FCC TEST REPORT

FOR

SAGE HUMAN ELECTRONICS INTERNATIONAL CO.,LTD.

BT FM Transmitter with QC/ 1A Dual USB Ports and Handsfree Mic

TEST Model No.: BT88C

Additional Model No.: 60343073694

Prepared for	:	SAGE HUMAN ELECTRONICS INTERNATIONAL CO.,LTD.
Address	:	4F., A Building, Rongli Industrial Park, No.2 Guiyuan Rd. Guihua Community, Guanlan Town, Longhua New Dist., Shenzhen, China

Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, China
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Date of receipt of test sample	:	October 28, 2020
Number of tested samples	:	2
Sample number	:	201023001A-1, 201023001A-2
Serial number	:	Prototype
Date of Test	:	October 28, 2020 ~ November 20, 2020
Date of Report	:	November 23, 2020

FCC TEST REPORT

FCC CFR 47 PART 15.239

Report Reference No. ..... :		**LCS201023001AEB**
Date of Issue ..... :		November 23, 2020
Testing Laboratory Name ..... :		**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address ..... :		101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, China
Testing Location/ Procedure..... :		Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name..... :		**SAGE HUMAN ELECTRONICS INTERNATIONAL CO.,LTD.**
Address ..... :		4F., A Building, Rongli Industrial Park, No.2 Guiyuan Rd. Guihua Community, Guanlan Town, Longhua New Dist., Shenzhen, China
Test Specification		
Standard..... :		FCC CFR 47 PART 15.239
Test Report Form No. ..... :		LCSEMC-1.0
TRF Originator ..... :		Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF ..... :		Dated 2011-03

Test Item Description. ..... :		**BT FM Transmitter with QC/ 1A Dual USB Ports and Handsfree Mic**
Trade Mark..... :		cigii
Model/ Type reference..... :		BT88C
Ratings ..... :		DC 12-24V
Result ..... :		**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Linda He / File administrators	Jin Wang / Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : **LCS201023001AEB**	November 23, 2020 Date of issue

Type / Model.....	: BT88C
EUT.....	: BT FM Transmitter with QC/ 1A Dual USB Ports and Handsfree Mic
Applicant.....	**: SAGE HUMAN ELECTRONICS INTERNATIONAL CO.,LTD.**
Address.....	: 4F., A Building, Rongli Industrial Park, No.2 Guiyuan Rd. Guihua Community, Guanlan Town, Longhua New Dist., Shenzhen, China
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: SAGE HUMAN ELECTRONICS INTERNATIONAL CO.,LTD.**
Address.....	: 4F., A Building, Rongli Industrial Park, No.2 Guiyuan Rd. Guihua Community, Guanlan Town, Longhua New Dist., Shenzhen, China
Telephone.....	: /
Fax.....	: /
Factory.....	: /
Address.....	: /
Telephone.....	: /
Fax.....	: /

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
00	November 23, 2020	Initial Issue	Gavin Liang

TABLE OF CONTENTS

Description Page

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT		BT FM Transmitter with QC/ 1A Dual USB Ports and Handsfree Mic
Test Model	:	BT88C
Additional Models No.	:	60343073694
Models Declaration	:	PCB board, structure and internal of these models are the same, Only the model names are different for these models.
Power Supply	:	DC 12-24V
Hardware Version	:	BT88C_2819_8027_V1.2/BT88C_8825_8824_V1.2/BT88C_KEY _V1.0
Software Version	:	V5.0
Bluetooth		
Frequency Range	:	2402MHz ~ 2480MHz
Bluetooth Version	:	V5.0
Bluetooth Channel Number	:	79 channels for Bluetooth V5.0 (BDR/EDR)
Bluetooth Channel Spacing	:	1MHz for Bluetooth V4.0 (BDR/EDR)
Bluetooth Modulation Type	:	GFSK, π/4-DQPSK, 8-DPSK for Bluetooth V5.0 (BDR/EDR)
Antenna Description	:	Internal Antenna, -0.68dBi(Max.)
FM		
Frequency Range	:	88.1~107.9MHz
Channel number	:	199
Channel Spacing	:	100KHz
Channel frequency	:	88.1~107.9MHz(Channel Number: 199, Channel Frequency=88.1+0.1(K-1), K=1, 2, 3 ……199)
Modulation Type	:	FM
Antenna Description	:	Internal antenna, 1.5 dBi(Max.)

1.2 Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
--	--	--	--	--

1.3 External I/O Cable

I/O Port Description	Quantity	Cable
USB Port	2	N/A

1.4 Description of Test Facility

NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10:2013 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5 Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6 Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	3.10dB	(1)
		30MHz~200MHz	2.96dB	(1)
		200MHz~1000MHz	3.10dB	(1)
		1GHz~26.5GHz	3.80dB	(1)
		26.5GHz~40GHz	3.90dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	1.63dB	(1)
Power disturbance	:	30MHz~300MHz	1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7 Description of Test Modes

The FM Transmitter is powered by a battery which is DC 12V. In the audio port and MIC port give a 2.5 kHz tone at a level 16 dB higher than that required to produce a frequency deviation of 75 KHz and make it works in TX mode (88.1 MHz, 98.0 MHz and 107.9 MHz).

Worst-case mode and channel used for 9 KHz-1000 MHz radiated emissions was the mode and channel with the highest output power, that was determined to be TX.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR PART 15C 15.207, 15.209 and 15.239.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209, 15.239 under the FCC Rules Part 15 Subpart C.

2.3 General Test Procedures

2.3.1 Conducted Emissions

N/A

2.3.2 Radiated Emissions

The EUT is placed on a turn table 0.8 meter above ground for below 1GHz and 1.5m for above 1GHz. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10-2013.

2.4. Test Sample

The application provides 2 samples to meet requirement;

Sample Number	Description
Sample 1(201023001A-1)	Engineer sample – continuous transmit
Sample 2(201023001A-2)	Normal sample – Intermittent transmit

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a continuous transmit condition.

3.2 EUT Exercise Software

N/A.

3.3 Special Accessories

N/A.

3.4 Block Diagram/Schematics

Please refer to the related document.

3.5 Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6 Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

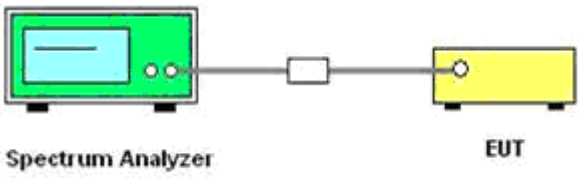
Applied Standard: FCC CFR 47 PART 15.239			
FCC Rules	Description of Test	Test Sample	Result
§15.239 (a)	Occupied Bandwidth	Sample 2	Compliant
§15.239 (b)	Field Strength of Fundamental frequency	Sample 1	Compliant
§15.205 (a) §15.209 (a)	Radiated Spurious Emissions	Sample 1	Compliant
§15.207 (a)	AC Conducted Emissions	N/A	N/A
§15.203	Antenna Requirements	Sample 1	Compliant

5. 99% AND 20DB BANDWIDTH

5.1 Limit

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.

5.2 Block Diagram of Test Setup



5.3 Test Procedure

1) The transmitter shall be operated at its maximum carrier power measured under normal test conditions

2) The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

3) The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

4) Detector function = peak.

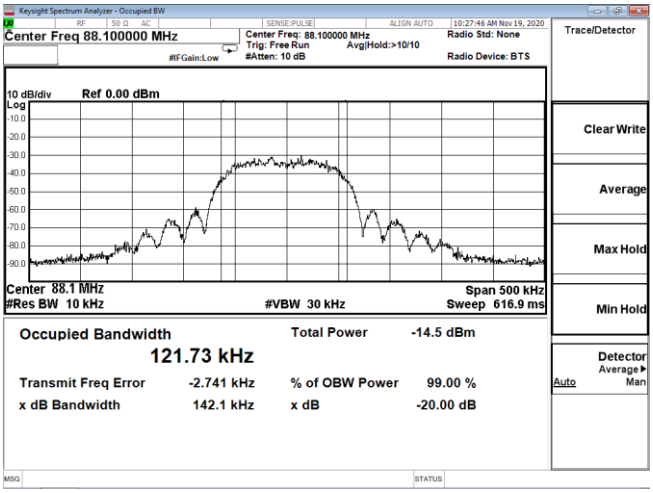
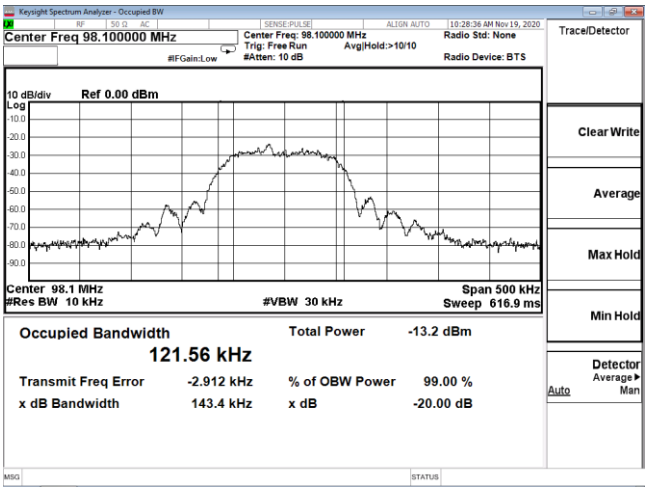
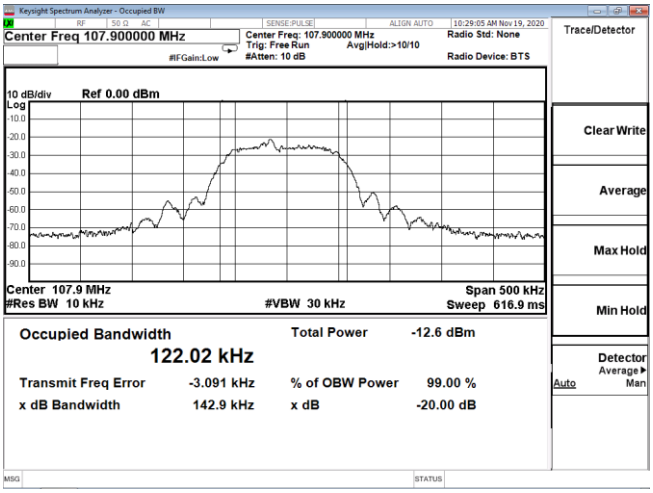
5) Trace = max hold.

5.4 Test Results

Frequency (MHz)	20dB Bandwidth (KHz)	99% Bandwidth (KHz)	Limit (KHz)	Conclusion
88.1	142.1	121.73	200.00	PASS
98.0	143.4	121.56	200.00	PASS
107.9	142.9	122.02	200.00	PASS

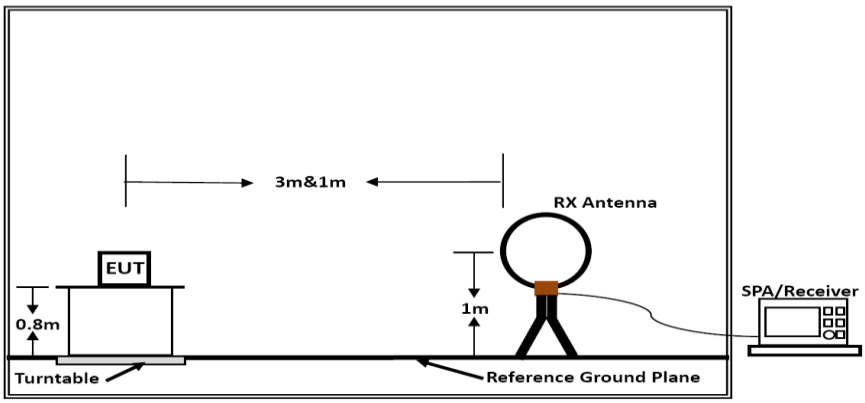
Remark:
1. Test results including cable loss;
2. Please refer to the following page.

