



Report No: FCC 1604067-01 File reference No: 2016-06-08

Applicant: Phimax INTERNATIONAL LIMITED

Product: WiFi Speaker

Model No: X-Sound

Trademark: PHIMAX

Test Standards: FCC Part 15.247

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10, FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of

raragraph 13.24/ regulations for the evaluation

electromagnetic compatibility

Approved By

# Jack Chung

Jack Chung

Manager

Dated: June 08, 2016

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# SHENZHEN TIMEWAY TESTING LABORATORIES

Room 512-519, 5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

Date: 2016-06-08



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# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

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

### **CNAL-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

### FCC-Registration No.: 899988

The 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 No.: 899988.

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### 1.0 General Details

### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Room 512-519,5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen,

Guangdong China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

### 1.2 Applicant Details

Applicant: Phimax INTERNATIONAL LIMITED

Address: Room 1303, No.95 XinYan Building YanLing Road TianHe Distirct, Guangzhou, China

Telephone: 020-38937810 Fax: 020-38937810

### 1.3 Description of EUT

Product: WiFi Speaker

Manufacturer: SHENZHEN PHIMAX INTERNATIONAL COMPANY LTD

Address: Room 401, 4 Floor Office Building ,ZhongKeNuo Indurstry , HeZhou of

BaoAn Distirct, Shenzhen, China

Brand Name: PHIMAX
Model Number: X-Sound

Additional Model Number: N/A

Type of Modulation IEEE 802.11b : DSSS (CCK, QPSK, DBPSK)

IEEE 802.11g/n (HT20/40): OFDM(64QAM, 16QAM, QPSK, BPSK)

Frequency range IEEE802.11b/g/n (HT20/40): 2412-2462MHz,IEEE802.11n (HT40) : 2422-2452MHz

Channel Spacing 5MHz for IEEE 802.11b/g/n(HT20/40)
Air Data Rate IEEE 802.11b: 11, 5.5, 2, 1 Mbps

IEEE 802.11g: 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n HT20/40: 150, 135, 117, 104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6.5

Mbps

Frequency Selection By software

Channel Number IEEE 802.11b/g/n (HT20): 11 Channels; IEEE 802.11n (HT40): 7 Channels,

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Antenna: Integral Antenna and the maximum Gain of this antenna is 3.58dBi;

Power Adapter Model No.: BX-1352500

Input: 100-240V, 50/60Hz, 1.5A; Output: DC13.5V, 2.5A

Submitted Sample: 2 Samples

**Test Duration** 1.5

2016-04-08 to 2016-06-08

Test Uncertainty 1.6

> Conducted Emissions Uncertainty = 3.6dB Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Terry Tang

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2.0 Test Equipments						
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date	
ESPI Test Receiver	R&S	ESPI 3	100379	2015-08-22	2016-08-21	
TWO Line-V-NETW	R&S	EZH3-Z5	100294	2015-08-22	2016-08-21	
TWO Line-V-NETW	R&S	EZH3-Z5	100253	2015-08-22	2016-08-21	
Ultra Broadband ANT	R&S	HL562	100157	2015-08-23	2016-08-22	
ESDV Test Receiver	R&S	ESDV	100008	2015-08-22	2016-08-21	
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2015-08-22	2016-08-21	
System Controller	CT	SC100	-			
Printer	EPSON	РНОТО ЕХЗ	CFNH234850			
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-	
Loop Antenna	EMCO	6502	00042960	2015-08-23	2016-08-22	
ESPI Test Receiver	R&S	ESI26	838786/013	2015-08-22	2016-08-21	
3m OATS			N/A	2015-08-24	2016-08-23	
Horn Antenna	R&S	BBHA 9170	BBHA9170265	2015-08-24	2016-08-23	
Horn Antenna	R&S	BBHA 9120D	9120D-631	2015-08-24	2016-08-23	
Power meter	Anritsu	ML2487A	6K00003613	2015-08-22	2016-08-21	
Power sensor	Anritsu	MA2491A	32263	2015-08-22	2016-08-21	
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2015-08-23	2016-08-21	
LISN	AFJ	LS16C	10010947251	2015-08-22	2016-08-21	
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2015-08-23	2016-08-22	
9*6*6 Anechoic			N/A	2015-08-24	2016-08-23	
EMI Test Receiver	RS	ESCS30	100139	2015-08-22	2016-08-21	

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### 3. DESCRIPTION OF TEST MODES

### IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 11Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 54Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: 6.5Mbps data rate (worst case) were chosen for full testing

### IEEE 802.11n (HT40) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n (HT40) mode: 6.5Mbps data rate (worst case) were chosen for full testing

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

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### 3.0 **Technical Details**

### 3.1 Summary of test results

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.207	<b>Conducted Emission Test</b>	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit:	PASS	Complies

### 3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247 and ANSI C63.4:2014 AND ANSI C63.10:2013

### 4.0 **EUT Modification**

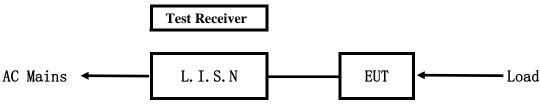
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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### 5.0 Power Line Conducted Emission Test

### 5.1 Schematics of the test

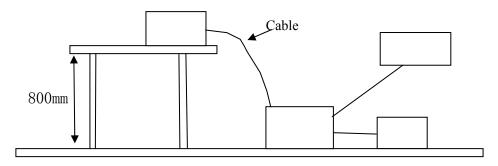


EUT: Equipment Under Test

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4-2014.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



## 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

### A. EUT

Device	Manufacturer	Model	FCC ID	
WiFi Chaolson	SHENZHEN PHIMAX	V Cound	2AHXMX-SOUND	
WiFi Speaker	INTERNATIONAL COMPANY LTD	X-Sound		

### B. Internal Device

Device	Manufacturer	Model	FCC
			ID/DOC
N/A			

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### C. Accessory

Device	Manufacturer	Model	FCC ID/DOC	Rating
N/A				

# 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4-2014.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107

Frequency	Class A Lim	its (dB µ V)	Class B Limits (dB $\mu$ V)		
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0	
5.00 ~ 30.00	73.0	60.0	60.0	50.0	

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

### 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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### A: Conducted Emission on Live Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

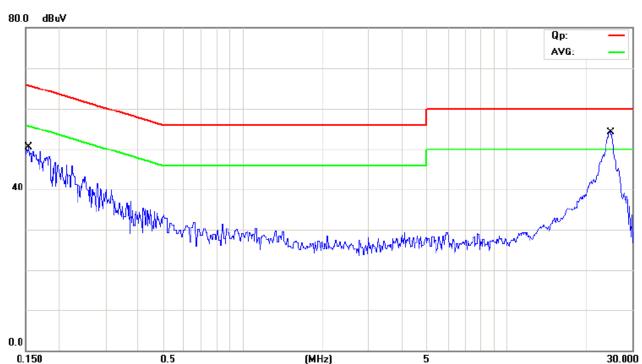
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Keep WIFI Transmitting** 

**Equipment Level: Class B** 

**Results: PASS** 

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	×	24.6507	39.40	11.38	50.78	60.00	-9.22	QP	
2		24.6507	28.80	11.38	40.18	50.00	-9.82	AVG	
3		0.1535	33.30	11.00	44.30	65.81	-21.51	QP	
4		0.1535	0.30	11.00	11.30	55.81	-44.51	AVG	

30.000

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### B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Keep WIFI Transmitting** 

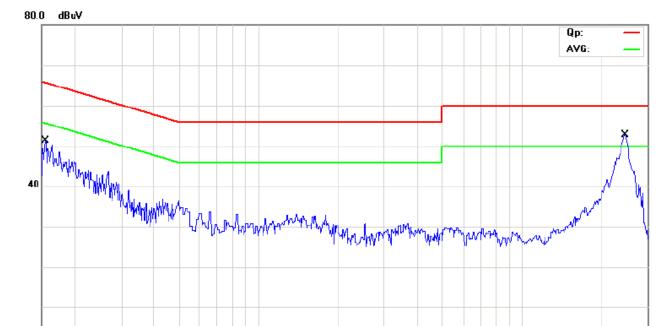
**Equipment Level: Class B** 

**Results: Pass** 

0.0

0.150

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	×	24.5436	38.40	11.37	49.77	60.00	-10.23	QP	
2		24.5436	27.90	11.37	39.27	50.00	-10.73	AVG	
3		0.1545	33.20	11.00	44.20	65.75	-21.55	QP	
4		0.1545	2.90	11.00	13.90	55.75	-41.85	AVG	

(MHz)

5

0.5

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### 6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10–2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**OP**" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

# Block diagram of Test setup Distance = 3m Computer Pre –Amplifier Furn-table Receiver

# 6.2 Configuration of The EUT Same as section 5.3 of this report

# 6.3 EUT Operating Condition Same as section 5.4 of this report.

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### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

### Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109

Frequency Range (MHz)	Distance (m)	Field strength (dB µ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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### Test result

### General Radiated Emission Data and Harmonics Radiated Emission Data

### Radiated Emission In Horizontal/Vertical (30MHz----1000MHz)

Keep WIFI Transmitting **EUT set Condition:** 

**Results:** Pass

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
124.200	31.71	Н	43.50
254.560	42.45	Н	46.00
158.080	31.93	Н	43.50
468.640	37.80	Н	46.00
158.000	40.13	V	43.50
246.840	33.60	V	46.00
592.600	42.47	V	46.00
513.920	45.03	V	46.00

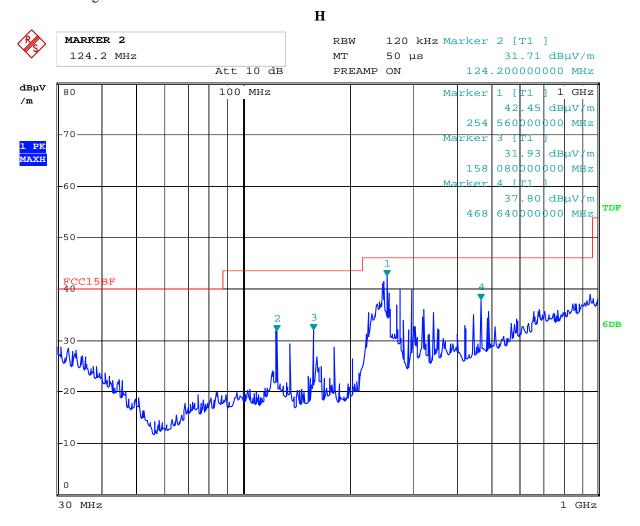
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### Test Figure:



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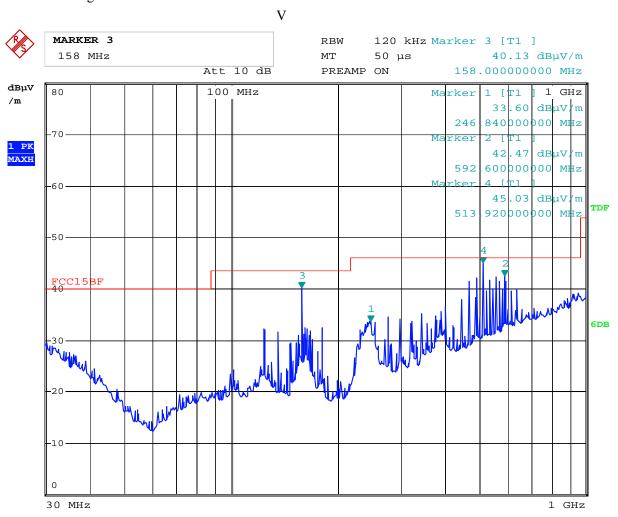
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### Test Figure:



7.JUN.2016 14:07:01 Date:

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### Operation Mode: Transmitting under CH01 for 11g at 54Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
4824.00	49.28 (PK)	Н	74(Peak)/ 54(AV)
4824.00	49.32 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472		H/V	74(Peak)/ 54(AV)
16884		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 54Mbps

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### Operation Mode: Transmitting under CH06 for 11g at 54Mbps

	0	о I	
Frequency (MHz)	Level@3m (dB \u03ba V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
4874.00	52.20 (PK)	V	74(Peak)/ 54(AV)
4874.00	52.65 (PK)	Н	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059	-	H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 54 Mbps

