



FCC Part 15C Test Report

FCC ID: 2A8BZ-FMTXV2

Applicant: Shenzhen Mingbowei Technology Co., Ltd.

Address: 601-2, NO32 of Yangmen Industrial zone, Nanshan Dist, Shenzhen, China

Manufacturer: Shenzhen Mingbowei Technology Co., Ltd.

Address: 601-2, NO32 of Yangmen Industrial zone, Nanshan Dist, Shenzhen, China

EUT: FM Transmitter

Trade Mark: HolidayCoro

Model Number: FMTXV2

Date of Receipt: Aug. 02, 2022

Test Date: Aug. 02, 2022 - Aug. 08, 2022

Date of Report: Aug. 08, 2022

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

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Applicable Standards: ANSI C63.10:2013
FCC PART 15 C 15.231

Test Result: Pass

Report Number: DL-2022080815E

Prepared (Test Engineer): Pxing Huang

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.239) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.239 (b)	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.239 (a)	Occupied Bandwidth	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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 %**.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	FM Transmitter
Trademark:	HolidayCoro
Model No.:	FMTXV2
Sample No.:	N/A
Model Difference:	N/A
Sample No.:	DL-2022080815E#
Operation Frequency:	88MHz~108MHz
Channel Spacing	0.1MHz
Channel numbers:	199 Channel
Modulation technology:	FM
Antenna Type:	External Antenna
Antenna gain:	0dBi
Power supply:	DC 12V/1A from Adapter
Adapter:	Model: 1210 Input: 100-240V, 50/60Hz Output: DC 12V/1A

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The EUT's all information provided by client.

2.2 DESCRIPTION OF TEST MODES

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 above was evaluated respectively.

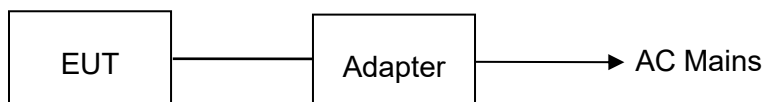
Test Mode	Description
Mode 1	88.1MHz
Mode 2	96.3MHz
Mode 3	107.7MHz

Note: The addition and subtraction buttons of EUT can realize the transmission of different frequencies.

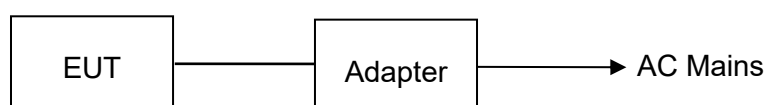


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	FM Transmitter	FMTXV2	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	No	No

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

None.



2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 20db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Dec. 06, 2021	Dec. 05, 2022
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Dec. 06, 2021	Dec. 05, 2022
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Dec. 06, 2021	Dec. 05, 2022
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Dec. 06, 2021	Dec. 05, 2022
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Dec. 06, 2021	Dec. 05, 2022
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Dec. 06, 2021	Dec. 05, 2022
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Dec. 06, 2021	Dec. 05, 2022
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Dec. 06, 2021	Dec. 05, 2022
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Dec. 06, 2021	Dec. 05, 2022
10	RF cableFMTXV2 (9kHz-1GHz)	ChengYu	966	004	Dec. 06, 2021	Dec. 05, 2022
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Dec. 06, 2021	Dec. 05, 2022
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Dec. 06, 2021	Dec. 05, 2022
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Dec. 06, 2021	Dec. 05, 2022
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Dec. 06, 2021	Dec. 05, 2022
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Dec. 06, 2021	Dec. 05, 2022
16	D.C. Power Supply	LongWei	PS-305D	010964729	Dec. 06, 2021	Dec. 05, 2022

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	ChengYu	843 Room	843	Nov. 25, 2019	Nov. 24, 2022
2	EMI Receiver	R&S	ESR	101421	Dec. 06, 2021	Dec. 05, 2022
3	LISN	R&S	ENV216	102417	Dec. 06, 2021	Dec. 05, 2022
4	843 Cable 1#	ChengYu	CE Cable	001	Dec. 06, 2021	Dec. 05, 2022

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

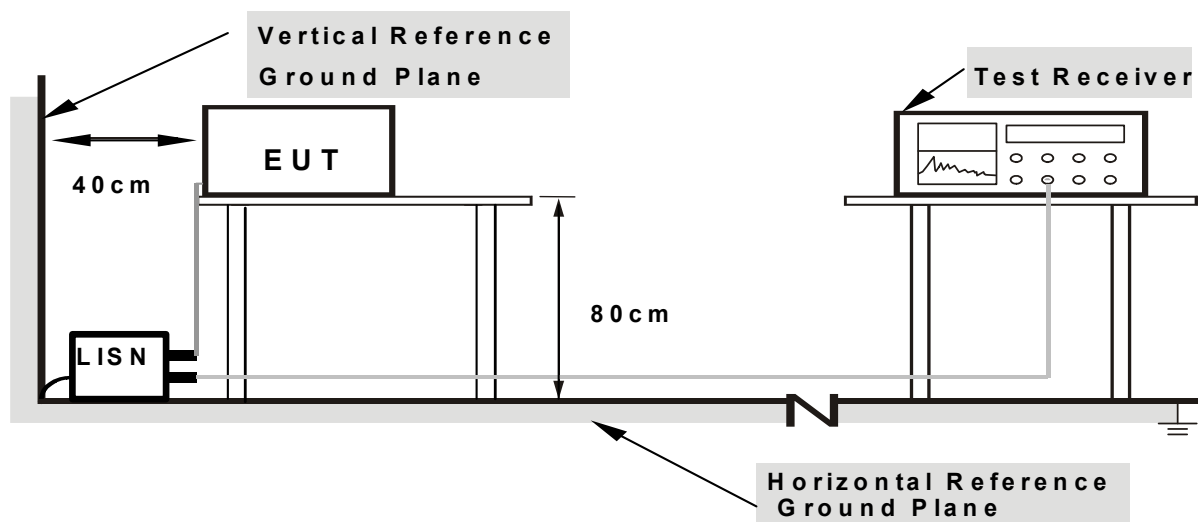
- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

DEVIATION FROM TEST STANDARD

No deviation



3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

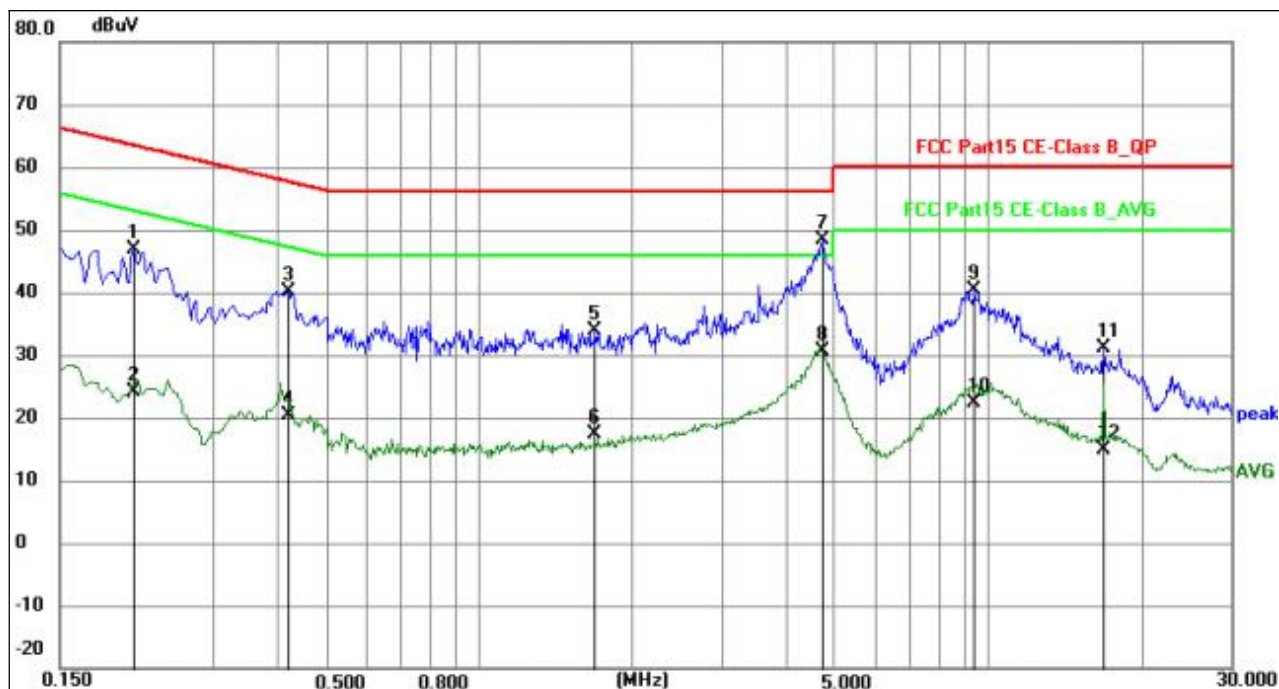
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULTS

Note: 1. All modes were tested at AC 120V and 240V, only the worst result of AC 120V was reported.
2. All modes of Mode 1, Mode 2, Mode 3 Pre tested, and only mode 1 worst was reported in the report.



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage:	AC 120V/60Hz		
Test Mode:	Mode 1		



Remark:

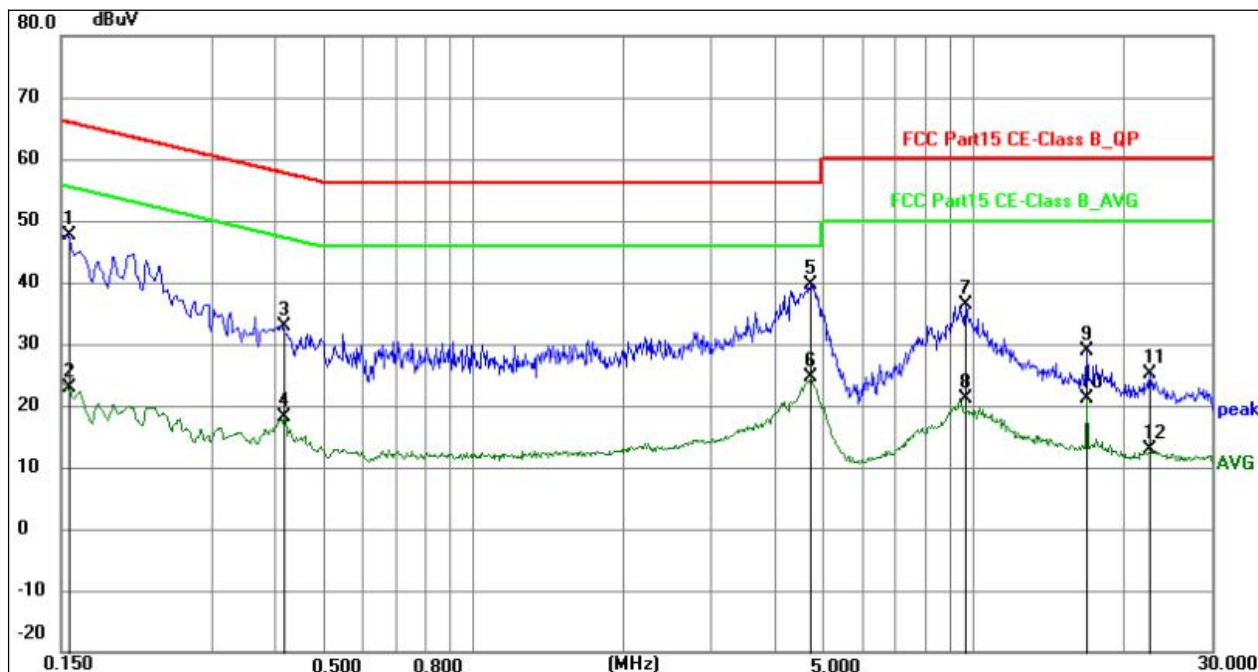
Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Margin = Limi - Level;

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2084	36.55	10.29	46.84	63.27	16.43	QP	P
2	0.2084	13.90	10.29	24.19	53.27	29.08	AVG	P
3	0.4200	29.77	10.32	40.09	57.45	17.36	QP	P
4	0.4200	10.04	10.32	20.36	47.45	27.09	AVG	P
5	1.6935	23.52	10.37	33.89	56.00	22.11	QP	P
6	1.6935	7.11	10.37	17.48	46.00	28.52	AVG	P
7 *	4.7309	37.88	10.45	48.33	56.00	7.67	QP	P
8	4.7309	20.28	10.45	30.73	46.00	15.27	AVG	P
9	9.4458	29.94	10.54	40.48	60.00	19.52	QP	P
10	9.4458	11.94	10.54	22.48	50.00	27.52	AVG	P
11	16.8759	20.62	10.62	31.24	60.00	28.76	QP	P
12	16.8759	4.26	10.62	14.88	50.00	35.12	AVG	P



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage:	AC 120V/60Hz		
Test Mode:	Mode 1		



Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Margin = Limi - Level;

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1545	37.26	10.32	47.58	65.75	18.17	QP
2	0.1545	12.47	10.32	22.79	55.75	32.96	AVG
3	0.4155	22.60	10.34	32.94	57.54	24.60	QP
4	0.4155	7.87	10.34	18.21	47.54	29.33	AVG
5 *	4.7220	29.24	10.47	39.71	56.00	16.29	QP
6	4.7220	14.05	10.47	24.52	46.00	21.48	AVG
7	9.7025	25.77	10.57	36.34	60.00	23.66	QP
8	9.7025	10.60	10.57	21.17	50.00	28.83	AVG
9	16.8759	18.10	10.69	28.79	60.00	31.21	QP
10	16.8759	10.53	10.69	21.22	50.00	28.78	AVG
11	22.5820	14.40	10.76	25.16	60.00	34.84	QP
12	22.5820	2.15	10.76	12.91	50.00	37.09	AVG



3.2. RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
40.66-40.70 MHz	2250	225
70-130 MHz	1250	125
130-174 MHz	1250-3750**	1250-375**
174-260 MHz	3750	375
260-470 MHz	3750-12500**	3750-1250**
Above 470 MHz	12500	1250

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, $\mu\text{V/m}$ at 3 meters = $56.81818(F) - 6136.3636$; for the band 260-470 MHz, $\mu\text{V/m}$ at 3 meters = $41.6667(F) - 7083.3333$. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).



Receiver setup:

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

3.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

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

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

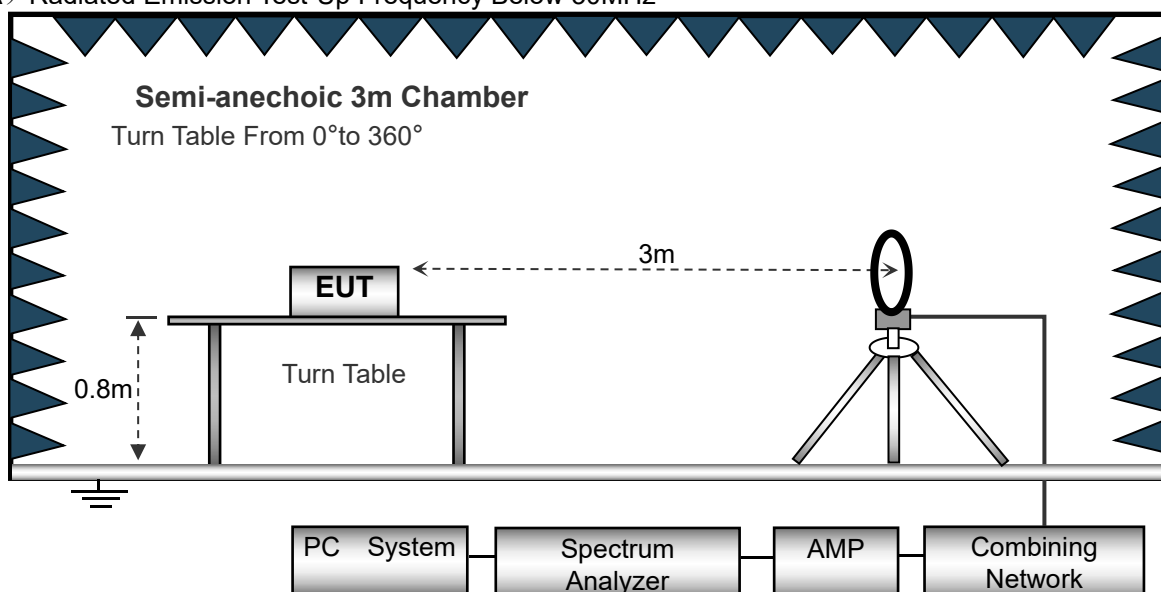
3.2.3 DEVIATION FROM TEST STANDARD

No deviation

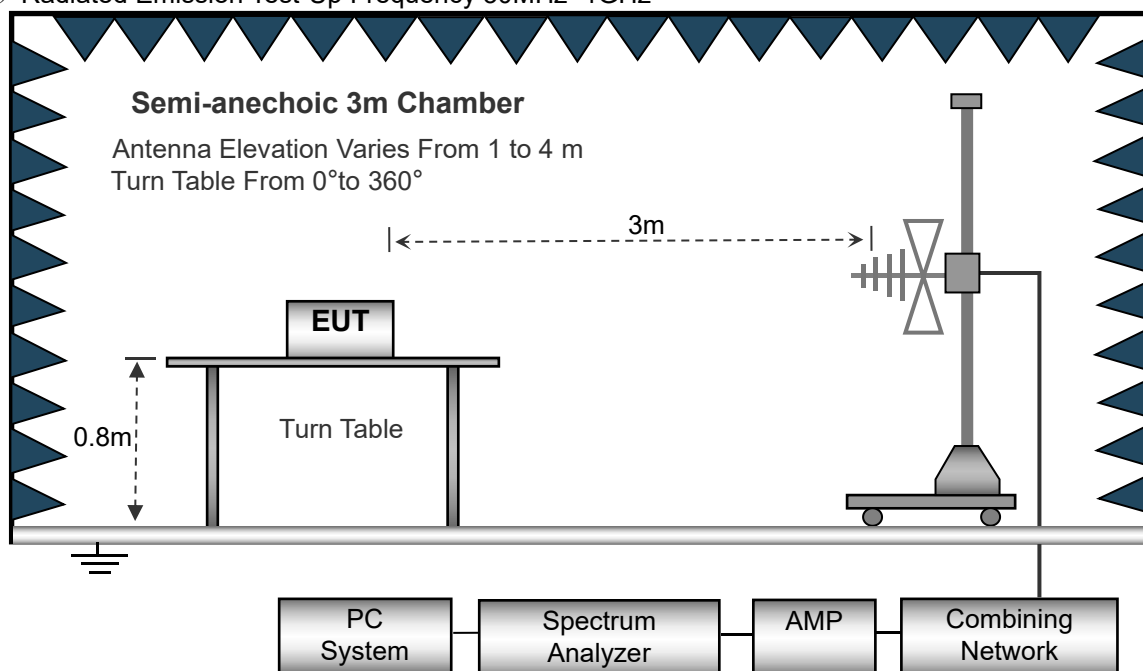


3.2.4 TEST SETUP

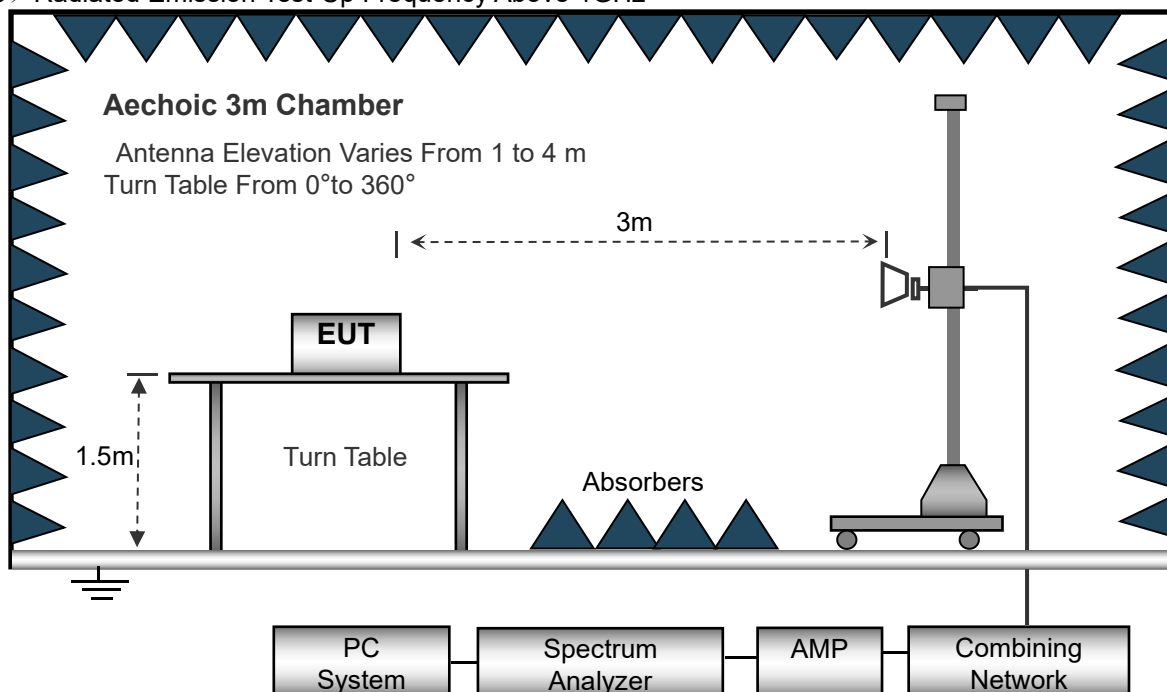
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz

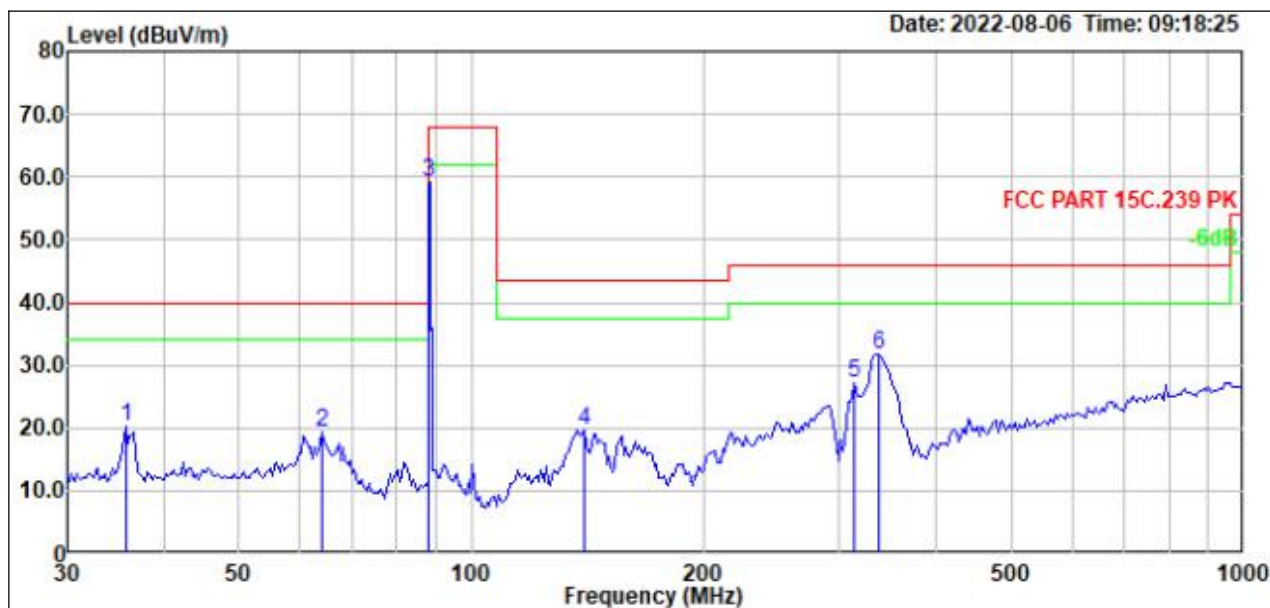


3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.2.6 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)**

Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 1		



		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	35.762	41.11	20.22	-20.89	40.00	-19.78	Horizontal	Peak
2	64.080	41.26	19.19	-22.07	40.00	-20.81	Horizontal	Peak
3	88.100	83.58	59.16	-24.42	68.00	-8.84	Horizontal	Peak
4	139.791	39.36	19.53	-19.83	43.50	-23.97	Horizontal	Peak
5	313.648	44.74	27.27	-17.47	46.00	-18.73	Horizontal	Peak
6	336.482	48.64	31.81	-16.83	46.00	-14.19	Horizontal	Peak

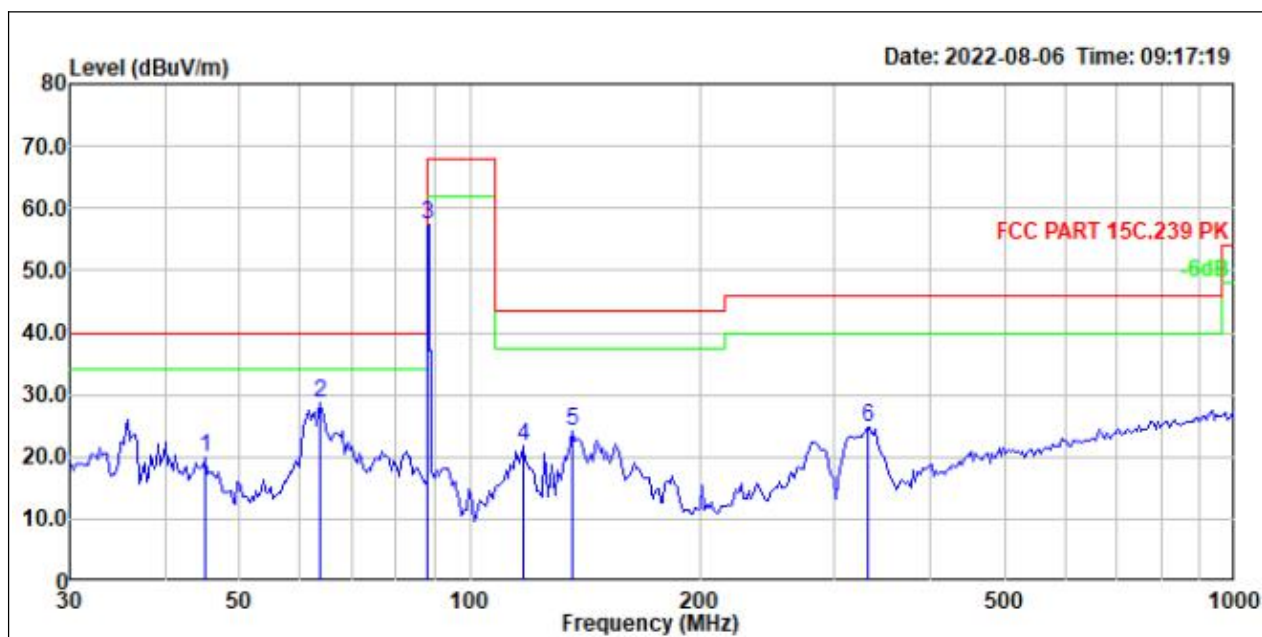
Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 1		

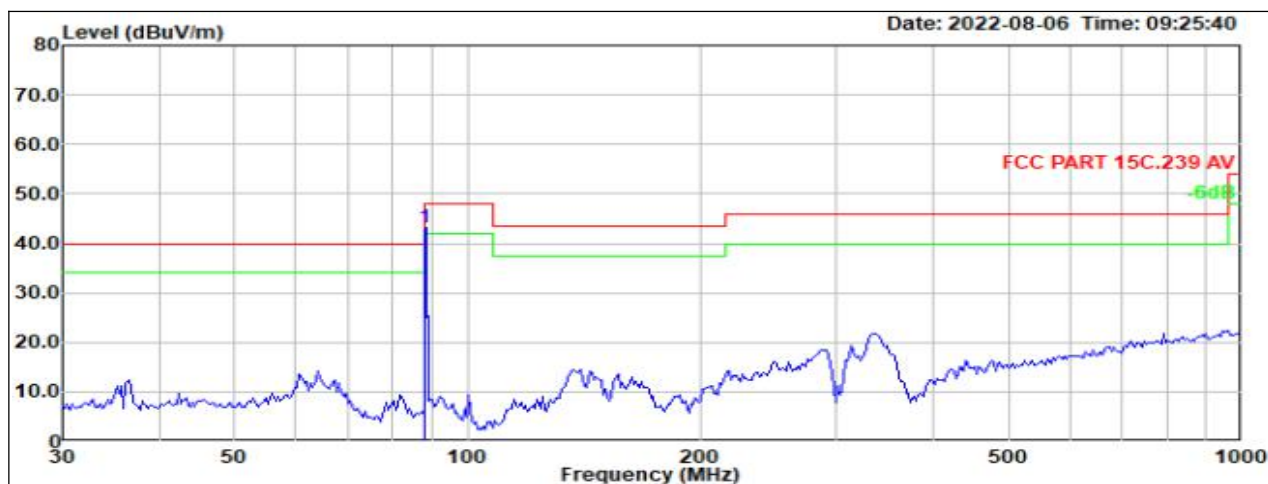


	Freq	Read Level	Level Factor	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB	
1	45.095	40.67	20.02	-20.65	40.00	-19.98	Vertical Peak
2	63.631	50.66	28.68	-21.98	40.00	-11.32	Vertical Peak
3	88.100	81.73	57.31	-24.42	68.00	-10.69	Vertical Peak
4	117.269	43.30	21.79	-21.51	43.50	-21.71	Vertical Peak
5	135.916	44.19	24.07	-20.12	43.50	-19.43	Vertical Peak
6	331.786	41.77	24.84	-16.93	46.00	-21.16	Vertical Peak

Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;

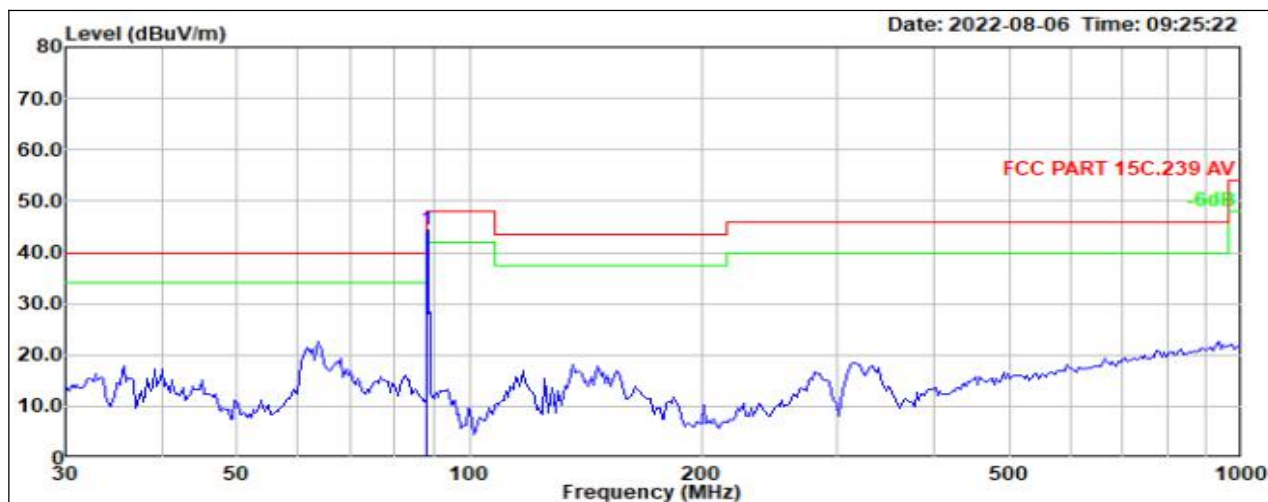


	Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB	Remark
1	88.100	67.58	43.16	-24.42	48.00	-4.84	Horizontal Average

Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



	Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB	Remark
1	88.100	68.73	44.31	-24.42	48.00	-3.69	Vertical Average

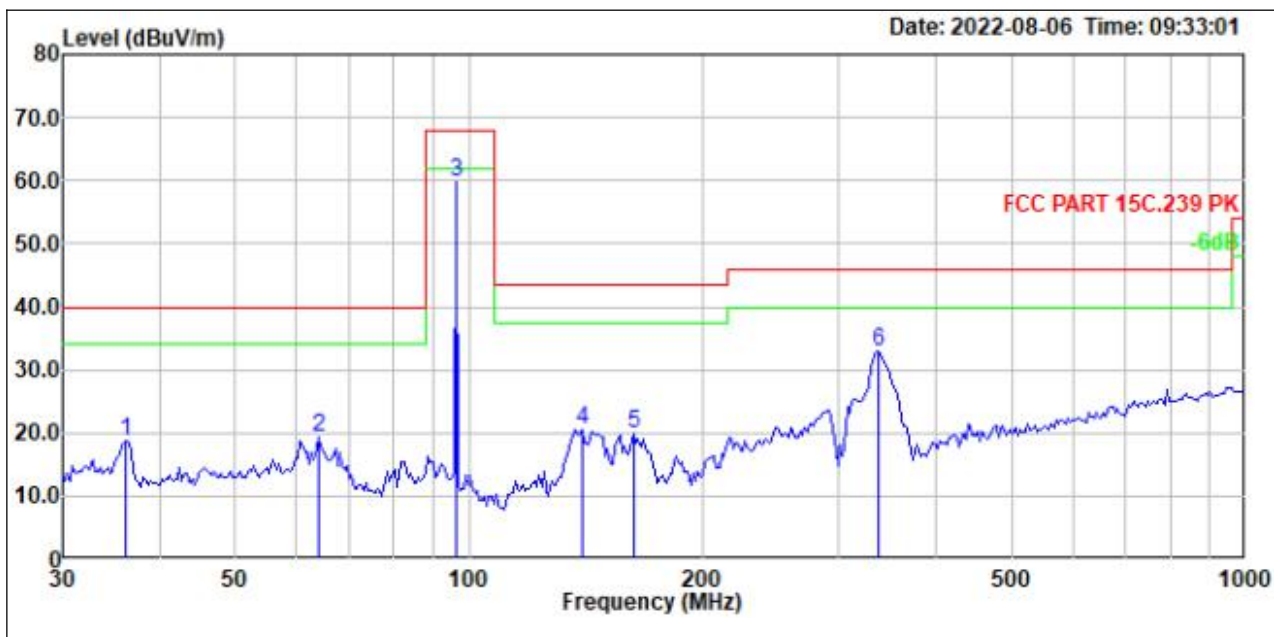
Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 2		



		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	36.268	39.49	18.67	-20.82	40.00	-21.33	Horizontal	Peak
2	64.080	41.26	19.19	-22.07	40.00	-20.81	Horizontal	Peak
3	96.323	83.67	59.80	-23.87	68.00	-8.20	Horizontal	Peak
4	139.791	40.36	20.53	-19.83	43.50	-22.97	Horizontal	Peak
5	163.162	39.22	19.87	-19.35	43.50	-23.63	Horizontal	Peak
6	336.482	49.64	32.81	-16.83	46.00	-13.19	Horizontal	Peak

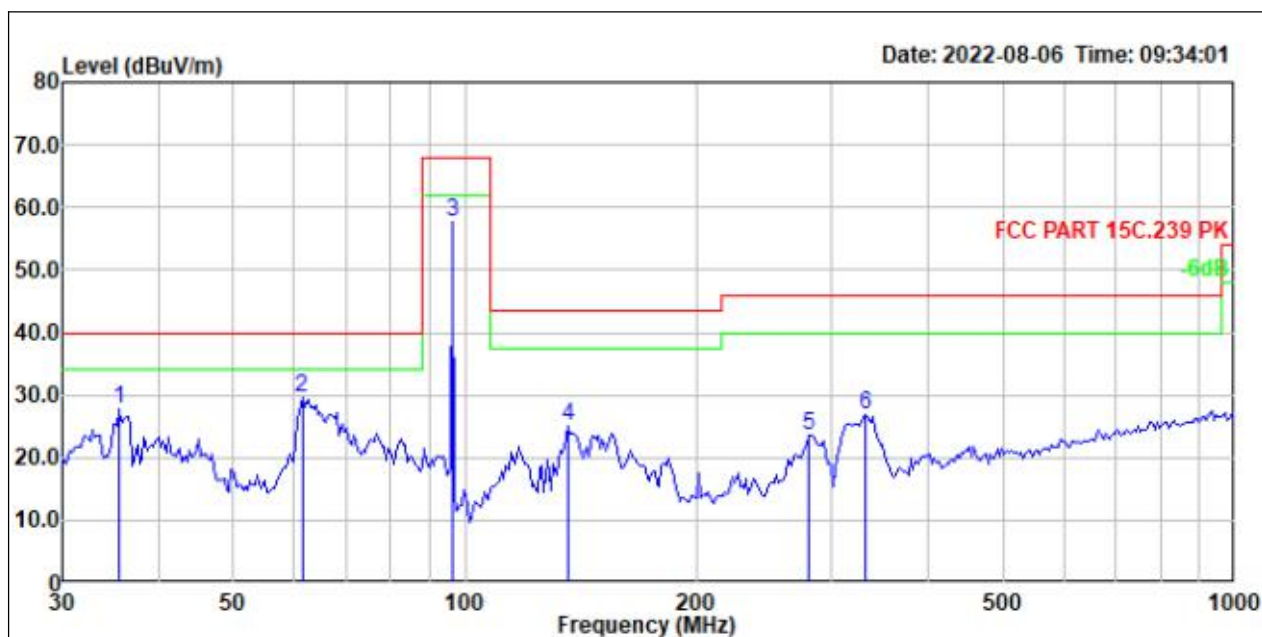
Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 2		

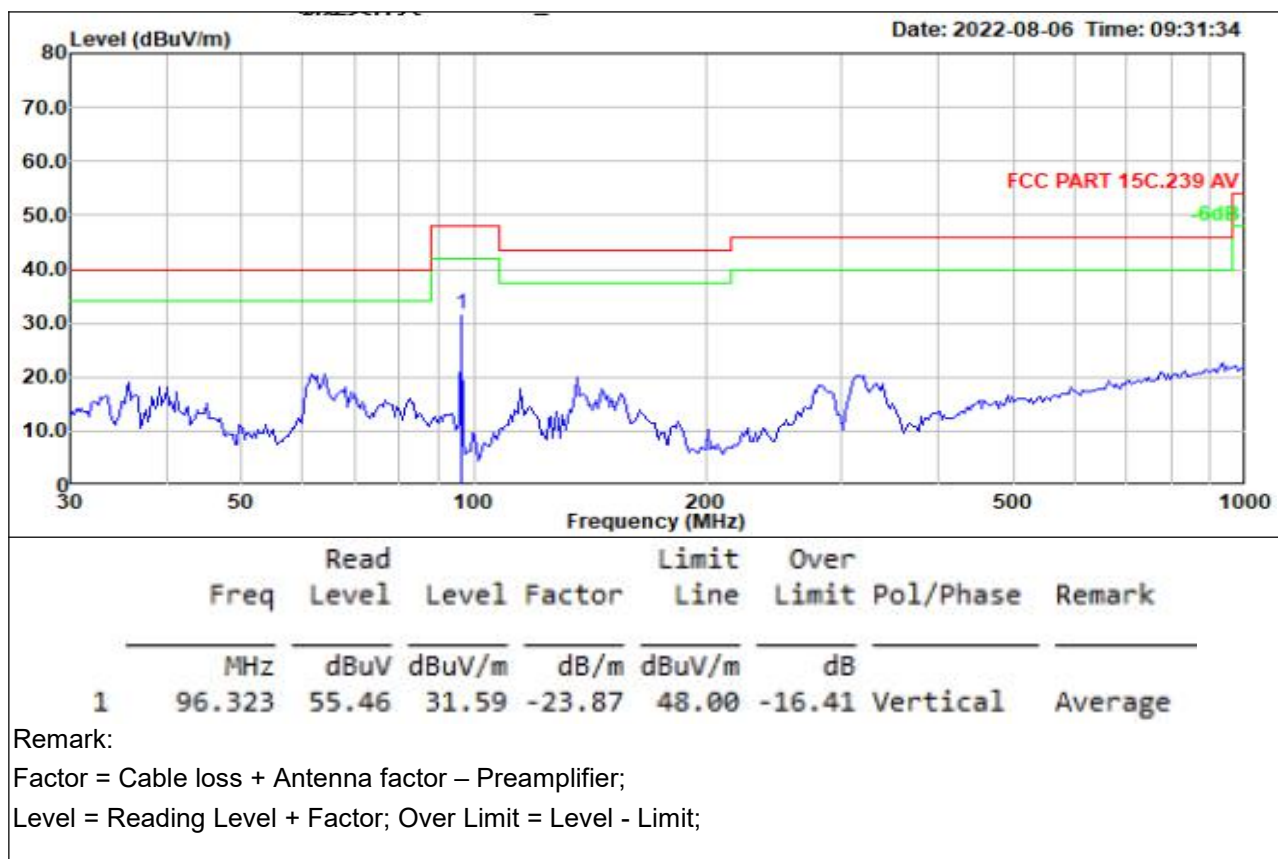
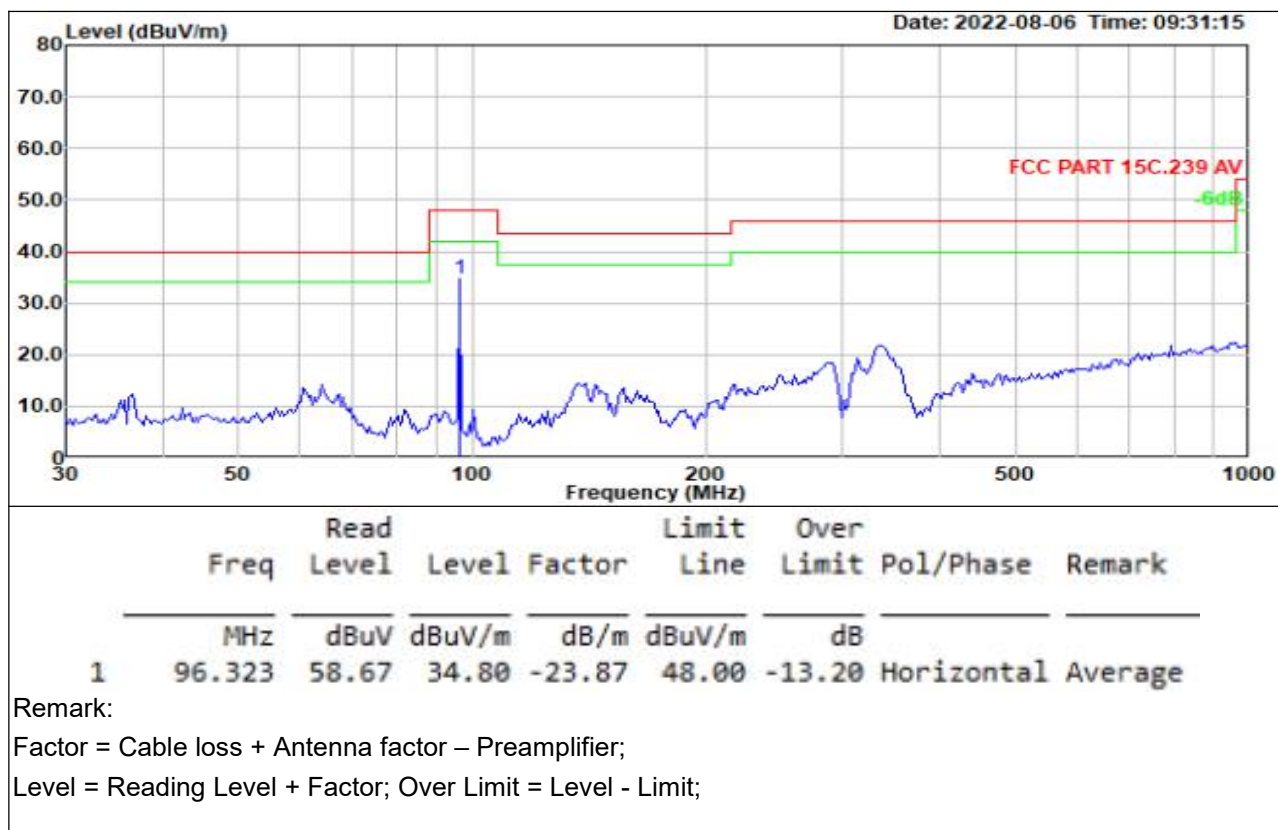


		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	35.511	48.82	27.90	-20.92	40.00	-12.10	Vertical	Peak
2	61.434	51.14	29.56	-21.58	40.00	-10.44	Vertical	Peak
3	96.323	81.46	57.59	-23.87	68.00	-10.41	Vertical	Peak
4	135.916	45.19	25.07	-20.12	43.50	-18.43	Vertical	Peak
5	280.294	42.27	23.48	-18.79	46.00	-22.52	Vertical	Peak
6	331.786	43.77	26.84	-16.93	46.00	-19.16	Vertical	Peak

Remark:

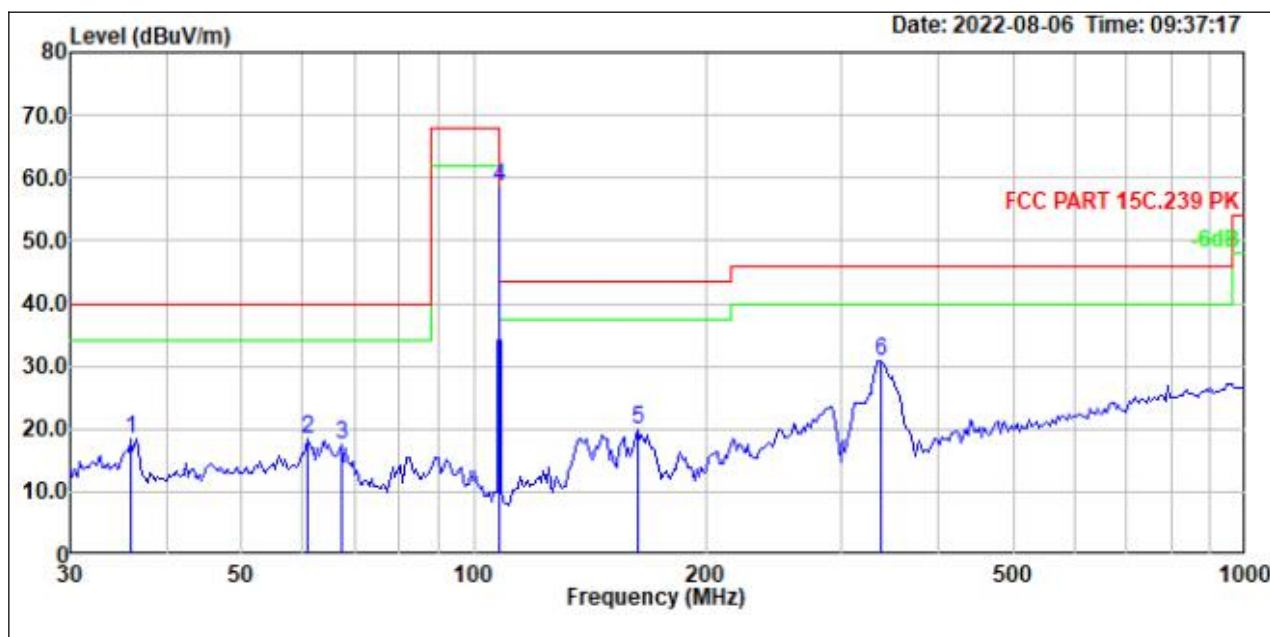
Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;





Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 3		



	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	36.014	39.39	18.54	-20.85	40.00	-21.46	Horizontal	Peak
2	61.004	39.92	18.43	-21.49	40.00	-21.57	Horizontal	Peak
3	67.311	40.14	17.48	-22.66	40.00	-22.52	Horizontal	Peak
4	107.700	81.26	58.66	-22.60	68.00	-9.34	Horizontal	Peak
5	163.162	39.22	19.87	-19.35	43.50	-23.63	Horizontal	Peak
6	336.482	47.64	30.81	-16.83	46.00	-15.19	Horizontal	Peak

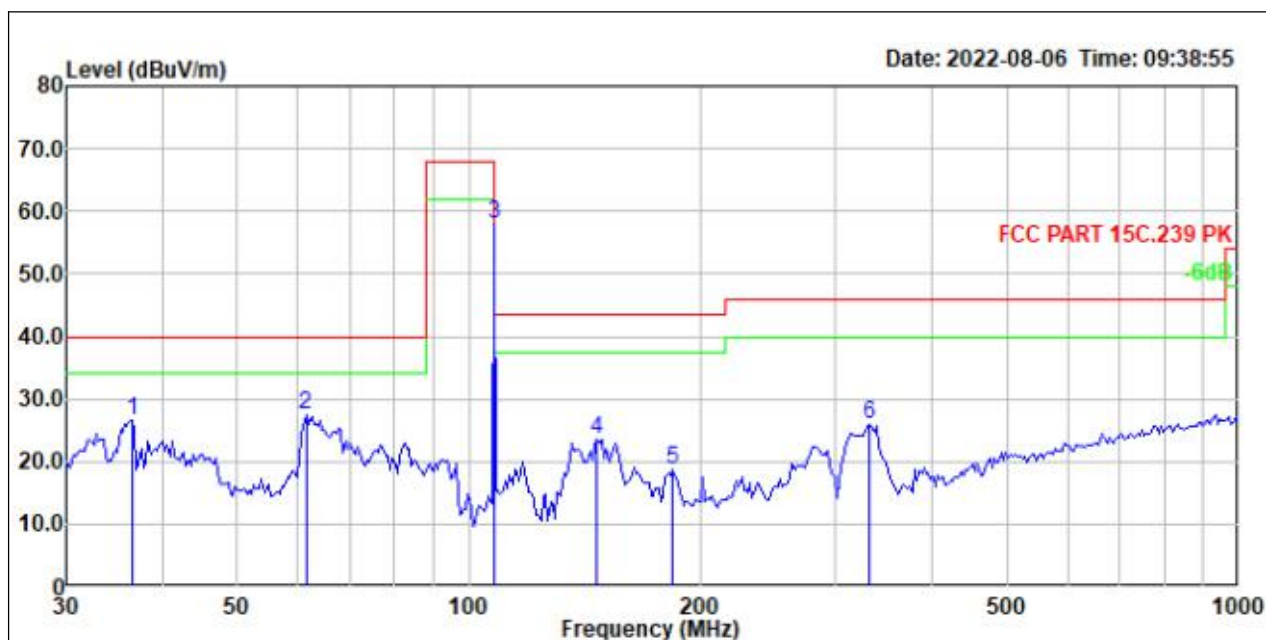
Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 3		

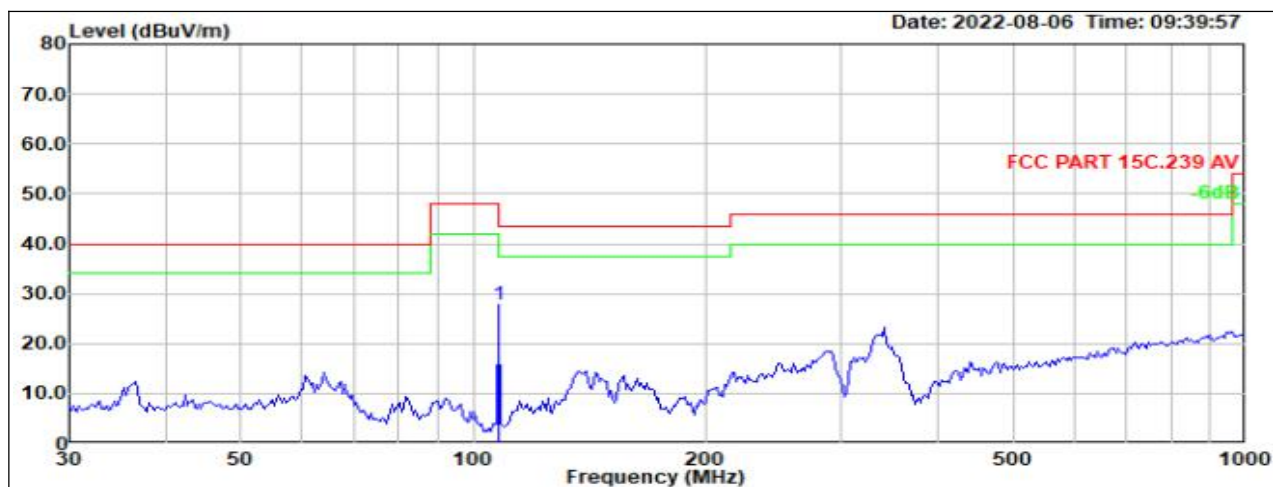


		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	36.524	47.27	26.50	-20.77	40.00	-13.50	Vertical	Peak
2	61.434	49.14	27.56	-21.58	40.00	-12.44	Vertical	Peak
3	107.700	80.67	58.07	-22.60	68.00	-9.93	Vertical	Peak
4	146.839	43.01	23.68	-19.33	43.50	-19.82	Vertical	Peak
5	183.866	40.68	18.85	-21.83	43.50	-24.65	Vertical	Peak
6	331.786	42.77	25.84	-16.93	46.00	-20.16	Vertical	Peak

Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;

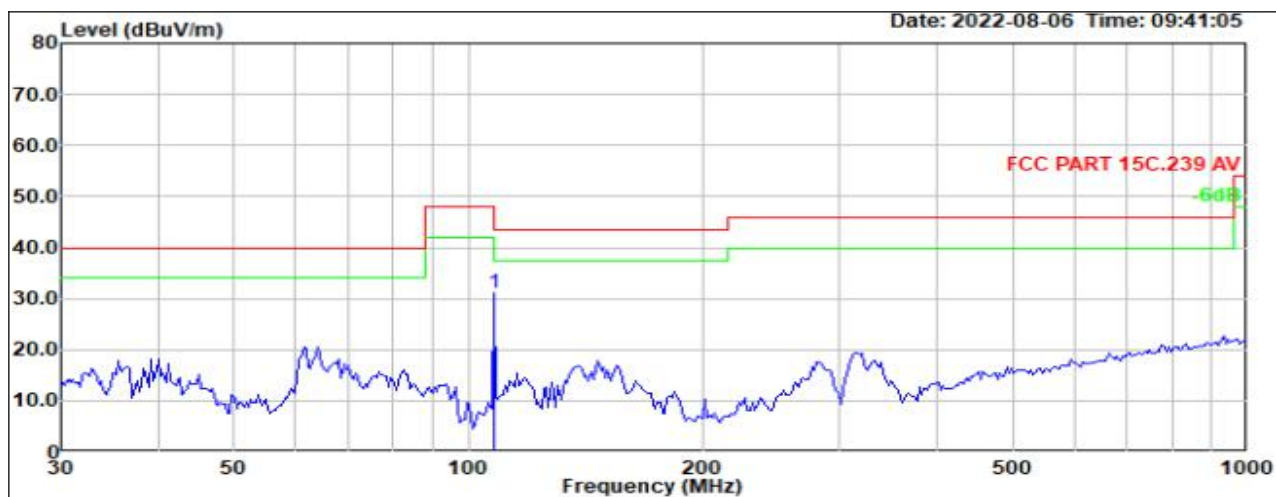


		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	107.700	50.26	27.66	-22.60	48.00	-20.34	Horizontal	Average

Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



		Read			Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	dB		
1	107.700	53.67	31.07	-22.60	48.00	-16.93	Vertical	Average

Remark:

Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Factor; Over Limit = Level - Limit;



4. BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.239(a) , Subpart C	
Section	Description
15.239(a)	According to §15.239 (a) 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 88-108MHz.

4.1.1 TEST PROCEDURE

1. Set RBW = 1.3 kHz.
2. Set the video bandwidth (VBW) = 3.9 kHz.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



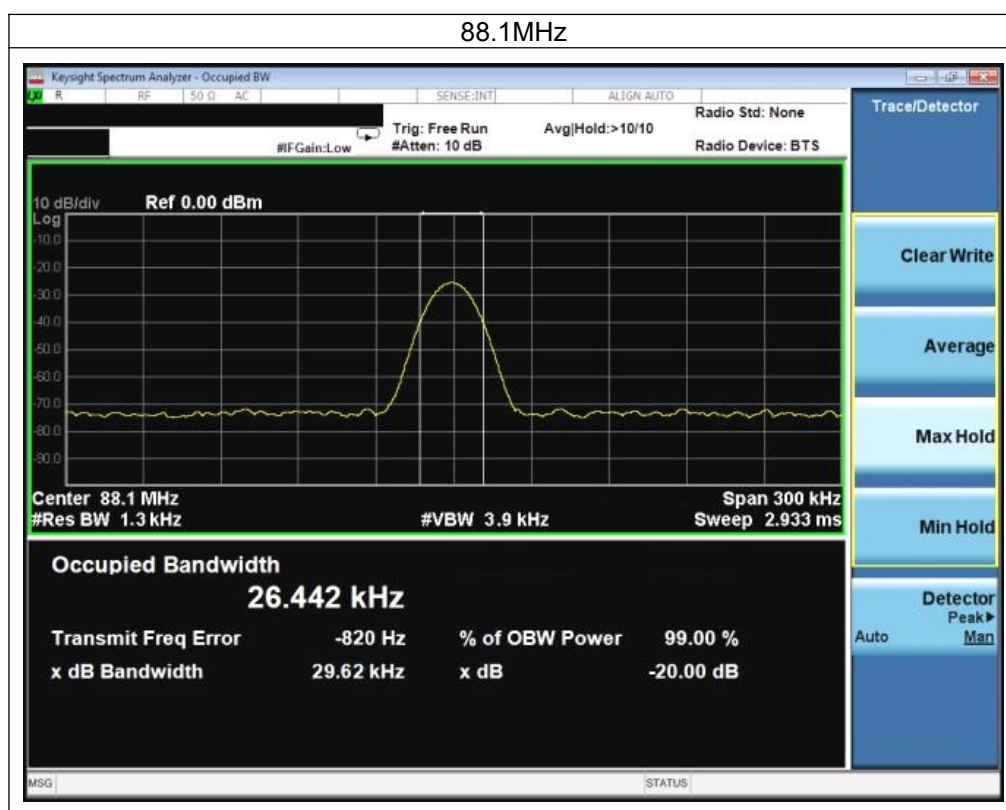
4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



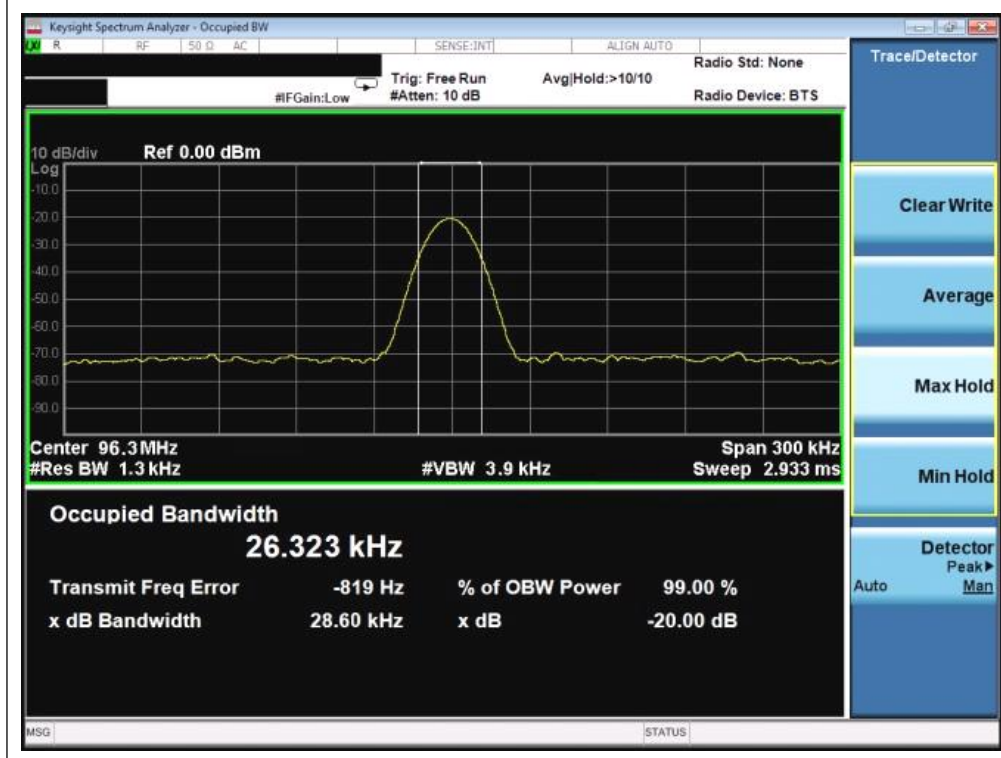
4.1.5 TEST RESULTS

Frequency (MHz)	99% OBW (kHz)	20dB Bandwidth (kHz)	Result
88.1	26.42	29.62	Pass
96.3	26.32	28.60	Pass
107.7	26.54	28.62	Pass

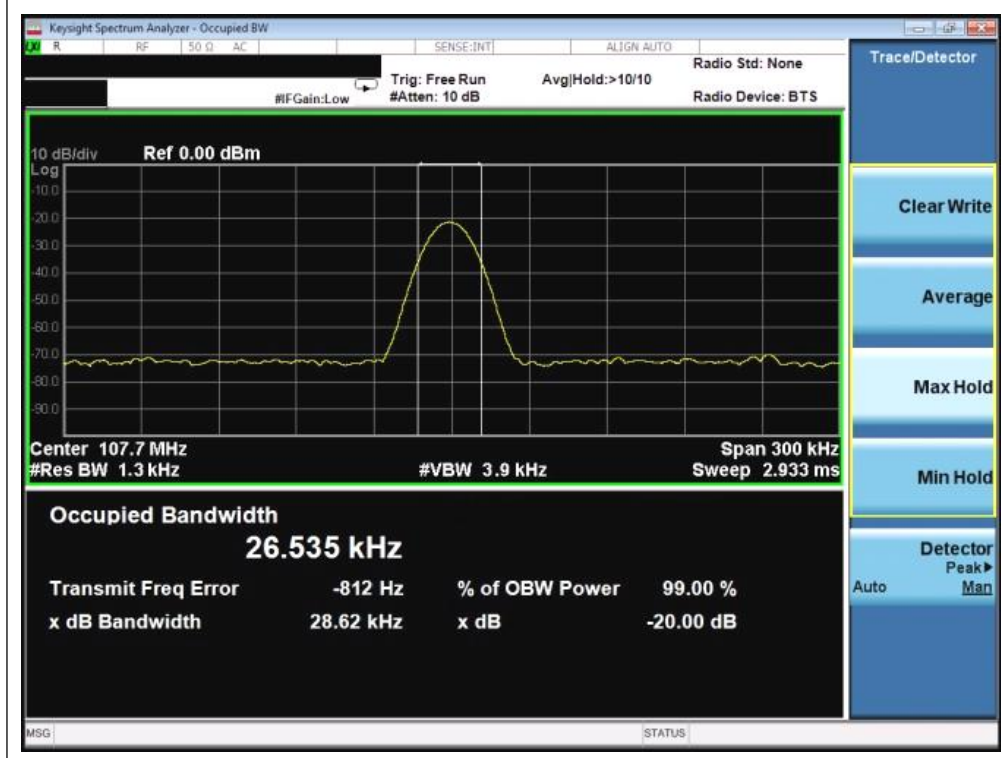




96.3MHz



107.7MHz





5. ANTENNA REQUIREMENT

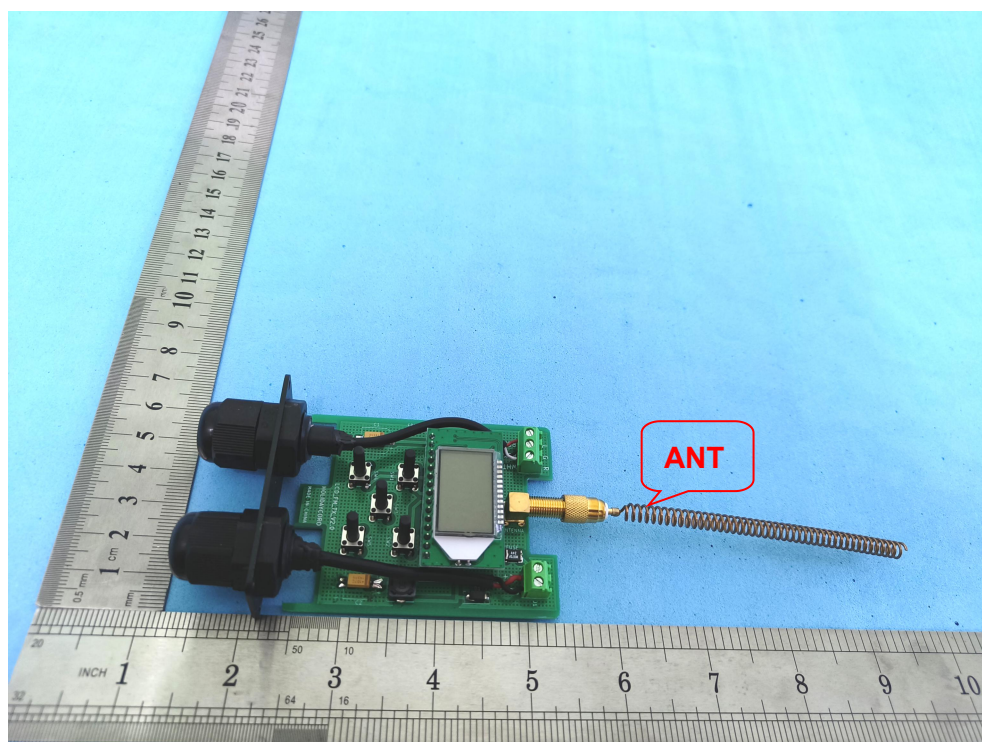
5.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

5.2 EUT ANTENNA

The antenna used in this product is an External Antenna, the directional gains of antenna used for transmitting is 0dBi.

Note: The antenna of EUT is a screw connector, and the FM Antenna specified by the manufacturer is required to realize FM transmission. No user can replace the FM Antenna at will.

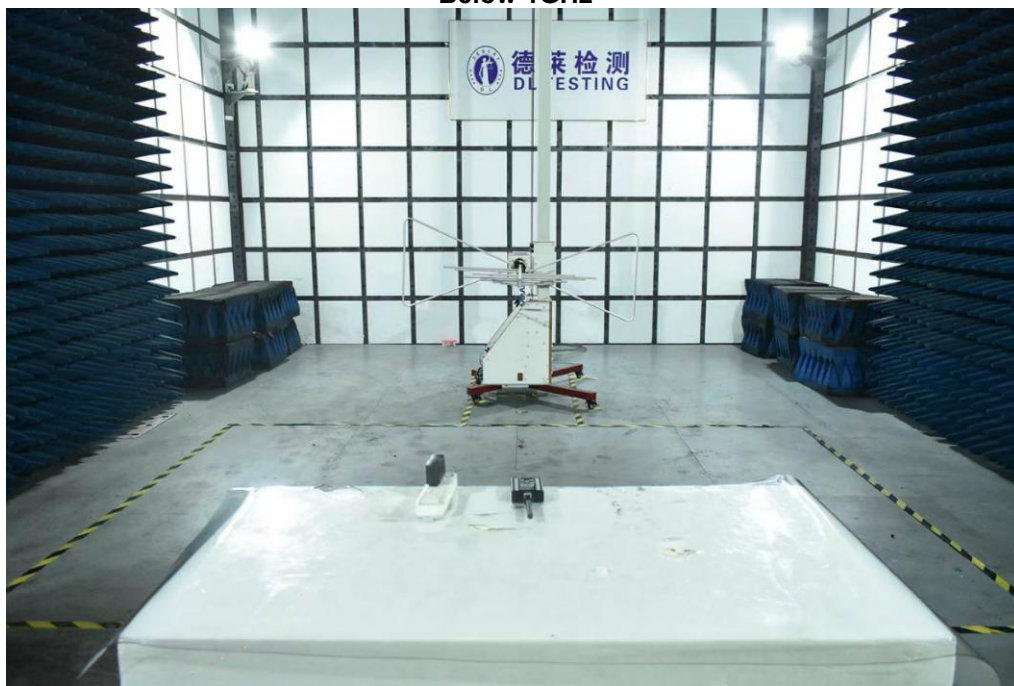




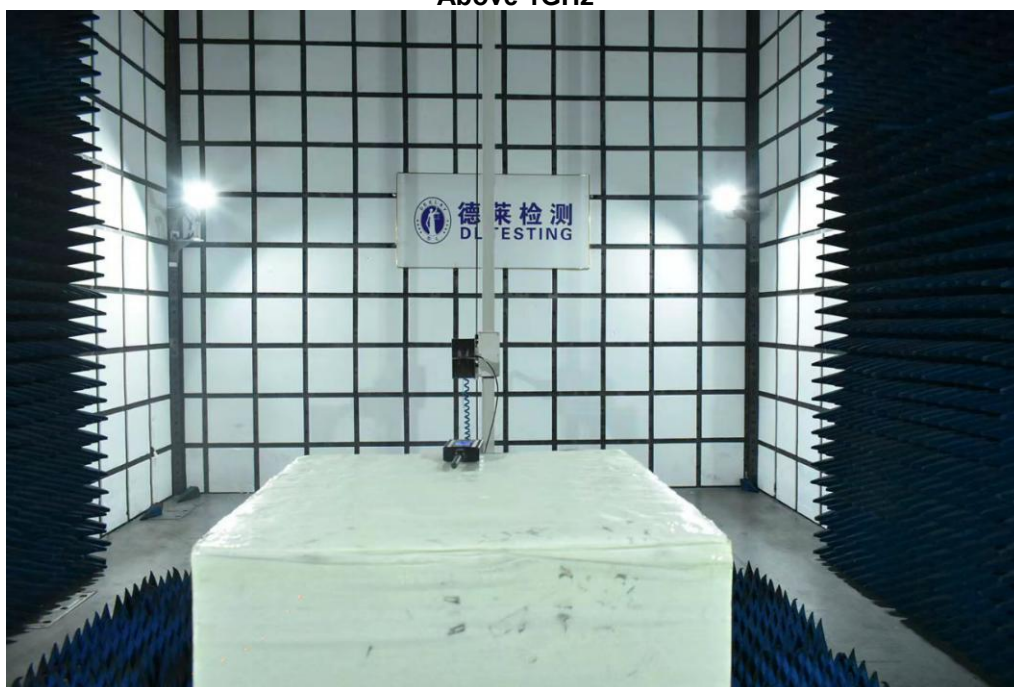
6. TEST SEUUP PHOTO

Radiated Measurement Photos

Below 1GHz



Above 1GHz





Conducted Measurement Photos



***** END OF REPORT *****