



Report No.SH16090036W09

# FCC RF TEST REPORT

*Issued to*

**E3 Enterprise**

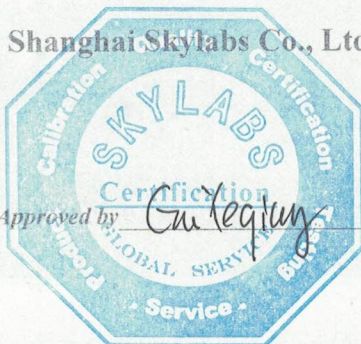
*For*

**Smart Home Products**

Model Name : E3PHONE  
Trade Name : E3  
Brand Name : E3  
Standard : 47 CFR Part 15, Subpart C  
ANSI C63.10-2013  
FCC ID : 2AD9UE3PHONE  
Test date : Apr.8,2016 to Apr.9,2016  
Issue date : Jul.12,2016

*by*

**Shanghai Skylabs Co., Ltd.**



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## DIRECTORY

<b>1.</b>	<b>General Information .....</b>	<b>4</b>
<b>1.1</b>	Applicant .....	4
<b>1.2</b>	Manufacturer .....	4
<b>1.3</b>	Description of EUT .....	4
<b>2.</b>	<b>Facilities and Accreditations .....</b>	<b>6</b>
<b>2.1</b>	Test Facility .....	6
<b>2.2</b>	Environmental Conditions .....	6
<b>2.3</b>	Measurement Uncertainty .....	6
<b>2.4</b>	List of Equipments Used .....	7
<b>3.</b>	<b>Test Standards and Results .....</b>	<b>8</b>
<b>4.</b>	<b>47 CFR Part 15C .....</b>	<b>9</b>
<b>4.1</b>	Antenna requirement .....	9
<b>5.</b>	<b>Test Result.....</b>	<b>10</b>
<b>5.1</b>	Peak Output Power.....	10
<b>5.2</b>	6dB & 20dB Bandwidth.....	12
<b>5.3</b>	Conducted Spurious Emissions.....	22
<b>5.4</b>	Power Spectral Density (PSD) .....	28
<b>5.5</b>	Band Edge .....	34
<b>5.6</b>	Conducted Emission .....	39
<b>5.7</b>	Radiated Emission.....	42
<b>Annex A</b>	<b>Photos of the EUT .....</b>	<b>45</b>
<b>Annex B</b>	<b>Photos of Setup .....</b>	<b>48</b>

**Change History**

Issue	Date	Reason for change
1.0	Apr.10,2016	First edition



## 1. General Information

### 1.1 Applicant

**E3 Enterprise**

32F, Shinjuku Nonura Building, 1-26-2 NishiShinjuku, Shinjuku-Ku, Tokyo, Japan 163-0532

### 1.2 Manufacturer

**E3 Enterprise**

32F, Shinjuku Nonura Building, 1-26-2 NishiShinjuku, Shinjuku-Ku, Tokyo, Japan 163-0532

### 1.3 Description of EUT

EUT Name.....: Smart Home Products  
Model Name.....: E3PHONE  
Brand Name.....: E3  
Trade Name.....: E3  
Hardware Version.....: E3P\_PCB\_V1.0  
Software Version.....: V1.0  
Modulation Type.....: DSSS (802.11b), OFDM (802.11g/n)  
Frequency Range.....: 2.412GHz - 2.462GHz (at interval of 5 MHz)  
Channel Number.....: 11  
Antenna Type.....: FPC antenna  
Antenna Gain.....: 1.74 dBi

**Charger**

Brand Name..... UNIFIVE  
Mode No..... UB310-0520  
Electrical Rating [Input]..... 100-240V, 0.25A  
Electrical Rating [Output]..... 5V, 2A  
Manufacturer..... Unifive Technology CO.,LTD  
Manufacturer Address..... 5F,No.42,Keya Road,Daya District,Taichuang City 428,Taiwan

**NOTE 1:**

*The EUT contains WIFI Module operating at 2.4GHz ISM band; it supports 802.11b, 802.11g, 802.11n(20MHz) and they are all tested in this report. The frequencies allocated is  $F$  (MHz)  $= 2412 + 5 \times (n - 1)$  ( $1 \leq n \leq 11$ ). The lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 1 (2412MHz), 6 (2437MHz) and 11 (2462MHz).*



**NOTE 2:**

*For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacture.*



## **2. Facilities and Accreditations**

### **2.1 Test Facility**

Shanghai Skylabs Co., Ltd. Skylabs Laboratory is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6644. A 9\*6\*6(m) full/semi-anechoic chamber was used for the radiated emissions test.

### **2.2 Environmental Conditions**

Ambient temperature: 15~35°C

Relative humidity: 30~60%

Atmosphere pressure: 86-106kPa

### **2.3 Measurement Uncertainty**

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission:  $\pm 1.76\text{dB}$

Uncertainty of Radiated Emission:  $\pm 3.16\text{dB}$



## 2.4 List of Equipments Used

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Service Simulator	Agilent	N4010A	MY47230669	2016.9.21	1year
Spectrum Analyzer	R&S	FSU26	200880	2016.2.25	1year
Power Splitter	Weinschel	1506A	NW521	(n.a.)	(n.a.)
Power Splitter	Mini-Circuits	ZFRSC-183-S+	76500F1016	(n.a.)	(n.a.)
Attenuator 1	Resnet	10dB	(n.a.)	(n.a.)	(n.a.)
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)	(n.a.)
Power supplier	NF	ES2000S	9087735	2016.9.24	1year
Full/Semi-Anechoic Chamber	CHENGYU	9.2×6.25×6.15m	SAR	2015.9.14	3year
EMI Test Receiver	R&S	ESCI7	100787	2016.2.55	1year
LISN	TESEQ	NNB 51	33285	2016.2.25	1year
Personal Computer	HP	6300P	CNG24296YW	(n.a.)	(n.a.)
Test Antenna-Horn	Schwarzbeck	BBHA9170	BBHA91970171	2016.9.21	1year
Test Antenna-Log	Schwarzbeck	VULB 9163	9163-561	2016.9.24	1year
Test Antenna-Loop	Rohde&Schwarz	FMZB 1519	1519-025	2016.9.21	1year
Test Antenna-Horn	Schwarzbeck	BBHA 9120D	9120D-1033	2016.7.24	1year
EPM Series Power Meter	Agilent	E4418B	GB43318055	2016.5.23	1year
Power Sensor	Agilent	8482A	MY41091706	2016.5.23	1year
Temporary Antenna Connector	Farpu	SMA-K	(n.a.)	(n.a.)	(n.a.)
RF Cable	(n.a.)	0-25G	(n.a.)	(n.a.)	(n.a.)

**NOTE:**

*Equipments listed above have been calibrated and are in the period of validation.*





### 3. Test Standards and Results

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

FCC Part 15 Subpart C §15.247

ANSI C63.10-2013

June 2015 KDB558074

**NOTE:**

*(1)All test items were verified and recorded according to the standards and without any deviation during the test.*

*(2)This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart C (WIFI, 2.4GHz ISM band radiators), recorded in a separate test report.*

Test items and the results are as bellow:

No.	FCC Rules	Description	Result
1	15.203	Antenna Requirement	Pass
2	15.247(b)	Peak Output power	Pass
3	15.247(a)	6dB & 20dB Bandwidth	Pass
4	15.247(d)	Conducted Spurious Emission	Pass
5	15.247(d)	Band Edge	Pass
6	15.207	Conducted Emission	Pass
7	15.247(d) 15.209	Radiated Emission	Pass
8	15.247(e)	Power Spectral Density (PSD)	Pass





## **4. 47 CFR Part 15C**

### **4.1 Antenna requirement**

#### **4.1.1 Applicable standard**

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

#### **4.1.2 Result: Compliant**

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.



## 5. Test Result

### 5.1 Peak Output Power

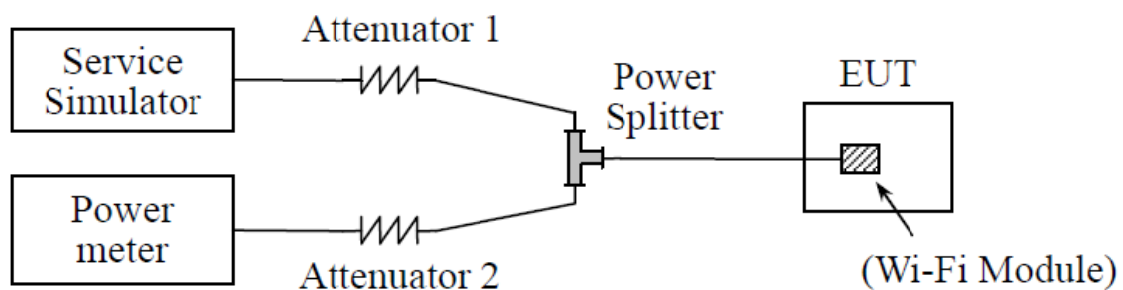
#### 5.1.1 Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

#### 5.1.2 Test Description

The measured output power was calculated by the reading of the spectrum analyzer and calibration.

##### A. Test Setup:



The EUT (Equipment under the test) is coupled to the Power Meter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in power meter.



### 5.1.3 Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.(Duty cycle > 98%)

#### A. Test Verdict:

Mode	Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
			dBm	W	dBm	W	
802.11b	1	2412	18.23	0.06653	30	1	Pass
	6	2437	17.99	0.06295			Pass
	11	2462	17.46	0.05572			Pass
802.11g	1	2412	21.64	0.14588			Pass
	6	2437	21.74	0.14928			Pass
	11	2462	21.17	0.13092			Pass
802.11n (20MHz)	1	2412	21.32	0.13552			Pass
	6	2437	20.83	0.12106			Pass
	11	2462	20.37	0.10889			Pass

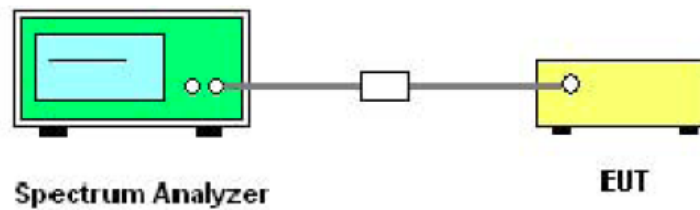


## 5.2 6dB & 20dB Bandwidth

### 5.2.1 Requirement

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

### 5.2.2 Test Description



### 5.2.3 Test Result

The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the Module.

#### A. Test Verdict:

##### 802.11b Test mode

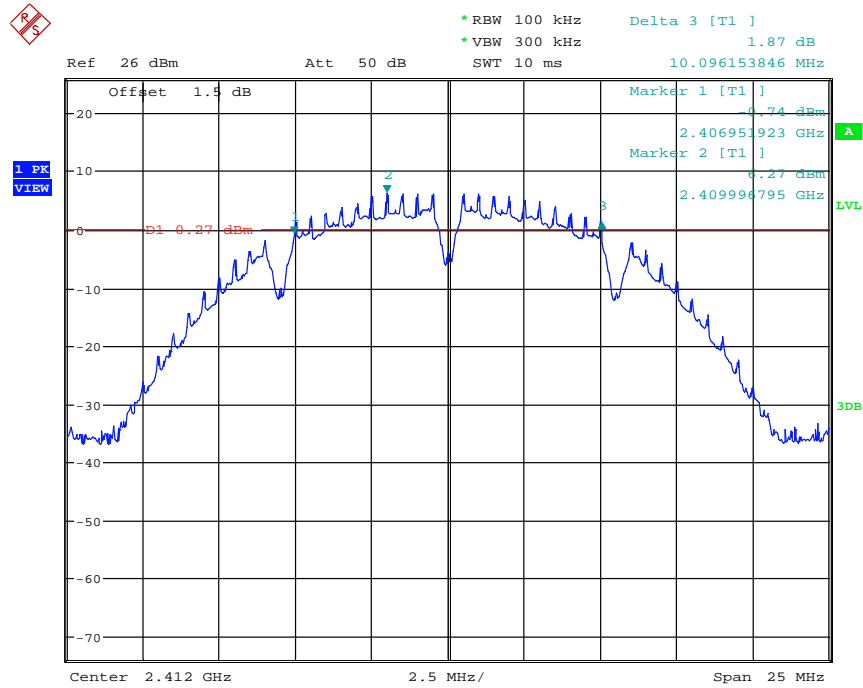
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Refer to plot	20dB Bandwidth (MHz)	Refer to plot	Limit (KHz)	Result
1	2412	10.096	Plot A1	16.185	Plot A2	$\geq 500$	Pass
6	2437	10.096	Plot B1	16.185	Plot B2	$\geq 500$	Pass
11	2462	10.096	Plot C1	16.185	Plot C2	$\geq 500$	Pass

##### 802.11g Test mode

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Refer to plot	20dB Bandwidth (MHz)	Refer to plot	Limit (KHz)	Result
1	2412	16.426	Plot D1	18.389	Plot D2	$\geq 500$	Pass
6	2437	16.466	Plot E1	18.469	Plot E2	$\geq 500$	Pass
11	2462	16.426	Plot F1	18.229	Plot F2	$\geq 500$	Pass

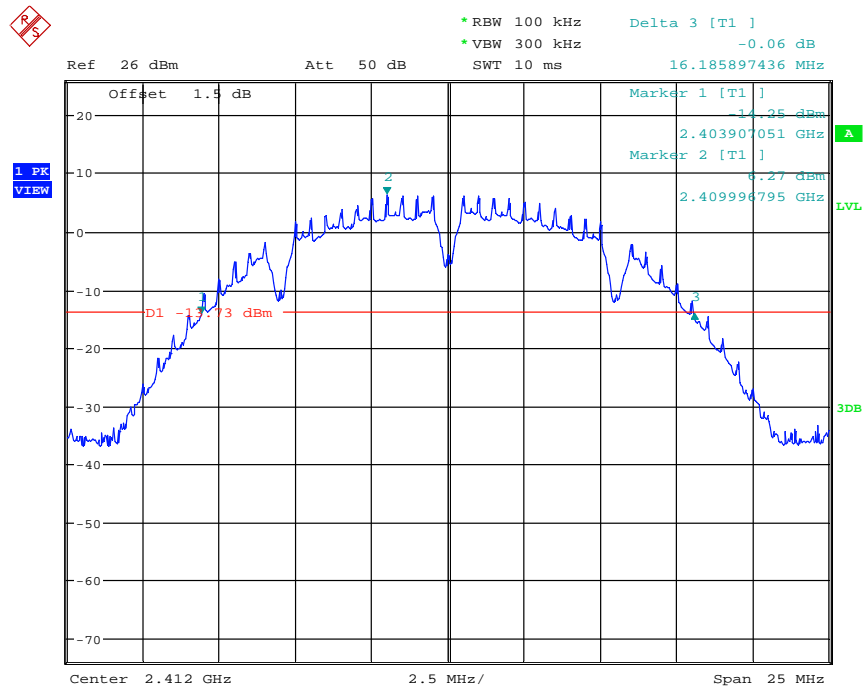
##### 802.11n (20MHz) Test mode

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Refer to plot	20dB Bandwidth (MHz)	Refer to plot	Limit (KHz)	Result
1	2412	17.668	Plot G1	18.910	Plot G2	$\geq 500$	Pass
6	2437	17.628	Plot H1	18.830	Plot H2	$\geq 500$	Pass
11	2462	17.628	Plot I1	18.910	Plot I2	$\geq 500$	Pass

