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TEST REPORT

FOR FCC PART 15 SUBPART C 15.249

Report Reference No.: **CTL1804026032-WF**

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Ivan Xie

Product Name.....: Game controller

Model/Type reference: SL-9101, ESM-9101

Trade Mark.....: N/A

FCC ID.....: RP8-SL-9101

Applicant's name: **DongGuan KingSheng Electronics&Tech Co. Ltd**

Address of applicant: Building 39, Arising Sun Industrial City, LinCun Village, TangXia Town, DongGuan City, China

Test Firm: **Shenzhen CTL Testing Technology Co., Ltd.**

Address of Test Firm: Floor 1-A, Baisha Technology Park, No.3011, ShaheXi Road, Nanshan District, Shenzhen, China 518055

Test specification.....:

Standard.....: **FCC Part 15.249:**Operation within the bands 920-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz and 24.0 - 24.25 GHz.

TRF Originator: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF: Dated 2011-01

Date of Receipt.....: Apr.18, 2018

Date of Test Date.....: Apr.18, 2018–May 4, 2018

Data of Issue.....: May 4, 2018

Result.....: **Pass**

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TEST REPORT

Test Report No. :	CTL1804026032-WF	May 4, 2018
		Date of issue

Equipment under Test : Game controller

Model /Type : SL-9101

Applicant : **DongGuan KingSheng Electronics&Tech Co. Ltd**

Address : Building 39, Arising Sun Industrial City, LinCun
Village, TangXia Town, DongGuan City, China

Manufacturer : **DongGuan KingSheng Electronics&Tech Co. Ltd**

Address : Building 39, Arising Sun Industrial City, LinCun
Village, TangXia Town, DongGuan City, China

Test result	Pass *
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* In the configuration tested, the EUT complied with the standards specified page 5.

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

**** Modified History ****

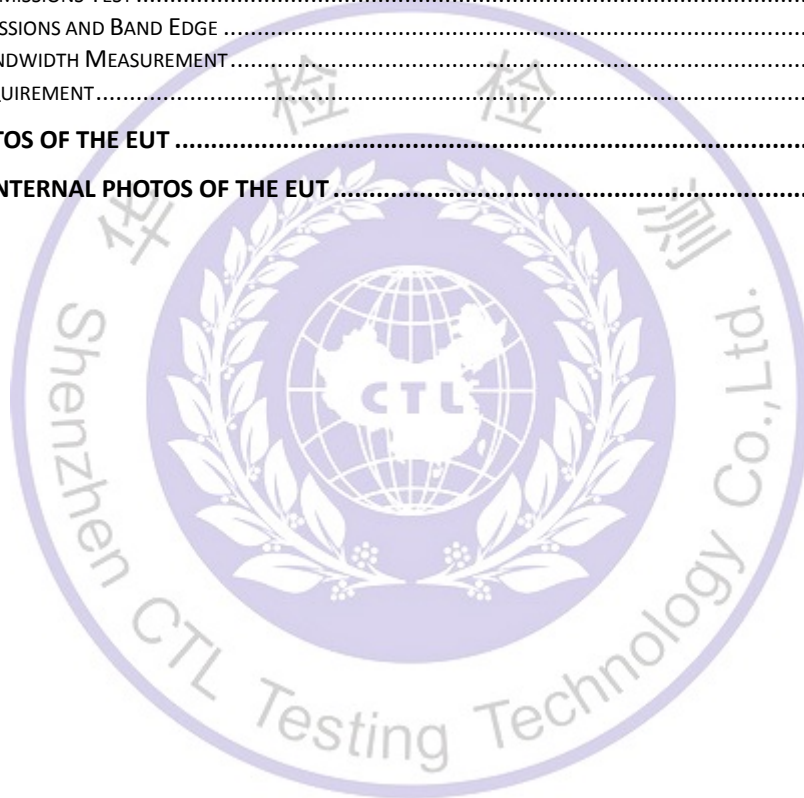
Revision	Description	Issued Data	Report No.	Remark
Version 1.0	Initial Test Report Release	May 4, 2018	CTL1804026032-WF	Tracy Qi



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1. SUMMARY

1.1. TEST STANDARDS

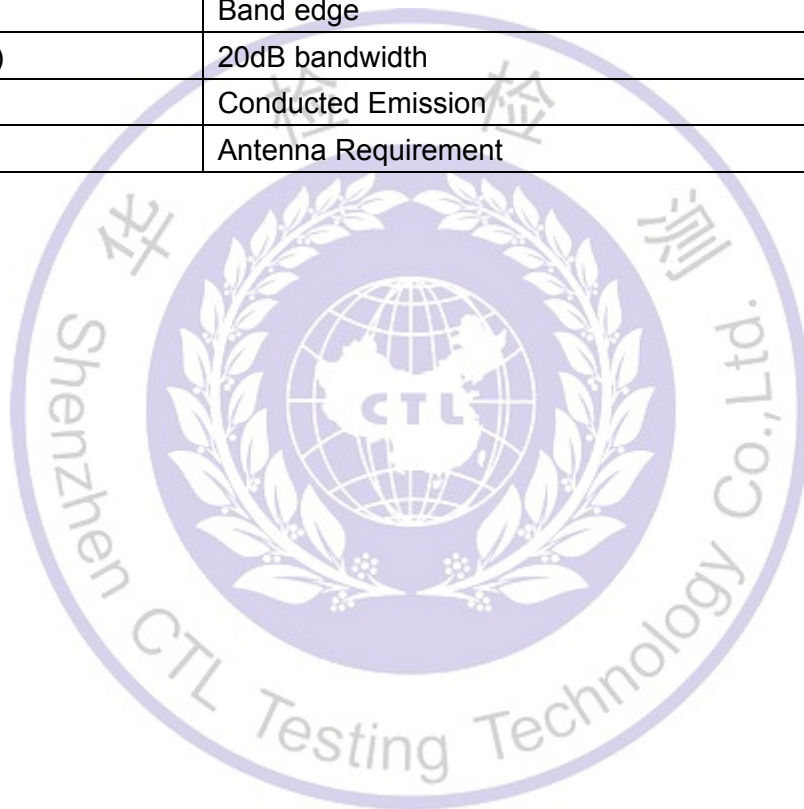
The tests were performed according to following standards:

[FCC Rules Part 15.249](#): Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

[ANSI C63.10:2013](#) : American National Standard for Testing Unlicensed Wireless Devices

1.2. Test Description

FCC PART 15.249		
FCC Part 15.249(a)	Field Strength of Fundamental	PASS
FCC Part 15.209	Spurious Emission	PASS
FCC Part 15.209	Band edge	PASS
FCC Part 15.215(c)	20dB bandwidth	PASS
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.203	Antenna Requirement	PASS



1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

1.3.2 Laboratory accreditation

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

IC Registration No.: 9618B

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 9618B on November 13, 2013.

FCC-Registration No.: 399832

Shenzhen CTL Testing Technology Co., Ltd. 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 our files. Registration 399832, December 08, 2017.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	Above 1GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.20dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. GENERAL INFORMATION

2.1. Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	Game controller
Model/Type reference:	SL-9101, ESM-9101
Power supply:	DC 3.7V from battery
2.4GHz Wireless	
Modulation:	GFSK
Operation frequency:	2412MHz~2475MHz
Channel number:	18
Channel separation:	1MHz
Antenna type:	PCB antenna
Antenna gain:	-1dBi

Note: For more details, please refer to the user's manual of the EUT.

2.3. Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing. There are 18 channels provided to the EUT and Channel 01/09/18 were selected for testing.

Operation Frequency List :

Channel	Frequency (MHz)
01	2412
02	2415
03	2417
04	2421
05	2425
06	2429
07	2433
08	2437
09	2440
10	2445
11	2449
12	2453

13	2457
14	2461
15	2465
16	2469
17	2471
18	2475

Note: Test performed at the lowest/middle/highest frequencies selected in the list above for EUT supported while working on specified mode.



2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	3560.6550.1 2	2017/06/02	2018/06/01
LISN	R&S	ESH2-Z5	860014/010	2017/06/02	2018/06/01
Bilog Antenna	Sunol Sciences Corp.	JB1	A061713	2017/06/02	2018/06/01
EMI Test Receiver	R&S	ESCI	103710	2017/06/02	2018/06/01
Spectrum Analyzer	Agilent	E4407B	MY41440676	2017/05/21	2018/05/20
Spectrum Analyzer	Agilent	N9020	US46220290	2018/01/17	2019/01/16
Controller	EM Electronics	Controller EM 1000	N/A	2017/05/21	2018/05/20
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2017/05/19	2018/05/18
Active Loop Antenna	SCHWARZBECK	FMZB1519	1519-037	2017/05/19	2018/05/18
Amplifier	Agilent	8349B	3008A02306	2017/05/19	2018/05/18
Amplifier	Agilent	8447D	2944A10176	2017/05/19	2018/05/18
Temperature/Humidity Meter	Gangxing	CTH-608	02	2017/05/20	2018/05/19
High-Pass Filter	K&L	9SH10-2700/X1 2750-O/O	N/A	2017/05/20	2018/05/19
High-Pass Filter	K&L	41H10-1375/U1 2750-O/O	N/A	2017/05/20	2018/05/19
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	2017/06/02	2018/06/01
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	2017/06/02	2018/06/01
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	2017/06/02	2018/06/01
RF Cable	Megalon	RF-A303	N/A	2017/06/02	2018/06/01

The calibration interval was one year

2.5. Related Submittal(s) / Grant(s)

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

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

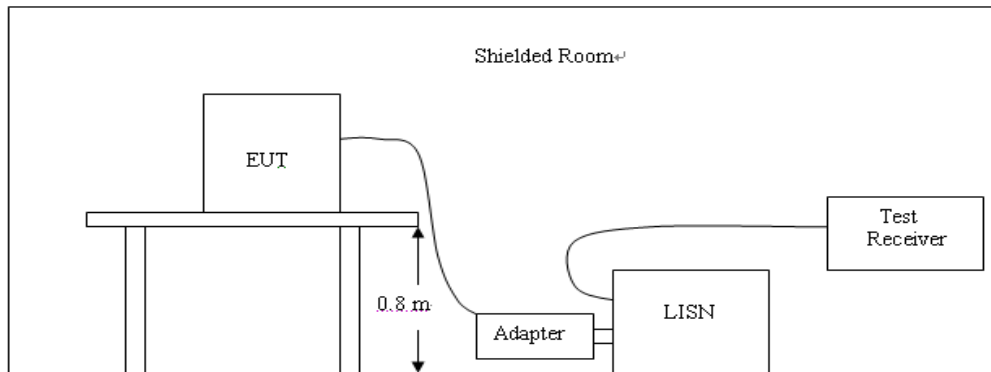
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

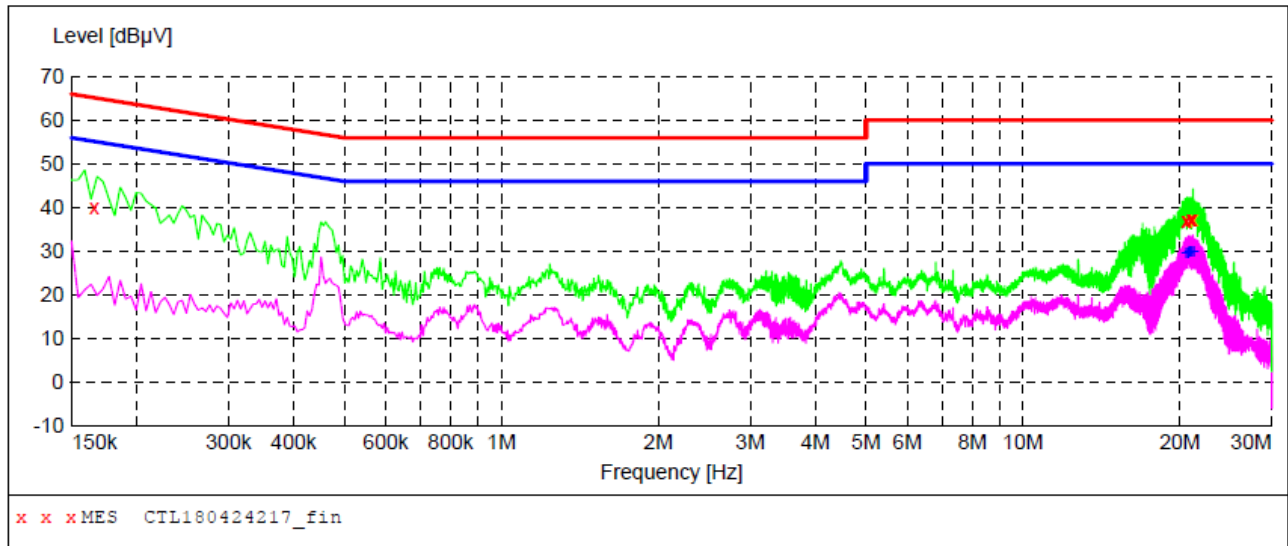
1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Remark: All modes were test at Low, Middle, and High channel; only the worst result of High Channel was reported as below:

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "CTL180424217_fin"**

24/04/2018 18:53

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.166000	40.10	10.2	65	25.1	QP	L1	GND
20.516000	36.90	11.0	60	23.1	QP	L1	GND
20.630000	36.90	11.0	60	23.1	QP	L1	GND
20.984000	37.30	11.0	60	22.7	QP	L1	GND
21.008000	37.10	11.0	60	22.9	QP	L1	GND
21.146000	37.10	11.0	60	22.9	QP	L1	GND

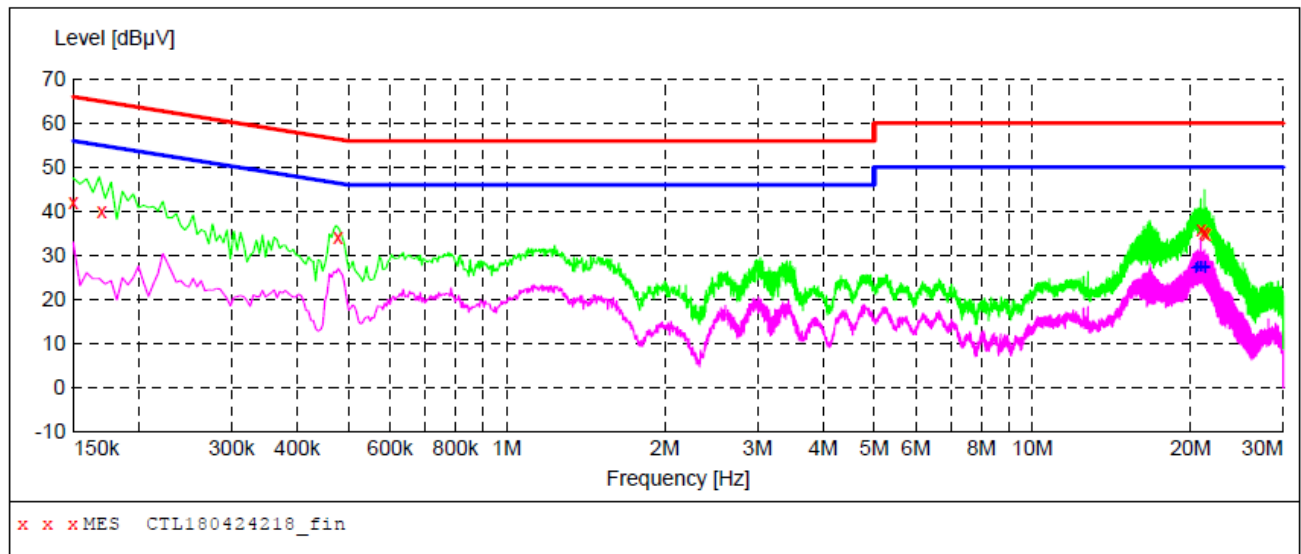
MEASUREMENT RESULT: "CTL180424217_fin2"

24/04/2018 18:53

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
20.540000	29.50	11.0	50	20.5	AV	L1	GND
20.684000	29.60	11.0	50	20.4	AV	L1	GND
20.780000	30.00	11.0	50	20.0	AV	L1	GND
20.852000	30.00	11.0	50	20.0	AV	L1	GND
21.008000	29.90	11.0	50	20.1	AV	L1	GND
21.188000	29.90	11.0	50	20.1	AV	L1	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "CTL180424218_fin"**

24/04/2018 18:57

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	41.90	10.2	66	24.1	QP	N	GND
0.170000	39.90	10.2	65	25.1	QP	N	GND
0.478000	34.00	10.2	56	22.4	QP	N	GND
20.936000	35.90	11.0	60	24.1	QP	N	GND
21.206000	35.30	11.0	60	24.7	QP	N	GND
21.422000	34.90	11.0	60	25.1	QP	N	GND

MEASUREMENT RESULT: "CTL180424218_fin2"

24/04/2018 18:57

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
20.432000	27.10	11.0	50	22.9	AV	N	GND
20.630000	27.50	11.0	50	22.5	AV	N	GND
20.870000	27.60	11.0	50	22.4	AV	N	GND
20.894000	27.50	11.0	50	22.5	AV	N	GND
21.224000	27.40	11.0	50	22.6	AV	N	GND
21.242000	27.20	11.0	50	22.8	AV	N	GND

Note:

1. Margin = Limit – level
2. Peripheral device during the Testing

No.	Product	Manufacturer	Model	Length	Certification	Note
1	Notebook	Dell	H57	--	DOC	--
2	Adapter	Dell	PA-1650-05D	--	DOC	--
3	USB line	--	--	90cm	--	Not shield

3.2. Radiated Emissions and Band Edge

Limit

According 15.249, the field strength of emissions from intentional radiators operated within 2400MHz-2483.5 MHz shall not exceed 94dB μ V/m (50mV/m):

FCC PART 15.249(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 §15.209, whichever is the lesser attenuation.

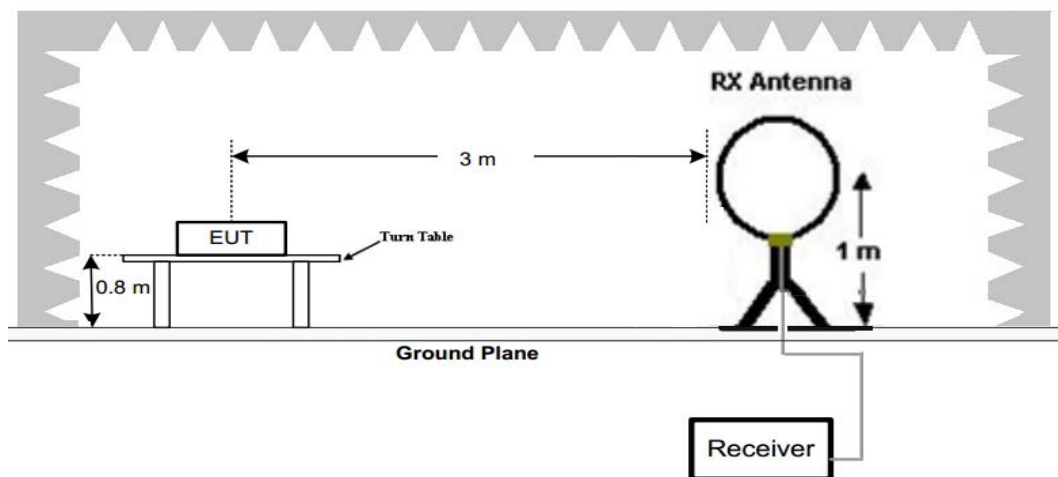
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

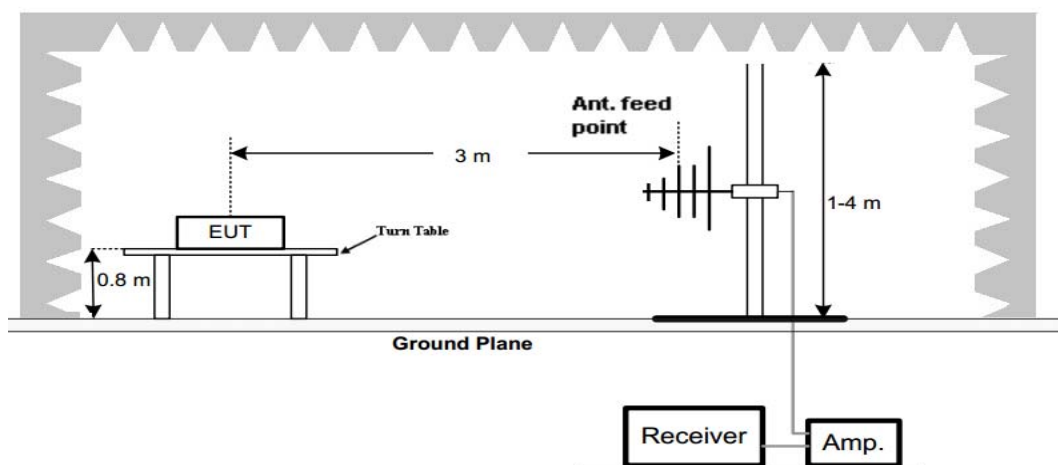
Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

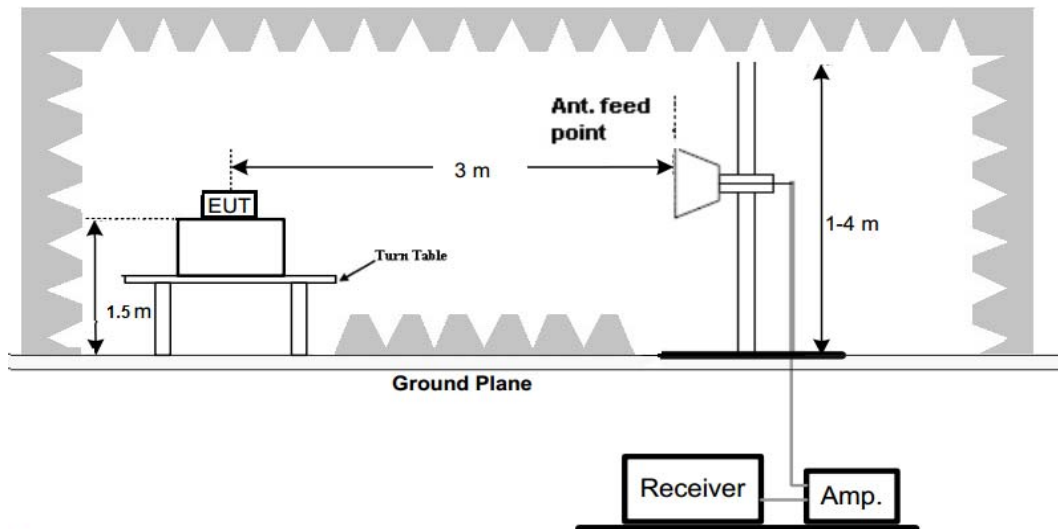
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz

**Test Procedure**

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
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 measurements have been completed.

TEST RESULTS

Remark:

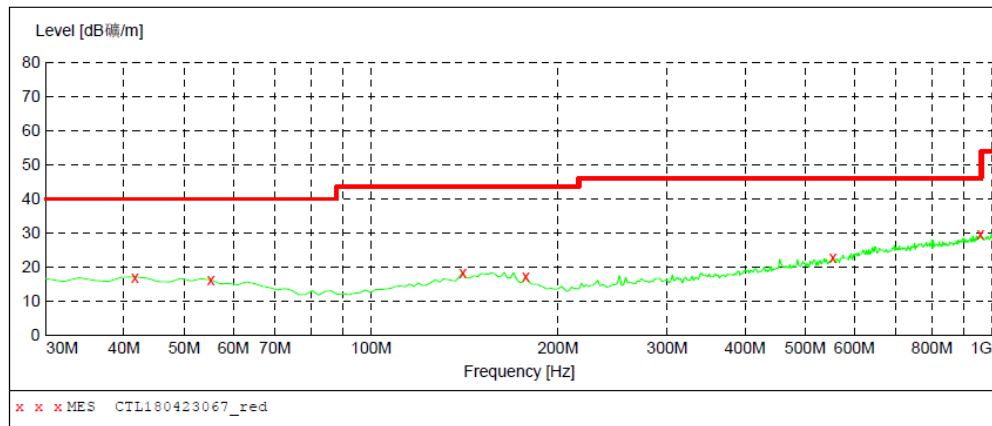
1. We measured Radiated Emission at GFSK mode from 9 KHz to 25GHz and recorded worst case.
2. For below 1GHz testing recorded worst at GFSK low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas. Time	IF Bandw.	Transducer
Frequency 30.0 MHz	Frequency 1.0 GHz	MaxPeak	200.0 ms	120 kHz	VULB 9168

**MEASUREMENT RESULT: "CTL180423067_red"**

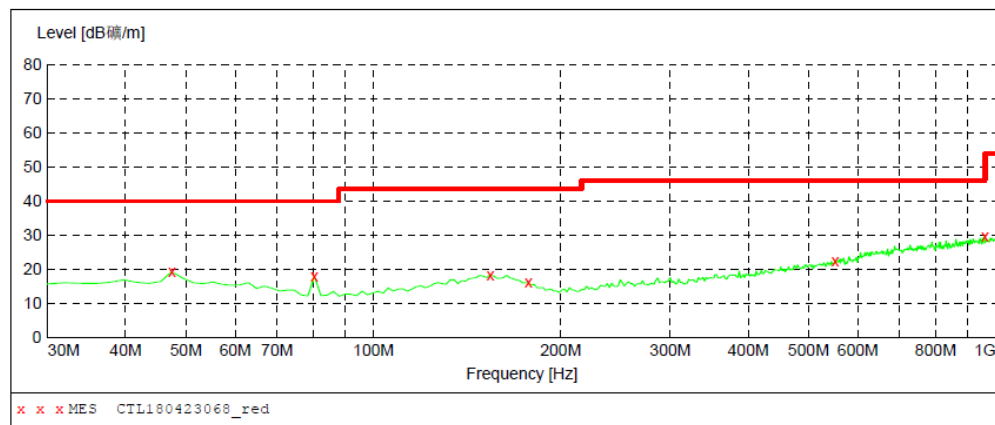
2018-4-24 10:01

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
41.640000	17.00	14.1	40.0	23.0	---	0.0	0.00	HORIZONTAL
55.220000	16.10	13.4	40.0	23.9	---	0.0	0.00	HORIZONTAL
140.580000	18.40	14.4	43.5	25.1	---	0.0	0.00	HORIZONTAL
177.440000	17.20	13.2	43.5	26.3	---	0.0	0.00	HORIZONTAL
553.800000	22.80	20.1	46.0	23.2	---	0.0	0.00	HORIZONTAL
957.320000	29.60	25.9	46.0	16.4	---	0.0	0.00	HORIZONTAL

Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas. Time	IF Bandw.	Transducer
Frequency 30.0 MHz	Frequency 1.0 GHz	MaxPeak	200.0 ms	120 kHz	VULB 9168

**MEASUREMENT RESULT: "CTL180423068_red"**

2018-4-24 10:03

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	19.20	13.8	40.0	20.8	---	0.0	0.00	VERTICAL
80.440000	17.90	9.8	40.0	22.1	---	0.0	0.00	VERTICAL
154.160000	18.40	15.2	43.5	25.1	---	0.0	0.00	VERTICAL
177.440000	16.10	13.2	43.5	27.4	---	0.0	0.00	VERTICAL
551.860000	22.40	20.1	46.0	23.6	---	0.0	0.00	VERTICAL
959.260000	29.70	25.9	46.0	16.3	---	0.0	0.00	VERTICAL

Note:

1. Margin = Limit - level

For 1GHz to 25GHz**GFSK Mode (above 1GHz)**

Frequency(MHz):			2412		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4824.00	52.68	PK	74.00	21.32	48.17	33.49	6.91	35.89	4.51
4824.00	--	AV	54.00	--	--	--	--	--	--
5175.50	43.19	PK	74.00	30.81	35.98	34.38	7.10	34.27	7.21
5175.50	--	AV	54.00	--	--	--	--	--	--
7236.00	47.32	PK	74.00	26.68	36.22	36.95	9.18	35.03	11.10
7236.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2412		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4824.00	51.09	PK	74.00	22.91	46.58	33.49	6.91	35.89	4.51
4824.00	--	AV	54.00	--	--	--	--	--	--
5175.50	44.34	PK	74.00	29.66	36.78	34.69	7.23	34.36	7.56
5175.50	--	AV	54.00	--	--	--	--	--	--
7236.00	46.98	PK	74.00	27.02	35.88	36.95	9.18	35.03	11.10
7236.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2440		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4880.00	50.26	PK	74.00	23.74	44.01	33.60	6.95	34.30	6.25
4880.00	--	AV	54.00	--	--	--	--	--	--
5210.75	43.17	PK	74.00	30.83	35.54	34.57	7.16	34.10	7.63
5210.75	--	AV	54.00	--	--	--	--	--	--
7320.00	47.62	PK	74.00	26.38	35.93	37.46	9.23	35.00	11.69
7320.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2440		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4880.00	49.98	PK	74.00	24.02	43.73	33.60	6.95	34.30	6.25
4880.00	--	AV	54.00	--	--	--	--	--	--
5210.75	43.04	PK	74.00	30.96	35.40	34.58	7.16	34.10	7.64
5210.75	--	AV	54.00	--	--	--	--	--	--
7320.00	48.76	PK	74.00	25.24	37.07	37.46	9.23	35.00	11.69
7320.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2475		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4950.00	51.04	PK	74.00	22.96	46.12	33.84	7.00	35.92	4.92
4950.00	--	AV	54.00	--	--	--	--	--	--
5325.50	44.95	PK	74.00	29.05	37.41	34.67	7.22	34.35	7.54
5325.50	--	AV	54.00	--	--	--	--	--	--
7425.00	47.79	PK	74.00	26.21	35.84	37.64	9.28	34.97	11.95
7425.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2475		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4950.00	50.96	PK	74.00	23.04	46.04	33.84	7.00	35.92	4.92
4950.00	--	AV	54.00	--	--	--	--	--	--
5325.50	43.02	PK	74.00	30.98	35.83	34.36	7.10	34.27	7.19
5325.50	--	AV	54.00	--	--	--	--	--	--
7425.00	48.01	PK	74.00	25.99	36.06	37.64	9.28	34.97	11.95
7425.00	--	AV	54.00	--	--	--	--	--	--

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor
3. Margin value = Limit value - Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. The other emission levels were very low against the limit.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Results of Band Edges Test (Radiated)

Frequency(MHz):			2412		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
2412.00	96.14	PK	--	--	62.75	28.78	4.61	0.00	33.39
2412.00	90.57	AV	--	--	57.18	28.78	4.61	0.00	33.39
2349.75	43.76	PK	74.00	30.24	10.68	28.52	4.56	0.00	33.08
2349.75	--	AV	54.00	--	--	--	--	--	--
2390.00	43.02	PK	74.00	30.98	9.70	28.72	4.60	0.00	33.32
2390.00	--	AV	54.00	--	--	--	--	--	--
2400.00	44.89	PK	74.00	29.11	11.50	28.78	4.61	0.00	33.39
2400.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2412		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
2412.00	95.08	PK	--	--	61.69	28.78	4.61	0	33.39
2412.00	89.01	AV	--	--	55.62	28.78	4.61	0	33.39
2349.75	44.27	PK	74	29.73	11.19	28.52	4.56	0	33.08
2349.75	--	AV	54	--	--	--	--	--	--
2390.00	42.54	PK	74	31.46	9.22	28.72	4.60	0	33.32
2390.00	--	AV	54	--	--	--	--	--	--
2400.00	43.71	PK	74	30.29	10.32	28.78	4.61	0	33.39
2400.00	--	AV	54	--	--	--	--	--	--

Frequency(MHz):			2475		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
2475.00	95.11	PK	--	--	61.49	28.92	4.70	0.00	33.62
2475.00	87.85	AV	--	--	54.23	28.92	4.70	0.00	33.62
2483.50	43.64	PK	74	30.36	10.01	28.93	4.70	0.00	33.63
2483.50	--	AV	54	--	--	--	--	--	--
2491.95	43.91	PK	74	30.09	10.25	28.95	4.71	0.00	33.66
2491.95	--	AV	54	--	--	--	--	--	--
2500.00	43.84	PK	74	30.16	10.16	28.96	4.72	0.00	33.68
2500.00	--	AV	54	--	--	--	--	--	--

Frequency(MHz):			2475		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
2475.00	96.09	PK	--	--	62.47	28.92	4.70	0.00	33.62
2475.00	88.24	AV	--	--	54.62	28.92	4.70	0.00	33.62
2483.50	43.76	PK	74	30.24	10.13	28.93	4.70	0.00	33.63
2483.50	--	AV	54	--	--	--	--	--	--
2489.05	42.75	PK	74	31.25	9.09	28.95	4.71	0.00	33.66
2489.05	--	AV	54	--	--	--	--	--	--
2500.00	43.08	PK	74	30.92	9.4	28.96	4.72	0.00	33.68
2500.00	--	AV	54	--	--	--	--	--	--

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor
3. Margin value = Limit value - Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. The other emission levels were very low against the limit.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

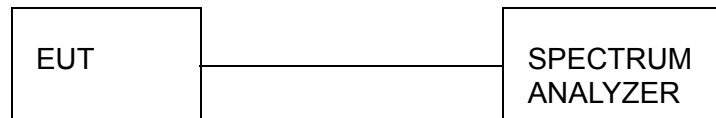


3.3. Occupied Bandwidth Measurement

Limit

N/A

Test Configuration



Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30 KHz RBW and 100 KHz VBW.

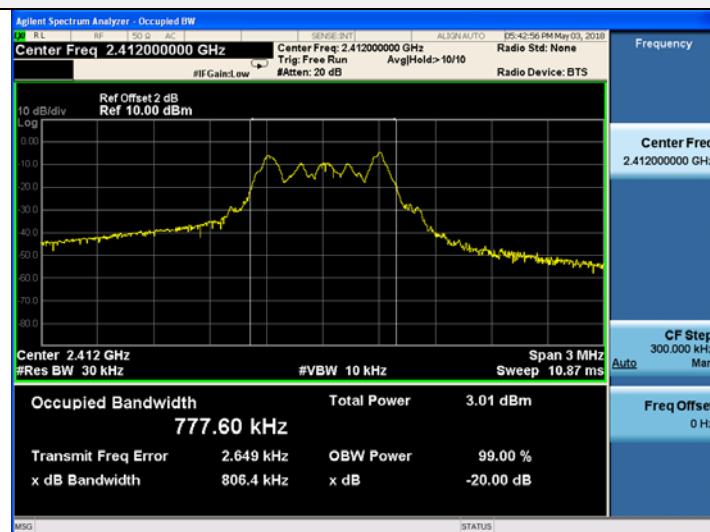
The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Test Results

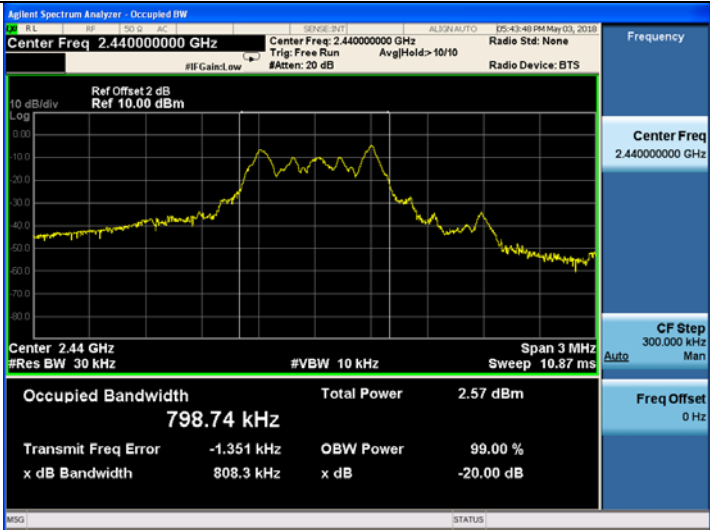
Modulation	Channel	99% OBW (MHz)	20dB bandwidth (MHz)	Result
GFSK	CH01	0.77760	0.8064	Pass
	CH09	0.79874	0.8083	
	CH18	0.78960	0.8217	

Test plot as follows:

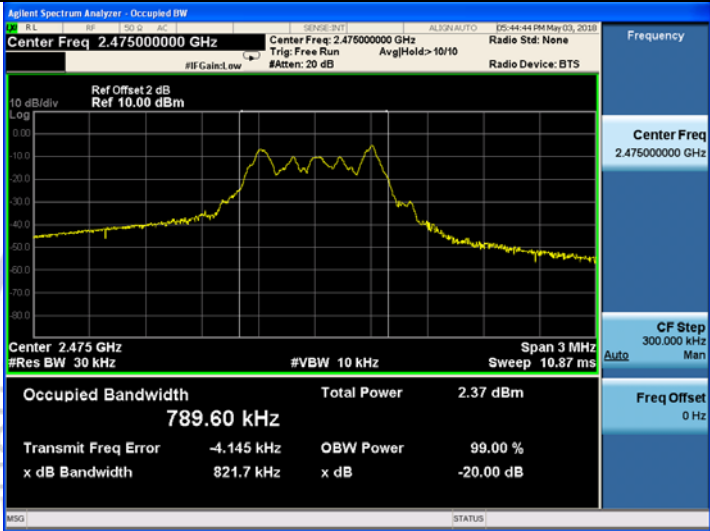
GFSK Modulation



CH01



CH09



CH18

3.4. Antenna Requirement

Standard Applicable

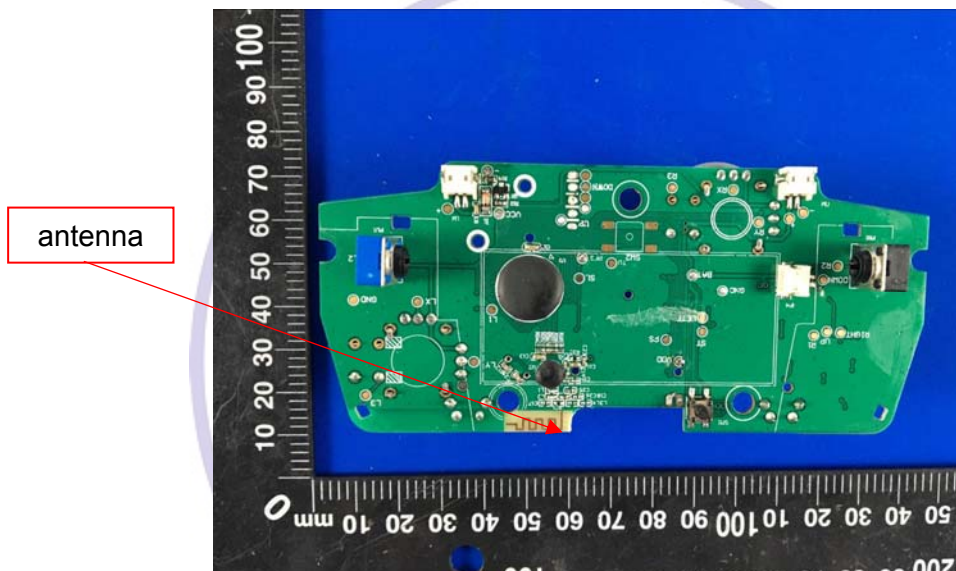
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The antenna used in this product is an PCB Antenna, The directional gains of antenna used for transmitting is -1.0dBi.



4. Test Setup Photos of the EUT

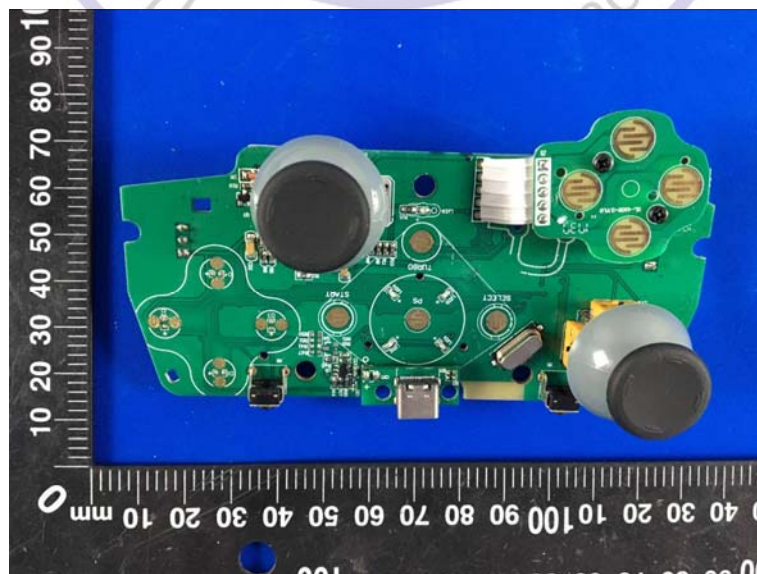
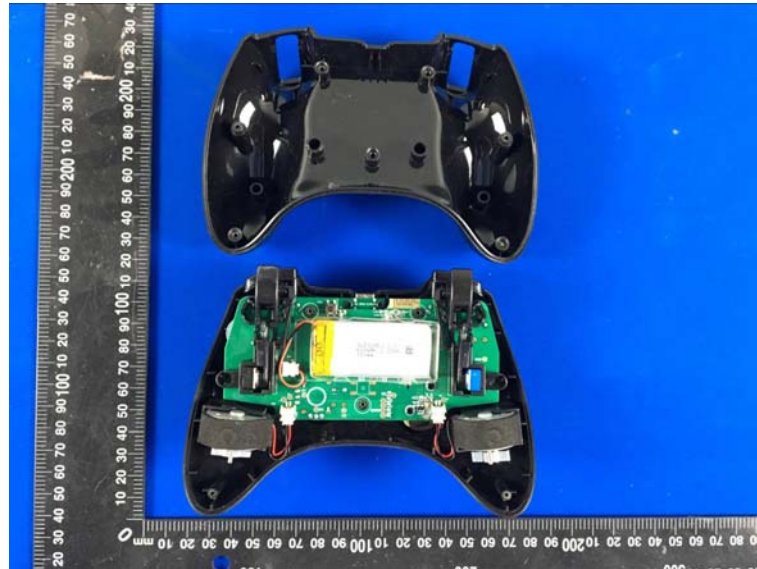


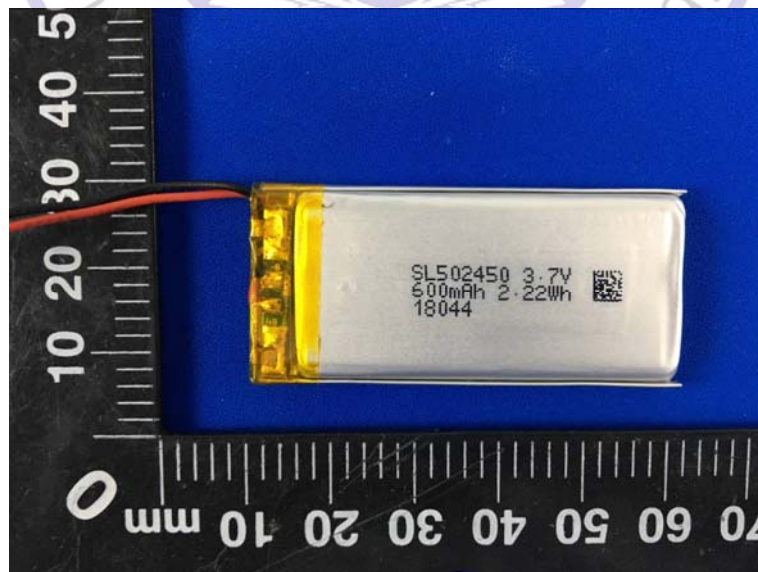
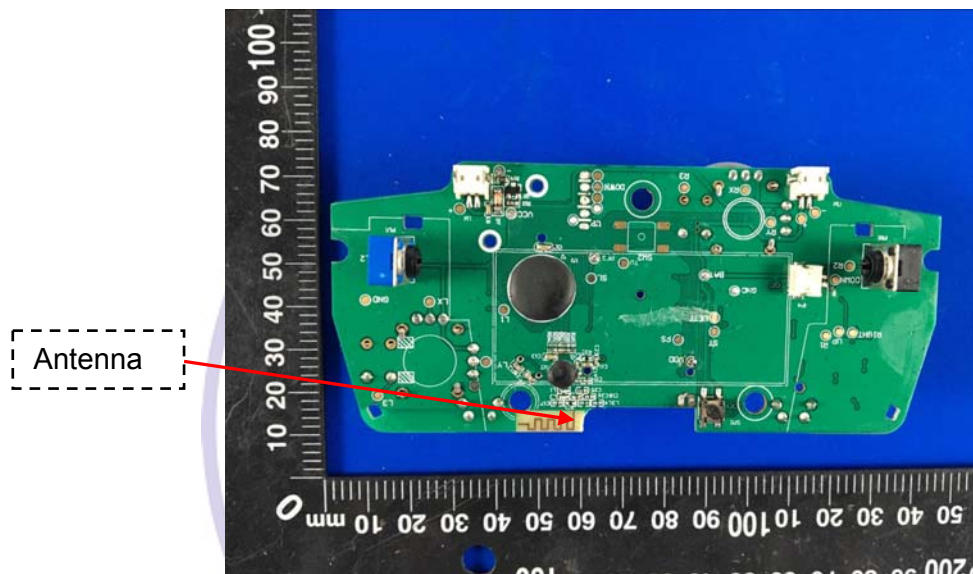
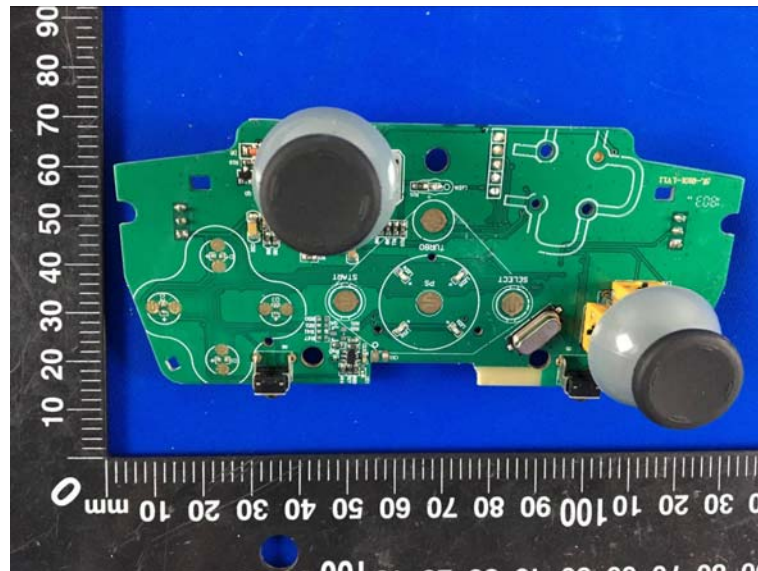
5. External and Internal Photos of the EUT

External Photos of EUT





Internal Photos of EUT



***** End of Report *****