

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

OF

REMOTE CONTROLLED PLANES

MODEL No.: C147-B PALADIN (#21841)

FCC ID: QIY21841

Trademark: N/A

REPORT NO: ES120926193E

ISSUE DATE: October 30, 2012

Prepared for

**SHENZHEN ART-TECH R/C HOBBY CO., LTD
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Prepared by

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VERIFICATION OF COMPLIANCE

Applicant:	SHENZHEN ART-TECH R/C HOBBY CO., LTD 3/F, No.1 Wanyelong Industrial Park, Liyuan Industrial Area, Tangtou Village, Shiyan Town, Baoan District, Shenzhen, China
Manufacturer:	SHENZHEN ART-TECH R/C HOBBY CO., LTD 3/F, No.1 Wanyelong Industrial Park, Liyuan Industrial Area, Tangtou Village, Shiyan Town, Baoan District, Shenzhen, China
Product Description:	REMOTE CONTROLLED PLANES
Model Number:	C147-B PALADIN (#21841)
Trademark:	N/A
File Number:	ES120926193E
Date of Test:	October 10, 2012 to October 30, 2012

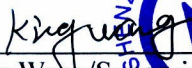
We hereby certify that:

The above equipment was tested by SHENZHEN 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.

Date of Test : October 10, 2012 to October 30, 2012

Prepared by : 
Aaron Lai/Editor

Reviewer : 
King Wang/Supervisor

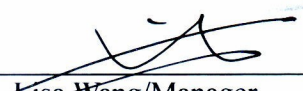
Approve & Authorized Signer : 
Lisa Wang/Manager

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1. General Information

1.1 Product Description

A major technical descriptions of EUT is described as following:

- A). Operation Frequency: 2412-2473MHz
- B). Modulation: GFSK
- C). Number of Channel: 62
- D). Channel space: 1MHz
- E). BIT Rate of Transmission: 1Mbps
- F). Antenna Type: Integral antenna
- G). Antenna Gain: 0dBi
- H). Power Supply: DC 6V from 4*1.5V AA battery.

Channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	23	2434	45	2456
2	2413	24	2435	46	2457
3	2414	25	2436	47	2458
4	2415	26	2437	48	2459
5	2416	27	2438	49	2460
6	2417	28	2439	50	2461
7	2418	29	2440	51	2462
8	2419	30	2441	52	2463
9	2420	31	2442	53	2464
10	2421	32	2443	54	2465
11	2422	33	2444	55	2466
12	2423	34	2445	56	2467
13	2424	35	2446	57	2468
14	2425	36	2447	58	2469
15	2426	37	2448	59	2470
16	2427	38	2449	60	2471
17	2428	39	2450	61	2472
18	2429	40	2451	62	2473
19	2430	41	2452		
20	2431	42	2453		
21	2432	43	2454		
22	2433	44	2455		

Note:

1. Test of channel was included the lowest middle and highest frequency to perform the test, and then record on this report.

1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: QIY21841 filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (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 CNAS, 2010.10.29
The certificate is valid until 2013.10.28
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01: 2006(identical to ISO/IEC17025: 2005)
The Certificate Registration Number is L2291

Accredited by TUV Rheinland Shenzhen 2010.5.25
The Laboratory has been assessed according to the requirements ISO/IEC 17025

Accredited by FCC, October 28, 2010
The Certificate Registration Number is 406365.

Accredited by Industry Canada, March 05, 2010
The Certificate Registration Number is 46405-4480.

Name of Firm : SHENZHEN EMTEK CO., LTD.
Site Location : Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, 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 placed on a 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 30 MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is placed on a 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 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.	REMOTE CONTROLLED PLANES	SHENZHEN ART-TECH R/C HOBBY CO., LTD	C147-B PALADIN (#21841)	QIY21841	N/A	EUT

Note:

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

3. Description of Test Modes

The Transmitter of EUT is an REMOTE CONTROLLED PLANES

We Pre-scanned tests, X, Y, Z in the three orthogonal panels, the worse of the result Z recorded in the following pages.

