



198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology  
Development District, Guangzhou, China 510663  
Tel: +86 20 82155555 Fax: +86 20 82075059  
Email: [sgs\\_internet\\_operations@sgs.com](mailto:sgs_internet_operations@sgs.com)  
**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 282399


Report No.: GZEM110800312101  
Page: 1 of 77  
FCC ID: TZI-WF1015

# TEST REPORT

Application No.:	GZEM1108003121AV
Applicant:	Arts Electronics Co., Ltd.
FCC ID:	TZI-WF1015
Product Name:	Internet radio with FM and alarm clock
Product Description:	Internet radio with 2.4 GHz as carrier
Model No.:	MS-INT2275
Trade Mark:	MetroSonix
Standards:	FCC PART 15 Subpart C: 2010 section 15.247
Date of Receipt:	2011-08-22
Date of Test:	2011-08-22 to 2011-09-01
Date of Issue:	2011-09-09
Test Result :	<b>Pass*</b>

\* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 3 of this report for further detail.

Authorized Signature:

  
2011 Sep.

**Strong Yao**  
Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2011-09-09		Original

Authorized for issue by:			
Tested By			2011-08-22 to 2011-09-01 Date
Prepared By			2011-09-09 Date
Checked By			2011-09-09 Date



### 3 Test Summary

Test	Test Requirement	Test method	Result
Antenna Requirement	FCC PART 15 C section 15.247 (c) and Section 15.203	FCC PART 15 C section 15.247 (c) and Section 15.203	PASS
6 dB Bandwidth	FCC PART 15 C section 15.247 (a)(2)	ANSI C63.10: Clause 6.9 and KDB558074	PASS
Maximum Peak Output Power	FCC PART 15 C section 15.247(b)(3)	ANSI C63.10: Clause 6.10 and KDB558074 (Power Output Option 2-Method #1).	PASS
Peak Power Spectral Density	FCC PART 15 C section 15.247(e)	ANSI C63.10: Clause 6.11 and KDB558074 (PSD Option 1).	PASS
Conducted Spurious Emission (30MHz to 25GHz)	FCC PART 15 C section 15.209 &15.247(d)	ANSI C63.10: Clause 6.7 and KDB558074.	PASS
Radiated Spurious Emission 30 MHz to 25 GHz)	FCC PART 15 C section 15.209 &15.247(d)	ANSI C63.10: Clause 6.4, 6.5 and 6.6 & KDB558074	PASS
Band Edges Measurement	FCC PART 15 C section 15.247 (d) &15.205	ANSI C63.10: Clause 6.9 & KDB558074.	PASS
Conducted Emissions at Mains Terminals	FCC PART 15 C section 15.207	ANSI C63.10: Clause 6.2 & KDB558074.	PASS

**Remark:**

N/A: not applicable. Refer to the relative section for the details.

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

ANSI C63.10: the detail version is ANSI C63.10:2009 in the whole report.

KDB558074: "DTS test procedure of March 2005 "



## 4 Contents

1	COVER PAGE .....	1
2	VERSION.....	2
3	TEST SUMMARY .....	3
4	CONTENTS.....	4
5	GENERAL INFORMATION .....	5
5.1	Client Information .....	5
5.2	General Description of E.U.T. ....	5
5.3	Details of E.U.T. ....	5
5.4	Description of Support Units .....	6
5.5	Deviation from Standards .....	6
5.6	Abnormalities from Standard Conditions .....	6
5.7	Other Information Requested by the Customer .....	6
5.8	Test Location .....	6
5.9	Test Facility .....	7
6	EQUIPMENT USED DURING TEST .....	8
7	TEST RESULTS .....	10
7.1	E.U.T. test conditions.....	10
7.2	Antenna Requirement .....	12
7.3	6 dB Bandwidth.....	13
7.4	Maximum Peak Output Power.....	18
7.5	Peak Power Spectral Density .....	25
7.5	Conducted Spurious Emissions .....	31
7.6	Radiated Spurious Emissions .....	41
7.7	Band Edges Requirement .....	70
7.8	Conducted Emissions at Mains Terminals 150 kHz to 30MHz.....	74



## 5 General Information

### 5.1 Client Information

Applicant: Arts Electronics Co., Ltd.  
Address of Applicant: NO. 1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

### 5.2 General Description of E.U.T.

Product Name: Internet radio with FM and alarm clock  
Model No.: MS-INT2275  
Trade Mark: MetroSonix

### 5.3 Details of E.U.T.

Operating Frequency: 2412-2462MHz  
Type of Modulation: 802.11b: DSSS(CCK/QPSK/BPSK)  
802.11g: OFDM(BPSK/QPSK/16QAM/64QAM)  
Transmit Data Rate: 802.11b :1M/2M/5.5M/11M bps  
802.11g :6M/9M/12M/18M/24M/36M/48M/54M bps  
Number of Channels: 11 Channels  
Channel Separation: 5 MHz  
Antenna Type: External WIFI antenna  
Antenna gain: 2.5dBi  
Function: Internet radio with 2.4 GHz as carrier  
Power Supply: AC 100-240V 50/60Hz 0.7A  
Adaptor: Model:AS190-120-BA150  
Input: AC 100-240V 50/60Hz 0.7A  
Output: DC 12.0V 1.5A  
Power cord: 1.7 m x 2 wires unshielded DC cable



#### **5.4 Description of Support Units**

The EUT has been tested as an independent unit for fixed frequency by testing lab.

#### **5.5 Deviation from Standards**

Biconical and log periodic antennas were used instead of dipole antennas.

#### **5.6 Abnormalities from Standard Conditions**

None.

#### **5.7 Other Information Requested by the Customer**

None.

#### **5.8 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,  
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



## 5.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.
- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.
- **FCC (Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.
- **Industry Canada (Registration No.: 4620B-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.
- **VCCI (Registration No.: R-2460 and C-2584)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460 and C-2584 respectively.
- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IEC 61010-1:2006-10 and Rules of procedure IEC 61010-2:2006-10, and the relevant IEC 61010-2:2006-10 and the relevant IEC 61010-2:2006-10 Scheme Operational documents.



## 6 Equipment Used during Test

RE in Chamber						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date	Calibratio n Interval
					(YYYY-MM-DD)	
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2012-09-06	2Y
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2012-01-17	1Y
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	10036	2012-06-01	1Y
EMC0514	Coaxial cable	SGS	N/A	N/A	2011-12-08	1Y
EMC2025	Trilog Broadband Antenna 30-3000MHz	SCHWARZBECK MESS-ELEKTRONIK	VULB 9163	9163-450	2011-10-28	1Y
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2011-12-20	1Y
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2011-12-20	1Y
EMC2026	Horn Antenna 1-18GHz	R&S	BBHA 9120D	9120D-841	2011-10-28	1Y
EMC0518	Horn Antenna	Rohde & Schwarz	HF906	100096	2012-08-29	1Y
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2012-01-17	1Y
EMC0049	Amplifier	Agilent	8447D	2944A10862	2012-04-21	1Y
EMC0075	310N Amplifier	Sonoma	310N	272683	2011-10-25	1Y
EMC0523	Active Loop Antenna	EMCO	6502	42963	2011-11-17	1Y
EMC2041	Broad-Band Horn Antenna(14)15-26.5(40)GHz	SCHWARZBECK MESS-ELEKTRONI	BBHA 9170	9170-375	2012-06-01	1Y
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	2012-05-10	2Y

Conducted Emission						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date	Calibratio n Interval
					(YYYY-MM-DD)	
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m <sup>3</sup>	N/A	N/A	N/A
EMC0118	Two-line v-netwok	R&S	ENV216	100359	2012-08-29	1Y
EMC0102	LISN	SCHAFFNER CHASE	MN2050D/1	1421	2011-11-23	1Y
EMC2046	Artificial Mains Network (LISN)	AFJ Instruments	LT32C	S.N.32031120150	2012-05-18	1Y
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	2011-11-24	1Y
EMC0107	Coaxial Cable	SGS	2m	N/A	2012-07-18	1Y
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	1Y
EMC0120	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	20550	2012-01-17	1Y
EMC0121	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	20549	2012-01-17	1Y
EMC0122	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	20548	2012-01-17	1Y





# SGS-CSTC Standards Technical Services Co., Ltd.

Report No.: GZEM110800312101

Page: 9 of 77

FCC ID: TZI-WF1015

General used equipment						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date	Calibration Interval
					(YYYY-MM-DD)	
EMC0006	DMM	Fluke	73	70681569	2011-12-16	1Y
EMC0007	DMM	Fluke	73	70671122	2011-12-16	1Y



## 7 Test Results

### 7.1 E.U.T. test conditions

**Test Voltage:** Input: AC 120V, 60 Hz

Output: DC 12V

**Temperature:** 20.0 -25.0 °C

**Humidity:** 38-50 % RH

**Atmospheric Pressure:** 1000 -1010 mbar

**Requirements:** **15.31(e):** For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

**15.32:** Power supplies and CPU boards used with personal computers and for which separate authorizations are required to be obtained shall be tested as follows: Testing shall be in accordance with the procedures specified in Section 15.31 of this part.

**Test frequencies and frequency range:** According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

According to the 15.33 (a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

**Number of fundamental frequencies to be tested in EUT transmit band**

Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
1 MHz or less	1	Middle
1 MHz to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom



**Frequency range of radiated emission measurements**

<b>Lowest frequency generated in the device</b>	<b>Upper frequency range of measurement</b>
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz, whichever is lower
At or above 10 GHz to below 30 GHz	5th harmonic of highest fundamental frequency or to 100 GHz, whichever is lower
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz, whichever is lower, unless otherwise specified

EUT channels and frequencies list:

<b>Channel</b>	<b>Frequency (MHz)</b>
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

Test frequencies are the lowest channel: 1 channel(2412MHz), middle channel: 6 channel(2437 MHz) and highest channel: 11 channel(2462 MHz)



## 7.2 Antenna Requirement

### Standard requirement

15.203 requirement:

For intentional device. According to 15.203. 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.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz bands that are used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

### EUT Antenna

The antenna is an External WIFI antenna and no consideration of replacement. The best case gain of the antenna is 2.5dBi.

**Test result: The unit does meet the FCC requirements.**

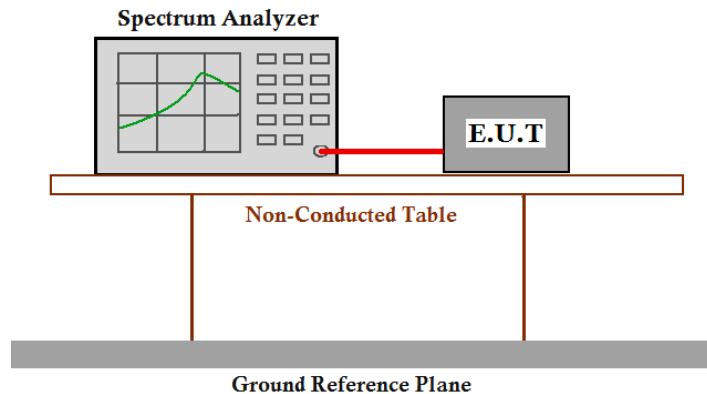
### 7.3 6 dB Bandwidth

Test Requirement: FCC Part 15 C section 15.247  
 (a)(2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Method: ANSI C63.10: Clause 6.9 and KDB558074

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attention attenuation RF cable (cable loss =2.0dB) from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW=100KHz. VBW = 300KHz, Sweep = auto; Detector Function = Peak. Trace = Max Hold, Set span to encompass the entire emission bandwidth of the signal.
3. Mark the peak power frequency and -6dB (upper and lower) power frequency.
4. Repeat until all the test status is investigated.
5. Report the worse case.



**SGS-CSTC Standards Technical Services Co., Ltd.**

Report No.: GZEM110800312101  
Page: 14 of 77  
FCC ID: TZI-WF1015

Channel No.	Frequency (MHz)	Mode	Data Rate	Measured 6dB bandwidth (MHz)	Limit	Result
1	2412	802.11b	11 Mbps	9.97996	≥500KHz	Pass
6	2437		11 Mbps	9.91984		Pass
11	2462		11 Mbps	9.97996		Pass
1	2412	802.11g	54 Mbps	16.73346	≥500KHz	Pass
6	2437		54 Mbps	16.73346		Pass
11	2462		54 Mbps	16.73346		Pass

**Test result: The unit does meet the FCC requirements.**

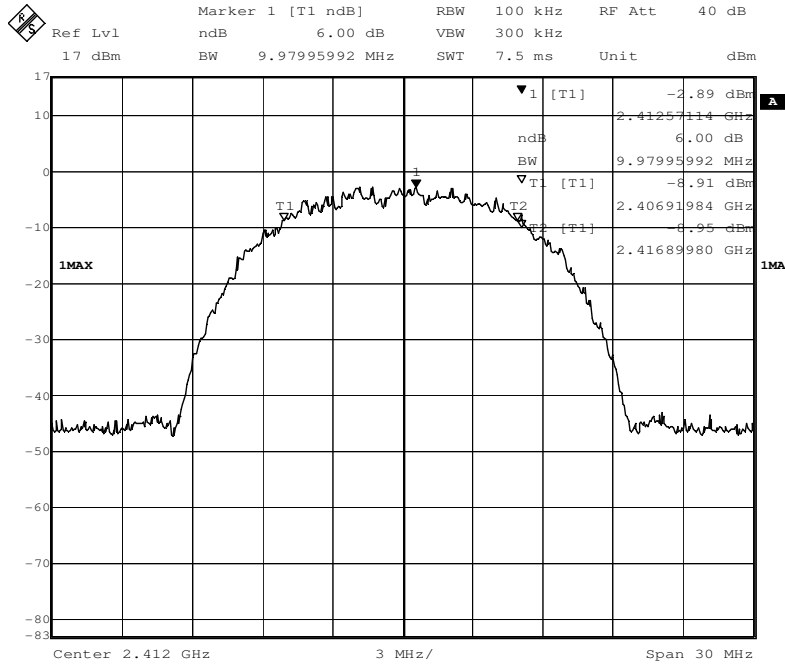


6dB bandwidth:

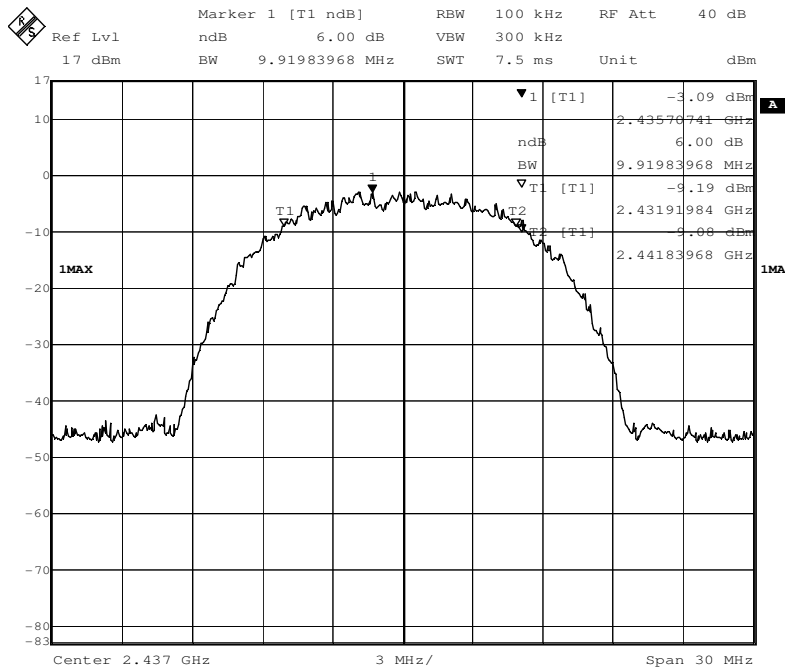
Result plot as follows:

802.11b mode with 11Mbps data rate

Channel 1:2.412GHz:

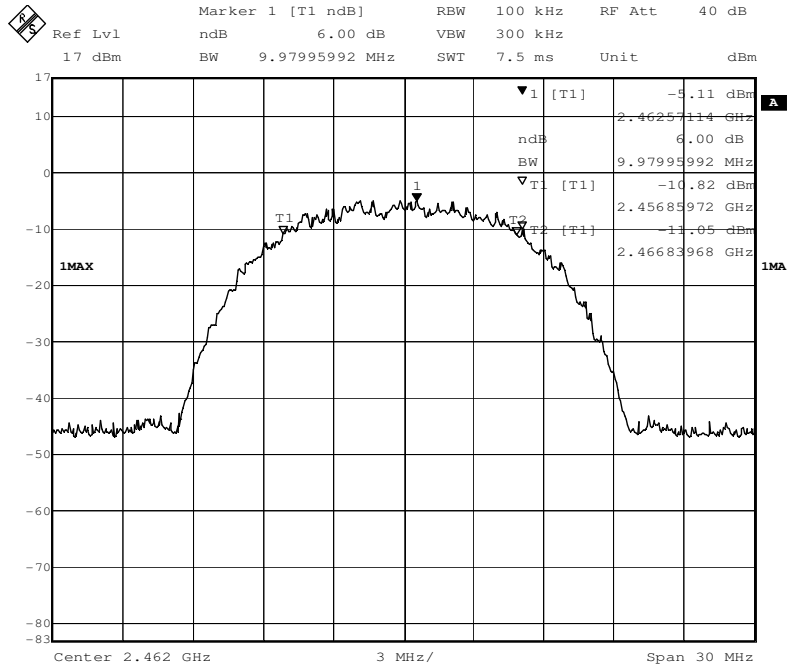


Channel 6:2.437GHz:



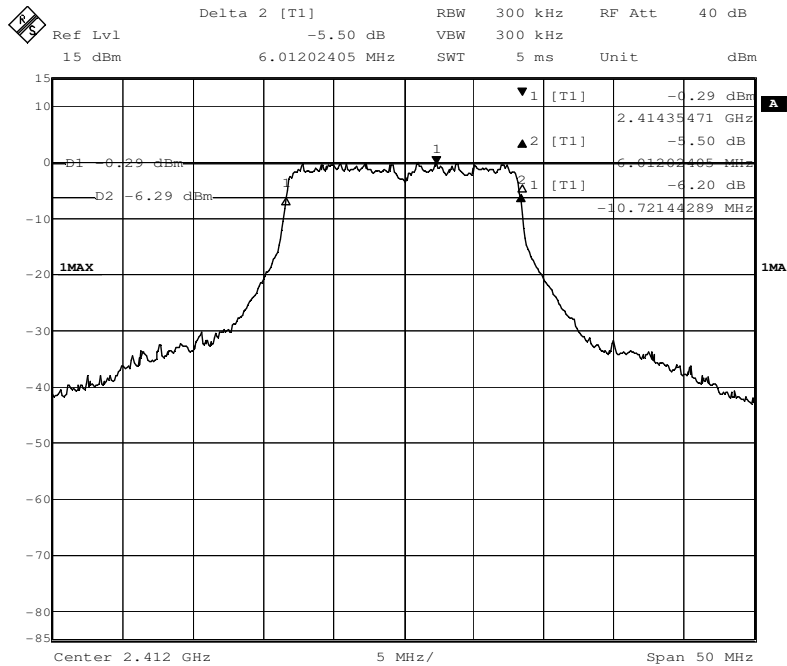


Channel 11:2.462GHz:



802.11g mode with 54Mbps data rate

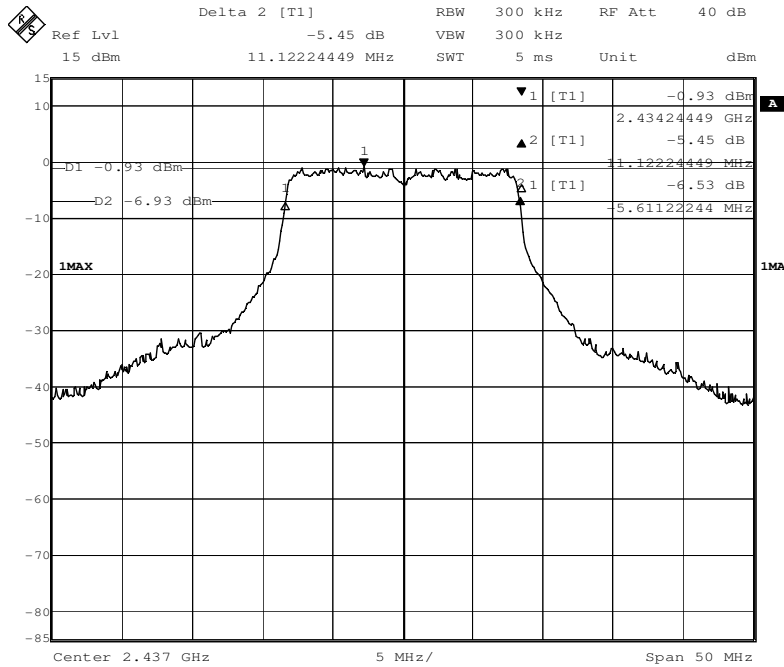
Channel 1:2.412GHz:



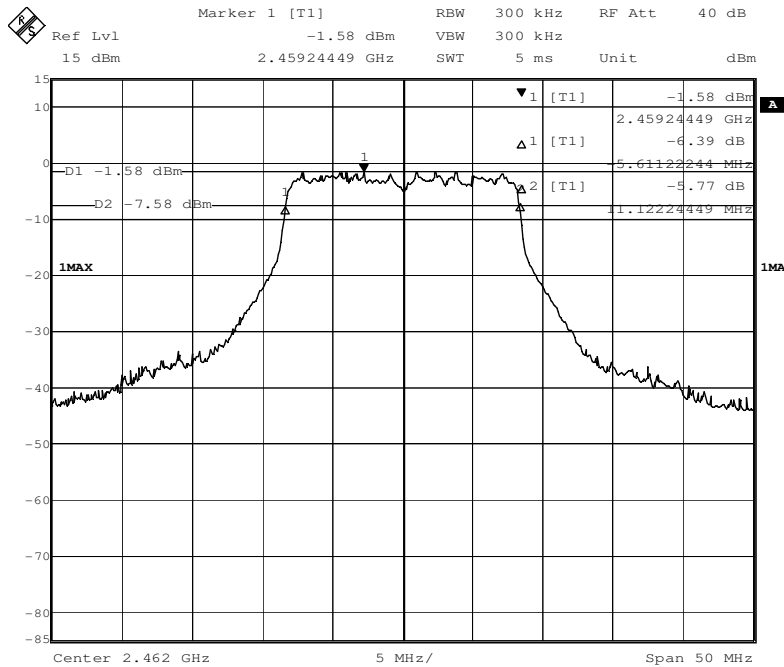




Channel 6:2.437GHz:



Channel 11:2.462GHz:



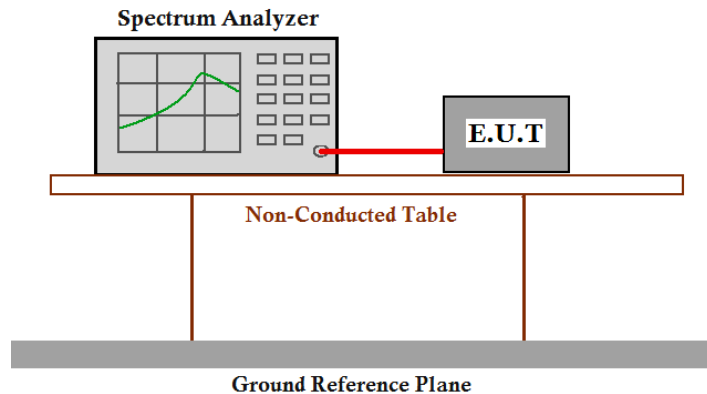
**7.4 Maximum Peak Output Power**

**Test Requirement:** FCC Part 15 C section 15.247  
 (b)(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.  
 Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b) (1), (b) (2), and (b) (3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Test Method:** ANSI C63.10: Clause 6.10 and KDB558074 (Power Output Option 2-Method #1).

**Test Status:** Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

**Test Configuration:**





Test Procedure:

1. Remove the antenna from the EUT and then connect a low attention attenuation RF cable (Cable loss =2.0dB) from the antenna port to the spectrum.
2. Set span to encompass the entire emission bandwidth (EBW) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW  $\geq$  3 MHz.
5. Use sample detector mode if bin width (i.e., span/number of points in spectrum display)  $<$  0.5 RBW. Otherwise use peak detector mode.
6. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep.  
If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to "free run".
7. Trace average 100 traces in power averaging mode.
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.
9. Measure the channel power of the test frequency with special test status.
10. Repeat until all the test status is investigated.
11. Report the worse case.



# SGS-CSTC Standards Technical Services Co., Ltd.

Report No.: GZEM110800312101

Page: 20 of 77

FCC ID: TZI-WF1015

## Test result:

Channel No.	Frequency (MHz)	Mode	Data Rate	Measured Channel Power (dBm)	Limit	Result
1	2412	802.11b	1 Mbps	14.40	1W(30dBm)	Pass
			2 Mbps	14.27		
			5.5 Mbps	15.13		
			11 Mbps	16.18		
6	2437		1 Mbps	13.32		
			2 Mbps	13.44		
			5.5 Mbps	14.31		
			11 Mbps	15.37		
11	2462		1 Mbps	11.92		
			2 Mbps	12.13		
			5.5 Mbps	12.96		
			11 Mbps	14.09		



**SGS-CSTC Standards Technical Services Co., Ltd.**

Report No.: GZEM110800312101

Page: 21 of 77

FCC ID: TZI-WF1015

1	2412	802.11g	6 Mbps	17.22	Pass
			9 Mbps	17.74	
			12 Mbps	17.26	
			18 Mbps	17.38	
			24 Mbps	17.53	
			36 Mbps	17.74	
			48 Mbps	17.65	
			54 Mbps	17.78	
6	2437		6 Mbps	16.59	
			9 Mbps	16.92	
			12 Mbps	16.41	
			18 Mbps	16.17	
			24 Mbps	16.74	
			36 Mbps	16.76	
			48 Mbps	16.71	
			54 Mbps	17.14	
11	2462		6 Mbps	16.00	
			9 Mbps	15.91	
			12 Mbps	15.72	
			18 Mbps	15.52	
			24 Mbps	16.02	
			36 Mbps	16.15	
			48 Mbps	16.07	
			54 Mbps	16.18	

**Remark: Level = Read Level + Cable Loss.**

Pre-test all possible combinations between available modulations, data rates; find the worst case on 802.11b mode with 11Mbps data rate and 802.11g mode with 54Mbps data rate

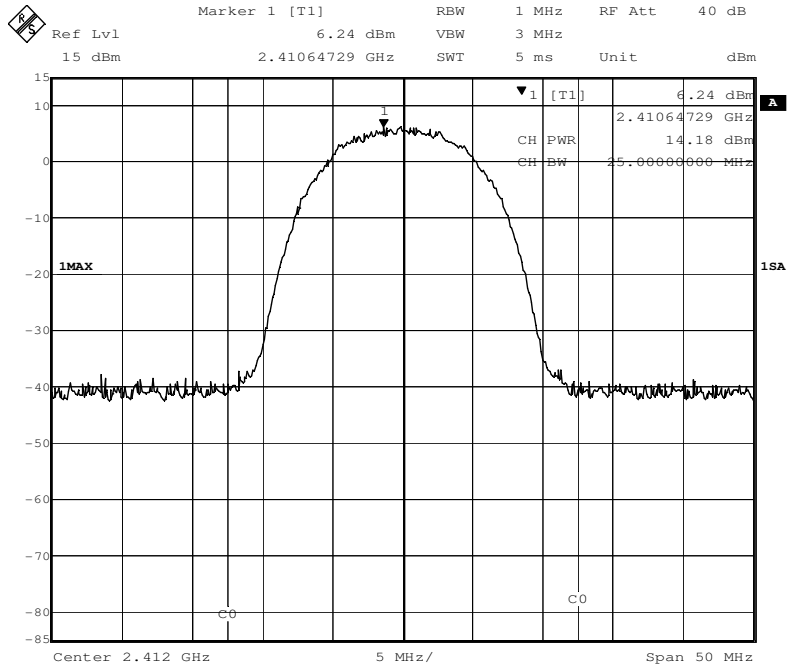
**The unit does meet the FCC requirements.**



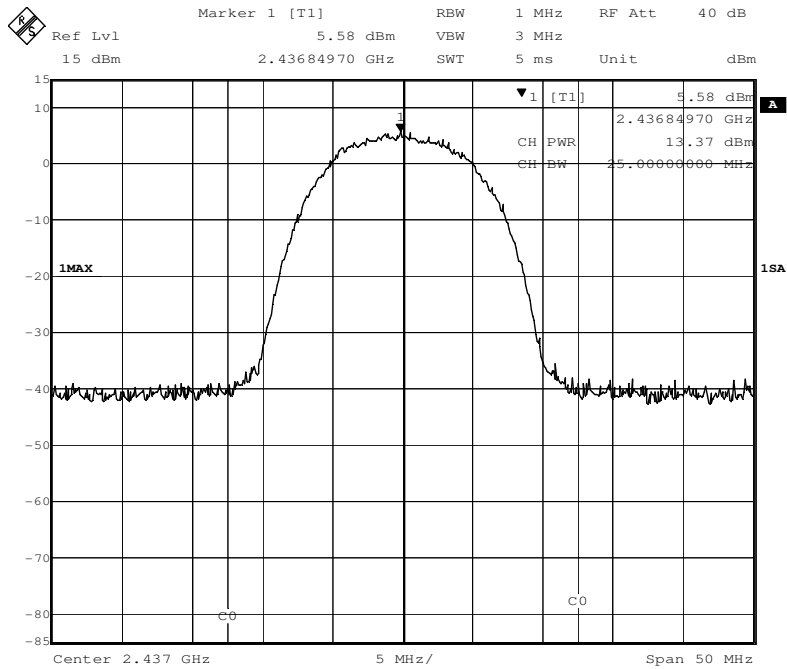
Result plot as follows:

802.11b mode with 11Mbps data rate

Channel 1:2.412GHz:

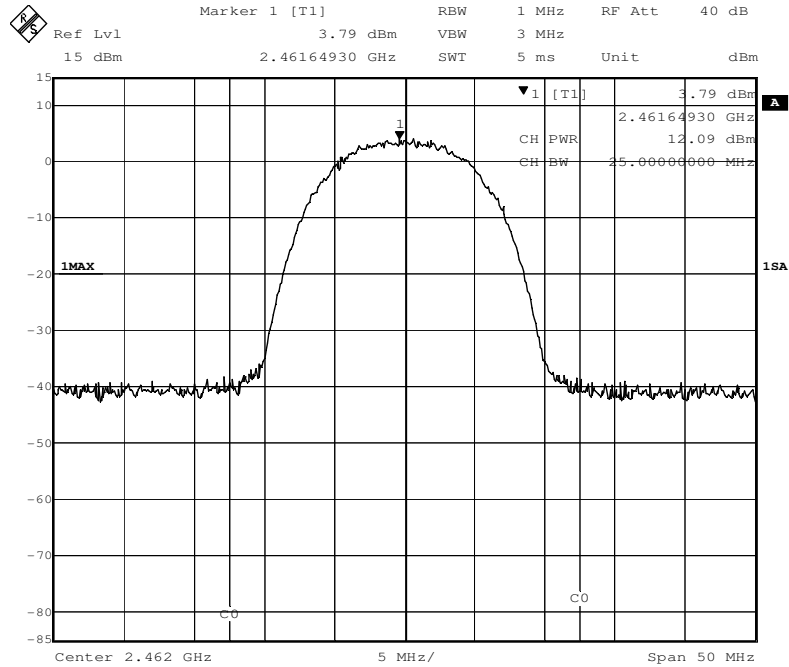


Channel 6:2.437GHz:



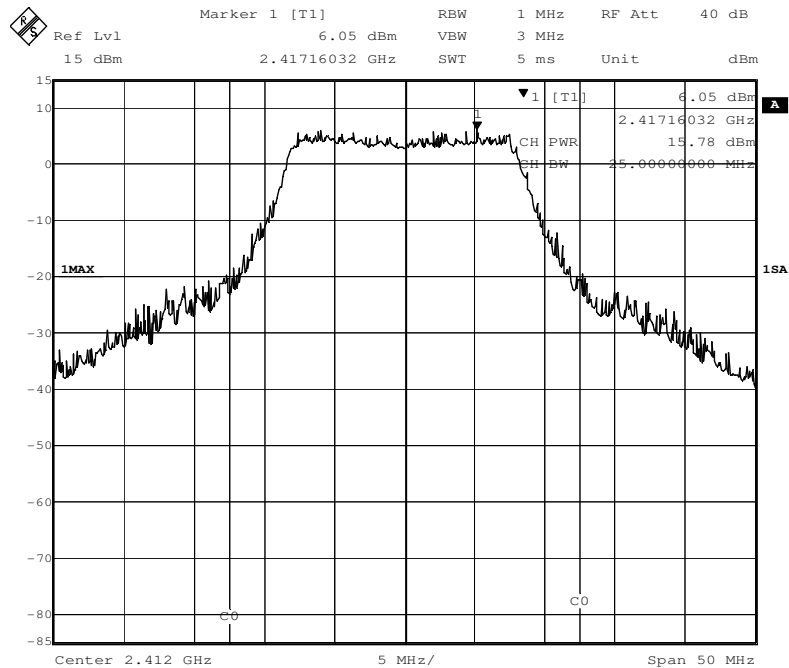


Channel 11:2.462GHz:



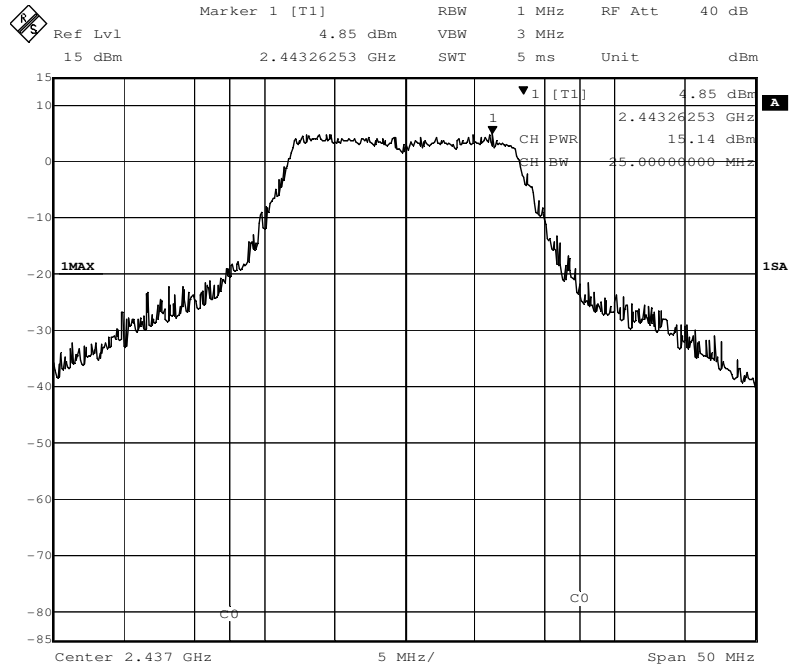
802.11g mode with 54Mbps data rate

Channel 1:2.412GHz:

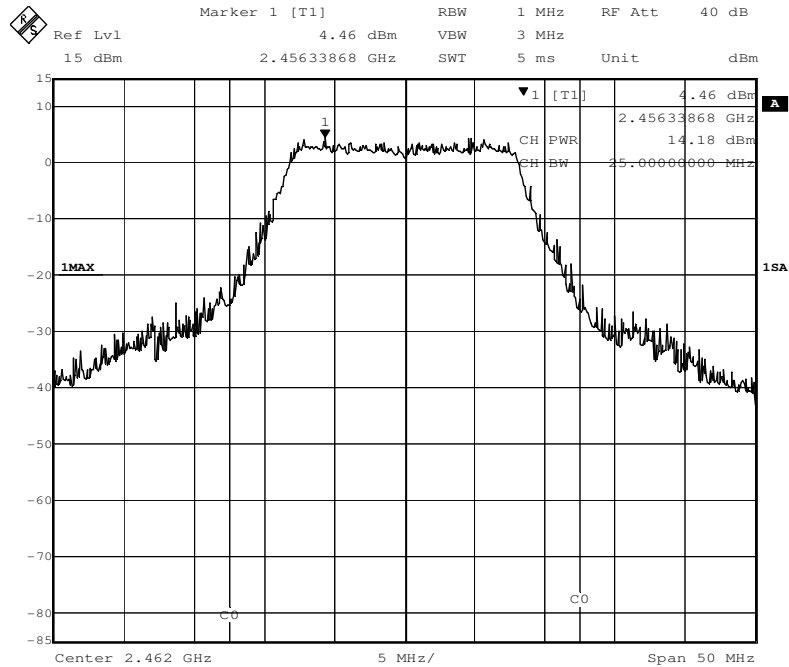




Channel 6:2.437GHz:



Channel 11:2.462GHz:





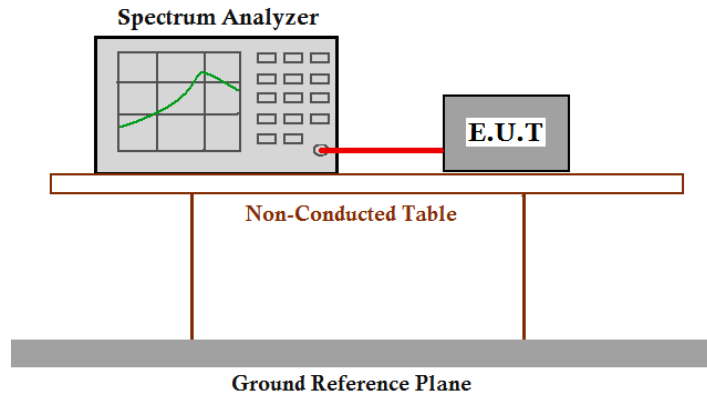
### 7.5 Peak Power Spectral Density

**Test Requirement:** FCC Part 15 C section 15.247  
 (e) 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.  
 This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

**Test Method:** ANSI C63.10: Clause 6.11 and KDB558074 (PSD Option 1).

**Test Status:** Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

**Test Configuration:**





Test Procedure:

1. Remove the antenna from the EUT and then connect a low attention attenuation RF cable (cable loss =2.0 dB) from the antenna port to the spectrum analyzer or power meter.
2. Set the spectrum analyzer:
  - a) Set CENTER FREQUENCY = Frequency from Power Spectral Density Test Matrix (see 6.10.2)
  - b) Set SPAN = 20 MHz (For devices with a nominal 40 MHz BW, 50 MHz span will be needed)
  - c) Set REFERENCE LEVEL = 20 dBm
  - d) Set ATTENUATION = 0 dB (add internal attenuation, if necessary)
  - e) Set SWEEP TIME = Coupled
  - f) Set RBW = 3 kHz
  - g) Set VBW = 10 kHz
  - h) Set DETECTOR = Peak
  - i) Set MKR = Center Frequency
  - j) Set TRACE = CLEAR WRITE

Place the radio in continuous transmit mode. Set the TRACE to MAX HOLD, and after the trace stabilizes, the TRACE to VIEW. Set the marker on the peak of the signal and then adjust the center frequency of the spectrum analyzer to the marker frequency.

