FCC Report

Applicant:	Qingdao Jewelry Bank Co., Ltd.
Address of Applicant:	E-1064, Sino Korea International Commodity City, Xingyang Road, Chengyang District, Qingdao, China
Manufacturer:	Qingdao Jewelry Bank Co., Ltd.
Address of Manufacturer:	E-1064, Sino Korea International Commodity City, Xingyang Road, Chengyang District, Qingdao, China
Equipment Under Test (EUT)	
Product Name:	D61 SKU93571 Sharper Image HD Video Streaming Drone
Model No.:	D61
FCC ID:	2AP6A-D61
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	June 11, 2018
Date of Test:	June 12-28, 2018
Date of report issued:	June 29, 2018
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*June 29, 2018*	*Original*

Prepared By: ***Date:*** *June 29, 2018*

Project Engineer

Check By: ***Date:*** *June 29, 2018*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Pseudorandom Frequency Hopping Sequence	15.247(a)(1)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Remark: Test according to ANSI C63.4:2014 and ANSI C63.10:2013

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

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%.			

5 General Information

5.1 General Description of EUT

Product Name:	D61 SKU93571 Sharper Image HD Video Streaming Drone
Model No.:	D61
Serial No.:	842583063931
Operation Frequency:	2405MHz~2476MHz
Channel numbers:	15
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	0dBi(declared by Applicant)
Power supply:	DC4.5V (3 x 1.5V”AA” Size battery)

Operation Frequency each of channel			
Channel	Frequency	Channel	Frequency
1	2405MHz	9	2445MHz
2	2410MHz	10	2450MHz
3	2415MHz	11	2455MHz
4	2420MHz	12	2460MHz
5	2425MHz	13	2465MHz
6	2430MHz	14	2470MHz
7	2435MHz	15	2476MHz
8	2440MHz		

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	2405MHz
The middle channel	2440MHz
The Highest channel	2476MHz

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting mode.

5.3 Test Facility

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

- **FCC —Registration No.: 381383**

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 381383, January 08, 2018.

- **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, August 15, 2016.

5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.5 Other Information Requested by the Customer

None.

5.6 Description of Support Units

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	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

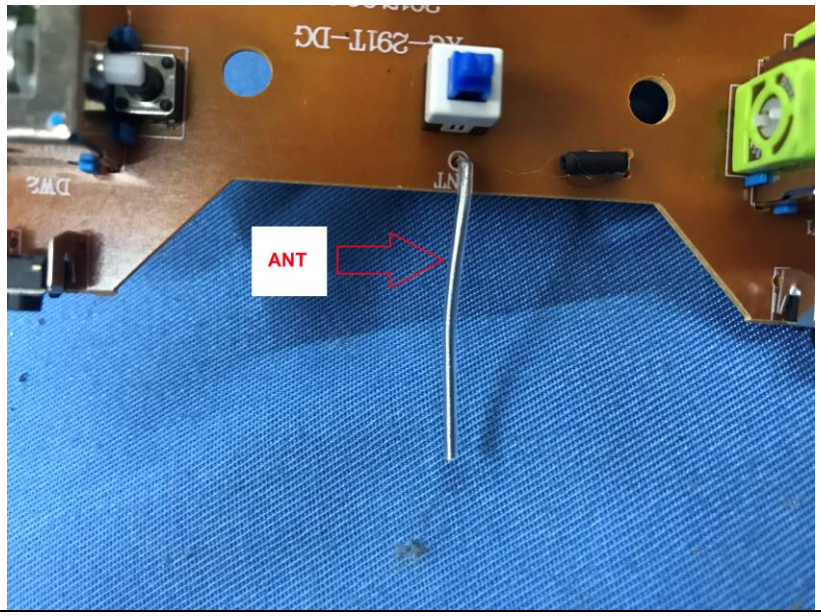
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

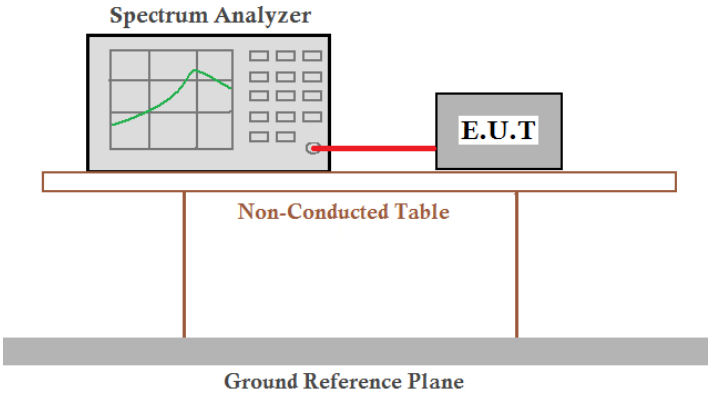
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The antenna is Integral antenna, the best case gain of the antenna is 0dBi



7.2 Conducted Peak Output Power

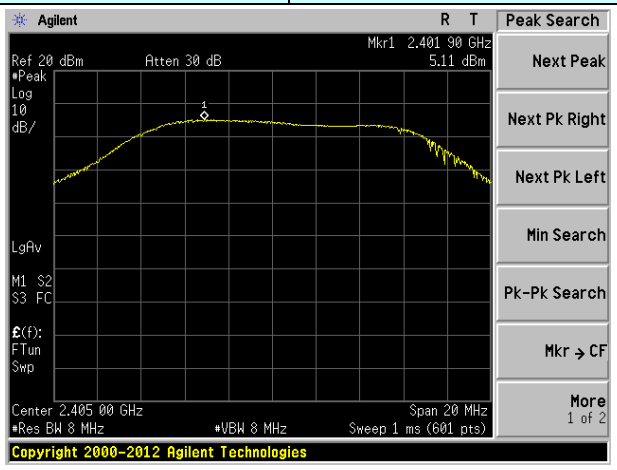
Test Requirement:	FCC Part15 C Section 15.247 (b)(1)
Test Method:	ANSI C63.10:2013
Limit:	20.97dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

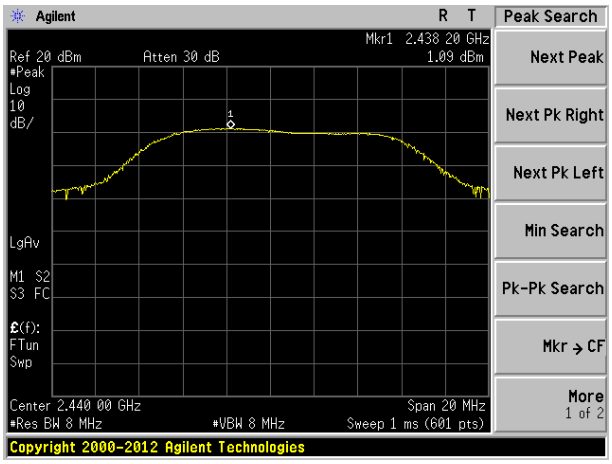
Mode	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
GFSK	Lowest	5.11	20.97	Pass
	Middle	1.09		
	Highest	4.33		

Test plot as follows:

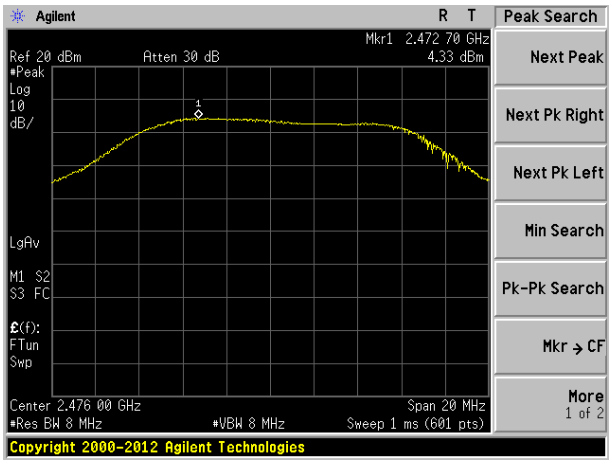
Test mode:	GFSK mode



Lowest channel

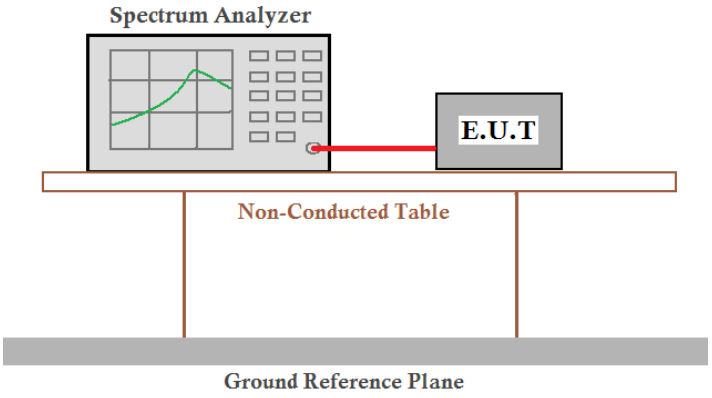


Middle channel



Highest channel

7.3 20dB Emission Bandwidth

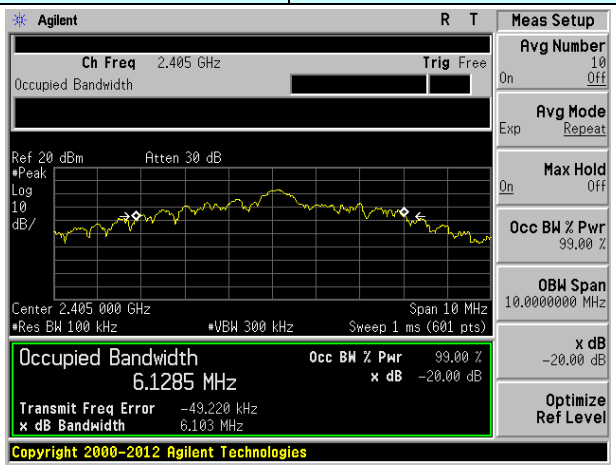
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	DA 00-705,ANSI C63.10:2013
Limit:	N/A
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

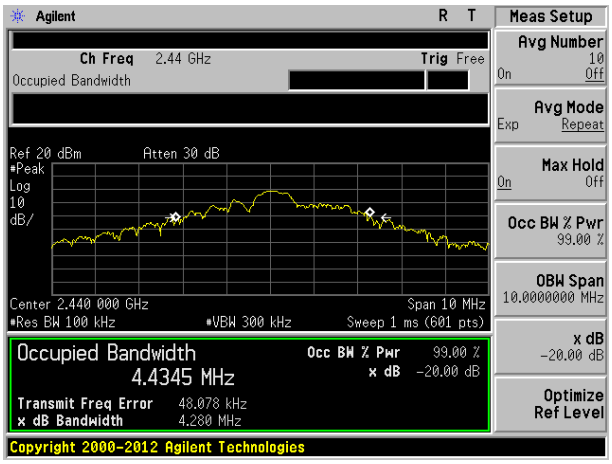
Mode	Test channel	20dB Emission Bandwidth (MHz)	Result
GFSK	Lowest	6.103	Pass
	Middle	4.280	
	Highest	6.084	

Test plot as follows:

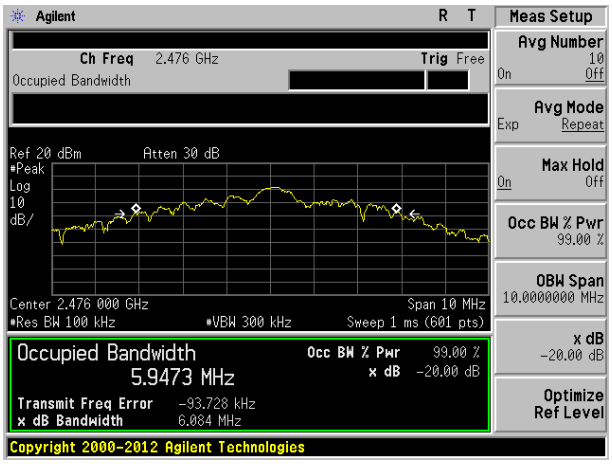
Test mode:	GFSK mode



Lowest channel

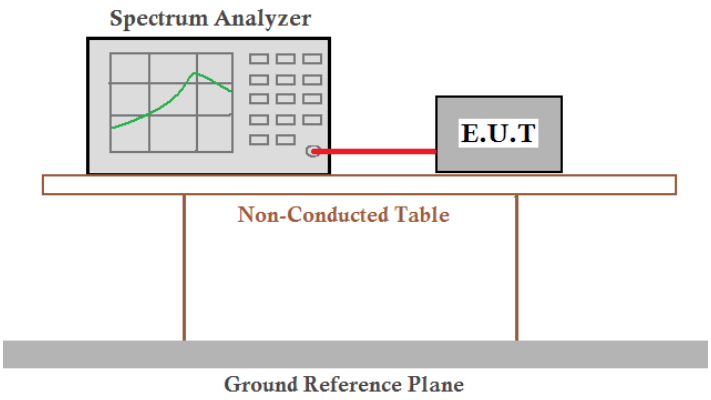


Middle channel



Highest channel

7.4 Carrier Frequencies Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	DA 00-705, ANSI C63.10:2013
Receiver setup:	RBW=100KHz, VBW=300KHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

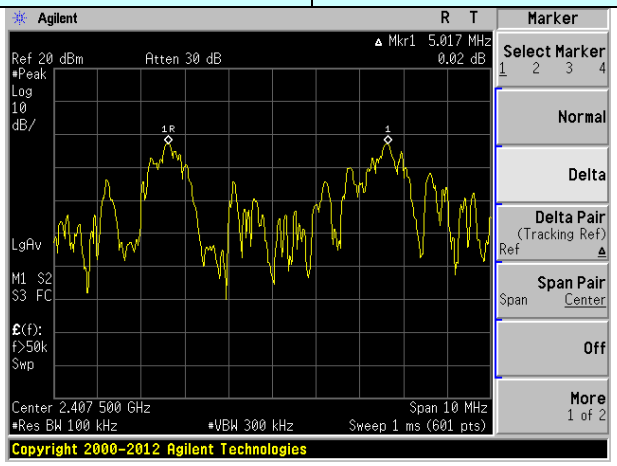
Mode	Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result
GFSK	Lowest	5017	4073	Pass
	Middle	5000	4073	Pass
	Highest	6017	4073	Pass

Note: According to section 7.3

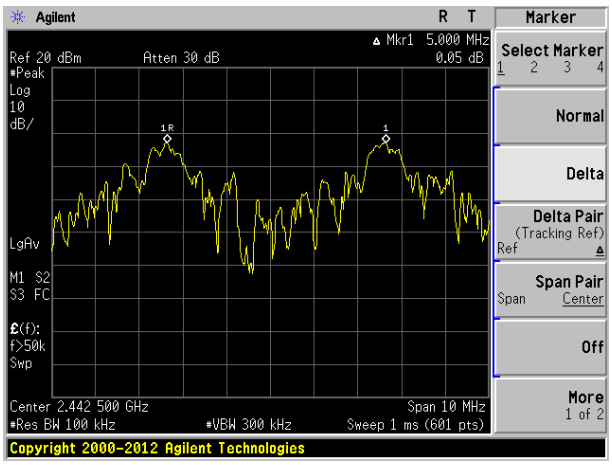
Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
GFSK	6109	4073

Test plot as follows:

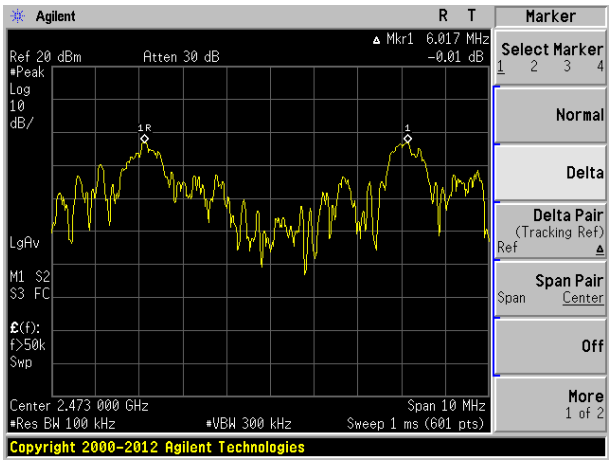
Modulation mode:	GFSK



Lowest channel

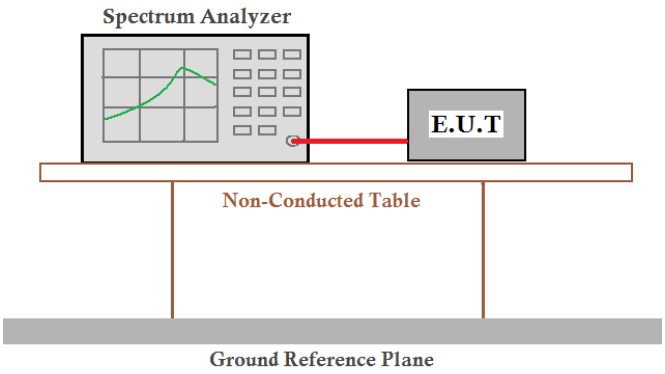


Middle channel



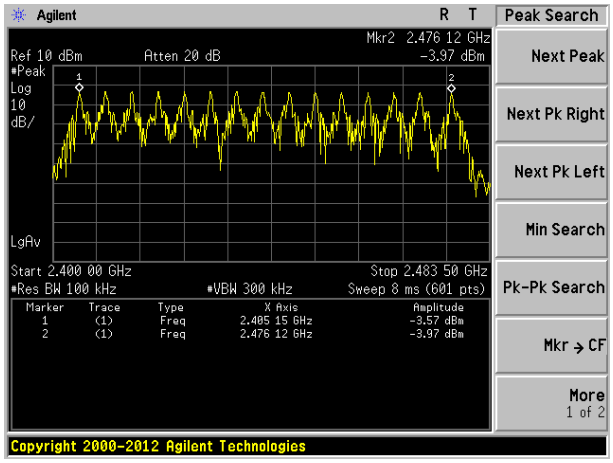
Highest channel

7.5 Hopping Channel Number

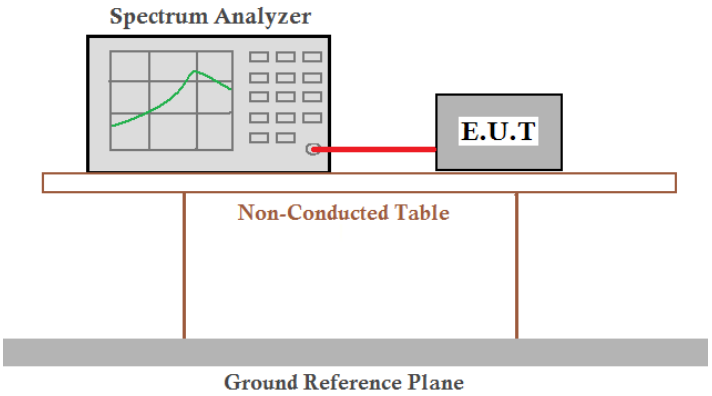
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	DA 00-705, ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data:

Mode	Hopping channel numbers	Limit	Result
GFSK	15	15	Pass



7.6 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=1MHz, VBW=1MHz, Span=0Hz, Detector=Peak
Limit:	0.4 Second
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Frequency	Ton (ms)	Dwell time(ms)	Limit(ms)	Result
2405MHz	0.7067	38.1618	400	Pass
2440MHz	0.7100	38.34	400	Pass
2476MHz	0.7100	38.34	400	Pass

The formula as below:

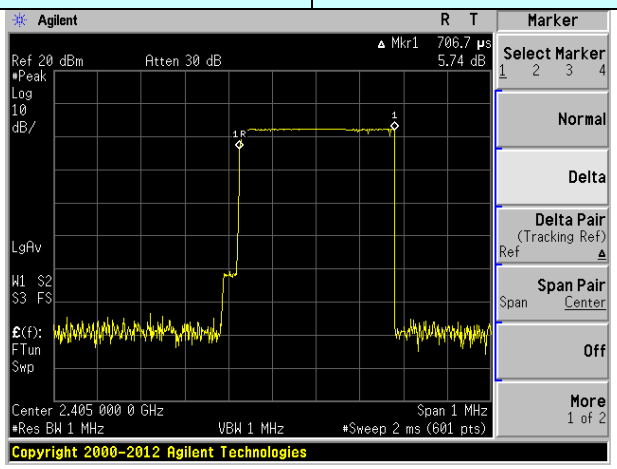
2405MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=0.7067ms*9*0.4*15=38.1618ms

2440MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=0.71ms*9*0.4*15=38.34ms

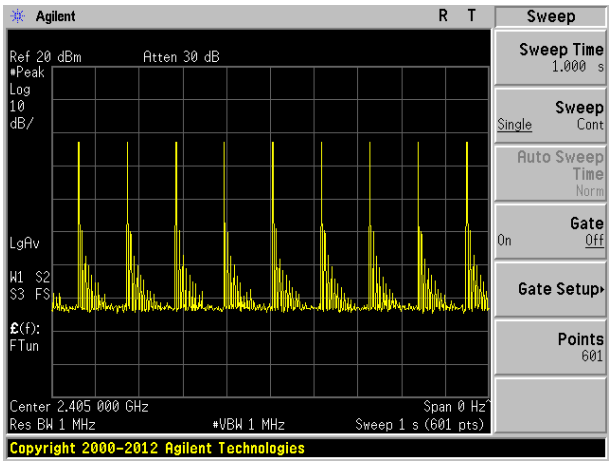
2476MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=0.71ms*9*0.4*15=38.34ms

Test plot as follows:

Test channel:	2405MHz

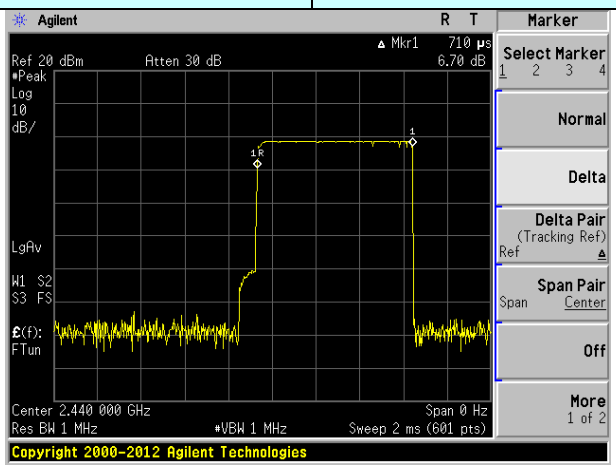


Ton

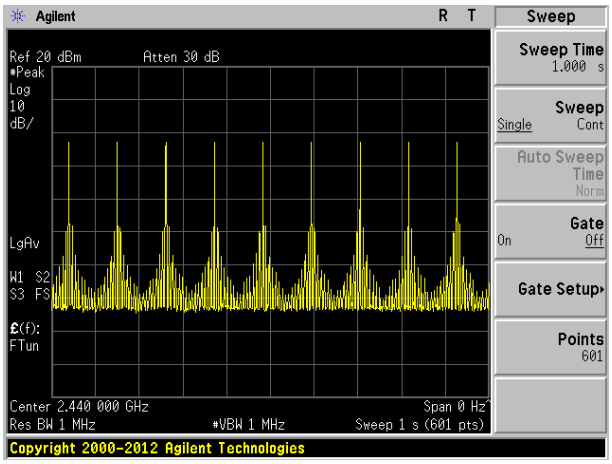


Ton times in 1s

Test channel:	2440MHz

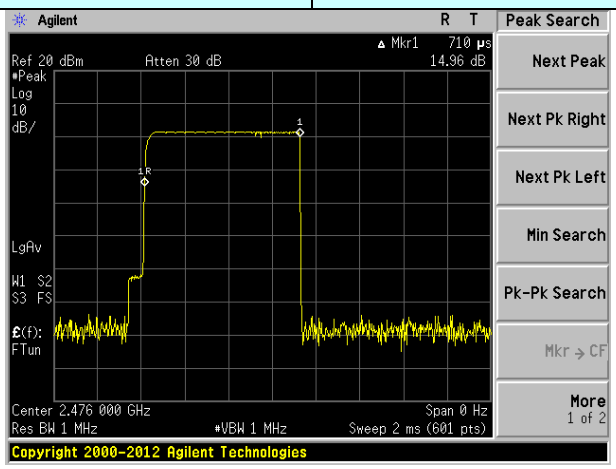


Ton

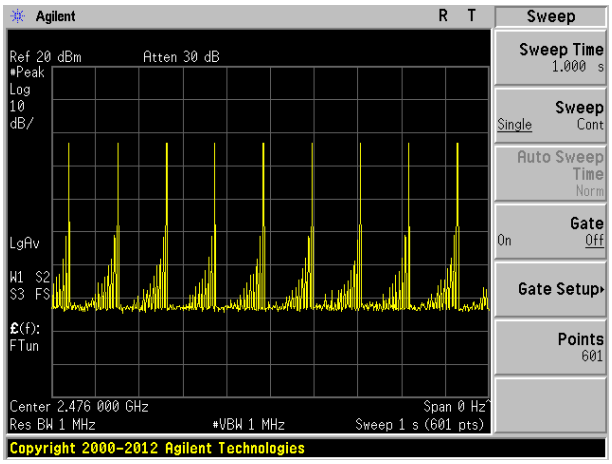


Ton times in 1s

Test channel:	2476MHz



Ton



Ton times in 1s

7.7 Pseudorandom Frequency Hopping Sequence

Test Requirement:	FCC Part15 C Section 15.247 (a)(1) requirement:

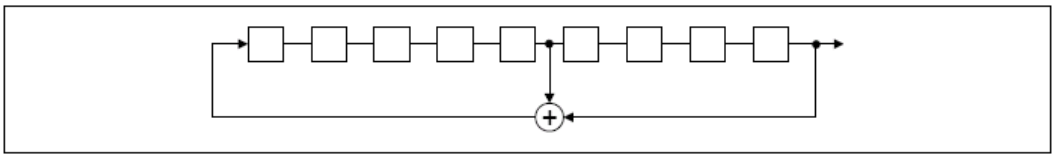
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- *Number of shift register stages: 9*
- *Length of pseudo-random sequence: 2^9 -1 = 511 bits*
- *Longest sequence of zeros: 8 (non-inverted signal)*



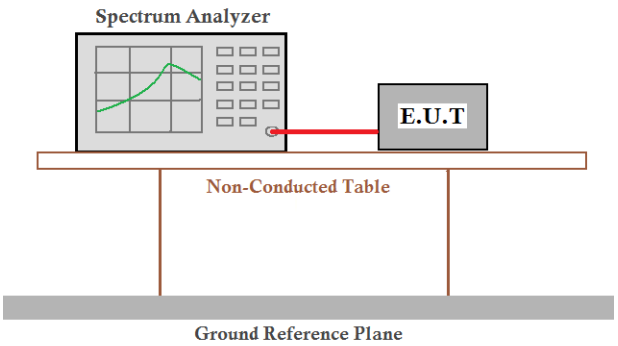
Linear Feedback Shift Register for Generation of the PRBS sequence

Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

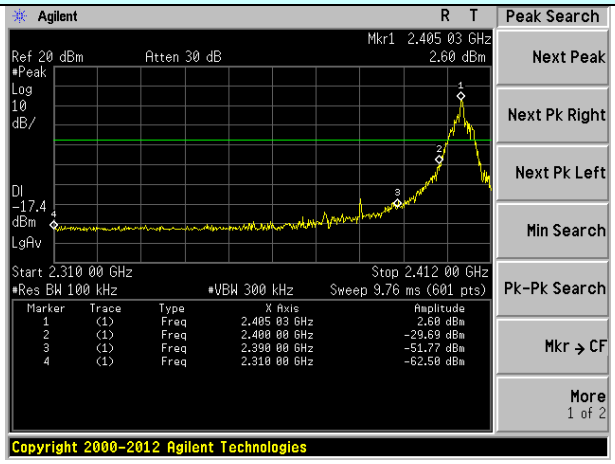
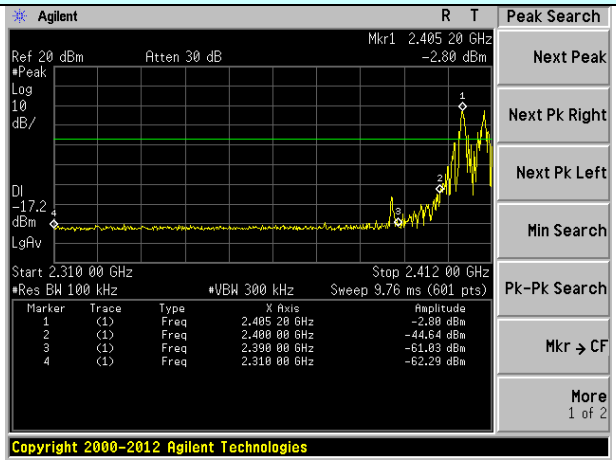
7.8 Band Edge

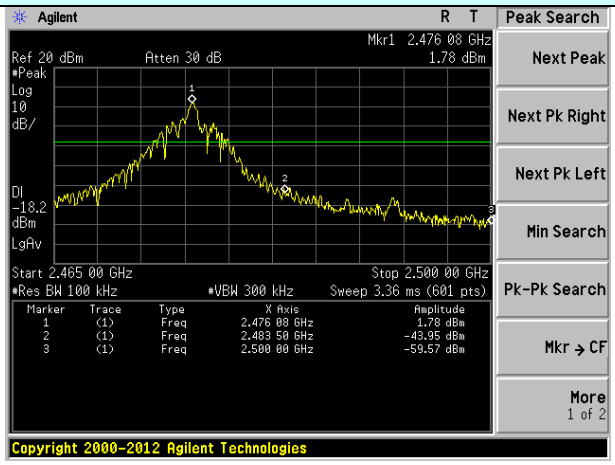
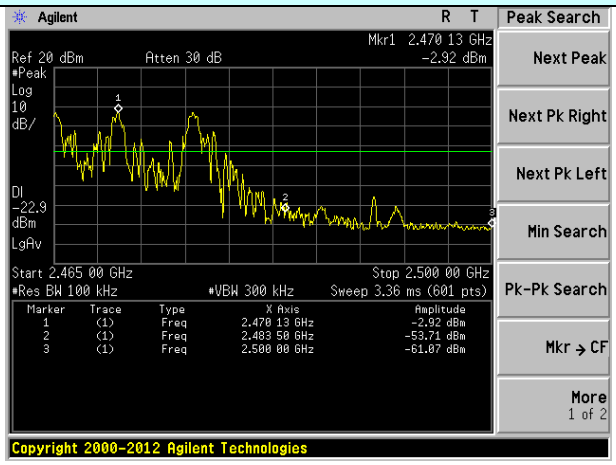
7.8.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Detector=Peak
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

GFSK Mode:

Test channel:	Lowest channel
	
No-hopping mode	Hopping mode

Test channel:	Highest channel
	
No-hopping mode	Hopping mode

7.8.2 Radiated Emission Method

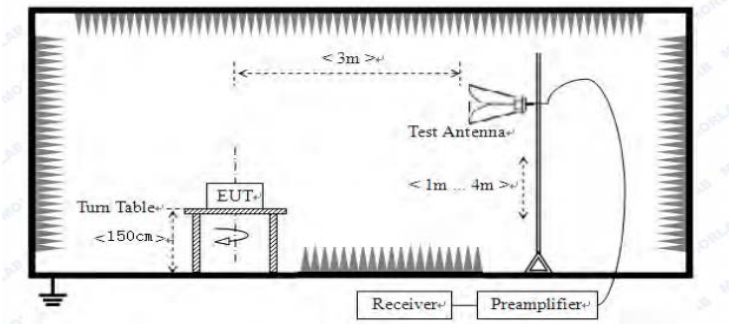
Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10:2013
Test Frequency Range:	All restriction band have been tested, and 2.3GHz to 2.5GHz band is the worse case
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Remark
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit:

Frequency	Limit (dBuV/m @3m)	Remark
Above 1GHz	54.00	Average Value
	74.00	Peak Value

Test setup:



Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 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.

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test channel:	Lowest

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	40.94	27.59	5.38	30.18	43.73	74.00	-30.27	Horizontal
2400.00	57.45	27.58	5.39	30.18	60.24	74.00	-13.76	Horizontal
2390.00	41.31	27.59	5.38	30.18	44.10	74.00	-29.90	Vertical
2400.00	59.28	27.58	5.39	30.18	62.07	74.00	-11.93	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	31.93	27.59	5.38	30.18	34.72	54.00	-19.28	Horizontal
2400.00	43.05	27.58	5.39	30.18	45.84	54.00	-8.16	Horizontal
2390.00	31.74	27.59	5.38	30.18	34.53	54.00	-19.47	Vertical
2400.00	44.52	27.58	5.39	30.18	47.31	54.00	-6.69	Vertical

Test channel:	Highest

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	42.81	27.53	5.47	29.93	45.88	74.00	-28.12	Horizontal
2500.00	42.36	27.55	5.49	29.93	45.47	74.00	-28.53	Horizontal
2483.50	43.33	27.53	5.47	29.93	46.40	74.00	-27.60	Vertical
2500.00	43.17	27.55	5.49	29.93	46.28	74.00	-27.72	Vertical

Average value:

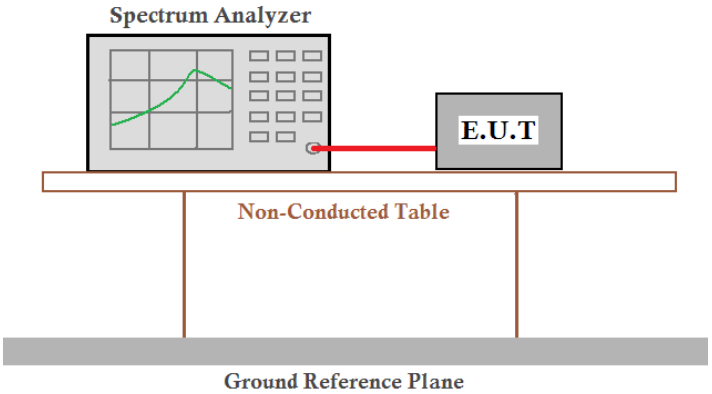
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	34.73	27.53	5.47	29.93	37.80	54.00	-16.20	Horizontal
2500.00	33.01	27.55	5.49	29.93	36.12	54.00	-17.88	Horizontal
2483.50	35.78	27.53	5.47	29.93	38.85	54.00	-15.15	Vertical
2500.00	32.77	27.55	5.49	29.93	35.88	54.00	-18.12	Vertical

Remark:

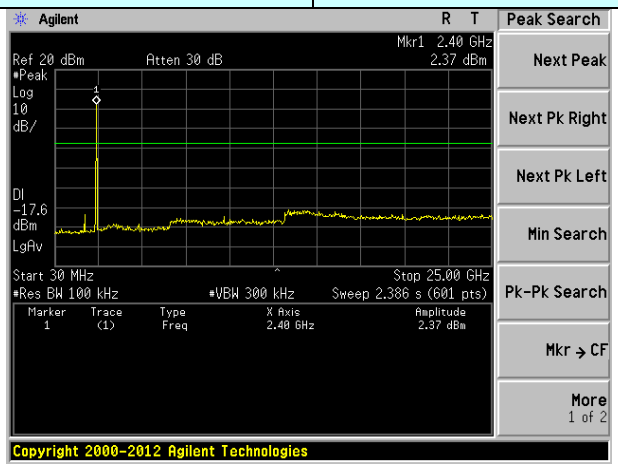
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.9 Spurious Emission

7.9.1 Conducted Emission Method

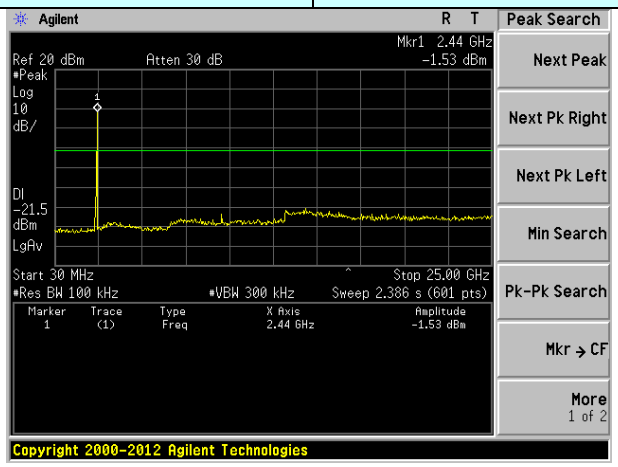
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test channel:	Lowest channel



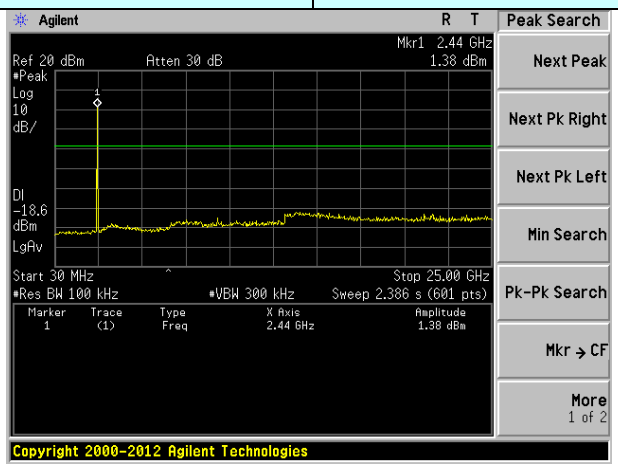
30MHz~25GHz

Test channel:	Middle channel



30MHz~25GHz

Test channel:	Highest channel



30MHz~25GHz

7.9.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

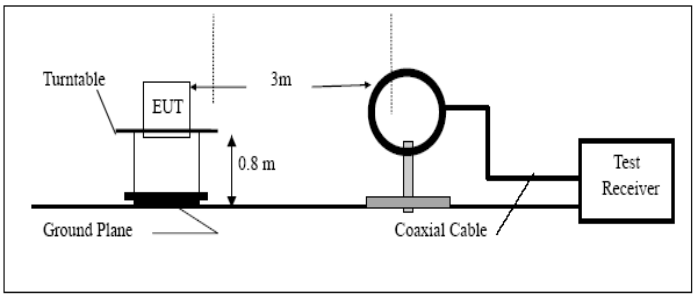
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

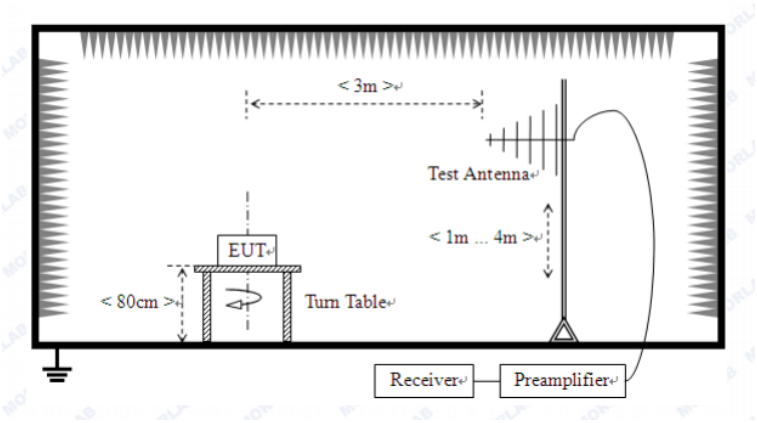
Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	300m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

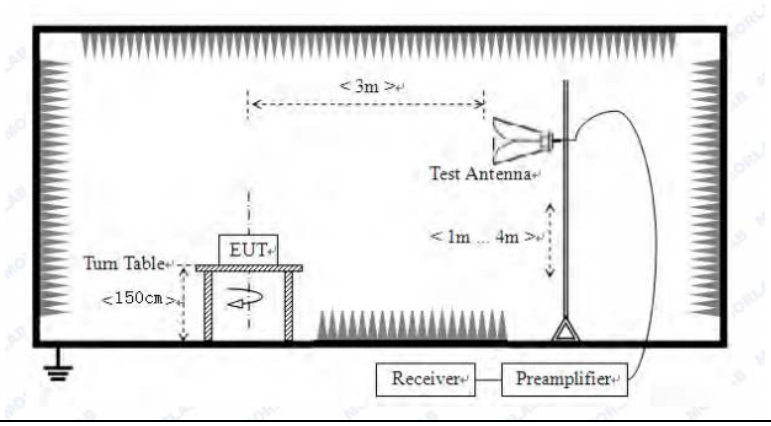
Test setup:

Below 30MHz



Below 1GHz

<table>
<tr><td></td><td>


Above 1GHz


</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) 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.
</td></tr>
</table>

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark:

1. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*
2. *The measured filed strength at frequencies below 30MHz are lower than the limit over 30dB. So the data isn't reported.*

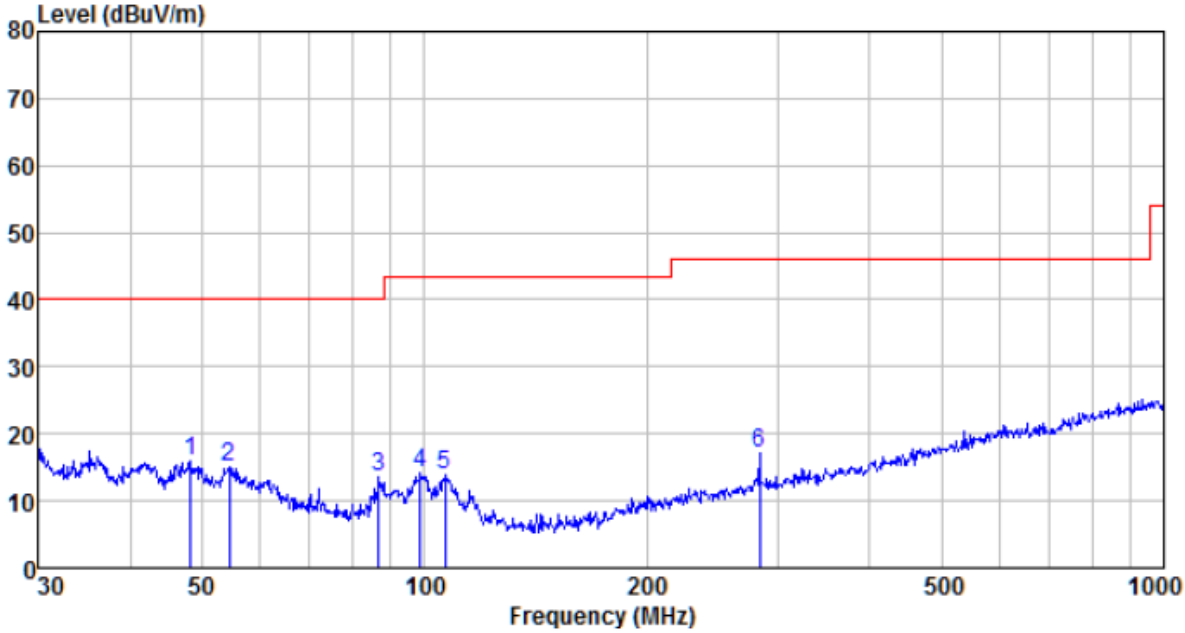
Measurement data:

■ **9kHz~30MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

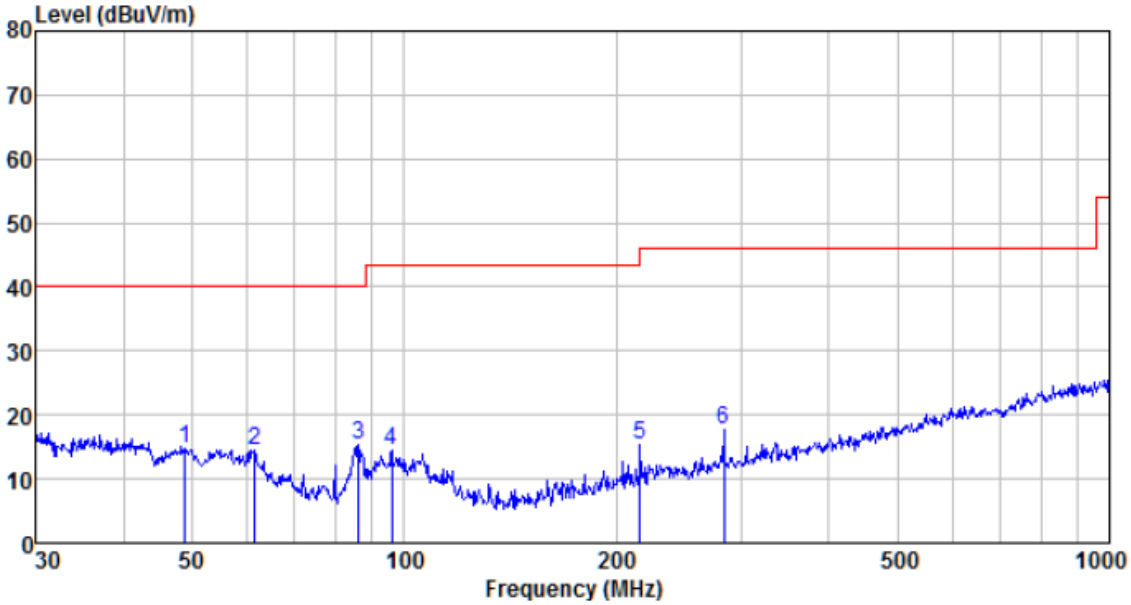
■ **Below 1GHz**

Mode:	**Transmitting mode**	**Test by:**	**Jason**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Horizontal**



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
48.332	39.02	12.29	0.75	36.10	15.96	40.00	-24.04	QP
54.452	38.63	11.85	0.81	36.25	15.04	40.00	-24.96	QP
86.807	39.39	9.68	1.08	36.61	13.54	40.00	-26.46	QP
98.833	37.53	12.06	1.18	36.71	14.06	43.50	-29.44	QP
106.759	38.12	11.41	1.25	36.78	14.00	43.50	-29.50	QP
283.979	39.10	13.16	2.29	37.41	17.14	46.00	-28.86	QP

Mode:	**Transmitting mode**	**Test by:**	**Jason**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Vertical**



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
48.843	37.70	12.29	0.76	36.13	14.62	40.00	-25.38	QP
61.346	39.06	10.84	0.87	36.34	14.43	40.00	-25.57	QP
86.200	41.45	9.43	1.08	36.60	15.36	40.00	-24.64	QP
96.099	38.45	11.65	1.16	36.69	14.57	43.50	-28.93	QP
216.024	39.89	11.02	1.93	37.35	15.49	46.00	-30.51	QP
283.979	39.60	13.16	2.29	37.41	17.64	46.00	-28.36	QP

■ **Above 1GHz**

Test channel:	Lowest

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
4810.00	36.79	31.78	8.60	37.73	39.44	74.00	-34.56	Vertical
7215.00	31.49	36.15	11.66	35.63	43.67	74.00	-30.33	Vertical
9620.00	31.16	38.01	14.14	34.94	48.37	74.00	-25.63	Vertical
12025.00	*					74.00		Vertical
14430.00	*					74.00		Vertical
4810.00	40.97	31.78	8.60	37.73	43.62	74.00	-30.38	Horizontal
7215.00	33.20	36.15	11.66	35.63	45.38	74.00	-28.62	Horizontal
9620.00	30.54	38.01	14.14	34.94	47.75	74.00	-26.25	Horizontal
12025.00	*					74.00		Horizontal
14430.00	*					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
4810.00	25.70	31.78	8.60	37.66	28.42	54.00	-25.58	Vertical
7215.00	20.23	36.15	11.66	35.69	32.35	54.00	-21.65	Vertical
9620.00	19.34	38.01	14.14	34.91	36.58	54.00	-17.42	Vertical
12025.00	*					54.00		Vertical
14430.00	*					54.00		Vertical
4810.00	29.87	31.78	8.60	37.66	32.59	54.00	-21.41	Horizontal
7215.00	22.37	36.15	11.66	35.69	34.49	54.00	-19.51	Horizontal
9620.00	19.03	38.01	14.14	34.91	36.27	54.00	-17.73	Horizontal
12025.00	*					54.00		Horizontal
14430.00	*					54.00		Horizontal

Remark:

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

Test channel:	Middle

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
4880.00	36.59	31.85	8.66	37.75	39.35	74.00	-34.65	Vertical
7320.00	31.36	36.37	11.72	35.60	43.85	74.00	-30.15	Vertical
9760.00	31.05	38.35	14.25	35.03	48.62	74.00	-25.38	Vertical
12200.00	*					74.00		Vertical
14640.00	*					74.00		Vertical
4880.00	40.74	31.85	8.67	32.12	49.14	74.00	-24.86	Horizontal
7320.00	33.05	36.37	11.72	31.89	49.25	74.00	-24.75	Horizontal
9760.00	30.40	38.35	14.25	31.62	51.38	74.00	-22.62	Horizontal
12200.00	*					74.00		Horizontal
14640.00	*					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
4880.00	25.55	31.85	8.67	37.68	28.39	54.00	-25.61	Vertical
7320.00	20.13	36.37	11.72	35.64	32.58	54.00	-21.42	Vertical
9760.00	19.25	38.35	14.25	34.98	36.87	54.00	-17.13	Vertical
12200.00	*					54.00		Vertical
14640.00	*					54.00		Vertical
4880.00	29.70	31.85	8.67	37.68	32.54	54.00	-21.46	Horizontal
7320.00	22.26	36.37	11.72	35.64	34.71	54.00	-19.29	Horizontal
9760.00	18.92	38.35	14.25	34.98	36.54	54.00	-17.46	Horizontal
12200.00	*					54.00		Horizontal
14640.00	*					54.00		Horizontal

Remark:

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

Test channel:	Highest

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
4952.00	35.78	31.91	8.71	37.79	38.61	74.00	-35.39	Vertical
7428.00	30.82	36.56	11.79	35.57	43.60	74.00	-30.40	Vertical
9904.00	30.57	38.81	14.36	35.11	48.63	74.00	-25.37	Vertical
12380.00	*					74.00		Vertical
14856.00	*					74.00		Vertical
4952.00	39.76	31.91	8.71	37.79	42.59	74.00	-31.41	Horizontal
7428.00	32.44	36.56	11.79	35.57	45.22	74.00	-28.78	Horizontal
9904.00	29.85	38.81	14.36	35.11	47.91	74.00	-26.09	Horizontal
12380.00	*					74.00		Horizontal
14856.00	*					74.00		Horizontal

Average value:

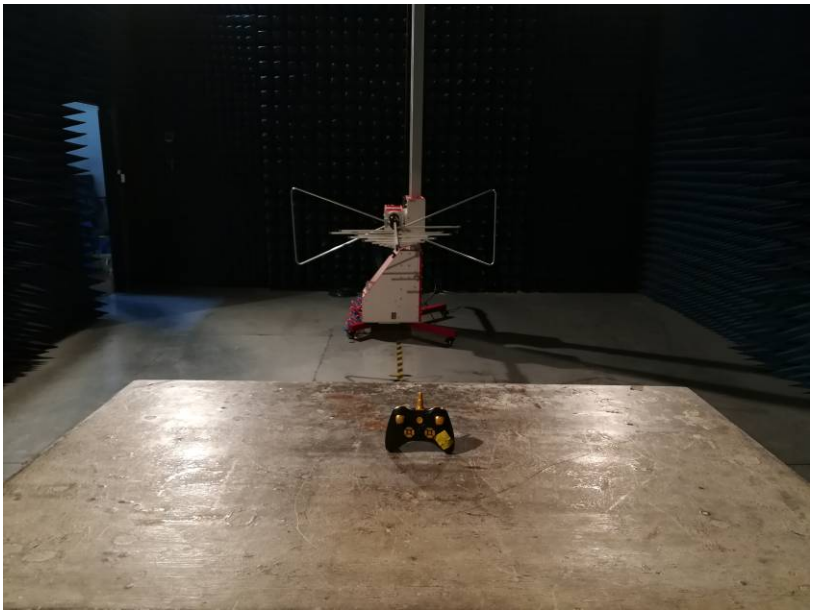
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4952.00	24.92	31.91	8.71	37.68	27.86	54.00	-26.14	Vertical
7428.00	19.71	36.56	11.79	35.58	32.48	54.00	-21.52	Vertical
9904.00	18.87	38.81	14.36	35.07	36.97	54.00	-17.03	Vertical
12380.00	*					54.00		Vertical
14856.00	*					54.00		Vertical
4952.00	28.99	31.91	8.71	37.68	31.93	54.00	-22.07	Horizontal
7428.00	21.78	36.56	11.79	35.58	34.55	54.00	-19.45	Horizontal
9904.00	18.48	38.81	14.36	35.07	36.58	54.00	-17.42	Horizontal
12380.00	*					54.00		Horizontal
14856.00	*					54.00		Horizontal

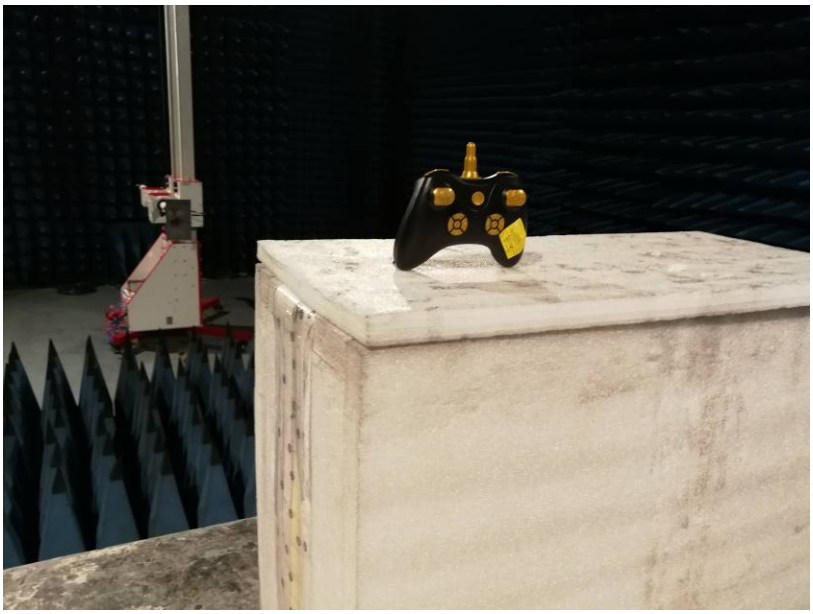
Remark:

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

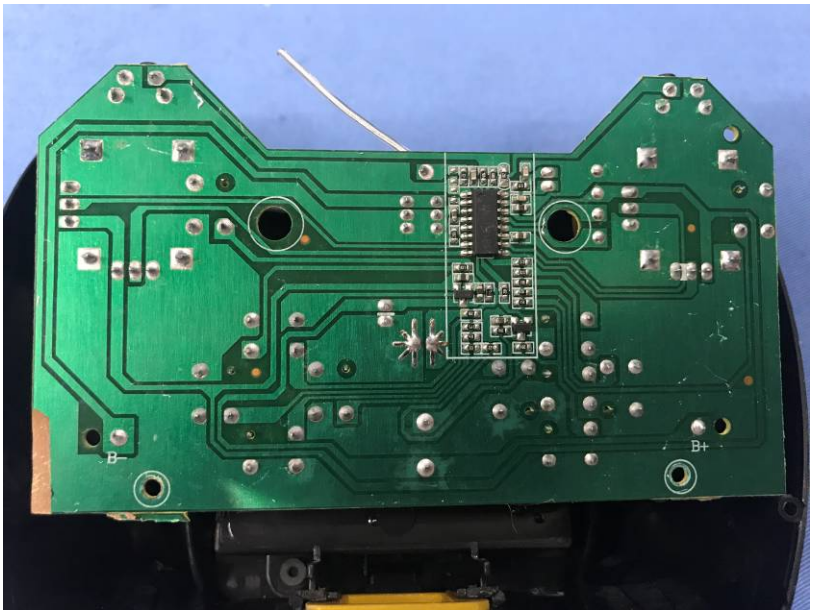
8 Test Setup Photo

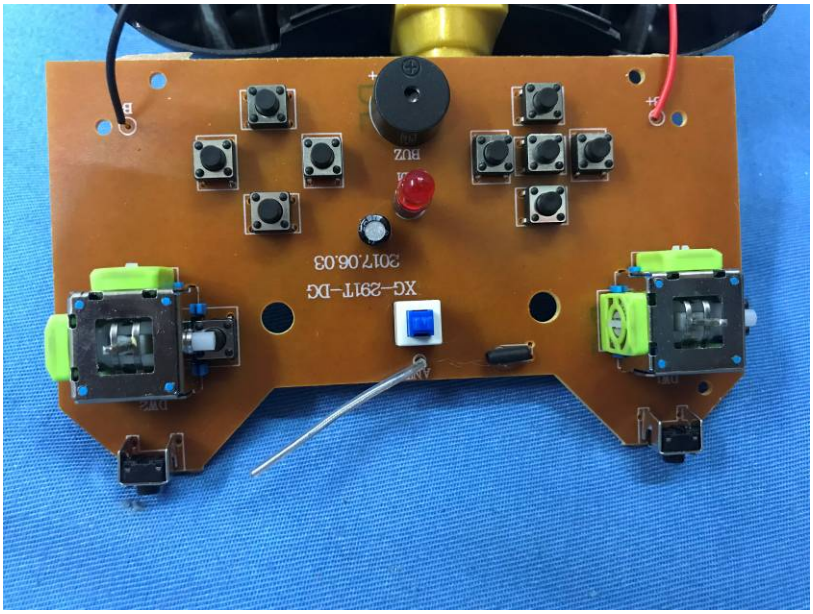
Radiated Emission

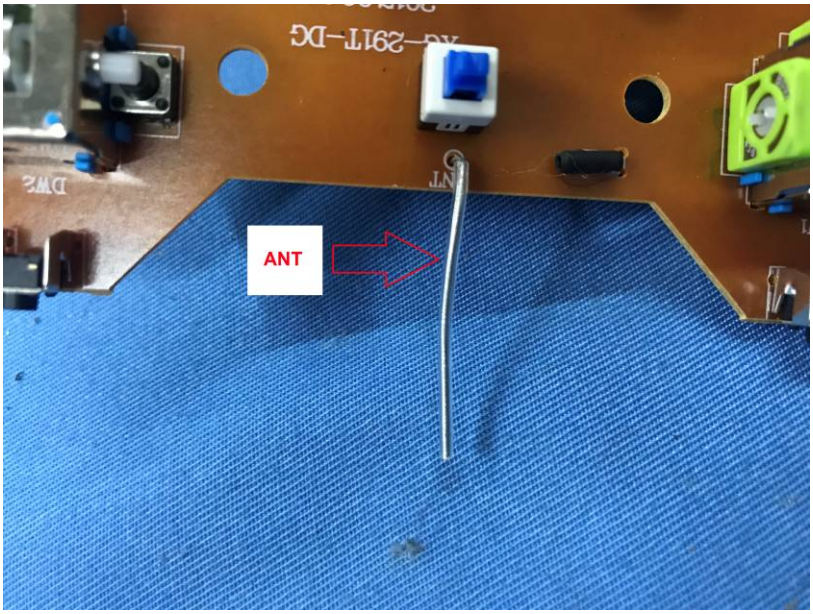




9 EUT Constructional Details


B-
B+





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