1. For lowest channel : 2412MHz (Channel 1)
2. For middle channel : 2447MHz (Channel 36)
3. For highest channel: 2473MHz (Channel 62)

4. Summary of Test Results

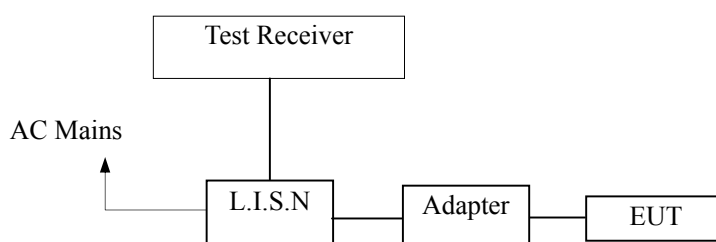
FCC Rules	Description Of Test	Result
§ 2.1049	Transmitter 20dB bandwidth	Compliance
§15.249(d), §15.209	Transmitter Band Edge Radiated Emissions	Compliance
§15.207	AC Power Conducted Emission	Not applicable
§15.249(a), (d), (e) §15.209	Transmitter Radiated Spurious Emissions	Compliance

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					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2012	05/28/2013
L.I.S.N.	Schwarzbeck	NNLK8129	8129203	05/29/2012	05/28/2013
50Ω Coaxial Switch	Anritsu	MP59B	M20531	N/A	N/A
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	05/29/2012	05/28/2013
Voltage Probe	Rohde & Schwarz	TK9416	N/A	05/29/2012	05/28/2013
I.S.N	Rohde & Schwarz	ENY22	1109.9508.02	05/29/2012	05/28/2013

5.4 Conducted Emission Limit

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.

5.5 Measurement Result

Note: Not applicable, the EUT power supply from DC 4*1.5V AA battery.

5.6 Conducted Measurement Photo

N/A

6. Radiated Emission Test

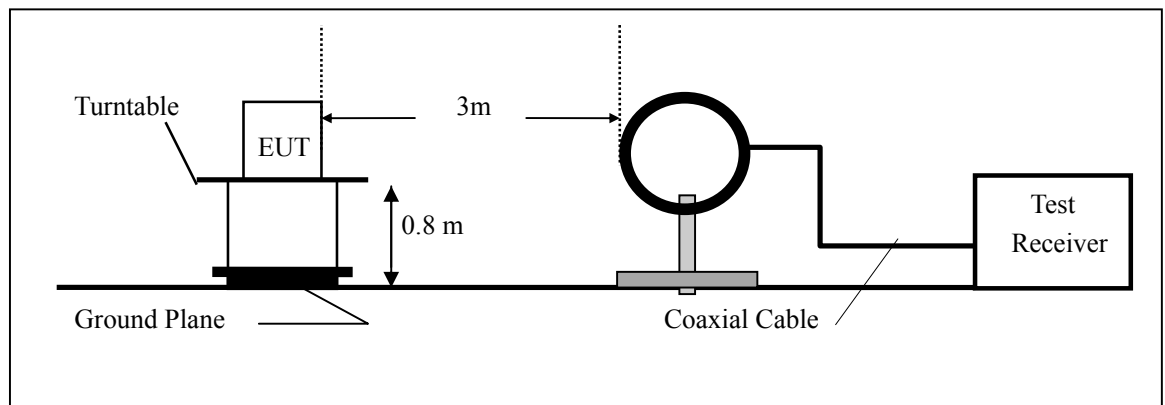
6.1 Measurement Procedure

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 was complete.

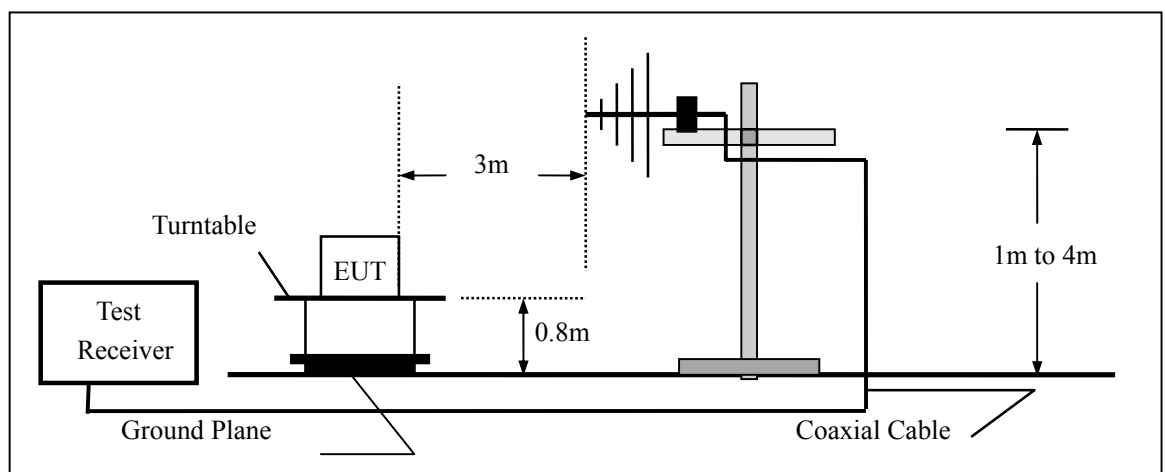
For emissions measurement set the bandwidth of the Spectrum's RBW at 1MHz above 1GHz and RBW 100 KHz below 1GHz.