After viewing the EUT waveform on the spectrum analyzer, perform the following spectrum analyzer functions to capture the trace:

Set SPAN = 300 kHz

Set SWEEP TIME = 100 s

Set TRACE = MAX HOLD

Set MKR = PEAK SEARCH

3. Measure the Power Spectral Density of the test frequency with special test status.
4. Repeat until all the test status is investigated.
5. Report the worse case.



**SGS-CSTC Standards Technical Services Co., Ltd.**

Report No.: GZEM110800312101  
Page: 27 of 77  
FCC ID: TZI-WF1015

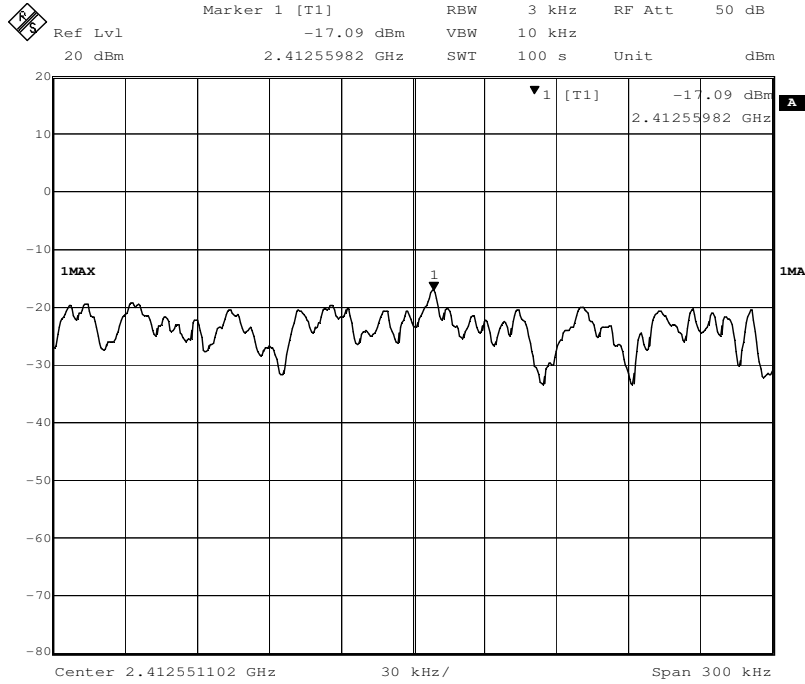
Channel No.	Frequency (MHz)	Mode	Data Rate	Measured Peak Power Spectral Density (dBm/3KHz)	Limit	Result
1	2412	802.11b	11 Mbps	-15.09	8dBm/3KHz	Pass
6	2437		11 Mbps	-15.34		Pass
11	2462		11 Mbps	-17.53		Pass
1	2412	802.11g	54 Mbps	-17.22		Pass
6	2437		54 Mbps	-17.17		Pass
11	2462		54 Mbps	-18.63		Pass

**Test result: Level = Read Level + Cable Loss.**

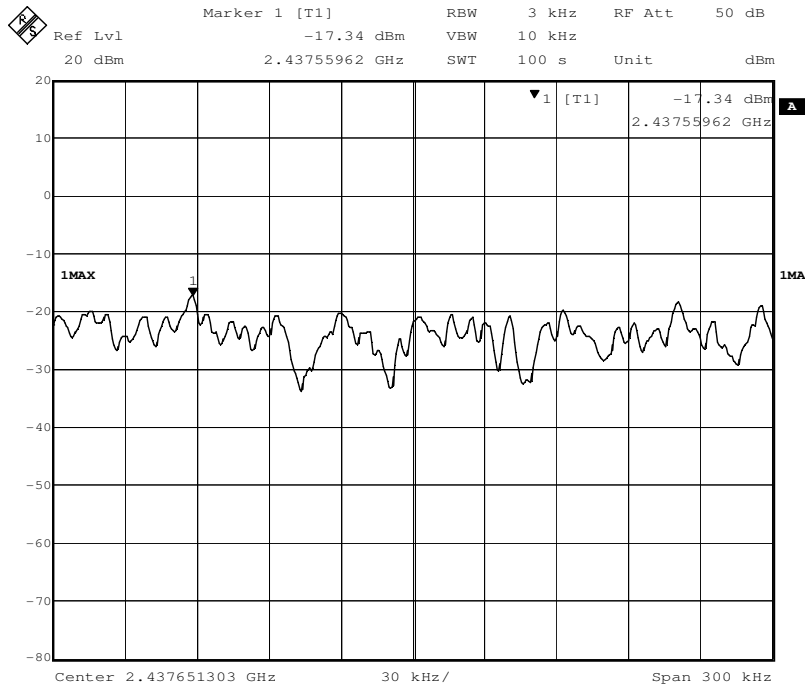
**The unit does meet the FCC requirements.**



Result plot as follows:  
802.11b mode with 11Mbps data rate  
Channel 1:2.412 GHz:

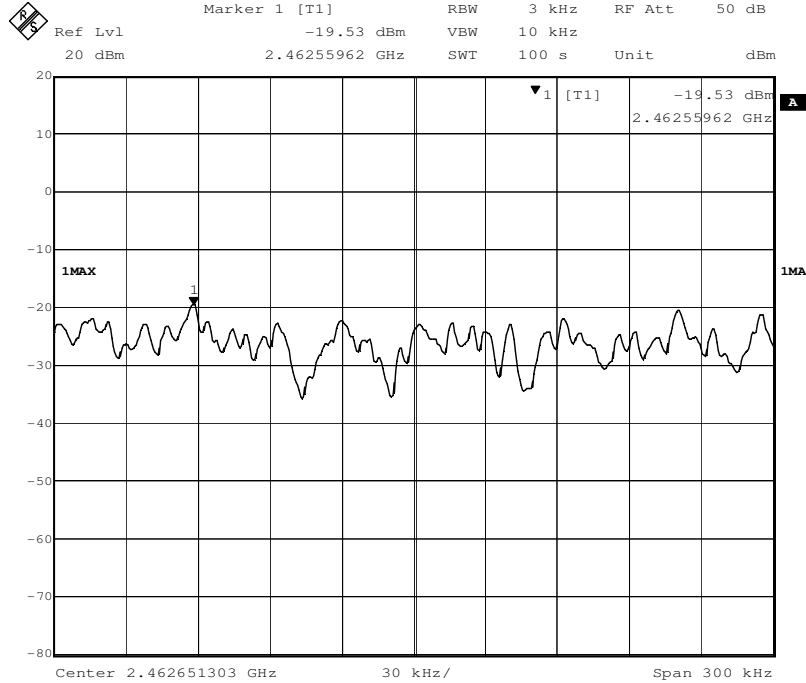


Channel 6:2.437 GHz:



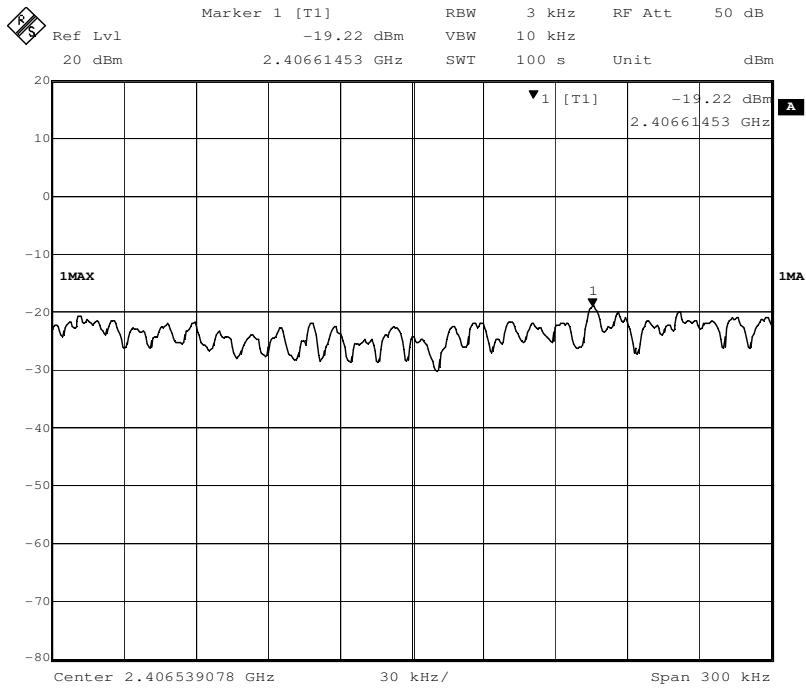


Channel 11:2.462 GHz:



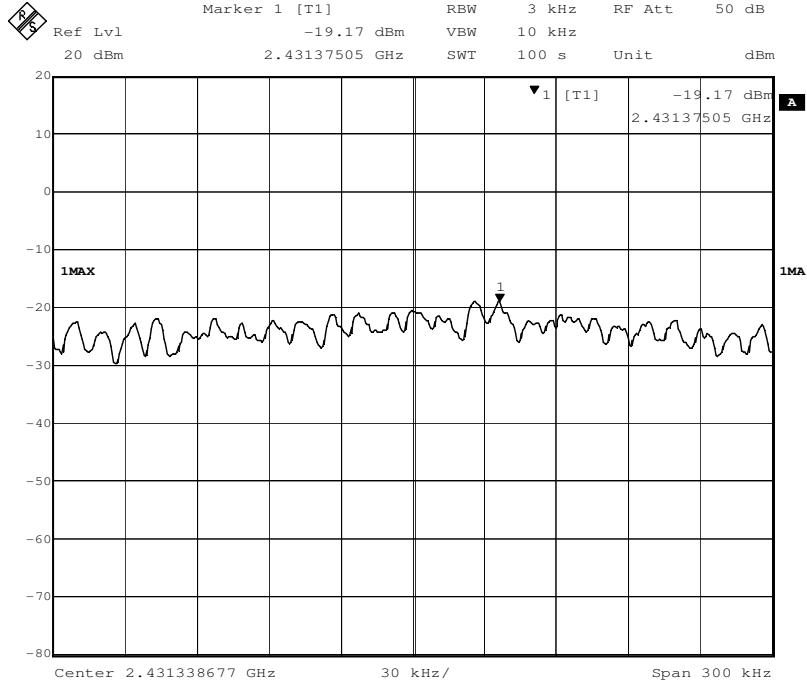
802.11g mode with 54Mbps data rate

Channel 1:2.412 GHz:

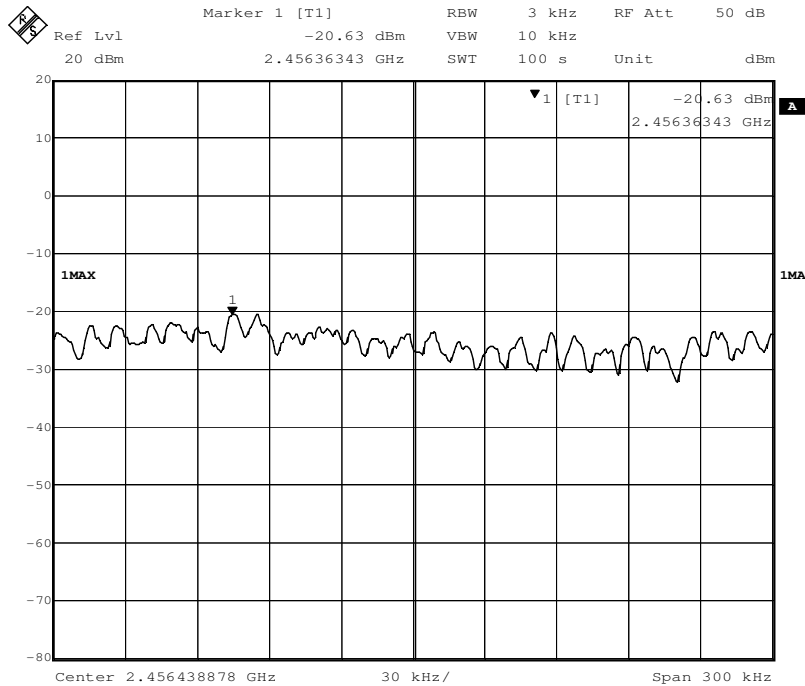




Channel 6:2.437 GHz:



Channel 11:2.462 GHz:



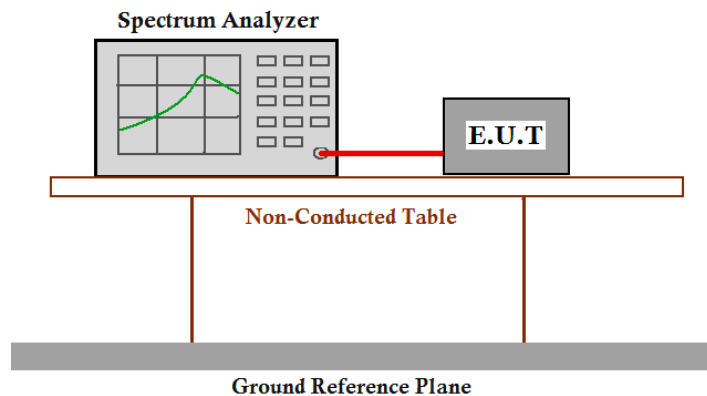
**7.5 Conducted Spurious Emissions**

Test Requirement: FCC Part 15 C section 15.247  
 (d) 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.

Test Method: ANSI C63.10: Clause 6.7 and KDB558074.

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

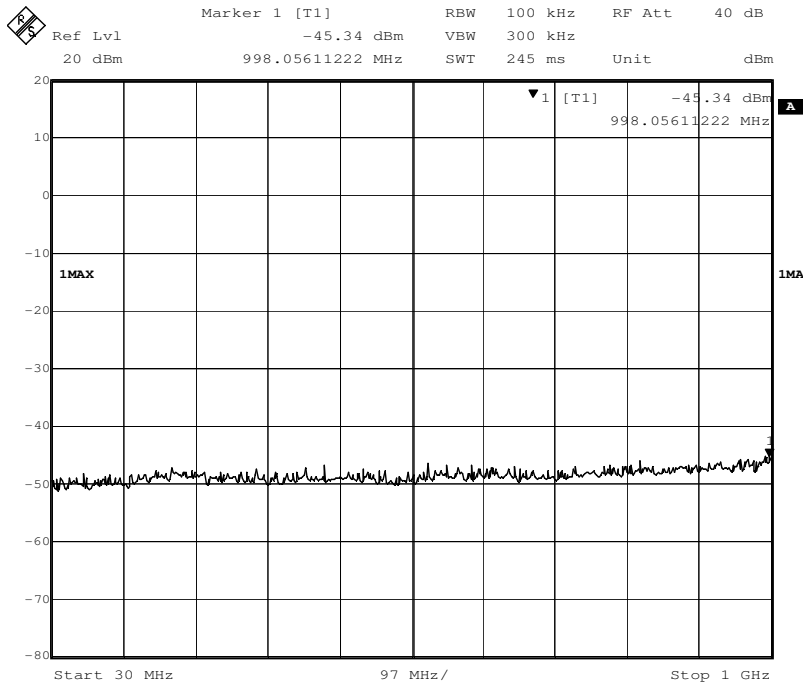
Test Configuration:



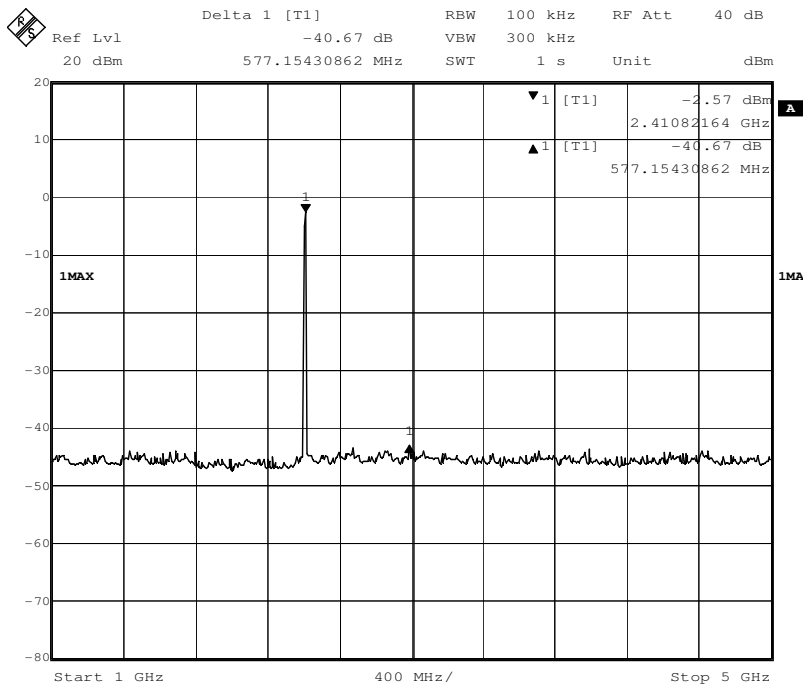
- Test Procedure:
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer or power meter.
  2. Set the spectrum analyzer: RBW=100 KHz, VBW = 300KHz. Sweep = auto; Detector Function = Peak. Trace = Max Hold, Scan up through 10th harmonic.
  3. Measure the Conducted Spurious Emissions of the test frequency with special test status.
  4. Repeat until all the test status is investigated.
  5. Report the worse case.



