TEST REPORT

Product	:	SLYPOD
Trade mark	:	MOZA
Model/Type reference	:	MS-280, MS-580, MS-280S
Serial Number	:	N/A
Report Number	:	EED32L00160901
FCC ID	:	2AMJR-SLYPOD
Date of Issue	:	Jul. 31, 2019
Test Standards	:	47 CFR Part 15Subpart C
Test result	:	PASS

Prepared for:

Shenzhen Gudsen Technology Co., Ltd
6/F,10th Building,Jiuxiang Ling Industrial Park,
Ave Xili ,Nanshan District, Shenzhen, China

Prepared by:

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	Ware Xin		Kevin Yang
Date:	Jul. 31, 2019		Check No.:3096310050

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2 Version

Version No.	Date	Description
00	Jul. 31, 2019	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	N/A
AC Power Line Conducted Emission	47 CFR Part 15Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	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:

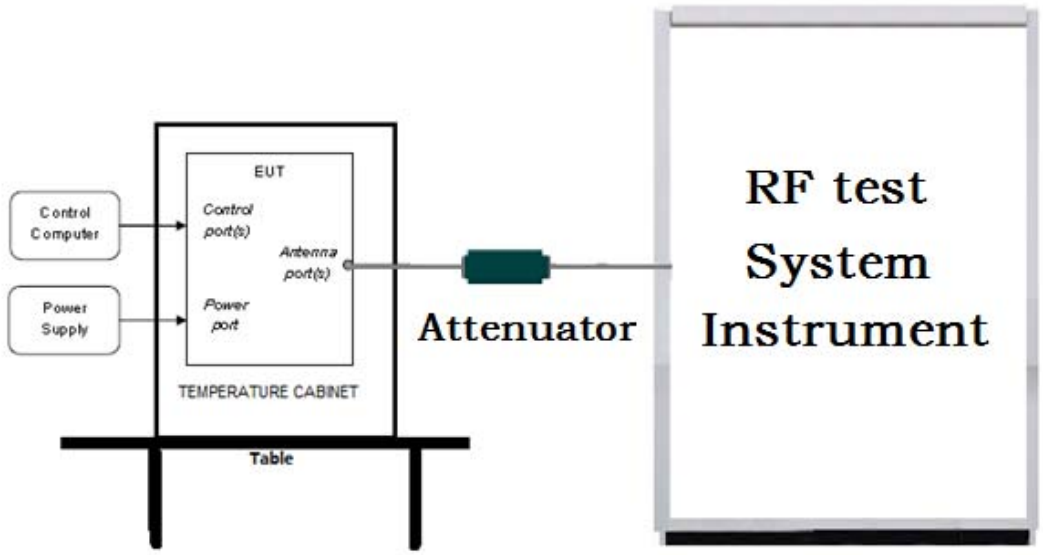
Test according to ANSI C63.4-2014 & ANSI C63.10-2013.
The tested sample(s) and the sample information are provided by the client.
Model No.: MS-280, MS-580, MS-280S
Only the model MS-280 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, only the internal telescopic part of the telescopic length is different.

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:

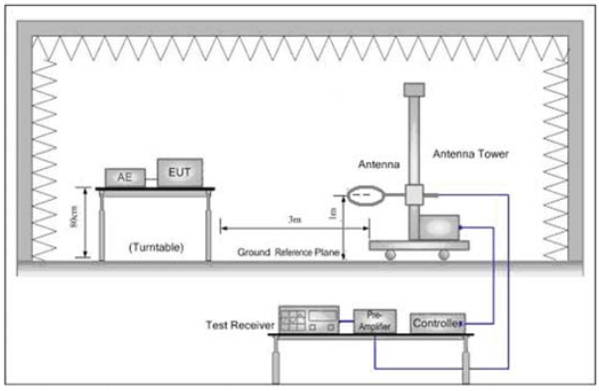


Figure 1. Below 30MHz

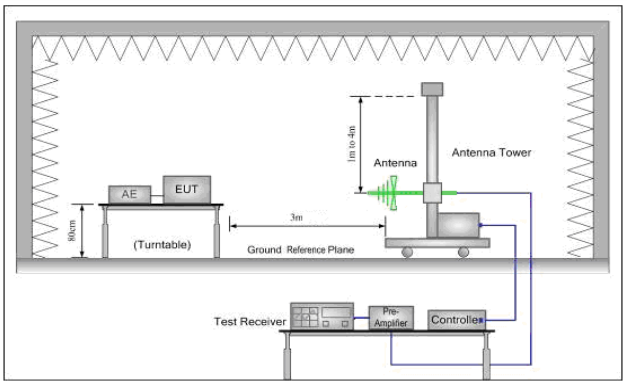


Figure 2. 30MHz to 1GHz

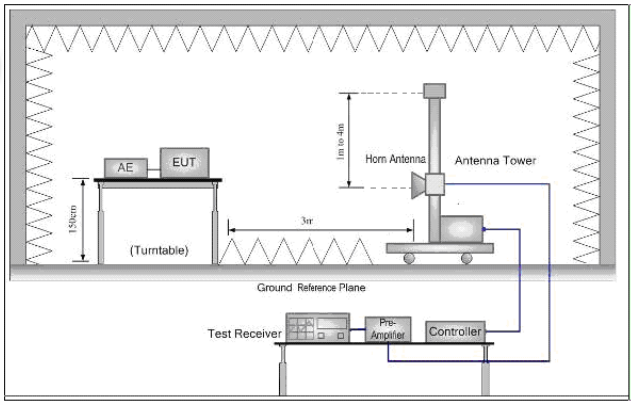
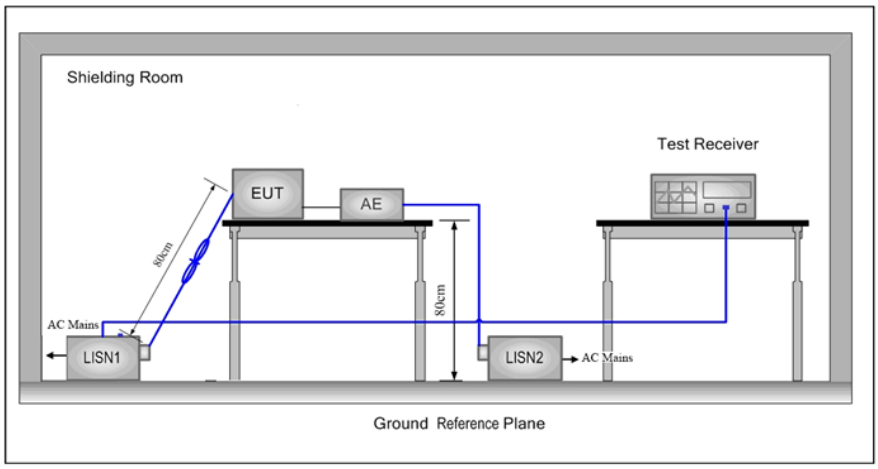


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	64 % 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:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			

6 General Information

6.1 Client Information

Applicant:	Shenzhen Gudsen Technology Co., Ltd
Address of Applicant:	6/F,10th Building,Jiuxiang Ling Industrial Park,Ave Xili ,Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Gudsen Technology Co., Ltd
Address of Manufacturer:	6/F,10th Building,Jiuxiang Ling Industrial Park,Ave Xili ,Nanshan District, Shenzhen, China

6.2 General Description of EUT

Product Name:	SLYPOD
Model No.(EUT):	MS-280, MS-580, MS-280S
Test Model No.	MS-280
Trade mark:	MOZA
EUT Supports Radios application:	BT4.2 Single mode
Power Supply:	DC 5V
Sample Received Date:	Jun. 20, 2019
Sample tested Date:	Jun. 20, 2019 to Jul. 31, 2019

6.3 Product Specification subjective to this standard

Operation Frequency:	2402-2480MHz
Modulation Type:	GFSK
Number of Channel:	40
Test Power Grade:	N/A
Test Software of EUT:	EMI_Test_Tool_v1.3 (manufacturer declare)
Antenna Type and Gain:	Internal Antenna and 0.08dBi
Test Voltage:	5V

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
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
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	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

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	03-01-2019	02-28-2020
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-01-2019	02-28-2020
Signal Generator	Keysight	N5182B	MY53051549	03-01-2019	02-28-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
DC Power	Keysight	E3642A	MY54426035	03-01-2019	02-28-2020
PC-1	Lenovo	R4960d	---	03-01-2019	02-28-2020
BT&WI-FI Automatic control	R&S	OSP120	101374	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-2	15860006	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-1	15860004	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-4	158060007	03-01-2019	02-28-2020
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	10-12-2018	10-11-2019

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	---	05-24-2019	05-24-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-401	12-21-2018	12-20-2019
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	07-30-2018	07-29-2019
Microwave Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Microwave Preamplifier	Tonscend	EMC051845SE	980380	01-16-2019	01-15-2020
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1869	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057410	06-05-2018	06-03-2021
Double ridge horn antenna	A.H.SYSTEMS	SAS-574	374	06-05-2018	06-04-2021
Pre-amplifier	A.H.SYSTEMS	PAP-1840-60	6041.6041	08-08-2018	08-07-2019
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-25-2021
Spectrum Analyzer	R&S	FSP40	100416	04-28-2019	04-26-2020
Receiver	R&S	ESCI	100435	05-20-2019	05-18-2020
Receiver	R&S	ESCI7	100938-003	11-23-2018	11-22-2019
Multi device Controller	maturo	NCD/070/10711112	---	01-09-2019	01-08-2020
Signal Generator	Agilent	E4438C	MY45095744	03-01-2019	02-28-2020
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	03-01-2020
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	10-12-2018	10-11-2019
Communication test set	Agilent	E5515C	GB47050534	03-01-2019	02-28-2020
Cable line	Fulai(7M)	SF106	5219/6A	01-09-2019	01-08-2020
Cable line	Fulai(6M)	SF106	5220/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5216/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5217/6A	01-09-2019	01-08-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-09-2019	01-08-2020

3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	06-18-2019	06-17-2020
Receiver	Keysight	N9038A	MY57290136	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-27-2019	03-25-2020
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-075	04-25-2018	04-23-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-23-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-829	04-25-2018	04-23-2021
Communication Antenna	Schwarzbeck	CLSA 0110L	1014	02-14-2019	02-13-2020
Biconical antenna	Schwarzbeck	VUBA 9117	9117-381	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-08-2021
Preamplifier	EMCI	EMC184055SE	980596	05-22-2019	05-22-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
Preamplifier	EMCI	EMC001330	980563	05-08-2019	05-08-2020
Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	05-01-2019	04-30-2020
Signal Generator	KEYSIGHT	E8257D	MY53401106	03-01-2019	02-28-2020
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018	01-15-2021
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-08-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	01-09-2019	01-08-2020
Cable line	Times	EMC104-NMNM-1000	SN160710	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	01-09-2019	01-08-2020
Cable line	Times	HF160-KMKM-3.00M	393493-0001	01-09-2019	01-08-2020

8 Radio Technical Requirements Specification

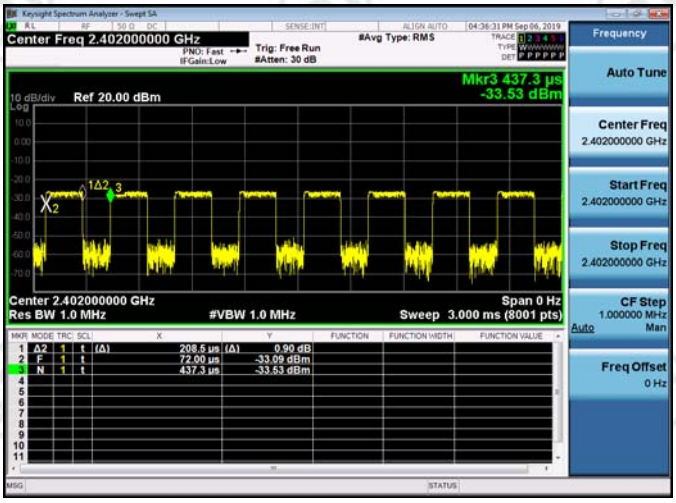
Reference documents for testing:

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	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	Appendix G)
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix H)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix I)

Duty Cycle			
Configuration	**TX ON(us)**	**TX ALL(us)**	**Duty Cycle(%)**
BLE	**208.5**	**365.3**	**57.08**



Appendix A): 6dB Occupied Bandwidth

Test Limit

According to §15.247(a)(2) and RSS-247 section 5.2(a)

6 dB Bandwidth ：

Limit	Shall be at least 500kHz

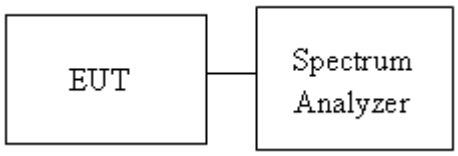
Occupied Bandwidth(99%) ： For reporting purposes only.

Test Procedure

Test method Refer as KDB 558074 D01 v04, section 8.1 and ANSI 63.10:2013 clause 6.9.2 & 6.9.3.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth and 99% Bandwidth.
4. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

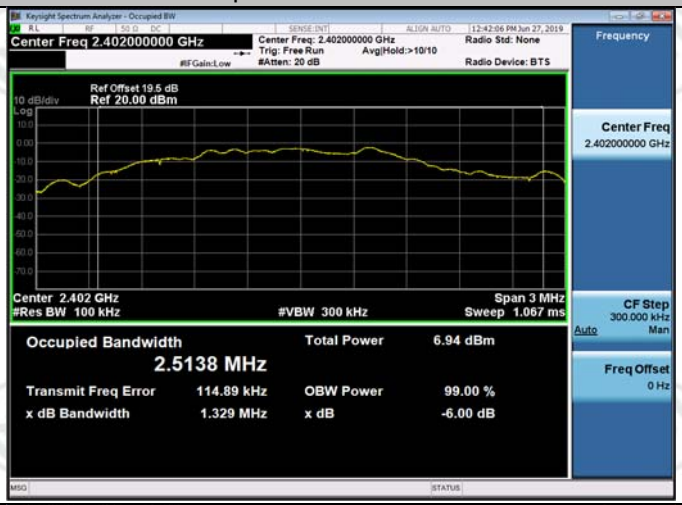
Test Setup

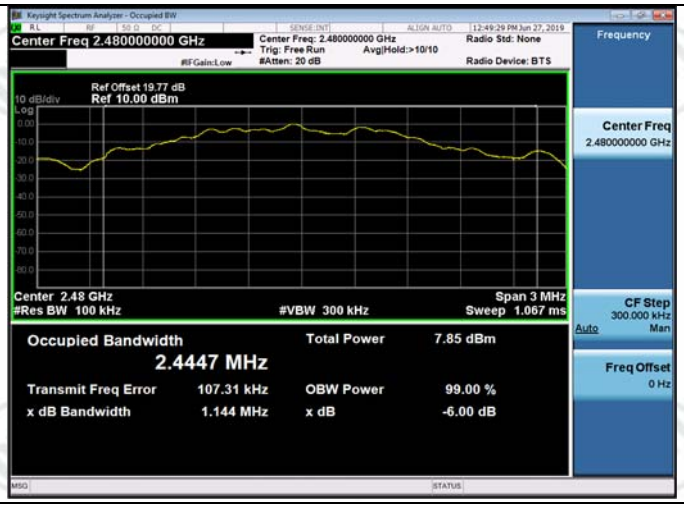


Test Result

Mode	Channel	6dB Bandwidth [MHz]	99% OBW[MHz]	Verdict
BLE	LCH	1.329	2.5138	PASS
BLE	MCH	1.139	2.4600	PASS
BLE	HCH	1.144	2.4447	PASS

Test Graphs

Graphs	
LCH	
MCH	

HCH	

Keysight Spectrum Analyzer - Occupied BW
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 19.77 dB
10 dB/div
Ref 10.00 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
2.4447 MHz
Total Power
7.85 dBm
Transmit Freq Error
107.31 kHz
OBW Power
99.00 %
x dB Bandwidth
1.144 MHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

Appendix B): Conducted Peak Output Power

Test Limit

According to §15.247(b) and RSS-247 section 5.4(d)

Peak output power：

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi [Limit = 30 – (DG – 6)] ☐ Point-to-point operation

Test Procedure

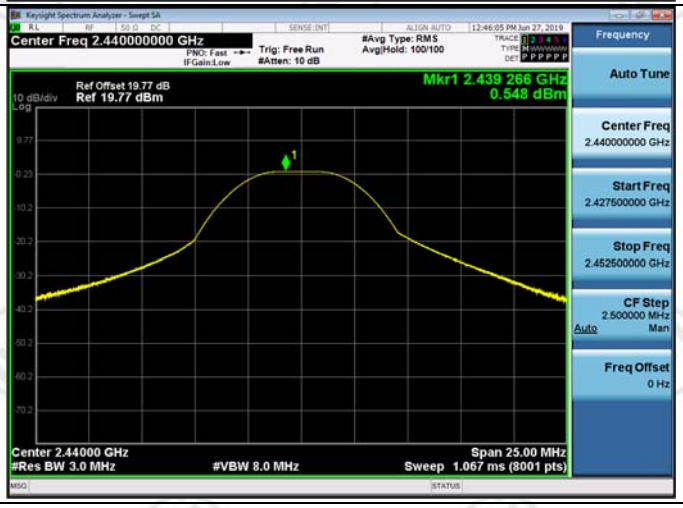
Test method Refer as KDB 558074 D01 v04, section 9.1.2.

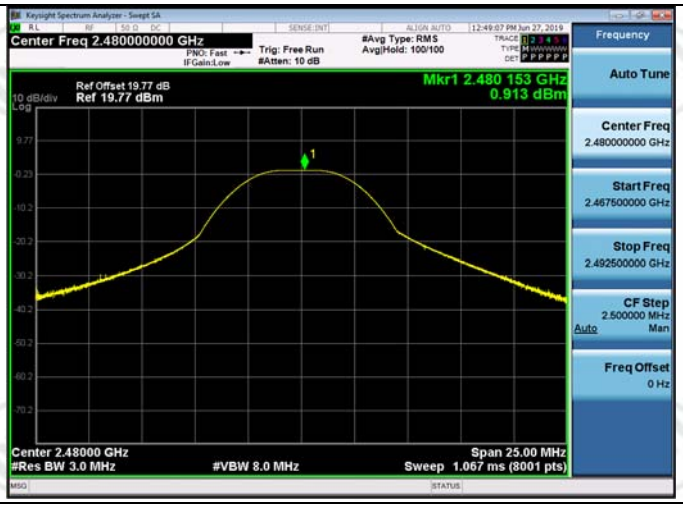
1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

Test Result

Mode	Channel	Conduct Peak Power[dBm]	Verdict
BLE	LCH	-0.012	PASS
BLE	MCH	0.548	PASS
BLE	HCH	0.913	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
12:49:07 PM Jun 27, 2019
Ref Offset 19.77 dB
10 dB/div
Log
Ref 19.77 dBm
Mkr1 2.480 153 GHz
0.913 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

Appendix C): Band-edge for RF Conducted Emissions

Test Limit

According to §15.247(d) and RSS-247 section 5.5

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Test Procedure

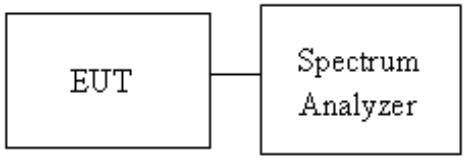
Test method Refer as KDB 558074 D01 v04, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Setup



Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	LCH	-1.922	-52.468	-21.92	PASS
BLE	HCH	-0.002	-44.809	-20	PASS

Test Graphs

Graphs	
LCH	
HCH	

Appendix D): RF Conducted Spurious Emissions

Test Limit

According to §15.247(d) and RSS-247 section 5.5

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Test Procedure

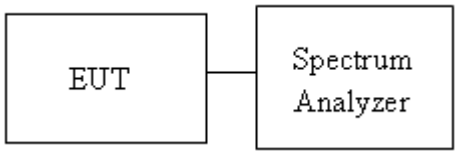
Test method Refer as KDB 558074 D01 v04, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

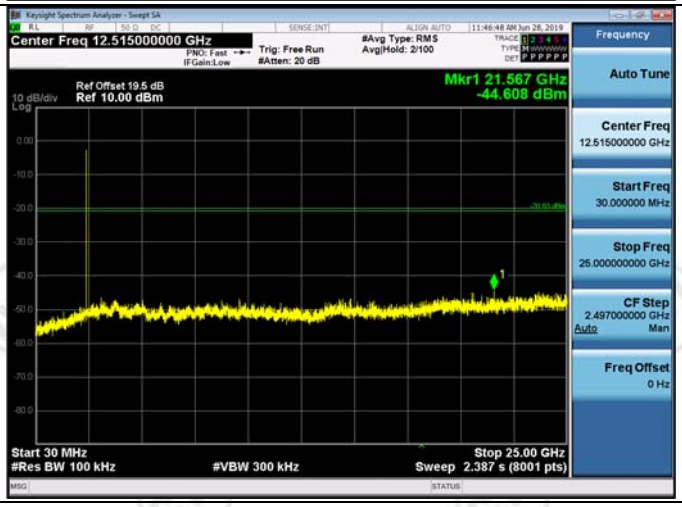
Test Setup

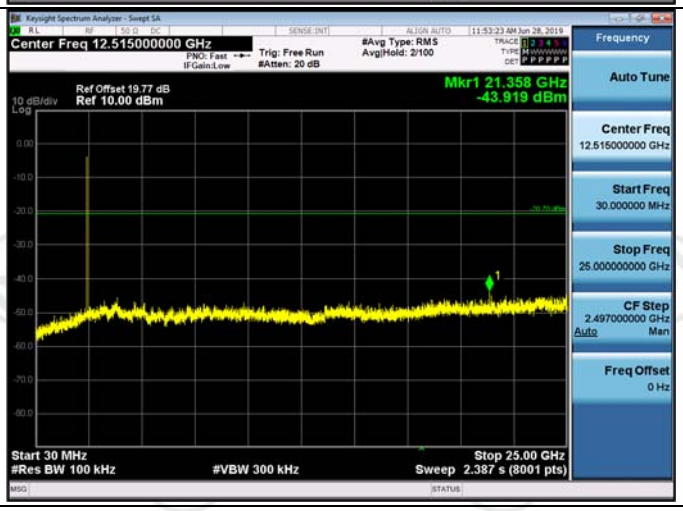


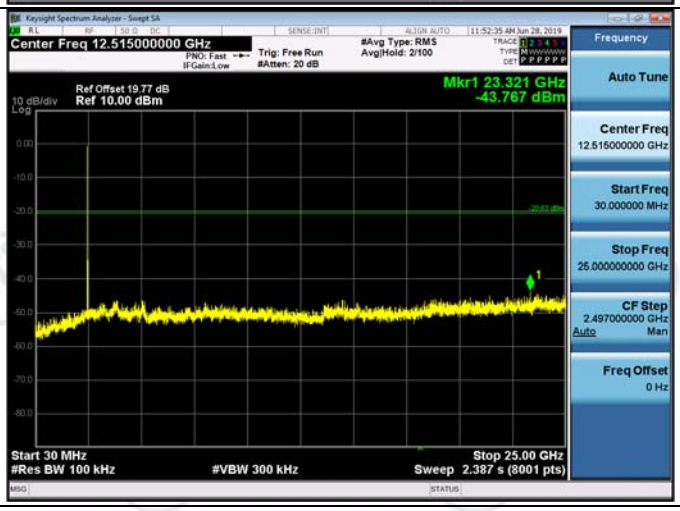
Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
BLE	LCH	-0.825	<Limit	PASS
BLE	MCH	-0.698	<Limit	PASS
BLE	HCH	-0.633	<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

Test Limit

According to §15.247(e) and RSS-247 section 5.2(b)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi [Limit = 8 – (DG – 6)] ☐ Point-to-point operation：

Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 10.2

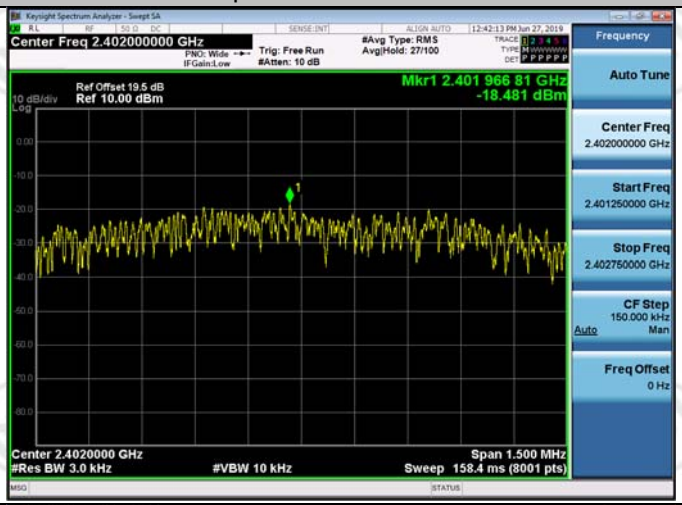
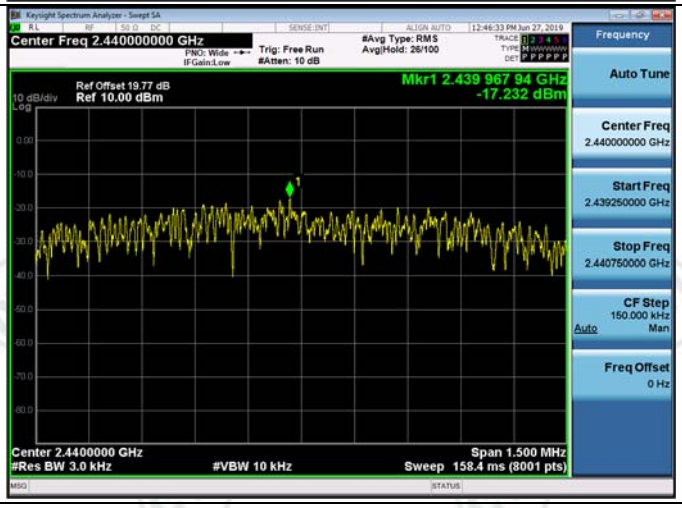
1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.

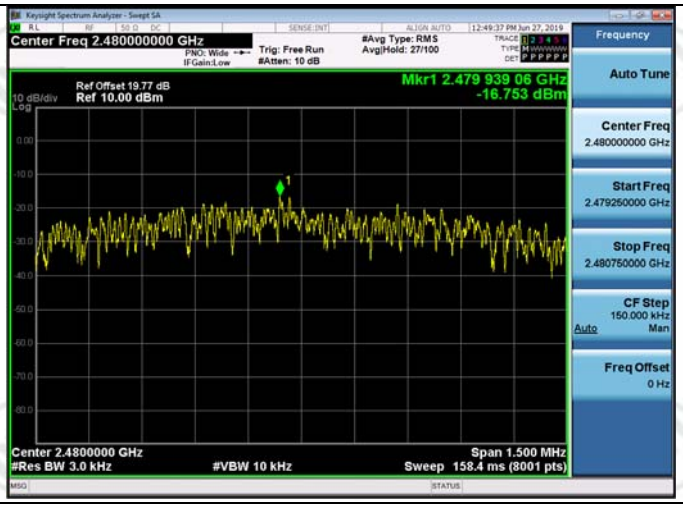
Measure and record the result of power spectral density. in the test report.

Result Table

Mode	Channel	PSD [dBm]	Verdict
BLE	LCH	-18.481	PASS
BLE	MCH	-17.232	PASS
BLE	HCH	-16.753	PASS

Test Graphs

Graphs	
LCH	
MCH	

HCH	

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 27/100
12:49:37 PM Jun 27, 2019
Ref Offset 19.77 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 2.479 939 06 GHz
-16.753 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
MSG
STATUS

Appendix F): Antenna Requirement

15.203 requirement:

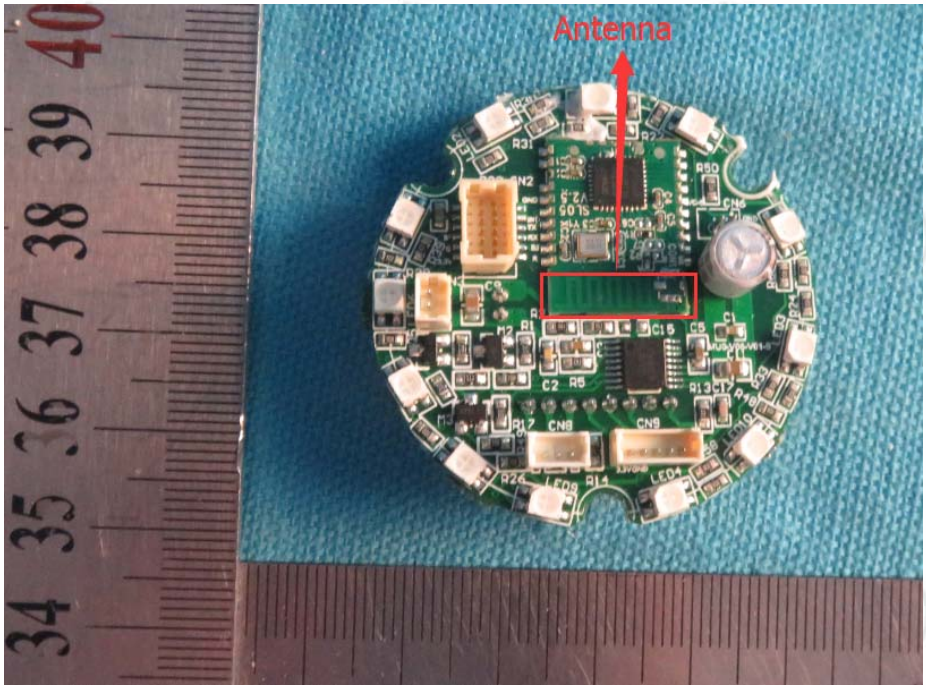
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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 integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is –2.54dBi.



Appendix G): AC Power Line Conducted Emission

Test Procedure:	Test frequency range :150KHz-30MHz 1)The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3)The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Limit:	

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

* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

NOTE : The lower limit is applicable at the transition frequency

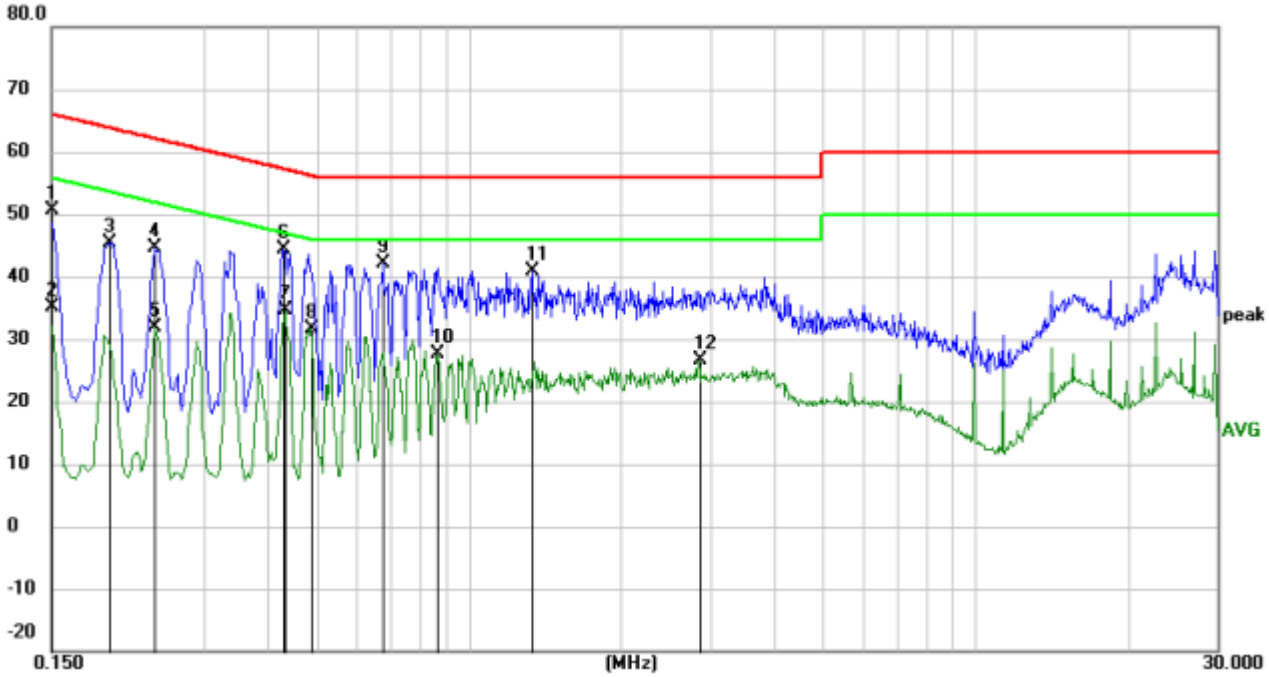
Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

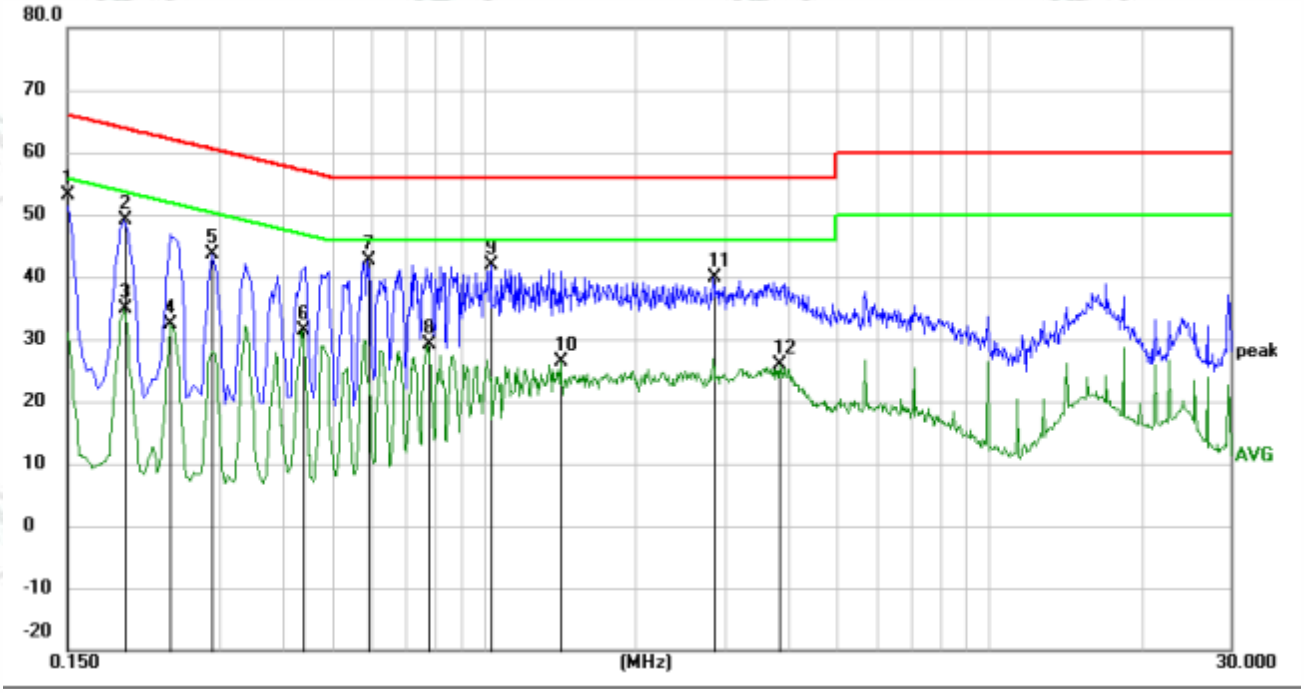
Product	:	SLYPOD	**Model/Type reference**	:	MS-280
Temperature	:	23℃	**Humidity**	:	54%

Live line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.72	9.91	50.63	66.00	-15.37	QP	
2		0.1500	25.12	9.91	35.03	56.00	-20.97	AVG	
3		0.1949	35.54	9.91	45.45	63.83	-18.38	QP	
4		0.2400	34.58	9.95	44.53	62.10	-17.57	QP	
5		0.2400	21.86	9.95	31.81	52.10	-20.29	AVG	
6		0.4290	34.50	9.89	44.39	57.27	-12.88	QP	
7	*	0.4335	24.79	9.89	34.68	47.19	-12.51	AVG	
8		0.4875	21.65	9.89	31.54	46.21	-14.67	AVG	
9		0.6765	32.24	9.87	42.11	56.00	-13.89	QP	
10		0.8655	17.75	9.81	27.56	46.00	-18.44	AVG	
11		1.3335	31.01	9.78	40.79	56.00	-15.21	QP	
12		2.8410	16.79	9.72	26.51	46.00	-19.49	AVG	

Neutral line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	43.20	9.91	53.11	66.00	-12.89	QP	
2		0.1949	39.33	9.91	49.24	63.83	-14.59	QP	
3		0.1949	25.07	9.91	34.98	53.83	-18.85	AVG	
4		0.2400	22.44	9.95	32.39	52.10	-19.71	AVG	
5		0.2895	33.64	9.99	43.63	60.54	-16.91	QP	
6		0.4380	21.51	9.89	31.40	47.10	-15.70	AVG	
7		0.5910	32.49	10.04	42.53	56.00	-13.47	QP	
8		0.7755	19.42	9.80	29.22	46.00	-16.78	AVG	
9		1.0320	32.07	9.81	41.88	56.00	-14.12	QP	
10		1.4235	16.57	9.77	26.34	46.00	-19.66	AVG	
11		2.8410	30.18	9.72	39.90	56.00	-16.10	QP	
12		3.8445	16.09	9.73	25.82	46.00	-20.18	AVG	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

Appendix H): 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:

Test method Refer as KDB 558074 D01 v04, Section 12.1

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:

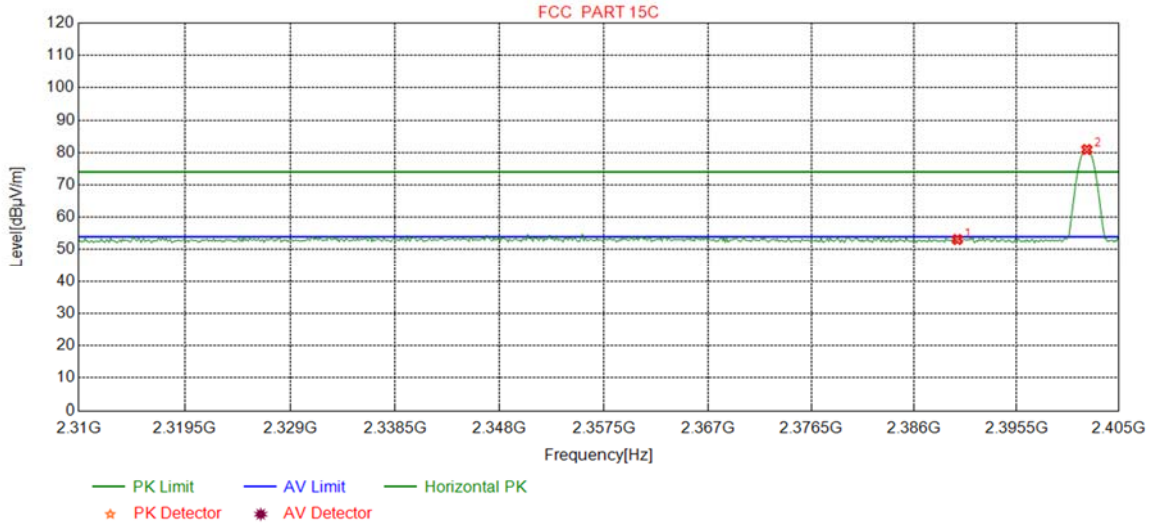
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. . Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are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

Mode:	BLE GFSK Transmitting	Channel:	2402
Remark:	PK		

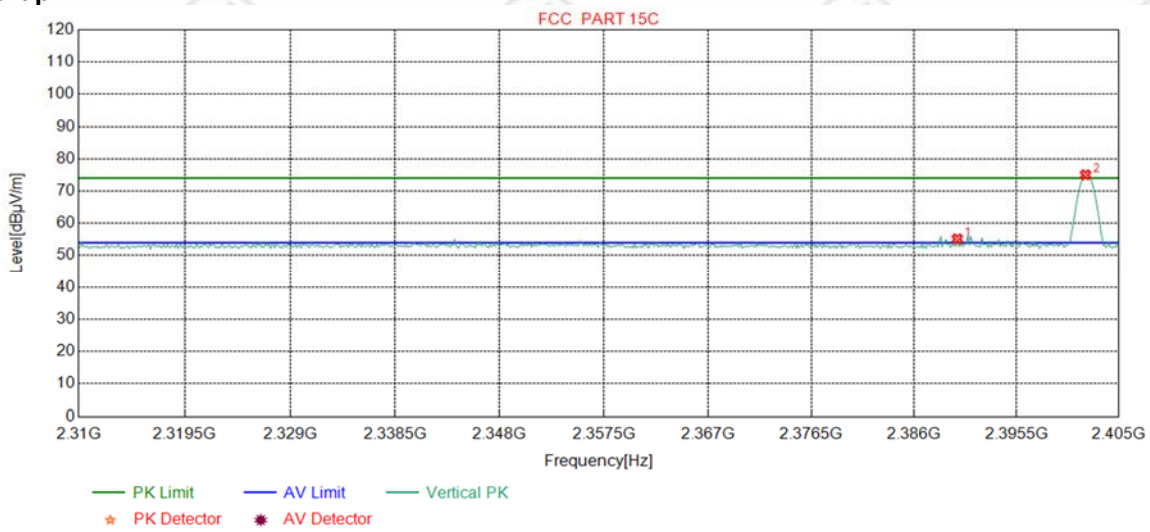
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	49.99	53.17	74.00	20.83	Pass	Horizontal
2	2402.0275	32.26	13.31	-42.43	77.82	80.96	74.00	-6.96	Pass	Horizontal

Mode:	BLE GFSK Transmitting	Channel:	2402
Remark:	PK		

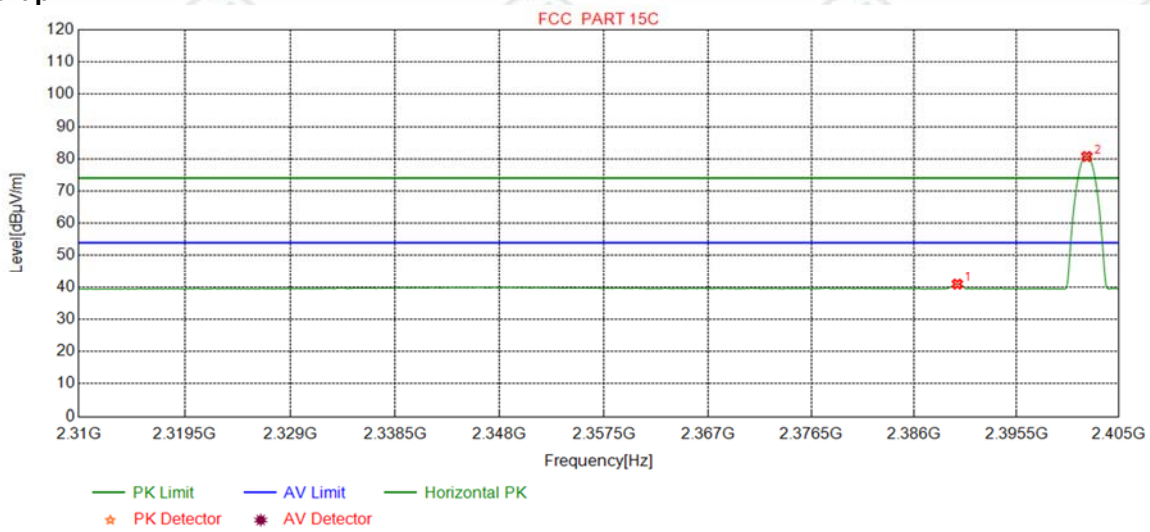
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	52.01	55.19	74.00	18.81	Pass	Vertical
2	2401.9086	32.26	13.31	-42.43	71.92	75.06	74.00	-1.06	Pass	Vertical

Mode:	BLE GFSK Transmitting	Channel:	2402
Remark:	PK		

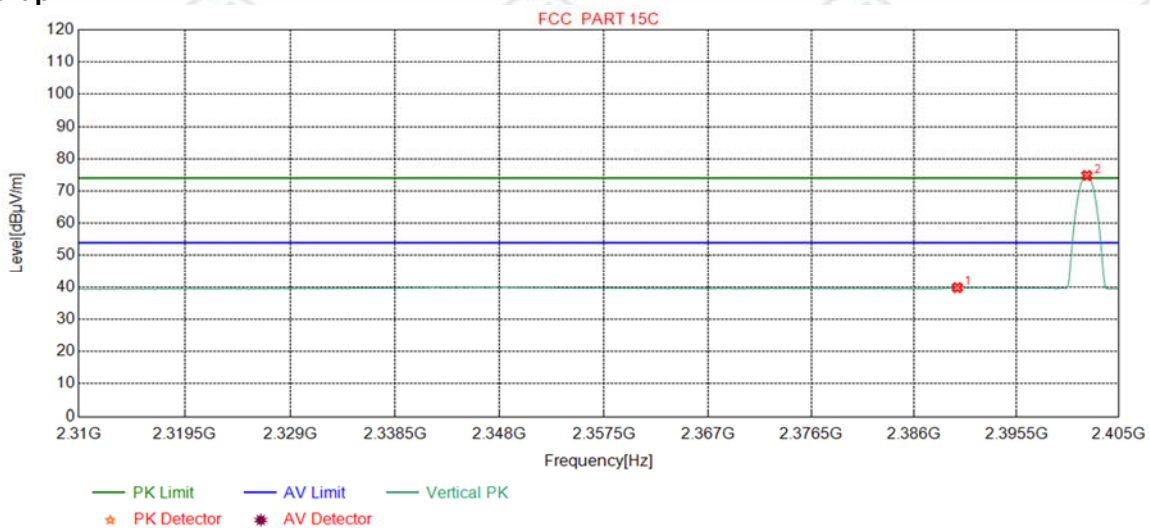
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	37.69	40.87	54.00	13.13	Pass	Horizontal
2	2402.0275	32.26	13.31	-42.43	77.60	80.74	54.00	-26.74	Pass	Horizontal

Mode:	BLE GFSK Transmitting	Channel:	2402
Remark:	PK		

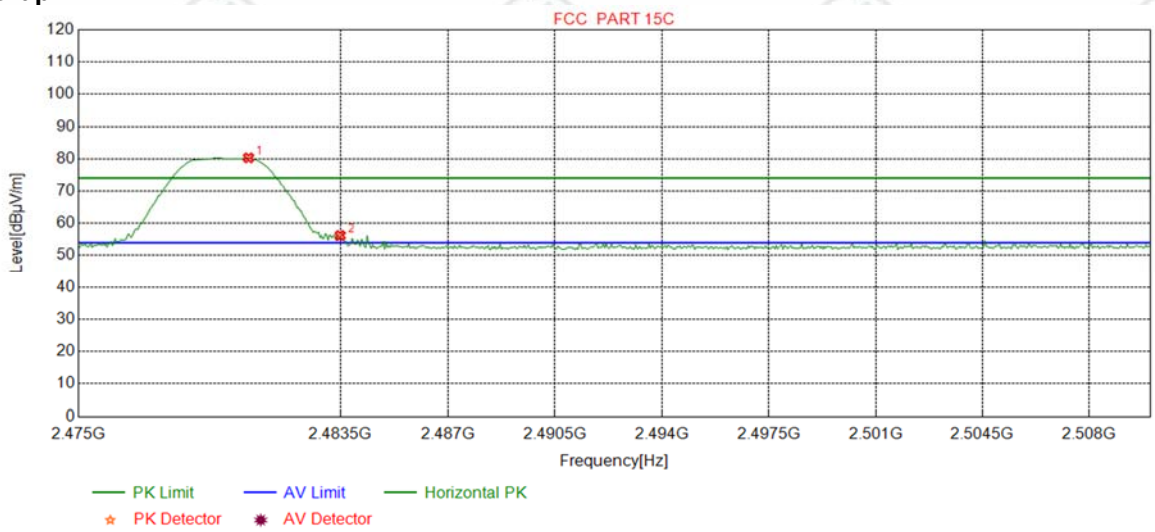
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	36.63	39.81	54.00	14.19	Pass	Vertical
2	2402.0275	32.26	13.31	-42.43	71.71	74.85	54.00	-20.85	Pass	Vertical

Mode:	BLE GFSK Transmitting	Channel:	2480
Remark:	PK		

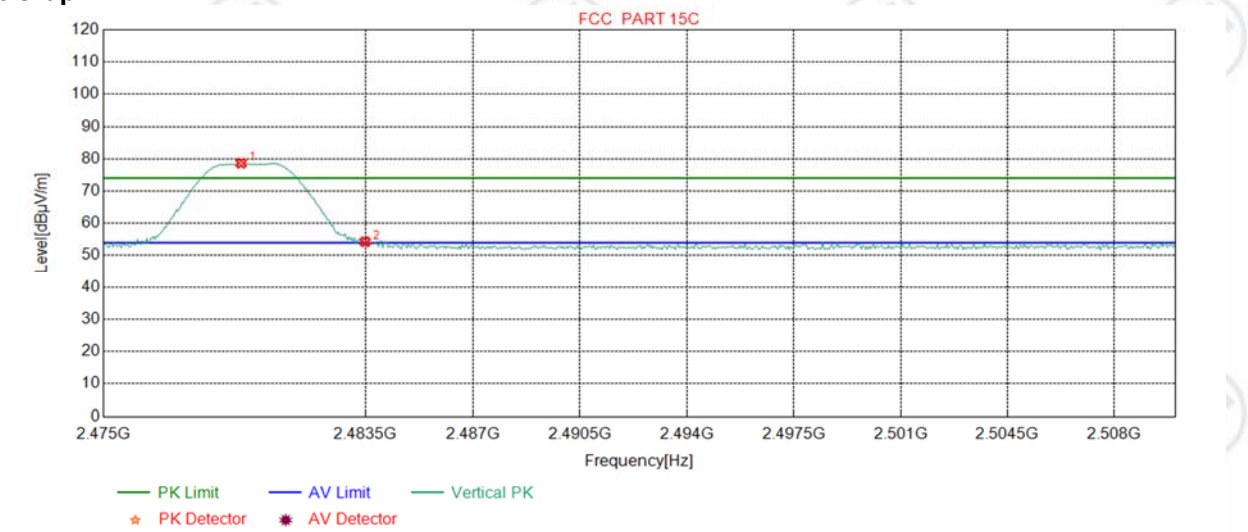
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2480.5194	32.37	13.39	-42.40	76.94	80.30	74.00	-6.30	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	52.91	56.27	74.00	17.73	Pass	Horizontal

Mode:	BLE GFSK Transmitting	Channel:	2480
Remark:	PK		

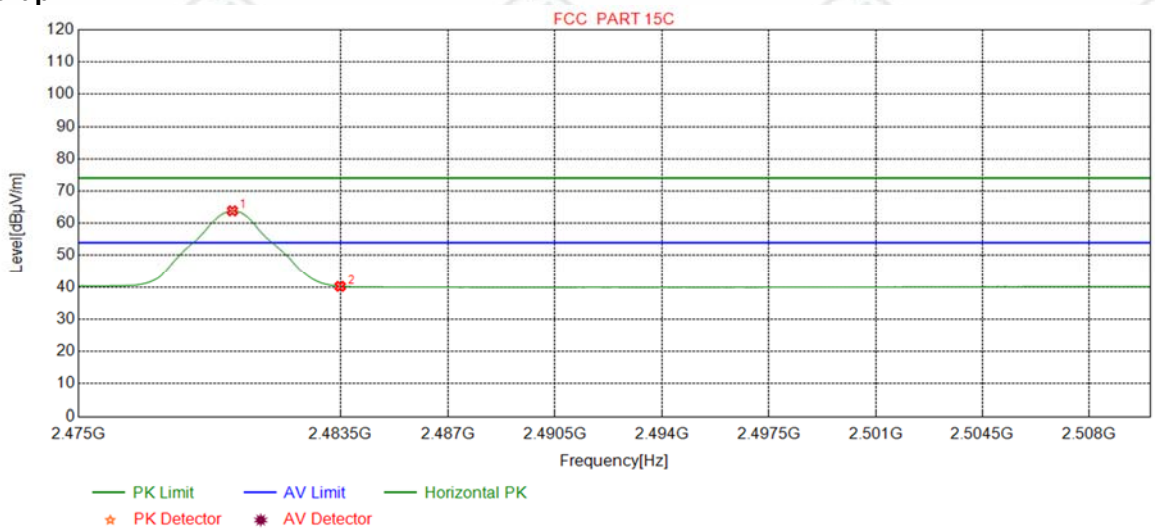
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.4681	32.37	13.39	-42.39	75.27	78.64	74.00	-4.64	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	50.95	54.31	74.00	19.69	Pass	Vertical

Mode:	BLE GFSK Transmitting	Channel:	2480
Remark:	PK		

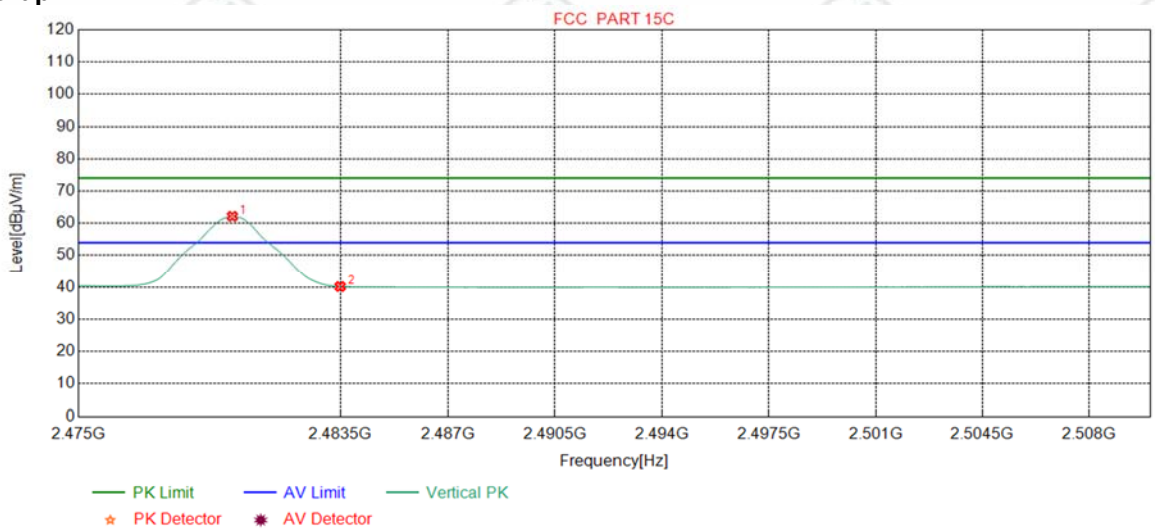
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.9937	32.37	13.39	-42.39	60.51	63.88	54.00	-9.88	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	36.84	40.20	54.00	13.80	Pass	Horizontal

Mode:	BLE GFSK Transmitting	Channel:	2480
Remark:	PK		

Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.9937	32.37	13.39	-42.39	58.81	62.18	54.00	-8.18	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	36.78	40.14	54.00	13.86	Pass	Vertical

Note:

1) Through Pre-scan Non-hopping transmitting mode and charge+transmitter mode with all kind of data type, find the DH5 of data type is the worse case ofGFSK modulation type in charge + transmitter mode.

2) 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 I) 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:

Test method Refer as KDB 558074 D01 v04, Section 12.1

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:

Transmitter Emission below 1GHz

Mode:		BLE GFSK Transmitting				Channel:		2402		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	84.9075	8.23	1.06	-32.08	53.49	30.70	40.00	9.30	Pass	H
2	127.9798	8.00	1.32	-32.02	56.78	34.08	43.50	9.42	Pass	H
3	163.6794	8.10	1.49	-31.97	62.39	40.01	43.50	3.49	Pass	H
4	192.0062	10.14	1.62	-31.96	56.32	36.12	43.50	7.38	Pass	H
5	256.0326	12.32	1.90	-31.88	51.20	33.54	46.00	12.46	Pass	H
6	600.0290	19.00	2.96	-31.99	42.80	32.77	46.00	13.23	Pass	H
7	35.7236	10.93	0.66	-32.11	45.96	25.44	40.00	14.56	Pass	V
8	83.3553	7.87	1.05	-32.07	46.78	23.63	40.00	16.37	Pass	V
9	162.1272	8.02	1.48	-31.98	51.79	29.31	43.50	14.19	Pass	V
10	208.8859	11.13	1.71	-31.94	48.47	29.37	43.50	14.13	Pass	V
11	256.0326	12.32	1.90	-31.88	44.72	27.06	46.00	18.94	Pass	V
12	600.0290	19.00	2.96	-31.99	42.46	32.43	46.00	13.57	Pass	V

Mode:		BLE GFSK Transmitting				Channel:		2441		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	84.8105	8.21	1.06	-32.08	54.08	31.27	40.00	8.73	Pass	H
2	127.9798	8.00	1.32	-32.02	57.24	34.54	43.50	8.96	Pass	H
3	162.0302	8.01	1.48	-31.97	62.38	39.90	43.50	3.60	Pass	H
4	192.0062	10.14	1.62	-31.96	55.73	35.53	43.50	7.97	Pass	H
5	249.8240	12.20	1.88	-31.91	50.64	32.81	46.00	13.19	Pass	H
6	600.0290	19.00	2.96	-31.99	42.71	32.68	46.00	13.32	Pass	H
7	89.2729	9.23	1.09	-32.08	45.76	24.00	43.50	19.50	Pass	V
8	168.0448	8.34	1.52	-31.96	51.70	29.60	43.50	13.90	Pass	V
9	208.8859	11.13	1.71	-31.94	48.66	29.56	43.50	13.94	Pass	V
10	255.8386	12.32	1.90	-31.88	43.53	25.87	46.00	20.13	Pass	V
11	600.0290	19.00	2.96	-31.99	43.12	33.09	46.00	12.91	Pass	V
12	844.9785	21.44	3.50	-31.82	36.77	29.89	46.00	16.11	Pass	V

Mode:		BLE GFSK Transmitting				Channel:		2480		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	35.6266	10.90	0.66	-32.12	46.92	26.36	40.00	13.64	Pass	H
2	83.1613	7.83	1.05	-32.08	54.79	31.59	40.00	8.41	Pass	H
3	160.4780	7.93	1.47	-31.98	63.31	40.73	43.50	2.77	Pass	H
4	237.6008	11.88	1.83	-31.90	52.35	34.16	46.00	11.84	Pass	H
5	600.0290	19.00	2.96	-31.99	43.84	33.81	46.00	12.19	Pass	H
6	879.7080	21.86	3.55	-31.66	36.76	30.51	46.00	15.49	Pass	H
7	35.7236	10.93	0.66	-32.11	46.53	26.01	40.00	13.99	Pass	V
8	87.6238	8.85	1.08	-32.08	47.05	24.90	40.00	15.10	Pass	V
9	163.3883	8.09	1.49	-31.98	52.89	30.49	43.50	13.01	Pass	V
10	208.8859	11.13	1.71	-31.94	48.67	29.57	43.50	13.93	Pass	V
11	600.0290	19.00	2.96	-31.99	43.32	33.29	46.00	12.71	Pass	V
12	906.3856	22.14	3.60	-31.52	37.22	31.44	46.00	14.56	Pass	V

Transmitter Emission above 1GHz

Mode:		BLE GFSK Transmitting					Channel:		2402		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2790.3790	32.86	4.22	-42.23	52.08	46.93	74.00	27.07	Pass	H	PK
2	4804.0000	34.50	4.55	-40.66	52.22	50.61	74.00	23.39	Pass	H	PK
3	4879.1253	34.50	4.80	-40.60	49.24	47.94	74.00	26.06	Pass	H	PK
4	7206.0000	36.31	5.81	-41.02	45.71	46.81	74.00	27.19	Pass	H	PK
5	9608.0000	37.64	6.63	-40.76	46.74	50.25	74.00	23.75	Pass	H	PK
6	12010.0000	39.31	7.60	-41.21	43.25	48.95	74.00	25.05	Pass	H	PK
7	1596.8597	29.04	3.07	-42.90	59.50	48.71	74.00	25.29	Pass	V	PK
8	4804.1203	34.50	4.55	-40.66	51.35	49.74	74.00	24.26	Pass	V	PK
9	4880.1253	34.50	4.80	-40.60	52.11	50.81	74.00	23.19	Pass	V	PK
10	7206.0000	36.31	5.81	-41.02	45.58	46.68	74.00	27.32	Pass	V	PK
11	9608.0000	37.64	6.63	-40.76	45.52	49.03	74.00	24.97	Pass	V	PK
12	12010.0000	39.31	7.60	-41.21	43.87	49.57	74.00	24.43	Pass	V	PK

Mode:		BLE GFSK Transmitting					Channel:		2441		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1792.6793	30.33	3.31	-42.71	59.54	50.47	74.00	23.53	Pass	H	PK
2	2790.7791	32.87	4.22	-42.23	52.52	47.38	74.00	26.62	Pass	H	PK
3	4879.1253	34.50	4.80	-40.60	54.84	53.54	74.00	20.46	Pass	H	PK
4	7323.0000	36.42	5.85	-40.92	44.66	46.01	74.00	27.99	Pass	H	PK
5	9764.0000	37.71	6.71	-40.62	41.95	45.75	74.00	28.25	Pass	H	PK
6	12205.0000	39.42	7.67	-41.16	44.71	50.64	74.00	23.36	Pass	H	PK
7	4880.7244	34.50	4.80	-40.60	48.51	47.21	54.00	6.79	Pass	H	AV
8	1808.2808	30.43	3.33	-42.70	58.42	49.48	74.00	24.52	Pass	V	PK
9	2791.1791	32.87	4.22	-42.23	53.66	48.52	74.00	25.48	Pass	V	PK
10	4879.1253	34.50	4.80	-40.60	54.92	53.62	74.00	20.38	Pass	V	PK
11	7323.0000	36.42	5.85	-40.92	44.05	45.40	74.00	28.60	Pass	V	PK
12	9764.0000	37.71	6.71	-40.62	42.34	46.14	74.00	27.86	Pass	V	PK
13	12205.0000	39.42	7.67	-41.16	44.63	50.56	74.00	23.44	Pass	V	PK
14	4879.6843	34.50	4.80	-40.60	49.87	48.57	54.00	5.43	Pass	V	AV

Mode:		BLE GFSK Transmitting					Channel:		2480		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1999.0999	31.69	3.47	-42.61	58.57	51.12	74.00	22.88	Pass	H	PK
2	4879.1253	34.50	4.80	-40.60	50.19	48.89	74.00	25.11	Pass	H	PK
3	4960.0000	34.50	4.82	-40.53	49.69	48.48	74.00	25.52	Pass	H	PK
4	7440.0000	36.54	5.85	-40.82	45.23	46.80	74.00	27.20	Pass	H	PK
5	9920.0000	37.77	6.79	-40.48	42.60	46.68	74.00	27.32	Pass	H	PK
6	12400.0000	39.54	7.86	-41.12	44.44	50.72	74.00	23.28	Pass	H	PK
7	2199.9200	31.98	3.65	-42.52	57.55	50.66	74.00	23.34	Pass	V	PK
8	4879.1253	34.50	4.80	-40.60	51.36	50.06	74.00	23.94	Pass	V	PK
9	4960.0000	34.50	4.82	-40.53	48.37	47.16	74.00	26.84	Pass	V	PK
10	7440.0000	36.54	5.85	-40.82	43.74	45.31	74.00	28.69	Pass	V	PK
11	9920.0000	37.77	6.79	-40.48	42.40	46.48	74.00	27.52	Pass	V	PK
12	12400.0000	39.54	7.86	-41.12	44.39	50.67	74.00	23.33	Pass	V	PK

Note:

1) Through Pre-scan Non-hopping transmitting mode and charge+transmitter mode with all kind of data type, find the DH5 of data type is the worse case of GFSK modulation type in charge + transmitter mode.

2) 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*

3) 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.