FCC Part 15C

Measurement and Test Report

For

Zhejiang Bosen Electronic Co., Ltd.

No.1266, Juxian Road, Hi-Tech Park, Ningbo, Zhejiang, China

FCC ID: YH4-BDT-7000X

Report Concerns: Original Report	**Equipment Type:** CAR DVD PLAYER
Model:	BDT-70003
Report No.:	STR10048188I
Test Date:	2010-05-17 to 2010-06-12
Issue Date:	2010-06-13
Test Engineer:	John Zhi
Reviewed By:	Lahm Peng
Approved & Authorized By:	Jandy so/PSQ Manager

Prepared By:

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Zhejiang Bosen Electronic Co., Ltd.

Address of applicant: No.1266, Juxian Road, Hi-Tech Park, Ningbo, Zhejiang, China

Manufacturer: Zhejiang Bosen Electronic Co., Ltd.

Address of manufacturer: No.1266, Juxian Road, Hi-Tech Park, Ningbo, Zhejiang, China

General Description of E.U.T

Items	Description
EUT Description:	CAR DVD PLAYER
Trade Name:	/
Model No.:	BDT-70003
Add Model:	BDT-XY00Z(X=6,7,Y=0,2,Z=1-9)
Rated Voltage:	DC 12V
Max. Output Power	-6~4 dBm
Frequency range:	2402-2480MHz
Number of channels:	79
Channel Separation:	1MHz
Type of Antenna:	Integral Antenna
Size:	20.1x10.1x18.2cm

Note: The test data is gathered from a production sample, provided by the manufacturer. Test is carried out with BDT-70003 since the others listed in the report have the different appearances only without electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Zhejiang Bosen Electronic Co., Ltd. in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted with Low Channel, Middle Channel and High Channel, accordingly in reference to the Operating Instructions.

1.5 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

1.6 EUT Exercise Software

The EUT exercise program used during the testing was designed to exercise the system components.

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Power Cable	0.3	Unshielded	Without Core
AV Cable	0.15	Unshielded	Without Core
Speaker Cable	0.3	Unshielded	Without Core
USB Cable	0.5	Unshielded	Without Core
GPS Antenna Cable	4.8	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§ 15.247(a)(1)(iii)	Quantity of Hopping Channel	Compliant
§ 15.247(a)(1)	Channel Separation	Compliant
§ 15.247(a)(1)(iii)	Time of Occupancy (Dwell time)	Compliant
§ 15.247(a)	20dB Bandwidth	Compliant
§ 15.247(b)(1)	Power Output	Compliant
§ 15.209(a)(f)	Radiated Emission	Compliant
§ 15.247(c)	Band edge	Compliant

3. §15.203 - ANTENNA REQUIREMENT

3.1 Standard Applicable

According to FCC 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.

3.2 Test Result

This product has a permanent antenna, fulfill the requirement of this section.

4. NUMBER OF HOPPING CHANNELS AND CHANNEL SPACING

4.1 Standard Applicable

According to FCC 15.247(a)(1), 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, and frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

4.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B	US41192821	2009-08-12	2010-08-11
ATTEN	Attenuator	ATS100-4-20	/	2009-08-12	2010-08-11

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

4.3 Test Procedure

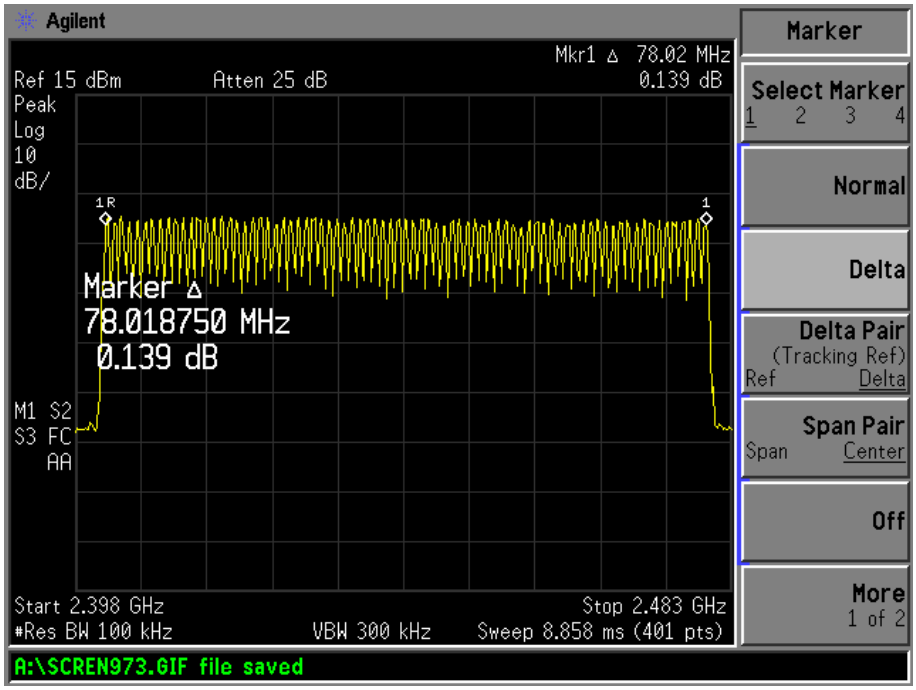
Set the Lowest channel to the Highest Channel, observed the band of 2400MHz to 2438.5MHz, than count it out the number of channels for comparing with the FCC rules. Adjust channel spacing can be read by adjusting the Analyzer SPAN.

4.4 Environmental Conditions

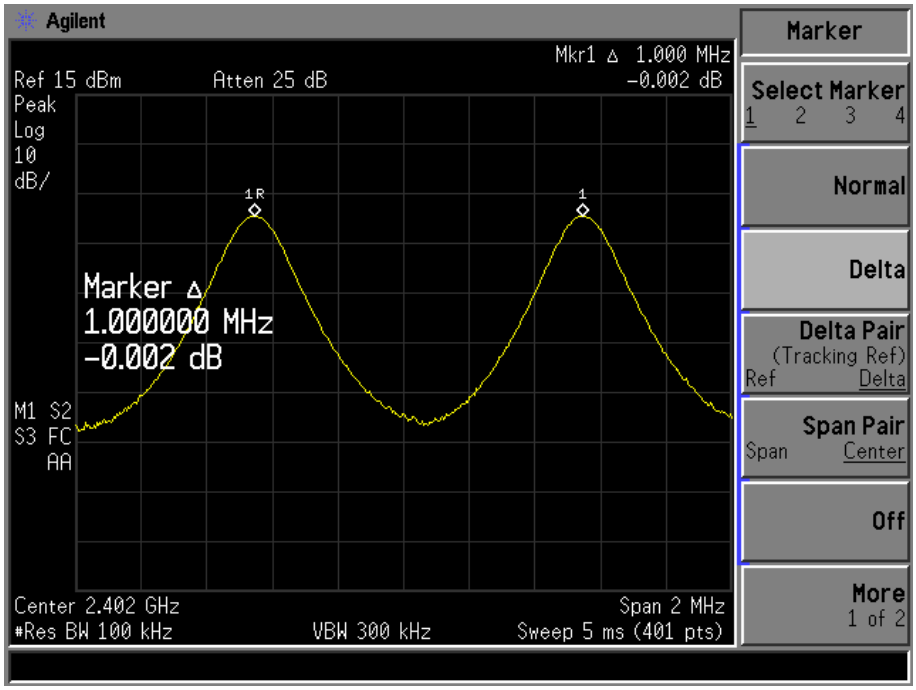
Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

