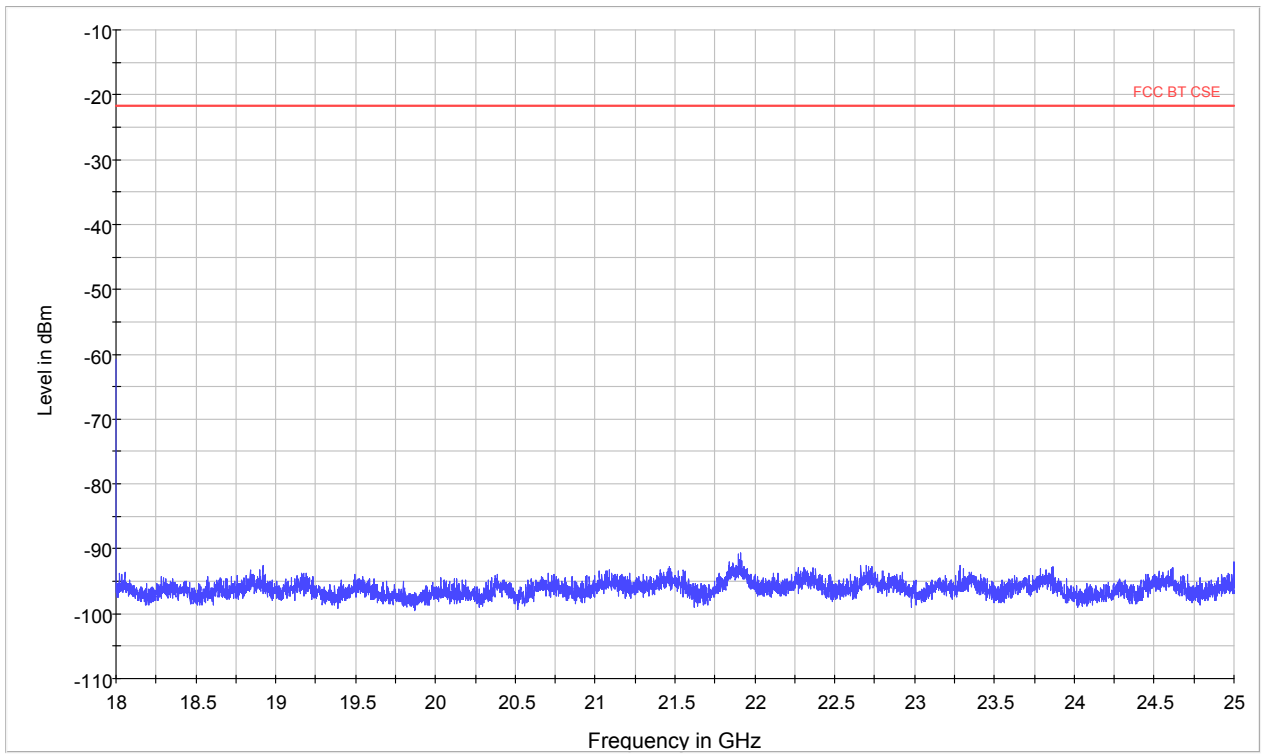
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

CH0:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402
Spurious RF conducted emissions from 30MHz to 18GHz

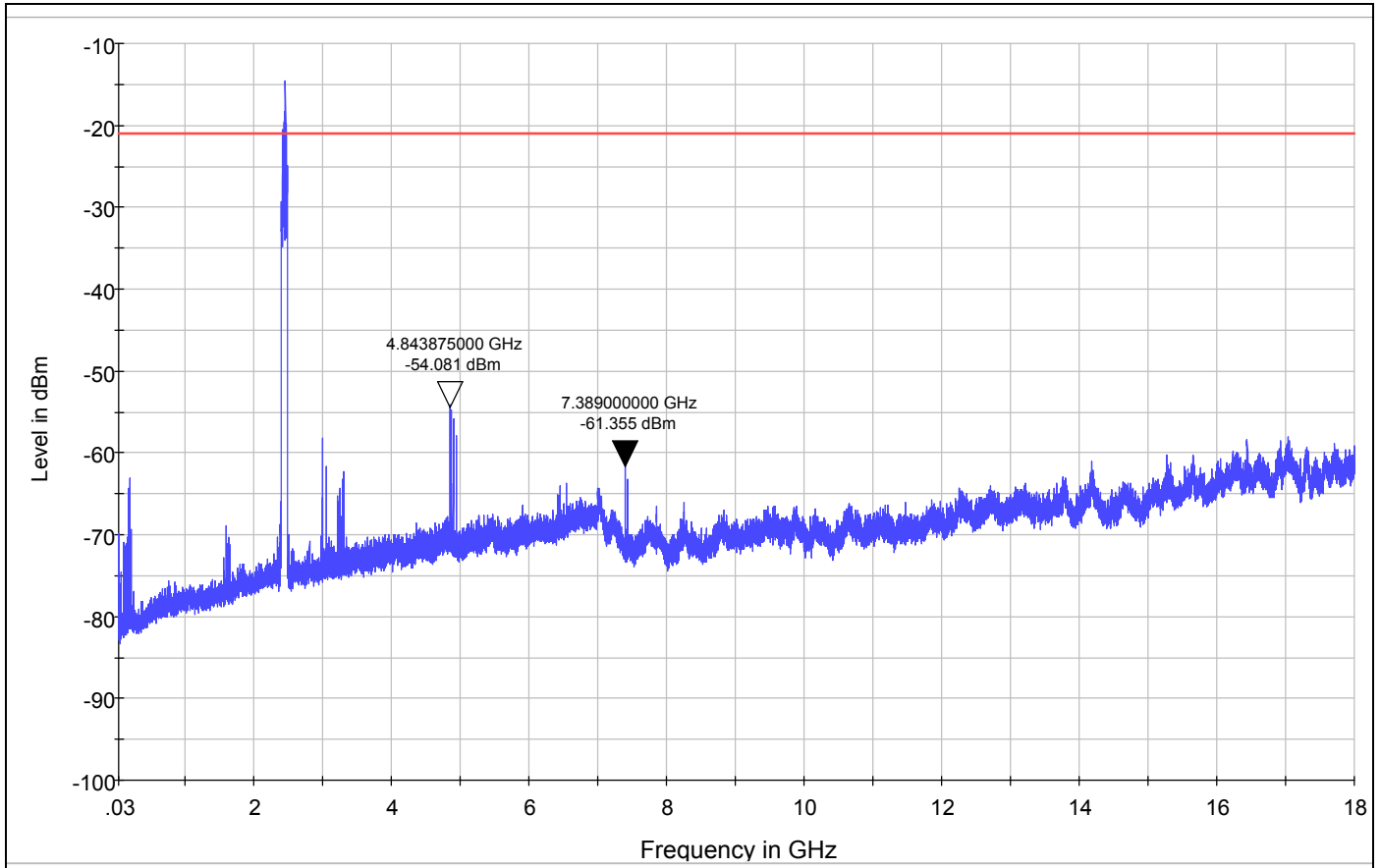


Spurious RF conducted emissions from 18GHz to 25GHz

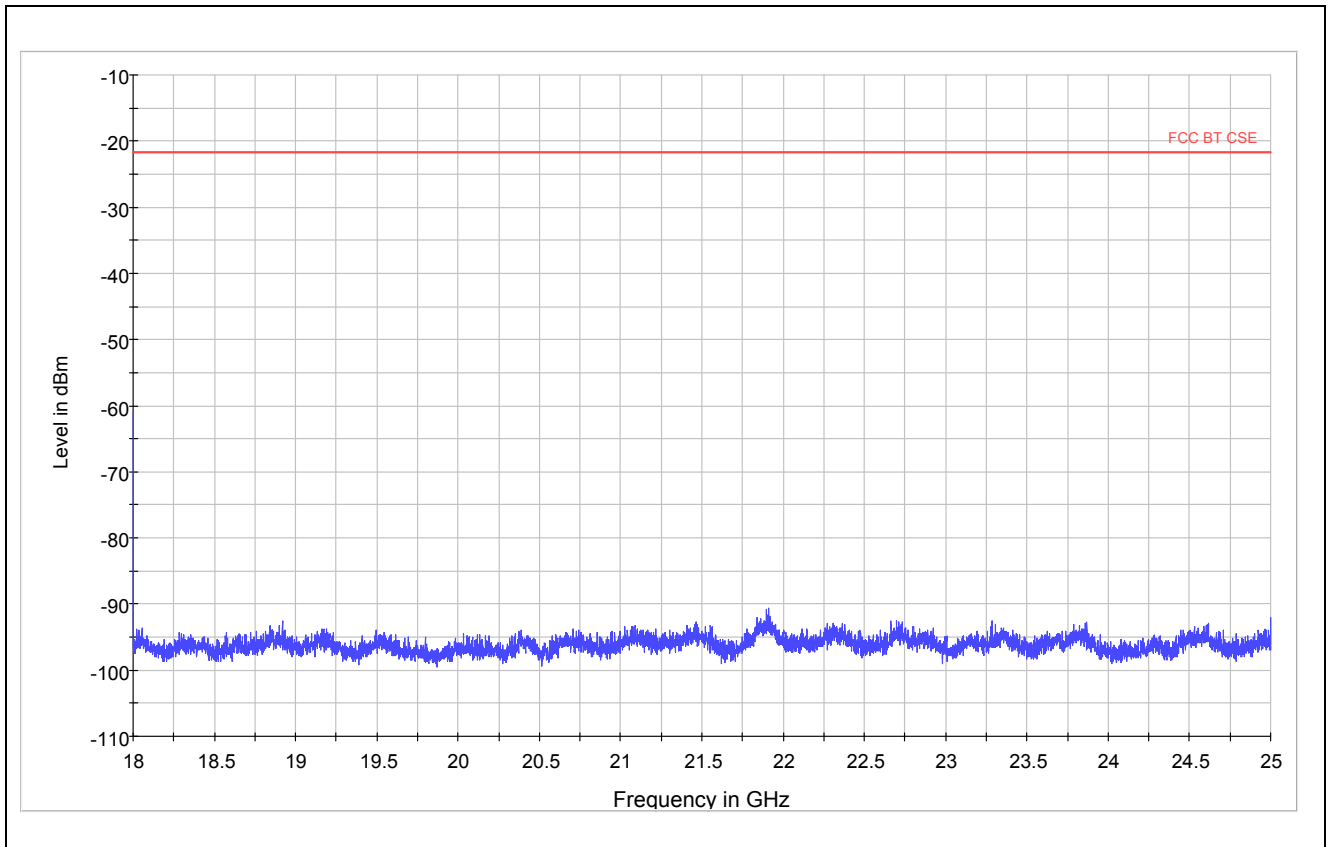
Harmonic	TX ch.0 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4804.5	-52.420	-21.71
3	7206	-56.872	-21.71
4	9608	Nf	-21.71
5	12010	Nf	-21.71
6	14412	Nf	-21.71
7	16814	Nf	-21.71
8	19216	Nf	-21.71
9	21618	Nf	-21.71
10	24020	Nf	-21.71
Nf: noise floor			

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

CH39:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2441
Spurious RF conducted emissions from 30MHz to 18GHz

