TEST REPORT

Product	:	FLIP
Trade mark	:	N/A
Model/Type reference	:	X3C01, SA16
Serial Number	:	N/A
Report Number	:	EED32J00037601
FCC ID	:	2ALLR-X3C01
Date of Issue	:	Mar. 29, 2017
Test Standards	:	47 CFR Part 15Subpart C (2015)
Test result	:	PASS

Prepared for:

Guangdong Virtual Reality Technology Co,. Ltd.
Shenzhen Flour Limited, South Gate 3rd Floor, 9106 Beihuan Avenue, Nanshan District, Shenzhen, Guangdong

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Tested By:	Tom chen (Test Project)	Compiled by:	Ware Xin (Project Engineer)
Reviewed by:	Kevin yang (Reviewer)	Approved by:	Sheek Luo (Lab supervisor)
Date:	Mar. 29, 2017		Check No.: 2392116632

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. Report Seal

2 Version

Version No.	Date	Description
00	Mar. 29, 2017	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15Subpart C Section 15.207	ANSI C63.10-2013	N/A
Conducted Peak Output Power	47 CFR Part 15Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
6dB Occupied Bandwidth	47 CFR Part 15Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
Power Spectral Density	47 CFR Part 15Subpart C Section 15.247 (e)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
RF Conducted Spurious Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
Radiated Spurious Emissions	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.
The tested sample and the sample information are provided by the client.

N/A: The device is only alkaline battery operated,so in this whole report not application.

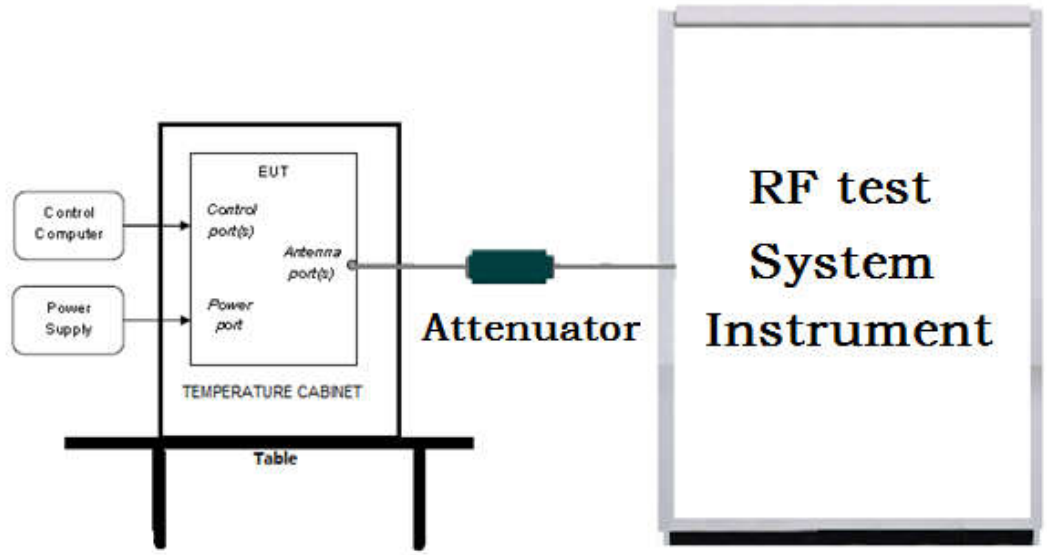
Model No.:X3C01, SA16
Only the model X3C01 was tested,since the electrical circuit design, layout, components used and internal wiring are identical for the above models,with difference the outer decoration.

4 Content

5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

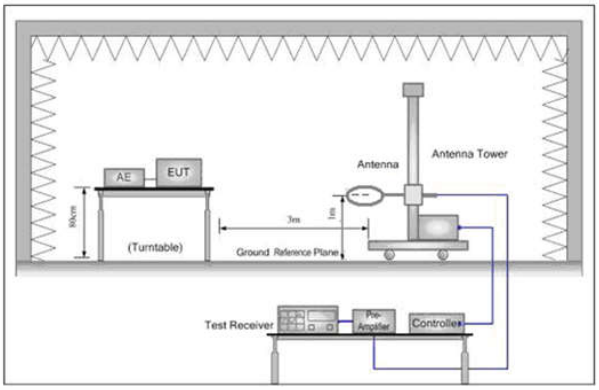


Figure 1. Below 30MHz

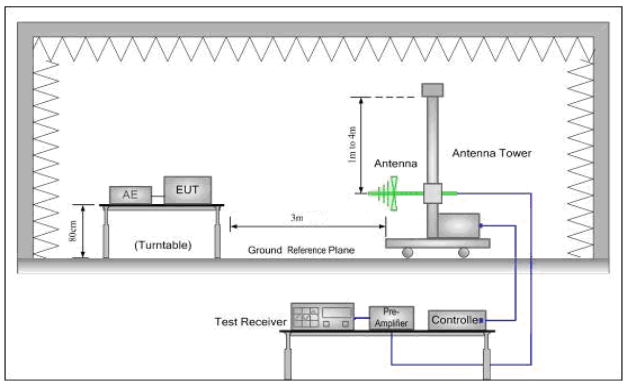


Figure 2. 30MHz to 1GHz

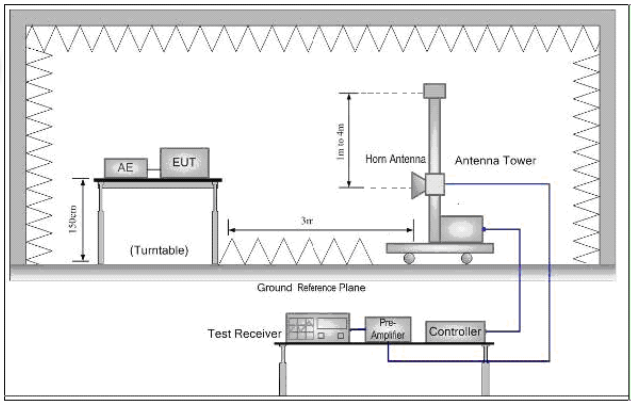
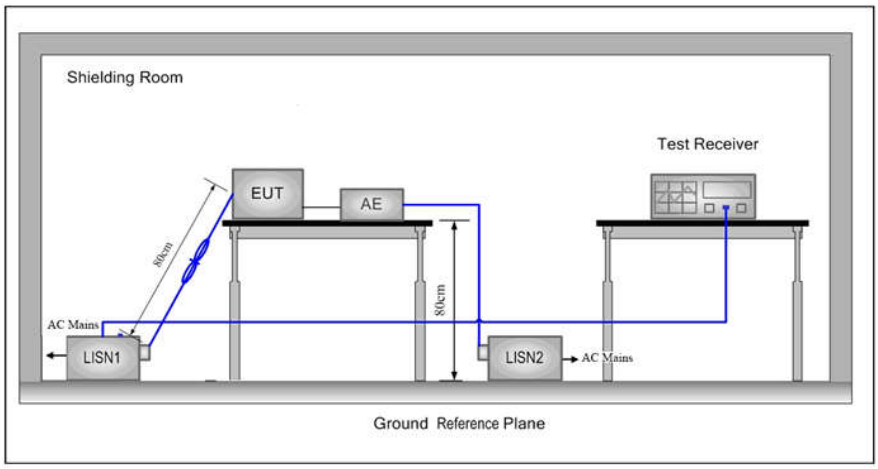


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	23°C
Humidity:	50% RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx	RF Channel		
		Low(L)	Middle(M)	High(H)
GFSK	2402MHz ~2480 MHz	Channel 1	Channel 20	Channel 40
		2402MHz	2440MHz	2480MHz
Transmitting mode:	The EUT transmitted the continuous modulation test signal at the specific channel(s).			

6 General Information

6.1 Client Information

Applicant:	Guangdong Virtual Reality Technology Co,. Ltd.
Address of Applicant:	Shenzhen Flour Limited, South Gate 3rd Floor, 9106 Beihuan Avenue, Nanshan District, Shenzhen,Guangdong
Manufacturer:	Guangdong Virtual Reality Technology Co,. Ltd.
Address of Manufacturer:	Shenzhen Flour Limited, South Gate 3rd Floor, 9106 Beihuan Avenue, Nanshan District, Shenzhen,Guangdong
Factory:	Shenzhen Kaifa Technology Co,. LTD
Address of Factory:	Caitian Road 7006, Futian District, Shenzhen

6.2 General Description of EUT

Product Name:	FLIP
Model No.:	X3C01, SA16
Test Model No.:	X3C01
Trade mark:	N/A
EUT Supports Radios application:	BT4.0 Signal mode
Power Supply:	alkaline battery: 2(AAA)*1.5V=3.0V
Sample Received Date:	Mar. 20, 2017
Sample tested Date:	Mar. 20, 2017 to Mar. 24, 2017

6.3 Product Specification subjective to this standard

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	4.0
Modulation Technique:	DSSS
Modulation Type:	GFSK
Number of Channel:	40
Test Power Grade:	N/A
Test Software of EUT:	N/A
EUT Function:	Portable production
Antenna Type:	PIFA Antenna
Antenna Gain:	2dBi
Test Voltage:	alkaline battery: 2(AAA)*1.5V=3.0V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
3	2406MHz	13	2426MHz	23	2446MHz	33	2466MHz
4	2408MHz	14	2428MHz	24	2448MHz	34	2468MHz
5	2410MHz	15	2430MHz	25	2450MHz	35	2470MHz
6	2412MHz	16	2432MHz	26	2452MHz	36	2472MHz
7	2414MHz	17	2434MHz	27	2454MHz	37	2474MHz
8	2416MHz	18	2436MHz	28	2456MHz	38	2476MHz
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

6.6 Test Facility

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

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International Group 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 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard Conditions

None.

6.9 Other Information Requested by the Customer

None.

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

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

RF test system					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2016	03-31-2017
Signal Generator	Keysight	N5182B	MY53051549	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	TTF20120439	01-11-2017	01-10-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	003	01-11-2017	01-10-2018
DC Power	Keysight	E3642A	MY54436035	04-01-2016	03-31-2017
BT&WI-FI Automatic control	R&S	OSP120	101374	04-01-2016	03-31-2017
RF control unit	JS Tonscend	JS0806-2	158060006	04-01-2016	03-31-2017

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	TTE20130797	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2016	05-22-2017
Microwave Preamplifier	Agilent	8449B	3008A02425	02-16-2017	02-15-2018
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Microwave Preamplifier	A.H.SYSTEMS	PAP-1840-60	6041.6042	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574 374	374	06-30-2015	06-28-2018
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-15-2017
Receiver	R&S	ESCI	100435	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-15-2017
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Cable line	Fulai(7M)	SF106	5219/6A	01-11-2017	01-10-2018
Cable line	Fulai(6M)	SF106	5220/6A	01-11-2017	01-10-2018
Cable line	Fulai(3M)	SF106	5216/6A	01-11-2017	01-10-2018
Cable line	Fulai(3M)	SF106	5217/6A	01-11-2017	01-10-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	TTF20120439	01-11-2017	01-10-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	003	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA09 CL12-0395-001	TTF20120434	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA08 CL12-0393-001	TTF20120435	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA04 CL12-0396-002	TTF20120436	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA03 CL12-0394-001	TTF20120437	01-11-2017	01-10-2018

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C (2015)	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices

Test Results List:

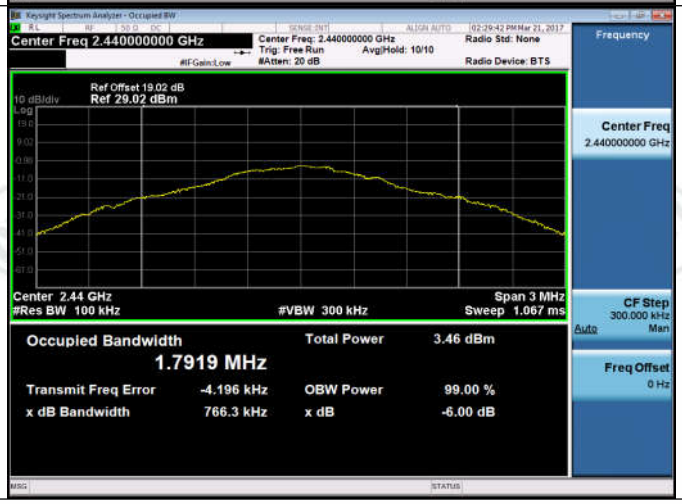
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix A)
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10	Power Spectral Density	PASS	Appendix E)
Part15C Section 15.203/15.247 (c)	ANSI C63.10	Antenna Requirement	PASS	Appendix F)
Part15C Section 15.207	ANSI C63.10	AC Power Line Conducted Emission	PASS	N/A
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix G)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix H)

Appendix A): 6dB Occupied Bandwidth

Test Result

Mode	Channel	6dB Bandwidth [MHz]	99% OBW[MHz]	Verdict	Remark
BLE	LCH	0.8055	1.7248	PASS	Peak detector
BLE	MCH	0.7663	1.7919	PASS	
BLE	HCH	0.7558	1.8330	PASS	

Test Graphs

Graphs			
LCH			
MCH			

HCH	

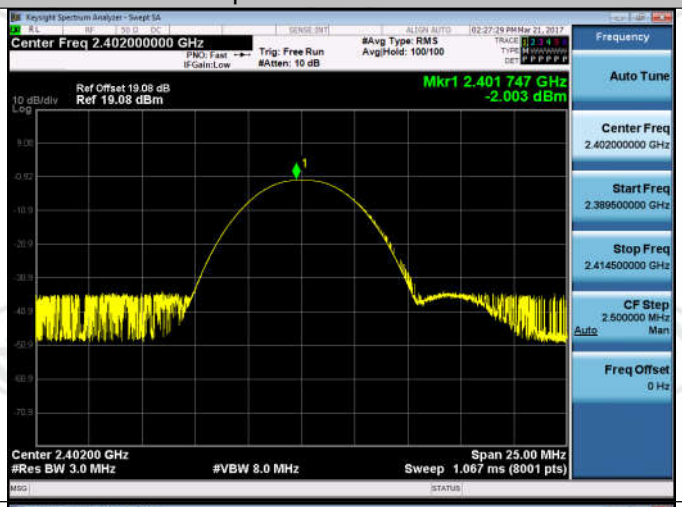
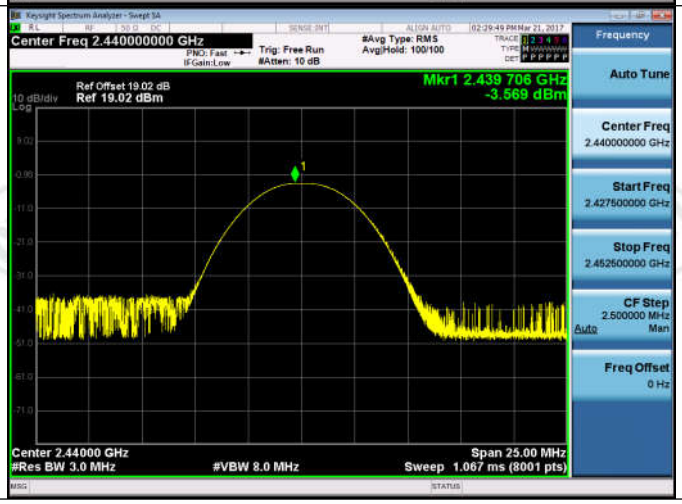
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 19.05 dB
10 dB/div
Ref 29.05 dBm
Log
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1.067 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.8330 MHz
Total Power 1.80 dBm
Freq Offset
0 Hz
Transmit Freq Error -14.106 kHz
OBW Power 99.00 %
x dB Bandwidth 755.8 kHz
x dB -6.00 dB

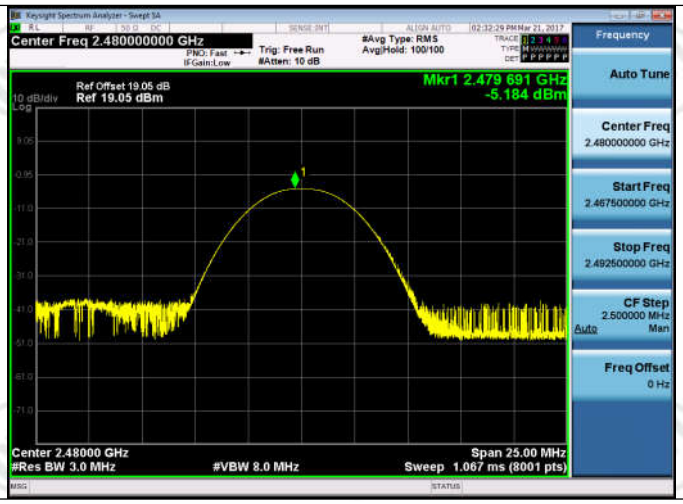
Appendix B): Conducted Peak Output Power

Test Result

Mode	Channel	Conduct Peak Power[dBm]	Verdict
BLE	LCH	-2.003	PASS
BLE	MCH	-3.569	PASS
BLE	HCH	-5.184	PASS

Test Graphs

Graphs			
LCH			
MCH			

HCH	

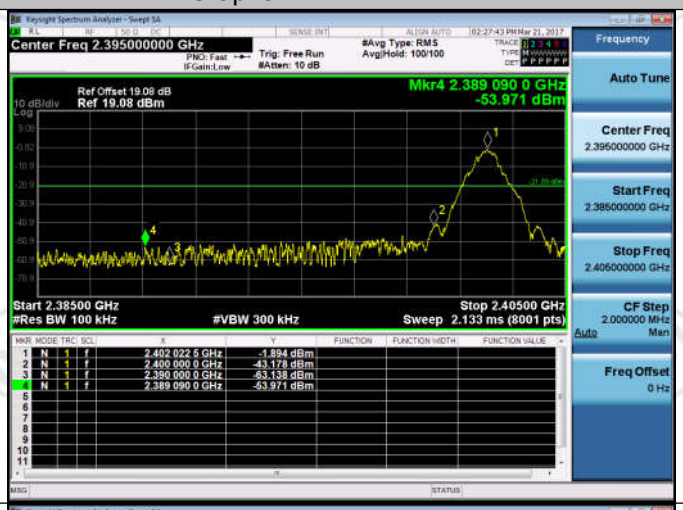
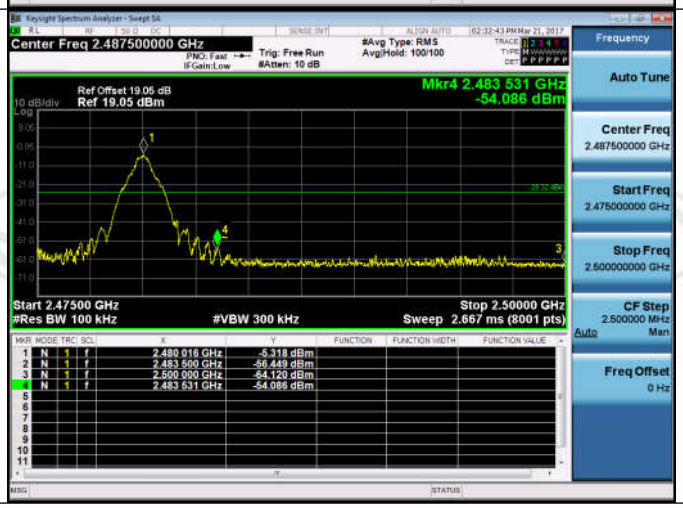
Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 100/100
02:32:29 PM Mar 21, 2017
Ref Offset 19.05 dB
10 dB/div
Ref 19.05 dBm
Log
Mkr1 2.479 691 GHz
-5.184 dBm
Center 2.48000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 25.00 MHz
Sweep 1.067 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.467500000 GHz
Stop Freq
2.492500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Appendix C): Band-edge for RF Conducted Emissions

Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	LCH	-1.894	-53.971	-21.89	PASS
BLE	HCH	-5.318	-54.086	-25.32	PASS

Test Graphs

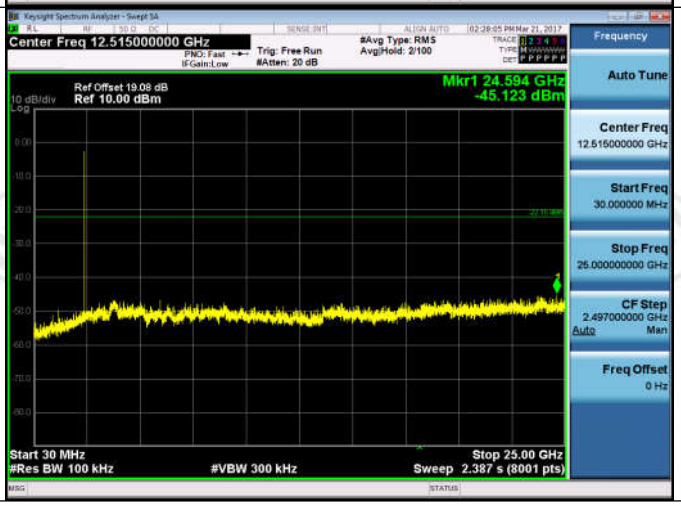
Graphs		
LCH		
HCH		

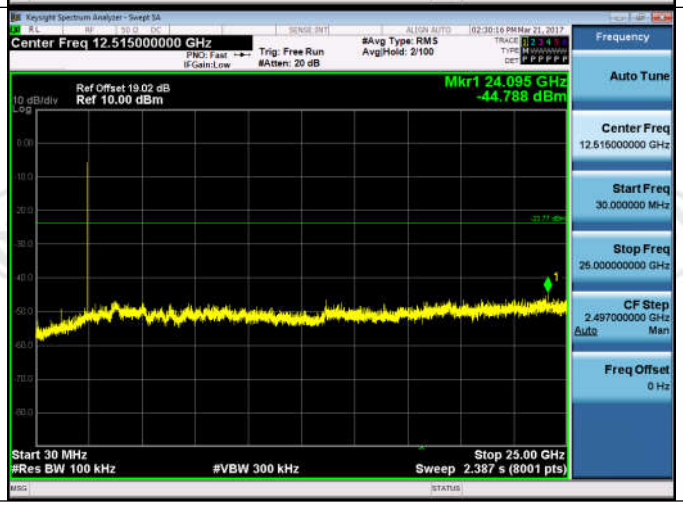
Appendix D): RF Conducted Spurious Emissions

Result Table

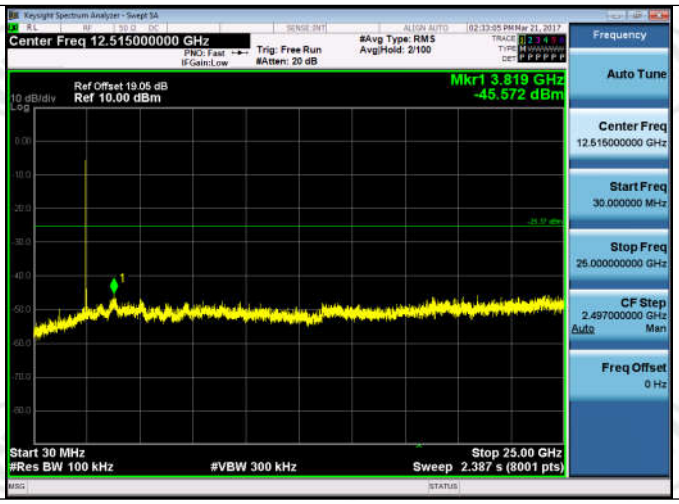
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
BLE	LCH	-2.153	<Limit	PASS
BLE	MCH	-3.771	<Limit	PASS
BLE	HCH	-5.37	<Limit	PASS

Test Graphs

BLE_LCH_Graphs		
Pref/BLE/LCH		
Puw/BLE/LCH		

BLE_MCH_Graphs		
Pref/BLE/MCH		
Puw/BLE/MCH		

BLE_HCH_Graphs		
Pref/BLE/HCH		

Puw/BLE/HCH	

Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 2/100
Ref Offset 19.05 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 3.819 GHz
-45.572 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (8001 pts)
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz

Appendix E): Power Spectral Density

Result Table

Mode	Channel	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE	LCH	-14.413	8	PASS
BLE	MCH	-16.768	8	PASS
BLE	HCH	-18.025	8	PASS

Test Graphs

Graphs			
LCH			
MCH			

HCH	

Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 27/100
Ref Offset 19.05 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 2.479 999 44 GHz
-18.025 dBm
Center 2.4800000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.500 MHz
Sweep 158.4 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479250000 GHz
Stop Freq
2.480750000 GHz
CF Step
150.000 kHz
Auto
Man
Freq Offset
0 Hz

Appendix F): Antenna Requirement

15.203 requirement:

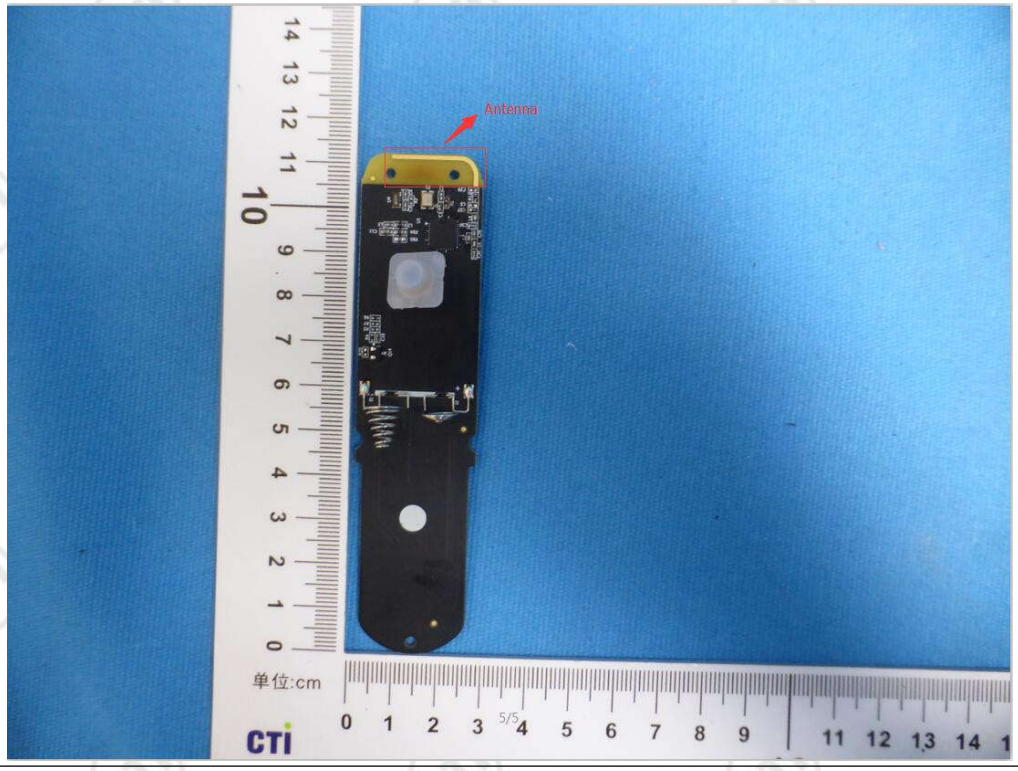
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:	

The antenna is PIFA Antenna and no consideration of replacement. The best case gain of the antenna is 2dBi.



Appendix G): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

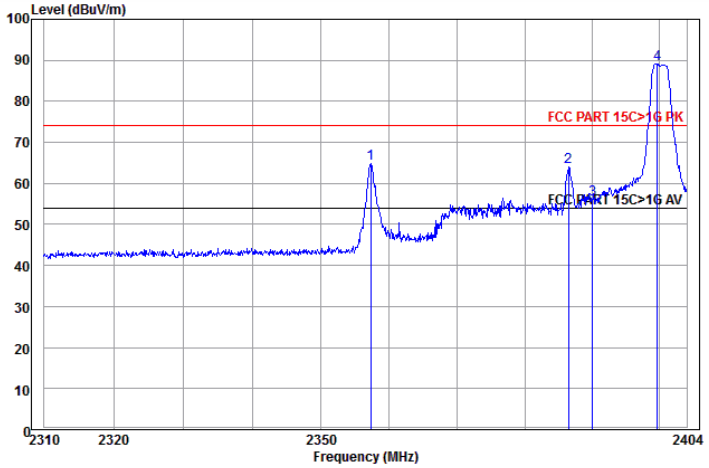
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. . Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

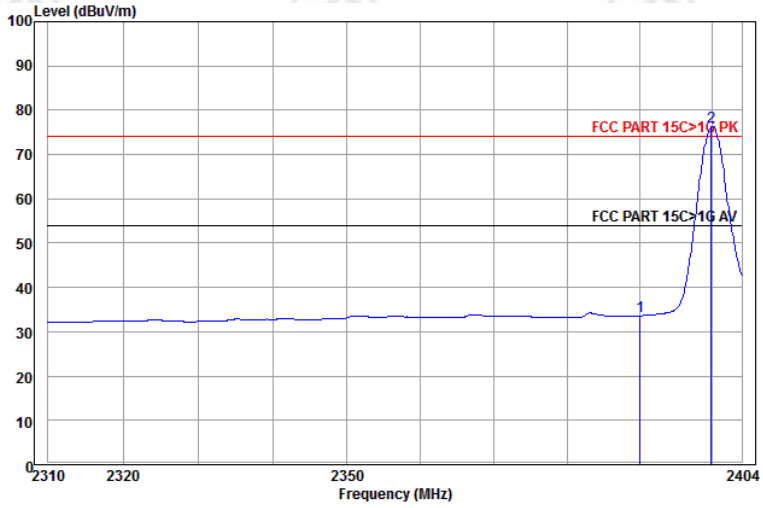
Test plot as follows:

Worse case mode:	GFSK		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



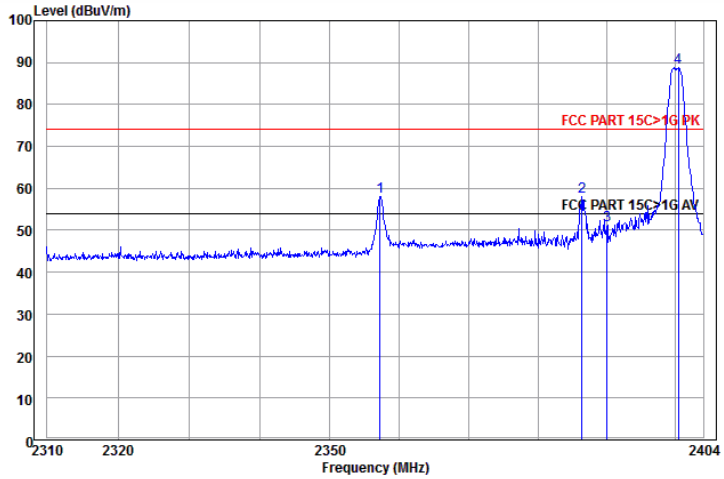
	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2357.283	32.47	4.20	34.38	62.44	64.73	74.00	-9.27	Horizontal	
2	2386.421	32.53	4.27	34.39	61.67	64.08	74.00	-9.92	Horizontal	
3	2390.000	32.53	4.28	34.39	53.59	56.01	74.00	-17.99	Horizontal	
4 pp	2399.593	32.55	4.30	34.39	86.65	89.11	74.00	15.11	Horizontal	

Worse case mode:	GFSK		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



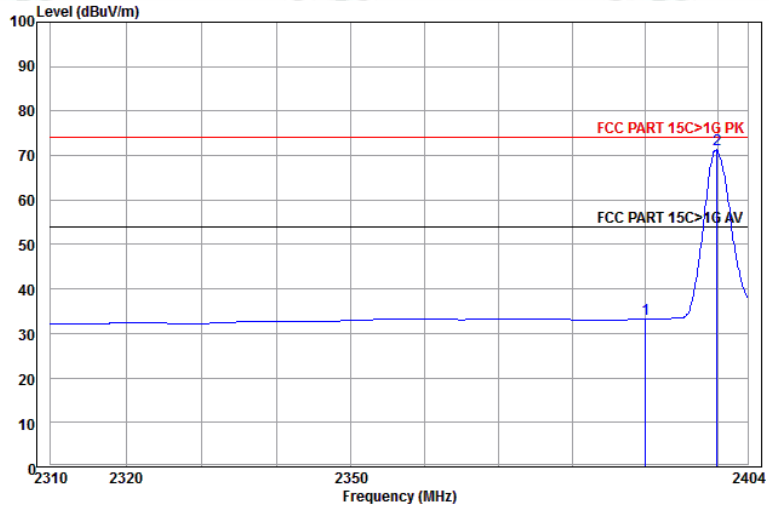
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	31.18	33.60	54.00	-20.40	Horizontal	Average
2 pp	2399.785	32.55	4.30	73.97	76.43	54.00	22.43	Horizontal	Average

Worse case mode:	GFSK		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



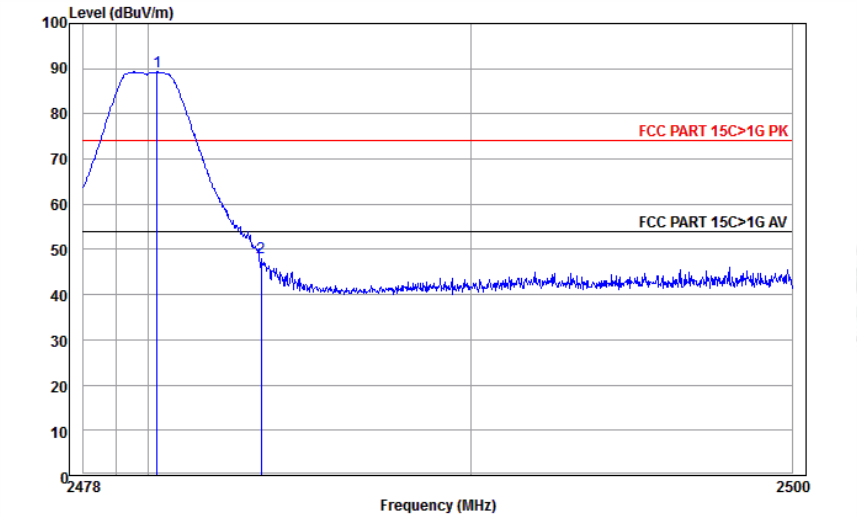
	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2357.189	32.47	4.20	34.38	55.83	58.12	74.00	-15.88	Vertical	
2	2386.326	32.53	4.27	34.39	55.75	58.16	74.00	-15.84	Vertical	
3	2390.000	32.53	4.28	34.39	48.70	51.12	74.00	-22.88	Vertical	
4 pp	2400.359	32.56	4.31	34.39	86.27	88.75	74.00	14.75	Vertical	

Worse case mode:	GFSK		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



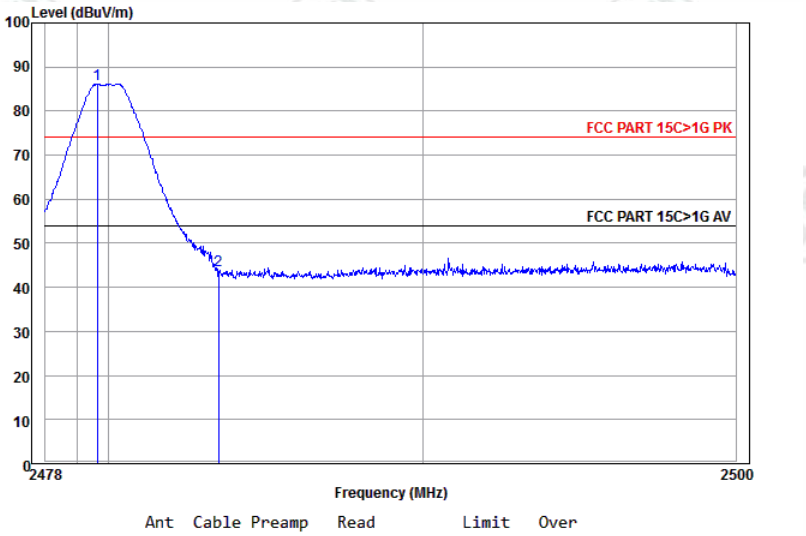
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	30.88	33.30	54.00	-20.70	Vertical	Average
2 pp	2399.785	32.55	4.30	68.98	71.44	54.00	17.44	Vertical	Average

Worse case mode:	GFSK		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2480.279	32.71	4.50	34.41	86.51	89.31	74.00	15.31	Horizontal	
2	2483.500	32.71	4.51	34.41	45.42	48.23	74.00	-25.77	Horizontal	

Worse case mode:	GFSK		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2479.643	32.71	4.50	34.41	83.39	86.19	74.00	12.19	Vertical	
2	2483.500	32.71	4.51	34.41	41.11	43.92	74.00	-30.08	Vertical	

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading -Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Appendix H): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. 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.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

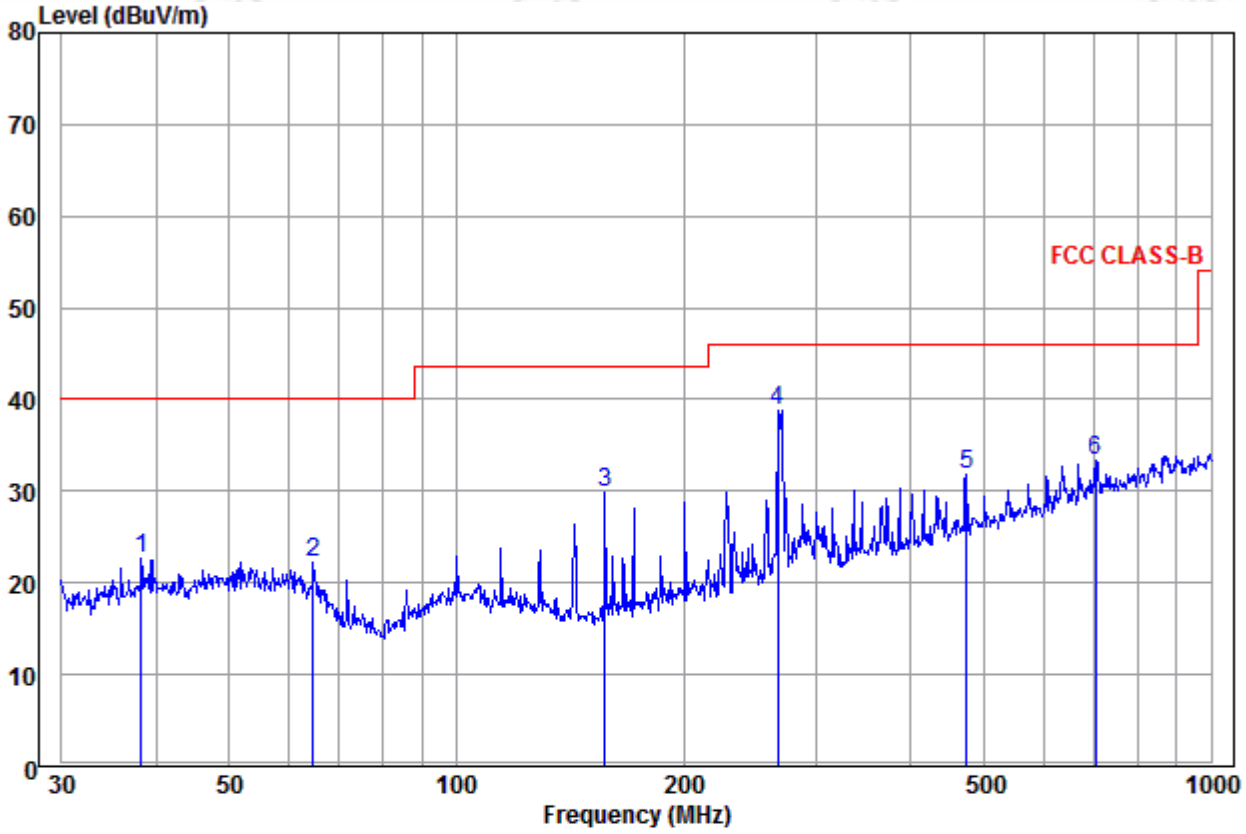
Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

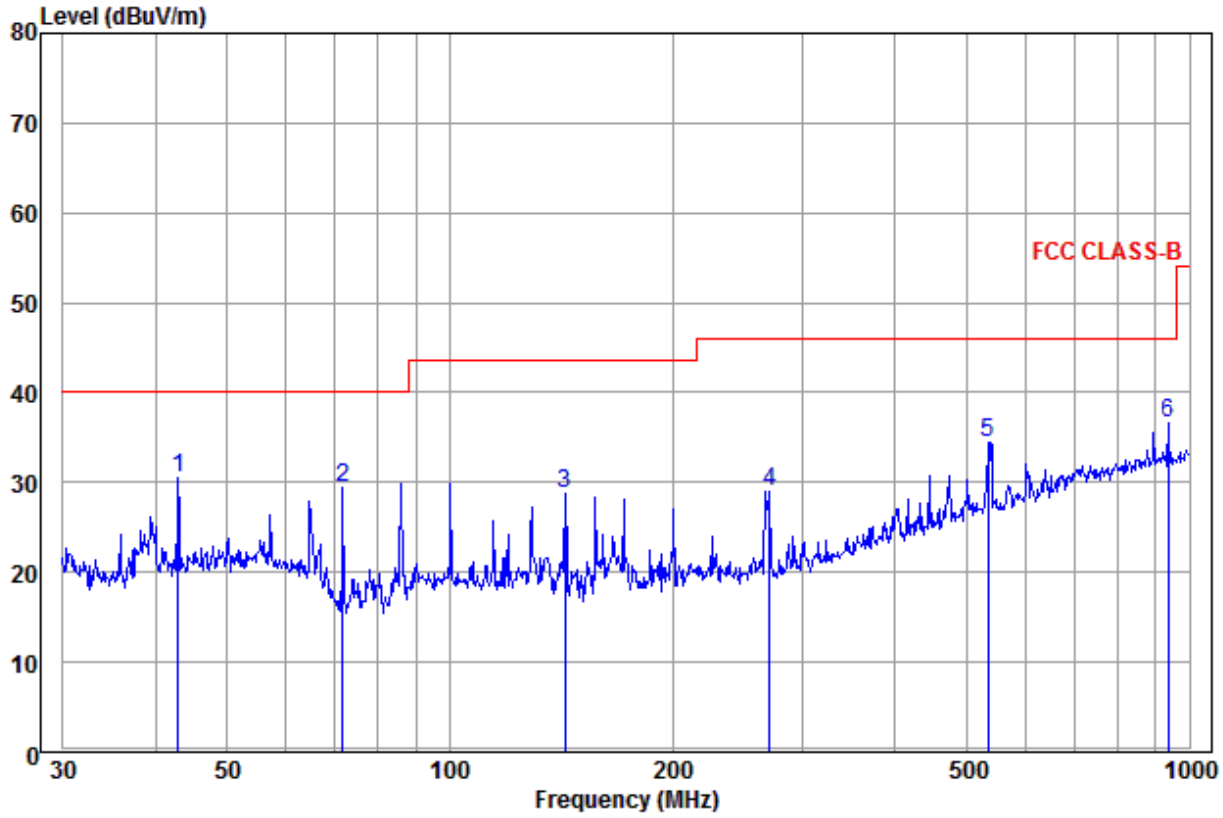
Radiated Emission below 1GHz

30MHz~1GHz (QP)		
Test mode:	Transmitting	Horizontal



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	38.212	13.93	0.63	8.18	22.74	40.00	-17.26	Horizontal	
2	64.659	12.15	1.44	8.75	22.34	40.00	-17.66	Horizontal	
3	157.559	10.02	1.69	18.20	29.91	43.50	-13.59	Horizontal	
4 pp	266.609	12.79	2.36	23.62	38.77	46.00	-7.23	Horizontal	
5	473.835	17.74	3.06	10.94	31.74	46.00	-14.26	Horizontal	
6	704.226	20.73	3.90	8.69	33.32	46.00	-12.68	Horizontal	

Test mode:	Transmitting	Vertical



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	42.900	14.48	0.80	15.25	30.53	40.00	-9.47	Vertical	
2	71.581	10.10	1.47	17.94	29.51	40.00	-10.49	Vertical	
3	143.326	10.09	1.58	17.03	28.70	43.50	-14.80	Vertical	
4	270.375	12.87	2.36	13.84	29.07	46.00	-16.93	Vertical	
5	533.832	18.54	3.18	12.79	34.51	46.00	-11.49	Vertical	
6 pp	935.546	22.40	4.33	9.85	36.58	46.00	-9.42	Vertical	

Transmitter Emission above 1GHz

Worse case mode:		GFSK		Test channel:		Lowest	Remark: Peak		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1346.929	30.56	2.68	34.81	44.26	42.69	74.00	-31.31	Pass	H
1768.619	31.35	3.06	34.46	43.64	43.59	74.00	-30.41	Pass	H
3241.498	33.38	5.57	34.53	40.11	44.53	74.00	-29.47	Pass	H
4804.000	34.69	5.11	34.35	35.20	40.65	74.00	-33.35	Pass	H
7206.000	36.42	6.66	34.90	32.61	40.79	74.00	-33.21	Pass	H
9608.000	37.88	7.73	35.08	34.28	44.81	74.00	-29.19	Pass	H
1340.089	30.54	2.67	34.82	46.91	45.30	74.00	-28.70	Pass	V
1777.646	31.36	3.07	34.45	46.36	46.34	74.00	-27.66	Pass	V
3064.958	33.54	5.61	34.51	42.17	46.81	74.00	-27.19	Pass	V
4804.000	34.69	5.11	34.35	36.49	41.94	74.00	-32.06	Pass	V
7206.000	36.42	6.66	34.90	32.93	41.11	74.00	-32.89	Pass	V
9608.000	37.88	7.73	35.08	33.65	44.18	74.00	-29.82	Pass	V

Worse case mode:		GFSK		Test channel:		Middle	Remark: Peak		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1557.252	30.98	2.88	34.62	43.90	43.14	74.00	-30.86	Pass	H
1988.327	31.68	3.22	34.31	42.81	43.40	74.00	-30.60	Pass	H
2920.248	33.47	5.46	34.49	40.87	45.31	74.00	-28.69	Pass	H
4804.000	34.69	5.11	34.35	33.20	38.65	74.00	-35.35	Pass	H
7206.000	36.42	6.66	34.90	35.61	43.79	74.00	-30.21	Pass	H
9608.000	37.88	7.73	35.08	31.28	41.81	74.00	-32.19	Pass	H
1557.252	30.98	2.88	34.62	45.59	44.83	74.00	-29.17	Pass	V
1978.230	31.67	3.21	34.31	44.50	45.07	74.00	-28.93	Pass	V
2803.700	33.28	5.22	34.47	42.39	46.42	74.00	-27.58	Pass	V
4804.000	34.69	5.11	34.35	38.49	43.94	74.00	-30.06	Pass	V
7206.000	36.42	6.66	34.90	34.93	43.11	74.00	-30.89	Pass	V
9608.000	37.88	7.73	35.08	35.65	46.18	74.00	-27.82	Pass	V

Worse case mode:		GFSK		Test channel:		Highest	Remark: Peak		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1340.089	30.54	2.67	34.82	43.61	42.00	74.00	-32.00	Pass	H
2207.058	32.16	3.81	34.35	41.89	43.51	74.00	-30.49	Pass	H
2935.153	33.50	5.49	34.49	40.76	45.26	74.00	-28.74	Pass	H
4960.000	35.02	5.05	34.31	33.82	39.58	74.00	-34.42	Pass	H
7440.000	36.45	6.88	34.90	33.34	41.77	74.00	-32.23	Pass	H
9920.000	38.22	7.47	35.02	33.01	43.68	74.00	-30.32	Pass	H
1340.089	30.54	2.67	34.82	41.53	39.92	74.00	-34.08	Pass	V
1786.719	31.37	3.07	34.45	40.19	40.18	74.00	-33.82	Pass	V
2818.011	33.31	5.25	34.47	37.27	41.36	74.00	-32.64	Pass	V
4960.000	35.02	5.05	34.31	33.43	39.19	74.00	-34.81	Pass	V
7440.000	36.45	6.88	34.90	34.31	42.74	74.00	-31.26	Pass	V
9920.000	38.22	7.47	35.02	34.14	44.81	74.00	-29.19	Pass	V

Note:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

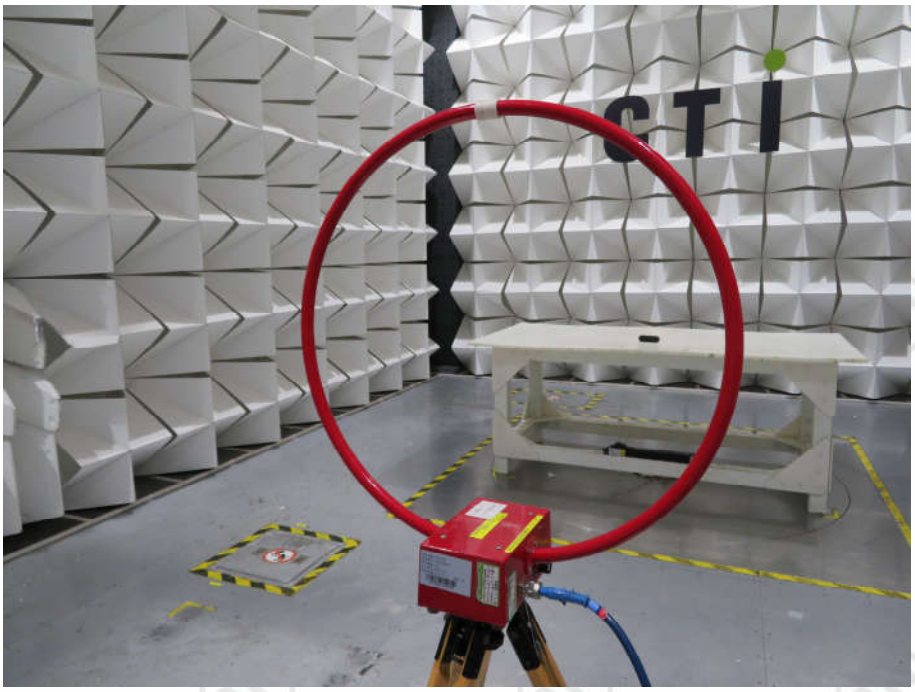
Final Test Level =Receiver Reading -Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test model No.: X3C01



Radiated spurious emission Test Setup-1(Below 30MHz)

Radiated spurious emission Test Setup-1(30MHz-1GHz)

Radiated spurious emission Test Setup-3(Above 1GHz)

PHOTOGRAPHS OF EUT Constructional Details

Test Model No.: X3C01

View of Product-1

View of Product-2

View of Product-3

View of Product-4

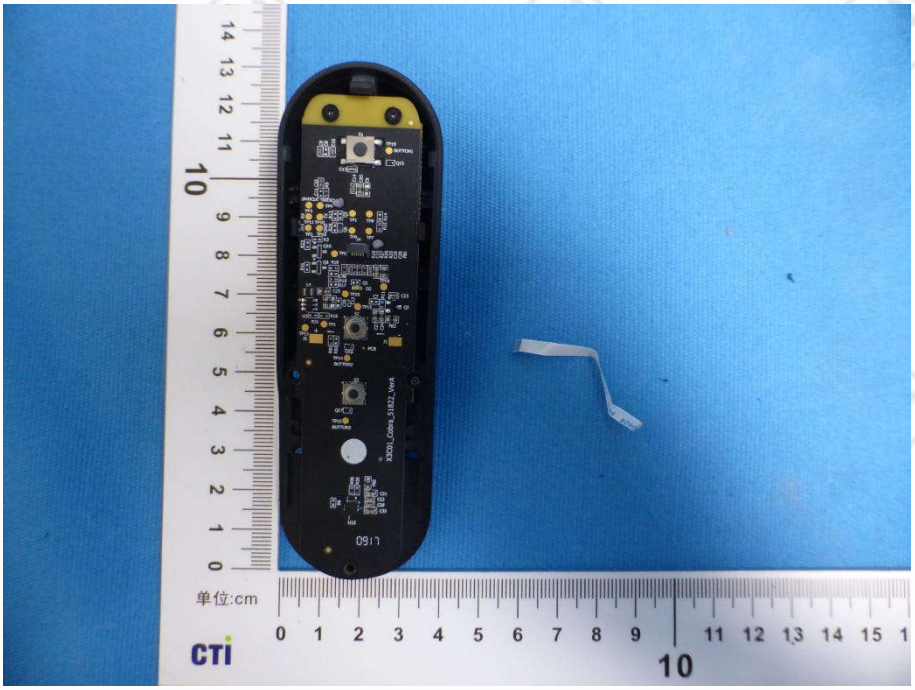
View of Product-5

View of Product-6

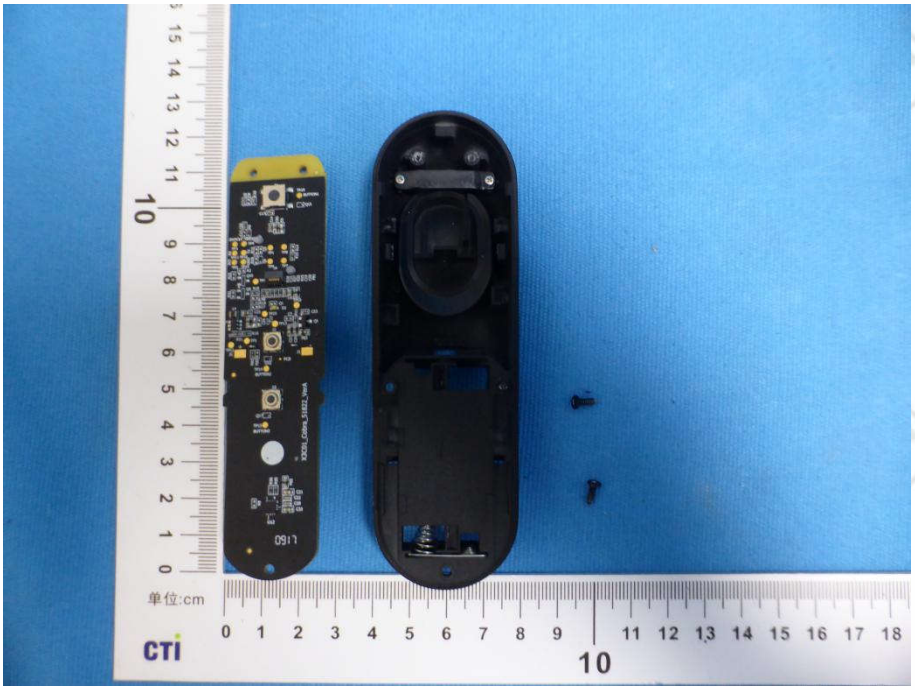
View of Product-7

View of Product-8

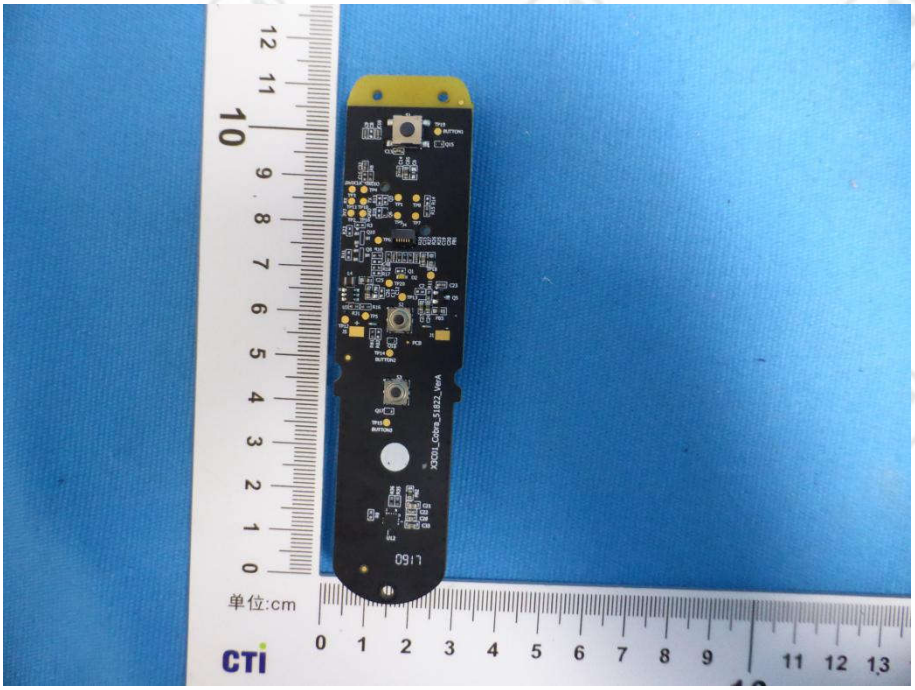
View of Product-9



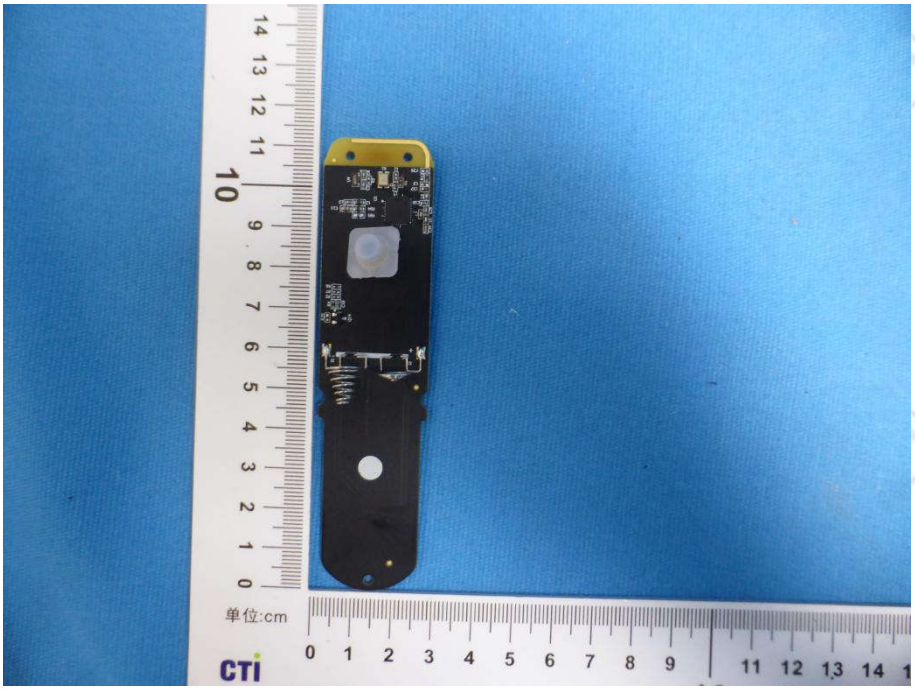
View of Product-10



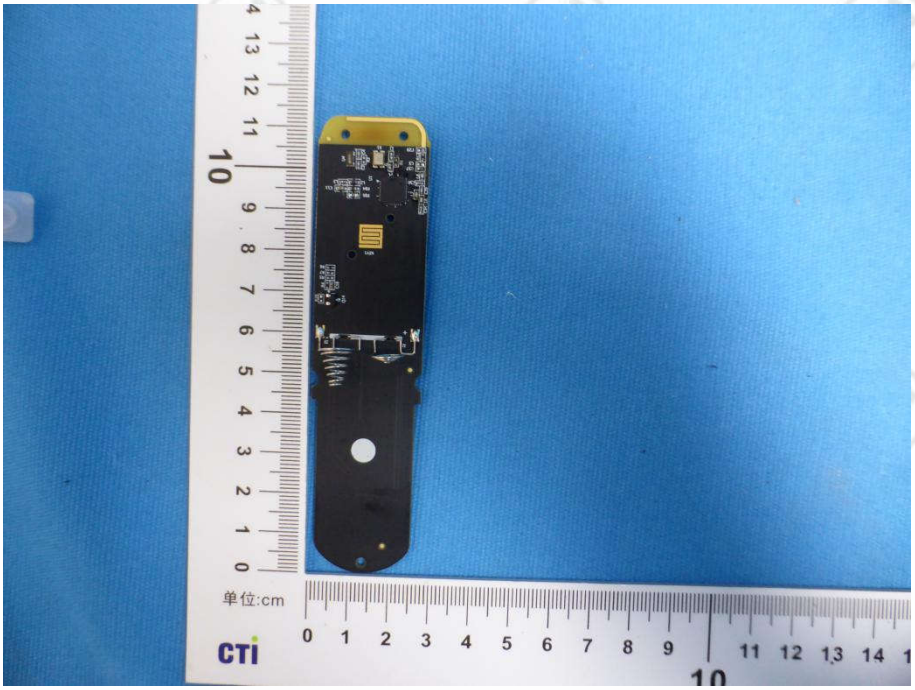
View of Product-11



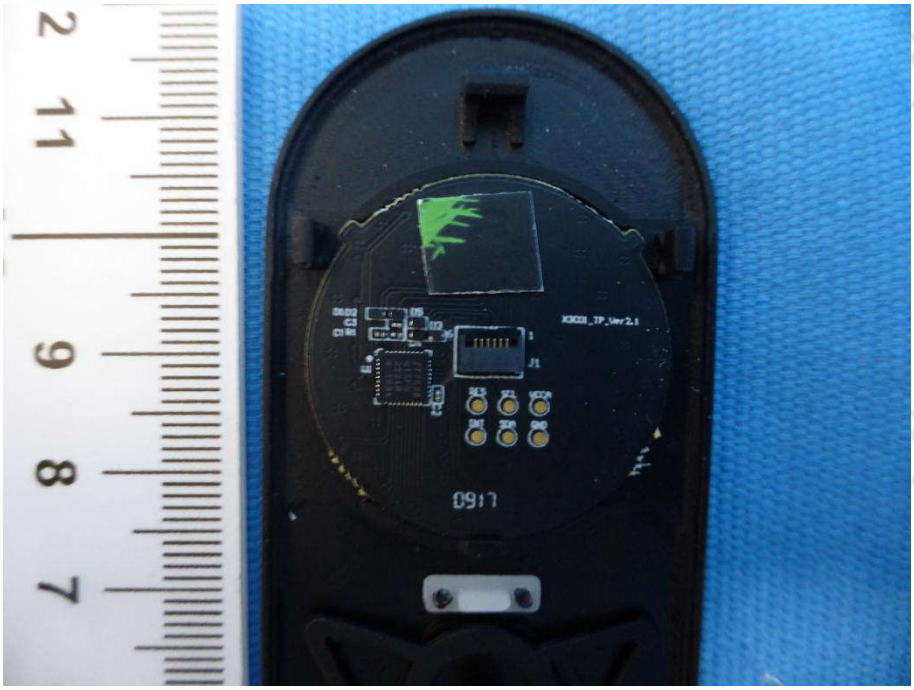
View of Product-12



View of Product-13



View of Product-14



View of Product-15

*** End of Report ***