



FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

MAX NICE TRADING LIMITED

FLAT 52,9/F.,SINO LND. PLAZA,NO.9, KAI CHEUNG RD.,
KOWLOONBAY,KLN. H.K.

FCC ID: ZWCBH-02

Report Type: Original Report	Product Type: BLUETOOTH HEADSET
Report Number: BCTC22070347E	
Report Date: 2011-11-22	
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**TEST CERTIFICATION**

Product:	BLUETOOTH HEADSET
Model:	BH-02,MICHALBTCA.MICHALBTCW.MICHALBTCR.MICHALBTCB,MICHALBTCP.MI CHALBTCO.BH-01.BH-02.BH-02A.BH-03.BH-04.BH-04A.BH-04B.BH-04C.BH-05.BH- 06.BH-07.BH-08.TCE6820.TCE6830.TCE6840. TCE6850.TCE6860 BTH-01.BTH-02.BTH-03.BTH-04.BTH-05.BTH-06.BTH-07.BTH-08 BTE6822 , BTE6823 , BTE6824 , BTE6825 , BTE6826 87090 87091 87092 87093 87094 87095 87096
Model different:	All models have the same constructions, circuit diagram and PCB layout. Only model name and color are different.
Applicant:	MAX NICE TRADING LIMITED FLAT 52,9/F.,SINO LND. PLAZA,NO.9, KAI CHEUNG RD., KOWLOONBAY,KLN. H.K.
Factory:	MAX NICE TRADING LIMITED FLAT 52,9/F.,SINO LND. PLAZA,NO.9, KAI CHEUNG RD., KOWLOONBAY,KLN. H.K.
Trade Mark:	N/A
Tested:	November 10,2011 - November 22,2011
Test Voltage:	DC 3.7V
Applicable Standards:	FCC Part 15:Subpart C ANSI C63.4:2003

The above equipment has been tested by Shenzhen BCTC Technology Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Davis ma
Tested By: _____
(Davis Ma)

Date: November 22,2011

Merry Zhao
Check By: _____
(Merry Zhao)

Date: November 22,2011

Lisa Au
Approved By: _____

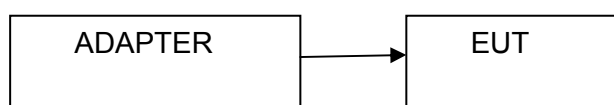
Date: November 22,2011



Test Facility

The test site used to collect the radiated data is located on the address of emitel (Shenzhen) Limited (FCC Registered Test Site Number: 746887) on Building 2, 171 Meihua Road, Futian District, Shenzhen, 518049 China. The Test Site is constructed and calibrated to meet the FCC requirements.

Configuration of Test Setup



**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Result
§ 15.203	Antenna Requirement	Compliant
§ 15.207 (a)	Conducted Emissions	Compliant
§ 15.205, § 15.209, § 15.109, § 15.247(d)	Radiated Emissions	Compliant
§ 15.247 (a)(1)	20 dB Bandwidth	Compliant
§ 15.247(a)(1)	Channel Separation Test	Compliant
§ 15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliant
§ 15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
§ 15.247(b)(1)	Peak Output Power Measurement	Compliant
§ 15.247(d)	Band edges	Compliant



CFR47 §15.203 - ANTENNA REQUIREMENT

Standard Applicable

According to CFR47 § 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. 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has an integral antenna on PCB, the gain is less than -1.5 dBi, please refer to the EUT internal photos.

Result: Compliant.

CFR47 §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

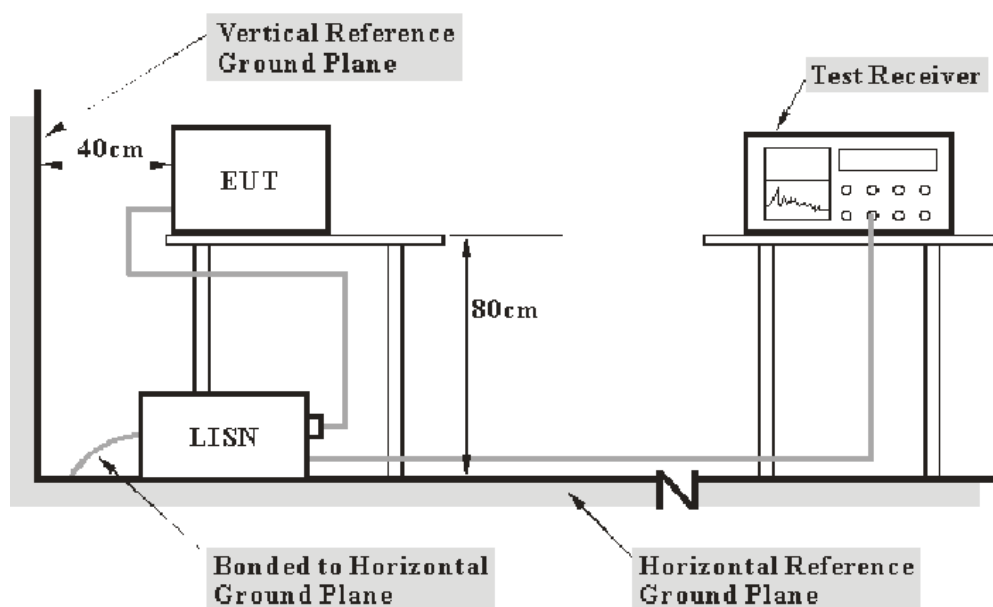
CFR47 §15.207

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at emitel (Shenzhen) Limited is ± 2.4 dB.

EUT Setup



- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.



EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range
150 kHz – 30 MHz

IF B/W

9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	DE25330	2011-03-25	2012-03-25
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-25	2012-03-25
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2011-06-21	2012-06-21
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-09-25	2012-09-25

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

12.60 dB at 29.7250 MHz in the **Neutral** conductor mode

**Test Data****Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

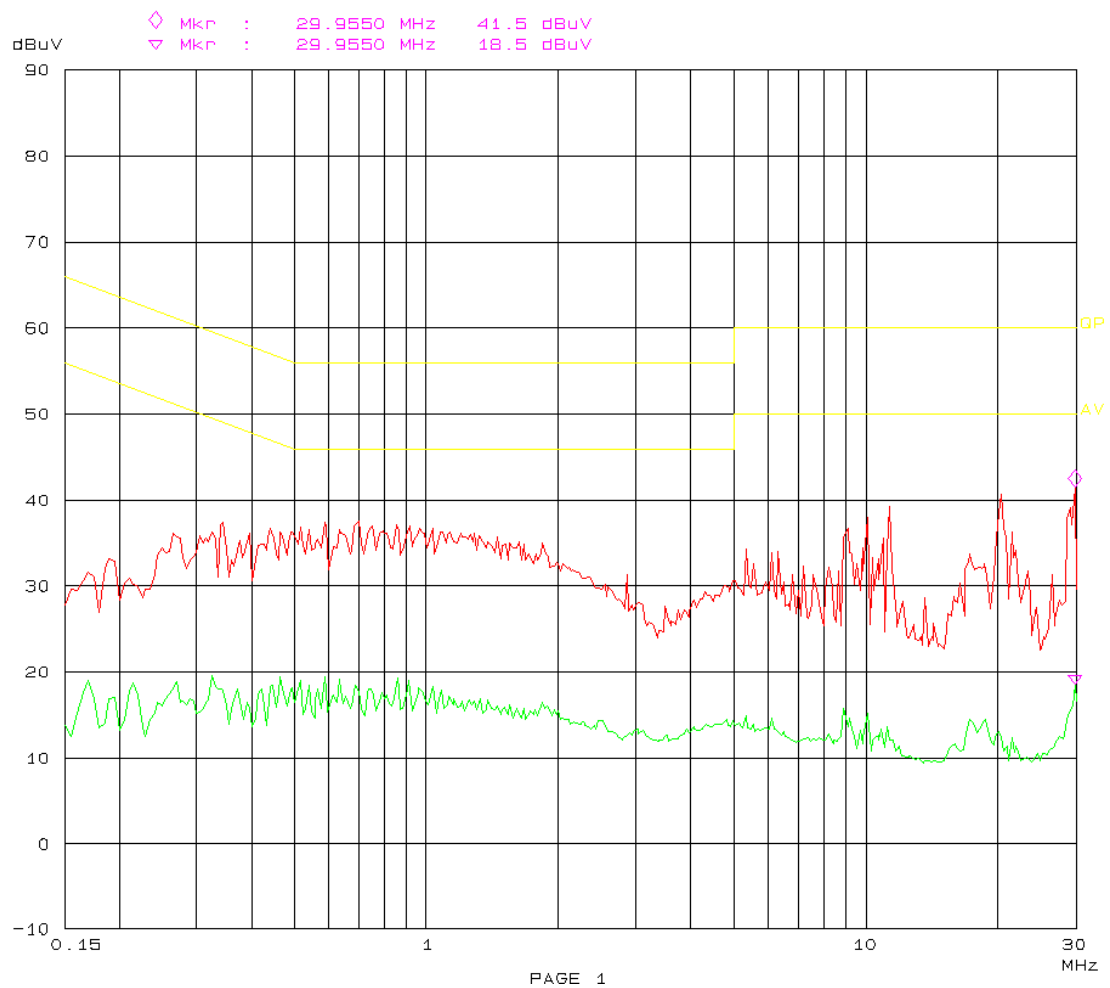
* The testing was performed by Davis Ma.

