

FCC TEST REPORT

for

Peerless-AV

Wireless Audio Distribution System

Model Number: ADS100-A252

FCC ID: 2AAW2ADS100-A252

Prepared for : Peerless-AV
Address : 2300 White Oak Circle, Aurora, IL 60502 USA

Prepared by : Keyway Testing Technology Co., Ltd.
Address : Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

Tel: 86-769-8718 2258
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Report No. : 13KWE09937F
Date of Test : Sept. 10~15, 2013
Date of Report : Sept. 16, 2013

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Keyway Testing Technology Co., Ltd.

Applicant:	Peerless-AV		
Address:	2300 White Oak Circle, Aurora, IL 60502 USA		
Manufacturer:	Integrity Electronic Co., LTD		
Address:	68#Huanghe Road, FengHuangGang, Tangxia Town, Dongguan City, China		
E.U.T:	Wireless Audio Distribution System		
Model Number:	ADS100-A252		
Trade Name:	Peerless	Serial No.:	-----
Date of Receipt:	Aug. 15, 2013	Date of Test:	Sept. 10~15, 2013
Test Specification:	FCC Part 15, Subpart C: Oct. 1, 2012 ANSI C63.4:2009		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: Sept. 16, 2013			
Tested by:	Reviewed by:	Approved by:	
 <hr/> Andy Gao / Engineer	 <hr/> Jade Yang/ Supervisor	 <hr/> Chris Du / Manager	
Other Aspects:	None.		
<i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i>			
<i>This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.</i>			

1.TEST SUMMARY

Test Items	Test Requirement	Uncertainty	Result
Conducted Emissions	15.207 ANSI C63.4	$\pm 2.7\text{dB}$	PASS
Radiated Emissions	15.209 15.249 ANSI C63.4	$\pm 3.6\text{dB}$	PASS
20dB Bandwidth	15.249 ANSI C63.4	$\pm 1\text{kHz}$	PASS
Band Edge Compliance Test	15.249 ANSI C63.4	$\pm 3.6\text{dB}$	PASS
Antenna Requirement	15.203 ANSI C63.4	/	PASS

Note: N/A means not applicable.

2.GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Description	:	Wireless Audio Distribution System
M/N	:	ADS100-A252
Power Supply	:	AC 120V/60Hz
Operation Frequency	:	2406~2474MHz
Channel Number	:	18 Channels
Channel separation:	:	4MHz
Modulation Technology	:	GFSK
Antenna Type	:	integral antenna
Antenna Gain	:	1dBi

2.3. Independent Operation Modes

The basic operation modes are:

2.3.1. EUT work continues TX mode and frequency as below:

Channel	:	Frequency
Low	:	2406MHz
Middle	:	2442MHz
High	:	2474MHz

2.4. Difference between Model Numbers

None.

2.5. Test Supporting System

3. TEST SITES

3.1. Test Facilities

Lab Qualifications : 944 Shielded Room built by ETS-Lindgren, USA
Date of completion: March 28, 2011

966 Chamber built by ETS-Lindgren, USA
Date of completion: March 28, 2011

Certificated by TUV Rheinland, Germany.
Registration No.: UA 50207153
Date of registration: July 13, 2011

Certificated by UL, USA
Registration No.: 100567-237
Date of registration: September 1, 2011

Certificated by Intertek
Registration No.: 2011-RTL-L1-31
Date of registration: October 11, 2011

Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February 21, 2012

Certificated by CNAS China
Registration No.: CNAS L5783
Date of registration: August 8, 2012

Name of Firm : Keyway Testing Technology Co., Ltd.

Site Location : Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

3.2. List of Test and Measurement Instruments

3.2.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	May 9,13	May 9,14
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	May 9,13	May 9,14
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	May 9,13	May 9,14
RF Cable	FUJIKURA	3D-2W	944 Cable	May 9,13	May 9,14

3.2.2. For radiated emission test (Below 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	May 9,13	May 9,14
Bilog Antenna	ETS-LINDGREEN	3142D	135452	May 20,13	May 20,14
Spectrum Analyzer	Agilent	8593E	3911A04271	May 9,13	May 9,14
3m Semi-anechoic Chamber	ETS-LINDGREEN	966	KW01	May 9,13	May 9,14
Signal Amplifier	SONOMA	310	187016	May 9,13	May 9,14
Signal Amplifier	Agilent	8449B	3008A00251	May 9,13	May 9,14
RF Cable	IMRO	IMRO-400	966 Cable 1#	May 9,13	May 9,14
MULTI-DEVICE Controller	ETS-LINDGREEN	2090	126913	N/A	N/A
Antenna Holder	ETS-LINDGREN	2070B	00109601	N/A	N/A

3.2.3. For above 1GHz radiated emission, band edge, 20dB bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	DAZE	ZN30701	11003	May 11,13	May 11,14
Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	May 11,13	May 11,14
Spectrum Analyzer	Agilent	8593E	3911A04271	May 9,13	May 9,14
3m Semi-anechoic Chamber	ETS-LINDGREN	966	KW01	May 9,13	May 9,14
Signal Amplifier	DAZE	ZN3380C	11001	May 9,13	May 9,14
Signal Amplifier	Agilent	8449B	3008A00251	May 9,13	May 9,14
RF Cable	IMRO	IMRO-400	966 Cable 1#	May 9,13	May 9,14
MULTI-DEVICE Controller	ETS-LINDGREN	2090	126913	N/A	N/A
Antenna Holder	ETS-LINDGREN	2070B	00109601	N/A	N/A

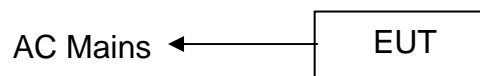
4. TEST SET-UP AND OPERATION MODES

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Wireless Audio Distribution System)

4.3. Test Operation Mode and Test Software

None.

4.4. Special Accessories and Auxiliary Equipment

None.

4.5. Countermeasures to Achieve EMC Compliance

None.

5. EMISSION TEST RESULTS

5.1. Conducted Emission at the Mains Terminals Test

5.1.1. Limit 15.209 limits

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

5.1.2. Test Setup

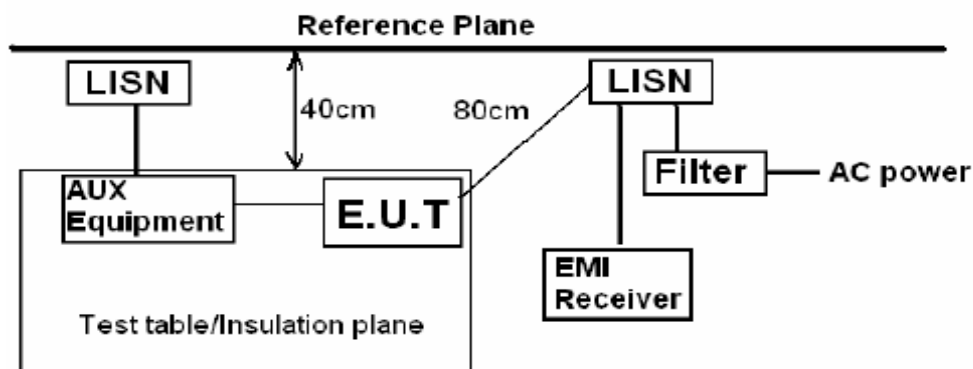
The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 0.8 m, the excess was folded back and forth parallel to the cable at the centre so as to form a bundle no longer than 0.4 m.

The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.

The frequency range from 150 kHz to 30 MHz was investigated.

The bandwidth of the test receiver was set at 9 kHz.

Pretest for all mode, The test data of the worst case condition(s) was reported on the following page.



Remark:

E.U.T: Equipment Under Test

LISN: Line Impedance Stabilization Network

Test table height=0.8m

5.1.3. Test Mode

Set EUT in TX mode.