### Operation Mode: Transmitting under CH11 for 11g at 54Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03bc V/m)
4924	49.58 (PK)	Н	74(Peak)/ 54(AV)
4924	49.64 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24620		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

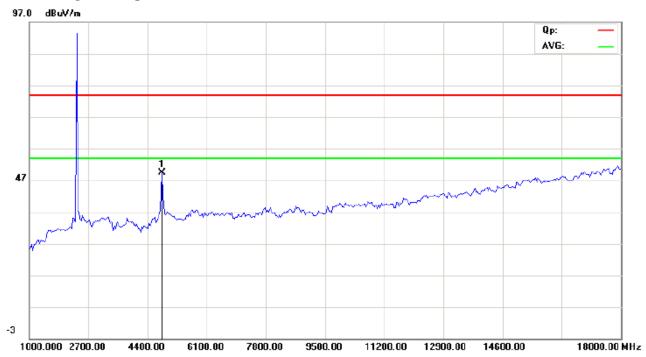
- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11g mode at 54 Mbps

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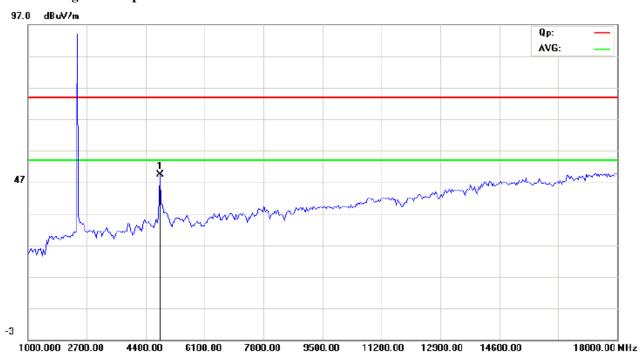


Please refer to the following test plots for details:

### CH01 for 11g at 54Mbps: Horizontal



### CH01 for 11g at 54Mbps: Vertical



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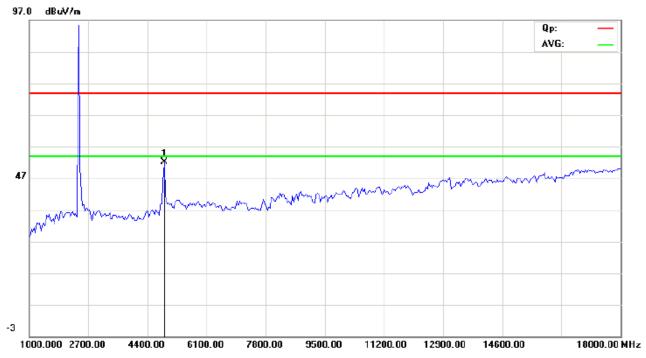
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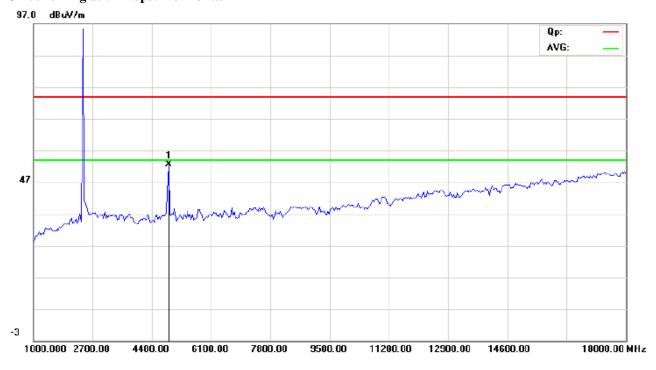
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### CH06 for 11g at 54Mbps: Vertical



### CH06 for 11g at 54Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

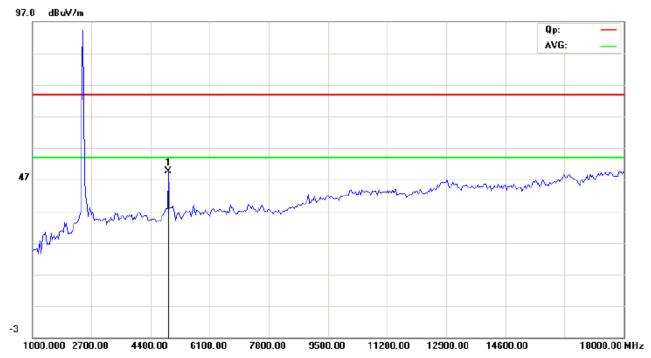
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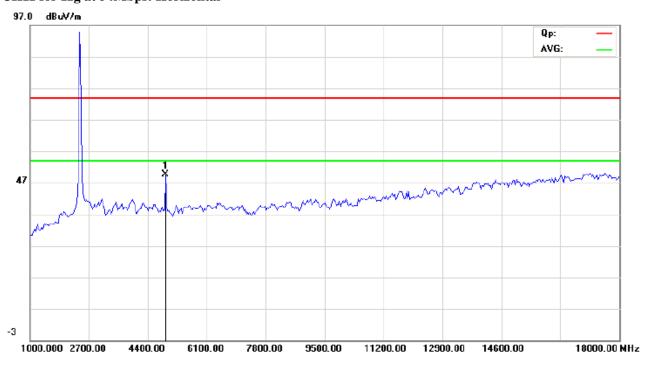
Date: 2016-06-08



### CH11 for 11g at 54Mbps: Vertical



### CH11 for 11g at 54Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

The report refers only to the sample tested and does not apply to the bulk.

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Report No.: FCC1604067-01 Page 23 of 104

Date: 2016-06-08



### Operation Mode: Transmitting under CH01 for 11b at 11Mbps

	0		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
4824.00	50.82 (PK)	Н	74(Peak)/ 54(AV)
4824.00	50.59 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472		H/V	74(Peak)/ 54(AV)
16684		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

### Operation Mode: Transmitting under CH06 for 11b at 11Mbps

Frequency (MHz)	Level@3m (dB \u03ba V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
4874.00	50.51 (PK)	Н	74(Peak)/ 54(AV)
4874.00	50.58 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

The report refers only to the sample tested and does not apply to the bulk.

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Date: 2016-06-08



### Operation Mode: Transmitting under CH11 for 11b at 11Mbps

	0		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
4924	52.29 (PK)	Н	74(Peak)/ 54(AV)
4924	52.13 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24620		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

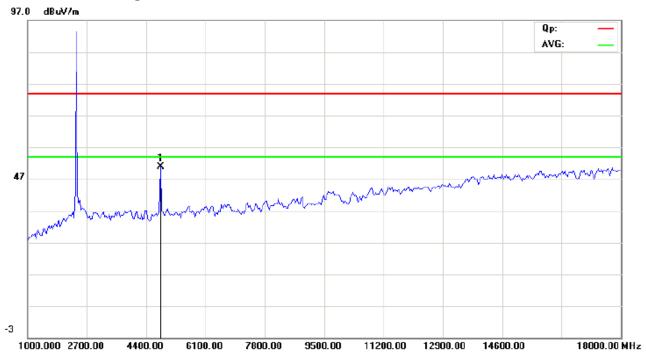
3. For 802.11b mode at 11Mbps

Date: 2016-06-08

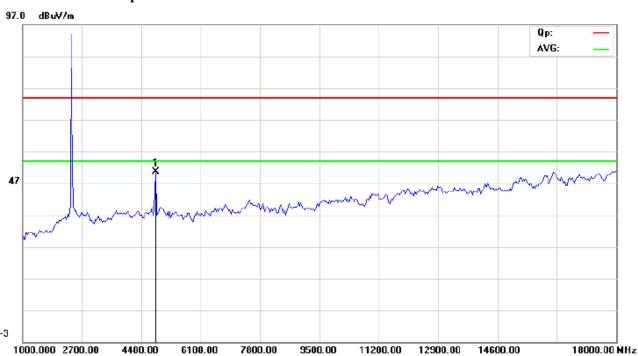


Please refer to the following test plots for details:

### CH01 for 11b at 11Mbps: Horizontal



### CH01 for 11b at 11Mbps: Vertical



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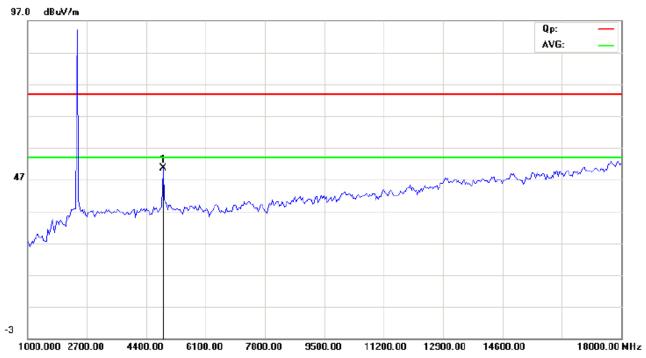
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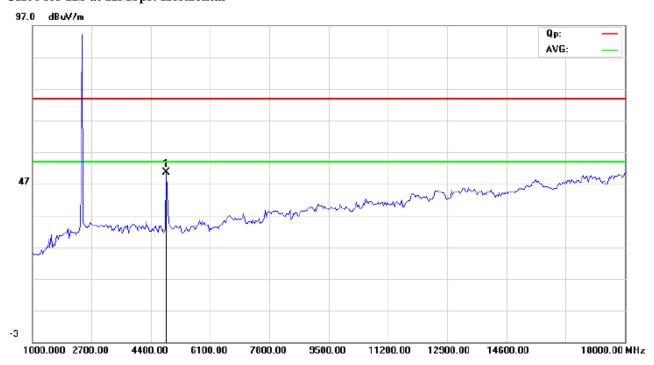
Date: 2016-06-08



### CH06 for 11b at 11Mbps: Vertical



### CH06 for 11b at 11Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

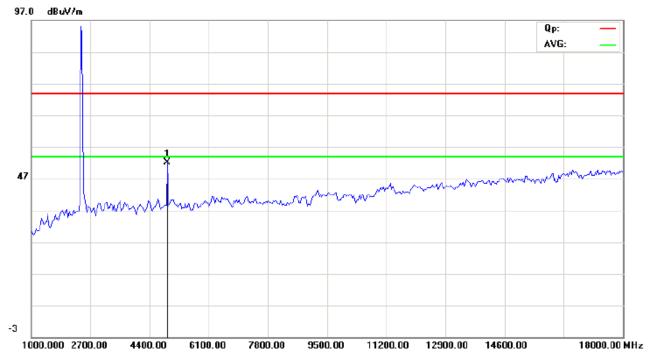
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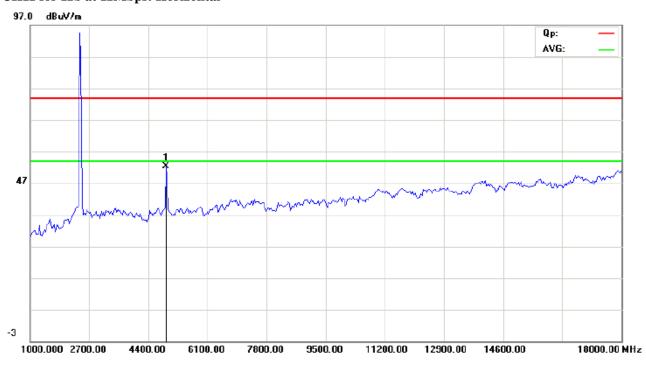
Date: 2016-06-08



### CH11 for 11b at 11Mbps: Vertical



### CH11 for 11b at 11Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Date: 2016-06-08



### Operation Mode: Transmitting under CH01 for 11n HT20 at 6.5Mbps

	0		1
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
4824.00	49.85 (PK)	Н	74(Peak)/ 54(AV)
4824.00	49.59 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472		H/V	74(Peak)/ 54(AV)
16684		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 6.5Mbps

### Operation Mode: Transmitting under CH06 for 11n HT20 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03bc V/m)
4874.00	51.04 (PK)	Н	74(Peak)/ 54(AV)
4874.00	51.69 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 6.5Mbps

The report refers only to the sample tested and does not apply to the bulk.

