



**FCC PART 15C  
TEST REPORT  
No. 2012WLN0409**

for

**Sony Mobile Communications AB**

**GSM 850/900/1800/1900 quad bands and CDMA2000 850/1900 dual**

**bands mobile phone**

**Type: PM-0150-BV**

**With**

**FCC ID: PY7PM-0150**

**Hardware Version: A**

**Software Version: s\_atp\_tsubasa\_1\_0\_3\_1\_e**

**Issued Date: 2012-09-24**



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Rat

*DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02*

*FCC 2.948 Listed: No.733176*

**No. DGA-PL-114/01-02**

*IC O.A.T.S listed: No.6629A-1*

**Note:**The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

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## 1. TEST LATORATORY

### 1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT  
Address: No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China  
Postal Code: 100191  
Telephone: 008610623046332678  
Fax: 008610623046332504

### 1.2. Testing Environment

Normal Temperature: 15-30°C  
Extreme Temperature: -20/+55°C  
Relative Humidity: 30-60%  
Air Pressure 990hPa-1040hPa

Note: The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

### 1.3. Project data

Project Leader: SunZhenyu  
Testing Start Date: 2012-08-24  
Testing End Date: 2012-09-21

### 1.4. Signature



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Xu Zhongfei

(Prepared this test report)



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Gao Hong

(Reviewed this test report)



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Xiao Li

Deputy Director of the laboratory

(Approved this test report)

## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

Company Name: Sony Mobile Communications (China) Co. Ltd  
Address /Post: Sony Mobile R&D Center, No. 16, Guangshun South Street,  
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### **2.2. Manufacturer Information**

Company Name: Sony Mobile Communications AB  
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Country: Sweden  
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Fax: +46-10-8002441

### 3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY

#### EQUIPMENT(AE)

##### 3.1. About EUT

Description	GSM 850/900/1800/1900 quad bands and CDMA2000 850/1900 dual bands mobile phone
Type	PM-0150-BV
FCC ID	PY7PM-0150
Frequency Range	ISM 2400MHz~2483.5MHz
Type of modulation	DSSS/CCK/OFDM
Number of Channels	11
Cellular Frequency Band	GSM 850/900/1800/1900 and UMTS FDD 1/8
Support Functions	MP3, Camera, FM radio, USB memory, GPS receiver, Bluetooth (EDR), WLAN (802.11 b/g/n) and Wi-Fi hotspot
Antenna	Integral Antenna
MAX Radiated Power	19.50dBm(OFDM)
MAX Conducted Power	20.48dBm(OFDM)
Extreme Temperature	-20/+55°C
Normal Voltage	3.7V
Extreme Low Voltage	3.5V
Extreme High Voltage	4.2V

Note: Photographs of EUT are shown in ANNEX C of this test report. Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

##### 3.2. Internal Identification of EUT used during the test

EUT ID*	S/N	IMEI	HW Version	SW Version
EUT1	CB5A1KF4LK	004402145894170	A	s_atp_tsubasa_1_0_3_1_e
EUT2	CB5A1KF4M2	004402145896332	A	s_atp_tsubasa_1_0_3_1_e

\*EUT ID: is used to identify the test sample in the lab internally.

##### 3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Travel Charger	AC-0400-CN	5800129
AE2	Battery	AB-0400	001374SWSGNS

\*AE ID: is used to identify the test sample in the lab internally.

### 3.4. General Description

The Equipment Under Test (EUT) is a model of GSM 850/900/1800/1900 quad bands and CDMA2000 850/1900 dual bands mobile phone with integrated antenna.

The EUT supports GSM 850/900/1800/1900MHz bands and CDMA2000 850/1900MHz bands. It also supports GPRS service with multi-slots class 12 and EGPRS service with multi-slots class 12 too.

It has MP3, camera, FM radio, USB memory, GPS receiver, Mobile High-Definition Link (MHL), Bluetooth (EDR and Bluetooth 4.0), WLAN (802.11 b/g/n) and Wi-Fi hotspot functions. It includes normal option: lithium battery and travel charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

## 4. REFERENCE DOCUMENTS

### 4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

### 4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850MHz.	Oct, 2009 Edition
ANSI C63.10	Procedures for testing compliance of a wide variety of unlicensed wireless devices	2009



## 5. LABORATORY ENVIRONMENT

**Shielding Room1** (6.0 metersx3.0 metersx2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

**Semi-anechoic chamber** (10 metersx6.7metersx6.15meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 M ohm
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance
Site voltage standing-wave ratio ( $S_{VSWR}$ )	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

**Shielding Room2** (7.30 metersx4.00 metersx3.80 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

## 6. SUMMARY OF TEST RESULTS

### 6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (a)	/	<b>P</b>
Peak Power Spectral Density	15.247 (d)	/	<b>P</b>
Occupied 6dB Bandwidth	15.247 (d)	/	<b>P</b>
Band Edges Compliance	15.247 (b)	/	<b>P</b>
Transmitter Spurious Emission - Conducted	15.247	/	<b>P</b>
Transmitter Spurious Emission - Radiated	15.247, 15.209, 15.209	/	<b>P</b>
AC Powerline Conducted Emission	15.107, 15.207	/	<b>P</b>

Please refer to **ANNEX A** for detail.

The measurement is made according to Public notice ANSI C63.10.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NM	Not measured, The test was not measured by TMC
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

### 6.2. Statements

TMC has evaluated the test cases requested by the client/manufacturer as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.1.

#### Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage
V min	Low Voltage
V max	High Voltage
H nom	Norm Humidity
A nom	Norm Air Pressure

For this report, all the test case listed above is tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	T nom	26°C
Voltage	V nom	3.7V(By battery)
Humidity	H nom	44%
Air Pressure	A nom	1010hPa

## **7. TEST EQUIPMENTS UTILIZED**

### **Conducted test system**

<b>No.</b>	<b>Equipment</b>	<b>Model</b>	<b>Serial Number</b>	<b>Manufacturer</b>	<b>Calibration Due date</b>
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	2013-07-19
2	Test Receiver	ESS	847151/015	Rohde & Schwarz	2012-10-30
3	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2013-08-13

### **Radiated emission test system**

<b>No.</b>	<b>Equipment</b>	<b>Model</b>	<b>Serial Number</b>	<b>Manufacturer</b>	<b>Calibration Due date</b>
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2013-08-11
2	BiLog Antenna	3142B	9908-1403	EMCO	2013-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2012-12-25
4	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2013-06-30

### **Anechoic chamber**

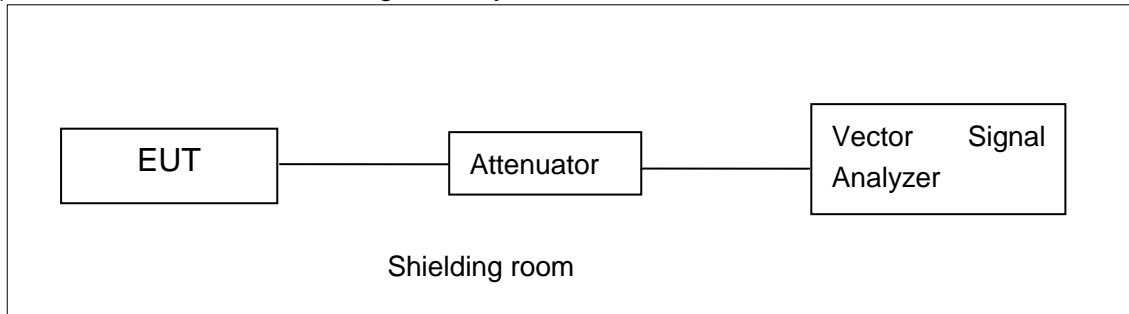
Fully anechoic chamber by Frankonia German.

## ANNEX A: MEASUREMENT RESULTS

### A.1. Measurement Method

#### A.1.1. Conducted Measurements

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values. Vector Signal Analyzer

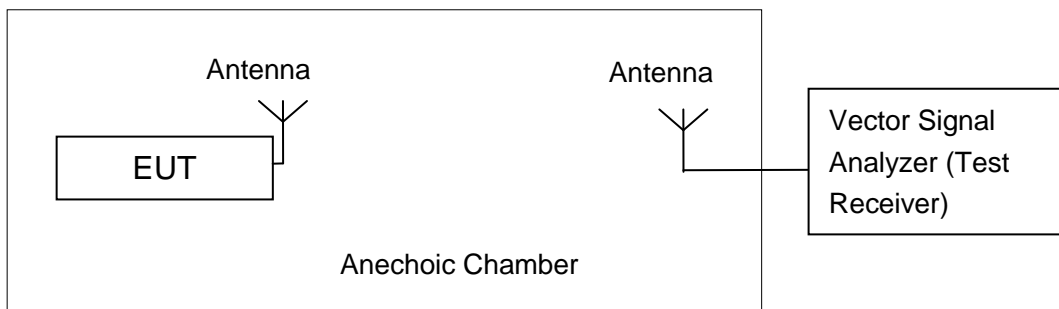


#### A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,

Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



The measurement is made according to ANSI C63.10

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

## A.2. Maximum Peak Output Power

### Measurement Limit and Method:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

The measurement is made according to ANSI C63.10

### Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

### A.2.1. Antenna Gain

The antenna gain of the complete system is calculated by the difference of radiated power and the conducted power of the EUT.

Test	Channel		
Tnom,Vnom	1	6	11
Conducted Power(dBm)	18.52	18.67	18.49
Radiated Power(dBm)	17.68	17.01	16.85
Gain(dBi)	-0.84	-1.66	-1.64

Antenna Gain = Radiated value (with radiated sample) - Conducted values (with conducted samples)

### A.2.2. Maximum Peak Output Power

#### Measurement Results:

Mode	Test Result (dBm)					
	2412MHz (Ch1)		2437MHz (Ch6)		2462 MHz (Ch11)	
	Conducted	Radiated	Conducted	Radiated	Conducted	Radiated
802.11b	18.52	17.68	18.67	17.01	18.49	16.85
802.11g	20.34	19.50	20.48	18.82	20.35	18.71
802.11n	19.63	18.79	19.68	18.02	19.48	17.84

**Conclusion: PASS**

## A.3. Peak Power Spectral Density

### Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(d)	< 8 dBm/3 kHz

The measurement is made according to ANSI C63.10

**Measurement Uncertainty:**

Measurement Uncertainty	0.75dB
-------------------------	--------

**Measurement Results:**

Mode	Channel	Power Spectral Density ( dBm/3 kHz )	Conclusion
802.11b	1	-10.30	P
	6	-10.03	P
	11	-10.55	P
802.11g	1	-13.41	P
	6	-13.24	P
	11	-13.48	P
802.11n	1	-15.11	P
	6	-15.41	P
	11	-15.50	P

**Conclusion: PASS**

**A.4. Occupied 6dB Bandwidth**

**Measurement Limit:**

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

The measurement is made according to ANSI C63.10

**Measurement Uncertainty:**

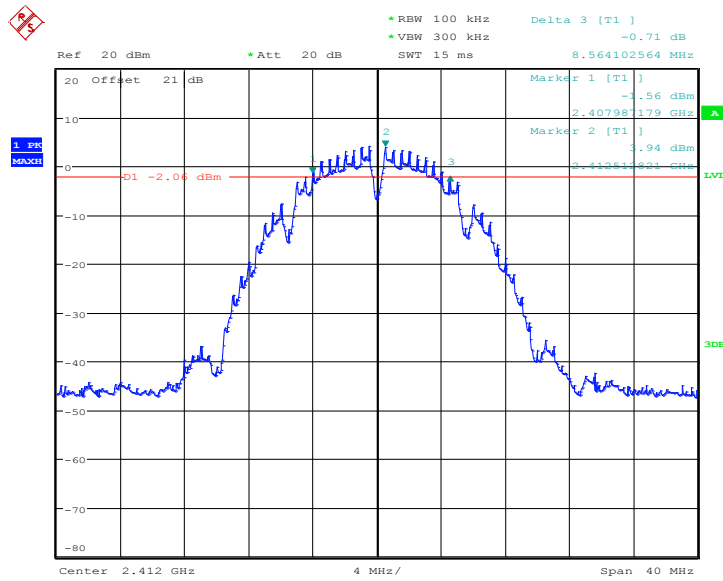
Measurement Uncertainty	60.80Hz
-------------------------	---------

**Measurement Result:**

Mode	Channel	Occupied 6dB Bandwidth ( kHz)		conclusion
802.11b	1	Fig.1	8564	P
	6	Fig.2	9038	P
	11	Fig.3	9038	P
802.11g	1	Fig.4	16410	P
	6	Fig.5	16410	P
	11	Fig.6	16410	P
802.11n	1	Fig.7	17628	P
	6	Fig.8	17628	P
	11	Fig.9	17628	P

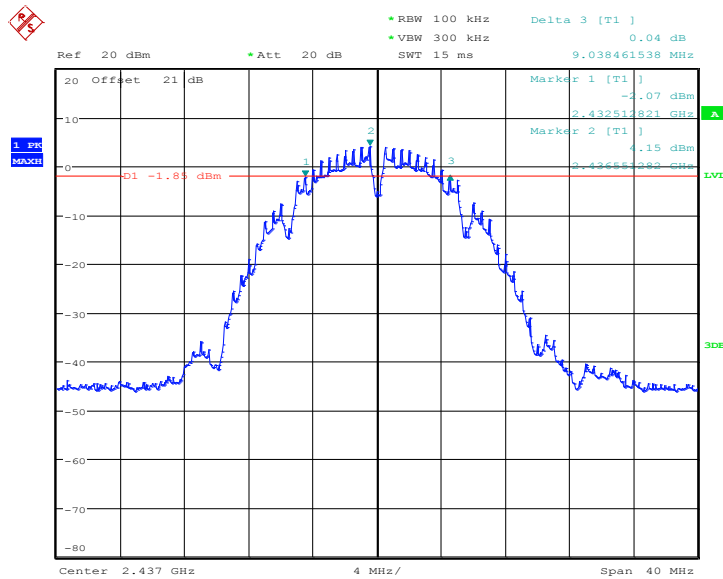
**Conclusion: PASS**

**Test graphs as below:**



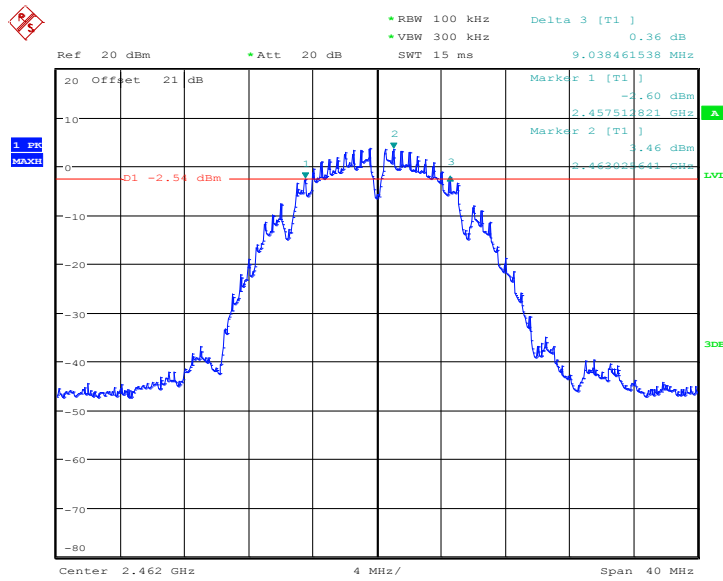
Date: 30.AUG.2012 10:21:49

**Fig. 1 Occupied 6dB Bandwidth (802.11b, Ch 1)**



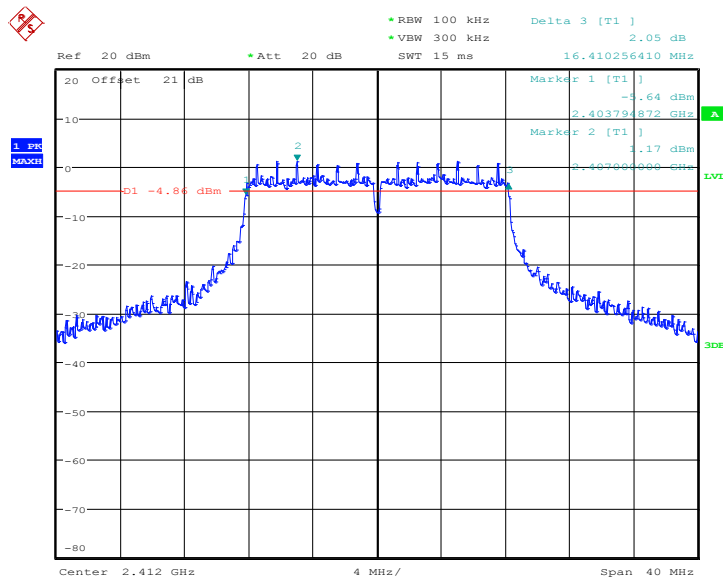
Date: 30.AUG.2012 10:34:22

**Fig. 2 Occupied 6dB Bandwidth (802.11b, Ch 6)**



Date: 30.AUG.2012 10:36:52

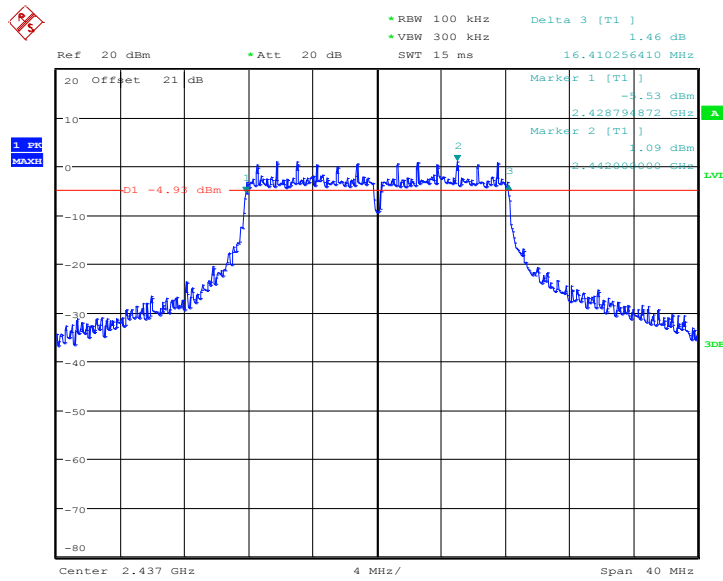
**Fig. 3 Occupied 6dB Bandwidth (802.11b, Ch 11)**



Date: 30.AUG.2012 11:00:30

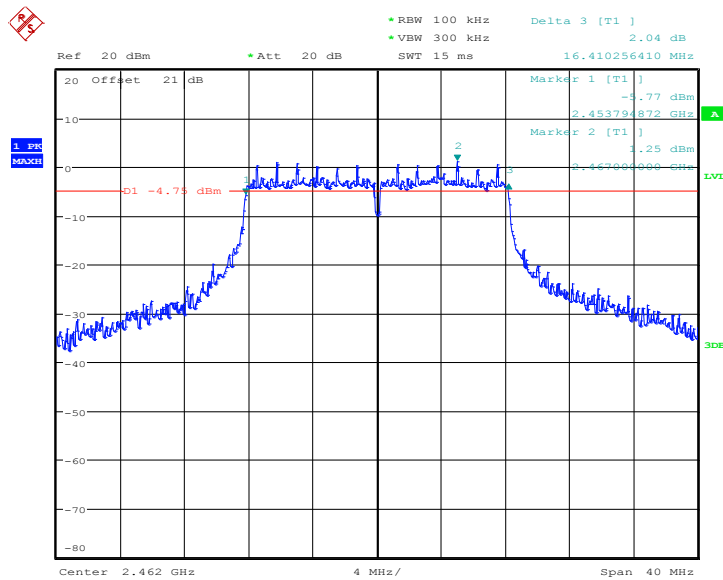
**Fig. 4 Occupied 6dB Bandwidth (802.11g, Ch 1)**