Test Data



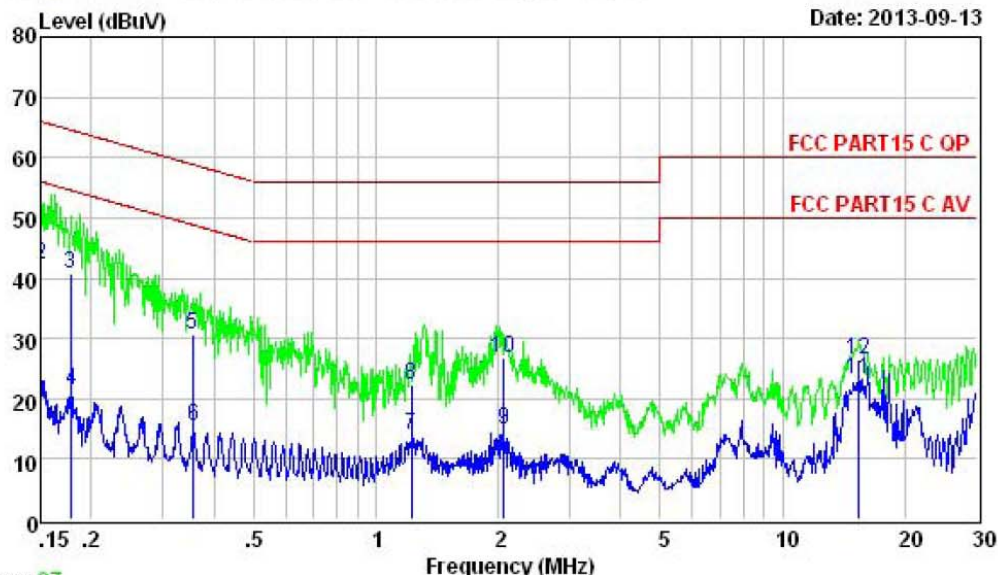
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Data: 28

File: F:\944 Data\conduction\H\Hongyi.EM6 (38)

Date: 2013-09-13



Trace: 27

Site : 944 Shielded Room
Condition : FCC PART15 C QP LINE
EUT : Wireless Audio Distribution System
POWER : AC 120V/60Hz
M/N : ADS100-A252
Test Engineer: Andy
Comment : Temp:24.7';Humi:54%;Press:101.28kPa
Test Mode : TX Mode

			Limit	Over	
	Freq	Level	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.150	25.74	56.00	-30.26	Average
2	0.150	42.20	66.00	-23.80	QP
3	0.178	40.80	64.58	-23.78	QP
4	0.179	21.35	54.55	-33.20	Average
5	0.355	30.60	58.84	-28.24	QP
6	0.356	15.39	48.83	-33.44	Average
7	1.223	13.94	46.00	-32.06	Average
8	1.223	22.30	56.00	-33.70	QP
9	2.066	14.73	46.00	-31.27	Average
10	2.066	26.80	56.00	-29.20	QP
11	15.388	23.18	50.00	-26.82	Average
12	15.388	26.40	60.00	-33.60	QP

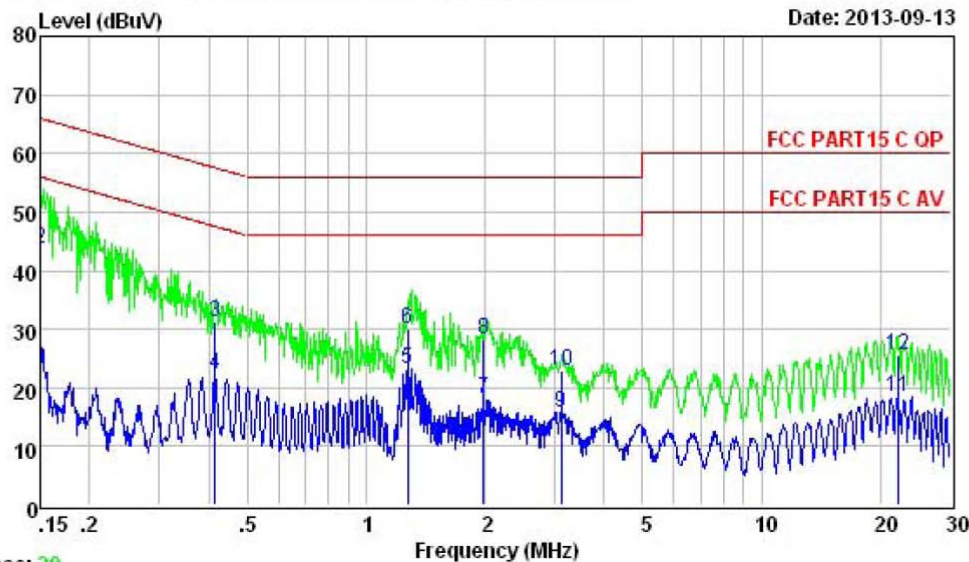


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Data: 30 File: F:\944 Data\conduction\H\Hongyi.EM6 (38)

Date: 2013-09-13



Trace: 29

Site : 944 Shielded Room
Condition : FCC PART15 C QP NEUTRAL
EUT : Wireless Audio Distribution System
POWER : AC 120V/60Hz
M/N : ADS100-A252
Test Engineer: Andy
Comment : Temp:24.7'; Humi:54%; Press:101.28kPa
Test Mode : TX Mode

	Freq	Level	Limit	Over	
	MHz	dBuV	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.150	27.32	56.00	-28.68	Average
2	0.150	43.70	66.00	-22.30	QP
3	0.414	31.10	57.57	-26.47	QP
4	0.415	22.21	47.55	-25.34	Average
5	1.276	23.28	46.00	-22.72	Average
6	1.276	30.10	56.00	-25.90	QP
7	1.980	18.22	46.00	-27.78	Average
8	1.980	28.30	56.00	-27.70	QP
9	3.107	15.76	46.00	-30.24	Average
10	3.107	22.90	56.00	-33.10	QP
11	22.063	18.45	50.00	-31.55	Average
12	22.063	25.60	60.00	-34.40	QP

5.2. Radiated Emission Test

5.2.1. Limit 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

5.2.2. Fundamental and harmonics emission limits

Fundamental Frequency	Field Strength of Fundamental		Field Strength of Harmonics	
	mV/m	dBuV/m	$\mu\text{V}/\text{m}$	dBuV/m
902~928 MHz	50	94	500	54
2400~2483.5 MHz	50	94	500	54
5725~5875MHz	50	94	500	54
24.0~24.25GHz	250	108	2500	68

5.2.3. Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

5.2.4. Test setup

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

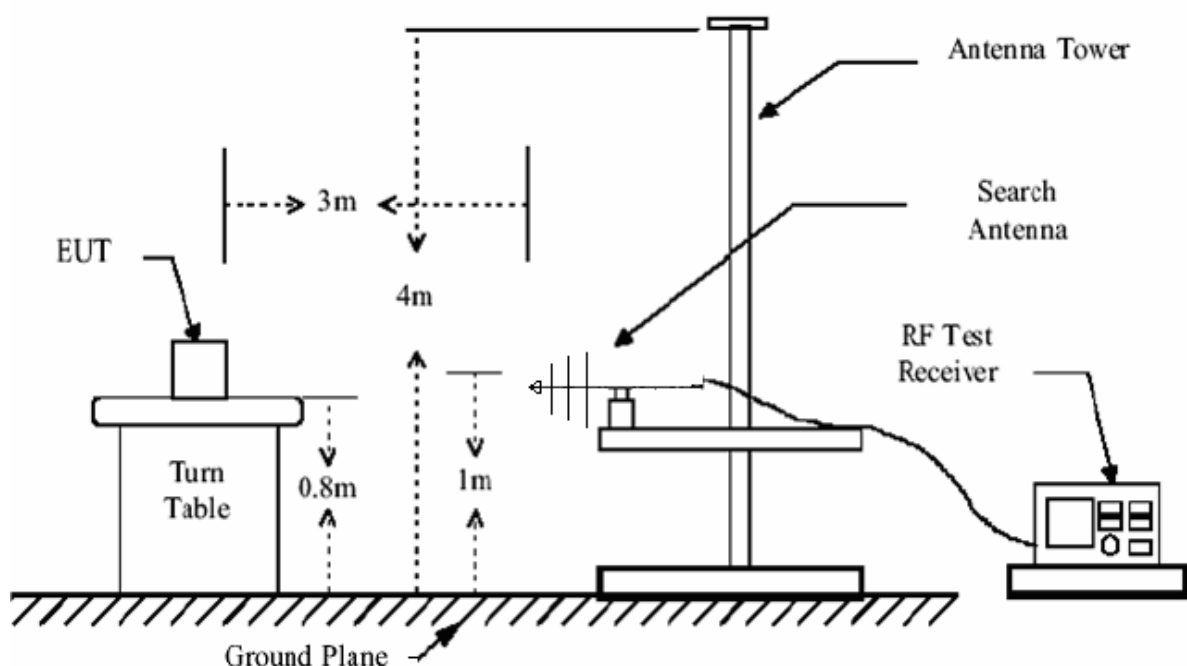
The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

The test data of the worst case condition(s) was reported on the following pages.

Notes: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.

