TEST REPORT

Application No.:	FYFR2203000013AT
Applicant:	Earfun Technology (HK) Limited
Address of Applicant:	FLAT/RM A 9F,SILVERCORP INTERNATIONAL TOWER 707-713 NATHAN ROAD MONGKOK KL, HONG KONG
Manufacturer:	Earfun Technology (HK) Limited
Address of Manufacturer:	FLAT/RM A 9F,SILVERCORP INTERNATIONAL TOWER 707-713 NATHAN ROAD MONGKOK KL, HONG KONG
Factory:	Shenzhen Wintop Technology Co., Ltd
Address of Factory:	No. 46 Xinhe Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen City, Guangdong, China
Equipment Under Test (EUT):	
EUT Name:	ANC Wireless Earbuds
Model No.:	TW306
Trade Mark:	EarFun
FCC ID:	2AVIT-TW306
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2022-03-02
Date of Test:	2022-03-03 to 2022-03-07
Date of Issue:	2022-03-08
Test Result:	**Pass***

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

Kidd Yang
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2022-03-08		Original

Authorized for issue by:				
		Tree Zhan **Tree Zhan/Project Engineer**		
		Winkey Wang **Winkey Wang/Reviewer**		

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中国·深圳·宝安区福永街道凤塘大道鑫龙科技园福永实验室 邮编: 518103 t (86–755) 88663988 f (86–755) 26710594 sgs.china@sgs.com

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(b)(4)	Pass
Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence		N/A	47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(1)	Pass
20dB Bandwidth		ANSI C63.10 (2013) Section 7.8.7	47 CFR Part 15, Subpart C 15.247(a)(1)	Pass
Carrier Frequencies Separation		ANSI C63.10 (2013) Section 7.8.2	47 CFR Part 15, Subpart C 15.247a(1)	Pass
Hopping Channel Number		ANSI C63.10 (2013) Section 7.8.3	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Dwell Time		ANSI C63.10 (2013) Section 7.8.4	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 7.8.6	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 7.8.8	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

3 Contents

4 General Information

4.1 Details of E.U.T.

Power Supply:	Battery: Left earbuds: Li-Ion Polymer Battery 3.7V 35mAh(Charge by travel case) Right earbuds: Li-Ion Polymer Battery 3.7V 35mAh(Charge by travel case) travel case with backup battery: Li-Ion Polymer Battery 3.7V 380mAh(Charged by Type-C port)
Cable(s):	Type-c cable 22cm Unshielded Non-Core
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.2 Dual mode
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	FPC Antenna
Antenna Gain:	Left earbuds & Right earbuds Max.: -3.09dBi

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
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The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Peak Output Power	± 0.8dB
20dB Bandwidth	± 0.3%
Carrier Frequencies Separation	± 0.3%
Hopping Channel Number	± 0.3%
Dwell Time	± 0.3%
Conducted Band Edges Measurement	± 2.7dB
Conducted Spurious Emissions	± 2.7dB
Radiated Emissions which fall in the restricted bands	± 4.4dB (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	± 3.1dB (Below 1GHz)
Radiated Spurious Emissions Above 1GHz	± 4.4dB (Above 1GHz)

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{cispr/ETSI}$ (CISPR/ETSI Uncertainty), so the test results

– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.4 Test Location

All tests were performed at:

Compliance Certification Services（Kunshan）Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark,Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 6606.01)

Compliance Certification Services（Kunshan）Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

• FCC –Designation Number: CN1322

Compliance Certification Services（Kunshan）Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

• Innovation, Science and Economic Development Canada

Compliance Certification Services（Kunshan）Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

20dB Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12

Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Carrier Frequencies Separation					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Hopping Channel Number					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12

6GHz)					
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Dwell Time					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Conducted Band Edges Measurement					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12

26.5GHz)					
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Conducted Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2021/7/13	2022/7/12
MXA Signal Analyzer(10Hz-26.5GHz)	Agilent	N9020A	SEM004-20	2021/7/13	2022/7/12
Signal Generator(9kHz-40GHz)	Agilent	N5173B	SEM006-05	2021/7/13	2022/7/12
ESG Vector Signal Generator(250kHz-6GHz)	Agilent	E4438C	SEM006-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-15	2021/7/13	2022/7/12
Power Sensor	Erika Fiedler	U2021XA	SEM009-16	2021/7/13	2022/7/12
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08	2021/7/13	2022/7/12
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2021/7/13	2022/7/12
Attenuator(18GHz, 20dB, 2W)	Huber+Suhner	6620_SMA-50-1	SEM021-09	2021/7/13	2022/7/12
Electric and Magnetic Field Probe - Analyzer(3kHz-30MHz)	Narda	EHP-200AC	SEM022-20	2021/4/8	2022/4/7

Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Trilog-Broadband Antenna(25MHz-2GHz)	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
Biconical Antenna(150MHz-1GHz)	Schwarzbeck	VUBA9117	SEM003-35	2021/12/26	2024/12/25
Loop Antenna(9kHz-30MHz)	ETS-LINDGREN	6502	SEM003-36	2021/9/26	2024/9/25
MXE EMI receiver(20Hz-8.4GHz)	Agilent	N9038A	SEM004-05	2021/7/13	2022/7/12
Pre-amplifier (0.1-1.3GHz)	HP	8447D	SEM005-02	2021/7/13	2022/7/12
Broad-Band Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10
Broad-Band Horn Antenna (1-18GHz)	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
Double-ridged waveguide horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-34	2021/9/25	2024/9/24
Spectrum Analyzer(20Hz-43GHz)	Rohde & Schwarz	101288	SEM004-08	2021/7/13	2022/7/12
Low Noise Amplifier(100MHz-18GHz)	CLAVIIO	BDLNA-0118-352810	SEM005-05	2021/7/13	2022/7/12
Pre-amplifier(26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021/7/13	2022/7/12
Pre-amplifier(18GHz-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2021/7/13	2022/7/12

Radiated Spurious Emissions Below 1GHz					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Trilog-Broadband Antenna(25MHz-2GHz)	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
Biconical Antenna(150MHz-1GHz)	Schwarzbeck	VUBA9117	SEM003-35	2021/12/26	2024/12/25
Loop Antenna(9kHz-30MHz)	ETS-LINDGREN	6502	SEM003-36	2021/9/26	2024/9/25
MXE EMI receiver(20Hz-8.4GHz)	Agilent	N9038A	SEM004-05	2021/7/13	2022/7/12
Pre-amplifier (0.1-1.3GHz)	HP	8447D	SEM005-02	2021/7/13	2022/7/12
Broad-Band Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10

Broad-Band Horn Antenna (1-18GHz)	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
Double-ridged waveguide horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-34	2021/9/25	2024/9/24
Spectrum Analyzer(20Hz-43GHz)	Rohde & Schwarz	101288	SEM004-08	2021/7/13	2022/7/12
Low Noise Amplifier(100MHz-18GHz)	CLAVIIO	BDLNA-0118-352810	SEM005-05	2021/7/13	2022/7/12
Pre-amplifier(26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021/7/13	2022/7/12
Pre-amplifier(18GHz-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2021/7/13	2022/7/12

Radiated Spurious Emissions Above 1GHz					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Trilog-Broadband Antenna(25MHz-2GHz)	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
Biconical Antenna(150MHz-1GHz)	Schwarzbeck	VUBA9117	SEM003-35	2021/12/26	2024/12/25
Loop Antenna(9kHz-30MHz)	ETS-LINDGREN	6502	SEM003-36	2021/9/26	2024/9/25
MXE EMI receiver(20Hz-8.4GHz)	Agilent	N9038A	SEM004-05	2021/7/13	2022/7/12
Pre-amplifier (0.1-1.3GHz)	HP	8447D	SEM005-02	2021/7/13	2022/7/12
Broad-Band Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10
Broad-Band Horn Antenna (1-18GHz)	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
Double-ridged waveguide horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-34	2021/9/25	2024/9/24
Spectrum Analyzer(20Hz-43GHz)	Rohde & Schwarz	101288	SEM004-08	2021/7/13	2022/7/12
Low Noise Amplifier(100MHz-18GHz)	CLAVIIO	BDLNA-0118-352810	SEM005-05	2021/7/13	2022/7/12
Pre-amplifier(26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021/7/13	2022/7/12
Pre-amplifier(18GHz-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2021/7/13	2022/7/12

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-22	2021-07-13	2022-07-12
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-23	2021-07-13	2022-07-12
Barometer	DUMAI	DYM3	SEM002-24	2021-07-13	2022-07-12

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

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 Left earbuds & Right earbuds Max.: -3.09dBi.

Antenna location: Refer to internal photo.

6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

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

> Number of shift register stages: 9

> Length of pseudo-random sequence: 29 -1 = 511 bits

> Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g):

According to Technical Specification, the system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h):

According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

The system is designed not have the ability to coordinated with other FHSS System in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitter.

7 Radio Spectrum Matter Test Results

7.1 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.5

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

7.1.1 E.U.T. Operation

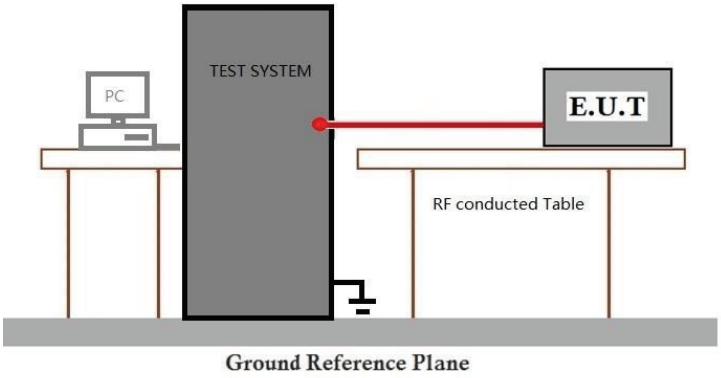
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247(a)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.7

7.2.1 E.U.T. Operation

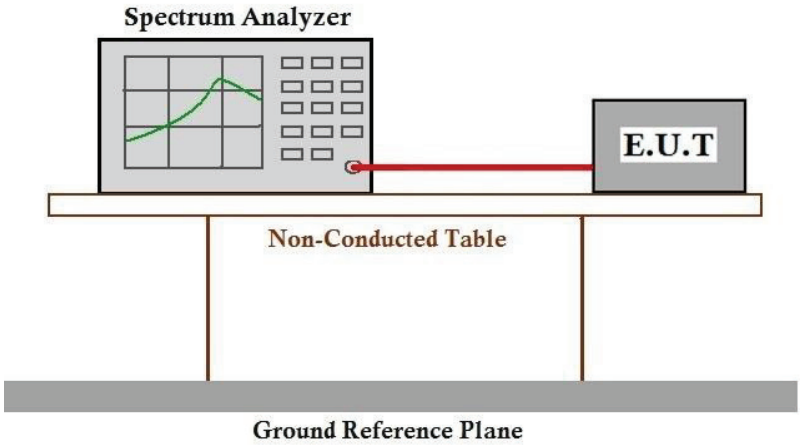
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.3 Carrier Frequencies Separation

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)

Test Method: ANSI C63.10 (2013) Section 7.8.2

Limit:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

7.3.1 E.U.T. Operation

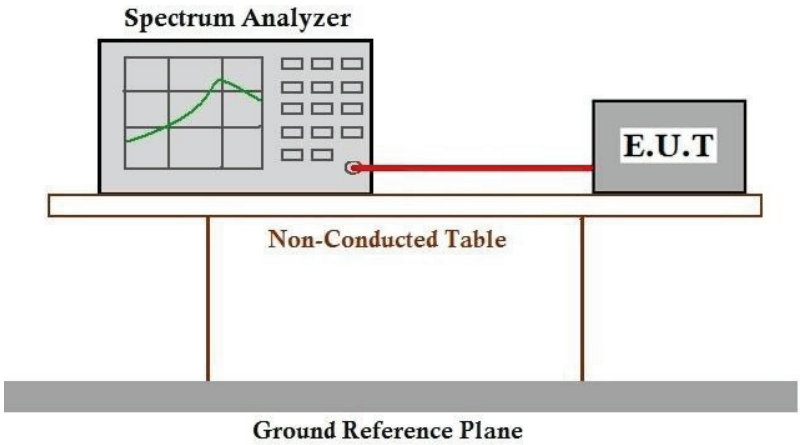
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX_Hop mode (Left earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	03	TX_Hop mode (Right earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.4 Hopping Channel Number

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.3

Limit:

Frequency range(MHz)	Number of hopping channels (minimum)
902-928	50 for 20dB bandwidth <250kHz
	25 for 20dB bandwidth ≥250kHz
2400-2483.5	15
5725-5850	75

7.4.1 E.U.T. Operation

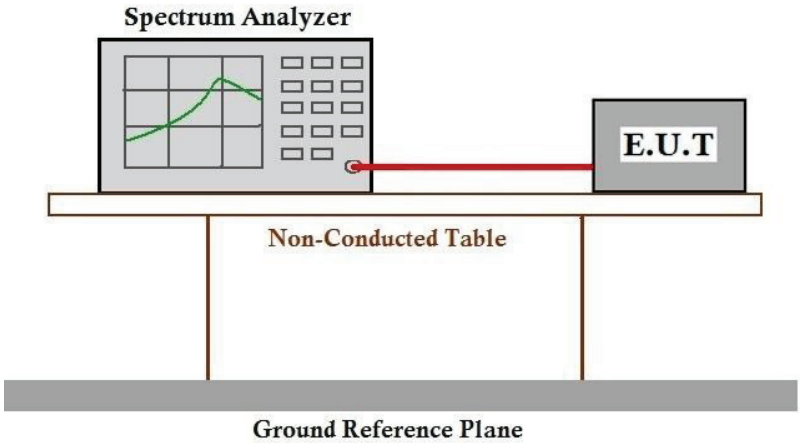
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX_Hop mode (Left earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	03	TX_Hop mode (Right earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.5 Dwell Time

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.4

Limit:

Frequency(MHz)	Limit
902-928	0.4S within a 20S period(20dB bandwidth<250kHz)
	0.4S within a 10S period(20dB bandwidth≥250kHz)
2400-2483.5	0.4S within a period of 0.4S multiplied by the number of hopping channels
5725-5850	0.4S within a 30S period

7.5.1 E.U.T. Operation

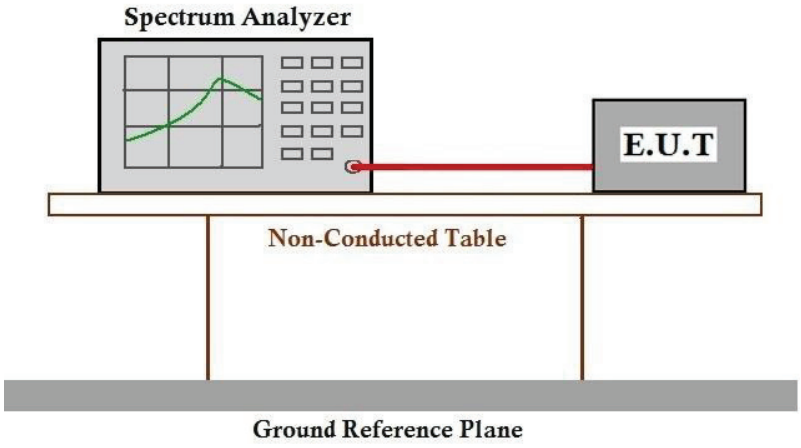
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX_Hop mode (Left earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	03	TX_Hop mode (Right earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.6 Conducted Band Edges Measurement

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

Test Method: ANSI C63.10 (2013) Section 7.8.6

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).

7.6.1 E.U.T. Operation

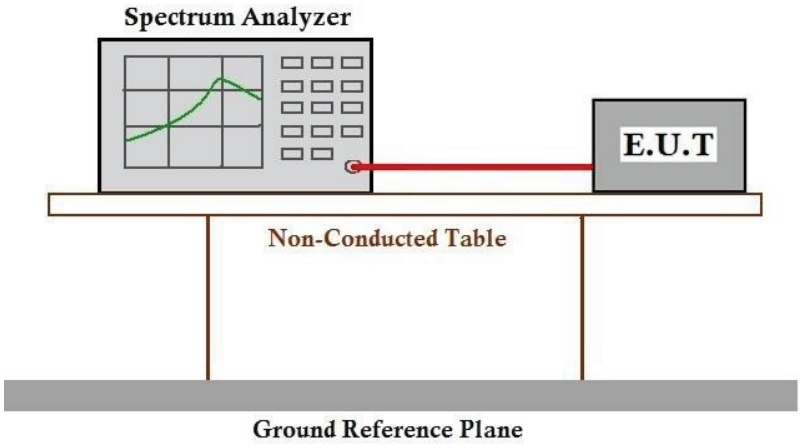
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	01	TX_Hop mode (Left earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	03	TX_Hop mode (Right earbuds)_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 Conducted Spurious Emissions

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

Test Method: ANSI C63.10 (2013) Section 7.8.8

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).