**B. Test Plots:**

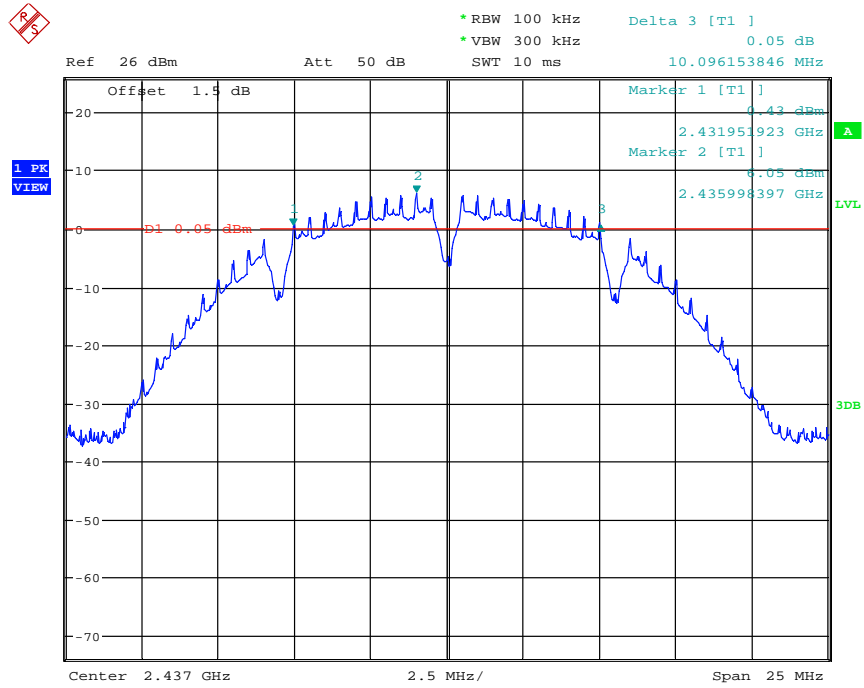
Date: 1.NOV.2016 12:44:47

Plot A1



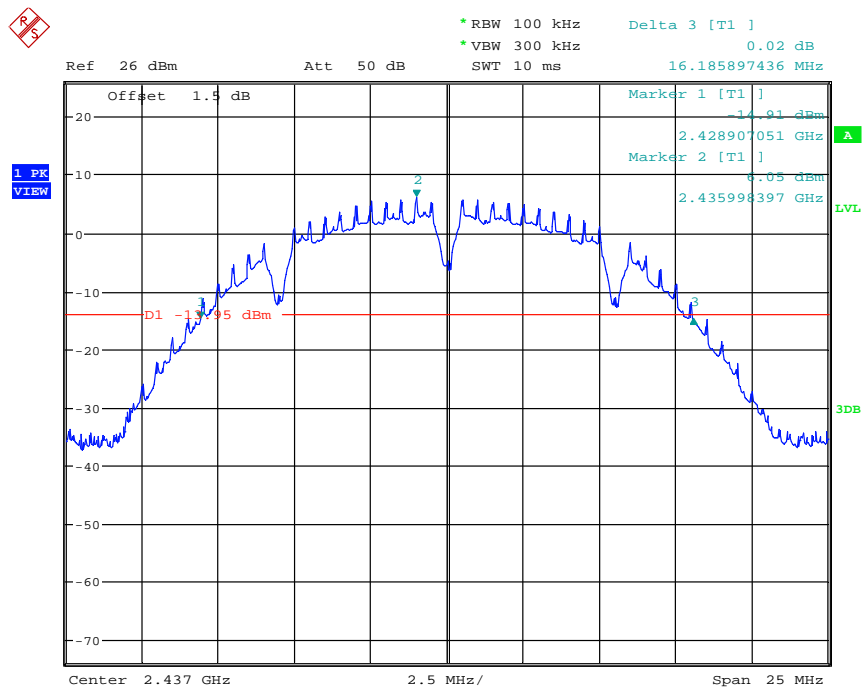
Date: 1.NOV.2016 12:45:29

Plot A2



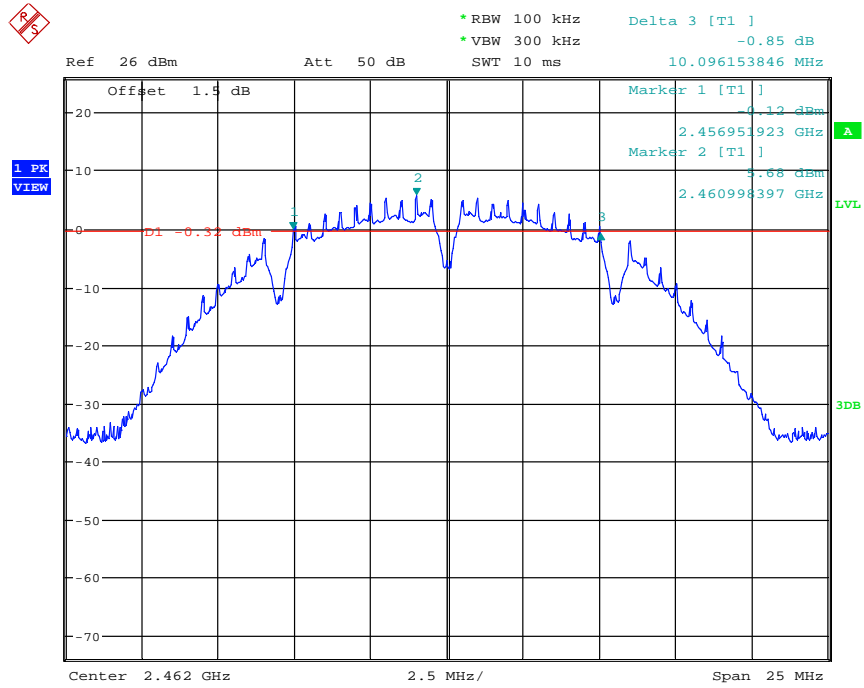
Date: 1.NOV.2016 12:41:11

Plot B1



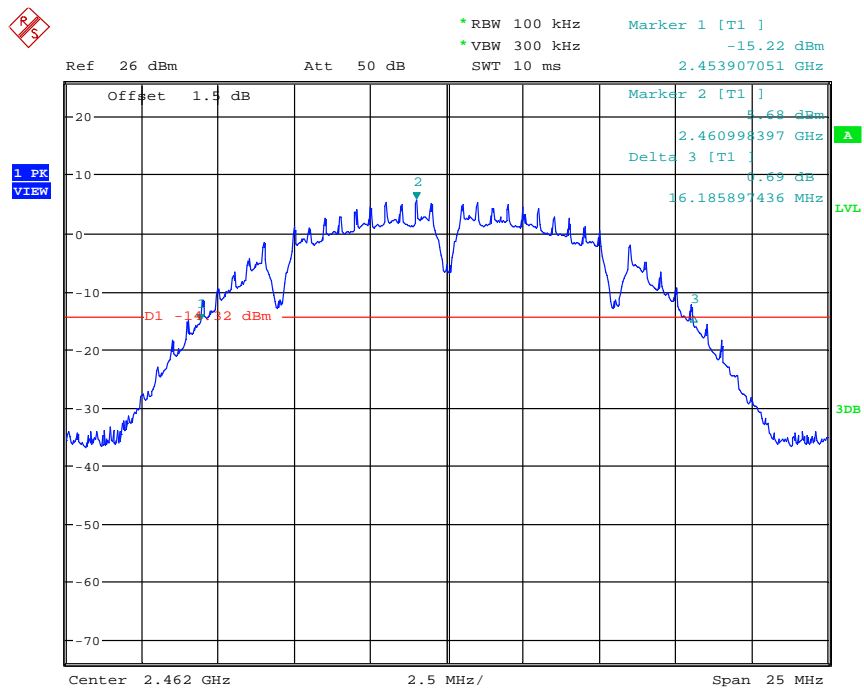
Date: 1.NOV.2016 12:43:22

Plot B2



Date: 1.NOV.2016 12:38:34

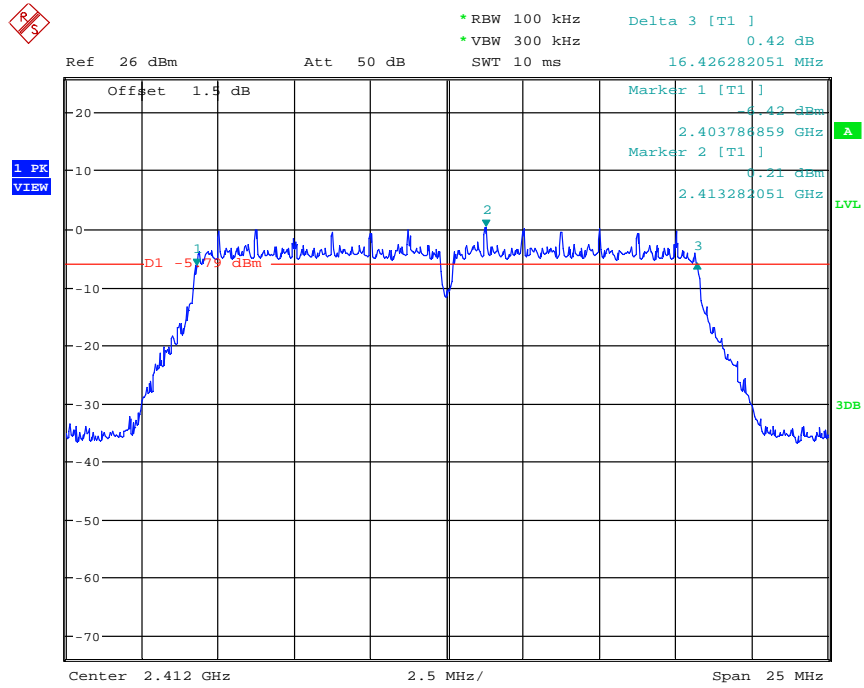
Plot C1



Date: 1.NOV.2016 12:39:38

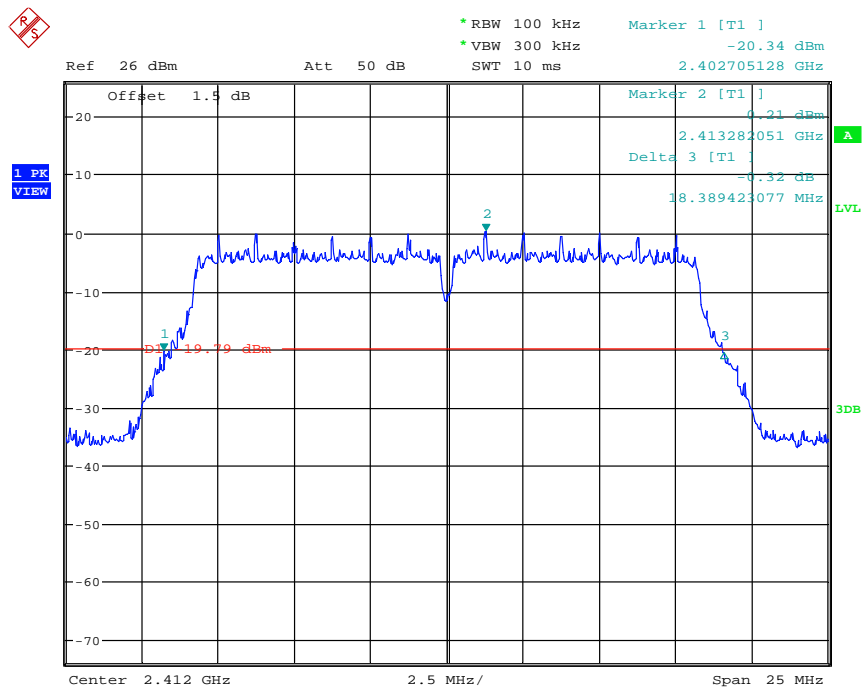
Plot C2





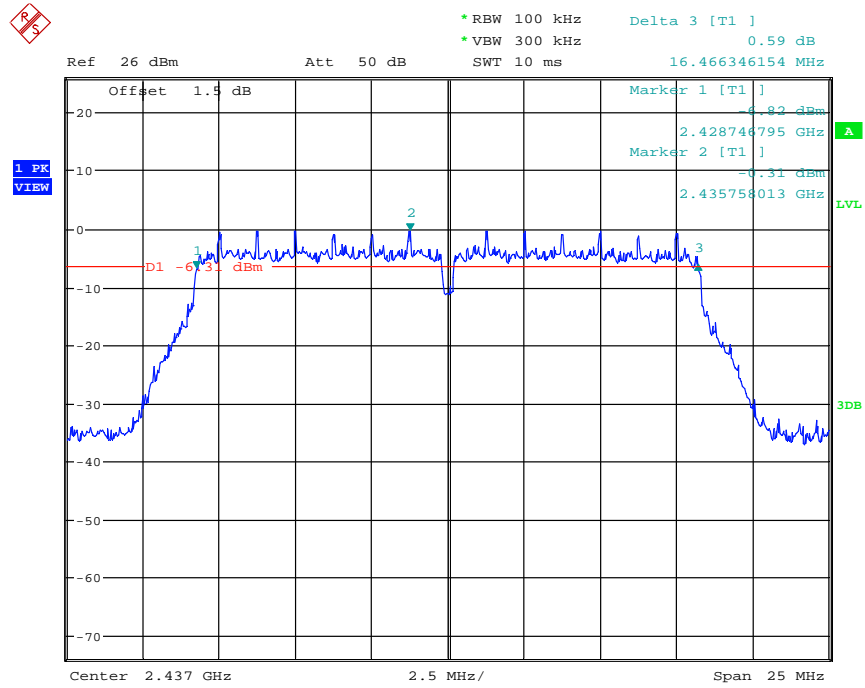
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Plot D1