6.2 Test SET-UP (Block Diagram of Configuration)

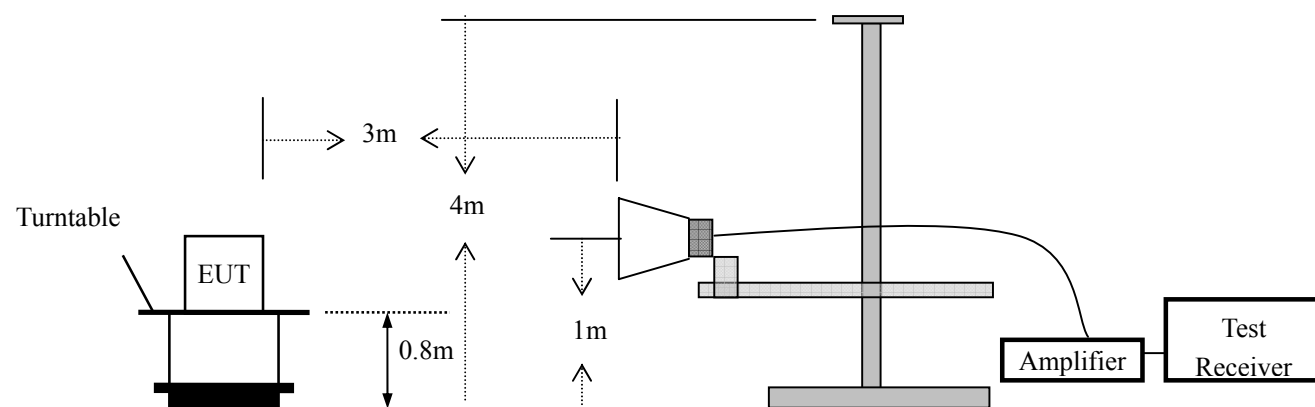
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(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.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 29, 2012	05/28/2013
Pre-Amplifier	HP	8447D	2944A07999	May 29, 2012	05/28/2013
Bilog Antenna	Schwarzbeck	VULB9163	142	May 29, 2012	05/28/2013
Loop Antenna	ARA	PLA-1030/B	1029	May 29, 2012	05/28/2013
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 29, 2012	05/28/2013
Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 29, 2012	05/28/2013
Cable	Schwarzbeck	AK9513	ACRX1	May 29, 2012	05/28/2013
Cable	Rosenberger	N/A	FP2RX2	May 29, 2012	05/28/2013
Cable	Schwarzbeck	AK9513	CRPX1	May 29, 2012	05/28/2013
Cable	Schwarzbeck	AK9513	CRRX2	May 29, 2012	05/28/2013

6.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

15.205 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)

- 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.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

6.5 Measurement Result

Operation Mode: TX Mode Test Date : October 20, 2012
Frequency Range: 9KHz~30MHz Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40 \log (\text{Specific distance} / \text{test distance})$ (dB);

Limit line = Specific limits (dBuV) + distance extrapolation factor.