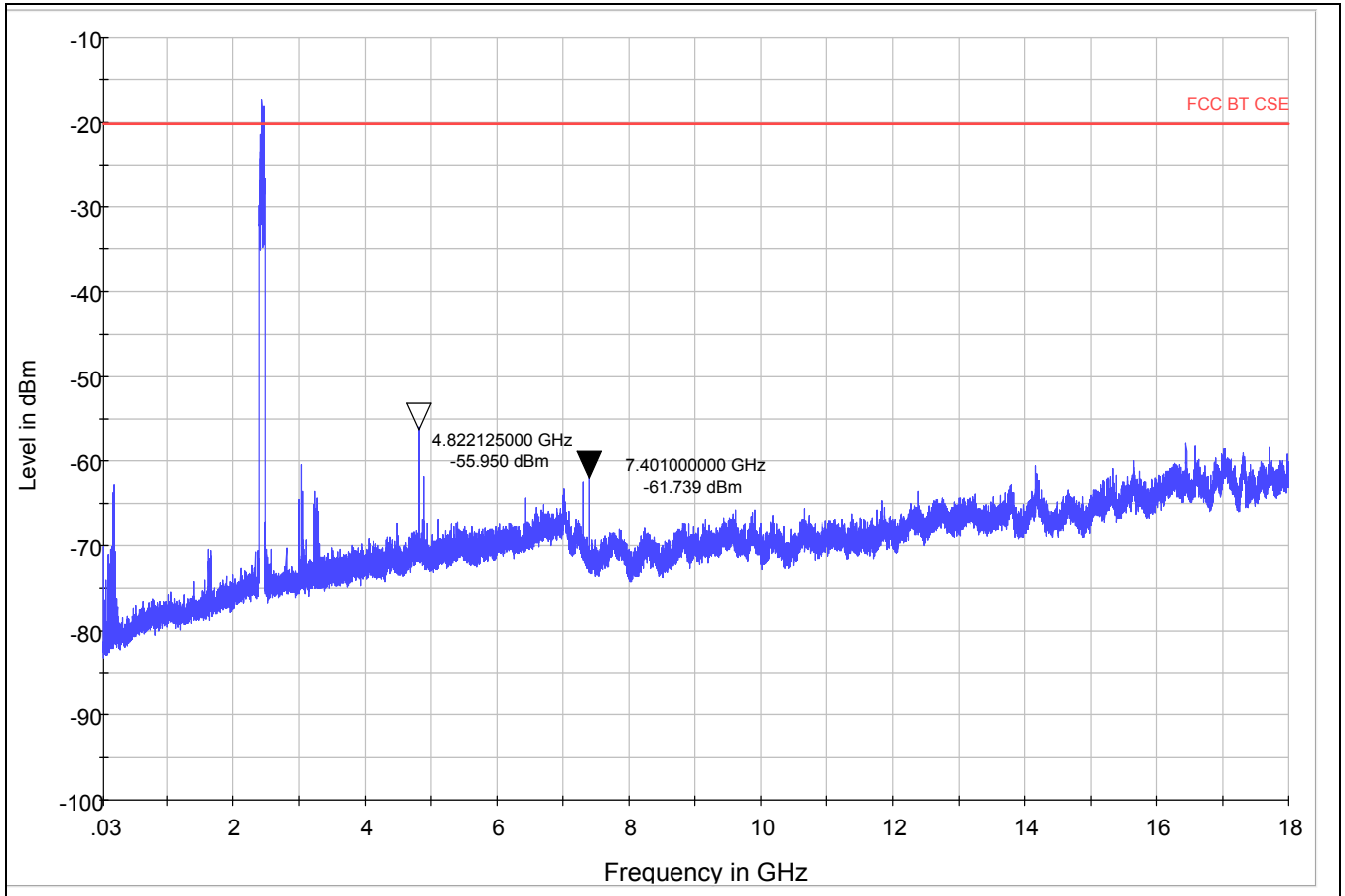


Spurious RF conducted emissions from 18GHz to 25GHz

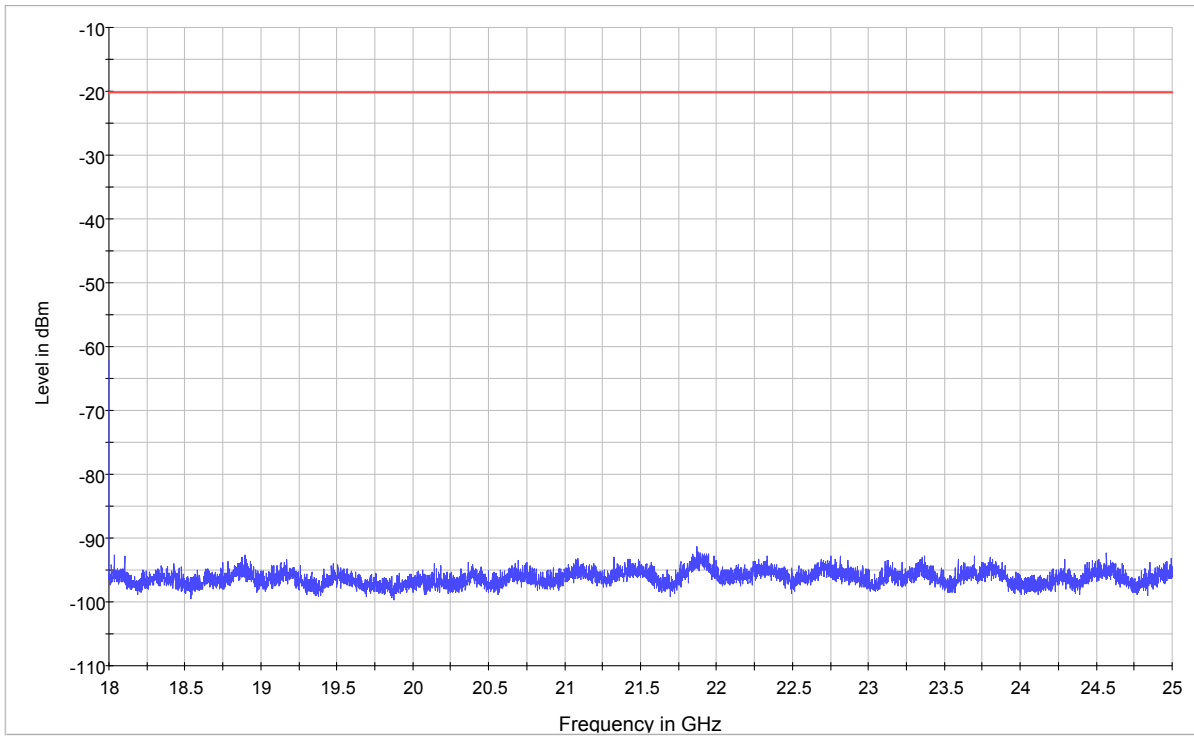
Harmonic	TX ch.39 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4843.978	-54.081	-21
3	7389	-61.355	-21
4	9764	Nf	-21
5	12205	Nf	-21
6	14646	Nf	-21
7	17087	Nf	-21
8	19528	Nf	-21
9	21969	Nf	-21
10	24410	Nf	-21
Nf: noise floor			

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

CH78



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 25GHz

Harmonic	TX ch.78 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4822.125	-55.950	-20.2
3	7401	-61.739	-20.2
4	9920	Nf	-20.2
5	12400	Nf	-20.2
6	14880	Nf	-20.2
7	17360	Nf	-20.2
8	19840	Nf	-20.2
9	22320	Nf	-20.2
10	24800	Nf	-20.2
Nf: noise floor			

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

2.10. Radiates Emission

Ambient condition

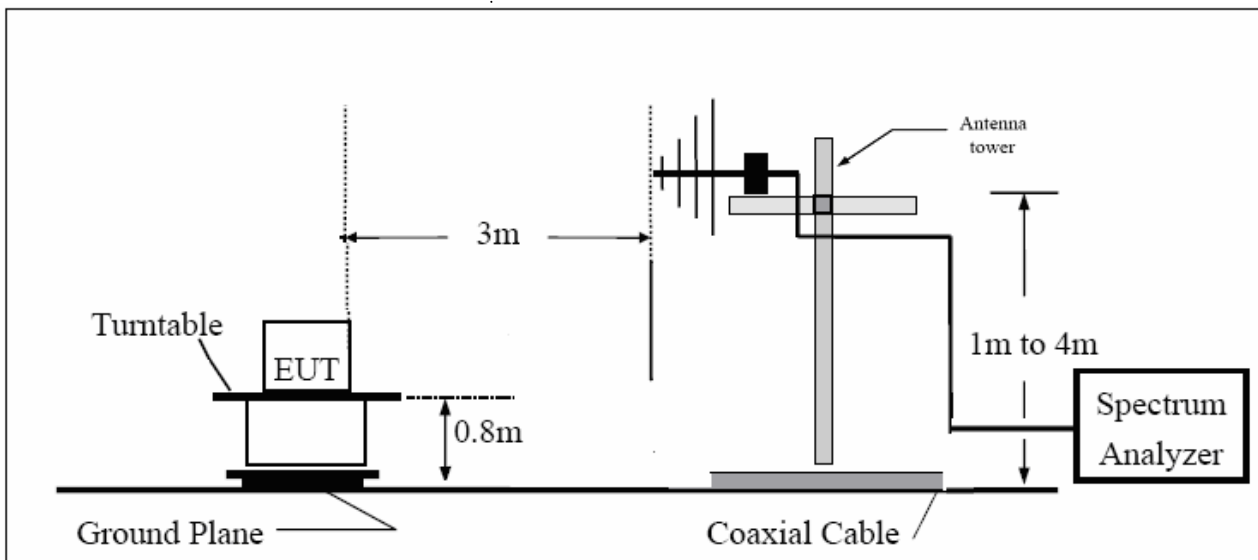
Temperature	Relative humidity	Pressure
24°C	50%	102.5kPa

Method of Measurement

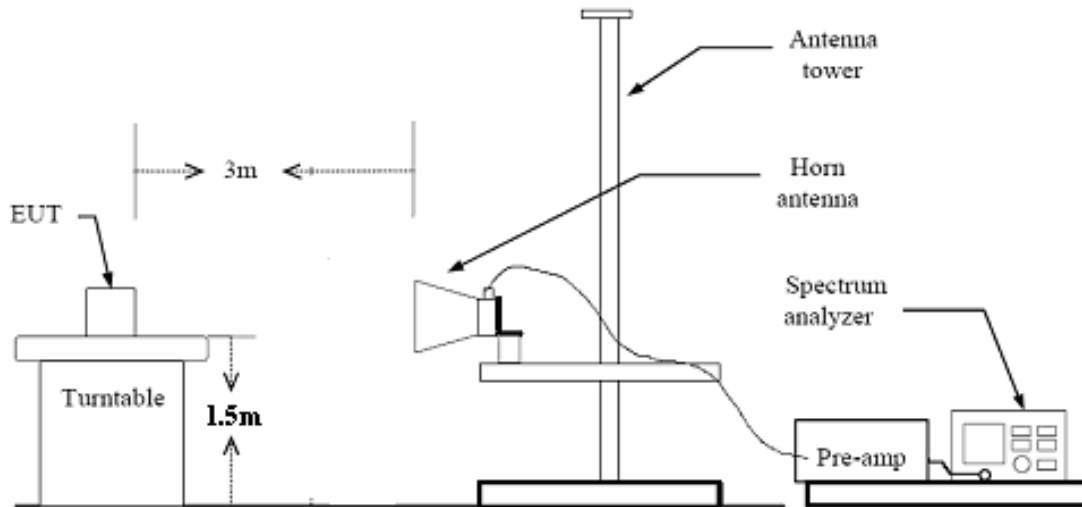
The test set-up was made in accordance to the general provisions of ANSI C63.4-2003. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 30MHz to26GHz 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
Above 960	500	54