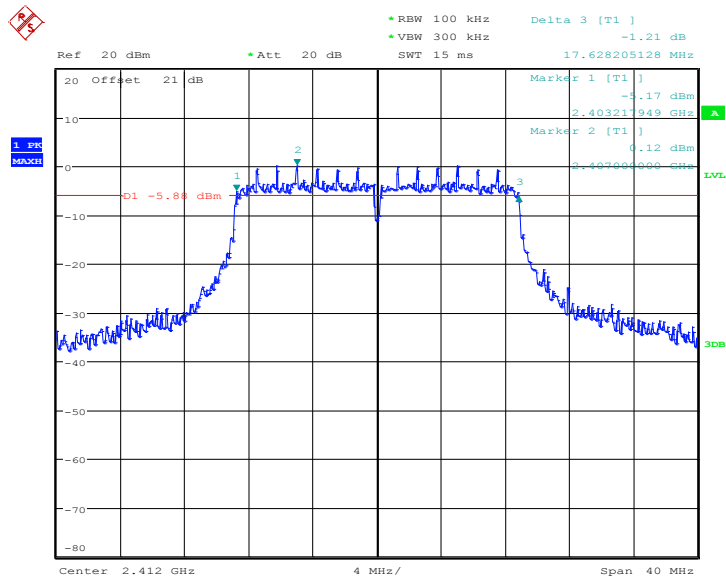
Date: 30.AUG.2012 11:02:16

**Fig. 5 Occupied 6dB Bandwidth (802.11g, Ch 6)**



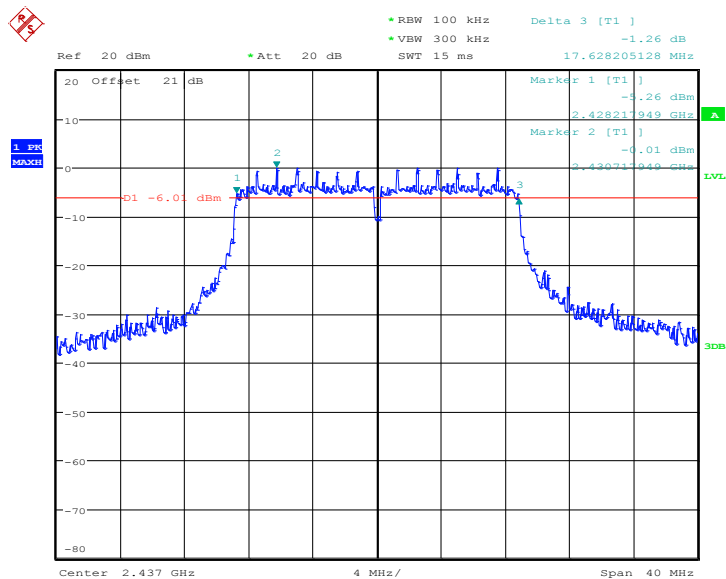
Date: 30.AUG.2012 11:03:58

**Fig. 6 Occupied 6dB Bandwidth (802.11g, Ch 11)**



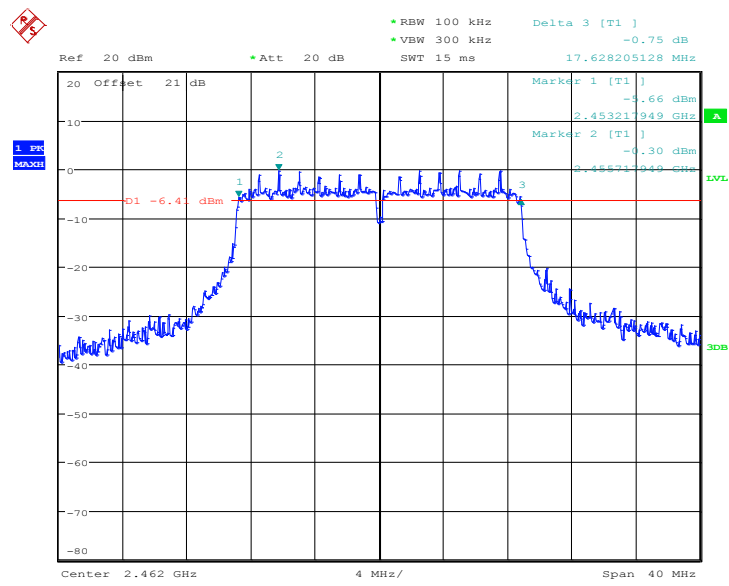
Date: 30.AUG.2012 11:06:02

**Fig. 7 Occupied 6dB Bandwidth (802.11n-HT20, Ch 1)**



Date: 30.AUG.2012 11:10:03

**Fig. 8 Occupied 6dB Bandwidth (802.11n-HT20, Ch 6)**



Date: 30.AUG.2012 11:11:25

**Fig. 9 Occupied 6dB Bandwidth (802.11n-HT20, Ch 11)**

### A.5. Band Edges Compliance

**Measurement Limit:**

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

The measurement is made according to ANSI C63.10

**Measurement Uncertainty:**

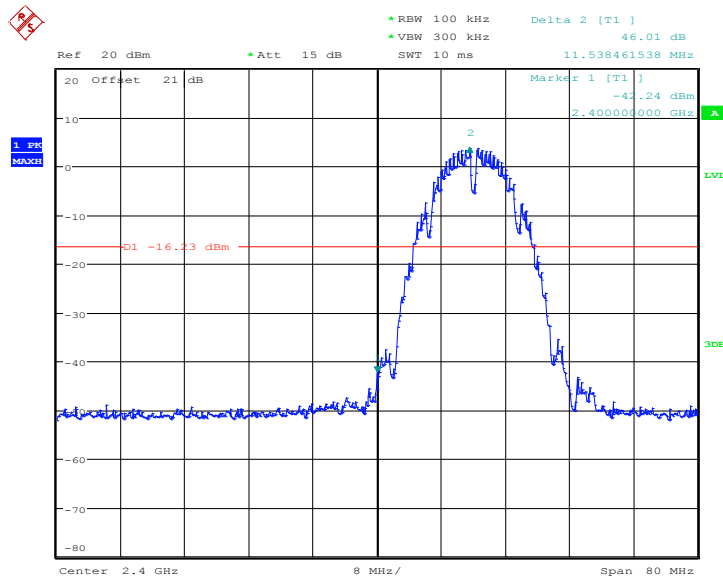
Measurement Uncertainty	0.75dB
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**Measurement Result:**

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.10	P
	11	Fig.11	P
802.11g	1	Fig.12	P
	11	Fig.13	P
802.11n	1	Fig.14	P
	11	Fig.15	P

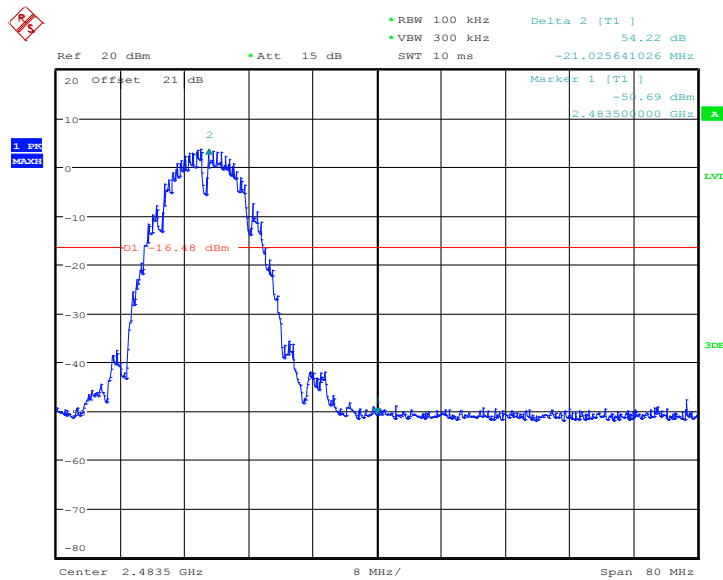
**Conclusion: PASS**

Test graphs as below:



Date: 30.AUG.2012 11:15:13

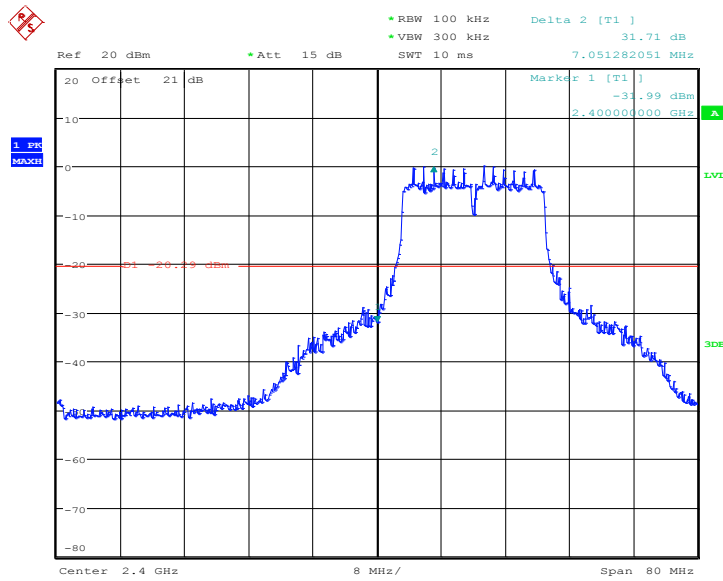
**Fig. 10 Band Edges (802.11b, Ch 1)**



Date: 30.AUG.2012 11:16:54

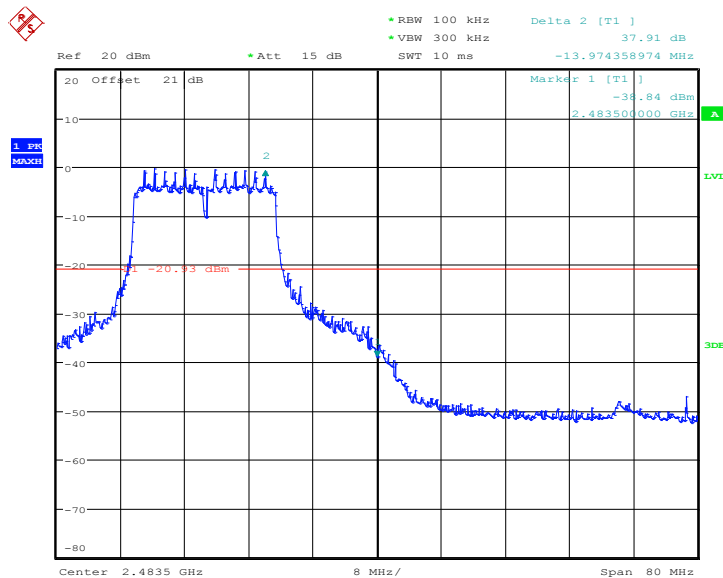
**Fig. 11 Band Edges (802.11b, Ch 11)**





Date: 30.AUG.2012 11:21:46

**Fig. 14 Band Edges (802.11n-HT20, Ch 1)**



Date: 30.AUG.2012 11:22:43

**Fig. 15 Band Edges (802.11n-HT20, Ch 11)**

## A.6. Transmitter Spurious Emission

### Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

The measurement is made according to ANSI C63.10

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)).

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

### Measurement Uncertainty:

Frequency Range	Uncertainty
$30\text{MHz} \leq f \leq 2\text{GHz}$	0.63
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	0.82
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.55
$8\text{GHz} \leq f \leq 20\text{GHz}$	1.86
$20\text{GHz} \leq f \leq 22\text{GHz}$	1.90
$22\text{GHz} \leq f \leq 26\text{GHz}$	2.20

### A.6.1 Transmitter Spurious Emission - Conducted

#### Measurement Results:

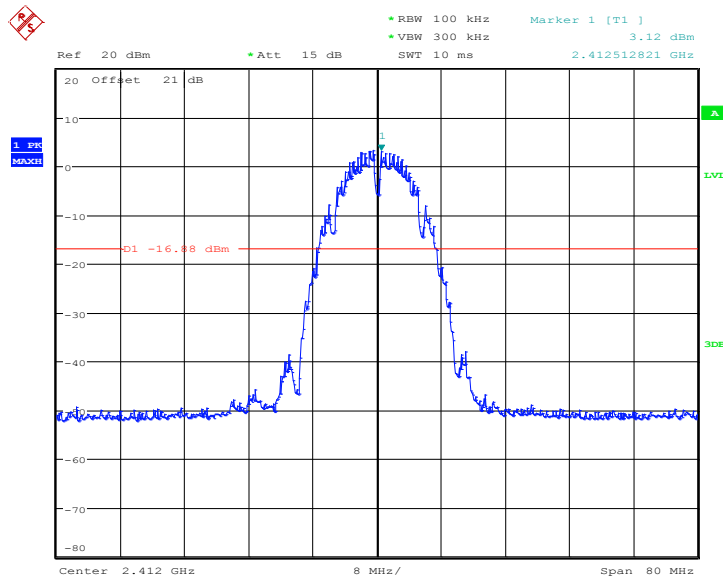
MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.16	P
		30 MHz ~ 1 GHz	Fig.17	P
		1 GHz ~ 26 GHz	Fig.18	P
	6	2.437 GHz	Fig.19	P
		30 MHz ~ 1 GHz	Fig.20	P
		1 GHz ~ 26 GHz	Fig.21	P
	11	2.462 GHz	Fig.22	P
		30 MHz ~ 1 GHz	Fig.23	P
		1 GHz ~ 26 GHz	Fig.24	P
802.11g	1	2.412 GHz	Fig.25	P
		30 MHz ~ 1 GHz	Fig.26	P



	6	1 GHz ~ 26 GHz	Fig.27	P
		2.437 GHz	Fig.28	P
		30 MHz ~ 1 GHz	Fig.29	P
	11	1 GHz ~ 26 GHz	Fig.30	P
		2.462 GHz	Fig.31	P
		30 MHz ~ 1 GHz	Fig.32	P
802.11n (20MHz)	1	1 GHz ~ 26 GHz	Fig.33	P
		2.412 GHz	Fig.34	P
		30 MHz ~ 1 GHz	Fig.35	P
	6	1 GHz ~ 26 GHz	Fig.36	P
		2.437 GHz	Fig.37	P
		30 MHz ~ 1 GHz	Fig.38	P
	11	1 GHz ~ 26 GHz	Fig.39	P
		2.462 GHz	Fig.40	P
		30 MHz ~ 1 GHz	Fig.41	P
		1 GHz ~ 26 GHz	Fig.42	P