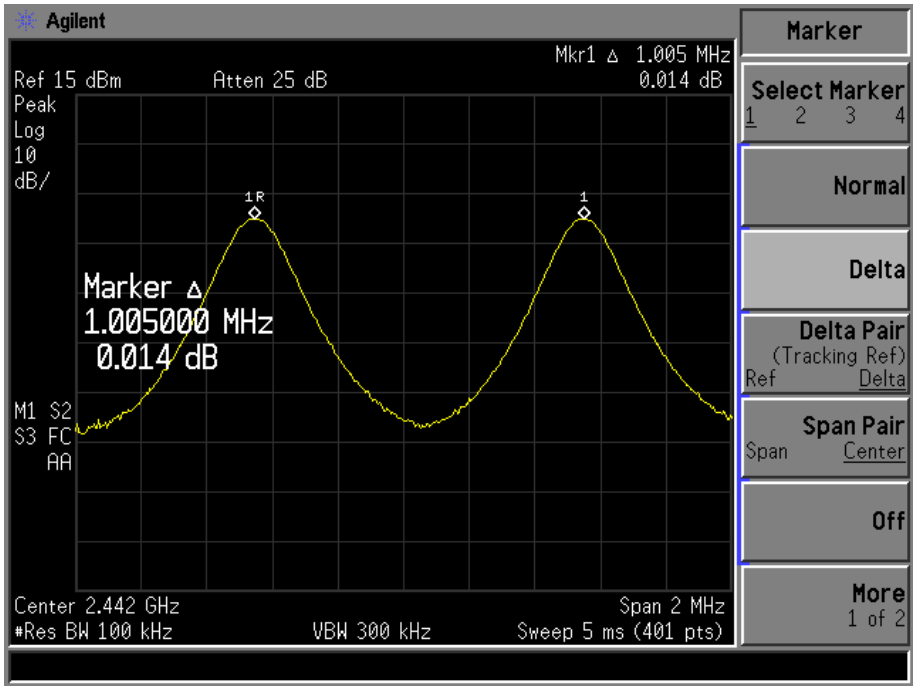
No. of Channel=79



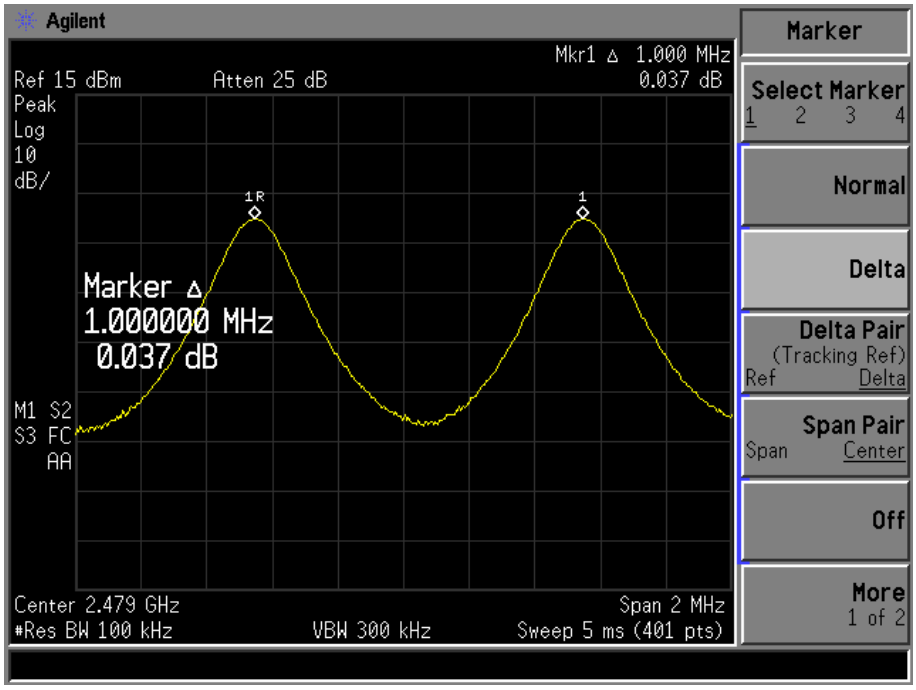
Channel Spacing (Low CH=1MHz)



Channel Spacing (Middle CH=1MHz)



Channel Spacing (High CH=1MHz)



5. DWELL TIME OF A HOPPING CHANNEL

5.1 Standard Applicable

According to 15.247(a)(1)(iii), 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.

5.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B	US41192821	2009-08-12	2010-08-11
ATTEN	Attenuator	ATS100-4-20	/	2009-08-12	2010-08-11

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

5.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW, VBW=100KHz, Span = 0Hz.
4. Repeat above procedures until all frequency measured was complete.

5.4 Environmental Conditions

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

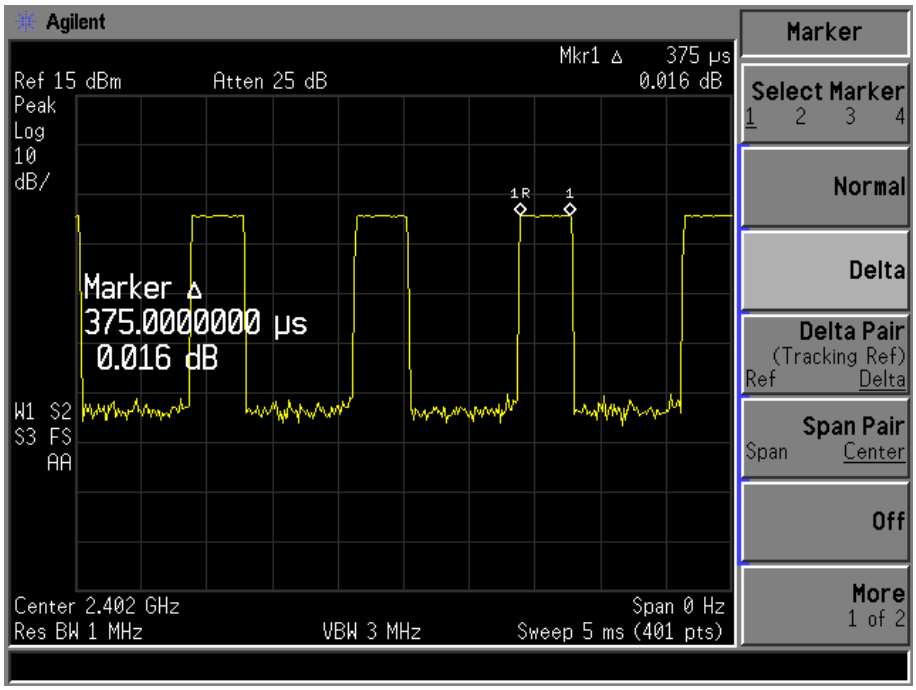
5.5 Summary of Test Results/Plots

The dwell time within a 31.6 second period in data mode is independent from the packet type (packet length). The calculation for a 31.6 second period is a follows:

Dwell time = time slot length * hop rate / number of hopping channels *31.6s

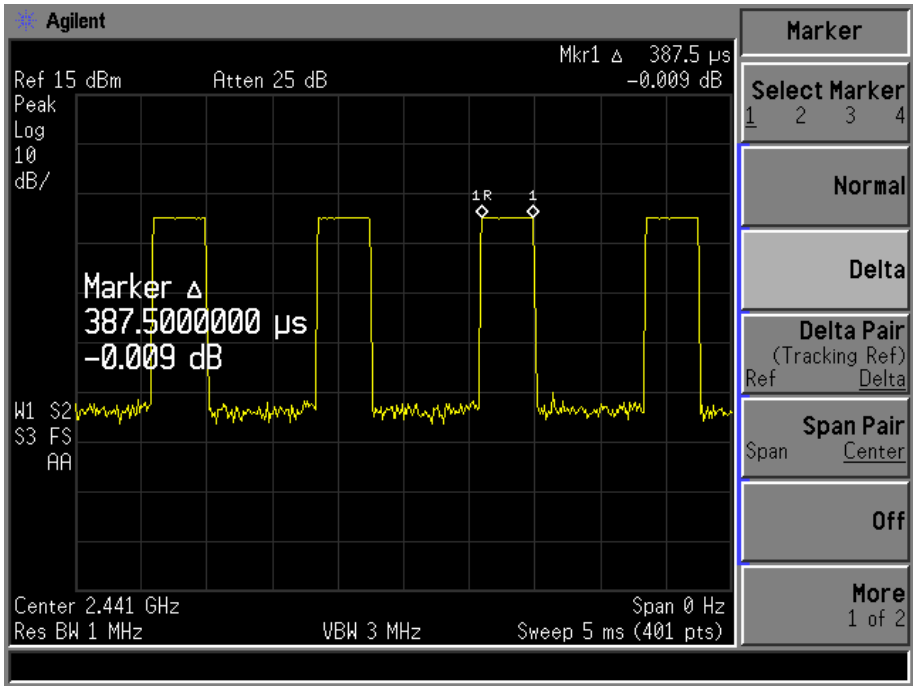
Test data is corrected with the worse case, which the packet length is DH1.

CH Low:



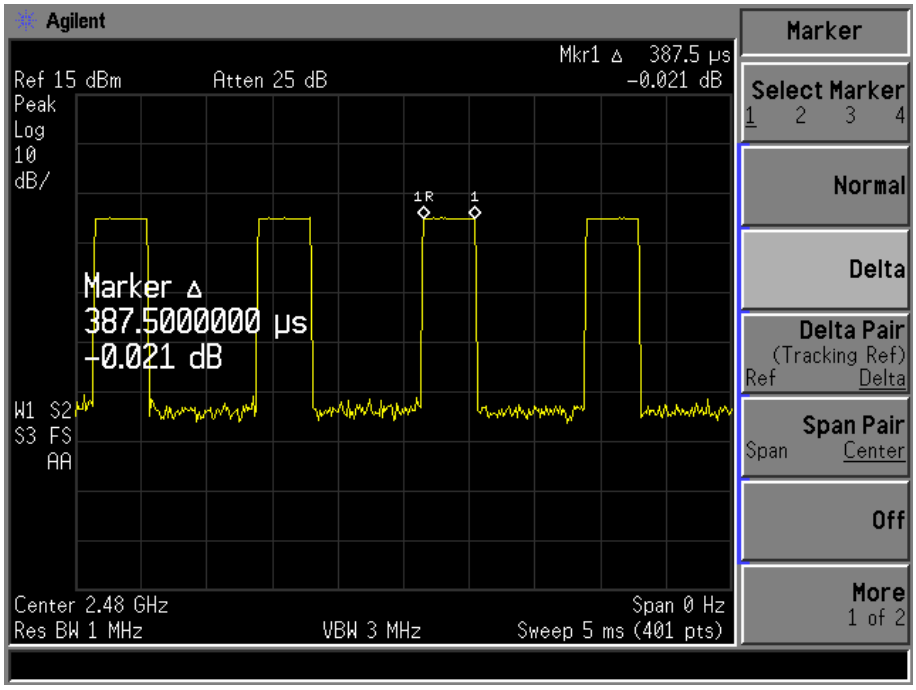
DH1 time slot = 0.38(ms) * (1600/(79)) * 31.6 = 243.2 (ms) < 400 (ms)

CH Mid:



DH1 time slot = 0.38(ms) * (1600/(79)) * 31.6 = 243.2 (ms) < 400 (ms)

CH High:



DH1 time slot = 0.38 (ms) * (1600/(79)) * 31.6 = 243.2 (ms) < 400 (ms)

6. 20-dB BANDWIDTH

6.1 Standard Applicable

According to 15.247(a)(1)(iii). For frequency hopping systems operating in the 2400MHz-2483.5 MHz no limit for 20dB bandwidth.

6.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B	US41192821	2009-08-12	2010-08-11
ATTEN	Attenuator	ATS100-4-20	/	2009-08-12	2010-08-11

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

6.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. The spectrum analyzer as RBW=10KHz (1 % of Bandwidth.), Sweep=auto
4. Mark the peak frequency and –20dB (upper and lower) frequency.

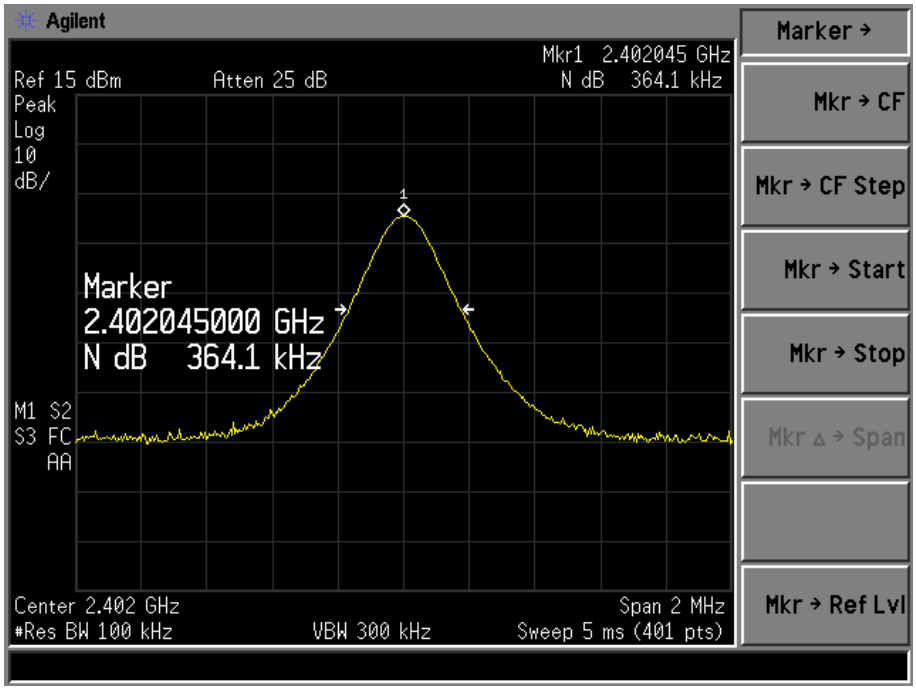
6.4 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

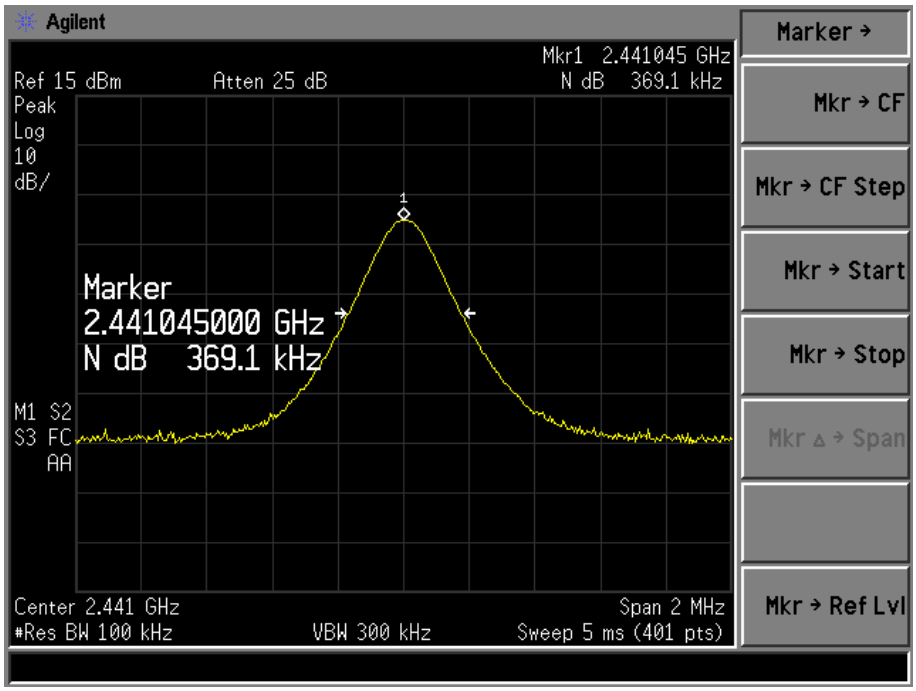
6.5 Summary of Test Results/Plots

Frequency MHz	20 dB Bandwidth kHz	Limit dB
2402	364.1	/
2441	369.1	/
2480	364.1	/

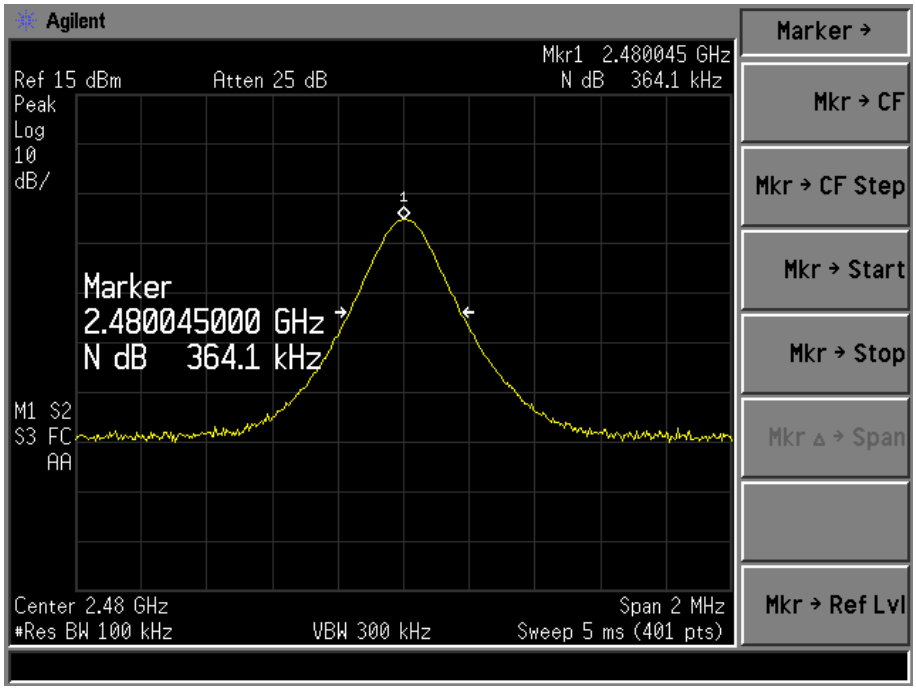
CH Low:


Agilent
Mkr1 2.402045 GHz
Ref 15 dBm
Atten 25 dB
N dB 364.1 kHz
Peak
Log
10
dB/
Marker
2.402045000 GHz
N dB 364.1 kHz
M1 S2
S3 FC
AA
Center 2.402 GHz
#Res BW 100 kHz
VBW 300 kHz
Span 2 MHz
Sweep 5 ms (401 pts)
Marker →
Mkr → CF
Mkr → CF Step
Mkr → Start
Mkr → Stop
Mkr Δ → Span
Mkr → Ref Lvl

CH Mid:


Agilent
Mkr1 2.441045 GHz
Ref 15 dBm
Atten 25 dB
N dB 369.1 kHz
Peak
Log
10
dB/
Marker
2.441045000 GHz
N dB 369.1 kHz
M1 S2
S3 FC
AA
Center 2.441 GHz
#Res BW 100 kHz
VBW 300 kHz
Span 2 MHz
Sweep 5 ms (401 pts)
Marker →
Mkr → CF
Mkr → CF Step
Mkr → Start
Mkr → Stop
Mkr Δ → Span
Mkr → Ref Lvl

CH High:


Agilent
Marker →
Mkr1 2.480045 GHz
Ref 15 dBm
Atten 25 dB
N dB 364.1 kHz
Peak
Log
10
dB/
Mkr → CF
Mkr → CF Step
Mkr → Start
Mkr → Stop
Marker
2.480045000 GHz
N dB 364.1 kHz
M1 S2
S3 FC
AA
Mkr Δ → Span
Mkr → Ref Lvl
Center 2.48 GHz
Span 2 MHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 5 ms (401 pts)

7. POWER OUTPUT

7.1 Standard Applicable

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.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-08-12	2010-08-11
Positioning Controller	C&C	CC-C-1F	N/A	2009-08-12	2010-08-11
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-21	2010-07-20
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-21	2010-07-20
RF Switch	EM	EMSW18	SW060023	2009-08-12	2010-08-11
Amplifier	Agilent	8447F	3113A06717	2009-08-12	2010-08-11
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-08-12	2010-08-11
Spectrum Analyzer	Rohde & Schwarz	FSP	N/A	2010-04-16	2011-04-15

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

7.3 Test Procedure

The device under test has an integral antenna and the power was measured on a radiated basis.

7.4 Environmental Conditions

Temperature:	24 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

2402 MHz 0.6194 mW EIRP

2441 MHz 0.6358 mW EIRP

2480 MHz 0.5076 mW EIRP

Note: The Antenna Gain is under considering.

8. FIELD STRENGTH OF SPURIOUS EMISSIONS

8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ±5.10 dB.

8.2 Standard Applicable

According to §15.247(c), 15.205 15.209(b) &15.35 (b), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Section 15.209:
30 - 88 MHz 40 dBuV/m @3M
88 -216 MHz 43.5 dBuV/m @3M
216 -960 MHz 46 dBuV/m @3M
Above 960 MHz 54dBuV/m @3M

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 20 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209,WHICHEVER IS THE LESSER ATTENUATION.

Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

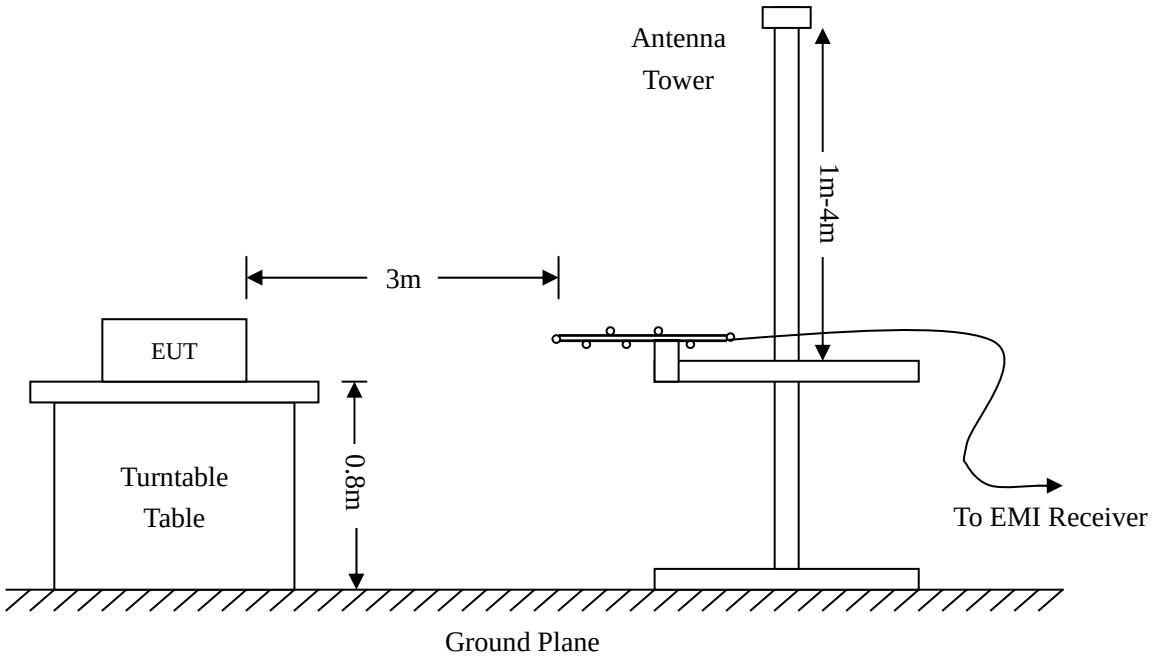
8.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-08-12	2010-08-11
Positioning Controller	C&C	CC-C-1F	N/A	2009-08-12	2010-08-11
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-21	2010-07-20
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-21	2010-07-20
RF Switch	EM	EMSW18	SW060023	2009-08-12	2010-08-11
Amplifier	Agilent	8447F	3113A06717	2009-08-12	2010-08-11
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-08-12	2010-08-11
Spectrum Analyzer	Rohde & Schwarz	FSP	N/A	2010-04-16	2011-04-15

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

8.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



8.5 Corrected Amplitude & Margin Calculation

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

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

8.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.7 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst margin of:

-1.11 dBμV at **301.4224MHz** in the **Horizontal** polarization for **High Channel**, **30 MHz to 25 GHz, 3 Meters**

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4804.0	AV	34.5	86	V	34.1	5.2	33	40.8	54	-13.2
4804.0	AV	34.8	35	H	34.1	5.2	33	41.1	54	-12.9
7206.0	AV	21.9	245	V	37.4	6.1	33.5	31.9	54	-22.1
7206.0	AV	23.4	198	H	37.4	6.1	33.5	33.4	54	-20.6
2402.0	AV	84.5	266	V	29.1	3.7	34	83.3		(Fund.)
2402.0	AV	85.5	185	H	29.1	3.7	34	84.3		(Fund.)
4804.0	PK	47.2	245	V	34.1	5.2	33	53.5	74	-20.5
4804.0	PK	49.2	60	H	34.1	5.2	33	55.5	74	-18.5
7206.0	PK	44.5	56	V	37.4	6.1	33.5	54.5	74	-19.5
7206.0	PK	43.4	60	H	37.4	6.1	33.5	53.4	74	-20.6
2402.0	PK	85.5	90	V	29.1	3.7	34	84.3		(Fund.)
2402.0	PK	87.6	43	H	29.1	3.7	34	86.4		(Fund.)
Middle Channel (1G to 25GHz)										
4882.0	AV	28.2	126	V	34.1	5.2	33	34.5	54	-19.5
4882.0	AV	29.2	32	H	34.1	5.2	33	35.5	54	-18.5
7323.0	AV	23.1	322	V	37.4	6.1	33.5	33.1	54	-20.9
7323.0	AV	24.9	257	H	37.4	6.1	33.5	34.9	54	-19.1
2441.0	AV	87.8	49	V	29.1	3.7	34	86.6		(Fund.)
2441.0	AV	88.7	89	H	29.1	3.7	34	87.5		(Fund.)
4882.0	PK	47.5	20	V	34.1	5.2	33	53.8	74	-20.2
4882.0	PK	48.8	265	H	34.1	5.2	33	55.1	74	-18.9
7323.0	PK	42.4	44	V	37.4	6.1	33.5	52.4	74	-21.6
7323.0	PK	43.9	78	H	37.4	6.1	33.5	53.9	74	-20.1
2441.0	PK	91.3	266	V	29.1	3.7	34	90.1		(Fund.)
2441.0	PK	94	42	H	29.1	3.7	34	92.8		(Fund.)

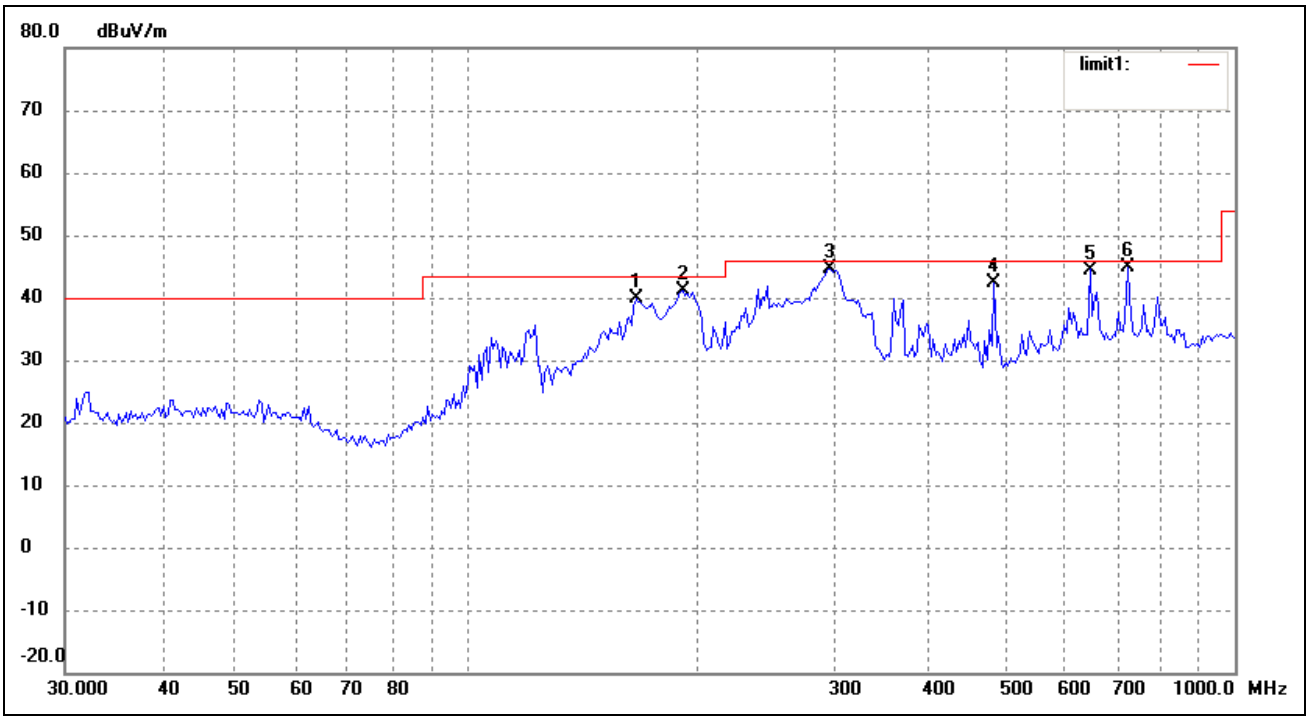
High Channel (1G to 25GHz)										
4960.0	AV	26.2	146	V	34.1	5.2	33	32.5	54	-21.5
4960.0	AV	27.4	56	H	34.1	5.2	33	33.7	54	-20.3
7440.0	AV	22.5	69	V	37.4	6.1	33.5	32.5	54	-21.5
7440.0	AV	24.2	53	H	37.4	6.1	33.5	34.2	54	-19.8
2480.0	AV	84.8	155	V	29.1	3.7	34	83.6		(Fund.)
2480.0	AV	86.1	58	H	29.1	3.7	34	84.9		(Fund.)
4960.0	PK	48.3	274	V	34.1	5.2	33	54.6	74	-19.4
4960.0	PK	49.7	85	H	34.1	5.2	33	56	74	-18
7440.0	PK	45.6	64	V	37.4	6.1	33.5	55.6	74	-18.4
7440.0	PK	46.6	67	H	37.4	6.1	33.5	56.6	74	-17.4
2480.0	PK	88.8	124	V	29.1	3.7	34	87.6		(Fund.)
2480.0	PK	91.1	159	H	29.1	3.7	34	89.9		(Fund.)

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

From 30 MHz to 1 GHz

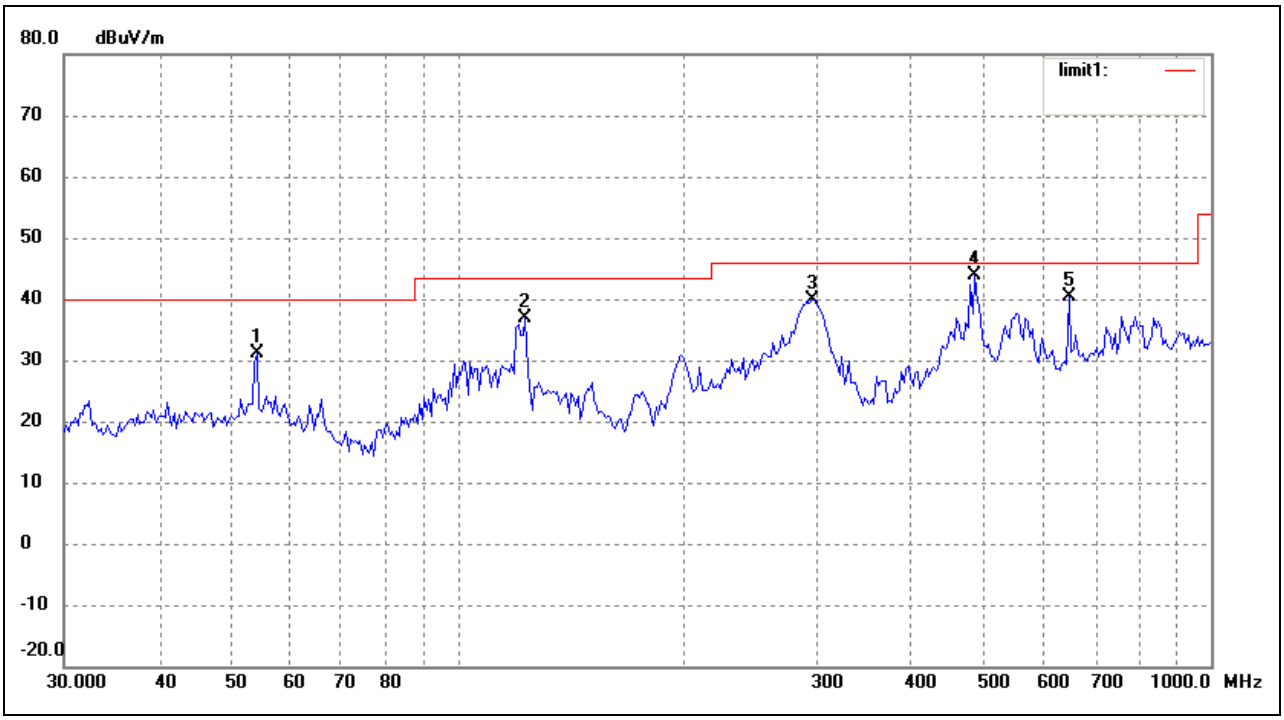
Low Channel Tx

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	166.0680	35.85	3.93	39.78	43.50	-3.72	21	200	QP
2	191.0738	35.38	5.66	41.04	43.50	-2.46	329	100	QP
3	297.2241	36.07	8.62	44.69	46.00	-1.31	34	100	QP
4	485.6093	31.02	11.41	42.43	46.00	-3.57	250	100	QP
5	647.3856	30.17	14.33	44.50	46.00	-1.50	60	200	QP
6	724.2611	30.09	14.74	44.83	46.00	-1.17	102	100	QP

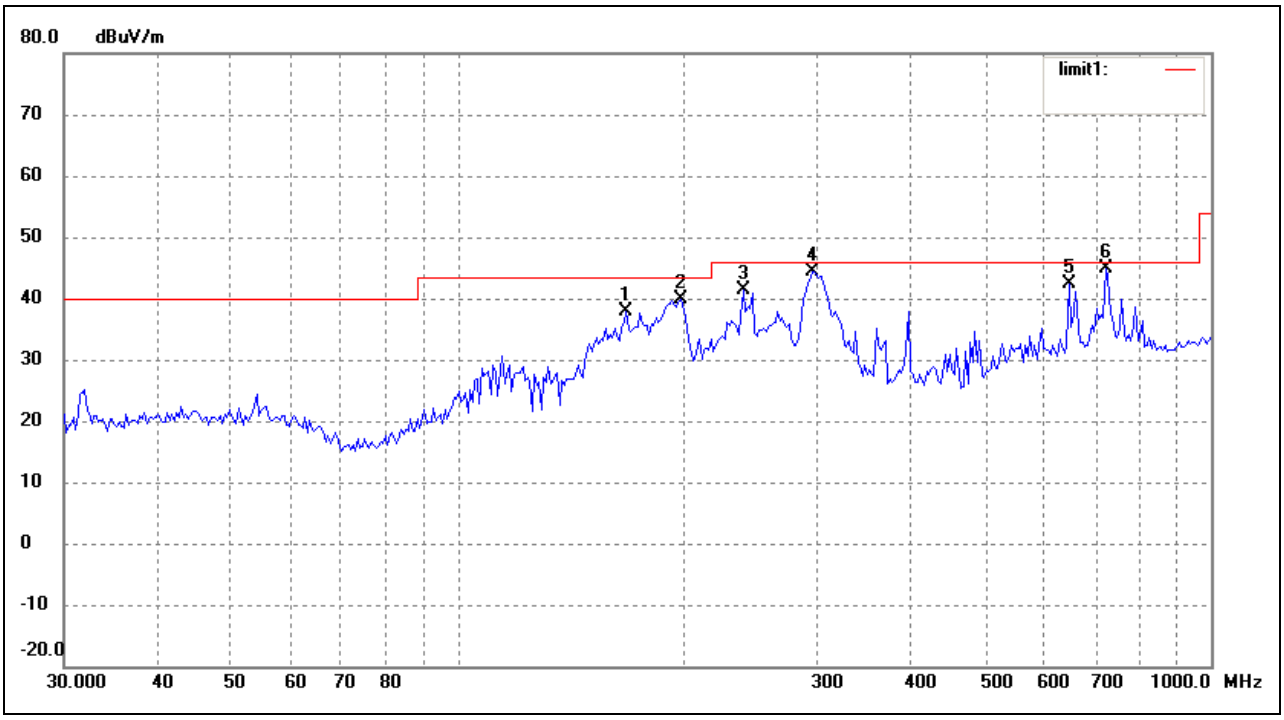
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	54.0711	23.53	7.50	31.03	40.00	-8.97	87	200	QP
2	122.8340	32.09	4.87	36.96	43.50	-6.54	68	100	QP
3	295.1469	31.27	8.60	39.87	46.00	-6.13	52	100	QP
4	485.6093	32.31	11.55	43.86	46.00	-2.14	359	100	QP
5	647.3856	25.99	14.33	40.32	46.00	-5.68	46	200	QP

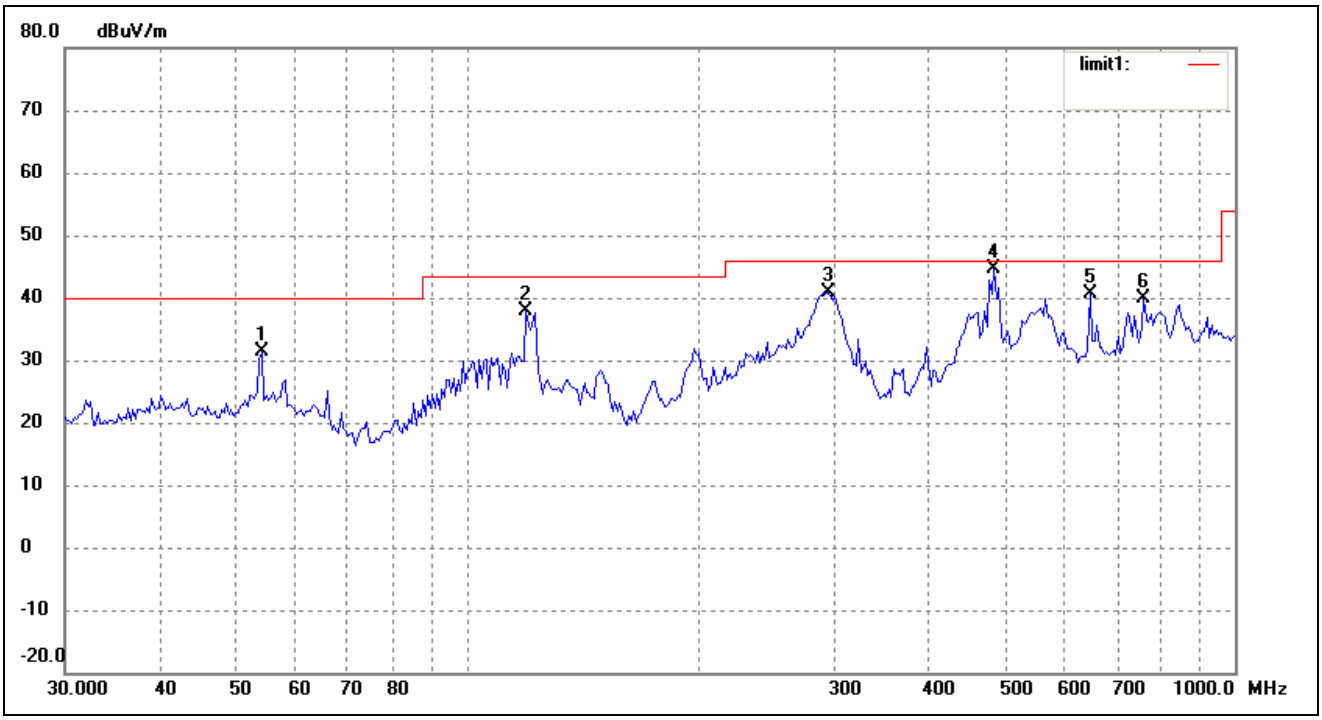
Middle Channel Tx

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	167.2368	33.88	3.97	37.85	43.50	-5.65	25	100	QP
2	197.8928	34.27	5.68	39.95	43.50	-3.55	11	100	QP
3	239.1473	34.09	7.39	41.48	46.00	-4.52	36	100	QP
4	295.1469	35.79	8.60	44.39	46.00	-1.61	0	100	QP
5	647.3856	27.99	14.33	42.32	46.00	-3.68	360	100	QP
6	724.2611	30.08	14.74	44.82	46.00	-1.18	25	100	QP

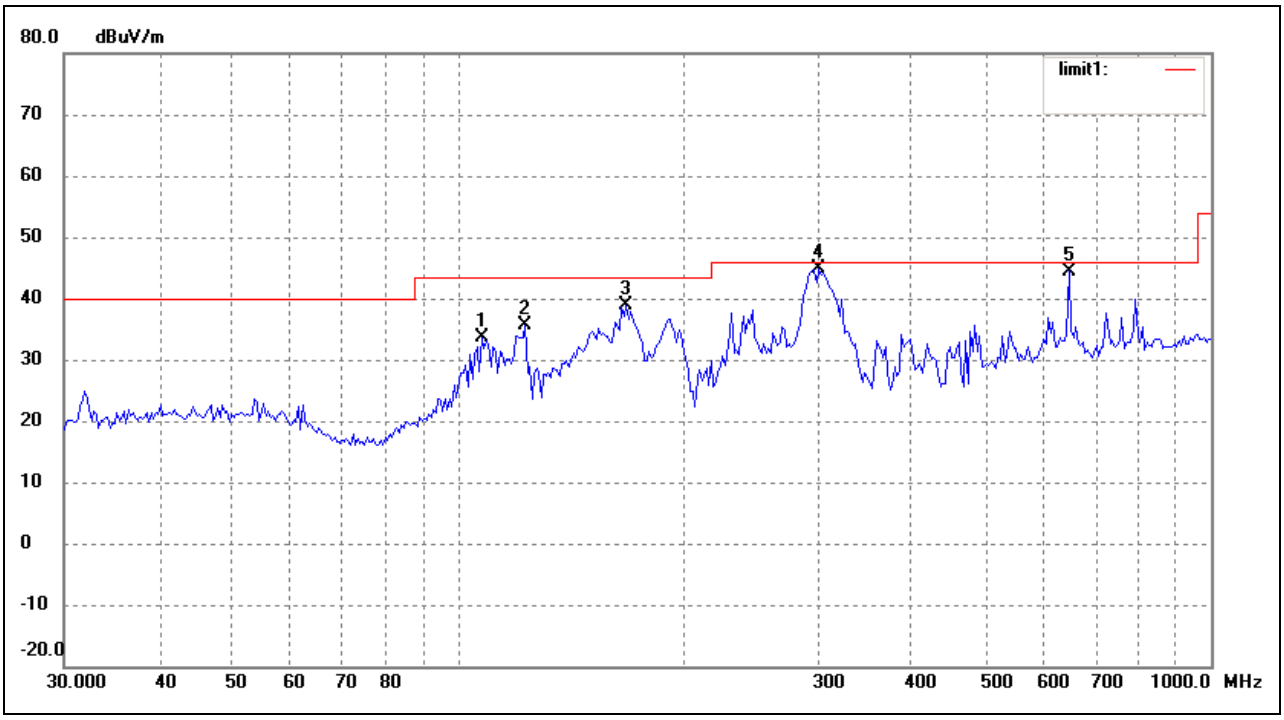
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	54.0711	23.82	7.50	31.32	40.00	-8.68	36	100	QP
2	119.4361	32.50	5.36	37.86	43.50	-5.64	22	100	QP
3	295.1469	32.33	8.60	40.93	46.00	-5.07	41	100	QP
4	485.6093	33.18	11.55	44.73	46.00	-1.27	25	100	QP
5	647.3856	26.37	14.33	40.70	46.00	-5.30	66	100	QP
6	760.7036	24.69	15.12	39.81	46.00	-6.19	57	100	QP

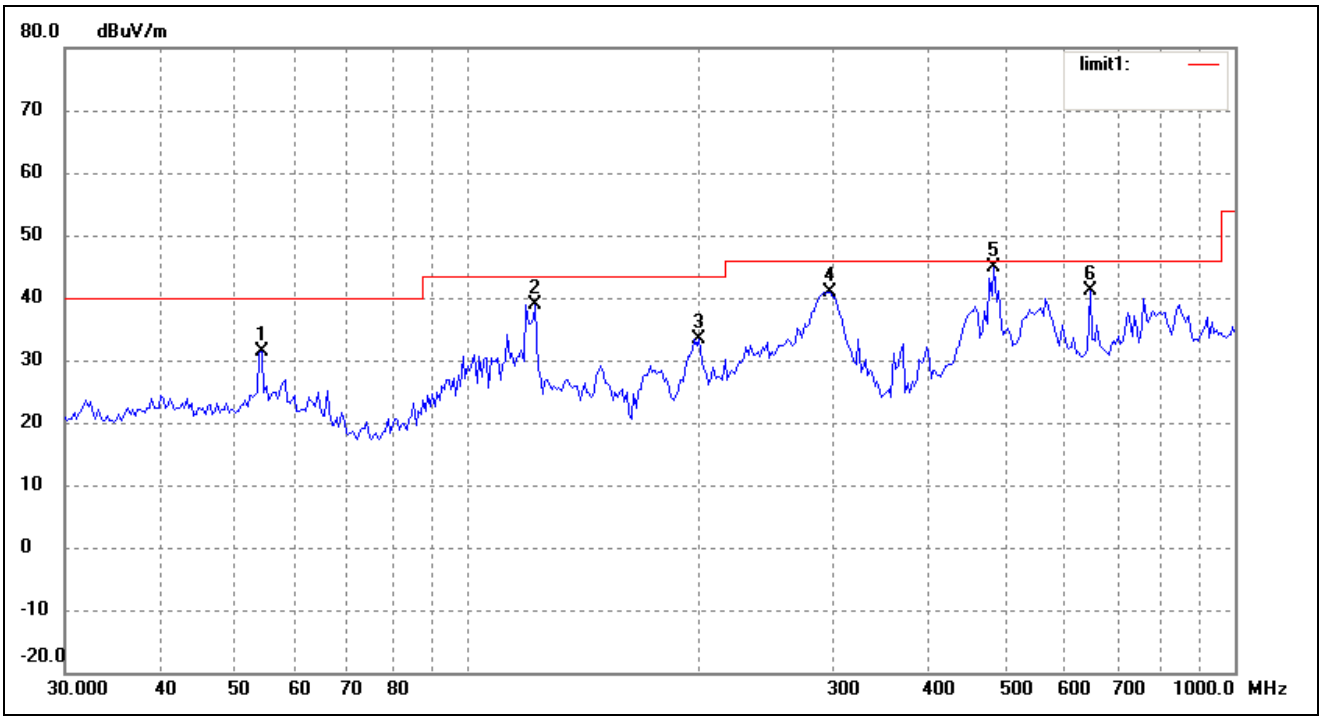
High Channel Tx

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	107.5101	26.37	7.16	33.53	43.50	-9.97	221	200	QP
2	122.8340	30.75	4.87	35.62	43.50	-7.88	129	100	QP
3	167.2368	34.86	3.97	38.83	43.50	-4.67	314	100	QP
4	301.4224	36.23	8.66	44.89	46.00	-1.11	60	100	QP
5	647.3856	30.17	14.33	44.50	46.00	-1.50	60	200	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	54.0711	23.82	7.50	31.32	40.00	-8.68	21	200	QP
2	122.8340	34.09	4.87	38.96	43.50	-4.54	102	100	QP
3	200.6881	27.62	5.70	33.32	43.50	-10.18	111	100	QP
4	297.2241	32.31	8.62	40.93	46.00	-5.07	250	100	QP
5	485.6093	33.31	11.55	44.86	46.00	-1.14	163	200	QP
6	647.3856	26.71	14.33	41.04	46.00	-4.96	120	100	QP

9. OUT OF BAND EMISSIONS

9.1 Standard Applicable

According to §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-08-12	2010-08-11
Positioning Controller	C&C	CC-C-1F	N/A	2009-08-12	2010-08-11
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-21	2010-07-20
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-21	2010-07-20
RF Switch	EM	EMSW18	SW060023	2009-08-12	2010-08-11
Amplifier	Agilent	8447F	3113A06717	2009-08-12	2010-08-11
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-08-12	2010-08-11
Spectrum Analyzer	Rohde & Schwarz	FSP	N/A	2010-04-16	2011-04-15

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

9.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW, VBW=100KHz, Span=100MHz, Sweep = auto
3. Set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2438.5MHz, then mark the higher-level emission for comparing with the FCC rules.

9.4 Environmental Conditions

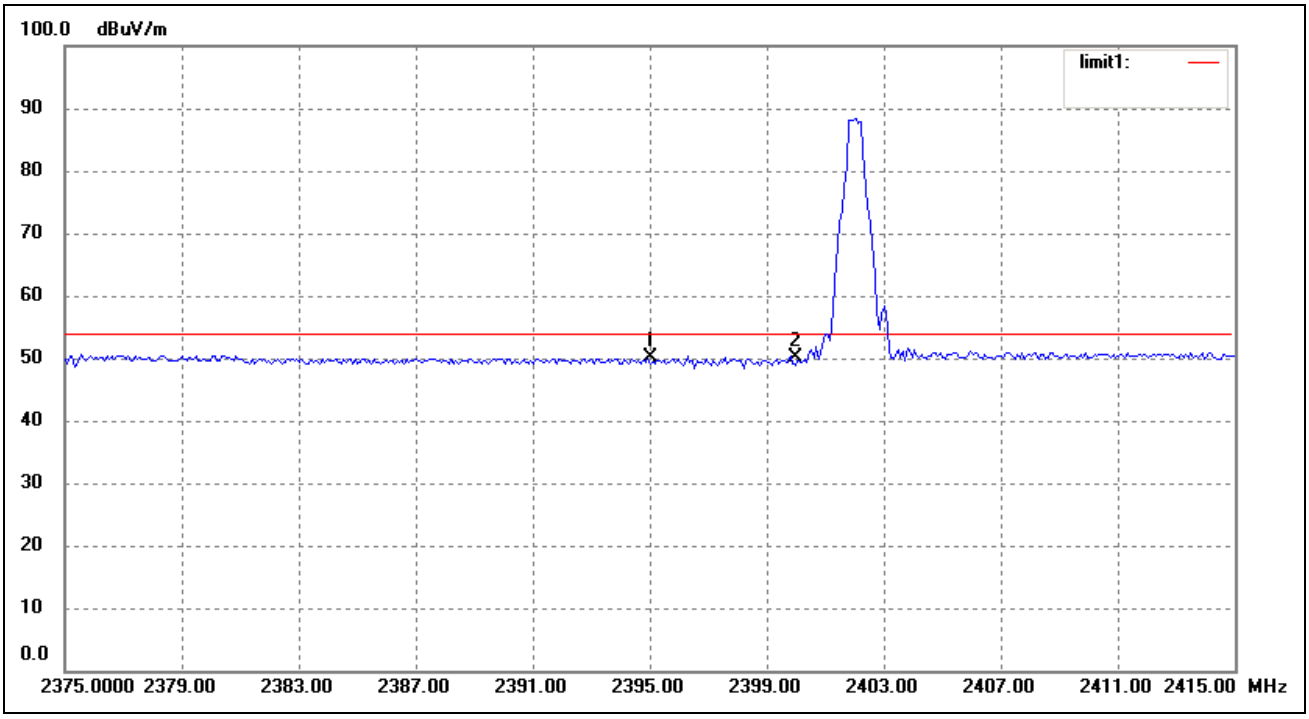
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Frequency MHz	Limit dB	Result
Low Edge	<54dBuv	Pass
High Edge	<54dBuv	Pass

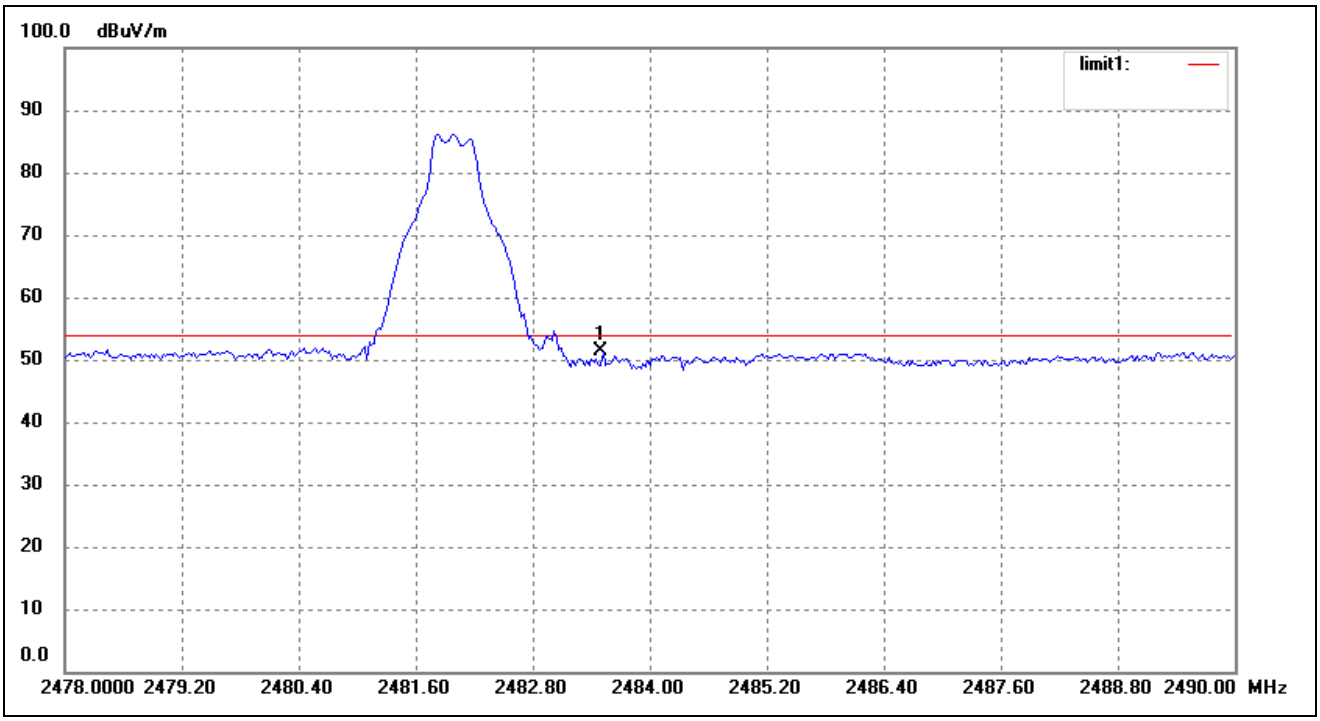
The edge emissions are below the FCC 15.209 Limits. Please refer to the test plots below.

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2395.000	15.53	34.64	50.17	54.00	-3.83	Average Detector
	2395.000	15.53	34.64	58.46	54.00	-15.54	Peak Detector
2	2400.000	15.47	34.68	50.15	54.00	-3.85	Average Detector
	2400.000	21.05	32.68	58.73	74.00	-15.25	Peak Detector

Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.49	34.97	51.46	54.00	-2.54	Average Detector
	2483.500	19.40	32.97	57.47	74.00	-16.53	Peak Detector

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