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### Operation Mode: Transmitting under CH11 for 11n HT20 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03bc V/m)
4924	50.19 (PK)	Н	74(Peak)/ 54(AV)
4924	50.14 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24620		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

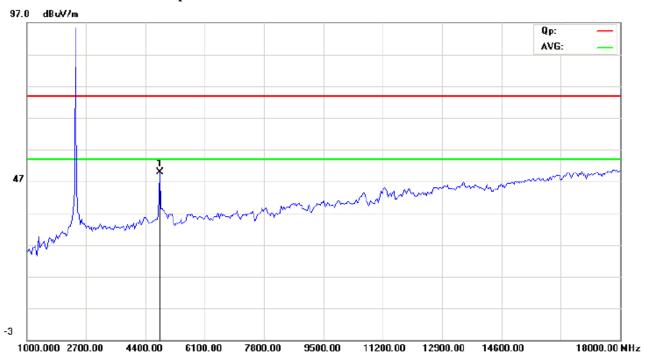
3. For 802.11n (HT20) mode 6.5Mbps

Date: 2016-06-08

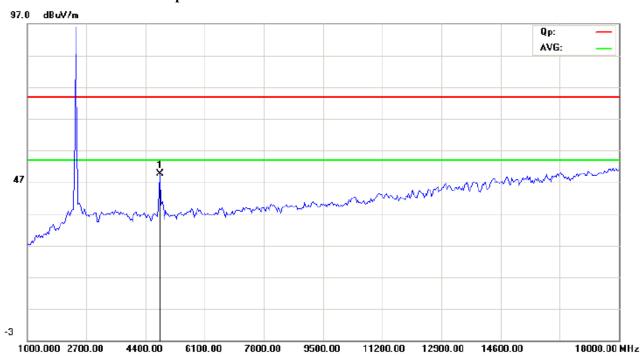


Please refer to the following test plots for details:

### CH01 for 11n HT20 at 6.5Mbps: Horizontal



### CH01 for 11n HT20 at 6.5Mbps: Vertical



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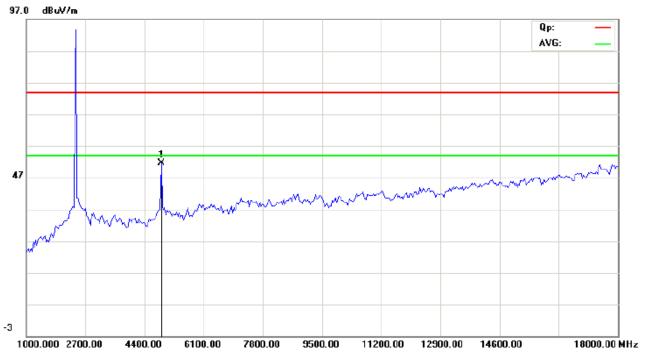
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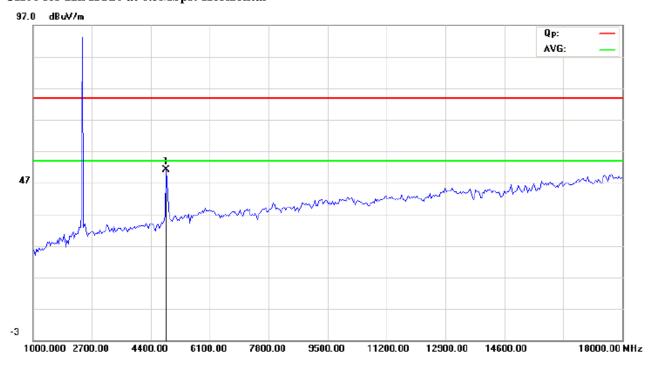
Date: 2016-06-08



# CH06 for 11n HT20 at 6.5Mbps: Vertical



### CH06 for 11n HT20 at 6.5Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

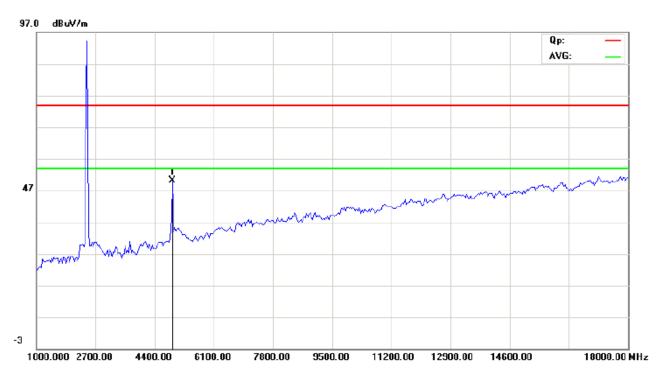
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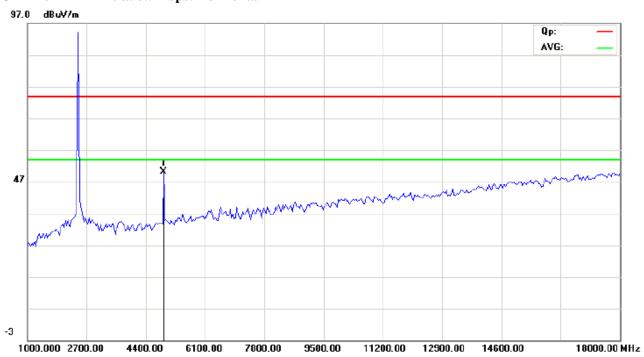
Date: 2016-06-08



### CH11 for 11n HT20 at 6.5Mbps: Vertical



### CH11 for 11n HT20 at 6.5Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Date: 2016-06-08



# Operation Mode: Transmitting under CH01 for 11n HT40 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
4844.00	49.51 (PK)	Н	74(Peak)/ 54(AV)
4844.00	49.27 (PK)	V	74(Peak)/ 54(AV)
7266.00		H/V	74(Peak)/ 54(AV)
9688.00		H/V	74(Peak)/ 54(AV)
12110		H/V	74(Peak)/ 54(AV)
14532		H/V	74(Peak)/ 54(AV)
16954		H/V	74(Peak)/ 54(AV)
19376		H/V	74(Peak)/ 54(AV)
21798		H/V	74(Peak)/ 54(AV)
24220		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT40) mode 6.5Mbps

### Operation Mode: Transmitting under CH04 for 11n HT40 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
4874.00	49.66 (PK)	Н	74(Peak)/ 54(AV)
4874.00	48.53 (PK)	V	74(Peak)/ 54(AV)
7311.00	-	H/V	74(Peak)/ 54(AV)
9748.00	-	H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059	-	H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT40) mode 6.5Mbps

The report refers only to the sample tested and does not apply to the bulk.

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### Operation Mode: Transmitting under CH07 for 11n HT40 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03bc V/m)
4904	50.32 (PK)	Н	74(Peak)/ 54(AV)
4904	50.08 (PK)	V	74(Peak)/ 54(AV)
7356		H/V	74(Peak)/ 54(AV)
9808		H/V	74(Peak)/ 54(AV)
12260		H/V	74(Peak)/ 54(AV)
14712		H/V	74(Peak)/ 54(AV)
17164		H/V	74(Peak)/ 54(AV)
19616		H/V	74(Peak)/ 54(AV)
22068		H/V	74(Peak)/ 54(AV)
24520		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

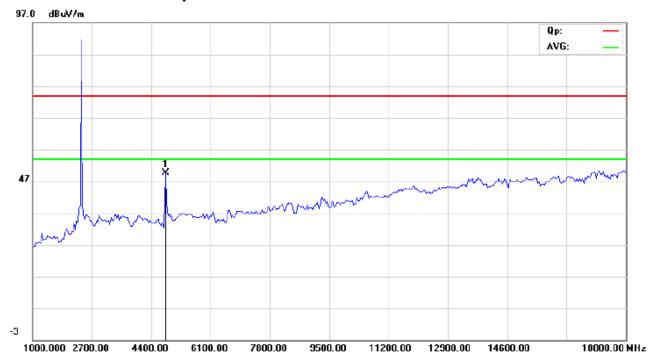
3. For 802.11n (HT40) mode 6.5Mbps

Date: 2016-06-08

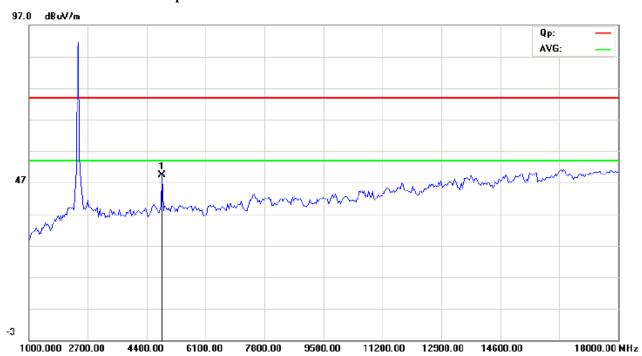


Please refer to the following test plots for details:

### CH01 for 11n HT40 at 6.5Mbps: Horizontal



### CH01 for 11n HT40 at 6.5Mbps: Vertical



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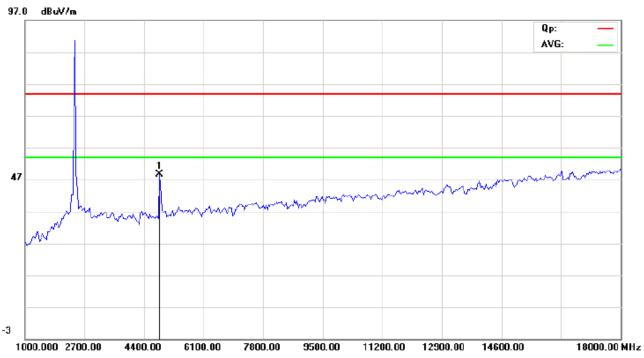
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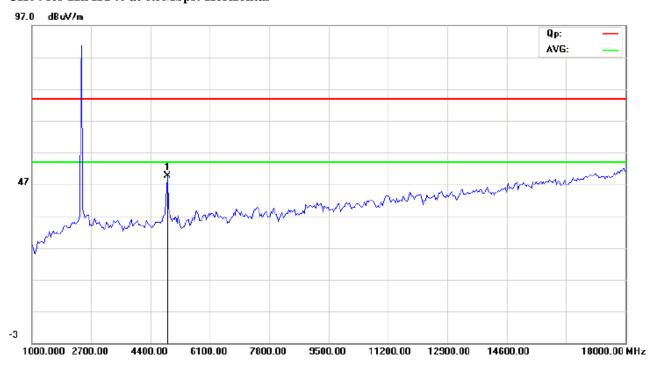
Date: 2016-06-08



### CH04 for 11n HT40 at 6.5Mbps: Vertical



### CH04 for 11n HT40 at 6.5Mbps: Horizontal



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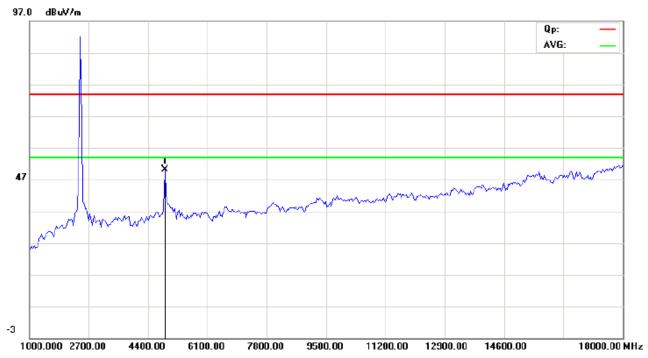
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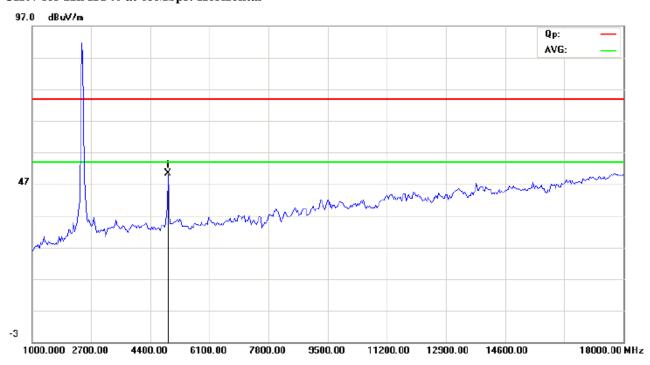
Date: 2016-06-08



## CH07 for 11n HT40 at 6.5Mbps: Vertical



## CH07 for 11n HT40 at 65Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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adopt any other remedies which may be appropriate.