Operation Mode: TX Channel 1 Test Date : October 18, 2012
Frequency Range: 30~1000MHz Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)	Note
240.26	V	27.33	46.00	-18.67	PK
252.04	V	30.51	46.00	-15.49	PK
264.13	V	26.44	46.00	-19.56	PK
493.00	V	29.48	46.00	-16.52	PK
512.54	V	30.60	46.00	-15.40	PK
532.01	V	31.62	46.00	-14.38	PK
48.39	H	17.98	40.00	-22.02	PK
101.15	H	16.96	43.50	-26.54	PK
238.90	H	20.46	46.00	-25.54	PK
261.85	H	26.03	46.00	-19.97	PK
351.11	H	24.05	46.00	-21.95	PK
415.04	H	21.32	46.00	-24.68	PK

- Note:**
- (1) All Readings are Peak 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.
 - (4) EUT stood on the table position is the worst case result in the report.

Operation Mode: TX Channel 36 Test Date : October 18, 2012
Frequency Range: 30~1000MHz Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)	Note
241.06	V	26.15	46.00	-19.85	PK
253.54	V	30.96	46.00	-15.04	PK
266.73	V	26.44	46.00	-19.56	PK
496.00	V	28.64	46.00	-17.36	PK
514.99	V	26.50	46.00	-19.50	PK
533.37	V	28.70	46.00	-17.30	PK
44.39	H	17.98	40.00	-22.02	PK
99.65	H	14.26	43.50	-29.24	PK
236.30	H	20.52	46.00	-25.48	PK
258.85	H	20.33	46.00	-25.67	PK
348.66	H	21.69	46.00	-24.31	PK
413.68	H	18.76	46.00	-27.24	PK

- Note:**
- (1) All Readings are Peak 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.
 - (4) EUT stood on the table position is the worst case result in the report.

Operation Mode: TX Channel 62 Test Date : October 18, 2012
Frequency Range: 30~1000MHz Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)	Note
239.86	V	26.10	46.00	-19.90	PK
252.29	V	30.71	46.00	-15.29	PK
263.17	V	23.99	46.00	-22.01	PK
491.68	V	25.22	46.00	-20.78	PK
516.55	V	27.59	46.00	-18.41	PK
539.87	V	29.01	46.00	-16.99	PK
43.99	H	15.62	40.00	-24.38	PK
98.40	H	14.26	43.50	-29.24	PK
239.86	H	20.36	46.00	-25.64	PK
263.17	H	20.03	46.00	-25.97	PK
350.22	H	19.63	46.00	-26.37	PK
420.18	H	19.32	46.00	-26.68	PK

- Note:**
- (1) All Readings are Peak 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.
 - (4) EUT stood on the table position is the worst case result in the report.

Above 1GHz

Operation Mode: TX Channel 1
Frequency Range: Above 1GHz
Test Result: PASS
Measured Distance: 3m

Test Date : October 20, 2012
Temperature : 28°C
Humidity : 65 %
Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
7865.39	V	51.00	34.19	74.00	54.00	-23.00	-19.81
9908.65	V	53.23	35.44	74.00	54.00	-20.77	-18.56
11080.12	V	52.03	33.67	74.00	54.00	-21.97	-20.33
14322.11	V	56.43	38.63	74.00	54.00	-17.57	-15.37
15956.73	V	56.71	38.92	74.00	54.00	-17.29	-15.08
16637.82	V	57.37	39.90	74.00	54.00	-16.63	-14.10
7157.05	H	50.79	33.05	74.00	54.00	-23.21	-20.95
7892.63	H	50.84	33.69	74.00	54.00	-23.16	-20.31
10344.55	H	54.19	36.05	74.00	54.00	-19.81	-17.95
12987.17	H	53.02	35.76	74.00	54.00	-20.98	-18.24
14158.65	H	55.18	37.41	74.00	54.00	-18.82	-16.59
16392.62	H	55.69	38.19	74.00	54.00	-18.31	-15.81

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

- Note:**
- (1) All Readings are Peak Value and AV.
 - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 - (3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode:	TX Channel 36	Test Date :	October 20, 2012
Frequency Range:	Above 1GHz	Temperature :	28°C
Test Result:	PASS	Humidity :	65 %
Measured Distance:	3m	Test By:	WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
7838.14	V	50.78	33.40	74.00	54.00	-23.22	-20.60
9336.54	V	54.62	36.85	74.00	54.00	-19.38	-17.15
11052.88	V	54.44	36.64	74.00	54.00	-19.56	-17.36
12115.38	V	50.72	32.59	74.00	54.00	-23.28	-21.41
14403.84	V	55.63	38.17	74.00	54.00	-18.37	-15.83
17891.02	V	55.73	37.95	74.00	54.00	-18.27	-16.05
7238.78	H	52.94	34.84	74.00	54.00	-21.06	-19.16
8028.85	H	51.74	34.24	74.00	54.00	-22.26	-19.76
9881.41	H	54.53	36.15	74.00	54.00	-19.47	-17.85
11080.12	H	55.57	37.58	74.00	54.00	-18.43	-16.42
14322.11	H	57.67	39.42	74.00	54.00	-16.33	-14.58
15057.69	H	57.42	39.86	74.00	54.00	-16.58	-14.14

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

Note: (1) All Readings are Peak Value and AV.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 (3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode: TX Channel 62 Test Date : October 20, 2012
Frequency Range: Above 1GHz Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4814.10	V	50.01	32.31	74.00	54.00	-23.99	-21.69
8028.85	V	52.51	34.65	74.00	54.00	-21.49	-19.35
9799.68	V	55.72	34.67	74.00	54.00	-18.28	-19.33
11979.16	V	53.07	34.85	74.00	54.00	-20.93	-19.15
13804.48	V	54.37	36.67	74.00	54.00	-19.63	-17.33
14594.55	V	53.71	36.18	74.00	54.00	-20.29	-17.82
4814.10	H	47.53	29.30	74.00	54.00	-26.47	-24.70
6612.18	H	50.19	32.32	74.00	54.00	-23.81	-21.68
8001.60	H	52.68	33.98	74.00	54.00	-21.32	-20.02
9908.65	H	53.32	35.54	74.00	54.00	-20.68	-18.46
14431.09	H	54.85	37.41	74.00	54.00	-19.15	-16.59
17700.32	H	54.95	36.31	74.00	54.00	-19.05	-17.69

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

- Note:**
- (1) All Readings are Peak Value and AV.
 - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 - (3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Transmitter Fundamental Field Strength

Operation Mode: TX Channel 01 Test Date : October 20, 2012
FCC Part: 15.249(a) Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2412.00	V	71.49	60.80	114.00	94.00	-42.51	-33.20
2412.00	H	72.26	65.40	114.00	94.00	-41.74	-28.60

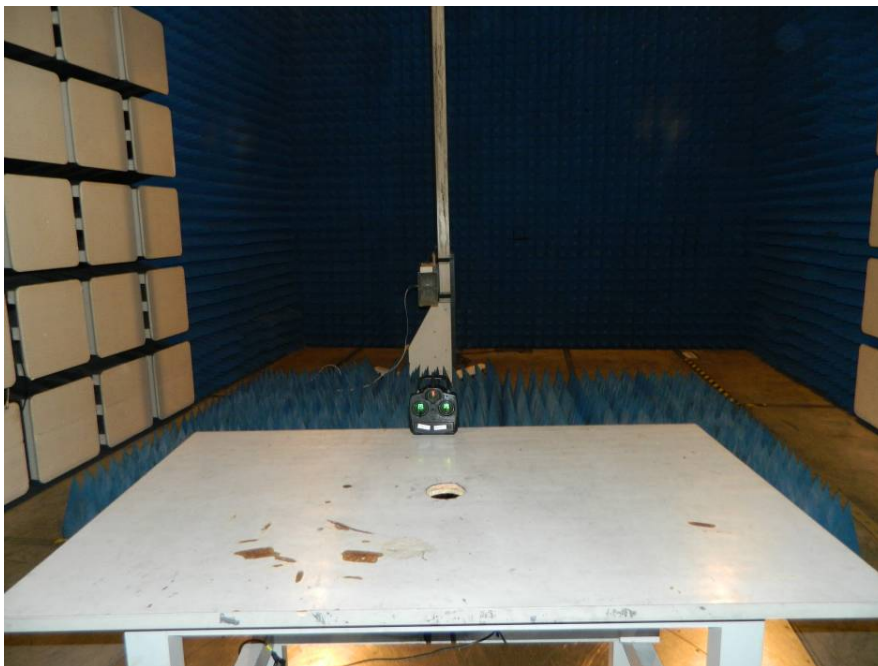
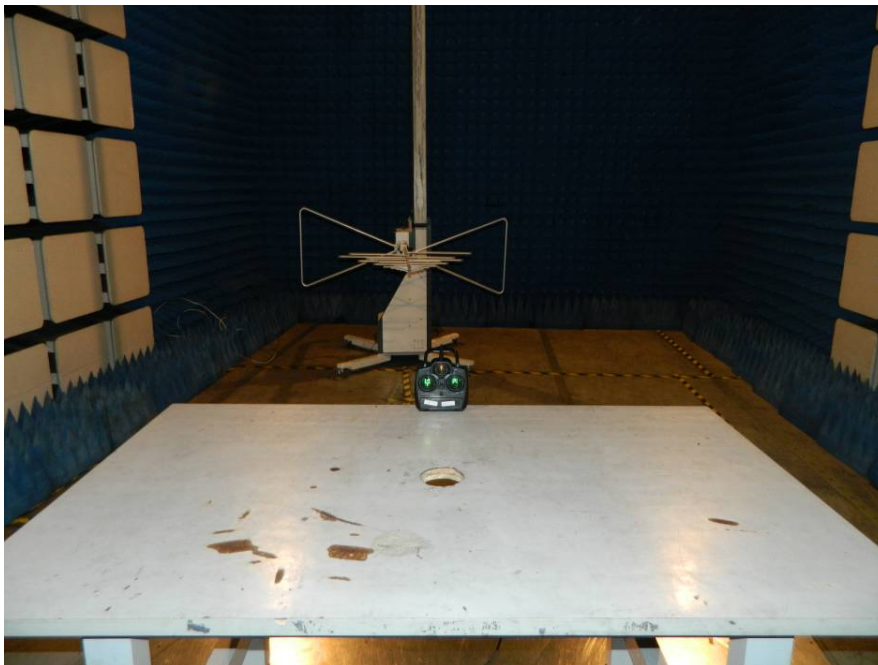
Operation Mode: TX Channel 36 Test Date : October 20, 2012
FCC Part: 15.249(a) Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2447.00	V	72.28	62.15	114.00	94.00	-41.72	-31.85
2447.00	H	72.01	66.21	114.00	94.00	-41.99	-27.79