Result plot as follows:  
802.11b mode with 11Mbps data rate  
Channel 1: 2.412 GHz  
**30 MHz to 1 GHz**



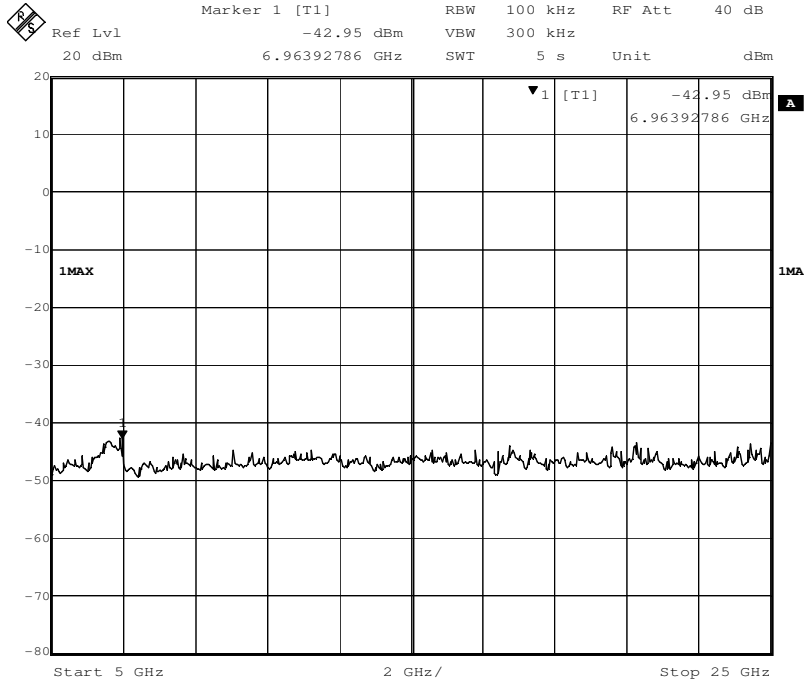
**1 G to 5 GHz**





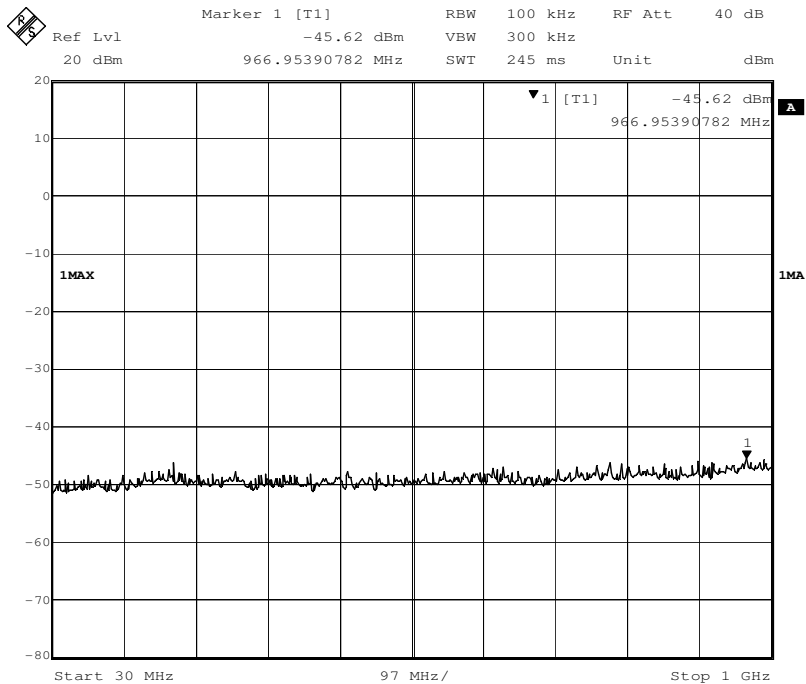


5 G to 25 GHz



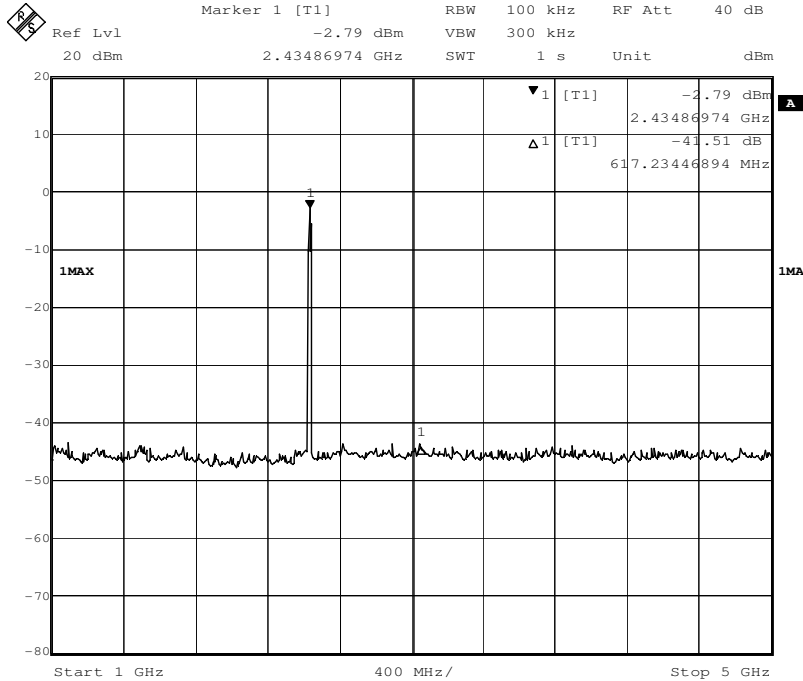
Channel 6:2.437 GHz

30 M to 1 GHz

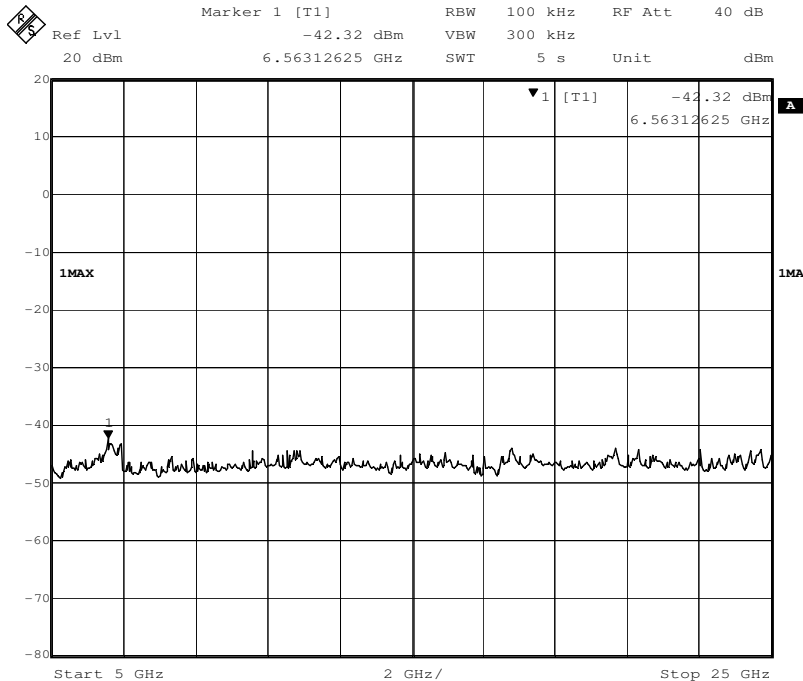




1 G to 5 GHz



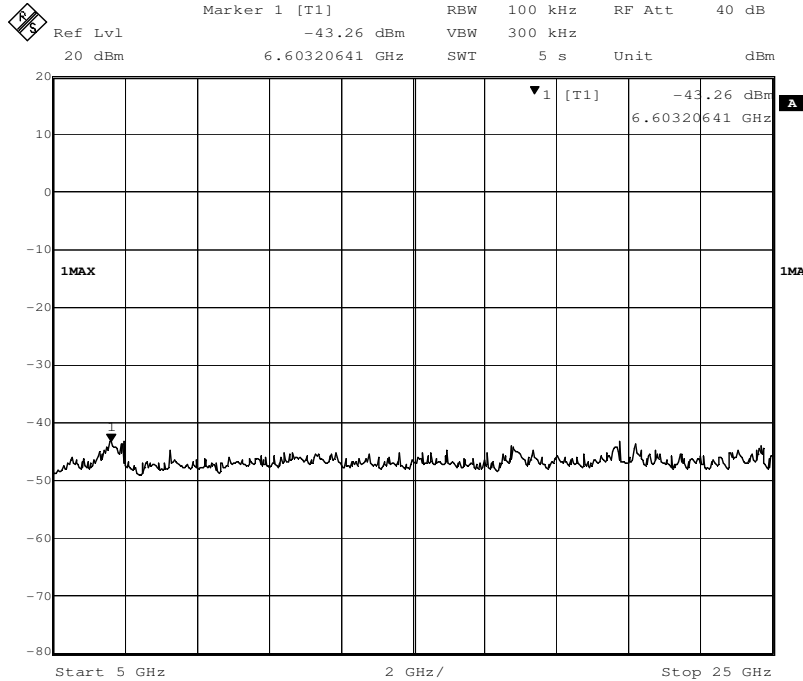
5 G to 25 GHz



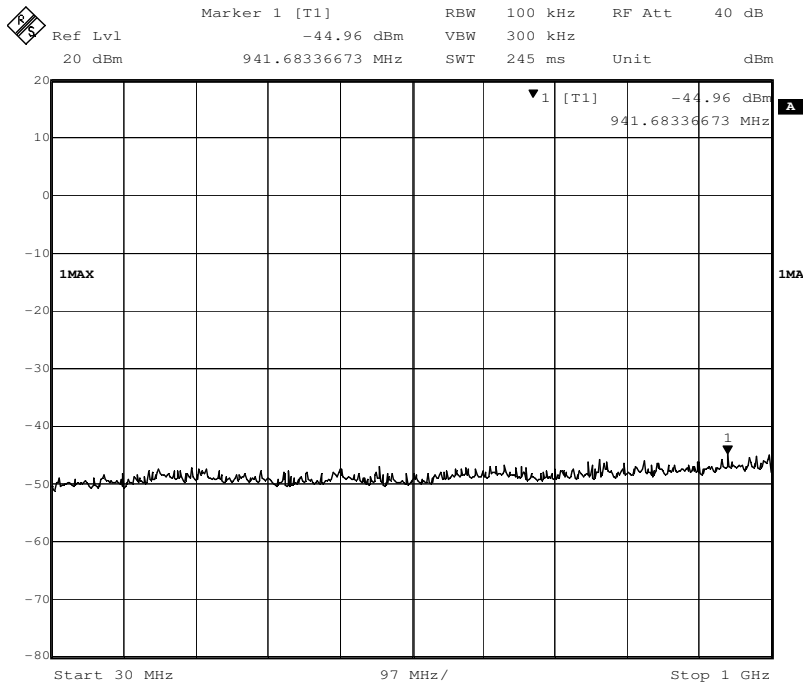




5 G to 25 GHz

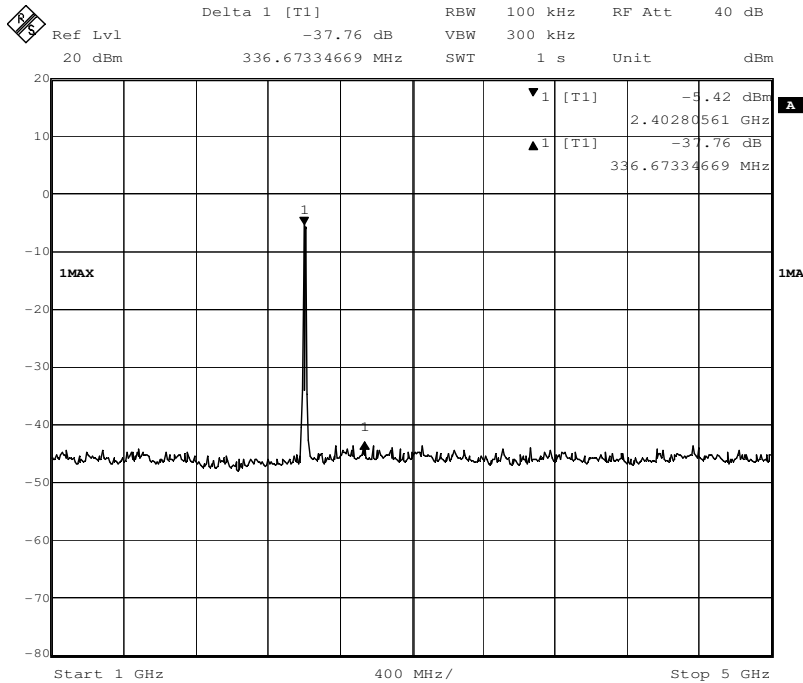


802.11g mode with 54Mbps data rate  
Channel 1: 2.412 GHz  
30 M to 1 GHz

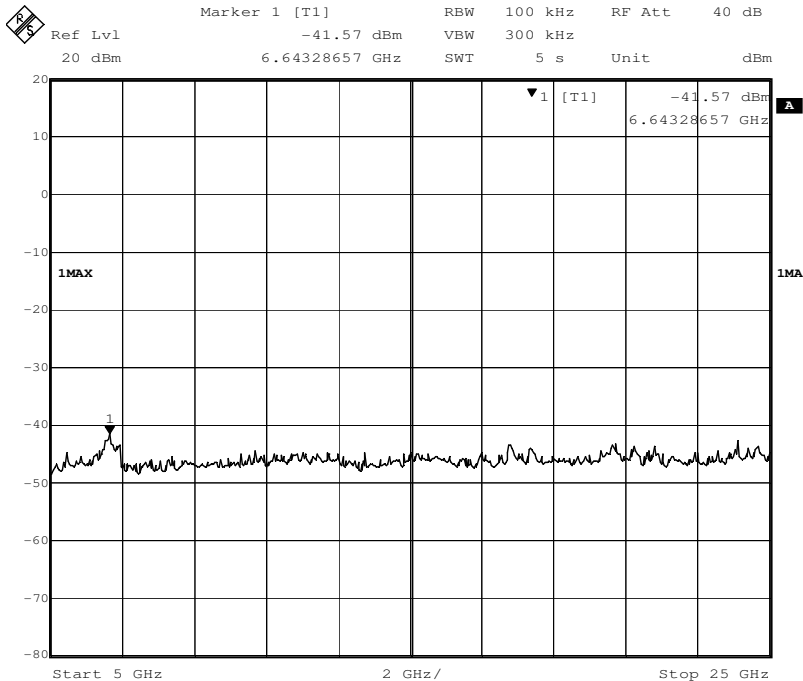




1 G to 5 GHz



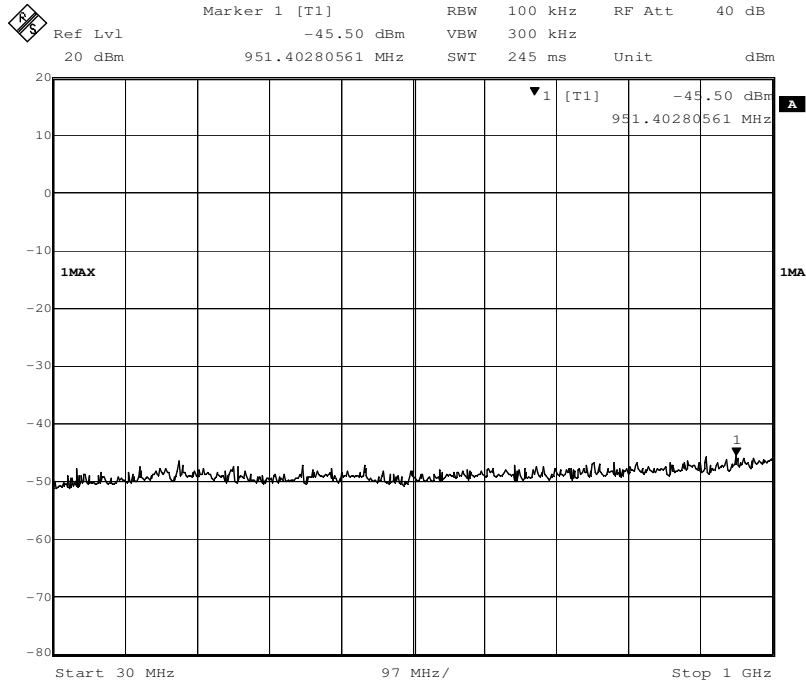
5 G to 25 GHz



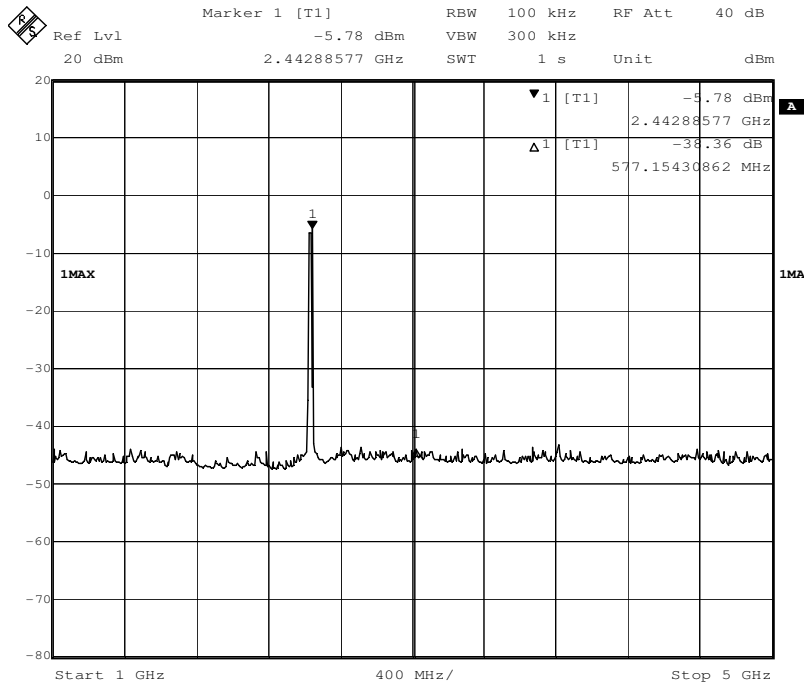


Channel 6: 2.437 GHz

30 M to 1 GHz

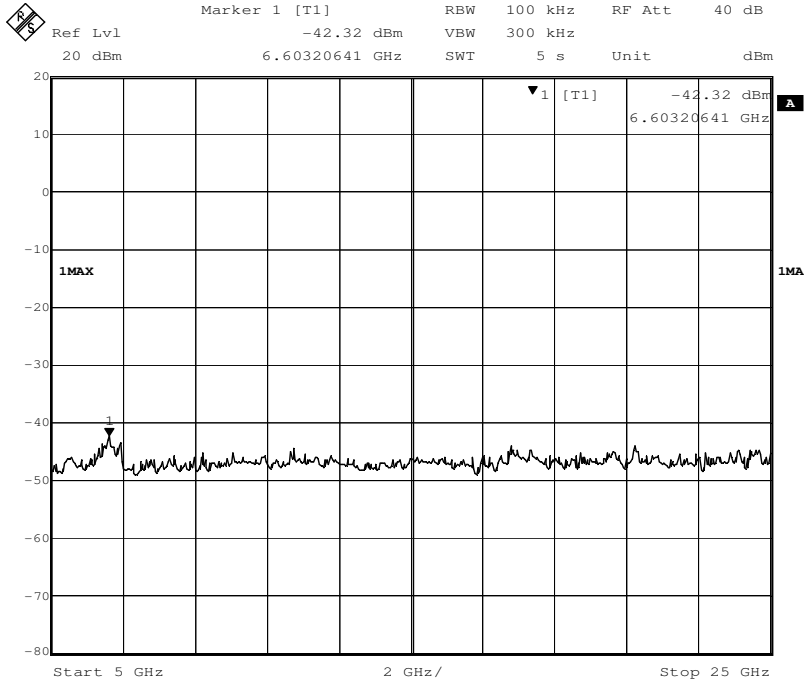


1 G to 5 GHz



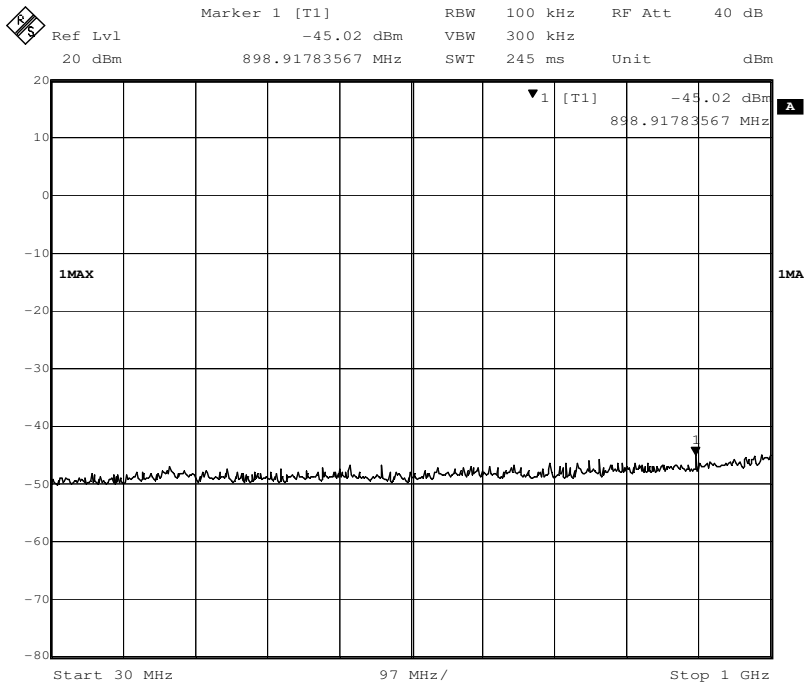


5 G to 25 GHz



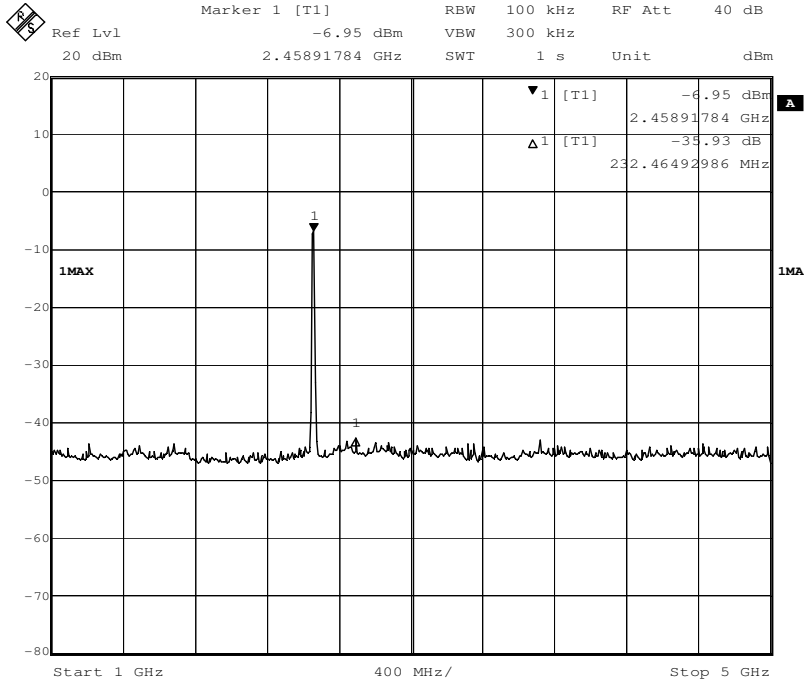
Channel 11: 2.462 GHz

30 M to 1 GHz

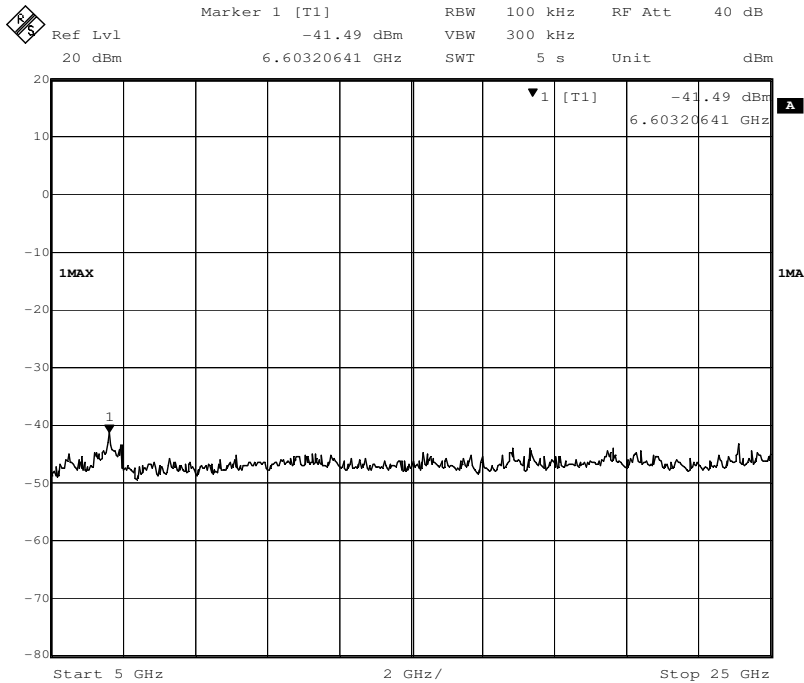




1 G to 5 GHz



5 G to 25 GHz





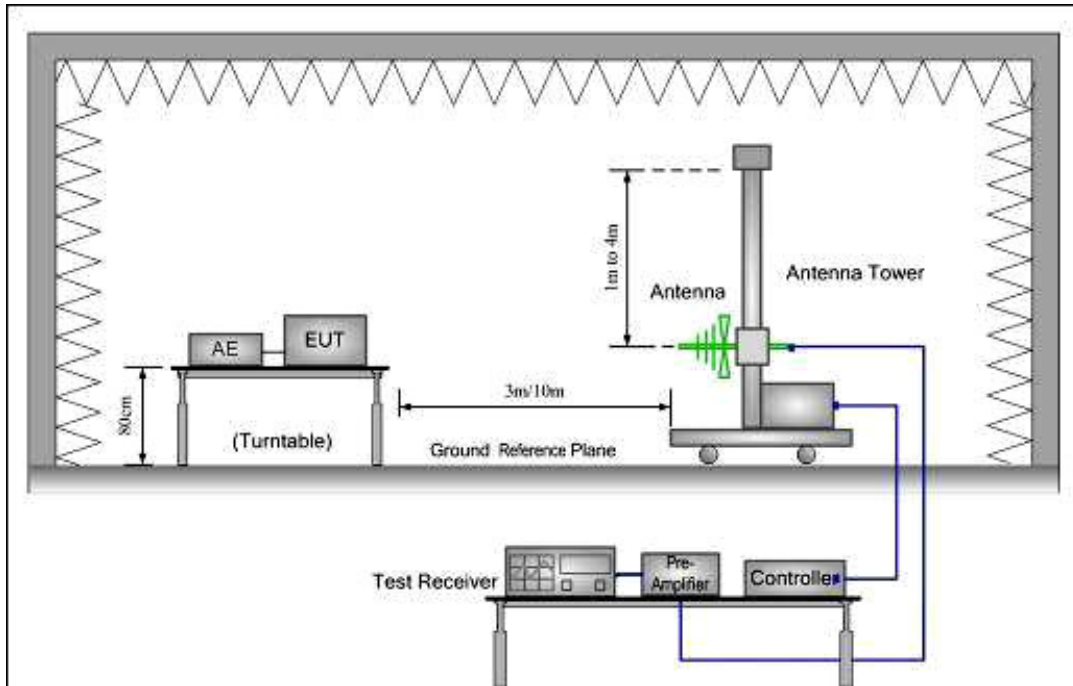


## 7.6 Radiated Spurious Emissions

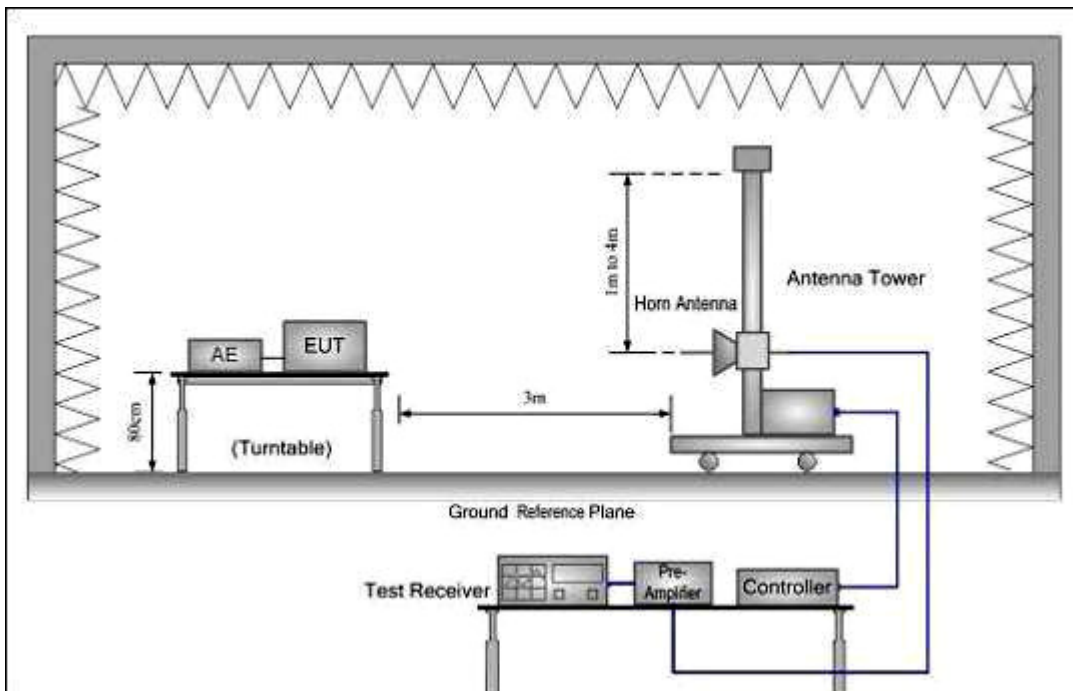
Test Requirement:	FCC Part 15 C section 15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. The radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 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, and provided the transmitter demonstrates compliance with the peak conducted power limits.
Test Method:	ANSI C63.10: Clause 6.4, 6.5 and 6.6 & KDB558074
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Detector:	For PK value: RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz VBW $\geq$ RBW Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz VBW = 10Hz Sweep = auto Detector function = peak Trace = max hold
15.209 Limit:	40.0 dB $\mu$ V/m between 30MHz & 88MHz 43.5 dB $\mu$ V/m between 88MHz & 216MHz 46.0 dB $\mu$ V/m between 216MHz & 960MHz 54.0 dB $\mu$ V/m above 960MHz

**Test Configuration:**

- 1) 30 MHz to 1 GHz emissions:



- 2) 1 GHz to 40 GHz emissions:





**Test Procedure:** The receiver was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

From 30MHz to 1GHz, read the Quasi-Peak field strength of the emissions with receiver QP detector RBW=120KHz.