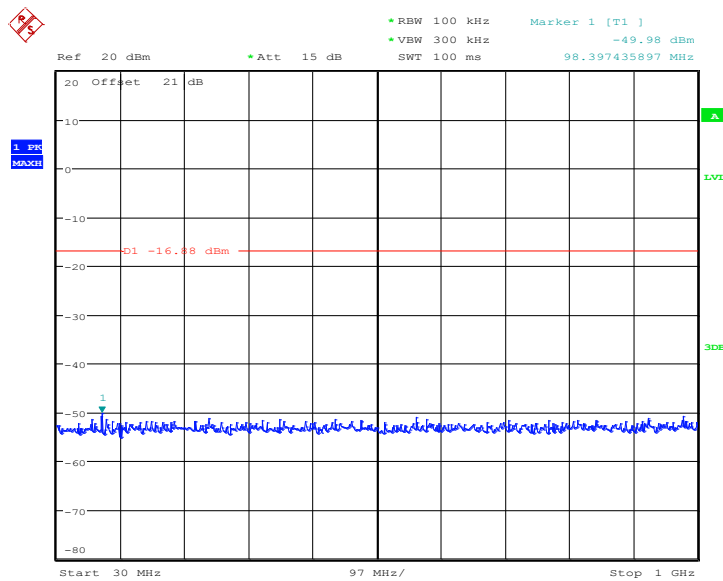
**Conclusion: PASS**

**Test graphs as below:**



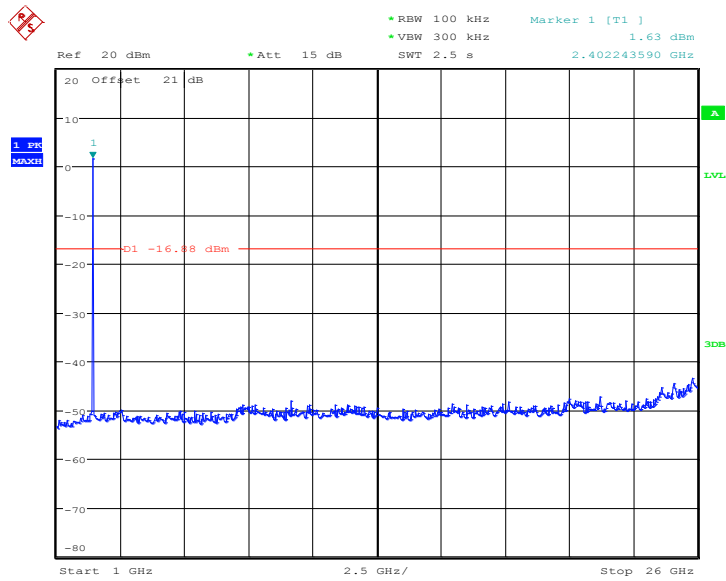
Date: 30.AUG.2012 13:21:01

**Fig. 16 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)**



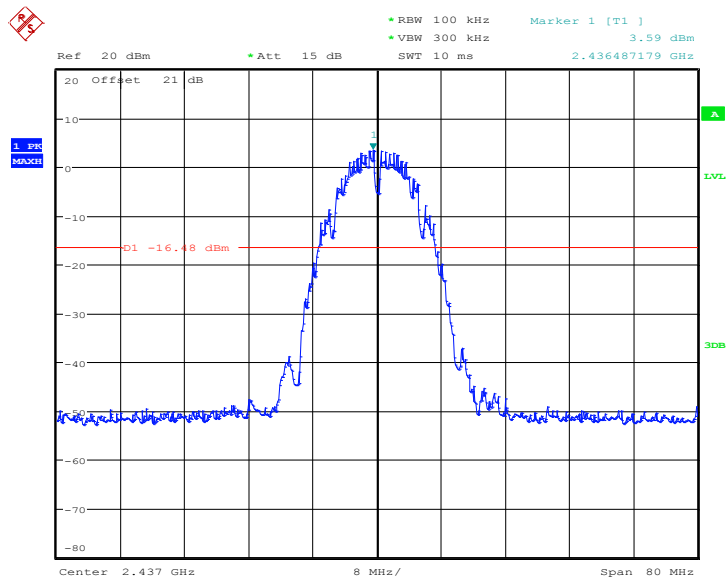
Date: 30.AUG.2012 13:21:24

**Fig. 17 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)**



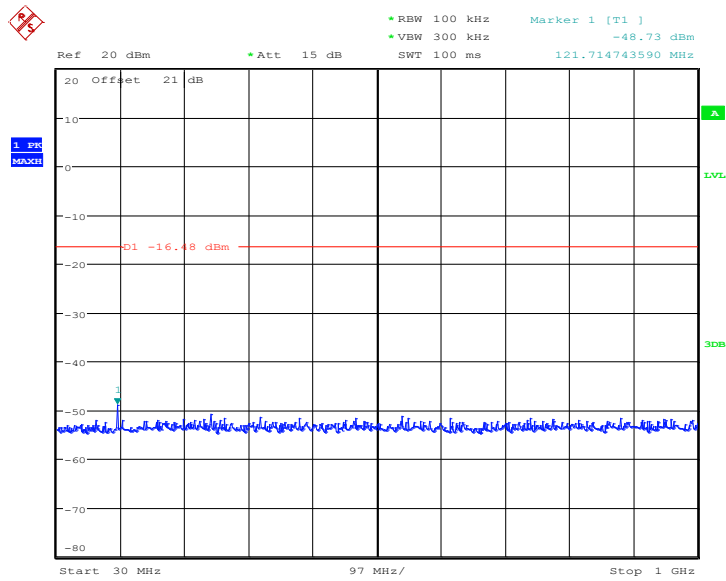
Date: 30.AUG.2012 13:21:52

**Fig. 18 Conducted Spurious Emission (802.11b, Ch1, 1 GHz-26 GHz)**



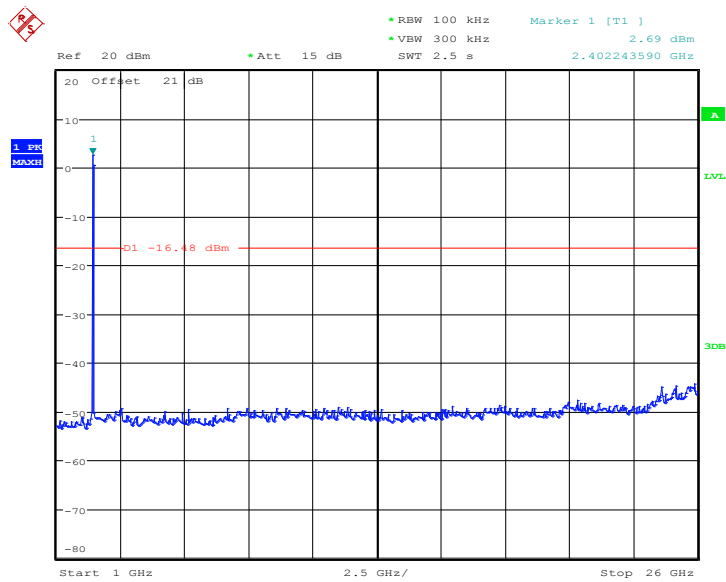
Date: 30.AUG.2012 13:22:49

**Fig. 19 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)**



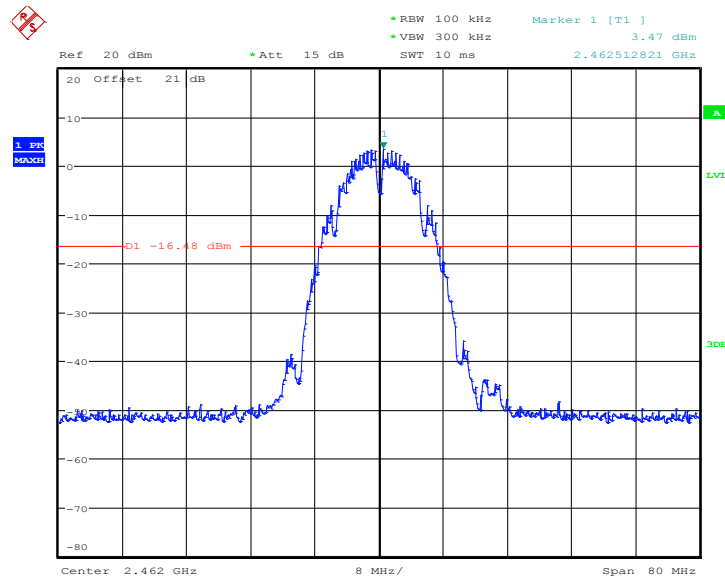
Date: 30.AUG.2012 13:23:11

**Fig. 20 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)**



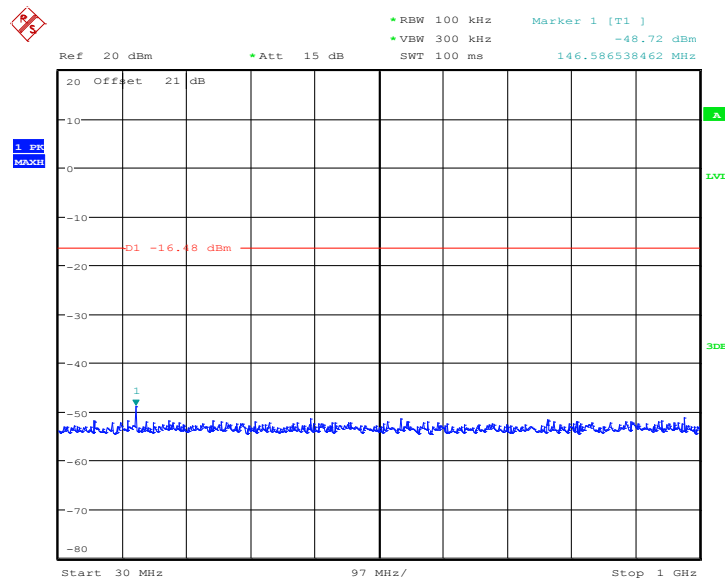
Date: 30.AUG.2012 13:23:33

**Fig. 21 Conducted Spurious Emission (802.11b, Ch6, 1 GHz-26 GHz)**



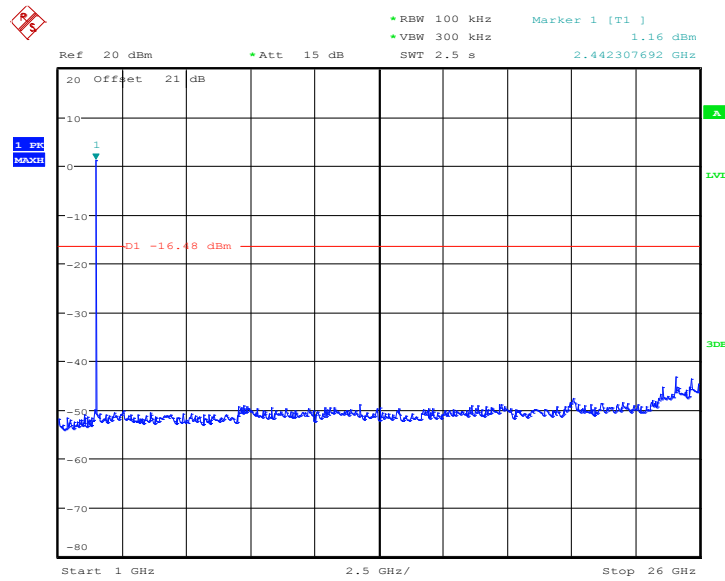
Date: 30.AUG.2012 13:24:39

**Fig. 22 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)**



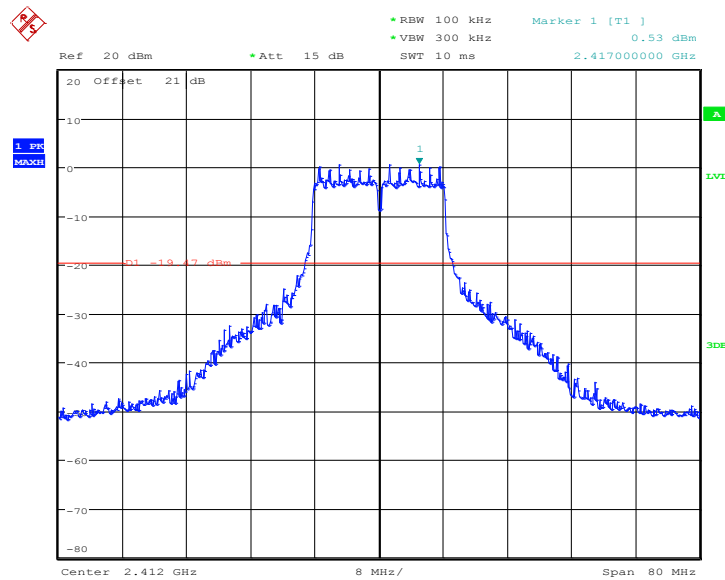
Date: 30.AUG.2012 13:24:55

**Fig. 23 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)**



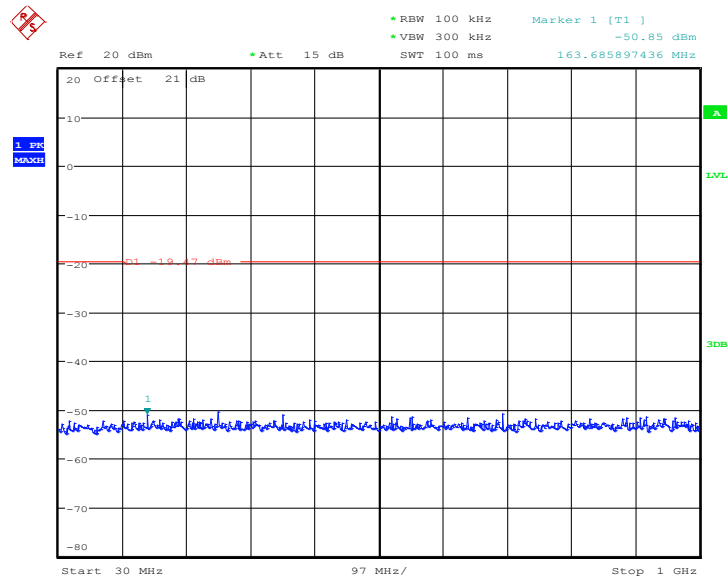
Date: 30.AUG.2012 13:25:12

**Fig. 24 Conducted Spurious Emission (802.11b, Ch11, 1 GHz-26 GHz)**



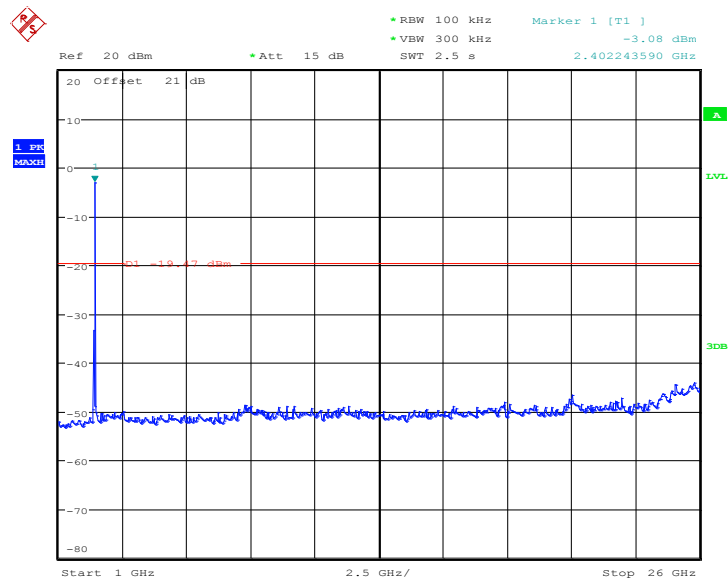
Date: 30.AUG.2012 13:27:06

**Fig. 25 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)**



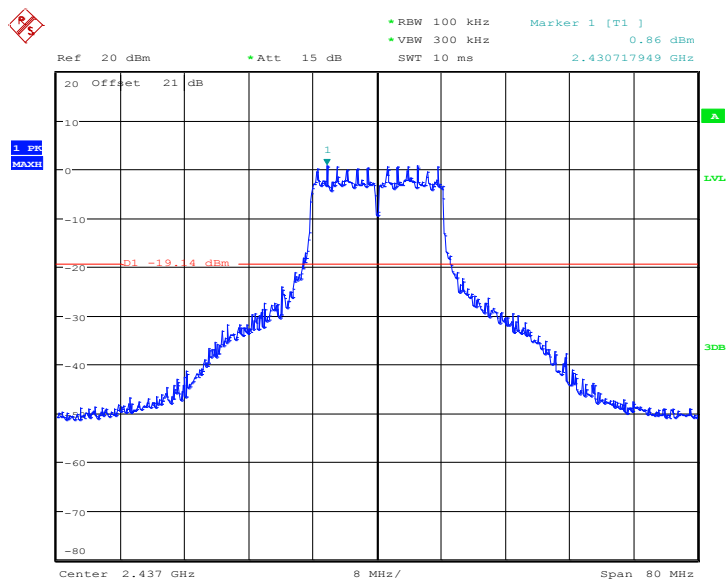
Date: 30.AUG.2012 13:27:27

**Fig. 26 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)**



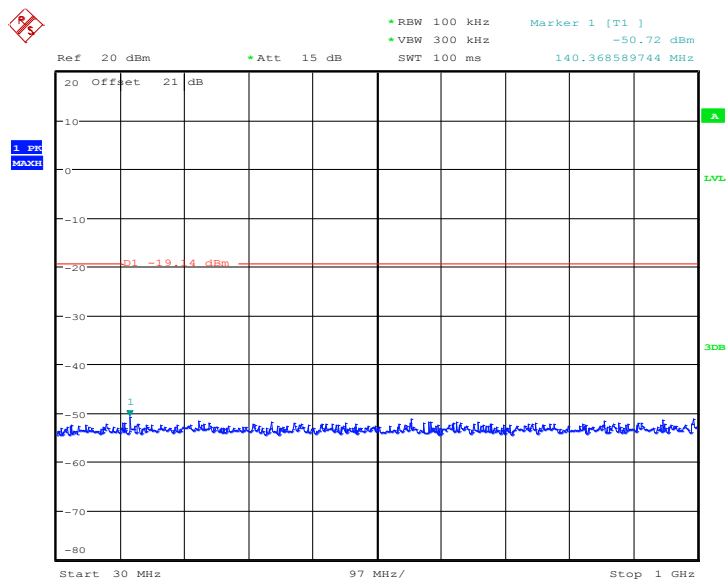
Date: 30.AUG.2012 13:27:59

**Fig. 27 Conducted Spurious Emission (802.11g, Ch1, 1 GHz-26 GHz)**



Date: 30.AUG.2012 13:29:33

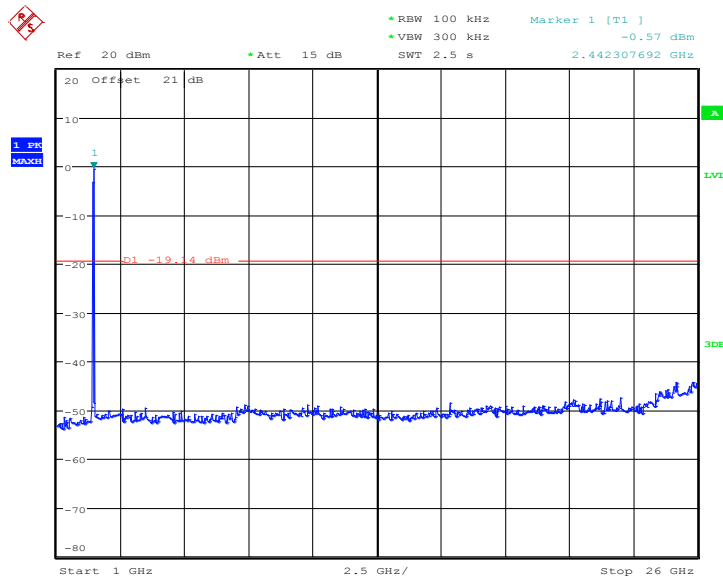
**Fig. 28 Conducted Spurious Emission (802.11g, Ch6, Center Frequency)**



Date: 30.AUG.2012 13:29:51

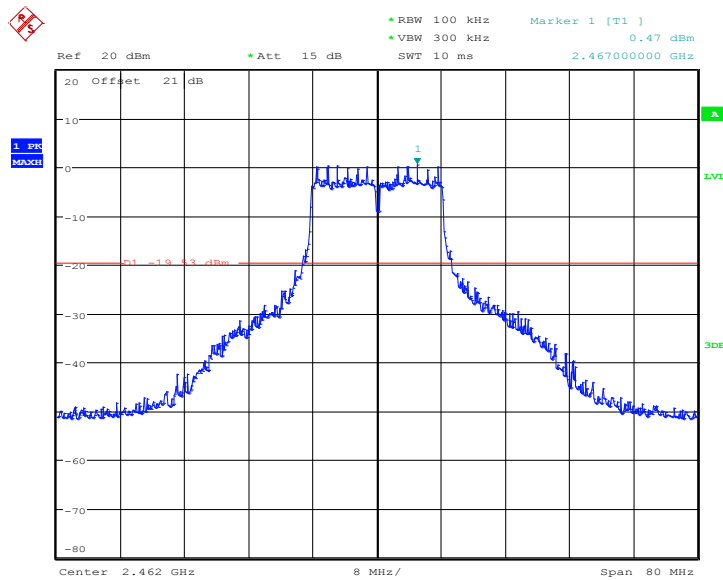
**Fig. 29 Conducted Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)**





