TEST REPORT

Product	:	Pilot Translating Earpiece
Trade mark	:	WAVERLYLABS
Model/Type reference	:	V100LR,V100LB,V100LW
Serial Number	:	N/A
Report Number	:	EED32J00237202
FCC ID	:	2AN4B-WLABSV1PL
Date of Issue	:	Nov. 22, 2017
Test Standards	:	47 CFR Part 15Subpart C
Test result	:	PASS

Prepared for:

Waverly Labs Inc.
19 Morris Ave Brooklyn New York United States 11205

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
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TEL: +86-755-3368 3668
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Tested By:	Tom chen (Test Project)	Compiled by:	Kevin Ian (Project Engineer)
Reviewed by:	Kevin Yang (Reviewer)	Approved by:	Sheek Luo (Lab supervisor)
Date:	Nov. 22, 2017		Check No.: 2392114011

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. Report Seal

2 Version

Version No.	Date	Description
00	Nov. 22, 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
Maximum Conducted Average Output Power	47 CFR Part 15Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013 KDB 558074 D01v04	PASS
6dB Occupied Bandwidth	47 CFR Part 15Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013 KDB 558074 D01v04	PASS
Power Spectral Density	47 CFR Part 15Subpart C Section 15.247 (e)	ANSI C63.10-2013 KDB 558074 D01v04	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013 KDB 558074 D01v04	PASS
RF Conducted Spurious Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013 KDB 558074 D01v04	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:
The tested sample(s) and the sample information are provided by the client.
N/A:The device is only battery operated, the conducted emission at AC mains is not applicable.
Model No.: V100LR,V100LB,V100LW
Only the model V100LR was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

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5 Test Requirement

5.1 Test setup

5.1.1 For Radiated Emissions test setup

Radiated Emissions setup:

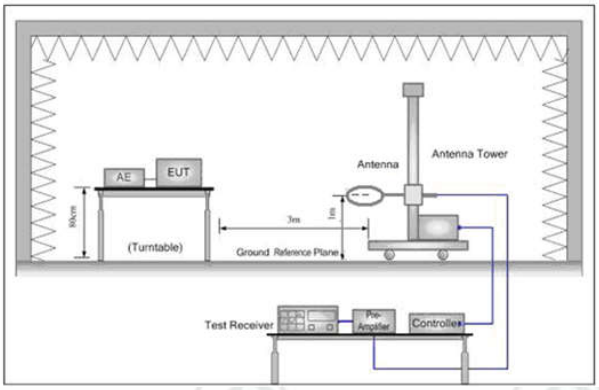


Figure 1. Below 30MHz

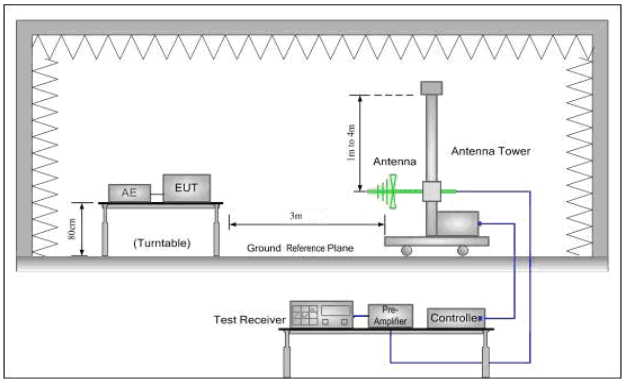


Figure 2. 30MHz to 1GHz

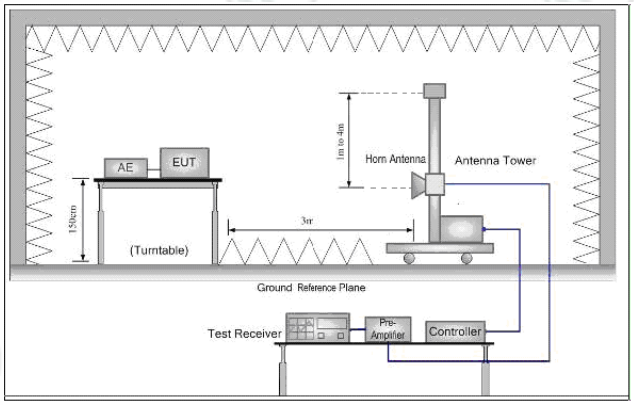


Figure 3. Above 1GHz

5.2 Test Environment

Operating Environment:	
Temperature:	24.6 °C
Humidity:	55 % RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	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:	Waverly Labs Inc.
Address of Applicant:	19 Morris Ave Brooklyn New York United States 11205
Manufacturer:	Waverly Labs Inc.
Address of Manufacturer:	19 Morris Ave Brooklyn New York United States 11205
Factory:	ShengHai Electronics (Shenzhen) Ltd.
Address of Factory:	Block 17-19, Hui Ming Ying Industry, Yan Chuan, Song Gang, Baoan County, Shenzhen, China 518105

6.2 General Description of EUT

Product Name:	Pilot Translating Earpiece
Model No.(EUT):	V100LR,V100LB,V100LW
Test Model No.:	V100LR
Trade mark:	WAVERLYLABS
EUT Supports Radios application:	BT4.1 Dual mode, 2402-2480MHz
Power Supply:	Lithium-ion button cell:1x3.7V(Z55)=3.7V
Sample Received Date:	Oct. 25, 2017
Sample tested Date:	Oct. 25, 2017 Nov. 21, 2017

6.3 Product Specification subjective to this standard

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	4.1
Modulation Technique:	DSSS
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	Portable production
Test Power Grade:	Class 1(manufacturer declare)
Test Software of EUT:	Blue Suite 2.4.8 (manufacturer declare)
Antenna Type and Gain:	Type: Monopole antenna, Gain: 0dBi
Test Voltage:	Lithium-ion button cell:1x3.7V(Z55)=3.7V

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.
FCC Designation No.: CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 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	03-14-2017	03-13-2018
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-14-2017	03-13-2018
Signal Generator	Keysight	N5182B	MY53051549	03-14-2017	03-13-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-11-2017	01-10-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-11-2017	01-10-2018
DC Power	Keysight	E3642A	MY54436035	03-14-2017	03-13-2018
PC-1	Lenovo	R4960d	---	04-01-2017	03-31-2018
power meter & power sensor	R&S	OSP120	101374	03-14-2017	03-13-2018
RF control unit	JS Tonscend	JS0806-2	158060006	03-14-2017	03-13-2018
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-14-2017	03-13-2018

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	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2017	05-22-2018
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	06-22-2017	06-21-2019
Microwave Preamplifier	A.H.SYSTEMS	PAP-1840-60	6041.6042	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574 374	---	06-30-2015	06-28-2018
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
Multi device Controller	maturo	NCD/070/10711112	---	01-11-2017	01-10-2018
LISN	schwarzbeck	NNBM8125	81251547	06-13-2017	06-12-2018
LISN	schwarzbeck	NNBM8125	81251548	06-13-2017	06-12-2018
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
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	FL3CX03WG18NM12-0398-002	---	01-11-2017	01-10-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-11-2017	01-10-2018

8 Radio Technical Requirements Specification

Reference documents for testing:

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

Test Results List:

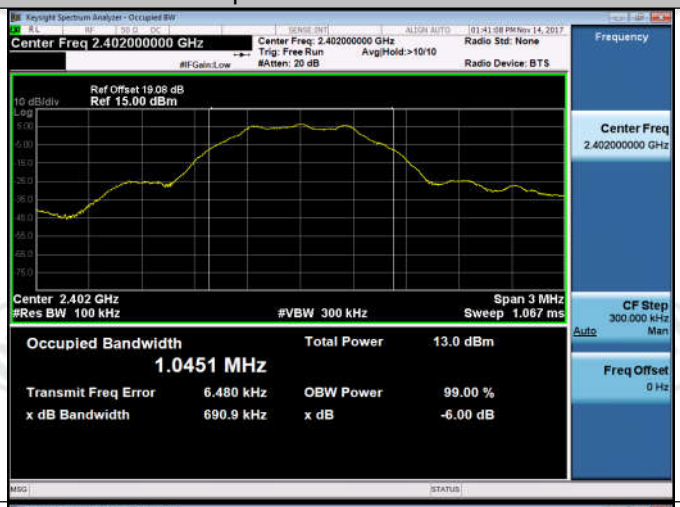
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (a)(2)	ANSI C63.10/ KDB 558074	6dB Occupied Bandwidth	PASS	Appendix A)
Part15C Section 15.247 (b)(3)	ANSI C63.10/ KDB 558074	Maximum Conducted Average Output Power	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10/ KDB 558074	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	N/A	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	0.6909	1.0451	PASS	Peak dector
BLE	MCH	0.6882	1.0451	PASS	
BLE	HCH	0.6966	1.0435	PASS	

Test Graphs

	Graphs
LCH	
MCH	
HCH	

Appendix B): Maximum Conducted Average Output Power

Test Result

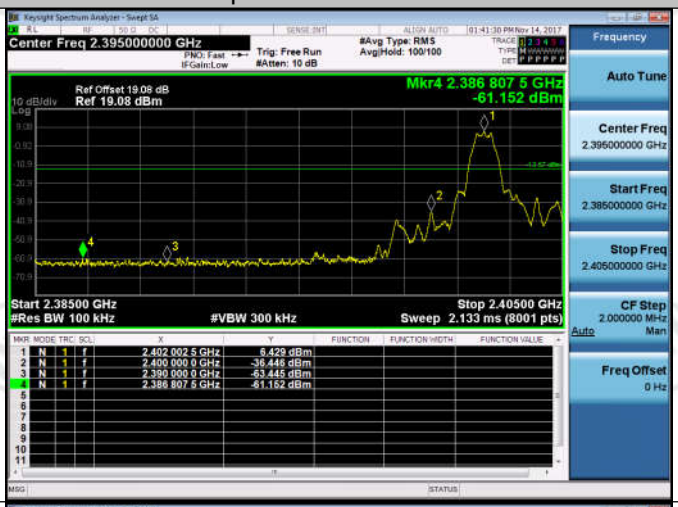
Mode	Channel	Duty cycle	Duty cycle Correction Factor(dB)	Read Valve [dBm]	Average Output Power[dBm]	Verdict
BLE	LCH	68.00%	1.68	5.11	6.79	PASS
BLE	MCH	67.46%	1.71	6.01	7.72	PASS
BLE	HCH	67.46%	1.71	6.10	7.81	PASS
Note:Output Power=Read Value+Duty cycle Correction Factor,and the Read Value was Read by power meter						

Appendix C): Band-edge for RF Conducted Emissions

Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	LCH	6.429	-61.152	-13.57	PASS
BLE	HCH	7.386	-53.233	-12.61	PASS

Test Graphs

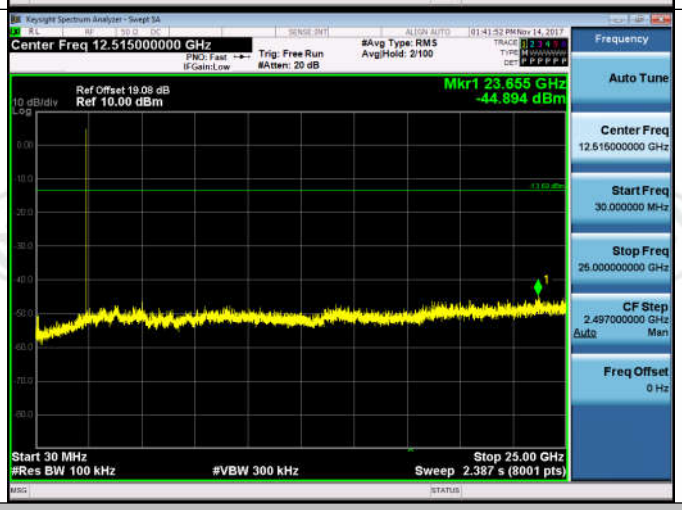
Graphs			
LCH			
HCH			

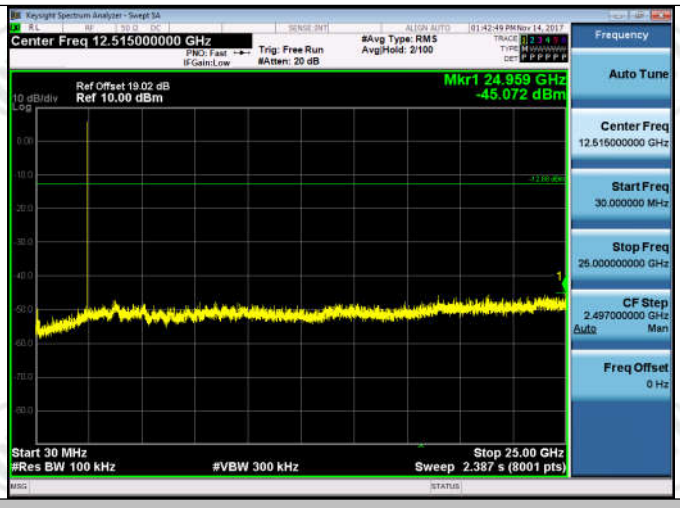
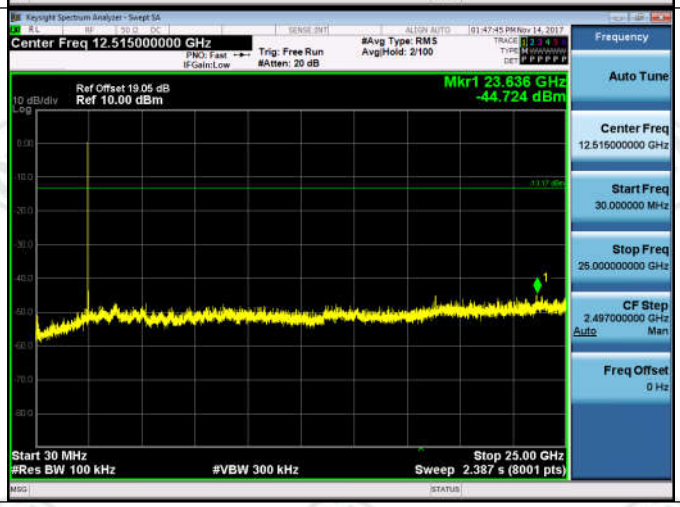
Appendix D): RF Conducted Spurious Emissions

Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
BLE	LCH	6.307	<Limit	PASS
BLE	MCH	7.320	<Limit	PASS
BLE	HCH	6.835	<Limit	PASS

Test Graphs

BLE_LCH_Graphs	
Pref/BLE/LCH	
Puw/BLE/LCH	
BLE_MCH_Graphs	
Pref/BLE/MCH	

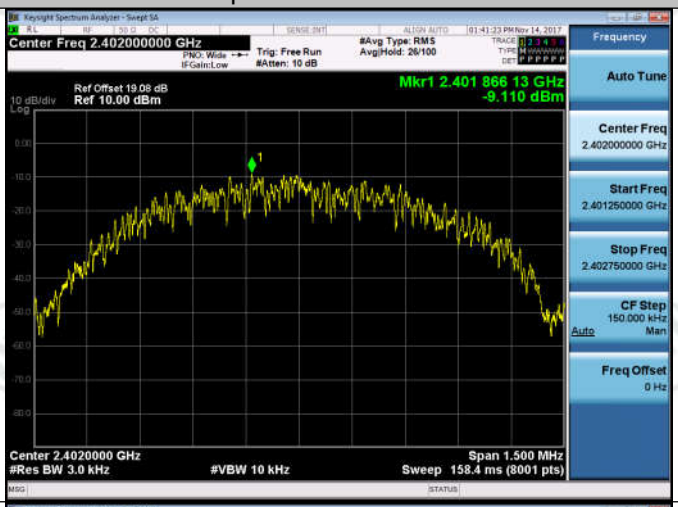
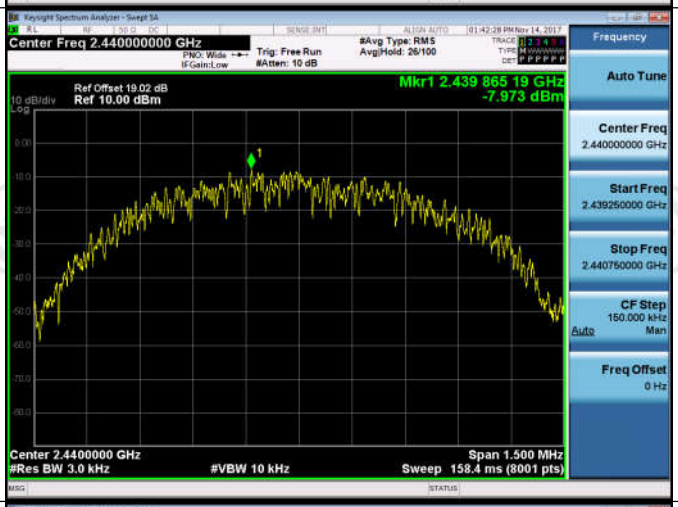
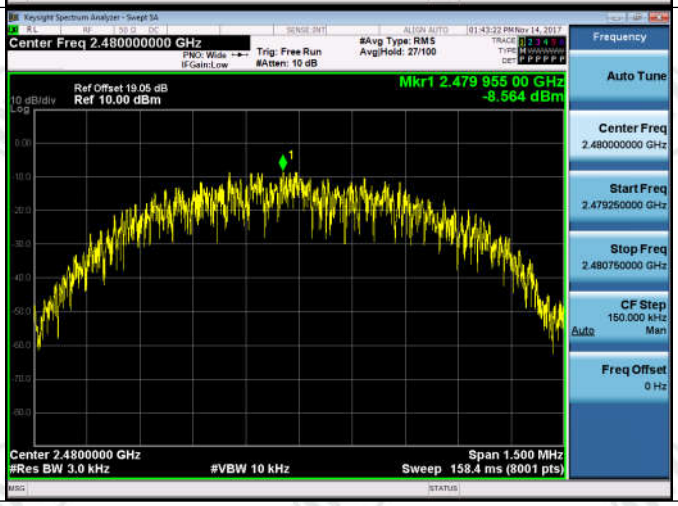
Puw/BLE/MCH			
BLE_HCH_Graphs			
Pref/BLE/HCH			
Puw/BLE/HCH			

Appendix E): Power Spectral Density

Result Table

Mode	Channel	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE	LCH	-9.110	8	PASS
BLE	MCH	-7.973	8	PASS
BLE	HCH	-8.564	8	PASS

Test Graphs

Graphs			
LCH			
MCH			
HCH			

Appendix F): Antenna Requirement

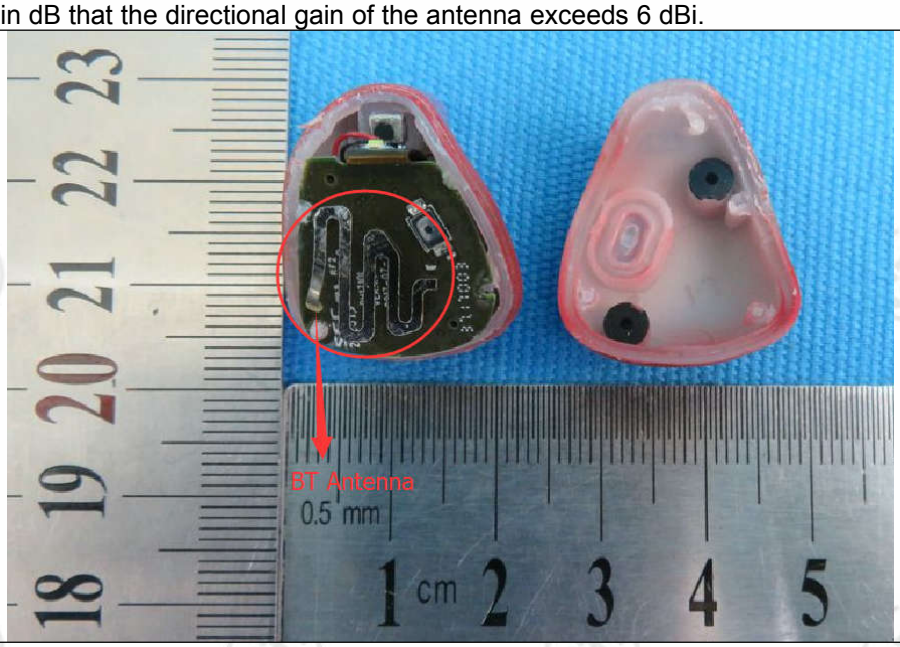
15.203 requirement:

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 Monopole antenna and no consideration of replacement. The best case gain of the antenna is 0dBi.

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:

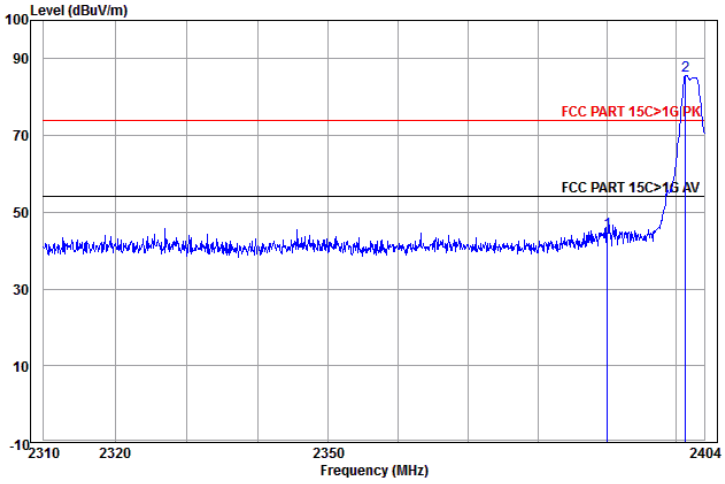
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. . Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are 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

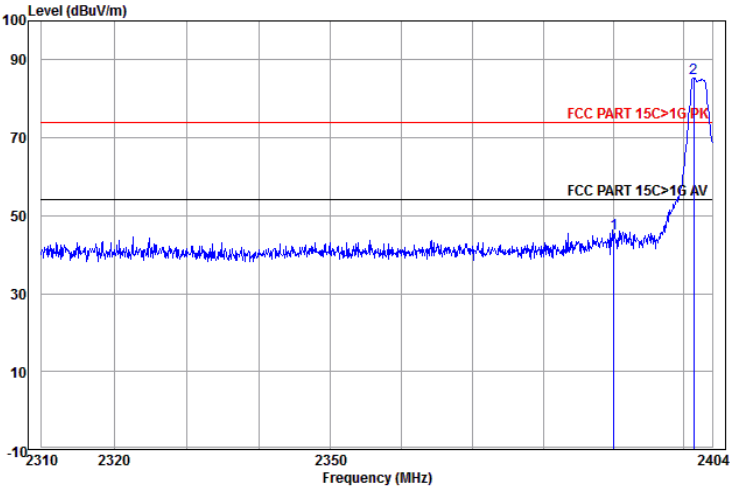
Test plot as follows:

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



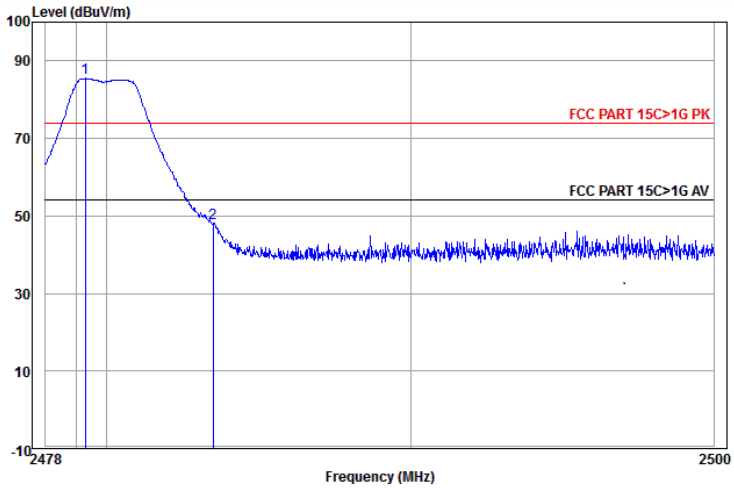
	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	44.03	53.30	44.87	74.00	-29.13	Horizontal	Peak
2 pp	2401.317	32.56	3.07	44.04	94.01	85.60	74.00	11.60	Horizontal	Peak

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



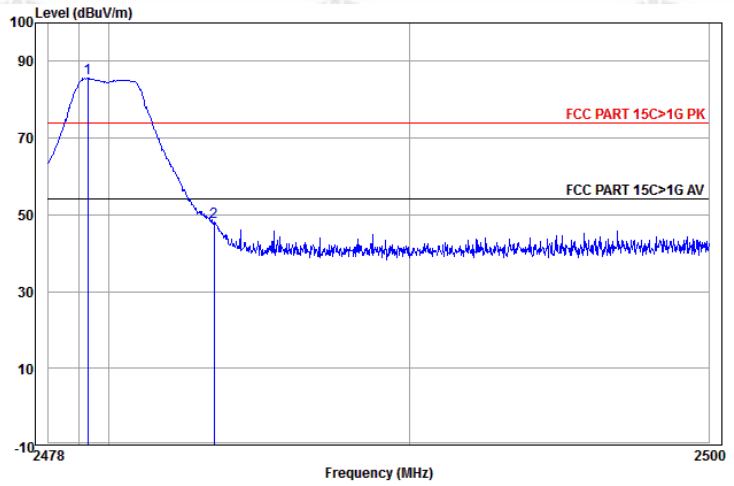
	Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	44.03	53.78	45.35	74.00	-28.65	Vertical	Peak
2 pp	2401.412	32.56	3.07	44.04	93.82	85.41	74.00	11.41	Vertical	Peak

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	2479.314	32.71	3.12	44.14	93.87	85.56	74.00	11.56	Horizontal	Peak
2	2483.500	32.71	3.12	44.14	56.35	48.04	74.00	-25.96	Horizontal	Peak

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	2479.314	32.71	3.12	44.14	93.86	85.55	74.00	11.55	Vertical	Peak
2	2483.500	32.71	3.12	44.14	56.46	48.15	74.00	-25.85	Vertical	Peak

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

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:

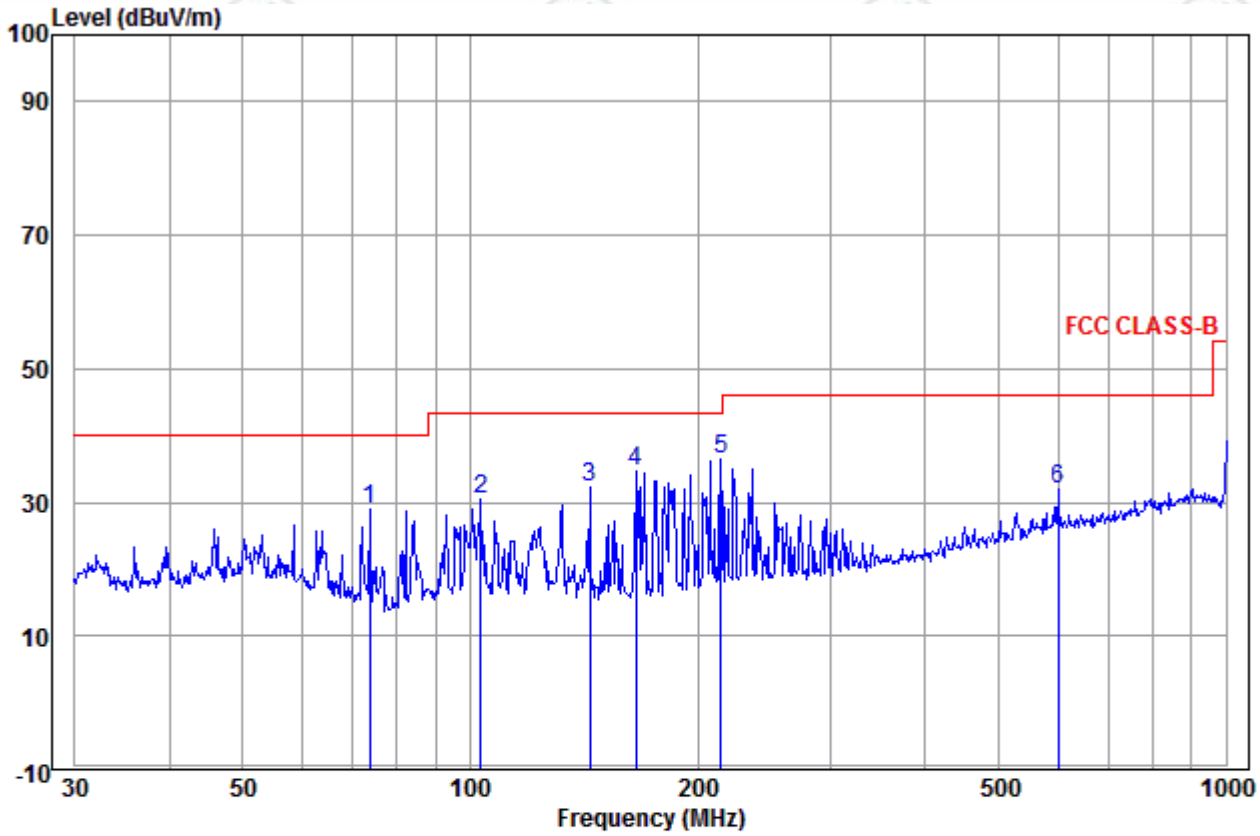
Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz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

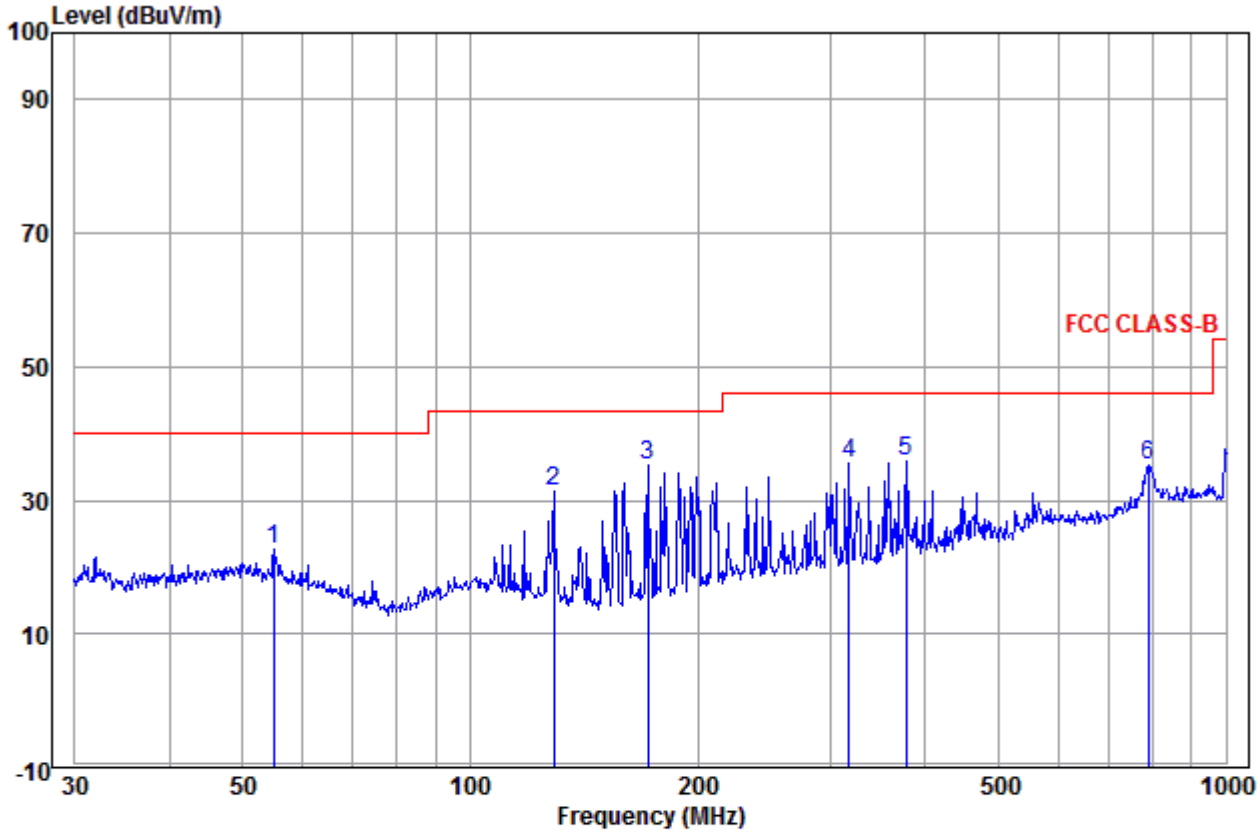
Radiated Emission below 1GHz

30MHz~1GHz (QP)		
Test mode:	Transmitting	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	73.617	9.72	0.31	18.79	28.82	40.00	-11.18	Vertical	QP
2	103.442	12.19	0.59	17.64	30.42	43.50	-13.08	Vertical	QP
3	143.830	9.18	0.61	22.54	32.33	43.50	-11.17	Vertical	QP
4	165.487	9.72	0.78	24.19	34.69	43.50	-8.81	Vertical	QP
5 pp	214.514	11.85	1.18	23.45	36.48	43.50	-7.02	Vertical	QP
6	599.321	18.69	1.83	11.41	31.93	46.00	-14.07	Vertical	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	55.027	13.81	0.16	8.55	22.52	40.00	-17.48	Horizontal	QP
2	129.015	10.18	0.60	20.58	31.36	43.50	-12.14	Horizontal	QP
3 pp	171.995	10.08	0.84	24.21	35.13	43.50	-8.37	Horizontal	QP
4	317.701	13.77	1.16	20.70	35.63	46.00	-10.37	Horizontal	QP
5	377.259	14.85	1.32	19.58	35.75	46.00	-10.25	Horizontal	QP
6	790.619	19.75	2.47	12.96	35.18	46.00	-10.82	Horizontal	QP

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
1241.562	30.32	1.93	44.33	44.98	32.90	74.00	-41.10	Pass	H
1533.648	30.93	2.33	43.96	44.53	33.83	74.00	-40.17	Pass	H
3776.385	32.96	4.02	44.62	46.08	38.44	74.00	-35.56	Pass	H
4804.000	34.69	5.98	44.60	43.50	39.57	74.00	-34.43	Pass	H
7206.000	36.42	6.97	44.77	43.36	41.98	74.00	-32.02	Pass	H
9608.000	37.88	6.98	45.58	43.47	42.75	74.00	-31.25	Pass	H
1185.958	30.19	1.84	44.40	44.93	32.56	74.00	-41.44	Pass	V
1518.111	30.90	2.31	43.98	45.53	34.76	74.00	-39.24	Pass	V
3738.129	32.99	3.99	44.62	46.34	38.70	74.00	-35.30	Pass	V
4804.000	34.69	5.98	44.60	43.21	39.28	74.00	-34.72	Pass	V
7206.000	36.42	6.97	44.77	42.98	41.60	74.00	-32.40	Pass	V
9608.000	37.88	6.98	45.58	41.93	41.21	74.00	-32.79	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
1179.935	30.18	1.83	44.41	46.83	34.43	74.00	-39.57	Pass	H
1533.648	30.93	2.33	43.96	45.96	35.26	74.00	-38.74	Pass	H
3766.785	32.97	4.02	44.62	46.73	39.10	74.00	-34.90	Pass	H
4880.000	34.85	6.13	44.60	44.40	40.78	74.00	-33.22	Pass	H
7320.000	36.43	6.85	44.87	42.61	41.02	74.00	-32.98	Pass	H
9760.000	38.05	7.12	45.55	43.86	43.48	74.00	-30.52	Pass	H
1238.405	30.32	1.92	44.33	45.88	33.79	74.00	-40.21	Pass	V
1529.749	30.93	2.33	43.96	45.79	35.09	74.00	-38.91	Pass	V
3776.385	32.96	4.02	44.62	47.00	39.36	74.00	-34.64	Pass	V
4880.000	34.85	6.13	44.60	43.87	40.25	74.00	-33.75	Pass	V
7320.000	36.43	6.85	44.87	44.02	42.43	74.00	-31.57	Pass	V
9760.000	38.05	7.12	45.55	43.92	43.54	74.00	-30.46	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
1299.773	30.46	2.01	44.25	45.56	33.78	74.00	-40.22	Pass	H
1634.419	31.12	2.45	43.85	45.52	35.24	74.00	-38.76	Pass	H
3766.785	32.97	4.02	44.62	46.63	39.00	74.00	-35.00	Pass	H
4960.000	35.02	6.29	44.60	42.75	39.46	74.00	-34.54	Pass	H
7440.000	36.45	6.73	44.97	43.20	41.41	74.00	-32.59	Pass	H
9920.000	38.22	7.26	45.52	43.50	43.46	74.00	-30.54	Pass	H
1367.659	30.60	2.11	44.16	47.78	36.33	74.00	-37.67	Pass	V
1814.218	31.42	2.65	43.67	45.59	35.99	74.00	-38.01	Pass	V
4096.875	33.05	4.42	44.60	46.56	39.43	74.00	-34.57	Pass	V
4960.000	35.02	6.29	44.60	42.99	39.70	74.00	-34.30	Pass	V
7440.000	36.45	6.73	44.97	44.19	42.40	74.00	-31.60	Pass	V
9920.000	38.22	7.26	45.52	43.47	43.43	74.00	-30.57	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:

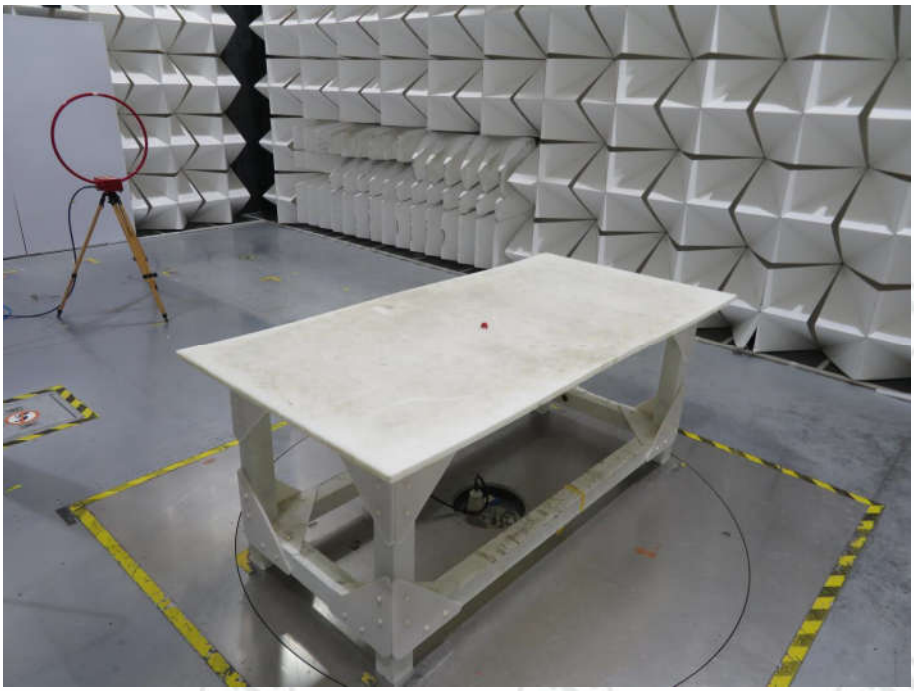
Final Test Level =Receiver Reading -Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

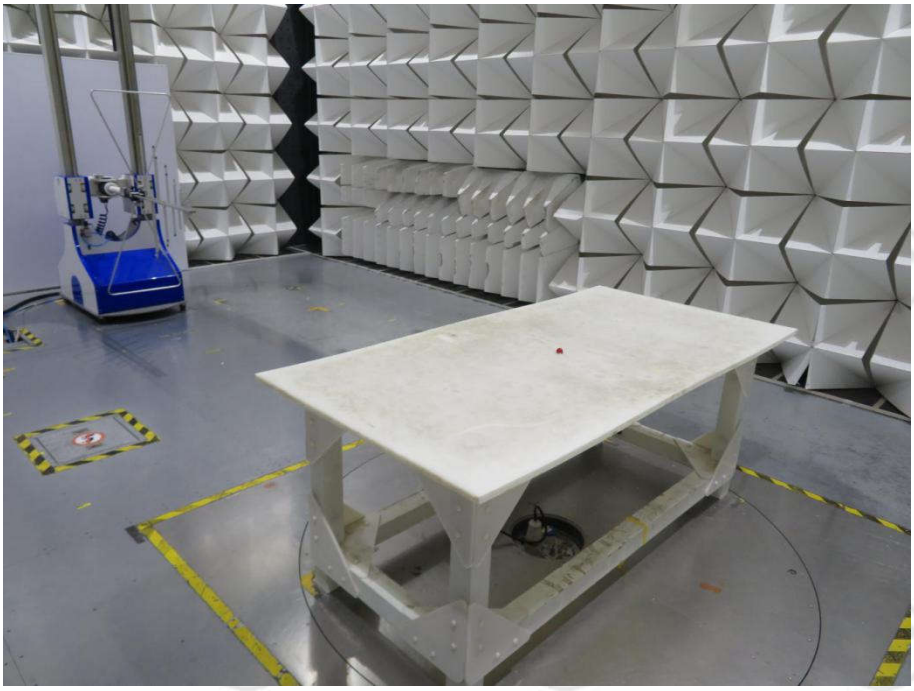
2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below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

PHOTOGRAPHS OF TEST SETUP

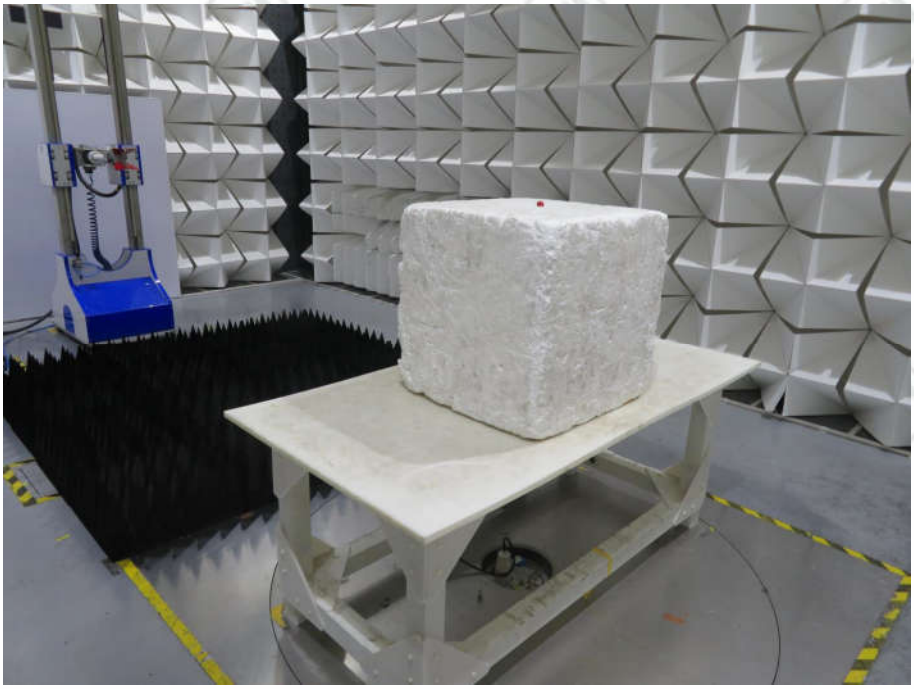
Test model No.: V100LR



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



Radiated spurious emission Test Setup-2(30MHz-1G)



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

Radiated spurious emission Test Setup for close-up

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32J00237201 for EUT external and internal photos.

*** End of Report ***

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