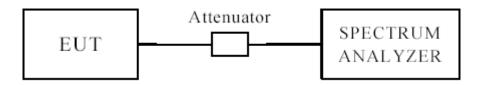
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Date: 2016-06-08



# 7.0 6dB Bandwidth Measurement

## 7.1 Test Setup



#### 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

### 7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 7.4 Test Result

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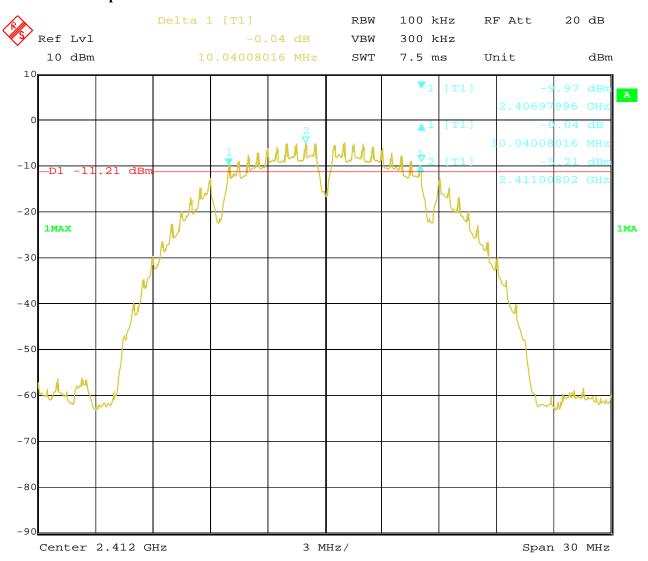
## 6dB Occupied Bandwidth

EUT		WiFi	Speaker		Model		X-9	Sound
Mode		802	2.11b		Input Voltage	ut Voltage DC		13.5V
Temperati	Temperature		leg. C,		Humidity		569	% RH
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	6 dB Bandwidth (MHz)		N	finimum Limit (MHz)	Pass/ Fail
1		2412	1	10.04			0.5	Pass
6		2437	1	10.04			0.5	Pass
11		2462	1	10.04			0.5	Pass
1		2412	11		10.16		0.5	Pass
6		2437 11			10.16		0.5	Pass
11	2462		11		10.16		0.5	Pass

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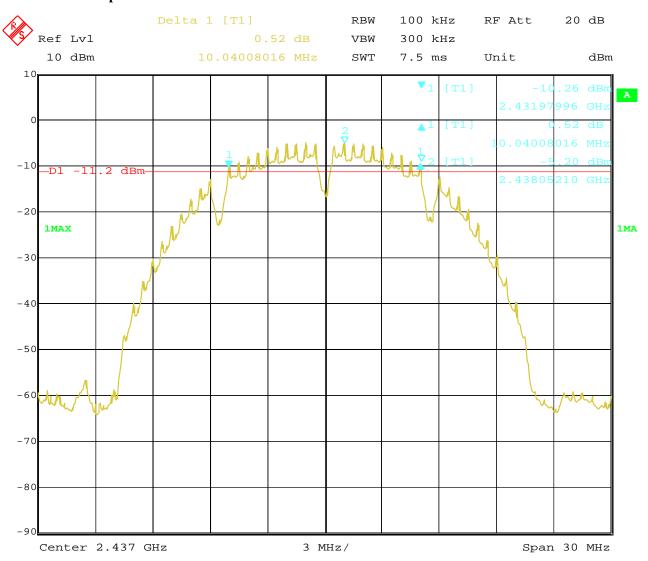




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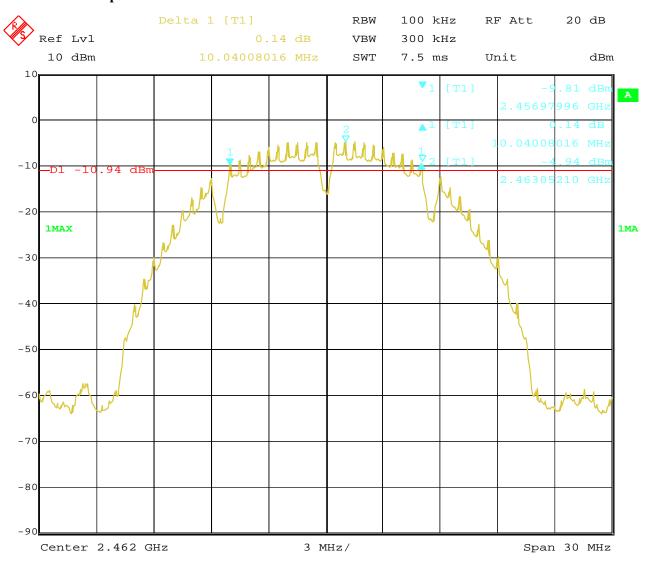




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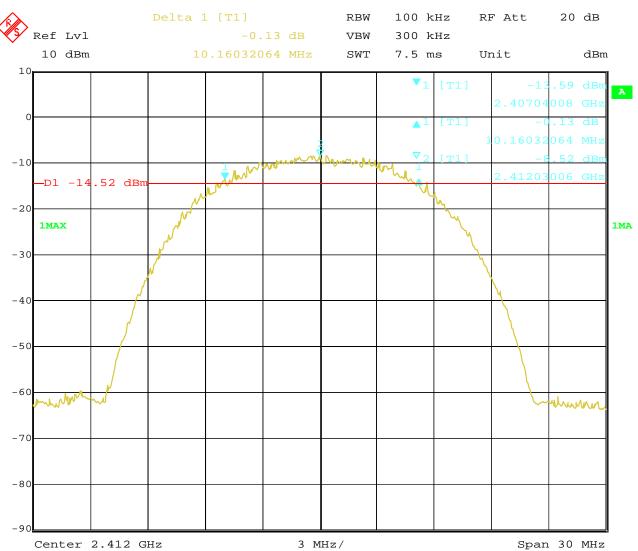




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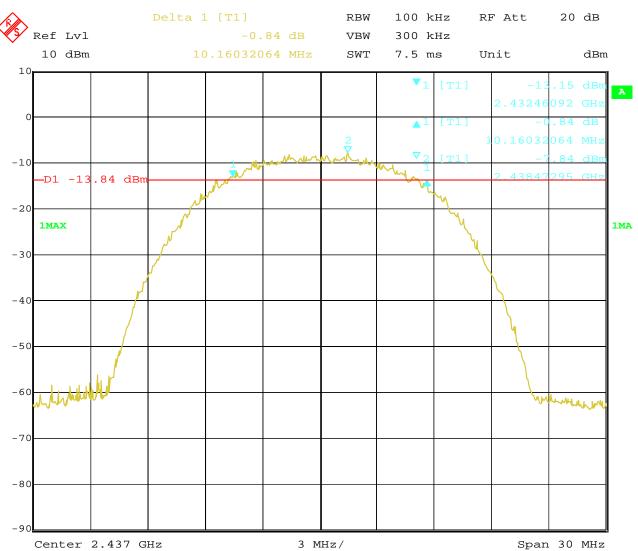




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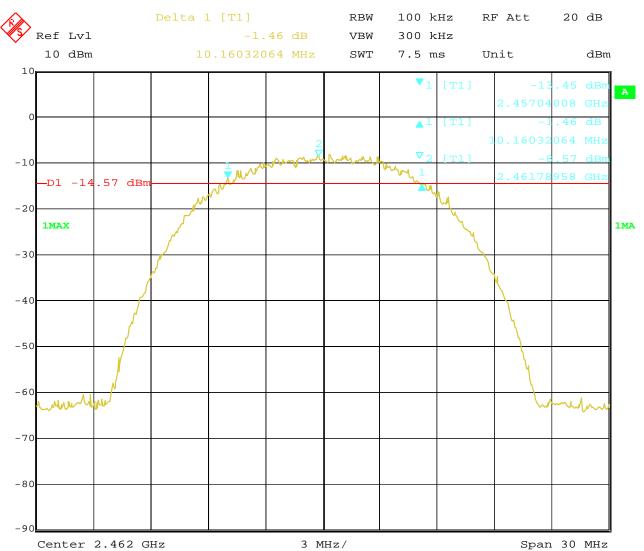




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## 6dB Occupied Bandwidth

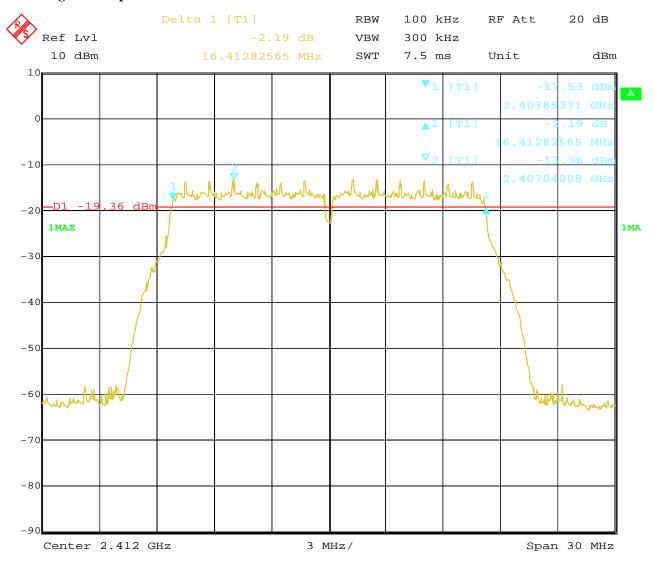
EUT		WiFi	Speaker		Model X-Sound		Sound	
Mode		80.	2.11g		Input Voltage	,	DC	13.5V
Temperat	ure	24 (	leg. C,		Humidity		569	% RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	6 dF	Bandwidth (MHz)	М	Iinimum Limit (MHz)	Pass/ Fail
1		2412	54		16.41		0.5	Pass
6		2437	54		16.41		0.5	Pass
11	2462		54		16.41		0.5	Pass

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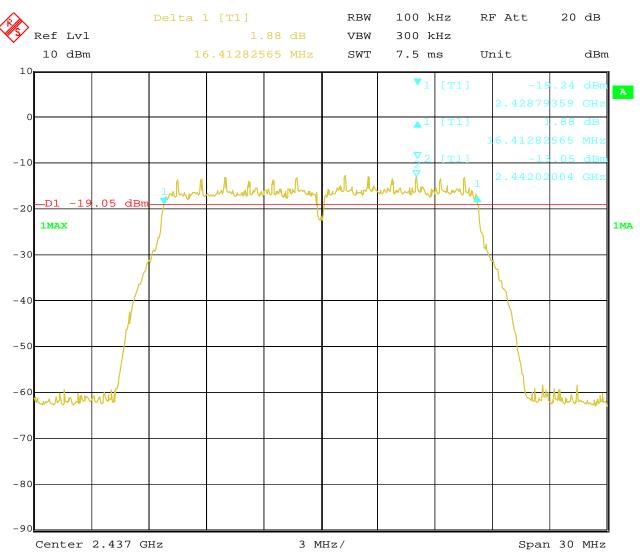
#### **Test Plots:**



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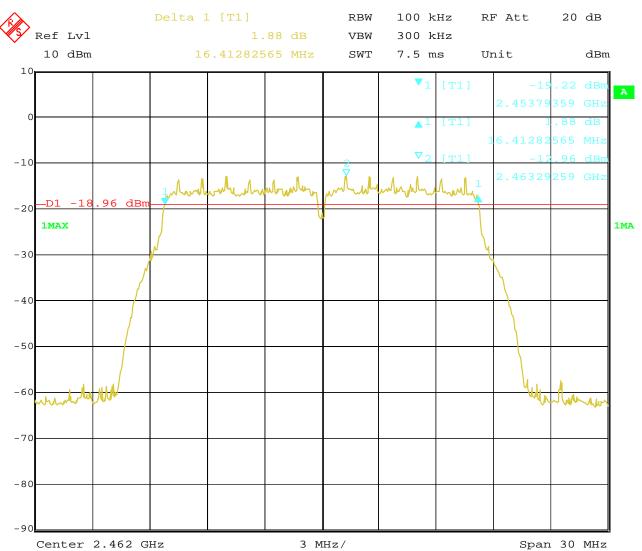