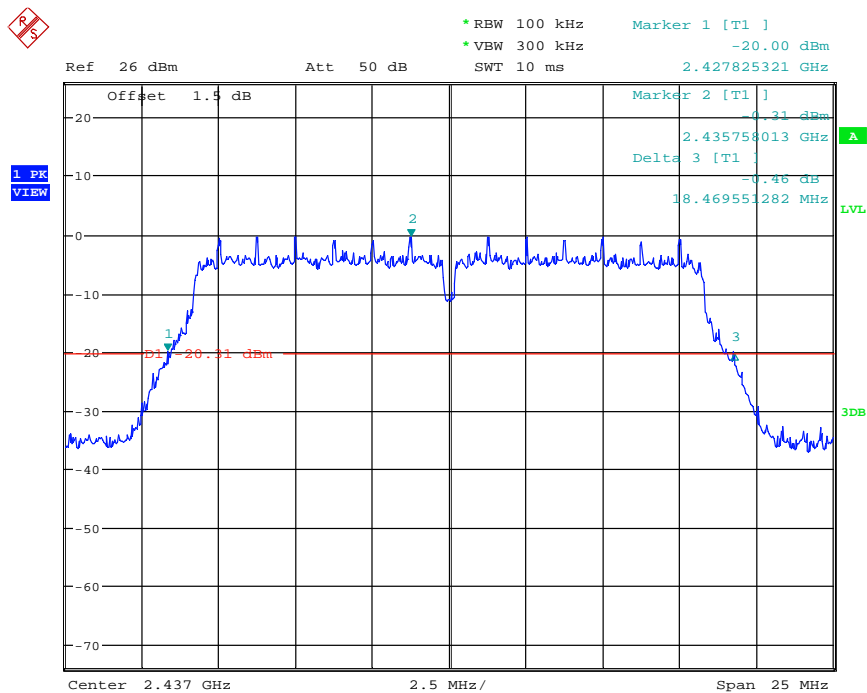
Date: 1.NOV.2016 12:33:13

Plot D2



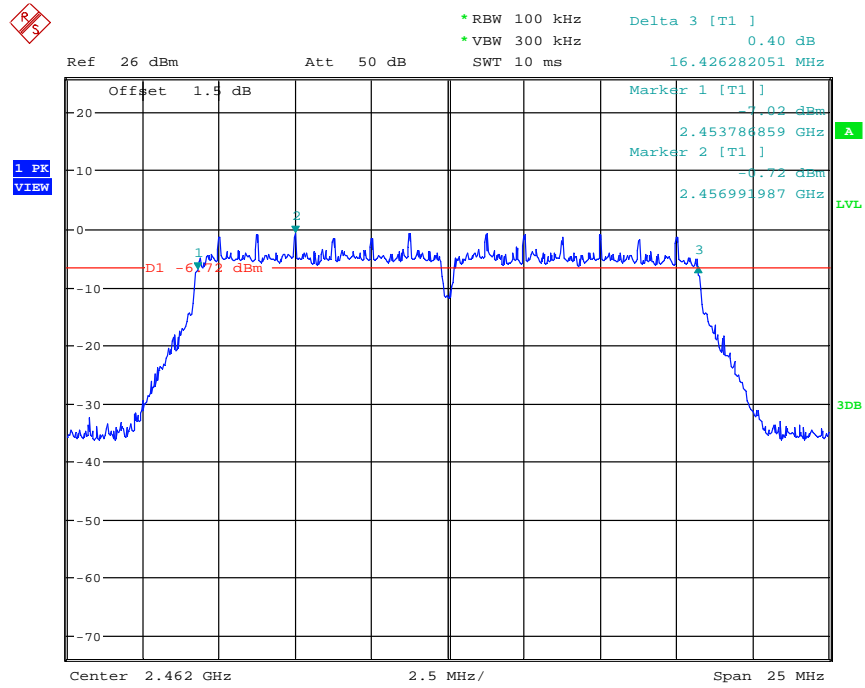
Date: 1.NOV.2016 12:34:17

Plot E1



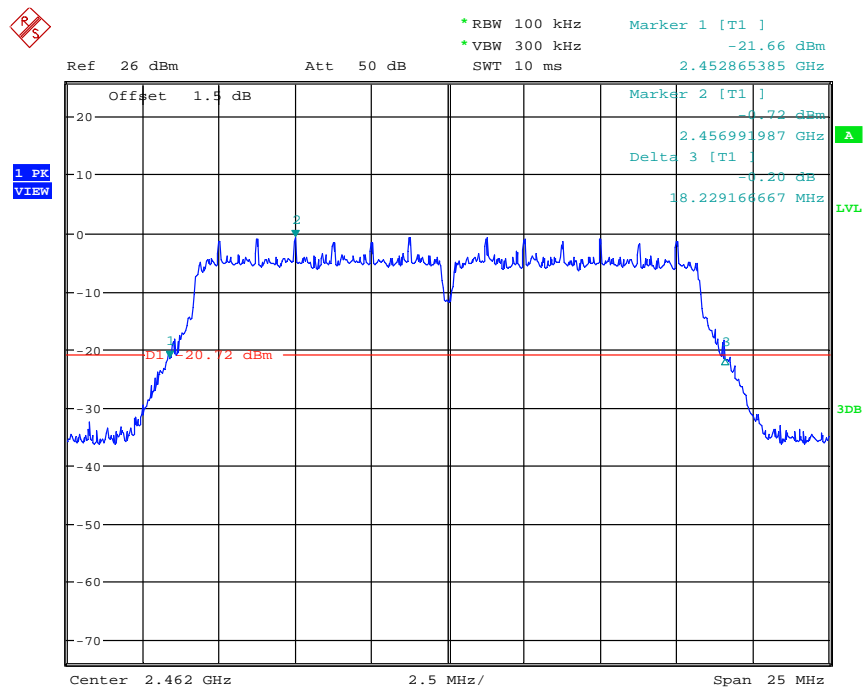
Date: 1.NOV.2016 12:34:54

Plot E2



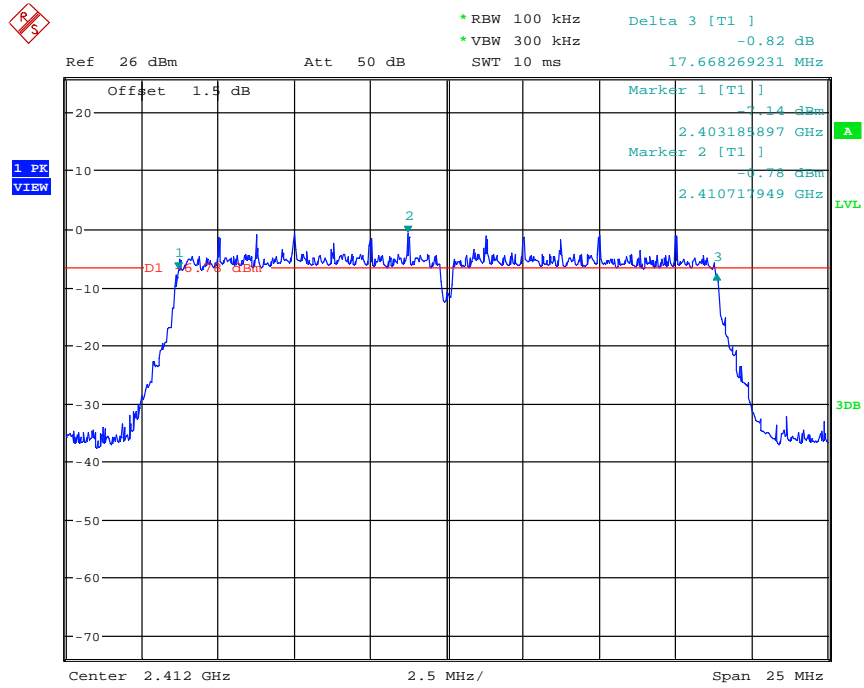
Date: 1.NOV.2016 12:36:08

Plot F1



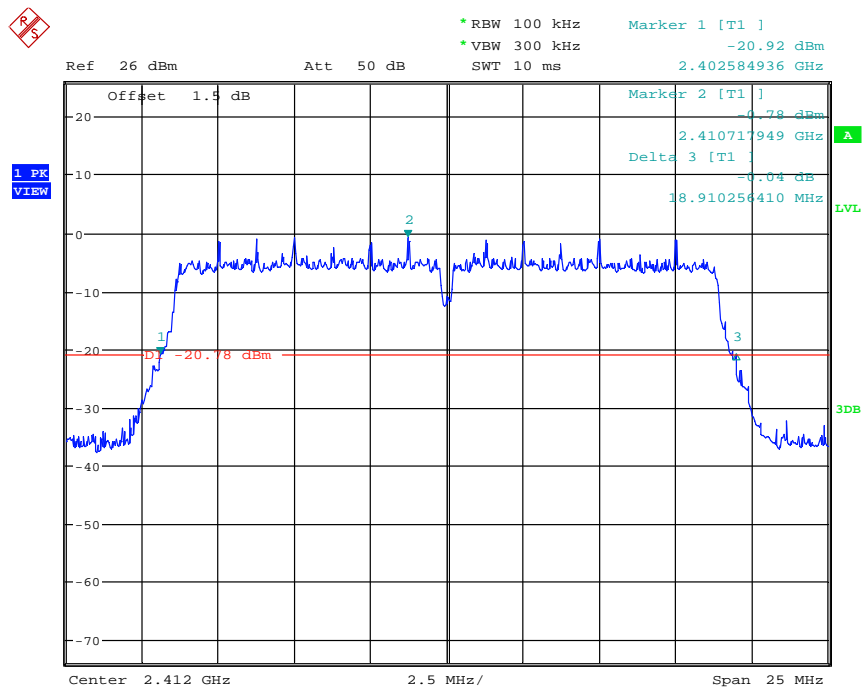
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Plot F2



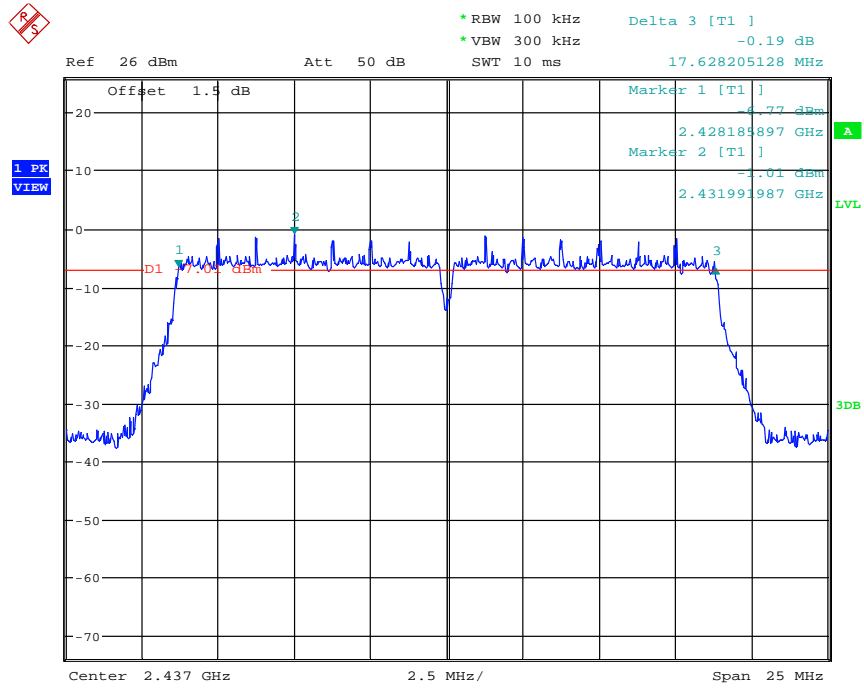
Date: 1.NOV.2016 12:30:49

Plot G1



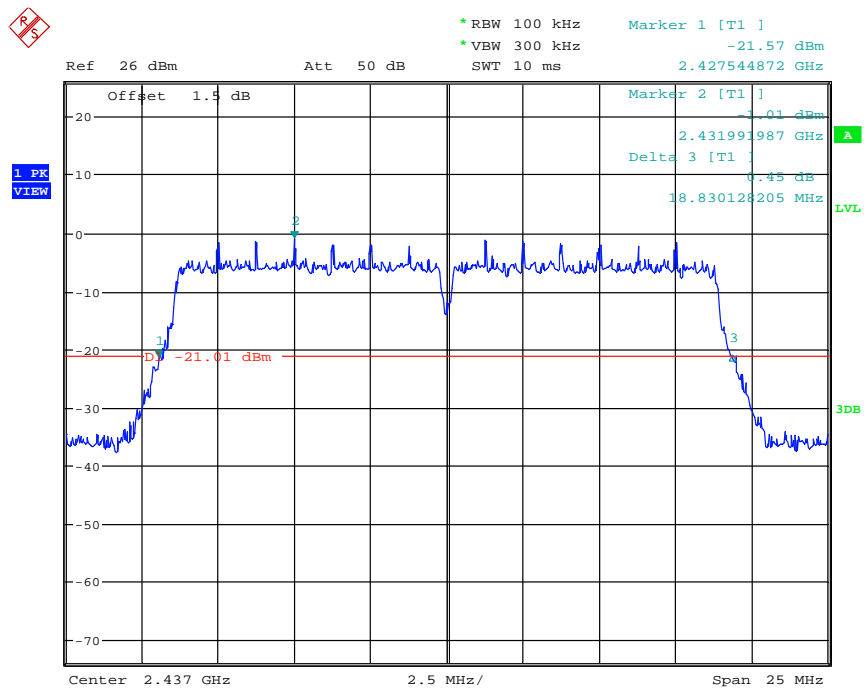
Date: 1.NOV.2016 12:31:15

Plot G2



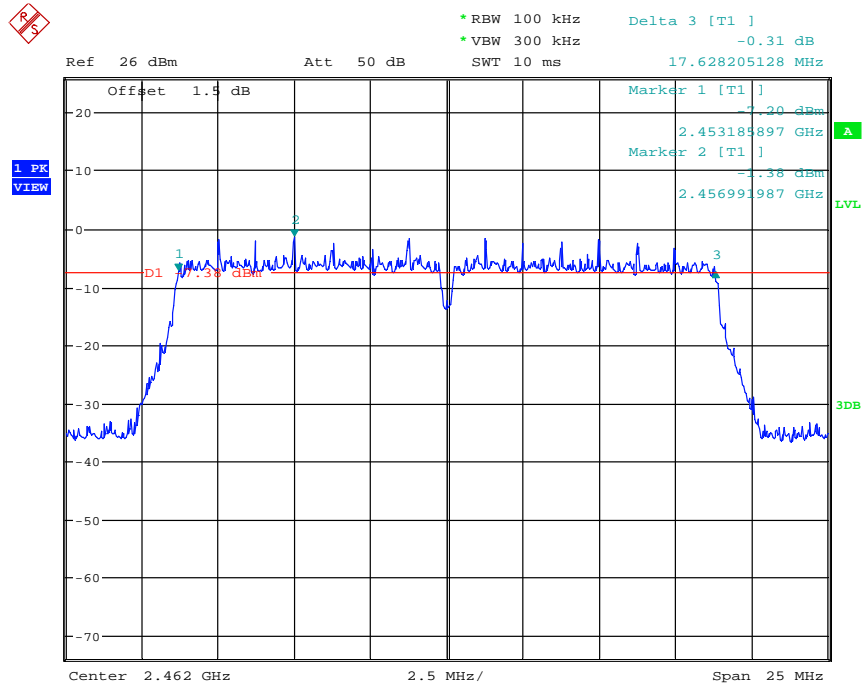
Date: 1.NOV.2016 12:28:53

Plot H1



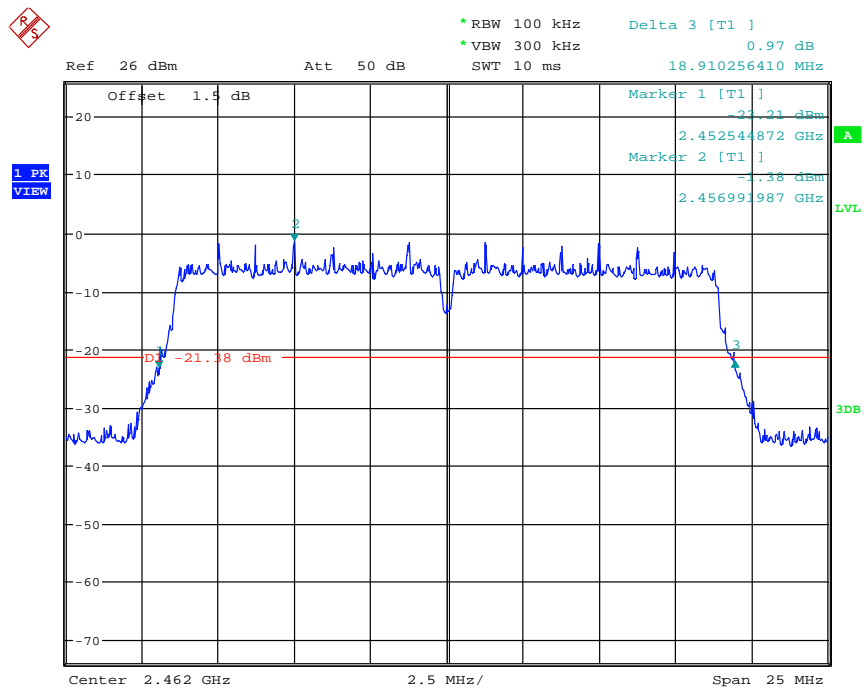
Date: 1.NOV.2016 12:29:56

Plot H2



Date: 1.NOV.2016 12:26:52

Plot I1



Date: 1.NOV.2016 12:27:42

Plot I2

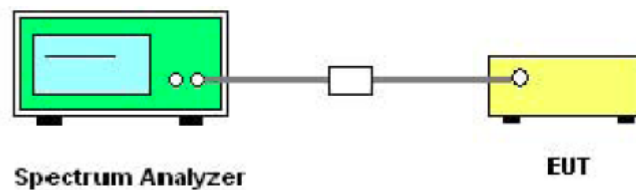


## 5.3 Conducted Spurious Emissions

### 5.3.1 Requirement

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

### 5.3.2 Test Description



### 5.3.3 Test Result

The Wifi Module operates at hopping-off test mode. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

#### A. Test Verdict:

##### 802.11b Test mode

Channel	Frequency (MHz)	Measured max out of band emission(dBm)	Refer to plot	Limit(dBm)		Result
				Carrier level	Calculated 20dBc limit	
1	2412	-41.93	Plot A	5.83	-14.17	Pass
6	2437	-41.37	Plot B	5.00	-15.00	Pass
11	2462	-41.35	Plot C	4.51	-15.49	Pass

##### 802.11g Test mode

Channel	Frequency (MHz)	Measured max out of band emission(dBm)	Refer to plot	Limit(dBm)		Result
				Carrier level	Calculated 20dBc limit	
1	2412	-41.89	Plot D	0.08	-19.92	Pass
6	2437	-41.25	Plot E	-2.20	-22.20	Pass
11	2462	-41.88	Plot F	-2.62	-22.62	Pass

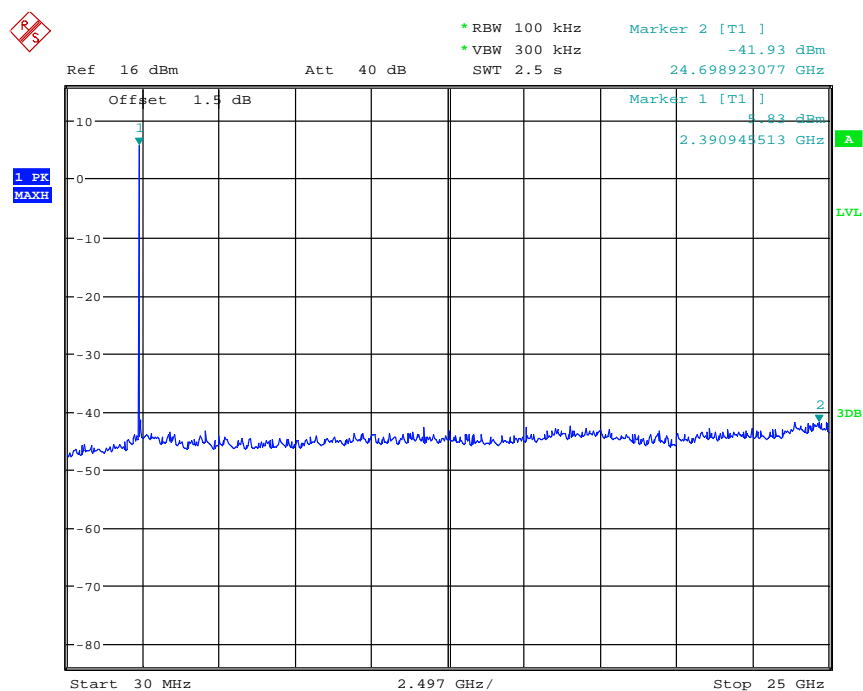




## 802.11n (20MHz) Test mode

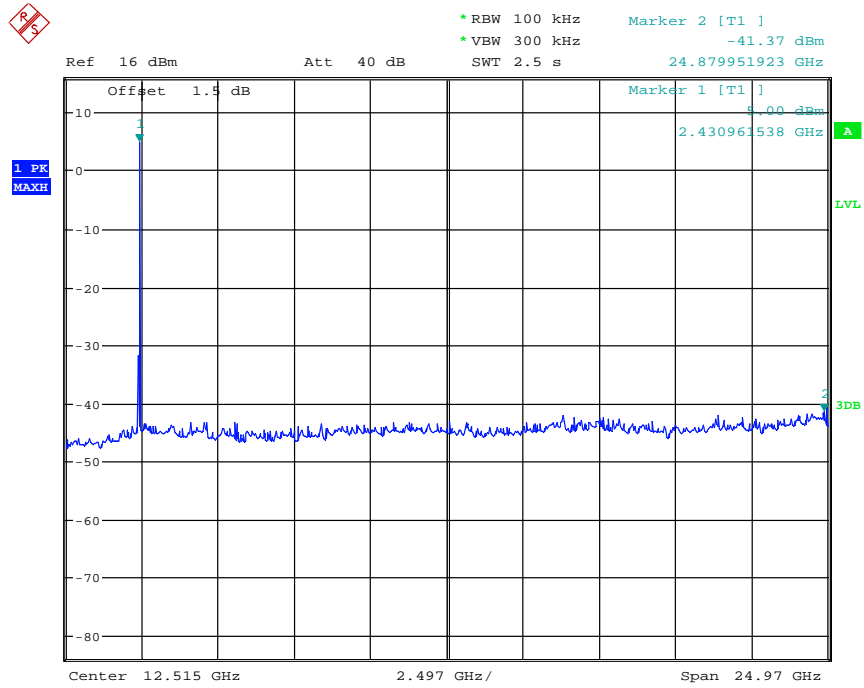
Channel	Frequency (MHz)	Measured max out of band emission(dBm)	Refer to plot	Limit(dBm)		Result
				Carrier level	Calculated 20dBc limit	
1	2412	-41.94	Plot G	-1.43	-21.43	Pass
6	2437	-40.92	Plot H	-1.49	-21.49	Pass
11	2462	-41.53	Plot I	-3.03	-23.03	Pass