§15.35(b)

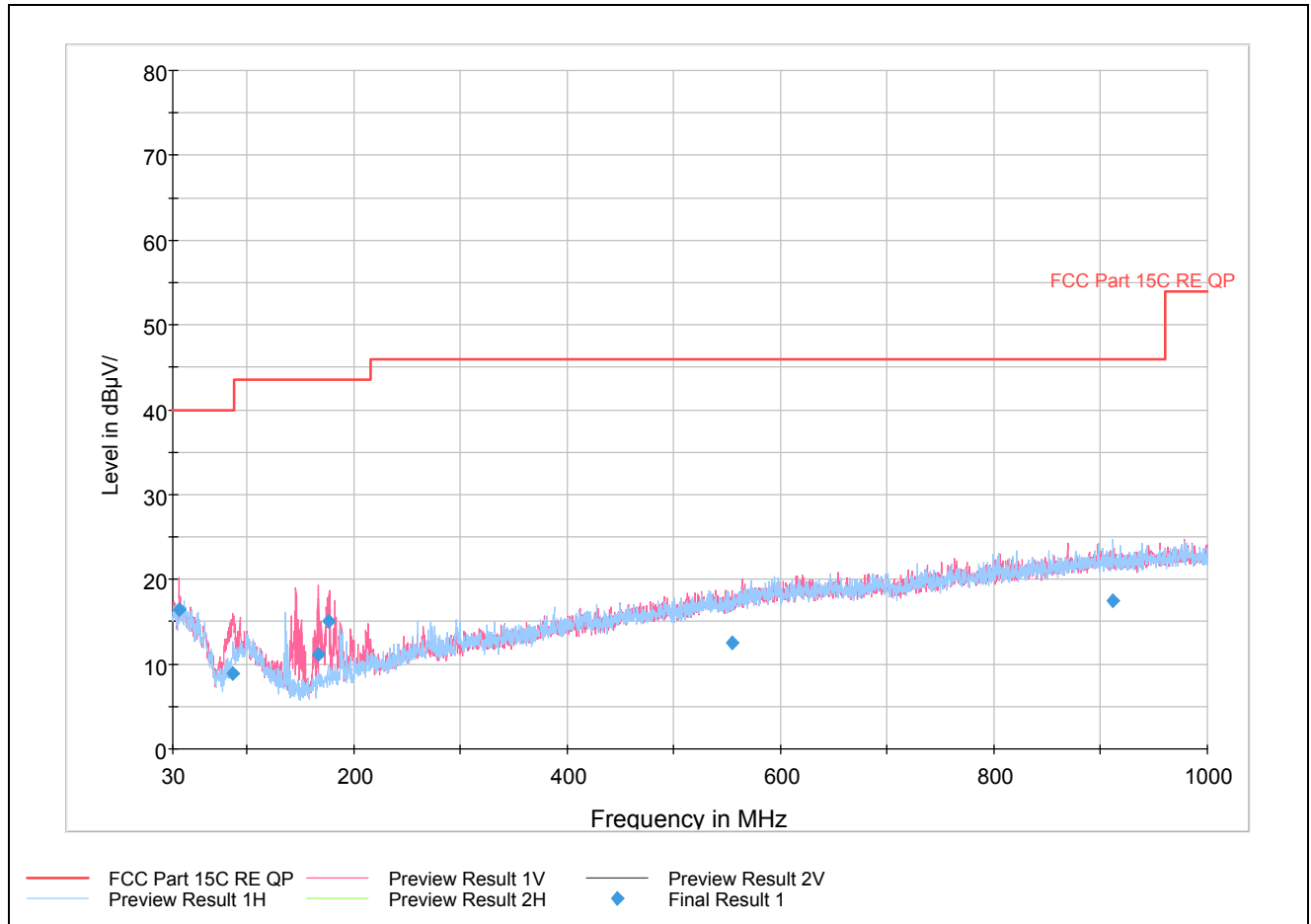
There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

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

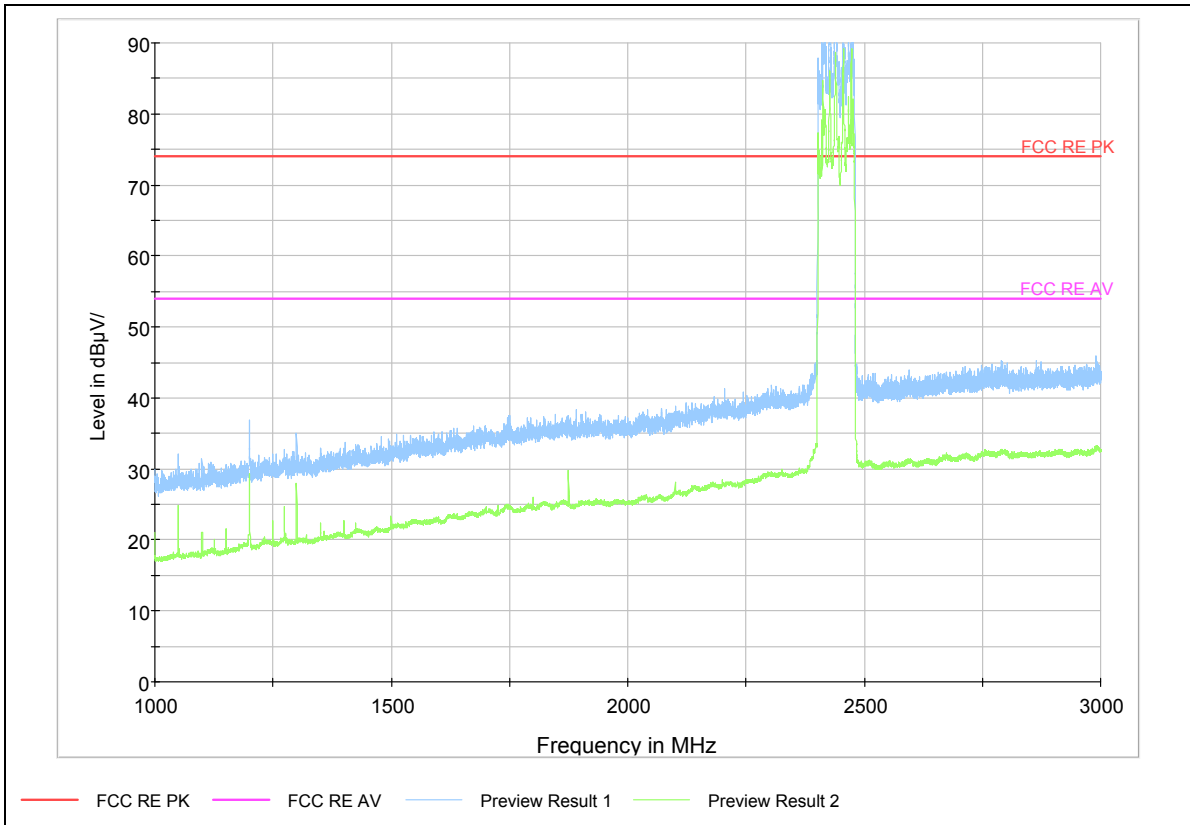
Channel 0



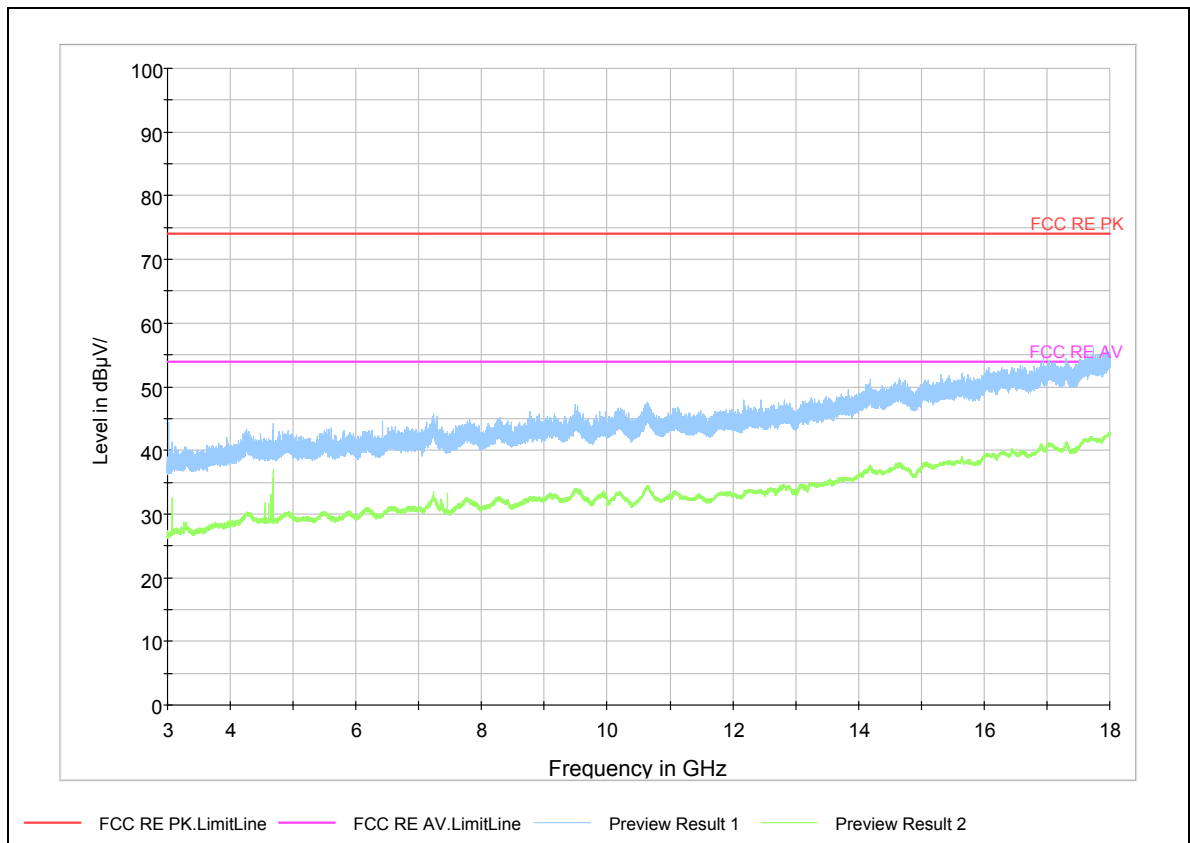
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
36.1425	16.5	100	Vertical	159	23.5	40
86.58	9	116	Vertical	90	31	40
166.605	11.2	100	Vertical	90	32.3	43.5
176.2725	15.1	100	Vertical	202	28.4	43.5
554.1625	12.6	100	Vertical	103	33.4	46
911.5325	17.5	100	Horizontal	248	28.5	46

