ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART B &C REQUIREMENT

OF

DIGITAL WIRELESS RECEIVER

MODEL No.: RC460, RC451

BRAND NAME: LYD

FCC ID: XZF-RC460

REPORT NO: KAD110212003E

ISSUE DATE: March 18, 2011

Prepared for

SHENZHEN LYD TECHNOLOGY CO., LTD.
Building A, Cunnan Industrial Estate, Shuidou Laowei, Longhua Town, Bao'an District, Shenzhen, China.

Prepared by

DONGGUAN EMTEK CO., LTD.

No.281, Guantai Road, Nancheng District,
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VERIFICATION OF COMPLIANCE

Applicant:	SHENZHEN LYD TECHNOLOGY CO., LTD. Building A, Cunnan Industrial Estate, Shuidou Laowei, Longhua Town, Bao'an District, Shenzhen, China.
Product Description:	DIGITAL WIRELESS RECEIVER
Brand Name:	LYD
Model Number:	RC460, RC451 (Note: These samples are the same except model number, so we prepare RC460 for EMC test.)
File Number:	KAD110212003E
Date of Test:	February 12, 2011 to March 18, 2011

We hereby certify that:

The above equipment was tested by DONGGUAN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.249.

The test results of this report relate only to the tested sample identified in this report.

Approved By

Sam Lv / Q.A. Manager
DONGGUAN EMTEK CO., LTD.

Table of Contents

1. General Information

1.1 Product Description

The SHENZHEN LYD TECHNOLOGY CO., LTD. Model: RC460 (referred to as the EUT in this report) The EUT is an short range, lower power, DIGITAL WIRELESS RECEIVER designed as an Input Device. It is designed by way of utilizing the FSK modulation achieves the system operating.

A major technical descriptions of EUT is described as following:

A) Operation Frequency: 2402~2480MHz
B) Modulation: FSK
C) Number of Channel: 40
D) Antenna Designation: External Antenna
E) Power Supply: AC100-240V 50/60Hz come from Adapter
Adapter Model: NLA080050W1U
Input: AC 100-240V 50/60Hz 0.2A Max
Output: DC 5V 800mA

Channel frequency:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH01	2402	CH15	2430	CH29	2458
CH02	2404	CH16	2432	CH30	2460
CH03	2406	CH17	2434	CH31	2462
CH04	2408	CH18	2436	CH32	2464
CH05	2410	CH19	2438	CH33	2466
CH06	2412	CH20	2440	CH34	2468
CH07	2414	CH21	2442	CH35	2470
CH08	2416	CH22	2444	CH36	2472
CH09	2418	CH23	2446	CH37	2474
CH10	2420	CH24	2448	CH38	2476
CH11	2422	CH25	2450	CH39	2478
CH12	2424	CH26	2452	CH40	2480
CH13	2426	CH27	2454		
CH14	2428	CH28	2456		

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: XZF-RC460 filing to comply with Section 15.249 of the FCC Part 15, Subpart B and Subpart C Rules, The composite system (receiver) is compliance with Subpart B is authorized under a DoC procedure.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description

EMC Lab. : Accredited by FCC, Nov. 05, 2008
The Certificate Number is 247565.

Accredited by Industry Canada, January 13, 2011
The Certificate Registration Number. is 46405-9444

Name of Firm : DONGGUAN EMTEK CO., LTD

Site Location : No.281, Guantai Road, Nancheng District,
Dongguan, Guangdong, China

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

2.4 Limitation

(1) Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

(2)Radiated Emissions FCC Rule: 15.249(a)

FCC Part 15, Subpart C Section 15.249. The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency(MHz)	Filed Strength of Fundamental(at 3m)		Filed Strength of Harmonics(at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
902-928	114	94	74.0	54.0
2400-2483.5	114	94	74.0	54.0
5725-5875	114	94	74.0	54.0
24000-24250	128	108	88.0	68.0

Radiated Emissions

FCC Rule: 15.249(d)(e)

FCC Part 15, Subpart C Section 15.209 limit of radiated emission for frequency below 1000GHz. The emissions from an intentional radiator shall not exceed the field strength level specified in the following table:

Frequency (MHz)	Field strength μV/m	Distance(m)	Field strength at 3m dBμV/m
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

FCC Part 15, Section 15.35(b) limit of radiated emission for frequency above 1000MHz

Frequency(MHz)	Class A(dBμV/m)(at 3m)		Class B(dBμV/m)(at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

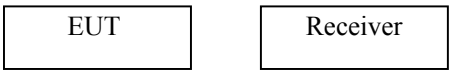


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1.	DIGITAL WIRELESS RECEIVER	LYD	RC460	XZF-RC460	N/A	***EUT***

Note:

(1) Unless otherwise denoted as EUT in『Remark』column , device(s) used in tested system is a support equipment.

3. Summary Of Test Results

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	Compliant
§15.249 (a),(b),(d),(e), §15.209	Radiated Emission	Compliant
§15.249	Band Edge	Compliant
§15.203	Antenna Requirement	Compliant

4. Description of test modes

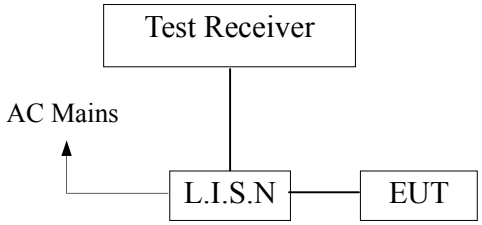
The basic operation modes are:
1. Low Channel: TX 2402MHz
2. Middle Channel: TX 2440MHz
3. High Channel: TX 2480MHz

5. Conducted Emissions Test

5.1 Measurement Procedure:

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.2 Test SET-UP (Block Diagram of Configuration)

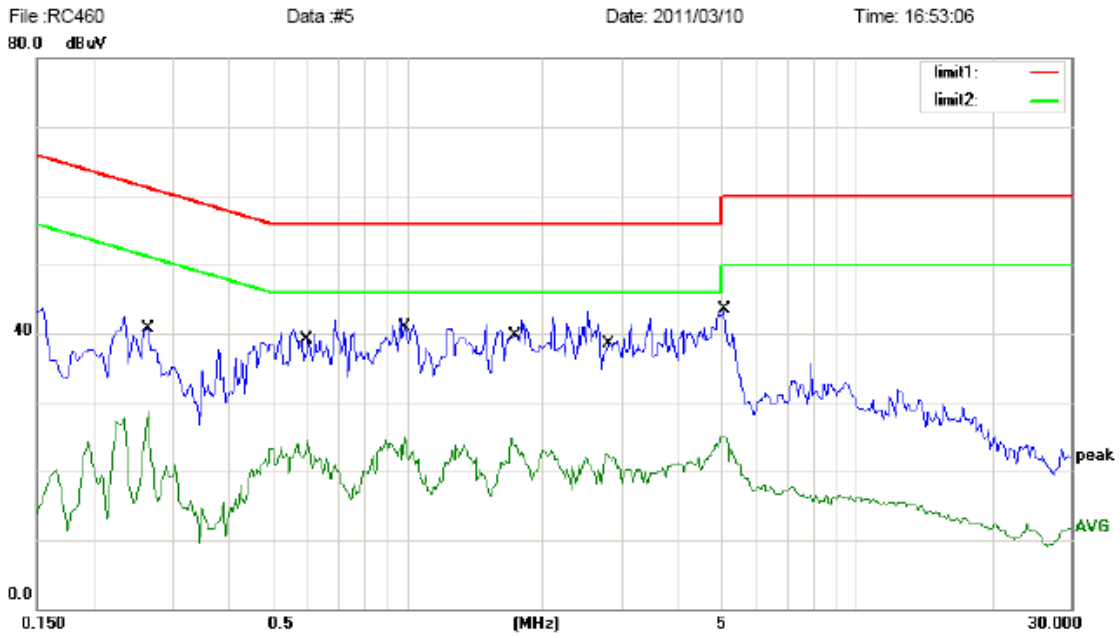


5.3 Measurement Equipment Used:

Conducted Emission Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Test Receiver	Rohde & Schwarz	ESCS30	100018	05/29/2010	05/29/2011
L.I.S.N	Rohde & Schwarz	ESH2-Z6	100253	05/29/2010	05/29/2011
Pulse Limiter	Rohde & Schwarz	EMV216	100017	05/29/2010	05/29/2011
50ΩCoaxial Switch	Anritsu	MP59B	6100175589	05/29/2010	05/29/2011

5.4 Measurement Result:

Conducted Emission Measurement



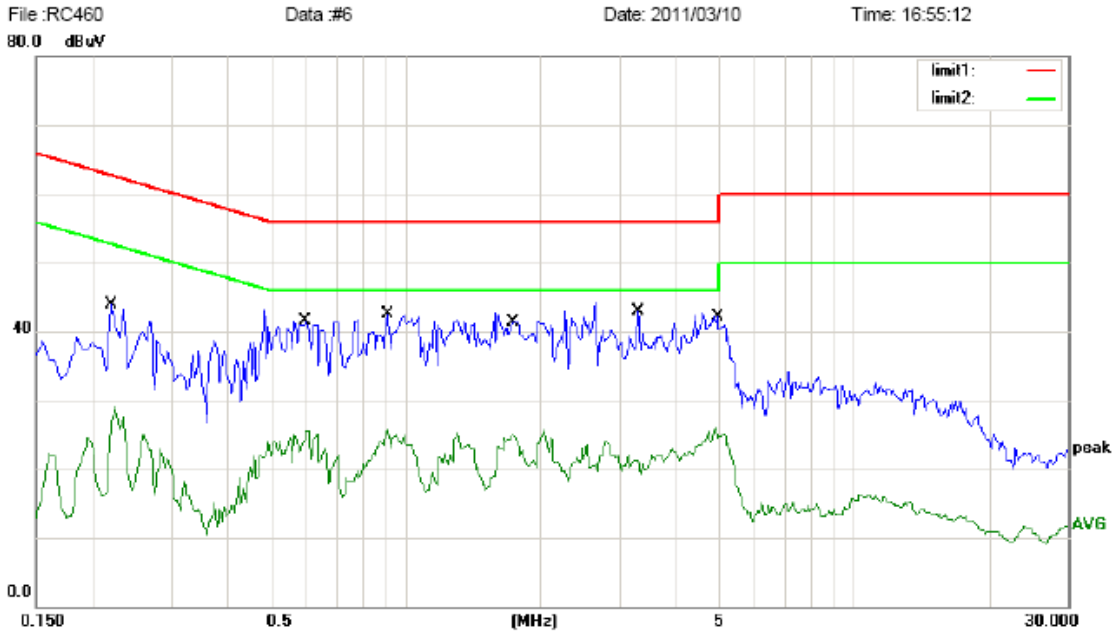
Site site #1 Phase: L1 Temperature: 25
Limit: (CE)FCC PART 15 C_QP Power: AC 120V/60Hz Humidity: 50 %
EUT: DIGITAL WIRELESS RECEIVER
M/N: RC460
Mode: TX
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2650	40.75	0.00	40.75	61.27	-20.52	QP	
2		0.2650	28.73	0.00	28.73	51.27	-22.54	AVG	
3		0.6000	39.90	0.00	39.90	56.00	-16.10	QP	
4		0.6000	24.45	0.00	24.45	46.00	-21.55	AVG	
5	*	0.9850	40.84	0.00	40.84	56.00	-15.16	QP	
6		0.9850	24.96	0.00	24.96	46.00	-21.04	AVG	
7		1.7400	39.71	0.00	39.71	56.00	-16.29	QP	
8		1.7400	24.75	0.00	24.75	46.00	-21.25	AVG	
9		2.7700	38.58	0.00	38.58	56.00	-17.42	QP	
10		2.7700	22.57	0.00	22.57	46.00	-23.43	AVG	
11		5.0750	43.51	0.00	43.51	60.00	-16.49	QP	
12		5.0750	24.97	0.00	24.97	50.00	-25.03	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

File :RC460\Data :#5 *Page: 1*

Conducted Emission Measurement



Site site #1 Phase: N Temperature: 25
Limit: (CE)FCC PART 15 C_QP Power: AC 120V/60Hz Humidity: 50 %
EUT: DIGITAL WIRELESS RECEIVER
M/N: RC460
Mode: TX
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2200	43.84	0.00	43.84	62.82	-18.98	QP	
2		0.2200	29.09	0.00	29.09	52.82	-23.73	AVG	
3		0.6000	41.57	0.00	41.57	56.00	-14.43	QP	
4		0.6000	25.54	0.00	25.54	46.00	-20.46	AVG	
5		0.9100	42.46	0.00	42.46	56.00	-13.54	QP	
6		0.9100	25.77	0.00	25.77	46.00	-20.23	AVG	
7		1.7400	42.64	0.00	42.64	56.00	-13.36	QP	
8		1.7400	24.83	0.00	24.83	46.00	-21.17	AVG	
9	*	3.3000	42.92	0.00	42.92	56.00	-13.08	QP	
10		3.3000	23.52	0.00	23.52	46.00	-22.48	AVG	
11		4.9200	42.08	0.00	42.08	56.00	-13.92	QP	
12		4.9200	26.20	0.00	26.20	46.00	-19.80	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

File :RC460\Data :#6 *Page: 1*

5.5 Conducted Measurement Photos:

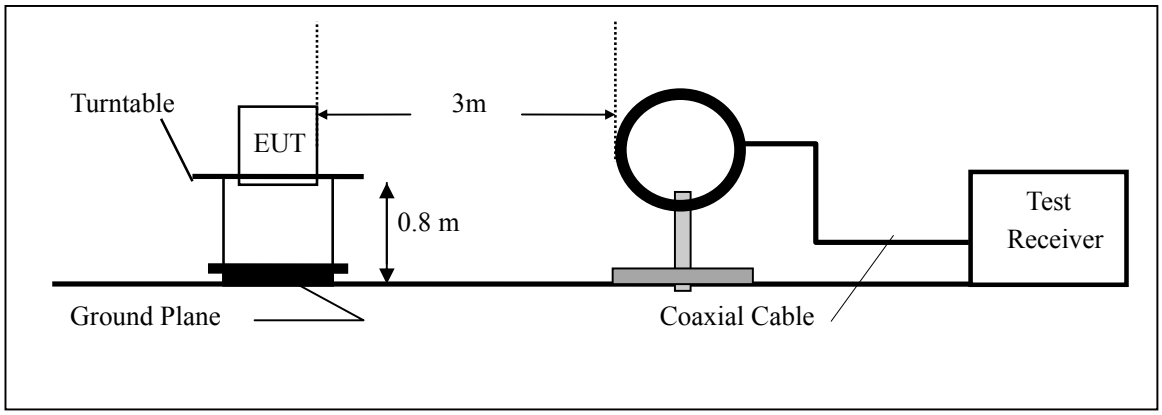
6. Radiated Emission Test

6.1 Measurement Procedure

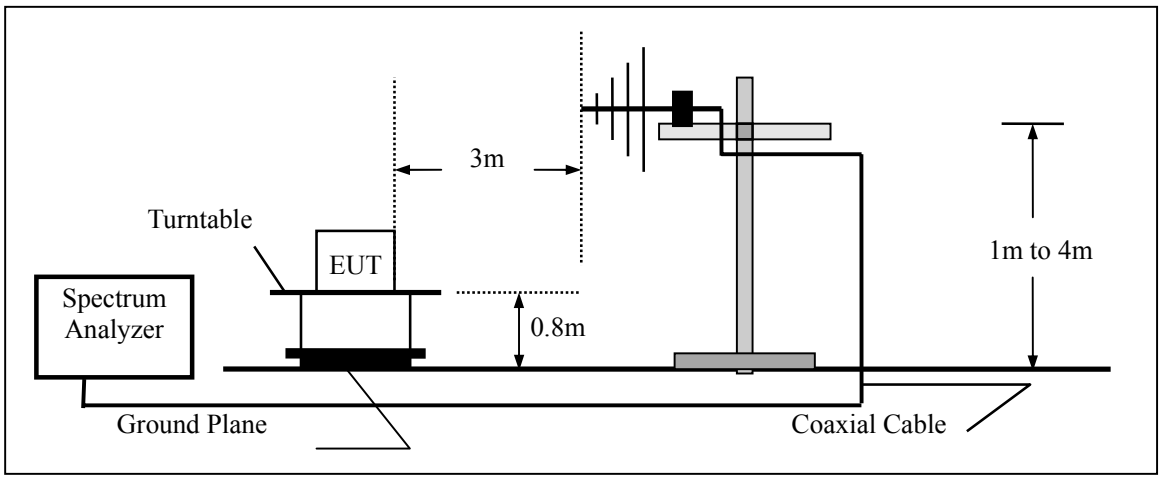
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

6.2 Test SET-UP (Block Diagram of Configuration)

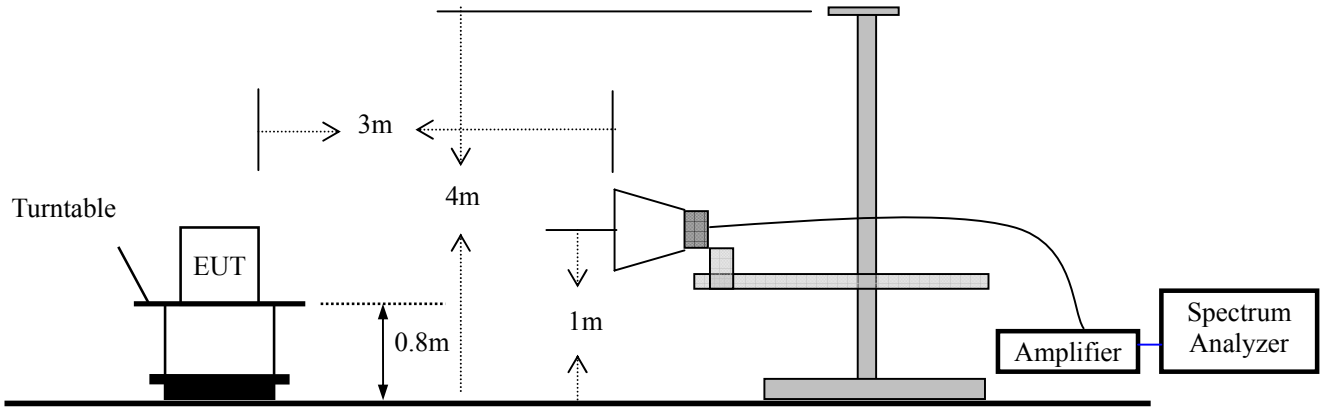
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



6.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSP7	839511/010	05/29/2010	05/29/2011
Spectrum Analyzer	HP	E4407B	839840481	05/29/2010	05/29/2011
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
Pre-Amplifier	HP	8447D	2944A07999	05/29/2010	05/29/2011
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2010	05/29/2011
Loop Antenna	ARA	PLA-1030/B	1029	05/29/2010	05/29/2011
Horn Antenna	Electro-Metrics	EM-6961	103314	05/29/2010	05/29/2011
Horn Antenna	Schwarzbeck	BBHA 9120	D143	05/29/2010	05/29/2011

6.4 Out of Band Radiated Measurement Result

Operation Mode:	TX Mode	Test Date :	March 10, 2011
Frequency Range:	30~1000MHz	Temperature :	23 ℃
Test Result:	PASS	Humidity :	59 %
Measured Distance:	3m	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
53.280	V	30.51	40.00	-9.49	QP
194.900	V	26.94	43.50	-16.56	QP
243.400	V	39.73	46.00	-6.27	QP
259.890	V	42.17	46.00	-3.83	QP
288.020	V	42.09	46.00	-3.91	QP
480.080	V	35.90	46.00	-10.10	QP
55.220	H	22.75	40.00	-17.25	QP
243.890	H	38.98	46.00	-7.02	QP
259.890	H	40.42	46.00	-5.58	QP
288.020	H	39.86	46.00	-6.14	QP
335.550	H	34.28	46.00	-11.72	QP
480.080	H	36.54	46.00	-9.46	QP

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209.

Note: (1) All Readings are QP Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode:	TX (2402MHz)	Test Date :	March 10, 2011
Frequency Range:	1-25GHz	Temperature :	28 ℃
Test Result:	PASS	Humidity :	65 %
Measured Distance:	3m	Test By:	Andy

Freq. (GHz)	Ant.Pol. H/V	Emission Level(dBuV)		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
2.402(F)	V	88.38	85.16	114	94	-25.62	-8.84
4.804	V	63.52	43.63	74	54	-10.48	-10.37
7.206	V	65.39	44.02	74	54	-8.61	-9.98
9.608	V	61.11	43.13	74	54	-12.89	-10.87
12.010	V	62.93	45.97	74	54	-11.07	-8.03
2.402(F)	H	88.40	86.11	114	94	-25.60	-7.89
4.804	H	64.52	44.10	74	54	-9.48	-9.90
7.206	H	63.55	43.68	74	54	-10.45	-10.32
9.608	H	62.61	42.95	74	54	-11.39	-11.05
12.010	H	62.46	45.60	74	54	-11.54	-8.40

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode:	TX(2440MHz)	Test Date :	March 10, 2011
Frequency Range:	1-25GHz	Temperature :	28 ℃
Test Result:	PASS	Humidity :	65 %
Measured Distance:	3m	Test By:	Andy

Freq.	Ant.Pol.	Emission Level(dBuV)		Limit 3m(dBuV/m)		Margin(dB)	
(GHz)	H/V	PK	AV	PK	AV	PK	AV
2.440(F)	V	85.22	82.55	114	94	-28.78	-11.45
4.880	V	63.64	43.47	74	54	-10.36	-10.53
7.320	V	62.08	41.06	74	54	-11.92	-12.94
9.760	V	60.45	40.19	74	54	-13.55	-13.81
12.200	V	61.63	38.52	74	54	-12.37	-15.48
2.440(F)	H	85.82	83.75	114	94	-28.18	-10.25
4.880	H	63.54	44.97	74	54	-10.46	-9.03
7.320	H	62.43	42.06	74	54	-11.57	-11.94
9.760	H	59.21	40.39	74	54	-14.79	-13.61
12.200	H	61.20	38.11	74	54	-12.8	-15.89

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

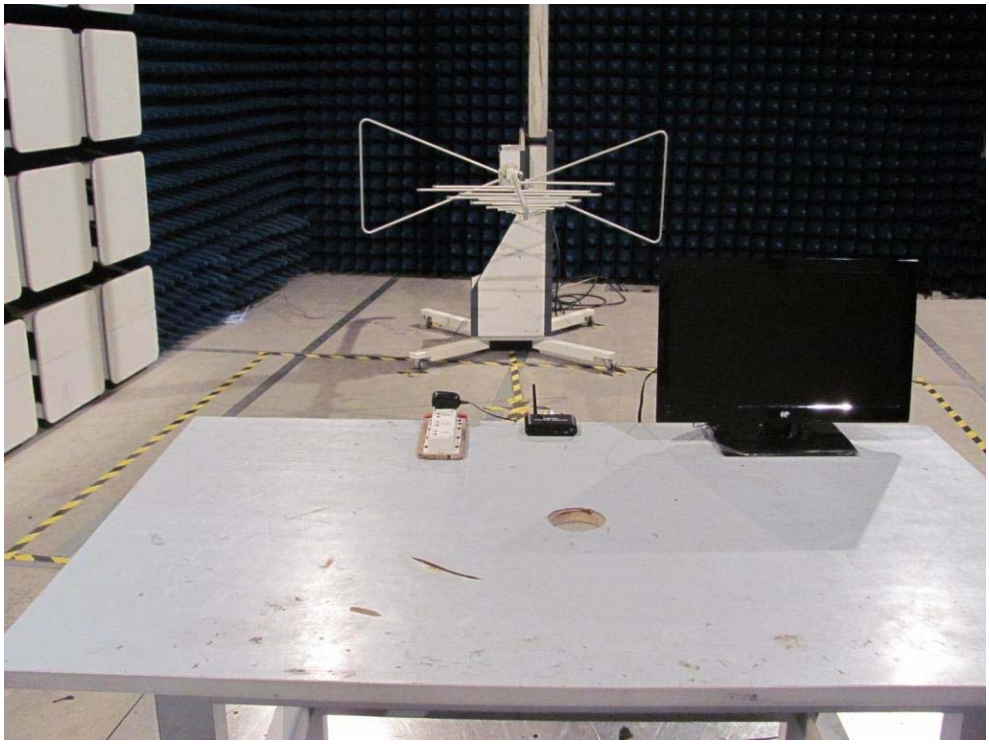
Operation Mode:	TX(2480MHz)	Test Date :	March 10, 2011
Frequency Range:	1-25GHz	Temperature :	28 ℃
Test Result:	PASS	Humidity :	65 %
Measured Distance:	3m	Test By:	Andy

Freq. (GHz)	Ant.Pol. H/V	Emission Level(dBuV)		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
2.480(F)	V	87.06	84.55	114	94	-26.94	-9.45
4.960	V	62.47	41.30	74	54	-11.53	-12.70
7.440	V	63.19	45.69	74	54	-10.81	-8.31
9.920	V	60.21	43.74	74	54	-13.79	-10.26
12.400	V	57.52	41.39	74	54	-16.48	-12.61
2.480(F)	H	87.75	84.14	114	94	-26.25	-9.86
4.960	H	61.14	43.42	74	54	-12.86	-10.58
7.440	H	63.55	45.09	74	54	-10.45	-8.91
9.920	H	61.05	42.35	74	54	-12.95	-11.65
12.400	H	58.43	42.90	74	54	-15.57	-11.10

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

6.5 Radiated Measurement Photos:



7. Band Edge

7.1 Test limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

7.2 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Set SPA Center Frequency=Fundamental frequency, RBW=100KHz, VBW=100KHz.
4. Set SPA Max hold. Mark peak.

7.3 Test SET-UP(Block Diagram of Configuration)

Same as 5.2 Radiated Emission Measurement.

7.4 Measurement Equipment Used:

Same as 5.3 Radiated Emission Measurement.

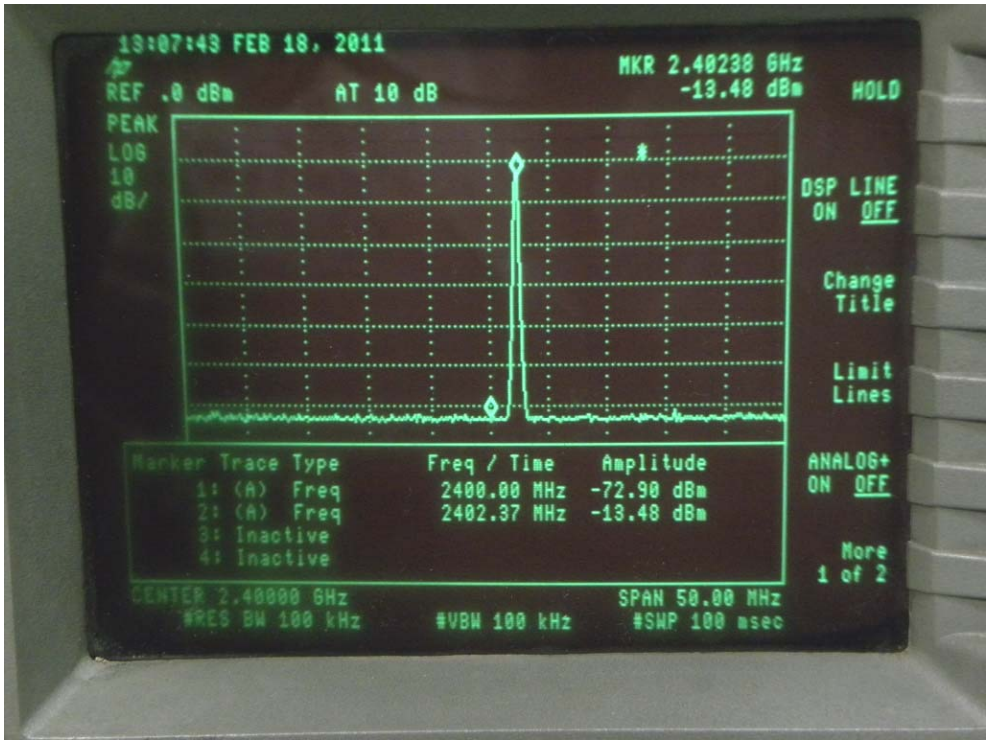
7.5 Measurement Results:

PASS.

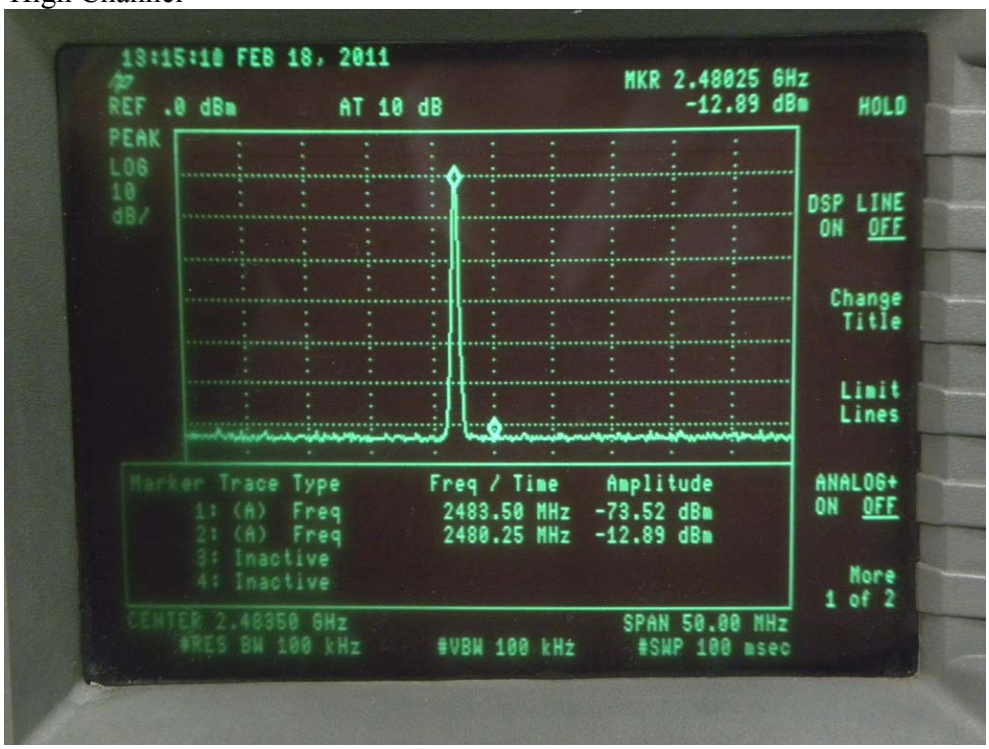
The test plots as following:

Test Data:

Low Channel



High Channel



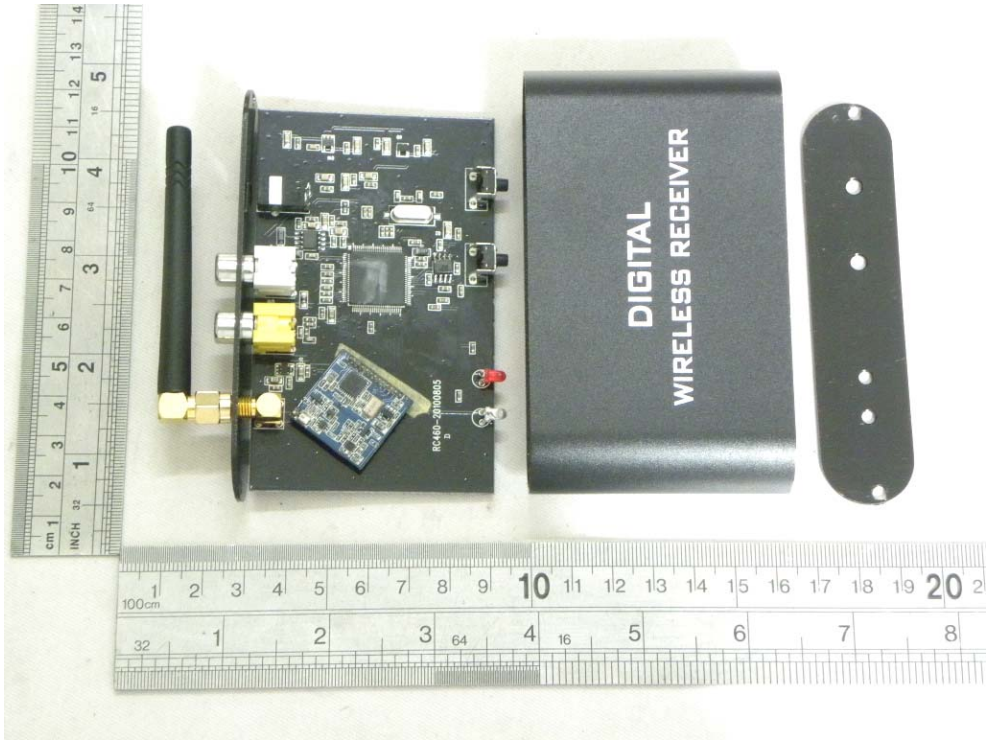
8. Antenna Application

8.1 Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and 15.240.

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by responsible party shall be used with the device.
The EUT's antenna used a whip antenna, this is permanently attached antenna and meets the requirements of this section.

General Appearance of the EUT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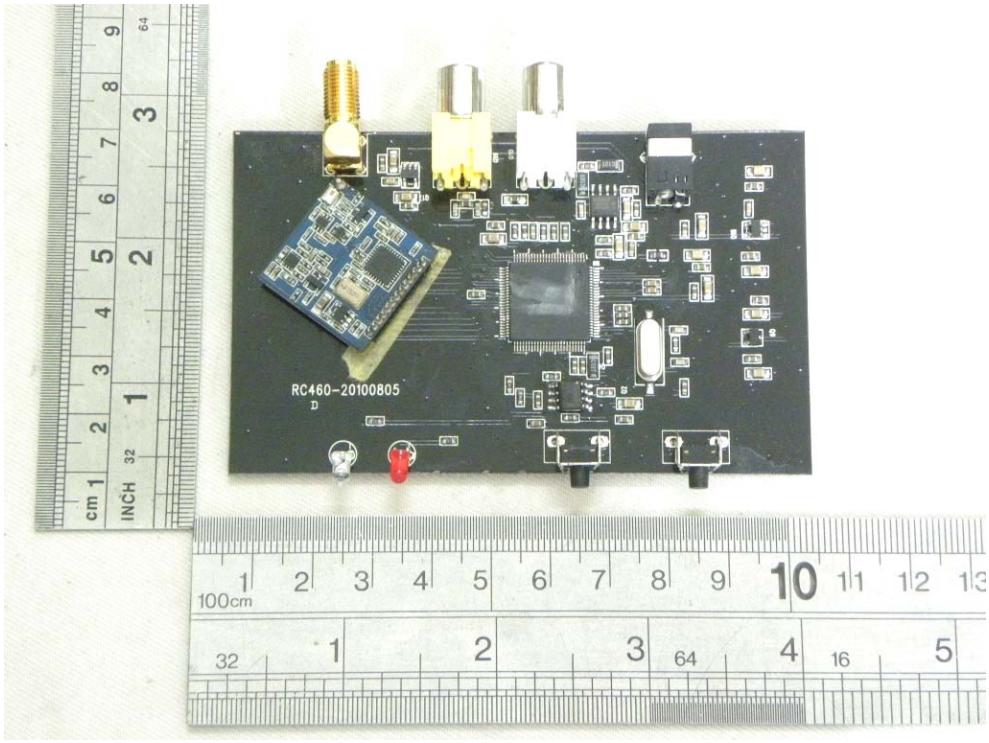
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