## B. Test Plot:



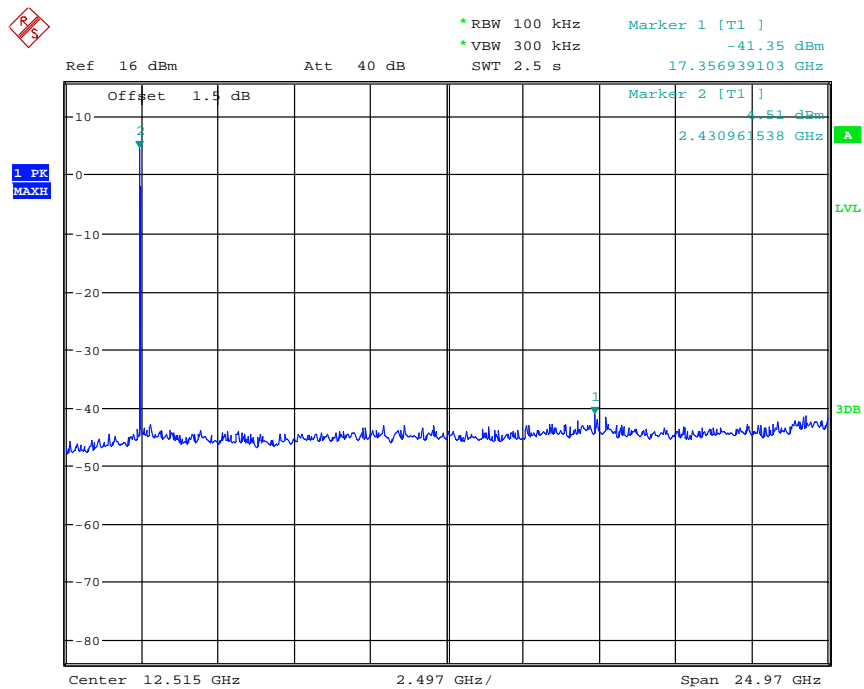
Date: 1.NOV.2016 12:48:18

Plot A



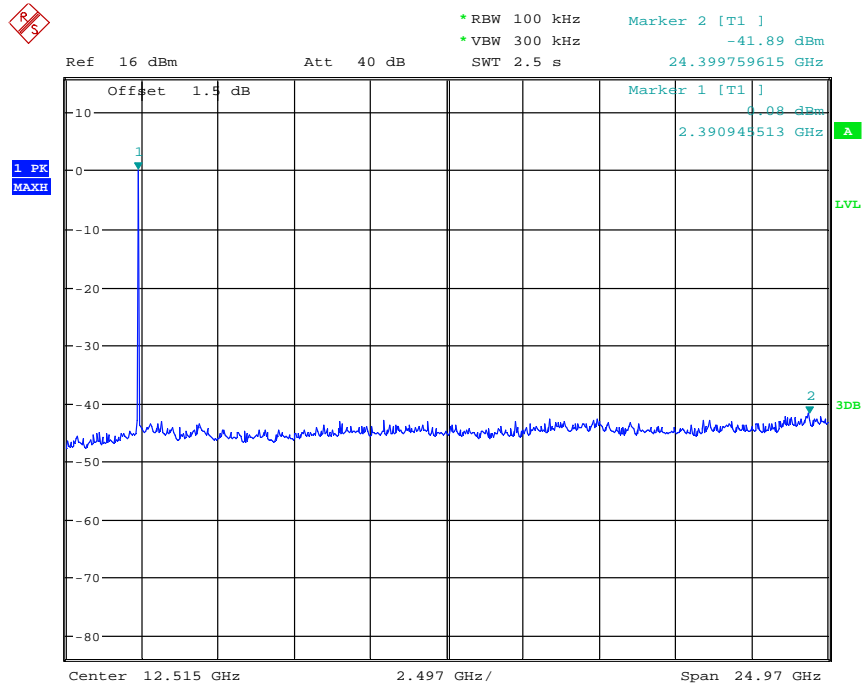
Date: 1.NOV.2016 12:49:13

Plot B



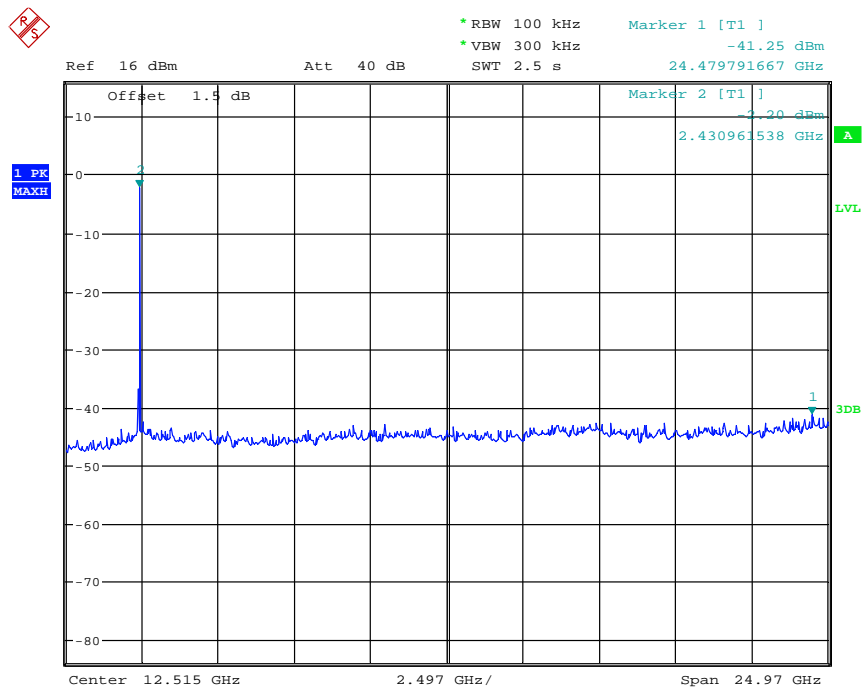
Date: 1.NOV.2016 12:49:58

Plot C



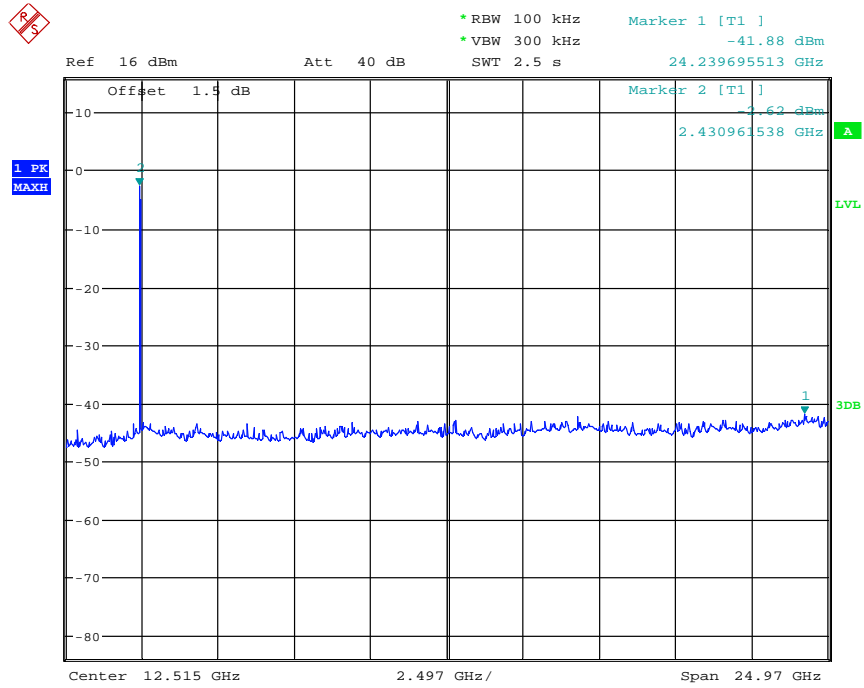
Date: 1.NOV.2016 12:52:32

Plot D



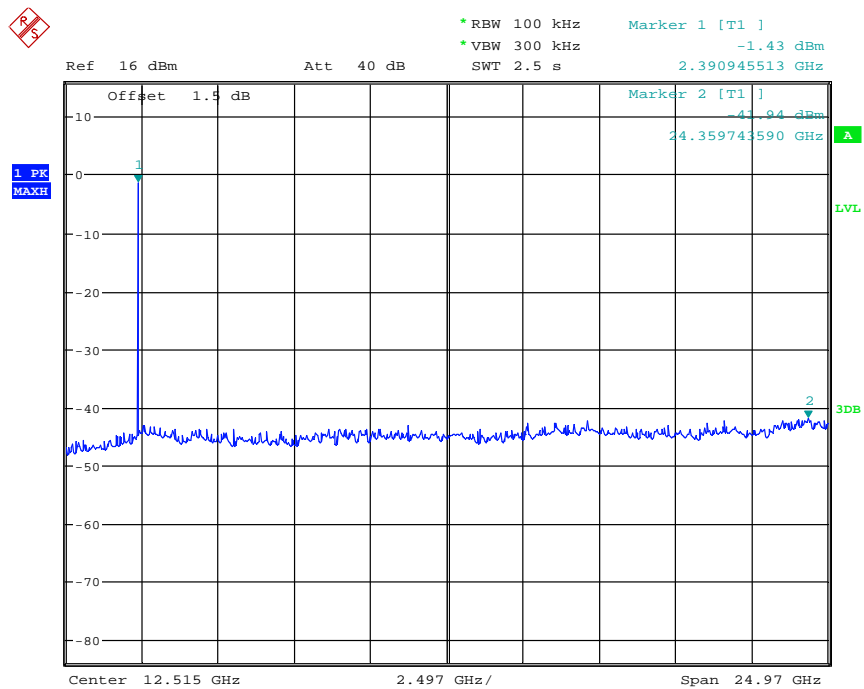
Date: 1.NOV.2016 12:51:40

Plot E



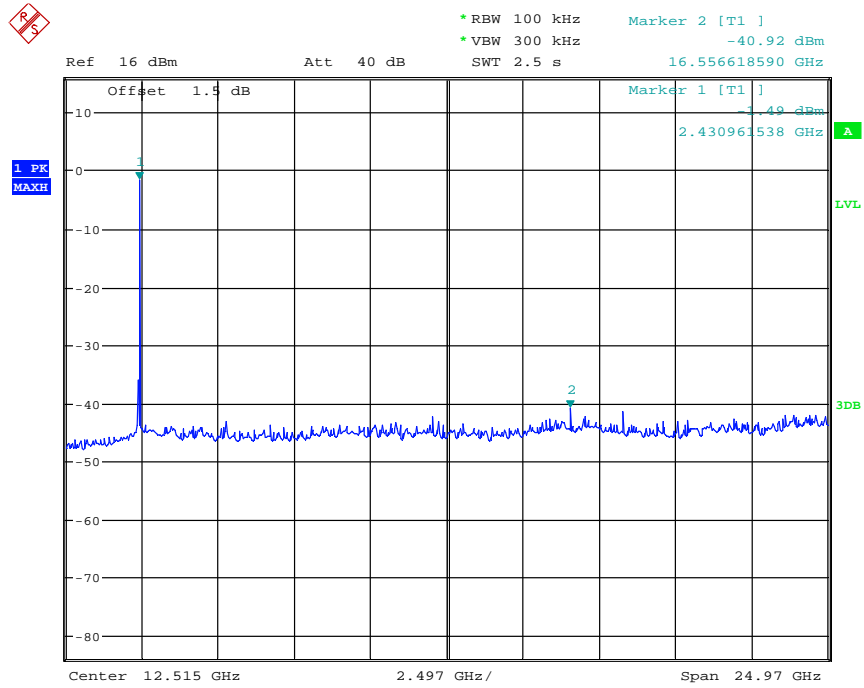
Date: 1.NOV.2016 12:50:43

Plot F



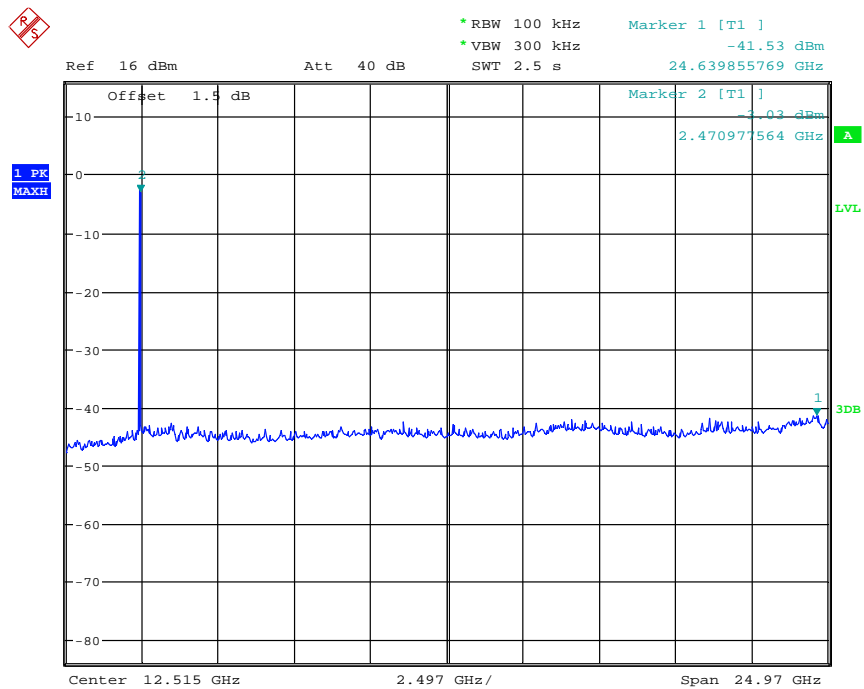
Date: 1.NOV.2016 12:53:23

Plot G



Date: 1.NOV.2016 12:54:08

Plot H



Date: 1.NOV.2016 12:55:31

Plot I

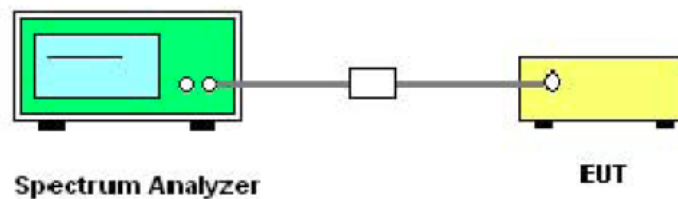


## 5.4 Power Spectral Density (PSD)

### 5.4.1 Requirement

According to FCC section 15.247(e), the same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used

### 5.4.2 Test Description



### 5.4.3 Test Result

#### A. Test Verdict

##### 802.11b Test mode

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to plot	Limit (dBm/3kHz)	Result
1	2412	-8.26	Plot A	8	Pass
6	2437	-7.74	Plot B	8	Pass
11	2462	-8.96	Plot C	8	Pass

