TEST REPORT

Report No.:	TW2211177-01E
Applicant:	TOPSAIL (HONG KONG) LIMITED
Product:	Bluetooth Speaker
Model No.:	9611X, 9613X, 9609X, 9610X, 9331X, 9332X, 6301A, 6302A, 6304X, 6305X, 9413X, 9415X, 9416X, 8810B, 8810C, 9401X, 9402A, 9402B, 9409403X, 9404X, 9404A, 9405A, 9405B, 9405C
Trademark:	N/A
Test Standards:	FCC Part 15.249
Test result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10 & FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By

Terry Tang

Manager

Dated: December 08, 2022

Results appearing herein relate only to the sample tested
The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China
Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The 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 No.: 744189.

Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

Test Report Conclusion

Content

1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688

Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 744189

For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: TOPSAIL (HONG KONG) LIMITED

Address: Room 803, Chevalier House, 45-51 Chatham Road South, Tsim Sha Tsui, Kowloon, Hong Kong

Telephone: --

Fax: --

1.3 Description of EUT

Product:	Bluetooth Speaker
Manufacturer:	TOPSAIL (HONG KONG) LIMITED
Address:	Room 402, No. 8, Sixth Street, Hekang New District, Changping Town, Dongguan City, Guangdong Province, China
Trademark:	N/A
Model Number:	9611X
Additional Model Name	9613X, 9609X, 9610X, 9331X, 9332X, 6301A, 6302A, 6304X, 6305X, 9413X, 9415X, 9416X, 8810B, 8810C, 9401X, 9402A, 9402B, 9409403X, 9404X, 9404A, 9405A, 9405B, 9405C
Rating:	Input: DC5V
Battery:	DC3.7V, 1200mAh Li-ion battery
Modulation Type:	GFSK, JI/4DQPSK
Operation Frequency:	2402-2480MHz
Channel Number:	79
Channel Separation:	1MHz
Hardware Version:	V1.0
Software Version:	V1.0
Serial No.:	2022120001

Antenna Designation PCB antenna with gain -0.58dBi Max (Get from the antenna specification)

1.4 Submitted Sample: 2 Samples

1.5 Test Duration
2022-11-17 to 2022-12-08

1.6 Test Uncertainty
Conducted Emissions Uncertainty =3.6dB
Radiated Emissions below 1GHz Uncertainty =4.7dB
Radiated Emissions above 1GHz Uncertainty =6.0dB
Conducted Power Uncertainty =6.0dB
Occupied Channel Bandwidth Uncertainty =5%
Conducted Emissions Uncertainty =3.6dB
Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by Andy

Print Name: Andy Xing

2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic	--	--	N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2022-07-15	2023-07-14
RF Cable	Zhengdi	7m	--	2022-07-15	2023-07-14
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17

2.2 Automation Test Software

For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209 and RSS-210	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

3.2 Test Standards

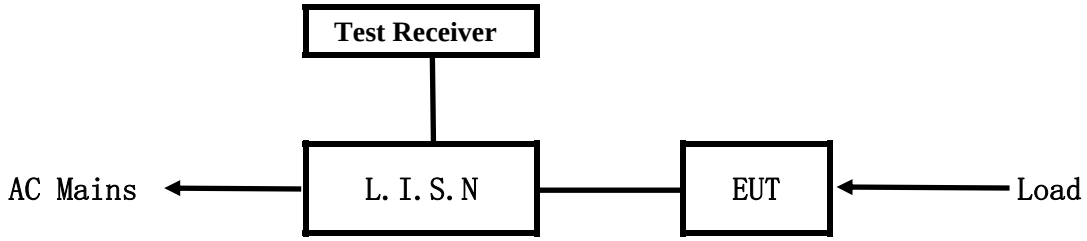
FCC Part 15 Subpart C, Paragraph 15.249 , ANSI C63.4 :2014 and ANSI C63.10 :2013

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

5. Power Line Conducted Emission Test

5.1 Schematics of the test



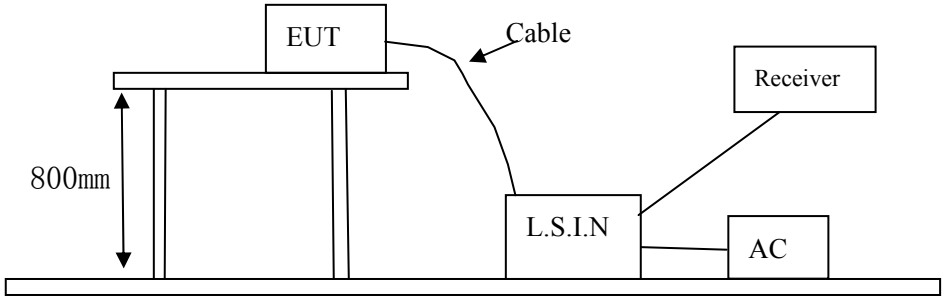
EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014.The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

Test Voltage: 120V, 60Hz

Block diagram of Test setup



5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Bluetooth Speaker	TOPSAIL (HONG KONG) LIMITED	9611X, 9613X, 9609X, 9610X, 9331X, 9332X, 6301A, 6302A, 6304X, 6305X, 9413X, 9415X, 9416X, 8810B, 8810C, 9401X, 9402A, 9402B, 9409403X, 9404X, 9404A, 9405A, 9405B, 9405C	2ACCE-22526

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz, 0.35A; Output: DC5V, 2A

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ～ 0.50	66.0～56.0*	56.0～46.0*
0.50 ～ 5.00	56.0	46.0
5.00 ～ 30.00	60.0	50.0

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

A: Conducted Emission on Live Terminal (150kHz to 30MHz)

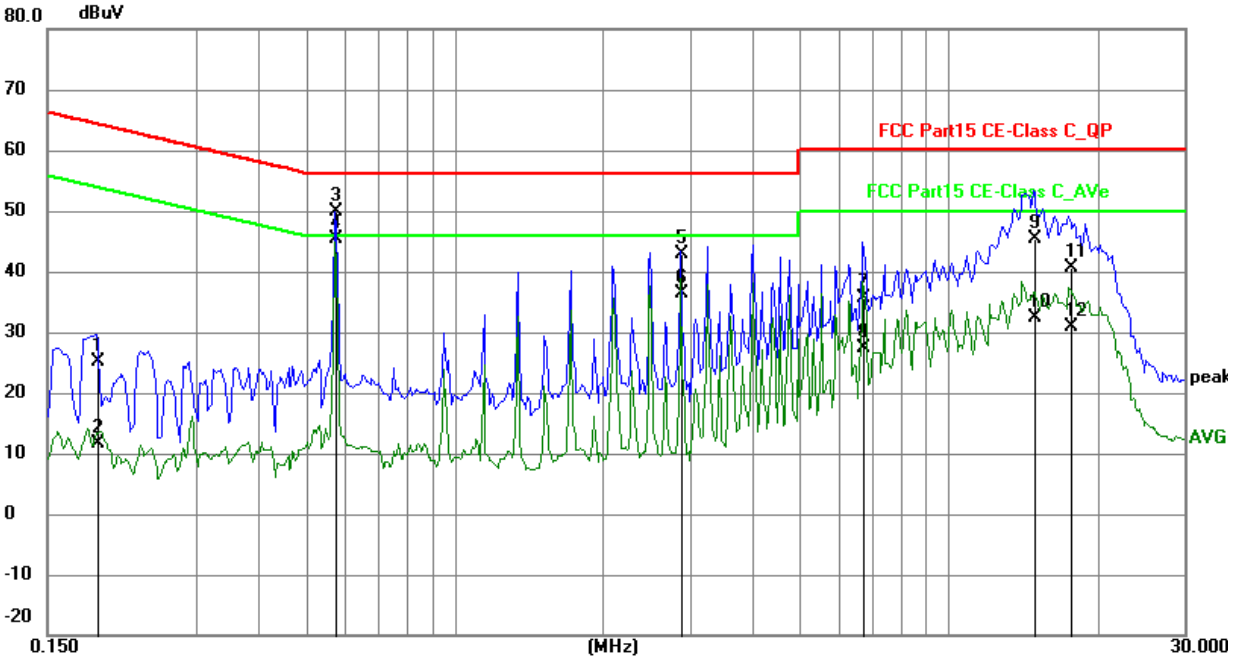
EUT Operating Environment

Temperature: 25℃ Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging + Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1890	15.31	9.76	25.07	64.08	-39.01	QP	P
2	0.1890	1.76	9.76	11.52	54.08	-42.56	AVG	P
3	0.5751	40.04	9.77	49.81	56.00	-6.19	QP	P
4	0.5751	35.68	9.77	45.45	46.00	-0.55	AVG	P
5	2.8722	33.00	9.84	42.84	56.00	-13.16	QP	P
6	2.8722	26.44	9.84	36.28	46.00	-9.72	AVG	P
7	6.7167	25.64	10.00	35.64	60.00	-24.36	QP	P
8	6.7167	17.29	10.00	27.29	50.00	-22.71	AVG	P
9	14.8989	34.94	10.38	45.32	60.00	-14.68	QP	P
10	14.8989	21.99	10.38	32.37	50.00	-17.63	AVG	P
11	17.6611	30.14	10.54	40.68	60.00	-19.32	QP	P
12	17.6611	20.30	10.54	30.84	50.00	-19.16	AVG	P

B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

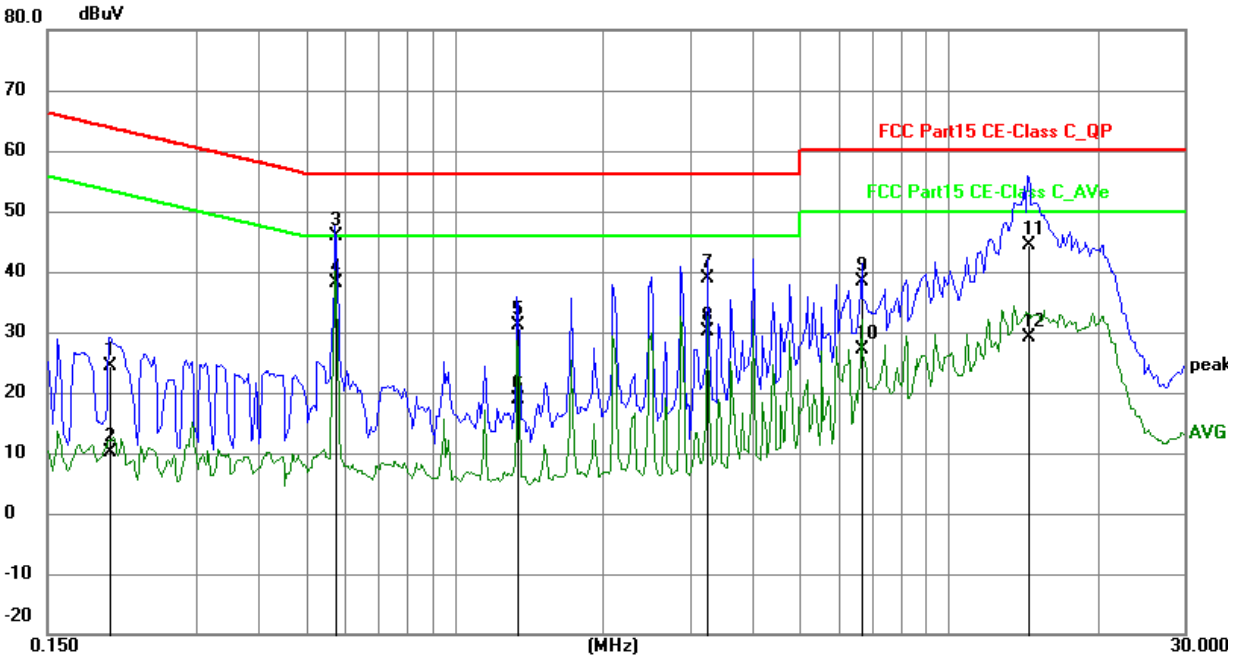
EUT Operating Environment

Temperature: 25℃ Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging + Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2007	14.68	9.75	24.43	63.58	-39.15	QP	P
2	0.2007	0.43	9.75	10.18	53.58	-43.40	AVG	P
3	0.5751	36.05	9.77	45.82	56.00	-10.18	QP	P
4	0.5751	28.38	9.77	38.15	46.00	-7.85	AVG	P
5	1.3433	21.30	9.79	31.09	56.00	-24.91	QP	P
6	1.3433	9.11	9.79	18.90	46.00	-27.10	AVG	P
7	3.2457	29.10	9.85	38.95	56.00	-17.05	QP	P
8	3.2457	20.22	9.85	30.07	46.00	-15.93	AVG	P
9	6.6972	28.42	10.00	38.42	60.00	-21.58	QP	P
10	6.6972	17.07	10.00	27.07	50.00	-22.93	AVG	P
11	14.5050	33.90	10.36	44.26	60.00	-15.74	QP	P
12	14.5050	18.83	10.36	29.19	50.00	-20.81	AVG	P

6 Radiated Emission Test

6.1 Test Method and test Procedure:

(1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189

(2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.