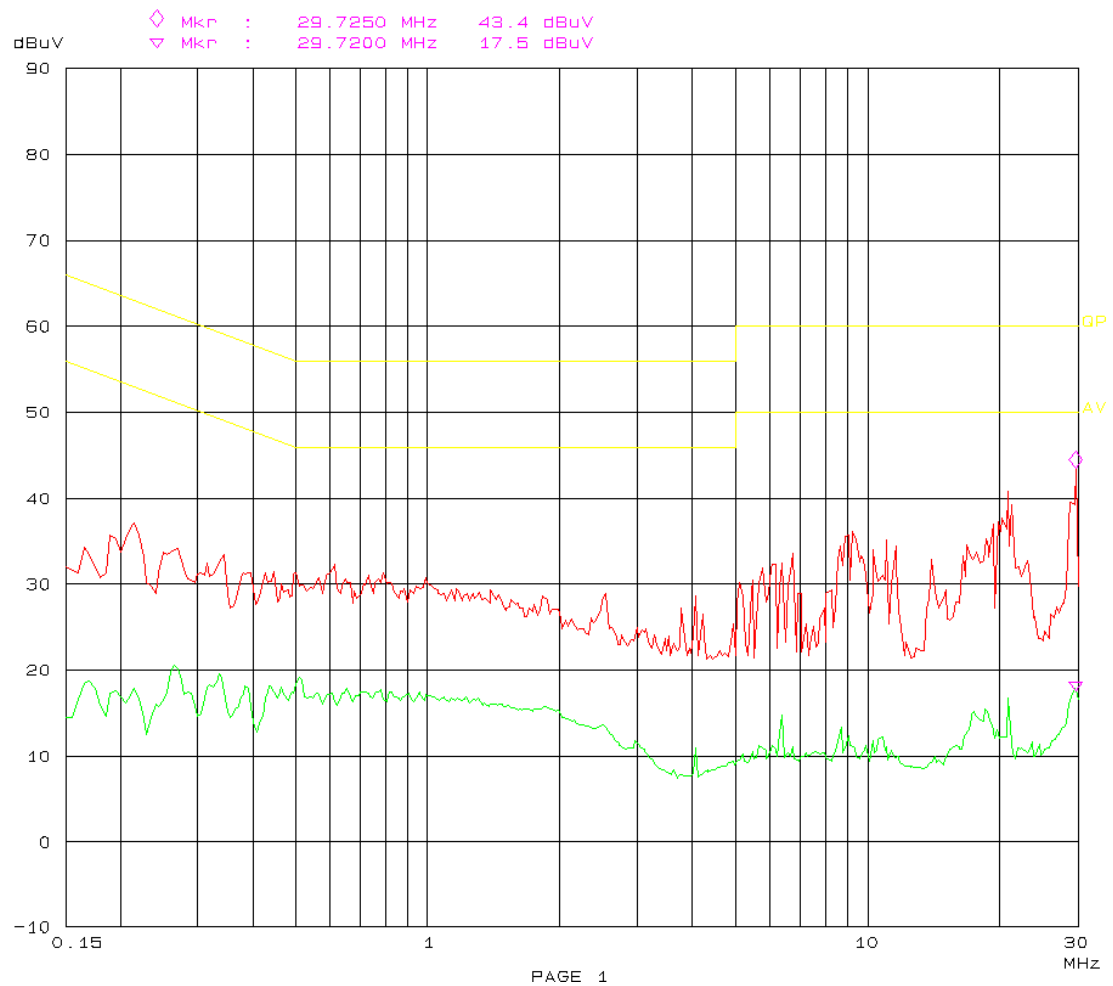
Test Mode: Charging & Transmitting

Line Conducted Emissions				FCC Part 15.207	
Frequency (MHz)	Amplitude (dB μ V)	Detector (QP/AV)	Conductor (Line/Neutral)	Limit (dB μ V)	Margin (dB)
29.7250	43.40	QP	Neutral	56.00	12.60
29.9550	41.50	QP	Line	56.00	14.50
20.8150	40.70	QP	Neutral	56.00	15.30
20.3050	40.60	QP	Line	56.00	15.40
11.3500	39.20	QP	Line	56.00	16.80
0.4650	36.30	QP	Line	56.60	20.30
8.9000	35.60	QP	Line	56.00	20.40
18.5650	35.20	QP	Neutral	56.00	20.80
8.6550	34.40	QP	Neutral	56.00	21.60
0.3250	36.30	QP	Line	59.58	23.28
6.3950	32.30	QP	Neutral	56.00	23.70
0.4650	19.50	AV	Line	45.60	26.10
0.2650	34.00	QP	Neutral	61.27	27.27
29.9550	18.50	AV	Line	46.00	27.50
29.7250	17.50	AV	Neutral	46.00	28.50
20.8150	16.60	AV	Neutral	46.00	29.40
0.3250	19.60	AV	Line	49.58	29.98
8.9000	15.80	AV	Line	46.00	30.20
18.5250	15.50	AV	Neutral	46.00	30.50
0.2650	20.50	AV	Neutral	51.27	30.77
6.3950	14.80	AV	Neutral	46.00	31.20
8.7250	13.30	AV	Neutral	46.00	32.70
20.3050	12.30	AV	Line	46.00	33.70
11.3500	12.00	AV	Line	46.00	34.00

Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.







CFR47 §15.205, §15.209, §15.247 - RADIATED EMISSIONS

Applicable Standard

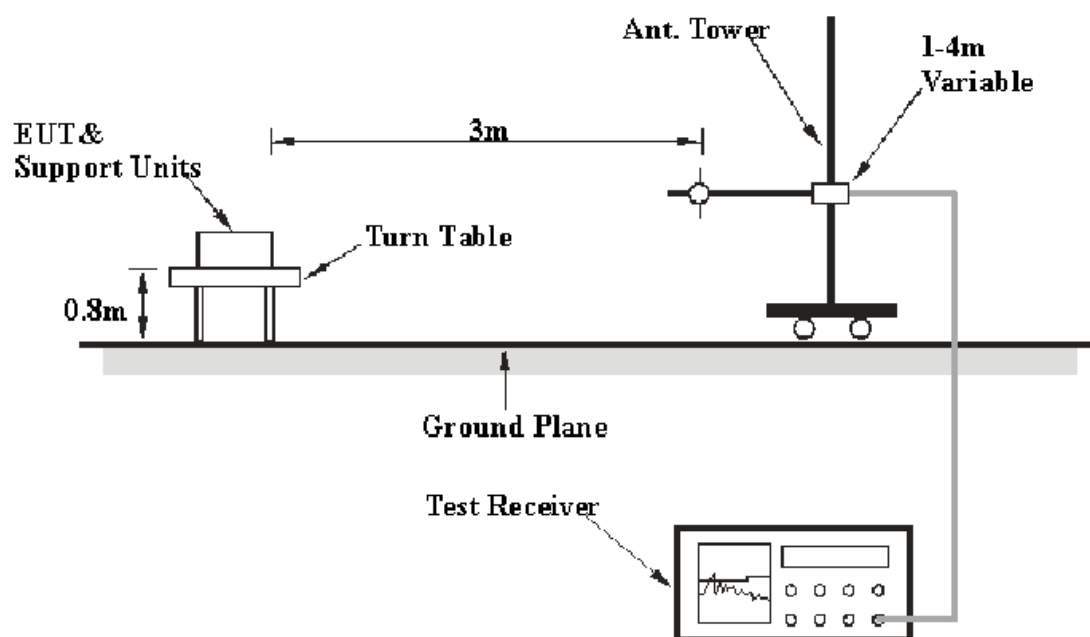
CFR47 §15.205; §15.209; §15.247 (d)

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at emitel (Shenzhen) Limited is ± 4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 and FCC 15.247 limits.

**EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>
30MHz – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25 GHz	1 MHz	3 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2011-10-15	2012-10-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-10-16	2012-10-16
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-03-11	2012-03-11
HP	Amplifier	8449B	3008A00277	2011-09-29	2012-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-09-25	2012-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-05-09	2012-05-09

Test Procedure

For the radiated emissions test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz and peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$



Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247, with the worst margin reading of:

Transmitting mode (Below 1GHz):

14.0 dB at **755.980375 MHz** in the **Vertical** polarization

Transmitting mode (Above 1 GHz):

6.23 dB at **2149.1 MHz** in the **Vertical** polarization (Low Channel)
6.14 dB at **2149.1 MHz** in the **Vertical** polarization (Middle Channel)
7.55 dB at **4960 MHz** in the **Horizontal** polarization (High Channel)

Test Data

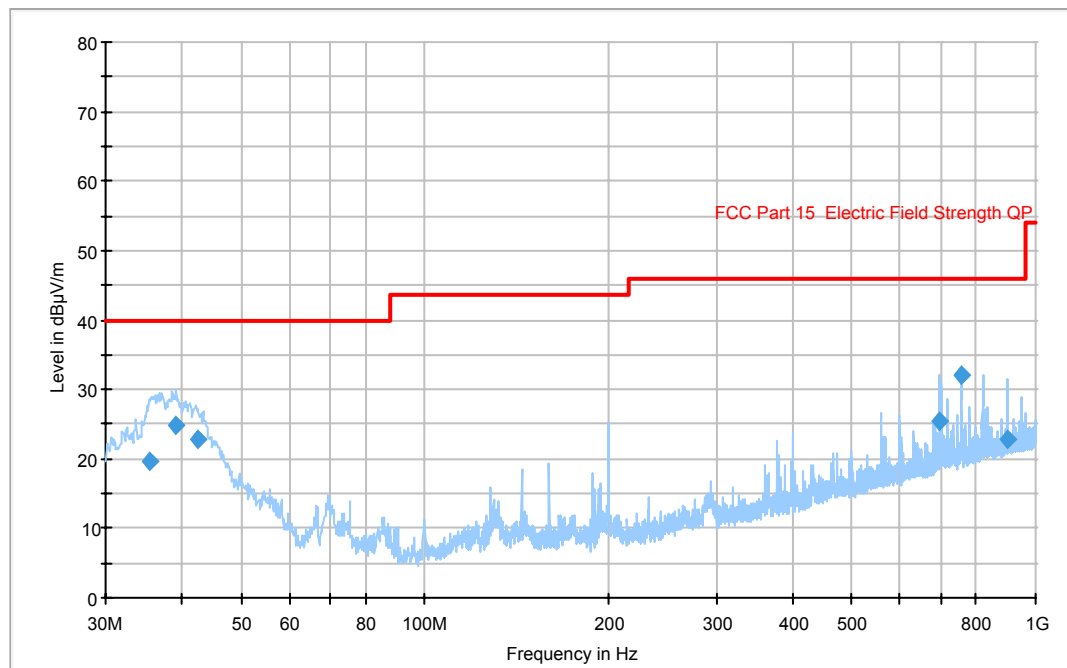
Environmental Conditions

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Davis Ma.*



Test Mode: Transmitting (worse-case below 1 GHz)



Frequency (MHz)	Corrected Amp. (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
755.980375	32.0	214.0	V	352.0	-5.9	46.0	14.0
39.171500	24.8	130.0	V	0.0	-14.9	40.0	15.2
42.554950	22.9	106.0	V	306.0	-16.8	40.0	17.1
35.456900	19.8	223.0	V	307.0	-12.2	40.0	20.2
695.931650	25.5	165.0	V	192.0	-6.9	46.0	20.5
897.540500	22.7	141.0	V	166.0	-3.9	46.0	23.3



Test Mode: Transmitting (Above 1 GHz)

Freq. (MHz)	S.A. Reading (dBμV/m)	Detector PK/QP/AV	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	FCC Part 15.247/209		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBμV/m)	Margin (dB)	Remarks
Low Channel (2402 MHz)												
2149.1	43.69	AV	360	1.30	V	29.8	6.48	32.2	47.77	54	6.23	spurious
4804.0	32.84	AV	240	1.02	H	36.3	8.41	31.81	45.74	54	8.26	harmonic
2149.1	40.91	AV	44	1.40	H	29.7	6.48	32.2	44.89	54	9.11	spurious
4804.0	33.06	AV	180	1.05	V	35.0	8.41	31.81	44.66	54	9.34	harmonic
4804.0	44.67	PK	240	1.02	H	36.3	8.41	31.81	57.57	74	16.43	harmonic
4804.0	45.12	PK	180	1.05	V	35.0	8.41	31.81	56.72	74	17.28	harmonic
2149.1	49.54	PK	360	1.30	V	29.8	6.48	32.20	53.62	74	20.38	spurious
2149.1	47.83	PK	44	1.40	H	29.7	6.48	32.20	51.81	74	22.19	spurious
Middle Channel (2441 MHz)												
2149.1	43.78	AV	130	1.07	V	29.8	6.48	32.2	47.86	54	6.14	spurious
4882	32.56	AV	250	1	H	36.3	8.41	31.81	45.46	54	8.54	harmonic
2149.1	40.86	AV	175	1.37	H	29.7	6.48	32.2	44.84	54	9.16	spurious
4882	33.04	AV	283	1.13	V	35.0	8.41	31.81	44.64	54	9.36	harmonic
4882	45.16	PK	250	1	H	36.3	8.41	31.81	58.06	74	15.94	harmonic
4882	45.36	PK	283	1.13	V	35.0	8.41	31.81	56.96	74	17.04	harmonic
2149.1	49.09	PK	360	1.07	V	29.8	6.48	32.2	53.17	74	20.83	spurious
2149.1	47.69	PK	175	1.37	H	29.7	6.48	32.2	51.67	74	22.33	spurious
High Channel (2480 MHz)												
4960	32.77	AV	35	1.1	H	36.4	9.44	32.16	46.45	54	7.55	harmonic
4960	32.84	AV	355	1.1	V	35.2	9.44	32.16	45.32	54	8.68	harmonic
2149.1	43.89	AV	280	1.2	V	25.8	6.48	32.2	43.97	54	10.03	spurious
2149.1	41.23	AV	150	1.15	H	26.7	6.48	32.2	42.21	54	11.79	spurious
4960	45.36	PK	35	1.1	H	36.4	9.44	32.16	59.04	74	14.96	harmonic
4960	45.89	PK	355	1.1	V	35.2	9.44	32.16	58.37	74	15.63	harmonic
2149.1	49.88	PK	280	1.2	V	25.8	6.48	32.2	49.96	74	24.04	spurious
2149.1	48.01	PK	150	1.15	H	26.7	6.48	32.2	48.99	74	25.01	spurious



Spurious emission in restricted band

Freq. (MHz)	S.A. Reading (dBμV/m)	Detector (PK/AV)	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	FCC Part 15.247/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBμV/m)	Margin (dB)
Out of left side band (2310 – 2390 MHz)											
2383.75	32.46	AV	0	1.6	H	30.9	6.6	33.9	36.06	54	17.94
2389.67	31.39	AV	360	1.2	V	30.3	6.6	33.9	34.39	54	19.61
2383.75	47.25	PK	0	1.6	H	30.9	6.6	33.9	50.85	74	23.15
2389.67	46.66	PK	360	1.2	V	30.3	6.6	33.9	49.66	74	24.34
Out of right side band (2483.5 – 2500 MHz)											
2484.36	33.25	AV	0	1.8	H	30.9	6.6	33.9	36.85	54	17.15
2483.86	32.28	AV	360	1.2	V	30.3	6.6	33.9	35.28	54	18.72
2484.36	49.86	PK	0	1.8	H	30.9	6.6	33.9	53.46	74	20.54
2483.86	45.96	PK	360	1.2	V	30.3	6.6	33.9	48.96	74	25.04

**CFR47 §15.247(a) (1)-CHANNEL SEPARATION TEST****Applicable Standard**

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-07	2012-11-06

Test Procedure

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 100 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another trace
3. Measure the channel separation.