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## 6dB Occupied Bandwidth

EUT		WiFi S	Speaker		Model		X-S	Sound
Mode		802.111	n HT20		Input Voltage		DC	13.5V
Temperat	ure	24 de	eg. C,		Humidity		56%	% RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	6	dB Bandwidth (MHz)	N	finimum Limit (MHz)	Pass/ Fail
1		2412	6.5M	17.56			0.5	Pass
6	2437		6.5M	17.56			0.5	Pass
11	1 2462		6.5M		17.56		0.5	Pass

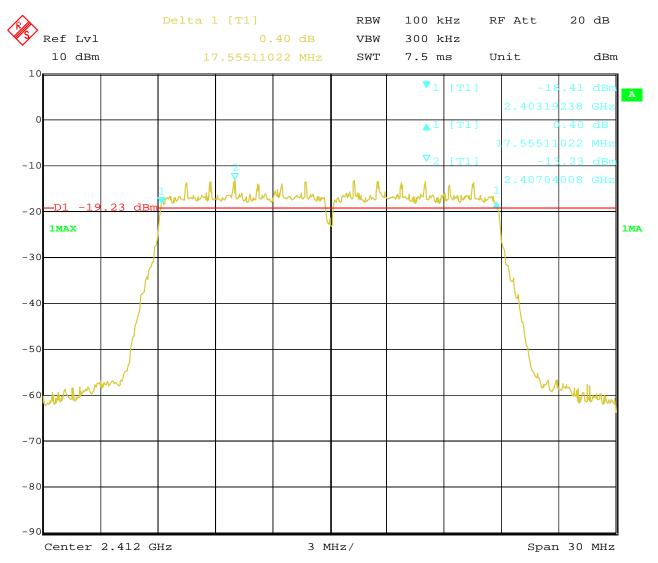
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#### **Test Plots:**

### 1. 802.11n at HT20 of CH01

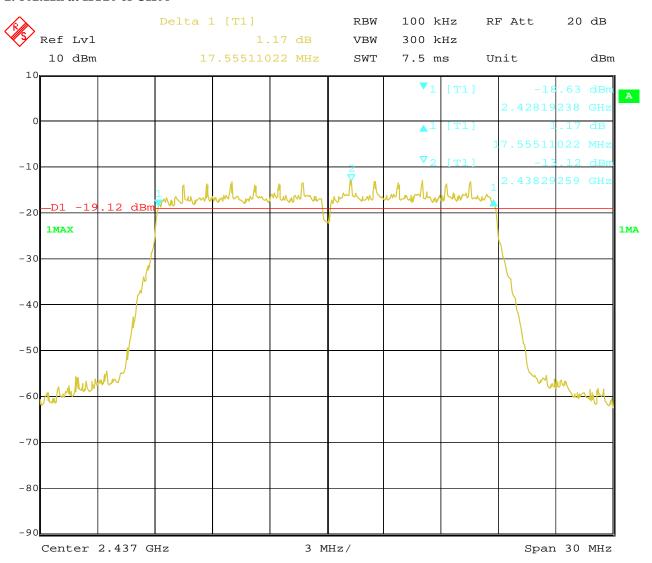


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### 2. 802.11n at HT20 of CH06

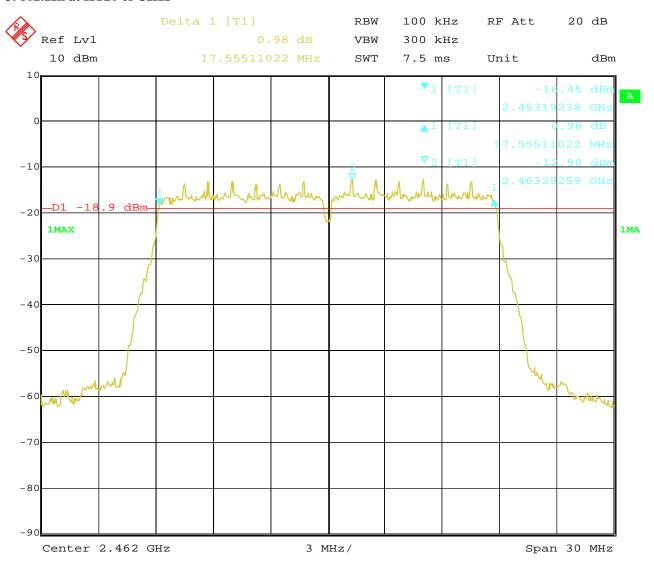


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### 3. 802.11n at HT20 of CH11



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## 6dB Occupied Bandwidth

EUT		WiFi S	Speaker		Model	X-Se	ound
Mode		802.111	n HT40		Input Voltage	DC1	3.5V
Temperat	ure	24 de	eg. C,		Humidity	56%	RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	6	dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass/ Fail
1		2422	6.5M		36.09	0.5	Pass
4		2437	6.5M		36.09	0.5	Pass
7		2452	6.5M		36.09	0.5	Pass

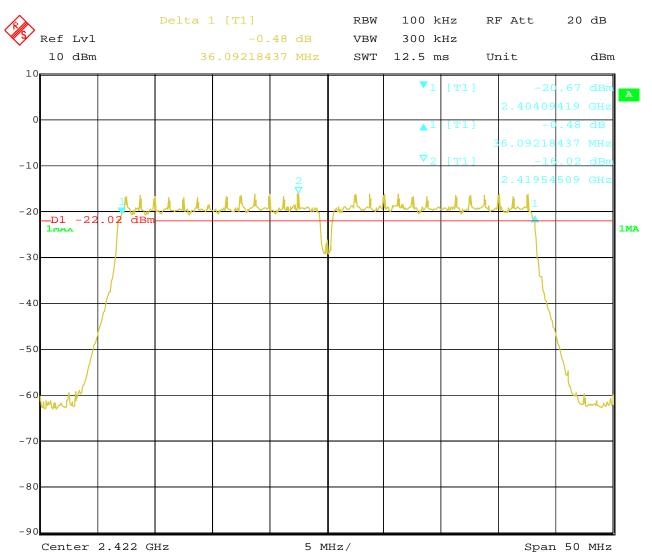
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#### **Test Plots:**

### 1. 802.11n at HT40 of CH01

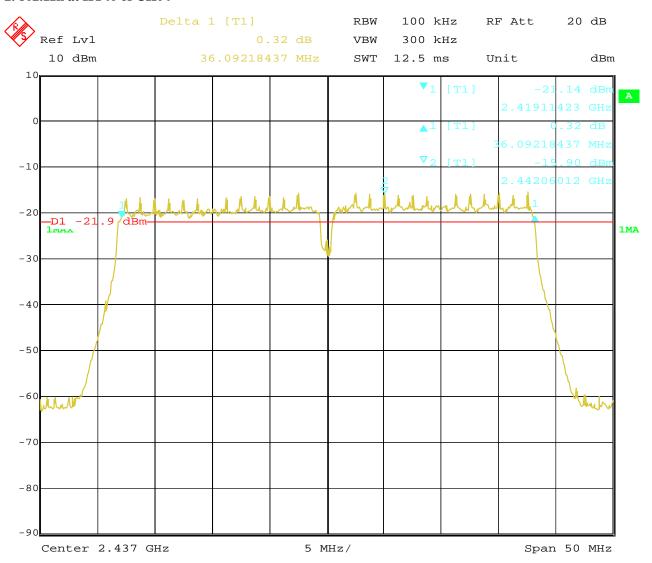


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### 2. 802.11n at HT40 of CH04

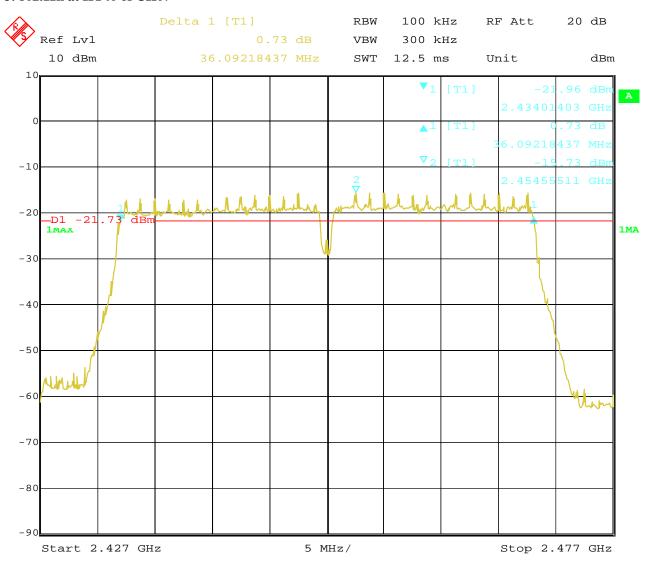


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### 3. 802.11n at HT40 of CH07



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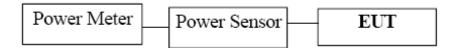
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## 8. Maximum Output Power

## 8.1 Test Setup



## 8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

#### **8.3 Test Procedure**

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the Peak power were measured.

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#### **8.4Test Results**

EUT		WiFi Speak	ker	Model			X-Sound
Mode		802.11b		Input Volta	Input Voltage		DC13.5V
Temperature		24 deg. C	,	Humidity	ī		56% RH
Channel	Cha	annel Frequency (MHz)		ower Output		wer Limit (dBm)	Pass/ Fail
				11Mbps			
1		2412		6.31		30	Pass
6		2437	6.32			30	Pass
11		2462	6.31			30	Pass
				1Mbps			
1		2412	6.56		30	Pass	
6		2437		6.63		30	Pass
11		2462		6.70		30	Pass

Note: 1. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

2. The worse case was recorded

EUT	EUT WiFi Speake		er	Model		Σ	K-Sound
Mode	Mode 802.11g		Input Voltage		e	Γ	OC13.5V
Temperat	ure	24 deg. C,	Humidity			5	56% RH
Channel	Ch	Channel Frequency (MHz)		Max. Power Output (dBm)		ower Limit (dBm)	Pass/ Fail
1		2412	6.26			30	Pass
6	2437		6.23			30	Pass
11	11 2462			6.47		30	Pass

Note: 1. At finial test to get the worst-case emission at 54Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

The report refers only to the sample tested and does not apply to the bulk.

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EUT	EUT WiFi Speake		er	Model		2	K-Sound
Mode	Mode 802.11n (HT20		20) Input Voltage		Γ	OC13.5V	
Temperat	ure	24 deg. C,	Humidity		56% RH		
Channel	Channel Frequency (MHz)		Max.	Max. Power Output (dBm)		Power Limit (dBm)	Pass/ Fail
1		2412	6.14			30	Pass
6	6 2437			6.29		30	Pass
11	11 2462			6.39		30	Pass

Note: 1. At finial test to get the worst-case emission at 6.5Mbps of 11n HT20 for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT	EUT WiFi Speake		er	Model		2	K-Sound
Mode	Mode 802.11n (HT4		Input Voltage		;	DC13.5V	
Temperat	ure	24 deg. C,	Humidity		4	56% RH	
Channel	Channel Frequency (MHz)		Max.	Max. Power Output (dBm)		Power Limit (dBm)	Pass/ Fail
1		2422	6.49			30	Pass
4	4 2437			6.29		30	Pass
7	7 2452			6.35		30	Pass

Note: 1. At finial test to get the worst-case emission at 6.5Mbps of 11n HT40 for CH01, CH04 and CH7

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

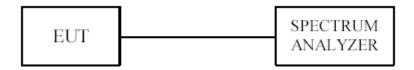
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# 9. Power Spectral Density Measurement

## 9.1 Test Setup



### 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

#### 9.3 Test Procedure

- 1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
- 2. Set the RBW = 10 kHz.
- 3. Set the VBW  $\geq$  30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode =  $\max$  hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be  $\leq 8$  dBm.

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## 9.4Test Result

EUT		WiFi Speaker		Model		X-Sound	
Mode 802.11b		802.11b 11M	bps	Input Voltage		DC13.5V	
Temperature		24 deg. C	24 deg. C,		Humidity		6% RH
Channel	Channel Frequency (MHz)		Final RF Power Level (dBm)		Max	ximum Limit (dBm)	Pass/ Fail
				11Mbps			
1		2412		-18.81		8	Pass
6	2437		-18.42			8	Pass
11		2462		-18.27		8	Pass

EUT		WiFi Speak	er	Model	Model		K-Sound
Mode		802.11b 1Mbps		Input Voltag	Input Voltage		C13.5V
Temperat	ure	24 deg. C.	24 deg. C,		Humidity		6% RH
Channel	Cha	annel Frequency	Final	RF Power	Maximum Limit		Pass/ Fail
Chamilei		(MHz)	Leve	el in (dBm)	(dBm)		
				1Mbps			
1		2412		-15.96		8	Pass
6 2437			-14.76		8	Pass	
11 2		2462		-14.04		8	Pass

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EUT	EUT WiFi Speak		er Model		X-Sound		
Mode	de 802.11g 54Mbps Input Voltage		DC13.5V				
Temperat	ure	24 deg. C,		Humidity		56	% RH
Channel	Cha	annel Frequency (MHz)	Final RF Power Level in (dBm)		M	Taximum Limit (dBm)	Pass/ Fail
				54Mbps			
1		2412		-21.68		8	Pass
6	2437			-20.88		8	Pass
11		2462		-21.67		8	Pass

EUT	EUT WiFi Speake		r	Model		X-Sound	
Mode	Mode 802.11n HT20 6.5		Mbps Input Voltage			DC13.5V	
Temperat	ure	24 deg. C,		Humidity		56	% RH
Channel	Cha	annel Frequency (MHz)	Final RF Power Level (dBm)		M	faximum Limit (dBm)	Pass/ Fail
				HT20			
1		2412		-21.83		8	Pass
6	2437			-20.44		8	Pass
11		2462		-21.50		8	Pass

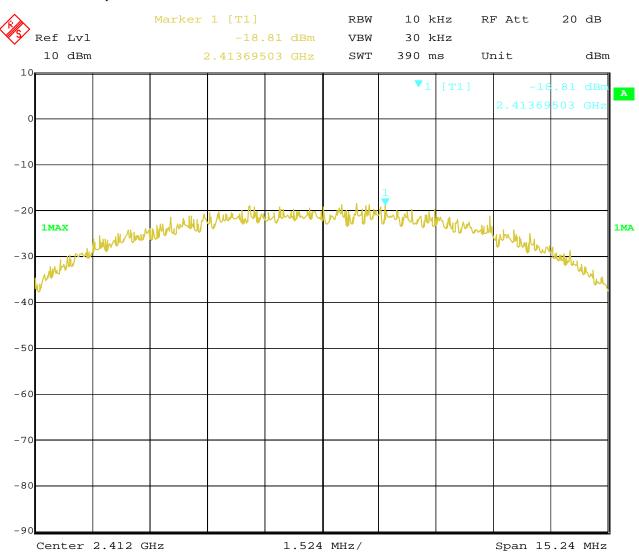
EUT		WiFi Speaker		Model		X-Sound	
Mode		802.11n HT40		Input Voltage		DC13.5V	
		6.5Mbps					
Temperature		24 deg. C,		Humidity		569	% RH
Channel	Channel Frequency		Fi	Final RF Power		laximum Limit	Pass/ Fail
	(MHz)		Level (dBm)		(dBm)		
HT40							
1	2422			-25.24		8	Pass
4	2437			-24.49		8	Pass
7	2452			-24.19		8	Pass

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## 9.5 Photo of Power Spectral Density Measurement

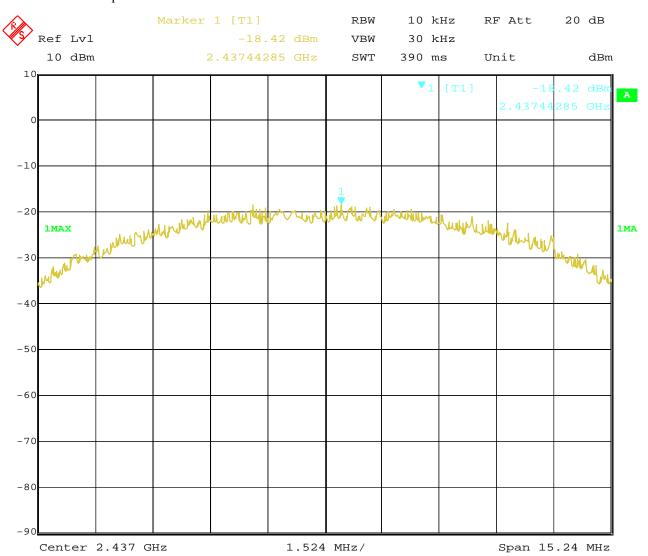


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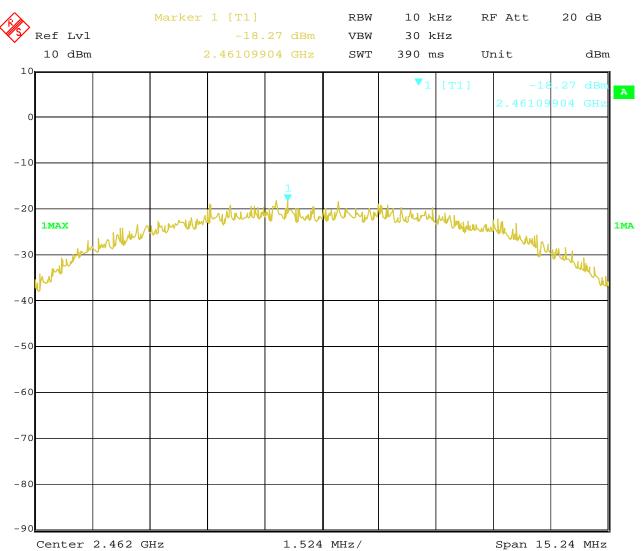


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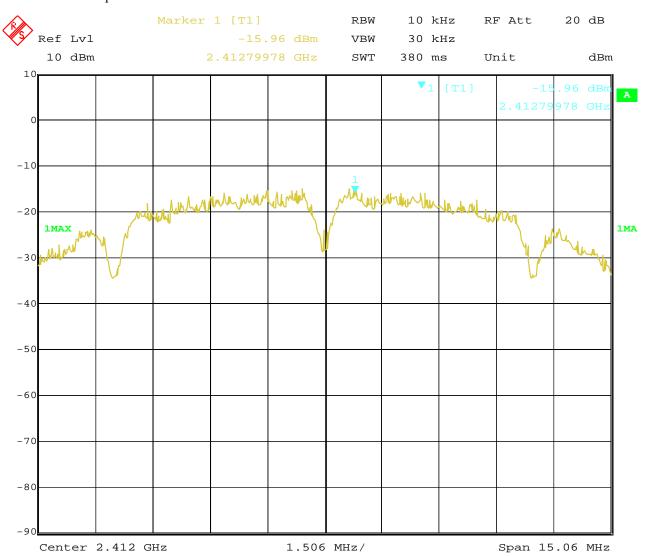


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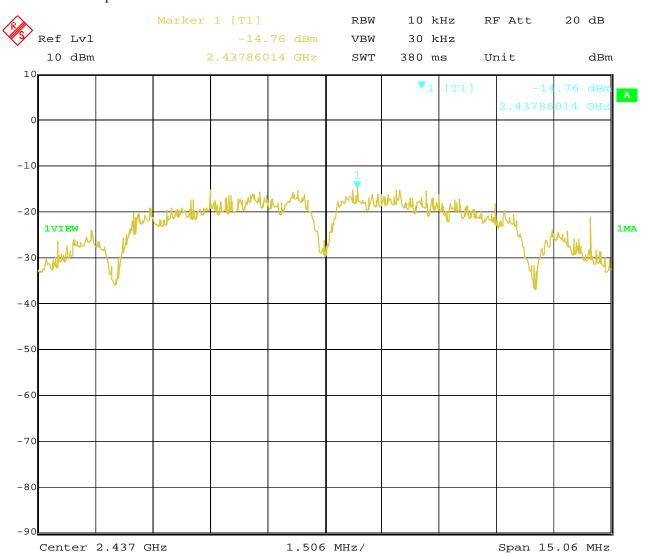


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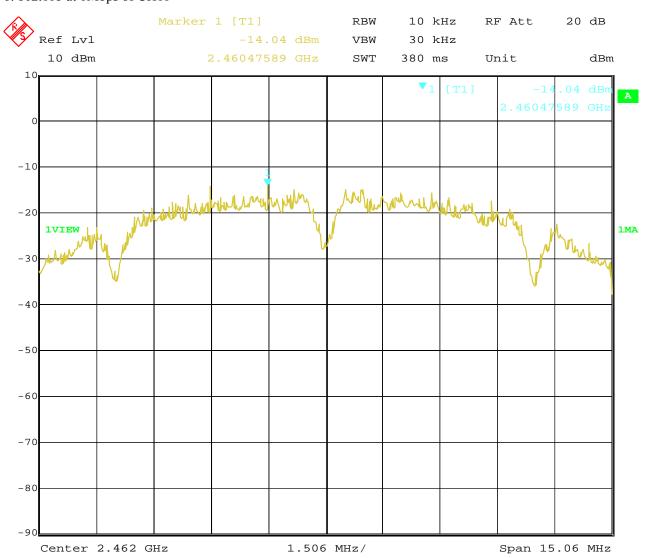


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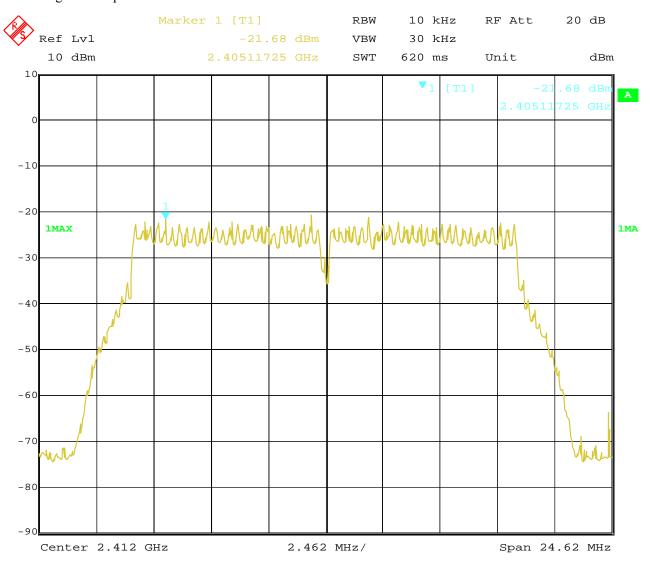


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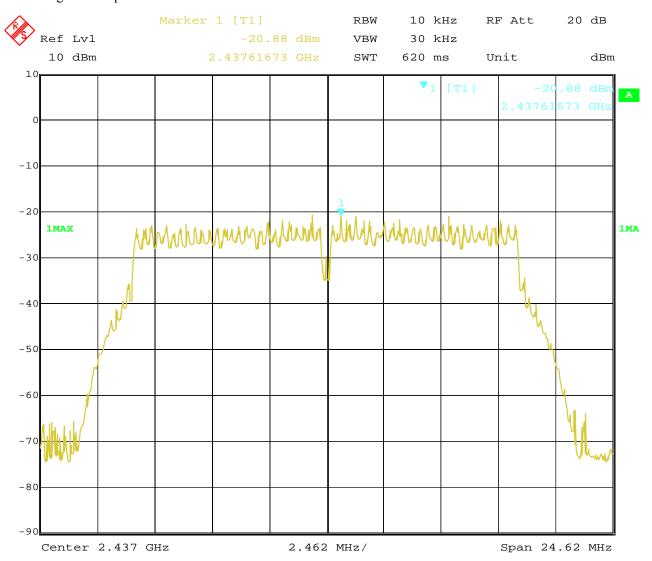


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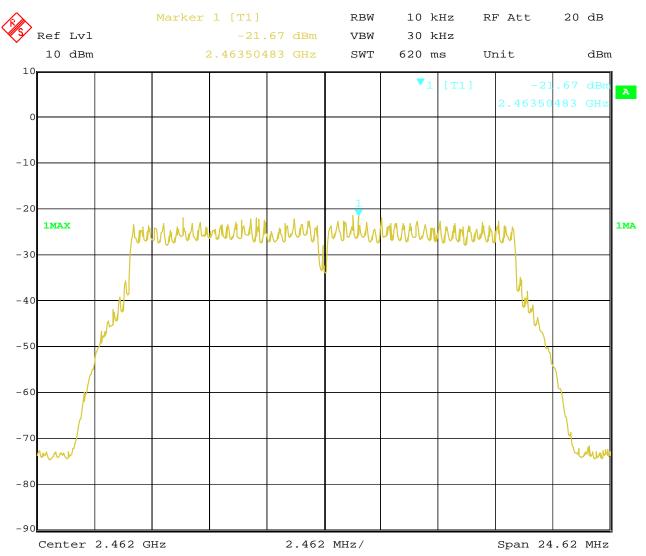




