



# RF TEST REPORT

**Report No.:** SET2023-01169

**Product Name:** LoRaWAN Sensor Terminal

**Model No.:** FST100

**FCC ID:** 2A8OE-FST100

**Applicant:** Xiamen Four-Faith Communication Technology Co., Ltd.

**Address:** 11th Floor, A-06 Area, No.370, Chengyi Street, Jimei, Xiamen, Fujian, China.

**Dates of Testing:** 01/10/2023 - 02/16/2023

**Issued by:** CCIC Southern Testing Co., Ltd.

**Lab Location:** Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.


**Tel:** 86 755 26627338      **Fax:** 86 755 26627238

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## Test Report

**Product** .....: LoRaWAN Sensor Terminal  
**Trade Name** .....: Four-Faith  
**Applicant**.....: Xiamen Four-Faith Communication Technology Co., Ltd.  
**Applicant Address** .....: 11th Floor, A-06 Area, No.370, Chengyi Street, Jimei,  
Xiamen, Fujian, China.  
**Manufacturer** .....: Xiamen Four-Faith Communication Technology Co., Ltd.  
**Manufacturer Address** .....: 11th Floor, A-06 Area, No.370, Chengyi Street, Jimei,  
Xiamen, Fujian, China.  
**Test Standards** .....: 47 CFR FCC Part 15.225  
ANSI C63.10-2013  
**Test Result**.....: Pass

**Tested by** .....:  2023.02.16  
Chuiwang Zhang, Test Engineer

**Reviewed by** .....:  2023.02.16  
Chris You, Senior Engineer

**Approved by** .....:  2023.02.16  
Tao Hou, Manager

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Change History		
Issue	Date	Reason for change
1.0	2023.02.16	First edition

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	LoRaWAN Sensor Terminal
Model No.	FST100
Operating Rang	13.56MHz
Number of channel	1
Modulation Type	ASK
Antenna Type	Internal Antenna
Antenna Gain	0dBi
Power supply	Disposable Lithium Battery 3.6V/4100mAh*2(Parallel connection)

## 1.1. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC certification standards:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C	Radio Frequency Devices
2	KDB 174176 D01 Line Conducted FAQ v01r01	AC Power-Line Conducted Emissions Frequently Asked Questions
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Test detailed items/section required by FCC/IC rules and results are as below:

No.	Section in CFR 47	Description	Result
1	15.203	Antenna Requirement	PASS
2	15.207	AC Power Line Conducted Emission	PASS
3	15.225(d) 15.209	Radiated Emission	PASS
4	15.225(a) (b) (c), 15.31(f)	Field Strength of Radiated Emissions	PASS
5	15.225(e)	Frequency Stability	PASS
6	15.215(c)	20 dB Bandwidth	PASS

Note: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10-2013.

## 1.2. Laboratory Facilities

### **FCC-Registration No.: 406086**

CCIC Southern Testing Co., Ltd 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. Designation Number: CN1283, valid time is until April 19th, 2023.

### **ISED Registration: 11185A-1**

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Jun. 30th, 2023.

### **A2LA Code: 5721.01**

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

## 1.3. Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature ( °C):	15°C - 35°C
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86KPa-106KPa

## 2. 47 CFR Part 15C Requirements

### 2.1. Antenna requirement

#### 2.1.1. Applicable Standard

According to FCC 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.

#### 2.1.2. Antenna Information

**Antenna Category:** Internal Antenna

A internal Antenna was soldered to the antenna port of EUT via an adaptor cable, can't be removed.

**Antenna General Information:**

No.	EUT	Operating frequency range	Ant. Type	Ant. Gain
1	LoRaWAN Sensor Terminal	13.56 MHz	Internal	0

#### 2.1.3. Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.



## **2.2. Field Strength of Radiated Emissions**

### **2.2.1. Requirement**

As per FCC Part 15.225.

- (a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) Extrapolation Factor =  $20 \log_{10}(30/3)^2 = 40\text{dB}$ .

### **2.2.2. Measuring Instruments**

The measuring equipment is listed in the section 3 of this test report.

### **2.2.3. Test Description**

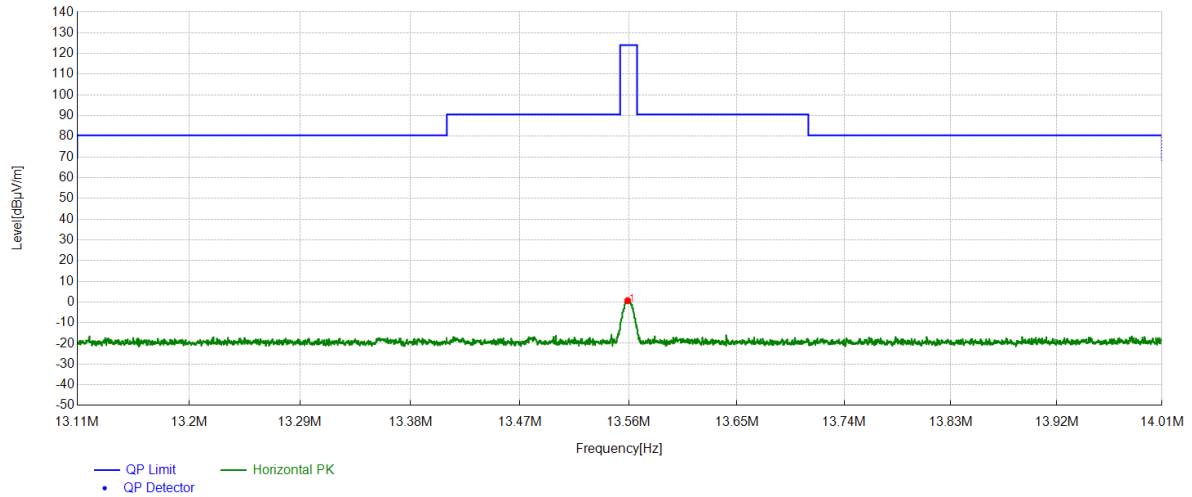
The measured Field Strength of Radiated Emissions was calculated by the reading of the spectrum analyzer and calibration.

### **2.2.4. Test Setup**

The radiated emission tests were performed in the 5-meter chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.

## 2.2.5. Test Result

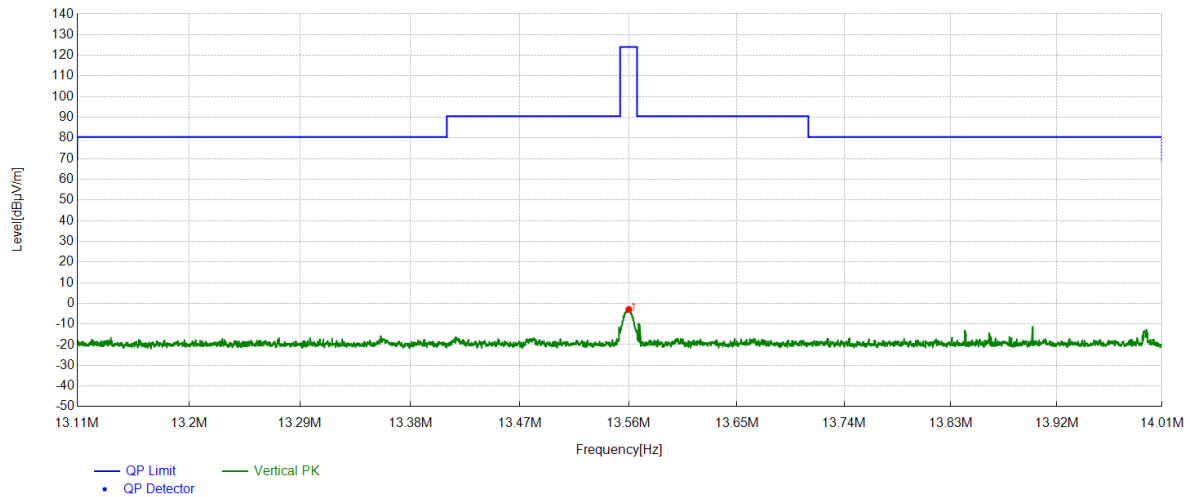
Field Strength of Radiated Emissions			
Test site:	5M anechoic chamber	Environment:	Temp: 23°C; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Vertical



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dBμV/m]	Height [cm]	Angle [°]	Polarity
1	13.56	0.63	-28.25	124.00	123.37	100	183	Horizontal

## Field Strength of Radiated Emissions

Test site:	5M anechoic chamber	Environment:	Temp: 23°C; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Vertical



### Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dBμV/m]	Height [cm]	Angle [°]	Polarity
1	13.56	-2.99	-28.25	124.00	126.99	100	88	Vertical

## 2.3. 20 dB Bandwidth

### 2.3.1. Requirement

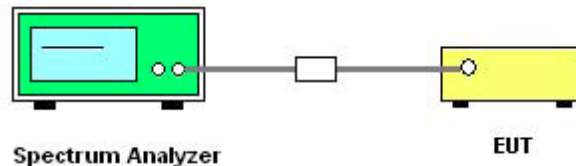
Per 15.215 (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553-13.567MHz).

### 2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.3.3. Test Setup

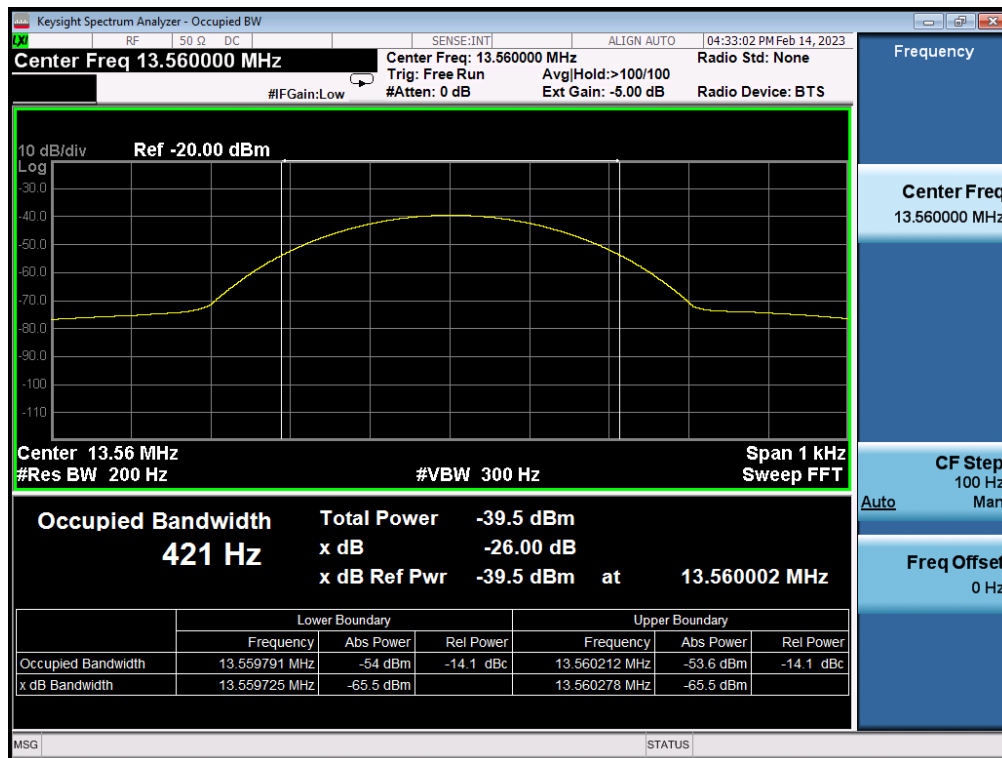


1. The EUT which is powered by the AC 120V/60Hz is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss and Atten as the factor is calibrated to correct the reading.
2. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
3. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
4. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

### 2.3.4. Test Results

Test Frequency(MHz)	20dB Bandwidth(kHz)	Limit (kHz)	Results
13.56	0.421	11.2	Pass

Note: For 13.56MHz, permitted Band is 14 kHz, so the Limit is 11.2 kHz.



Note: Because the measured signal is CW adjusting the RBW per C63.10-2013 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

## 2.4. Frequency Stability

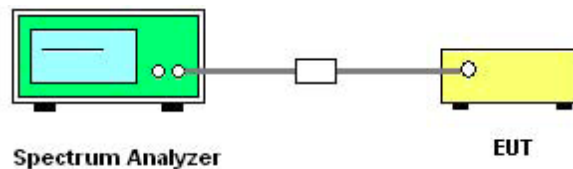
### 2.4.1. Requirement

According to FCC section 15.225(e), the frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  (100ppm) of the operating frequency over a temperature variation of  $-20$  degrees to  $+50$  degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.4.3. Test Setup



The EUT is powered by Battery, which is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

### 2.4.4. Test Procedures

1. Frequency Stability vs. Temperature: The EUT is powered by Battery, then antenna was connected to a Spectrum Analyzer. The EUT was placed inside the temperature chamber.
2. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.
3. Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

### 2.4.5. Test Results

Test Mode: Continuous Transmitting

Test Environment		Frequency Reading (MHz)	Frequency Error (%)	Frequency Error (ppm)	Limit (%)	Result
Adapter Power Supply	Temperature (°C)					
DC 3.6V	-20	13.559989	-0.0000008112	-0.8112	±0.01% (±100ppm)	Pass
	-10	13.559990	-0.0000007375	-0.7375		Pass
	0	13.559989	-0.0000008112	-0.8112		Pass
	10	13.559988	-0.0000008850	-0.8850		Pass
	20	13.559989	-0.0000008112	-0.8112		Pass
	30	13.559989	-0.0000008112	-0.8112		Pass
	40	13.559989	-0.0000008112	-0.8112		Pass
	50	13.559988	-0.0000008850	-0.8850		Pass
Max. = DC 3.06V	20	13.559989	-0.0000008112	-0.8112		Pass
Min. = DC 4.14V	20	13.559990	-0.0000007375	-0.7375		Pass

## 2.5. AC Power Line Conducted Emission

### 2.5.1. Requirement

According to FCC section 15.207, for an intentional radiator that 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 within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

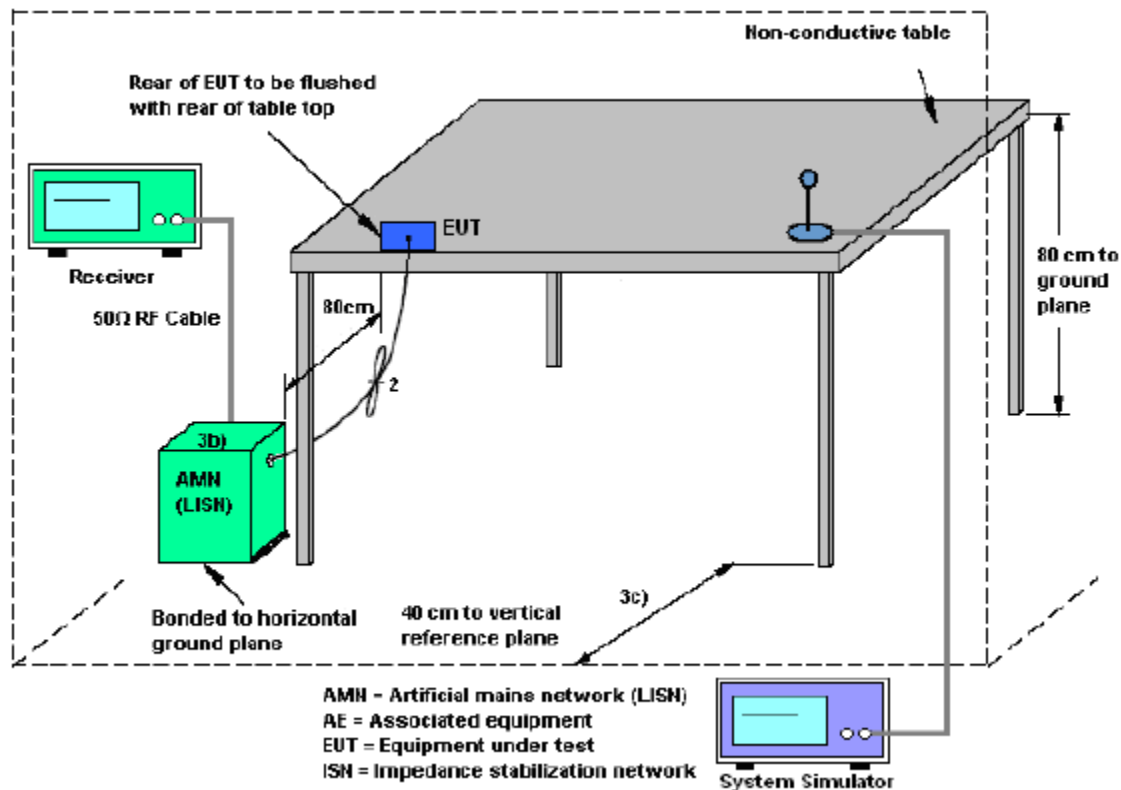
NOTE:

- (a) The lower limit shall apply at the band edges.
- (b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

### 2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.5.3. Test Setup





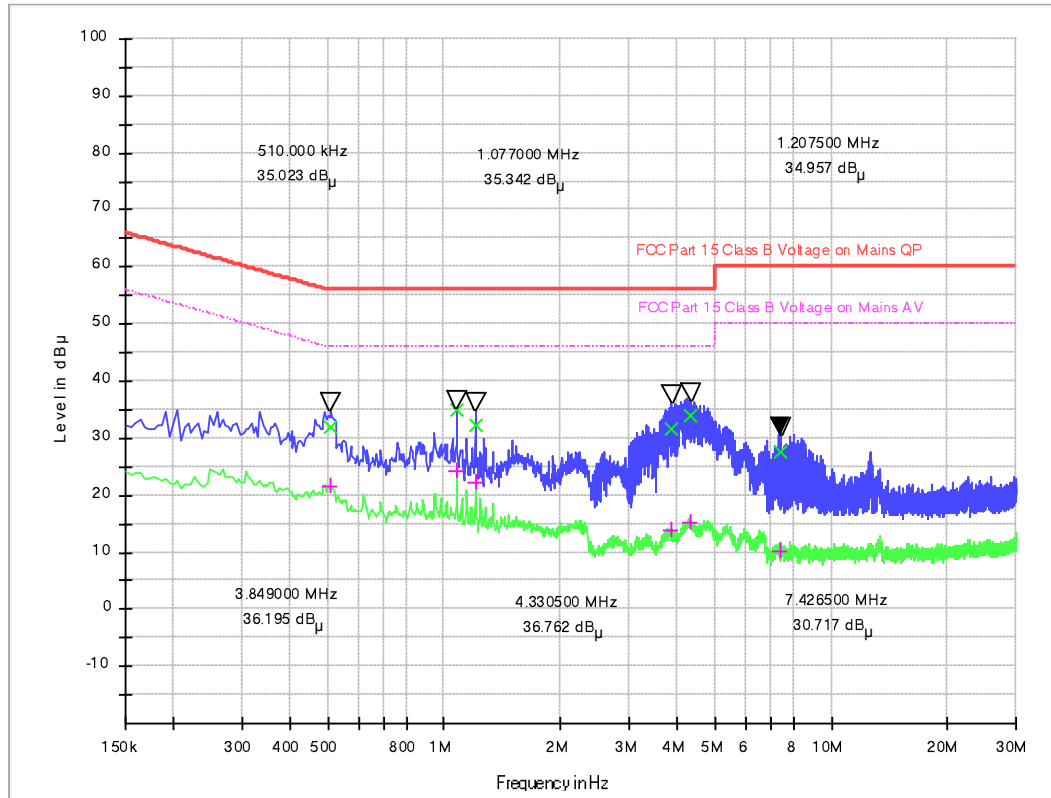
#### **2.5.4. Test Procedures**

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 micrometry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

#### **2.5.5. Test Results**

The EUT configuration of the emission tests is NFC Tx + Charging from Adapter.

### Line Phase



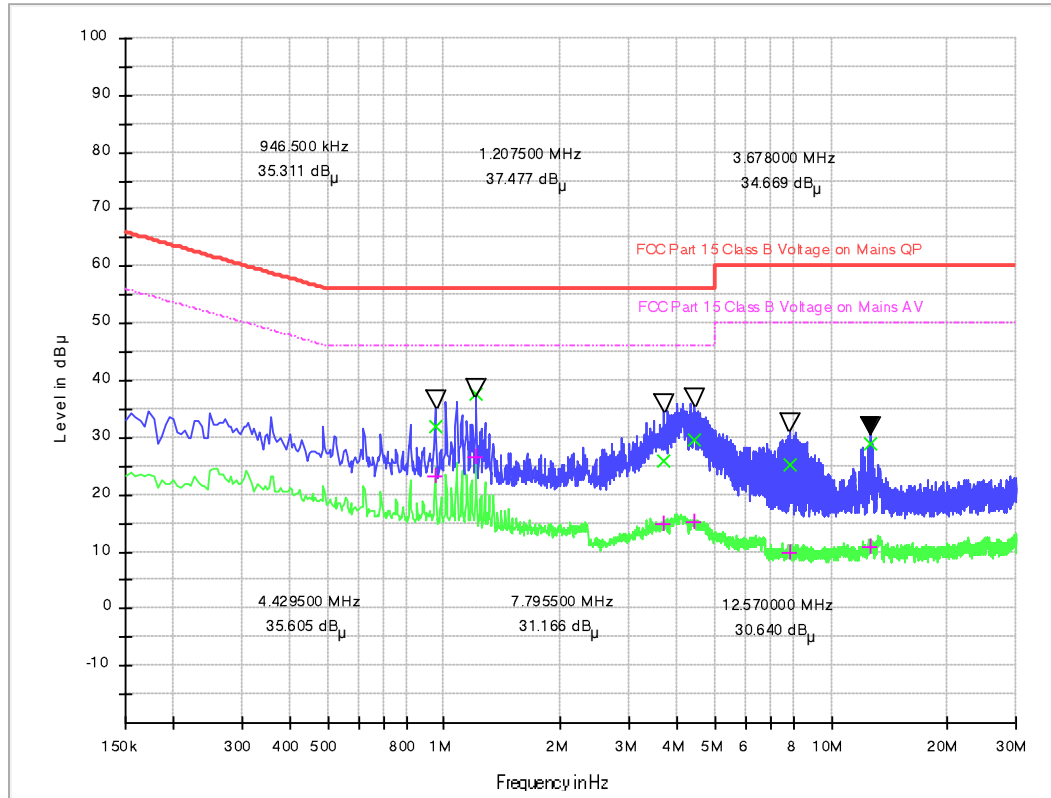
Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Cabel Loss (dB)	Corr.Factor (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V)	Margin - AV (dB)	Limit - AV (dB μ V)
0.510000	31.82	21.70	0.2	10.2	24.18	56.0	24.30	46.0
1.077000	34.91	24.18	0.2	10.2	21.09	56.0	21.82	46.0
1.207500	32.45	22.21	0.2	10.2	23.55	56.0	23.79	46.0
3.849000	31.65	13.73	0.2	10.2	24.35	56.0	32.27	46.0
4.330500	34.09	15.07	0.2	10.2	21.91	56.0	30.93	46.0
7.426500	27.66	10.00	0.5	10.5	32.34	60.0	40.00	50.0

**Test Result : Pass**

Remark:

1. Correction factor = Cabel loss+ attenuation factor.
2. attenuation factor = 10dB.

### Neutral Phase



Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Cabel Loss (dB)	Corr.Factor (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V)	Margin - AV (dB)	Limit - AV (dB μ V)
0.946500	31.81	23.12	0.2	10.2	24.19	56.0	22.88	46.0
1.207500	37.82	26.69	0.2	10.2	18.18	56.0	19.31	46.0
3.678000	26.07	14.85	0.2	10.2	29.93	56.0	31.15	46.0
4.429500	29.54	15.26	0.2	10.2	26.46	56.0	30.74	46.0
7.795500	25.24	9.78	0.2	10.2	34.76	60.0	40.22	50.0
12.570000	28.82	10.67	0.2	10.2	31.18	60.0	39.33	50.0

**Test Result : Pass**

Remark:

1. Correction factor = Cabel loss+ attenuation factor.
2. attenuation factor = 10dB.

## 2.6. Radiated Emission

### 2.6.1. Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level. If the transmitter uses an RMS average conducted power limit, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

§15.209(a) Radiated emission limits:

Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)
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

Note:

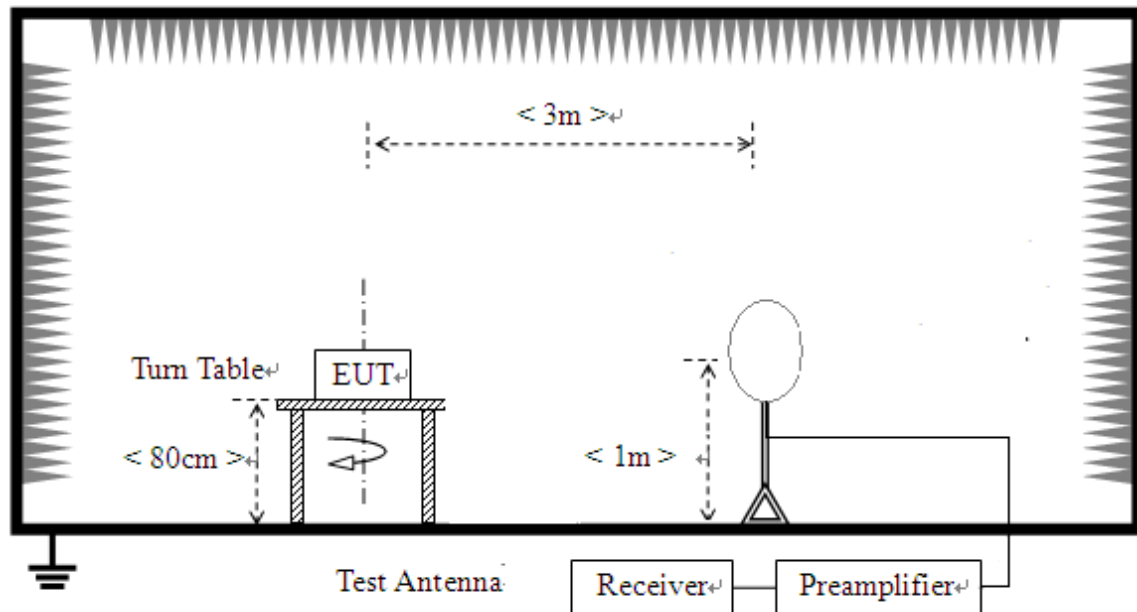
1. The radiated emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.
2. The EUT was connected to a 120VAC/60Hz power source.

### 2.6.2. Measuring Instruments

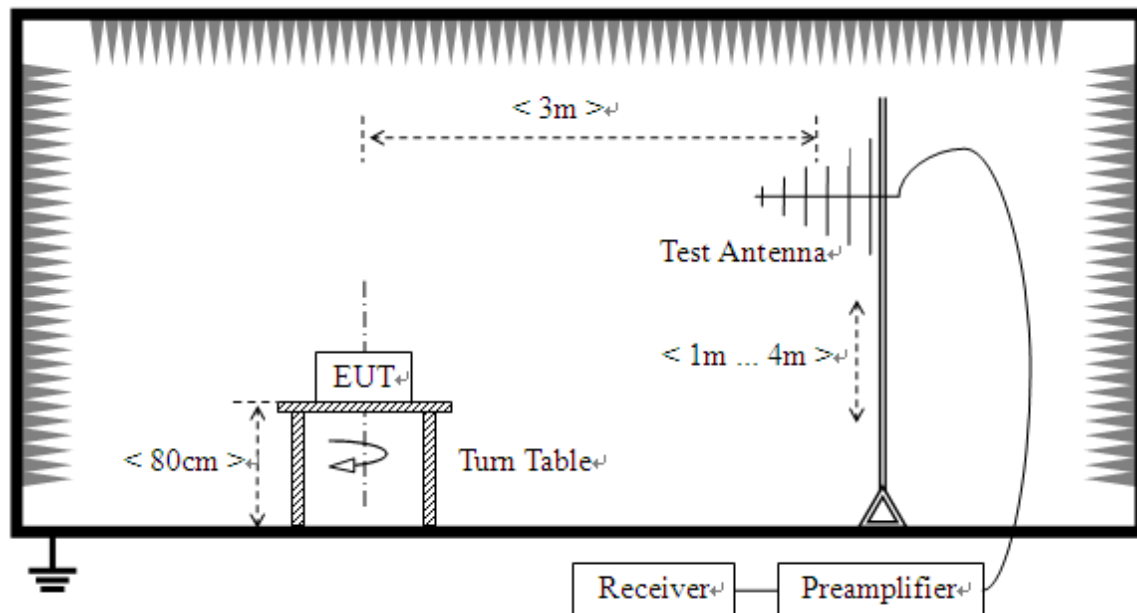
The measuring equipment is listed in the section 3 of this test report.

### 2.6.3. Test Setup

For radiated emissions from 9 kHz to 30 MHz



For radiated emissions from 30 MHz to 1 GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10:2013. The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10:2013.

For the Test Antenna:

- (a) In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- (b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz). Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

#### 2.6.4. Test Results

According to ANSI C63.10-2013 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

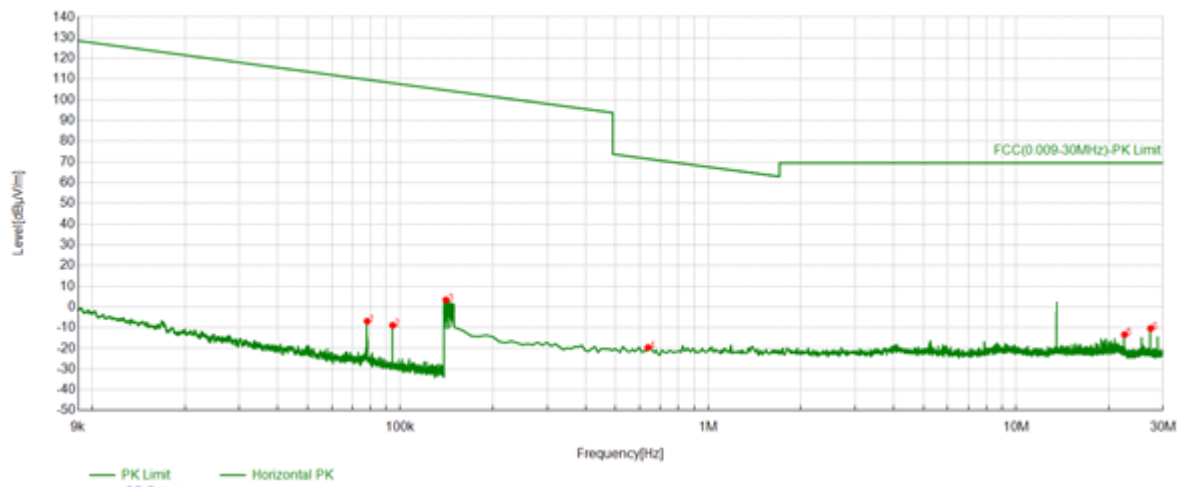
$L_{\text{Cable loss}}$ : Cable loss

During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  were built in test software.

The radiated frequency ranges from 9 kHz to 1 GHz.

### For 9 kHz to 30MHz

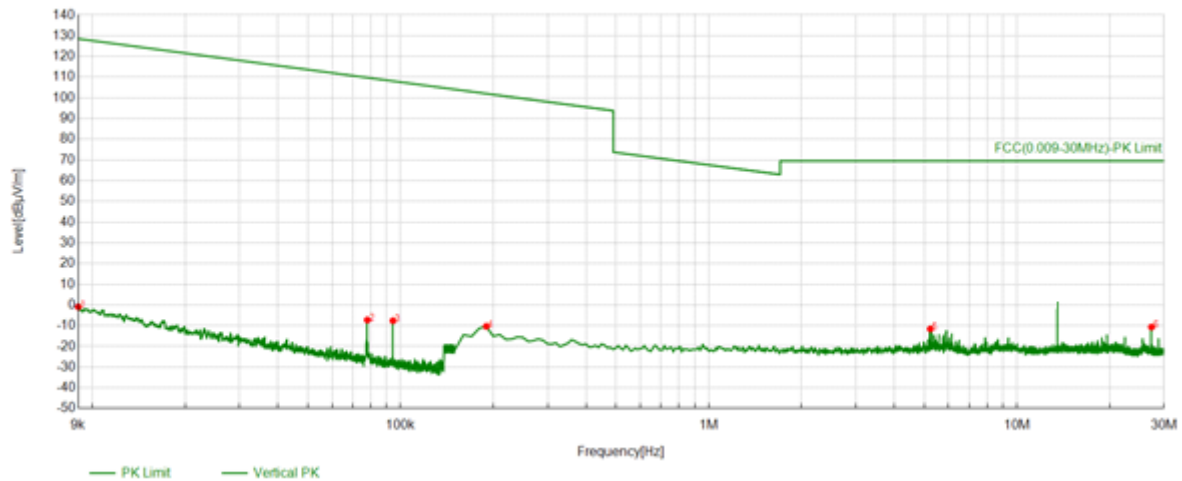
Project Information			
Test site:	5M anechoic chamber	Environment:	Temp: 23℃; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Horizontal



Suspected List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Factor [dB]	Margin [dBμV/m]	Trace	Angle [°]	Polarity
1	0.08	-6.88	-29.95	109.75	116.63	100	250	0.08	Horizontal
2	0.09	-8.87	-30.14	108.09	116.96	100	156	0.09	Horizontal
3	0.14	3.37	-29.79	104.63	101.26	100	0	0.14	Horizontal
4	0.64	-19.64	-29.55	71.51	91.15	100	178	0.64	Horizontal
5	22.51	-13.35	-28.39	69.54	82.89	100	45	22.51	Horizontal
6	27.33	-10.38	-28.23	69.54	79.92	100	122	27.33	Horizontal

## Project Information

Test site:	5M anechoic chamber	Environment:	Temp: 23℃; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Vertical



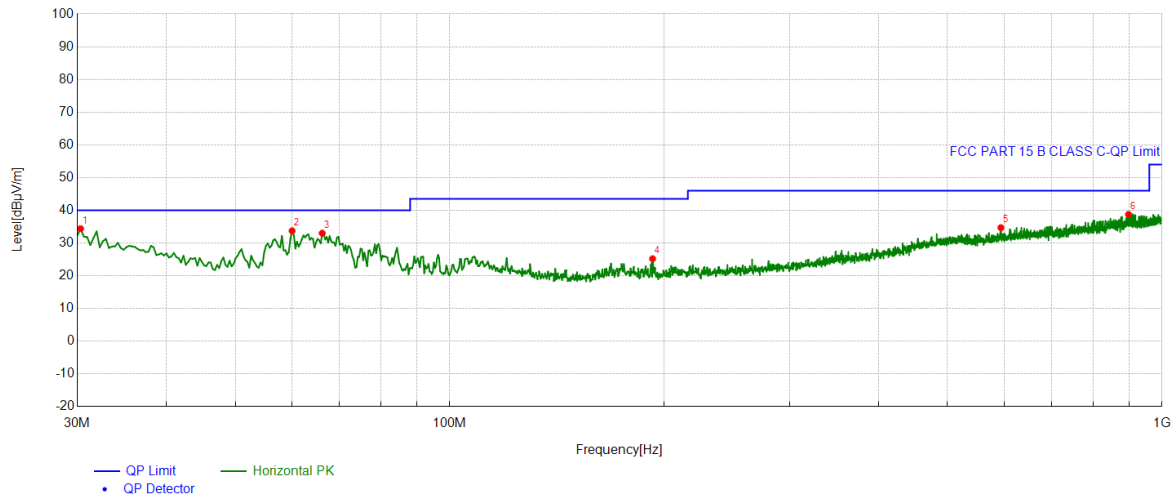
## Suspected List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Factor [dB]	Margin [dBμV/m]	Trace	Angle [°]	Polarity
1	0.01	-0.90	-29.60	128.52	129.42	100	14	0.01	Vertical
2	0.08	-7.25	-29.95	109.76	117.01	100	226	0.08	Vertical
3	0.09	-7.60	-30.14	108.09	115.69	100	314	0.09	Vertical
4	0.19	-10.34	-29.70	102.04	112.38	100	360	0.19	Vertical
5	5.24	-11.57	-29.38	69.54	81.11	100	119	5.24	Vertical
6	27.33	-10.68	-28.23	69.54	80.22	100	356	27.33	Vertical



### For 30MHz to 1000MHz

Project Information			
Test site:	5M anechoic chamber	Environment:	Temp: 23°C; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Horizontal



Suspected List									
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dBμV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	30.32	34.39	19.11	40.00	5.61	100	10	30.32	Horizontal
2	60.08	33.74	6.12	40.00	6.26	100	210	60.08	Horizontal
3	66.23	33.02	7.30	40.00	6.98	100	50	66.23	Horizontal
4	192.69	25.21	10.39	43.50	18.29	100	330	192.69	Horizontal
5	594.08	34.69	20.66	46.00	11.31	100	80	594.08	Horizontal
6	897.47	38.75	24.63	46.00	7.25	100	210	897.47	Horizontal

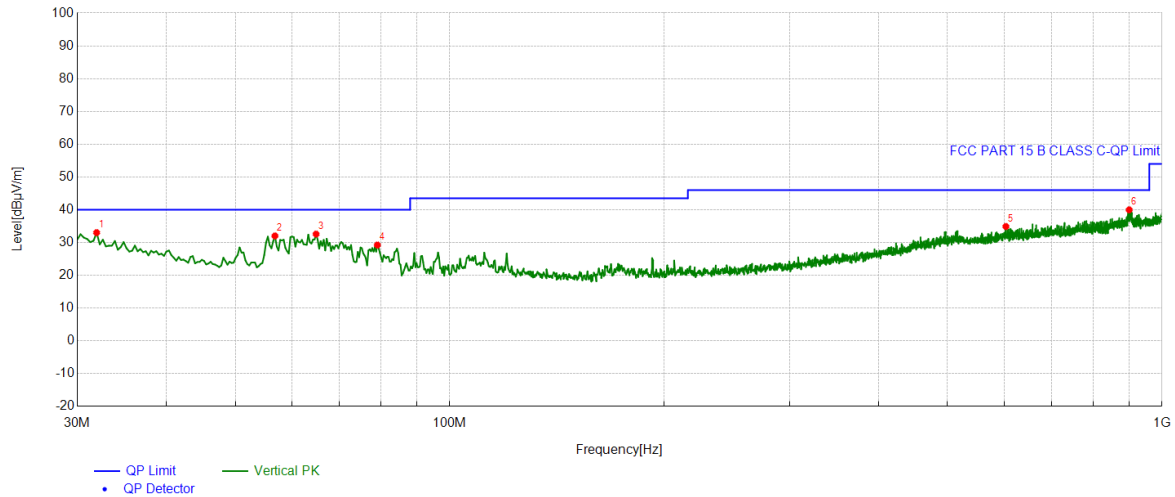
### Test Result : Pass

#### Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value - Emission Level.
4. The other emission levels were very low against the limit.

## Project Information

Test site:	5M anechoic chamber	Environment:	Temp: 23°C; Humi:59%;101Pka
Operator:	Yang zhicheng	Test Date:	2023.02.15
Test Mode:	NFC Tx	Polarization:	Vertical



### Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dBμV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	31.94	33.03	18.42	40.00	6.97	100	320	31.94	Vertical
2	56.85	32.03	7.47	40.00	7.97	100	60	56.85	Vertical
3	64.93	32.59	7.05	40.00	7.41	100	350	64.93	Vertical
4	79.16	29.24	9.69	40.00	10.76	100	250	79.16	Vertical
5	603.78	34.89	20.69	46.00	11.11	100	10	603.78	Vertical
6	899.41	39.97	24.62	46.00	6.03	100	220	899.41	Vertical

### Test Result : Pass

#### Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value - Emission Level.
4. The other emission levels were very low against the limit.

### 3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2019.03.25	2023.03.24
2	EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2022.07.21	2023.07.20
3	Loop Antenna	Schwarz beck	HFH2-Z2	A0304220	2022.05.02	2025.05.01
4	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2019.03.26	2023.03.25
5	Test Receiver	R&S	ESIB7	A0501375	2022.04.18	2023.04.17
6	Broadband Ant.	2786	ETC	A150402240	2021.09.16	2024.03.03
7	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2022.03.25	2023.03.24
8	Temperature chamber	Yamato	DNF810C	A170702700	2022.03.31	2023.03.30
9	Test Receiver	KEYSIGHT	N9038A	A141202036	2022.07.21	2023.07.20
10	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2022.07.21	2023.07.20
11	Cable	MATCHING PAD	W7	/	2022.07.21	2023.07.20

#### 4. Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage  $K=2$  to indicate 95% level of confidence . The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

##### Uncertainty of AC Power Line Conducted Emission Measurement (150kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	2.8dB
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##### Uncertainty of Radiated Emission Measurement (9kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	3.5dB
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##### Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	3.91dB
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##### Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	4.5dB
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##### Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	4.9dB
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##### Uncertainty of RF Conducted Measurement (9kHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	1.2dB
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**\*\*END OF REPORT\*\***