

FCC RADIO TEST REPORT

FCC ID: 2AHN3-6618

Applicant : Dongguan Tonsenbo Toys Products Co., Ltd.
Address : L building, Yinyang Industrial Zone, Xuzhen, Zhangmutou
Town, Dongguan City.

Equipment Under Test (EUT):

Name : Electric remote control car
Model : Lambor Race Car (6618), Rover SUV Car (6628)

Standards : FCC PART 15, SUBPART C : 2013 (Section 15.249)

Report No : CTB160128001

Date of Test : February 24-29, 2016

Date of Issue : March 11, 2015

Tset Result : **PASS**

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

Authorized Signature



(Simon Lee)
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen CTB Testing Technology Co., Ltd. Or test done by Shenzhen CTB Testing Technology Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen CTB Testing Technology Co., Ltd Approvals in writing.

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1 General Information

1.1 Description of Device (EUT)

EUT Name : Electric remote control car

Trade Name : N/A

Model No. : Lambor Race Car (6618), Rover SUV Car (6628)

DIFF. : All model's the function, software and electric circuit are the same , so all the test were performed on the model Lambor Race Car (6618)

Type of Antenna : PCB Antenna, Max. Gain: 0dBi

Operation Frequency : 2407 MHz -2481MHz

Channel number : 21

Modulation type : GFSK

Power Supply : DC 3V Supply by battery

Applicant : Dongguan Tonsenbo Toys Products Co., Ltd.

Address : L building, Yinyang Industrial Zone, Xuzhen, Zhangmutou Town, Dongguan City.

Manufacturer : Dongguan Tonsenbo Toys Products Co., Ltd.

Address : L building, Yinyang Industrial Zone, Xuzhen, Zhangmutou Town, Dongguan City.

1.2 Description of Test Facility

Shenzhen CTB Testing Technology Co., Ltd.

10th floor, West Logistics Information Center Building, Fuyong Town ,
Bao'an District, Shenzhen City, P.R.C

FCC Registered No.: 671575

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Cal. Due day	Cal Interval
3m Semi-Anechoic Chamber	Frankonia	N/A	N/A	2016.04.09	1 Year
EMI Test receiver	Rohde&Schwarz	ESCS30	100085	2016.04.09	1 Year
Signal Analyzer	Agilent	N9010A	MY48030494	2016.08.15	1 Year
Bilog Antenna	SCHAFFNER CHASE	CBL6143	N/A	2016.04.09	1 Year
Horn Antenna	SCHAFFNER CHASE	BBHA 9120D	BBHA 9120D(1206)	2016.04.09	1 Year
Amplifier	EM	EM-30180	060568	2016.04.09	1 Year
Power Meter	Anritsu	ML2487A	6K00001491	2016.08.15	1 Year
Power sensor	Anritsu	ML2491A	32516	2016.08.15	1 Year
Coaxial Cable	SZHTW	N/A	C-01	2016.04.09	1 Year
Coaxial Cable	SZHTW	N/A	C-02	2016.04.09	1 Year
Coaxial Cable	SZHTW	N/A	C-03	2016.04.09	1 Year
Test Receiver	Rohde&Schwarz	ESCS30	100086	2016.04.09	1 Year
L.I.S.N.	Schwarzbeck	NSLK8126	8126466	2016.04.09	1 Year
50 Ω Coaxial Switch	Anritsu	MP59B	6200264326	2016.04.09	1 Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2009 using a 50 μ H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2009 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS

33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m

ANSI STANDARD C63.4-2009 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2009 10.1.7 with the EUT 40 cm from the vertical ground wall.

4 Summary of Measurement

4.1 Summary of test result

Test Item	Test Requirement	Standard Paragraph	Result
Spurious Emission	FCC PART 15: 2013	Section 15.249&15.209	Compliance
Conduction Emission	FCC PART 15: 2013	Section 15.207	Compliance
Occupied bandwidth	FCC PART 15: 2013	Section 15.249	Compliance
Band edge Requirement	FCC PART 15: 2013	Section 15.249	Compliance
Antenna Requirement	FCC PART 15: 2013	Section 15.203	Compliance

Note: 1, EUT can be powered with inside battery, according to exploratory test, when powered by battery have worse emissions, and also can make sure EUT have enough power for wireless work, so all the final test were performed with new battery.
 2, All tests are according to ANSI C63.4-2009 and ANSI C63.10-2009

4.2 Test mode

Tested mode, channel information		
Mode	Channel	Frequency (MHz)
GFSK	CH0	2407
	CH10	2451
	CH20	2481

Channel list				
GFSK	CH0	2407 MHz	CH11	2454 MHz
	CH1	2412 MHz	CH12	2457 MHz
	CH2	2417 MHz	CH13	2460 MHz
	CH3	2422 MHz	CH14	2463 MHz
	CH4	2427MHz	CH15	2466MHz
	CH5	2432MHz	CH16	2469 MHz
	CH6	2437 MHz	CH17	2472MHz
	CH7	2442MHz	CH18	2475MHz
	CH8	2445MHz	CH19	2478MHz
	CH9	2448MHz	CH20	2481MHz
	CH10	2451MHz		

4.3 Block Diagram

For Radiated Emission:

EUT

4.4 Assistant equipment used for test

Description : N/A
 Manufacturer : N/A
 Model No. : N/A

4.5 Test Conditions

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

4.6 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.40dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.15 dB	Polarize: V
	2.56dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.2dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.12dB	Polarize: H
	2.52dB	Polarize: V
Uncertainty for radio frequency	1×10^{-9}	
Uncertainty for conducted RF Power	0.66dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.05%	

5 POWER LINE CONDUCTED EMISSION

5.1 Conducted Emission Limits(15.209&249)

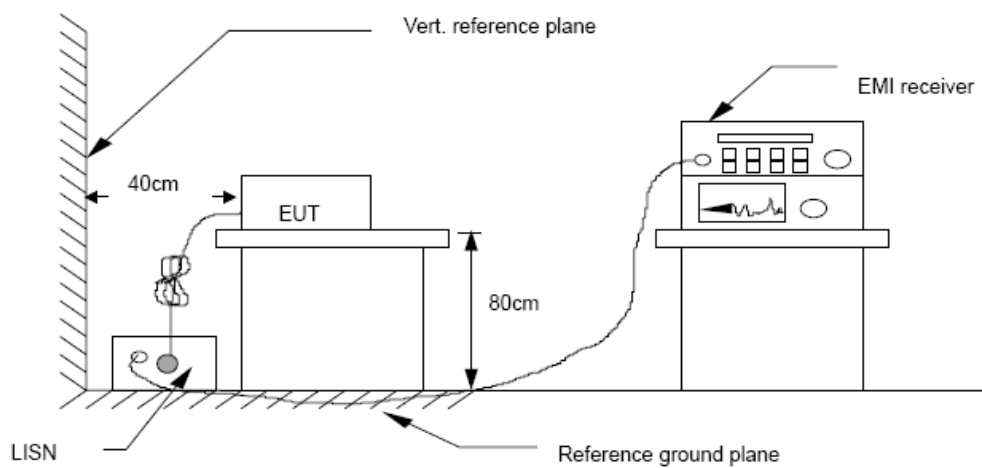
Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3. The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

5.2 Test Setup



5.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2009 on Conducted Emission Measurement. The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

5.4 Test Results

EUT'S power supply by DC battery, so this test not applicable.

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6 Radiation Emission

6.1 Radiation Emission Limits(15.209&249 (a))

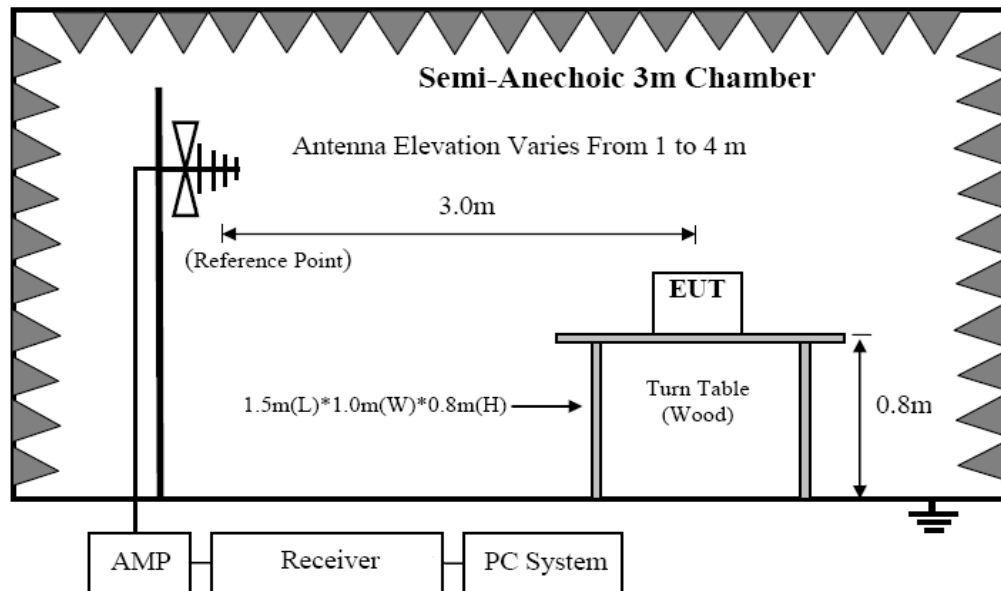
Frequency (MHz)	Field Strength Limits at 3 metres (watts,e.i.r.p.)		
	uV/m	dB uV/m	Measurement distance(m)
0.009-0.490	2400/F(kHz)	XX	300
0.490-1.705	24000/F(kHz)	XX	30
1.705-30	30	29.5	30
30~88	100(3nW)	40	3
88~216	150(6.8nW)	43.5	3
216~960	200(12nW)	46	3
Above960	500(75nW)	54	3
Carrier frequency		93.97(AV)	3
Carrier frequency		113.97(PK)	3

NOTE:

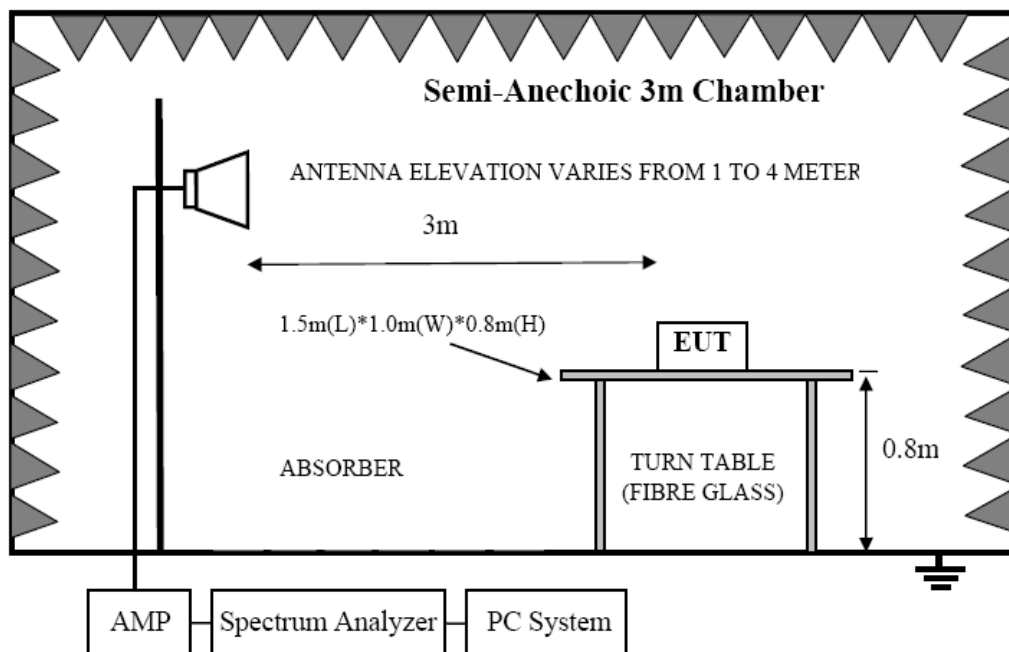
- The tighter limit applies at the band edges.
- Emission Level(dB uV/m)=20log Emission Level(Uv/m)

6.2 Test Setup

See the next page



30MHz-1GHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

- a) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
- b) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Quasi Peak Detector mode remeasured
- d) If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
- e) Rotated EUT through three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- f) For the actual test configuration, please see the test setup photo.

Note: The EUT was tested on three different polar directions; i.e. X axis, Y axis, Z axis. Only the worse case is reported.

6.4 Test Equipment Setting For emission test.

9KHz~150KHz	RBW 200Hz	VBW 1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHz~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

6.5 Test Condition

Continual Transmitting in maximum power.

6.6 Test Result

PASS.

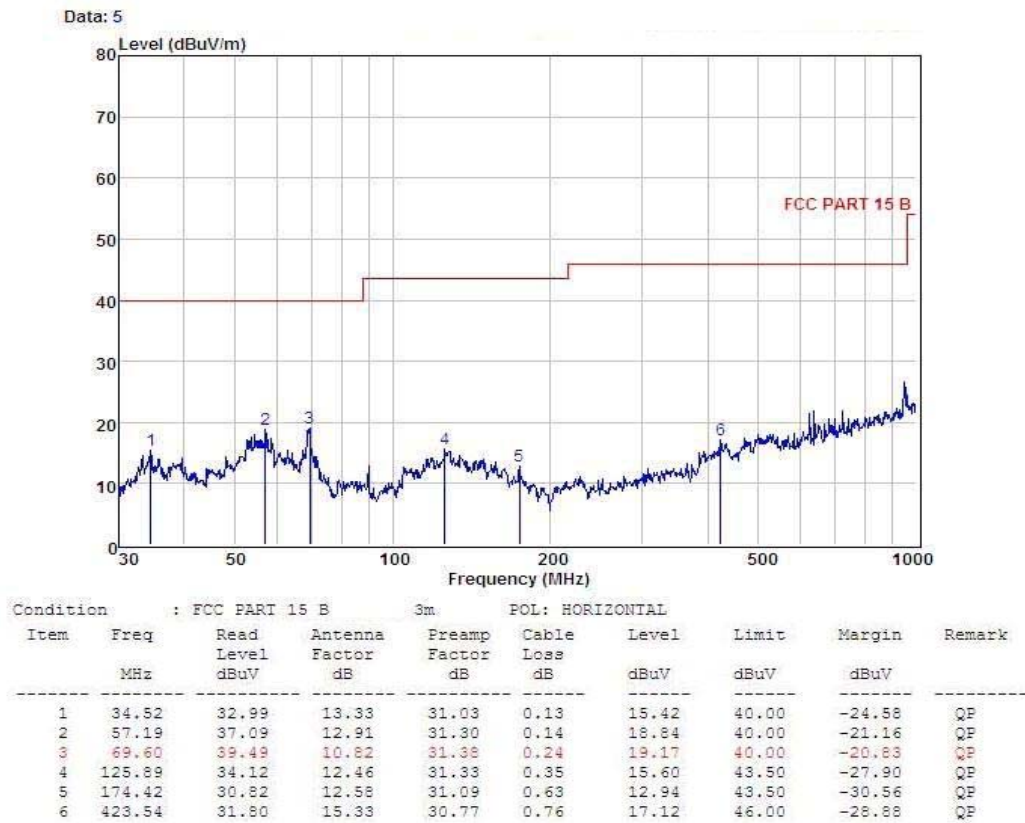
We have scanned the 10th harmonic from 9KHz to the EUT.

Note: The Radiated emissions is showed the maximum power data of TX test mode and showed worst orthogonal axes with X orthogonal axes.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: **PASS**

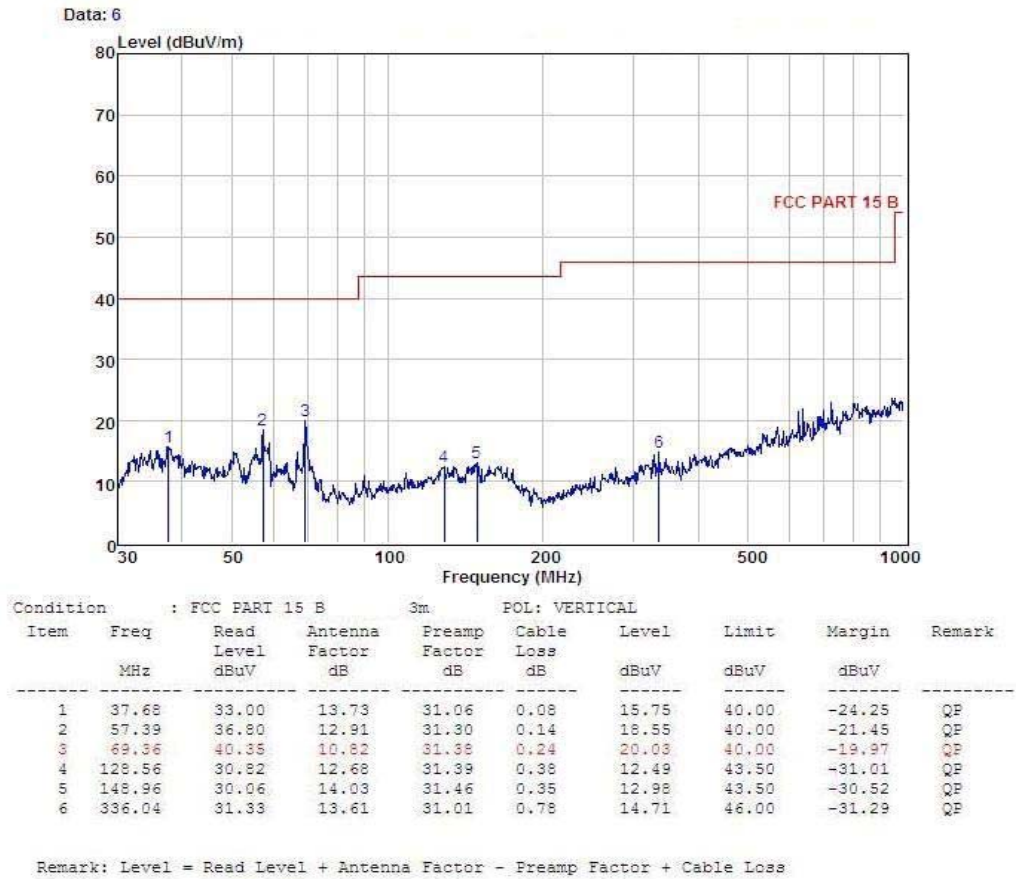
Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Below 1GHz test data:
 Note: This report only shall the worst case mode .
 HORIZONTAL:



Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

VERTICAL:



Notes:-Means other frequency and mode comply with standard requirements and at least have 20dB margin.

Radiated Emissions Result of Inside band (2407MHz)

EUT	Electric remote control car	Model Name	Lambor Race Car (6618)
Temperature	25°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3V supply by battery
Test Mode	TX Mode	Antenna polarization	Horizontal/Vertical

Channel Low(2407MHz)									
Fre. MHz	Plority H/V	Reading dBuV	Antenna Factor dB	Cable Loss dB	Amplifier Gain dB	Correct Factor dB	Measure Result dBuV/m	Limit dBuV/m	Margin dB
2407	H	88.29 (PK)	27.62	3.92	34.97	-3.43	84.86	113.97	-29.11
2407	H	83.20 (AV)	27.62	3.92	34.97	-3.43	79.77	93.97	-14.20
--	H	--	--	--	--	--	--	--	--
2407	V	92.08 (PK)	27.62	3.92	34.97	-3.43	88.65	113.97	-25.32
2407	V	82.53(AV)	27.62	3.92	34.97	-3.43	79.10	93.97	-14.87
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1486.44	H	47.15	---	-10.27	36.88	---	74.00	54.00	-17.12	Peak
1925.16	H	48.16	---	-8.86	39.30	---	74.00	54.00	-14.70	Peak
2638.09	H	44.42	---	-6.94	37.48	---	74.00	54.00	-16.52	Peak
4814.00	H	37.53	---	0.64	38.17	---	74.00	54.00	-15.83	Peak
N/A										
1251.40	V	50.54	---	-11.52	39.02	---	74.00	54.00	-14.98	Peak
1816.18	V	47.74	---	-9.16	38.58	---	74.00	54.00	-15.42	Peak
2771.76	V	44.08	---	-6.38	37.70	---	74.00	54.00	-16.30	Peak
4814.00	V	37.54		0.64	38.18	---	74.00	54.00	-15.82	Peak
N/A										

Notes: 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain

Measurement Result=Reading + Correct Factor

Margin=Measurement Result-Limit

2 --Spectrum setting: For fundamental frequency: BW =2MHz VBW=6MHz, Peak detector is for PK value, RMS detector is for AV value.

a. Peak setting Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting Above 1G: RBW=1MHz, VBW=10Hz, Peak detector is for AV value.

Radiated Emissions Result of Inside band (2451MHz)

EUT	Electric remote control car	Model Name	Lambor Race Car (6618)
Temperature	25°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3V supply by battery
Test Mode	TX Mode	Antenna polarization	Horizontal/Vertical

Channel Low(2451MHz)									
Fre. MHz	Plority H/V	Reading dBuV	Antenna Factor dB	Cable Loss dB	Amplifier Gain dB	Correct Factor dB	Measure Result dBuV/m	Limit dBuV/m	Margin dB
2451	H	90.01 (PK)	27.59	3.98	34.97	-3.40	86.61	113.97	-27.36
2451	H	84.52 (AV)	27.59	3.98	34.97	-3.40	81.12	93.97	-12.85
--	H	--	--	--	--	--	--	--	--
2451	V	91.84 (PK)	27.59	3.98	34.97	-3.40	88.44	113.97	-25.53
2451	V	83.37 (AV)	27.59	3.98	34.97	-3.40	79.97	93.97	-14.00
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1242.18	H	49.24	---	-10.96	38.28	---	74.00	54.00	-15.72	Peak
1929.70	H	47.84	---	-8.64	39.20	---	74.00	54.00	-14.80	Peak
2931.53	H	44.61	---	-5.95	38.66	---	74.00	54.00	-15.34	Peak
4902.00	H	36.63	---	0.87	37.50	---	74.00	54.00	-16.50	Peak
N/A										
1280.70	V	48.91	---	-10.96	37.95	---	74.00	54.00	-16.05	Peak
2121.29	V	47.55	---	-8.36	39.19	---	74.00	54.00	-14.81	Peak
3246.51	V	44.29	---	-5.39	38.90	---	74.00	54.00	-15.10	Peak
4902.00	V	39.99		0.87	40.86	---	74.00	54.00	-13.14	Peak
N/A										

- Notes:** 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit
- 2 –Spectrum setting: For fundamental frequency: BW =2MHz VBW=6MHz, Peak detector is for PK value, RMS detector is for AV value.
- Peak setting Above 1G: RBW=1MHz, VBW=3MHz
 - AV setting Above 1G: RBW=1MHz, VBW=10Hz, Peak detector is for AV value.

Radiated Emissions Result of Inside band (2481MHz)

EUT	Electric remote control car	Model Name	Lambor Race Car (6618)
Temperature	22°C	Relative Humidity	54%
Pressure	960hPa	Test voltage	DC 3V supply by battery
Test Mode	TX Mode	Antenna polarization	Horizontal/Vertical

Channel Low(2481MHz)									
Fre. MHz	Plority H/V	Reading dBuV	Antenna Factor dB	Cable Loss dB	Amplifier Gain dB	Correct Factor dB	Measure Result dBuV/m	Limit dBuV/m	Margin dB
2481	H	92.20 (PK)	27.53	3.96	34.97	-3.48	88.72	113.97	-25.25
2481	H	83.23 (AV)	27.53	3.96	34.97	-3.48	79.75	93.97	-14.22
--	H	--	--	--	--	--	--	--	--
2481	V	91.75 (PK)	27.53	3.96	34.97	-3.48	88.27	113.97	-25.70
2481	V	82.48 (AV)	27.53	3.96	34.97	-3.48	79.00	93.97	-14.97
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1233.15	H	49.96	---	-11.58	38.38	---	74.00	54.00	-15.62	Peak
2209.20	H	47.22	---	-8.15	39.07	---	74.00	54.00	-14.93	Peak
2927.62	H	46.00	---	-6.07	39.93	---	74.00	54.00	-14.07	Peak
4962.00	H	39.37	---	0.78	40.15	---	74.00	54.00	-13.85	Peak
N/A										
1302.72	V	49.93	---	-11.34	38.59	---	74.00	54.00	-15.41	Peak
2318.93	V	47.60	---	-8.22	39.38	---	74.00	54.00	-14.62	Peak
3132.85	V	45.04	---	-6.12	38.92	---	74.00	54.00	-15.08	Peak
4962.00	V	38.81		0.95	39.76	---	74.00	54.00	-14.24	Peak
N/A										

- Notes:** 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit
- 2 –Spectrum setting: For fundamental frequency: BW =2MHz VBW=6MHz, Peak detector is for PK value, RMS detector is for AV value.
- Peak setting Above 1G: RBW=1MHz, VBW=3MHz
 - AV setting Above 1G: RBW=1MHz, VBW=10Hz, Peak detector is for AV value.

7 Occupied bandwidth

7.1 Test limit

Please refer section 15.249

7.2 Method of measurement

- a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.
- b) The test receiver RBW set 30KHz, VBW set 30KHz, Sweep time set auto.

7.3 Test Setup

EUT Spectrum
Analyzer

7.4 Test Results

Mode	Freq (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (kHz)	Conclusion
GFSK TX Mode	2407	1.194	1.0094	/	PASS
	2451	1.137	1.0144	/	PASS
	2481	1.107	1.0040	/	PASS

Note: Detailed information please see the following page.

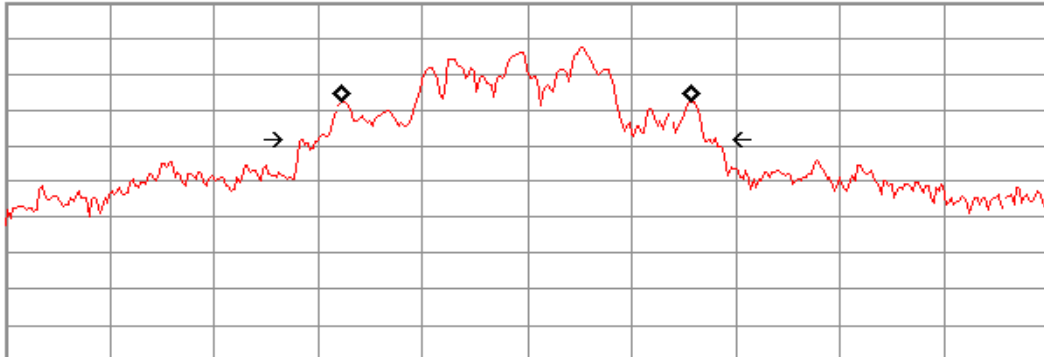
Agilent

R T

Ref 20 dBm

Atten 30 dB

#Peak
Log
10
dB/
Offst
1
dB



Center 2.407 GHz

#Res BW 30 kHz

#VBW 30 kHz

Span 3 MHz
Sweep 5 ms (401 pts)

Occupied Bandwidth
1.0094 MHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -29.053 kHz
x dB Bandwidth 1.194 MHz

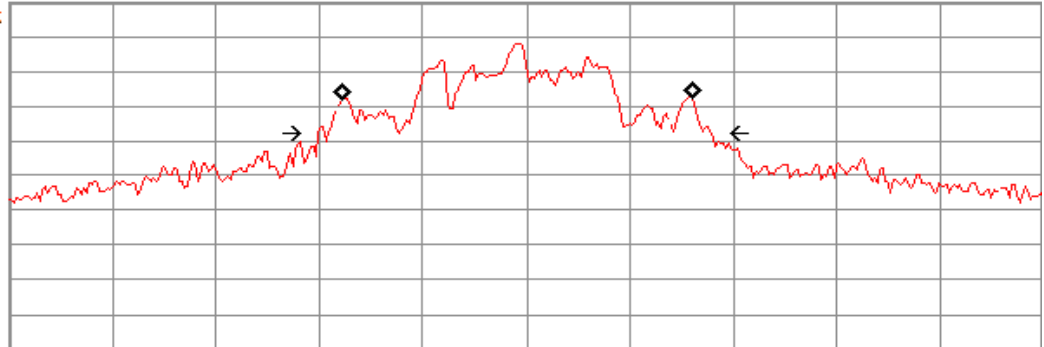
Agilent

R T

Ref 20 dBm

Atten 30 dB

#Peak
Log
10
dB/
Offst
1
dB



Center 2.451 GHz

#Res BW 30 kHz

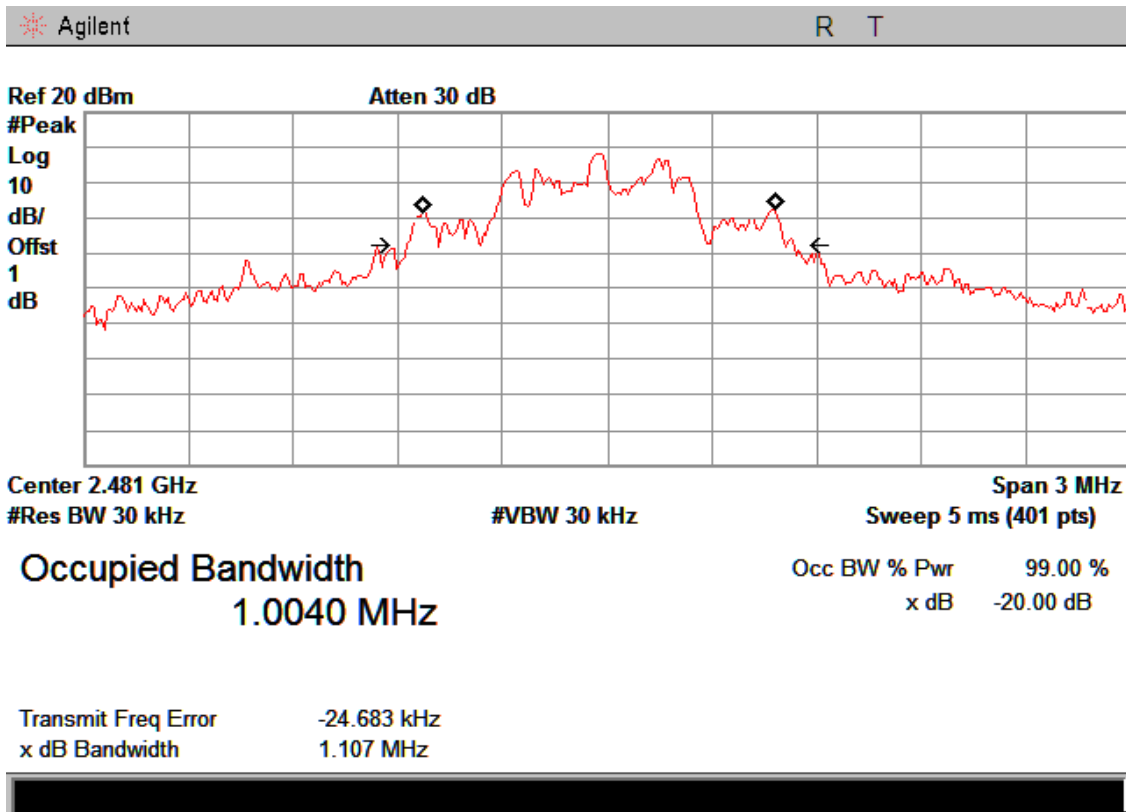
#VBW 30 kHz

Span 3 MHz
Sweep 5 ms (401 pts)

Occupied Bandwidth
1.0144 MHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -26.928 kHz
x dB Bandwidth 1.137 MHz



8 Band Edge Check

8.1 Test limit

Please refer section 15.249 and section 15.205.

249(d) 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.

249(e) As show in section 15.35(b), for frequencies above 1000MHz, the above field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

8.2 Test Procedure

8.2.1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

8.2.2. Set spectrum analyzer please see the following test plot.

8.2.3. Set the spectrum analyzer as RBW, VBW=1000 KHz,

8.2.4. Max hold, view and count how many channel in the band.

8.3 Test Setup

Please see the section 6.2, Above 1GHz Test Setup.

8.4 Test Result

Pass.

Detailed information please see the following page.

CH Low

Band Edge Test result								
EUT: Electric remote control car					M/N: Lambor Race Car (6618)			
Power: DC 3.0V From battery								
Test date: 2016-02-26			Test site: 3m Chamber			Tested by: Mason		
Test mode: Tx CH Low 2407MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	44.17	27.62	3.92	34.97	40.74	74	33.26	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	49.20	27.62	3.94	34.97	45.79	74	28.21	PK
2400	/	27.62	3.94	34.97	/	54	/	AV
Antenna Polarity: Horizontal								
2390	43.05	27.62	3.92	34.97	39.62	74	34.38	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	48.16	27.62	3.94	34.97	44.75	74	29.25	PK
2400	/	27.62	3.94	34.97	/	54	/	AV
Note: 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK 3, Result = Read level + Antenna factor + cable loss-Amp factor 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: Electric remote control car					M/N: Lambor Race Car (6618)			
Power: DC 3.0V From battery								
Test date: 2016-02-26			Test site: 3m Chamber			Tested by: Mason		
Test mode: Tx CH High 2481MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	48.27	27.59	4.00	34.97	44.89	74	29.11	PK
2483.5	/	27.59	4.00	34.97	/	54	/	AV
Antenna Polarity: Horizontal								
2483.5	47.95	27.59	4.00	34.97	44.57	74	29.43	PK
2483.5	/	27.59	4.00	34.97	/	54	/	AV
Note: 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK 3, Result = Read level + Antenna factor + cable loss-Amp factor 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

9 Antenna Requirement

9.1 Standard 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 shall be considered sufficient to comply with the provisions of this Section. 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.

9.2 Antenna Connected Construction

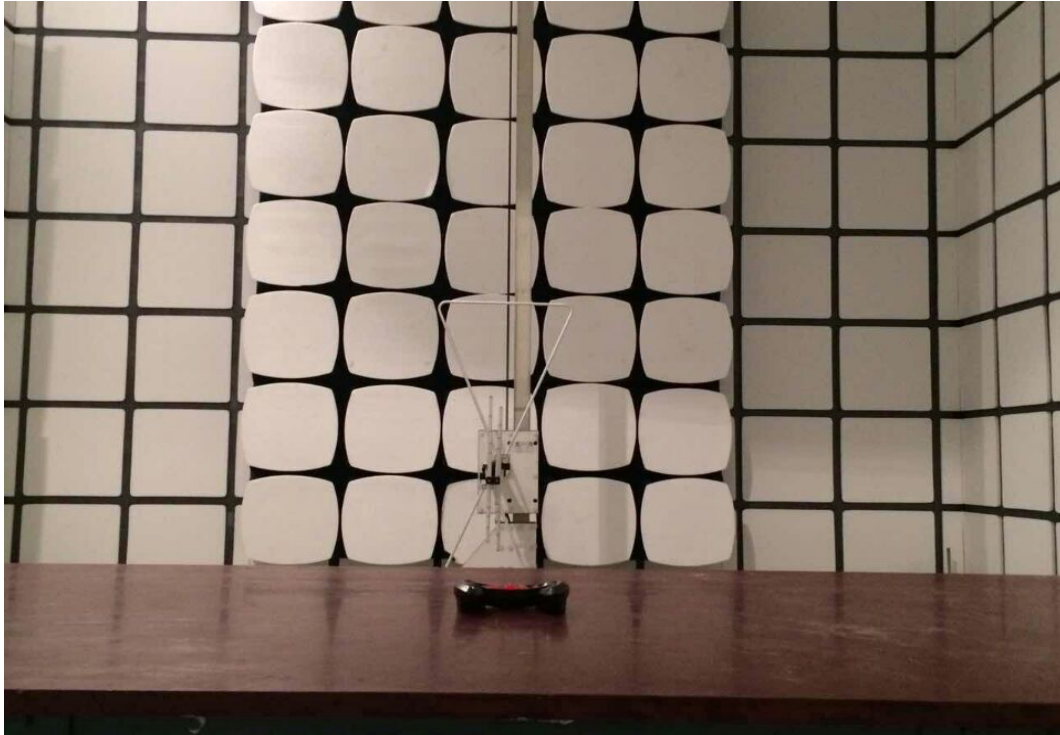
The directional gains of antenna used for transmitting is 0dBi, and the antenna is PCB Antenna. Please see EUT photo for details.

9.3 Result

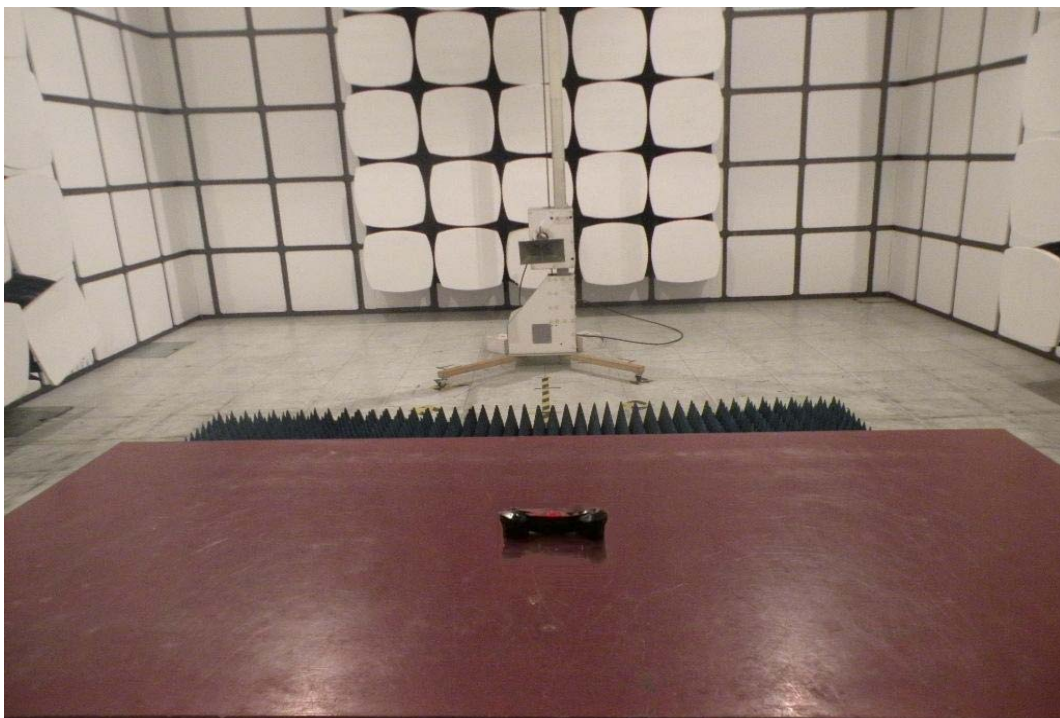
The EUT antenna is PCB Antenna. It complies with the standard requirement.

10 Photographs of Test Setup

Below 1G



Above 1G



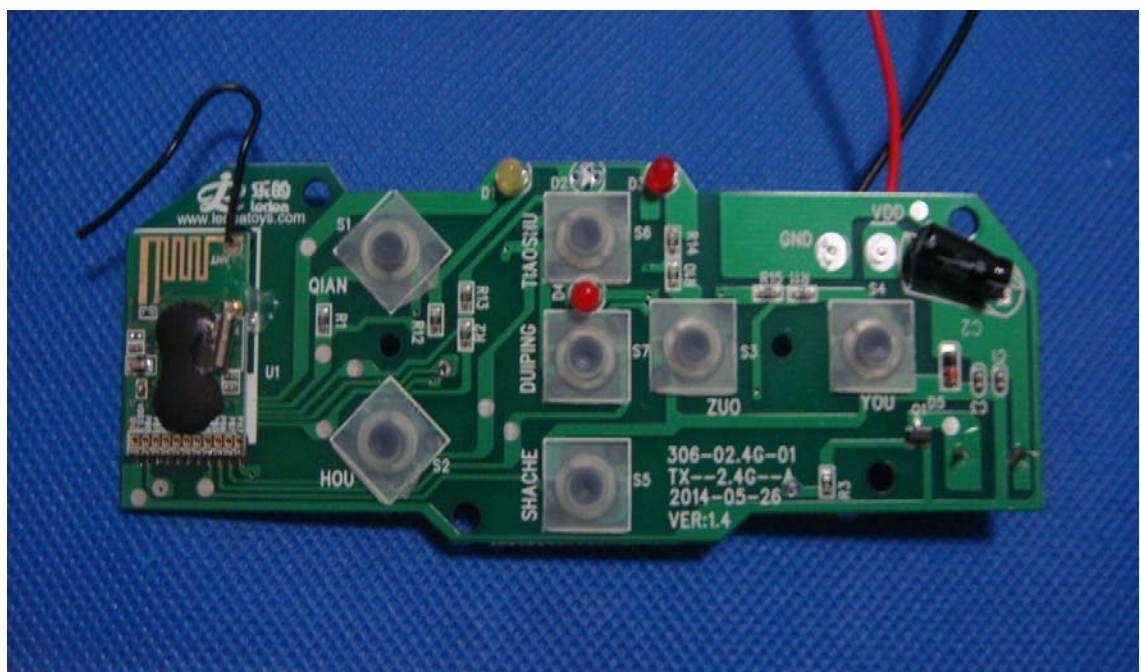
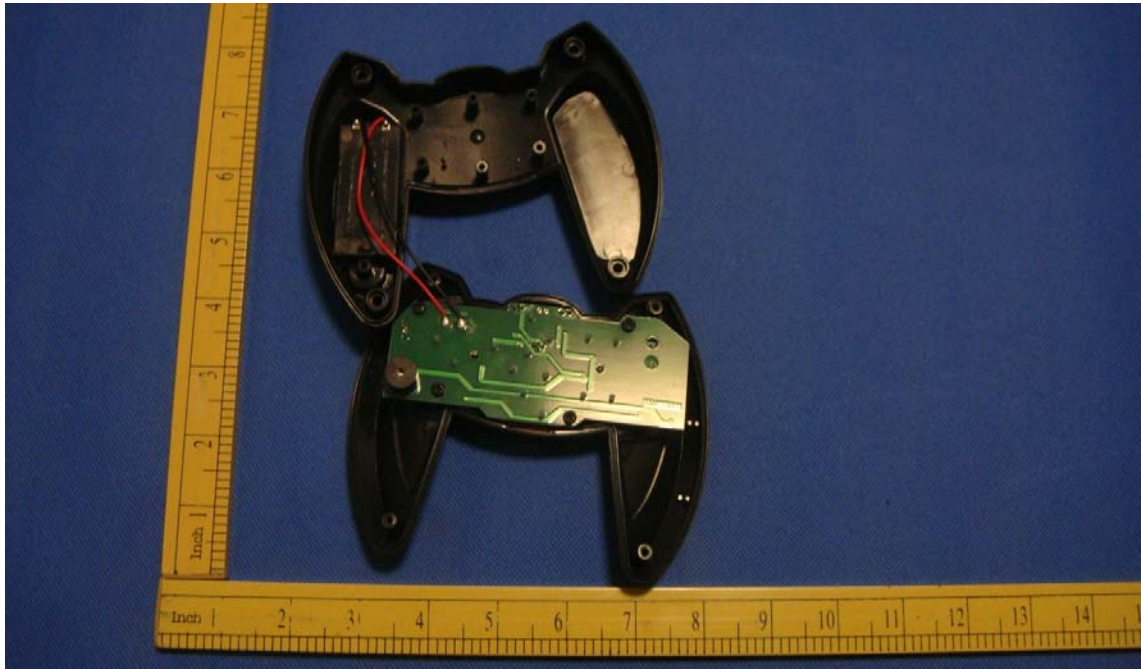
11 Photographs of EUT

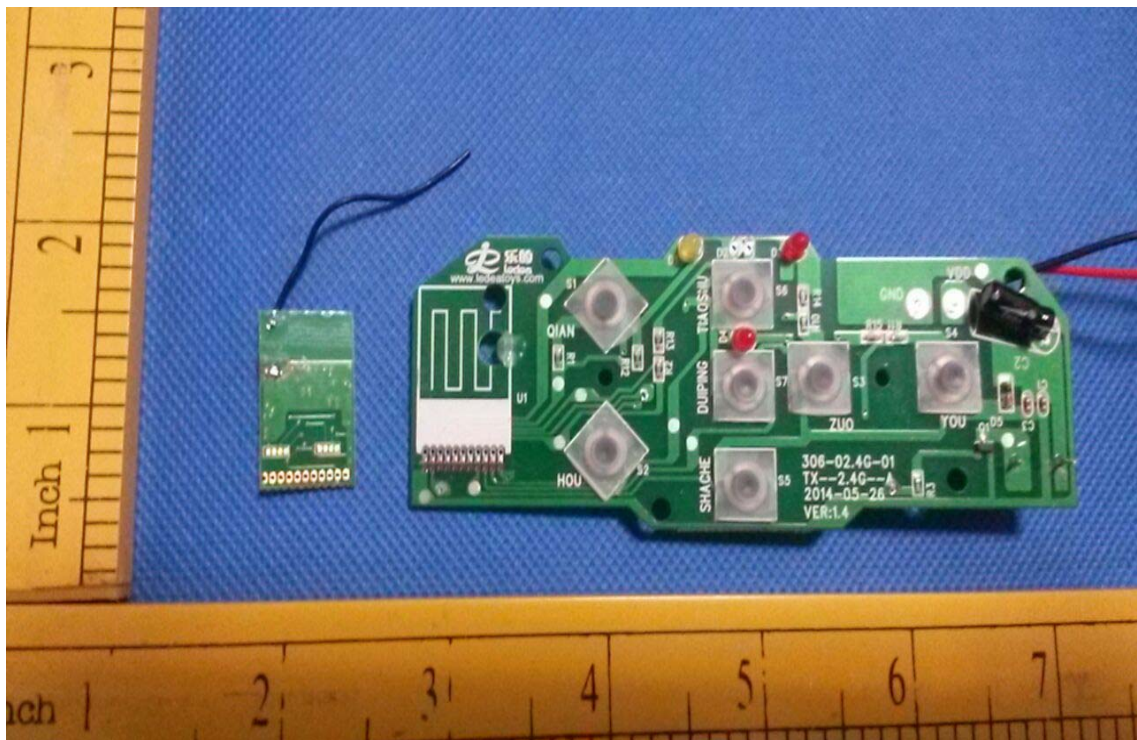
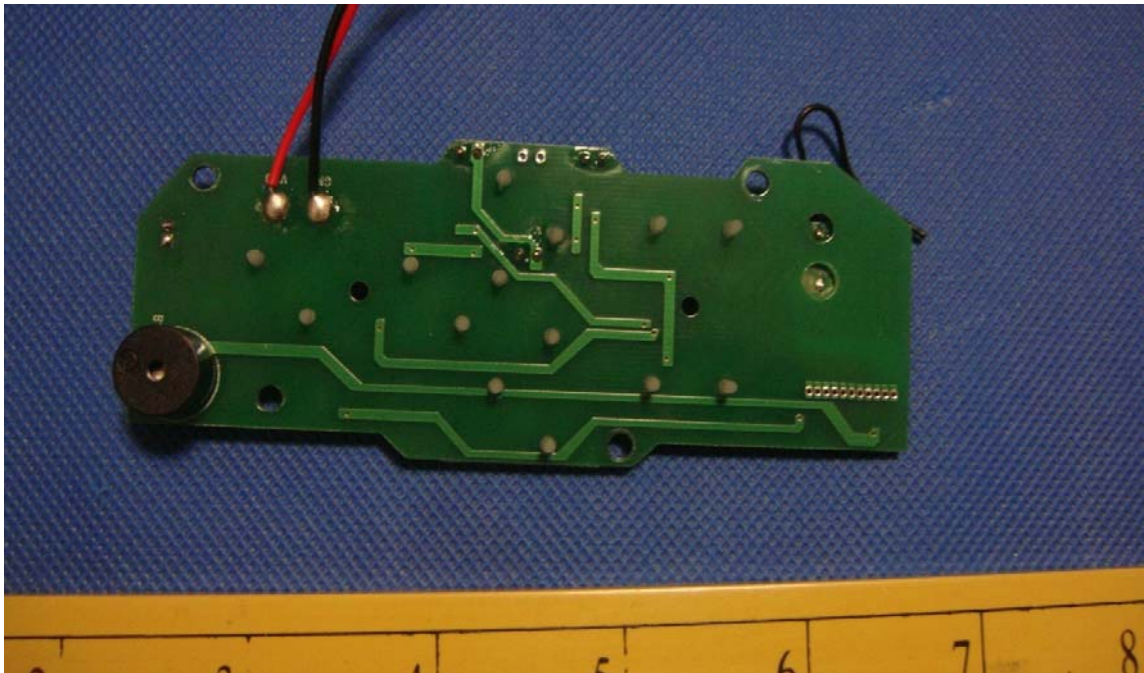












-----END OF THE REPORT----