FCC Radio Test Report

FCC ID: 2BBNB-BT84B

Original Grant

Report No.	:	TBR-C-202305-0117-31
Applicant	:	Shenzhen James Audio Technology Co., Ltd
Equipment Under Test (EUT)		
EUT Name	:	Bluetooth FM Transmitter
Model No.	:	BT84B
Series Model No.	:	20088
Brand Name	:	----
Sample ID	:	202305-0117-01-01# & 202305-0117-01-02#
Receipt Date	:	2023-06-07
Test Date	:	2023-06-07 to 2023-06-15
Issue Date	:	2023-06-15
Standards	:	FCC Part 15, Subpart C 15.239
Test Method	:	ANSI C63.10:2013
Conclusions	:	**PASS**

In the configuration tested, the EUT complied with the standards specified above, The EUT technically complies with the FCC requirements

Test/Witness Engineer	:	Camille Li
Engineer Supervisor	:	Ivan Su
Engineer Manager	:	Ray Lai

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Tel: +86 75526509301 Fax: +86 75526509195

Contents

Revision History

Report No.	Version	Description	Issued Date
TBR-C-202305-0117-31	Rev.01	Initial issue of report	2023-06-15

1. General Information about EUT

1.1 Client Information

Applicant	:	Shenzhen James Audio Technology Co., Ltd
Address	:	401, Building A, JMR Industrial Park, No.2 Guiyuan Road, Guixiang Community, Guanlan Town, Longhua District, Shenzhen, China
Manufacturer	:	Shenzhen James Audio Technology Co., Ltd
Address	:	401, Building A, JMR Industrial Park, No.2 Guiyuan Road, Guixiang Community, Guanlan Town, Longhua District, Shenzhen, China

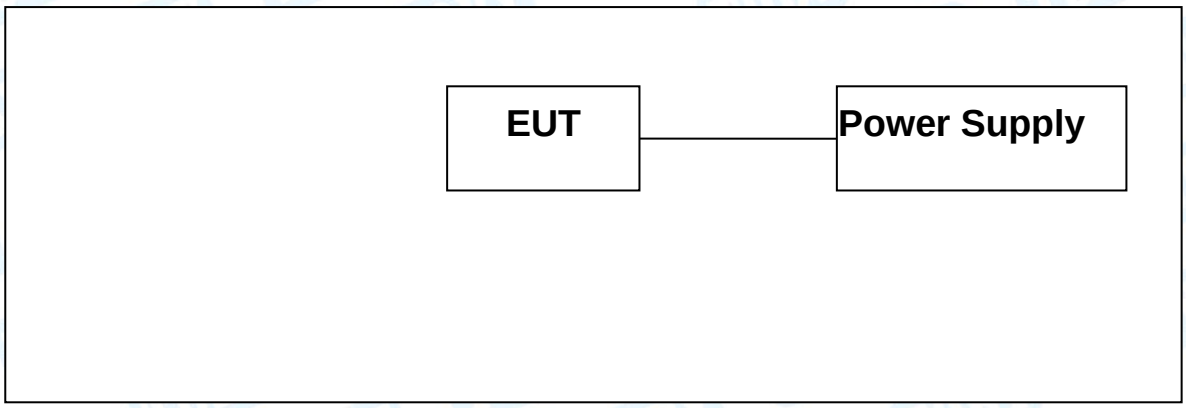
1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Bluetooth FM Transmitter	
Models No.	:	BT84B, 20088	
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that appearance.	
Product Description	:	Operation Frequency:	FM: 88.1-107.9 MHz
		Number of Channel:	199(Channel spacing 100KHz)
		Antenna Gain:	-0.58dBi spring Antenna
		Modulation Type:	FM
Power Rating	:	Input: DC 12V/24V	
Software Version	:	2023-03-27-(4EBD-B7C4BDB9)-(GadJet AU23)-JMS-BT84—6956C4-V0.0.7	
Hardware Version	:	BT84_6956C+8027_V1.1	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

1.3 Block Diagram Showing the Configuration of System Tested



1.4 Description of Support Units

The EUT has been tested as an independent unit.

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

Pretest Mode	
Pretest Mode	**Description**
Mode 1	Continuously transmitting (88.1MHz/98.1MHz/107.9MHz)
Radiated Emission	
Test Mode	**Description**
Mode 1	Continuously transmitting (88.1MHz/98.1MHz/107.9MHz)
Note : The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

Note:

(1) During the testing procedure, the continuously transmitting mode was programmed by the customer.

(2) The EUT is considered a portable unit, and it was pre-tested on the positioned of each 3 axis: X axis, Y axis and Z axis. The worst case was found positioned on Z-plane. There for only the test data of this Z-plane were used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of transmitting mode.

1	**Product SW/HW Version :**	N/A
2	**Radio SW/HW Version:**	N/A
3	**Test SW Version:**	N/A
4	**RF Power Setting in Test SW:**	Adjust and control the corresponding transmission frequency through the EUT entity key.

1.7 Measurement Uncertainty

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %.

Test Item	**Parameters**	**Expanded Uncertainty (U_{Lab})**
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.

2. Test Summary

FCC Part 15 Subpart (15.239)				
Standard Section	**Test Item**	**Test Sample(s)**	**Judgment**	**Remark**
15.203	Antenna Requirement	202305-0117-02-02#	PASS	N/A
15.207	Conducted Emission	N/A	N/A	N/A
15.239 &15.209	Radiation Emission	202305-0117-02-01#	PASS	N/A
15.239	Occupied Bandwidth	202305-0117-02-02#	PASS	N/A
Note: (1)N/A is an abbreviation for Not Applicable. (2) The EUT is powered by DC battery, no requirement for this test item.				

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0

4. Test Equipment

Radiation Emission Test (B Site)					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep.01.2022	Aug. 31, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2023	Feb.22, 2024
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Dec. 05, 2021	Dec. 04, 2023
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Feb. 26, 2022	Feb.25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Jun. 26, 2022	Jun.25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 26, 2022	Jun.25, 2024
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP051845	AP21C806141	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep.01.2022	Aug. 31, 2023
Antenna Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Sep.01.2022	Aug. 31, 2023
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Sep.01.2022	Aug. 31, 2023
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep.01.2022	Aug. 31, 2023
Analog Signal Generator	Agilent	N5181A	MY48180463	Sep.01.2022	Aug. 31, 2023
Vector Signal Generator	KEYSIGHT	N5182B	MY59101429	Sep.01.2022	Aug. 31, 2023
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Dec. 15, 2022	Dec. 14, 2023
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep.01.2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep.01.2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep.01.2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep.01.2022	Aug. 31, 2023
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Sep.01.2022	Aug. 31, 2023
Band Reject Filter Group	Tonsced	JS0806-F	21D8060414	Jun. 23, 2022	Jun. 22, 2023
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A
Wideband Radio Comunication Tester	Rohde & Schwarz	CMW500	144382	Sep.01.2022	Aug. 31, 2023

Universal Radio Communication Tester	Rohde&Schwarz	CMW500	168796	Jun. 23, 2022	Jun. 22, 2023
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 22, 2022	Jun. 21, 2023

5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1Test Standard

FCC Part 15.207

5.1.2 Test Limit

Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

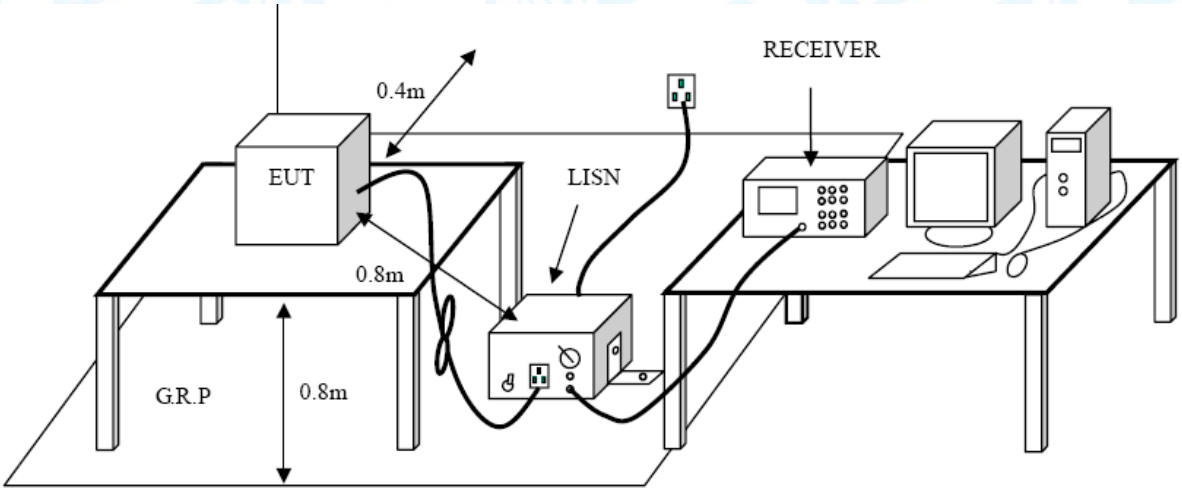
Notes:

(1) *Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequencies.

(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.2 Test Setup



5.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

5.4 Deviation From Test Standard

No deviation

5.5 Test Data

Not applicable.

6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209 & 15.239

6.1.2 Test Limit

According to FCC 15.209 requirement:

In addition to the provisions of Section 15.209, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Frequency (MHz	Field Strength (microvolt/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

Radiated Emission Limit (Above 1000MHz)

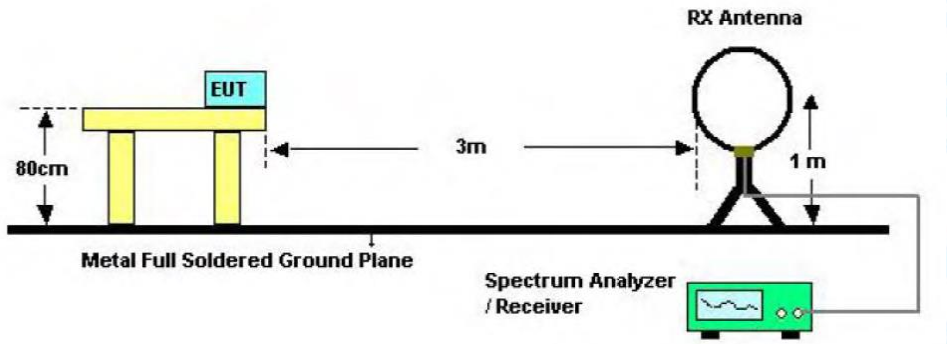
Frequency (MHz)	Distance Meters(at 3m)	
	Peak	Average
Above 1000	74	54

Note:

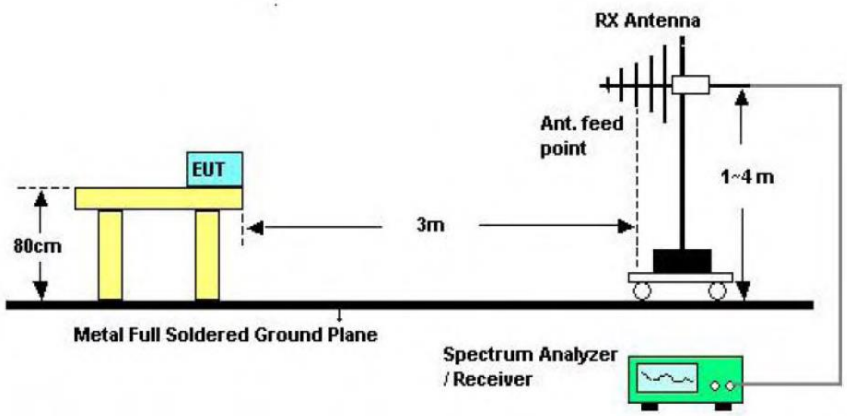
(1) The tighter limit applies at the band edges.

(2) Emission Level (dBuV/m)=20log Emission Level (uV/m)

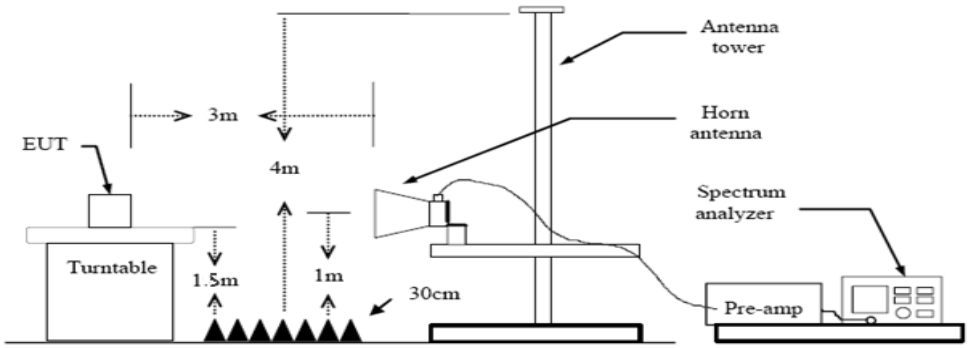
6.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.

(2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.

(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

(5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

(6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.

(7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

(8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Deviation From Test Standard

No deviation

6.6 Test Data

Please refer to the Attachment A.

7. Fundamental and Band Edge Test

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC Part 15.209 & 15.239

7.1.2 Test Limit

According to FCC 15.239(a)(b) and 15.209 requirement:

The field strength of emissions from the intentional radiators operated under these frequency bands shall not exceed the following:

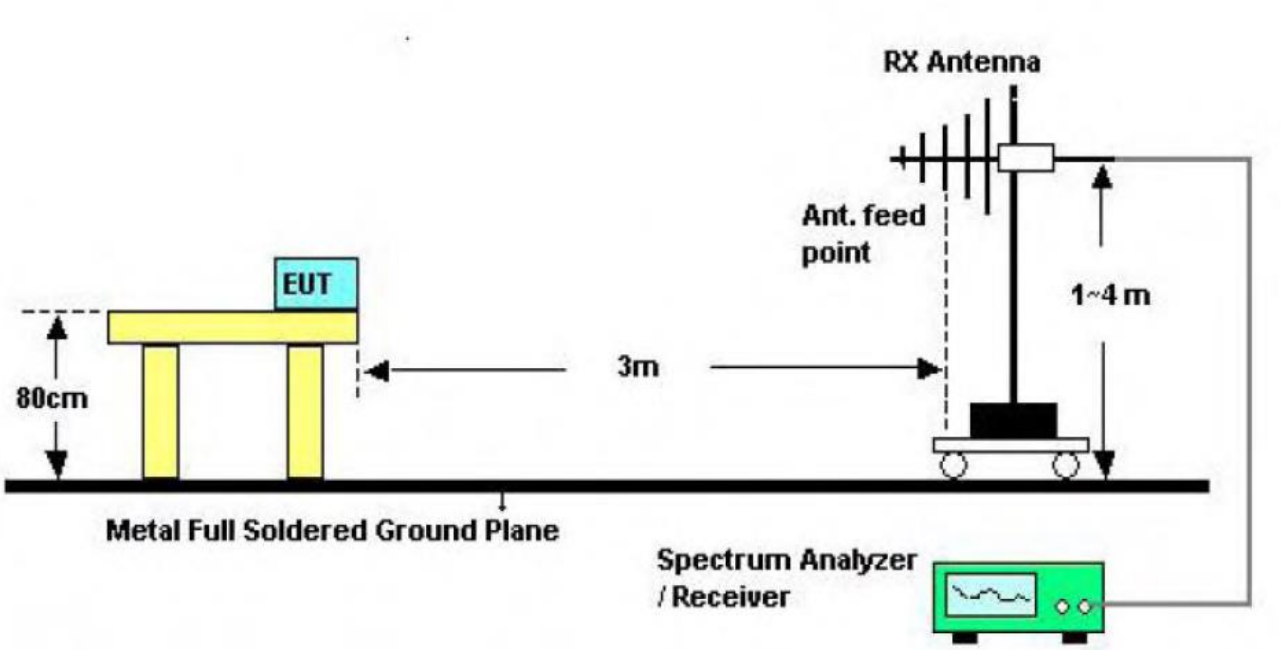
Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
88 to 108	Peak	Average
	67.96	47.96

According to FCC 15.239(c) and 15.209 requirements:

Field strength of outside of the frequency bands limit show in below table.

Outside Frequency Band Edge	Distance Meters(at 3m)
Below 88 MHz	40.0 (QP)
Above 108 MHz	43.5 (QP)

7.2 Test Setup



7.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.

(2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.

(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

(5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

(6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.

(7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

(8) For the actual test configuration, please see the test setup photo.

7.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

7.5 Deviation From Test Standard

No deviation

7.6 Test Data

Please refer to the Attachment B.

8. Bandwidth

8.1 Test Standard and Limit

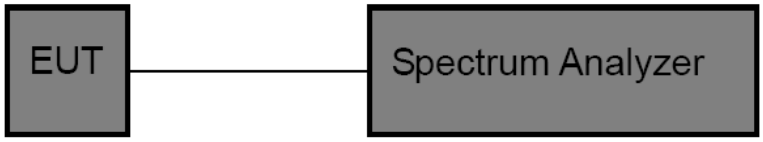
8.1.1 Test Standard

FCC Part 15.239

8.1.2 Test Limit

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

8.2 Test Setup



8.3 Test Procedure

(1) Set Spectrum Analyzer Center Frequency= Fundamental Frequency, RBW=3 kHz, VBW= 10 kHz, Span= 300 kHz.

(2) Measured the spectrum width with power higher than 20 dB below carrier.

8.4 EUT Operating Condition

The Equipment Under Test was Programmed to be in continuously transmitting mode.

8.5 Deviation From Test Standard

No deviation

8.6 Test Data

Please refer to the Attachment C.

9. Antenna Requirement

9.1 Standard Requirement

9.1.1 Standard

FCC Part 15.203

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

9.2 Antenna Connected Construction

The gains of the antenna used for transmitting is -0.58dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

The EUT antenna is a PCB Antenna. It complies with the standard requirement.

Antenna Type
☑ Permanent attached antenna
☐ Unique connector antenna
☐ Professional installation antenna

Attachment A-- Radiated Emission Test Data

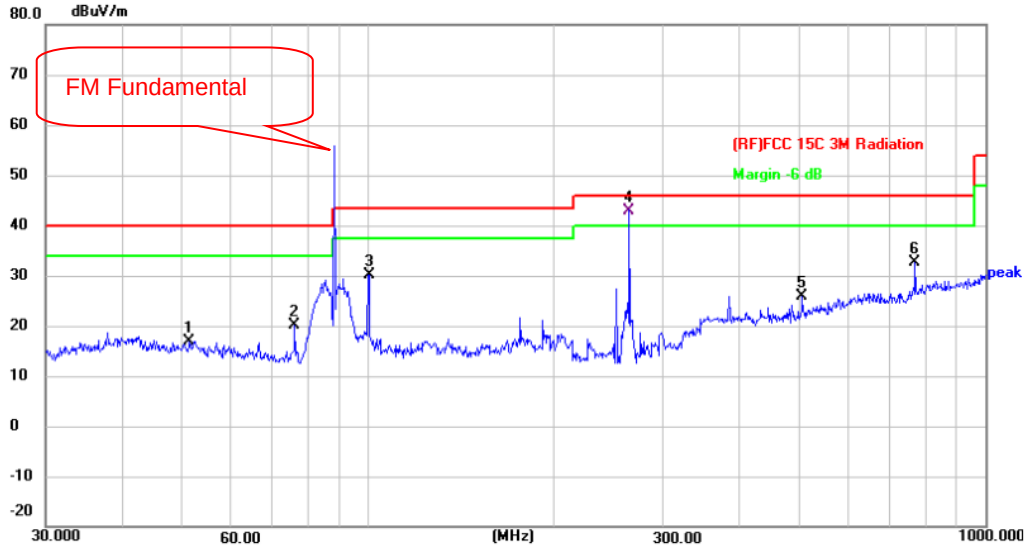
9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB Below the permissible value has no need to be reported.

30MHz~1GHz

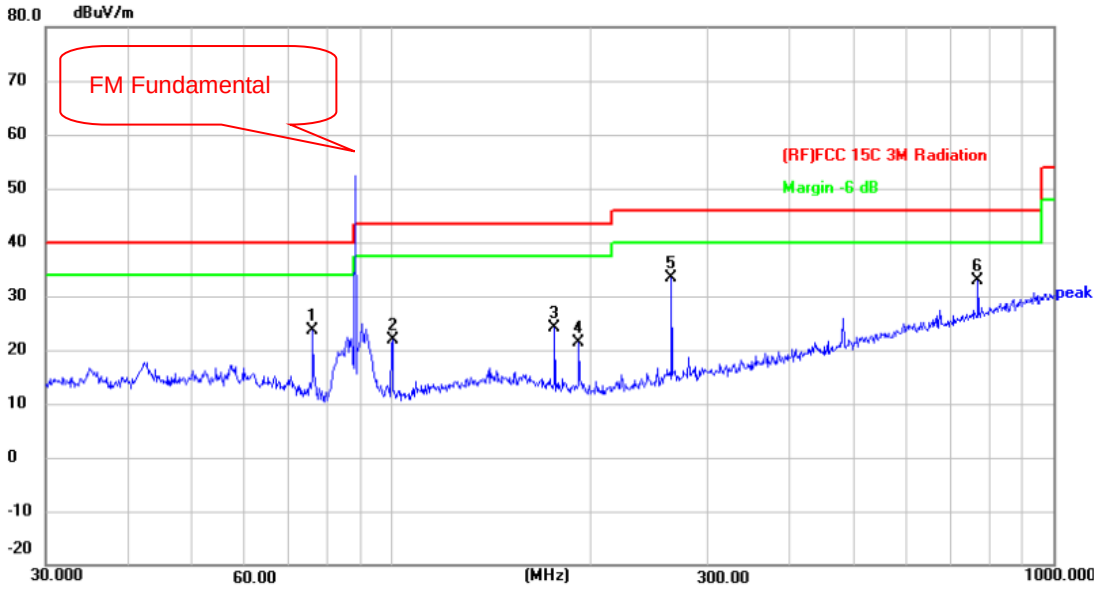
Temperature:	24.3℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Horizontal		
Test Mode:	88.1MHz		
Remark:	Only worse case is reported.		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	51.3004	39.64	-22.66	16.98	40.00	-23.02	peak
2	75.9770	46.13	-25.93	20.20	40.00	-19.80	peak
3	100.2283	55.79	-25.67	30.12	43.50	-13.38	peak
4 *	264.7456	65.06	-22.20	42.86	46.00	-3.14	QP
5	504.7062	41.08	-15.29	25.79	46.00	-20.21	peak
6	768.7481	42.33	-9.66	32.67	46.00	-13.33	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Vertical		
Test Mode:	88.1MHz		
Remark:	Only worse case is reported.		

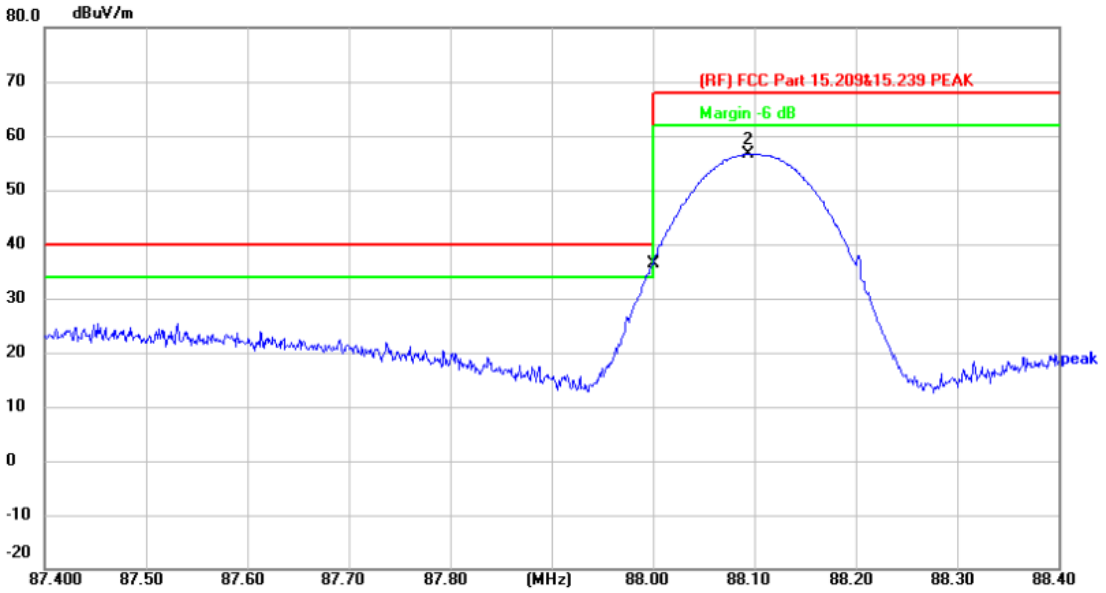


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	75.9773	49.55	-25.93	23.62	40.00	-16.38	peak
2	100.2286	47.50	-25.67	21.83	43.50	-21.67	peak
3	176.2686	47.71	-23.55	24.16	43.50	-19.34	peak
4	191.7450	45.87	-24.47	21.40	43.50	-22.10	peak
5 *	264.7457	55.59	-22.20	33.39	46.00	-12.61	peak
6	768.7481	42.54	-9.66	32.88	46.00	-13.12	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Attachment B--Fundamental and Band Edge Test Data

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Horizontal		
Test Mode:	88.1MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		

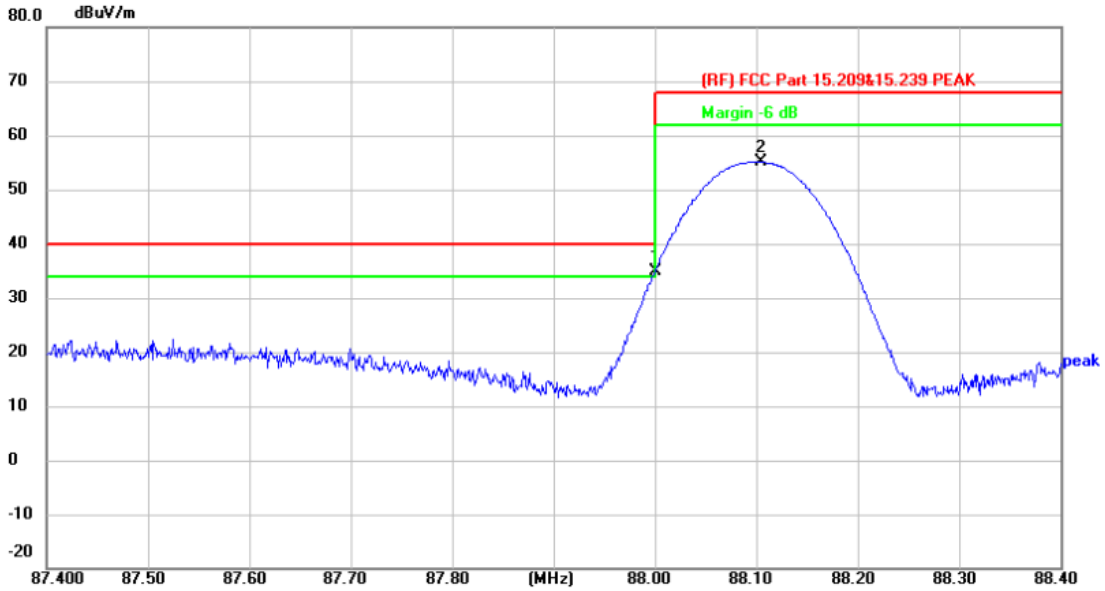


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	88.0000	63.12	-26.73	36.39	40.00	-3.61	peak
2	88.0940	83.32	-26.73	56.59	67.96	-11.37	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
88.0000	36.39	-26.73	9.66	47.96	-38.3	PASS
88.0940	56.59	-26.73	29.86	47.96	-18.1	PASS

Temperature:	24.3 ℃	Relative Humidity:	45%
Test Voltage:	DC 24V		
Ant. Pol.	Vertical		
Test Mode:	88.1MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		

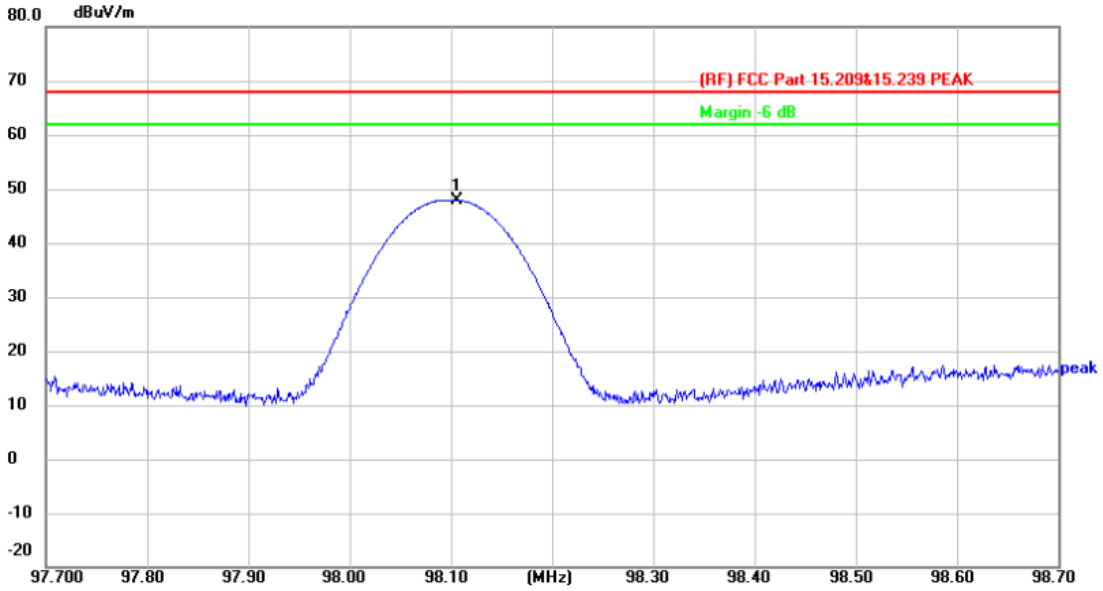


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	88.0000	61.52	-26.73	34.79	40.00	-5.21	peak
2	88.1050	81.79	-26.73	55.06	67.96	-12.90	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
88.0000	34.79	-26.73	8.06	47.96	-39.9	PASS
88.1050	55.06	-26.73	28.33	47.96	-19.63	PASS

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Horizontal		
Test Mode:	98.1MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		

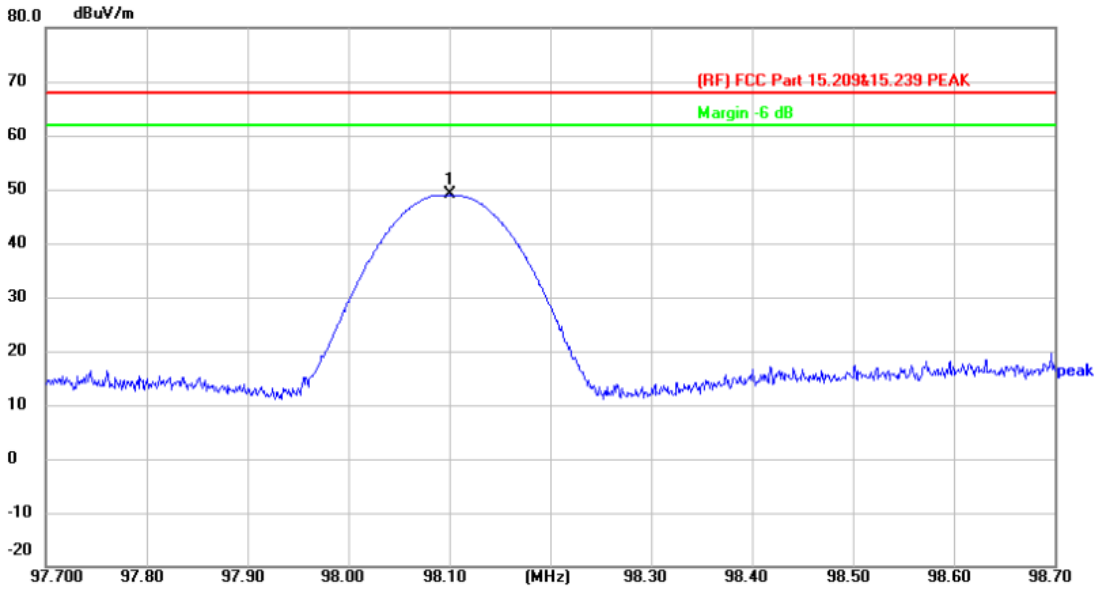


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	98.1059	73.84	-25.88	47.96	67.96	-20.00	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
98.1059	47.96	-25.88	19.08	47.96	-28.88	PASS

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Vertical		
Test Mode:	98.1MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		

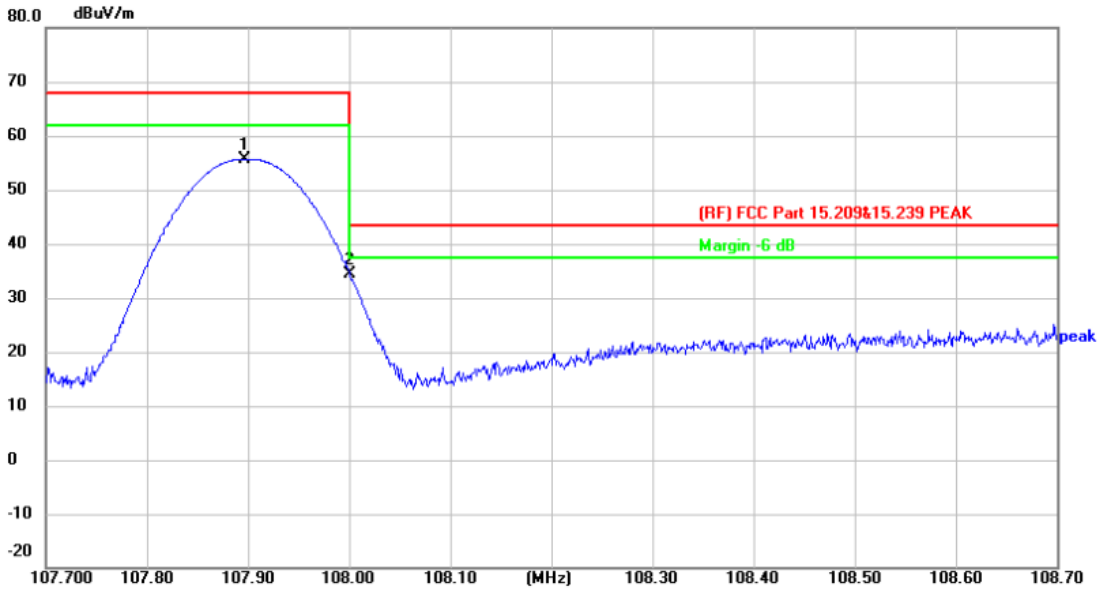


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	98.1010	74.90	-25.88	49.02	67.96	-18.94	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
98.1010	49.02	-25.88	23.14	47.96	-24.82	PASS

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Horizontal		
Test Mode:	107.9MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		

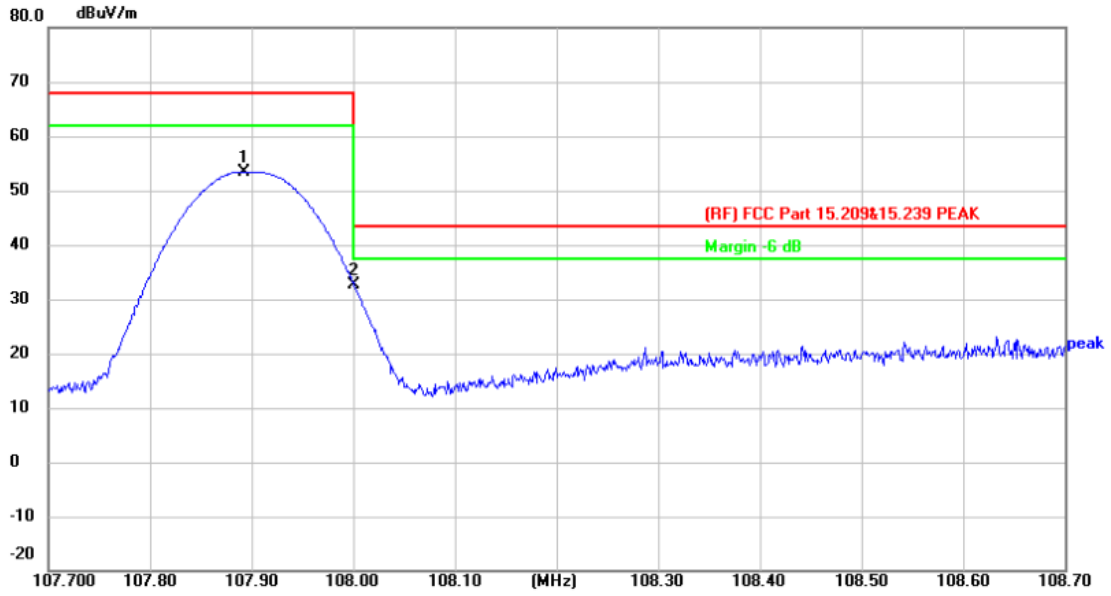


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	107.8970	80.59	-24.93	55.66	67.96	-12.30	peak
2 *	108.0010	59.28	-24.92	34.36	43.50	-9.14	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
107.8970	55.66	-24.93	30.73	47.96	-17.2	PASS
108.0010	34.36	-24.92	9.71	47.96	-38.25	PASS

Temperature:	24.3 ℃	**Relative Humidity:**	45%
Test Voltage:	DC 24V		
Ant. Pol.	Vertical		
Test Mode:	107.9MHz		
Remark:	Peak Value＜Average Limit, So only show the Peak Value		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	107.8920	78.42	-24.93	53.49	67.96	-14.47	peak
2 *	108.0000	57.52	-24.92	32.60	43.50	-10.90	peak

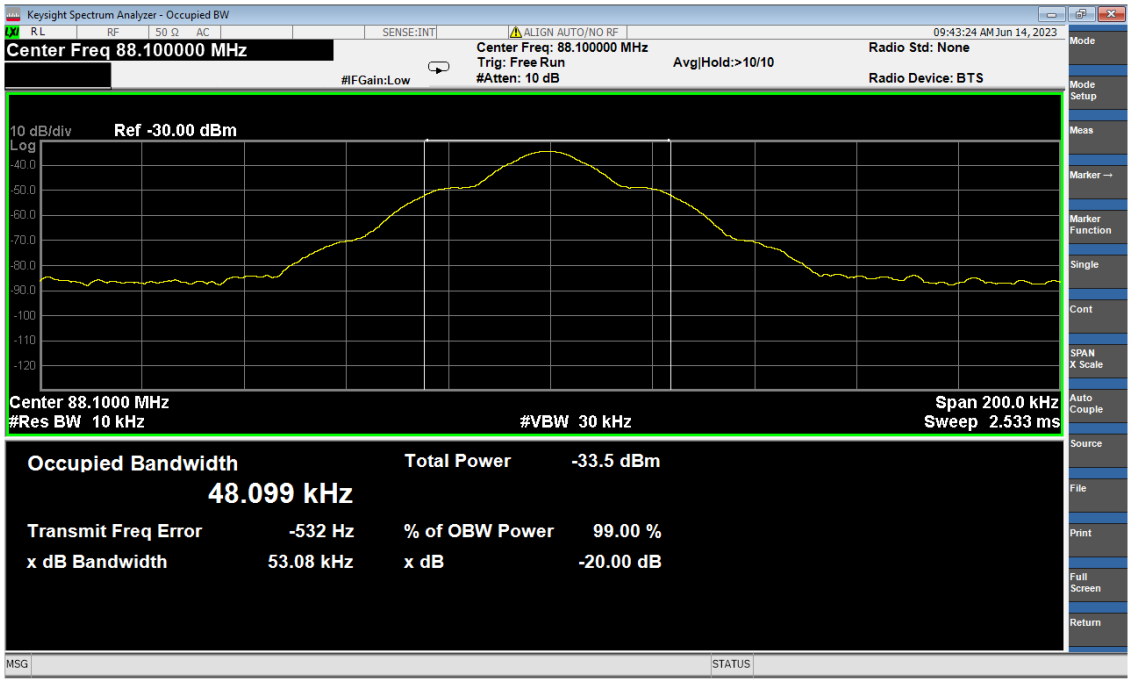
Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Margin (db)	Conclusion
107.8920	53.49	-24.93	28.56	47.96	-19.4	PASS
108.0000	32.60	-24.92	7.68	47.96	-40.28	PASS

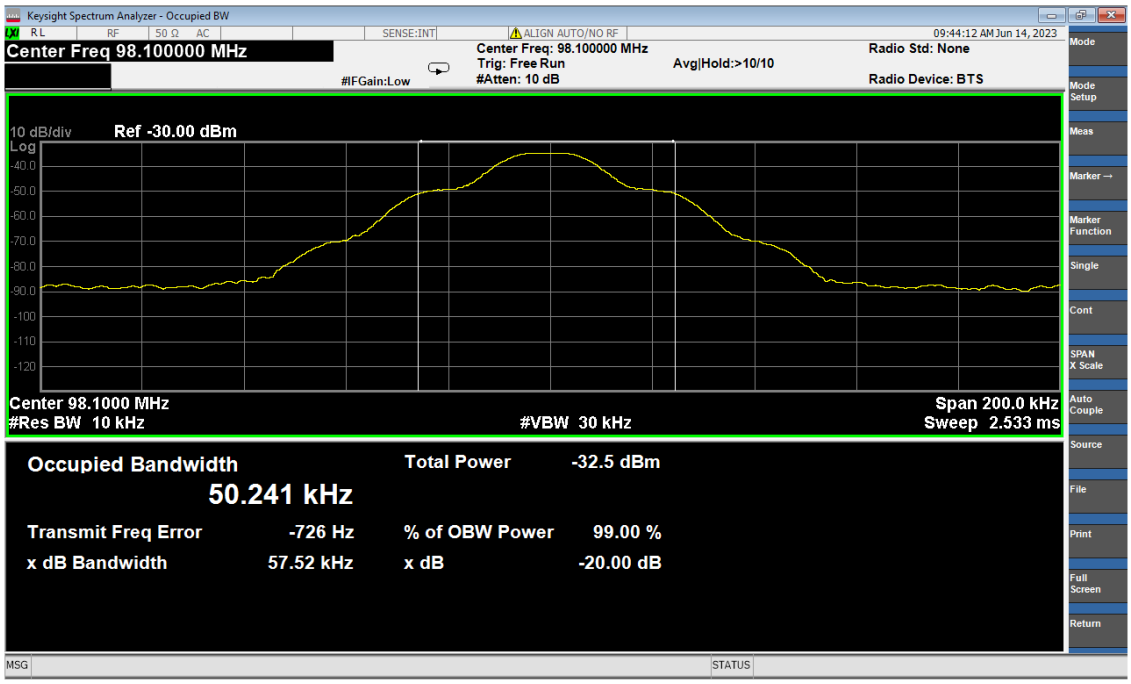
Attachment C-- Bandwidth Data

Frequency (MHz)	20 dB Bandwidth (kHz)	Limits (kHz)	Result
88.1	53.08	200	PASS
98.1	57.52		PASS
107.9	52.05		PASS

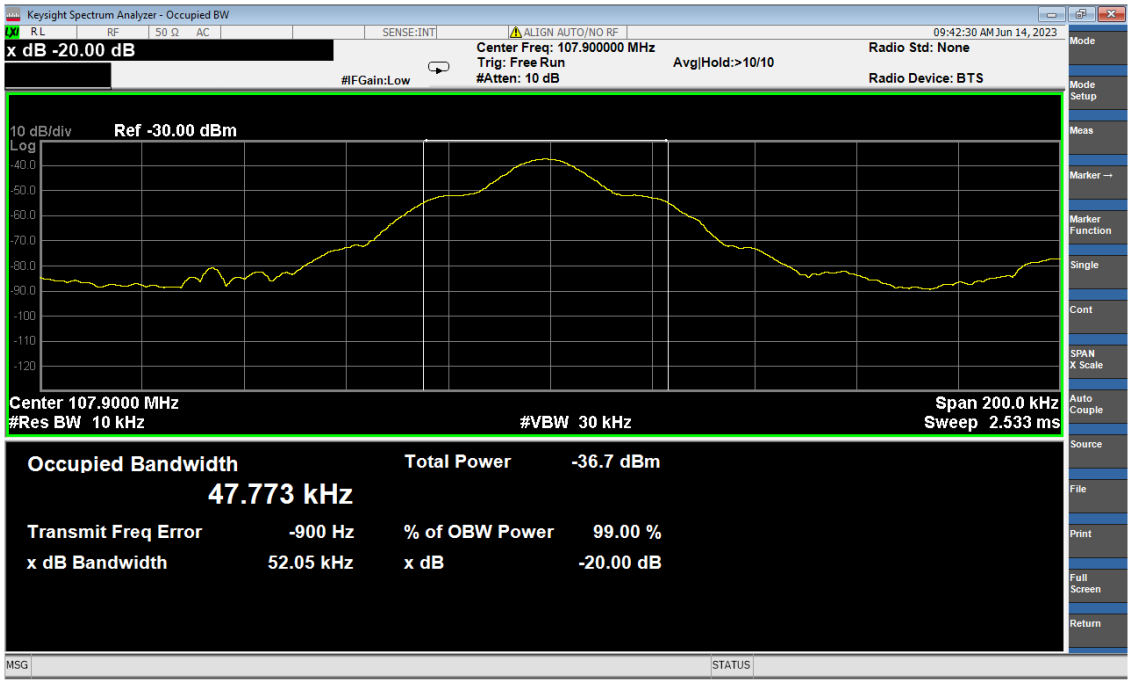
88.1 MHz



98.1 MHz



107.9 MHz



-----END OF REPORT-----