##### 802.11g Test mode

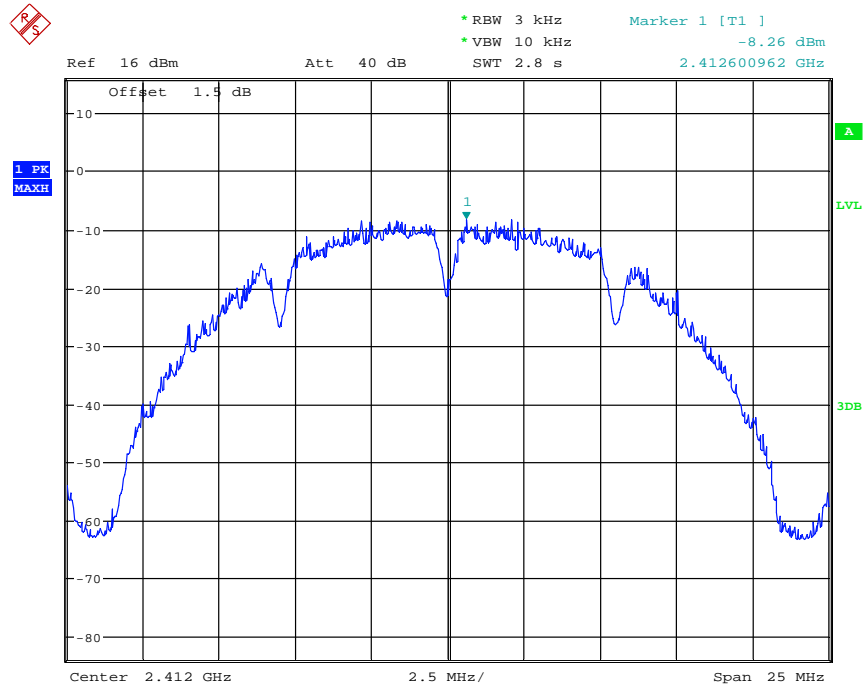
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to plot	Limit (dBm/3kHz)	Result
1	2412	-14.62	Plot D	8	Pass
6	2437	-14.20	Plot E	8	Pass
11	2462	-15.28	Plot F	8	Pass

##### 802.11n (20MHz) Test mode

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to plot	Limit (dBm/3kHz)	Result
1	2412	-14.62	Plot G	8	Pass
6	2437	-15.97	Plot H	8	Pass
11	2462	-14.41	Plot I	8	Pass