Operation Mode: TX Channel 36 Test Date : October 20, 2012
FCC Part: 15.249(a) Temperature : 28°C
Test Result: PASS Humidity : 65 %
Measured Distance: 3m Test By: WOLF
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2473.00	V	73.18	63.50	114.00	94.00	-40.82	-30.50
2473.00	H	72.85	64.98	114.00	94.00	-41.15	-29.02

6.6 Radiated Measurement Photos



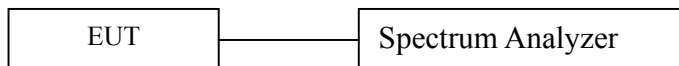


7. 20dB Bandwidth Test

7.1 Measurement Procedure

The EUT was operating in Transmitter mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used

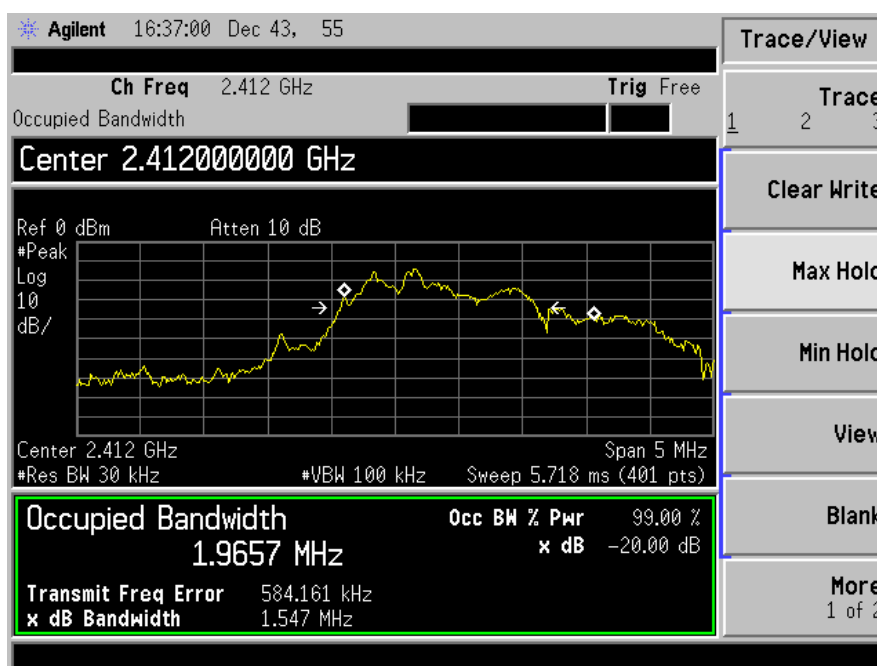
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4407B	88156318	05/29/2012	05/28/2013

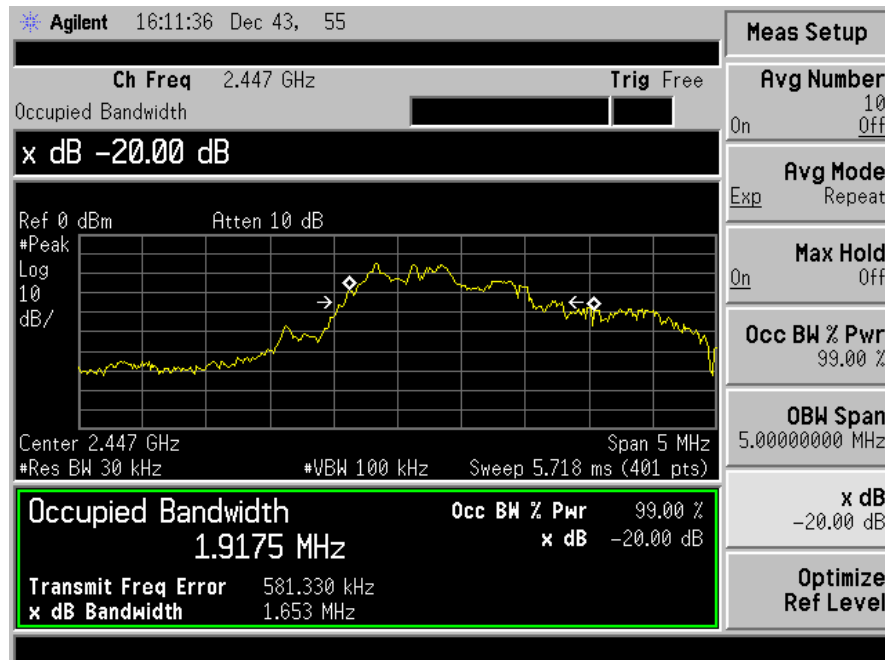
7.4 Measurement Results

20 Bandwidth Test Data Chart:
Refer to attached data chart.

Spectrum Detector:	PK	Test Date :	October 20, 2012
Test By:	Andy	Temperature :	28°C
Test Result:	PASS	Humidity :	65 %
TX			

Channel number	Channel frequency (MHz)	Measurement level (MHz)	Required Limit (kHz)
1	2412	1.5470	N/A
36	2447	1.6530	N/A
72	2473	1.7810	N/A





8. Band Edge Test

9.1 Measurement Procedure

1. The EUT was Operating in hopping mode or could be controlled its channel. Printed out test result from the spectrum by hard copy function.
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Repeat above procedures until all frequency measured were complete.

9.2 Test SET-UP (Block Diagram of Configuration)

As 6.2 Test set up (B) and (C)

9.3 Measurement Equipment Used

Same as 6.3 Radiated Emission Measurement.

9.4 Measurement Results

Spectrum Detector:	PK/AV	Test Date :	October 20, 2012
Test By:	Andy	Temperature :	28 °C
Test channel:	01	Humidity :	65 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2390.00	H	49.02	38.07	74	54
2390.00	V	48.14	37.50	74	54

Spectrum Detector:	PK/AV	Test Date :	October 20, 2012
Test By:	Andy	Temperature :	28 °C
Test channel:	62	Humidity :	65 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2483.50	H	49.15	38.50	74	54
2483.50	V	48.59	37.60	74	54

9. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measured (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	$\pm 3.00\text{dB}$
Fundamental Fieldstrength	Not Applicable	95%	$\pm 2.94\text{dB}$
Transmitter 20 dB Bandwidth	Not Applicable	95%	$\pm 0.92\text{ppm}$
Radiated Spurious Emissions	30 MHz to 40 GHz	95%	$\pm 3.00\text{dB}$