7.7.1 E.U.T. Operation

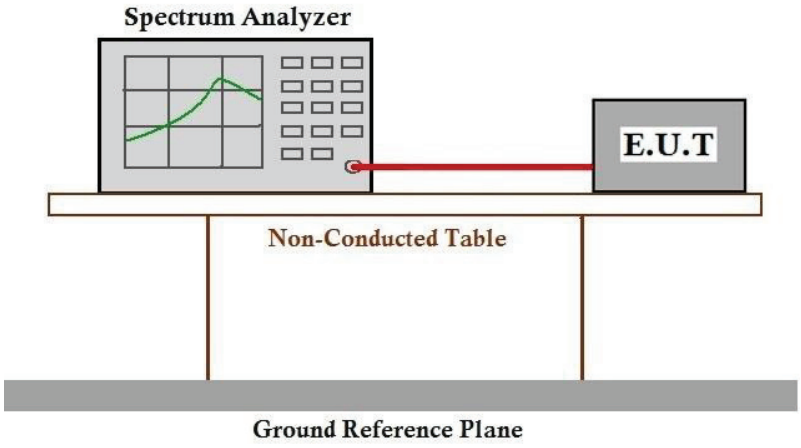
Operating Environment:

Temperature: 21.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1015 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 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.		

7.8.1 E.U.T. Operation

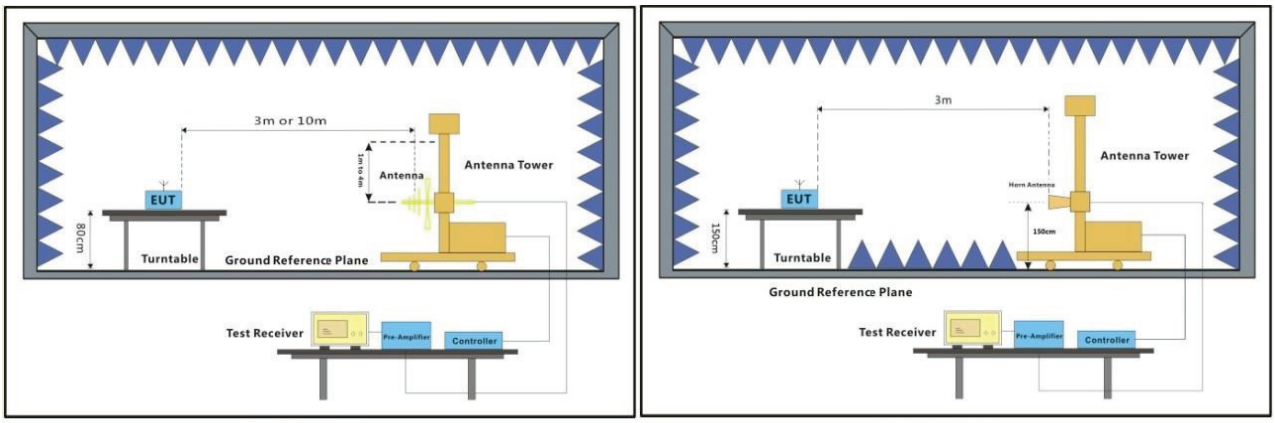
Operating Environment:

Temperature: 22.8 °C Humidity: 52.2 % RH Atmospheric Pressure: 1015 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram



30MHz-1GHz　　Above 1GHz

7.8.4 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.

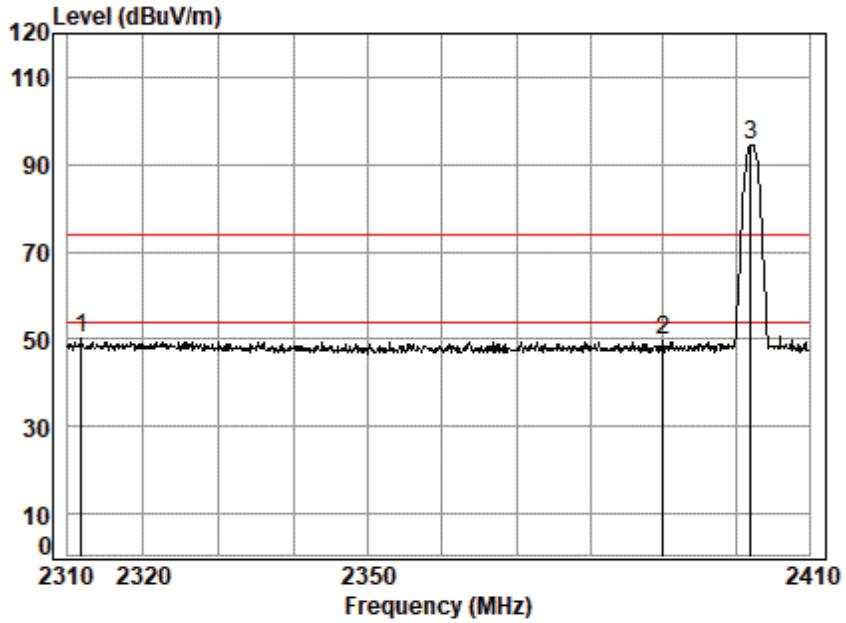
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

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.

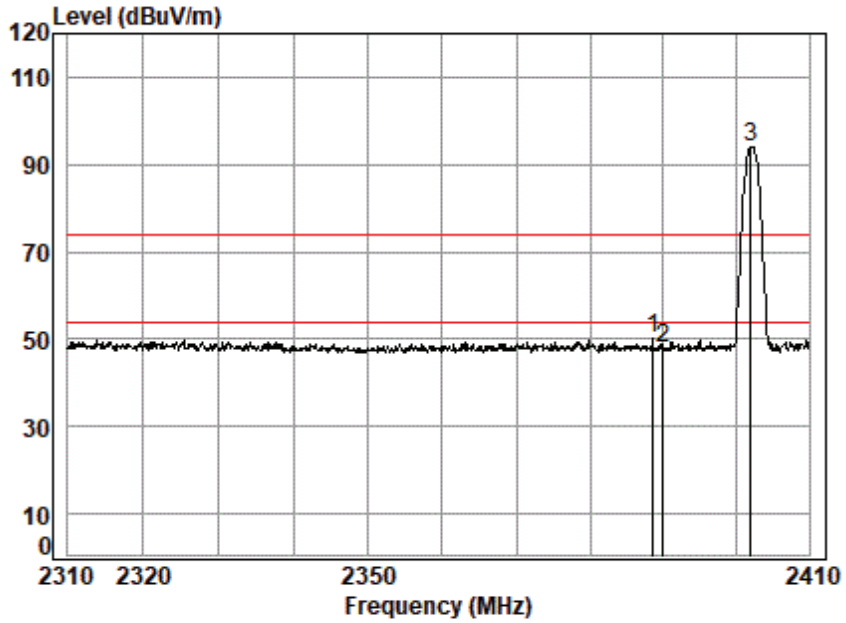
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2402 Band edge
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2311.7630	4.40	28.16	48.23	65.99	50.32	74.00	-23.68	peak
2	2390.0000	4.48	27.72	48.21	65.55	49.54	74.00	-24.46	peak
3	p2402.0000	4.50	27.82	48.21	110.45	94.56	74.00	20.56	peak

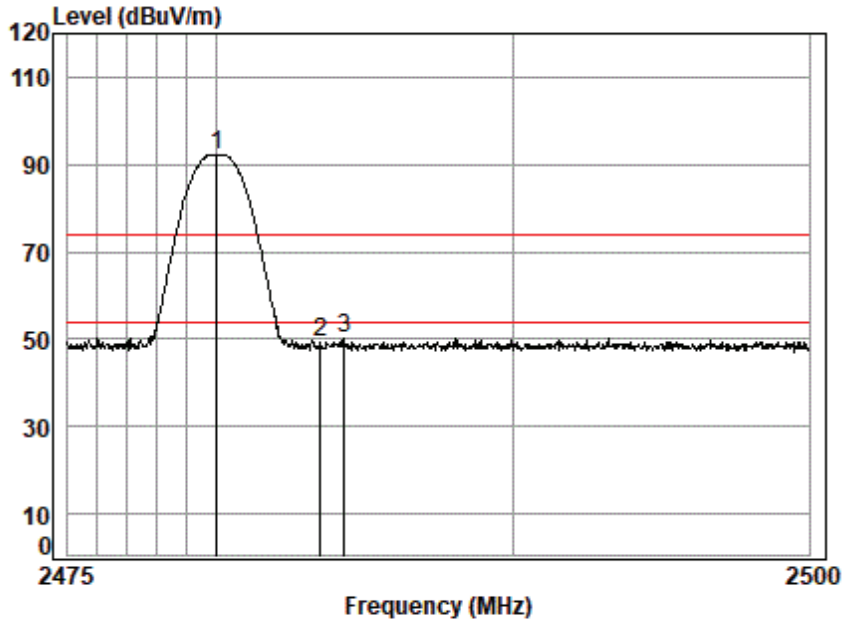
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2402 Band edge
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.5460	4.48	27.71	48.21	66.04	50.02	74.00	-23.98	peak
2	2390.0000	4.48	27.72	48.21	64.11	48.10	74.00	-25.90	peak
3	p2402.0000	4.50	27.82	48.21	109.92	94.03	74.00	20.03	peak

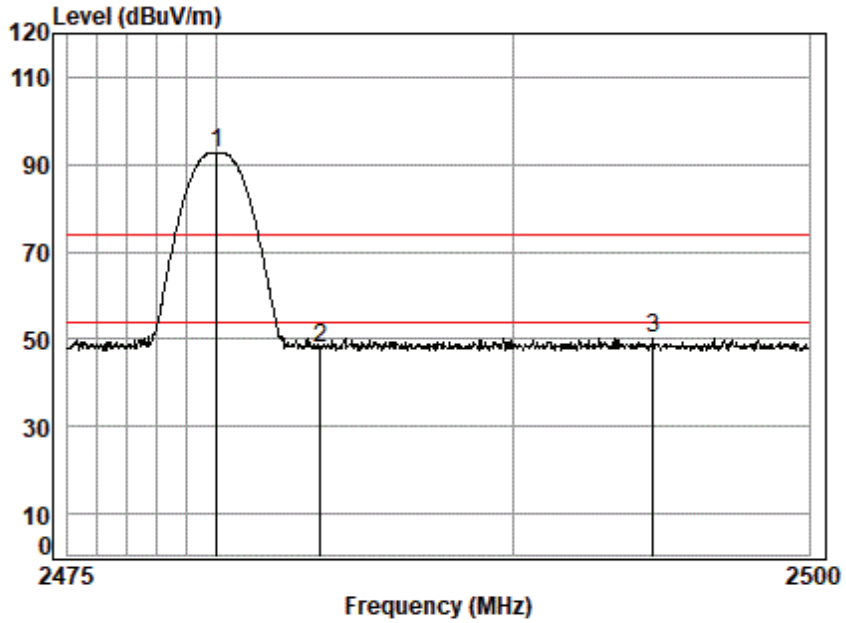
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2480 Band edge
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	p2480.0000	4.58	27.88	48.19	108.07	92.34	74.00	18.34	peak
2	2483.5000	4.58	27.83	48.19	64.96	49.18	74.00	-24.82	peak
3	2484.2960	4.58	27.82	48.19	65.84	50.05	74.00	-23.95	peak

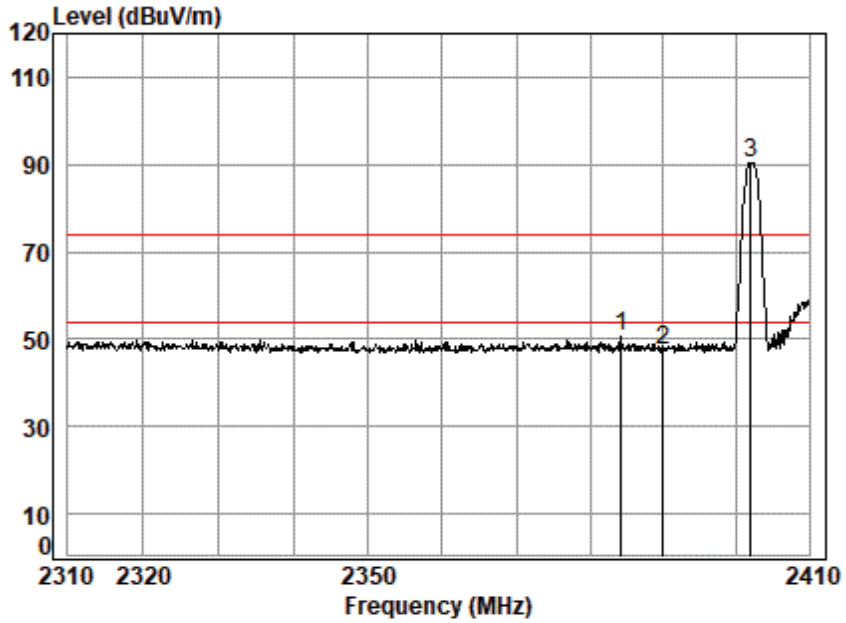
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2480 Band edge
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	p2480.0000	4.58	27.88	48.19	108.50	92.77	74.00	18.77	peak
2	2483.5000	4.58	27.83	48.19	63.55	47.77	74.00	-26.23	peak
3	2494.7290	4.59	27.67	48.19	66.27	50.34	74.00	-23.66	peak

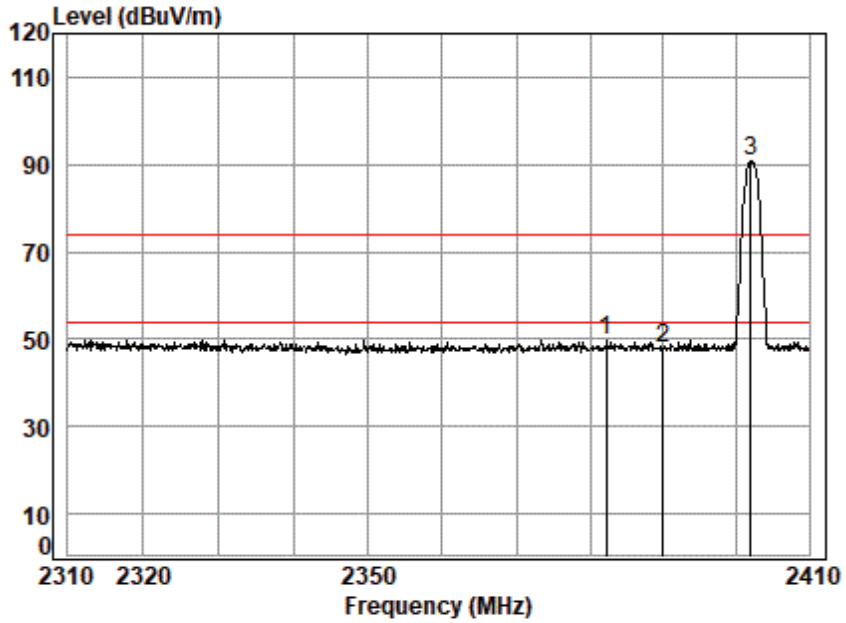
Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2402 Band edge
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2384.1970	4.48	27.67	48.21	66.54	50.48	74.00	-23.52	peak
2	2390.0000	4.48	27.72	48.21	63.40	47.39	74.00	-26.61	peak
3	p2402.0000	4.50	27.82	48.21	106.46	90.57	74.00	16.57	peak