Above 1GHz, read the Peak field strength and Average field strength.

Read the Peak field strength through RBW=1MHz, VBW=3MHz in spectrum analyzer setting;

Read the Average field strength through RBW=1MHz, VBW=10Hz in spectrum analyzer setting;

While maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the average field strength reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from  $20\log(\text{dwell time}/100 \text{ ms})$ , in an effort to demonstrate compliance with the 15.209 limit.



7.6.1 Harmonic and other spurious emissions

7.6.1.1 802.11b mode with 11Mbps data rate

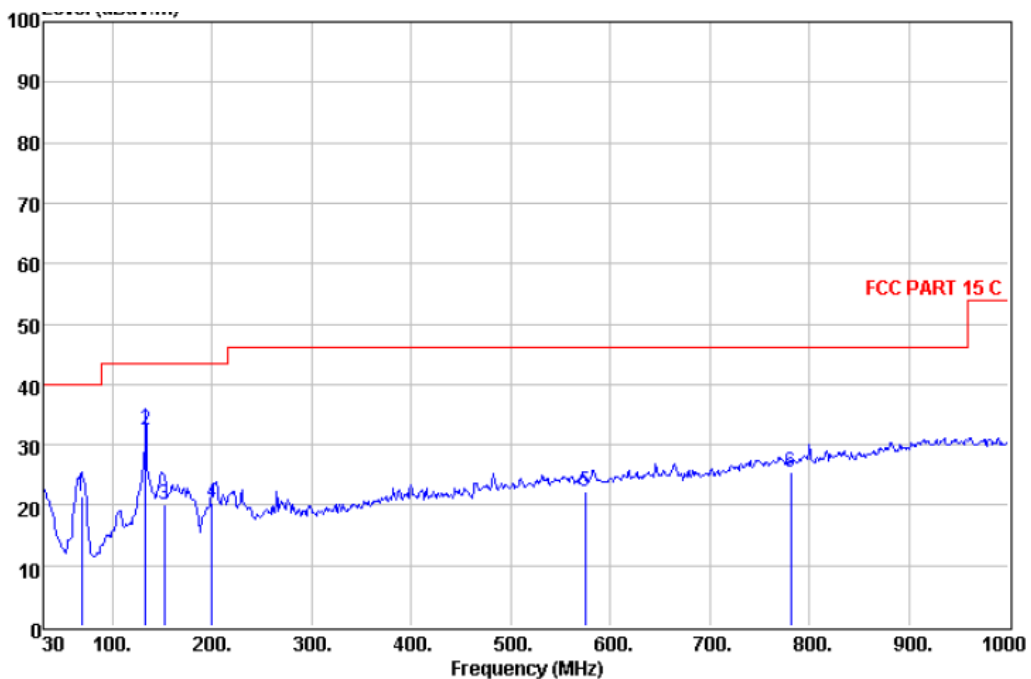
Test at Channel 1 (2.412 GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

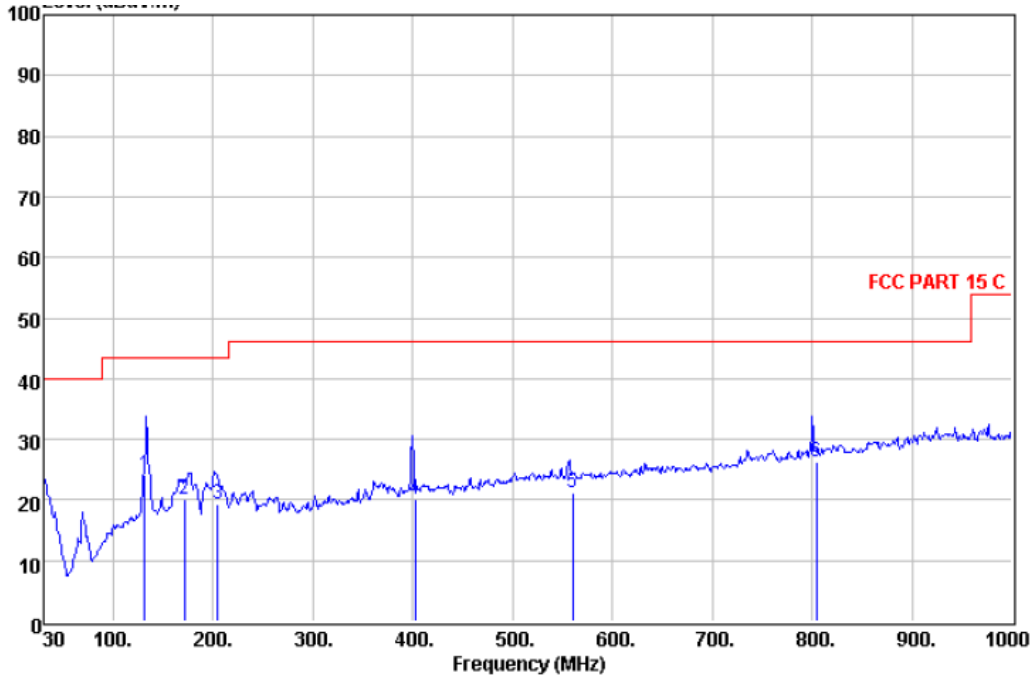
Freq	ReadAntenna	Cable	Preamp	Over	Limit	Remark	
MHz	Level	Factor	Loss	Factor	Level	Limit	
	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m
68.920	43.86	4.58	0.79	27.80	21.43	-18.57	40.00 QP
132.912	46.91	11.84	1.14	27.50	32.39	-11.11	43.50 QP
151.478	36.96	9.33	1.20	27.42	20.07	-23.43	43.50 QP
200.053	37.47	8.90	1.30	27.24	20.43	-23.07	43.50 QP
574.820	29.59	18.44	2.55	28.30	22.28	-23.72	46.00 QP
781.600	30.17	19.82	3.03	27.67	25.35	-20.65	46.00 QP



**Horizontal:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier	Level	Over Limit	Limit Line	Remark
MHz	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m	
130.930	38.62	11.95	1.13	27.51	24.19	-19.31	43.50	QP
171.050	37.62	8.51	1.24	27.34	20.03	-23.47	43.50	QP
204.370	36.13	8.99	1.33	27.23	19.22	-24.28	43.50	QP
401.915	29.84	16.06	2.09	27.77	20.22	-25.78	46.00	QP
560.540	28.56	18.40	2.53	28.25	21.24	-24.76	46.00	QP
804.023	30.67	20.15	3.12	27.60	26.34	-19.66	46.00	QP



1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4824.000	31.54	8.81	34.30	45.41	51.46	74	V
7236.000	36.48	12.32	34.30	47.68	62.18	74	V
4824.000	31.54	8.81	34.30	47.52	53.57	74	H
7236.000	36.48	12.32	34.30	46.06	60.56	74	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4824.000	31.54	8.81	34.30	28.01	34.06	54	V
7236.000	36.48	12.32	34.30	28.70	43.20	54	V
4824.000	31.54	8.81	34.30	27.20	33.25	54	H
7236.000	36.48	12.32	34.30	28.05	42.55	54	H