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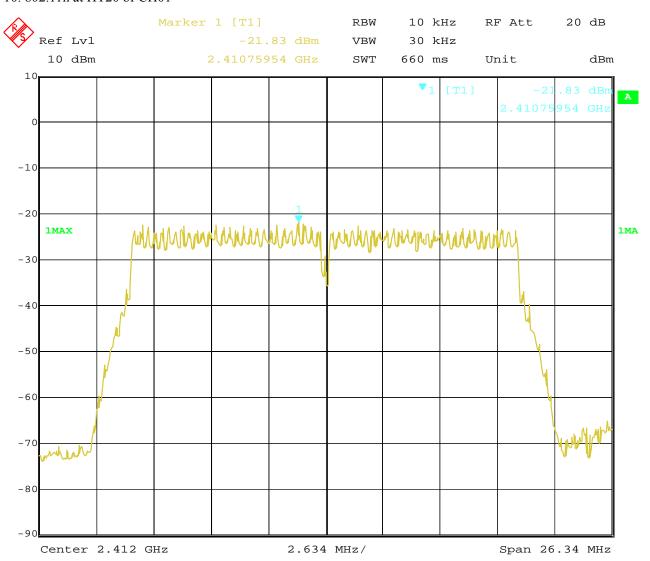


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#### 10. 802.11n at HT20 of CH01



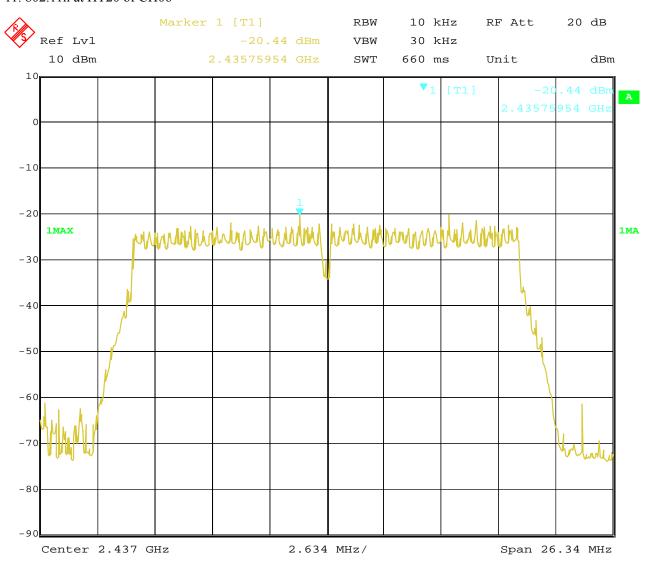
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#### 11. 802.11n at HT20 of CH06

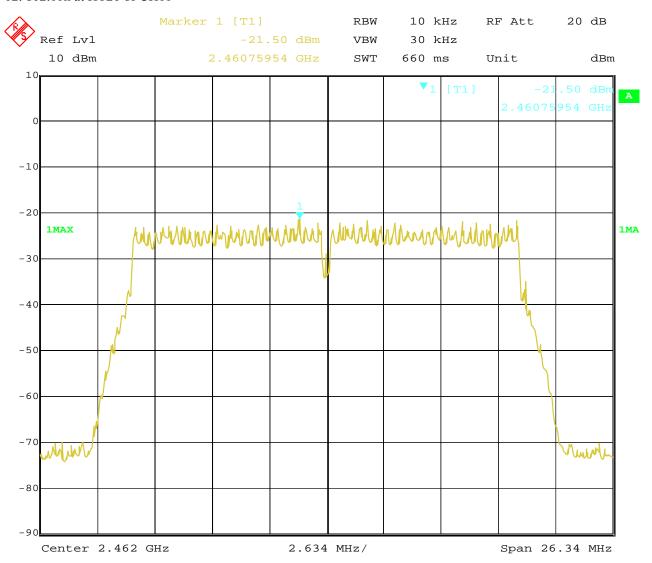


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#### 12. 802.11n at HT20 of CH11

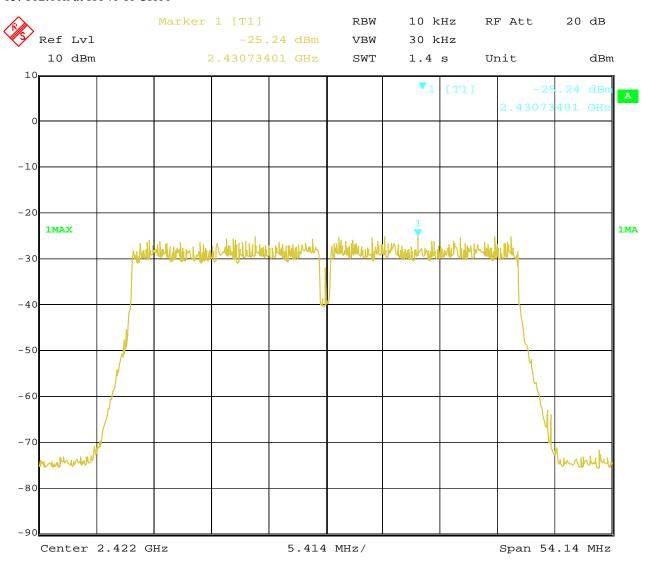


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#### 13. 802.11n at HT40 of CH01

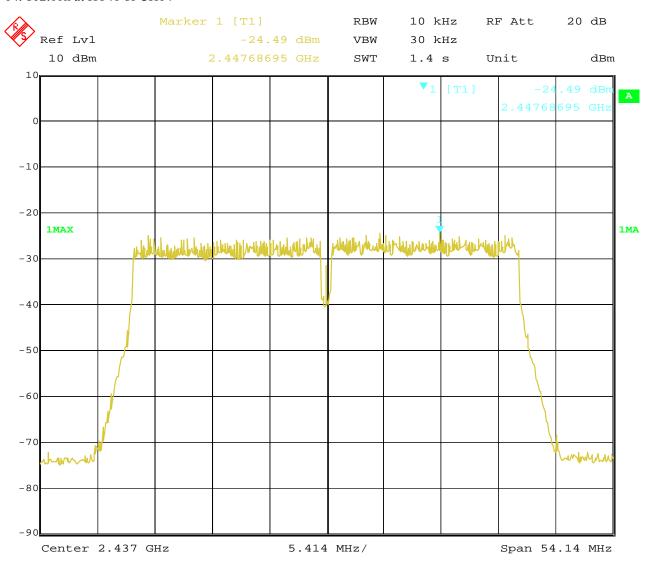


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#### 14. 802.11n at HT40 of CH04



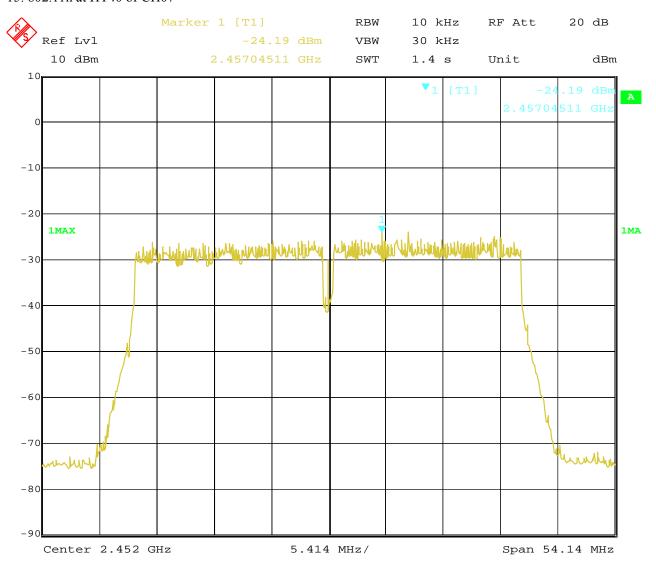
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#### 15. 802.11n at HT40 of CH07

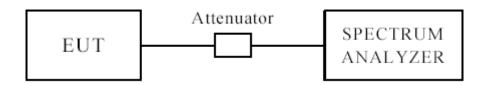


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# 10 Out of Band Measurement 10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

#### 10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

#### **10.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.( Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=1MHz and RMS detector)

For bandage test, the spectrum set as follows: RBW=100, VBW=300 kHz. A conducted measurement used

#### 10.4 Test Result

Please see next pages

Note: 1. this is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), after pre-test. It was found that the worse radiated emission was get at the lying position. the worse case was recorded

2. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

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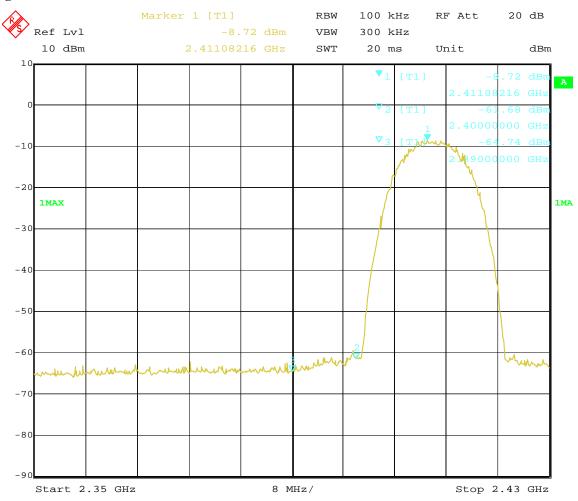
## For 802.11b mode

CH01 at 11Mbps

10.4 Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2400	PK (dBµV/m)	53.8	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)	35.2	Limit	$54(dB\mu V/m)$
2390	PK (dBµV/m)	46.2	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Lillit	$54(dB\mu V/m)$

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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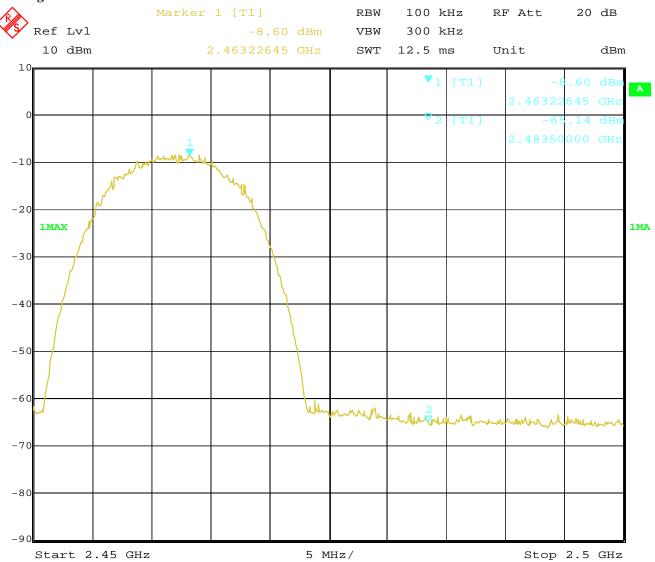


## CH11 at 11Mbps

#### **10.4** Band-edge and Restricted band Measurement

<u> </u>				
EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping	g Transmitting	Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBμV/m)	43.1	T took	74(dBμV/m)
	AV (dBμV/m)		Limit	54(dBμV/m)

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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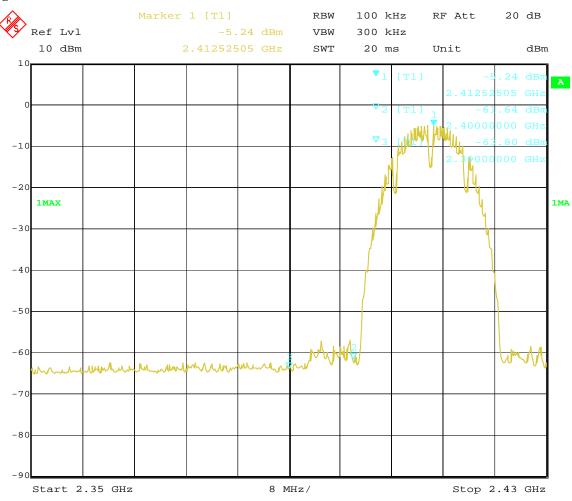
### For 802.11b mode