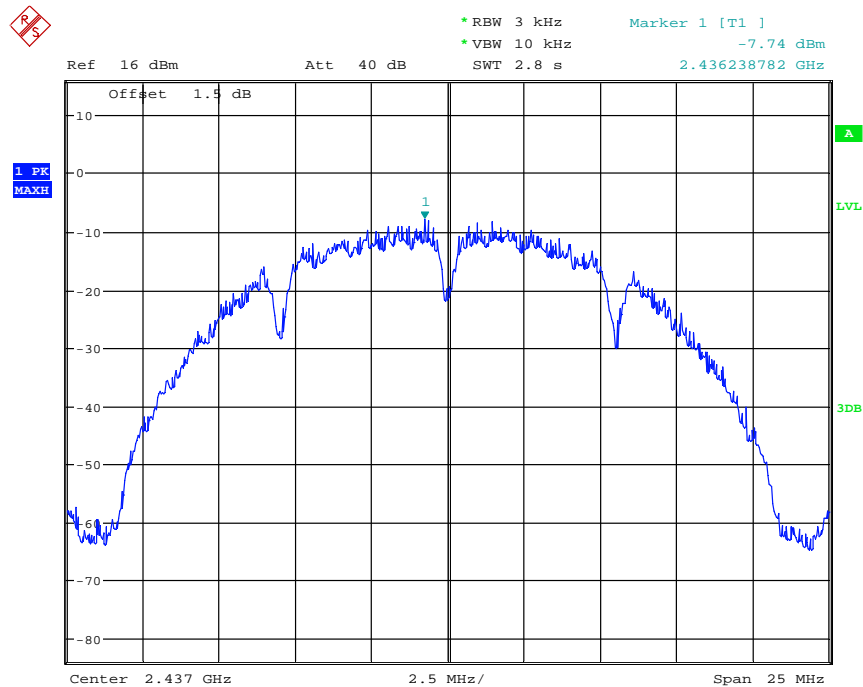


## B. Test Plot



Date: 1.NOV.2016 13:02:19

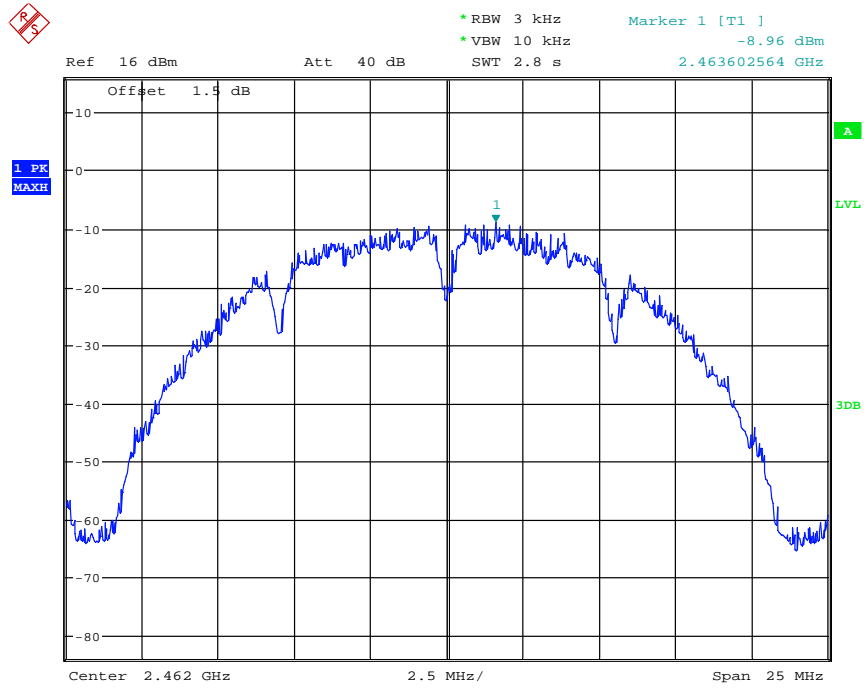
Plot A



Date: 1.NOV.2016 13:01:41

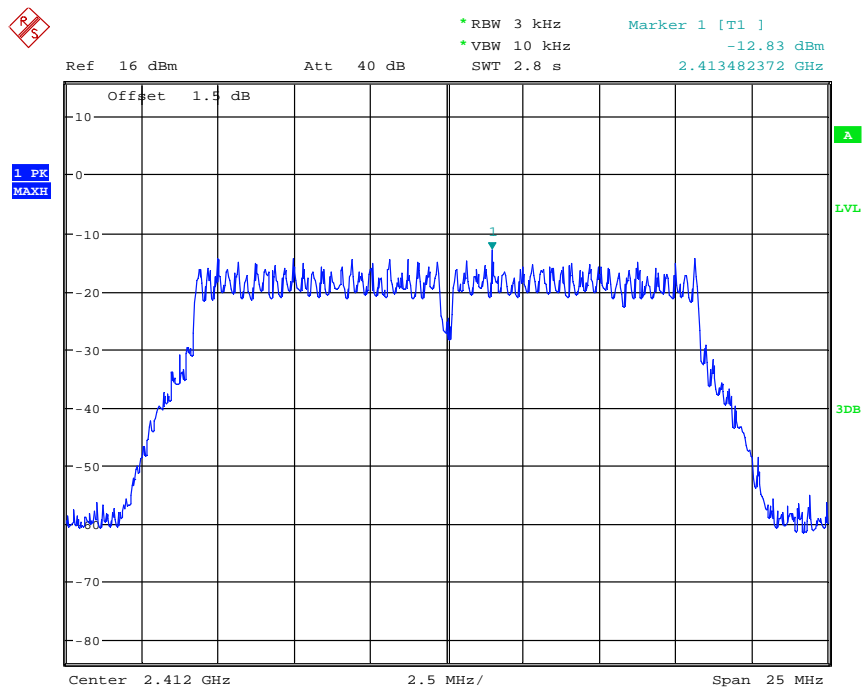
Plot B





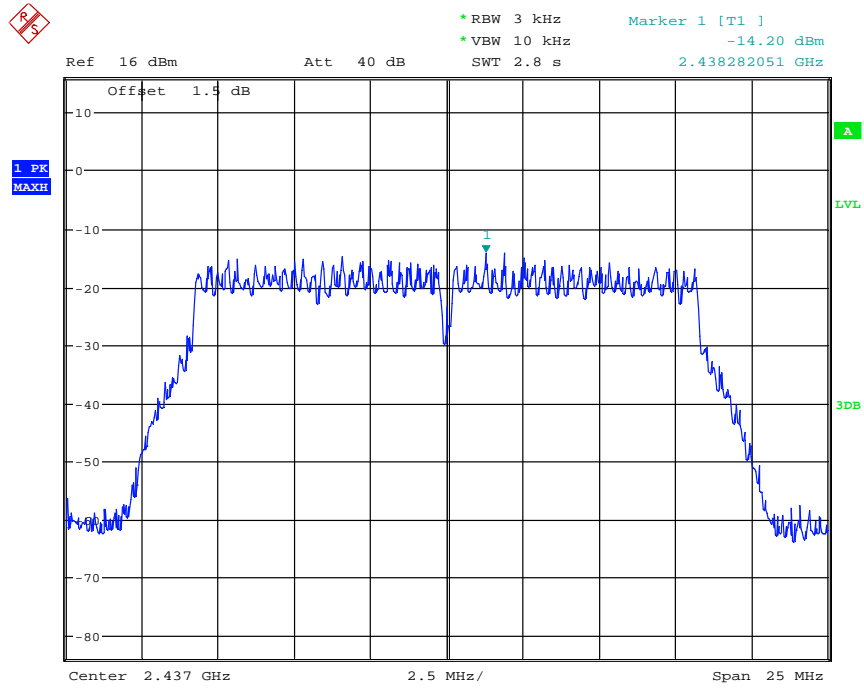
Date: 1.NOV.2016 13:01:05

Plot C



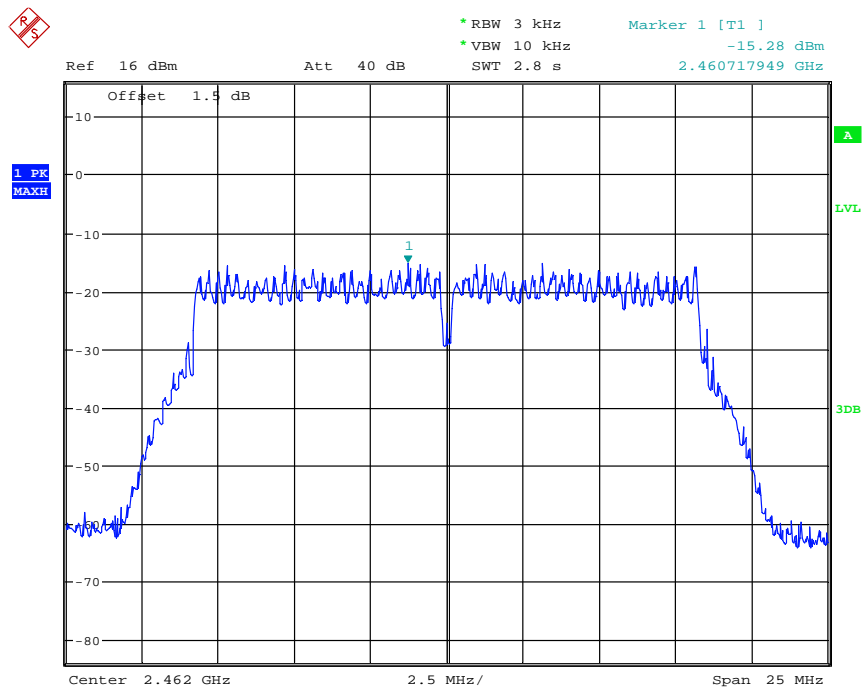
Date: 1.NOV.2016 12:59:24

Plot D



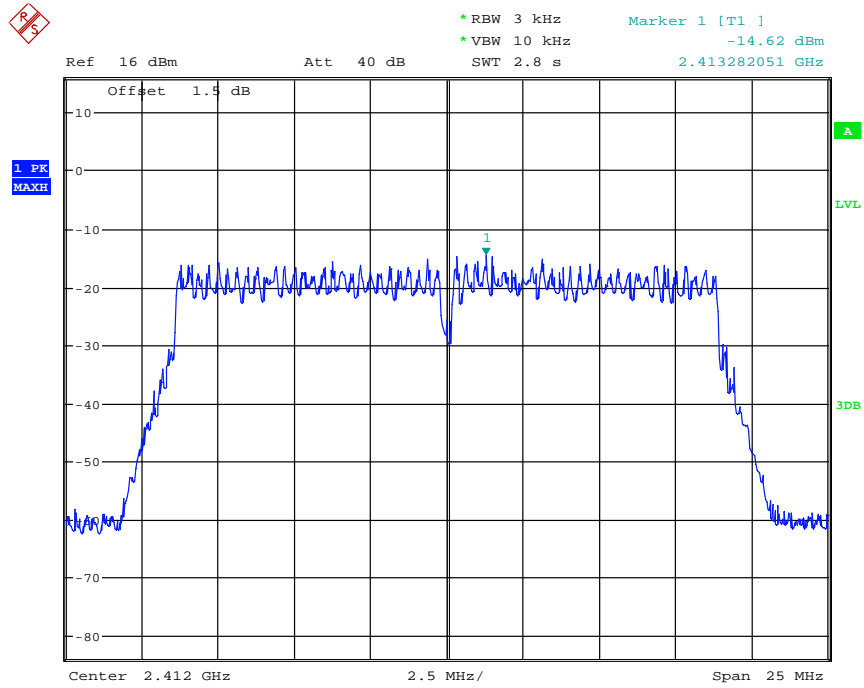
Date: 1.NOV.2016 12:59:52

Plot E



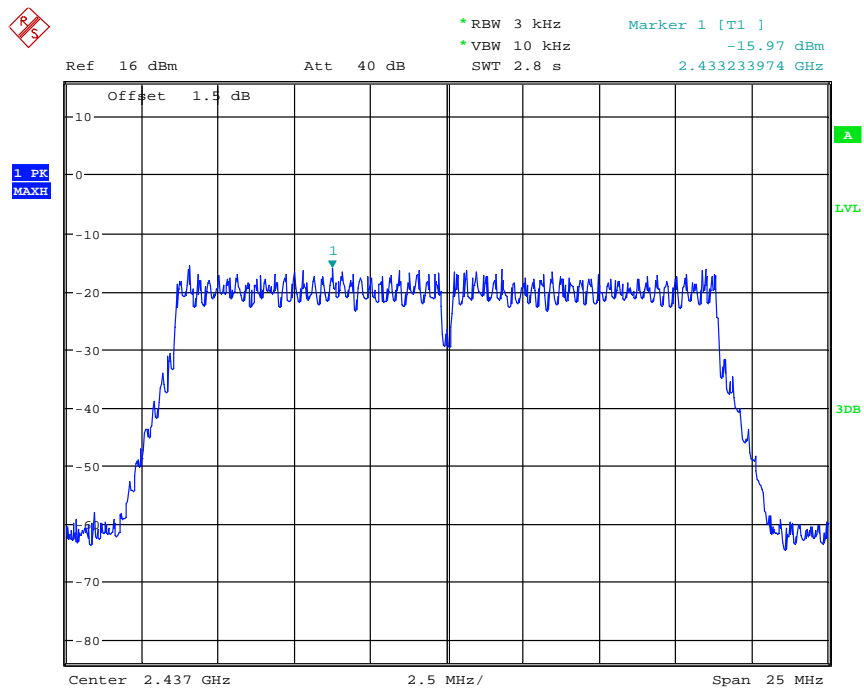
Date: 1.NOV.2016 13:00:31

Plot F



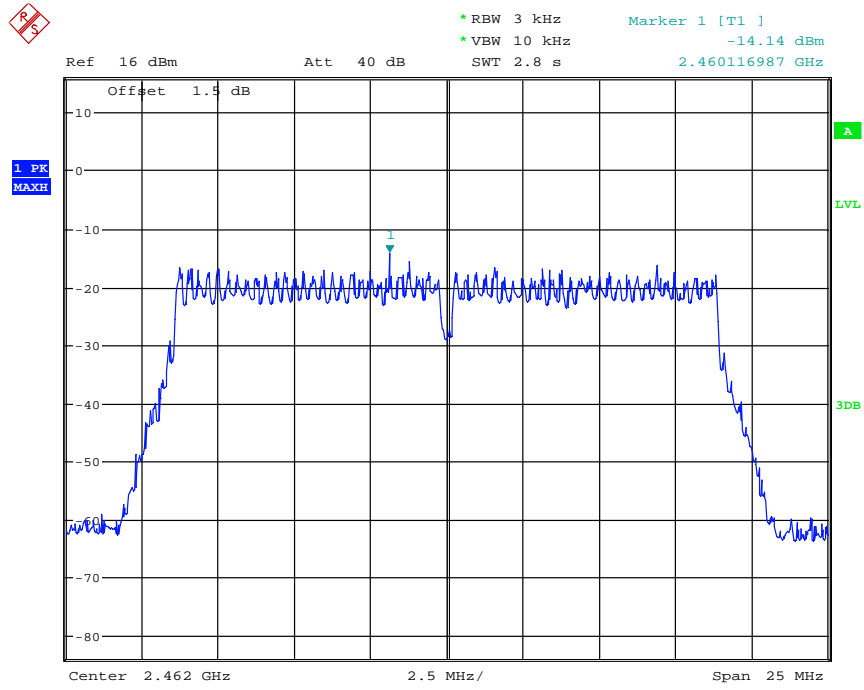
Date: 1.NOV.2016 12:58:44

Plot G



Date: 1.NOV.2016 12:58:10

Plot H



Date: 1.NOV.2016 12:57:33

Plot I

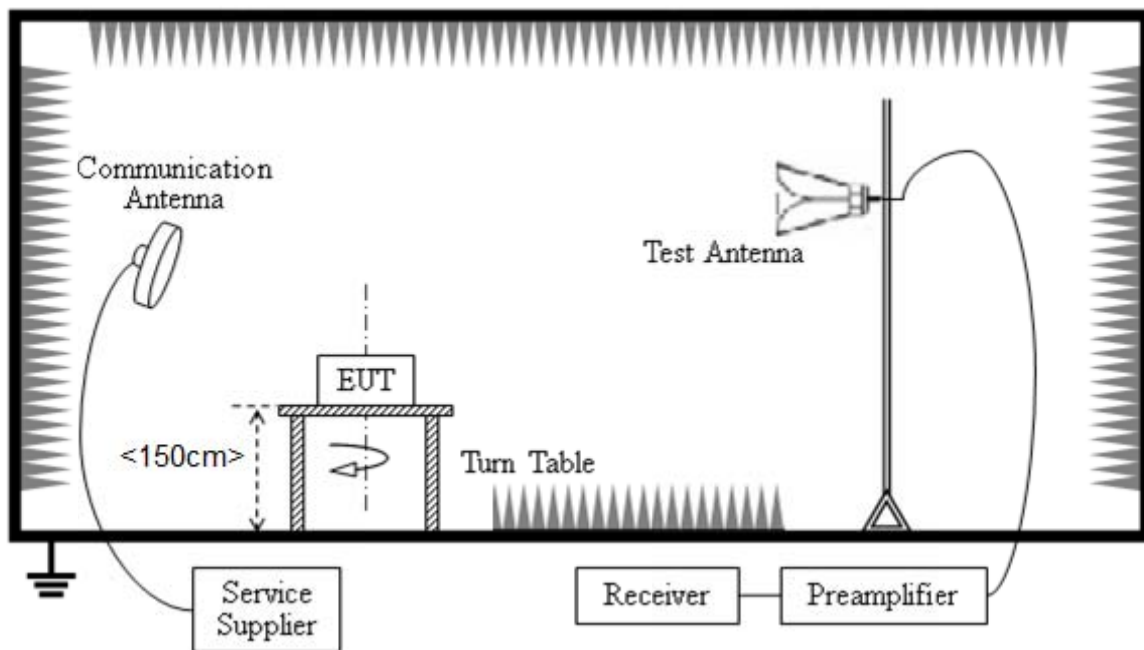


## 5.5 Band Edge

### 5.5.1 Requirement

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, , 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).

### 5.5.2 Test Description



The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

### 5.5.3 Test Result

The lowest and highest channels are tested to verify the Restricted Frequency Bands.

The measurement results are obtained as below:

$$E \text{ [dBV/m]} = UR + AT + A\text{Factor [dB]}; AT = LCable \text{ loss [dB]} - G\text{preamp [dB]}$$

AT: Total correction Factor except Antenna

UR: Receiver Reading

Gpreamp: Preamplifier Gain

AFactor: Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

The lowest and highest channels are tested to verify the Restricted Frequency Bands

**A. Test Verdict****802.11b Test mode**

Ch	Frequency (MHz)	Detector PK/AV	Max. Emission (dBuV/m)	Limit (dBuV/m)	Plot	Result
1	2389.66	PK	48.95	74	Plot A	Pass
1	2389.87	AV	42.83	54		Pass
11	2500.00	PK	48.07	74	Plot B	Pass
11	2489.21	AV	42.87	54		Pass

**802.11g Test mode**

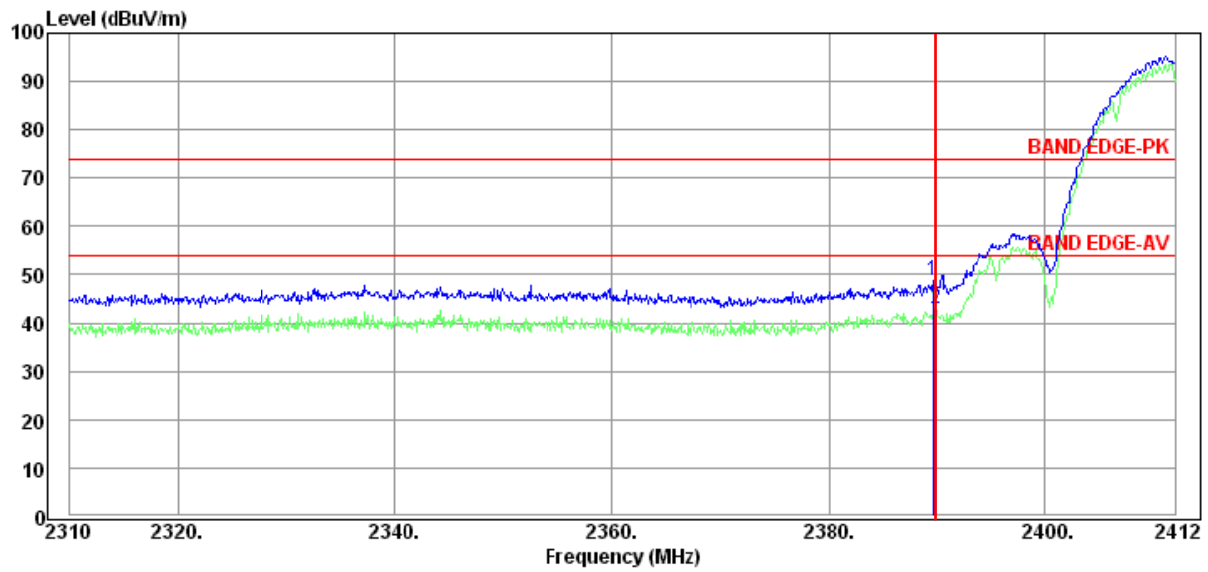
Ch	Frequency (MHz)	Detector PK/AV	Max. Emission (dBuV/m)	Limit (dBuV/m)	Plot	Result
1	2389.87	PK	57.17	74	Plot C	Pass
1	2389.97	AV	46.79	54		Pass
11	2494.87	PK	48.23	74	Plot D	Pass
11	2498.37	AV	43.75	54		Pass

**802.11n (20MHz) Test mode**

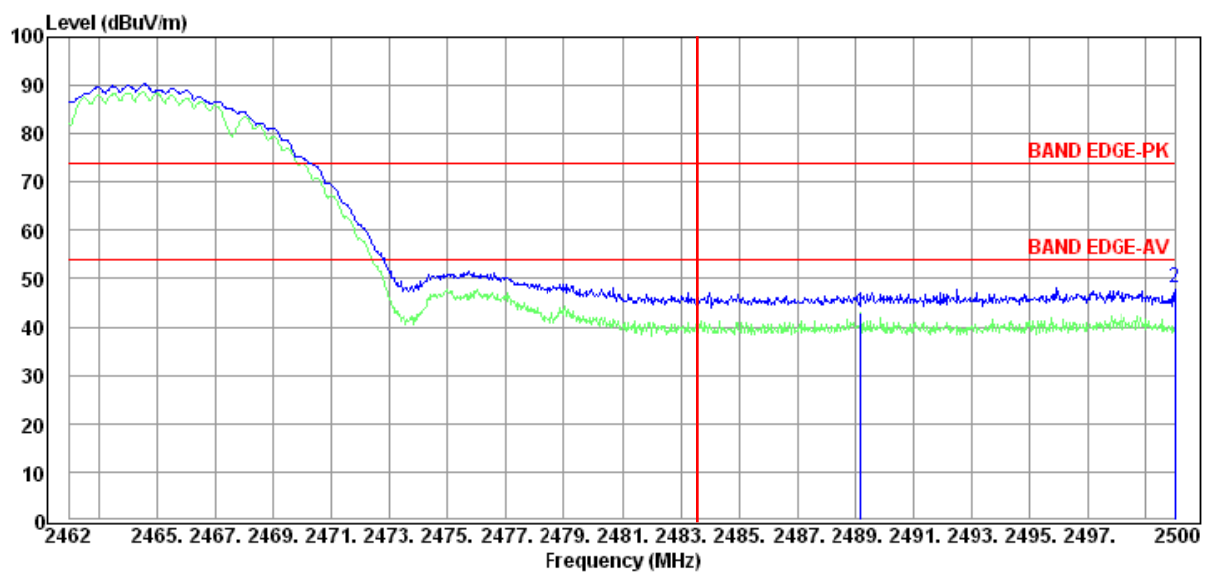
Ch	Frequency (MHz)	Detector PK/AV	Max. Emission (dBuV/m)	Limit (dBuV/m)	Plot	Result
1	2388.74	PK	57.00	74	Plot E	Pass
1	2389.46	AV	47.61	54		Pass
11	2496.96	PK	47.69	74	Plot F	Pass
11	2498.48	AV	42.62	54		Pass



