TEST REPORT

Application No.:	GZEM2005012531CR
Applicant:	Xiamen HongDao Technology CO., LTD
Address of Applicant:	Room 909, No 11th building, Ninghaisanli, Jimei District, Xiamen City, Fujian Province, CHINA
Manufacturer:	Xiamen Hongmeikang Heaith Technology Co., Ltd
Address of Manufacturer:	No. 37-2, Xinyuan Road, Xinglin, Jimei District, Xiamen
Factory:	Xiamen Hongmeikang Heaith Technology Co., Ltd
Address of Factory:	No. 37-2, Xinyuan Road, Xinglin, Jimei District, Xiamen
Equipment Under Test (EUT):	
EUT Name:	Smart Rowing Machine
Model No.:	RM2000, RM1000, RM3000, RM4000, RM5000 ¤
¤	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s):	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2020-05-21
Date of Test:	2020-06-03 to 2020-06-05
Date of Issue:	2020-06-15
Test Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2020-06-15		Original

Authorized for issue by:				
Tested By		Kevin zhang **Kevin_Zhang /Project Engineer**		2020-06-03 to 2020-06-05 **Date**
Checked By		**Jerry_Chan /Reviewer**		2020-06-15 **Date**

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2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

¤ **Declaration of EUT Family Grouping:**

Model No.: RM2000, RM1000, RM3000, RM4000, RM5000

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the exterior decoration, exterior color and model No..

Therefore only one model RM2000 was tested in this report.

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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 3.0V (2×"AAA" battery)
Test Voltage:	DC3.0V
Cable:	N/A
Antenna Gain	0dBi
Antenna Type	Integrated Antenna
Channel Spacing	2MHz
Modulation Type	GFSK
Number of Channels	40
Operation Frequency	2402MHz to 2480MHz

4.2 Description of Support Units

The EUT has been tested with corresponding accessories as below:

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800
BT test board	SGS EMC	RF 07	RF 07

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	±5.5 x 10^{-8}
2	Duty cycle	±0.57%
3	Occupied Bandwidth	±3%
4	RF Conducted power	±0.68dB
5	RF Power Density	±1.50dB
6	Conducted Spurious Emissions	±1.04dB
7	RF Radiated Power	±4.5dB (below 1GHz)
		±4.8dB (above 1GHz)
8	Radiated Spurious Emission Test	±4.5dB (30MHz-1GHz)
		±4.8dB (1GHz-18GHz)
9	Temperature	±0.4℃
10	Humidity	±1.3%
11	Supply Voltages	±1.5%
12	Time	±3%

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4.4 Test Location

All tests were performed at:

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198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

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4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services 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 282399, May 31, 2002.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

- **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584，G-10449 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

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5 Equipment List

Minimum 6dB Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-18	2020-11-17
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01

Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-18	2020-11-17
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01

Power Spectrum Density					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-18	2020-11-17
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01

Conducted Band Edges Measurement					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
MXA Signal Analyzer	AgilentTechnologies	N9020A	SEM004-10	2020-03-02	2021-03-01
ESG Vector Signal Generator	Keysight	E4438C	SEM006-03	2020-03-31	2021-03-30
EXG Analog Signal Generator	AgilentTechnologies	N5171B	SEM006-04	2017-07-26	2020-07-25
Power Meter	AgilentTechnologies	U2021XA_Ch2	SEM009-02	2020-05-26	2021-05-25
Power Meter	AgilentTechnologies	U2021XA_Ch3	SEM009-03	2020-05-26	2021-05-25
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-18	2020-11-17
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01

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Conducted Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-18	2020-11-17
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01

Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05
Bi-log Type Antenna	Schaffner Chase	CBL6143	EMC0519	2020-06-08	2023-06-07
Horn Antenna	SCHWARZBECKMESS-ELEKTRONIK	BBHA 9120D	EMC2016	2019-09-25	2022-09-24
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2019-11-18	2020-11-17
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2021-03-04
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18
MXE EMI Receiver	Keysight	N9038A	EMC2139	2019-11-18	2020-11-17
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2019-11-18	2020-11-17
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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Radiated Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05
Bi-log Type Antenna	Schaffner Chase	CBL6143	EMC0519	2020-06-08	2023-06-07
Horn Antenna	SCHWARZBECKMESS-ELEKTRONIK	BBHA 9120D	EMC2016	2019-09-25	2022-09-24
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2019-11-18	2020-11-17
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2021-03-04
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18
MXE EMI Receiver	Keysight	N9038A	EMC2139	2019-11-18	2020-11-17
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2019-11-18	2020-11-17
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DMM	Fluke	73	EMC0006	2019-07-16	2020-07-15
DMM	Fluke	73	EMC0007	2019-07-16	2020-07-15

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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(c)

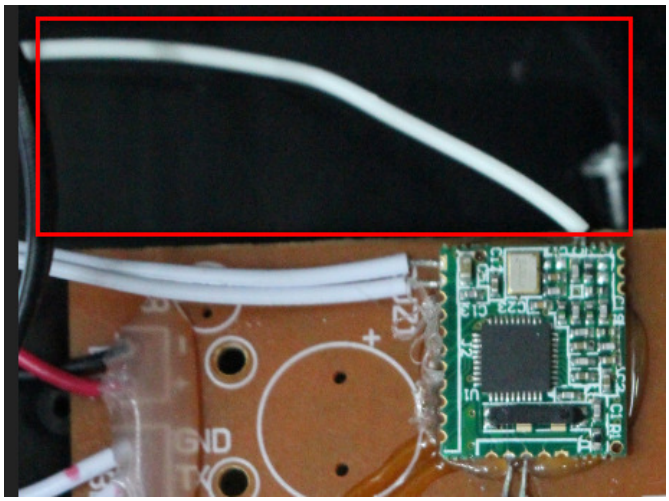
6.1.2 Conclusion

Standard 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 0dBi.

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7 Radio Spectrum Matter Test Results

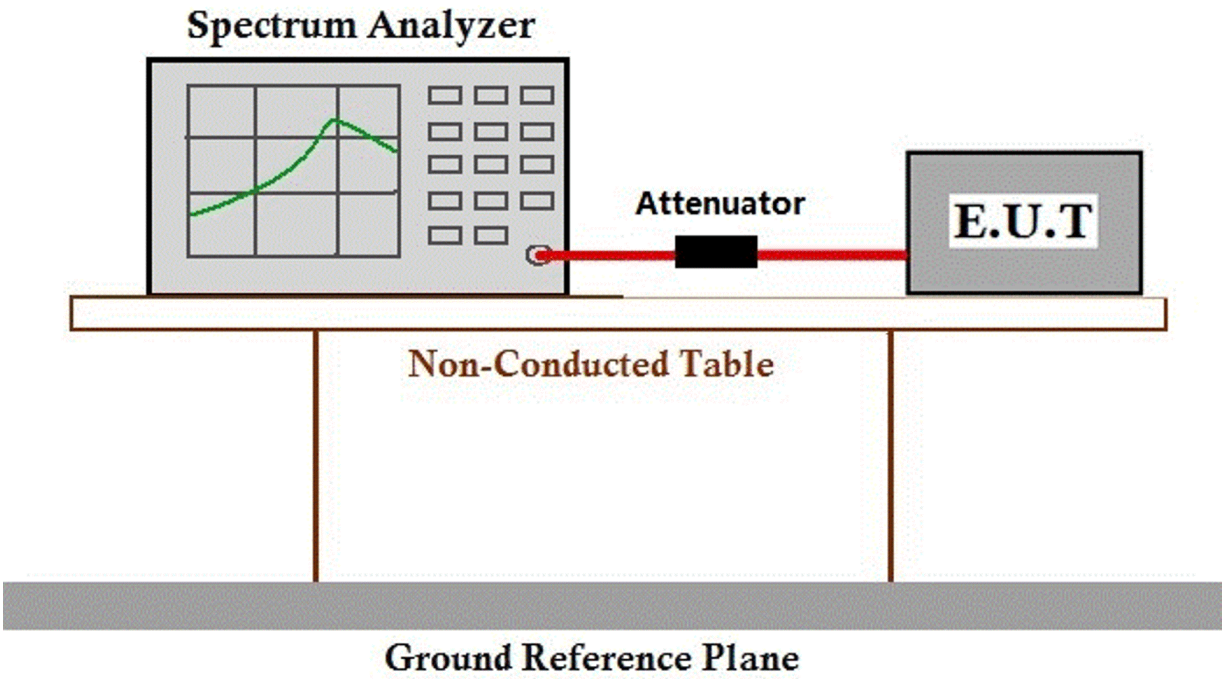
7.1 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
Test Method: ANSI C63.10 (2013) Section 11.8.1
Limit: ≥500 kHz

7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 61.1 % RH Atmospheric Pressure: 1020 mbar
Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.1.2 Test Setup Diagram



7.1.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

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7.2 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)
Test Method: ANSI C63.10 (2013) Section 11.9.1.1
Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥50 hopping channels
	0.25 for 25≤ hopping channels <50
	1 for digital modulation
2400-2483.5	1 for ≥75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

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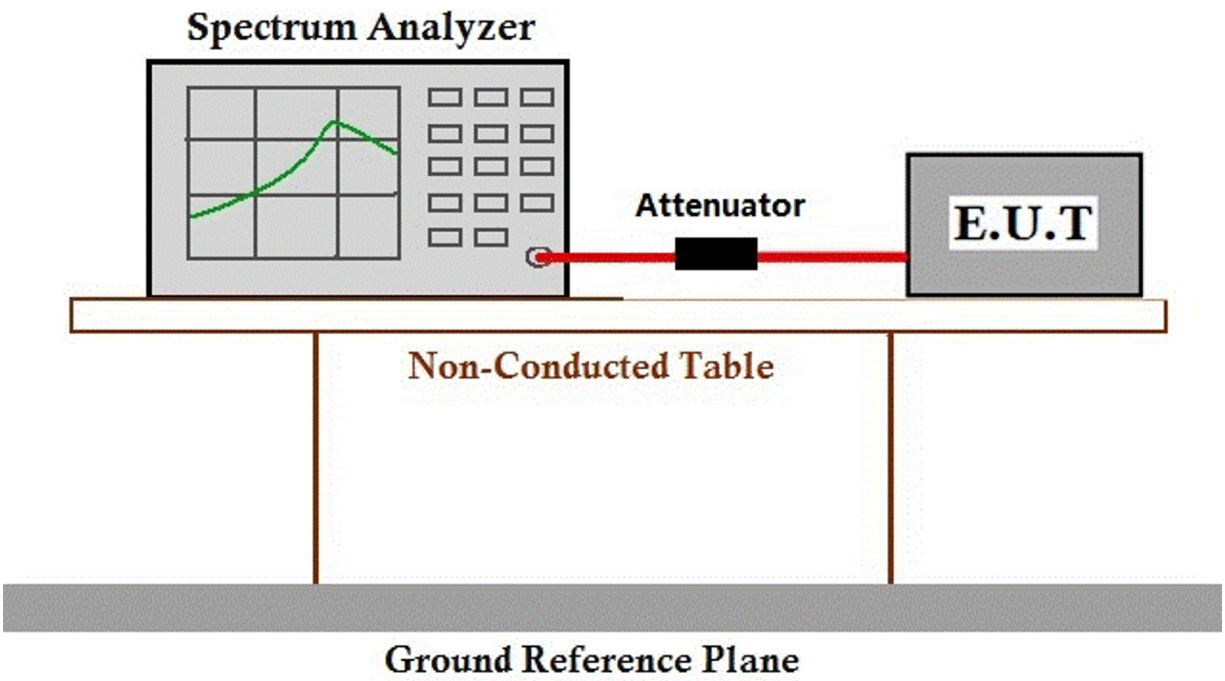
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % RH Atmospheric Pressure: 1020 mbar

Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

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7.3 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)

Test Method: ANSI C63.10 (2013) Section 11.10.2

Limit: ≤8dBm in any 3 kHz band during any time interval of continuous transmission

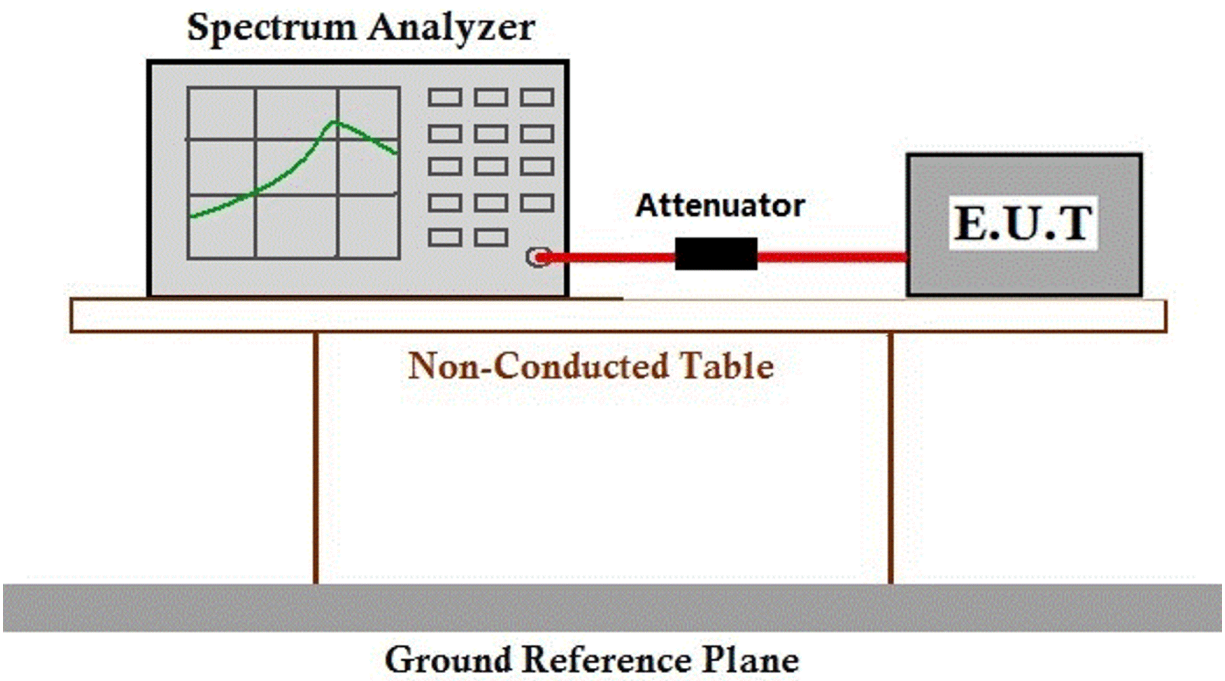
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % RH Atmospheric Pressure: 1020 mbar

Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.3.2 Test Setup Diagram



7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

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7.4 Conducted Band Edges Measurement

Test Requirement	47 CFR Part 15, Subpart C 15.247(d)
Test Method:	ANSI C63.10 (2013) Section 11.13.3.2
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)

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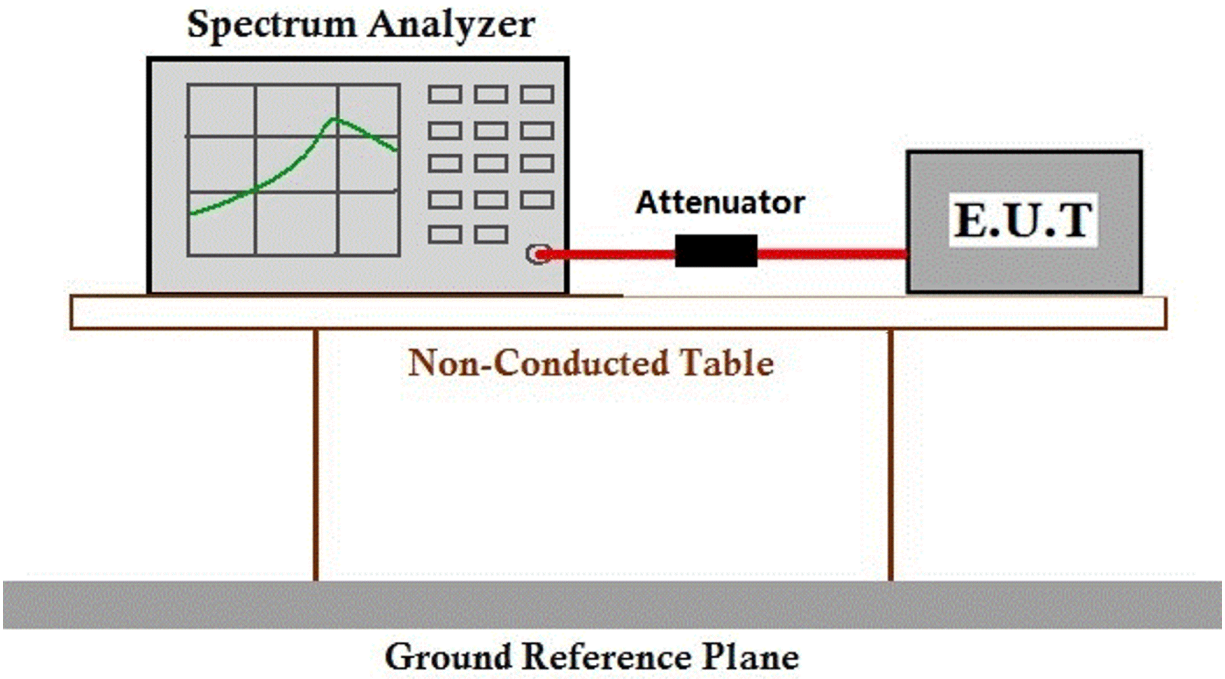
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % RH Atmospheric Pressure: 1020 mbar

Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

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7.5 Conducted Spurious Emissions

Test Requirement	47 CFR Part 15, Subpart C 15.247(d)
Test Method:	ANSI C63.10 (2013) Section 11.11
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)

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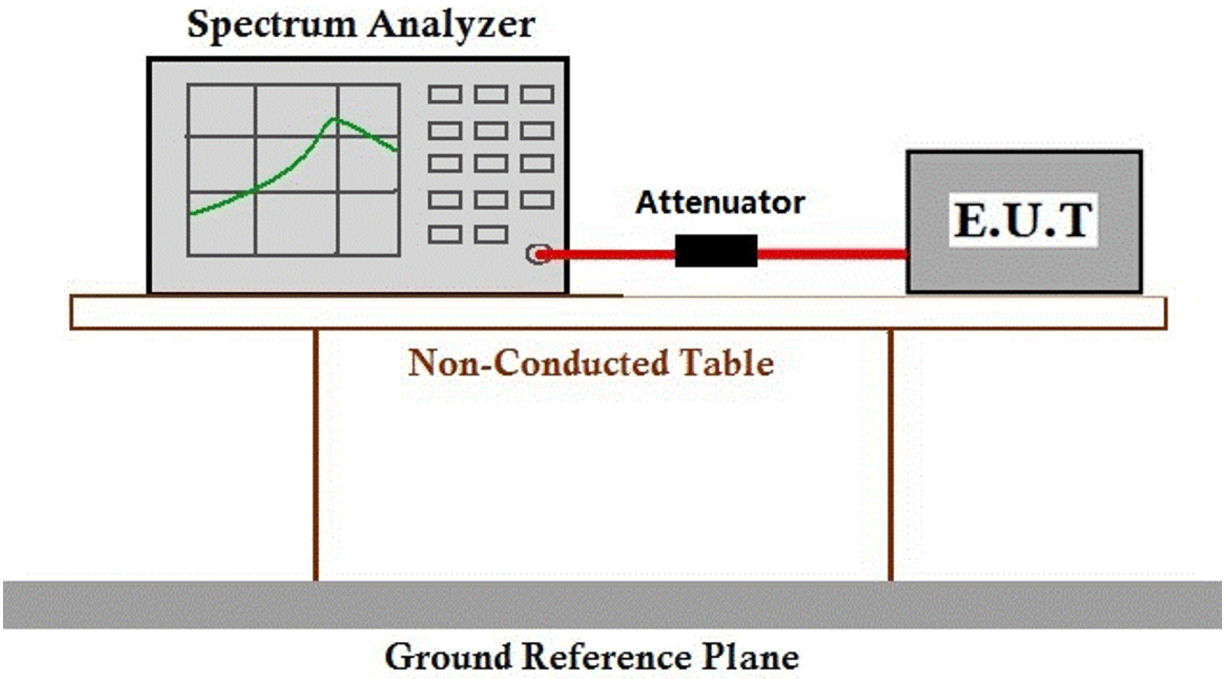
7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % RH Atmospheric Pressure: 1020 mbar

Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.5.2 Test Setup Diagram



7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

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7.6 Radiated Emissions which fall in the restricted bands

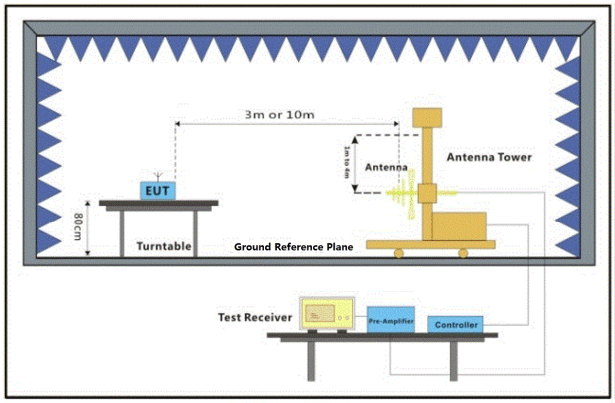
Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
Test Method: ANSI C63.10 (2013) Section 6.10.5
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

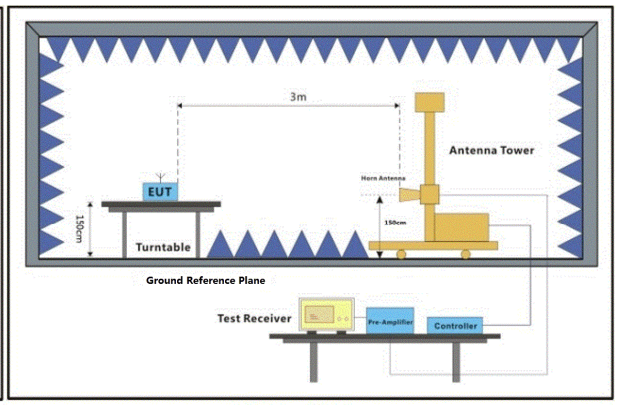
7.6.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar
Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.6.2 Test Setup Diagram



30MHz-1GHz



Above 1GHz

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7.6.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.

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 the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

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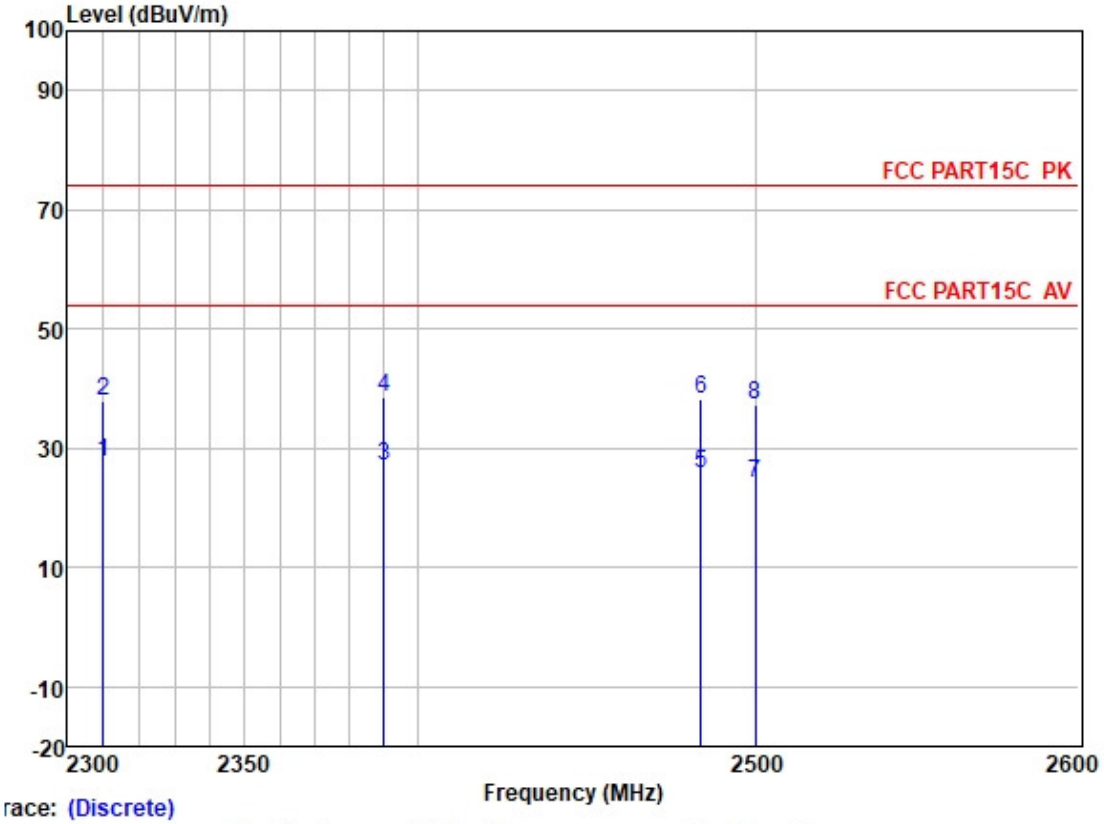
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	34.11	27.15	3.32	36.94	27.64	54.00	-26.36	HORIZONTAL	Average
2	2310.000	44.47	27.15	3.32	36.94	38.00	74.00	-36.00	HORIZONTAL	Peak
3	2390.000	33.00	27.33	3.48	36.92	26.89	54.00	-27.11	HORIZONTAL	Average
4	2390.000	44.82	27.33	3.48	36.92	38.71	74.00	-35.29	HORIZONTAL	Peak
5	2483.500	31.70	27.48	3.53	36.90	25.81	54.00	-28.19	HORIZONTAL	Average
6	2483.500	44.22	27.48	3.53	36.90	38.33	74.00	-35.67	HORIZONTAL	Peak
7	2500.000	30.19	27.50	3.40	36.89	24.20	54.00	-29.80	HORIZONTAL	Average
8	2500.000	43.31	27.50	3.40	36.89	37.32	74.00	-36.68	HORIZONTAL	Peak

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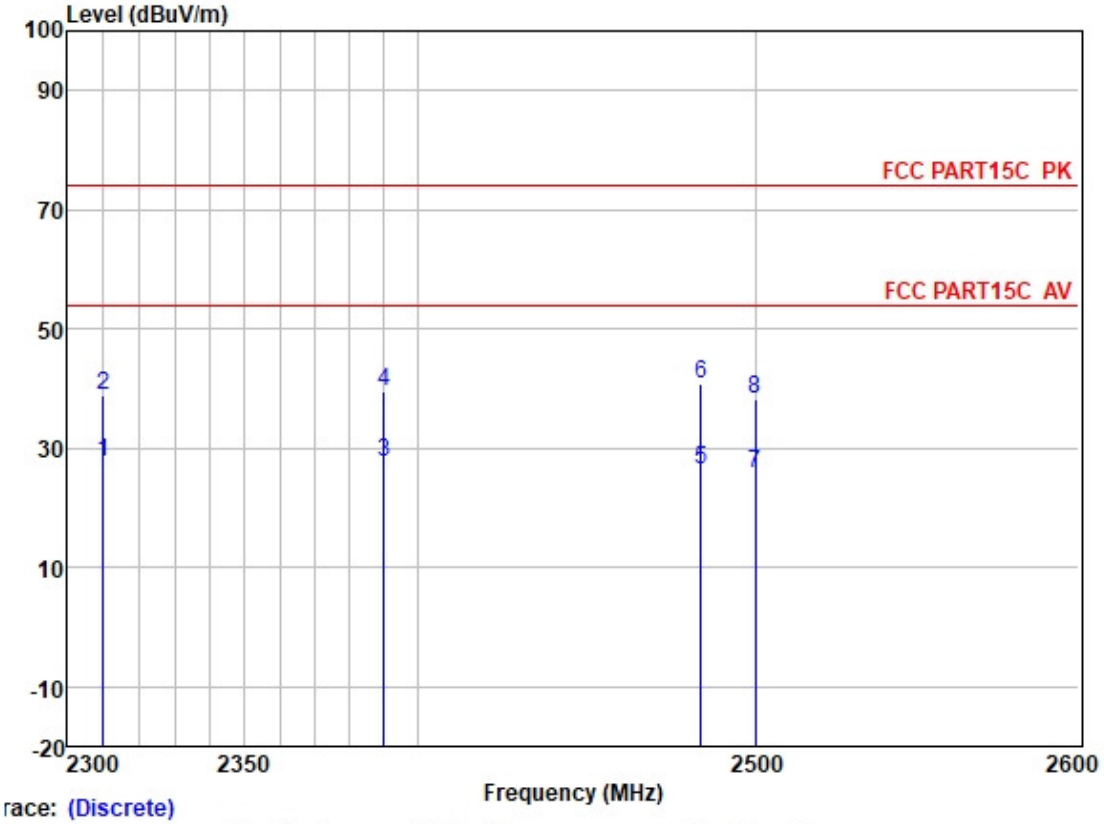
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	34.25	27.15	3.32	36.94	27.78	54.00	-26.22	VERTICAL	Average
2	2310.000	45.24	27.15	3.32	36.94	38.77	74.00	-35.23	VERTICAL	Peak
3	2390.000	33.74	27.33	3.48	36.92	27.63	54.00	-26.37	VERTICAL	Average
4	2390.000	45.59	27.33	3.48	36.92	39.48	74.00	-34.52	VERTICAL	Peak
5	2483.500	32.25	27.48	3.53	36.90	26.36	54.00	-27.64	VERTICAL	Average
6	2483.500	46.73	27.48	3.53	36.90	40.84	74.00	-33.16	VERTICAL	Peak
7	2500.000	31.63	27.50	3.40	36.89	25.64	54.00	-28.36	VERTICAL	Average
8	2500.000	44.33	27.50	3.40	36.89	38.34	74.00	-35.66	VERTICAL	Peak

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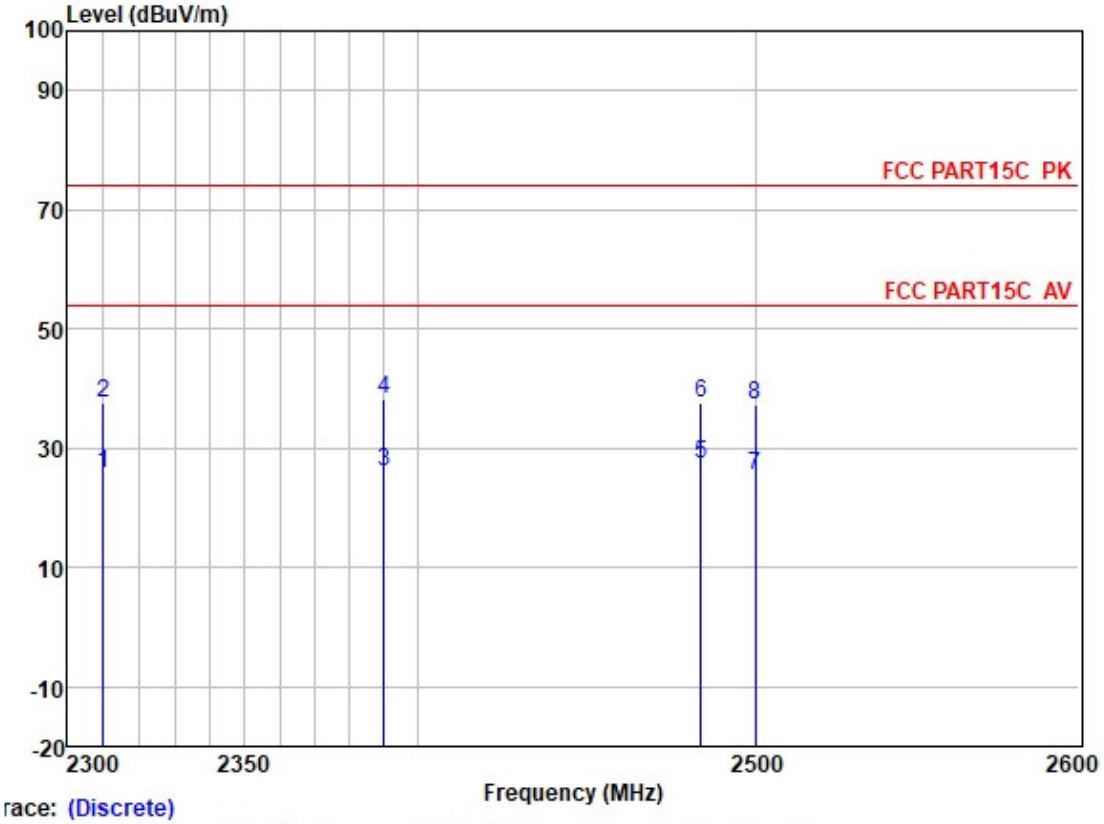
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	32.15	27.15	3.32	36.94	25.68	54.00	-28.32	HORIZONTAL	Average
2	2310.000	44.05	27.15	3.32	36.94	37.58	74.00	-36.42	HORIZONTAL	Peak
3	2390.000	32.25	27.33	3.48	36.92	26.14	54.00	-27.86	HORIZONTAL	Average
4	2390.000	44.34	27.33	3.48	36.92	38.23	74.00	-35.77	HORIZONTAL	Peak
5	2483.500	33.14	27.48	3.53	36.90	27.25	54.00	-26.75	HORIZONTAL	Average
6	2483.500	43.49	27.48	3.53	36.90	37.60	74.00	-36.40	HORIZONTAL	Peak
7	2500.000	31.34	27.50	3.40	36.89	25.35	54.00	-28.65	HORIZONTAL	Average
8	2500.000	43.35	27.50	3.40	36.89	37.36	74.00	-36.64	HORIZONTAL	Peak

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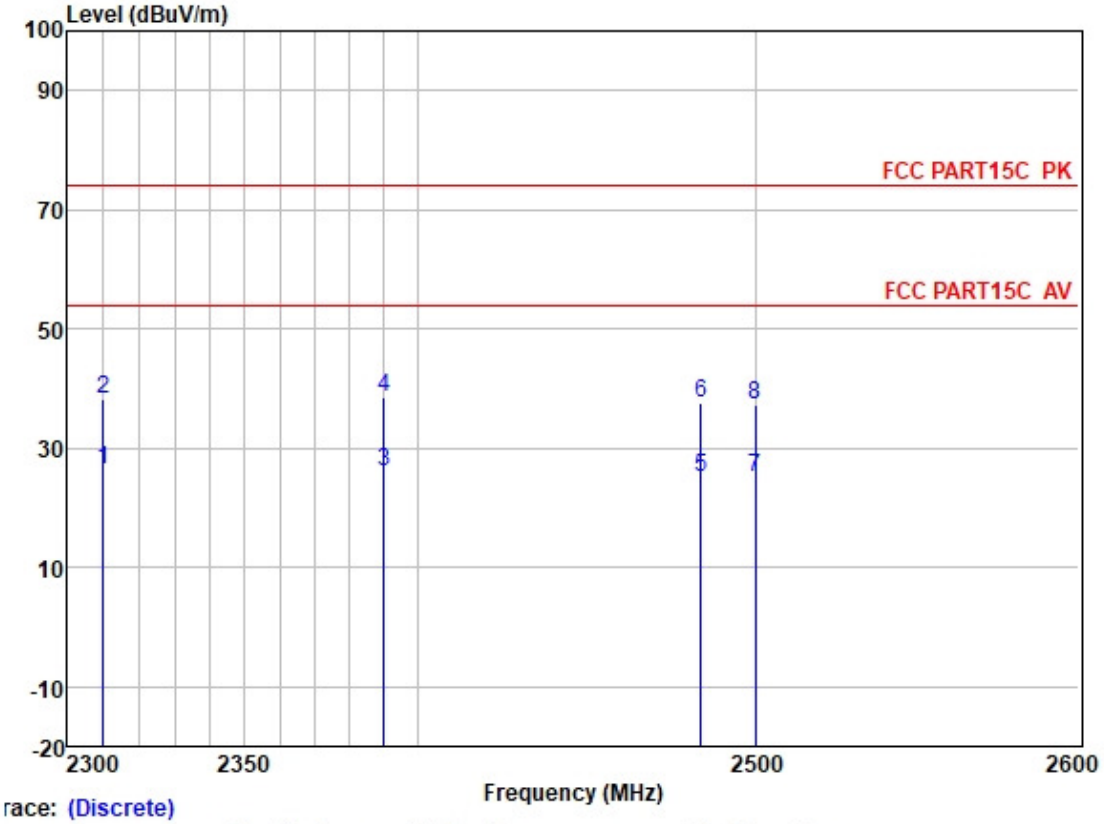
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	32.83	27.15	3.32	36.94	26.36	54.00	-27.64	VERTICAL	Average
2	2310.000	44.76	27.15	3.32	36.94	38.29	74.00	-35.71	VERTICAL	Peak
3	2390.000	32.25	27.33	3.48	36.92	26.14	54.00	-27.86	VERTICAL	Average
4	2390.000	44.73	27.33	3.48	36.92	38.62	74.00	-35.38	VERTICAL	Peak
5	2483.500	31.17	27.48	3.53	36.90	25.28	54.00	-28.72	VERTICAL	Average
6	2483.500	43.50	27.48	3.53	36.90	37.61	74.00	-36.39	VERTICAL	Peak
7	2500.000	30.98	27.50	3.40	36.89	24.99	54.00	-29.01	VERTICAL	Average
8	2500.000	43.42	27.50	3.40	36.89	37.43	74.00	-36.57	VERTICAL	Peak

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7.7 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

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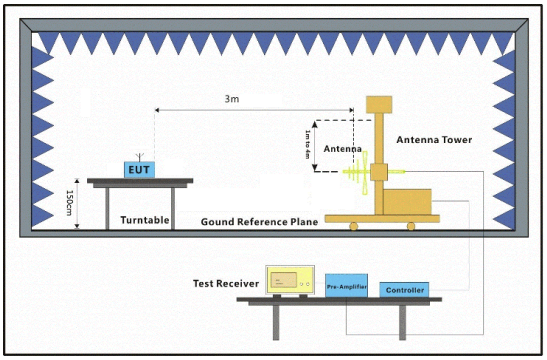
7.7.1 E.U.T. Operation

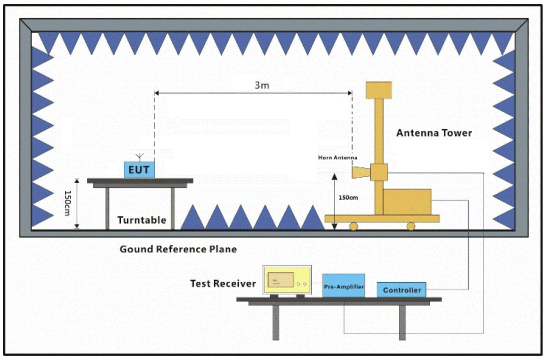
Operating Environment:

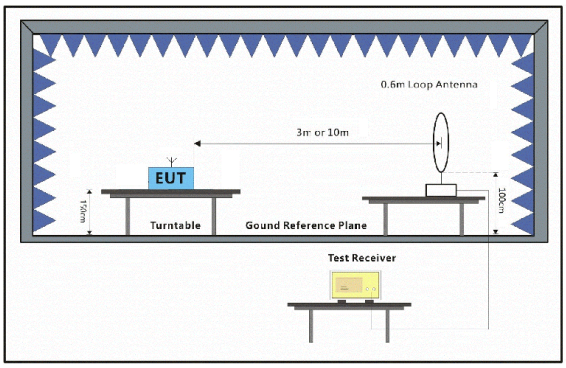
Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test mode b:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

7.7.2 Test Setup Diagram







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7.7.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.

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 the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

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 + Antenna Factor + Cable Factor – Preamplifier Factor

3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown

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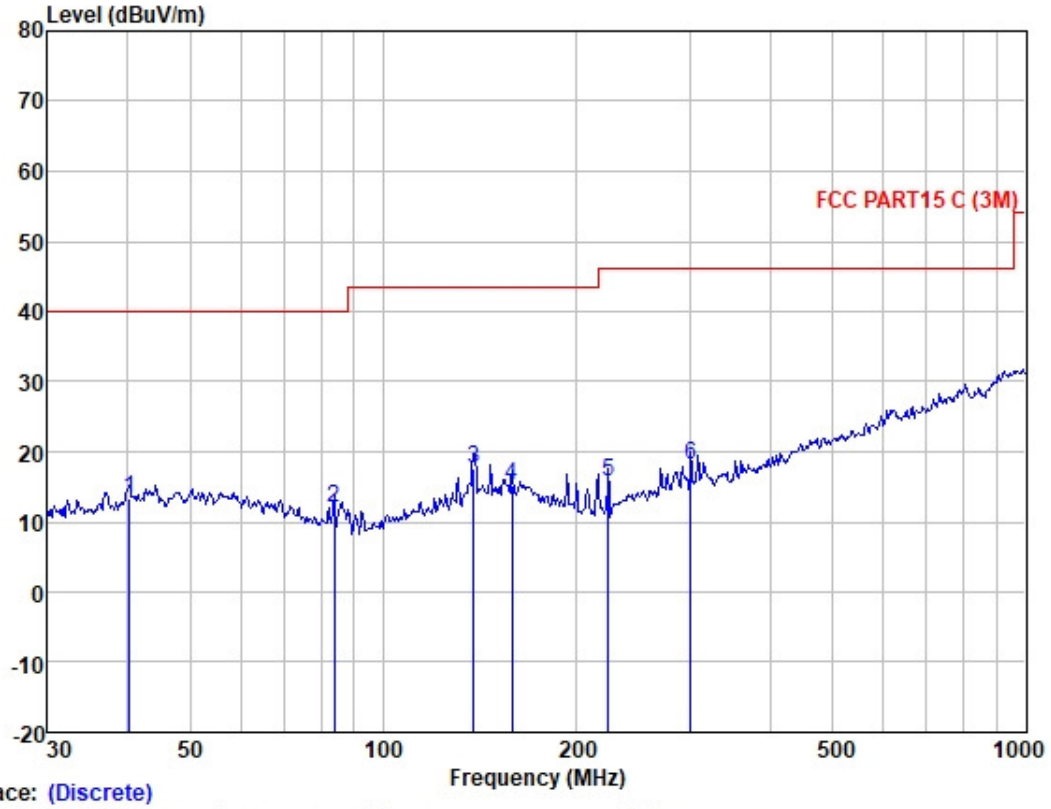
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	40.276	25.84	13.52	1.07	27.18	13.25	40.00	-26.75	HORIZONTAL	QP
2	83.816	29.42	8.04	1.62	27.11	11.97	40.00	-28.03	HORIZONTAL	QP
3	137.903	29.75	13.00	1.94	26.98	17.71	43.50	-25.79	HORIZONTAL	QP
4	158.668	26.30	13.67	2.13	26.85	15.25	43.50	-28.25	HORIZONTAL	QP
5	223.733	30.08	9.87	2.62	26.85	15.72	46.00	-30.28	HORIZONTAL	QP
6	300.367	28.73	13.60	2.97	27.21	18.09	46.00	-27.91	HORIZONTAL	QP

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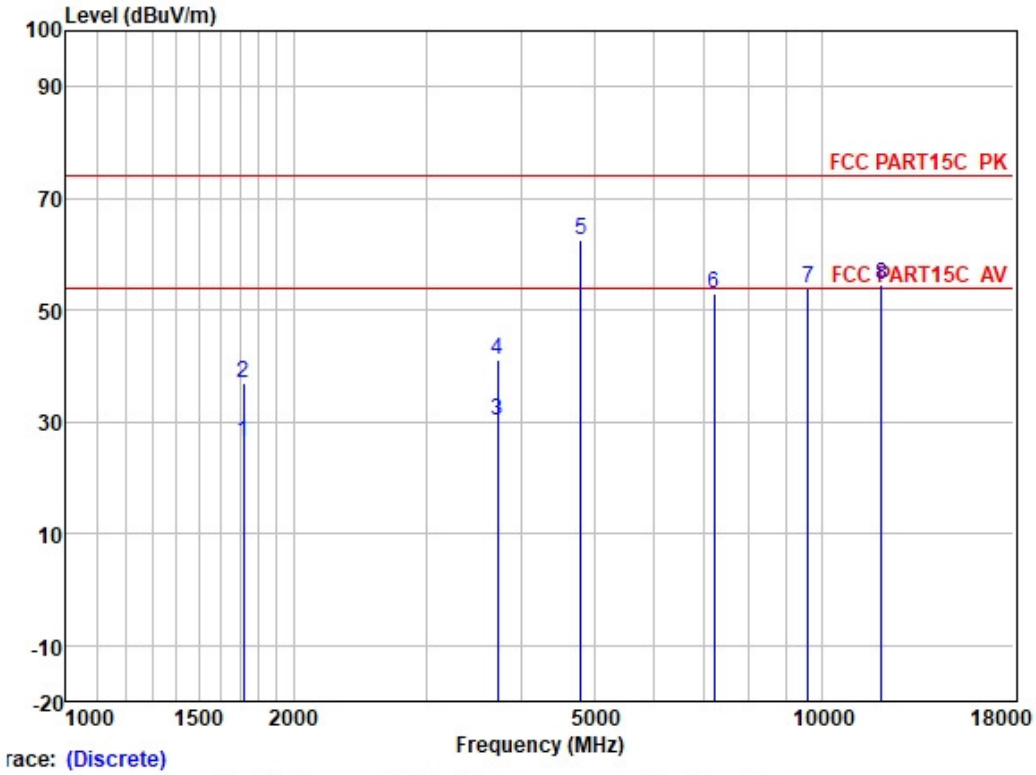
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1716.864	34.77	25.76	2.82	37.04	26.31	54.00	-27.69	HORIZONTAL	Average
2	1716.864	45.40	25.76	2.82	37.04	36.94	74.00	-37.06	HORIZONTAL	Peak
3	3725.195	32.69	29.31	4.57	36.42	30.15	54.00	-23.85	HORIZONTAL	Average
4	3725.195	43.77	29.31	4.57	36.42	41.23	74.00	-32.77	HORIZONTAL	Peak
5	4803.909	62.12	31.42	5.40	36.48	62.46	74.00	-11.54	HORIZONTAL	Peak
6	7206.309	48.15	35.54	5.98	36.75	52.92	74.00	-21.08	HORIZONTAL	Peak
7	9608.820	44.78	38.37	7.07	36.36	53.86	74.00	-20.14	HORIZONTAL	Peak
8	12010.470	43.99	38.90	8.19	36.40	54.68	74.00	-19.32	HORIZONTAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4803.909	-39.25	23.21	54	-30.79	Horizontal	Average
6	7206.309	-39.25	13.67	54	-40.33	Horizontal	Average
7	9608.820	-39.25	14.61	54	-39.39	Horizontal	Average
8	12010.470	-39.25	15.43	54	-38.57	Horizontal	Average
Remark: Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247							

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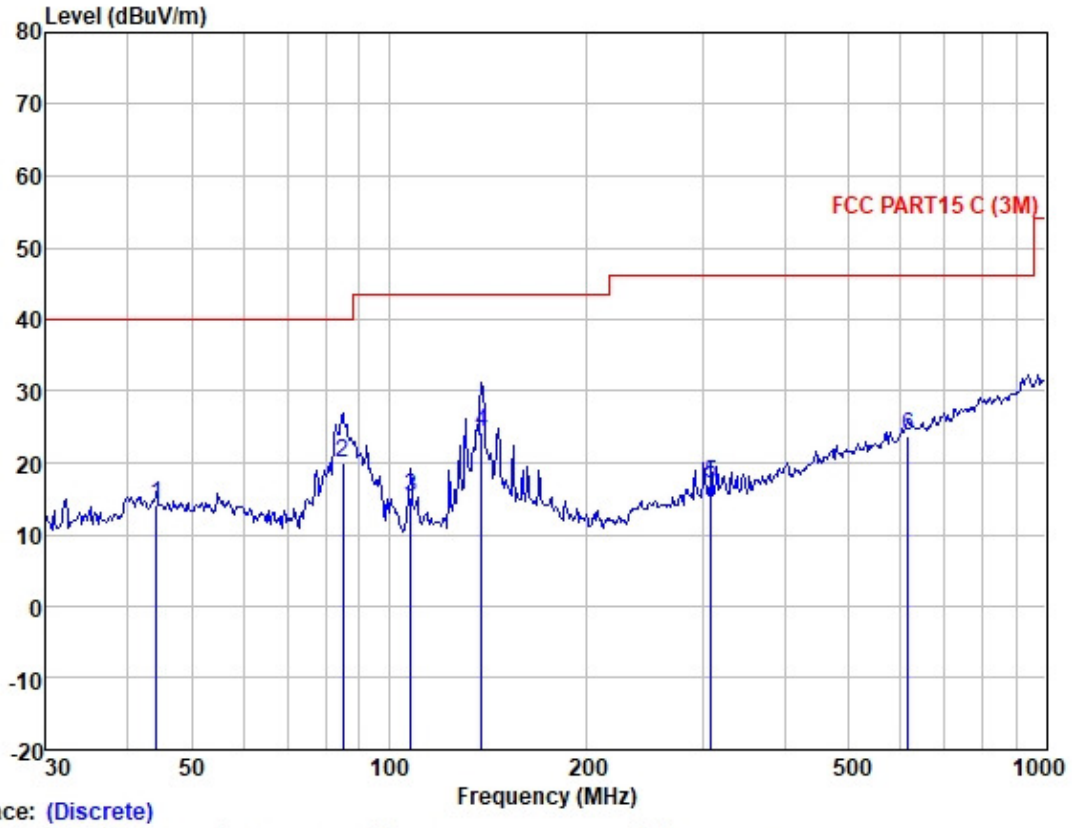
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	44.120	26.29	13.81	1.17	27.17	14.10	40.00	-25.90	VERTICAL	QP
2	84.999	37.63	7.85	1.62	27.11	19.99	40.00	-20.01	VERTICAL	QP
3	107.888	30.39	10.30	1.69	27.08	15.30	43.50	-28.20	VERTICAL	QP
4	137.903	36.28	13.00	1.94	26.98	24.24	43.50	-19.26	VERTICAL	QP
5	308.913	27.58	13.85	2.99	27.30	17.12	46.00	-28.88	VERTICAL	QP
6	616.372	26.64	20.35	4.88	28.08	23.79	46.00	-22.21	VERTICAL	QP

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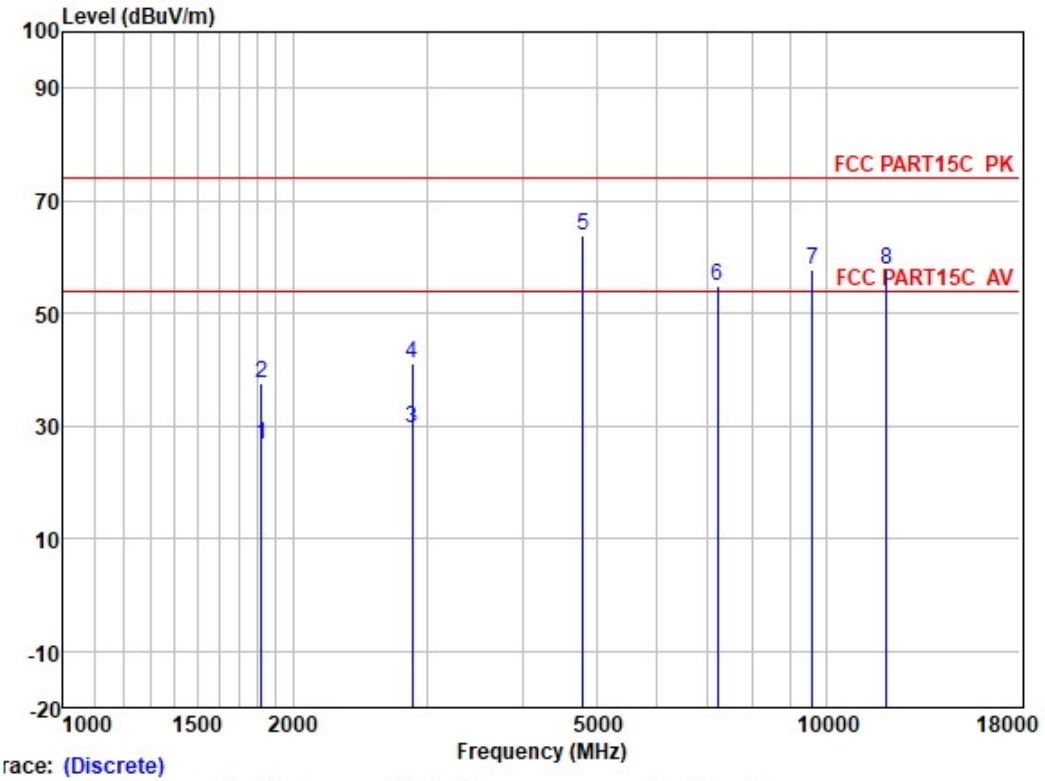
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1819.036	34.63	25.97	2.98	37.02	26.56	54.00	-27.44	VERTICAL	Average
2	1819.036	45.81	25.97	2.98	37.02	37.74	74.00	-36.26	VERTICAL	Peak
3	2871.934	34.29	28.26	3.70	36.65	29.60	54.00	-24.40	VERTICAL	Average
4	2871.934	45.71	28.26	3.70	36.65	41.02	74.00	-32.98	VERTICAL	Peak
5	4804.419	63.62	31.42	5.40	36.48	63.96	74.00	-10.04	VERTICAL	Peak
6	7206.309	50.07	35.54	5.98	36.75	54.84	74.00	-19.16	VERTICAL	Peak
7	9608.430	48.55	38.37	7.07	36.36	57.63	74.00	-16.37	VERTICAL	Peak
8	12010.760	47.15	38.90	8.19	36.40	57.84	74.00	-16.16	VERTICAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4804.419	-39.25	24.71	54	-29.29	Vertical	Average
6	7206.309	-39.25	15.59	54	-38.41	Vertical	Average
7	9608.430	-39.25	18.38	54	-35.62	Vertical	Average
8	12010.760	-39.25	18.59	54	-35.41	Vertical	Average
Remark: Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247							

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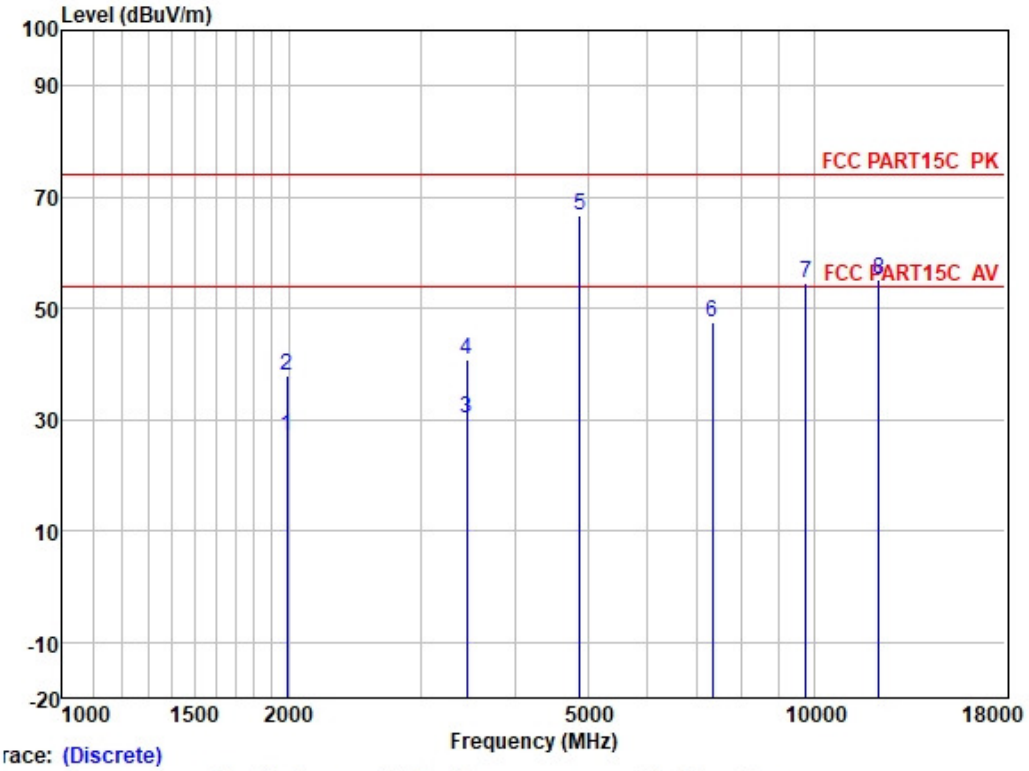
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:middle



race: (Discrete)

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1989.550	34.77	26.09	3.08	37.00	26.94	54.00	-27.06	HORIZONTAL	Average
2	1989.550	45.90	26.09	3.08	37.00	38.07	74.00	-35.93	HORIZONTAL	Peak
3	3455.508	33.66	28.88	4.20	36.46	30.28	54.00	-23.72	HORIZONTAL	Average
4	3455.508	44.08	28.88	4.20	36.46	40.70	74.00	-33.30	HORIZONTAL	Peak
5	4880.151	66.26	31.54	5.50	36.50	66.80	74.00	-7.20	HORIZONTAL	Peak
6	7320.092	42.04	36.00	6.13	36.76	47.41	74.00	-26.59	HORIZONTAL	Peak
7	9760.980	45.45	38.50	7.02	36.33	54.64	74.00	-19.36	HORIZONTAL	Peak
8	12200.620	44.55	38.77	8.10	36.30	55.12	74.00	-18.88	HORIZONTAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4880.151	-39.25	27.55	54	-26.45	Horizontal	Average
6	7320.092	-39.25	8.16	54	-45.84	Horizontal	Average
7	9760.980	-39.25	15.39	54	-38.61	Horizontal	Average
8	12200.620	-39.25	15.87	54	-38.13	Horizontal	Average

Remark:
Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247

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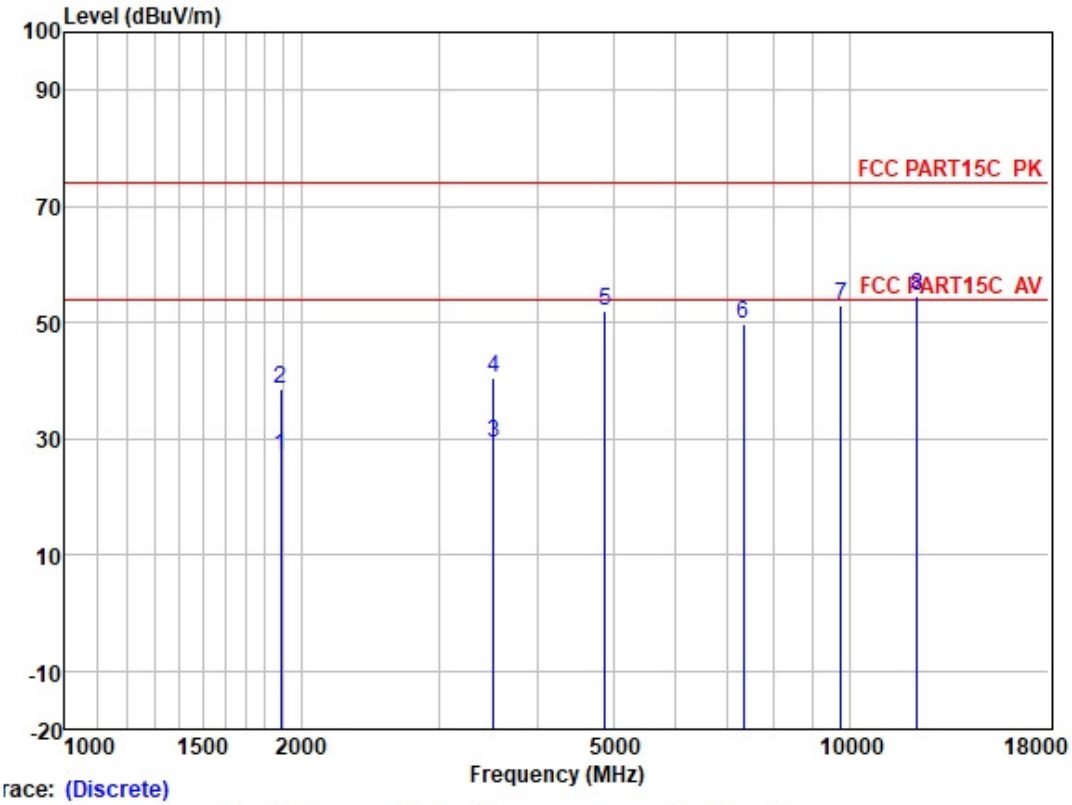
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:middle



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1883.236	35.22	26.03	2.91	37.01	27.15	54.00	-26.85	VERTICAL	Average
2	1883.236	46.59	26.03	2.91	37.01	38.52	74.00	-35.48	VERTICAL	Peak
3	3515.957	32.62	28.92	4.35	36.45	29.44	54.00	-24.56	VERTICAL	Average
4	3515.957	43.54	28.92	4.35	36.45	40.36	74.00	-33.64	VERTICAL	Peak
5	4880.151	51.60	31.54	5.50	36.50	52.14	74.00	-21.86	VERTICAL	Peak
6	7320.052	44.32	36.00	6.13	36.76	49.69	74.00	-24.31	VERTICAL	Peak
7	9760.497	43.88	38.50	7.02	36.33	53.07	74.00	-20.93	VERTICAL	Peak
8	12200.710	44.08	38.77	8.10	36.30	54.65	74.00	-19.35	VERTICAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4880.151	-39.25	12.89	54	-41.11	Vertical	Average
6	7320.052	-39.25	10.44	54	-43.56	Vertical	Average
7	9760.497	-39.25	13.82	54	-40.18	Vertical	Average
8	12200.710	-39.25	15.4	54	-38.6	Vertical	Average
Remark: Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247							

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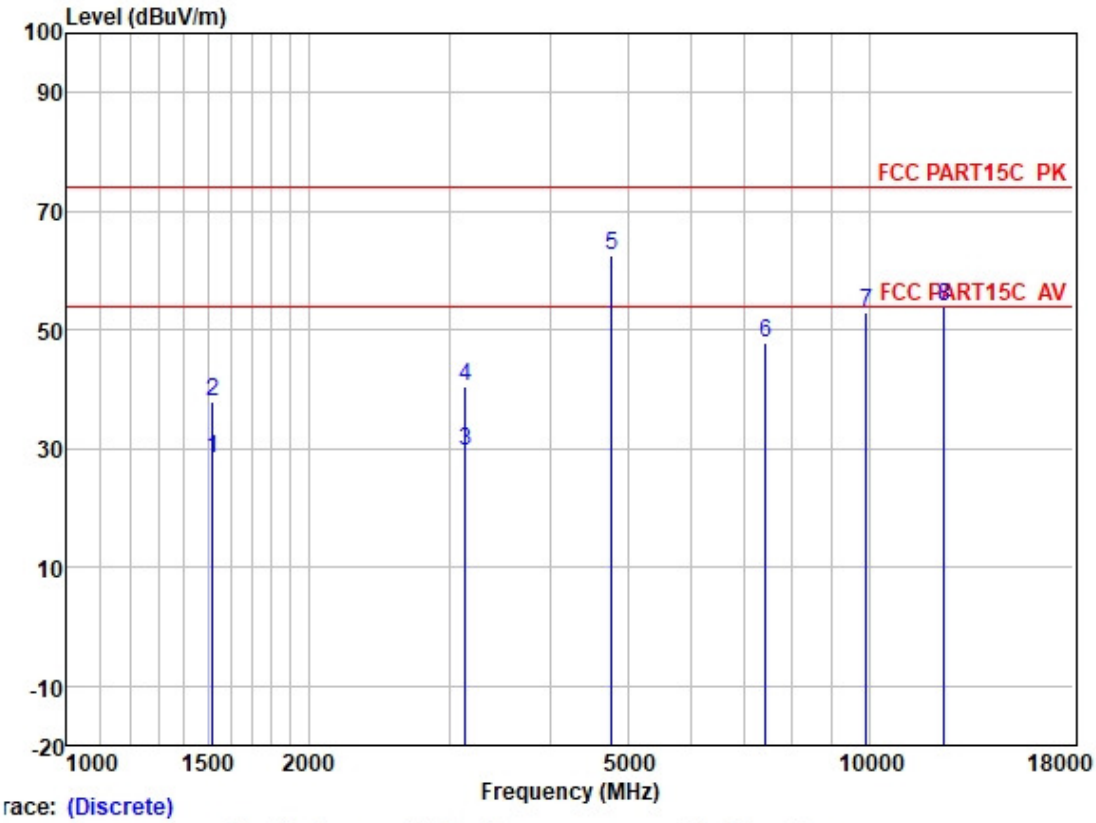
Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:High



race: (Discrete)

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1520.598	37.19	25.51	2.80	37.10	28.40	54.00	-25.60	HORIZONTAL	Average
2	1520.598	46.63	25.51	2.80	37.10	37.84	74.00	-36.16	HORIZONTAL	Peak
3	3141.145	33.70	28.51	3.95	36.52	29.64	54.00	-24.36	HORIZONTAL	Average
4	3141.145	44.66	28.51	3.95	36.52	40.60	74.00	-33.40	HORIZONTAL	Peak
5	4776.419	62.35	31.36	5.40	36.47	62.64	74.00	-11.36	HORIZONTAL	Peak
6	7440.516	41.97	36.27	6.22	36.77	47.69	74.00	-26.31	HORIZONTAL	Peak
7	9920.972	43.75	38.65	6.96	36.31	53.05	74.00	-20.95	HORIZONTAL	Peak
8	12400.130	43.61	38.57	7.97	36.17	53.98	74.00	-20.02	HORIZONTAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4776.419	-39.33	23.31	54	-30.69	Horizontal	Average
6	7440.516	-39.33	8.36	54	-45.64	Horizontal	Average
7	9920.972	-39.33	13.72	54	-40.28	Horizontal	Average
8	12400.130	-39.33	14.65	54	-39.35	Horizontal	Average

Remark:
Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247

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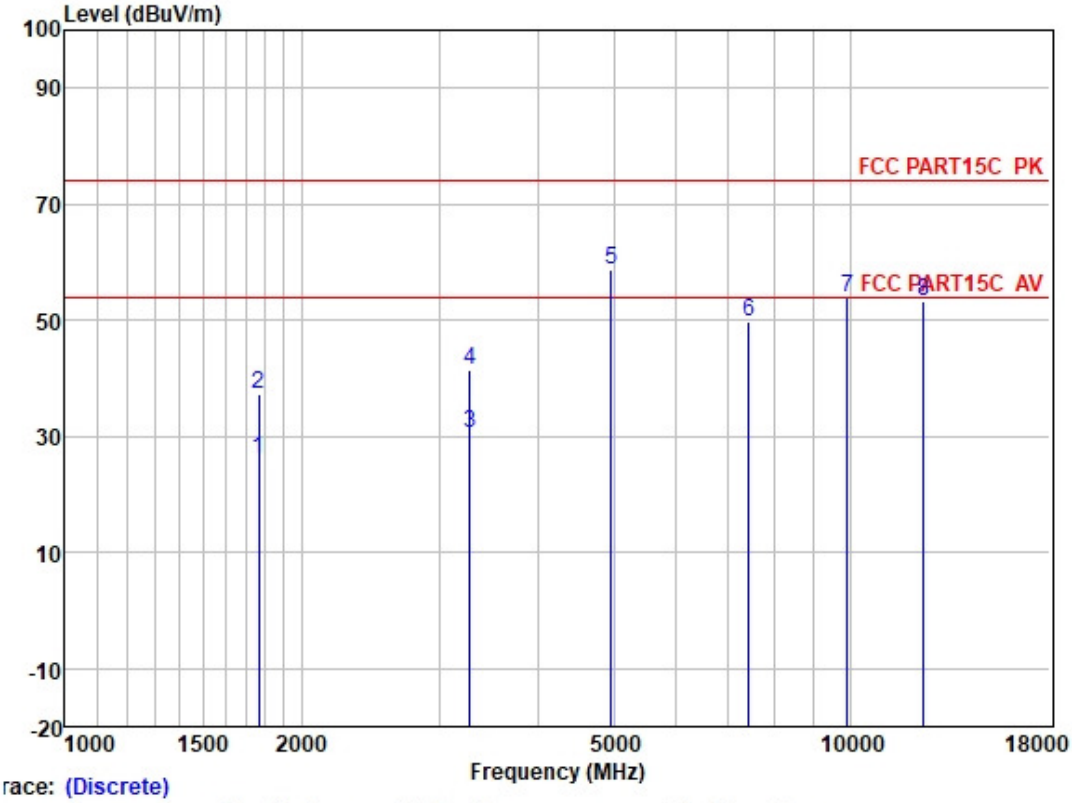
Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:High



race: (Discrete)

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1767.212	34.18	25.89	2.94	37.03	25.98	54.00	-28.02	VERTICAL	Average
2	1767.212	45.49	25.89	2.94	37.03	37.29	74.00	-36.71	VERTICAL	Peak
3	3280.326	34.18	28.73	4.04	36.49	30.46	54.00	-23.54	VERTICAL	Average
4	3280.326	45.22	28.73	4.04	36.49	41.50	74.00	-32.50	VERTICAL	Peak
5	4960.993	57.80	31.65	5.65	36.52	58.58	74.00	-15.42	VERTICAL	Peak
6	7440.646	44.16	36.27	6.22	36.77	49.88	74.00	-24.12	VERTICAL	Peak
7	9920.432	44.48	38.65	6.96	36.31	53.78	74.00	-20.22	VERTICAL	Peak
8	12400.900	42.78	38.57	7.97	36.17	53.15	74.00	-20.85	VERTICAL	Peak

	Freq	Duty cycle correction factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Pol/Phase	Remark
5	4960.993	-39.33	19.25	54	-34.75	Vertical	Average
6	7440.646	-39.33	10.55	54	-43.45	Vertical	Average
7	9920.432	-39.33	14.45	54	-39.55	Vertical	Average
8	12400.900	-39.33	13.82	54	-40.18	Vertical	Average
Remark: Duty cycle correction factor = 20log (duty cycle), the detailed duty cycle test data see: Appendix 15.247							

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8 Appendix

8.1 Appendix 15.247

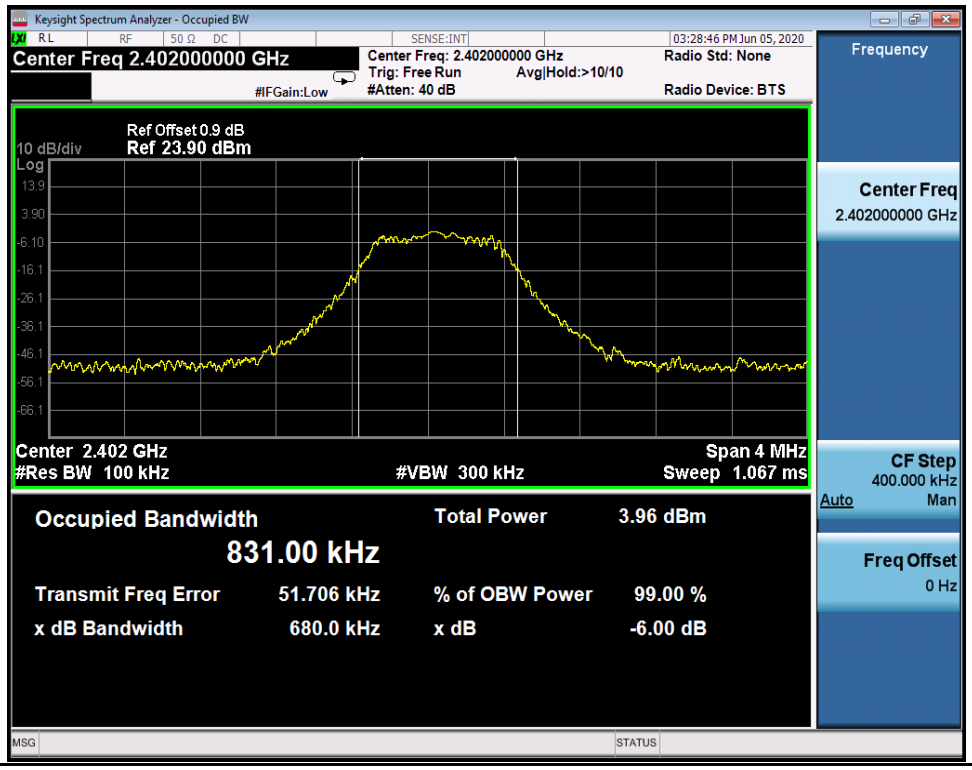
(Cable loss=0.9dB)

1.6dB Bandwidth

Test Mode	Test Channel	Ant	OBW[MHz]	EBW[MHz]	Limit	Verdict
BLE	2402	Ant1	0.83125	0.6800	0.5	PASS
BLE	2440	Ant1	0.83707	0.6949	0.5	PASS
BLE	2480	Ant1	0.85023	0.6787	0.5	PASS

TEST PLOT

6dB Bandwidth_BLE_2402_Ant1



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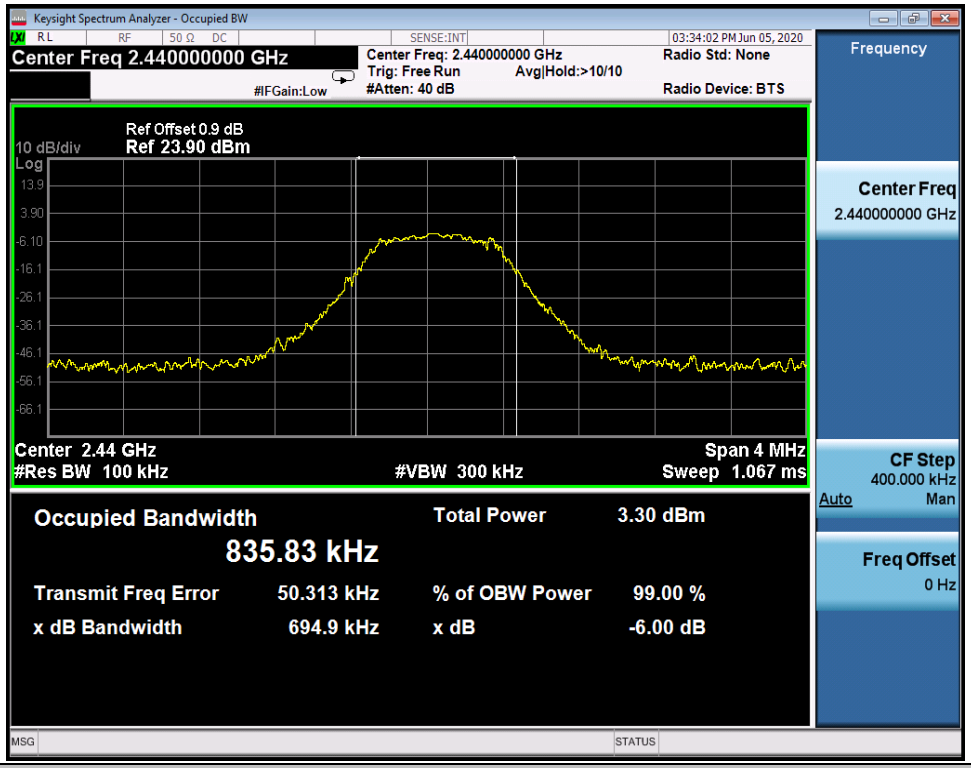
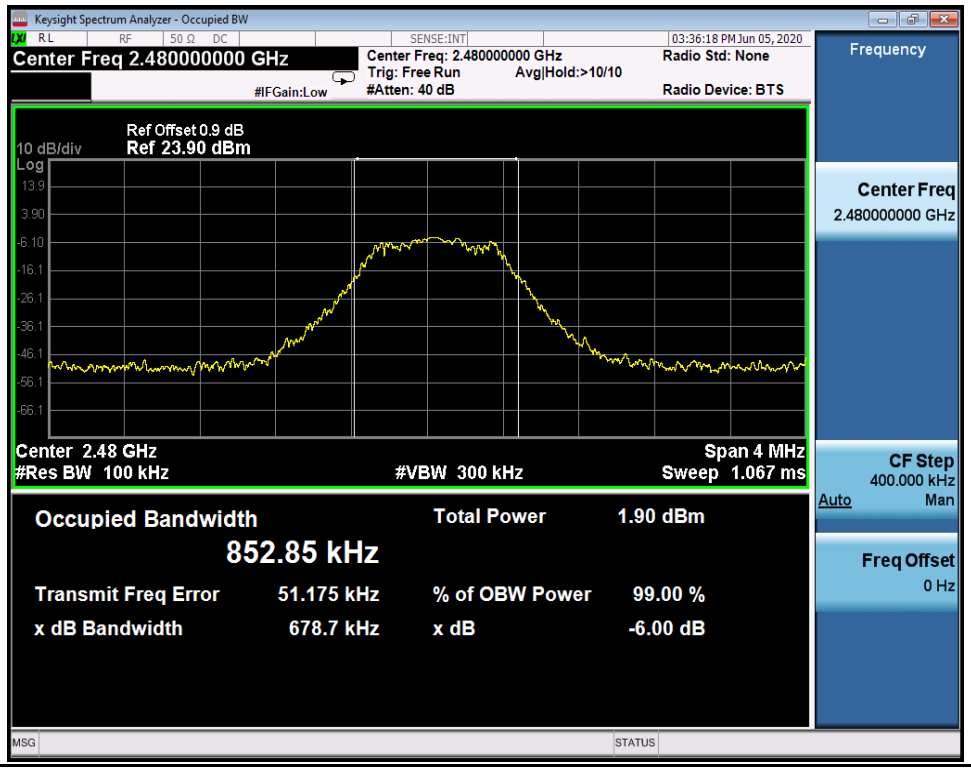
6dB Bandwidth_BLE_2440_Ant1



6dB Bandwidth_BLE_2480_Ant1



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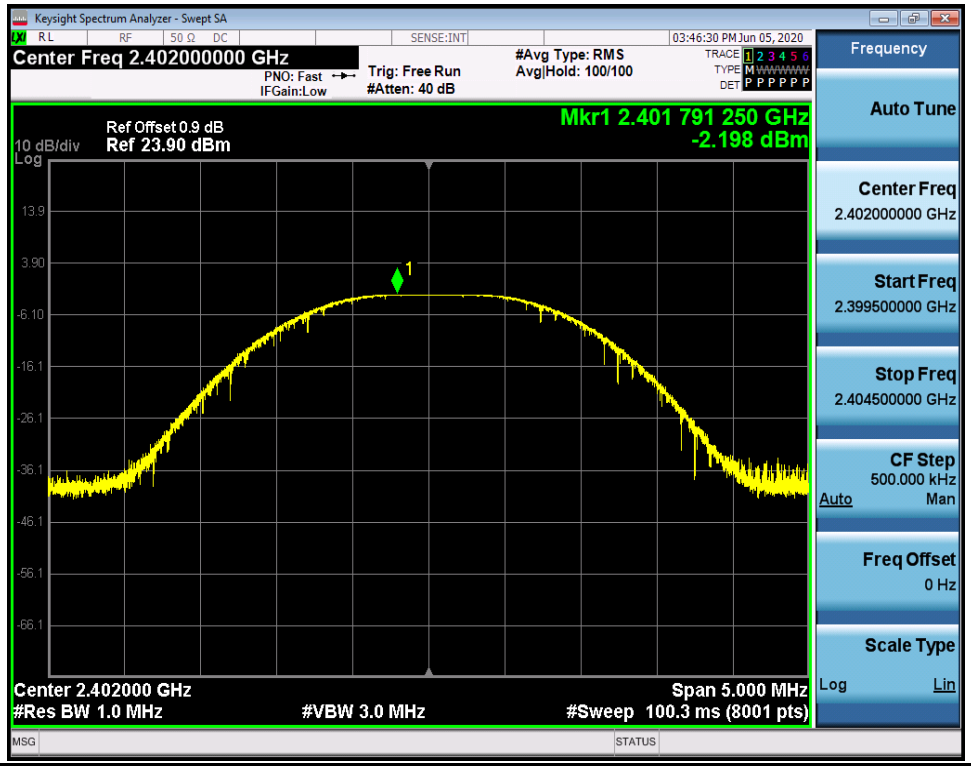
2.Maximum peak conducted output power

Test Mode	Test Channel	Ant	Power[dBm]	Limit[dBm]	Verdict
BLE	2402	Ant1	-2.198	30	PASS
BLE	2440	Ant1	-3.065	30	PASS
BLE	2480	Ant1	-4.133	30	PASS

TEST PLOT
Maximum peak conducted output power_BLE_2402_Ant1



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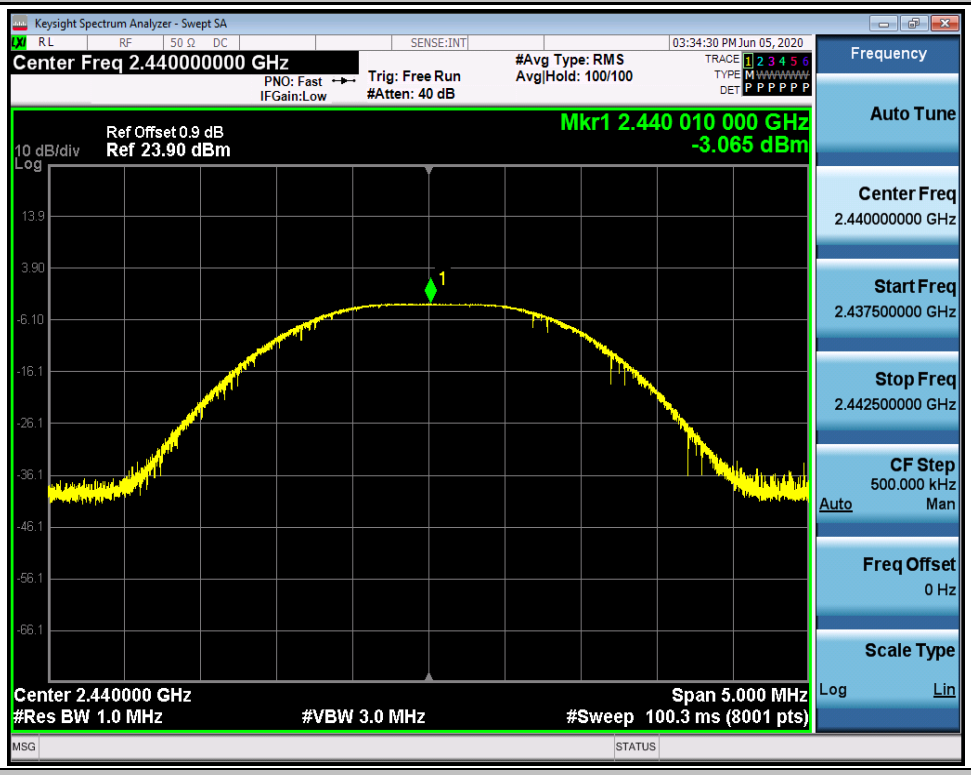
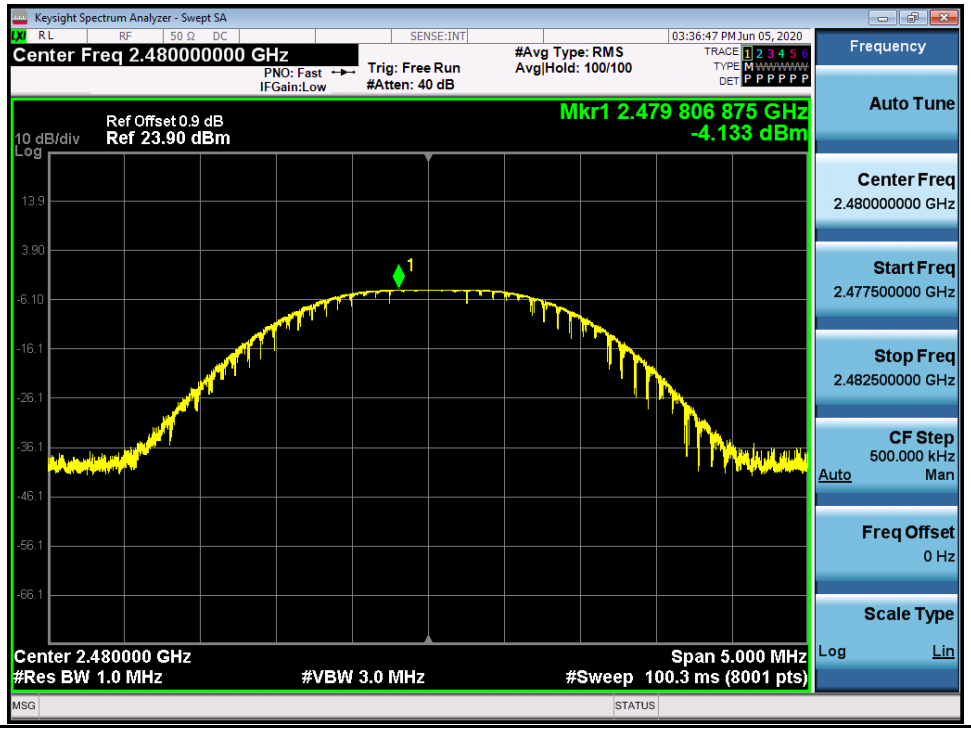
Maximum peak conducted output power_BLE_2440_Ant1



Maximum peak conducted output power_BLE_2480_Ant1



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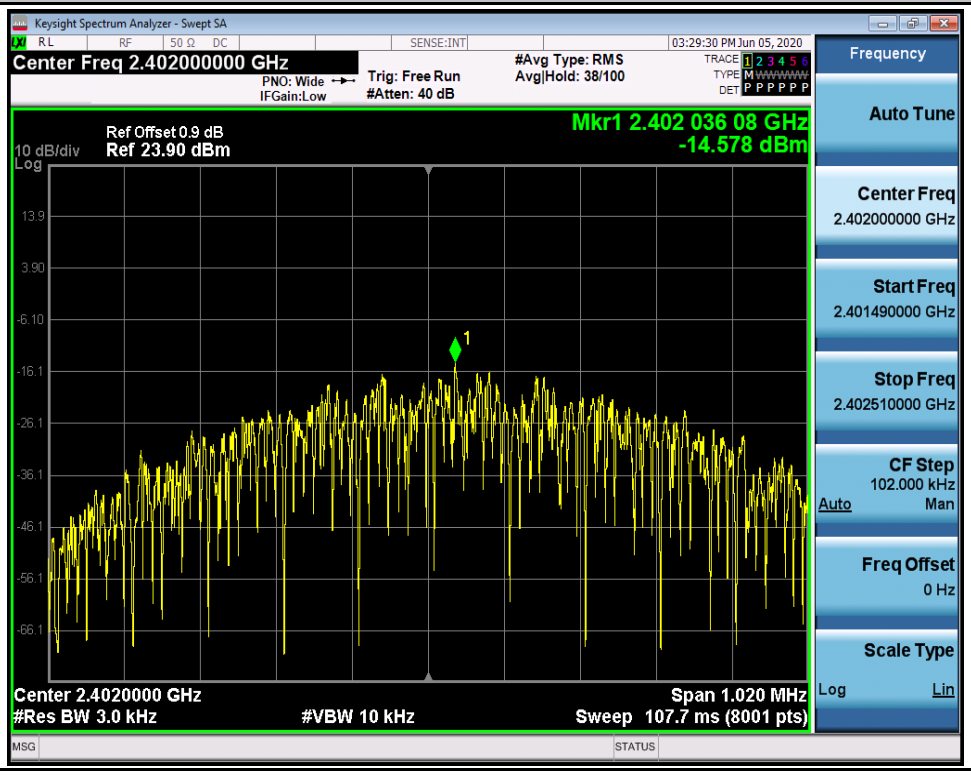
3.Maximum Peak power spectral density

Test Mode	Test Channel	Ant	Result	Limit[dBm/3kHz]	Verdict
BLE	2402	Ant1	-14.578	8.00	PASS
BLE	2440	Ant1	-14.136	8.00	PASS
BLE	2480	Ant1	-14.872	8.00	PASS

TEST PLOT
Maximum Peak power spectral density_BLE_2402_Ant1



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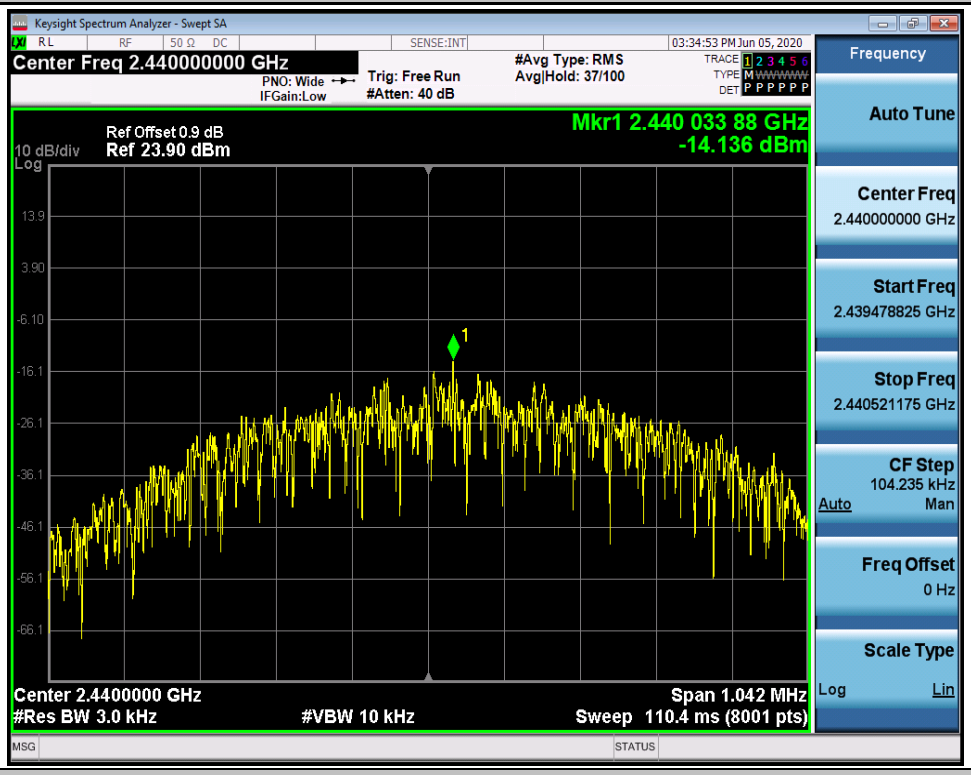
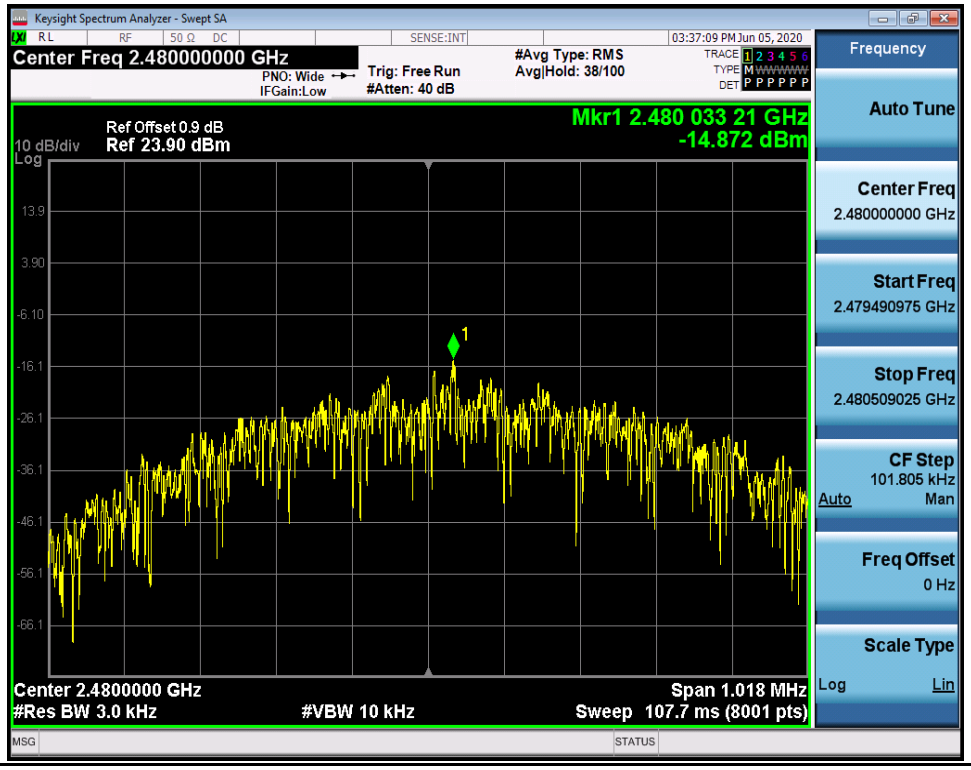
Maximum Peak power spectral density_BLE_2440_Ant1



Maximum Peak power spectral density_BLE_2480_Ant1



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4.Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Ant	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	2402	Ant1	-3.051	-48.611	-23.05	PASS
BLE	2480	Ant1	-4.941	-47.790	-24.94	PASS

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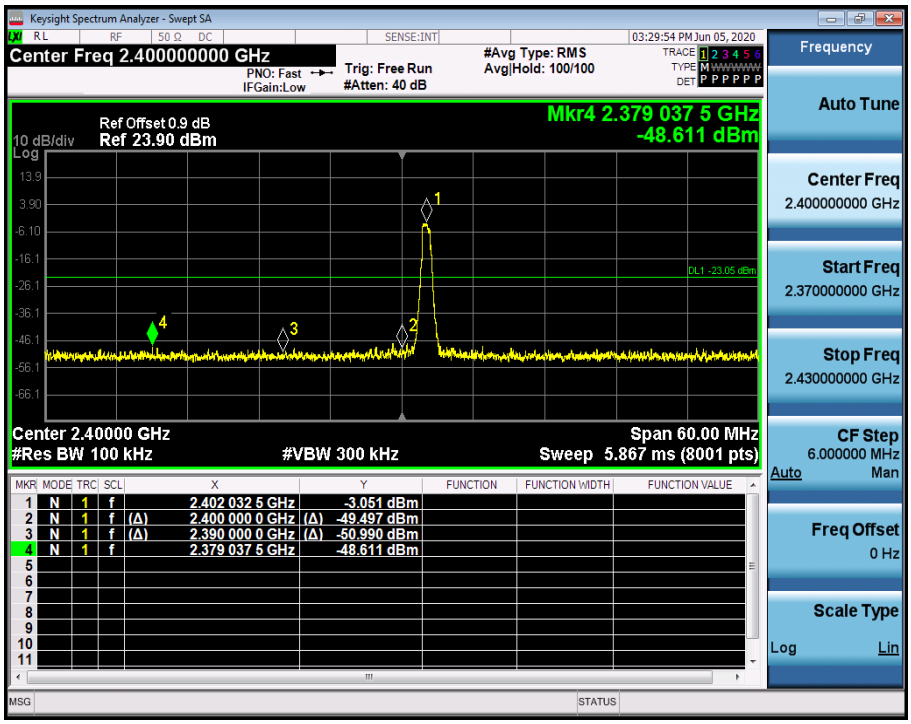
TEST PLOT

Band-edge for RF Conducted Emissions_BLE_2402_Ant1



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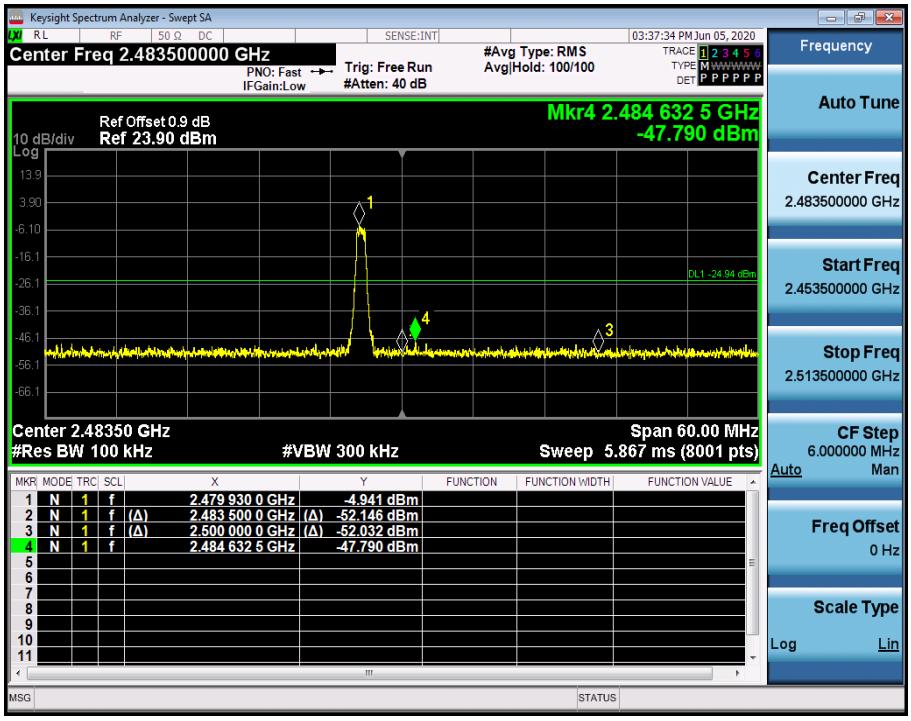

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5.RF Conducted Spurious Emissions

Test Mode	Test Channel	Ant	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BLE	2402	Ant1	30	10000	100	300	-2.779	-53.493	<-22.779	PASS
BLE	2402	Ant1	10000	26000	100	300	-2.779	-51.729	<-22.779	PASS
BLE	2440	Ant1	30	10000	100	300	-3.159	-52.865	<-23.159	PASS
BLE	2440	Ant1	10000	26000	100	300	-3.159	-50.546	<-23.159	PASS
BLE	2480	Ant1	30	10000	100	300	-4.23	-49.486	<-24.23	PASS
BLE	2480	Ant1	10000	26000	100	300	-4.23	-51.724	<-24.23	PASS

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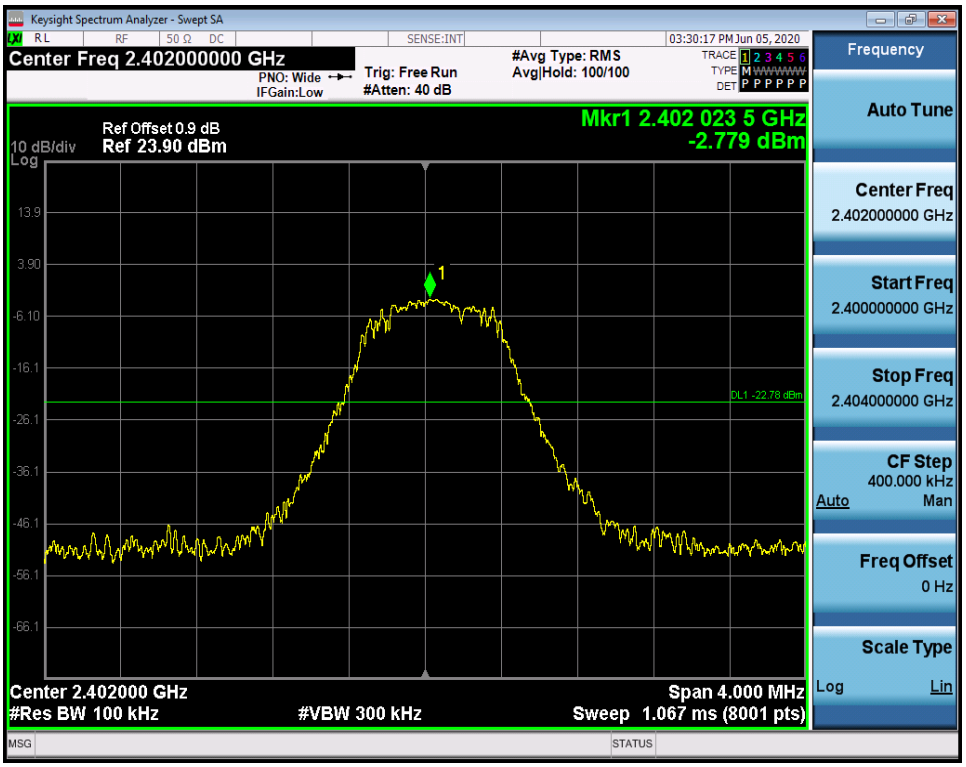
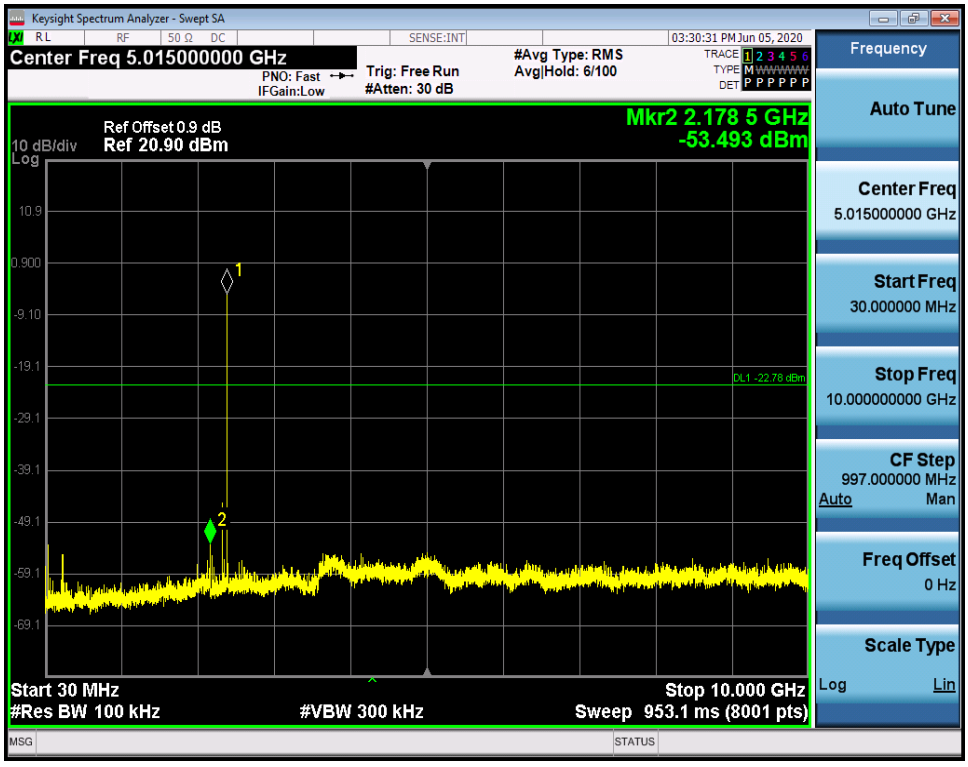
TEST PLOT	
RF Conducted Spurious Emissions_BLE_2402_Ant1	
Pref	
CSE_1	

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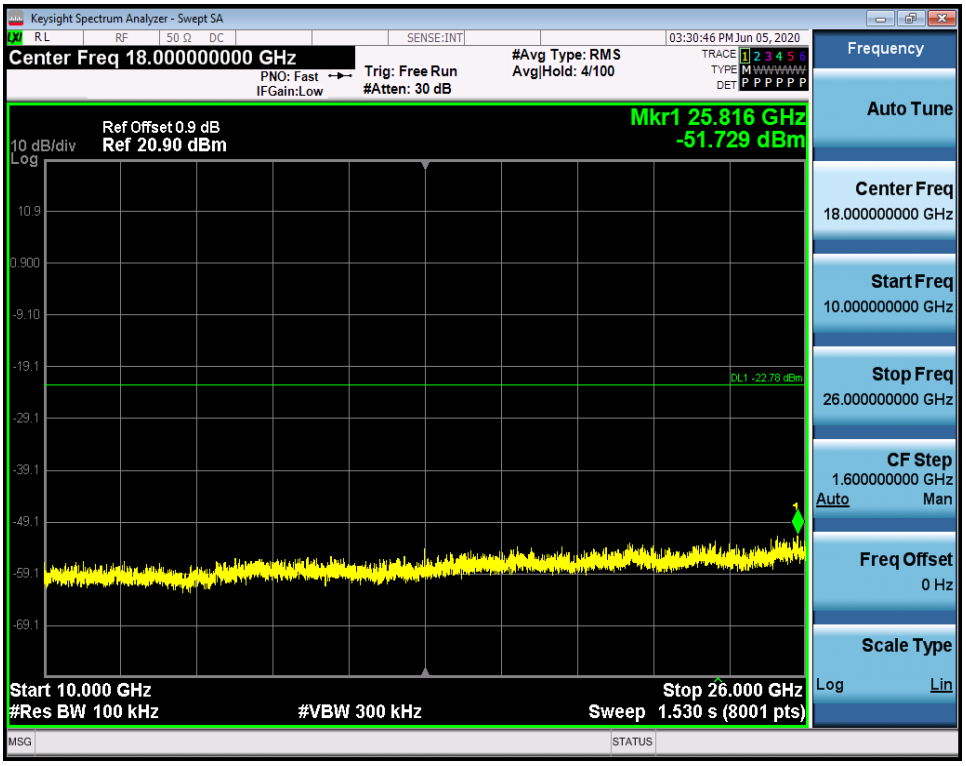
CSE_2	
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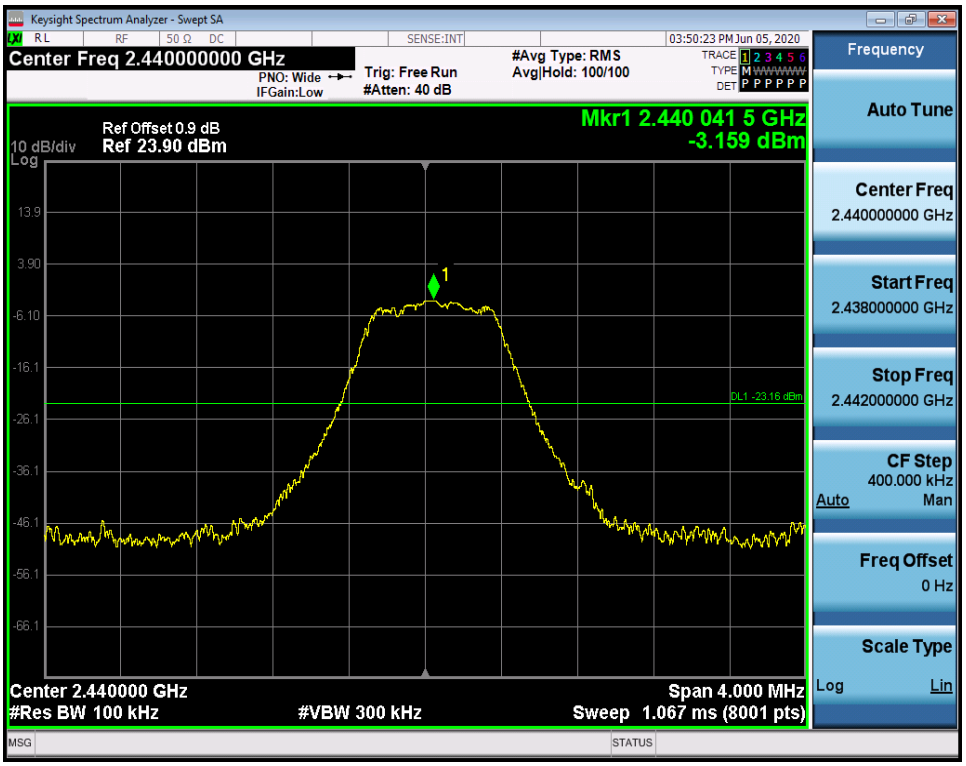
Pref	

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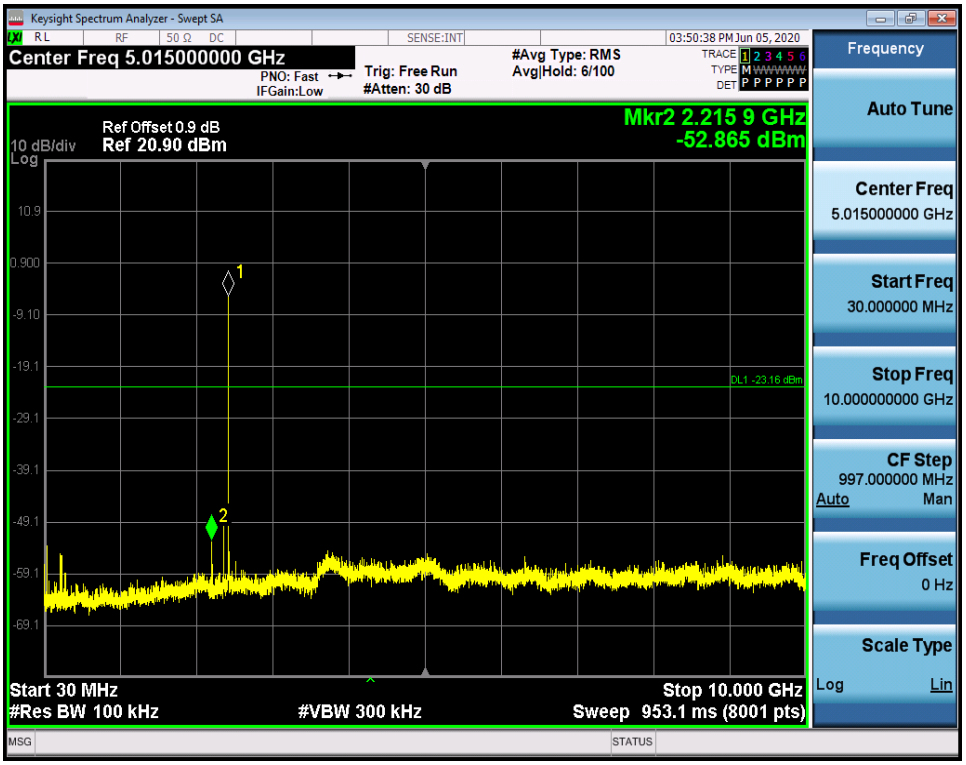
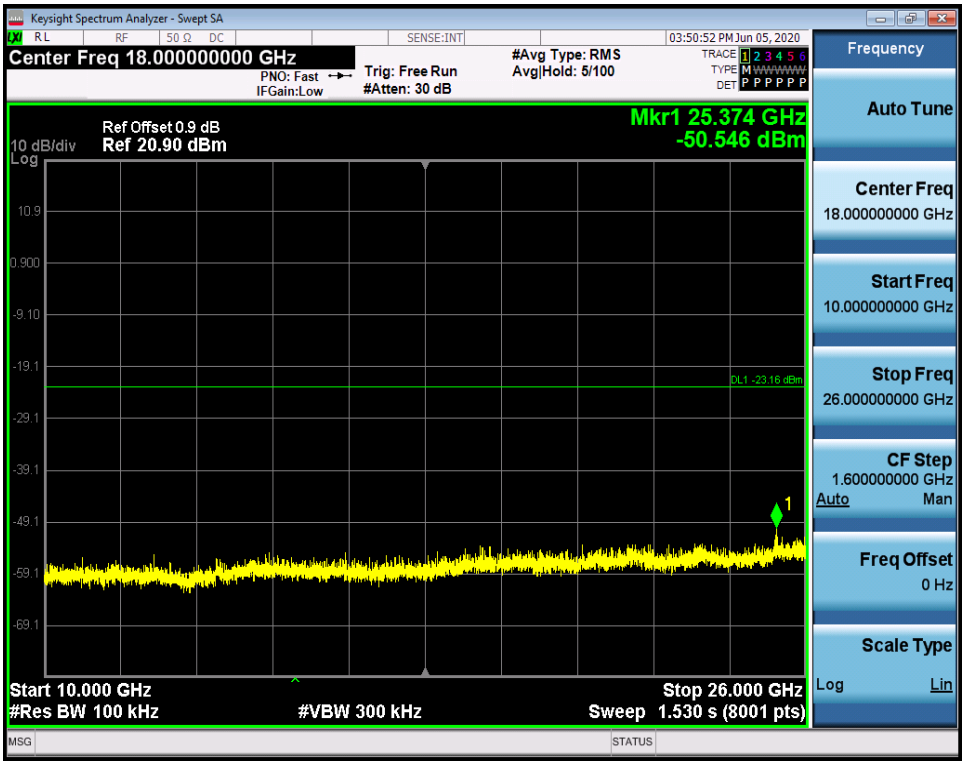
CSE_1	
CSE_2	

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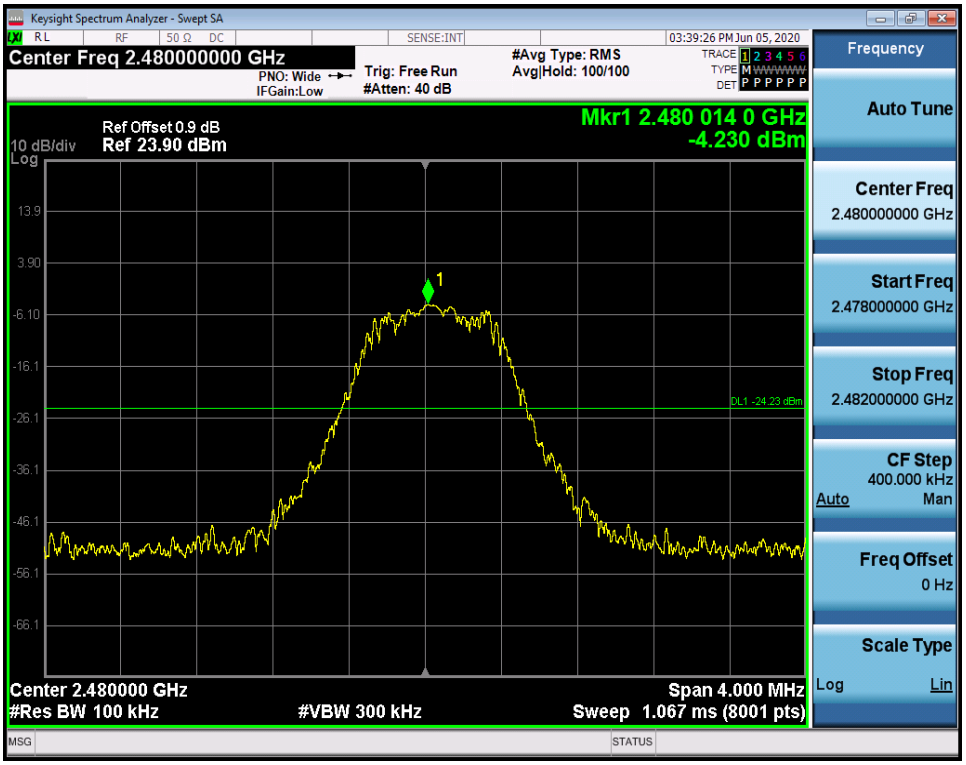
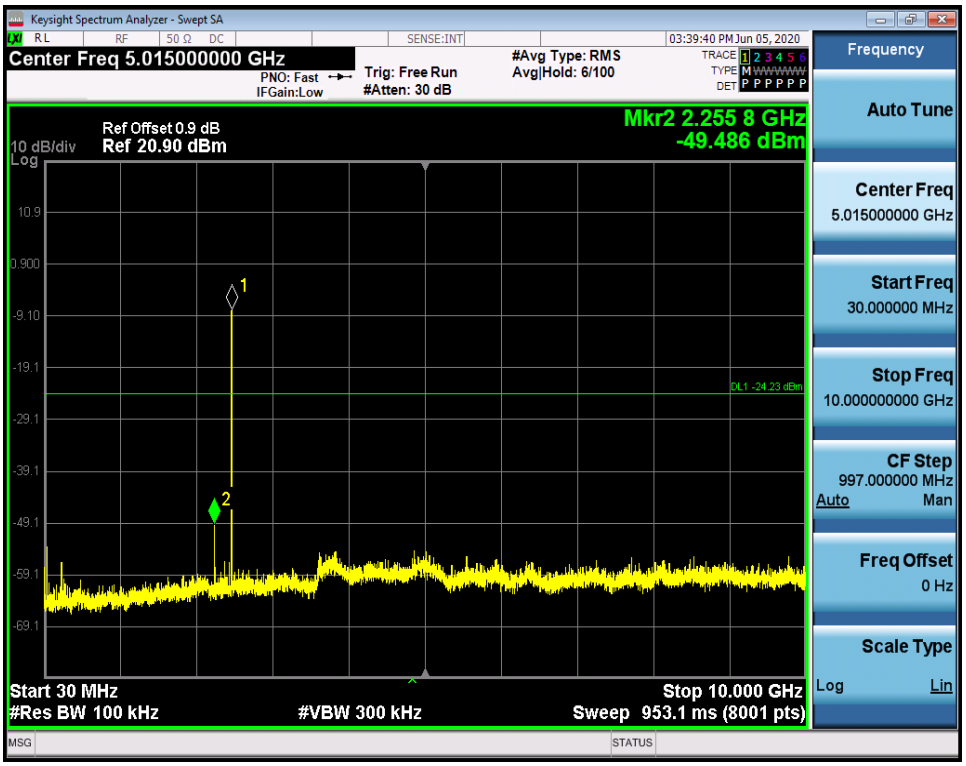
RF Conducted Spurious Emissions_BLE_2480_Ant1	
Pref	
CSE_1	

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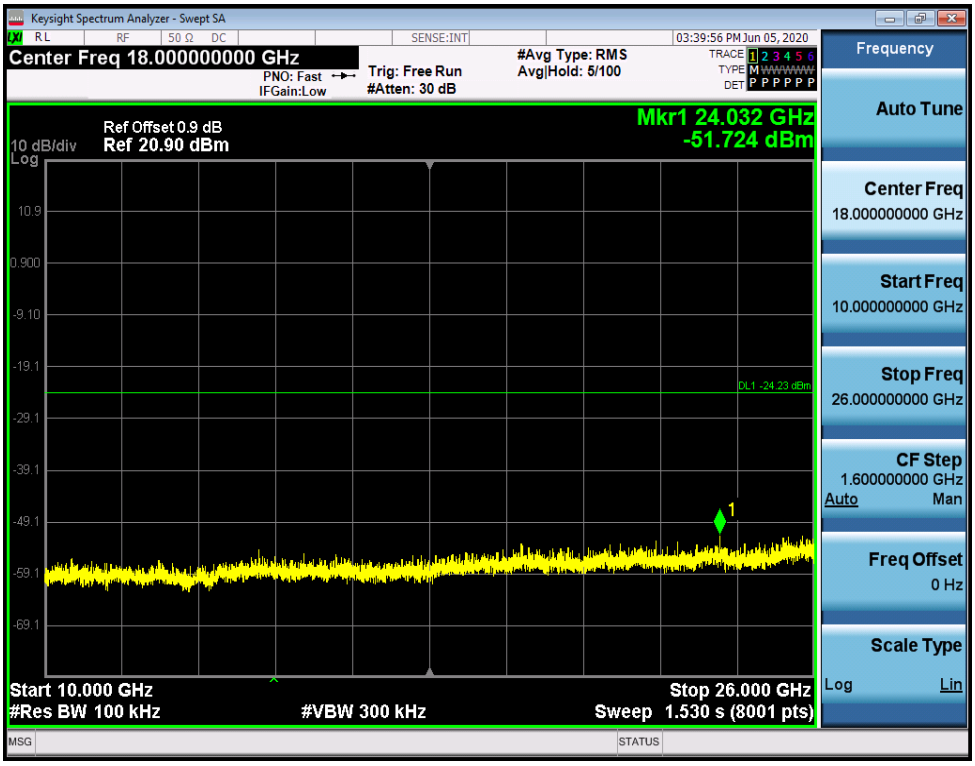
CSE_2	

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6.Duty cycle

Test mode	Test channel	Ant	T_{on}	T_{on+off}	Duty cycle
BLE	2402	Ant1	0.60ms	55.2ms	1.09%
BLE	2440	Ant1	0.60ms	55.2ms	1.09%
BLE	2480	Ant1	0.60ms	55.4ms	1.08%

--End of Report--

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