

FCC CERTIFICATION TEST REPORT FOR

FCC ID: X5B-PL6432BT

Report Reference No..... : 15FAB03037 11

Date of issue..... : 2015-04-16

Testing Laboratory..... : ATT Product Service Co., Ltd.

Address..... : No. 3, ChangLianShan Industrial Park, ChangAn Town,
DongGuan City, GuangDong, China.

Applicant's name..... : PERFORMANCE DESIGNED PRODUCTS, LLC

Address..... : 14144 Ventura Blvd, Suite 200, Sherman Oaks, CA 91423
U.S.A

Manufacturer..... : PERFORMANCE DESIGNED PRODUCTS, LLC

Test specification:

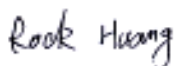
Test item description..... : RockCandy PS3 Wireless Controller

Trade Mark..... : --

Model/Type reference : PL-6432BT

Ratings..... : DC 3V (battery AA * 2Pcs)

Responsible Engineer



(Rock Huang/ Engineer)

Approved by



(King Wang /EMC Manager)

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TEST REPORT DECLARE

Applicant	:	PERFORMANCE DESIGNED PRODUCTS, LLC
Address	:	14144 Ventura Blvd, Suite 200, Sherman Oaks, CA 91423 U.S.A
Equipment under Test	:	RockCandy PS3 Wireless Controller
Model No	:	PL-6432BT
Trade Mark	:	--
Manufacturer	:	PERFORMANCE DESIGNED PRODUCTS, LLC
Address	:	14144 Ventura Blvd, Suite 200, Sherman Oaks, CA 91423 U.S.A

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C: 2013

Test procedure used: ANSI C63.10:2013; ANSI C63.4: 2009

We Declare:

The equipment described above is tested by ATT Product Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and ATT Product Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation X/Y/Z axis of the EUT. will record worst case in this report. our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	15FAB03037 11		
Date of Test:	2015-04-06---2015-04-15	Date of Report:	2015-04-16

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of ATT Product Service Co., Ltd.

1. Summary of test Standards and results

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Results
20dB Bandwidth	&15. 215(c) ANSI C63.10 :2009	PASS
Radiated Emission	15.209,&15.205,&15.249 ANSI C63.10 :2009	PASS
Conducted Emissions	&15.207(a) ANSI C63.10 :2009	PASS
Antenna requirement	&15.203	PASS
Outside of Band Emission (50dB attenuation)	&15.249(d)	PASS

Note:

N/A: the EUT was powered by DC battery in normal use condition

2.General test information

2.1 ACCREDITATIONS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA **FCC** **Registration Number :923232**
Canada **INDUSTRY CANADA** **Registration Number 11033A**

2.2Description of EUT

EUT* Name	:	RockCandy PS3 Wireless Controller
Model Number	:	PL-6432BT
Trade Mark	:	--
EUT function description	:	Please reference user manual of this device
Power supply	:	DC 3V (battery AA * 2Pcs)
Operation frequency	:	2412MHz -2475MHz
Modulation	:	GFSK
Data rate	:	1Mbps
Antenna Type	:	built-in antenna, maximum PK gain:-0.26dBi
Date of Receipt	:	2015-04-01
Sample Type	:	Series production

2.3Accessories of EUT

Description of Accessories	Manufacturer	Model number or Type	Other
/	/	/	/

2.4Assistant equipment used for test

Description of Assistant equipment	Manufacturer	Model number or Type	FCCID / FCC DOC	Other
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2.5 Block diagram of EUT configuration for test

Tested mode, channel, information		
Test Mode	Channel	Frequency (MHz)
Tx Mode	CH0	2412
	CH31	2440
	CH63	2475

2.6 Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25°C
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7 Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.44dB
Uncertainty for Radiation Emission test (150KHz-30MHz)	3.21dB
Uncertainty for Radiation Emission test (30MHz-200MHz)	3.42 dB (Polarize: V)
	3.52 dB (Polarize: H)
Uncertainty for Radiation Emission test (200MHz-1GHz)	3.52 dB (Polarize: V)
	3.54 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz to 25GHz)	4.20 dB (Polarize: V)
	4.20 dB (Polarize: H)
Uncertainty for radio frequency	1×10 ⁻⁹
Uncertainty for conducted RF Power	0.65dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. 20dB Bandwidth

3.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101307	2015/12/26	1Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2015/12/26	1Y
3	RF Cable	Micable	C10-01-01-1	100309	2015/12/26	1Y

3.2 Block diagram of test setup



3.3 Applicable Standard

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...

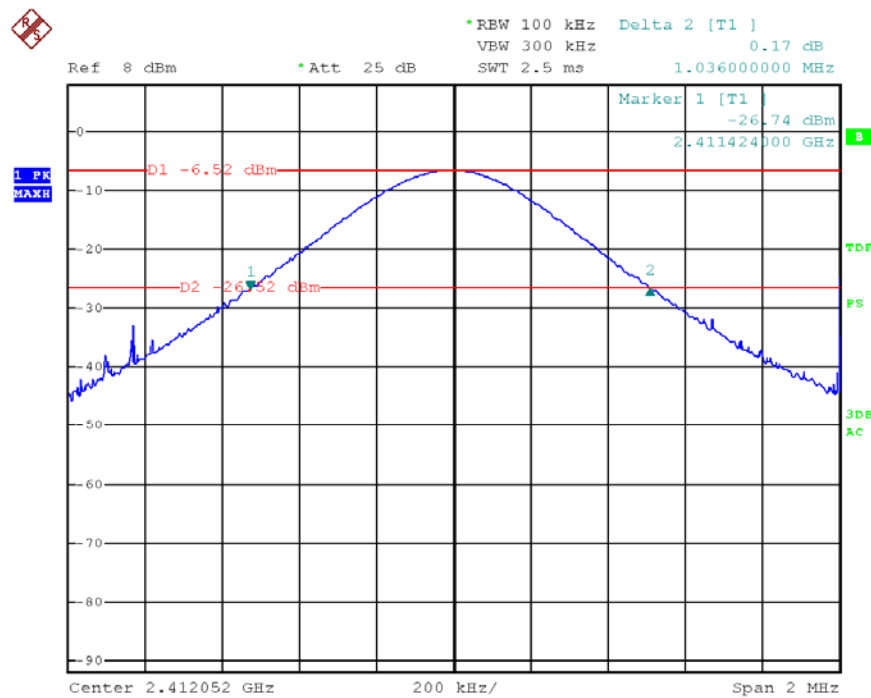
3.4 Test Procedure

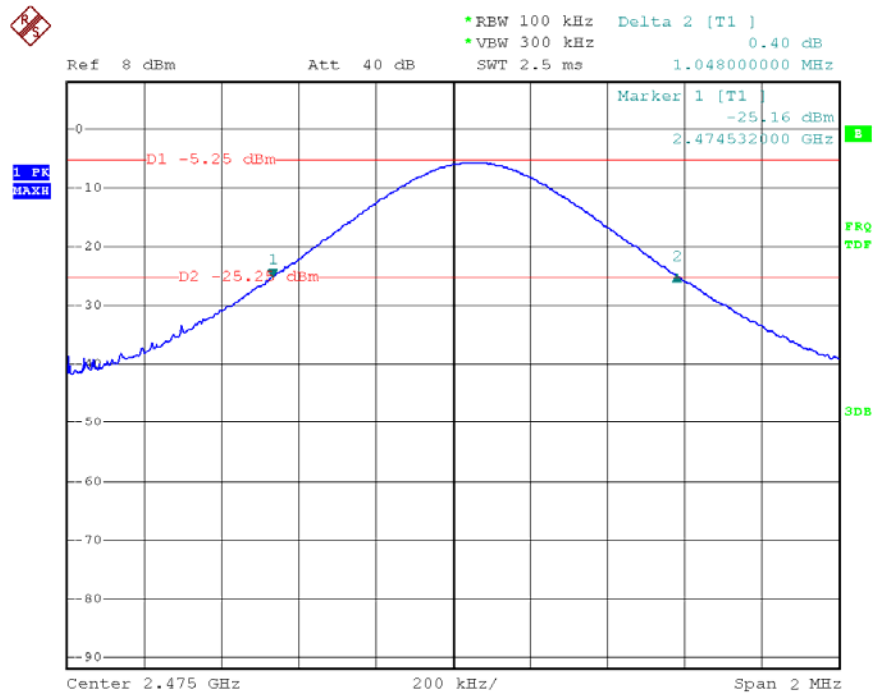
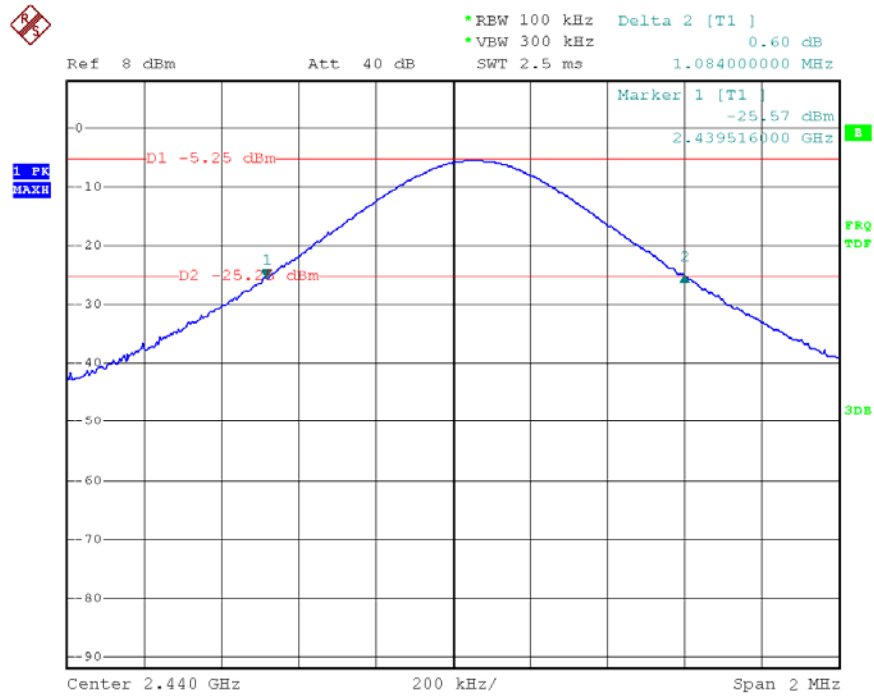
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete..

3.5 Test Result

EUT: RockCandy PS3 Wireless Controller M/N: PL-6432BT					
Mode	Freq (MHz)	Result (MHz)	Limit (MHz)	Margin (MHz)	Conclusion
Tx	2412	1.036	/	/	PASS
	2440	1.084	/	/	PASS
	2475	1.048	/	/	PASS

3.6 Original test data





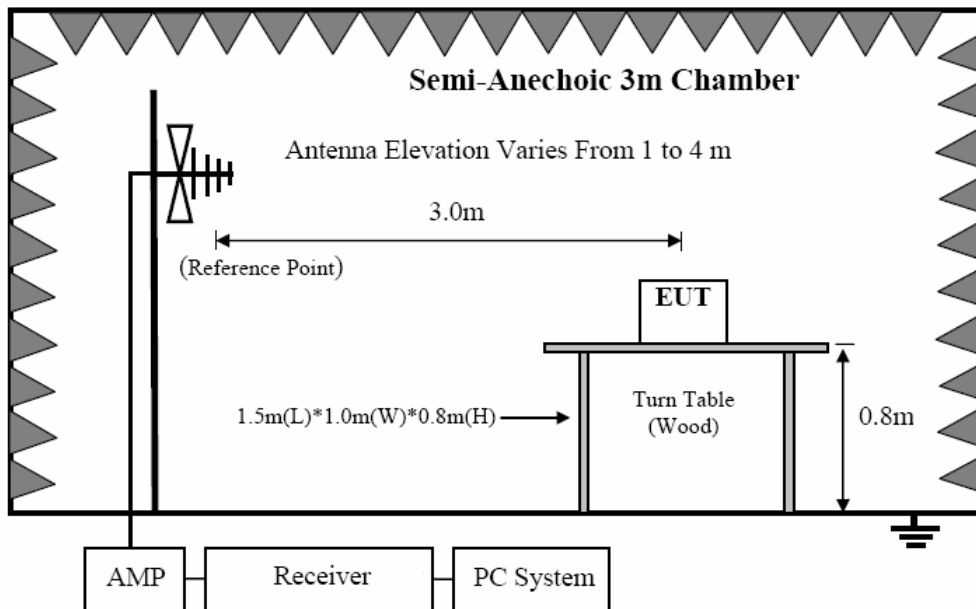
4. Radiated emission

4.1 Test equipment

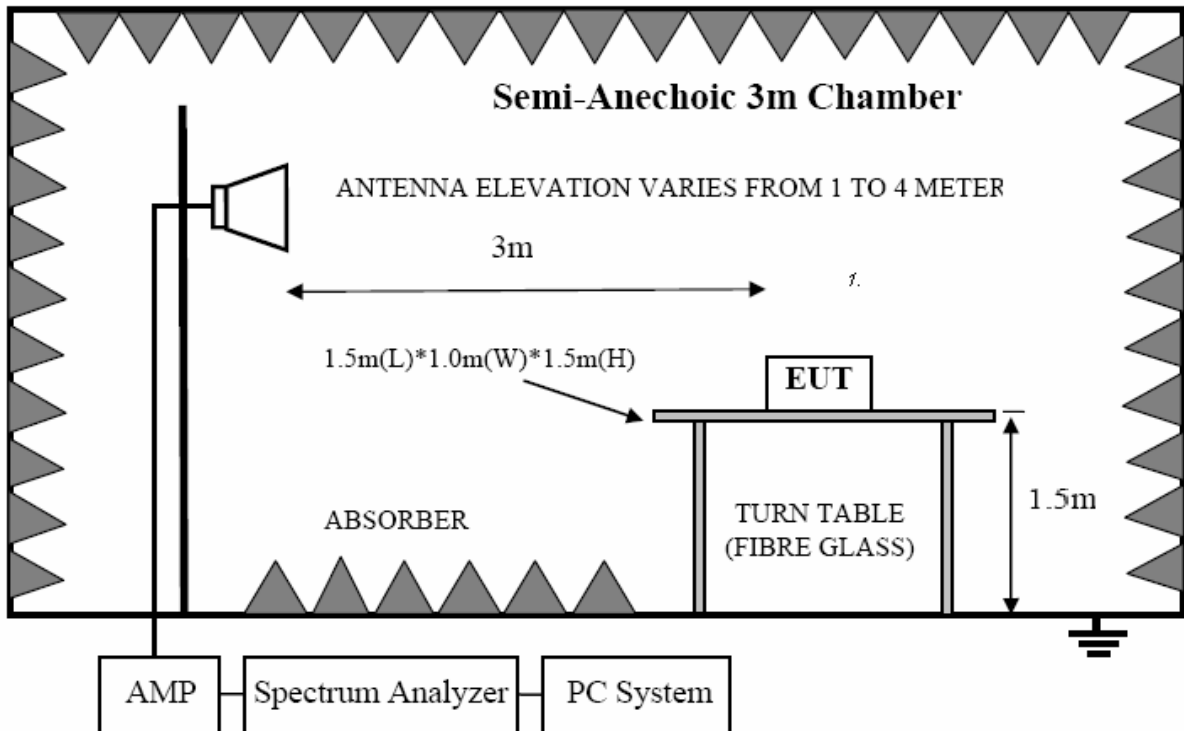
Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101307	2015/12/26	1Y
2	Spectrum analyzer	Agilent	E4407B	US40240708	2015/07/11	1Y
3	Loop antenna	Chase	HLA6120	20129	2015/12/26	1Y
4	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2015/12/26	1Y
5	Double Ridged Horn Antenna	R&S	HF907	100276	2015/12/26	1Y
6	Pre-Amplifier	R&S	SCU-01	10049	2015/12/26	1Y
7	Pre-amplifier	A.H.	PAM0-0118	360	2015/12/26	1Y
8	RF Cable	R&S	R01	10403	2015/12/26	1Y
9	RF Cable	R&S	R02	10512	2015/12/26	1Y
10	Horn Antenna	EMCO	3116	9608-4877	2015/12/26	1Y

4.2 Block diagram of test setup

In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

4.3 Limit

4.3.1 FCC 15.205 Restricted frequency band

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)

4.3.2 FCC 15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

4.3.2 FCC 15.249 Limit

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

4.3.3 Limit for this EUT

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4:2014. The specification used was the FCC 15.209, and FCC 15.249 limits.

4.4 Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and assistant system according clause 2.4 and 8.2
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) New battery is used during test.
 - (d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9MHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9KHz to 30MHz and 18GHz to 25GHz, so below final test was performed with frequency range from 30MHz to 18GHz.
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.
- (6) For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.
- (7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz Peak detector for Peak measure ;RMS detector for AV value.
- (8) After test and evaluation X/Y/Z axis of the EUT. will record the worst case in this report.

4.5 Test result

PASS. (See below detailed test result)

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C and section 15.205, 15.209 and 15.249, Vertical and Horizontal mode all have been tested, Horizontal mode is the worse case .with the worst margin reading of:

Radiated Emission Test Result

Test Mode: Tx

Test Site : 3m Chamber
EUT : RockCandy PS3 Wireless Controller **Model Number** : PL-6432BT
Power Supply : DC 3V **Test Mode** : Keeping Tx
Condition : Temp:24.5°C,Humi:55% **Antenna/Distance** : 3m

Frequency (MHz)	Receiver		Rx Antenna		Cable Loss (dB)	Amplifier Gain (dB)	Result Level (dBµV/m)	FCC 15.249	
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBµV/m)	Margin (dB)
Low Channel (2412)									
2412	96.68	PK	H	28.00	3.65	31.95	96.38	114.00	-17.62
2412	82.35	AV	H	28.00	3.65	31.95	82.05	94.00	-11.95
2412	97.42	PK	V	28.00	3.65	31.95	97.12	114.00	-16.88
2412	83.52	AV	V	28.00	3.65	31.95	83.22	94.00	-10.78
2390	66.48	PK	H	27.80	3.57	31.95	65.90	74.00	-8.10
2390	47.67	AV	H	27.80	3.57	31.95	47.09	54.00	-6.91
2390	67.35	PK	V	27.80	3.57	31.95	66.77	74.00	-7.23
2390	48.34	AV	V	27.80	3.57	31.95	47.76	54.00	-6.24
2400	66.33	PK	H	28.00	3.57	31.95	65.95	74.00	-8.05
2400	47.17	AV	H	28.00	3.57	31.95	46.79	54.00	-7.21
2400	67.37	PK	V	28.00	3.57	31.95	66.99	74.00	-7.01
2400	48.02	AV	V	28.00	3.57	31.95	47.64	54.00	-6.36
4824	54.37	PK	H	32.30	5.91	31.78	60.80	74.00	-13.20
4824	38.55	AV	H	32.30	5.91	31.78	44.98	54.00	-9.02
4824	55.13	PK	V	32.30	5.91	31.78	61.56	74.00	-12.44
4824	39.38	AV	V	32.30	5.91	31.78	45.81	54.00	-8.19
7236	46.79	PK	H	36.30	6.34	30.97	58.46	74.00	-15.54
7236	30.46	AV	H	36.30	6.34	30.97	42.13	54.00	-11.87
7236	47.35	PK	V	36.30	6.34	30.97	59.02	74.00	-14.98
7236	31.25	AV	V	36.30	6.34	30.97	42.92	54.00	-11.08
9648	46.57	PK	H	37.90	8.01	30.86	61.62	74.00	-12.38
9648	30.12	AV	H	37.90	8.01	30.86	45.17	54.00	-8.83
9648	48.13	PK	V	37.90	8.01	30.86	63.18	74.00	-10.82
9648	32.57	AV	V	37.90	8.01	30.86	47.62	54.00	-6.38
532	49.35	QP	H	14.20	2.74	27.60	38.69	46.00	-7.31
532	50.76	QP	V	14.20	2.74	27.60	40.10	46.00	-5.90
Middle Channel (2440)									
2440	93.77	PK	H	28.30	3.69	31.95	93.81	114.00	-20.19
2440	84.52	AV	H	28.30	3.69	31.95	84.56	94.00	-9.44
2440	95.16	PK	V	28.30	3.69	31.95	95.20	114.00	-18.80
2440	85.48	AV	V	28.30	3.69	31.95	85.52	94.00	-8.48
4880	58.49	PK	H	32.90	6.34	31.78	65.95	74.00	-8.05
4880	38.85	AV	H	32.90	6.34	31.78	46.31	54.00	-7.69
4880	59.05	PK	V	32.90	6.34	31.78	66.51	74.00	-7.49
4880	40.57	AV	V	32.90	6.34	31.78	48.03	54.00	-5.97

7320	47.25	PK	H	37.10	6.72	30.97	60.10	74.00	-13.90
7320	36.94	AV	H	37.10	6.72	30.97	49.79	54.00	-4.21
7320	48.56	PK	V	37.10	6.72	30.97	61.41	74.00	-12.59
7320	36.56	AV	V	37.10	6.72	30.97	49.41	54.00	-4.59
9760	44.73	PK	H	38.60	8.43	30.86	60.90	74.00	-13.10
9760	33.75	AV	H	38.60	8.43	30.86	49.92	54.00	-4.08
9760	45.62	PK	V	38.60	8.43	30.86	61.79	74.00	-12.21
9760	34.19	AV	V	38.60	8.43	30.86	50.36	54.00	-3.64
532	46.62	QP	H	14.20	2.74	27.60	35.96	46.00	-10.04
532	48.45	QP	V	14.20	2.74	27.60	37.79	46.00	-8.21
High Channel (2475)									
2475	97.58	PK	H	28.70	3.72	31.93	98.07	114.00	-15.93
2475	84.76	AV	H	28.70	3.72	31.93	85.25	94.00	-8.75
2475	98.35	PK	V	28.70	3.72	31.93	98.84	114.00	-15.16
2475	86.47	AV	V	28.70	3.72	31.93	86.96	94.00	-7.04
2483.5	61.35	PK	H	28.70	3.72	31.93	61.84	74.00	-12.16
2483.5	44.58	AV	H	28.70	3.72	31.93	45.07	54.00	-8.93
2483.5	64.43	PK	V	28.70	3.72	31.93	64.92	74.00	-9.08
2483.5	45.89	AV	V	28.70	3.72	31.93	46.38	54.00	-7.62
4950	55.43	PK	H	33.10	6.39	31.78	63.14	74.00	-10.86
4950	39.94	AV	H	33.10	6.39	31.78	47.65	54.00	-6.35
4950	58.23	PK	V	33.10	6.39	31.78	65.94	74.00	-8.06
4950	41.04	AV	V	33.10	6.39	31.78	48.75	54.00	-5.25
7425	51.34	PK	H	37.20	6.77	30.97	64.34	74.00	-9.66
7425	33.46	AV	H	37.20	6.77	30.97	46.46	54.00	-7.54
7425	53.57	PK	V	37.20	6.77	30.97	66.57	74.00	-7.43
7425	34.38	AV	V	37.20	6.77	30.97	47.38	54.00	-6.62
9900	46.88	PK	H	38.70	8.48	30.86	63.20	74.00	-10.80
9900	30.12	AV	H	38.70	8.48	30.86	46.44	54.00	-7.56
9900	48.45	PK	V	38.70	8.48	30.86	64.77	74.00	-9.23
9900	32.23	AV	V	38.70	8.48	30.86	48.55	54.00	-5.45
532	49.86	QP	H	14.20	2.74	27.60	39.20	46.00	-6.80
532	52.32	QP	V	14.20	2.74	27.60	41.66	46.00	-4.34

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit
 3. For fundamental frequency test: RBW=3MHz VBW=10MHz Peak detector for PK value, RBW=3MHz VBW=10MHz AV detector for AV value.

5. Antenna Requirements

5.1 Limit

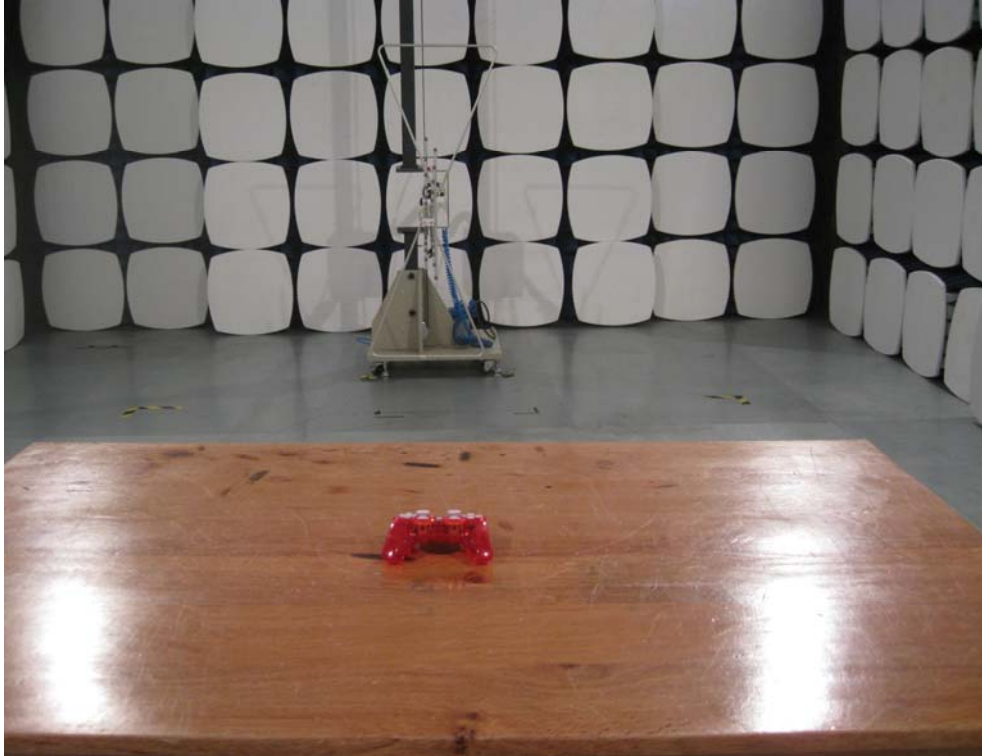
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.249 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.2 Result

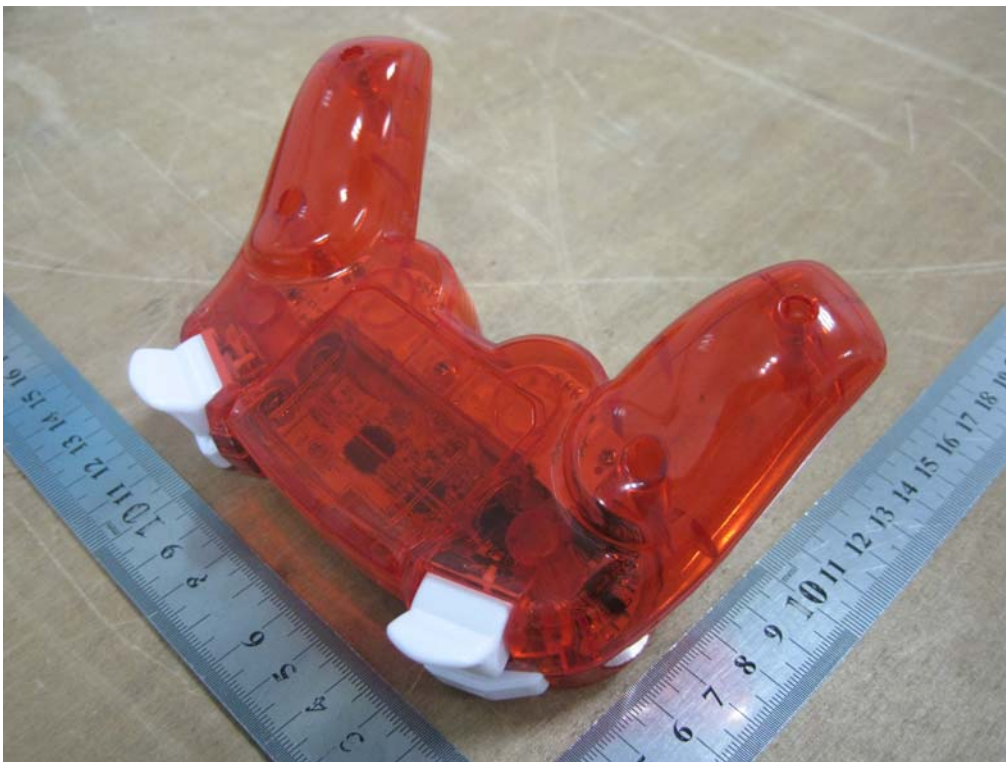
The EUT has an internal chip antenna permanently soldering on the printed circuit board, which complied with 15.203, the maximum gain was -0.26dBi.

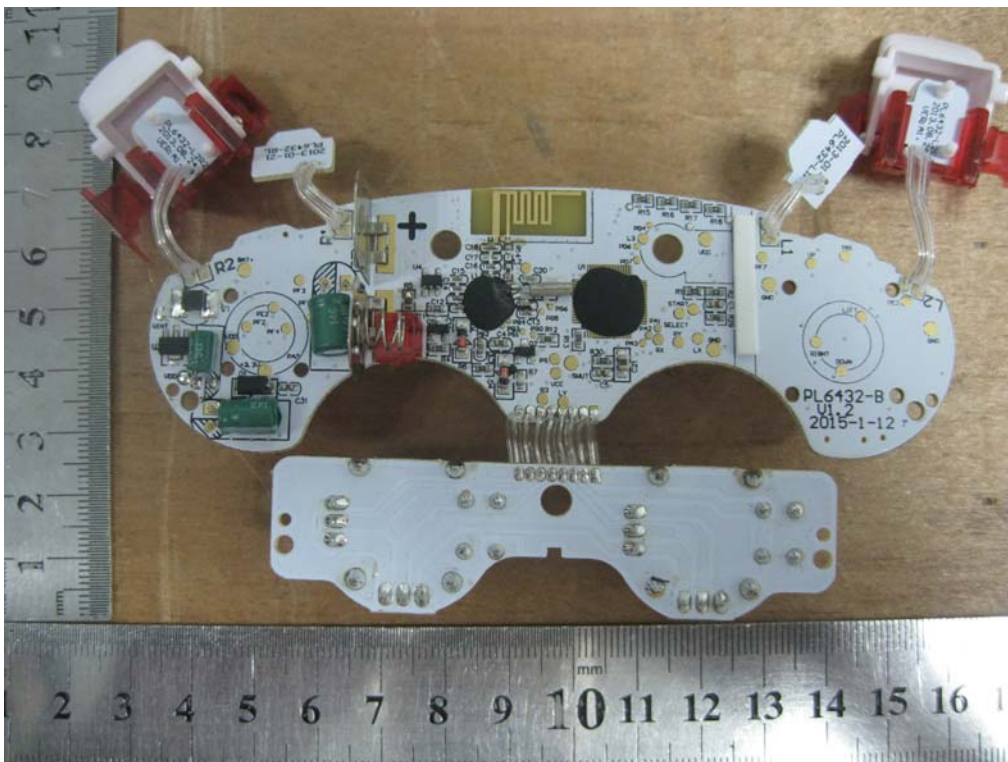
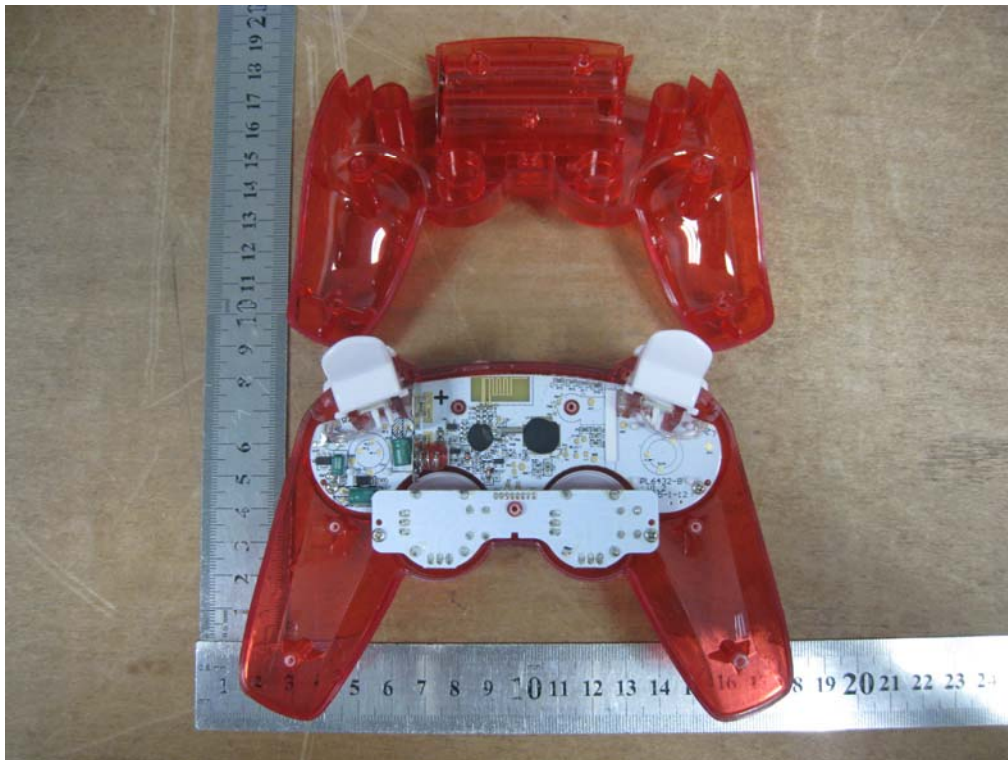
7.EUT TEST PHOTO

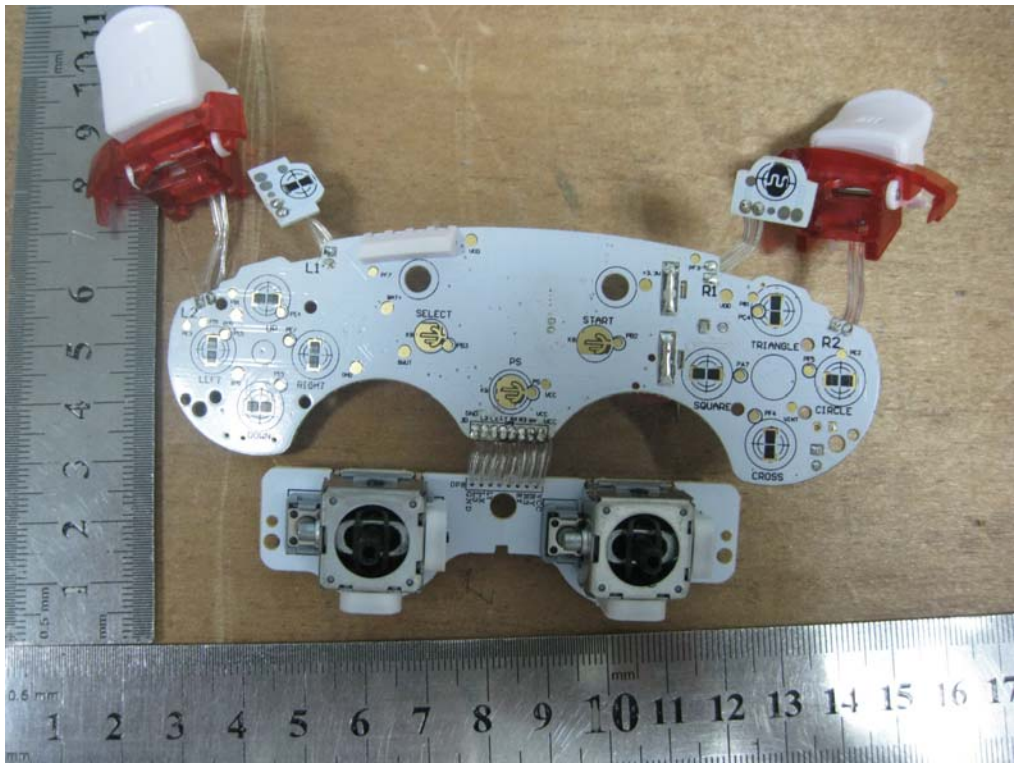
Radiated Measurement Photos



EUT PHOTO







END OF REPORT