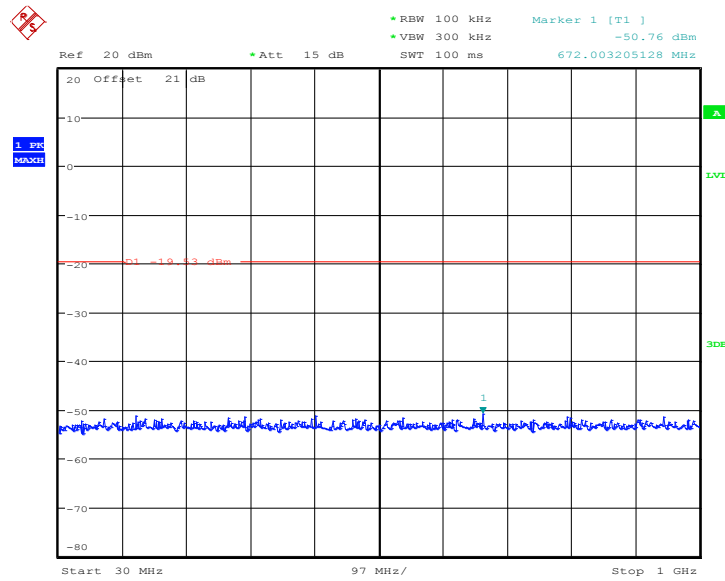
Date: 30.AUG.2012 13:30:15

**Fig. 30 Conducted Spurious Emission (802.11g, Ch6, 1 GHz-26 GHz)**



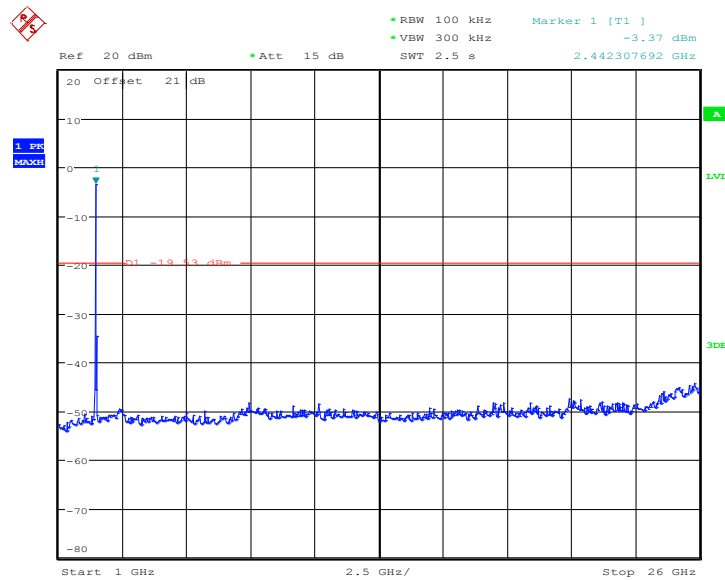
Date: 30.AUG.2012 13:31:07

**Fig. 31 Conducted Spurious Emission (802.11g, Ch11, Center Frequency)**



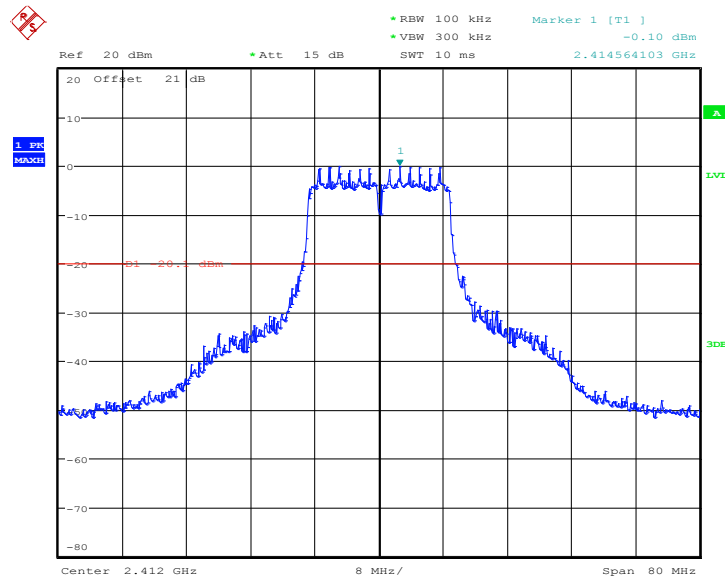
Date: 30.AUG.2012 13:31:32

**Fig. 32 Conducted Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)**



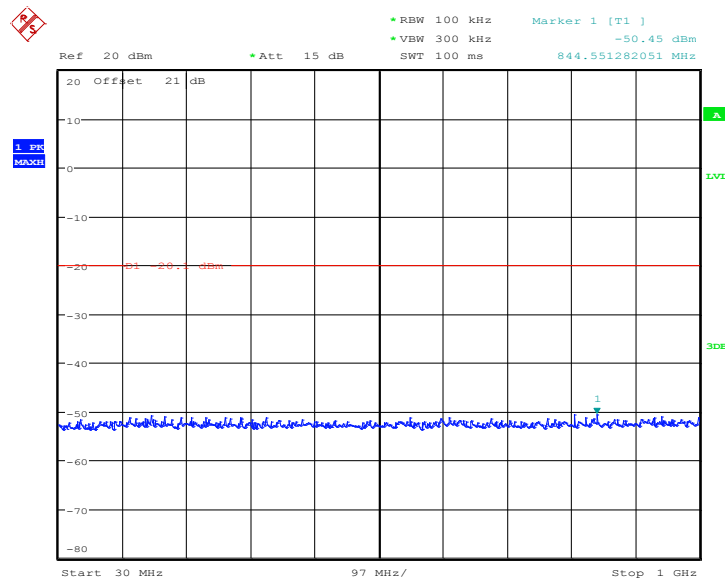
Date: 30.AUG.2012 13:31:57

**Fig. 33 Conducted Spurious Emission (802.11g, Ch11, 1 GHz-26 GHz)**



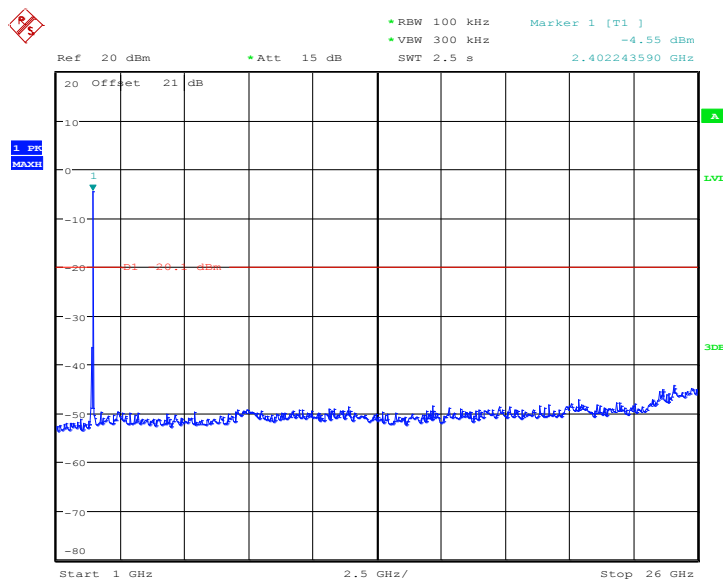
Date: 30.AUG.2012 14:02:21

**Fig. 34 Conducted Spurious Emission (802.11n-HT20, Ch1, Center Frequency)**



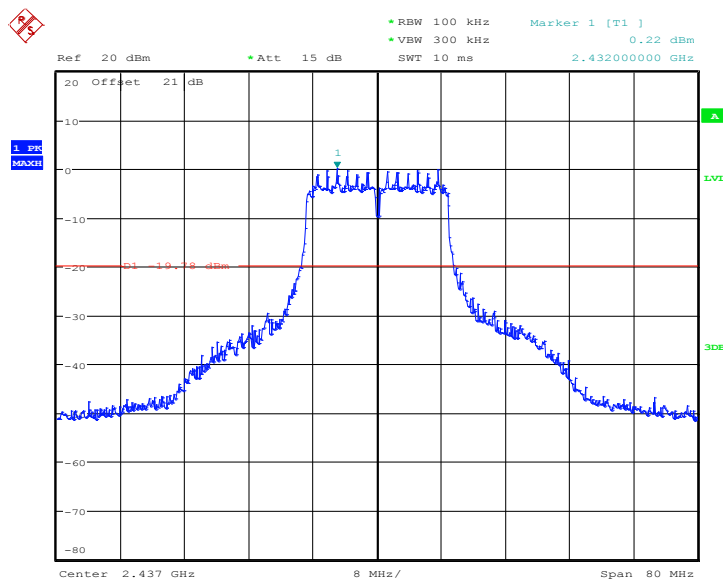
Date: 30.AUG.2012 14:03:29

**Fig. 35 Conducted Spurious Emission (802.11n-HT20, Ch1, 30 MHz-1 GHz)**



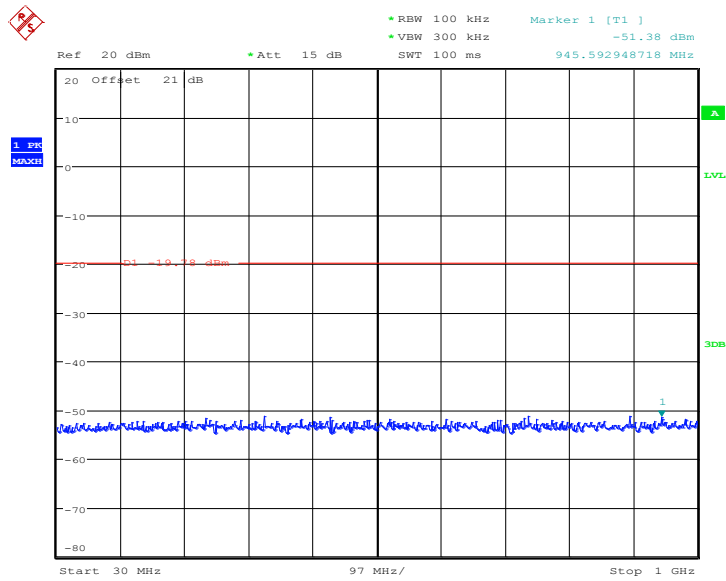
Date: 30.AUG.2012 14:03:48

**Fig. 36 Conducted Spurious Emission (802.11n-HT20, Ch1, 1 GHz-26 GHz)**



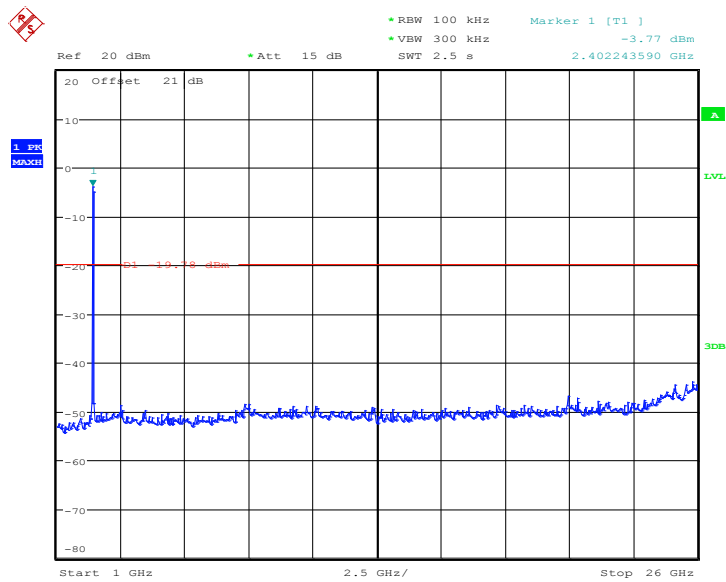
Date: 30.AUG.2012 14:05:23

**Fig. 37 Conducted Spurious Emission (802.11n-HT20, Ch6, Center Frequency)**



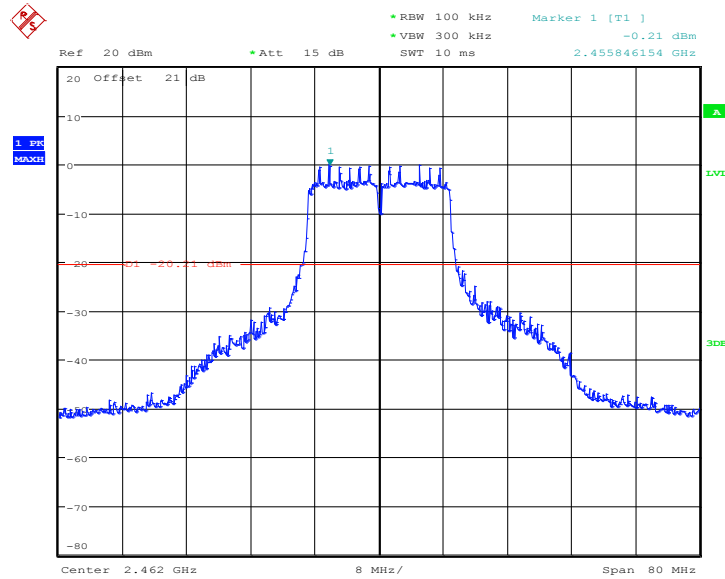
Date: 30.AUG.2012 14:05:45

**Fig. 38 Conducted Spurious Emission (802.11n-HT20, Ch6, 30 MHz-1 GHz)**



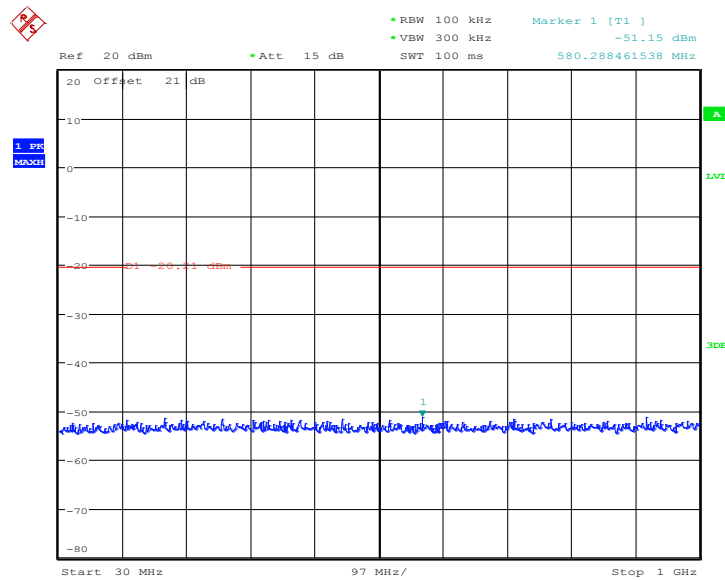
Date: 30.AUG.2012 14:06:05

**Fig. 39 Conducted Spurious Emission (802.11n-HT20, Ch6, 1 GHz-26 GHz)**



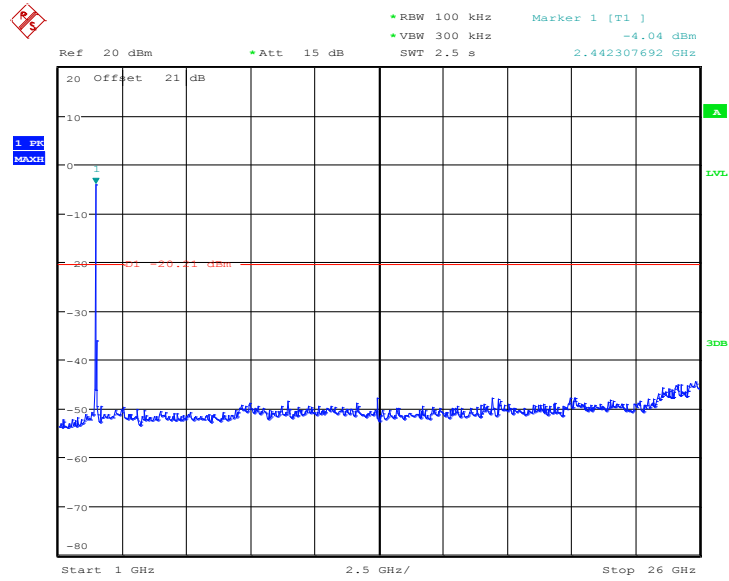
Date: 30.AUG.2012 14:06:59

**Fig. 40 Conducted Spurious Emission (802.11n-HT20, Ch11, Center Frequency)**



Date: 30.AUG.2012 14:07:17

**Fig. 41 Conducted Spurious Emission (802.11n-HT20, Ch11, 30 MHz-1 GHz)**



Date: 30.AUG.2012 14:07:33

**Fig. 42 Conducted Spurious Emission (802.11n-HT20, Ch11, 1 GHz-26 GHz)**

### A.6.2 Transmitter Spurious Emission - Radiated

Limit in restricted band:

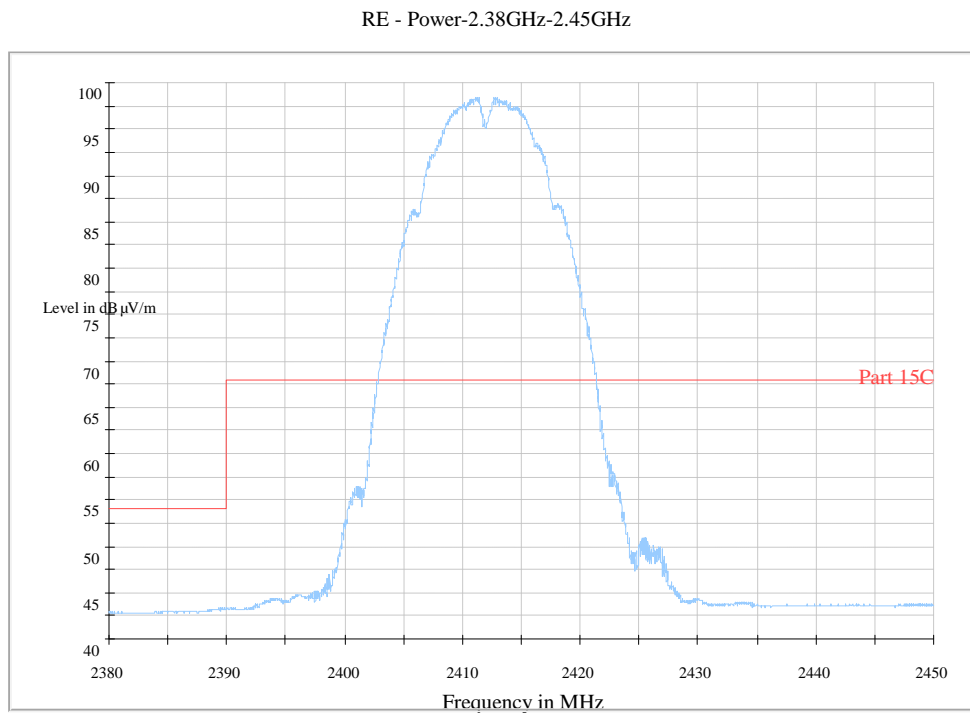
Measurement Results:

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.45GHz	Fig.43	P
	1	30 MHz ~1 GHz	Fig.44	P
		1 GHz ~ 3 GHz	Fig.45	P
		3 GHz ~ 18 GHz	Fig.46	P
	6	30 MHz ~1 GHz	Fig.47	P
		1 GHz ~ 3 GHz	Fig.48	P
		3 GHz ~ 18 GHz	Fig.49	P
	Power	2.45GHz ~2.5GHz	Fig.50	P
	11	30 MHz ~1 GHz	Fig.51	P
		1 GHz ~ 3 GHz	Fig.52	P
		3 GHz ~ 18 GHz	Fig.53	P
	802.11g	Power	2.38GHz ~2.45GHz	Fig.54
1		30 MHz ~1 GHz	Fig.55	P
		1 GHz ~ 3 GHz	Fig.56	P
		3 GHz ~ 18 GHz	Fig.57	P
6		30 MHz ~1 GHz	Fig.58	P
		1 GHz ~ 3 GHz	Fig.59	P
		3 GHz ~ 18 GHz	Fig.60	P
Power		2.45GHz~2.5GHz	Fig.61	P
11		30 MHz ~1 GHz	Fig.62	P
		1 GHz ~ 3 GHz	Fig.63	P
		3 GHz ~ 18 GHz	Fig.64	P
802.11n (20MHz)		Power	2.38GHz ~2.45GHz	Fig.65
	1	30 MHz ~1 GHz	Fig.66	P
		1 GHz ~ 3 GHz	Fig.67	P
		3 GHz ~ 18 GHz	Fig.68	P
	6	30 MHz ~1 GHz	Fig.69	P
		1 GHz ~ 3 GHz	Fig.70	P
		3 GHz ~ 18 GHz	Fig.71	P
	Power	2.45GHz~2.5GHz	Fig.72	P
	11	30 MHz ~1 GHz	Fig.73	P
		1 GHz ~ 3 GHz	Fig.74	P
		3 GHz ~ 18 GHz	Fig.75	P
	/	All channels	18 GHz~ 26 GHz	Fig.76

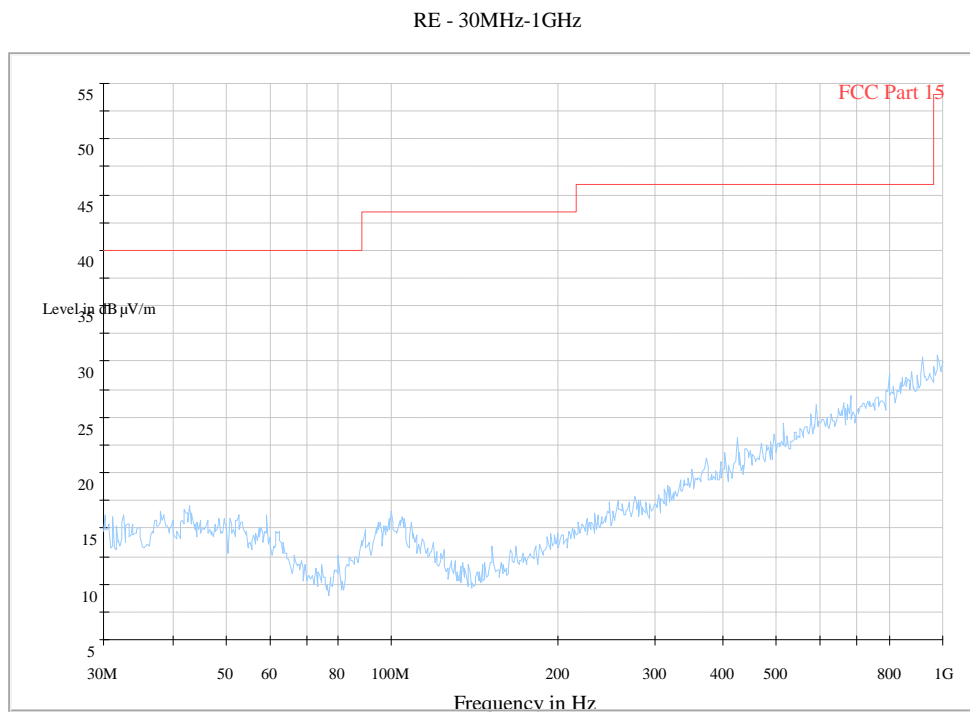
**Conclusion: PASS**

Test graphs as below:

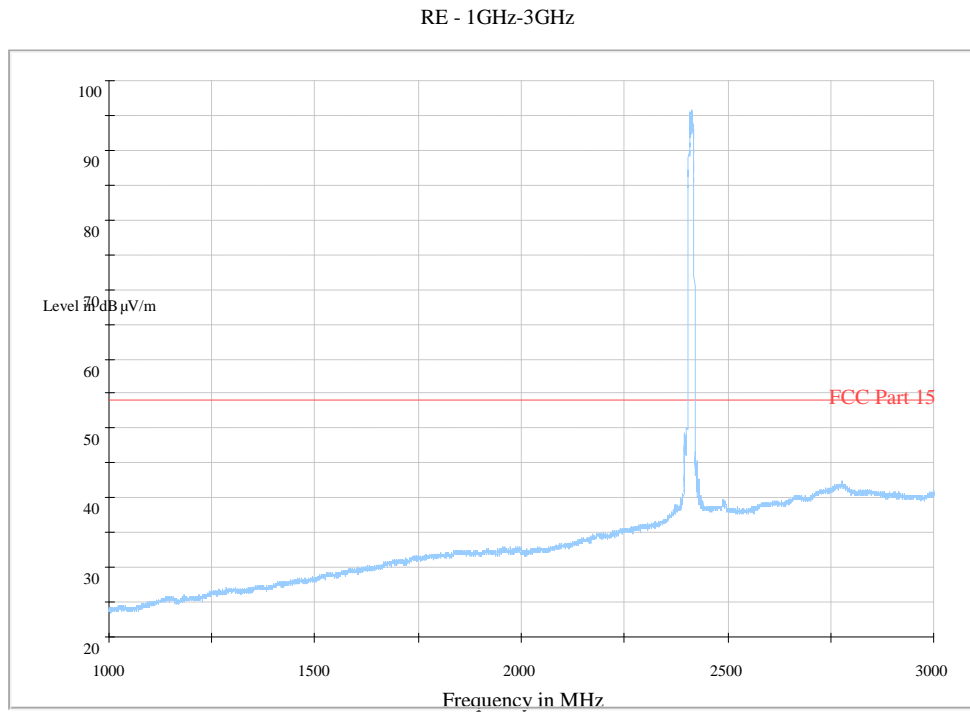




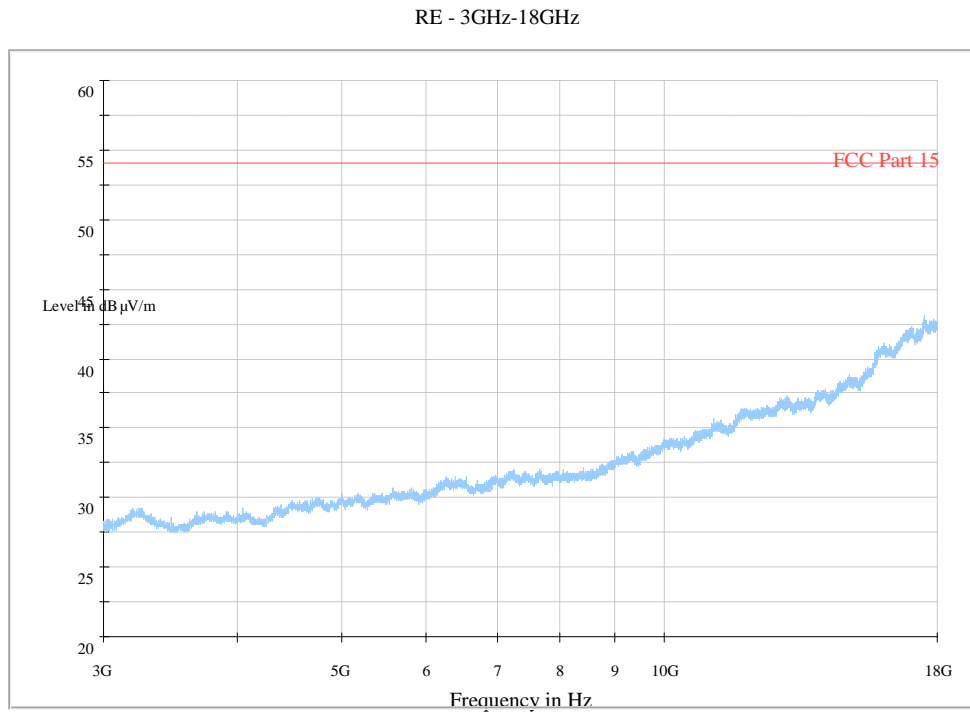
**Fig. 43 Radiated Spurious Emission (Power): 802.11b, ch1, 2.38 GHz - 2.45GHz**



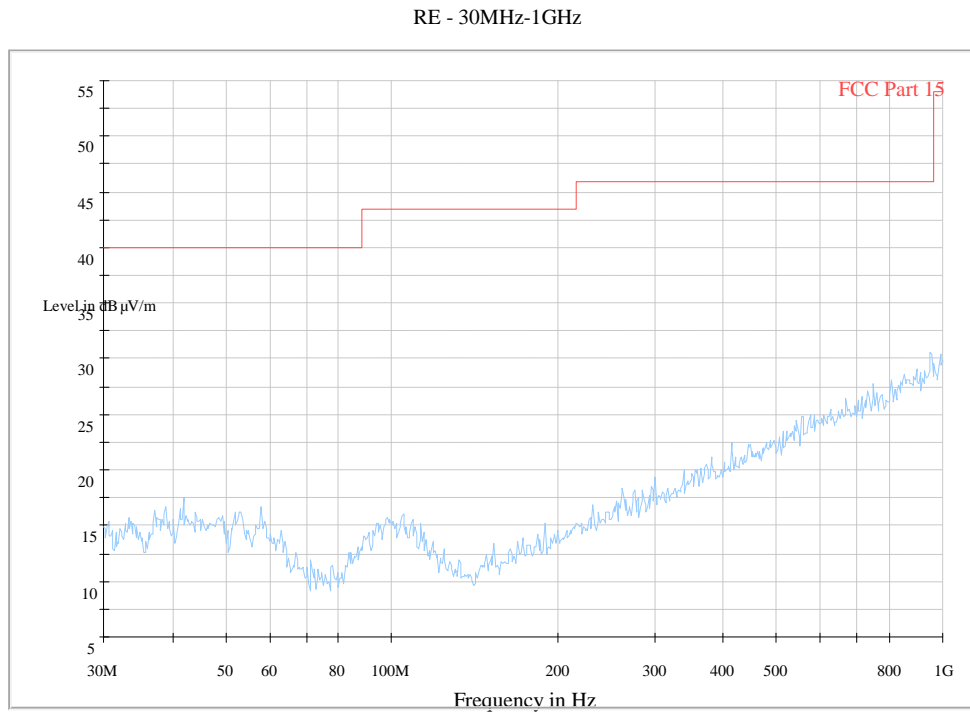
**Fig. 44 Radiated Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)**



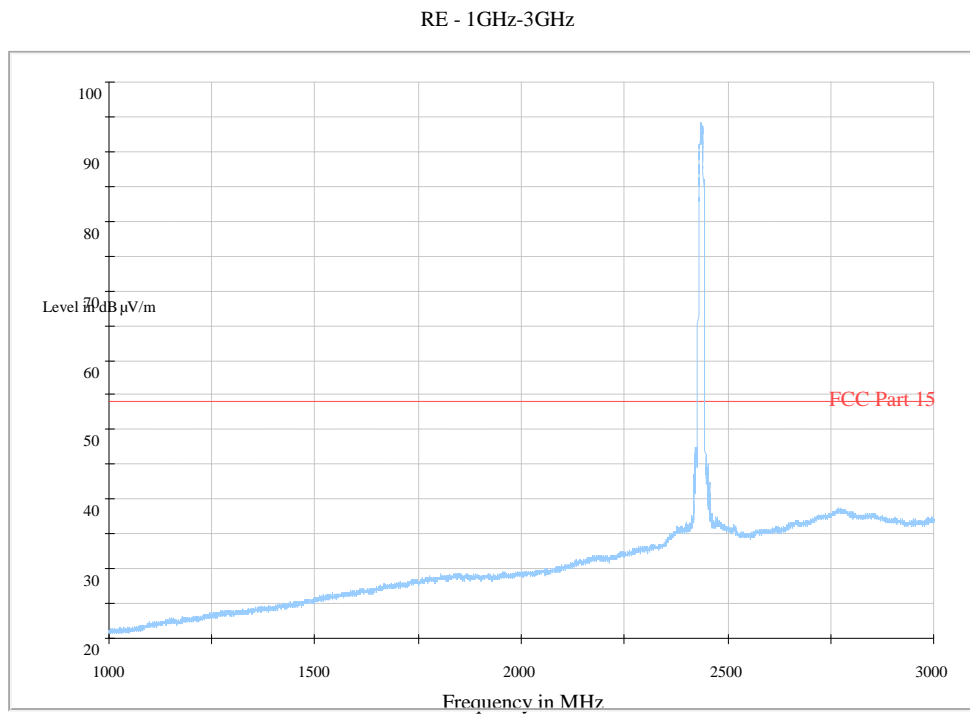
**Fig. 45 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-3 GHz)**



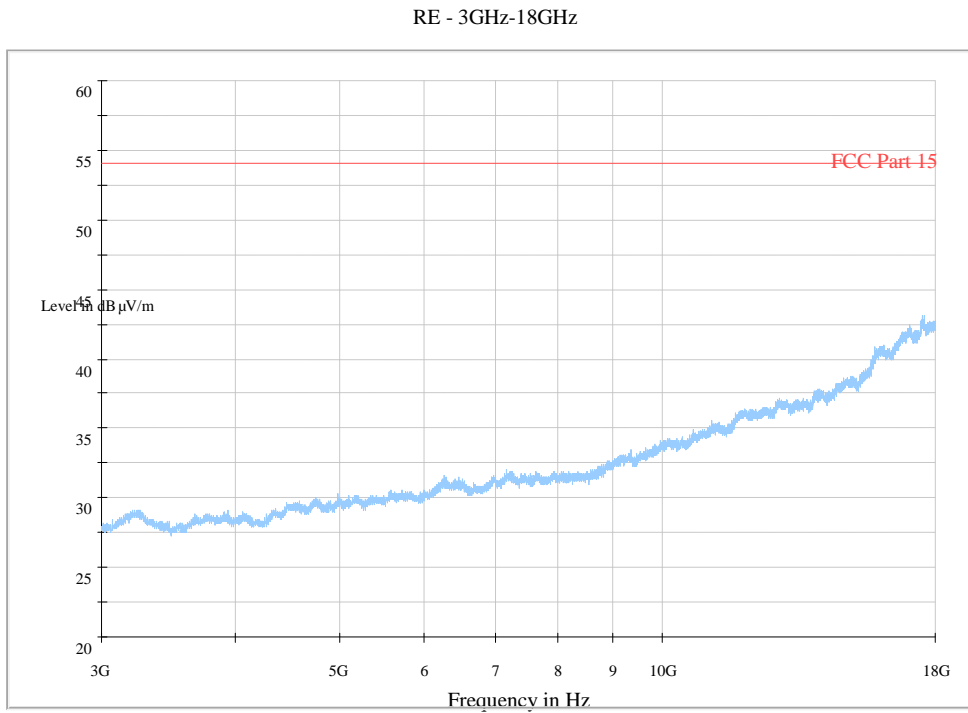
**Fig. 46 Radiated Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)**



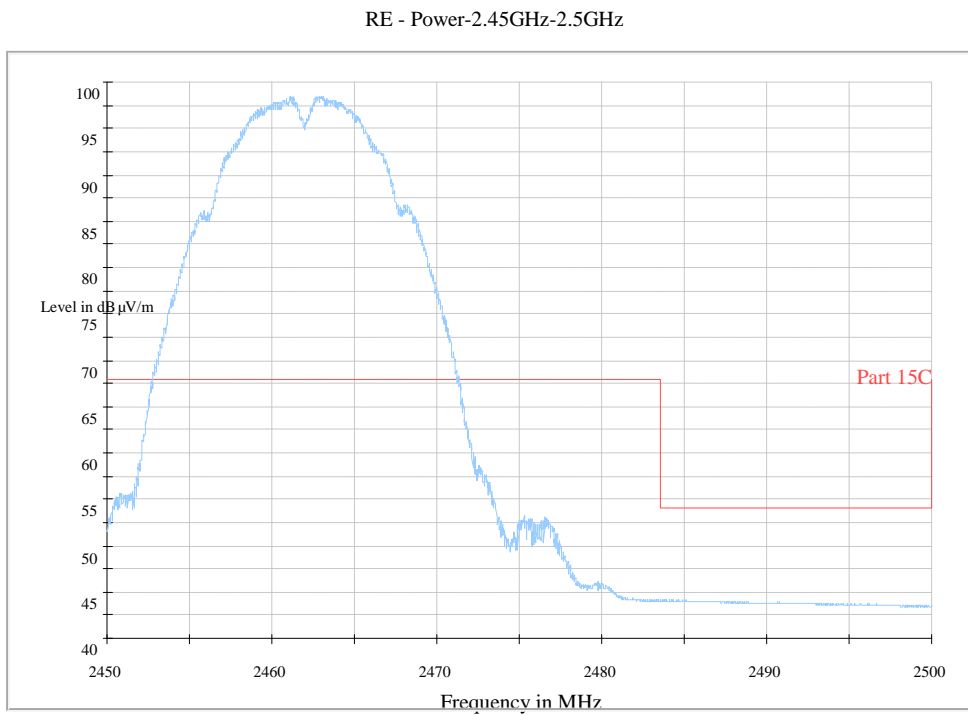
**Fig. 47 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)**



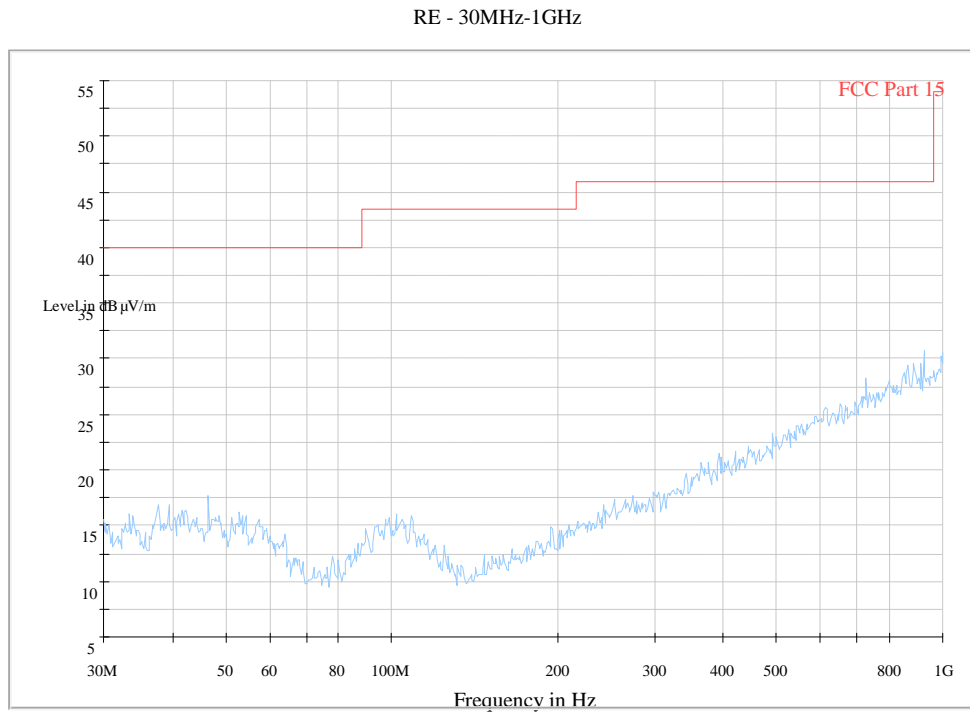
**Fig. 48 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-3 GHz)**



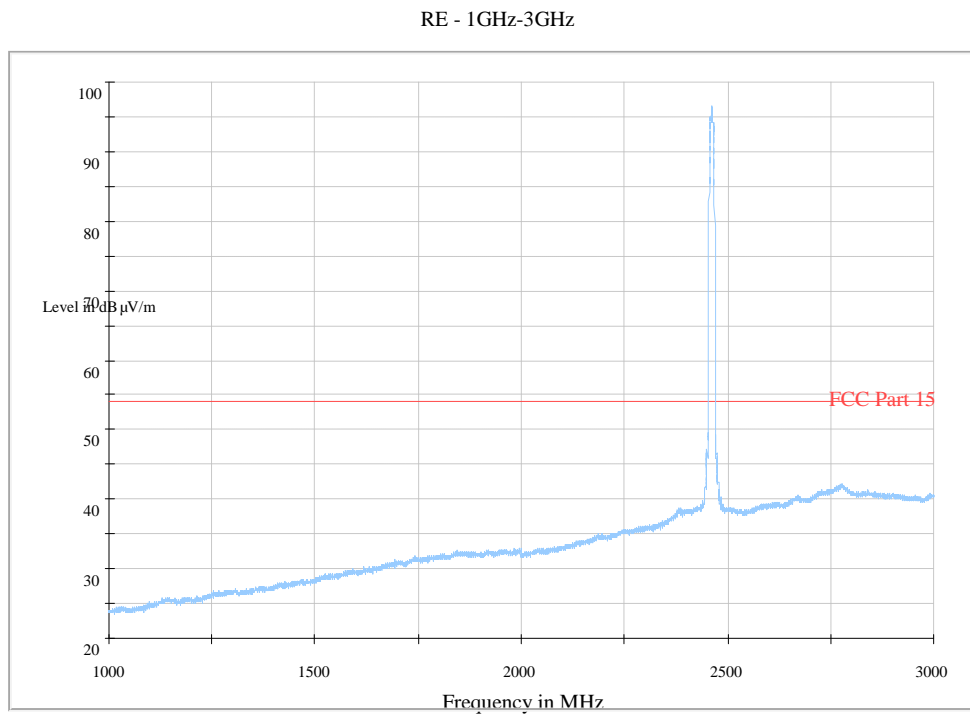
**Fig. 49 Radiated Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)**



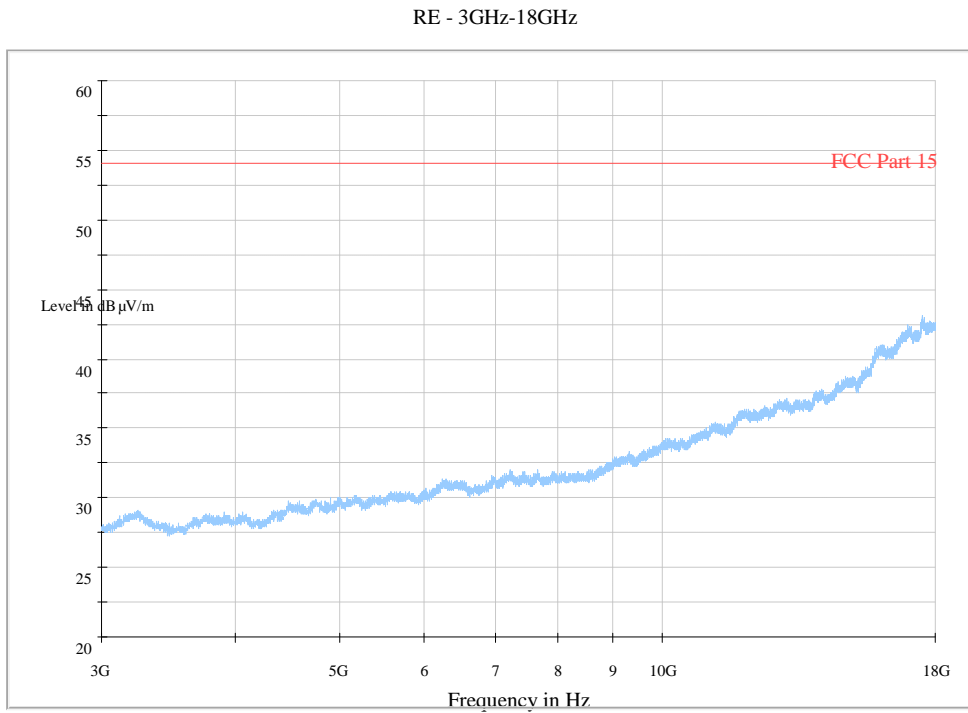
**Fig. 50 Radiated Spurious Emission (Power): 802.11b, ch11, 2.45 GHz - 2.5GHz**



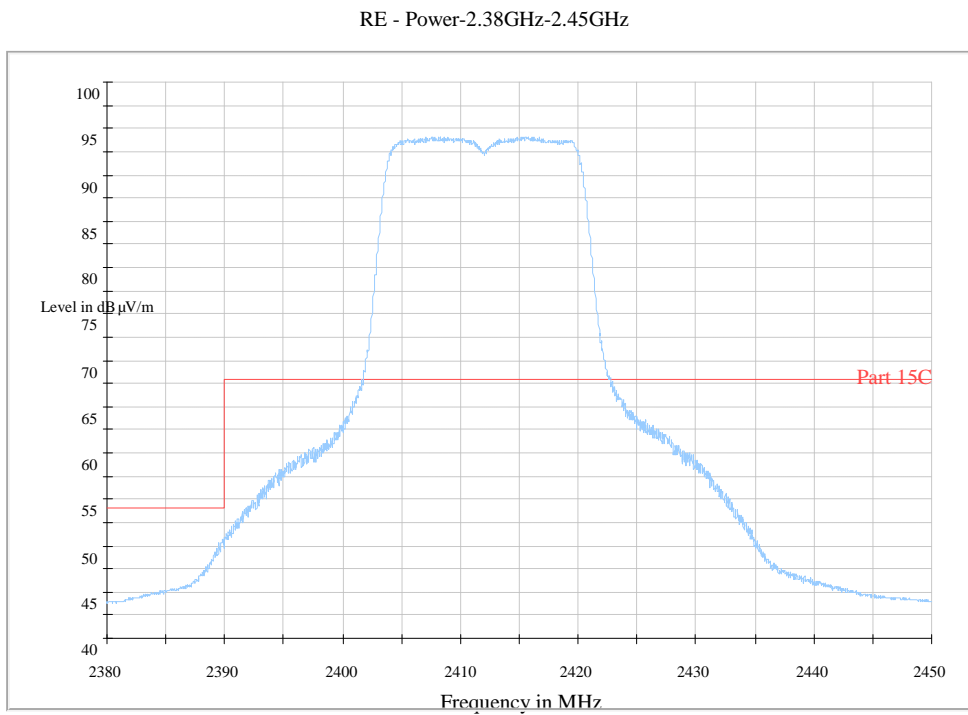
**Fig. 51 Radiated Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)**



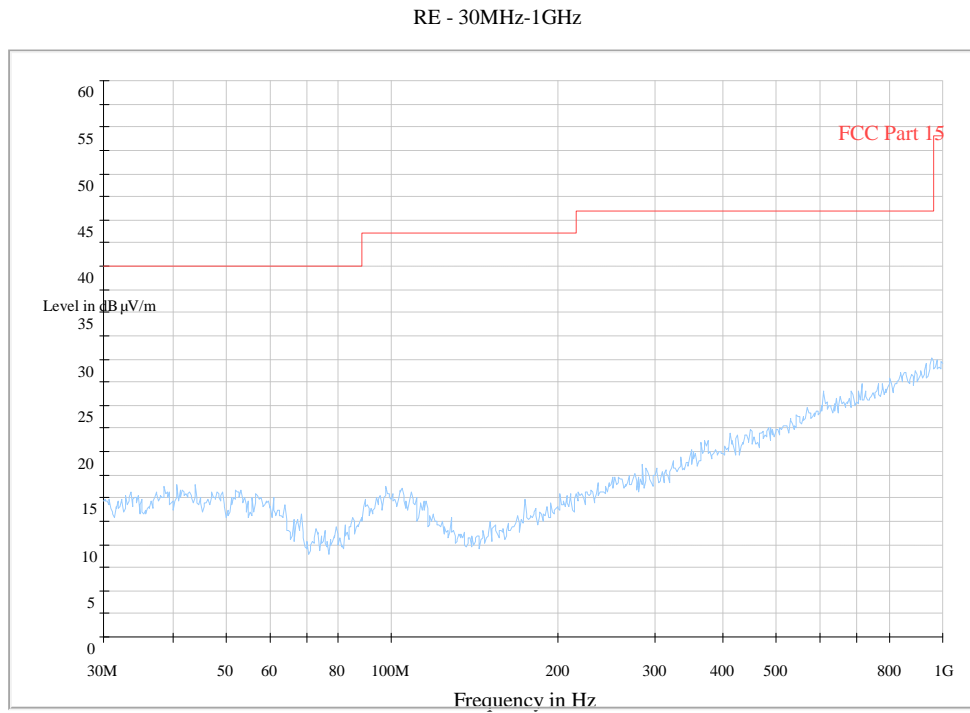
**Fig. 52 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-3 GHz)**



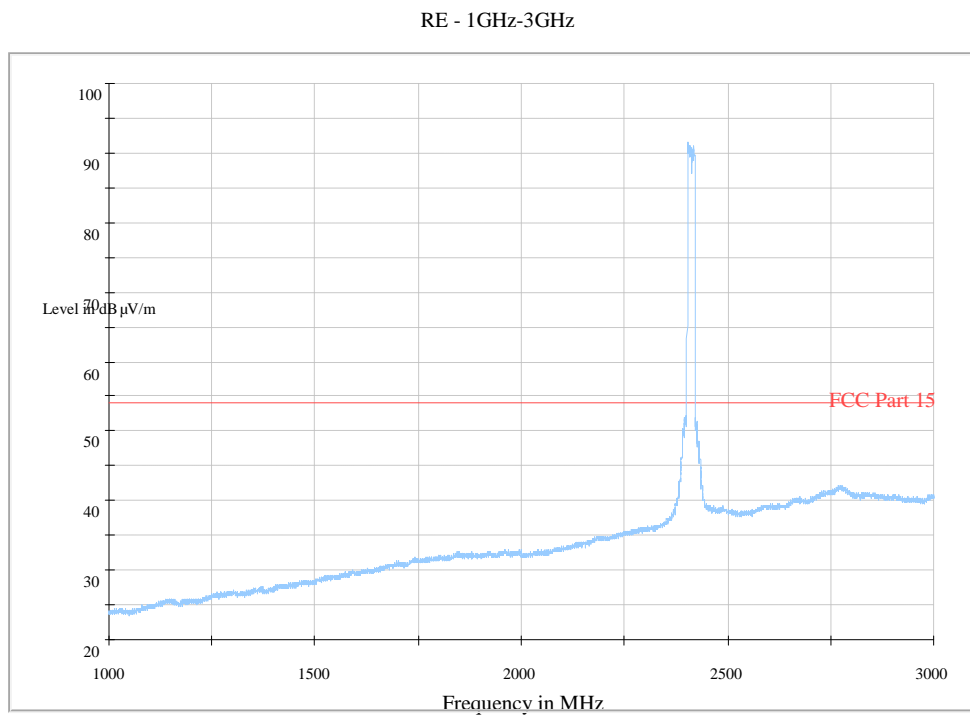
**Fig. 53 Radiated Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)**



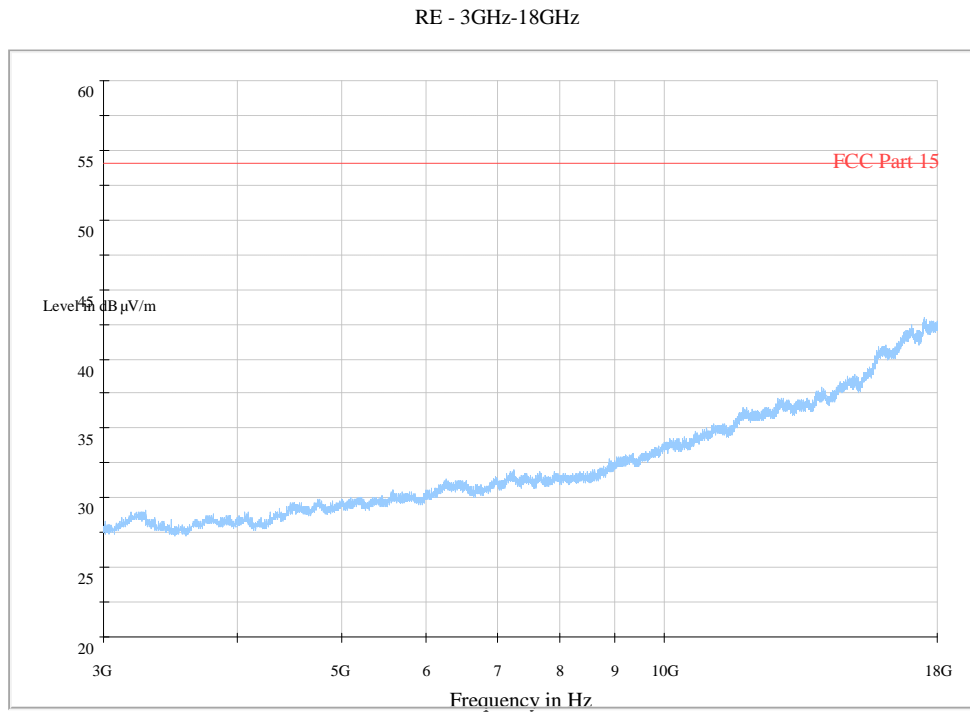
**Fig. 54 Radiated Spurious Emission (Power): 802.11g, ch1, 2.38 GHz - 2.45GHz**



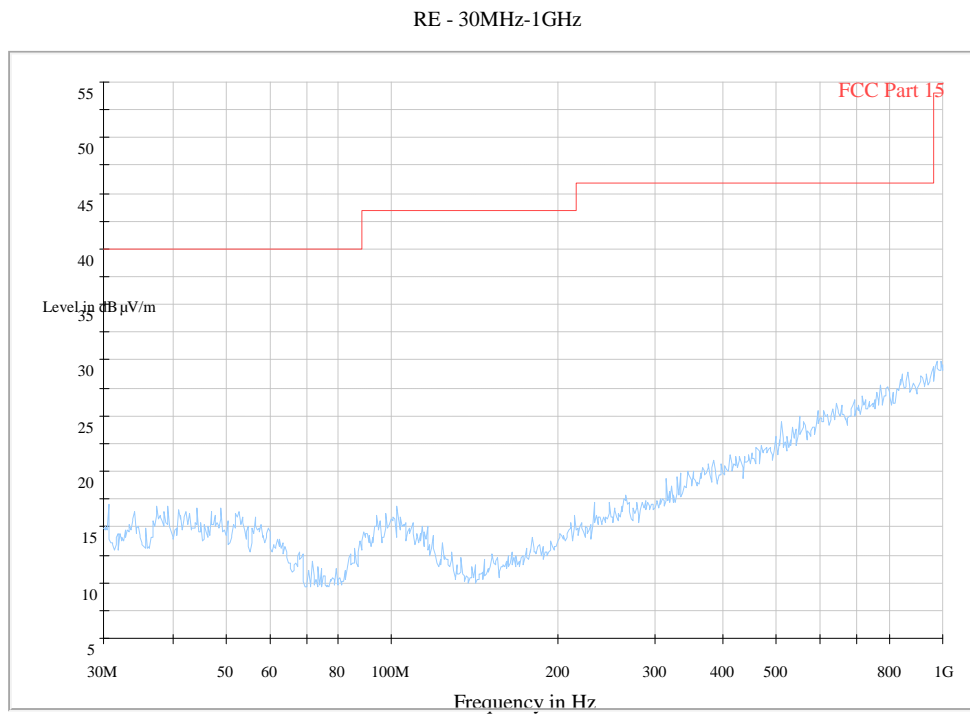
**Fig. 55 Radiated Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)**



**Fig. 56 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-3 GHz)**

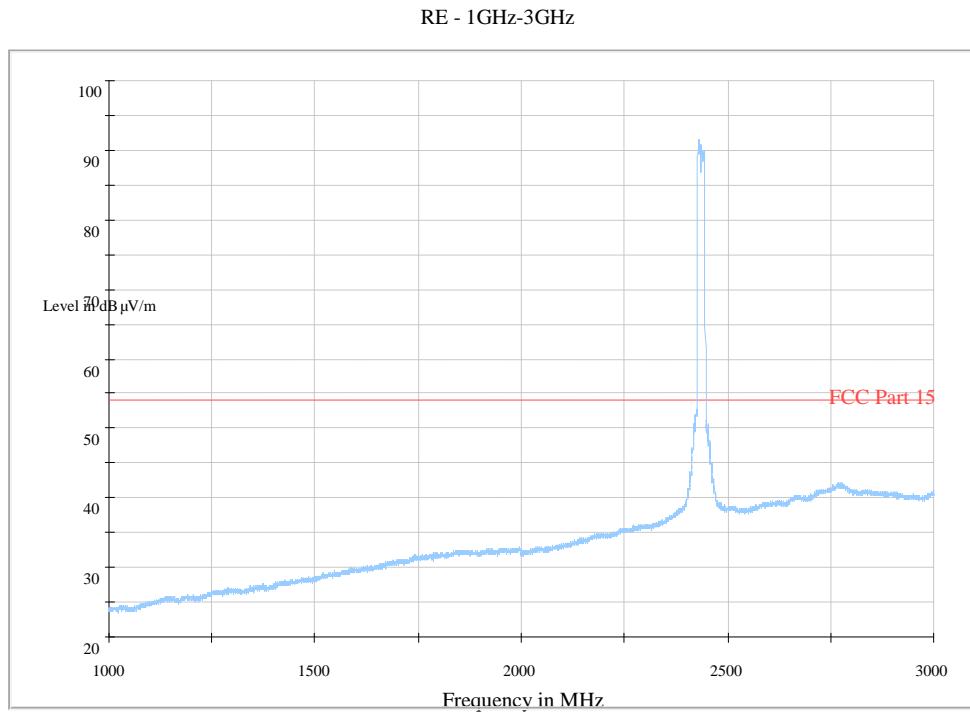


**Fig. 57 Radiated Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)**

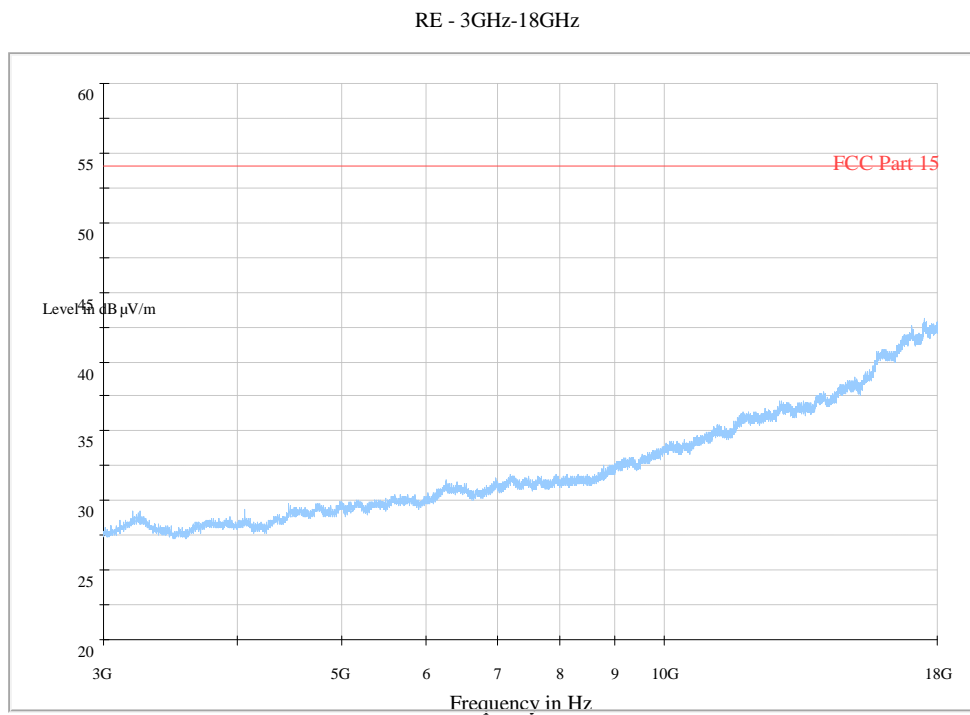


**Fig. 58 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)**

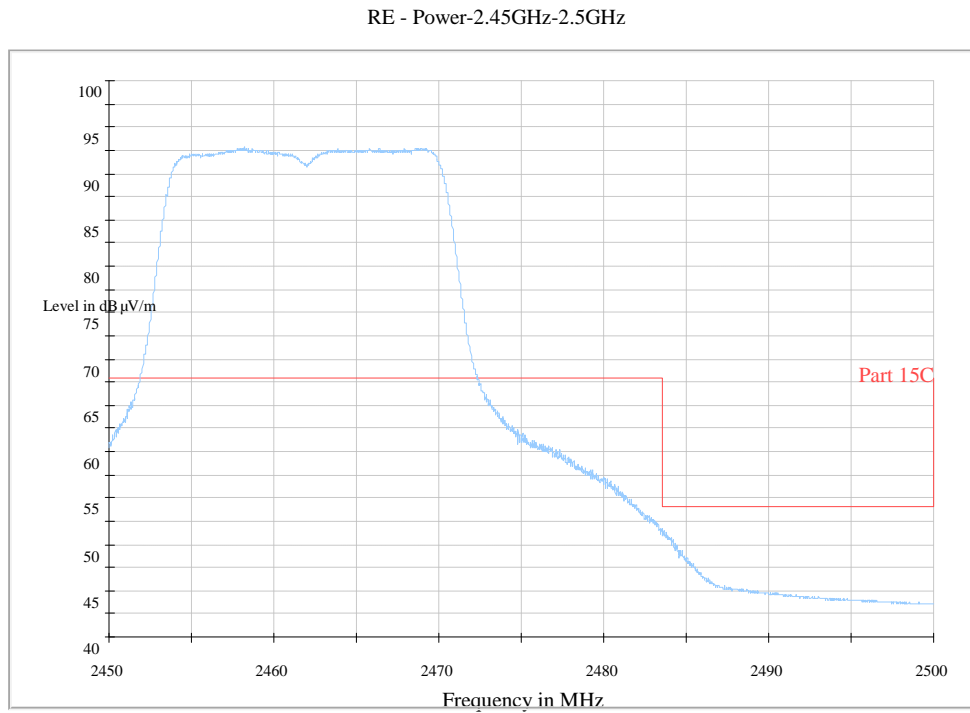




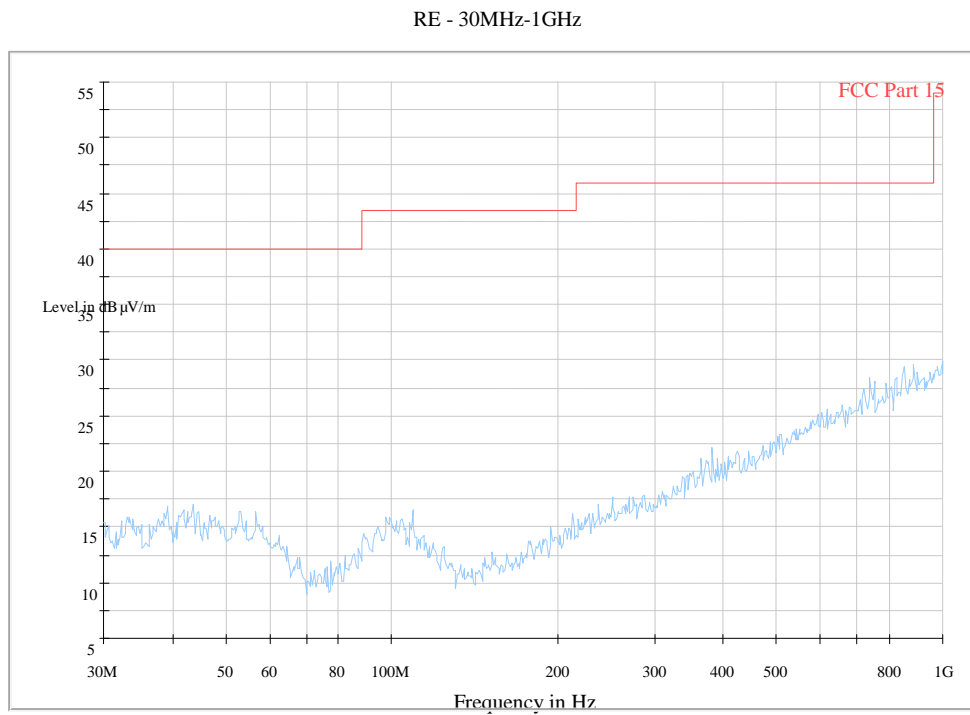
**Fig. 59 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-3 GHz)**



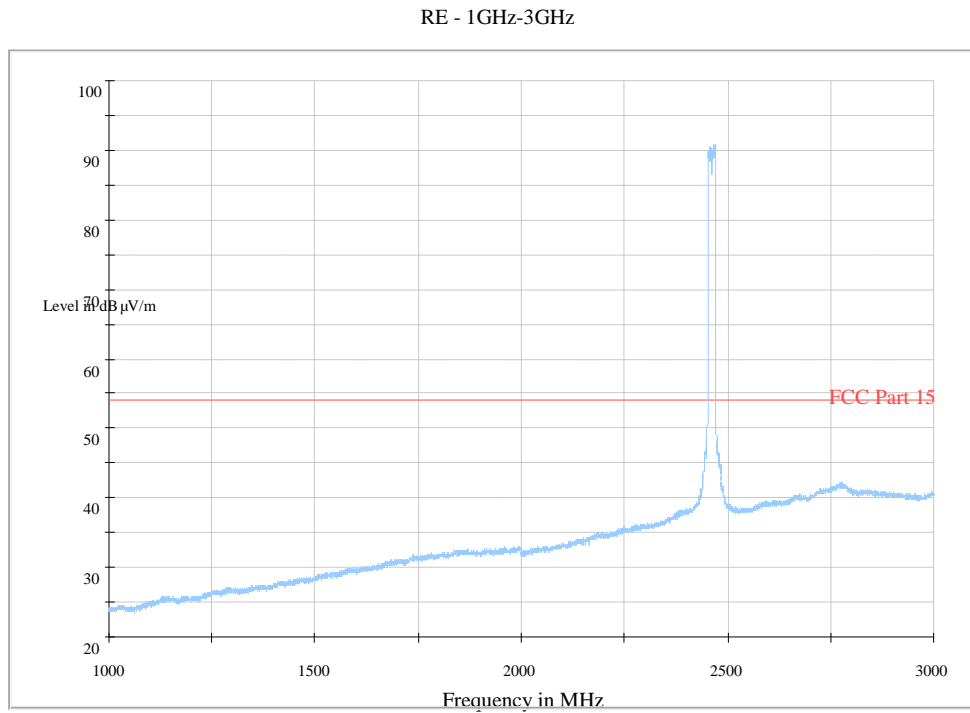
**Fig. 60 Radiated Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)**



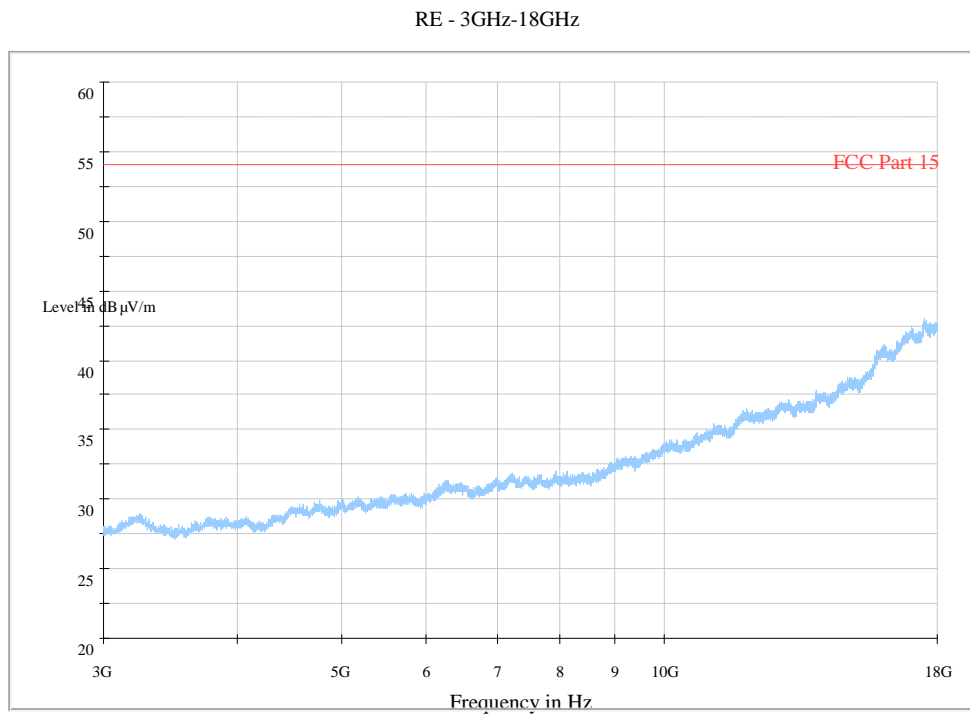
**Fig. 61 Radiated Spurious Emission (Power): 802.11g, ch11, 2.45 GHz - 2.5GHz**



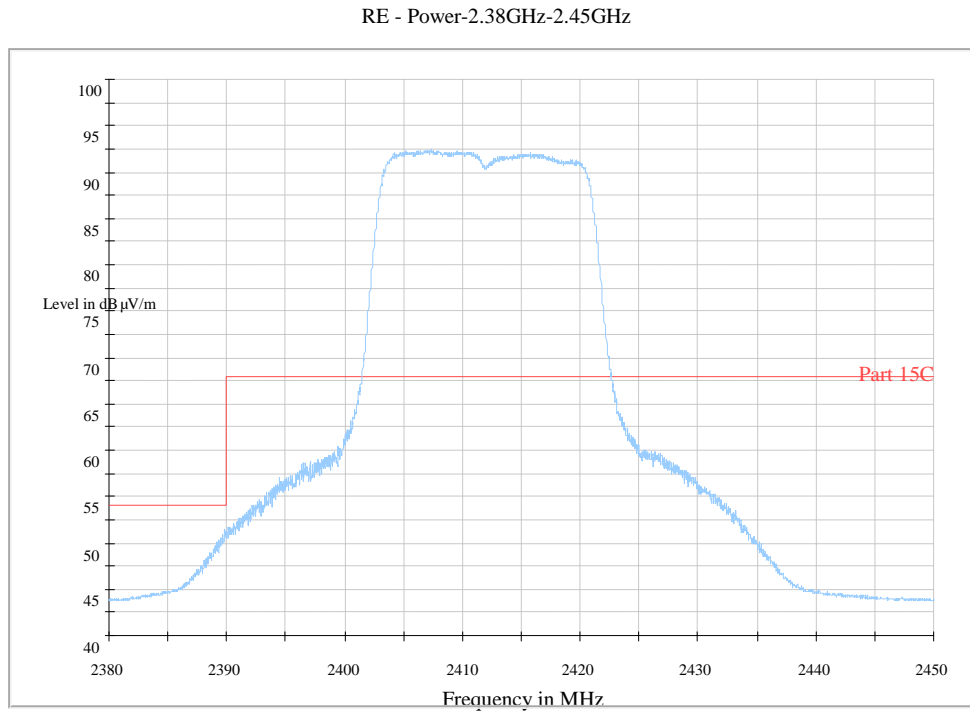
**Fig. 62 Radiated Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)**



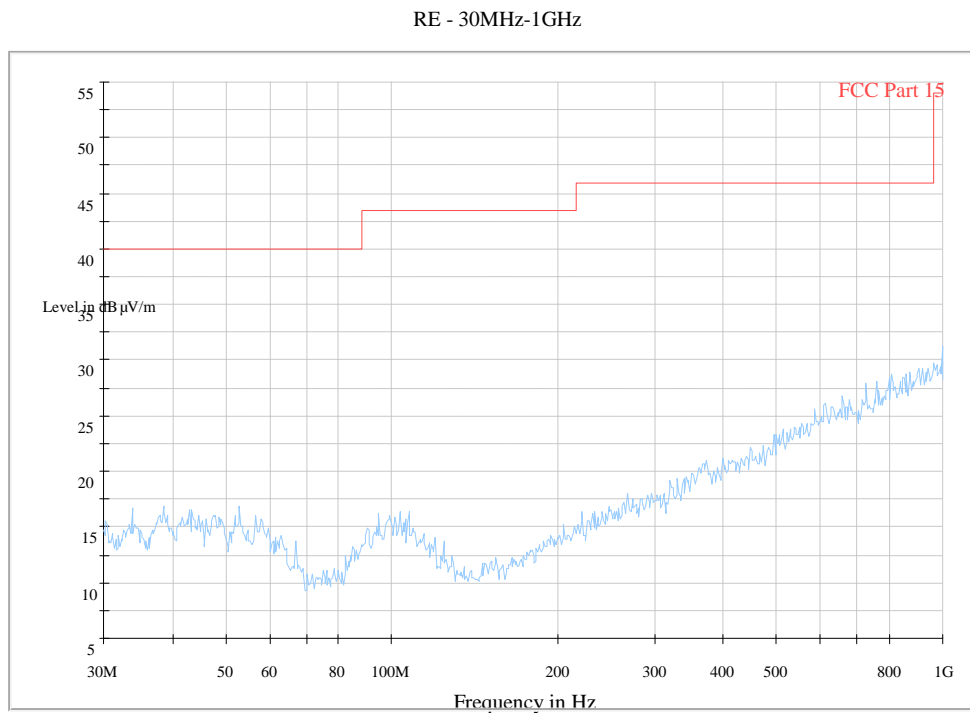
**Fig. 63 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-3 GHz)**



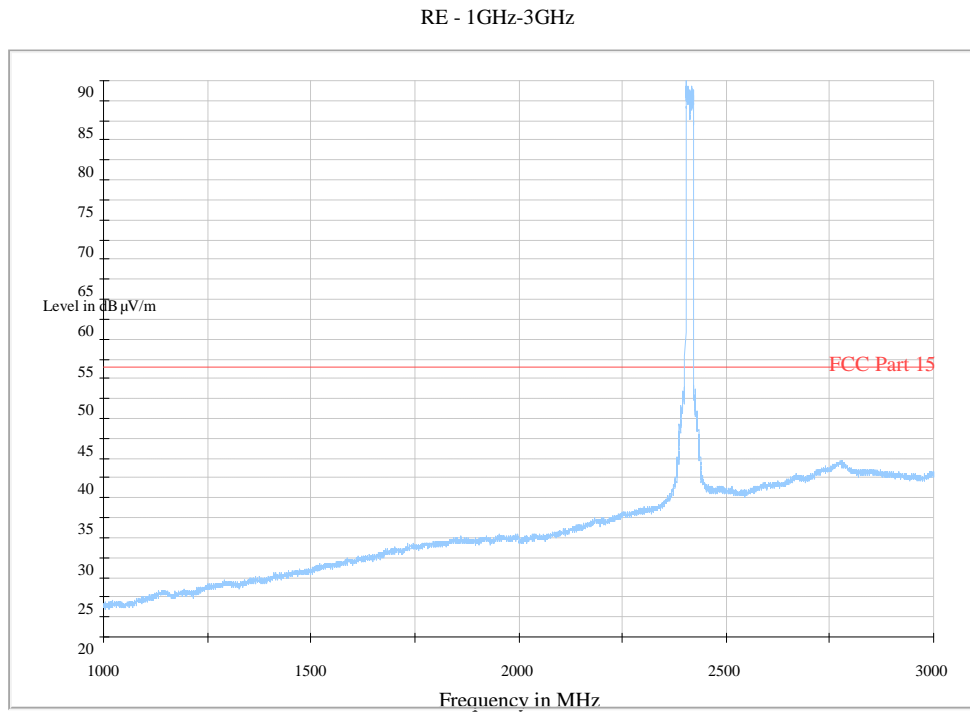
**Fig. 64 Radiated Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)**



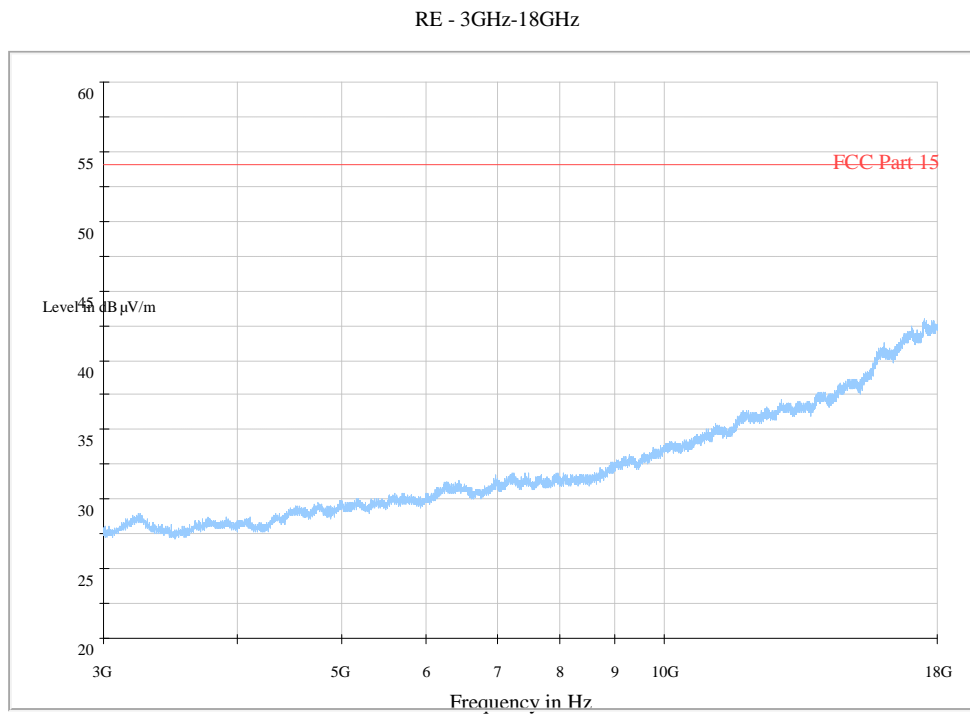
**Fig. 65 Radiated Spurious Emission (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz**



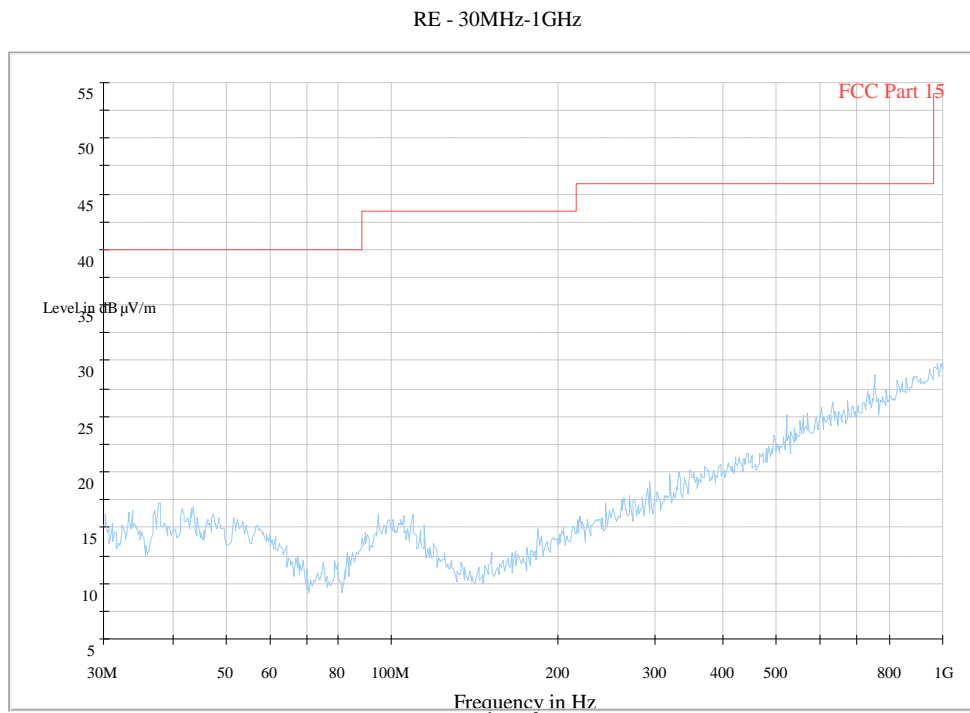
**Fig. 66 Radiated Spurious Emission (802.11n-HT20, Ch1, 30 MHz-1 GHz)**



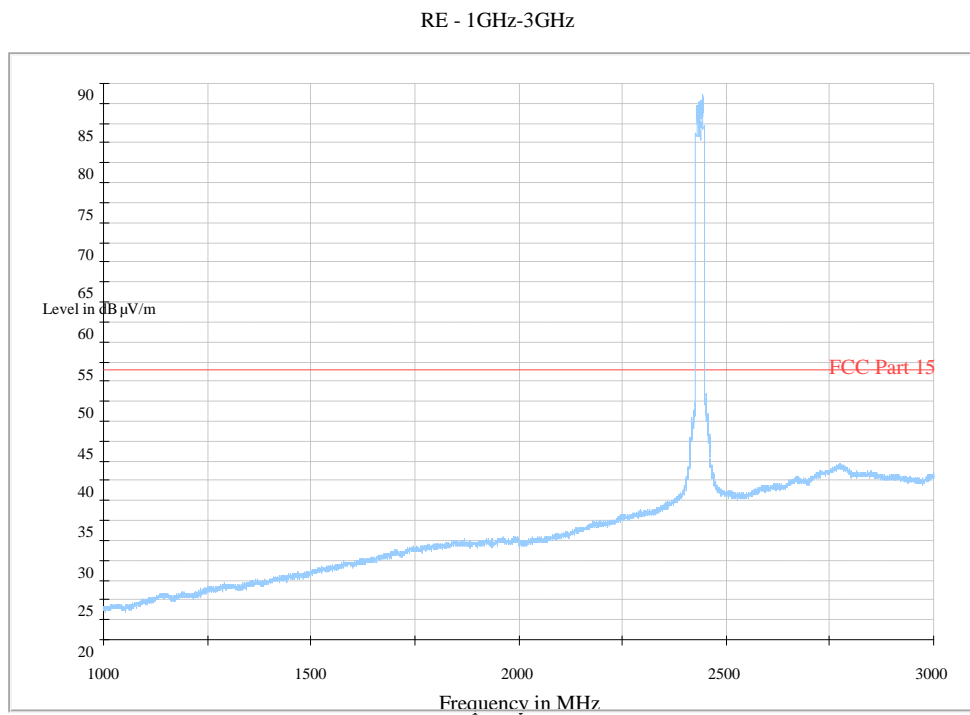
**Fig. 67 Radiated Spurious Emission (802.11n-HT20, Ch1, 1 GHz-3 GHz)**



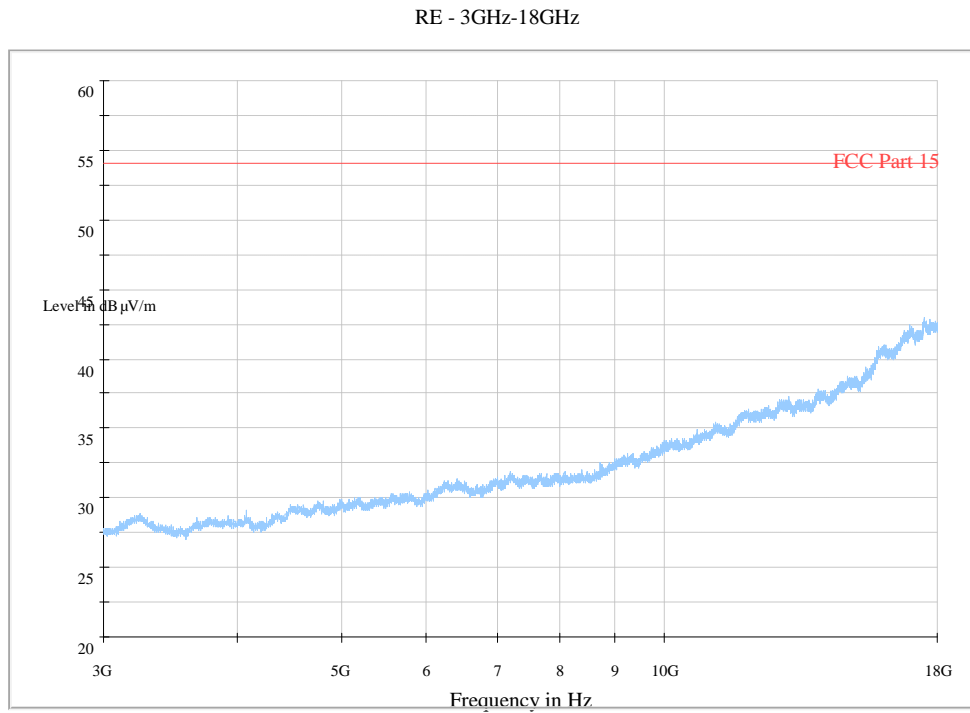
**Fig. 68 Radiated Spurious Emission (802.11n-HT20, Ch1, 3 GHz-18 GHz)**



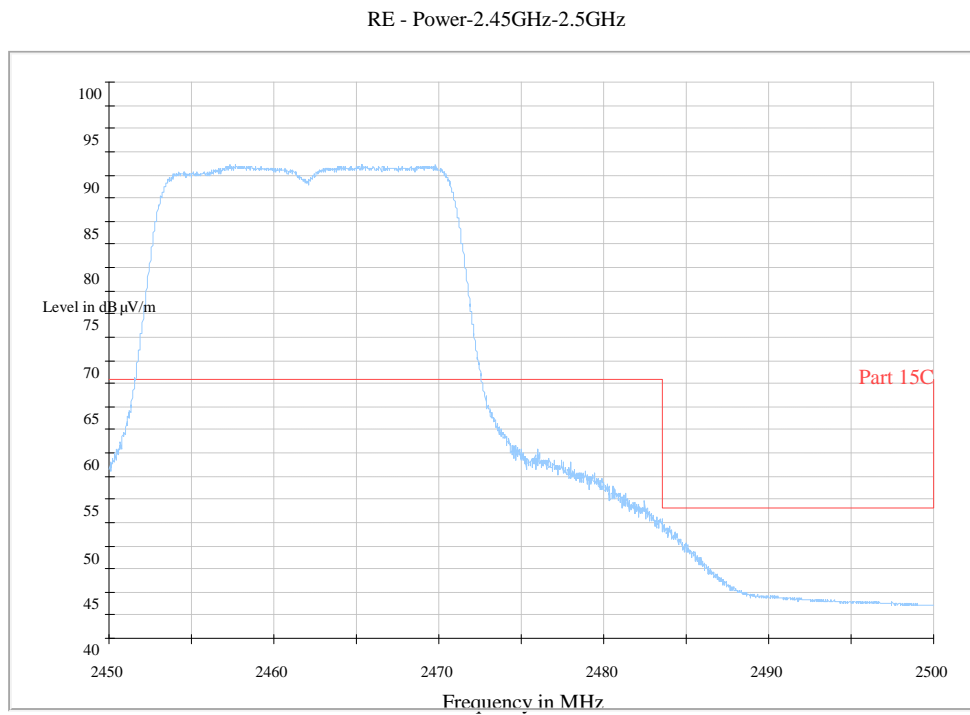
**Fig. 69 Radiated Spurious Emission (802.11n-HT20, Ch6, 30 MHz-1 GHz)**



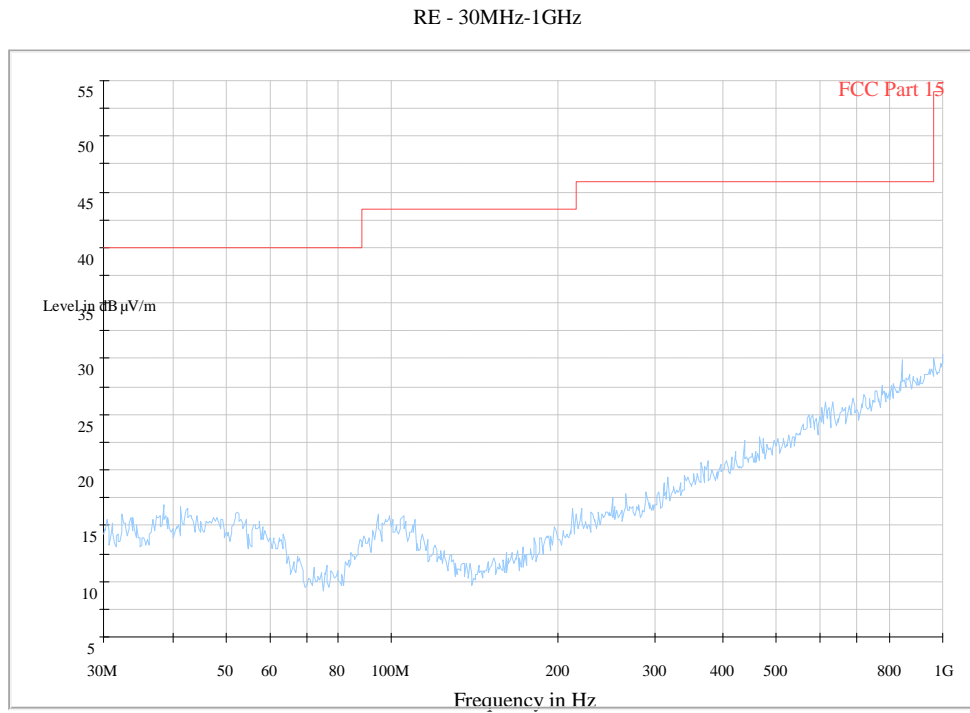
**Fig. 70 Radiated Spurious Emission (802.11n-HT20, Ch6, 1 GHz-3 GHz)**



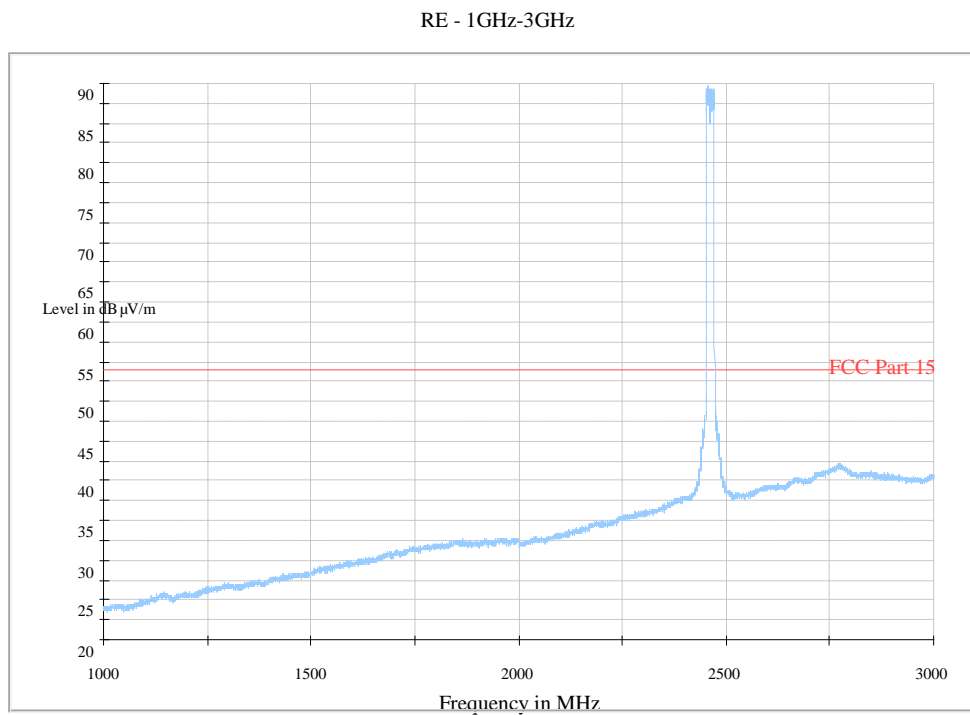
**Fig. 71 Radiated Spurious Emission (802.11n-HT20, Ch6, 3 GHz-18 GHz)**



**Fig. 72 Radiated Spurious Emission (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.5GHz**

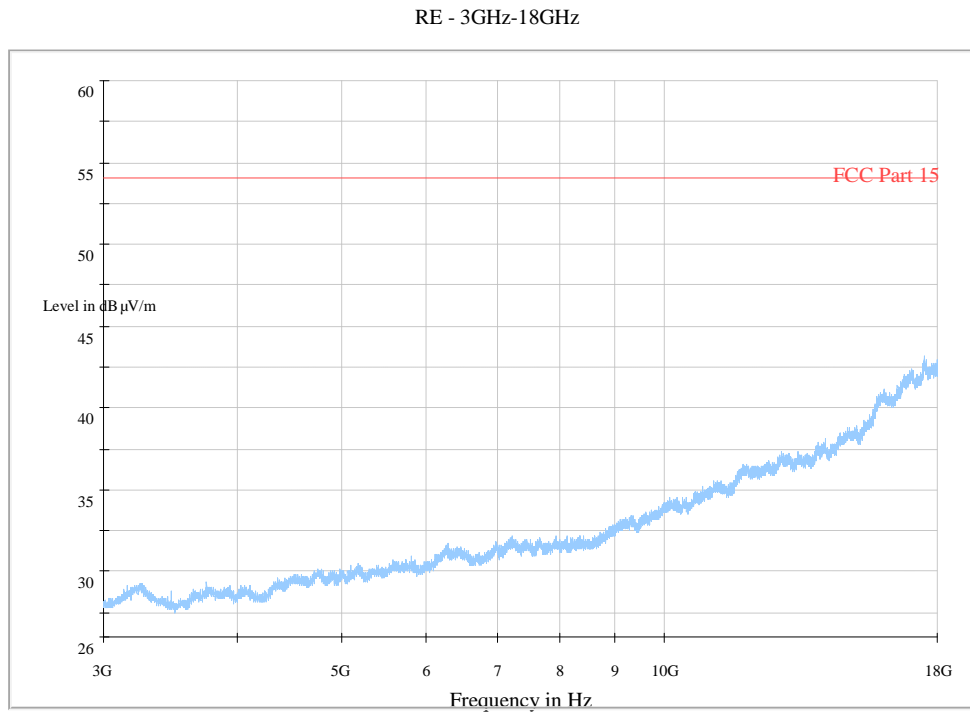


**Fig. 73 Radiated Spurious Emission (802.11n-HT20, Ch11, 30 MHz-1 GHz)**

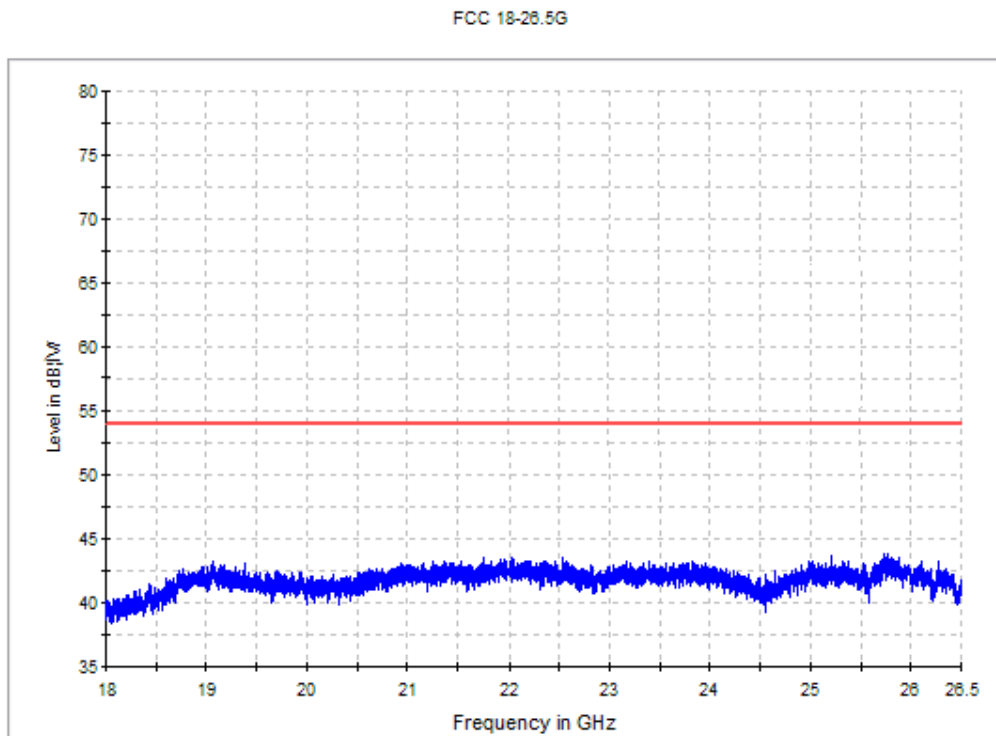


**Fig. 74 Radiated Spurious Emission (802.11n-HT20, Ch11, 1 GHz-3 GHz)**





**Fig. 75 Radiated Spurious Emission (802.11n-HT20, Ch11, 3 GHz-18 GHz)**



**Fig. 76 Radiated emission: 18 GHz - 26 GHz**

### A.7. AC Powerline Conducted Emission

**Test Condition:**

Voltage (V)	Frequency (Hz)
110	60

**Measurement Result and limit:**

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		11b mode	Idle	
0.15 to 0.5	66 to 56	Fig. 77	Fig. 78	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		11b mode	Idle	
0.15 to 0.5	56 to 46	Fig.77	Fig.78	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10

**Conclusion: PASS**

**Test graphs as below:**

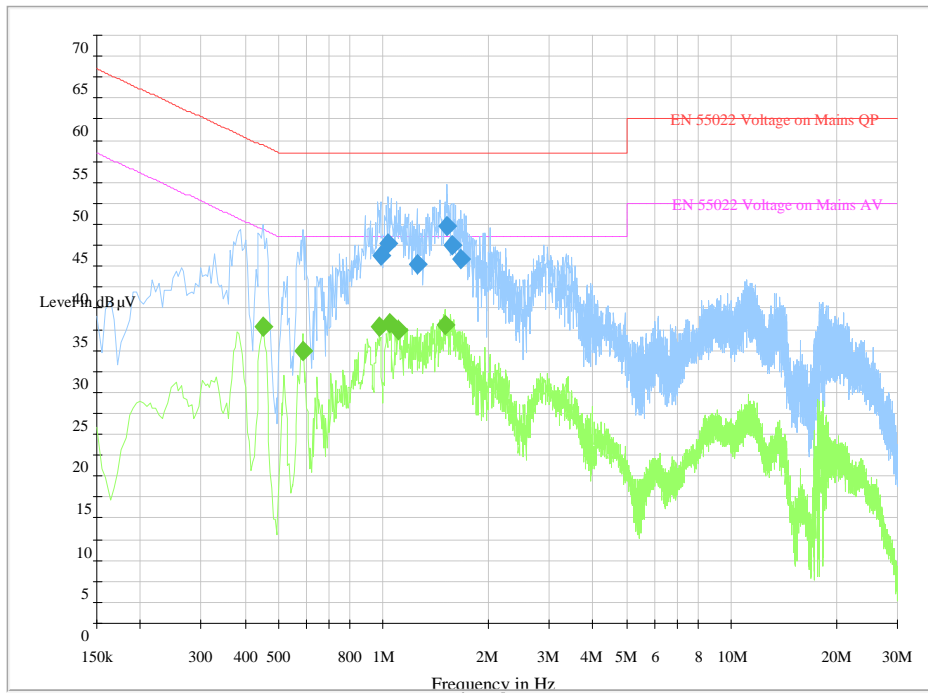


Fig. 77 AC Powerline Conducted Emission

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.982500	43.7	GND	L1	10.0	12.3	56.0
1.032000	45.1	GND	L1	10.0	10.9	56.0
1.248000	42.7	GND	L1	10.0	13.3	56.0
1.518000	47.3	GND	L1	10.0	8.7	56.0
1.572000	44.9	GND	L1	10.0	11.1	56.0
1.671000	43.4	GND	L1	10.0	12.6	56.0

Measurement Result:

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.451500	35.3	GND	L1	10.0	11.6	46.8
0.586500	32.4	GND	L1	10.0	13.6	46.0
0.973500	35.3	GND	L1	10.0	10.7	46.0
1.041000	35.7	GND	L1	10.0	10.3	46.0
1.099500	35.0	GND	L1	10.0	11.0	46.0
1.495500	35.5	GND	L1	10.0	10.5	46.0

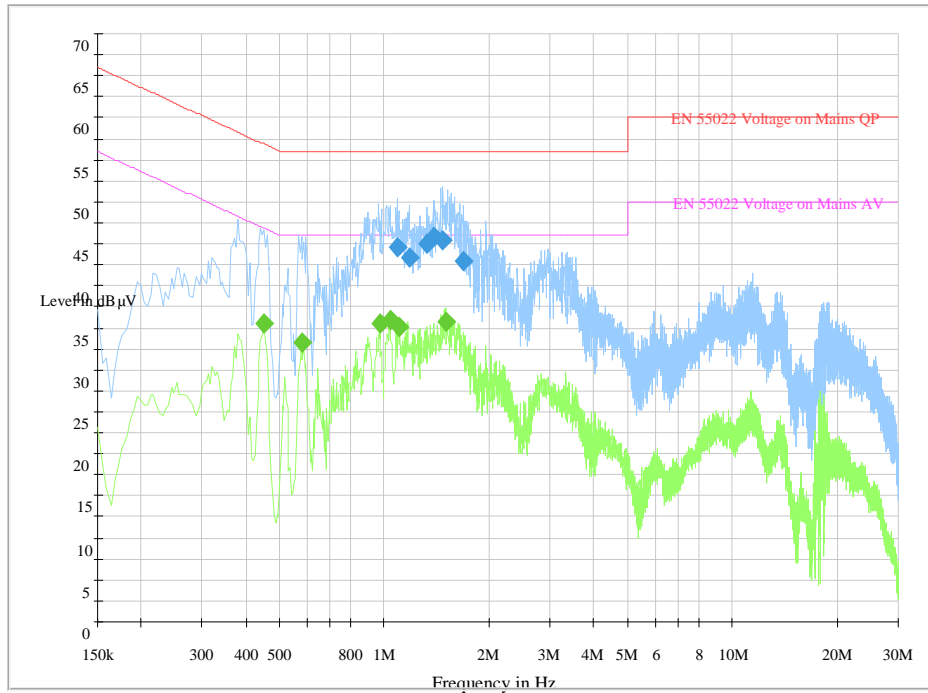


Fig. 78 AC Powerline Conducted Emission

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.090500	44.5	GND	L1	10.0	11.5	56.0
1.176000	43.4	GND	L1	10.0	12.6	56.0
1.324500	44.9	GND	L1	10.0	11.1	56.0
1.392000	45.8	GND	L1	10.0	10.2	56.0
1.477500	45.5	GND	L1	10.0	10.5	56.0
1.693500	42.9	GND	L1	10.0	13.1	56.0

Measurement Result:

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.451500	35.6	GND	L1	10.0	11.2	46.8
0.577500	33.2	GND	L1	10.0	12.8	46.0
0.973500	35.5	GND	L1	10.0	10.5	46.0
1.041000	35.9	GND	L1	10.0	10.1	46.0
1.099500	35.1	GND	L1	10.0	10.9	46.0
1.495500	35.7	GND	L1	10.0	10.3	46.0