## B. Test Plot

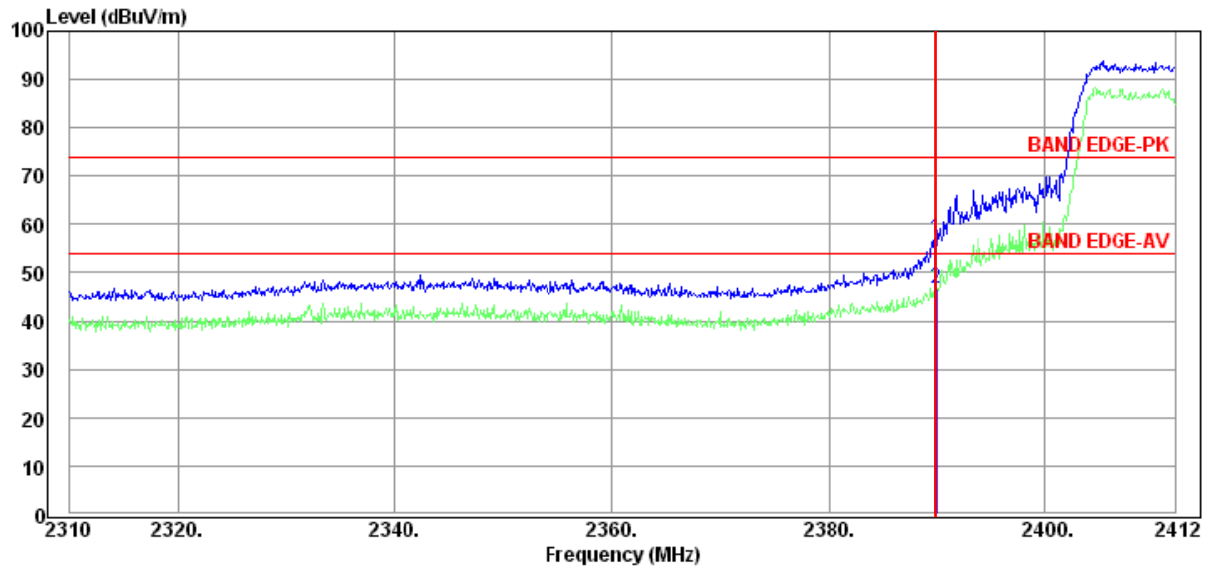


Plot A

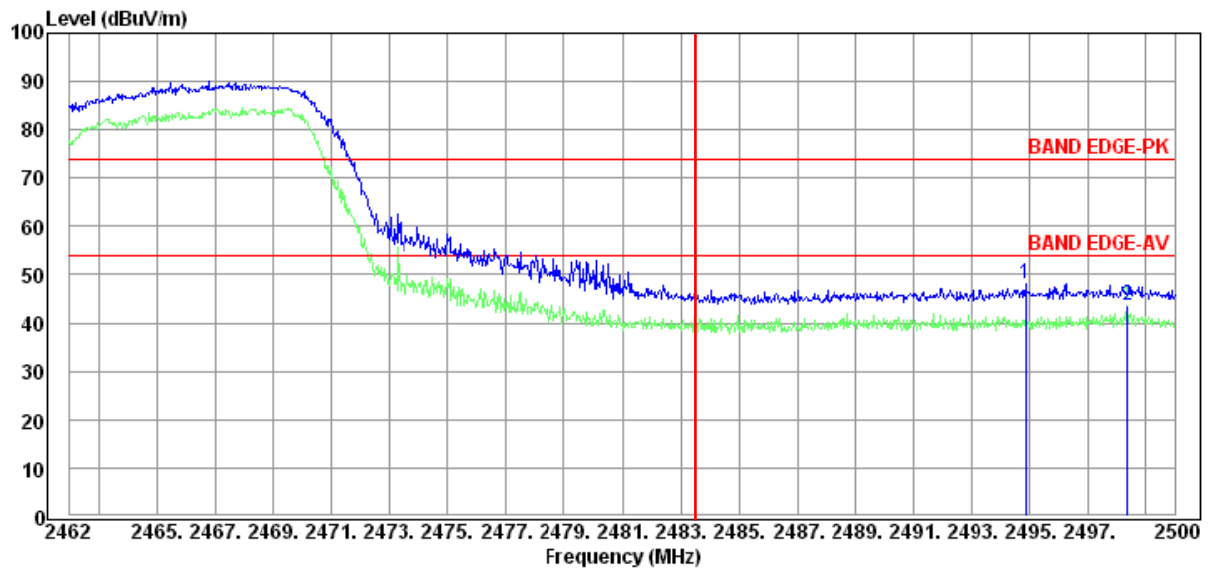


Plot B

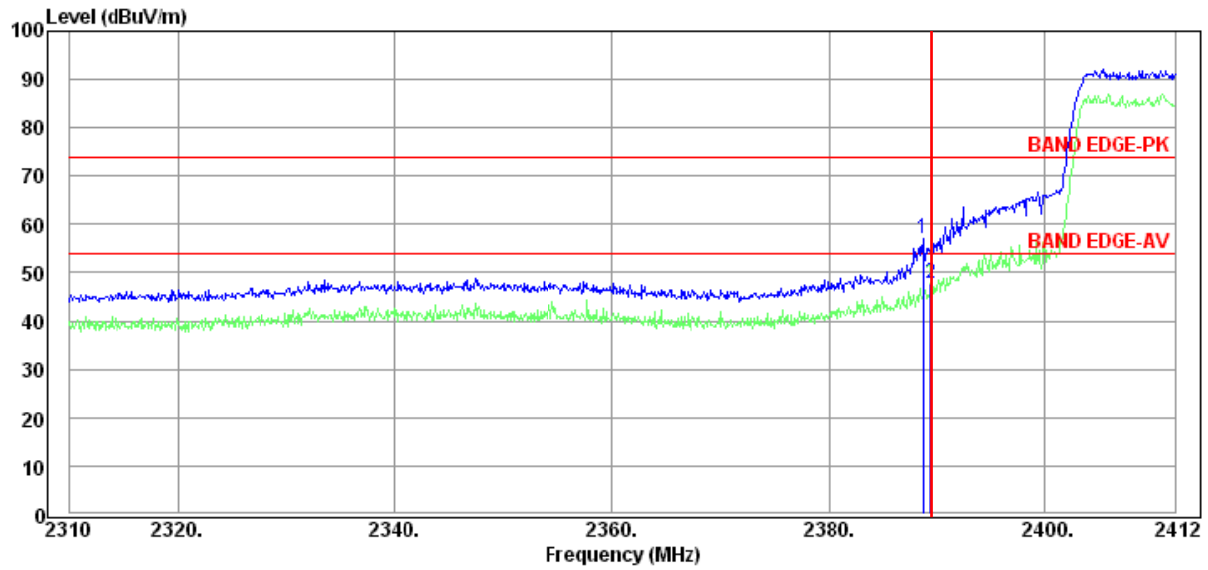




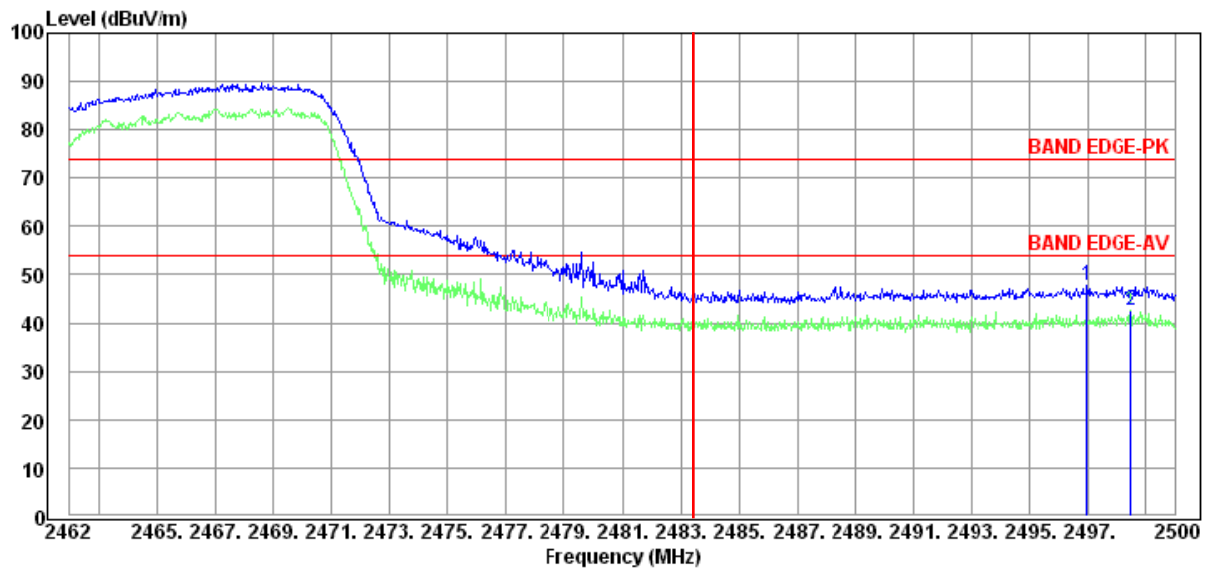
Plot C



Plot D



Plot E



Plot F



## 5.6 Conducted Emission

### 5.6.1 Requirement

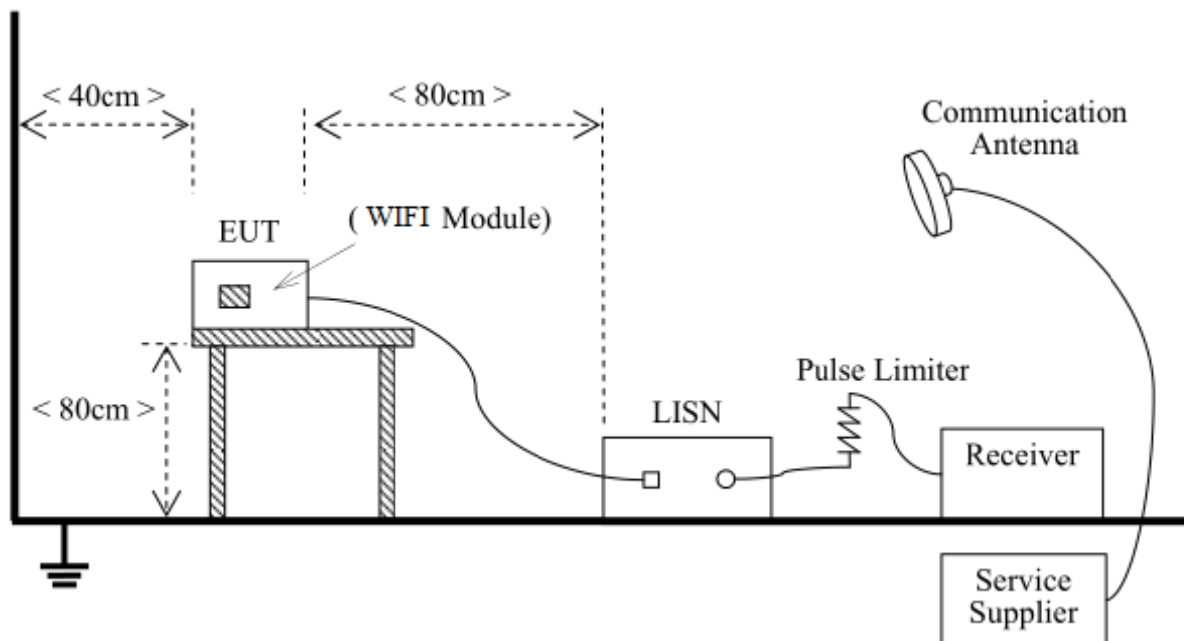
According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network(LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- (a) The lower limit shall apply at the band edges.
- (b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

### 5.6.2 Test Description



The EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. Power supplier is setting to 120V/60Hz. The set-up and test methods were according to ANSI C63.10:2013



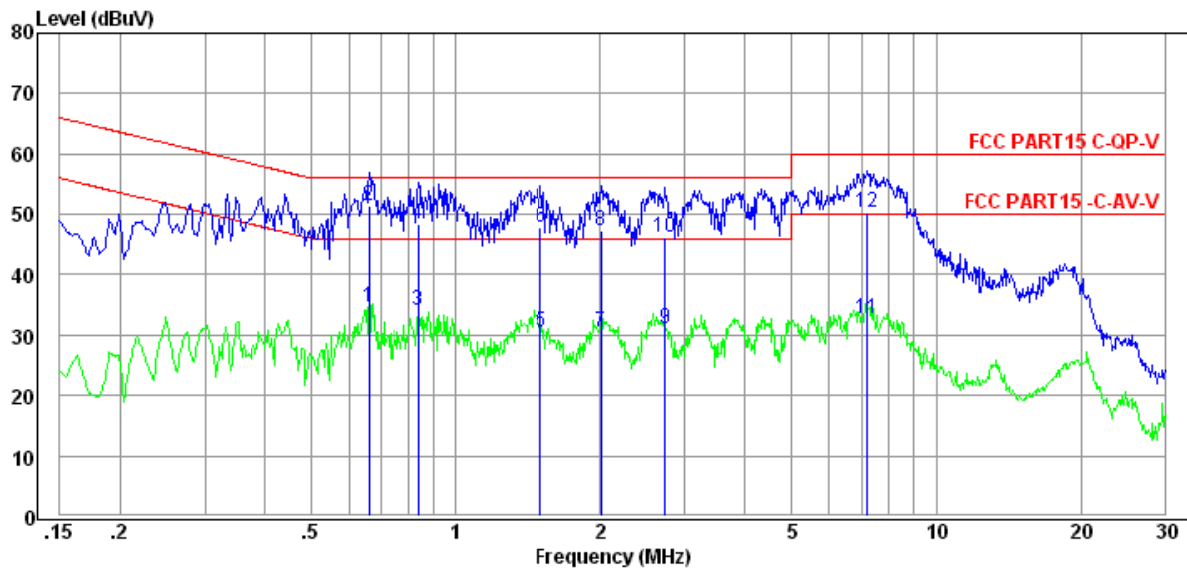
### 5.6.3 Test result

Test Verdict Recorded for Suspicious Points:

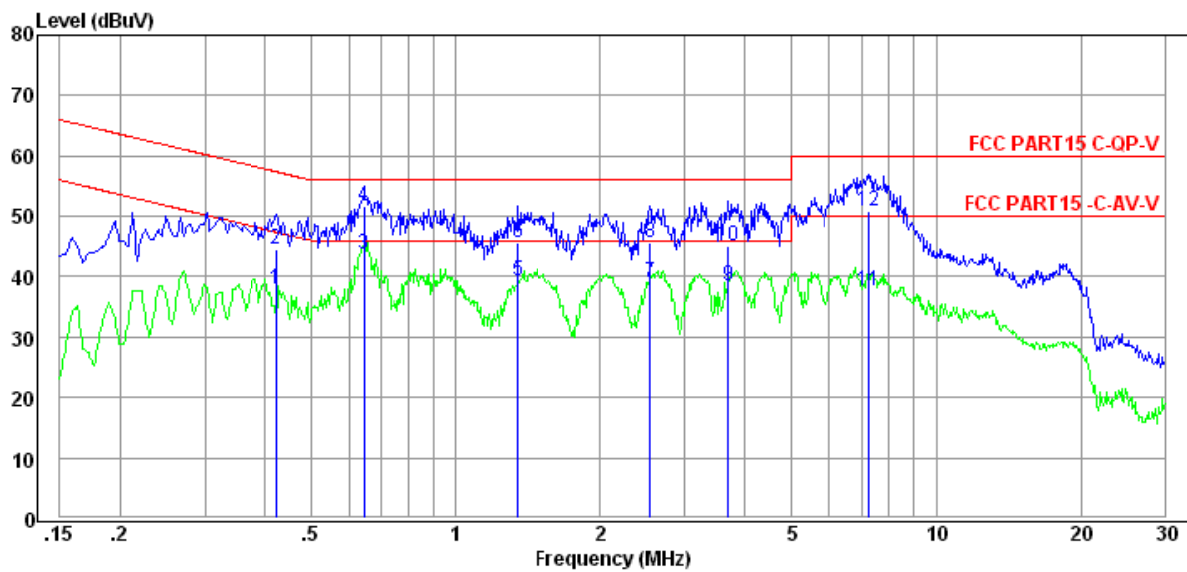
Frequency (MHz)	Level (dBuV)	Limit Line (dBuV)	Margin (dB)	Phase line	Detector
0.66	34.77	46.00	11.23	L	Average
0.66	51.48	56.00	4.52	L	QP
0.84	33.99	46.00	12.01	L	Average
0.84	48.31	56.00	7.69	L	QP
1.50	30.55	46.00	15.45	L	Average
1.50	47.94	56.00	8.06	L	QP
2.01	30.41	46.00	15.59	L	Average
2.01	47.18	56.00	8.82	L	QP
2.74	31.12	46.00	14.88	L	Average
2.74	46.05	56.00	9.95	L	QP
7.21	32.72	50.00	17.28	L	Average
7.21	50.22	60.00	9.78	L	QP
0.42	37.95	47.37	9.42	N	Average
0.42	44.63	57.37	12.74	N	QP
0.64	43.77	46.00	2.23	N	Average
0.64	51.73	56.00	4.27	N	QP
1.35	39.38	46.00	6.62	N	Average
1.35	45.59	56.00	10.41	N	QP
2.54	38.97	46.00	7.03	N	Average
2.54	45.51	56.00	10.49	N	QP
3.70	38.61	46.00	7.39	N	Average
3.70	45.11	56.00	10.89	N	QP
7.25	37.60	50.00	12.40	N	Average
7.25	50.84	60.00	9.16	N	QP



## 5.6.4 Test Plot



L Line



N Line



## 5.7 Radiated Emission

### 5.7.1 Requirement

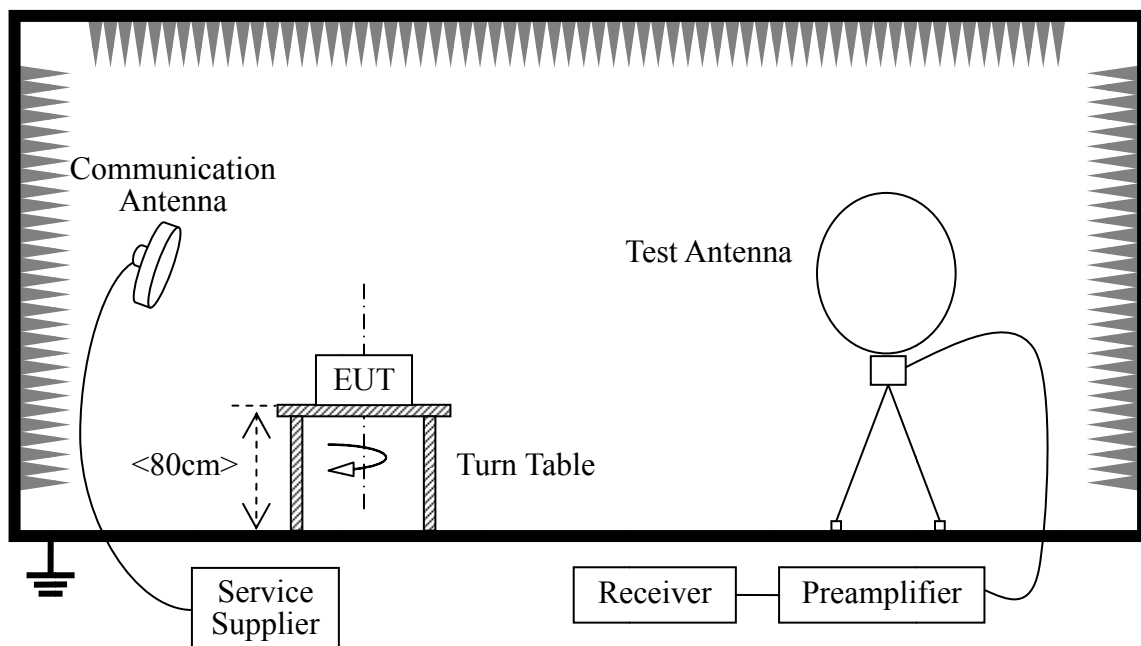
According to FCC section 15.247(c), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

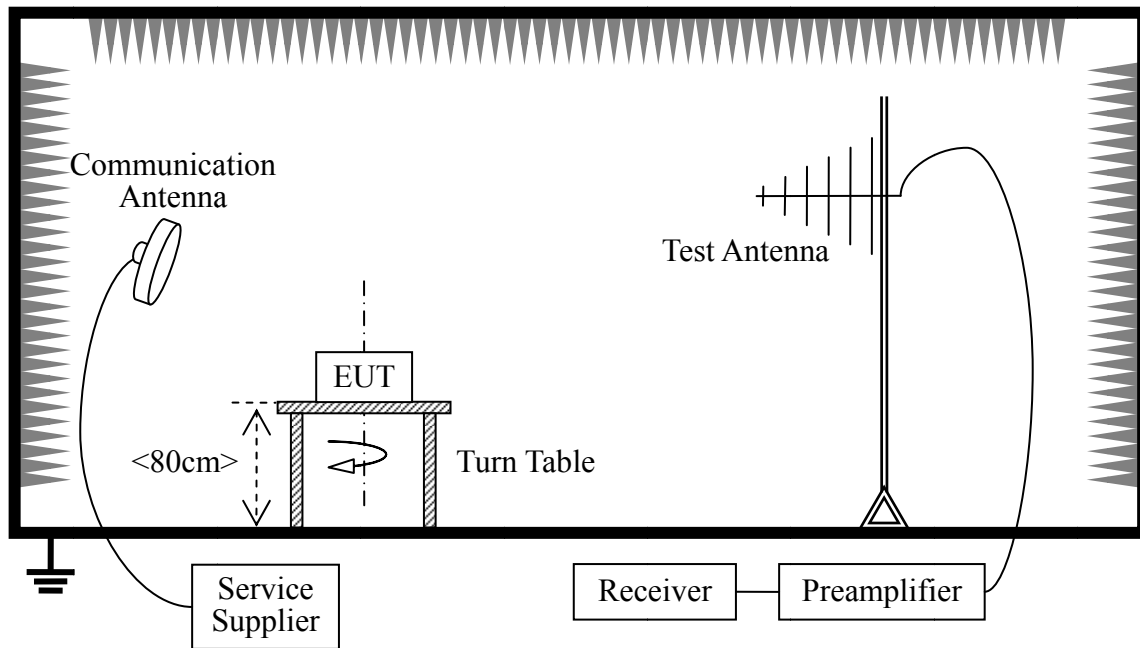
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)	Limit( $\text{dB}\mu\text{V/m}$ )	Detector
0.009-0.490	2400/F(kHz)	300	/	/
0.490-1.705	24000/F(kHz)	30	/	/
1.705-30	30	30	/	/
30 - 88	100	3	40	QP
88 - 216	150	3	43.5	QP
216 - 960	200	3	46	QP
960 - 1000	500	3	54	QP
Above 1000	500	3	54	AV

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

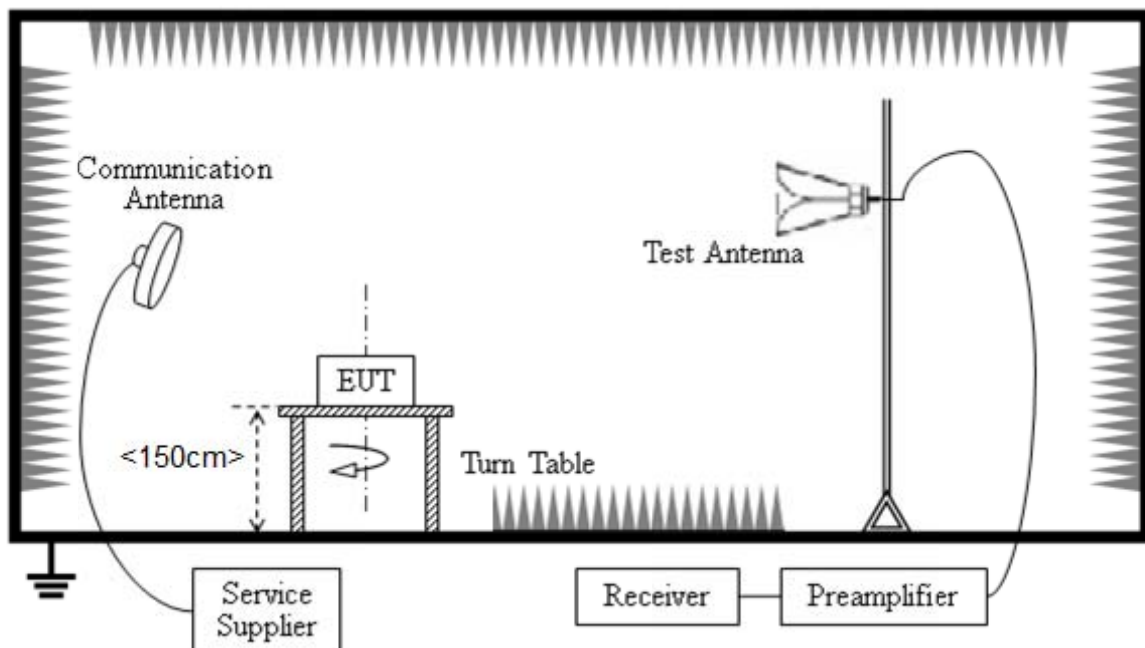
### 5.7.2 Test setup



Radiated Emissions Below 30MHz



Radiated Emissions 30-1000MHz



Radiated Emissions above 1000MHz

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10-2013. Below 1GHz, the EUT was set-up on insulator 80cm above the Ground Plane. Above 1GHz, the EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the Wifi Module is activated and controlled by the Wifi Service Supplier (SS) via a Common Antenna, and is set to



operate under transmitting at maximum power.