Temperature	24.2℃	Humidity	53.7%
Test Engineer	Ben Jin	Configurations	FM

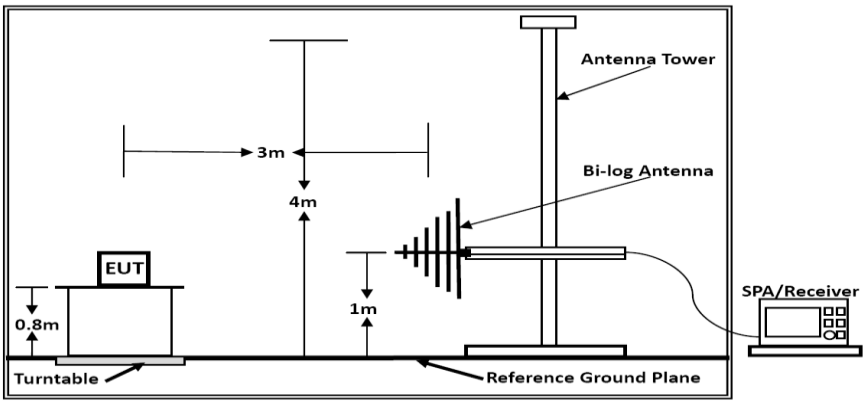
99% and 20dB Bandwidth	
	
Low Channel / 88.1 MHz	Middle Channel / 98.1 MHz
	
High Channel / 107.9 MHz	

6. RADIATED MEASUREMENT

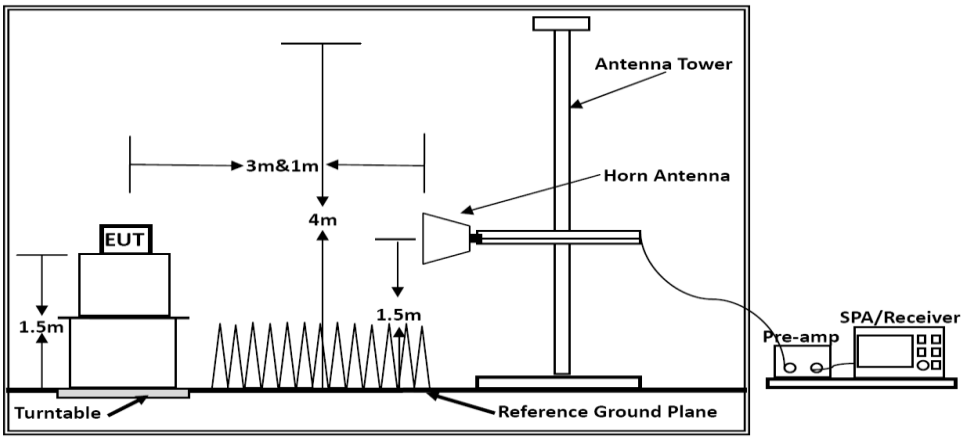
6.1 Block Diagram of Test Setup



Below 30MHz



Below 1GHz



Above 1GHz

6.2 Radiated Fundamental Frequency Limit

According to §15.239 (b): The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

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.

Frequencies (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: (1) Emission level dBμV = 20 log Emission level μV/m;

(2) The smaller limit shall apply at the cross point between two frequency bands;

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

5.3 Instruments Setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	30 MHz
Stop Frequency	1000 MHz
RB / VB (Emission in restricted band)	120KHz / 1MHz for Peak, 120 KHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	120KHz / 1MHz for Peak, 120 KHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

5.4 Test Procedures

1) Sequence of testing 9 kHz to 30 MHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna height is 0.8 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 2.5 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

Premeasurement:

--- The antenna is moved spherical over the EUT in different polarizations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

5.5 Results for Radiated Emissions

PASS.

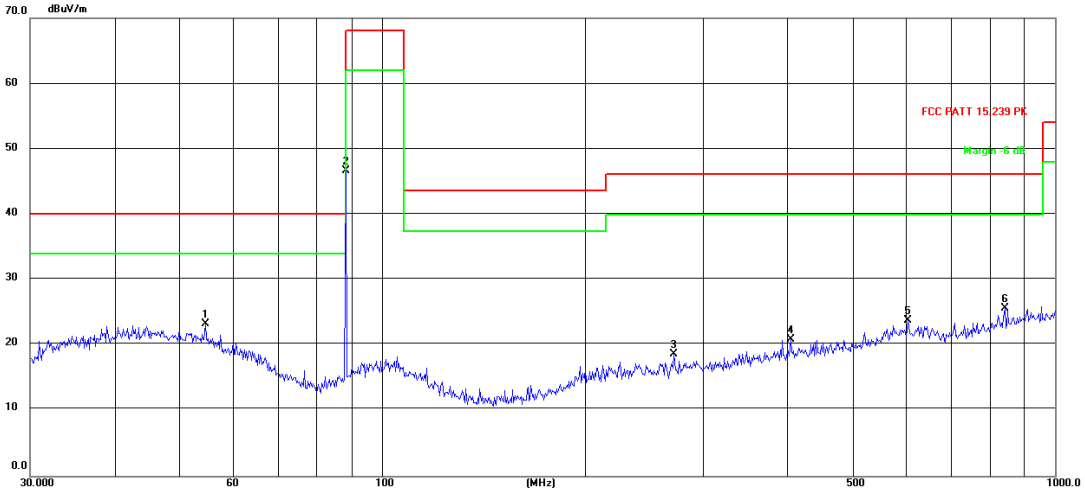
Only record the worst test result in this report.
The test data please refer to following page:

Temperature	24.6℃	Humidity	54.1%
Test Engineer	Ben Jin	Configurations	FM

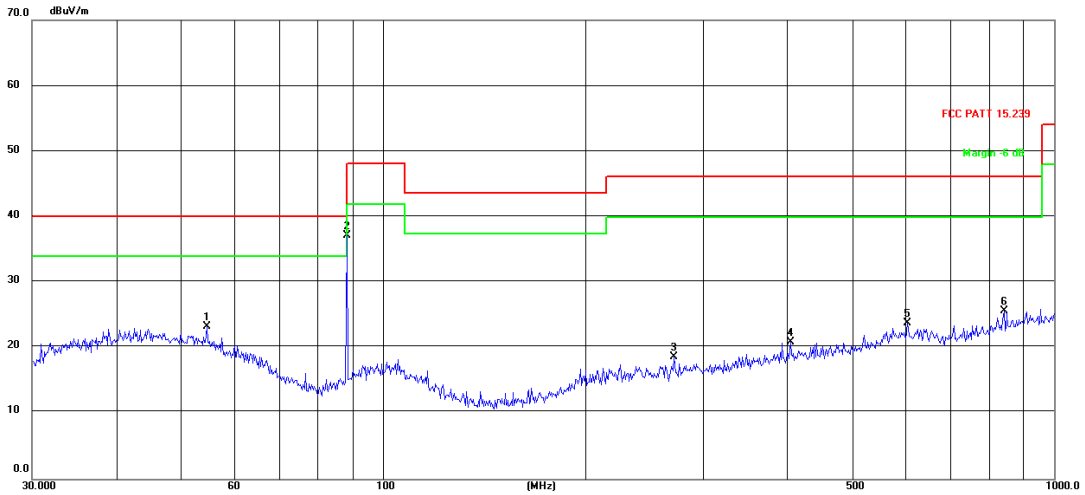
Below 1GHz

TX-88.1MHz

Horizontal

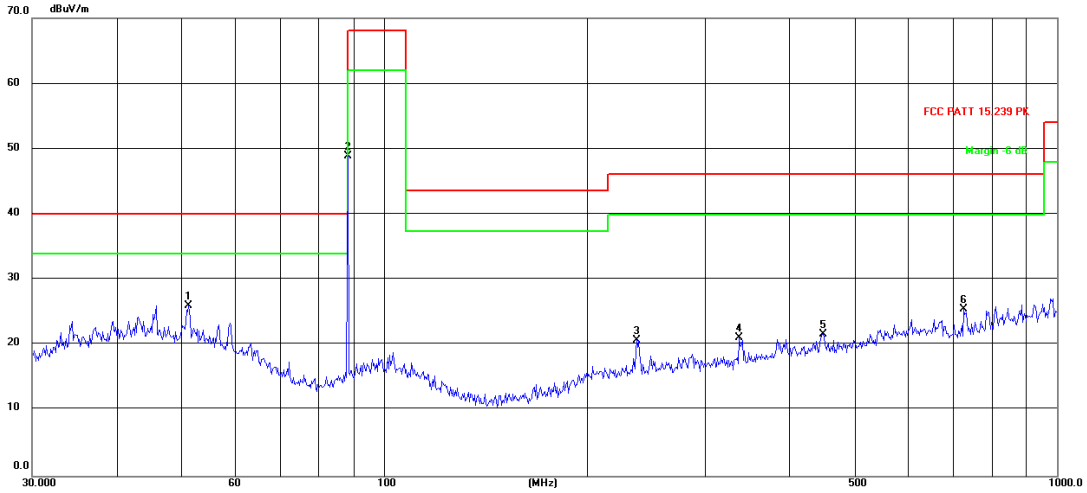


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	54.6428	52.07	-28.77	23.30	40.00	-16.70	peak
2	88.1000	79.10	-32.41	46.69	68.00	-21.31	peak
3	271.3245	46.63	-27.93	18.70	46.00	-27.30	peak
4	404.6664	45.86	-24.87	20.99	46.00	-25.01	peak
5	605.6592	44.84	-21.01	23.83	46.00	-22.17	peak
6	842.1295	45.21	-19.56	25.65	46.00	-20.35	peak

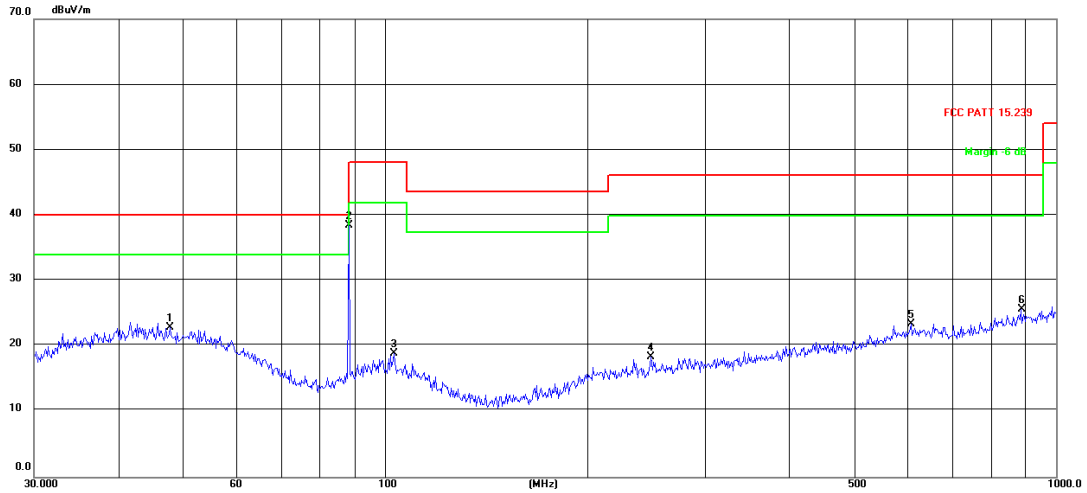


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	54.6428	52.07	-28.77	23.30	40.00	-16.70	AVG
2 *	88.1000	69.64	-32.45	37.19	48.00	-2.81	AVG
3	271.3245	46.63	-27.93	18.70	46.00	-27.30	AVG
4	404.6664	45.86	-24.87	20.99	46.00	-25.01	AVG
5	605.6592	44.84	-21.01	23.83	46.00	-22.17	AVG
6	842.1295	45.21	-19.56	25.65	46.00	-20.35	AVG