2. Measurement Uncertainty: ± 3.6 dB at a level of confidence of 95%.



Test Data

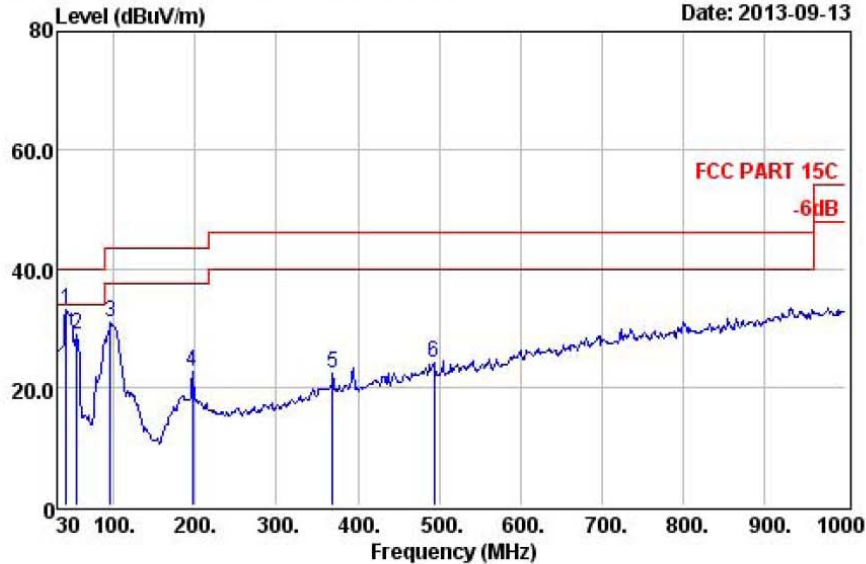


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Data: 86 File: D:\966 data\H\hongyi.EM6 (97)

Date: 2013-09-13



Site : 966 Chamber
Condition: FCC PART 15C 3m 3142D VERTICAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX Mode

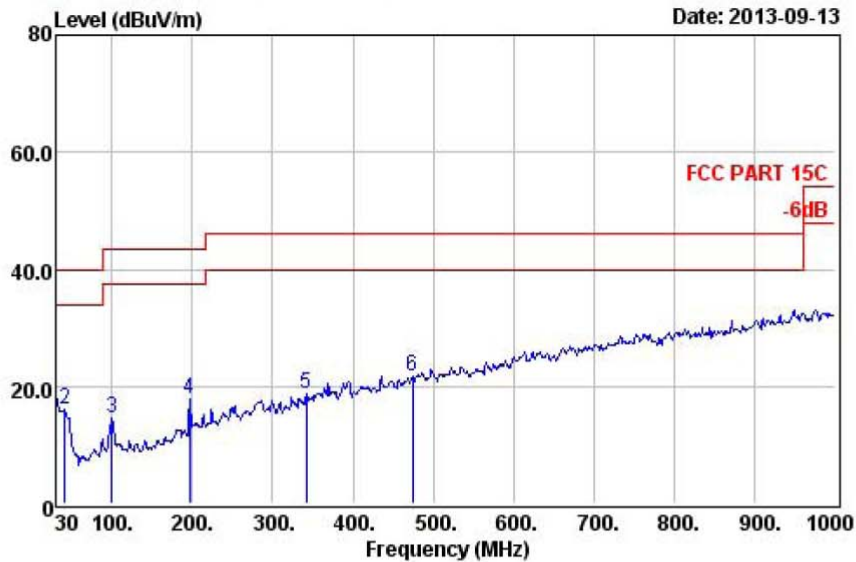
		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	41.64	31.38	51.67	0.56	12.23	33.08	40.00	-6.92	QP
2	54.25	31.37	51.20	0.75	8.16	28.74	40.00	-11.26	QP
3	95.96	31.35	51.88	0.94	9.40	30.87	43.50	-12.63	QP
4	196.84	31.11	41.52	1.46	10.72	22.59	43.50	-20.91	QP
5	369.50	30.62	34.50	2.18	16.16	22.22	46.00	-23.78	QP
6	493.66	30.59	33.43	2.77	18.60	24.21	46.00	-21.79	QP



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Data: 87 File: D:\966 data\Hihongyi.EM6 (97)



Site : 966 Chamber
Condition: FCC PART 15C 3m 3142D HORIZONTAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX Mode

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz		dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	30.00	31.41	32.10	0.56	18.80	20.05	40.00	-19.95	QP
2	41.64	31.38	34.63	0.56	12.23	16.04	40.00	-23.96	QP
3	99.84	31.35	35.28	0.94	9.59	14.46	43.50	-29.04	QP
4	196.84	31.11	36.71	1.46	10.72	17.78	43.50	-25.72	QP
5	342.34	30.70	32.06	2.10	15.19	18.65	46.00	-27.35	QP
6	474.26	30.60	31.47	2.69	18.28	21.84	46.00	-24.16	QP



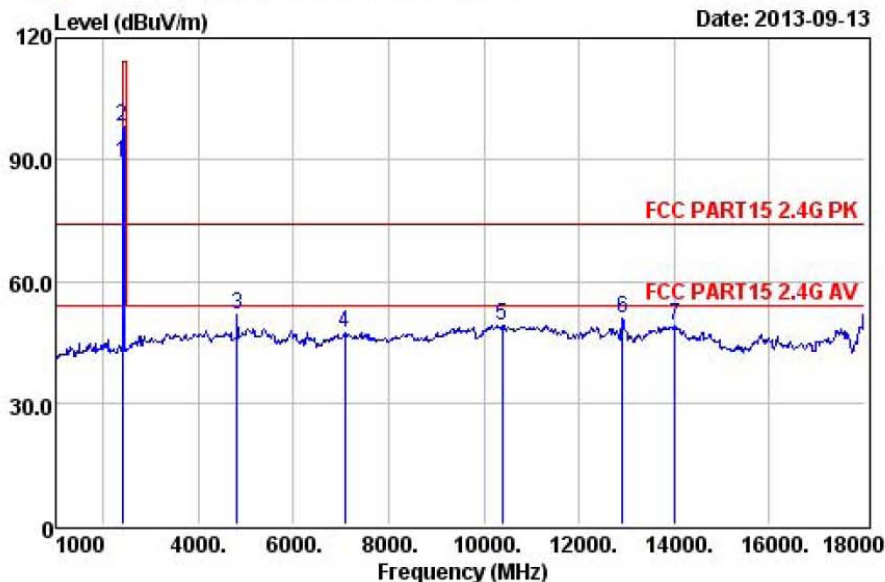
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Data: 80

File: D:\966 data\H\hongyi.EM6 (97)

Date: 2013-09-13



Site : 966 Chamber

Condition: FCC PART15 2.4G PK 3m ZN30701 VERTICAL

EUT : Wireless Audio Distribution System

M/N : ADS100-A252

Power : AC 120V/60Hz

Test By : Andy

Comment : Temp:24.8'C Humi:56% Press:101.52kPa

Test Mode: TX 2406MHz

		Preamp	Read	Cable	Antenna	Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit
	MHz		dB		dB	dB/m	dBuV/m	dB
1	2406.00	26.32	79.36	7.39	28.73	89.16	94.00	-4.84 Average
2	2406.00	26.32	88.56	7.39	28.73	98.36	114.00	-15.64 Peak
3	4812.00	27.49	34.30	12.01	32.94	51.76	74.00	-22.24 Peak
4	7069.00	27.91	21.24	16.60	37.23	47.16	74.00	-26.84 Peak
5	10384.00	28.84	21.94	17.04	39.01	49.15	74.00	-24.85 Peak
6	12917.00	29.18	21.54	18.14	40.50	51.00	74.00	-23.00 Peak
7	14022.00	29.40	15.48	19.38	43.40	48.86	74.00	-25.14 Peak