CH01 at 1Mbps

10.4 Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2400	PK (dBµV/m)	52.6	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)	33.9	Limit	$54(dB\mu V/m)$
2390	PK (dBµV/m)	44.5	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Lillit	$54(dB\mu V/m)$

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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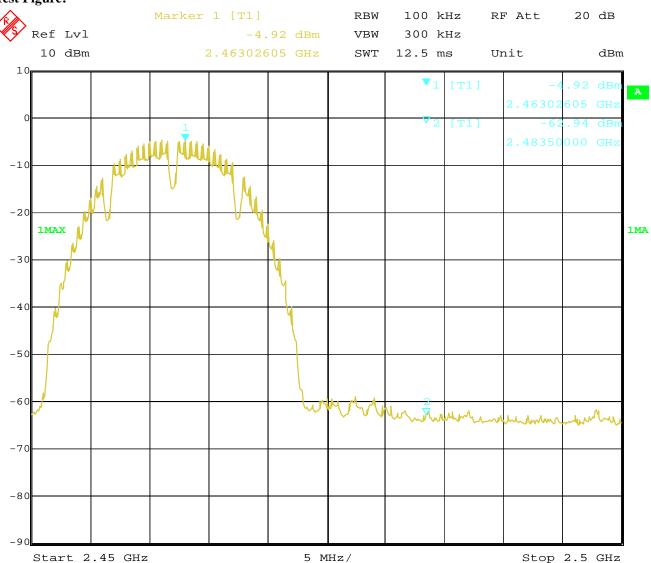


## CH11 at 1Mbps

#### **10.4** Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBµV/m)	43.7	Timit	74(dBμV/m)
	AV (dBμV/m)		Limit	54(dBμV/m)

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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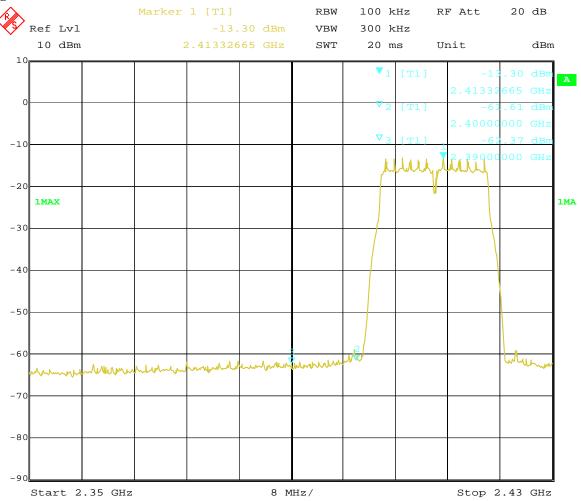
# For 802.11g mode

CH01 at 54Mbps

10.4 Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2400	PK (dBµV/m)	56.1	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)	37.2	Limit	54(dBµV/m)
2390	PK (dBµV/m)	46.9	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Dillif	54(dBµV/m)

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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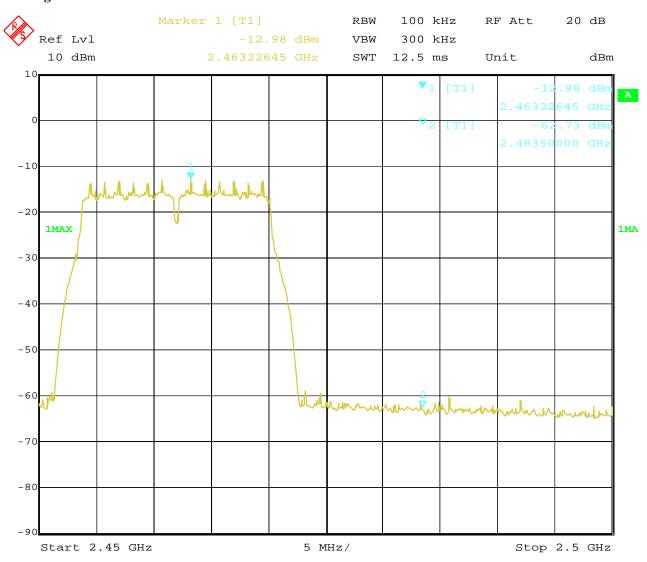


## CH11 at 54Mbps

#### **10.4** Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Mod	lel	X-Sound
Mode	Keeping Transmitting		Input V	oltage	DC13.5V
Temperature	24 deg. C,		Humi	dity	56% RH
Test Result:	Pass		Detec	ctor	PK
2483.5	PK (dBμV/m)	51.3	T ::4	74(dBμV/m) 54(dBμV/m)	
	AV (dBμV/m)	32.2	Limit		

#### **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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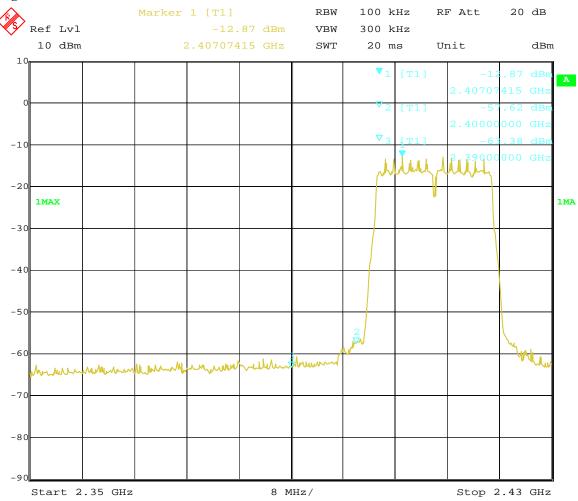
## For 802.11n (HT20) mode

CH01 at 6.5Mbps

10.4 Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2400	PK (dBµV/m)	56.9	T imit	74(dBμV/m)
	AV (dBμV/m)	47.3	Limit	54(dBµV/m)
2390	PK (dBμV/m)	46.8	Limit	74(dBµV/m)
	$AV (dB\mu V/m)$		LIIIII	54(dBµV/m)

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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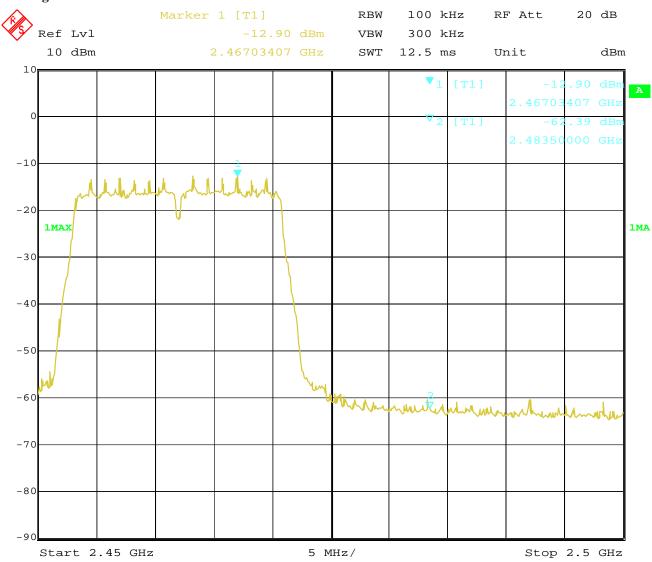


## CH11 at 6.5Mbps

#### **10.4** Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBµV/m)	53.2	Timile	74(dBμV/m)
	AV (dBμV/m)	34.6	Limit	54(dBµV/m)

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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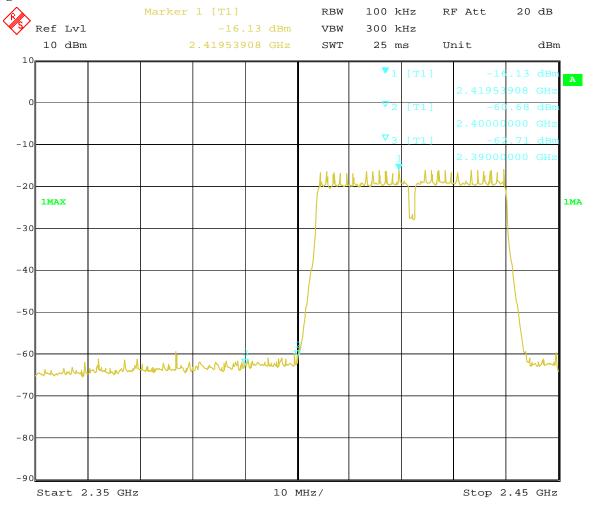
## For 802.11n (HT40) mode

CH01 at 6.5Mbps

10.4 Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2400	PK (dBµV/m)	56.2	T :it	$74(dB\mu V/m)$
	AV (dBμV/m)	37.8	Limit	$54(dB\mu V/m)$
2390	PK (dBµV/m)	48.0	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Liiiit	$54(dB\mu V/m)$

## **Test Figure:**



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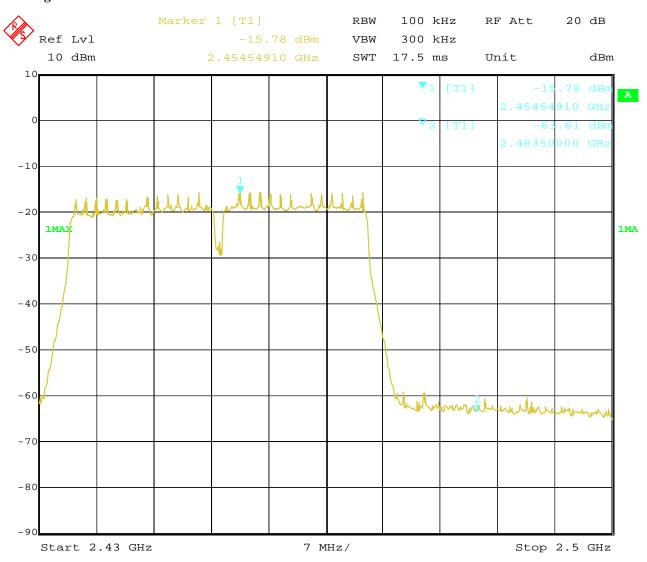


### CH7 at 6.5Mbps

#### **10.4** Band-edge and Restricted band Measurement

EUT	WiFi Speaker		Model	X-Sound
Mode	Keeping Transmitting		Input Voltage	DC13.5V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBµV/m)	55.2	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)	36.7	Limit	$54(dB\mu V/m)$

## **Test Figure:**



Note: The Max. FS in Restrict Band are measured in conventional method.

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# 11.0 Antenna Requirement

## 11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of the antennas is 3.58dBi.

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#### 12.0 FCC ID Label

#### **FCC ID: 2AHXMX-SOUND**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### **Mark Location:**



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#### 13.0 Photo of testing

Conducted Emission Test Setup:



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# Radiated Emission Test Setup:





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# Photographs - EUT

#### Outside view





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Outside view





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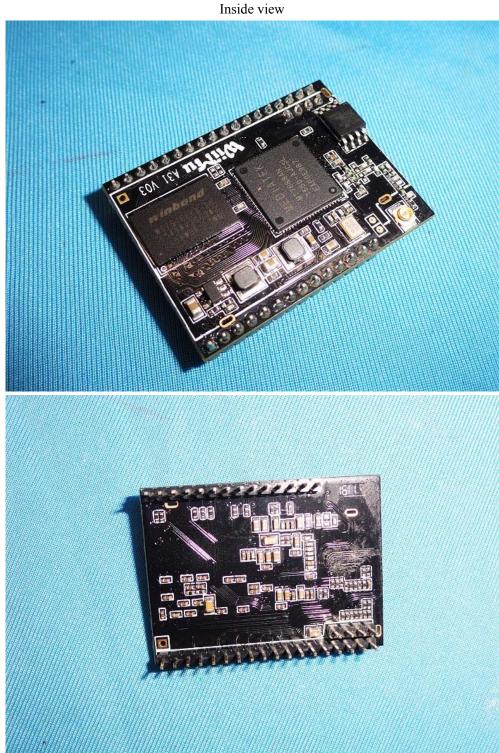
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End of the report