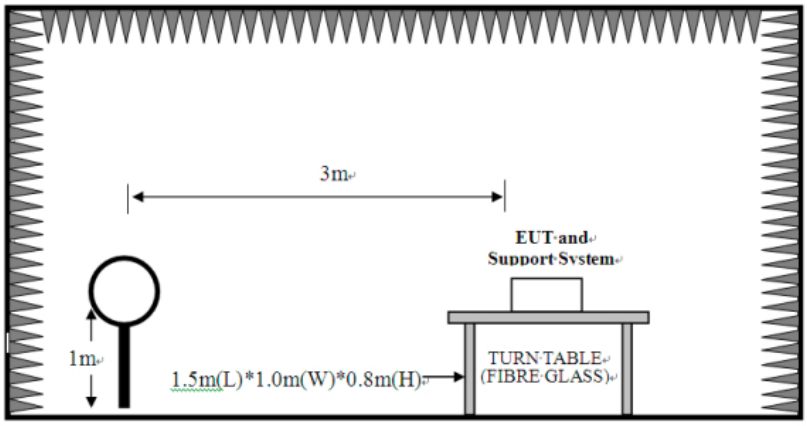
(3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.

(4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.

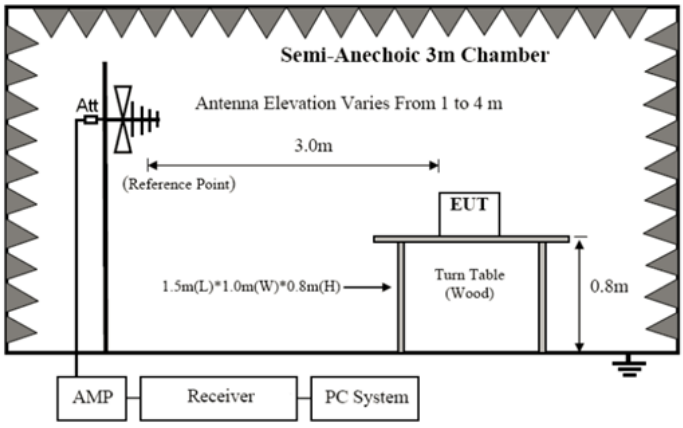
(5) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup

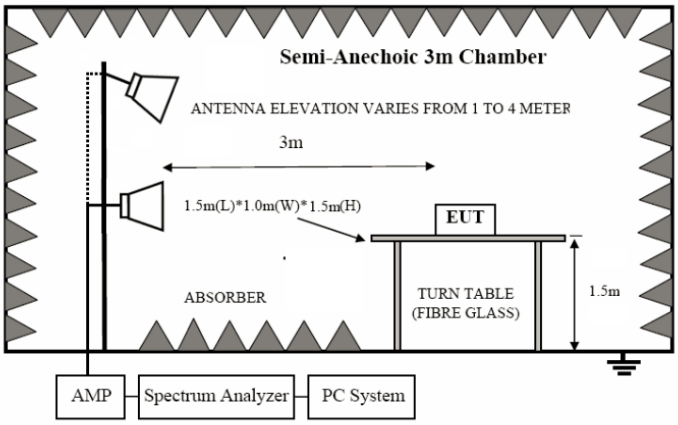
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



6.2 Configuration of The EUT

Same as section 5.3 of this report

6.3 EUT Operating Condition

Same as section 5.4 of this report.

6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)			Field Strength of Harmonics (3m)		
	mV/m	**dBuV/m**		**uV/m**	**dBuV/m**	
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note: 1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)

2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	20log(2400/F(kHz)) +40log (300/3)
0.490-1.705	3	20log(24000/F(kHz)) +40log (30/3)
1.705-30	3	69.5
30-80	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.

5. The two modulation modes of GFSK and Pi/4D-QPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

6. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

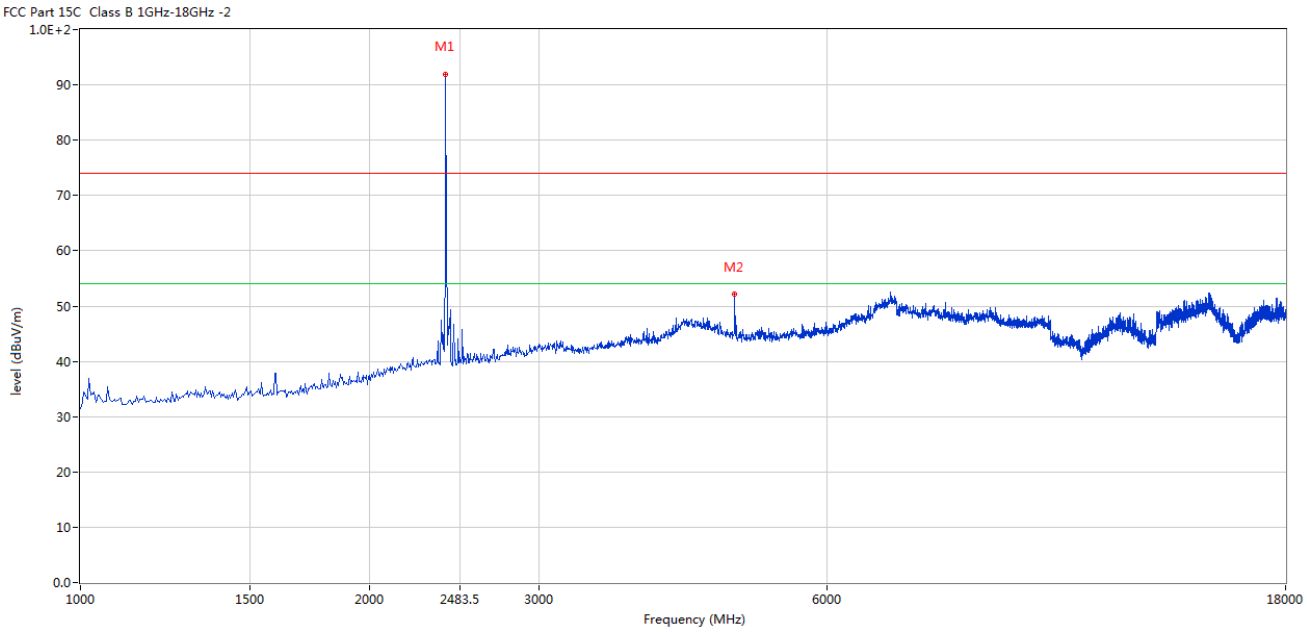
7. Battery fully charged was used during the test.

6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

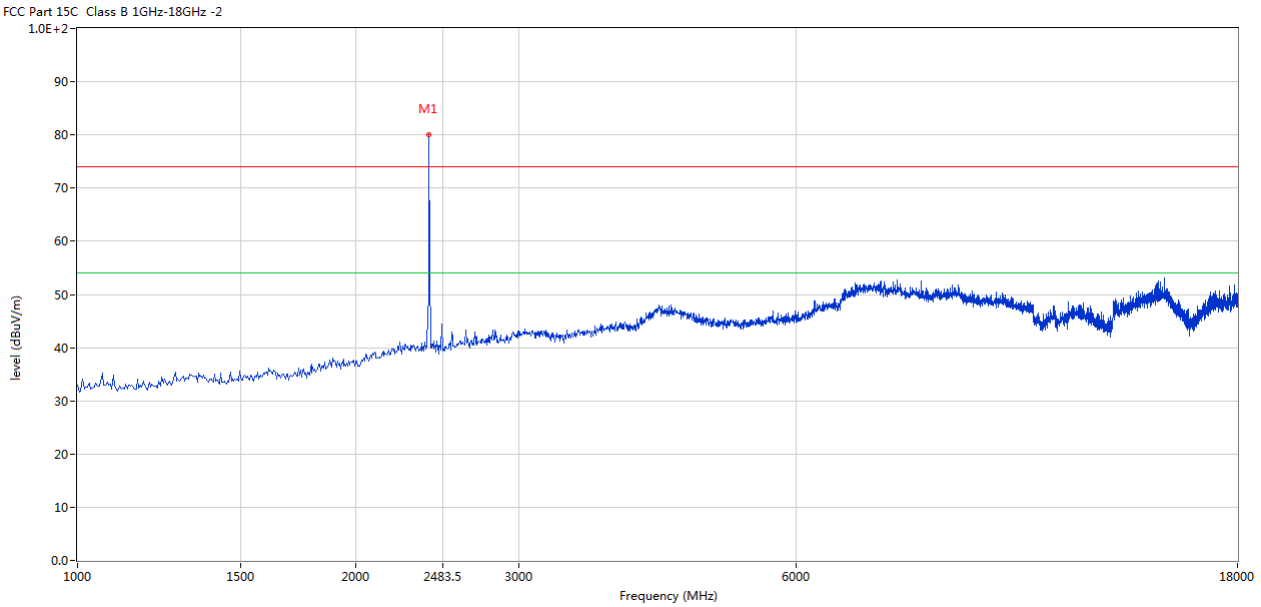
Please refer to the following test plots for details: Low Channel-2402MHz

Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	91.98	-3.57	114.0	-22.02	Peak	177.00	100	Horizontal	Pass
2	4802.799	52.09	3.12	74.0	-21.91	Peak	187.00	100	Horizontal	Pass