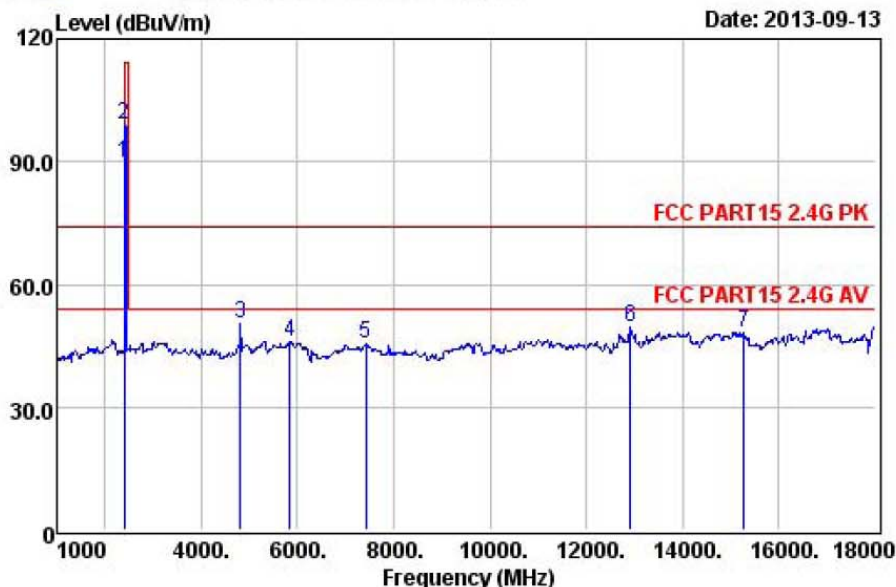


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Data: 81 File: D:\966 data\H\hongyi.EM6 (97)

Date: 2013-09-13



Site : 966 Chamber
Condition: FCC PART15 2.4G PK 3m ZN30701 HORIZONTAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX 2406MHz

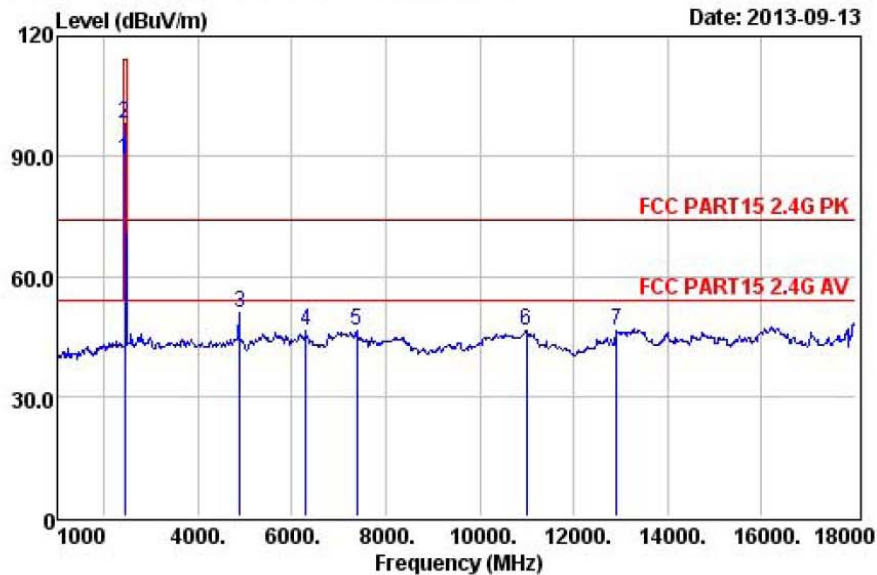
		Preamp	Read	Cable	Antenna	Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB
1	2406.00	26.32	80.07	7.39	28.73	89.87	94.00	-4.13 Average
2	2406.00	26.32	89.03	7.39	28.73	98.83	114.00	-15.17 Peak
3	4812.00	27.49	33.03	12.01	32.94	50.49	74.00	-23.51 Peak
4	5845.00	27.68	23.10	15.75	34.86	46.03	74.00	-27.97 Peak
5	7409.00	27.98	19.28	16.62	37.37	45.29	74.00	-28.71 Peak
6	12917.00	29.18	19.94	18.14	40.50	49.40	74.00	-24.60 Peak
7	15263.00	29.59	19.08	20.17	38.45	48.11	74.00	-25.89 Peak



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Tel: 0769-87182258
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Mail: kwtest@keywaytest.com

Data: 82 File: D:\966 data\H\hongyi.EM6 (97)



Site : 966 Chamber
Condition: FCC PART15 2.4G PK 3m ZN30701 VERTICAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX 2442MHz

		Preamp	Read	Cable&Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB
1	2442.00	26.33	79.46	7.48	28.76	89.37	94.00	-4.63 Average
2	2442.00	26.33	88.13	7.48	28.76	98.04	114.00	-15.96 Peak
3	4884.00	27.53	32.88	12.19	33.11	50.65	74.00	-23.35 Peak
4	6287.00	27.76	22.09	16.60	35.60	46.53	74.00	-27.47 Peak
5	7375.00	27.97	20.26	16.62	37.35	46.26	74.00	-27.74 Peak
6	10996.00	28.90	18.85	17.16	39.50	46.61	74.00	-27.39 Peak
7	12917.00	29.18	16.94	18.14	40.50	46.40	74.00	-27.60 Peak

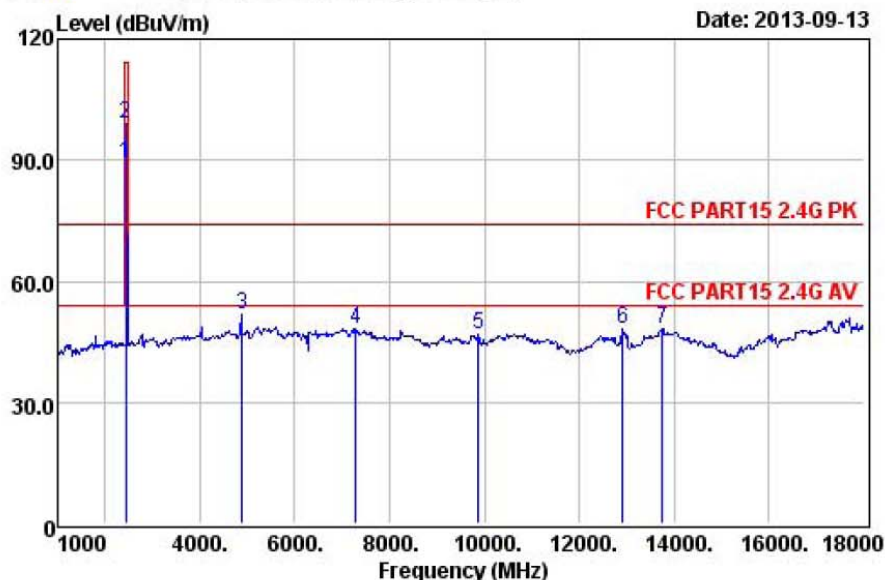


**Keyway
Testing**

Keyway Testing Technology Co., Ltd.
Baishun Industrial Zone, Zhangmutou
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Mail: kwtest@keywaytest.com

Data: 83 File: D:\966 data\H\hongyi.EM6 (97)

Date: 2013-09-13



Site : 966 Chamber
Condition: FCC PART15 2.4G PK 3m ZN30701 HORIZONTAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX 2442MHz

		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	2442.00	26.33	79.18	7.48	28.76	89.09	94.00	-4.91	Average
2	2442.00	26.33	88.97	7.48	28.76	98.88	114.00	-15.12	Peak
3	4884.00	27.53	34.06	12.19	33.11	51.83	74.00	-22.17	Peak
4	7290.00	27.96	22.22	16.61	37.32	48.19	74.00	-25.81	Peak
5	9874.00	28.75	20.16	16.95	38.30	46.66	74.00	-27.34	Peak
6	12917.00	29.18	18.82	18.14	40.50	48.28	74.00	-25.72	Peak
7	13750.00	29.35	15.35	19.08	43.25	48.33	74.00	-25.67	Peak

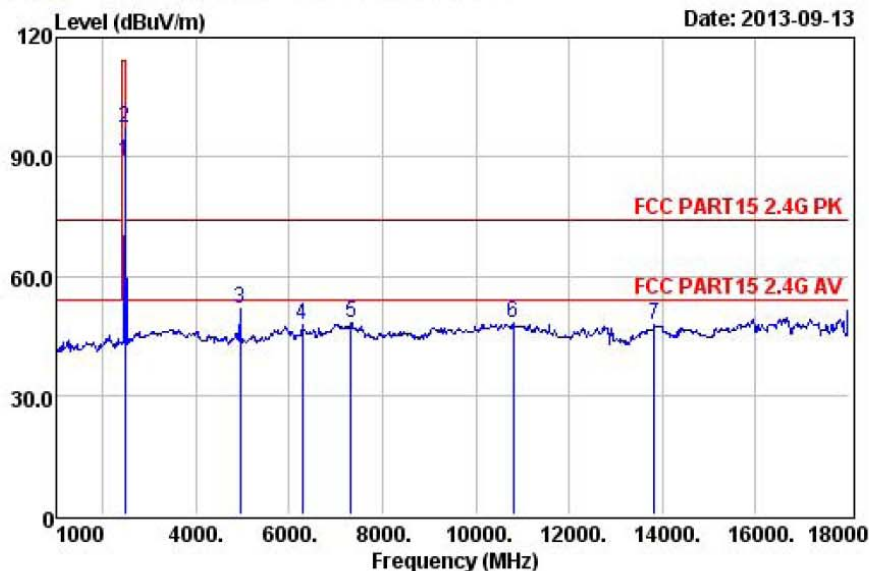


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Data: 84 File: D:\966 data\Hihongyi.EM6 (97)

Date: 2013-09-13



Site : 966 Chamber
Condition: FCC PART15 2.4G PK 3m ZN30701 VERTICAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX 2474MHz

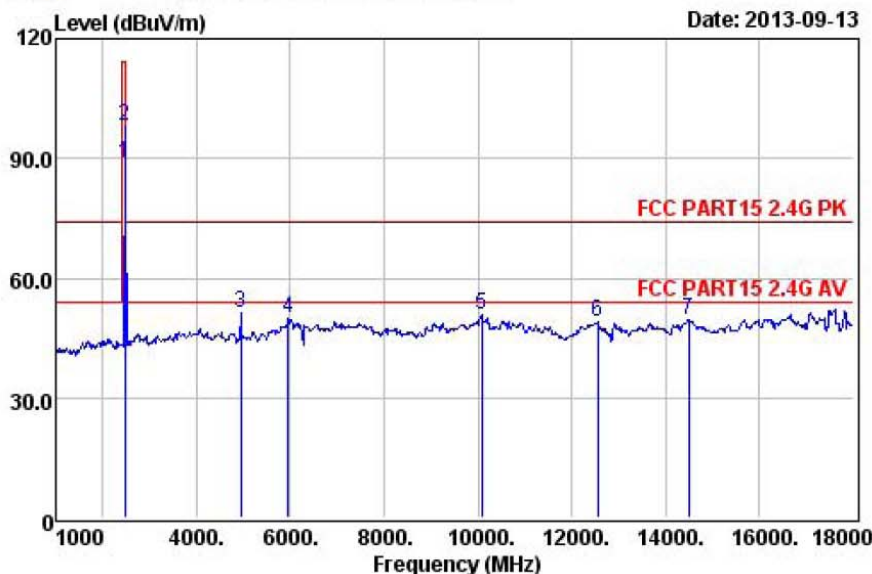
		Preamp	Read	Cable	Antenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	2474.00	26.34	78.81	7.52	28.79	88.78	94.00	-5.22	Average
2	2474.00	26.34	87.23	7.52	28.79	97.20	114.00	-16.80	Peak
3	4948.00	27.57	33.94	12.32	33.28	51.97	74.00	-22.03	Peak
4	6270.00	27.75	23.32	16.60	35.57	47.74	74.00	-26.26	Peak
5	7324.00	27.96	22.25	16.62	37.33	48.24	74.00	-25.76	Peak
6	10809.00	28.88	20.68	17.13	39.39	48.32	74.00	-25.68	Peak
7	13835.00	29.37	14.54	19.16	43.33	47.66	74.00	-26.34	Peak



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Data: 85 File: D:\966 data\Hihongyi.EM6 (97)



Site : 966 Chamber
Condition: FCC PART15 2.4G PK 3m ZN30701 HORIZONTAL
EUT : Wireless Audio Distribution System
M/N : ADS100-A252
Power : AC 120V/60Hz
Test By : Andy
Comment : Temp:24.8'C Humi:56% Press:101.52kPa
Test Mode: TX 2474MHz

		Preamp	Read	CableAntenna		Limit	Over	
	Freq	Factor	Level	Loss	Factor	Level	Line	Limit
	MHz		dB	dB	dB/m	dBuV/m	dBuV/m	dB
1	2474.00	26.34	78.75	7.52	28.79	88.72	94.00	-5.28 Average
2	2474.00	26.34	88.27	7.52	28.79	98.24	114.00	-15.76 Peak
3	4948.00	27.57	33.44	12.32	33.28	51.47	74.00	-22.53 Peak
4	5947.00	27.69	26.27	16.36	35.09	50.03	74.00	-23.97 Peak
5	10078.00	28.81	24.28	16.98	38.53	50.98	74.00	-23.02 Peak
6	12560.00	29.11	20.84	17.84	39.66	49.23	74.00	-24.77 Peak
7	14498.00	29.47	18.92	19.68	40.60	49.73	74.00	-24.27 Peak

6. 20DB OCCUPY BANDWIDTH

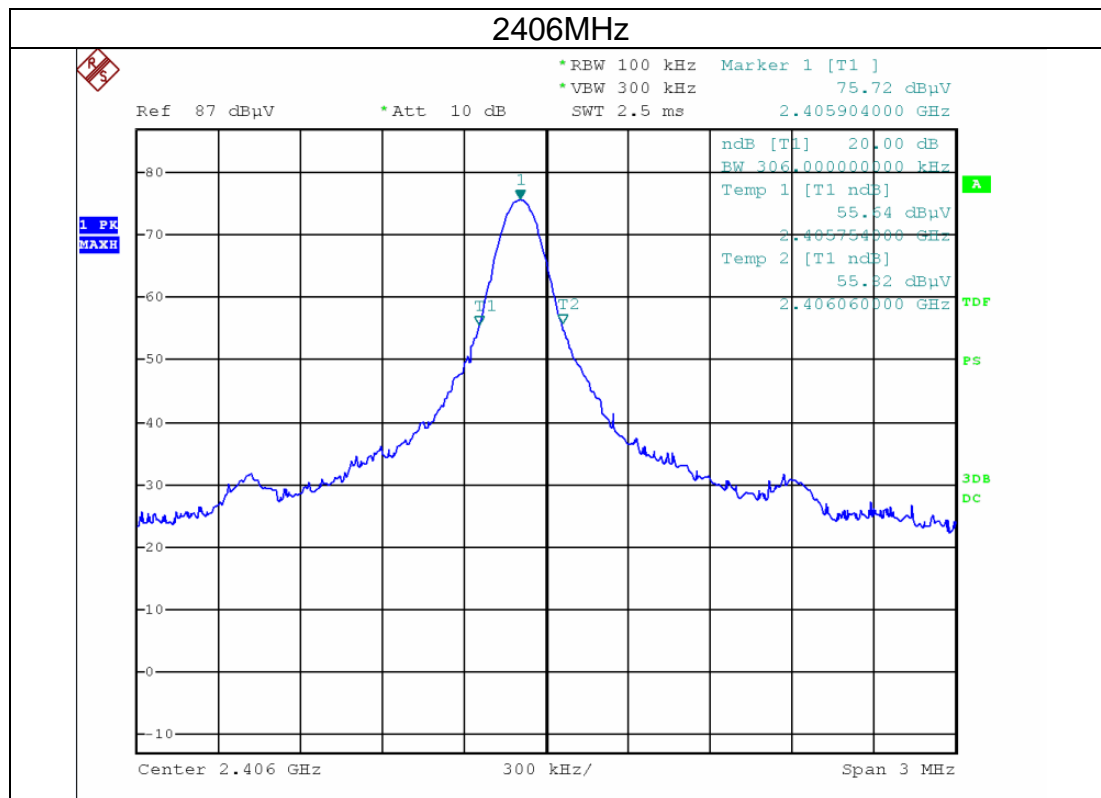
6.1. Limits

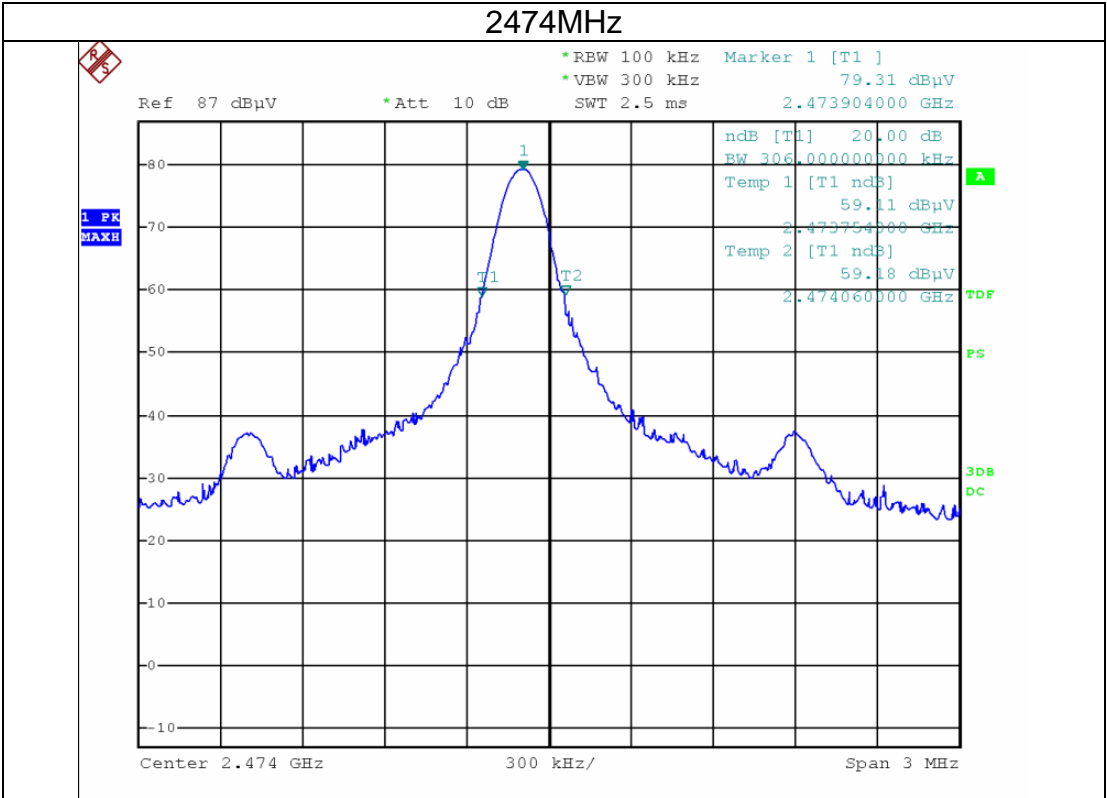
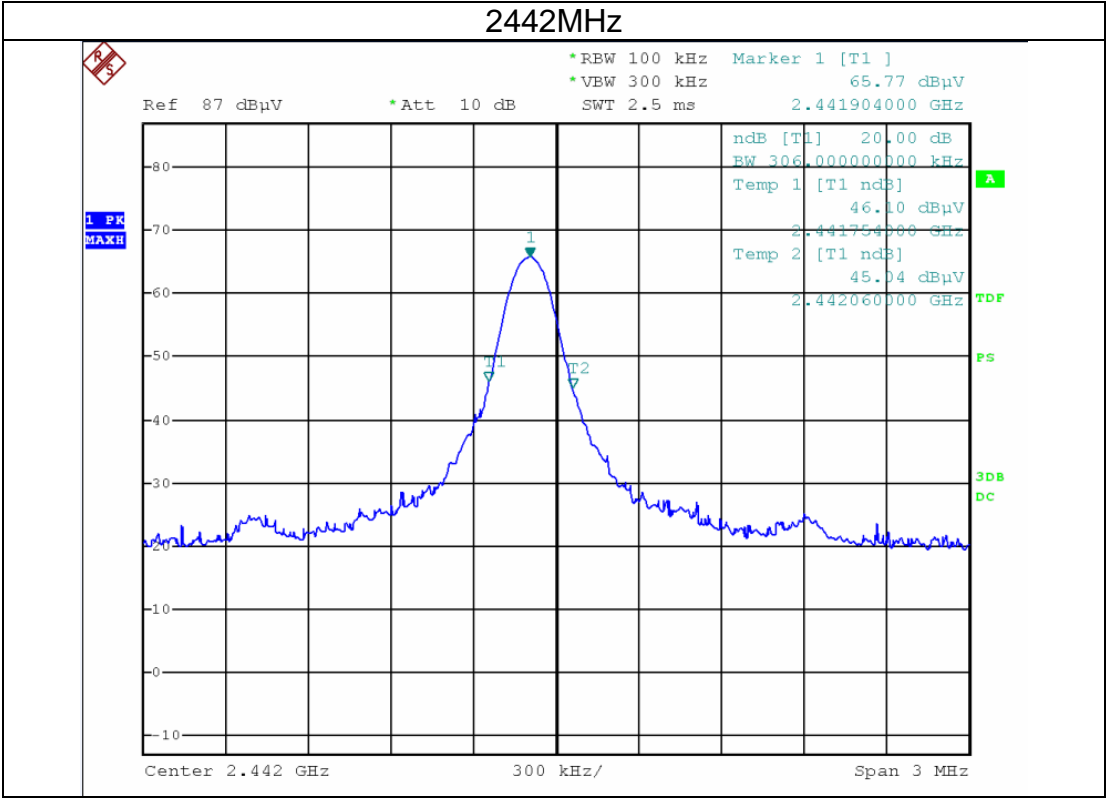
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test data:

Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)
2406	306	N/A
2442	306	N/A
2474	306	N/A

Test plot as follows:





7. BAND EDGE COMPLIANCE TEST

7.1. Limits

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

7.2. Test setup

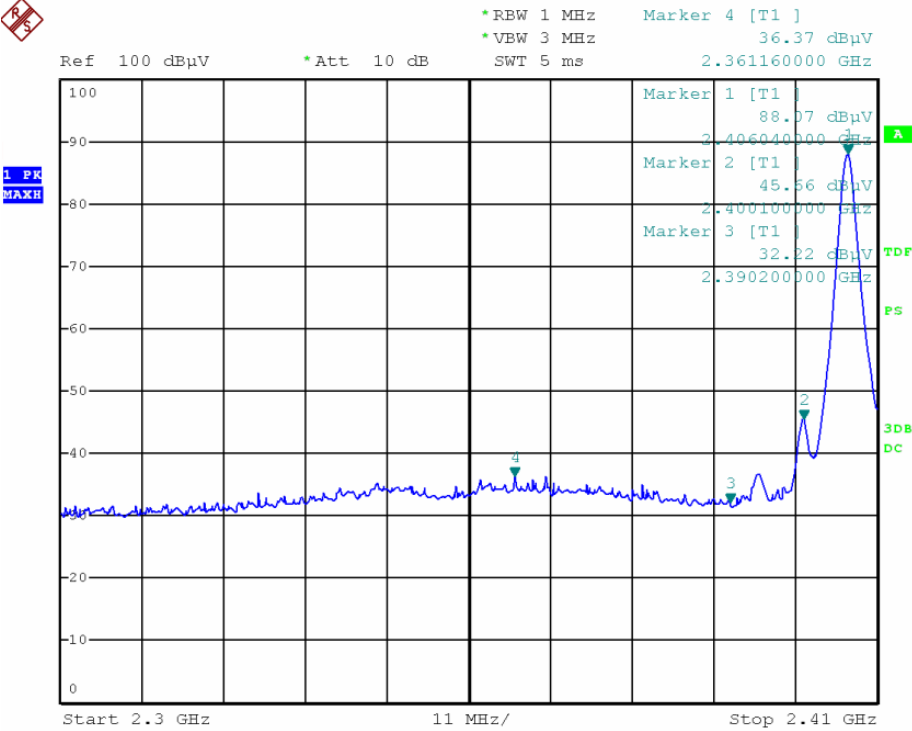
The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure.

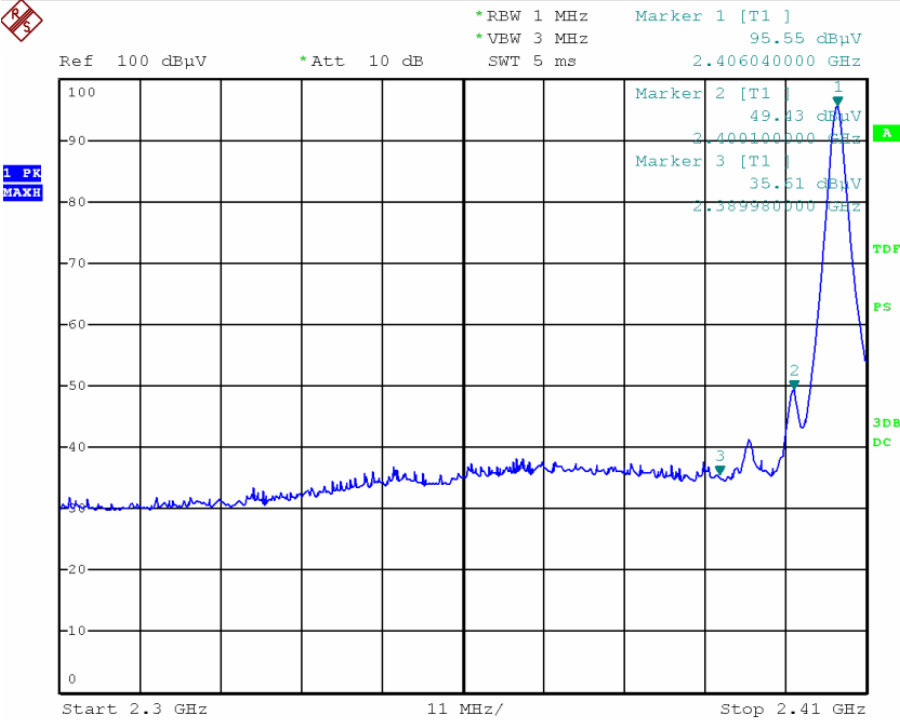
Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

Test plot as follows:

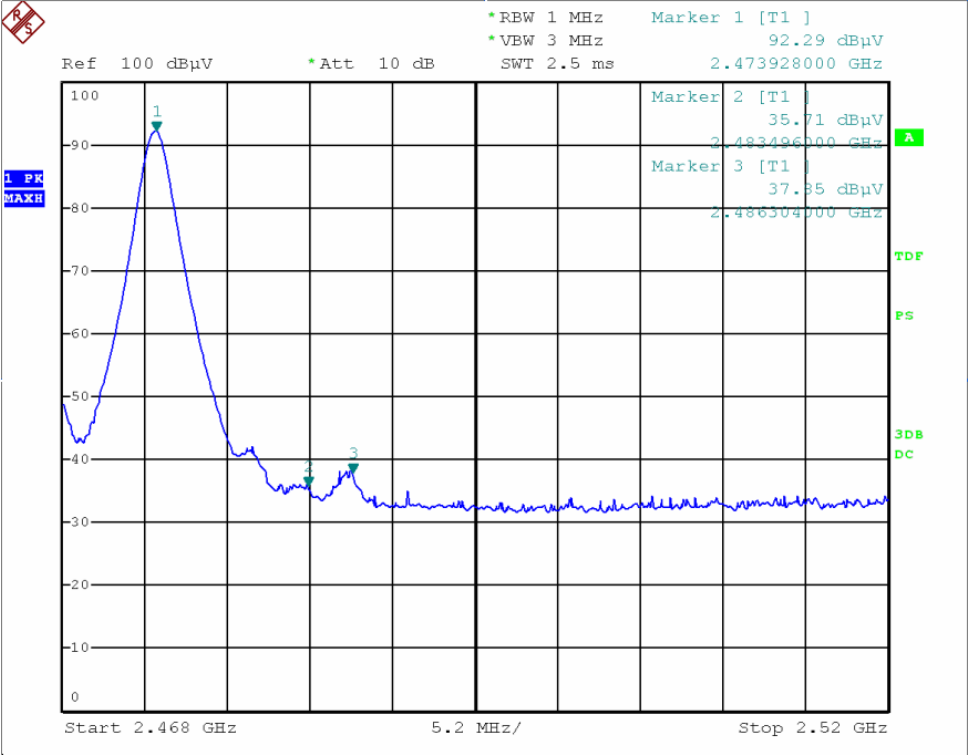
Test mode: 2406MHz
Polarization: VERTICAL



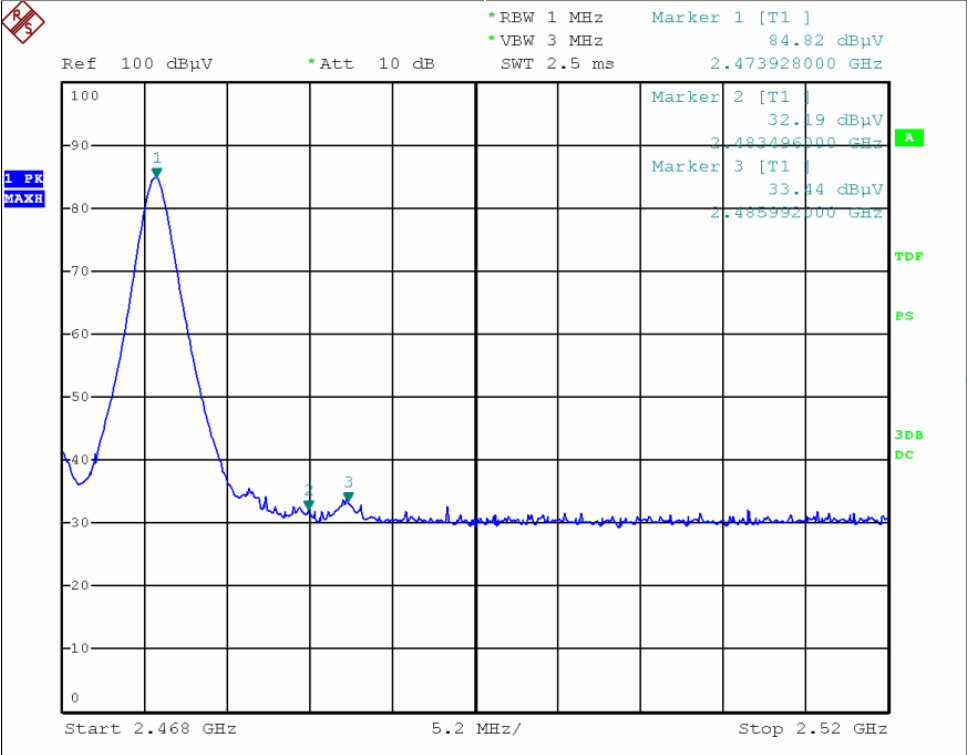
Test mode: 2406MHz
Polarization: HORIZONTAL



Test mode: 2474MHz
Polarization: HORIZONTAL



Test mode: 2474MHz
Polarization: VERTICAL



8. ANTENNA REQUIREMENT:

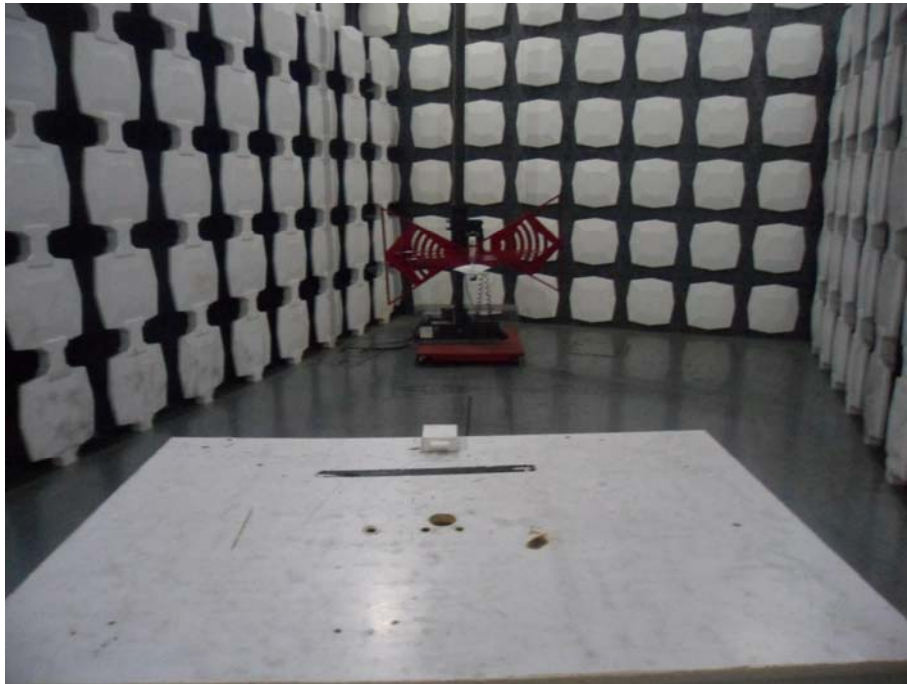
Standard requirement:	FCC Part15 C Section 15.203 /249(c)
<p>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, 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.</p> <p>15.249 requirement: Antenna gain must be at least 33 dBi. Alternatively, the main lobe beamwidth must not exceed 3.5 degrees. The beamwidth limit shall apply to both the azimuth and elevation planes. At antenna gains over 33 dBi or beamwidths narrower than 3.5 degrees, power must be reduced to ensure that the field strength does not exceed 2500 millivolts/meter.</p>	
E.U.T Antenna:	
<p>The antenna is integral antenna, and use reverse screw thread connect antenna. the best case gain of the antenna is 1dBi</p>	

9. PHOTOGRAPHS OF TEST SET-UP

9.1. Set-up for Conducted Emission Test



9.2. Set-up for Radiated Emission Test



10. PHOTOGRAPHS OF THE EUT

Figure 1
General Appearance of the EUT



Figure 2
General Appearance of the EUT

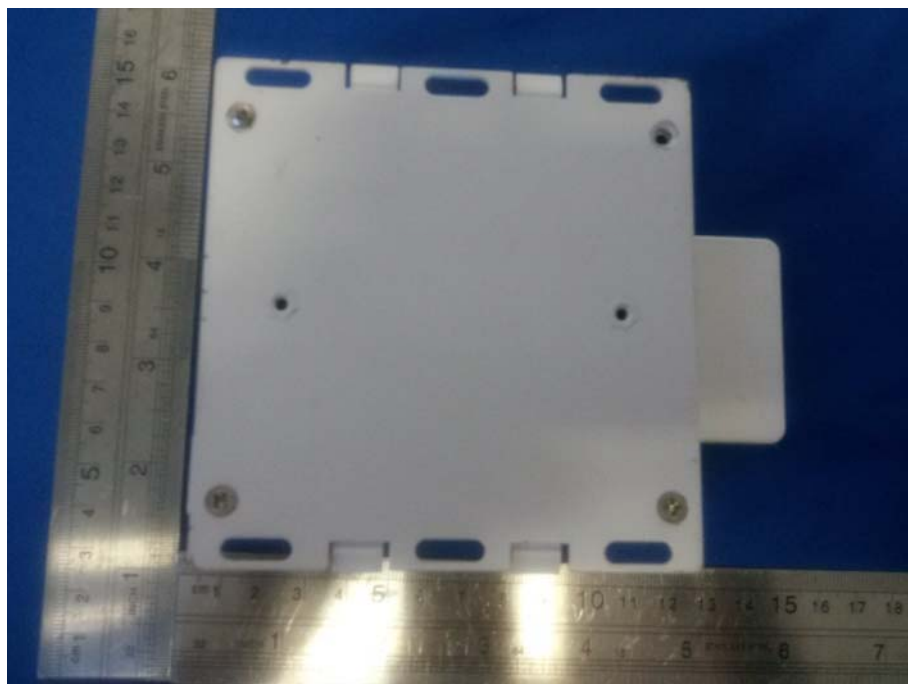


Figure 3
Inside view of the EUT

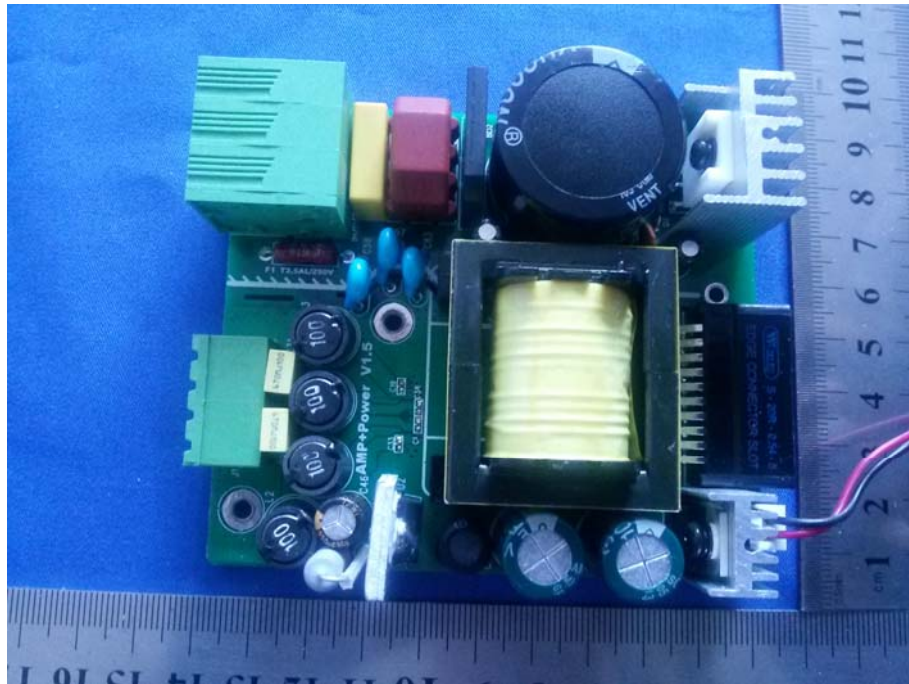


Figure 4
General Appearance of the PCB

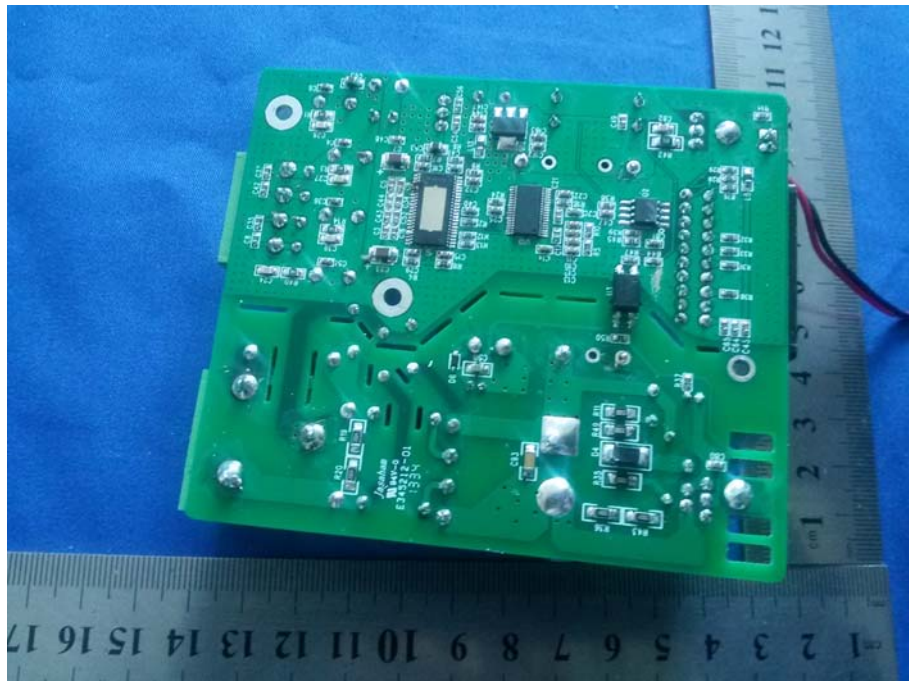
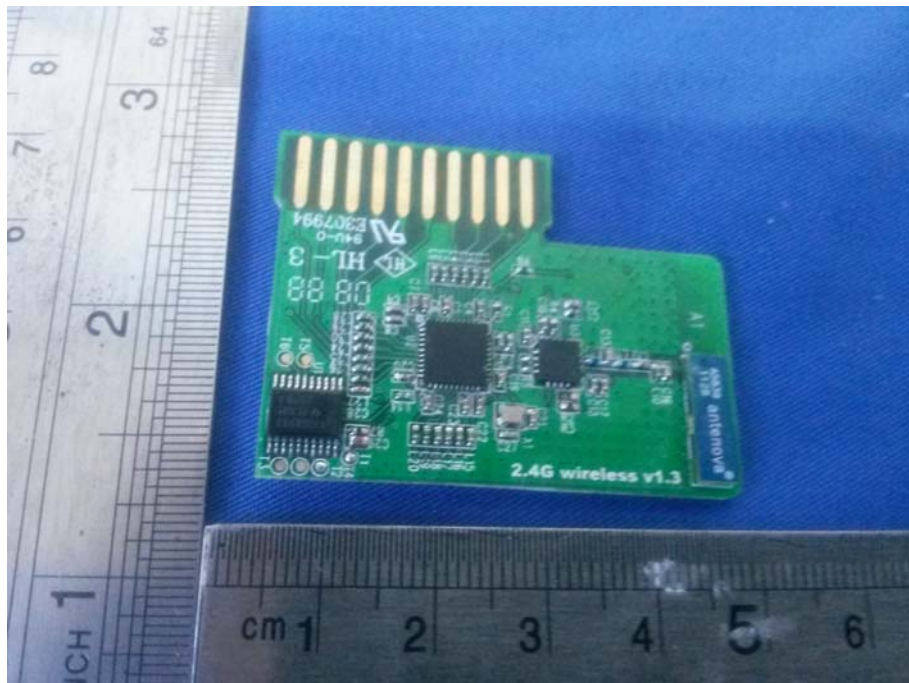


Figure 5
General Appearance of the PCB



Figure 6
General Appearance of the PCB



END