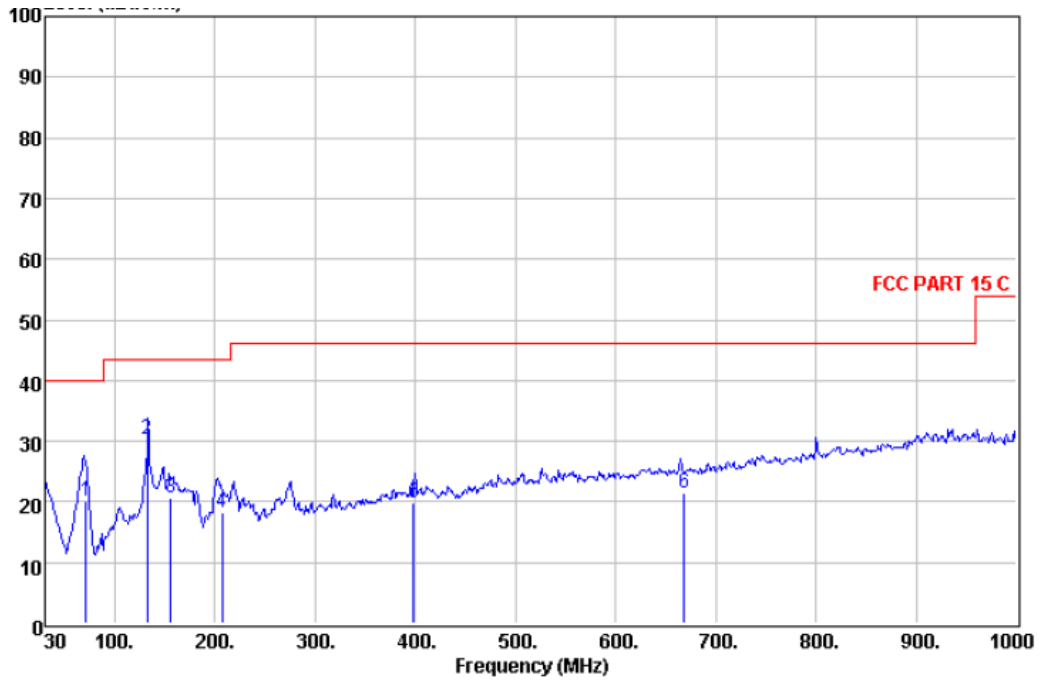
Test at Channel6 (2.437 GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

**Vertical:**

Peak scan

Level (dBμV/m)



Quasi-peak measurement

Freq MHz	ReadAntenna Level dBμV	Antenna Factor dB/m	Cable Loss dB	Preamplifier Factor dB	Level dBμV/m	Over Limit dB	Limit Line dBμV/m	Remark
71.286	42.27	4.76	0.81	27.78	20.06	-19.94	40.00	QP
132.045	44.76	11.86	1.13	27.50	30.25	-13.25	43.50	QP
156.100	37.89	8.98	1.21	27.40	20.68	-22.82	43.50	QP
206.860	34.99	9.04	1.34	27.23	18.14	-25.36	43.50	QP
398.470	29.54	15.95	2.08	27.76	19.81	-26.19	46.00	QP
668.240	28.48	18.38	2.73	28.03	21.56	-24.44	46.00	QP

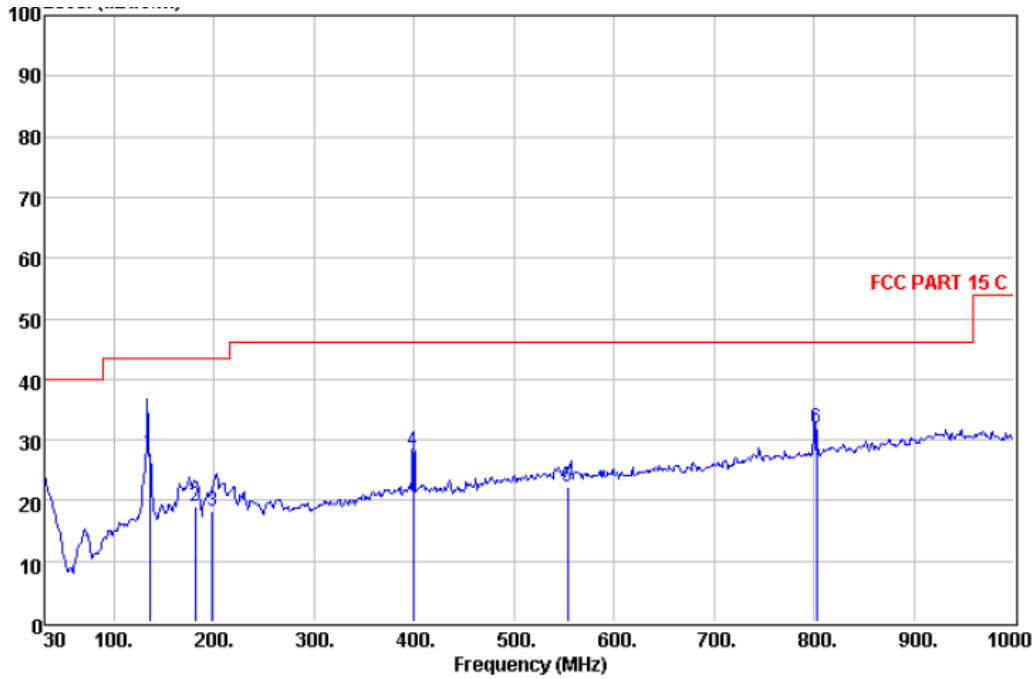




**Horizontal:**

Peak scan

Level (dB $\mu$ V/m)



Quasi-peak measurement

Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Over Level	Over Limit	Limit Line	Remark
MHz	dB $\mu$ V	dB/m	dB	dB	dB $\mu$ V/m	dB	dB $\mu$ V/m	
135.612	42.47	11.62	1.15	27.49	27.75	-15.75	43.50	QP
180.890	37.50	7.69	1.26	27.30	19.15	-24.35	43.50	QP
197.823	35.42	8.77	1.30	27.25	18.24	-25.26	43.50	QP
398.715	37.93	15.95	2.08	27.76	28.20	-17.80	46.00	QP
553.630	29.49	18.56	2.51	28.23	22.33	-23.67	46.00	QP
802.620	36.36	20.12	3.10	27.60	31.98	-14.02	46.00	QP





1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4874.00	31.57	8.63	34.30	44.10	50.00	74.00	V
7311.00	36.50	12.23	34.30	46.63	61.06	74.00	V
4874.00	31.57	8.63	34.30	45.89	51.79	74.00	H
7311.00	36.50	12.23	34.30	47.62	62.05	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4874.00	31.57	8.63	34.30	25.77	31.67	54.00	V
7311.00	36.50	12.23	34.30	25.97	40.40	54.00	V
4874.00	31.57	8.63	34.30	31.03	36.93	54.00	H
7311.00	36.50	12.23	34.30	28.13	42.56	54.00	H



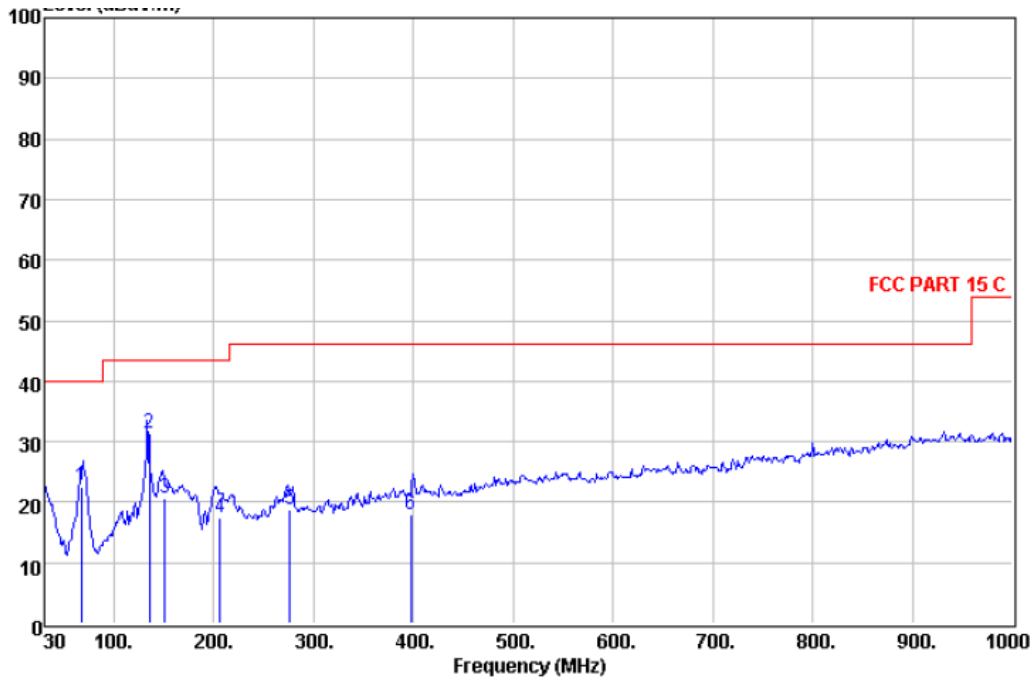
Test at Channel11 (2.462 GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

**Vertical:**

Peak scan

Level (dBμV/m)



Quasi-peak measurement

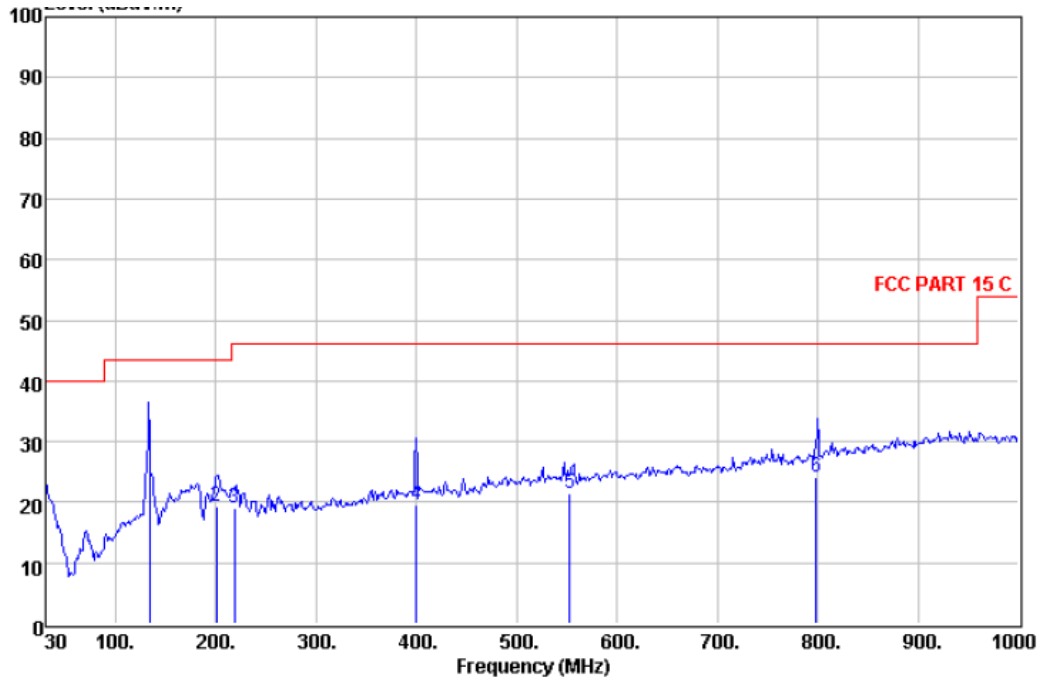
Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Over Limit	Limit Line	Remark
MHz	dBμV	dB/m	dB	dB	dBμV/m	dB	dBμV/m	
66.830	44.98	4.54	0.77	27.81	22.48	-17.52	40.00	QP
135.630	46.04	11.62	1.15	27.49	31.32	-12.18	43.50	QP
150.952	37.56	9.39	1.20	27.42	20.73	-22.77	43.50	QP
205.850	34.28	9.01	1.34	27.23	17.40	-26.10	43.50	QP
275.890	31.97	12.14	1.71	27.10	18.72	-27.28	46.00	QP
397.150	27.74	15.90	2.08	27.75	17.97	-28.03	46.00	QP



**Horizontal:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Freq	ReadAntenna	Cable	Preamplifier	Over	Limit	Remark	
MHz	Level	Factor	Loss	Factor	Level	Limit	
	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m
134.630	40.32	11.73	1.15	27.49	25.71	-17.79	43.50 QP
200.720	36.40	8.91	1.31	27.24	19.38	-24.12	43.50 QP
218.180	35.66	9.20	1.42	27.20	19.08	-26.92	46.00 QP
399.860	29.37	16.00	2.08	27.77	19.68	-26.32	46.00 QP
552.830	28.47	18.56	2.51	28.22	21.32	-24.68	46.00 QP
798.240	28.66	20.10	3.10	27.64	24.22	-21.78	46.00 QP



1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
4924.00	31.62	8.45	34.30	44.31	50.08	74.00	V
7386.00	36.53	12.19	34.30	46.78	61.20	74.00	V
4924.00	31.62	8.45	34.30	46.57	52.34	74.00	H
7386.00	36.53	12.19	34.30	45.47	59.89	74.00	H

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
4924.00	31.62	8.45	34.30	26.05	31.82	54.00	V
7386.00	36.53	12.19	34.30	24.04	38.46	54.00	V
4924.00	31.62	8.45	34.30	26.23	32.00	54.00	H
7386.00	36.53	12.19	34.30	25.13	39.55	54.00	H

The field strength is calculated by adding the Antenna Factor. Cable Factor & Pre-amplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Loss – Pre-amplifier Factor.

As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.



**7.6.1.2 802.11g mode with 54Mbps data rate**

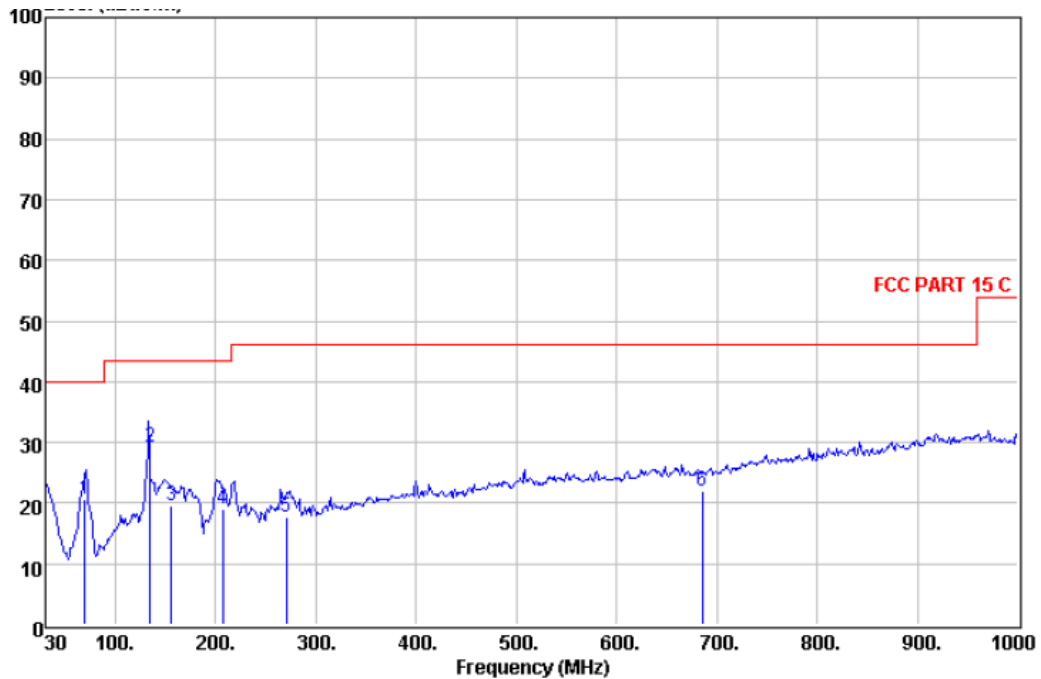
Test at Channel 1 (2.412 GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

**Vertical:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

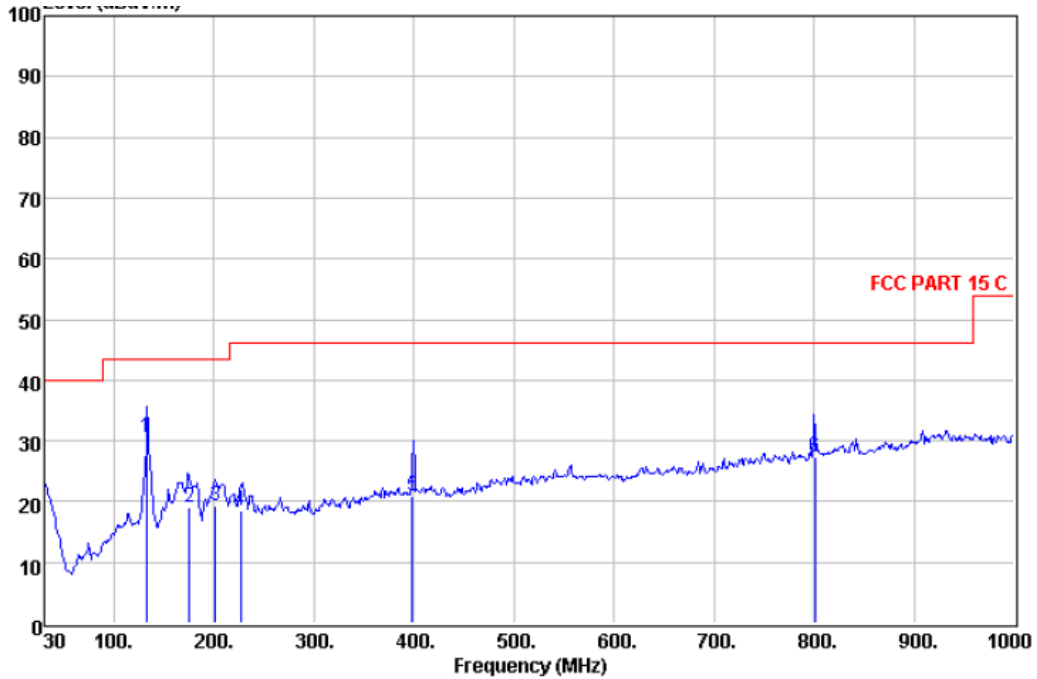
Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Over Limit	Limit Line	Remark
MHz	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m	
69.820	43.04	4.60	0.80	27.79	20.65	-19.35	40.00	QP
134.852	43.84	11.70	1.15	27.49	29.20	-14.30	43.50	QP
155.930	36.85	8.98	1.21	27.40	19.64	-23.86	43.50	QP
206.813	35.81	9.04	1.34	27.23	18.96	-24.54	43.50	QP
270.496	30.77	12.30	1.69	27.11	17.65	-28.35	46.00	QP
685.720	28.47	18.65	2.77	27.94	21.95	-24.05	46.00	QP



**Horizontal:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Over Limit	Limit Line	Remark
MHz	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m	
132.140	45.06	11.86	1.13	27.50	30.55	-12.95	43.50	QP
175.500	37.22	7.86	1.25	27.32	19.01	-24.49	43.50	QP
201.690	36.23	8.93	1.31	27.24	19.23	-24.27	43.50	QP
226.910	35.01	9.33	1.47	27.19	18.62	-27.38	46.00	QP
398.205	30.76	15.90	2.08	27.76	20.98	-25.02	46.00	QP
801.360	31.75	20.12	3.10	27.63	27.34	-18.66	46.00	QP



1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4824.00	31.54	8.81	34.30	45.46	51.51	74.00	V
7236.00	36.48	12.32	34.30	44.97	59.74	74.00	V
4824.00	31.54	8.81	34.30	44.87	50.92	74.00	H
7326.00	36.48	12.32	34.30	45.57	60.07	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4824.00	31.54	8.81	34.30	25.90	31.95	54.00	V
7236.00	36.48	12.32	34.30	24.21	38.71	54.00	V
4824.00	31.54	8.81	34.30	25.99	32.04	54.00	H
7326.00	36.48	12.32	34.30	25.32	39.82	54.00	H



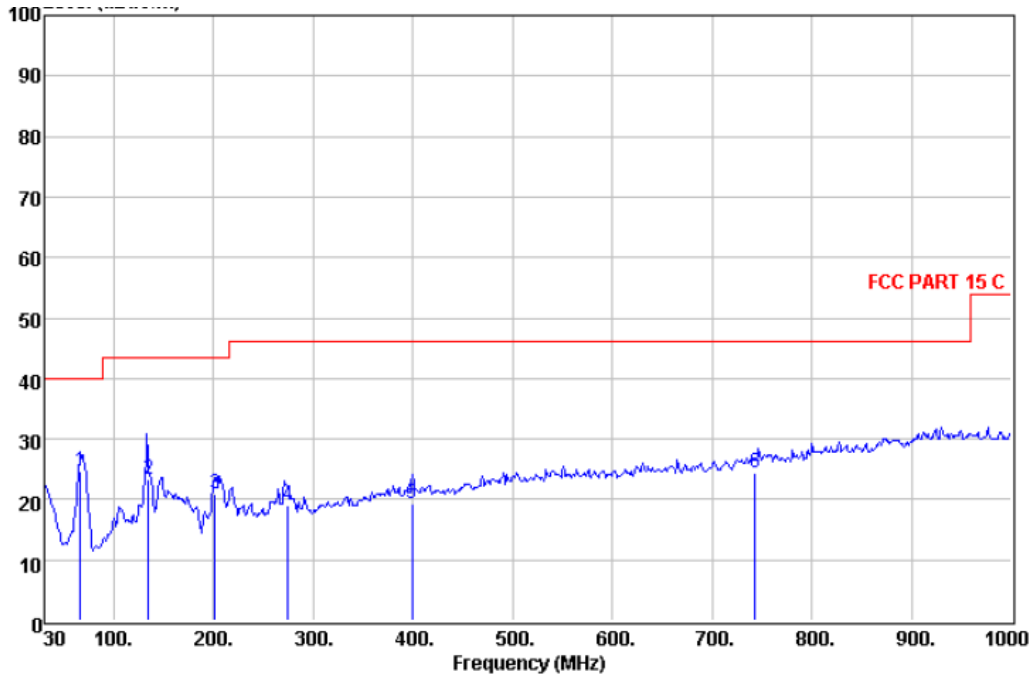
Test at Channel 6 (2.437GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

**Vertical:**

Peak scan

Level (dBμV/m)



Quasi-peak measurement

Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Over Limit	Limit Line	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m	
65.930	47.26	4.52	0.76	27.81	24.73	-15.27	40.00	QP
134.520	37.98	11.73	1.15	27.49	23.37	-20.13	43.50	QP
200.925	37.97	8.91	1.31	27.24	20.95	-22.55	43.50	QP
274.620	32.34	12.14	1.70	27.11	19.07	-26.93	46.00	QP
398.820	28.91	15.95	2.08	27.76	19.18	-26.82	46.00	QP
743.520	29.23	20.08	2.89	27.77	24.43	-21.57	46.00	QP

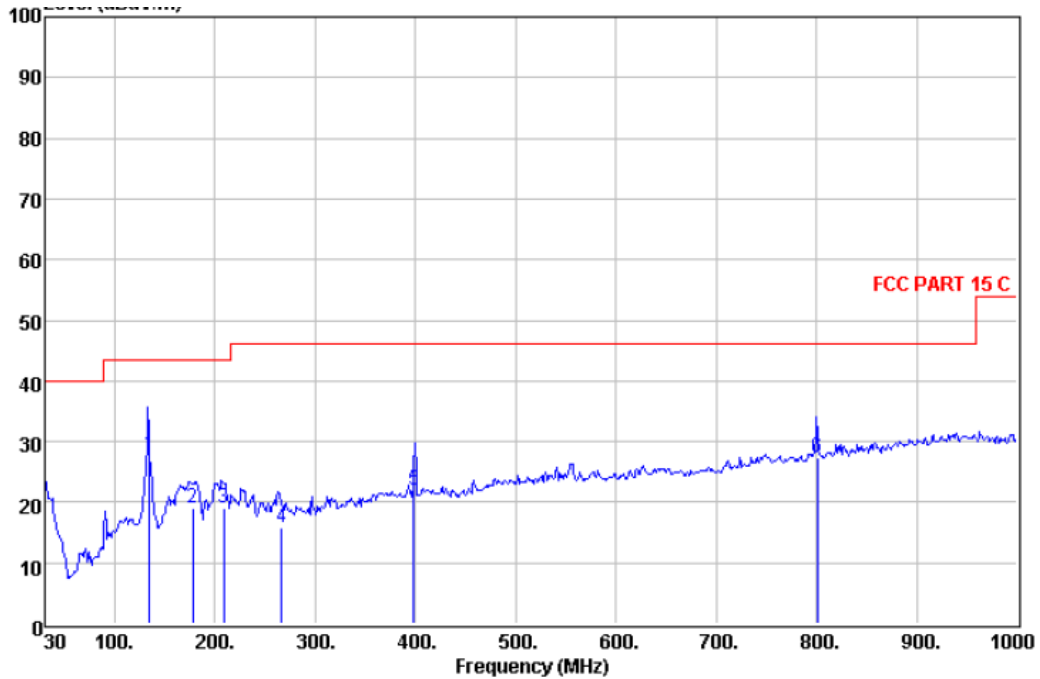




**Horizontal:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Read	Antenna	Cable	Preamp	Over	Limit		
Freq	Level	Factor	Loss	Factor	Level	Limit	Line Remark
MHz	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m
134.760	42.37	11.73	1.15	27.49	27.76	-15.74	43.50 QP
177.440	37.32	7.75	1.26	27.32	19.01	-24.49	43.50 QP
208.480	35.88	9.07	1.35	27.22	19.08	-24.42	43.50 QP
266.680	28.94	12.30	1.68	27.12	15.80	-30.20	46.00 QP
398.600	31.60	15.95	2.08	27.76	21.87	-24.13	46.00 QP
801.150	31.65	20.12	3.10	27.63	27.24	-18.76	46.00 QP



1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4874.00	31.57	8.63	34.30	44.69	50.59	74.00	V
7311.00	36.50	12.23	34.30	45.99	60.42	74.00	V
4874.00	31.57	8.63	34.30	45.80	51.70	74.00	H
7311.00	36.50	12.23	34.30	45.16	59.59	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
4874.00	31.57	8.63	34.30	26.80	32.70	54.00	V
7311.00	36.50	12.23	34.30	27.03	41.46	54.00	V
4874.00	31.57	8.63	34.30	25.90	31.80	54.00	H
7311.00	36.50	12.23	34.30	25.80	40.23	54.00	H



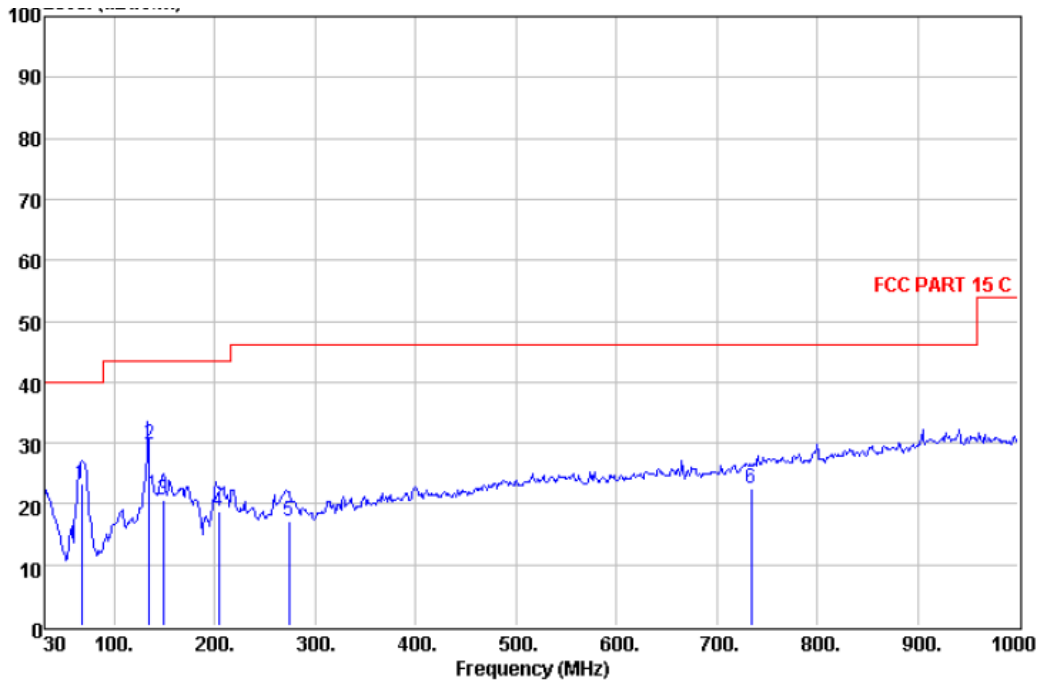
Test at Channel 11 (2.462 GHz) in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

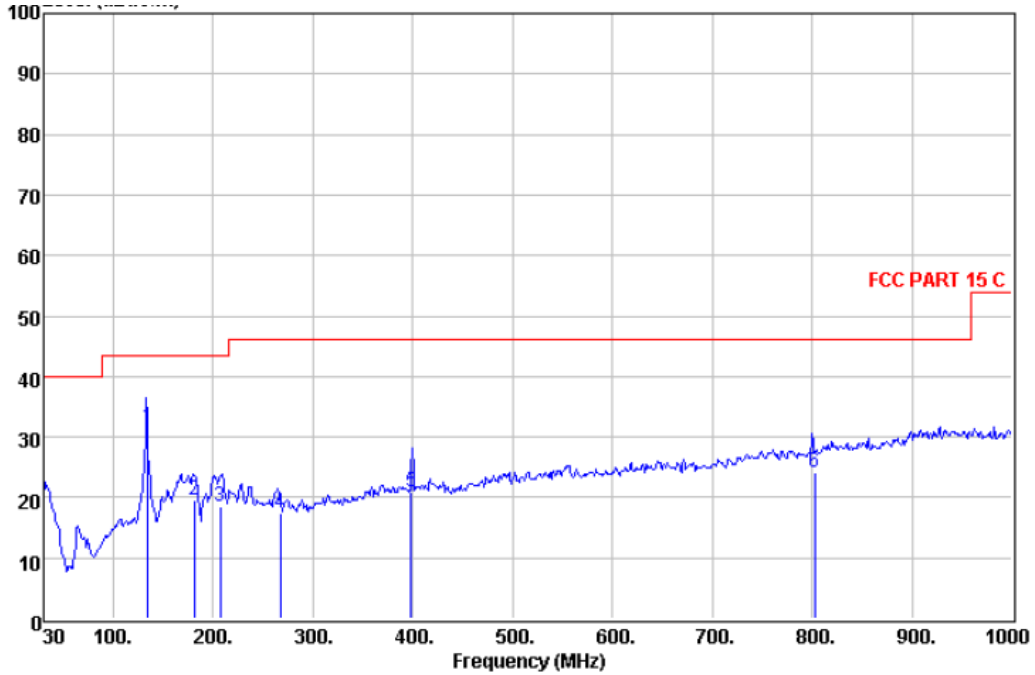
Freq	ReadAntenna	Cable	Preamp	Over	Limit	Line	Remark
MHz	Level	Factor	Loss	Factor	Level	Limit	
	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m
66.904	45.76	4.54	0.77	27.80	23.27	-16.73	40.00 QP
134.250	44.47	11.75	1.14	27.49	29.87	-13.63	43.50 QP
148.720	37.13	9.64	1.19	27.43	20.53	-22.97	43.50 QP
203.690	35.80	8.97	1.32	27.23	18.86	-24.64	43.50 QP
273.550	30.41	12.18	1.70	27.11	17.18	-28.82	46.00 QP
734.280	27.54	19.85	2.87	27.79	22.47	-23.53	46.00 QP



**Horizontal:**

Peak scan

Level (dBµV/m)



Quasi-peak measurement

Freq	ReadAntenna	Cable	Preamp	Over	Limit	Line	Remark
MHz	Level	Factor	Loss	Factor	Level	Limit	
	dBµV	dB/m	dB	dB	dBµV/m	dB	dBµV/m
134.520	46.16	11.73	1.15	27.49	31.55	-11.95	43.50 QP
180.750	38.01	7.69	1.26	27.30	19.66	-23.84	43.50 QP
206.930	35.47	9.04	1.34	27.23	18.62	-24.88	43.50 QP
266.810	30.46	12.30	1.68	27.12	17.32	-28.68	46.00 QP
397.820	30.55	15.90	2.08	27.75	20.78	-25.22	46.00 QP
802.365	28.50	20.12	3.10	27.60	24.12	-21.88	46.00 QP



1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
4924.00	31.62	8.45	34.30	46.40	52.17	74.00	V
7386.00	36.53	12.19	34.30	46.01	60.43	74.00	V
4924.00	31.62	8.45	34.30	45.53	51.30	74.00	H
7386.00	36.53	12.19	34.30	46.34	60.76	74.00	H

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
4924.00	31.62	8.45	34.30	26.96	32.73	54.00	V
7386.00	36.53	12.19	34.30	29.01	43.43	54.00	V
4924.00	31.62	8.45	34.30	25.23	31.00	54.00	H
7386.00	36.53	12.19	34.30	26.86	41.28	54.00	H

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

Remark:

- 1) .For this intentional radiator operates below 25 GHz. The spectrum shall be investigated to the tenth harmonics of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 3<sup>rd</sup> harmonic.
- 2). As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 3). The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

**Test result: The unit does meet the FCC requirements.**



## 7.6.2 Radiated Emissions which fall in the restricted bands

Test Requirement:	FCC Part 15 C section 15.247  (d) In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).
Test Method:	ANSI C63.10: Clause 6.4, 6.5 and 6.6 & KDB558074
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Limit:	40.0 dB $\mu$ V/m between 30MHz & 88MHz; 43.5 dB $\mu$ V/m between 88MHz & 216MHz; 46.0 dB $\mu$ V/m between 216MHz & 960MHz; 54.0 dB $\mu$ V/m above 960MHz.
Detector:	For PK value: RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz VBW $\geq$ RBW Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz VBW = 10Hz Sweep = auto Detector function = peak Trace = max hold



Section 15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section. only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 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 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		



**Test Result:**

**7.6.2.1 802.11b mode with 11Mbps data rate**

Test at Channel 1 (2.412 GHz) in transmitting status

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	46.32	45.13	74.00	Vertical
2390.000	27.61	6.14	35.05	47.43	46.13	74.00	V
2483.500	27.55	6.30	34.99	48.10	46.96	74.00	V
2500.000	27.55	6.30	34.98	47.98	46.85	74.00	V
2310.000	27.93	5.98	35.10	47.32	46.13	74.00	Horizontal
2390.000	27.61	6.14	35.05	47.72	46.42	74.00	H
2483.500	27.55	6.30	34.99	48.05	46.91	74.00	H
2500.000	27.55	6.30	34.98	47.28	46.15	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	26.12	24.93	54.00	Vertical
2390.000	27.61	6.14	35.05	27.00	25.70	54.00	V
2483.500	27.55	6.30	34.99	29.86	28.72	54.00	V
2500.000	27.55	6.30	34.98	30.29	29.16	54.00	V
2310.000	27.93	5.98	35.10	26.99	25.80	54.00	Horizontal
2390.000	27.61	6.14	35.05	28.80	27.50	54.00	H
2483.500	27.55	6.30	34.99	29.30	28.16	54.00	H
2500.000	27.55	6.30	34.98	29.07	27.94	54.00	H





# SGS-CSTC Standards Technical Services Co., Ltd.

Report No.: GZEM110800312101

Page: 65 of 77

FCC ID: TZI-WF1015

Test at Channel 6 (2.437 GHz) in transmitting status

## Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	46.92	45.73	74.00	Vertical
2390.000	27.61	6.14	35.05	47.68	46.38	74.00	V
2483.500	27.55	6.30	34.99	46.29	45.15	74.00	V
2500.000	27.55	6.30	34.98	48.39	47.26	74.00	V
2310.000	27.93	5.98	35.10	46.69	45.50	74.00	Horizontal
2390.000	27.61	6.14	35.05	49.71	48.41	74.00	H
2483.500	27.55	6.30	34.99	47.29	46.15	74.00	H
2500.000	27.55	6.30	34.98	46.99	45.86	74.00	H

## Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	30.31	29.12	54.00	Vertical
2390.000	27.61	6.14	35.05	30.90	29.60	54.00	V
2483.500	27.55	6.30	34.99	30.20	29.06	54.00	V
2500.000	27.55	6.30	34.98	29.37	28.24	54.00	V
2310.000	27.93	5.98	35.10	25.70	24.51	54.00	Horizontal
2390.000	27.61	6.14	35.05	27.30	26.00	54.00	H
2483.500	27.55	6.30	34.99	26.34	25.20	54.00	H
2500.000	27.55	6.30	34.98	24.52	23.39	54.00	H



Test at Channel 11 (2.462 GHz) in transmitting status

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	46.04	44.85	74.00	Vertical
2390.000	27.61	6.14	35.05	46.13	44.83	74.00	V
2483.500	27.55	6.30	34.99	46.50	45.36	74.00	V
2500.000	27.55	6.30	34.98	46.27	45.14	74.00	V
2310.000	27.93	5.98	35.10	46.45	45.26	74.00	Horizontal
2390.000	27.61	6.14	35.05	47.00	45.70	74.00	H
2483.500	27.55	6.30	34.99	47.89	46.75	74.00	H
2500.000	27.55	6.30	34.98	47.88	46.75	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	26.44	25.25	54.00	Vertical
2390.000	27.61	6.14	35.05	26.46	25.16	54.00	V
2483.500	27.55	6.30	34.99	26.20	25.06	54.00	V
2500.000	27.55	6.30	34.98	26.94	25.81	54.00	V
2310.000	27.93	5.98	35.10	29.15	27.96	54.00	Horizontal
2390.000	27.61	6.14	35.05	27.43	26.13	54.00	H
2483.500	27.55	6.30	34.99	27.25	26.11	54.00	H
2500.000	27.55	6.30	34.98	27.38	26.25	54.00	H



**7.6.2.2 802.11g mode with 54Mbps data rate**

Test at Channel 1 (2.412 GHz) in transmitting status

**Peak Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	47.63	46.44	74.00	Vertical
2390.000	27.61	6.14	35.05	47.31	46.01	74.00	V
2483.500	27.55	6.30	34.99	46.75	45.61	74.00	V
2500.000	27.55	6.30	34.98	49.17	48.04	74.00	V
2310.000	27.93	5.98	35.10	46.97	45.78	74.00	Horizontal
2390.000	27.61	6.14	35.05	46.12	44.82	74.00	H
2483.500	27.55	6.30	34.99	46.50	45.36	74.00	H
2500.000	27.55	6.30	34.98	46.61	45.48	74.00	H

**Average Measurement:**

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2310.000	27.93	5.98	35.10	27.27	26.08	54.00	Vertical
2390.000	27.61	6.14	35.05	27.11	25.81	54.00	V
2483.500	27.55	6.30	34.99	26.46	25.32	54.00	V
2500.000	27.55	6.30	34.98	28.70	27.57	54.00	V
2310.000	27.93	5.98	35.10	27.54	26.35	54.00	Horizontal
2390.000	27.61	6.14	35.05	26.41	25.11	54.00	H
2483.500	27.55	6.30	34.99	26.98	25.84	54.00	H
2500.000	27.55	6.30	34.98	26.80	25.67	54.00	H



# SGS-CSTC Standards Technical Services Co., Ltd.

Report No.: GZEM110800312101

Page: 68 of 77

FCC ID: TZI-WF1015

Test at Channel 6 (2.437 GHz) in transmitting status

## Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	46.03	44.84	74.00	Vertical
2390.000	27.61	6.14	35.05	46.17	44.87	74.00	V
2483.500	27.55	6.30	34.99	46.88	45.74	74.00	V
2500.000	27.55	6.30	34.98	47.41	46.28	74.00	V
2310.000	27.93	5.98	35.10	47.05	45.86	74.00	Horizontal
2390.000	27.61	6.14	35.05	47.00	45.70	74.00	H
2483.500	27.55	6.30	34.99	46.68	45.54	74.00	H
2500.000	27.55	6.30	34.98	47.77	46.64	74.00	H

## Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	26.98	25.79	54.00	Vertical
2390.000	27.61	6.14	35.05	26.72	25.42	54.00	V
2483.500	27.55	6.30	34.99	26.36	25.22	54.00	V
2500.000	27.55	6.30	34.98	26.59	25.46	54.00	V
2310.000	27.93	5.98	35.10	27.90	26.71	54.00	Horizontal
2390.000	27.61	6.14	35.05	27.70	26.40	54.00	H
2483.500	27.55	6.30	34.99	26.46	25.32	54.00	H
2500.000	27.55	6.30	34.98	26.44	25.31	54.00	H



# SGS-CSTC Standards Technical Services Co., Ltd.

Report No.: GZEM110800312101

Page: 69 of 77

FCC ID: TZI-WF1015

Test at Channel 11 (2.462 GHz) in transmitting status

## Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	47.02	45.83	74.00	Vertical
2390.000	27.61	6.14	35.05	47.13	45.83	74.00	V
2483.500	27.55	6.30	34.99	47.80	46.66	74.00	V
2500.000	27.55	6.30	34.98	47.17	46.04	74.00	V
2310.000	27.93	5.98	35.10	47.27	46.08	74.00	Horizontal
2390.000	27.61	6.14	35.05	48.10	46.80	74.00	H
2483.500	27.55	6.30	34.99	49.16	48.02	74.00	H
2500.000	27.55	6.30	34.98	48.24	47.11	74.00	H

## Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Antenna polarization
2310.000	27.93	5.98	35.10	27.24	26.05	54.00	Vertical
2390.000	27.61	6.14	35.05	27.53	26.23	54.00	V
2483.500	27.55	6.30	34.99	27.70	26.56	54.00	V
2500.000	27.55	6.30	34.98	27.04	25.91	54.00	V
2310.000	27.93	5.98	35.10	27.15	25.96	54.00	Horizontal
2390.000	27.61	6.14	35.05	26.20	24.90	54.00	H
2483.500	27.55	6.30	34.99	27.54	26.40	54.00	H
2500.000	27.55	6.30	34.98	27.36	26.23	54.00	H

## 7.7 Band Edges Requirement

Test Requirement: FCC Part 15 C section 15.247

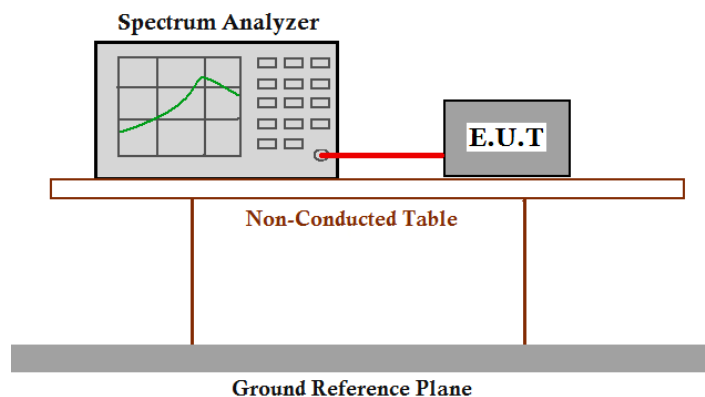
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. The radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains 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.

Frequency Band: 2400 MHz to 2483.5 MHz

Test Method: ANSI C63.10: Clause 6.9 & KDB558074.

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer or power meter.
2. Set RBW=100 kHz , VBW=100KHz ,suitable frequency span including 100 kHz bandwidth from band edge..
3. Measure the Conducted Spurious Emissions and Radiated Emissions of the test frequency with special test status.
4. Repeat until all the test status is investigated.
5. Report the worse.



**Test result with plots as follows:**

The band edges was measured and recorded Result:

The Lower Edges attenuated more than 20dB.

The Upper Edges attenuated more than 20dB.



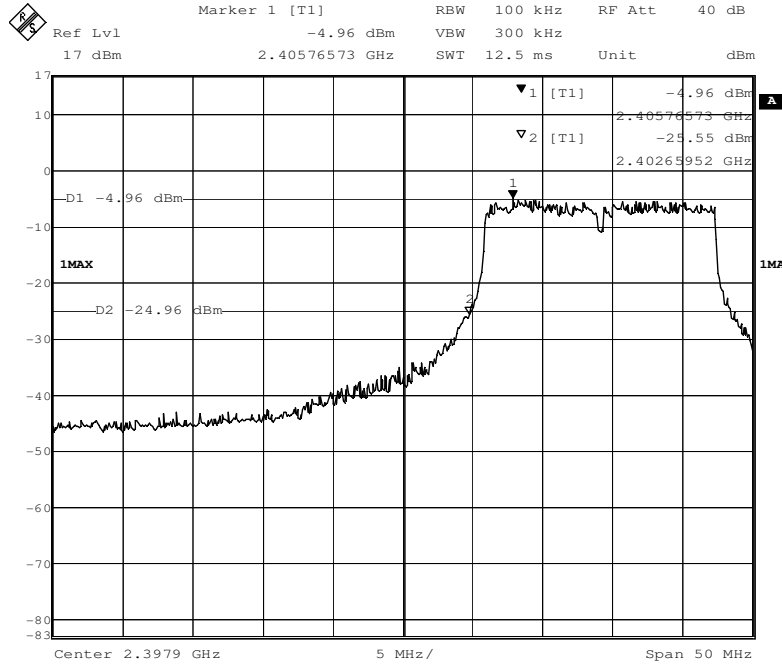




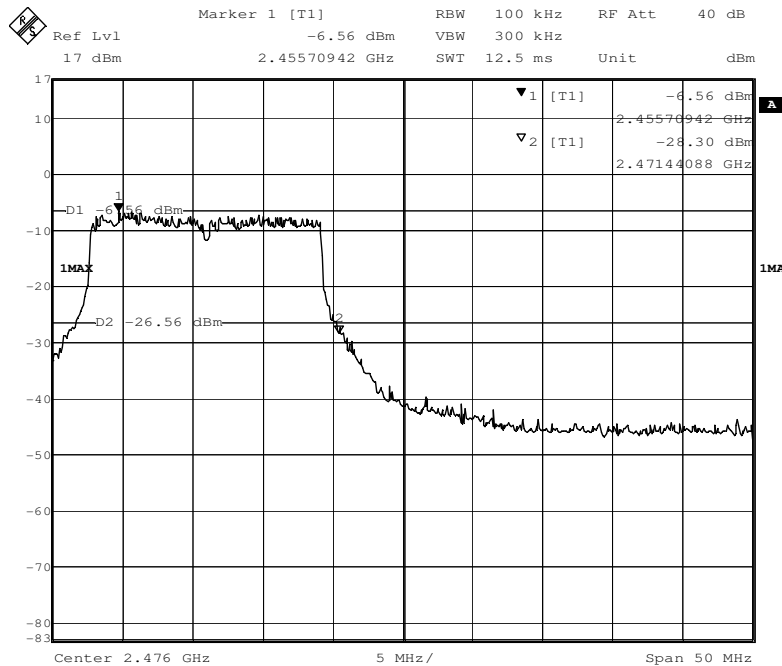
Result plot as follows:

802.11g mode with 54Mbps data rate

Channel 1: 2.412 GHz



Channel 11: 2.462 GHz





### 7.8 Conducted Emissions at Mains Terminals 150 kHz to 30MHz

**Test Requirement:** FCC Part 15 C section 15.207  
**Test Method:** ANSI C63.10: Clause 6.2 & KDB558074.  
**Frequency Range:** 150 kHz to 30 MHz  
**Detector:** Peak for pre-scan (9kHz Resolution Bandwidth)  
**Test Limit**

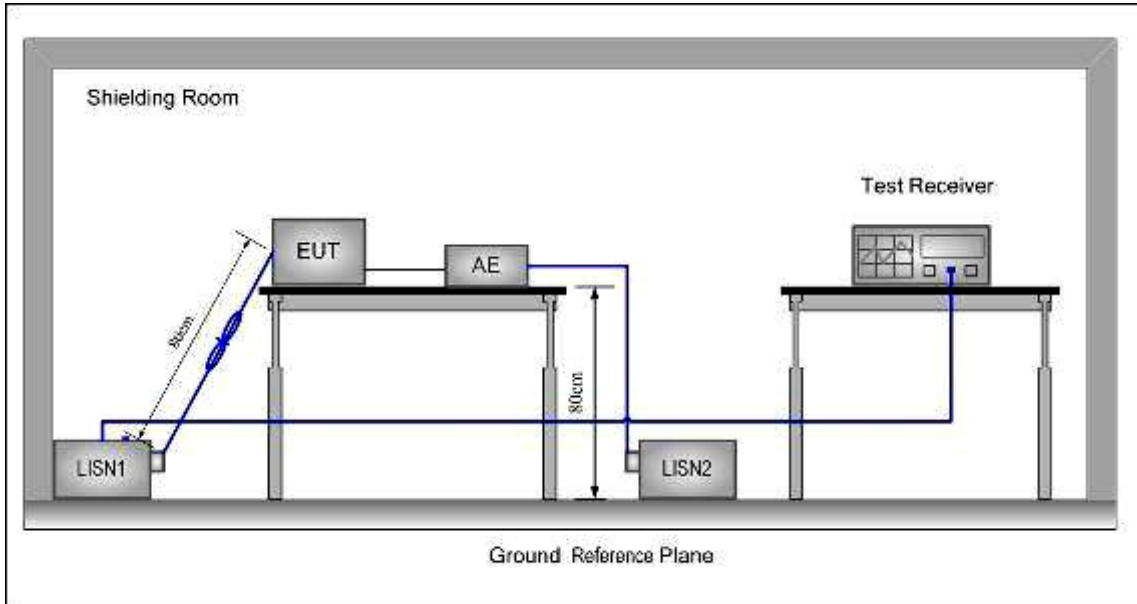
**Limits for conducted disturbance at the mains ports of class B**

Frequency Range (MHz)	Class B Limit (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

NOTE 1 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

**EUT Operation:** Test in normal operating mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.  
Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

**Test Configuration:**



**Test procedure:**

1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a  $50\Omega/50\mu\text{H} + 5\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.



**7.8.1 Measurement Data**

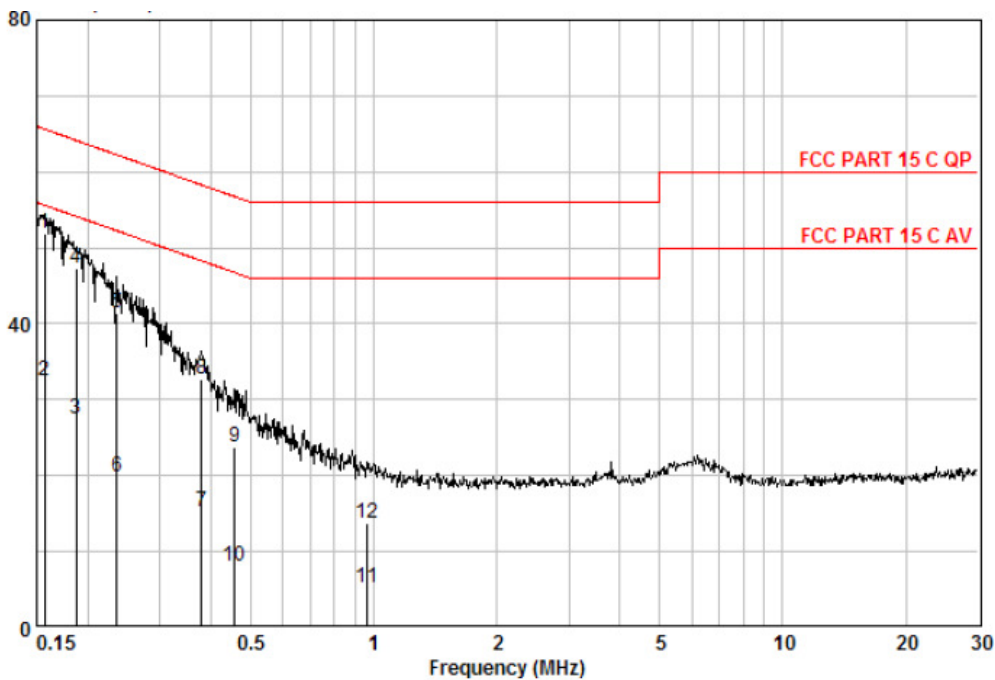
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the communicating was worst case mode.

**The following Quasi-Peak and Average measurements were performed on the EUT:**

Neutral Line

Level(dBμV)

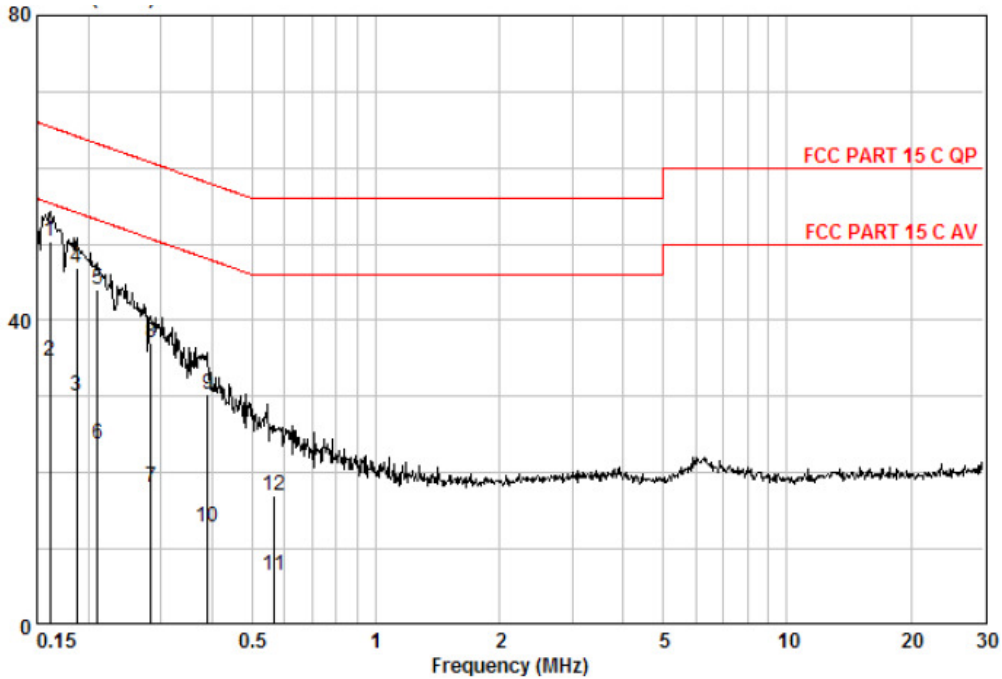


Measure data:

Freq MHz	Read Level dBμV	Cable Loss dB	LISN Factor dB	Level dBμV	Limit Line dBμV	Over Limit dB	Remark
0.156	42.24	0.07	9.65	51.96	65.65	-13.68	QP
0.156	22.76	0.07	9.65	32.48	55.65	-23.16	AVERAGE
0.187	17.70	0.11	9.64	27.45	54.15	-26.70	AVERAGE
0.187	37.60	0.11	9.64	47.35	64.15	-16.80	QP
0.235	31.74	0.11	9.64	41.49	62.26	-20.77	QP
0.235	9.98	0.11	9.64	19.73	52.26	-32.53	AVERAGE
0.379	5.56	0.05	9.64	15.24	48.30	-33.06	AVERAGE
0.379	22.92	0.05	9.64	32.60	58.30	-25.70	QP
0.456	13.96	0.05	9.66	23.66	56.76	-33.09	QP
0.456	-1.63	0.05	9.66	8.07	46.76	-38.68	AVERAGE
0.963	-4.50	0.03	9.68	5.22	46.00	-40.78	AVERAGE
0.963	4.00	0.03	9.68	13.72	56.00	-42.28	QP



Live Line  
 Level (dBµV)



Measure result:

Freq MHz	Read Level dBµV	Cable Loss dB	LISN Factor dB	Level dBµV	Limit Line dBµV	Over Limit dB	Remark
0.162	40.74	0.08	9.63	50.45	65.38	-14.94	QP
0.162	24.95	0.08	9.63	34.66	55.38	-20.73	AVERAGE
0.187	20.30	0.11	9.62	30.04	54.15	-24.11	AVERAGE
0.187	37.16	0.11	9.62	46.90	64.15	-17.25	QP
0.211	34.18	0.12	9.62	43.93	63.18	-19.26	QP
0.211	13.97	0.12	9.62	23.72	53.18	-29.47	AVERAGE
0.283	8.33	0.09	9.64	18.05	50.72	-32.67	AVERAGE
0.283	27.30	0.09	9.64	37.02	60.72	-23.70	QP
0.389	20.56	0.04	9.63	30.23	58.08	-27.84	QP
0.389	3.16	0.04	9.63	12.83	48.08	-35.24	AVERAGE
0.567	-3.08	0.05	9.63	6.60	46.00	-39.40	AVERAGE
0.567	7.34	0.05	9.63	17.02	56.00	-38.98	QP

--End of Report--