For the Test Antenna: In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength, the azimuth range of turntable was 0o to 360o, the receive antenna has two polarizations horizontal and vertical. When doing measurements above 1GHz, the EUT was placed within the 3dB beam width range of the horn antenna, and the EUT was tested in 3 orthogonal positions as recommended in ANSI C63.10 for Radiated Emissions and the worst-case data was presented.

### 5.7.3 Test Result

#### A. Test Result for 9kHz~30MHz

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
--	--	20	--	See Note

Note:

- The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.*
- Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB);*
- Limit line = specific limits (dBuV) + distance extrapolation factor.*

#### B. Test Result for above 30MHz ~ 10th Harmonic

Frequency (MHz)	Level (dBuV)	Limit Line (dBuV)	Margin (dB)	Antenna Polarization	Detector	Result
87.42	19.03	40.00	20.97	Horizontal	QP	QP
225.31	27.02	46.00	18.98	Horizontal	QP	QP
325.60	28.86	46.00	17.14	Horizontal	QP	QP
1378.13	21.10	54.00	32.90	Horizontal	Average	PASS
1496.53	21.38	54.00	32.62	Horizontal	Average	PASS
1724.08	19.82	54.00	34.18	Horizontal	Average	PASS
2371.75	34.49	54.00	19.51	Horizontal	Average	PASS
4997.81	27.44	54.00	30.56	Horizontal	Average	PASS
33.21	33.52	40.00	6.48	Vertical	QP	QP
37.16	35.79	40.00	4.21	Vertical	QP	QP
125.89	27.55	43.50	15.95	Vertical	QP	QP
1329.62	23.30	54.00	30.70	Vertical	Average	PASS
1724.08	21.48	54.00	32.52	Vertical	Average	PASS
1996.95	22.80	54.00	31.20	Vertical	Average	PASS
2350.60	27.90	54.00	26.10	Vertical	Average	PASS
4821.88	26.41	54.00	31.59	Vertical	Average	PASS

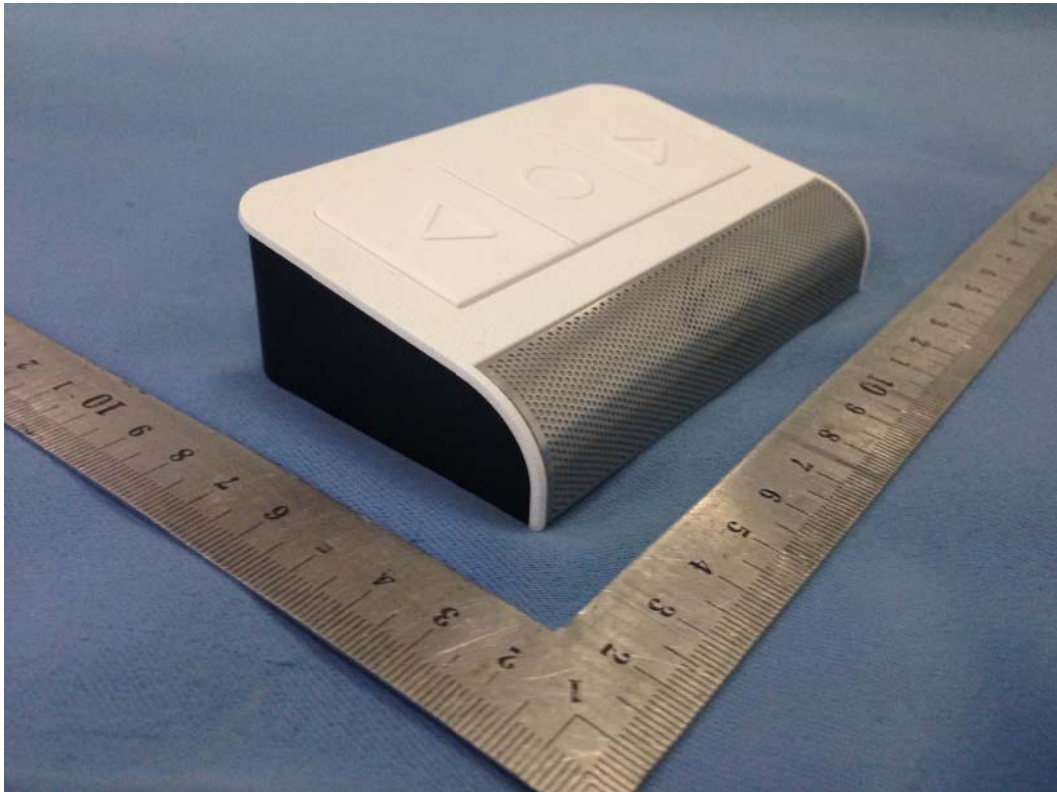
Note:

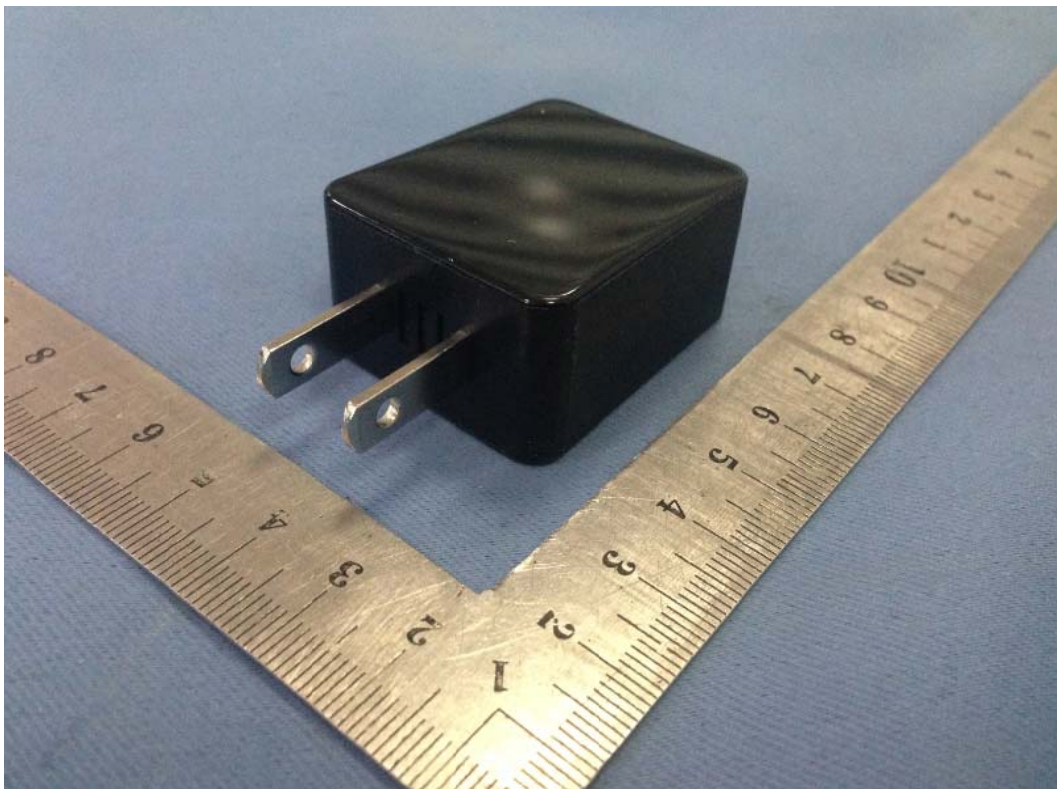
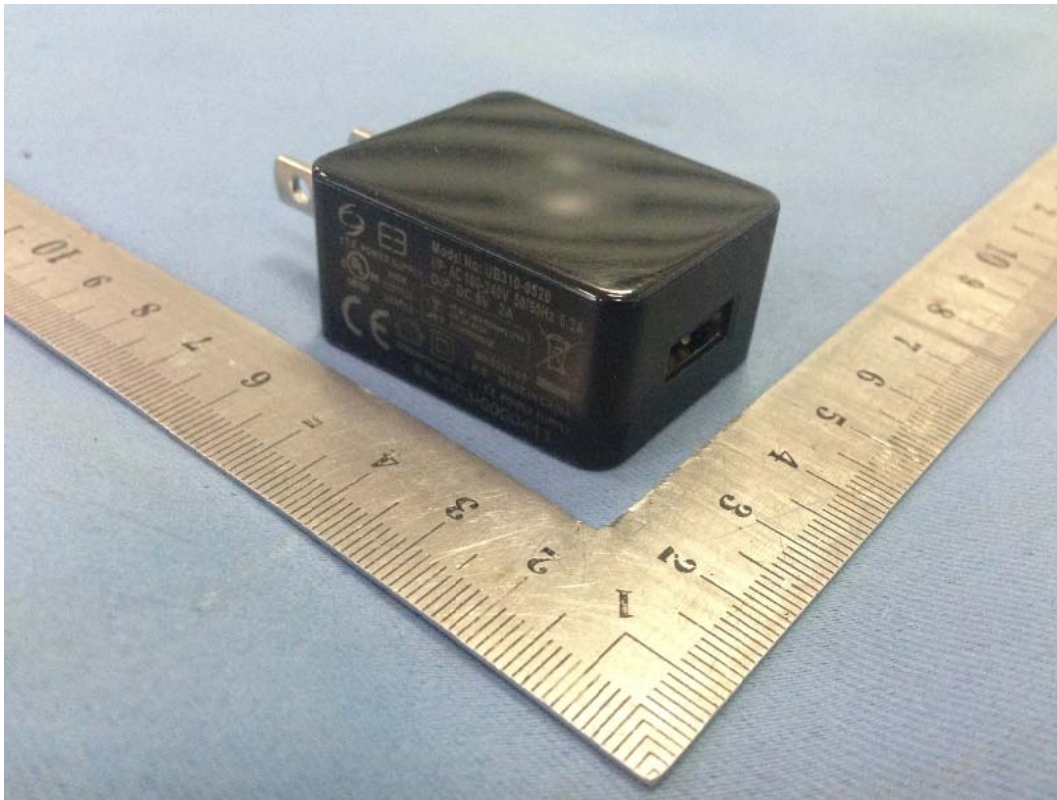
*The worst case (802.11g Channel 1:2412MHz) is recorded in the report.*





## Annex A Photos of the EUT





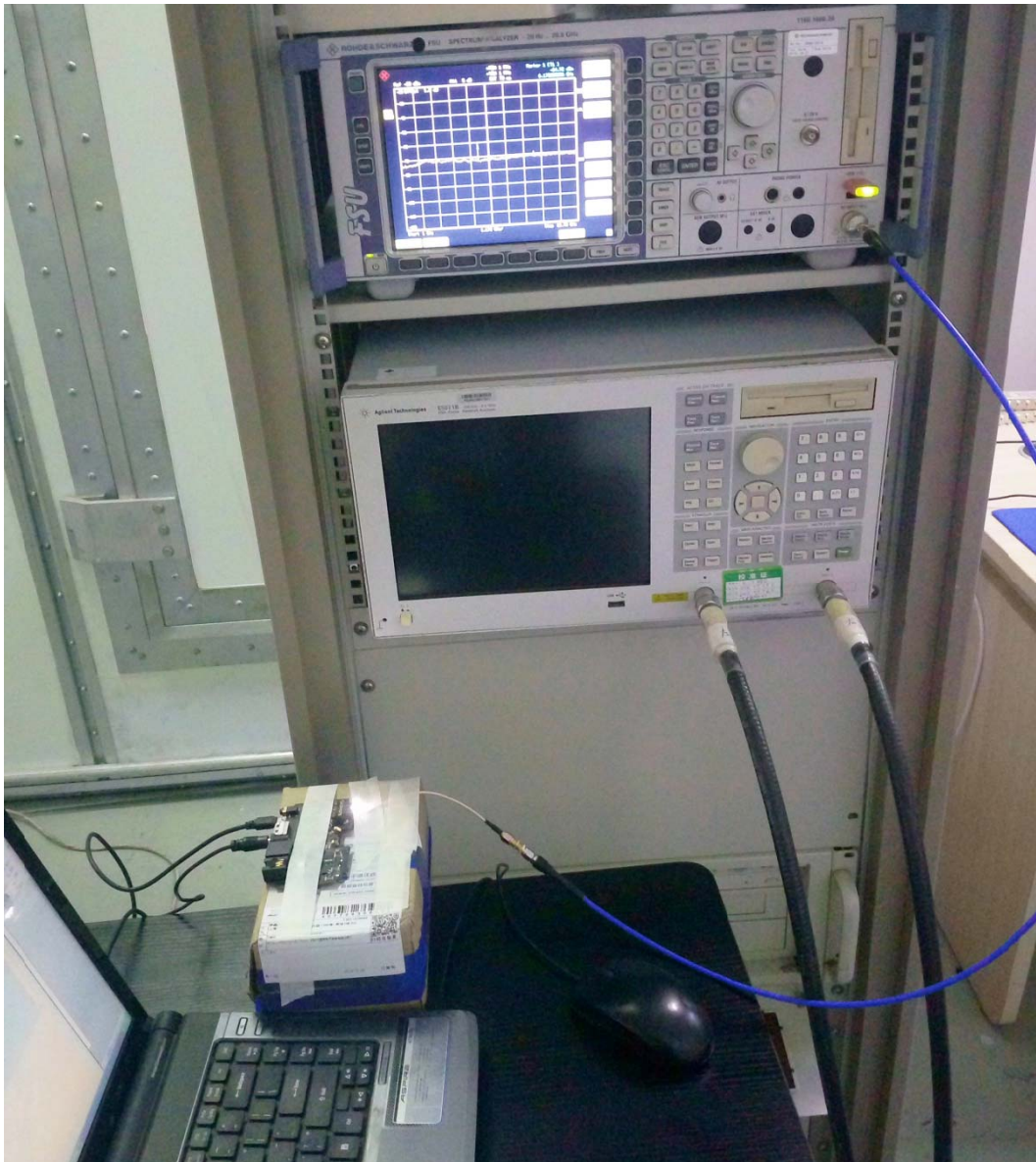






## Annex B Photos of Setup

### 1. RF



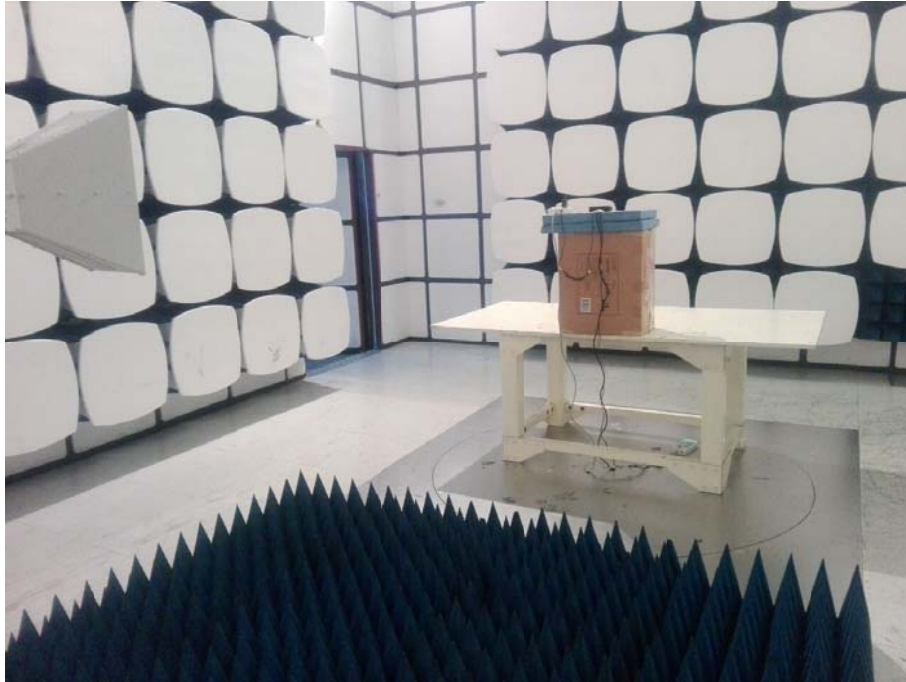


## 2. Conducted Emission



## 3. Radiated Emission





**\*\* END OF REPORT \*\***