Vertical



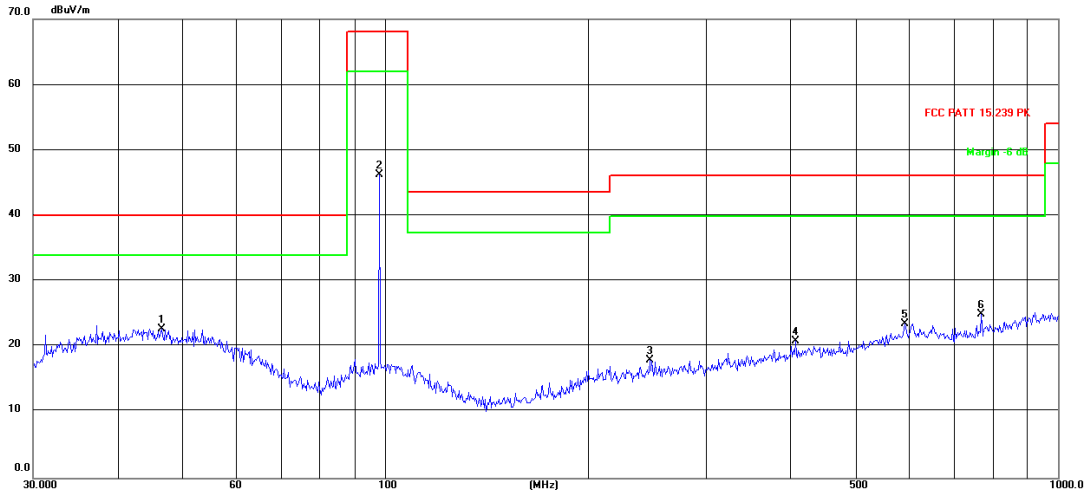
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	51.3004	54.47	-28.37	26.10	40.00	-13.90	peak
2	88.1000	81.39	-32.41	48.98	68.00	-19.02	peak
3	237.4755	49.58	-28.78	20.80	46.00	-25.20	peak
4	337.2155	47.68	-26.45	21.23	46.00	-24.77	peak
5	449.5557	46.04	-24.32	21.72	46.00	-24.28	peak
6	726.8052	46.61	-21.01	25.60	46.00	-20.40	peak



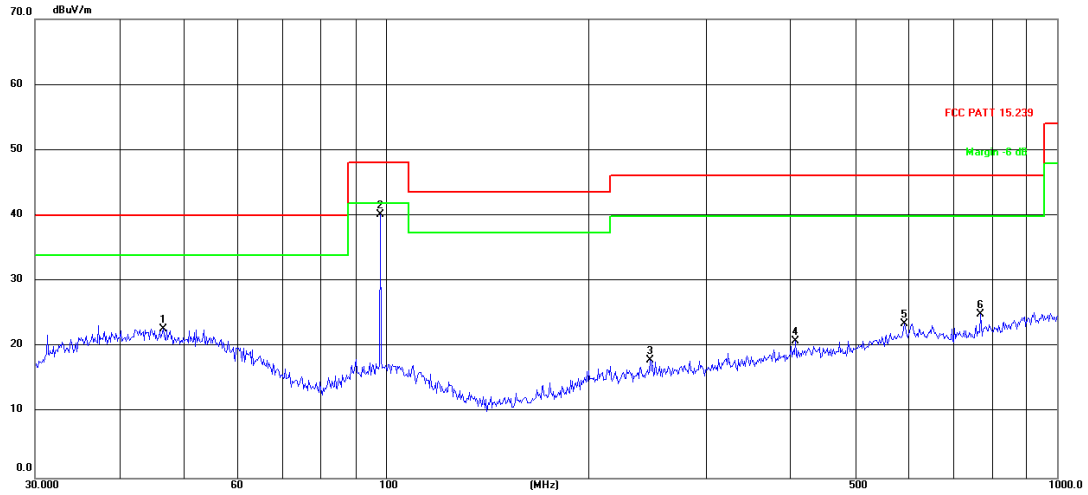
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	47.8260	51.15	-28.19	22.96	40.00	-17.04	AVG
2 *	88.1000	70.93	-32.45	38.48	40.00	-1.52	AVG
3	103.0800	49.25	-30.25	19.00	48.00	-29.00	AVG
4	249.4250	46.86	-28.38	18.48	46.00	-27.52	AVG
5	607.7867	44.52	-21.02	23.50	46.00	-22.50	AVG
6	887.6099	44.64	-18.96	25.68	46.00	-20.32	AVG

TX-98MHz

Horizontal

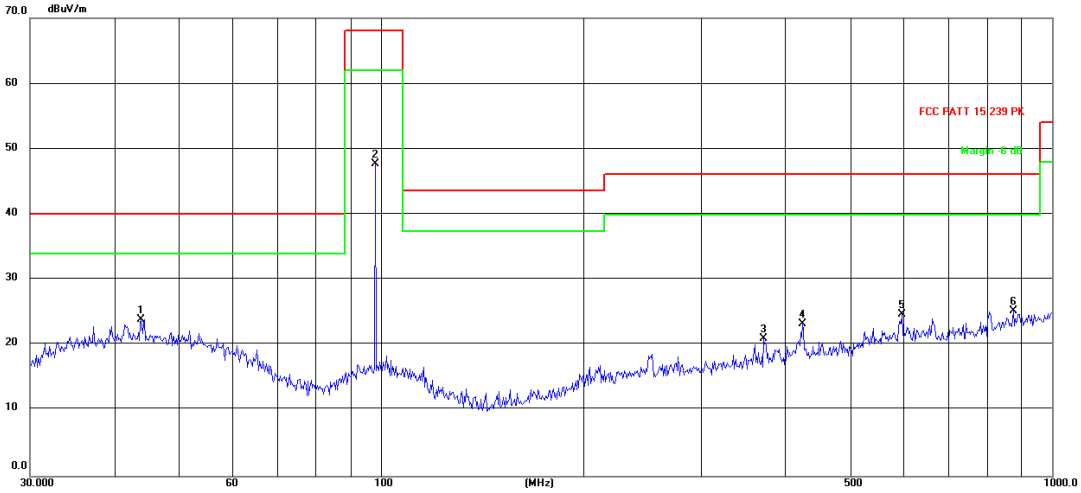


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	46.6663	51.03	-28.19	22.84	40.00	-17.16	peak
2	98.1000	76.70	-30.45	46.25	68.00	-21.75	peak
3	247.6818	46.46	-28.43	18.03	46.00	-27.97	peak
4	407.5144	45.77	-24.83	20.94	46.00	-25.06	peak
5	593.0496	44.82	-21.18	23.64	46.00	-22.36	peak
6	768.7481	45.50	-20.51	24.99	46.00	-21.01	peak

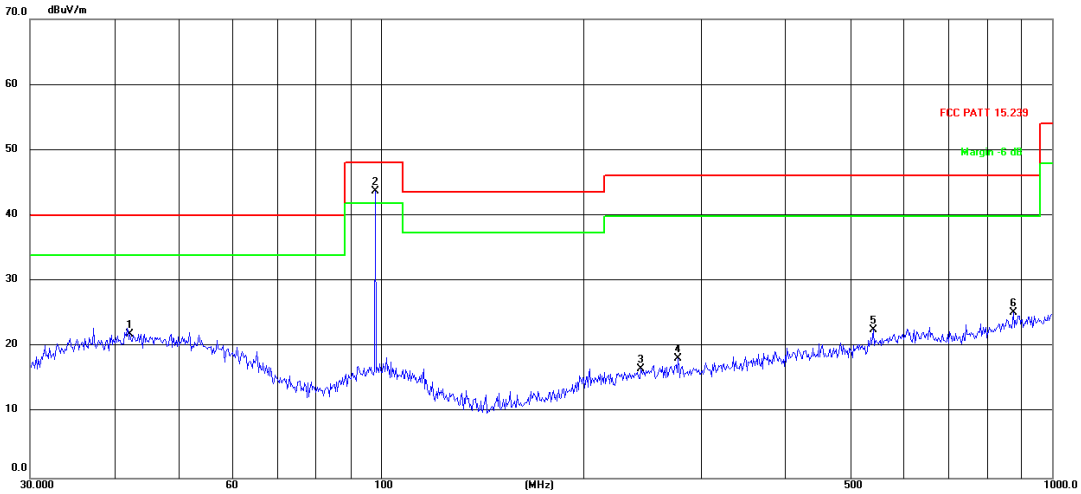


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	46.6663	51.03	-28.19	22.84	40.00	-17.16	AVG
2 *	98.1000	70.70	-30.45	40.25	48.00	-7.75	AVG
3	247.6818	46.46	-28.43	18.03	46.00	-27.97	AVG
4	407.5144	45.77	-24.83	20.94	46.00	-25.06	AVG
5	593.0496	44.82	-21.18	23.64	46.00	-22.36	AVG
6	768.7481	45.50	-20.51	24.99	46.00	-21.01	AVG

Vertical



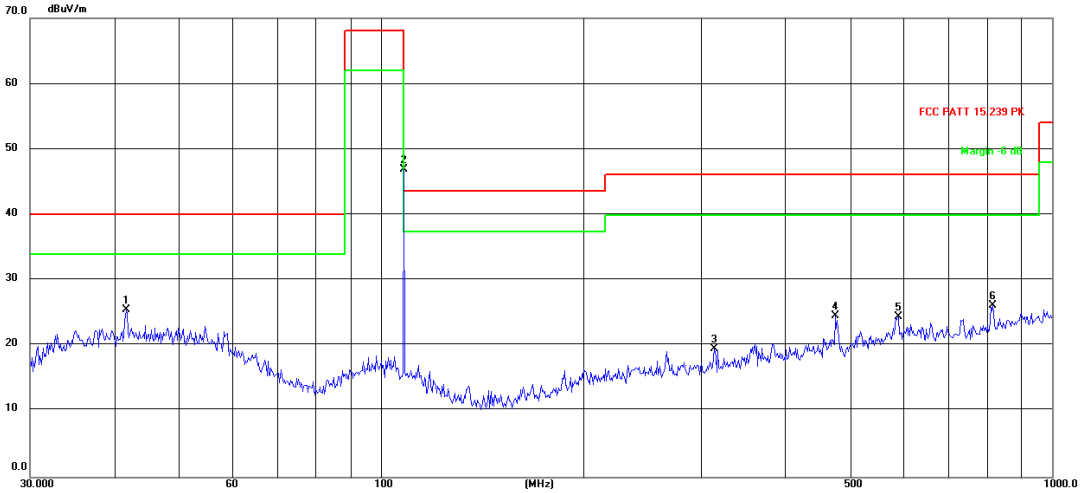
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	43.9658	52.33	-28.35	23.98	40.00	-16.02	peak
2	98.1000	78.20	-30.45	47.75	68.00	-20.25	peak
3	372.0045	46.74	-25.61	21.13	46.00	-24.87	peak
4	425.0280	47.94	-24.62	23.32	46.00	-22.68	peak
5	597.2232	45.90	-21.07	24.83	46.00	-21.17	peak
6	875.2468	44.45	-19.13	25.32	46.00	-20.68	peak



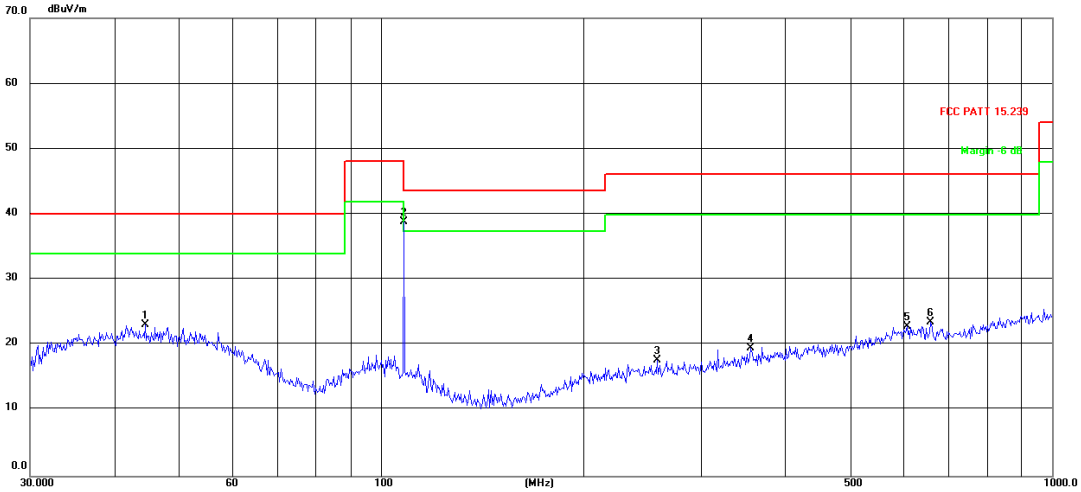
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	42.3022	50.60	-28.62	21.98	40.00	-18.02	AVG
2 *	98.1000	74.20	-30.45	43.75	48.00	-4.25	AVG
3	244.2321	45.31	-28.54	16.77	46.00	-29.23	AVG
4	277.0935	46.07	-27.82	18.25	46.00	-27.75	AVG
5	541.3725	45.27	-22.58	22.69	46.00	-23.31	AVG
6	875.2469	44.45	-19.13	25.32	46.00	-20.68	AVG

TX-107.9MHz

Horizontal

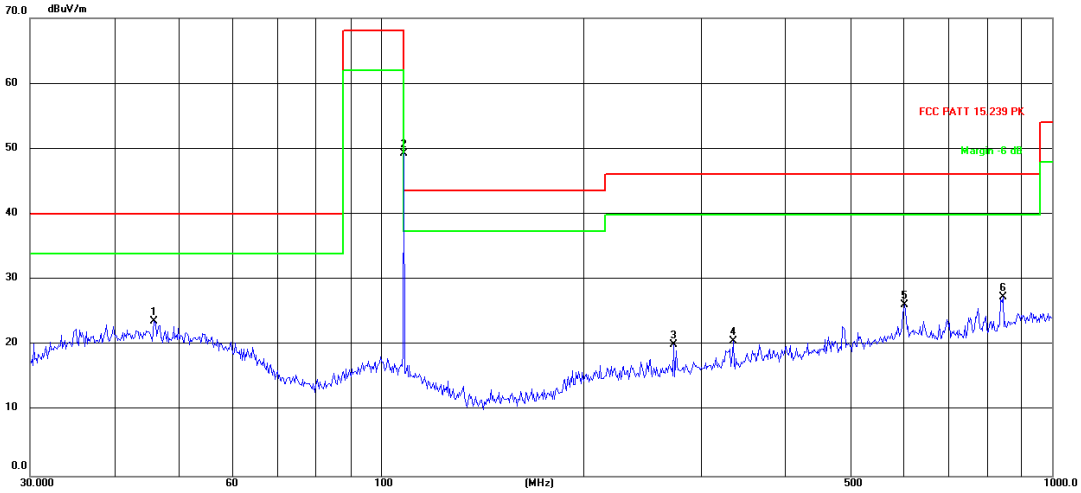


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	41.7129	54.23	-28.70	25.53	40.00	-14.47	peak
2	107.9000	77.43	-30.48	46.95	68.00	-21.05	peak
3	314.3763	46.63	-27.00	19.63	46.00	-26.37	peak
4	475.4990	48.61	-24.00	24.61	46.00	-21.39	peak
5	590.9737	45.79	-21.23	24.56	46.00	-21.44	peak
6	815.9678	46.10	-19.93	26.17	46.00	-19.83	peak

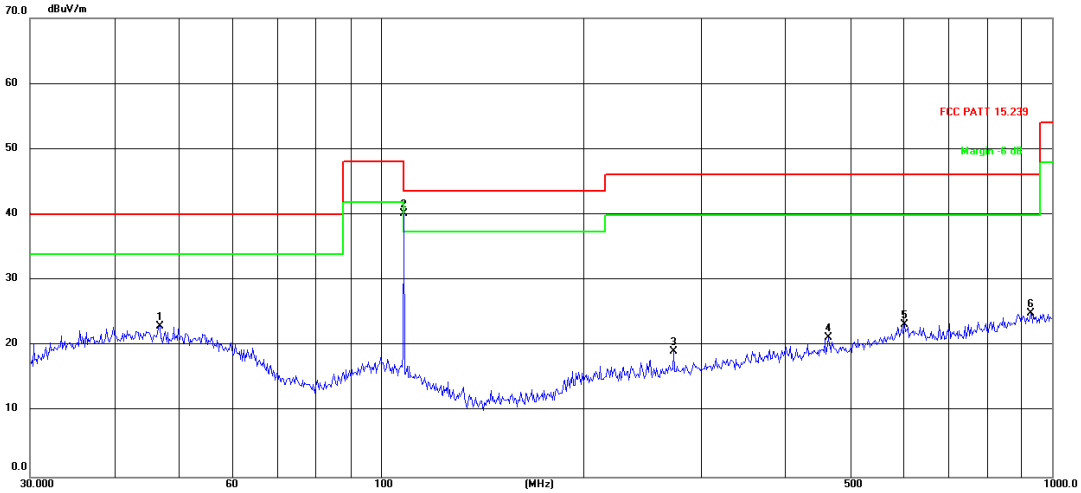


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	44.5868	51.37	-28.25	23.12	40.00	-16.88	AVG
2 *	107.9000	69.43	-30.48	38.95	48.00	-9.05	AVG
3	258.3264	46.00	-28.19	17.81	46.00	-28.19	AVG
4	355.4272	45.56	-26.01	19.55	46.00	-26.45	AVG
5	607.7867	43.99	-21.02	22.97	46.00	-23.03	AVG
6	658.8361	44.77	-21.19	23.58	46.00	-22.42	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	45.8551	51.95	-28.19	23.76	40.00	-16.24	peak
2	107.9000	79.75	-30.48	49.27	68.00	-18.73	peak
3	273.2339	48.06	-27.90	20.16	46.00	-25.84	peak
4	334.8586	47.11	-26.50	20.61	46.00	-25.39	peak
5	603.5389	47.25	-21.00	26.25	46.00	-19.75	peak
6	845.0877	46.90	-19.53	27.37	46.00	-18.63	peak



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	46.8302	51.19	-28.19	23.00	40.00	-17.00	AVG
2 *	107.9000	70.75	-30.48	40.27	48.00	-7.73	AVG
3	273.2340	47.06	-27.90	19.16	46.00	-26.84	AVG
4	463.9696	45.46	-24.15	21.31	46.00	-24.69	AVG
5	603.5391	44.25	-21.00	23.25	46.00	-22.75	AVG
6	929.0081	43.72	-18.63	25.09	46.00	-20.91	AVG

Note: The result below 30MHz and above 1GHz is too low so there is no record. The test setup show in the test setup photograph is the worst case.

6. POWER LINE CONDUCTED EMISSIONS(Not Applicable)

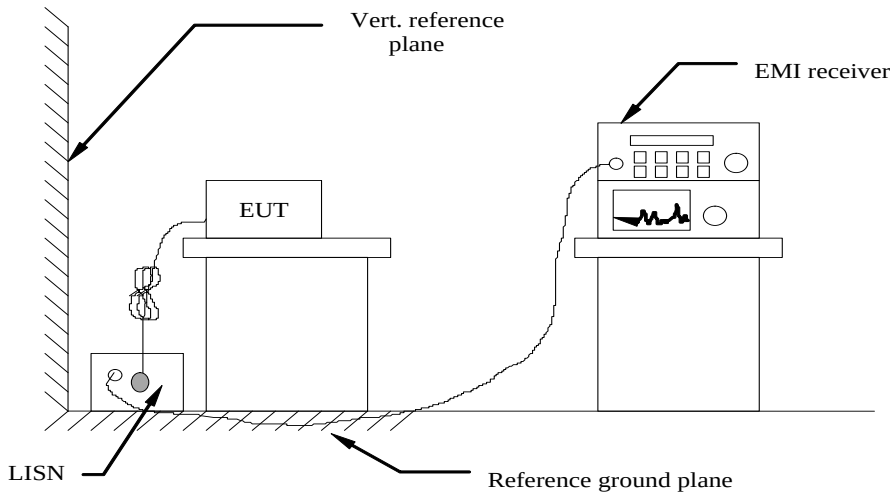
6.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

* Decreasing linearly with the logarithm of the frequency

6.2 Block Diagram of Test Setup



6.3 Test Results

Not applicable!!!

The device was powered by DC power!!!

7. ANTENNA REQUIREMENT

7.1 Standard Applicable

According to antenna requirement of §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. 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 re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

7.2 Antenna Connected Construction

7.2.1. Standard Applicable

According to § 15.203 & RSS-Gen Issue 4, 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.

7.2.2. Antenna Connector Construction

The directional gains of antenna used for transmitting is 1.5dBi, and the antenna is an internal antenna connect to PCB board and no consideration of replacement. Please see EUT photo for details.

7.2.3. Results: Compliance.

8. LIST OF TEST EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Power Meter	R&S	NRVS	100444	2020-06-22	2021-06-21
2	Power Sensor	R&S	NRV-Z81	100458	2020-06-22	2021-06-21
3	Power Sensor	R&S	NRV-Z32	10057	2020-06-22	2021-06-21
4	Test Software	Tonscend	JS1120-2	/	N/A	N/A
5	RF Control Unit	Tonscend	JS0806-2	N/A	2020-06-22	2021-06-21
6	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2019-11-22	2020-11-21
7	DC Power Supply	Agilent	E3642A	N/A	2020-11-13	2021-11-12
8	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
9	3m Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2020-06-22	2021-06-21
10	Positioning Controller	MF	MF7082	MF78020803	2020-06-22	2021-06-21
11	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2018-07-26	2021-07-25
12	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-07-26	2021-07-25
13	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2018-07-02	2021-07-01
14	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2020-09-20	2021-09-19
15	Broadband Preamplifier	SCHWARZBECK	BBV9745	9719-025	2020-06-22	2021-06-21
16	EMI Test Receiver	R&S	ESR 7	101181	2020-06-22	2021-06-21
17	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2020-11-13	2021-11-12
18	Broadband Preamplifier	/	BP-01M18G	P190501	2020-06-22	2021-06-21
19	RF Cable-R03m	Jye Bao	RG142	CB021	2020-06-22	2021-06-21
20	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2020-06-22	2021-06-21
21	6dB Attenuator	/	100W/6dB	1172040	2020-06-22	2021-06-21
22	3dB Attenuator	/	2N-3dB	/	2020-06-22	2021-06-21
23	EMI Test Receiver	R&S	ESPI	101840	2020-06-22	2021-06-21
24	Artificial Mains	R&S	ENV216	101288	2020-06-22	2021-06-21
25	10dB Attenuator	SCHWARZBECK	MTS-IMP-136	261115-001-0032	2020-06-22	2021-06-21
Note: All equipment is calibrated through CHINA CEPREI LABORATORY and GUANGZHOU LISAI CALIBRATION AND TEST CO., LTD.						

9. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

10. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

11. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

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