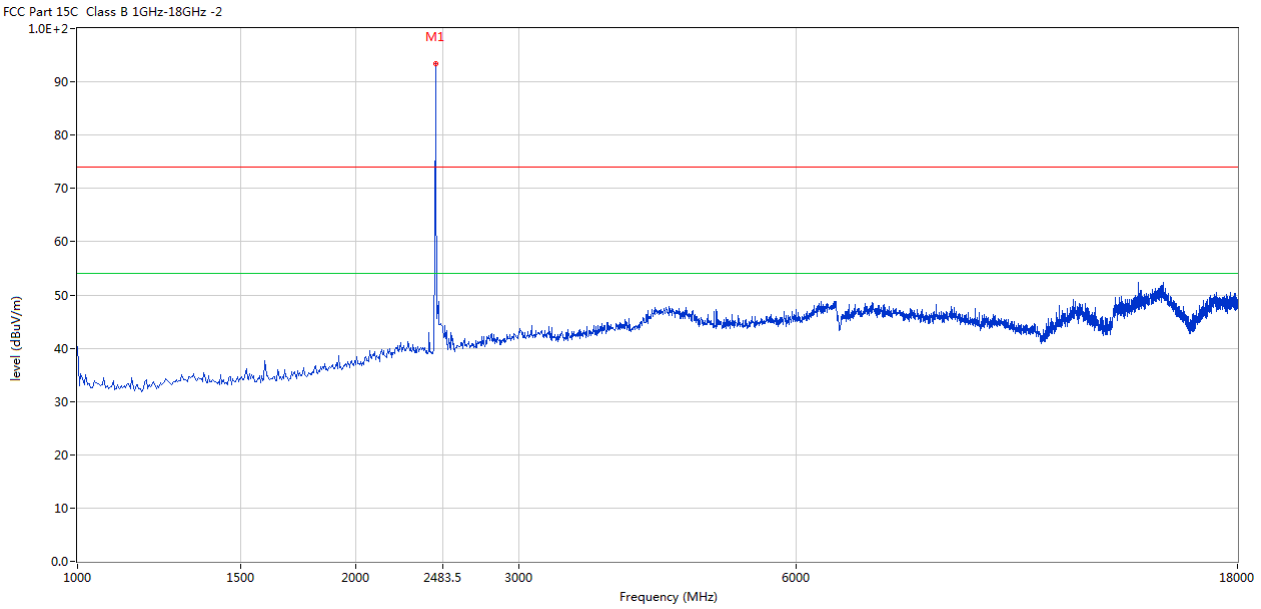
Vertical



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	80.52	-3.57	114.0	-33.48	Peak	4.00	100	Vertical	Pass

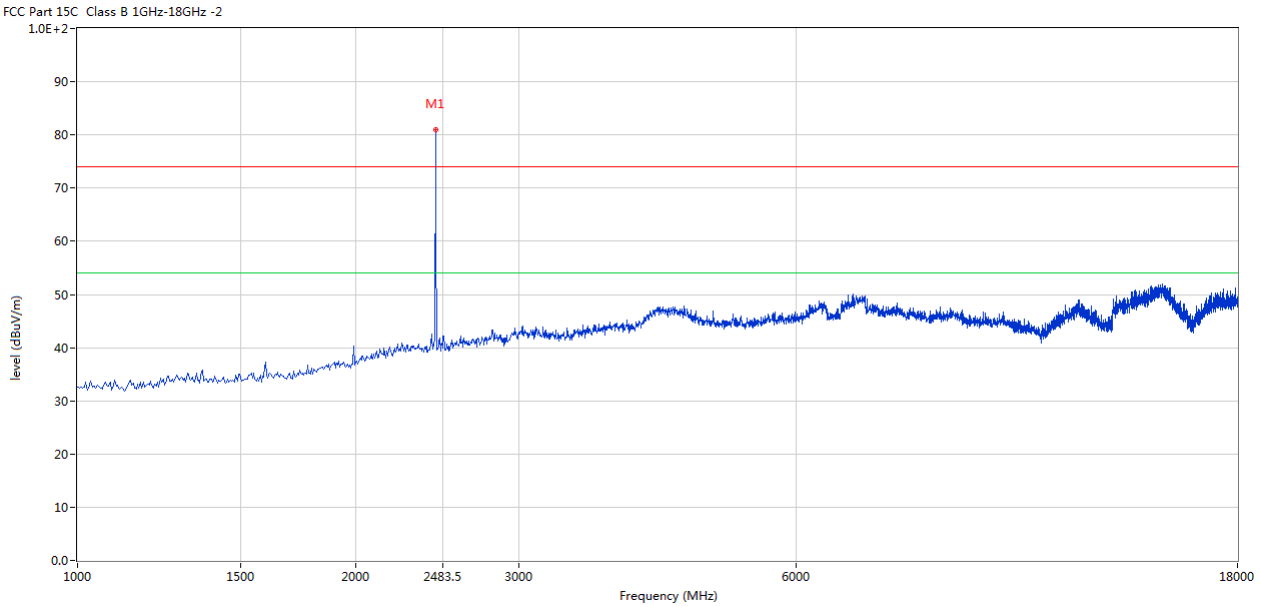
Please refer to the following test plots for details: Middle Channel-2440MHz

Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	92.01	-3.57	114.0	-21.99	Peak	199.00	100	Horizontal	Pass

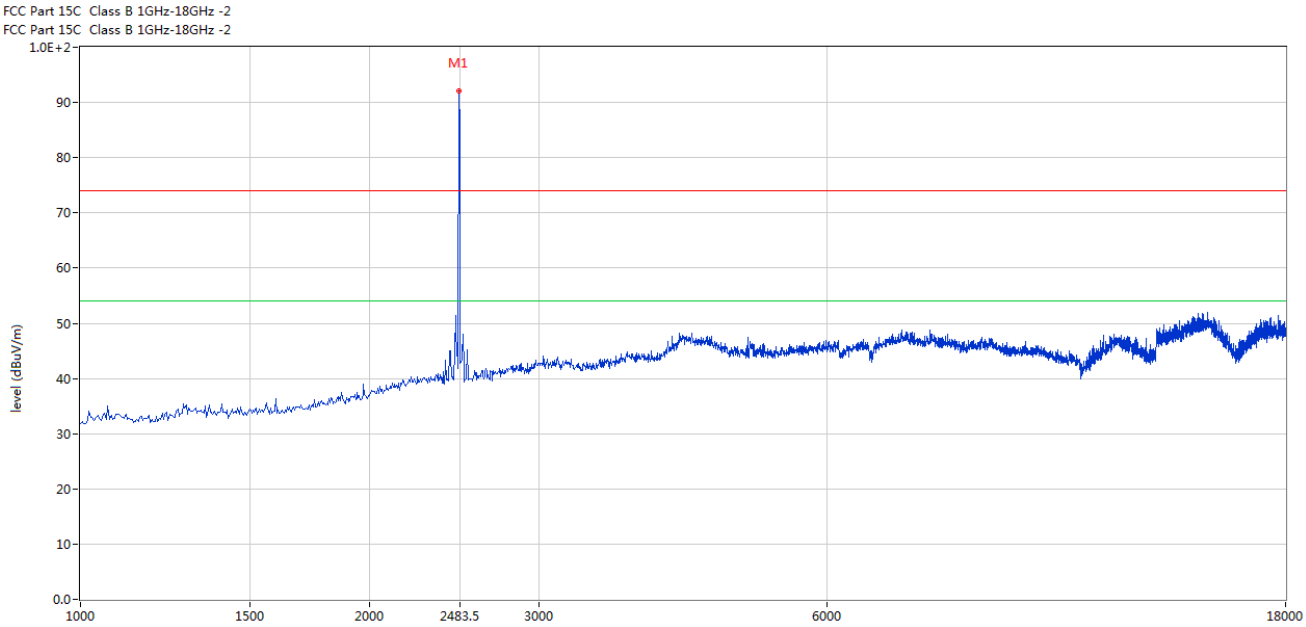
Vertical



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	80.98	-3.57	114.0	-33.02	Peak	320.00	100	Vertical	Pass

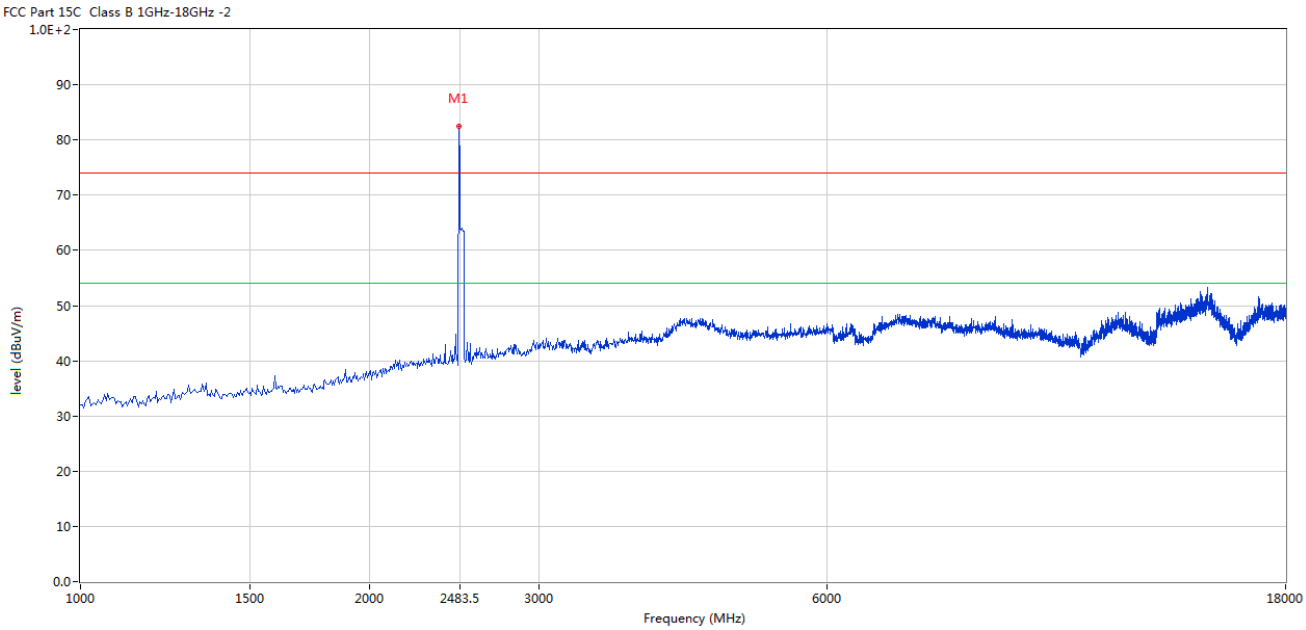
Please refer to the following test plots for details: High Channel-2480MHz

Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	91.97	-3.57	114.0	-22.03	Peak	183.00	100	Horizontal	Pass

Vertical



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	82.36	-3.57	114.0	-31.64	Peak	333.00	100	Vertical	Pass

Note: (1) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

(2) Margin=Emission-Limits

(3) According to section 15.35(b), the peak limit is 20dB higher than the average limit

(4) For test purpose, keep EUT continuous transmitting

(5) For emission above 18GHz and Below 30MHz, It is only the floor noise and less than the limit for more than 20dB. No necessary to take down.

(6) the measured PK value less than the AV limit.

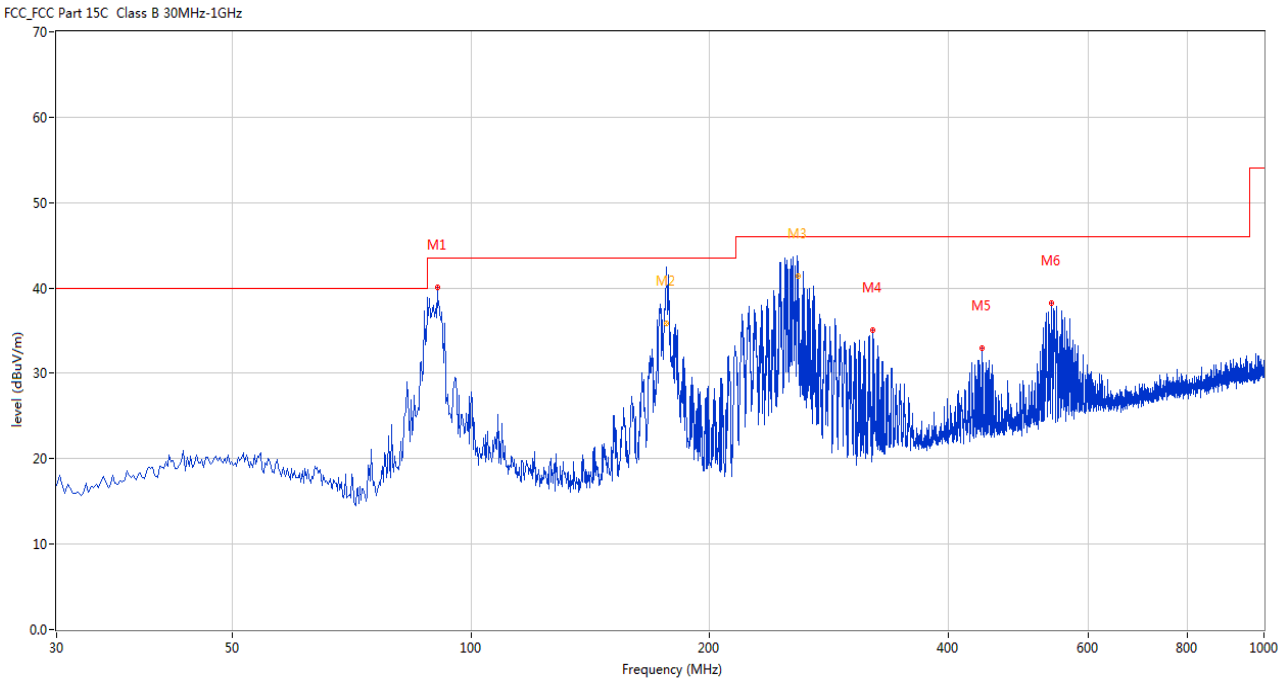
B. General Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



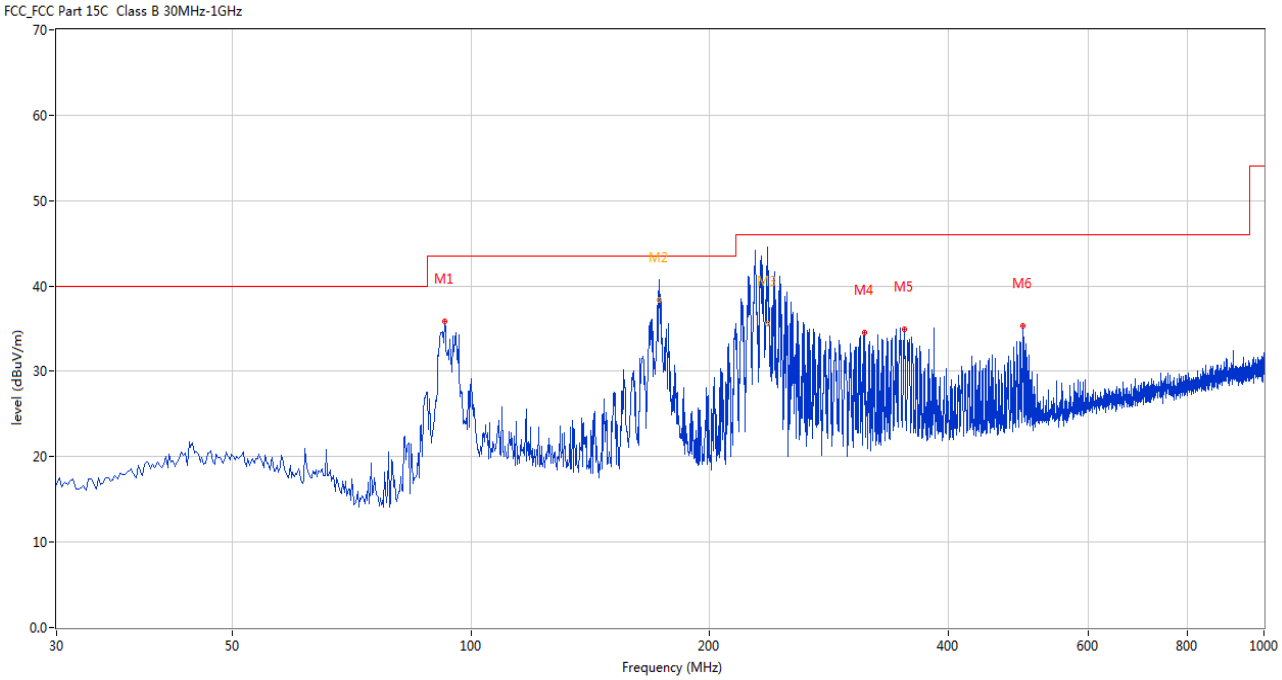
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	90.610	40.03	-15.01	43.5	-3.47	Peak	272.00	200	Horizontal	Pass
2*	176.409	35.90	-15.65	43.5	-7.60	QP	319.00	182	Horizontal	Pass
3*	258.267	41.42	-11.85	46.0	-4.58	QP	259.00	101	Horizontal	Pass
4	321.412	35.01	-10.54	46.0	-10.99	Peak	284.00	100	Horizontal	Pass
5	440.935	32.96	-8.02	46.0	-13.04	Peak	301.00	200	Horizontal	Pass
6	538.880	38.21	-6.45	46.0	-7.79	Peak	0.00	200	Horizontal	Pass

Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	92.549	35.89	-14.57	43.5	-7.61	Peak	66.00	100	Vertical	Pass
2*	172.708	38.41	-15.95	43.5	-5.09	QP	33.00	179	Vertical	Pass
3*	236.701	35.58	-12.34	46.0	-10.42	QP	287.00	200	Vertical	Pass
4	313.654	34.51	-10.83	46.0	-11.49	Peak	360.00	200	Vertical	Pass
5	351.960	35.00	-9.45	46.0	-11.00	Peak	360.00	200	Vertical	Pass
6	496.453	35.33	-7.13	46.0	-10.67	Peak	0.00	100	Vertical	Pass

7. Band Edge

7.1 Test Method and test Procedure:

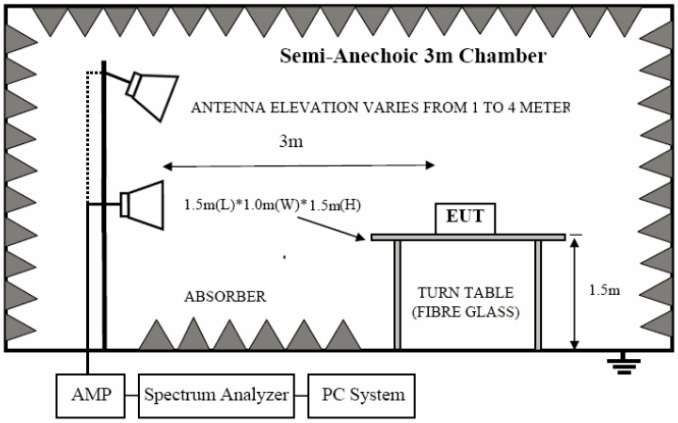
(1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189

(2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.

(3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.

(4) The antenna polarization: Vertical polarization and Horizontal polarization.

7. 2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

7.3 Configuration of the EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

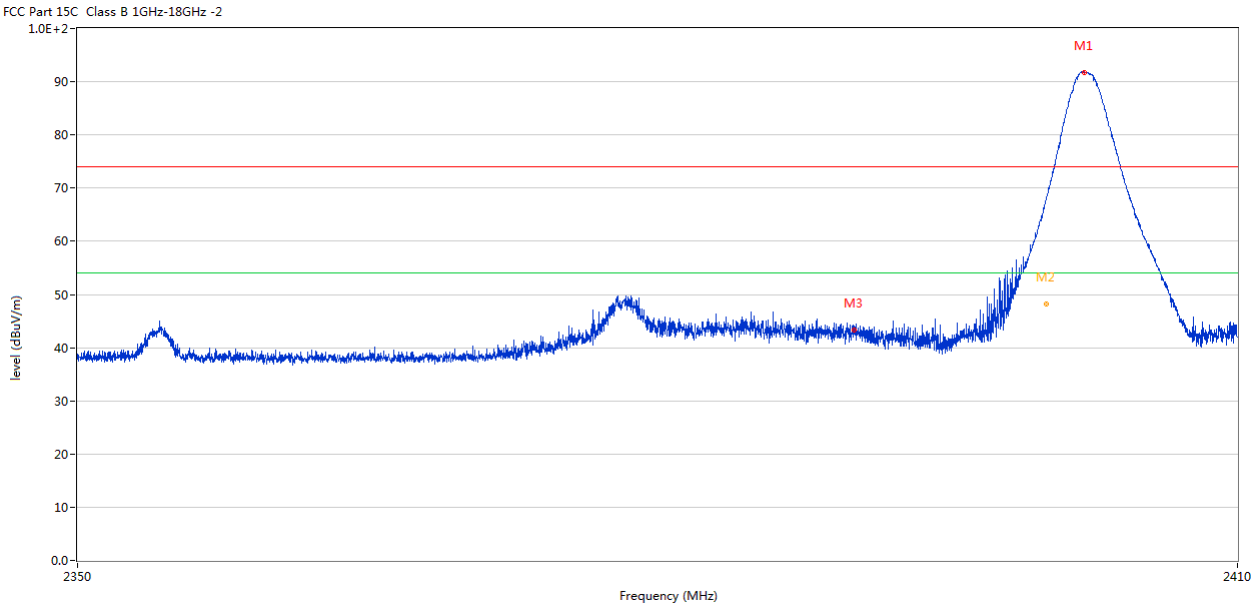
Same as section 5.4 of this report.

7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

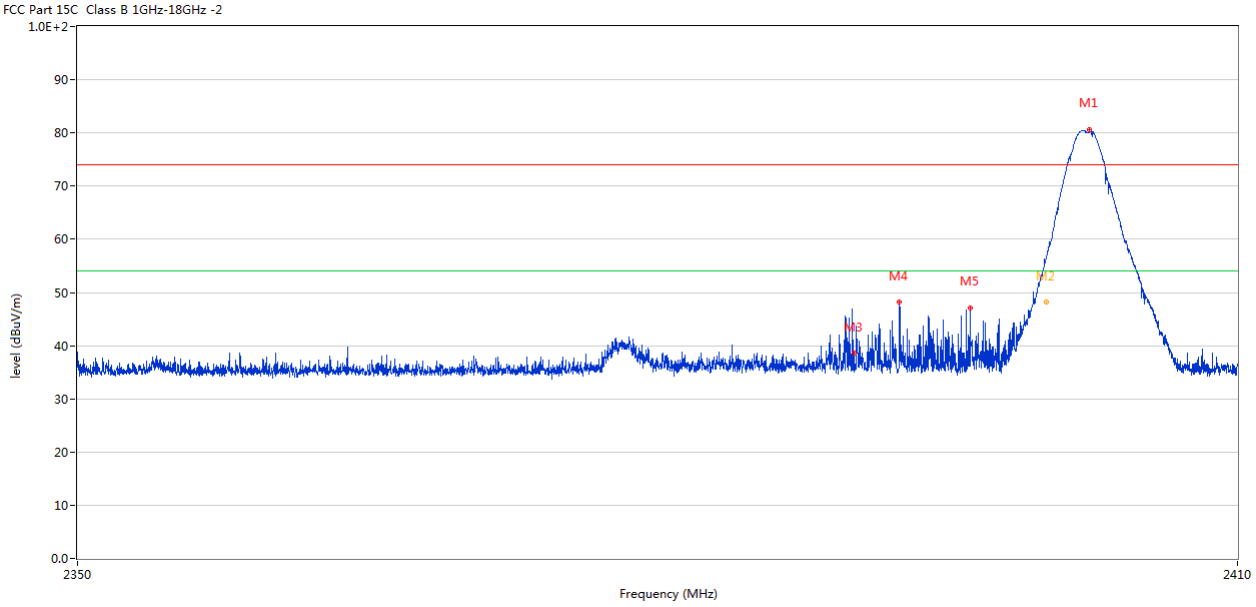
7.6 Test Result

Product:	Bluetooth Speaker	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



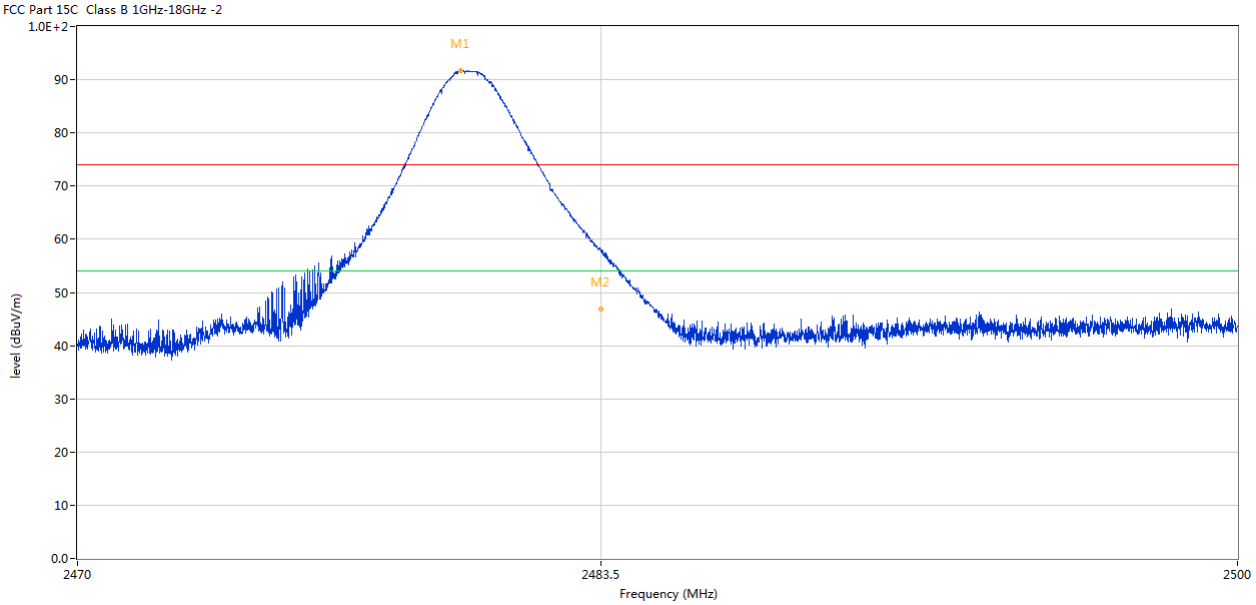
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.000	91.75	-3.57	74.0	17.75	Peak	183.00	100	Horizontal	N/A
2	2400.000	67.85	-3.57	74.0	-6.15	Peak	187.29	100	Horizontal	Pass
2**	2400.000	48.16	-3.57	54.0	-5.84	AV	187.29	100	Horizontal	Pass
3	2390.000	43.58	-3.53	74.0	-30.42	Peak	180.67	100	Horizontal	Pass

Product:	Bluetooth Speaker	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



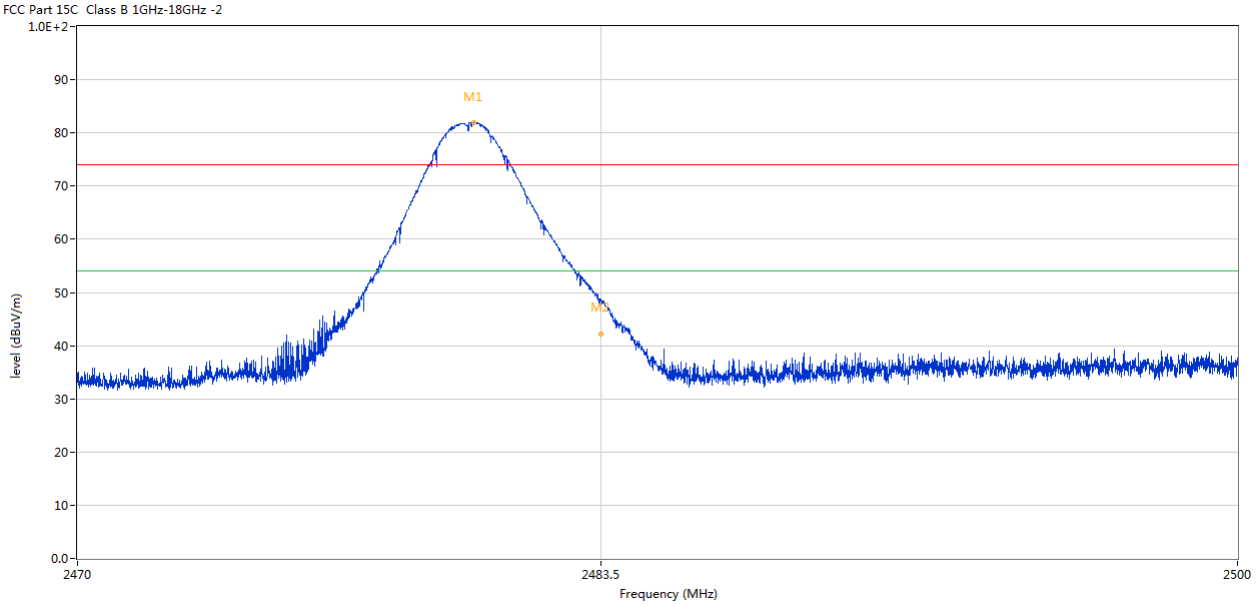
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.000	80.43	-3.57	74.0	6.43	Peak	338.00	100	Vertical	N/A
2	2400.000	59.49	-3.57	74.0	-14.51	Peak	338.00	100	Vertical	Pass
2**	2400.000	48.20	-3.57	54.0	-5.80	AV	338.00	100	Vertical	Pass
3	2390.000	39.13	-3.53	74.0	-34.87	Peak	123.67	100	Vertical	Pass
4	2392.364	51.20	-3.54	74.0	-22.80	Peak	119.00	100	Vertical	Pass
5	2396.023	50.15	-3.55	74.0	-23.85	Peak	94.00	100	Vertical	Pass

Product:	Bluetooth Speaker	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.883	91.74	-3.57	74.0	17.74	Peak	183.00	100	Horizontal	N/A
2	2483.500	61.65	-3.57	74.0	-12.35	Peak	187.29	100	Horizontal	Pass
2**	2483.500	46.87	-3.57	54.0	-7.13	AV	187.29	100	Horizontal	Pass

Product:	Bluetooth Speaker	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480.197	81.99	-3.57	74.0	7.99	Peak	329.00	100	Vertical	N/A
2	2483.500	53.93	-3.57	74.0	-20.07	Peak	324.00	100	Vertical	Pass
2**	2483.500	42.23	-3.57	54.0	-11.77	AV	324.00	100	Vertical	Pass

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.

2. For Restricted band test, the three modulation modes of GFSK and Pi/4D-QPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

8.0 Antenna Requirement

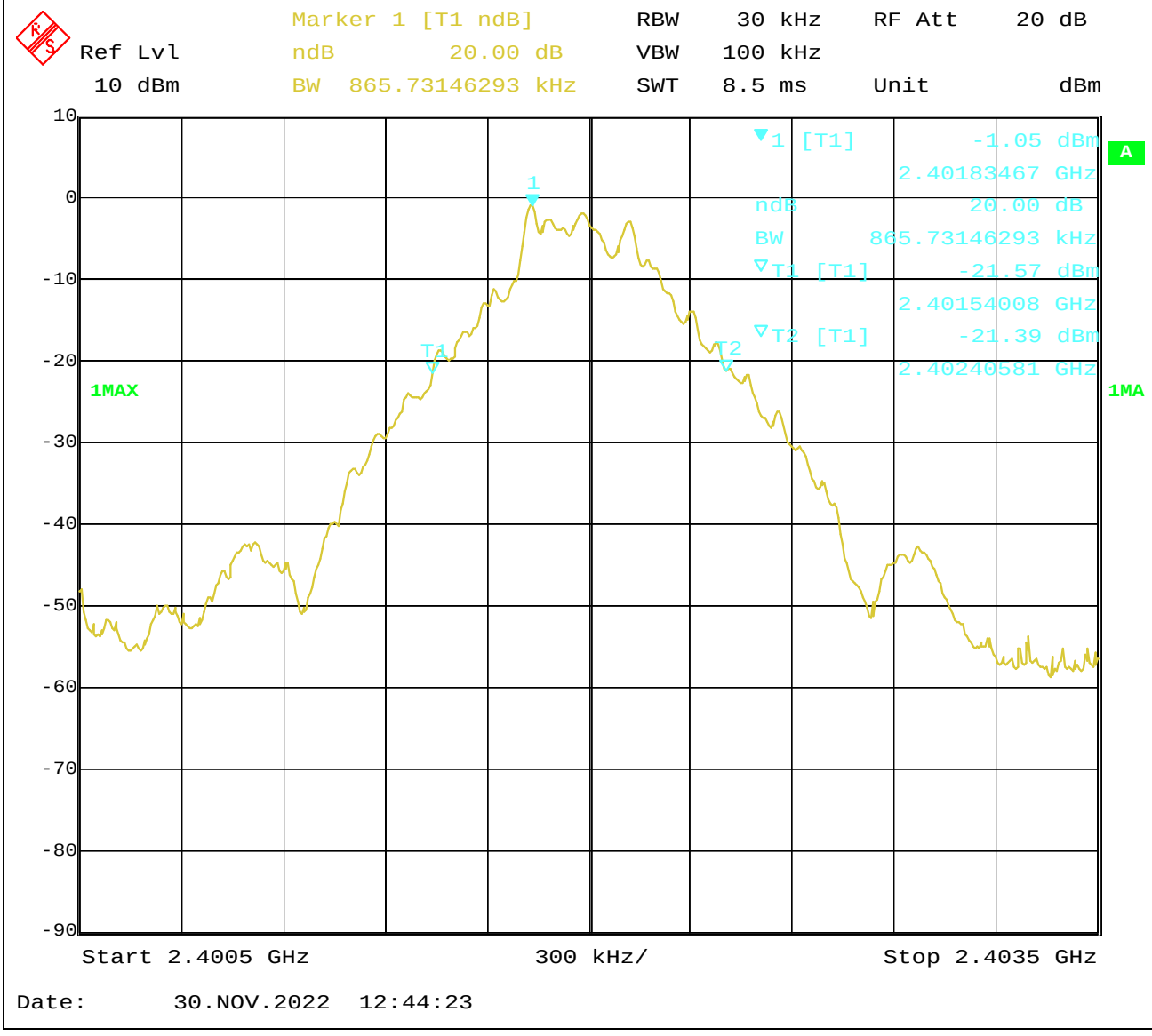
Applicable Standard

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 shall be considered sufficient to comply with the provisions of this section.

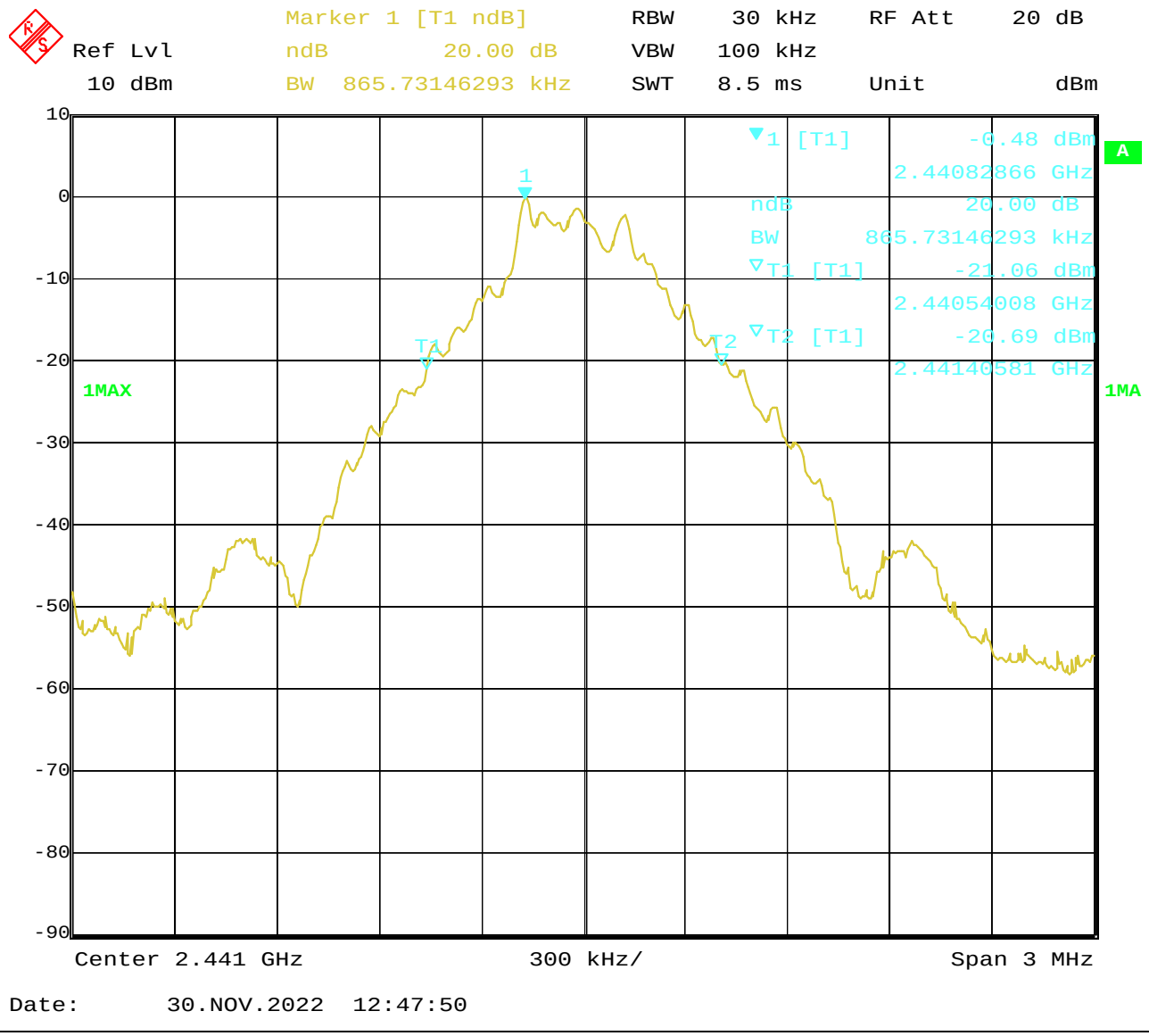
This product has a PCB antenna. The antenna gain is -0.58dBi Max. It fulfills the requirement of this section.

Test Result: Pass

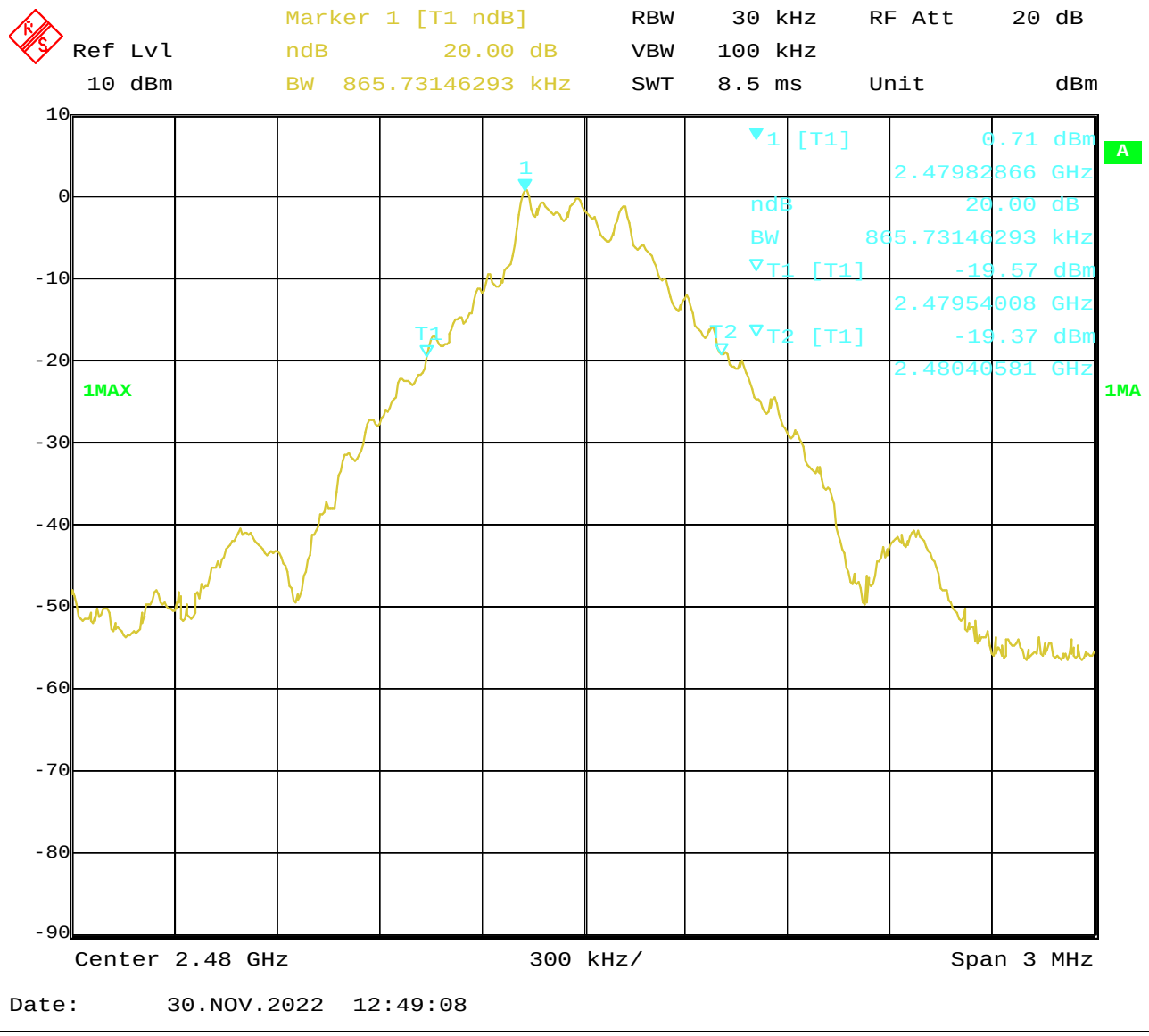
9.0 20dB Bandwidth Measurement			
GFSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	865.73kHz	--	--



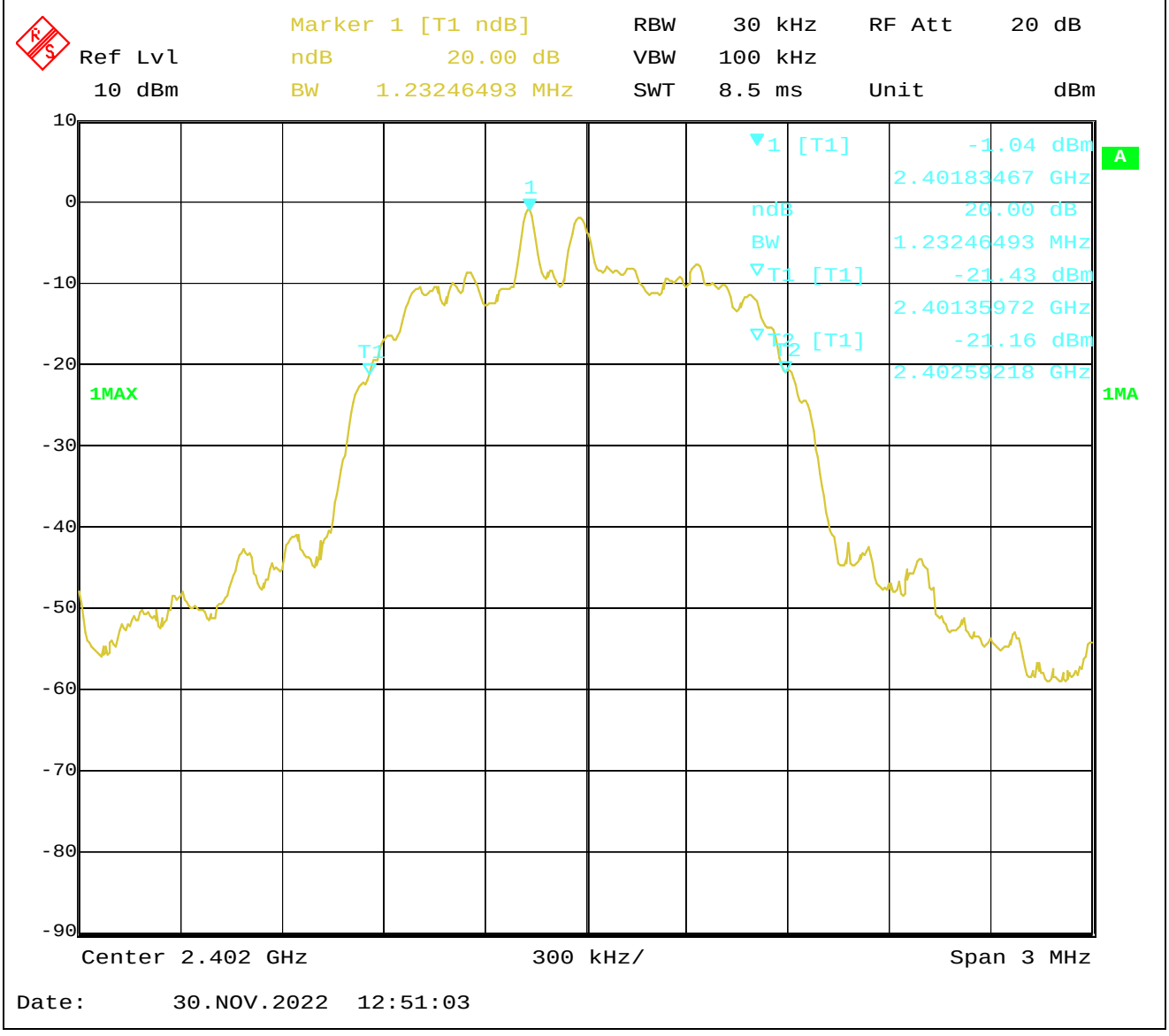
GFSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	865.73kHz	--	--



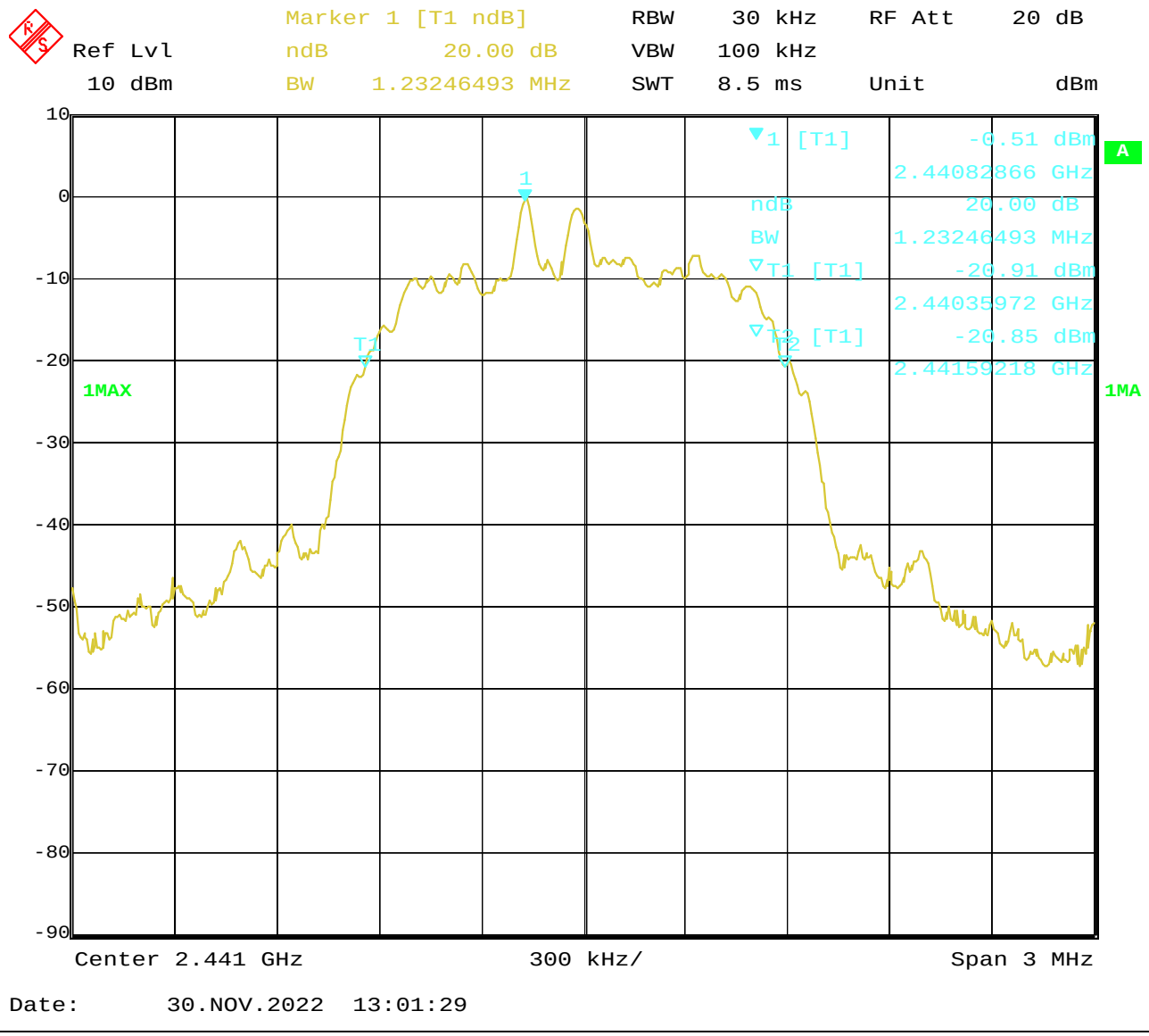
GFSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	865.73kHz	--	--



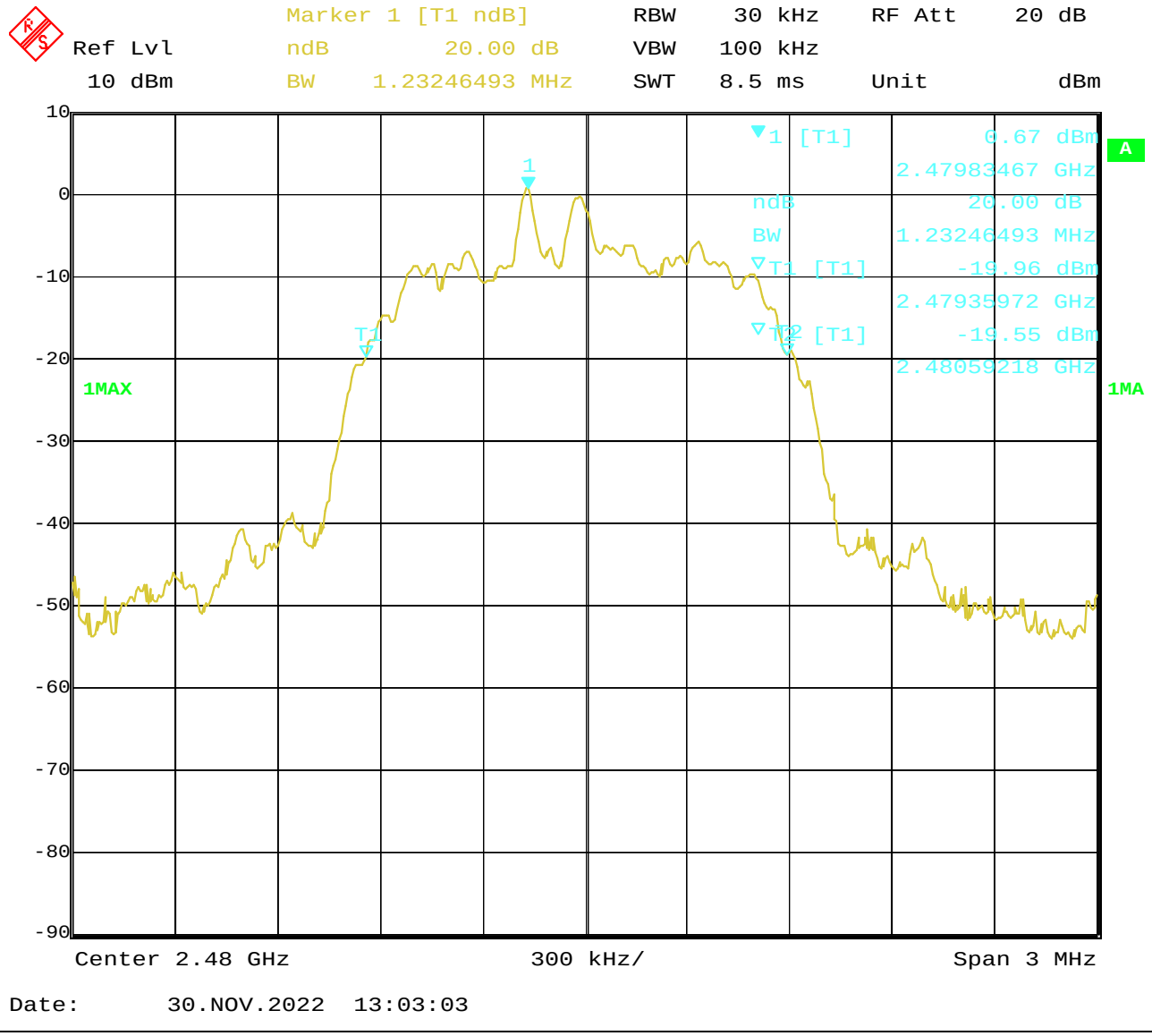
Л/4DQPSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.232MHz	--	--



Л/4DQPSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.232MHz	--	--



Л/4DQPSK			
Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.232MHz	--	--



10.0 FCC ID Label

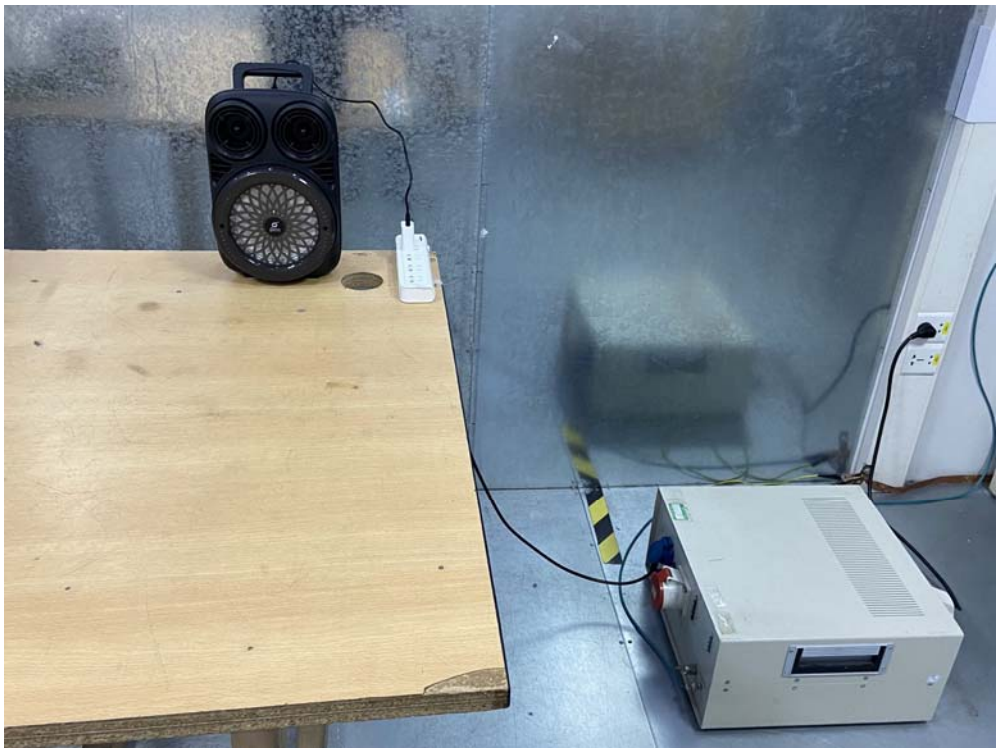
FCC ID: 2ACCE-22526

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

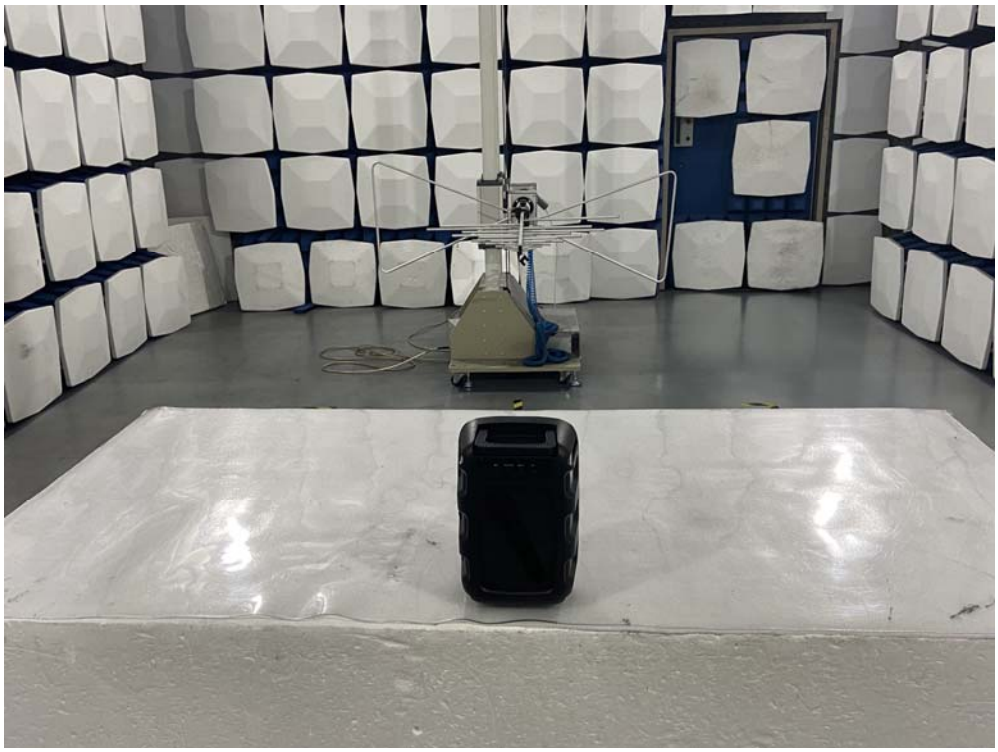
The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

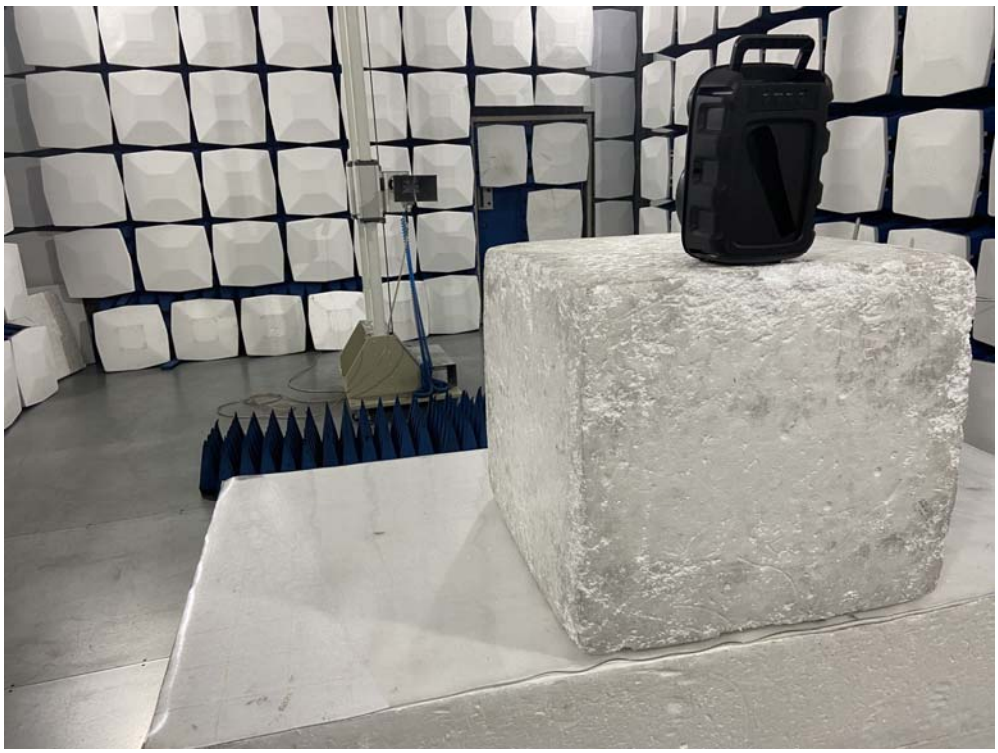
11.0 Photo of testing

11.1 Conducted test View



Radiated emission test view





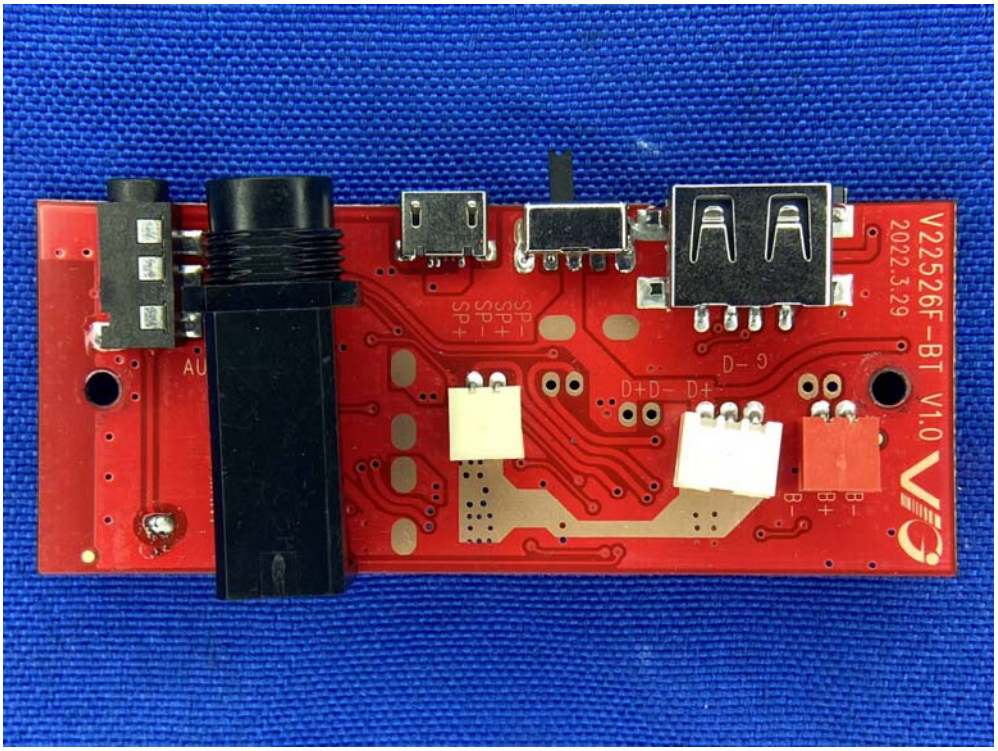
11.2 Photographs – EUT

Outside View

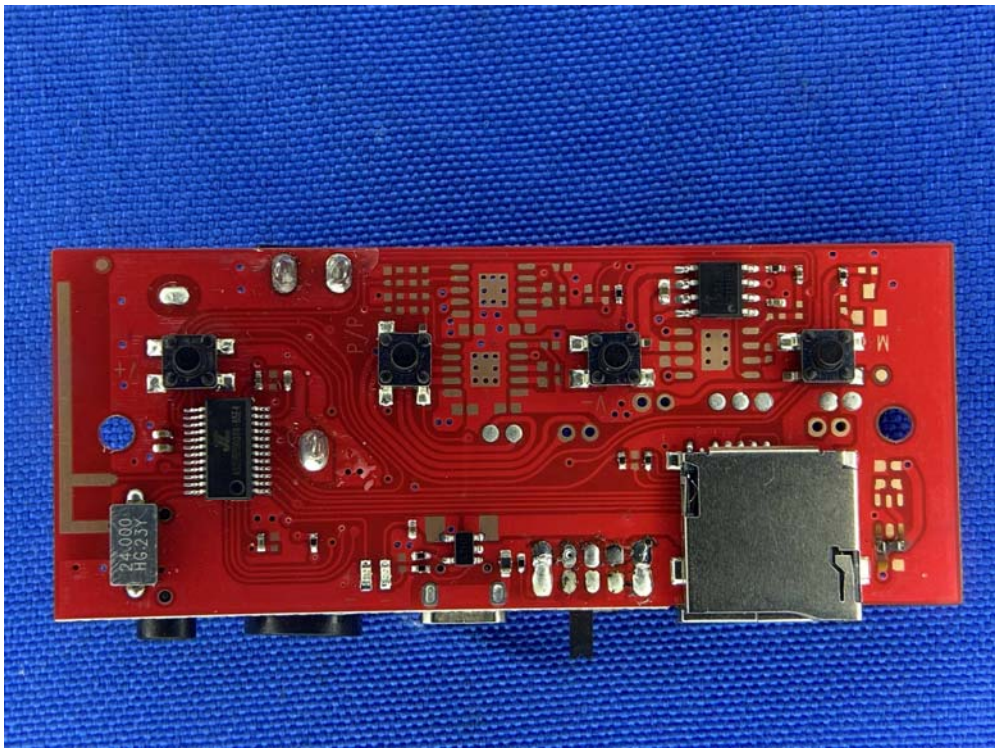
Outside View

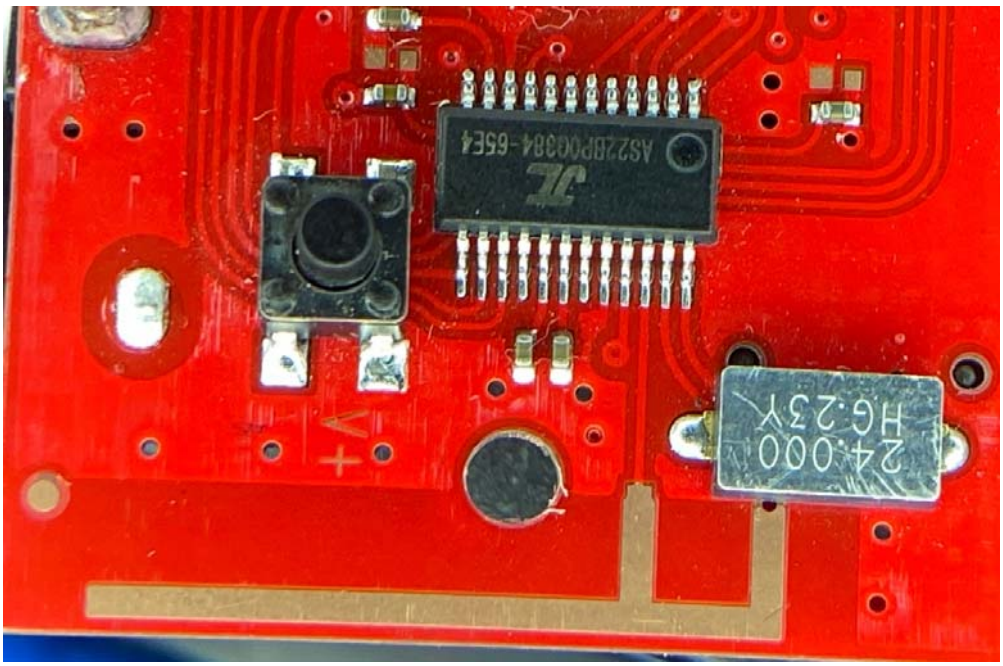
Outside View

Inside View



Inside View





Inside View

--End of the report--