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

* The testing was performed by Davis Ma.

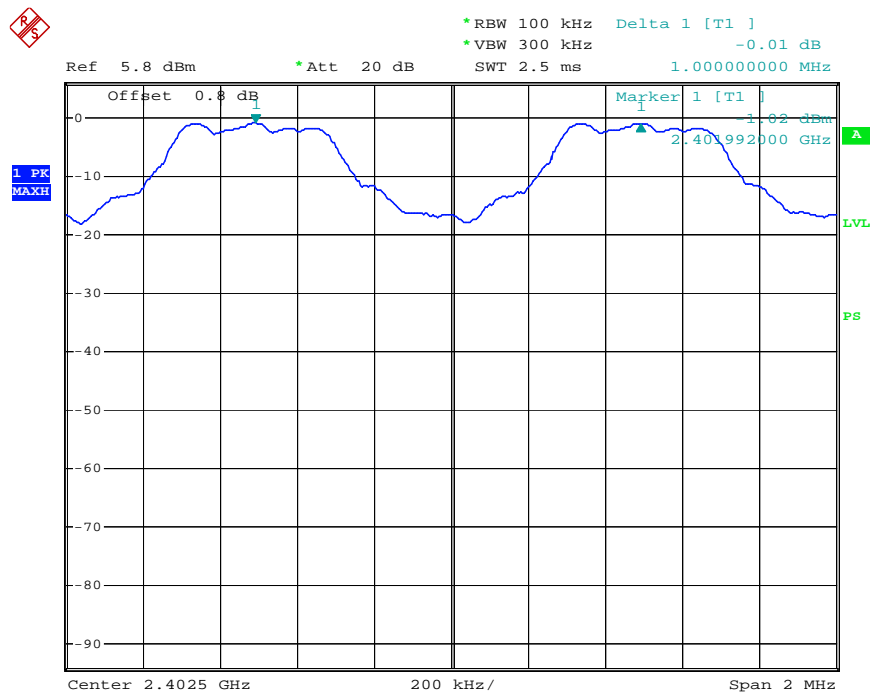
Test Result: Compliant.

Please refer to following tables and plots

*Test Mode: Transmitting*

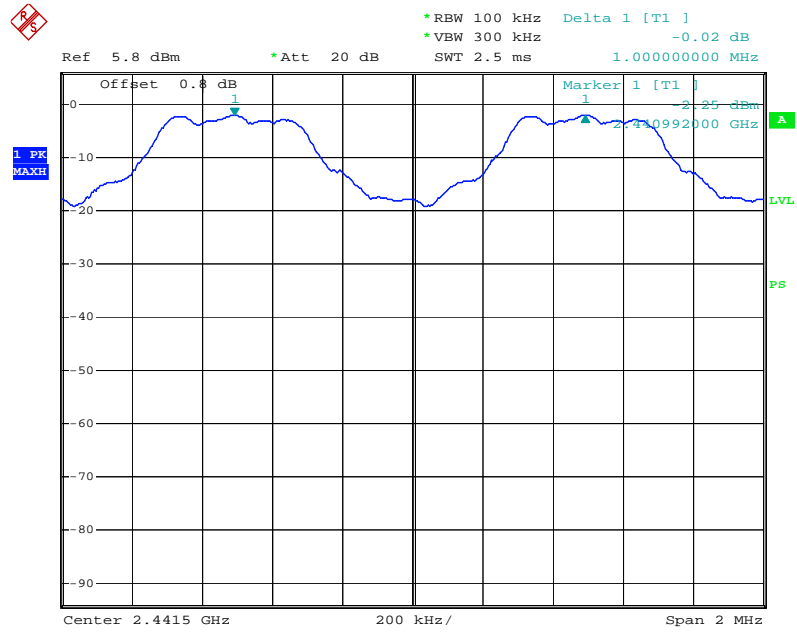
Channel	Channel Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low Channel	2402	1.000	0.6987	Pass
Adjacent Channel	2403			
Mid Channel	2441	1.000	0.6987	Pass
Adjacent Channel	2442			
High Channel	2480	1.000	0.6987	Pass
Adjacent Channel	2479			

Please refer to the following plots.

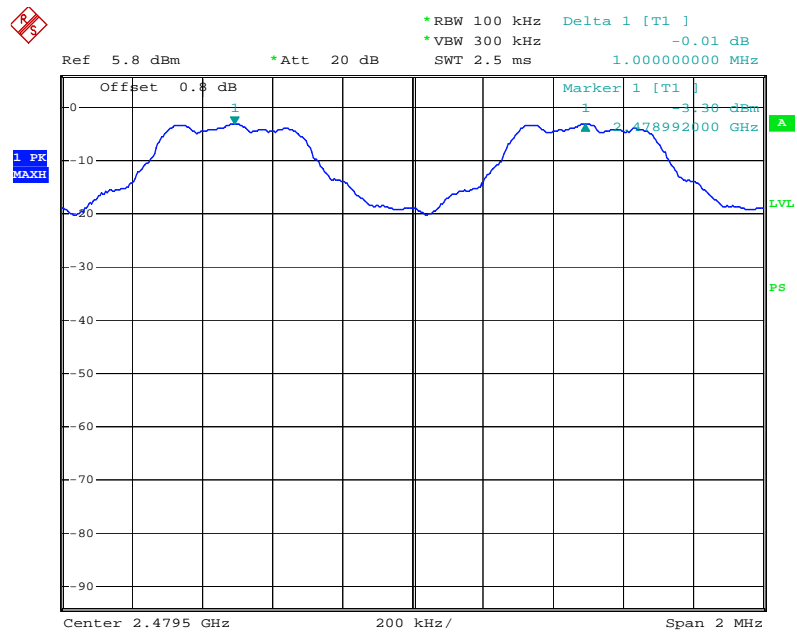
Low Channel



Middle Channel



High Channel



**CFR47 §15.247(a) (1) – 20dB BANDWIDTH TESTING****Applicable Standard**

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-07	2012-11-06

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

* The testing was performed by Davis Ma.

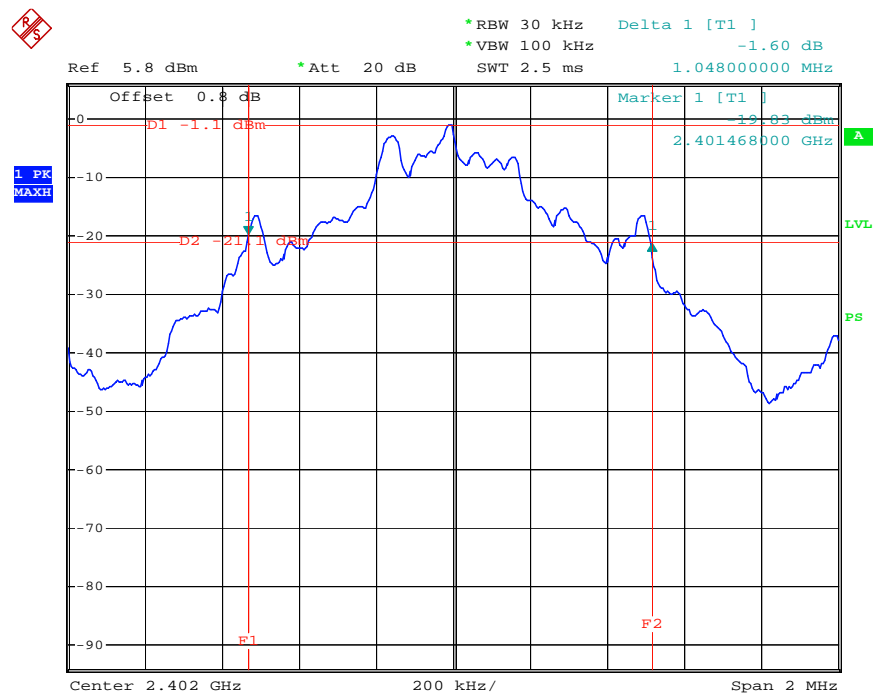
Test Result: Compliant.

Please refer to following tables and plots

*Test Mode: Transmitting*

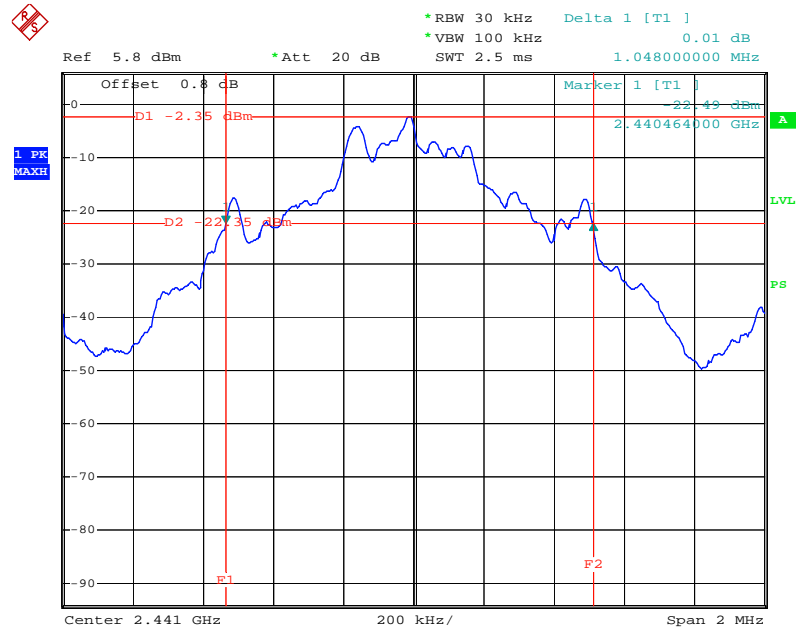
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2402	1.048
Middle	2441	1.048
High	2480	1.048

Please refer to the following plots.

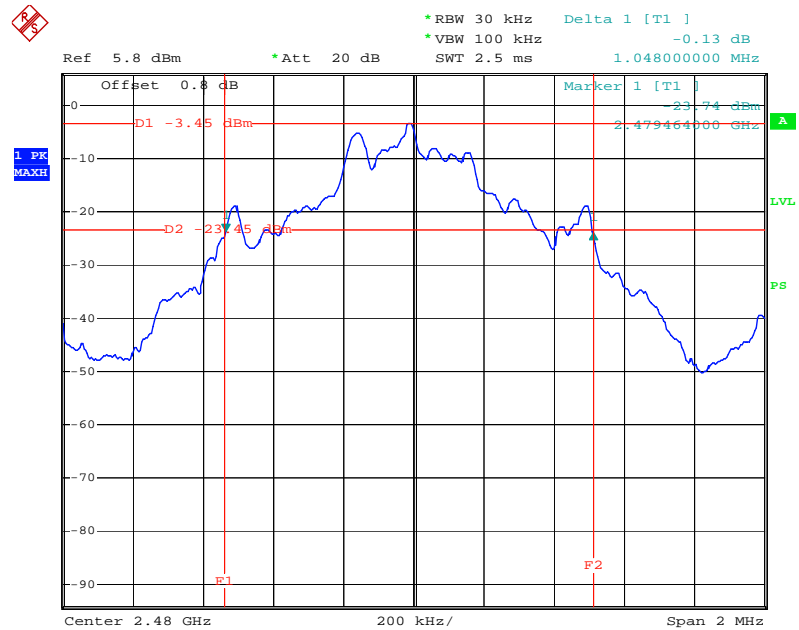
Low Channel



Middle Channel



High Channel



**CFR47 §15.247(a) (1) (iii)-QUANTITY OF HOPPING CHANNEL TEST**

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-07	2012-11-06

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Set the EUT in hopping mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

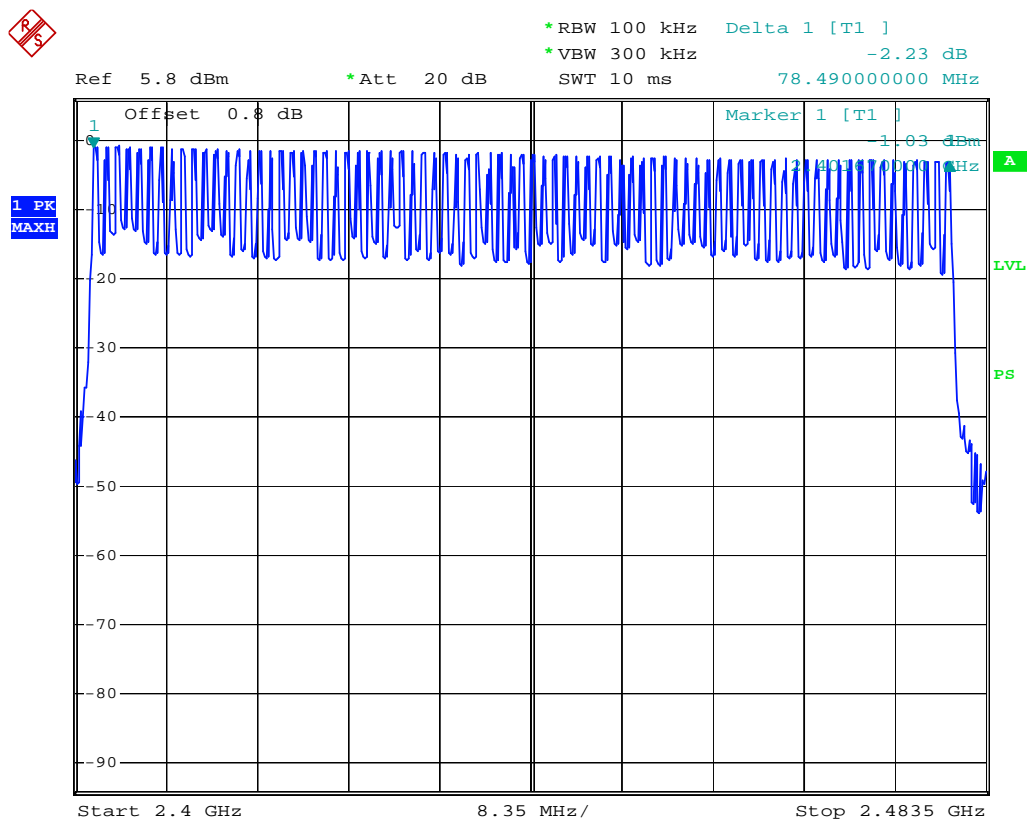
The testing was performed by Davis Ma.

Test Result: Compliant.

Please refer to following tables and plots

*Test Mode: Transmitting*

Frequency Range (MHz)	Number of Hopping Channel	Limit
2402-2480	79	> 15

Number of Hopping Channels

**CFR47 §15.247(a) (1) (iii) -TIME OF OCCUPANCY (DWELL TIME)**

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-07	2012-11-06

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 X channel no. (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.

Dwell Time= time slot length * hope rate/ number of hopping channels * 31.6s
Hop rate=1600/s

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Davis Ma.*

Test Result: Compliant.

Please refer to following tables and plots



Test Mode: Transmitting

DH 1 Mode:

Channel	Pulse Width (ms)	Dwell Time (Sec)	Limit (Sec)	Result
Low	0.480	0.154	0.4	Pass
Middle	0.480	0.154	0.4	Pass
High	0.480	0.154	0.4	Pass

Note: Dwell time=Pulse width (ms) \times (1600 \div 2 \div 79) \times 31.6 Second

DH 3 Mode:

Channel	Pulse Width (ms)	Dwell Time (Sec)	Limit (Sec)	Result
Low	1.755	0.281	0.4	Pass
Middle	1.763	0.282	0.4	Pass
High	1.755	0.281	0.4	Pass

Note: Dwell time=Pulse width (ms) \times (1600 \div 4 \div 79) \times 31.6 Second

DH 5 Mode:

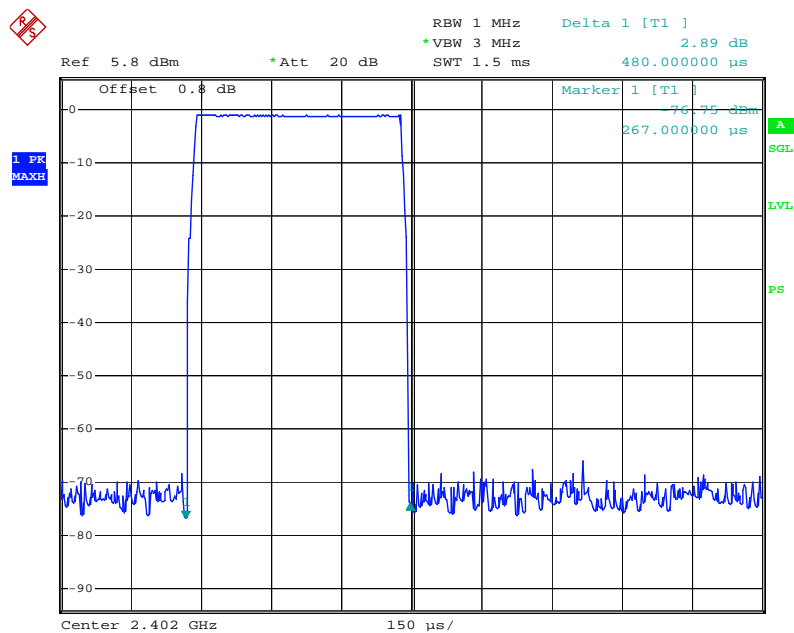
Channel	Pulse Width (ms)	Dwell Time (Sec)	Limit (Sec)	Result
Low	3.019	0.322	0.4	Pass
Middle	3.019	0.322	0.4	Pass
High	3.019	0.322	0.4	Pass

Note: Dwell time=Pulse width (ms) \times (1600 \div 6 \div 79) \times 31.6 Second

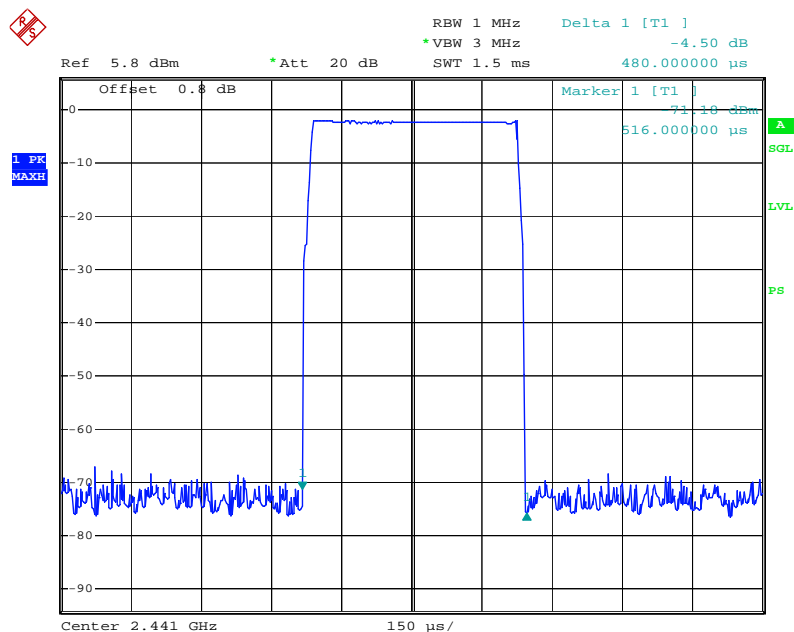
Please refer to the following plots.



Low Channel for DH1

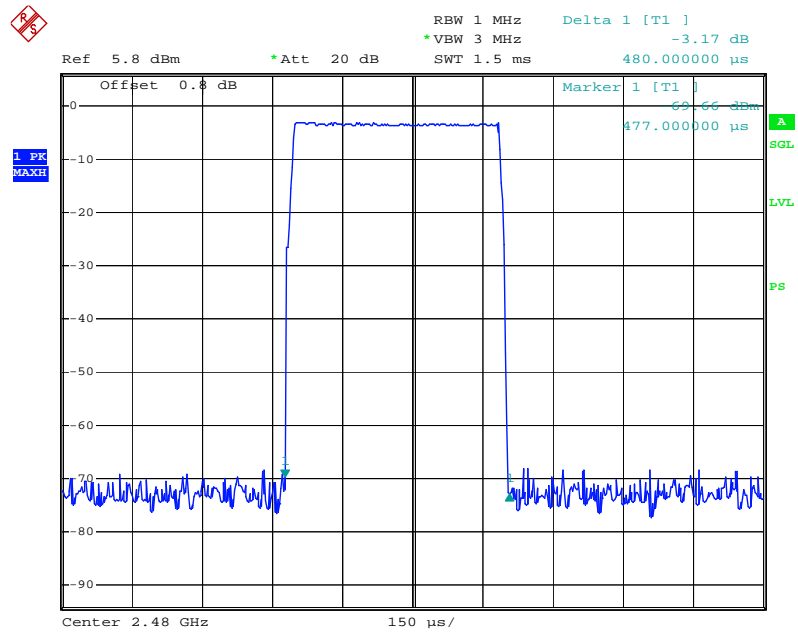


Middle Channel for DH1

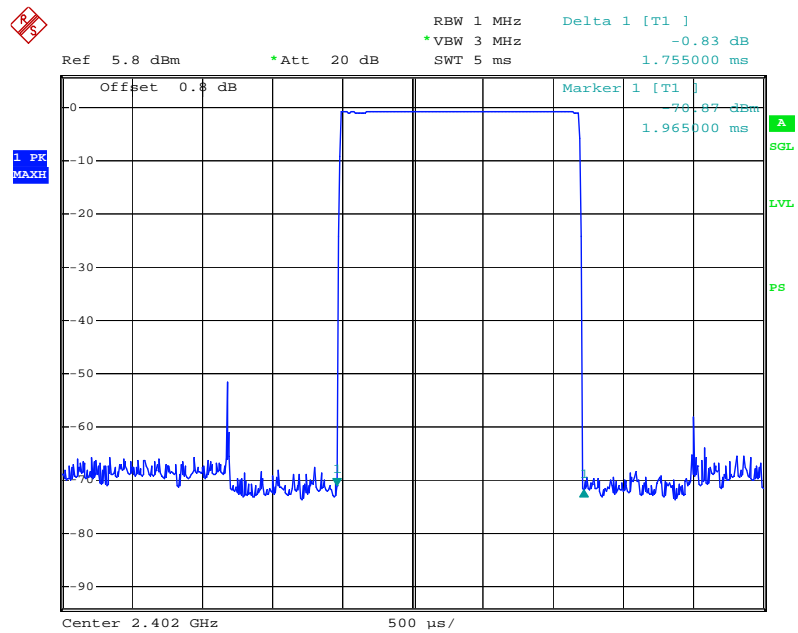




High Channel for DH1

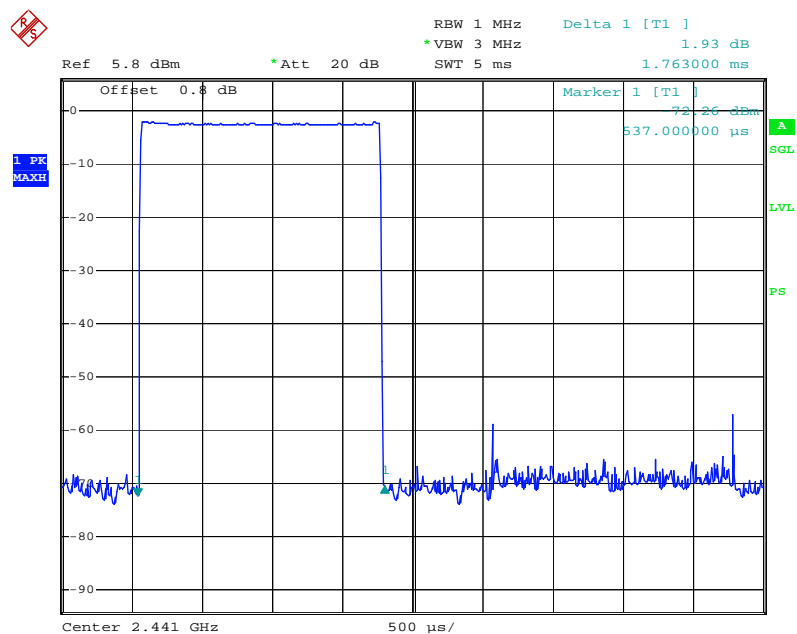


Low Channel for DH3

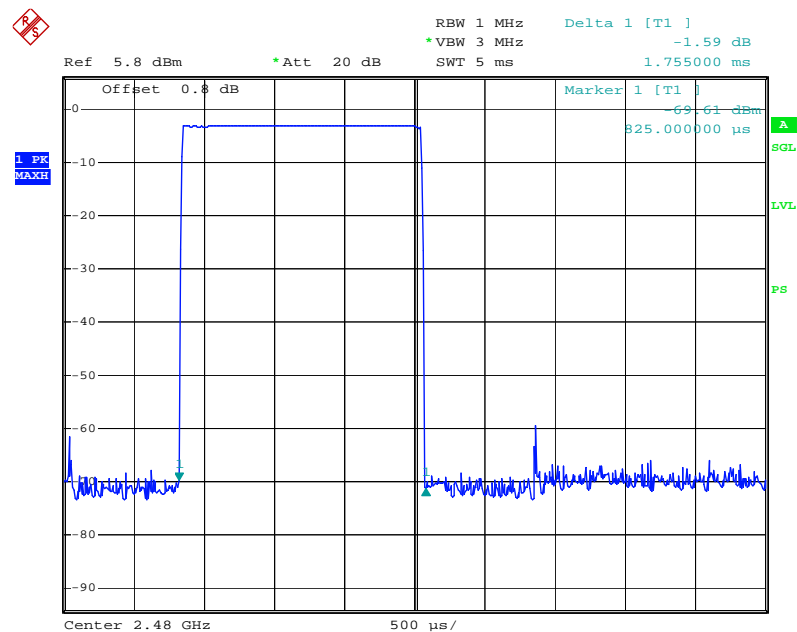




Middle Channel for DH3

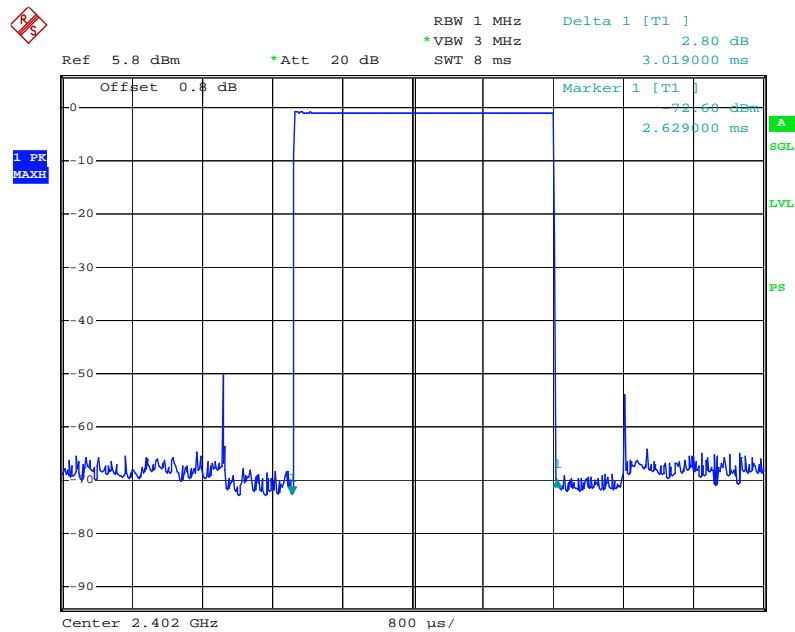


High Channel for DH3

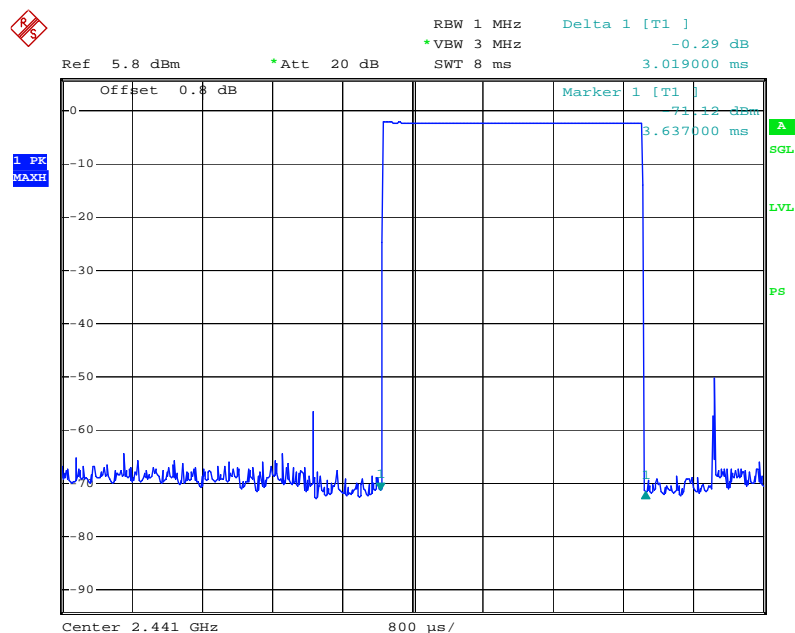




Low Channel for DH5

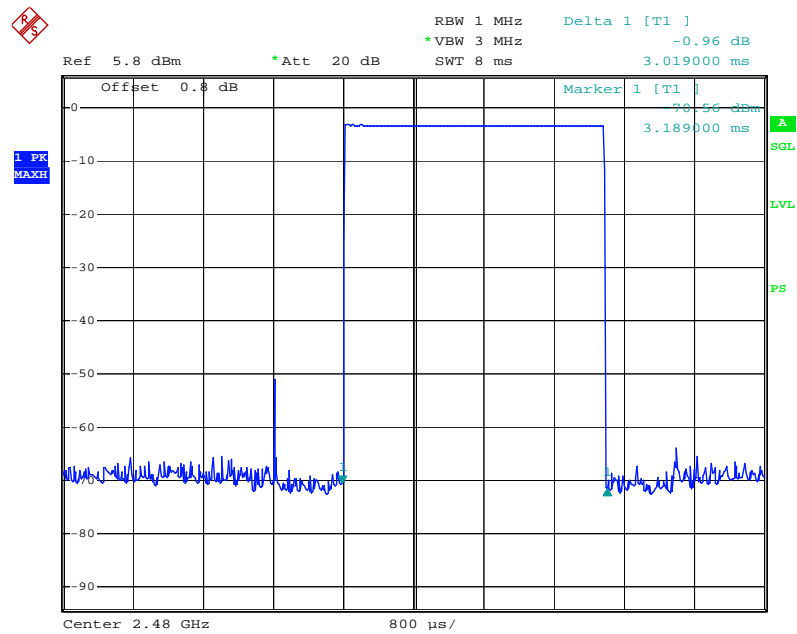


Middle Channel for DH5





High Channel for DH5



**CFR47 §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT****Applicable Standard**

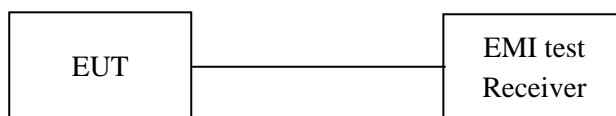
According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-07	2012-11-06
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-03-11	2012-03-11
HP	Amplifier	8449B	3008A00277	2011-09-29	2012-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-09-25	2012-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-05-09	2012-05-09

Test Procedure

1. Place the EUT on a bench and set in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI test receiver.
3. Add a correction factor to the display.



**Test Data****Environmental Conditions**

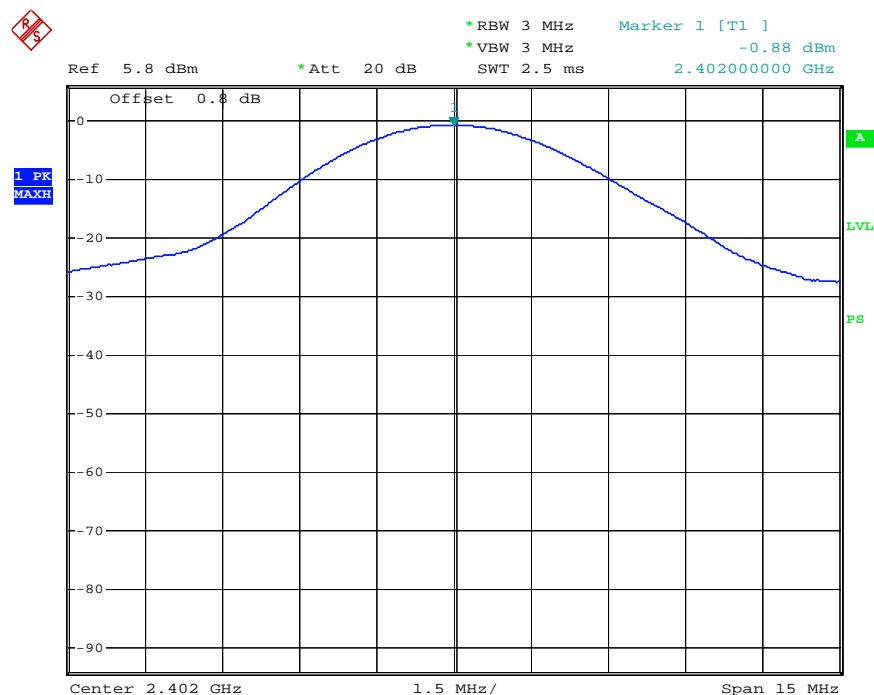
Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

* The testing was performed by Davis Ma.

Test Result: Compliant.

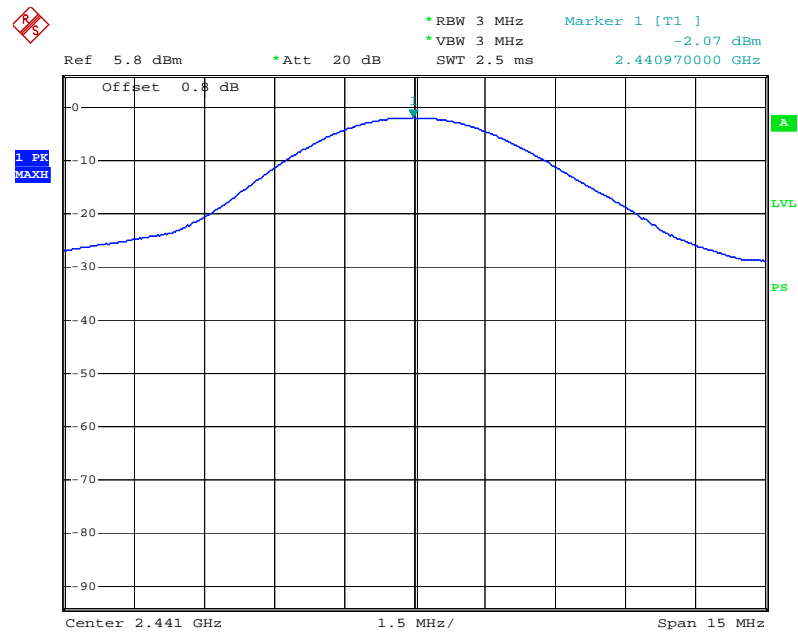
Test Mode: Transmitting

channel	Channel frequency (MHz)	Reading power (dBm)	Power output (mw)	Limit (mw)
Low channel	2402	-0.88	0.82	1000
Middle channel	2441	-2.07	0.62	1000
High channel	2480	-3.25	0.47	1000

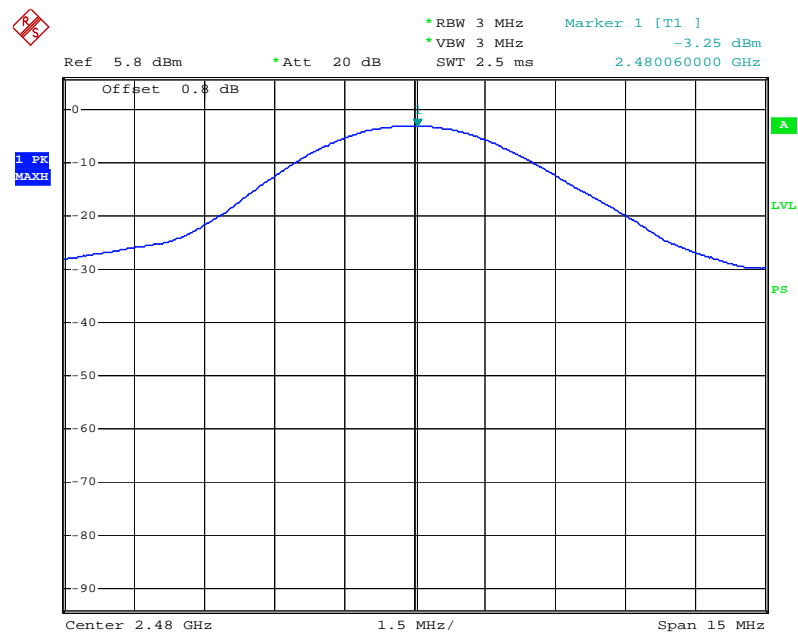
Low Channel



Middle Channel



High Chanel



**CFR47 §15.247(d) - BAND EDGES TESTING****Applicable Standard**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-10-16	2012-10-16
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-03-11	2012-03-11
HP	Amplifier	8449B	3008A00277	2011-09-29	2012-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-09-25	2012-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-05-09	2012-05-09

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, for Radiated emissions restricted band RBW=1MHz, VBW=3MHz.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
1. Repeat above procedures until all measured frequencies were complete.

**Test Data****Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

**The testing was performed by Davis Ma.*

Test Result: Compliant

Please refer to the following table and plots.

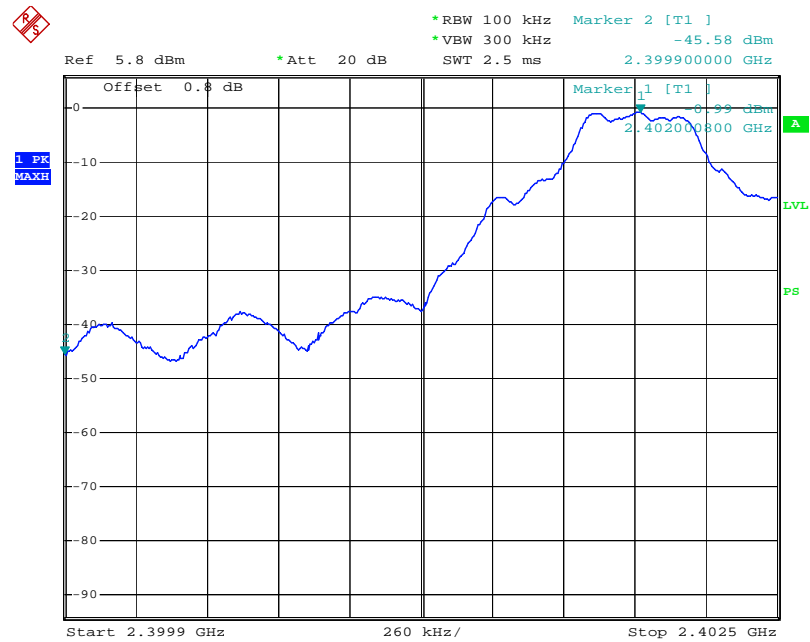
Test Mode: Transmitting

Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)
2399.9000	44.59	20
2483.6000	46.89	20

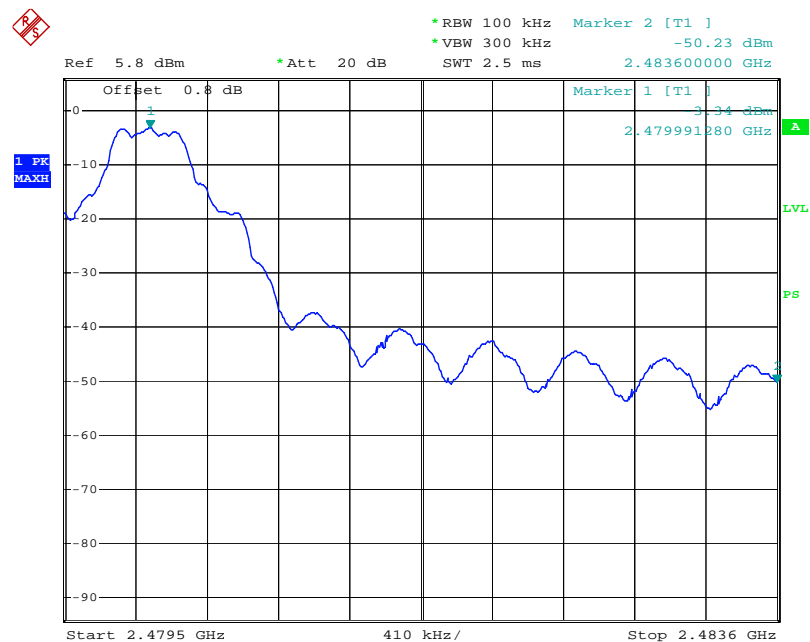
Note: The point fall into the stricted band was in FCC 15.209, please refer to the restrict band testing.



Band Edge: Left Side



Band Edge: Right Side



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