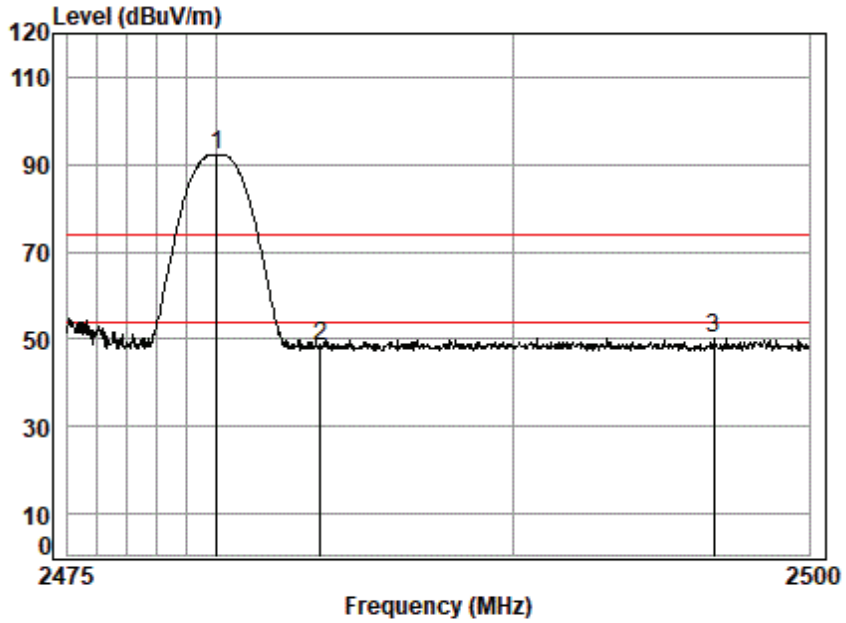
Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2402 Band edge
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2382.2780	4.47	27.66	48.21	66.02	49.94	74.00	-24.06	peak
2	2390.0000	4.48	27.72	48.21	63.96	47.95	74.00	-26.05	peak
3	p2402.0000	4.50	27.82	48.21	106.53	90.64	74.00	16.64	peak

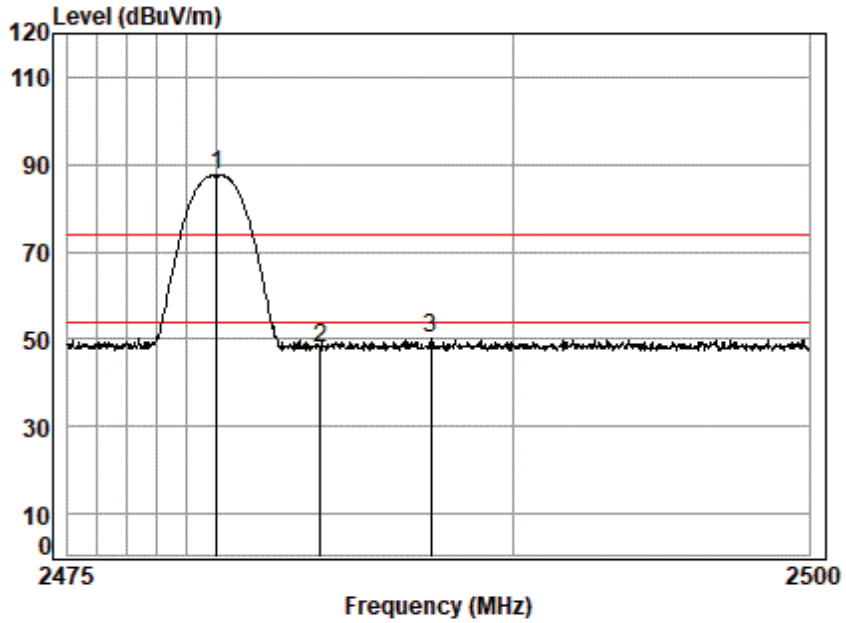
Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2480 Band edge
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	p2480.0000	4.58	27.88	48.19	108.10	92.37	74.00	18.37	peak
2	2483.5000	4.58	27.83	48.19	64.08	48.30	74.00	-25.70	peak
3	2496.7860	4.60	27.64	48.19	66.16	50.21	74.00	-23.79	peak

Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2480 Band edge
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	p2480.0000	4.58	27.88	48.19	103.17	87.44	74.00	13.44	peak
2	2483.5000	4.58	27.83	48.19	63.83	48.05	74.00	-25.95	peak
3	2487.2190	4.59	27.78	48.19	65.79	49.97	74.00	-24.03	peak

7.9 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

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
960-1000	500	3

7.9.1 E.U.T. Operation

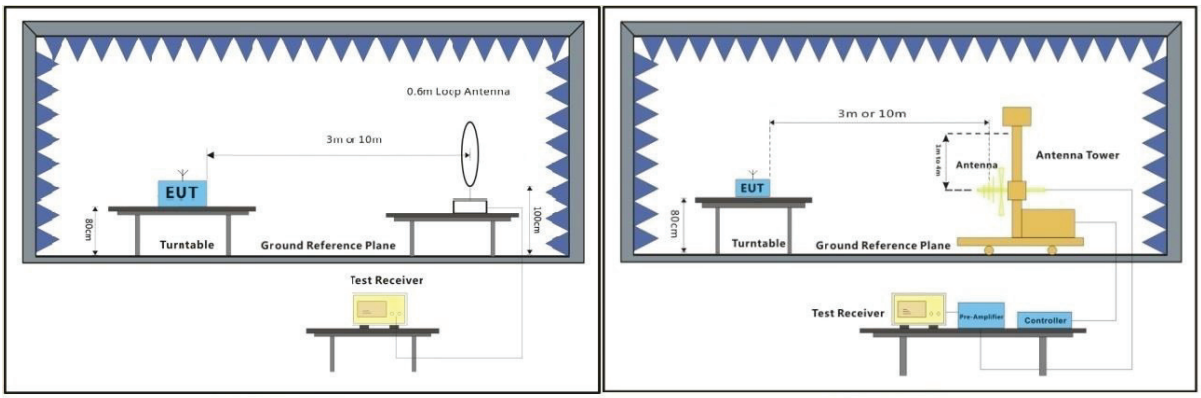
Operating Environment:

Temperature: 22.8 °C Humidity: 52.2 % RH Atmospheric Pressure: 1015 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Pre-scan	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram



Below 30MHz　　30MHz-1GHz

7.9.4 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. 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.

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 table 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 quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. 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.

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

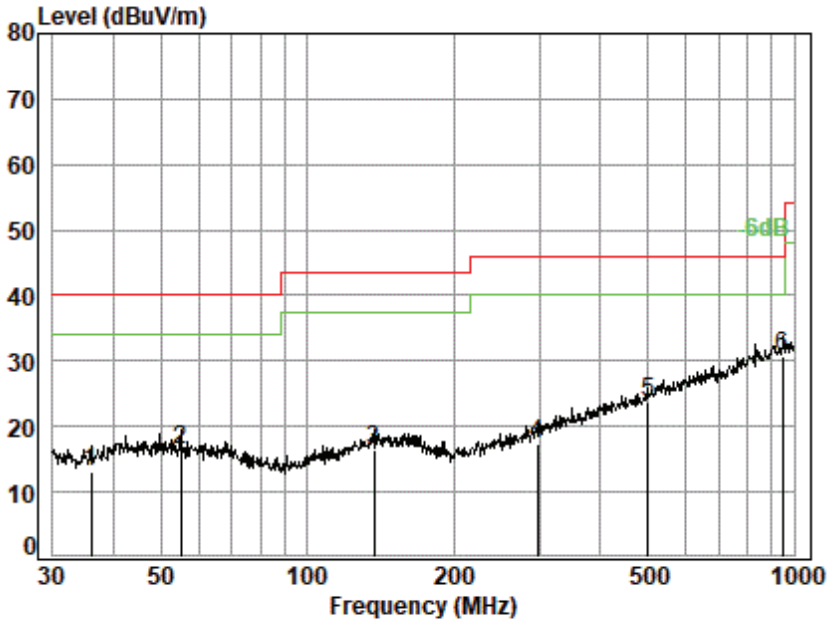
Remark:

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

2. Scan from 9kHz to 30MHz, the disturbance 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.

3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

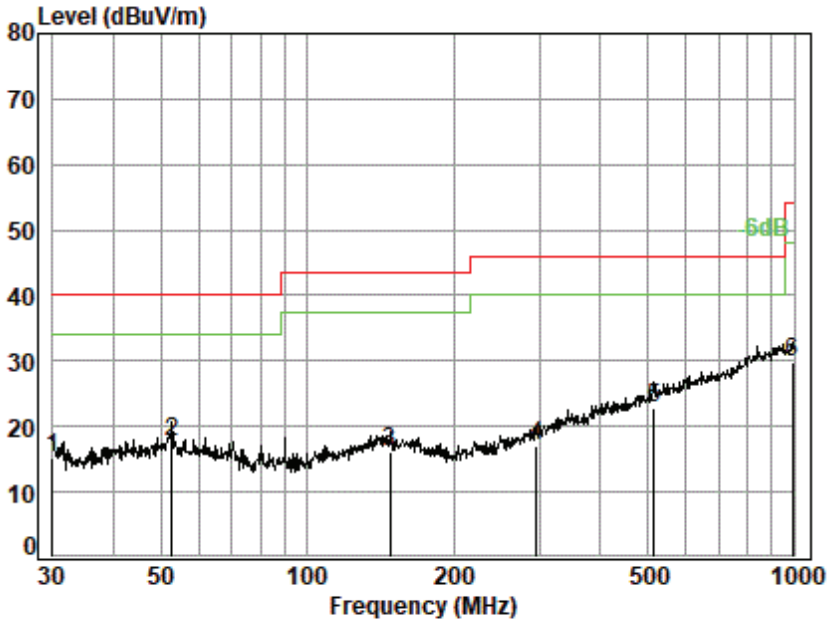
Test Mode: 00; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 00

		Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1		36.0007	0.19	15.88	25.89	22.85	13.03	40.00	-26.97	QP
2		55.0274	0.23	17.25	25.85	24.76	16.39	40.00	-23.61	QP
3		137.4202	0.91	17.23	25.60	23.92	16.46	43.50	-27.04	QP
4		297.2241	1.00	18.21	25.11	23.22	17.32	46.00	-28.68	QP
5		501.1790	1.42	22.91	26.36	25.87	23.84	46.00	-22.16	QP
6	p	948.7610	2.08	29.26	26.29	25.82	30.87	46.00	-15.13	QP

Test Mode: 00; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 00

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.0000	0.18	16.39	25.90	24.52	15.19	40.00	-24.81	QP
2 p	52.7600	0.23	17.28	25.86	26.04	17.69	40.00	-22.31	QP
3	147.9214	0.86	17.43	25.55	23.34	16.08	43.50	-27.42	QP
4	295.1469	0.99	18.12	25.11	22.90	16.90	46.00	-29.10	QP
5	515.4374	1.53	23.24	26.43	24.54	22.88	46.00	-23.12	QP
6	993.0114	2.56	29.31	26.21	24.22	29.88	54.00	-24.12	QP

7.10 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

7.10.1 E.U.T. Operation

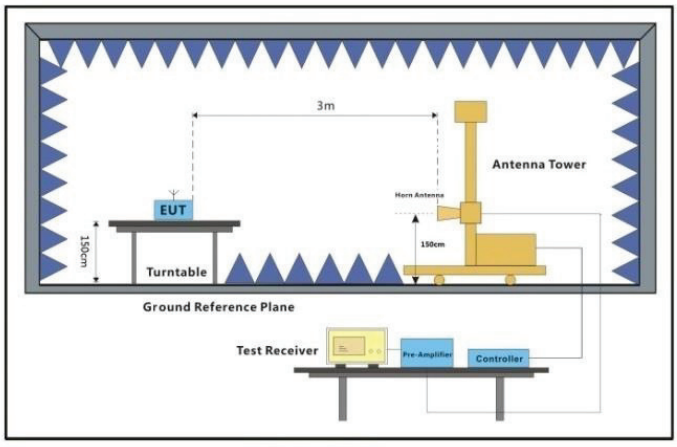
Operating Environment:

Temperature: 22.8 °C Humidity: 52.2 % RH Atmospheric Pressure: 1015 mbar

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode (Left earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.
Final test	02	TX_non-Hop mode (Right earbuds)_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.10.3 Test Setup Diagram



Above 1GHz

7.10.4 Measurement Procedure and Data

a. 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.

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 (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.

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 or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. 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.

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

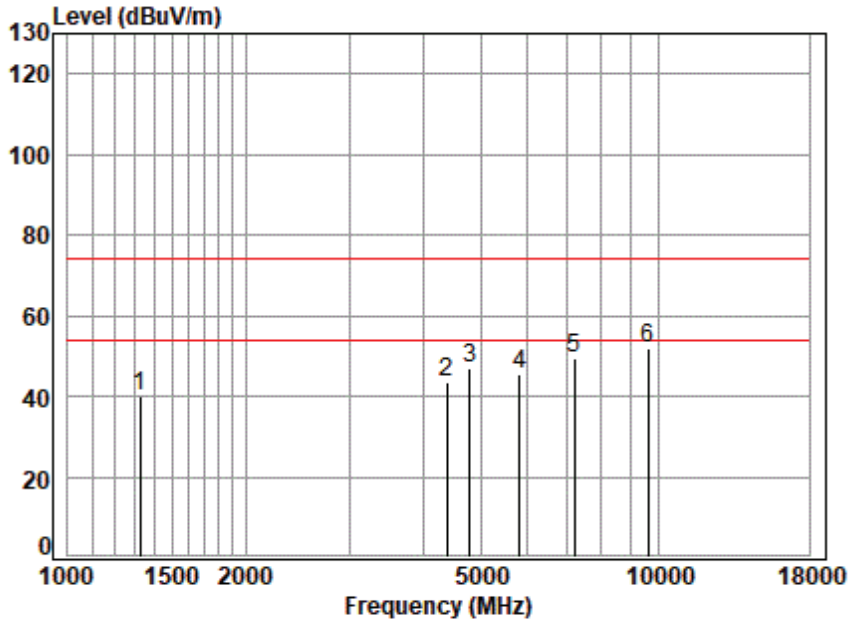
Remark:

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

2. Scan from 1GHz to 25GHz, the disturbance above 18GHz 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.

3. As shown in this section, 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.

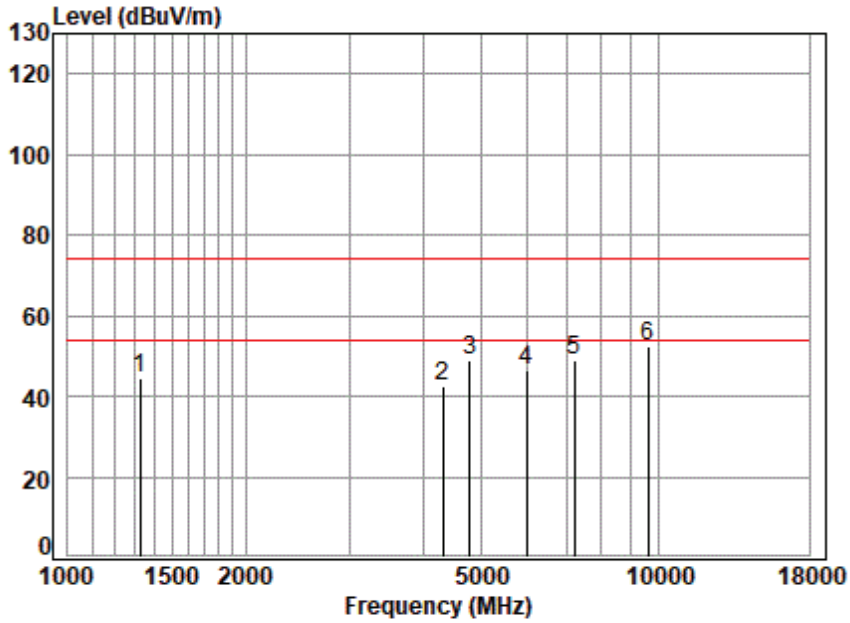
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2402 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1327.4460	2.80	26.20	48.12	58.93	39.81	74.00	-34.19	peak
2	4392.3760	6.95	29.80	48.01	54.56	43.30	74.00	-30.70	peak
3	4804.0000	7.61	30.80	47.73	56.42	47.10	74.00	-26.90	peak
4	5813.8120	7.40	31.50	47.43	54.19	45.66	74.00	-28.34	peak
5	7206.0000	7.75	36.10	47.26	52.99	49.58	74.00	-24.42	peak
6	p9608.0000	10.24	38.38	46.76	50.29	52.15	74.00	-21.85	peak