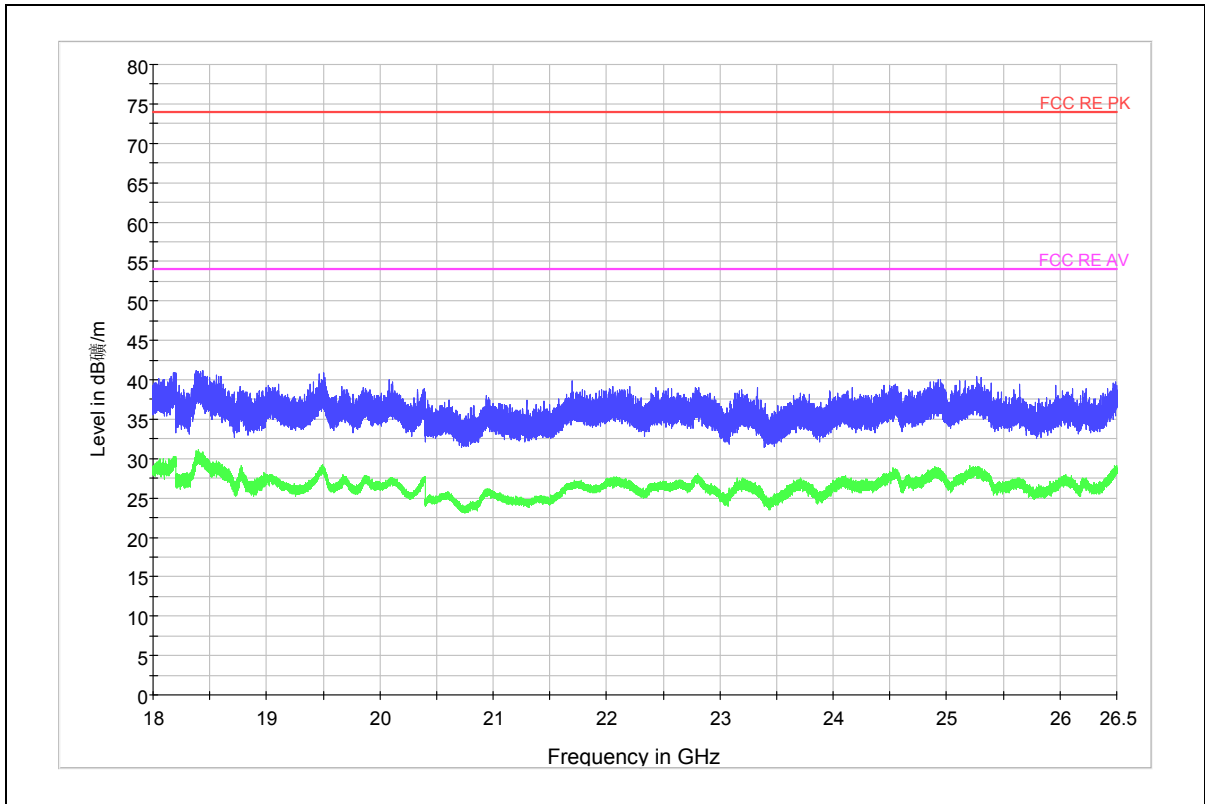
Note: All emissions level measured above 1GHz was more than 10dB below the limit



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

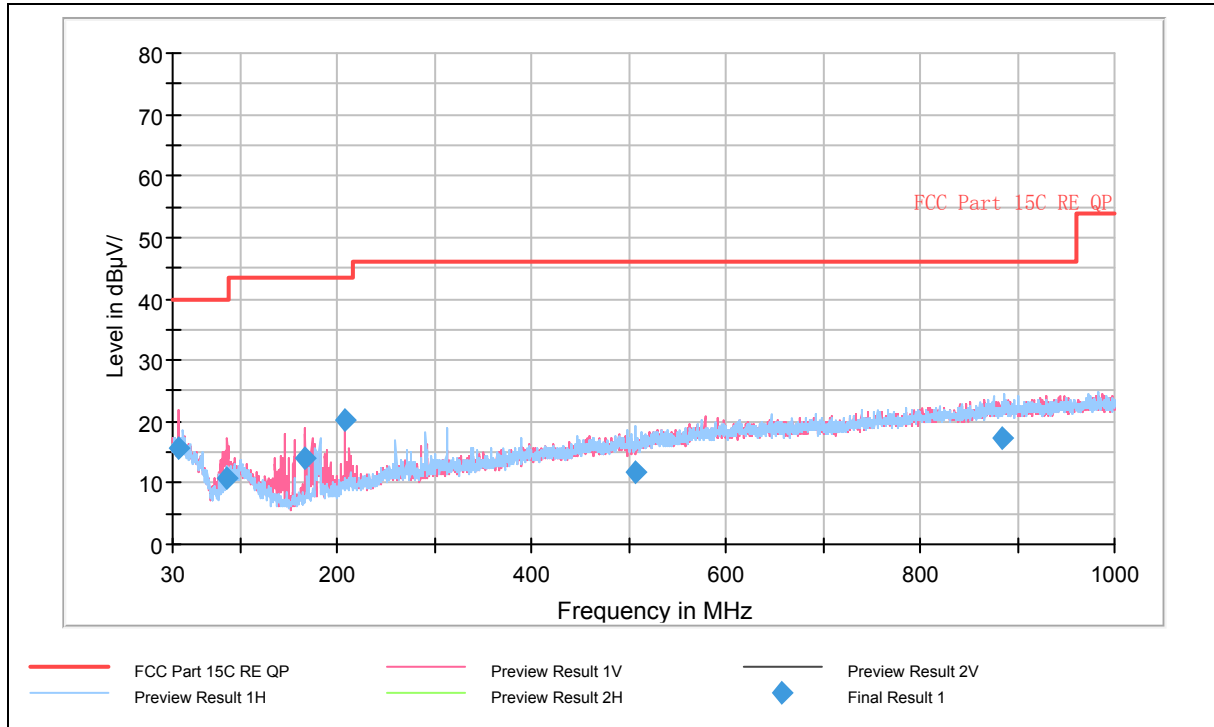


Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

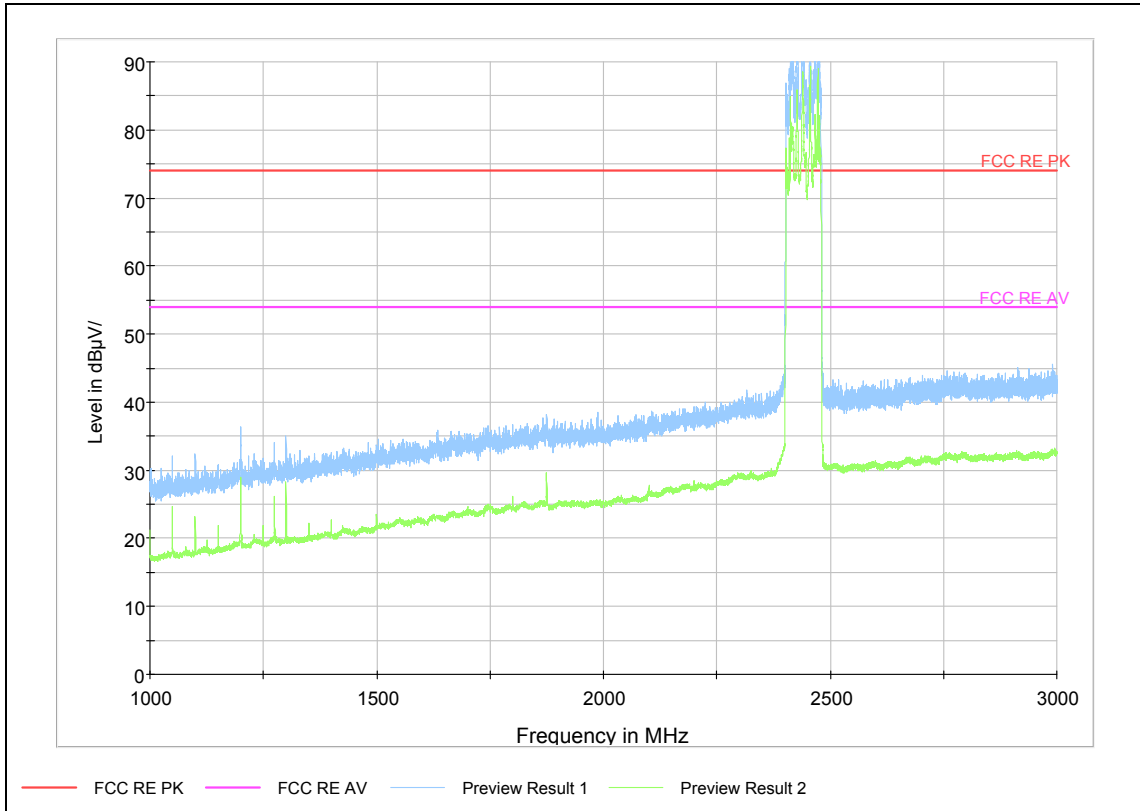
Channel 39



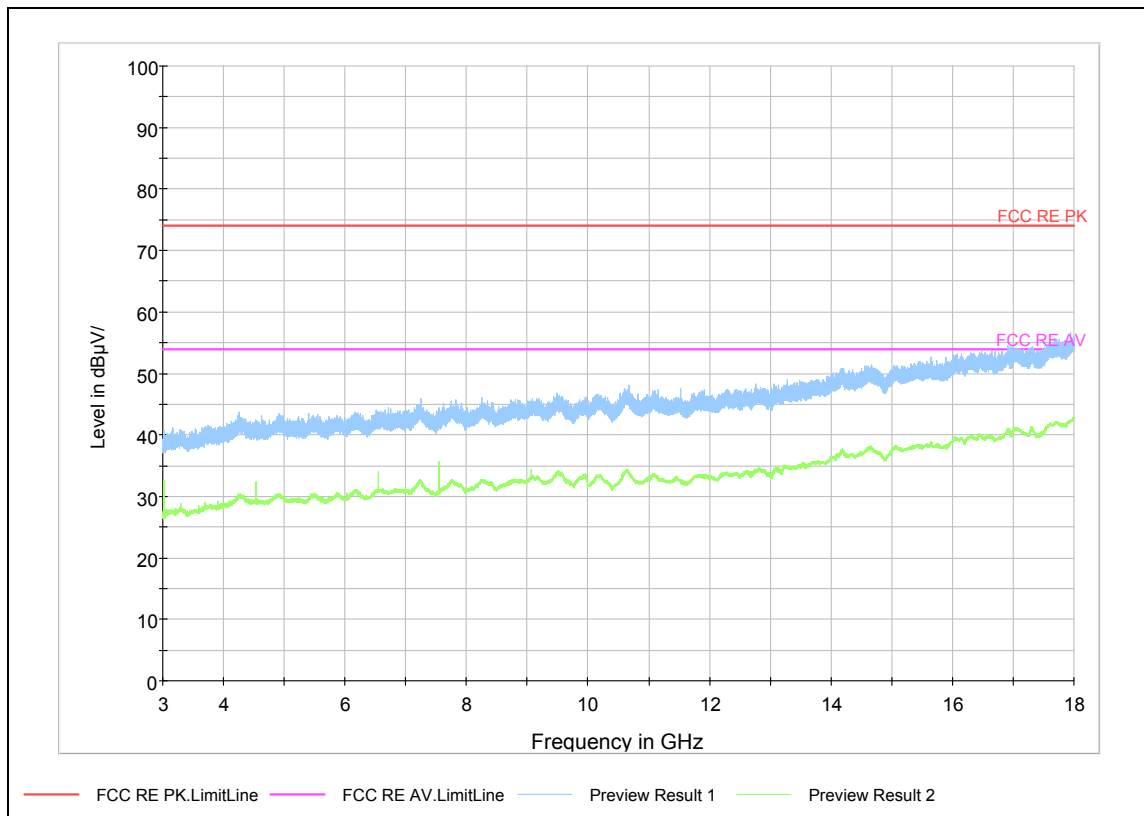
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
36.142500	15.6	100.0	Vertical	180.0	24.4	40.0
86.625000	10.8	100.0	Vertical	88.0	29.2	40.0
166.845000	14.2	100.0	Vertical	202.0	29.3	43.5
207.995000	20.3	100.0	Vertical	158.0	23.2	43.5
506.872500	11.7	100.0	Horizontal	194.0	34.3	46.0
885.222500	17.3	125.0	Horizontal	173.0	28.7	46.0

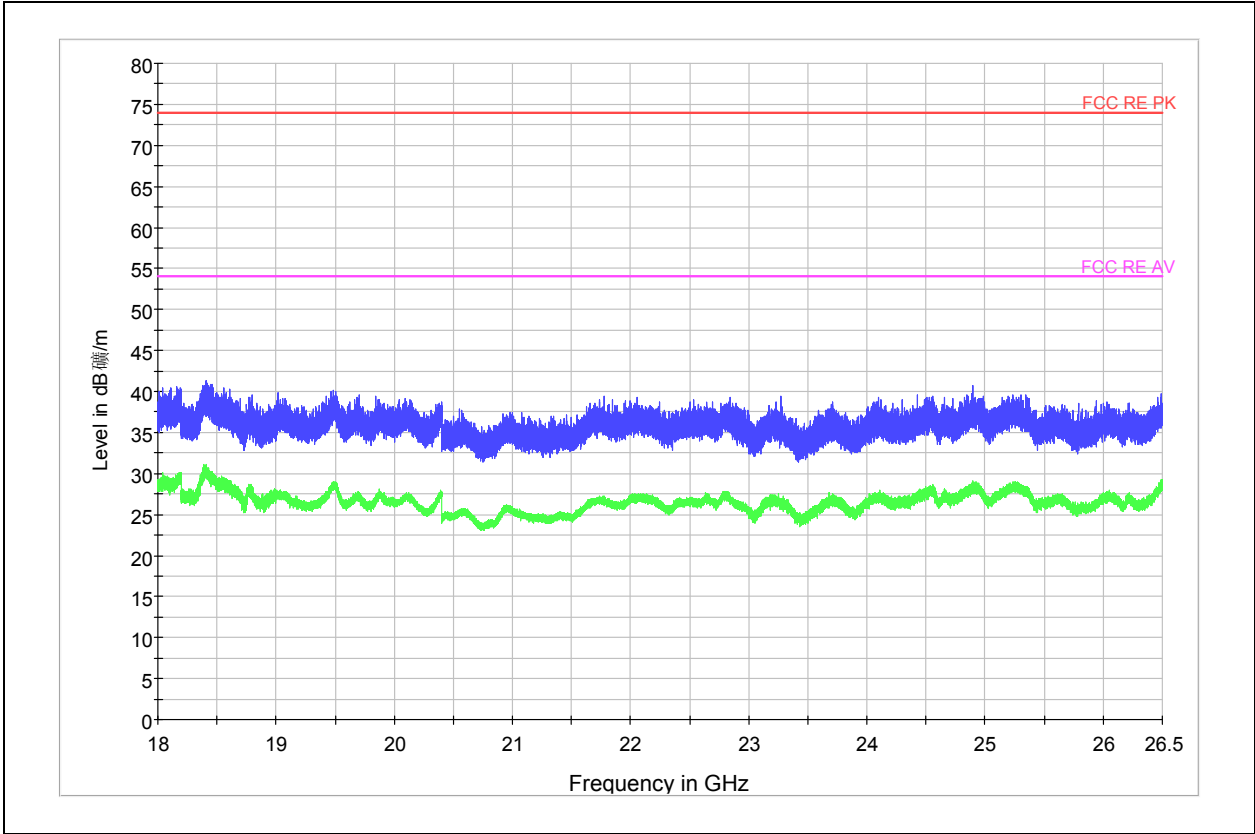
Note: All emissions level measured above 1GHz was more than 10dB below the limit



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

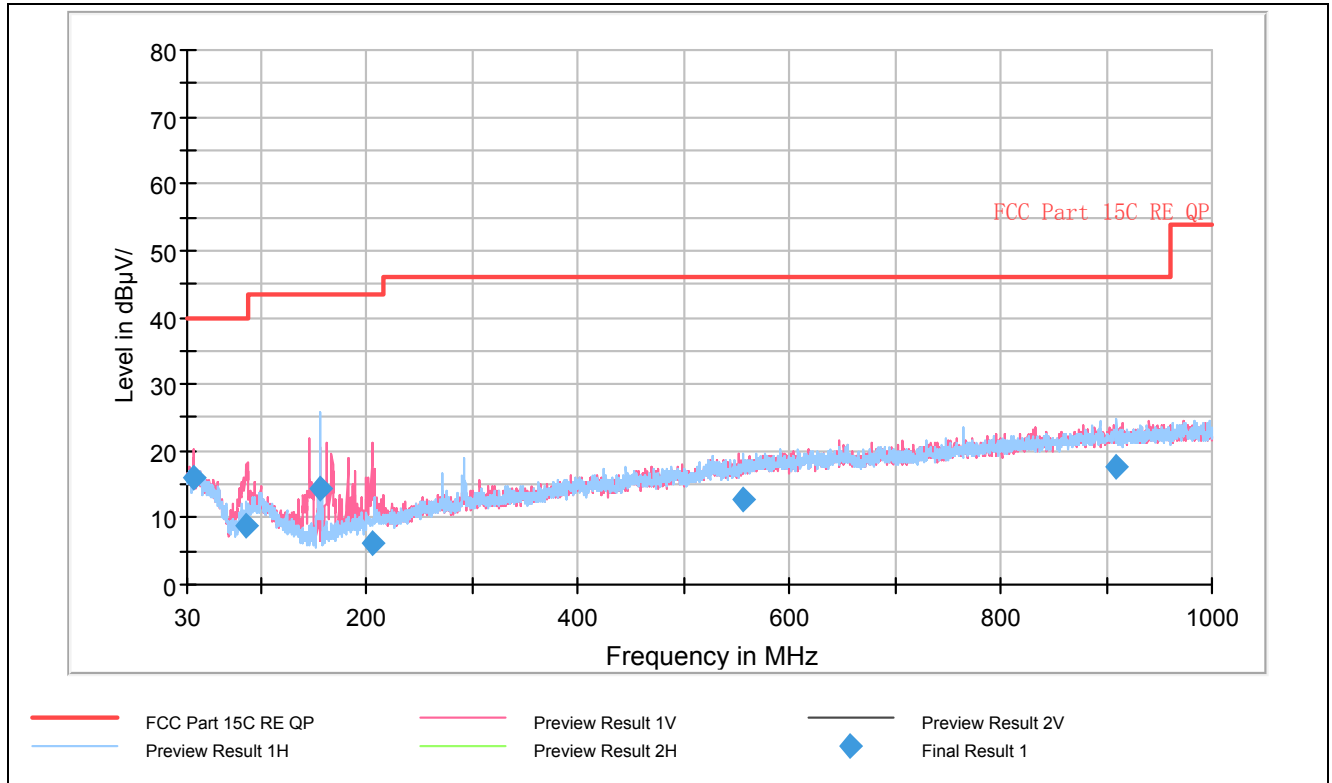


Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

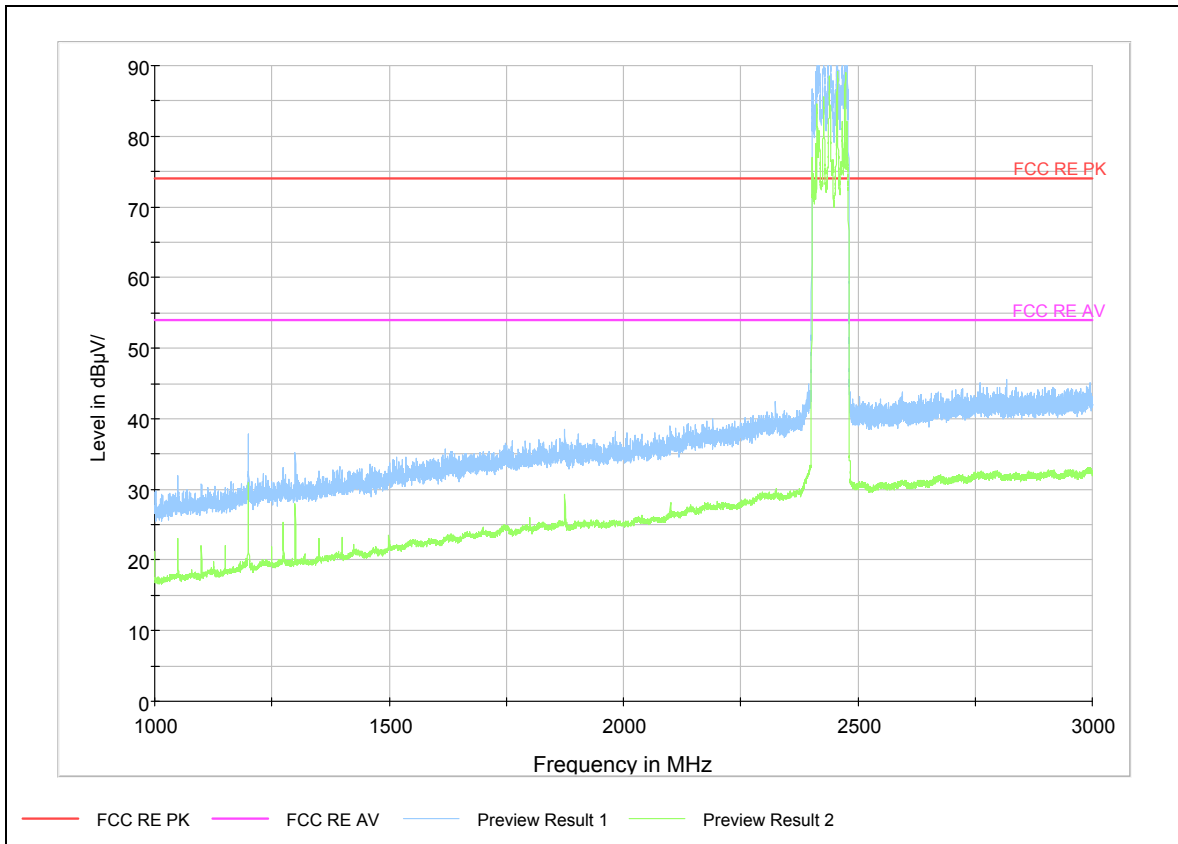
Channel 78



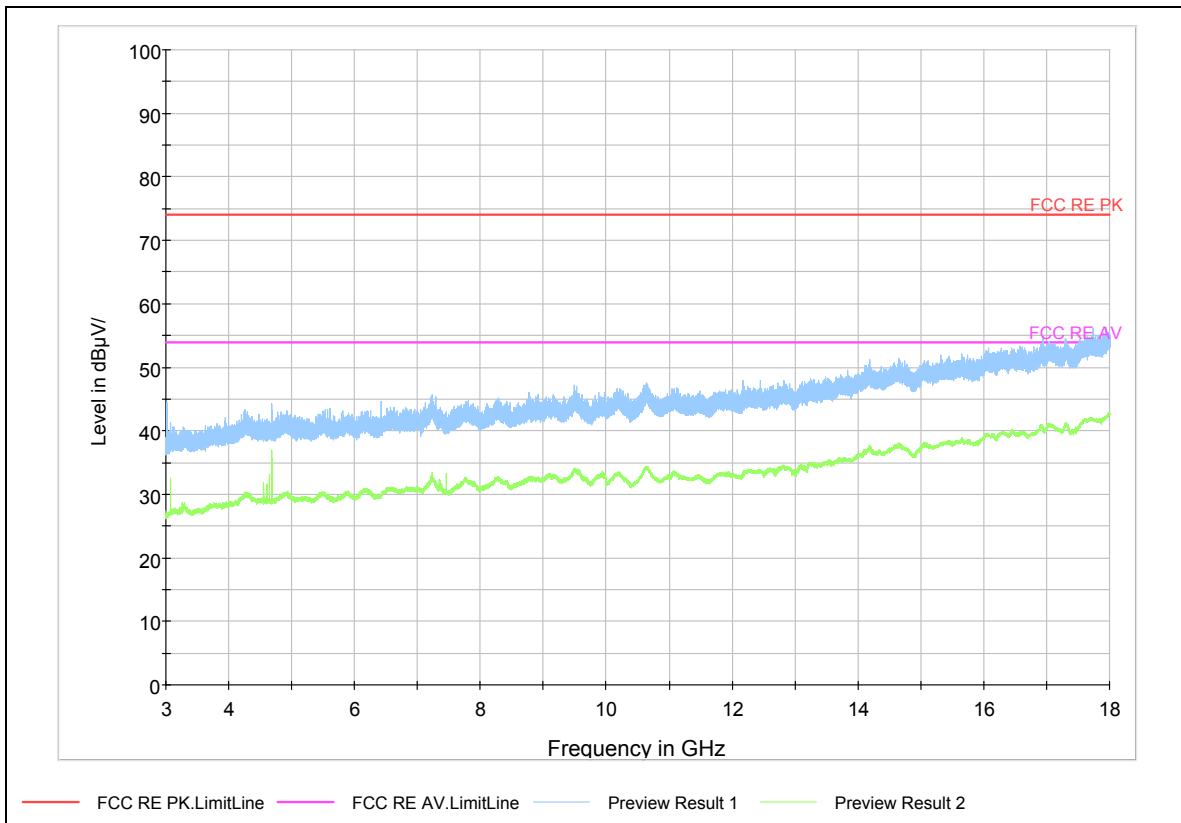
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
36.187500	16.0	115.0	Vertical	180.0	24.0	40.0
86.627500	8.9	100.0	Vertical	85.0	31.1	40.0
155.977500	14.2	125.0	Horizontal	292.0	29.3	43.5
205.242500	6.3	100.0	Vertical	2.0	37.2	43.5
556.465000	12.8	125.0	Horizontal	254.0	33.2	46.0
909.632500	17.5	100.0	Horizontal	98.0	28.5	46.0

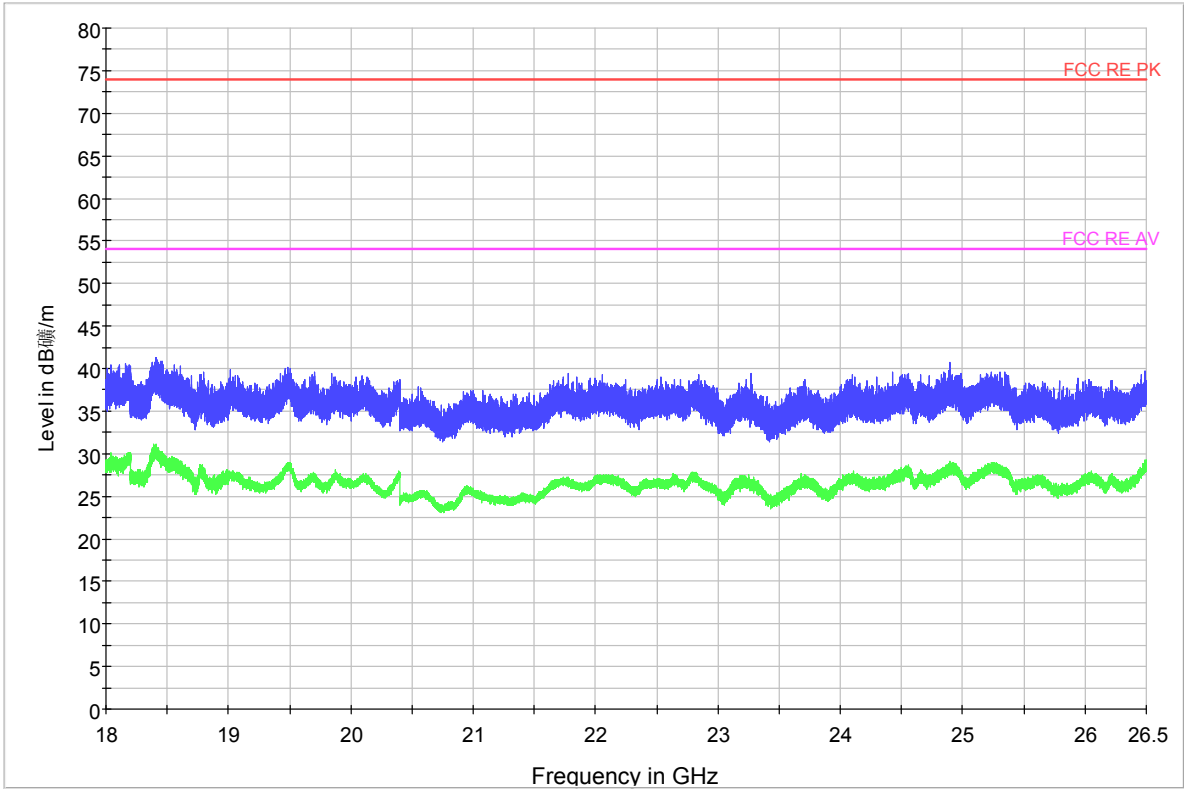
Note: All emissions level measured above 1GHz was more than 10dB below the limit



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

2.11. Conducted Emission

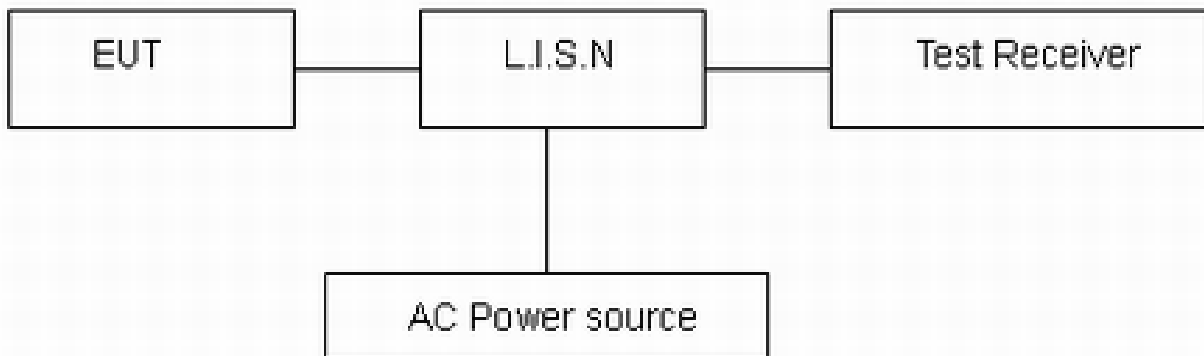
Ambient condition

Temperature	Relative humidity	Pressure
25°C	58%	101.5kPa

Methods 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 ANSI C63.4-2003. Connect the AC power line of the EUT to the L.I.S.N. 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

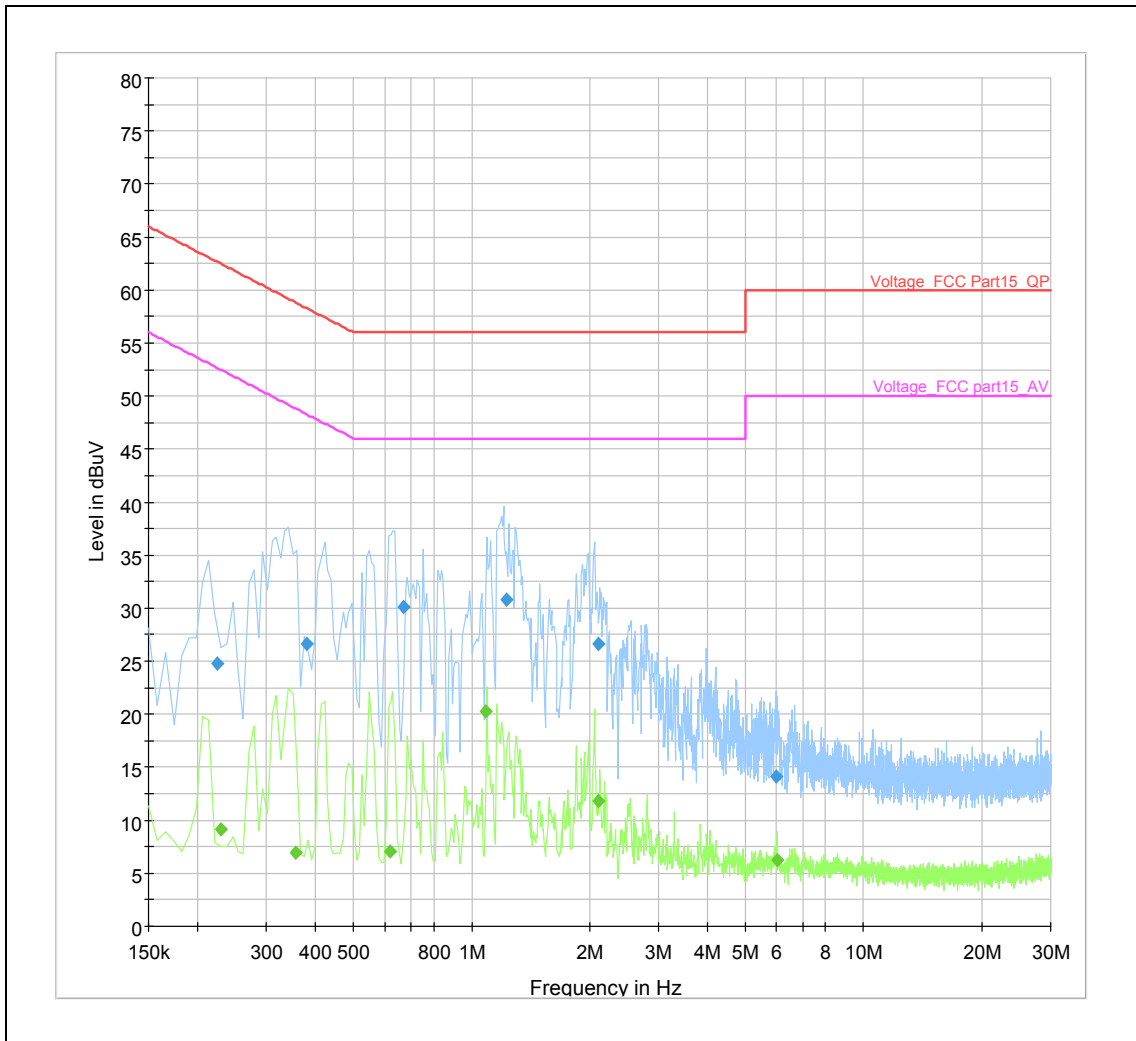
Frequency (MHz)	Conducted Limits(dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

*: Decreases with the logarithm of the frequency.

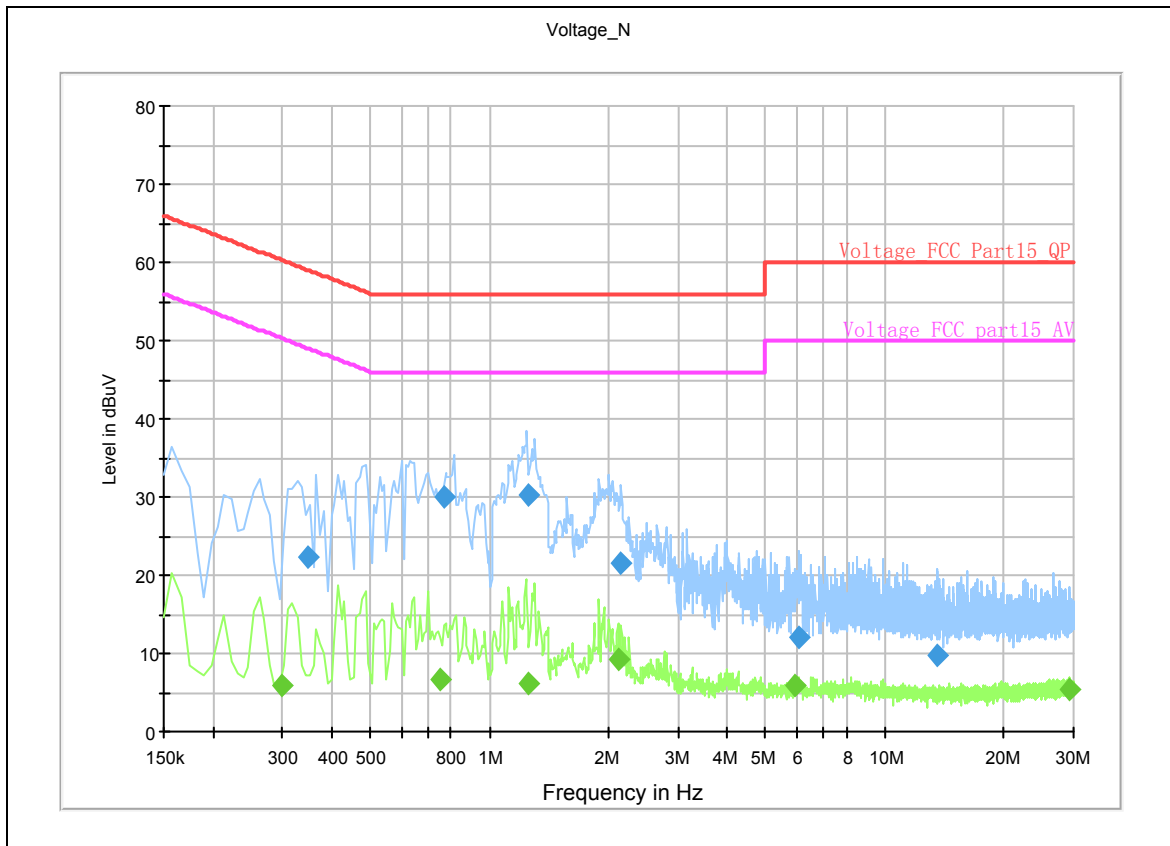
Measurement Uncertainty

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 Results:



L Line

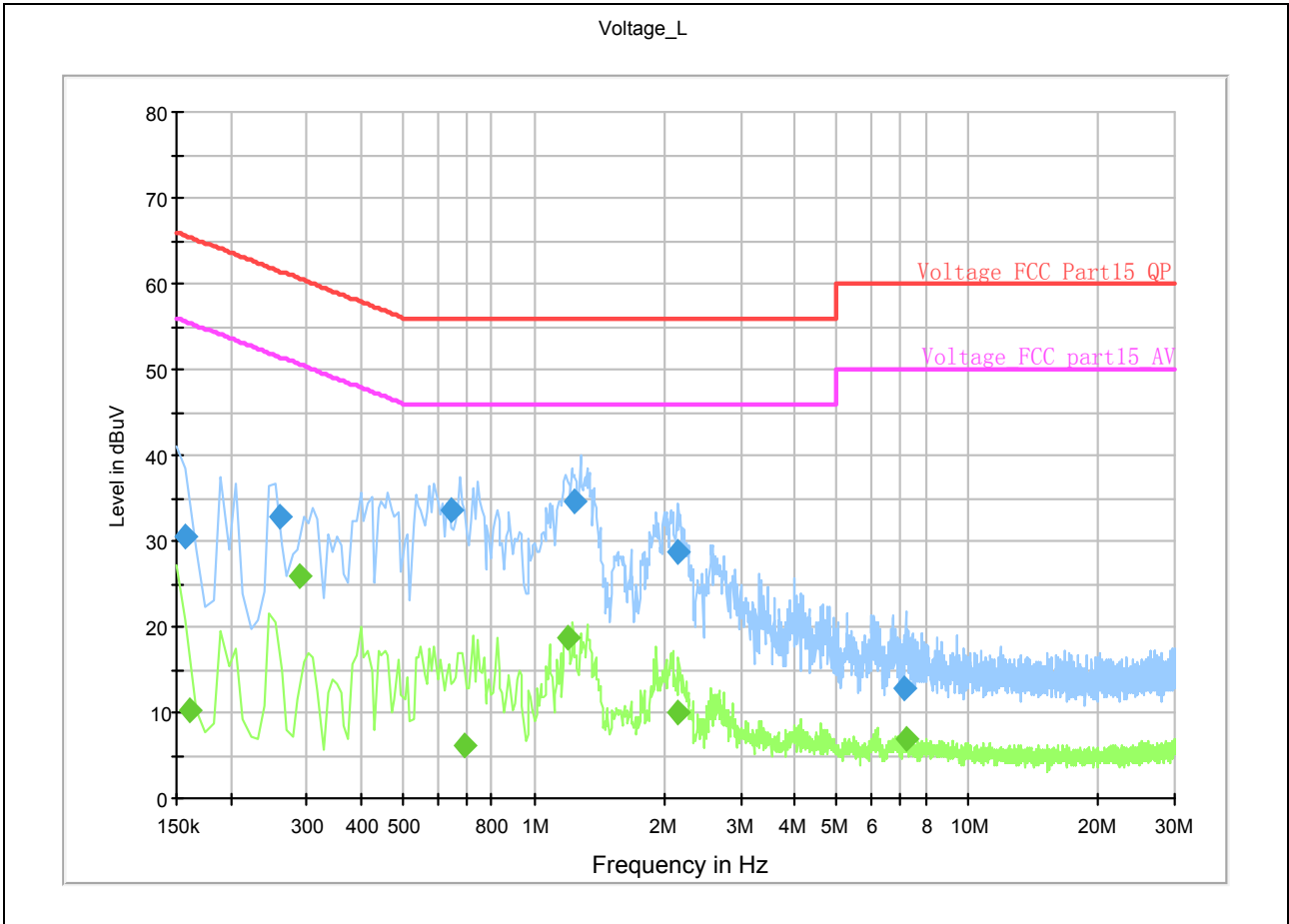


N Line

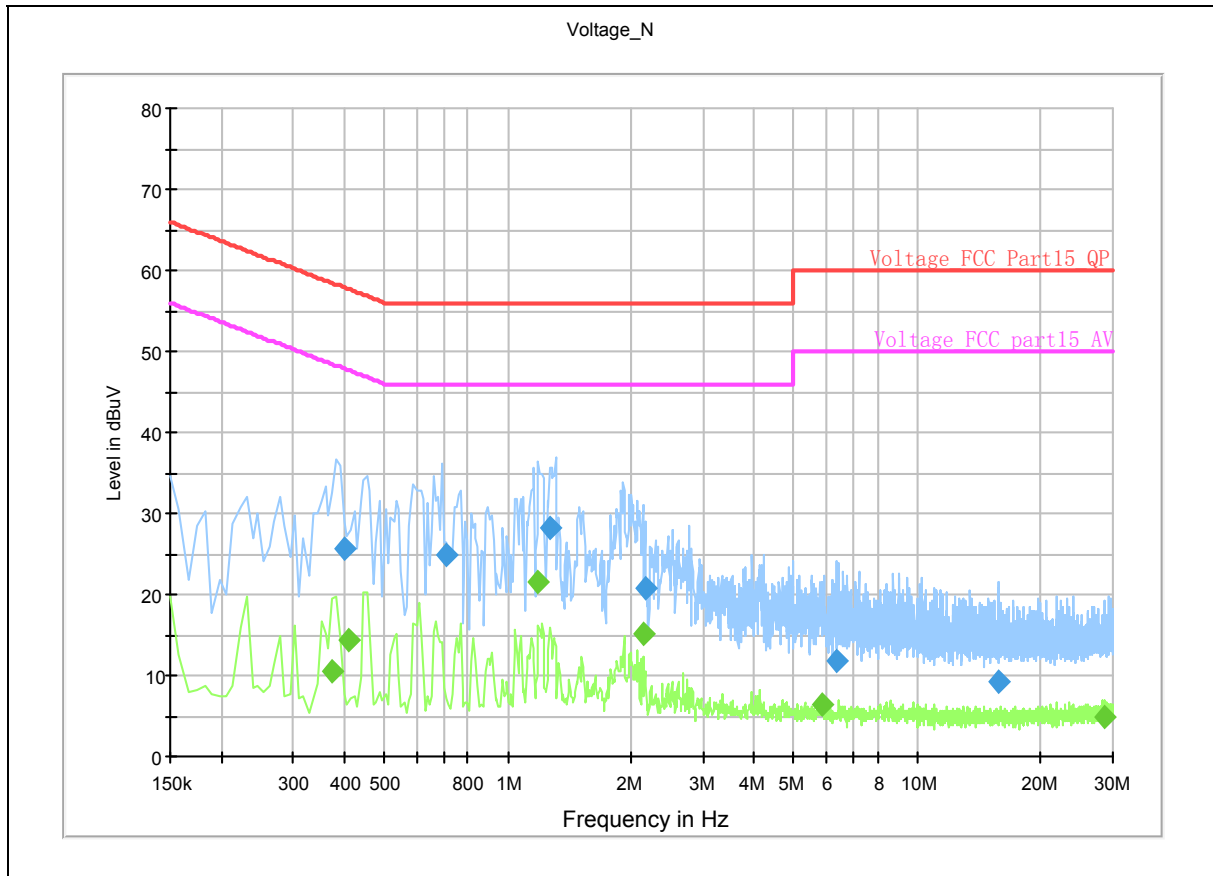
Conducted Emission from 150 KHz to 30 MHz

Channel No.:0

Frequency (MHz)	Detector	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)
0.297	Average	N	5.9	50.3	44.4
0.747	Average	N	6.8	46	39.2
1.251	Average	N	6.3	46	39.7
5.935	Average	N	5.9	50	44.1
6.025	Average	L	6.3	50	43.7
0.225	Quasi-peak	L	24.8	62.6	37.8
0.349	Quasi-peak	N	22.4	59	36.6
2.157	Quasi-peak	N	21.6	56	34.4
5.987	Quasi-peak	L	14.1	60	45.9
6.061	Quasi-peak	N	12.1	60	47.9
13.555	Quasi-peak	N	9.7	60	50.3
29.217	Average	N	5.5	50	44.5



L Line



N Line

Conducted Emission from 150 KHz to 30 MHz

Channel No.:39

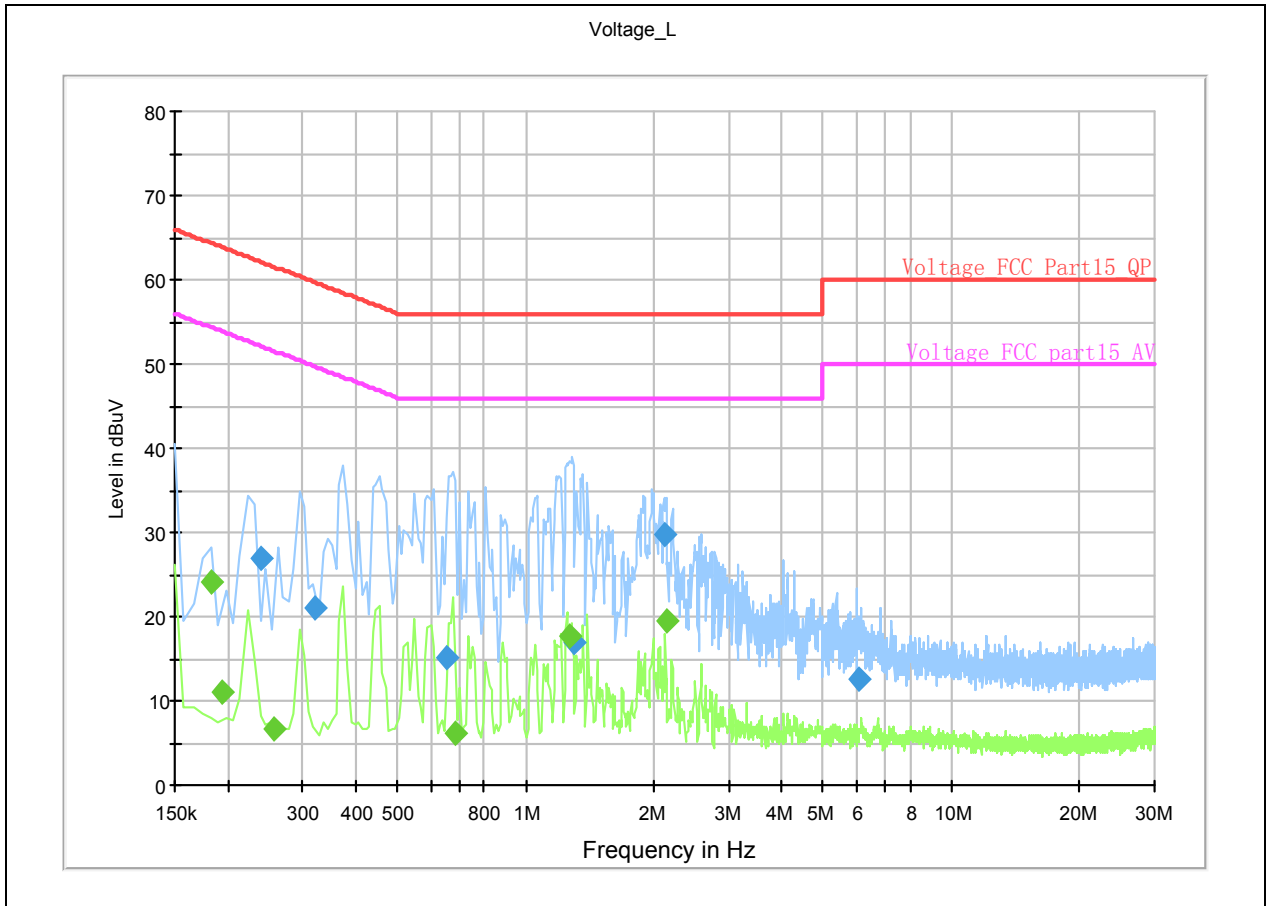
Frequency (MHz)	Detector	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)
0.16	Average	L	10.4	55.5	45.1
0.693	Average	L	6.2	46	39.8
2.143	Average	L	9.9	46	36.1
5.871	Average	N	6.5	50	43.5
7.257	Average	L	6.9	50	43.1
28.567	Average	N	4.8	50	45.2
0.401	Quasi-peak	N	25.7	57.8	32.1
0.707	Quasi-peak	N	24.8	56	31.2
2.163	Quasi-peak	N	20.7	56	35.3
6.333	Quasi-peak	N	11.7	60	48.3
7.151	Quasi-peak	L	12.9	60	47.1
15.831	Quasi-peak	N	9.3	60	50.7

TA Technology (Shanghai) Co., Ltd.
Test Report

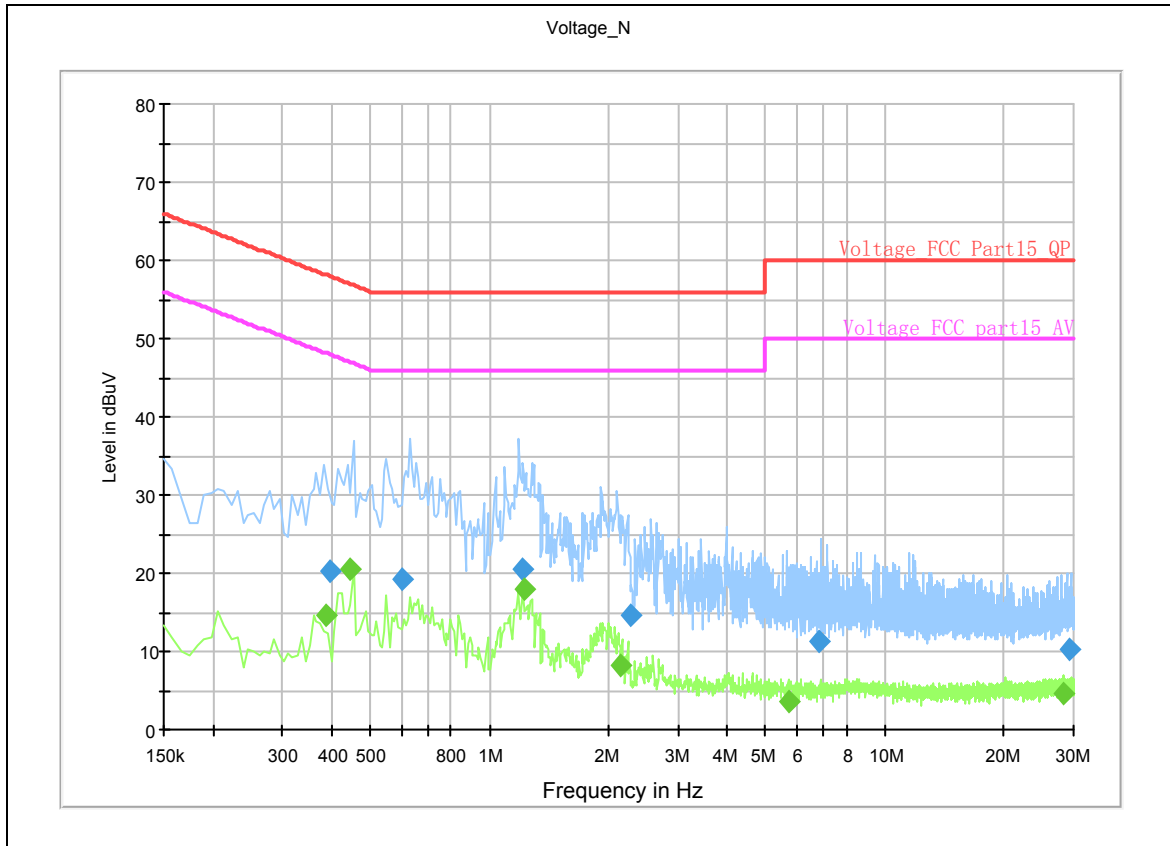
Registration Num:428261

Report No.: RZA2010-0701_15C

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L Line



N Line

Conducted Emission from 150 KHz to 30 MHz

Channel No.:78

Frequency (MHz)	Detector	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)
0.195	Average	L	11	53.8	42.8
0.257	Average	L	6.6	51.5	44.9
0.687	Average	L	6.1	46	39.9
2.139	Average	N	8.3	46	37.7
5.729	Average	N	3.6	50	46.4
28.135	Average	N	4.7	50	45.3
0.653	Quasi-peak	L	15.1	56	40.9
1.293	Quasi-peak	L	17	56	39
2.277	Quasi-peak	N	14.5	56	41.5
6.035	Quasi-peak	L	12.5	60	47.5
6.837	Quasi-peak	N	11.4	60	48.6
29.451	Quasi-peak	N	10.3	60	49.7

3. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	BT Base Station Simulator	CBT	R&S	100271	2009-11-26	One year
02	Signal Analyzer	FSV	R&S	100815	2009-06-29	One year
03	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

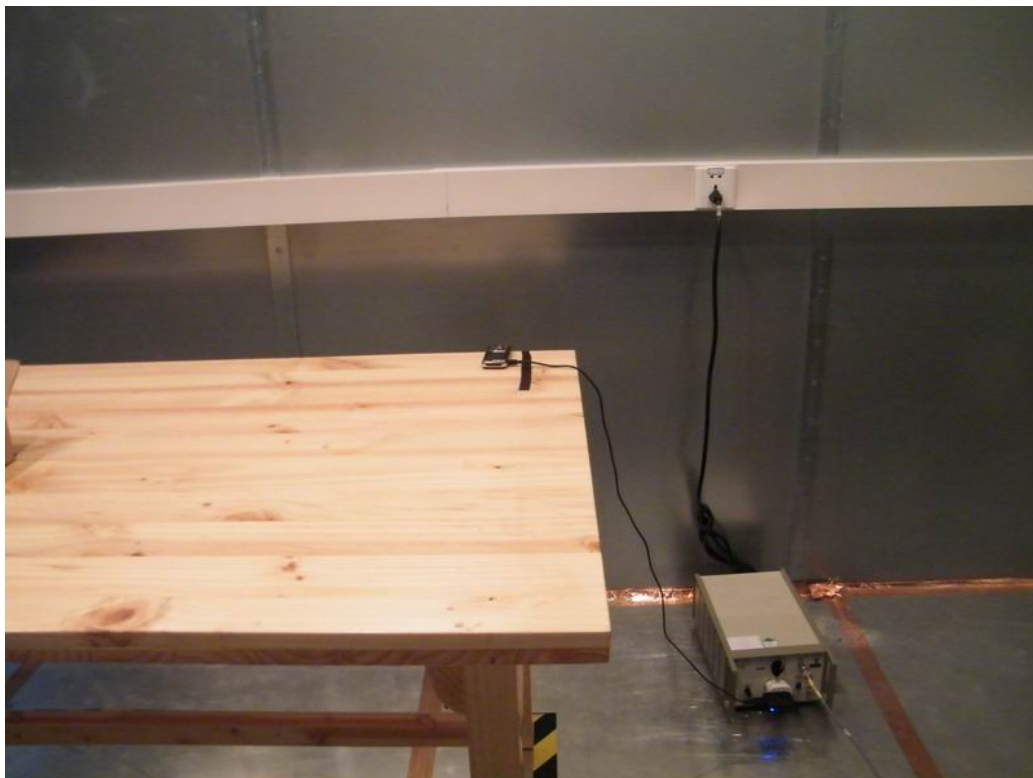


Picture 1 EUT

A.2 Test Setup



Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup