



FCC REPORT

Applicant: Estes-Cox Corporation d/b/a Estes Industries and Cox
Address of Applicant: 1295 H Street , Penrose, CO 81240 USA
Equipment Under Test (EUT)
Product Name: Proto-Z/Proto-X Six R/C Drone
Model No.: 4814, 4815, 4805, 4806, 4807, 4820
Trade Mark: Estes
FCC ID: M45-4814
Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2014
Date of sample receipt: June 15, 2015
Date of Test: June 16, 2015
Date of report issued: June 17, 2015
Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	June 17, 2015	Original

Prepared By:

Edward. Pan

Date:

June 17, 2015

Project Engineer

Check By:

Hank. Yan

Date:

June 17, 2015

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

Remark: The EUT test according to ANSI C63.4:2009 and ANSI C63.10:2009.

5 General Information

5.1 Client Information

Applicant:	Estes-Cox Corporation d/b/a Estes Industries and Cox
Address of Applicant:	1295 H Street , Penrose, CO 81240 USA
Manufacturer:	CVC International Limited
Address of Manufacture:	Unit 905, Workingberg Commercial Building, 41-47 Marble Road, North Point, Hong Kong
Factory:	FOSHAN DC ELECTRONIC TECHNOLOGY CO.,LTD
Address of Factory:	DC INDUSTRIAL BUILDING LAOCUN INDUSTRIAL AREA, LECONG, SHUNDE, FOSHAN

5.2 General Description of EUT

Product Name:	Proto-Z/Proto-X Six R/C Drone
Model No.:	4814, 4815, 4805, 4806, 4807, 4820
Operation Frequency:	2410MHz~2473MHz
Channel numbers:	64
Channel separation:	1MHz
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	0dBi (declare by Applicant)
Power supply:	DC 3V(2*1.5V "AAA" Size Battery)

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2410MHz	17	2426MHz	33	2442MHz	49	2458MHz
2	2411MHz	18	2427MHz	34	2443MHz	50	2459MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
15	2424MHz	31	2440MHz	47	2456MHz	63	2472MHz
16	2425MHz	32	2441MHz	48	2457MHz	64	2473MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2410MHz
The middle channel	2441MHz
The Highest channel	2473MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the new battery was used.</i>	

Per-test mode.			
We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:			
Axis	X	Y	Z
Field Strength(dBuV/m)	93.16	95.73	94.48
Final Test Mode:			
According to ANSI C63.4 standards, the test results is tested at the “worst setup”: Y axis (see the test setup photo)			

5.4 Description of Support Units

None

5.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 600491, June 28, 2013.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Room 301-309, 3th Floor, Block A, Huafeng Jinyuan Business Building, No. 300 Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

5.7 Description of Support Units

None.

5.8 Other Information Requested by the Customer

None.

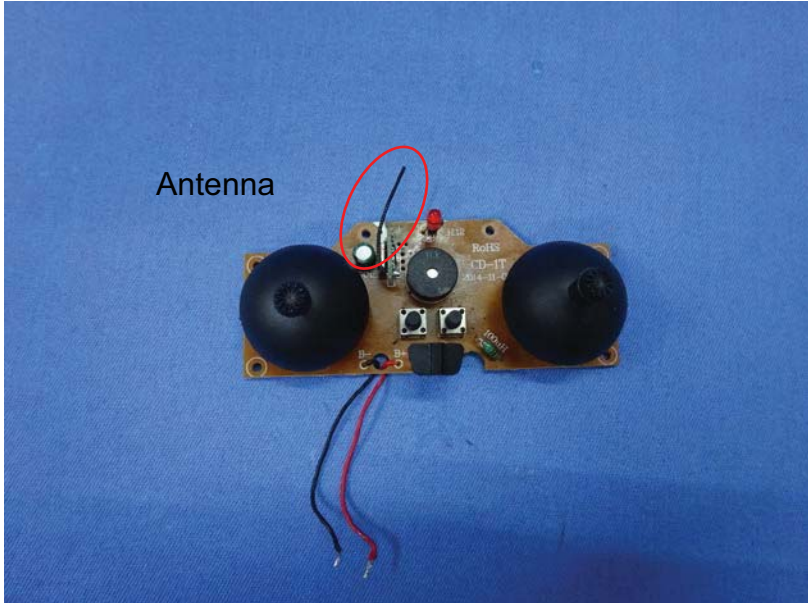
6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 28 2015	Mar. 27 2016
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Jul. 01 2014	Jun 30 2015
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun 30 2015
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jul. 01 2014	Jun 30 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015	Mar. 26 2016
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 28 2015	Mar. 27 2016
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 28 2015	Mar. 27 2016
11	Coaxial cable	GTS	N/A	GTS210	Mar. 28 2015	Mar. 27 2016
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 28 2015	Mar. 27 2016
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015
16	Band filter	Amindeon	82346	GTS219	Mar. 28 2015	Mar. 27 2016

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015

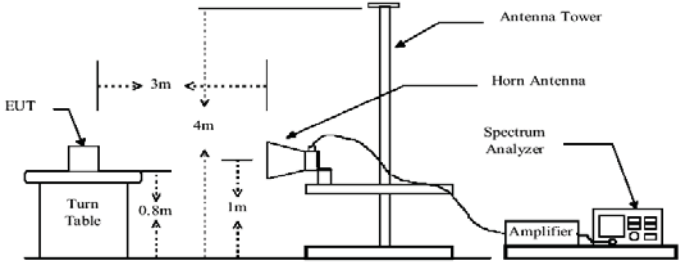
7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
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.	
E.U.T Antenna:	
<p><i>The antenna is Integral antenna, the best case gain of the antenna is 0dBi</i></p> 	

7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2009				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Peak		1MHz	10Hz	Average	
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	2400MHz-2483.5MHz	94.00		Average Value	
		114.00		Peak Value	
Limit: (Spurious Emissions)	Frequency	Limit (uV/m)	Value	Measurement Distance	
	0.009MHz-1.705MHz	2400/F(KHz)	QP	300m	
	0.490MHz-1.705MHz	24000/F(KHz)	QP	300m	
	1.705MHz-30MHz	30	QP	30m	
	30MHz-88MHz	100	QP	3m	
	88MHz-216MHz	150	QP		
	216MHz-960MHz	200	QP		
	960MHz-1GHz	500	QP		
	Above 1GHz	500	Average		
		5000	Peak		
Limit: (band edge)	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.				
Test setup:	<p>Below 1GHz</p> <p>Above 1GHz</p>				

	
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8m meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2410.00	93.60	27.57	5.40	33.99	92.58	114.00	-21.42	Vertical
2410.00	92.94	27.58	5.39	30.18	95.73	114.00	-18.27	Horizontal
2441.00	95.33	27.48	5.43	33.96	94.28	114.00	-19.72	Vertical
2441.00	93.53	27.48	5.43	33.96	92.48	114.00	-21.52	Horizontal
2473.00	95.85	27.50	5.46	33.92	94.89	114.00	-19.11	Vertical
2473.00	94.68	27.50	5.46	33.92	93.72	114.00	-20.28	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2410.00	83.96	27.58	5.39	30.18	86.75	94.00	-7.25	Vertical
2410.00	82.93	27.58	5.39	30.18	85.72	94.00	-8.28	Horizontal
2441.00	86.06	27.55	5.43	30.06	88.98	94.00	-5.02	Vertical
2441.00	84.14	27.55	5.43	30.06	87.06	94.00	-6.94	Horizontal
2473.00	85.71	27.52	5.47	29.93	88.77	94.00	-5.23	Vertical
2473.00	84.92	27.52	5.47	29.93	87.98	94.00	-6.02	Horizontal

Remark : RBW 4MHz VBW 4MHz Peak detector for PK value; RMS detector for AV value

7.2.2 Spurious emissions

Note: Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

■ Below 1GHz

Remark: The test was performed at the lowest, middle and highest channel. The data of lowest channel was found as the worst, so only the data of that channel is reported.

Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	polarization
30.21	39.31	14.33	0.55	30.10	24.09	40.00	-15.91	Vertical
42.75	34.80	15.56	0.69	30.03	21.02	40.00	-18.98	Vertical
89.59	31.95	13.76	1.11	29.75	17.07	43.50	-26.43	Vertical
197.89	31.86	12.57	1.83	29.21	17.05	43.50	-26.45	Vertical
374.62	27.57	16.54	2.74	29.62	17.23	46.00	-28.77	Vertical
830.40	26.96	22.37	4.58	29.17	24.74	46.00	-21.26	Vertical
30.64	28.96	14.33	0.56	30.10	13.75	40.00	-26.25	Horizontal
56.40	27.72	14.93	0.83	29.95	13.53	40.00	-26.47	Horizontal
105.27	27.71	14.68	1.24	29.66	13.97	43.50	-29.53	Horizontal
199.29	38.15	12.57	1.84	29.20	23.36	43.50	-20.14	Horizontal
252.95	34.95	14.06	2.14	29.66	21.49	46.00	-24.51	Horizontal
633.91	26.79	20.58	3.85	29.27	21.95	46.00	-24.05	Horizontal

■ Above 1GHz

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4820.00	51.25	31.79	8.61	32.10	59.55	74.00	-14.45	Vertical
7230.00	34.21	36.41	11.74	31.88	50.48	74.00	-23.52	Vertical
9640.00	31.59	37.80	14.08	31.72	51.75	74.00	-22.25	Vertical
12050.00	*					74.00		Vertical
14460.00	*					74.00		Vertical
4820.00	50.31	31.79	8.61	32.10	58.61	74.00	-15.39	Horizontal
7230.00	34.69	36.41	11.74	31.88	50.96	74.00	-23.04	Horizontal
9640.00	31.71	37.80	14.08	31.72	51.87	74.00	-22.13	Horizontal
12050.00	*					74.00		Horizontal
14460.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4820.00	42.79	31.79	8.61	32.10	51.09	54.00	-2.91	Vertical
7230.00	26.14	36.41	11.74	31.88	42.41	54.00	-11.59	Vertical
9640.00	23.11	37.80	14.08	31.72	43.27	54.00	-10.73	Vertical
12050.00	*					54.00		Vertical
14460.00	*					54.00		Vertical
4820.00	41.74	31.79	8.61	32.10	50.04	54.00	-3.96	Horizontal
7230.00	25.65	36.41	11.74	31.88	41.92	54.00	-12.08	Horizontal
9640.00	22.75	37.80	14.08	31.72	42.91	54.00	-11.09	Horizontal
12050.00	*					54.00		Horizontal
14460.00	*					54.00		Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *“*”, means this data is the too weak instrument of signal is unable to test.*

Test channel:	Middle channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	51.74	31.85	8.66	32.12	60.13	74.00	-13.87	Vertical
7323.00	32.95	36.37	11.72	31.89	49.15	74.00	-24.85	Vertical
9764.00	32.13	37.95	14.14	31.62	52.60	74.00	-21.40	Vertical
12205.00	*					74.00		Vertical
14646.00	*					74.00		Vertical
4882.00	50.94	31.85	8.66	32.12	59.33	74.00	-14.67	Horizontal
7323.00	32.87	36.37	11.72	31.89	49.07	74.00	-24.93	Horizontal
9764.00	32.44	37.95	14.14	31.62	52.91	74.00	-21.09	Horizontal
12205.00	*					74.00		Horizontal
14646.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	42.14	31.85	8.66	32.12	50.53	54.00	-3.47	Vertical
7323.00	25.70	36.37	11.72	31.89	41.90	54.00	-12.10	Vertical
9764.00	22.72	37.95	14.14	31.62	43.19	54.00	-10.81	Vertical
12205.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4882.00	40.99	31.85	8.66	32.12	49.38	54.00	-4.62	Horizontal
7323.00	25.15	36.37	11.72	31.89	41.35	54.00	-12.65	Horizontal
9764.00	22.29	37.95	14.14	31.62	42.76	54.00	-11.24	Horizontal
12205.00	*					54.00		Horizontal
14646.00	*					54.00		Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *“*” , means this data is the too weak instrument of signal is unable to test.*

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4946.00	53.51	31.91	8.71	32.16	61.97	74.00	-12.03	Vertical
7419.00	33.19	36.15	11.65	32.00	48.99	74.00	-25.01	Vertical
9892.00	32.26	38.07	14.16	31.56	52.93	74.00	-21.07	Vertical
12365.00	*					74.00		Vertical
14838.00	*					74.00		Vertical
4946.00	52.46	31.91	8.71	32.16	60.92	74.00	-13.08	Horizontal
7419.00	36.05	36.15	11.65	32.00	51.85	74.00	-22.15	Horizontal
9892.00	32.60	38.07	14.16	31.56	53.27	74.00	-20.73	Horizontal
12365.00	*					74.00		Horizontal
14838.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4946.00	43.33	31.91	8.71	32.16	51.79	54.00	-2.21	Vertical
7419.00	26.51	36.15	11.65	32.00	42.31	54.00	-11.69	Vertical
9892.00	23.44	38.07	14.16	31.56	44.11	54.00	-9.89	Vertical
12365.00	*					54.00		Vertical
14838.00	*					54.00		Vertical
4946.00	42.35	31.91	8.71	32.16	50.81	54.00	-3.19	Horizontal
7419.00	26.06	36.15	11.65	32.00	41.86	54.00	-12.14	Horizontal
9892.00	23.14	38.07	14.16	31.56	43.81	54.00	-10.19	Horizontal
12365.00	*					54.00		Horizontal
14838.00	*					54.00		Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *“*” , means this data is the too weak instrument of signal is unable to test.*

7.2.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	44.69	27.59	5.38	30.18	47.48	74.00	-26.52	Horizontal
2400.00	54.81	27.58	5.39	30.18	57.60	74.00	-16.40	Horizontal
2390.00	45.41	27.59	5.38	30.18	48.20	74.00	-25.80	Vertical
2400.00	57.98	27.58	5.39	30.18	60.77	74.00	-13.23	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	34.83	27.59	5.38	30.18	37.62	54.00	-16.38	Horizontal
2400.00	42.32	27.58	5.39	30.18	45.11	54.00	-8.89	Horizontal
2390.00	34.90	27.59	5.38	30.18	37.69	54.00	-16.31	Vertical
2400.00	45.47	27.58	5.39	30.18	48.26	54.00	-5.74	Vertical

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.01	27.53	5.47	29.93	50.08	74.00	-23.92	Horizontal
2500.00	45.83	27.55	5.49	29.93	48.94	74.00	-25.06	Horizontal
2483.50	48.15	27.53	5.47	29.93	51.22	74.00	-22.78	Vertical
2500.00	47.01	27.55	5.49	29.93	50.12	74.00	-23.88	Vertical

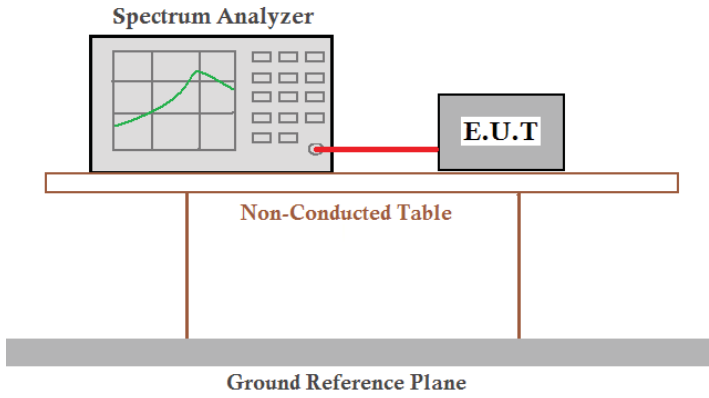
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.68	27.53	5.47	29.93	40.75	54.00	-13.25	Horizontal
2500.00	35.42	27.55	5.49	29.93	38.53	54.00	-15.47	Horizontal
2483.50	39.04	27.53	5.47	29.93	42.11	54.00	-11.89	Vertical
2500.00	35.49	27.55	5.49	29.93	38.60	54.00	-15.40	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor

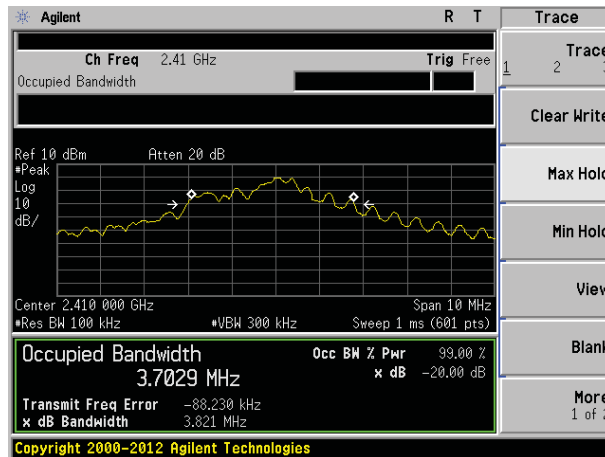
7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2009
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

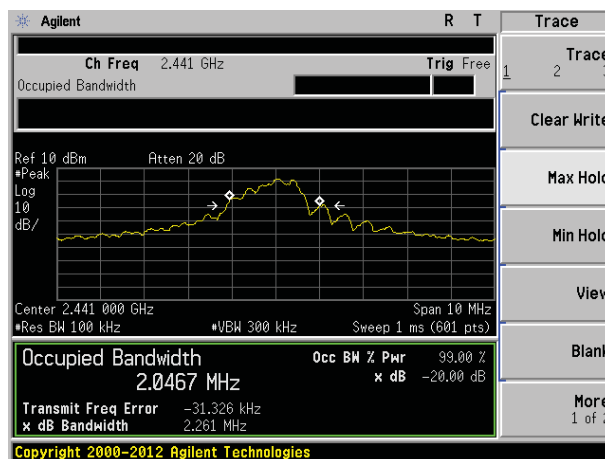
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	3.821	Pass
Middle	2.261	Pass
Highest	1.261	Pass

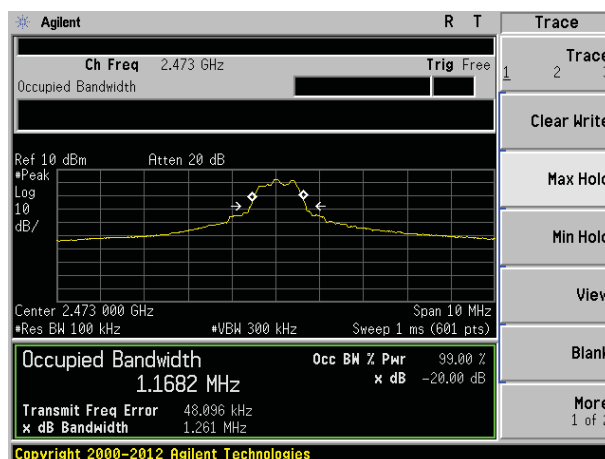
Test plot as follows:



Lowest channel



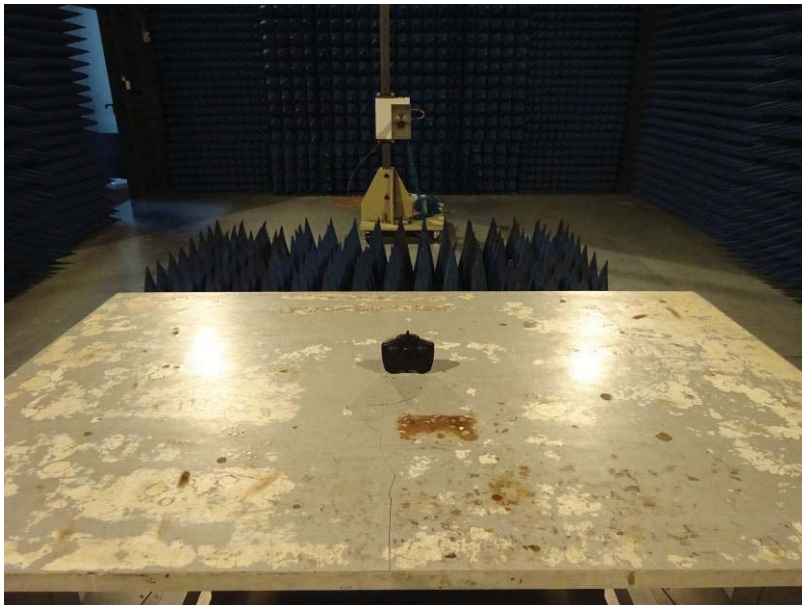
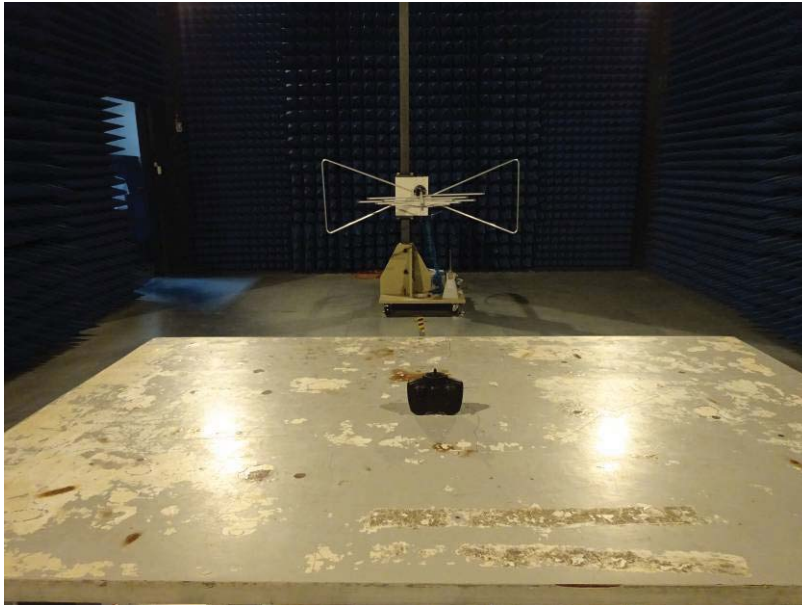
Middle channel



Highest channel

8 Test Setup Photo

Radiated Emission

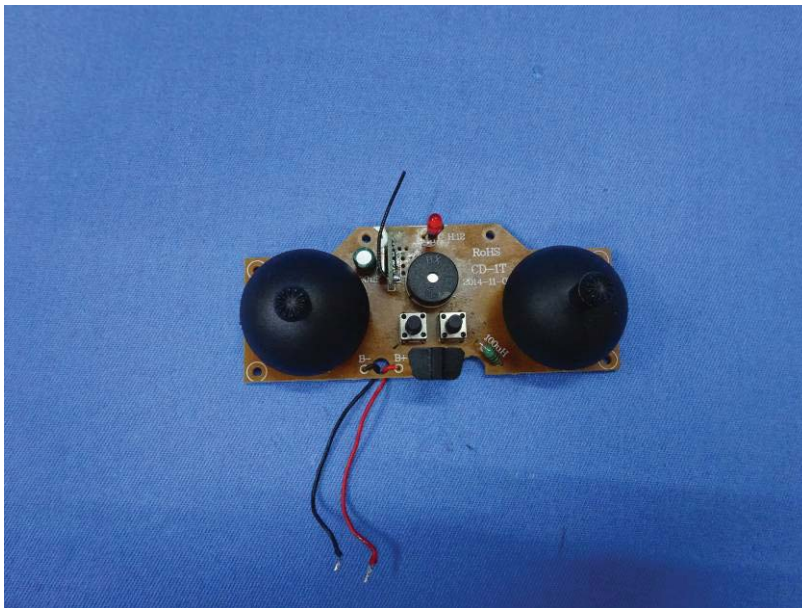


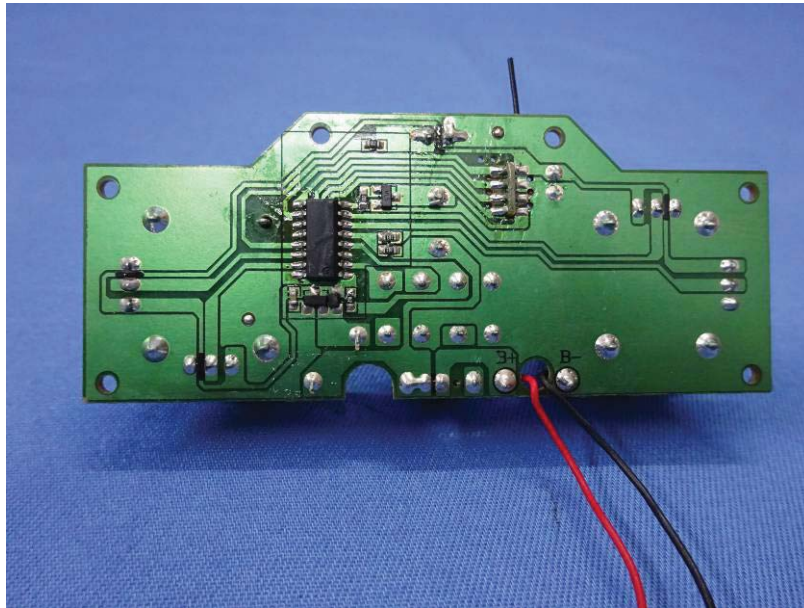
9 EUT Constructional Details











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