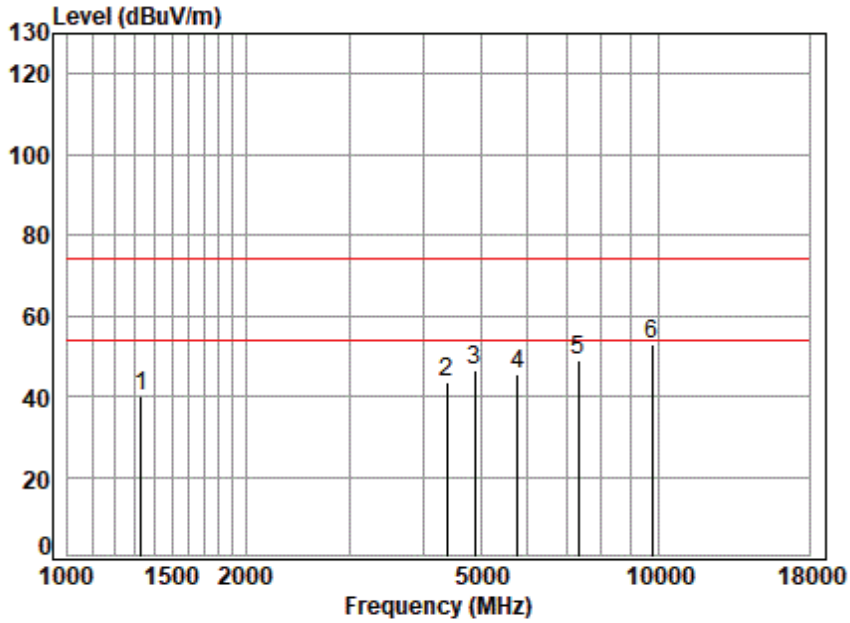
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2402 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1327.4460	2.80	26.20	48.12	63.45	44.33	74.00	-29.67	peak
2	4316.8590	6.93	29.73	48.06	53.85	42.45	74.00	-31.55	peak
3	4804.0000	7.61	30.80	47.73	58.38	49.06	74.00	-24.94	peak
4	5984.3050	7.29	31.77	47.40	54.75	46.41	74.00	-27.59	peak
5	7206.0000	7.75	36.10	47.26	52.36	48.95	74.00	-25.05	peak
6	p9608.0000	10.24	38.38	46.76	50.76	52.62	74.00	-21.38	peak

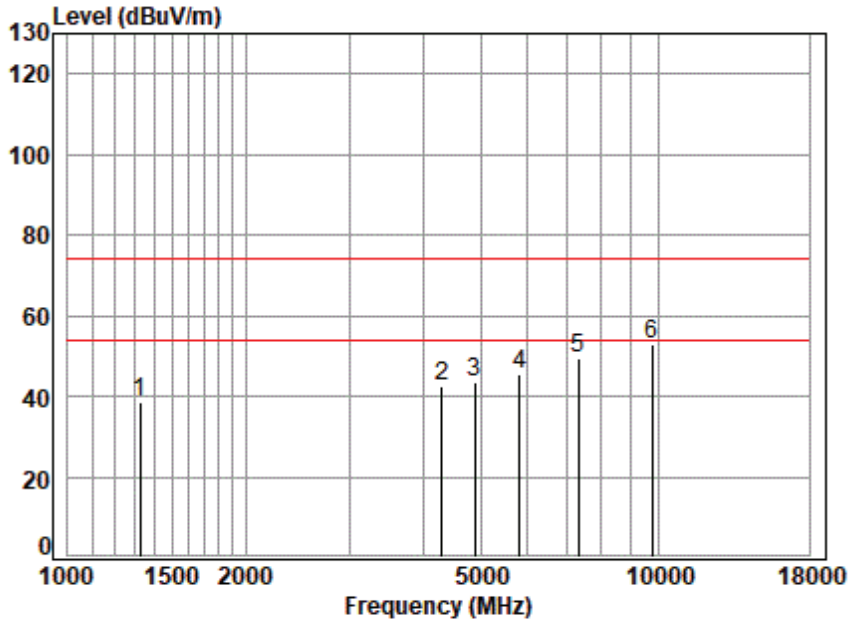
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2441 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.2880	2.81	26.20	48.12	59.38	40.27	74.00	-33.73	peak
2	4379.6990	6.95	29.80	48.02	54.80	43.53	74.00	-30.47	peak
3	4882.0000	7.77	30.80	47.67	55.79	46.69	74.00	-27.31	peak
4	5780.3000	7.43	31.50	47.44	53.87	45.36	74.00	-28.64	peak
5	7323.0000	7.84	36.24	47.23	51.90	48.75	74.00	-25.25	peak
6	p9764.0000	10.44	39.16	46.78	49.87	52.69	74.00	-21.31	peak

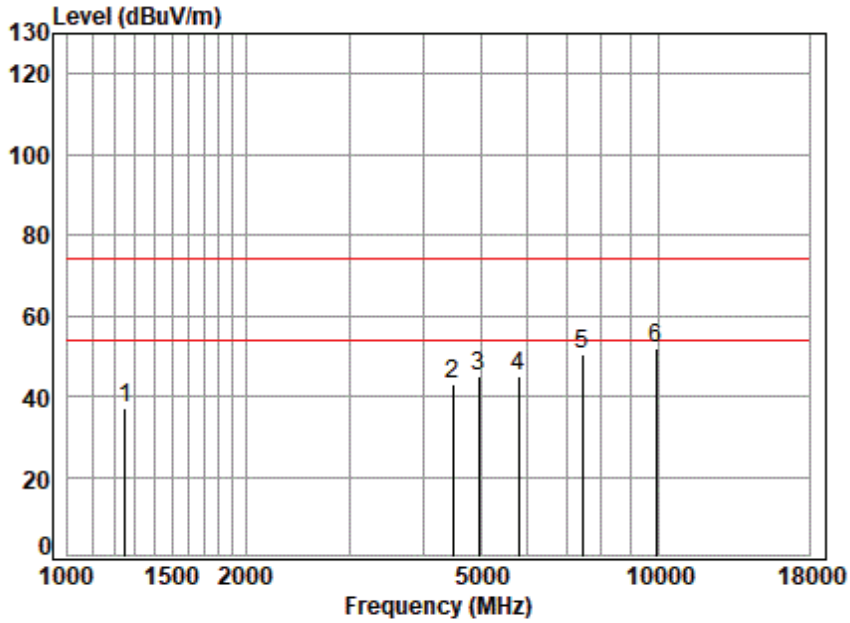
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2441 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1327.4460	2.80	26.20	48.12	57.45	38.33	74.00	-35.67	peak
2	4304.4000	6.93	29.71	48.07	53.95	42.52	74.00	-31.48	peak
3	4882.0000	7.77	30.80	47.67	52.80	43.70	74.00	-30.30	peak
4	5813.8120	7.40	31.50	47.43	53.82	45.29	74.00	-28.71	peak
5	7323.0000	7.84	36.24	47.23	52.56	49.41	74.00	-24.59	peak
6	p9764.0000	10.44	39.16	46.78	50.20	53.02	74.00	-20.98	peak

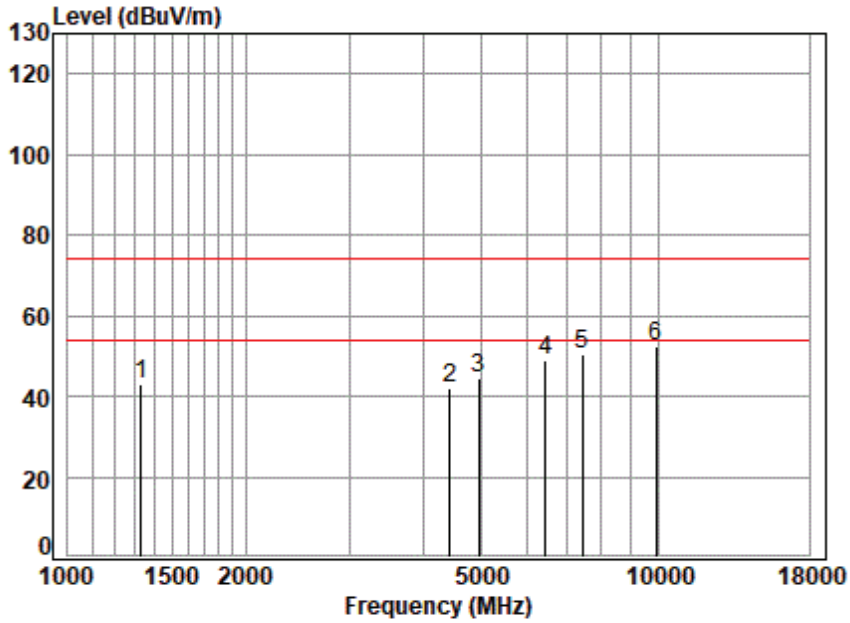
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2480 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1249.2690	2.67	26.29	48.10	55.97	36.83	74.00	-37.17	peak
2	4495.1250	6.97	30.28	47.93	53.67	42.99	74.00	-31.01	peak
3	4960.0000	7.92	30.94	47.63	53.89	45.12	74.00	-28.88	peak
4	5797.0320	7.41	31.50	47.44	53.44	44.91	74.00	-29.09	peak
5	7440.0000	7.94	36.86	47.21	52.81	50.40	74.00	-23.60	peak
6	p9920.0000	10.64	39.16	46.79	49.13	52.14	74.00	-21.86	peak

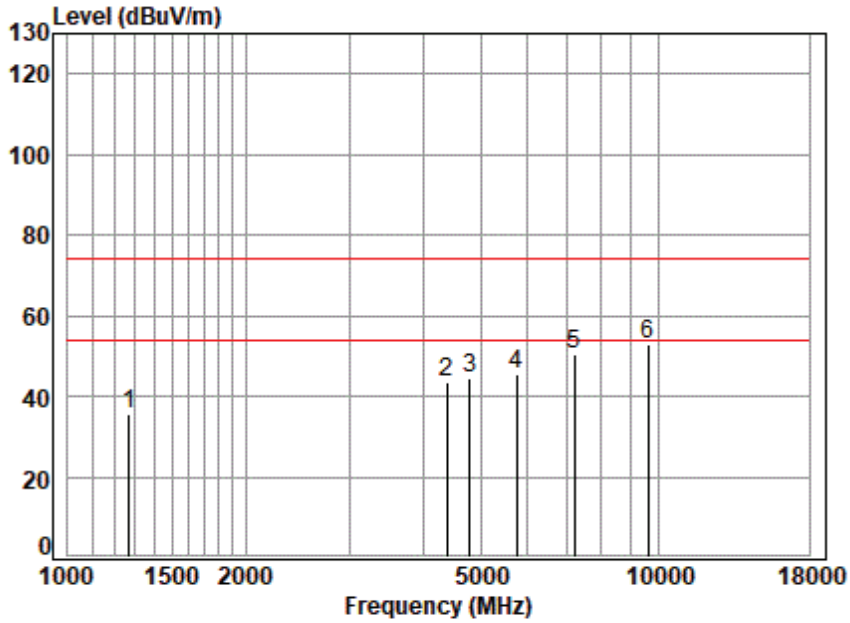
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2480 TX RSE
Note : BT L

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.2880	2.81	26.20	48.12	62.01	42.90	74.00	-31.10	peak
2	4443.4530	6.96	30.06	47.97	53.09	42.14	74.00	-31.86	peak
3	4960.0000	7.92	30.94	47.63	53.41	44.64	74.00	-29.36	peak
4	6451.3530	7.55	33.31	47.35	55.36	48.87	74.00	-25.13	peak
5	7440.0000	7.94	36.86	47.21	52.76	50.35	74.00	-23.65	peak
6	p9920.0000	10.64	39.16	46.79	49.34	52.35	74.00	-21.65	peak

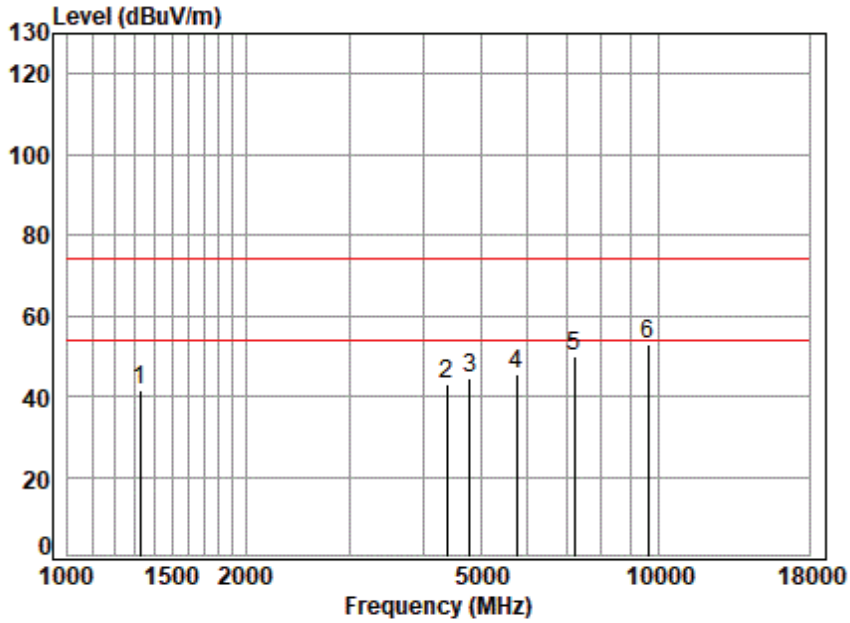
Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2402 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1271.1230	2.71	26.26	48.10	54.73	35.60	74.00	-38.40	peak
2	4392.3760	6.95	29.80	48.01	54.61	43.35	74.00	-30.65	peak
3	4804.0000	7.61	30.80	47.73	53.86	44.54	74.00	-29.46	peak
4	5746.9820	7.45	31.49	47.45	54.18	45.67	74.00	-28.33	peak
5	7206.0000	7.75	36.10	47.26	53.70	50.29	74.00	-23.71	peak
6	p9608.0000	10.24	38.38	46.76	50.93	52.79	74.00	-21.21	peak

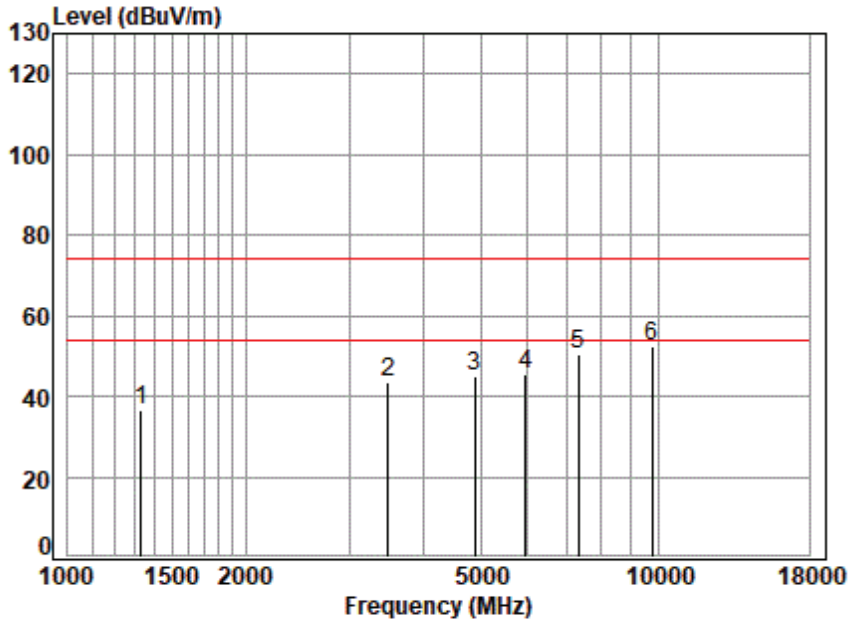
Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2402 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1327.4460	2.80	26.20	48.12	60.69	41.57	74.00	-32.43	peak
2	4392.3760	6.95	29.80	48.01	54.47	43.21	74.00	-30.79	peak
3	4804.0000	7.61	30.80	47.73	53.95	44.63	74.00	-29.37	peak
4	5763.6170	7.44	31.50	47.44	54.02	45.52	74.00	-28.48	peak
5	7206.0000	7.75	36.10	47.26	53.44	50.03	74.00	-23.97	peak
6	p9608.0000	10.24	38.38	46.76	50.80	52.66	74.00	-21.34	peak

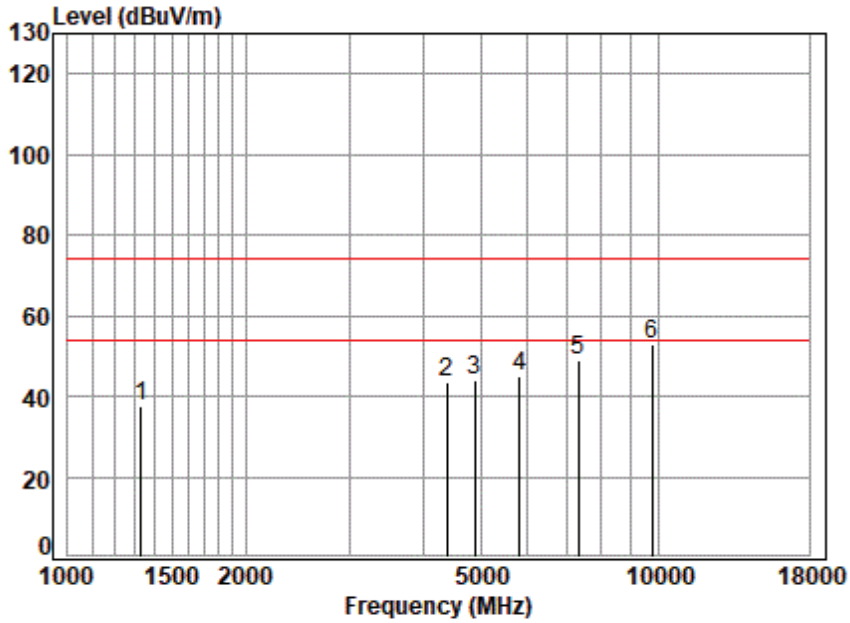
Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2441 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.2880	2.81	26.20	48.12	55.65	36.54	74.00	-37.46	peak
2	3485.6010	6.22	28.31	48.20	57.04	43.37	74.00	-30.63	peak
3	4882.0000	7.77	30.80	47.67	54.23	45.13	74.00	-28.87	peak
4	5967.0330	7.30	31.73	47.41	53.68	45.30	74.00	-28.70	peak
5	7323.0000	7.84	36.24	47.23	53.42	50.27	74.00	-23.73	peak
6	p9764.0000	10.44	39.16	46.78	49.71	52.53	74.00	-21.47	peak

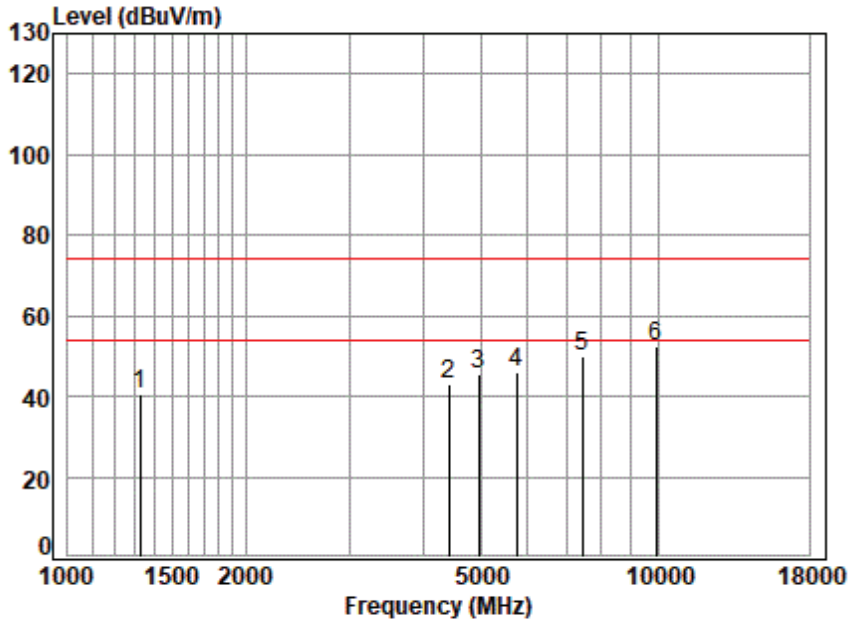
Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2441 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.2880	2.81	26.20	48.12	56.66	37.55	74.00	-36.45	peak
2	4392.3760	6.95	29.80	48.01	54.98	43.72	74.00	-30.28	peak
3	4882.0000	7.77	30.80	47.67	53.32	44.22	74.00	-29.78	peak
4	5813.8120	7.40	31.50	47.43	53.60	45.07	74.00	-28.93	peak
5	7323.0000	7.84	36.24	47.23	52.32	49.17	74.00	-24.83	peak
6	p9764.0000	10.44	39.16	46.78	49.94	52.76	74.00	-21.24	peak

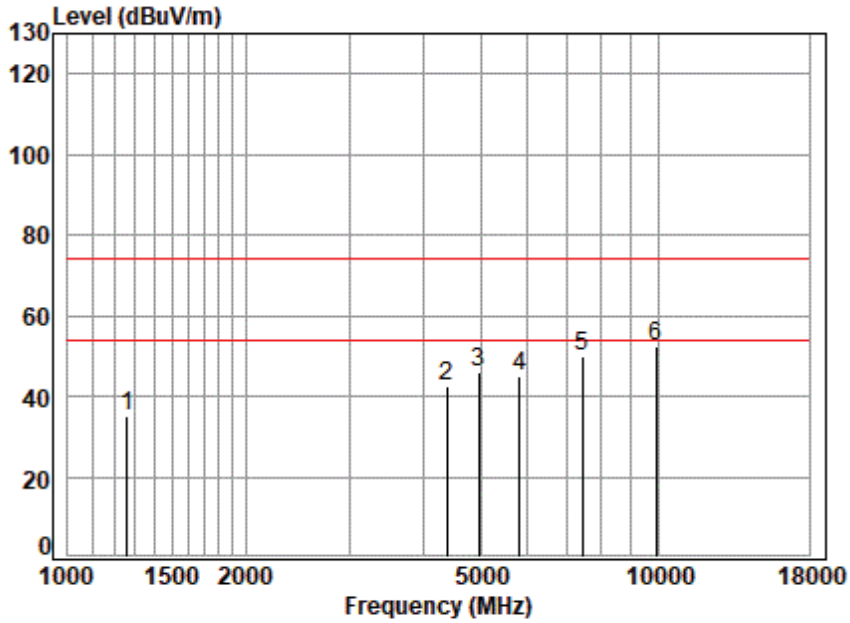
Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No :
Mode : 2480 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1327.4460	2.80	26.20	48.12	59.87	40.75	74.00	-33.25	peak
2	4417.8410	6.95	29.91	47.99	54.36	43.23	74.00	-30.77	peak
3	4960.0000	7.92	30.94	47.63	54.14	45.37	74.00	-28.63	peak
4	5746.9820	7.45	31.49	47.45	54.26	45.75	74.00	-28.25	peak
5	7440.0000	7.94	36.86	47.21	52.20	49.79	74.00	-24.21	peak
6	p9920.0000	10.64	39.16	46.79	49.44	52.45	74.00	-21.55	peak

Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No :
Mode : 2480 TX RSE
Note : BT R

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1260.1490	2.69	26.28	48.10	54.40	35.27	74.00	-38.73	peak
2	4379.6990	6.95	29.80	48.02	53.61	42.34	74.00	-31.66	peak
3	4960.0000	7.92	30.94	47.63	54.54	45.77	74.00	-28.23	peak
4	5813.8120	7.40	31.50	47.43	53.38	44.85	74.00	-29.15	peak
5	7440.0000	7.94	36.86	47.21	52.18	49.77	74.00	-24.23	peak
6	p9920.0000	10.64	39.16	46.79	49.49	52.50	74.00	-21.50	peak

8 Test Setup Photo

Refer to Appendix - Test Setup Photos for FYFR2203000013AT

9 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for FYFR2203000013AT

10 Appendix

For right earbud:

1. Duty Cycle

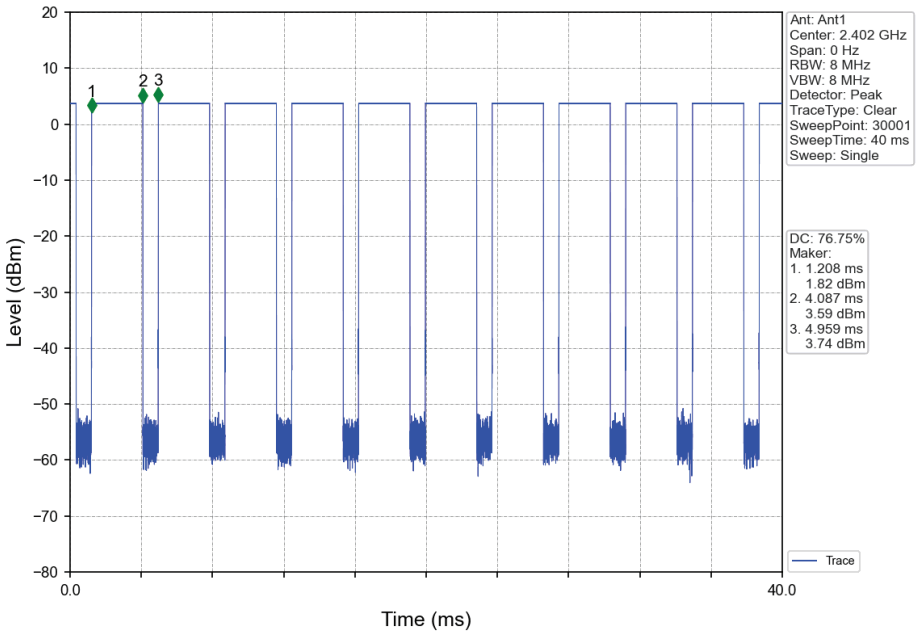
1.1 Ant1

1.1.1 Test Result

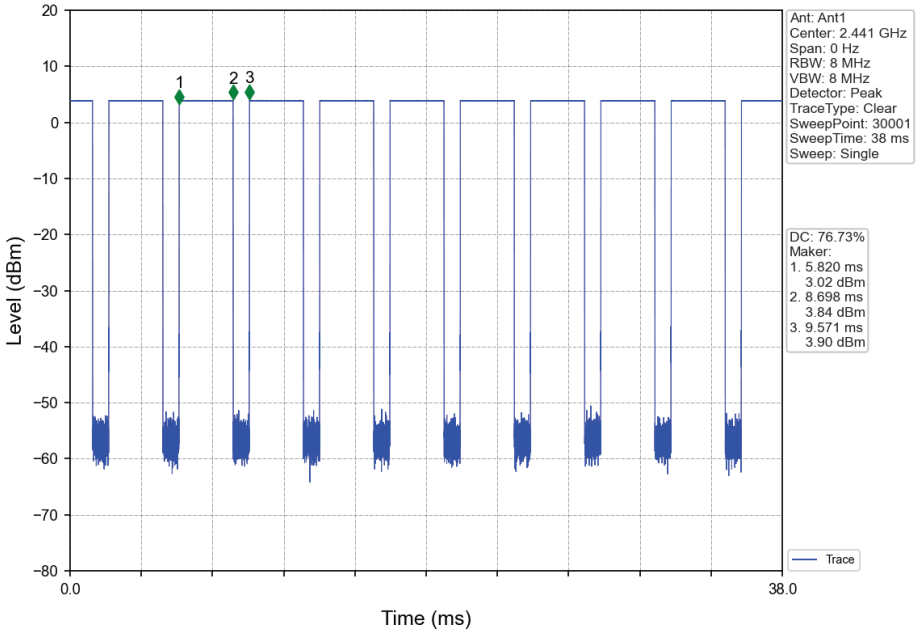
Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.879	3.751	76.75	1.15	0.03
		2441	DH5	2.878	3.751	76.73	1.15	0.03
		2480	DH5	2.878	3.751	76.73	1.15	0.03
Pi/4DQPSK	SISO	2402	2DH5	2.880	3.749	76.82	1.15	0.03
		2441	2DH5	2.882	3.751	76.83	1.14	0.03
		2480	2DH5	2.881	3.750	76.83	1.14	0.03
8DPSK	SISO	2402	3DH5	2.883	3.750	76.88	1.14	0.03
		2441	3DH5	2.883	3.751	76.86	1.14	0.03
		2480	3DH5	2.882	3.749	76.87	1.14	0.01

1.1.2 Test Graph

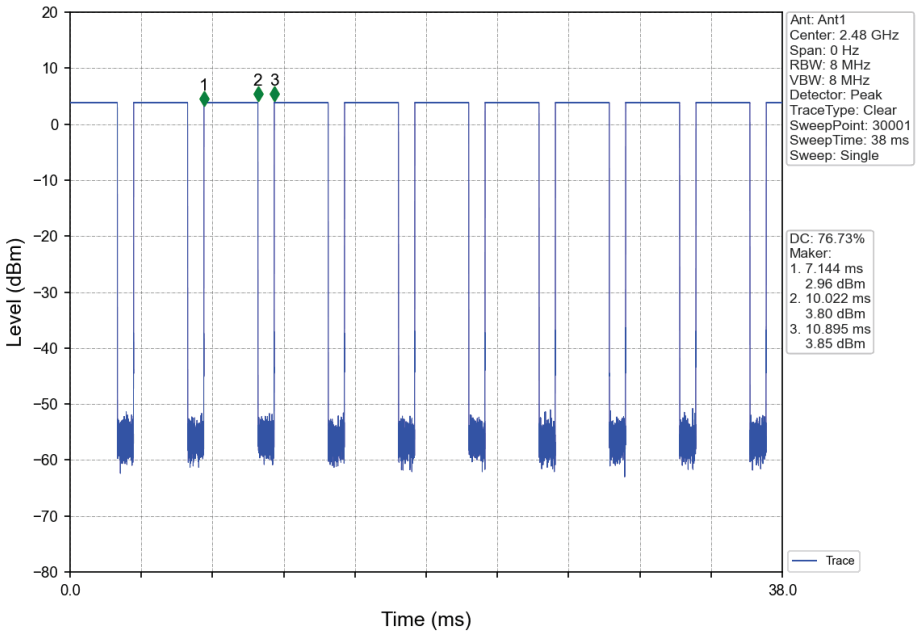
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



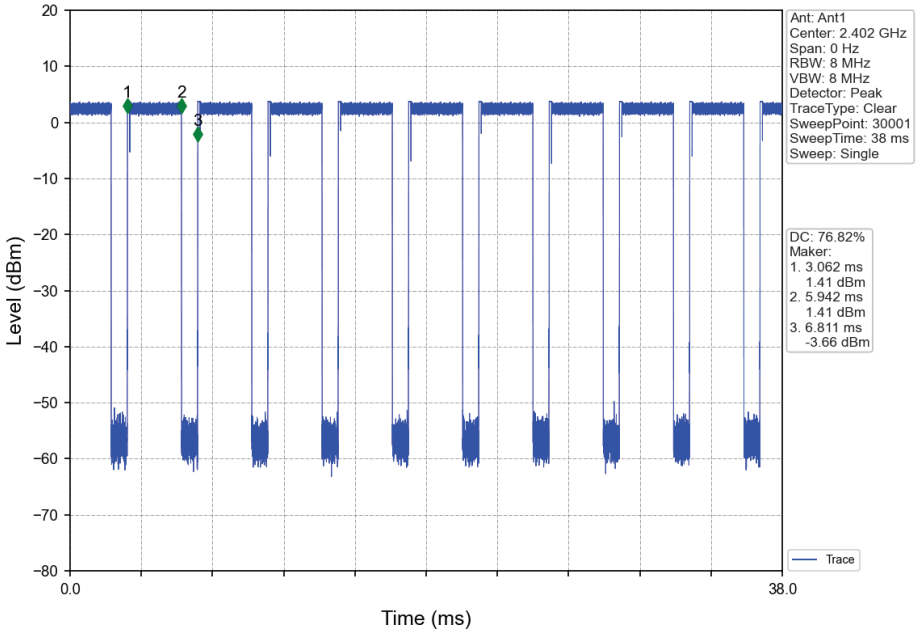
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



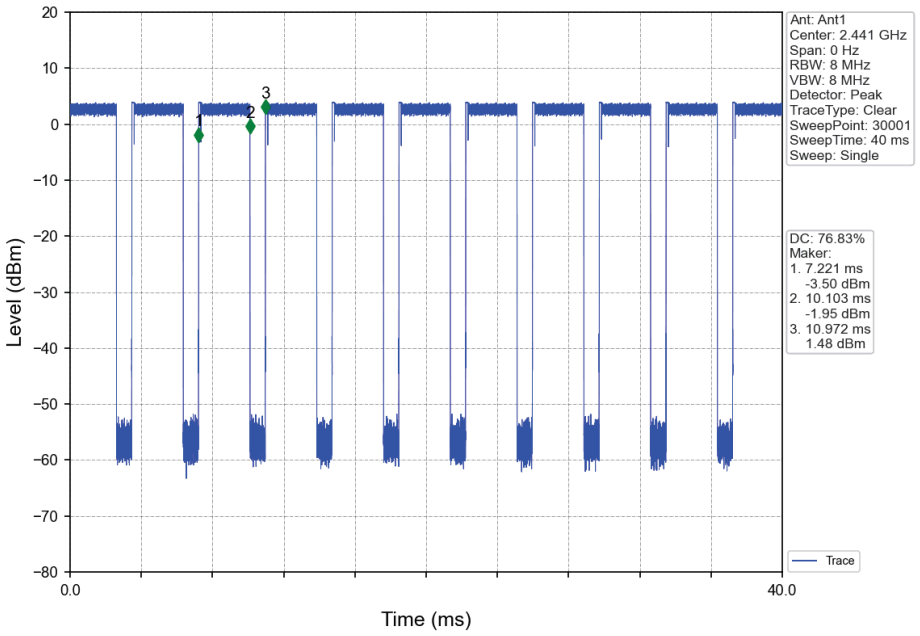
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



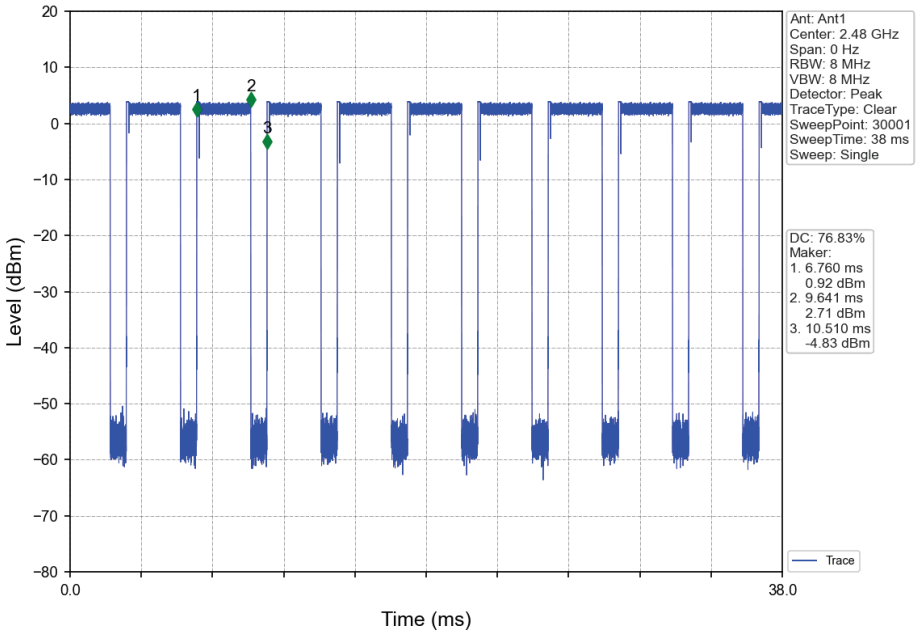
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



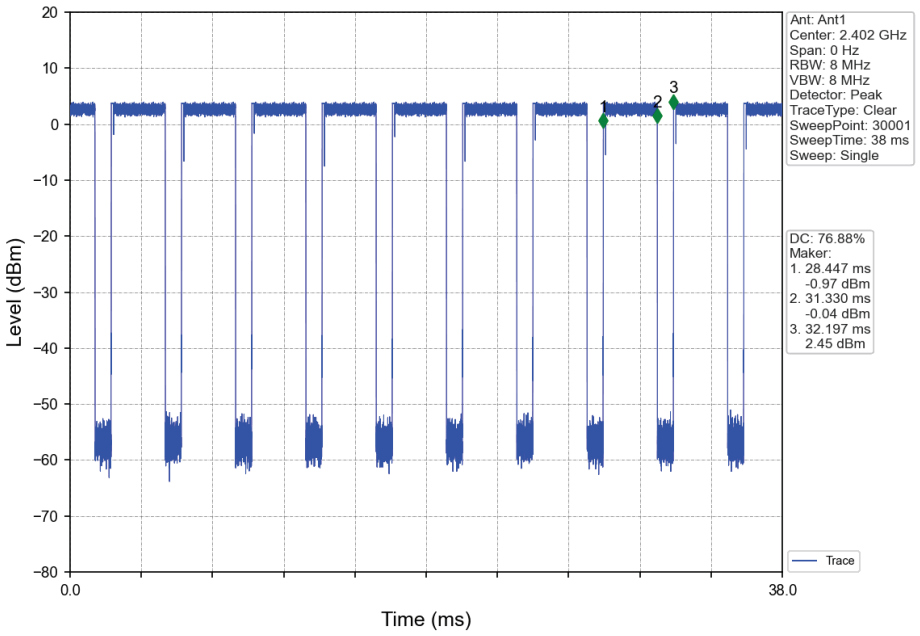
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



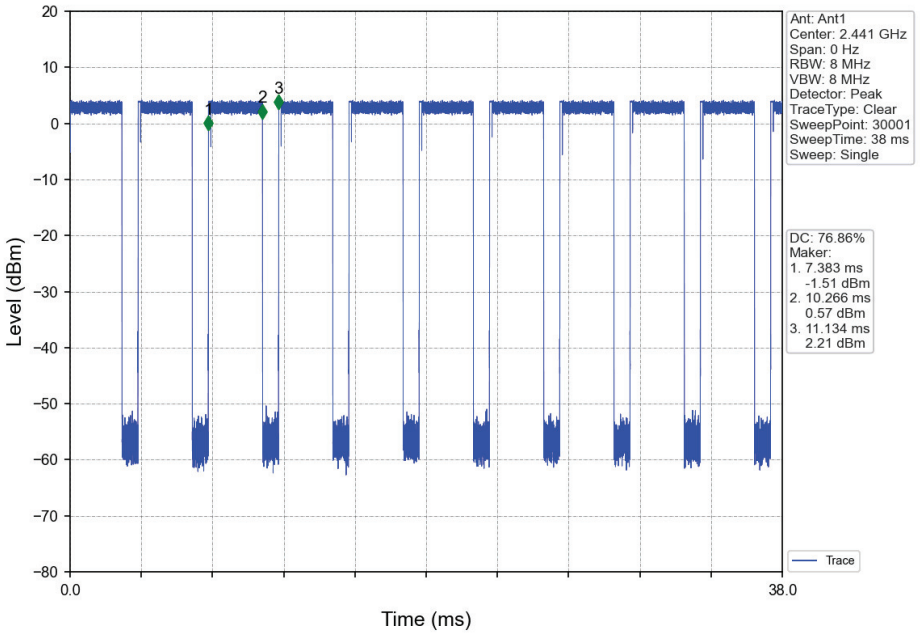
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



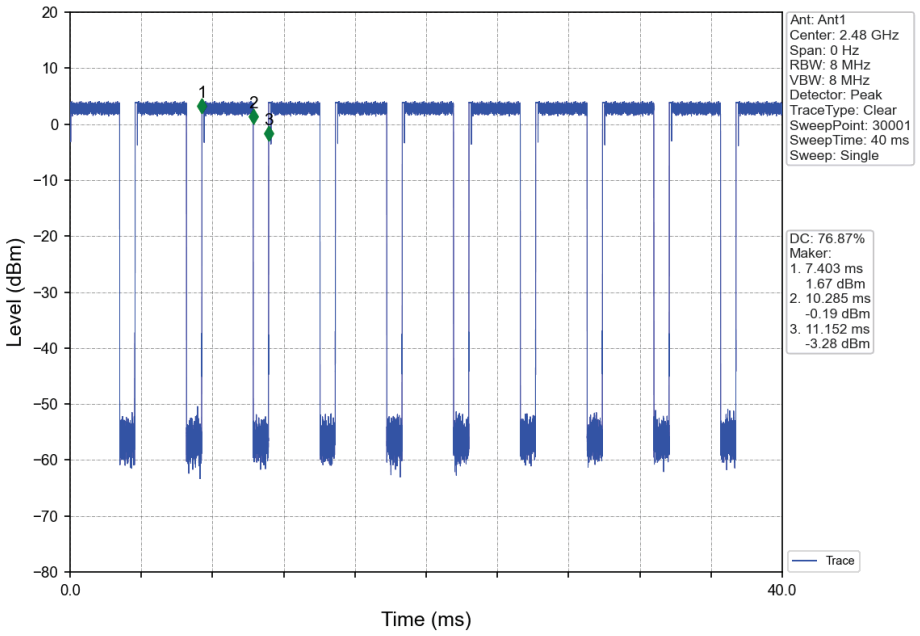
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



2. Bandwidth

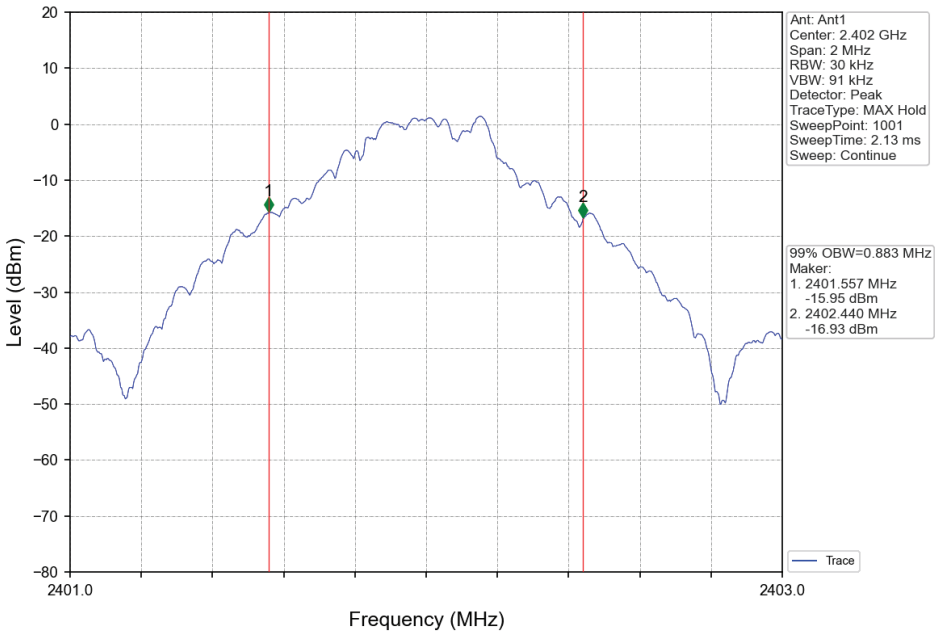
2.1 OBW

2.1.1 Test Result

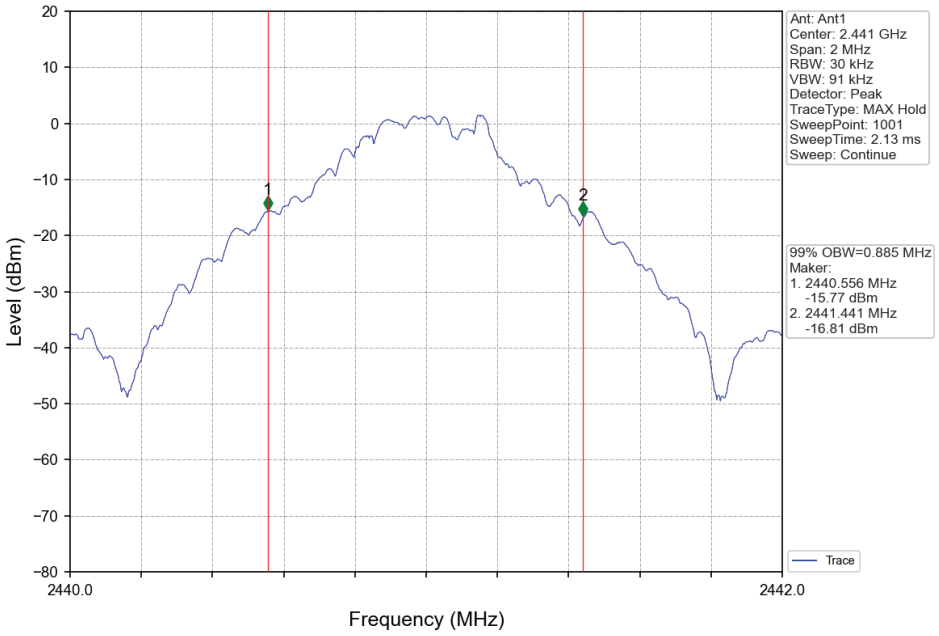
Mode	TX Type	Frequency (MHz)	Packet Type	Ant	99% Occupied Bandwidth (MHz) Result	Verdict
GFSK	SISO	2402	DH5	1	0.883	Pass
		2441	DH5	1	0.885	Pass
		2480	DH5	1	0.883	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.151	Pass
		2441	2DH5	1	1.151	Pass
		2480	2DH5	1	1.151	Pass
8DPSK	SISO	2402	3DH5	1	1.158	Pass
		2441	3DH5	1	1.159	Pass
		2480	3DH5	1	1.158	Pass

2.1.2 Test Graph

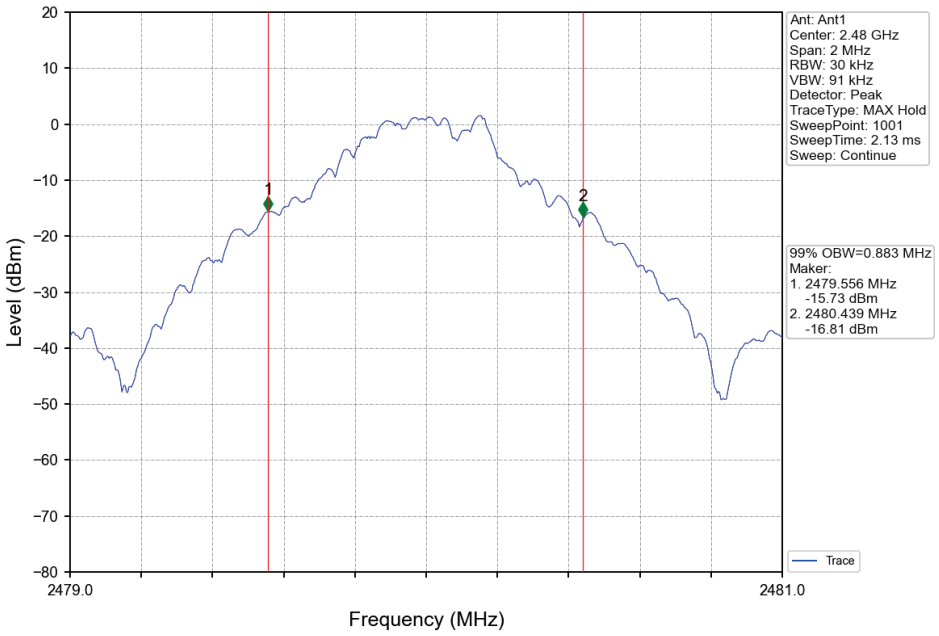
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



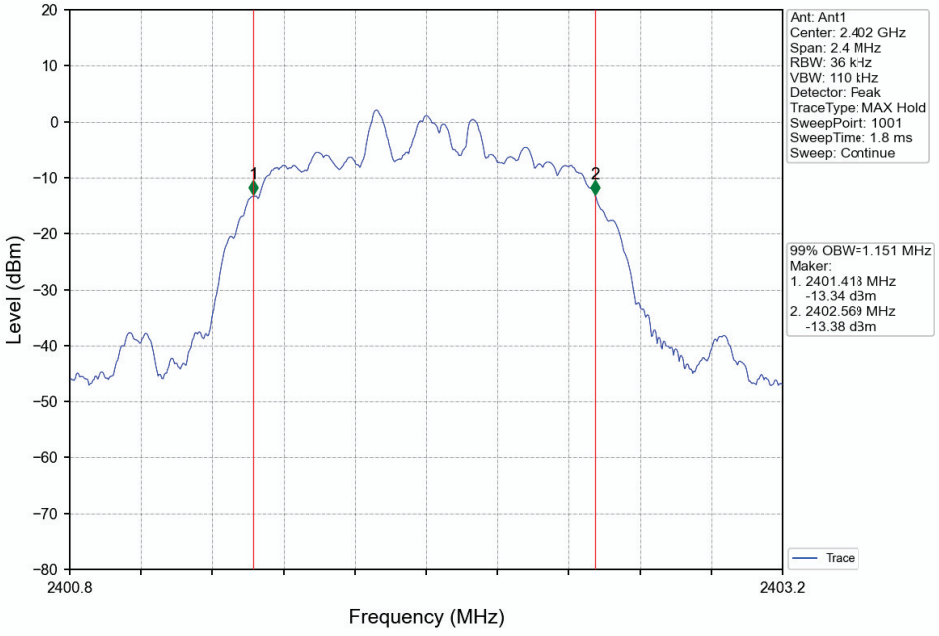
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



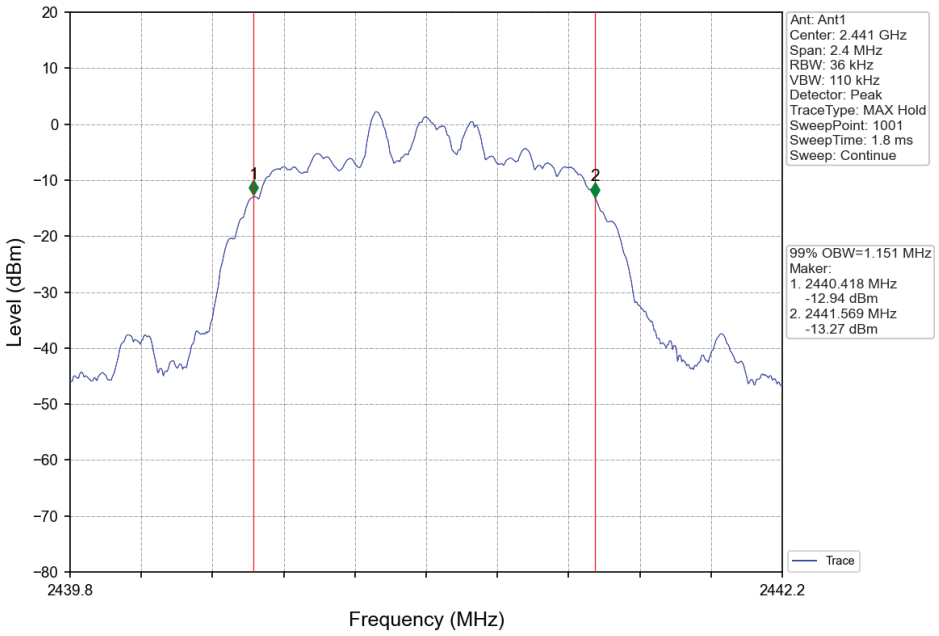
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



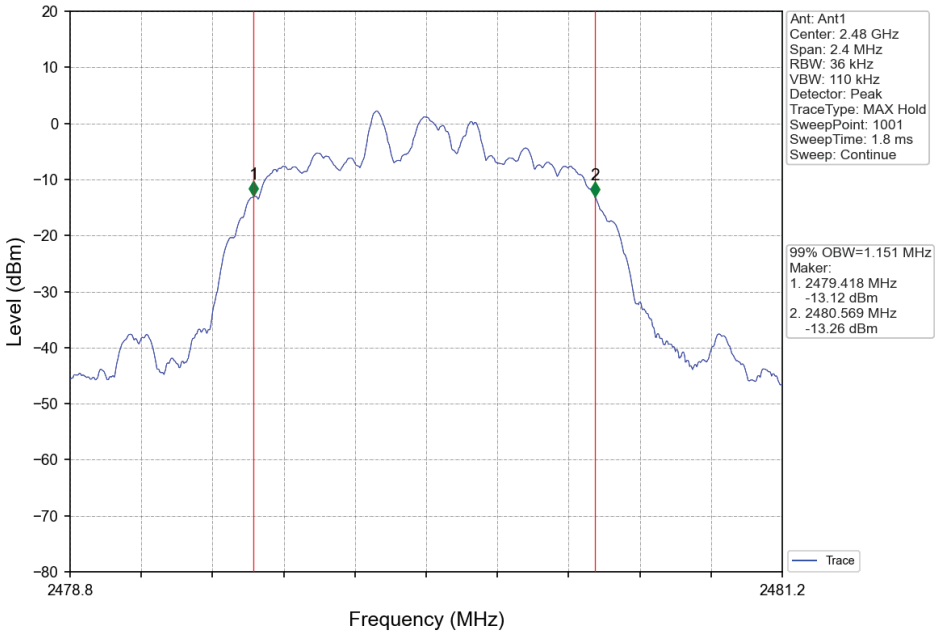
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



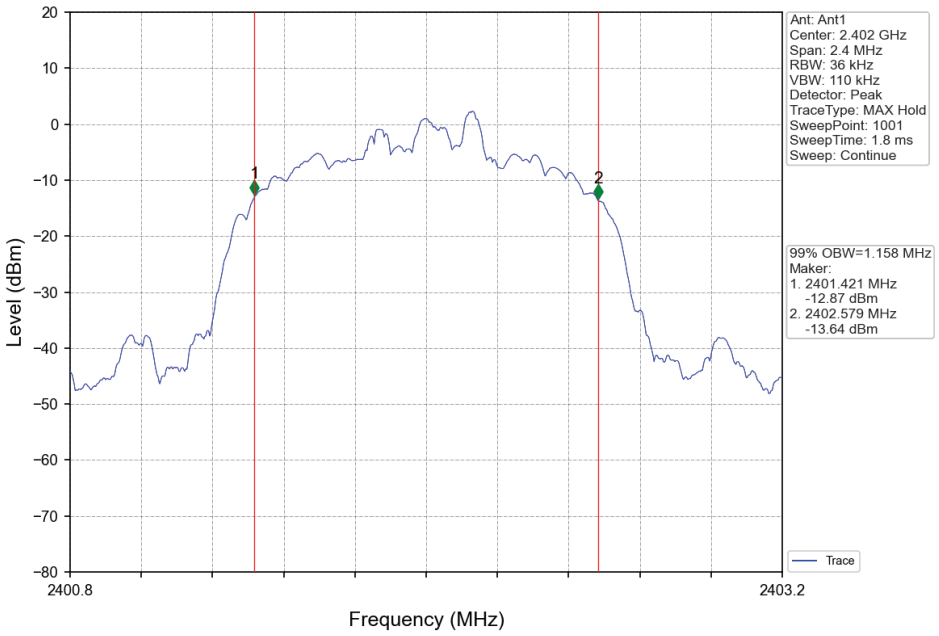
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



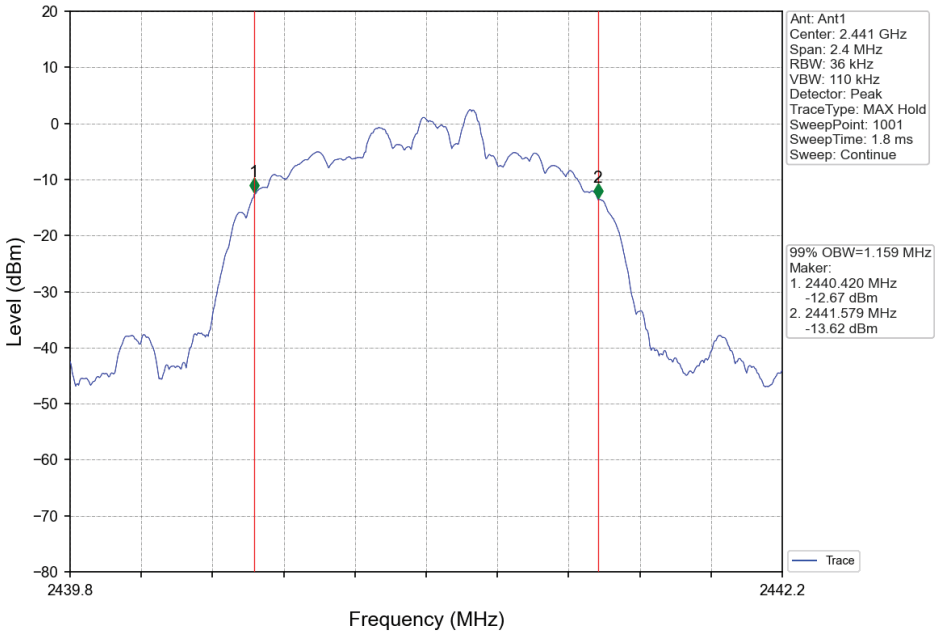
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



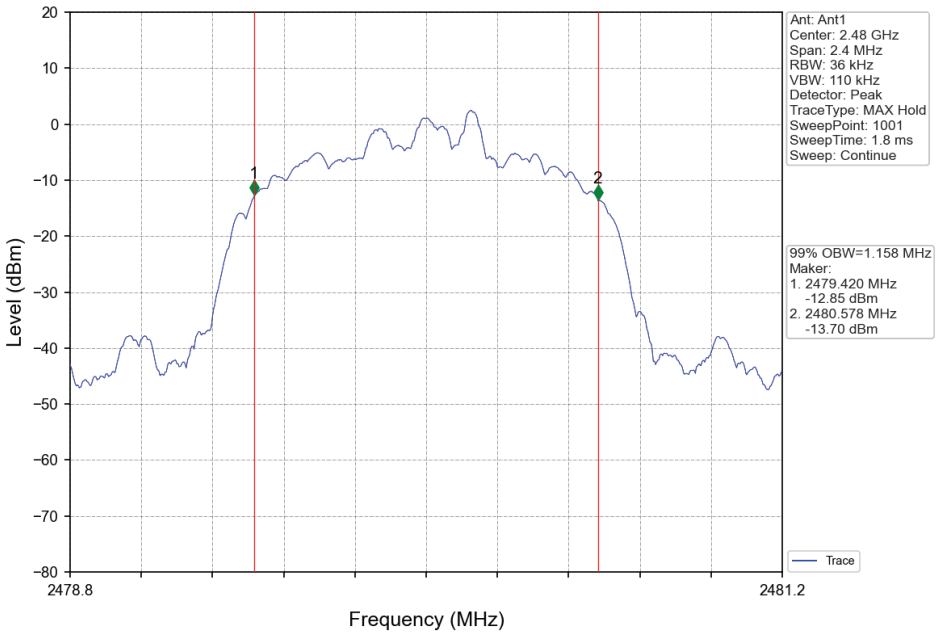
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



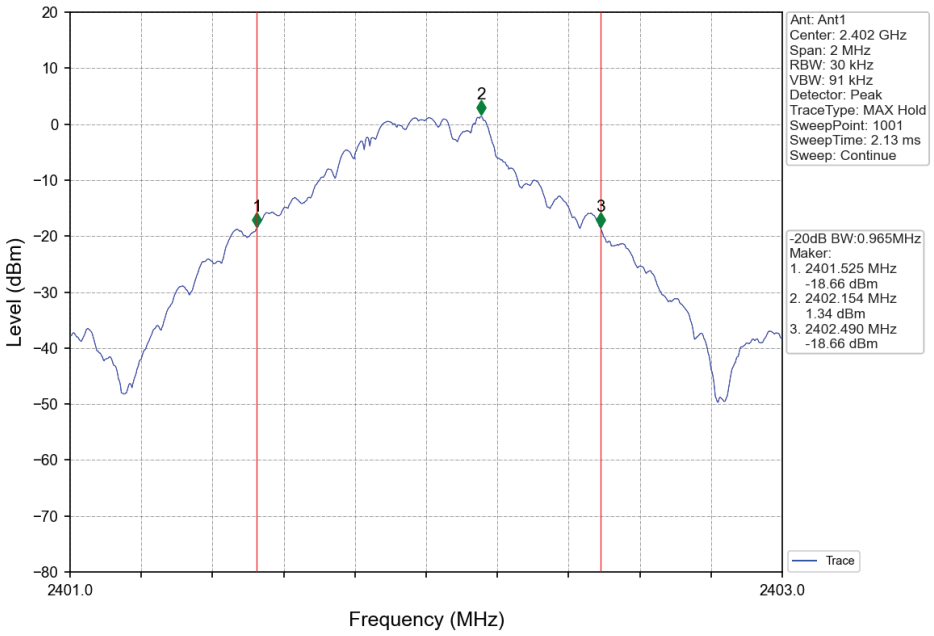
2.2 20dB BW

2.2.1 Test Result

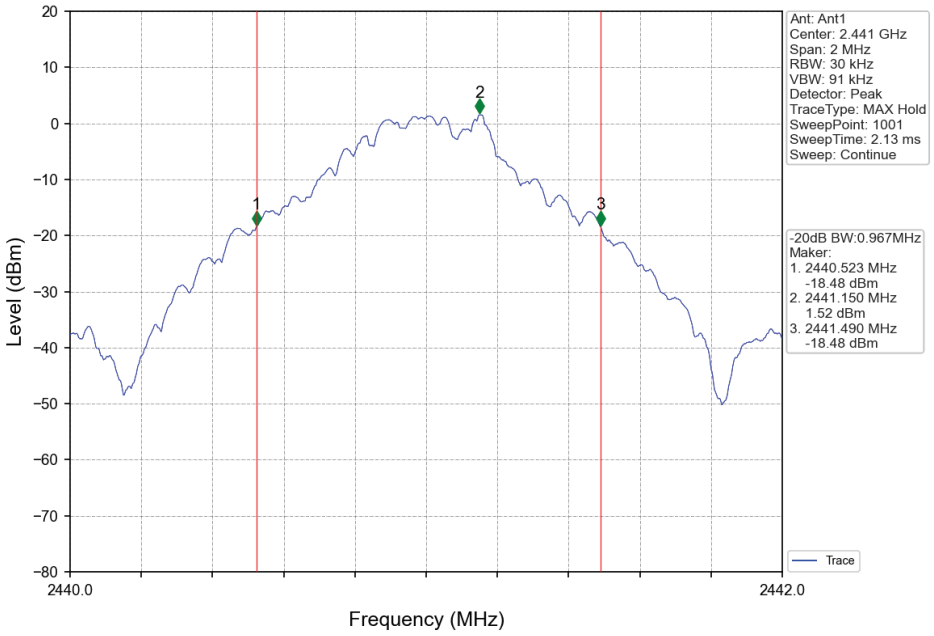
Mode	TX Type	Frequency (MHz)	Packet Type	Ant	20dB Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.965	Pass
		2441	DH5	1	0.967	Pass
		2480	DH5	1	0.962	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.265	Pass
		2441	2DH5	1	1.267	Pass
		2480	2DH5	1	1.267	Pass
8DPSK	SISO	2402	3DH5	1	1.282	Pass
		2441	3DH5	1	1.281	Pass
		2480	3DH5	1	1.282	Pass

2.2.2 Test Graph

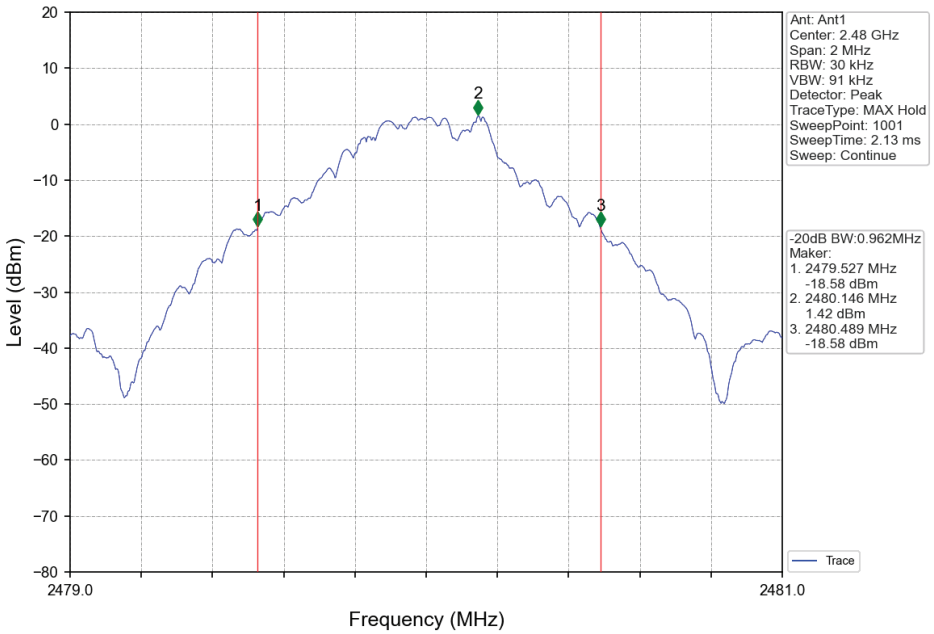
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



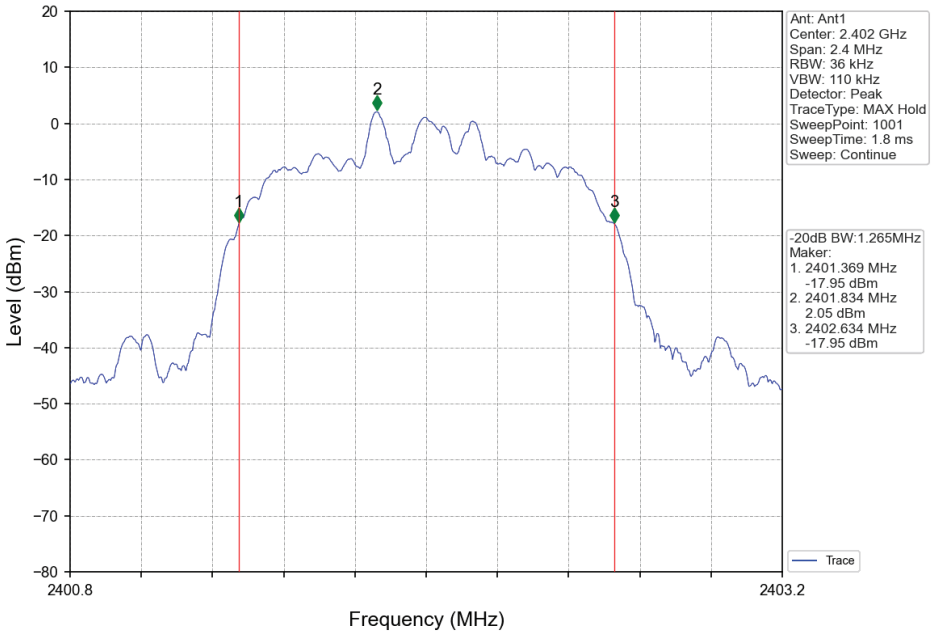
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



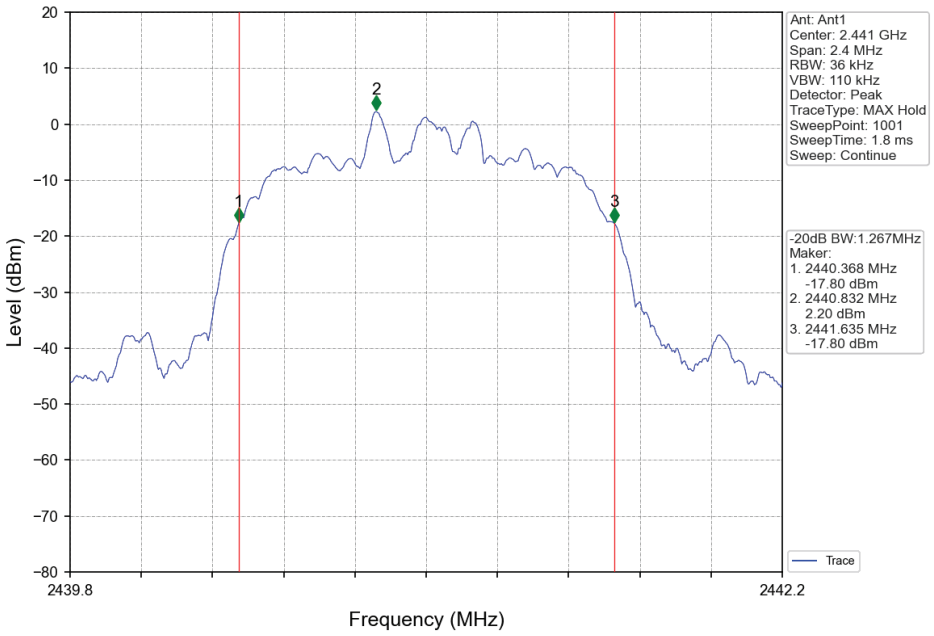
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



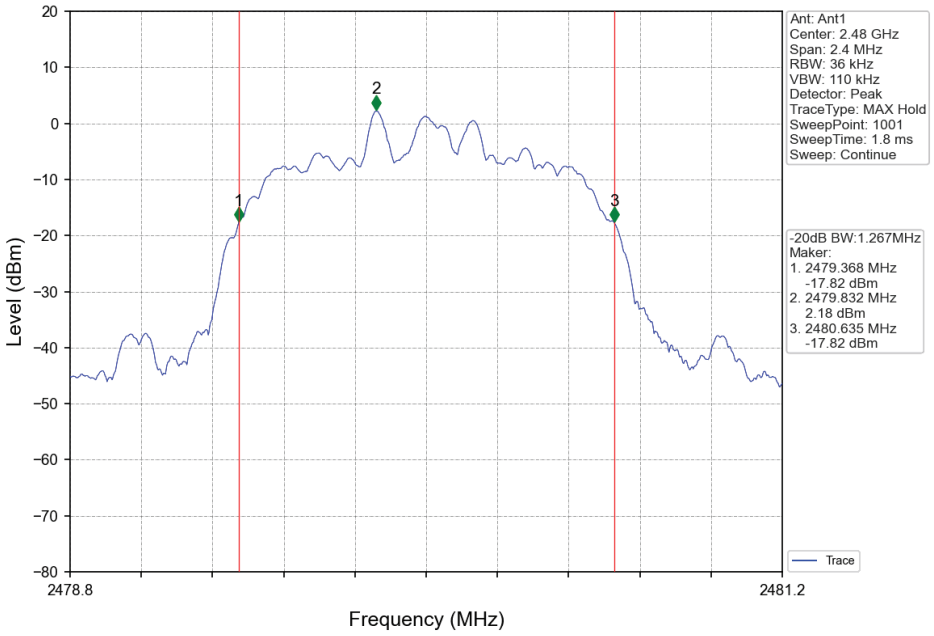
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



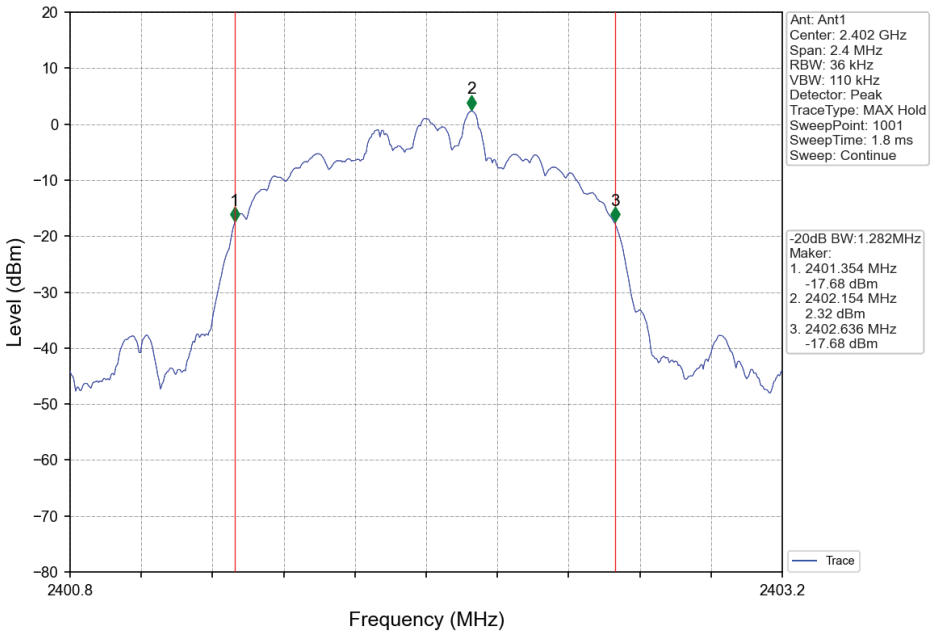
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



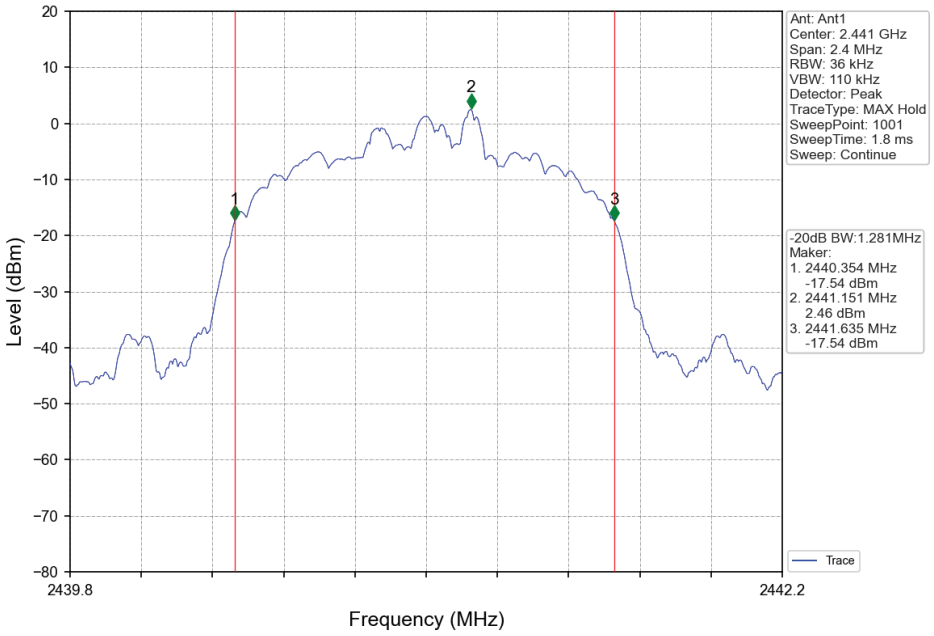
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



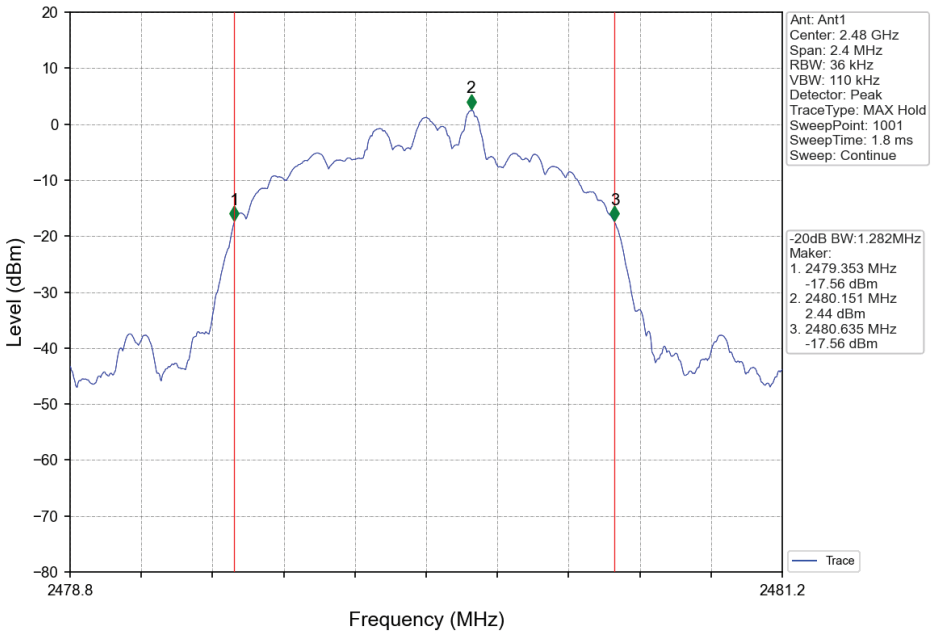
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				Ant1	Limit	
GFSK	SISO	2402	DH5	3.70	<=30	Pass
		2441	DH5	3.87	<=30	Pass
		2480	DH5	3.83	<=30	Pass
Pi/4DQPSK	SISO	2402	2DH5	3.76	<=20.97	Pass
		2441	2DH5	3.93	<=20.97	Pass
		2480	2DH5	3.88	<=20.97	Pass
8DPSK	SISO	2402	3DH5	3.80	<=20.97	Pass
		2441	3DH5	3.97	<=20.97	Pass
		2480	3DH5	3.93	<=20.97	Pass

4. Carrier Frequency Separation

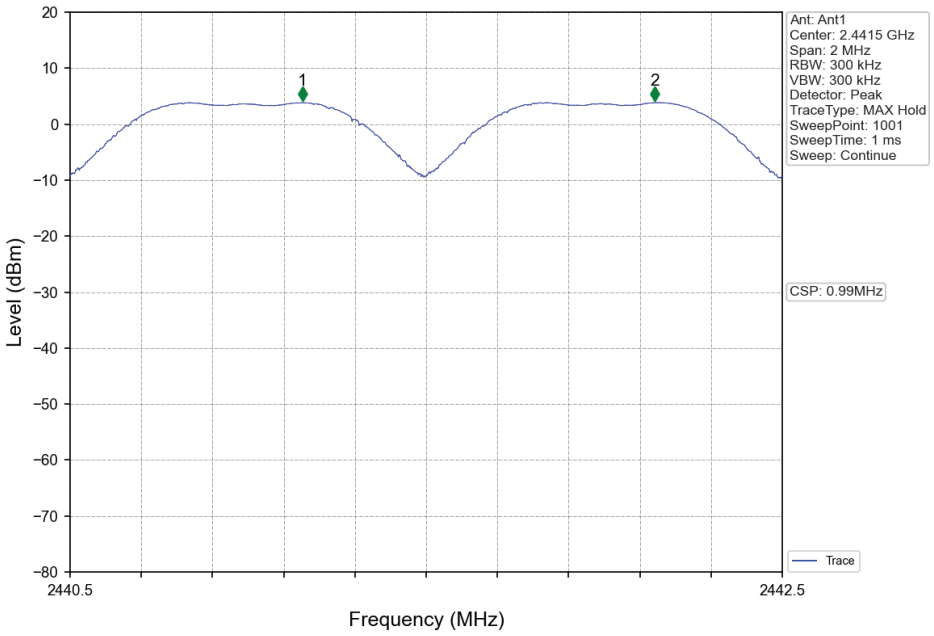
4.1 Ant1

4.1.1 Test Result

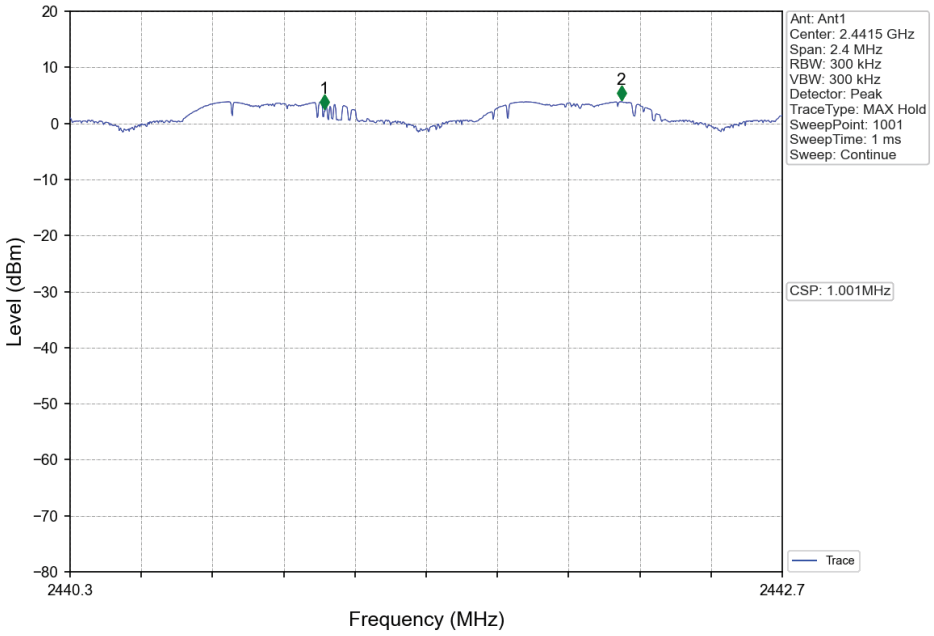
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	0.990	0.967	>=0.967	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.267	>=0.845	Pass
8DPSK	SISO	HOPP	3DH5	1.003	1.282	>=0.855	Pass

4.1.2 Test Graph

GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV