

# FCC Test Report

**Test Report  
On Behalf of  
Suzhou Fanxi Technology Co., Ltd.**

**For  
Intelligent Face Recognition Terminal**

**Model No.: QCC220-F, QCC220, QCC220-xx (where "xx" represents a number in the range of 01 to 15),  
VF107-xx (where "xx" represents a number in the range of 01 to 15)**

**FCC ID: 2BPI7-QCC220-F**

**Prepared For:** **Suzhou Fanxi Technology Co., Ltd.  
Room 101-3, Building 40, No.666, Jianlin Road, High-tech Zone, Suzhou,  
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**Prepared By:** **Shenzhen HUAK Testing Technology Co., Ltd.  
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Street, Bao'an District, Shenzhen, Guangdong, China**

**Date of Test:** **Jul. 18, 2025 ~ Aug. 08, 2025**  
**Date of Report:** **Aug. 08, 2025**  
**Report Number:** **HK2507183952-2E**

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## Test Result Certification

**Applicant's Name** .....: Suzhou Fanxi Technology Co., Ltd.  
**Address** .....: Room 101-3, Building 40, No.666, Jianlin Road, High-tech Zone, Suzhou, Jiangsu, 215000 China  
**Manufacturer's Name** .....: Suzhou Fanxi Technology Co., Ltd.  
**Address** .....: Room 101-3, Building 40, No.666, Jianlin Road, High-tech Zone, Suzhou, Jiangsu, 215000 China

### Product Description

**Trade Mark** .....: N/A  
**Product Name** .....: Intelligent Face Recognition Terminal  
**Model and/or Type Reference** .....: QCC220-F, QCC220, QCC220-xx (where "xx" represents a number in the range of 01 to 15), VF107-xx (where "xx" represents a number in the range of 01 to 15)  
**Standards** .....: FCC Rules and Regulations Part 15 Subpart C Section 15.225  
ANSI C63.10: 2020

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**Date of Test** .....:

**Date (s) of Performance of Tests** .....: Jul. 18, 2025 ~ Aug. 08, 2025

**Date of Issue** .....: Aug. 08, 2025

**Test Result** .....: Pass

Testing Engineer

len liao

Len Liao

Technical Manager

Sliver Wan

Sliver Wan

Authorized Signatory

Jason Zhou

Jason Zhou

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## \*\* Modified History \*\*

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Aug. 08, 2025	Jason Zhou



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## 2. EUT Description

Equipment:	Intelligent Face Recognition Terminal
Model Name:	QCC220-F
Series Model(s):	QCC220, QCC220-xx (where "xx" represents a number in the range of 01 to 15), VF107-xx(where "xx" represents a number in the range of 01 to 15)
Model Difference:	All model's the function, software and electric circuit are the same, only with differences lie in the silk screen printing on the product front and product model. Test sample mode: QCC220-F.
FCC ID:	2BPI7-QCC220-F
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Operation frequency:	13.56MHz
Modulation Type:	ASK
Power Source:	DC 9-24V
Power Rating:	DC 9-24V
Note:	<ol style="list-style-type: none"><li>1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.</li><li>2. Antenna gain Refer to the antenna specifications.</li><li>3. The cable loss data is obtained from the supplier.</li><li>4. The test results in the report only apply to the tested sample.</li></ol>

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### 3. General Information

#### 3.1 Test Environment and Mode

##### Operating Environment:

Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar

##### Test Mode:

Operation mode:	Keep the EUT in continuous transmitting with modulation
-----------------	---

The sample was placed (0.8m below 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

##### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

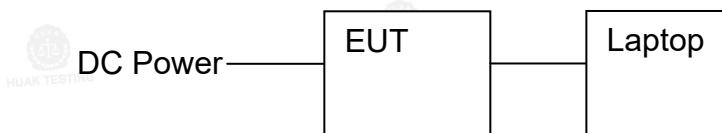
Axis	X	Y	Z
Field Strength(dBuV/m)	64.01	90.99	69.85

##### Final Test Mode:

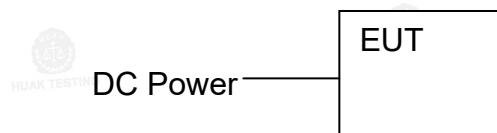
According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup": Y axis (see the test setup photo)

### 3.2 Description of Test Setup

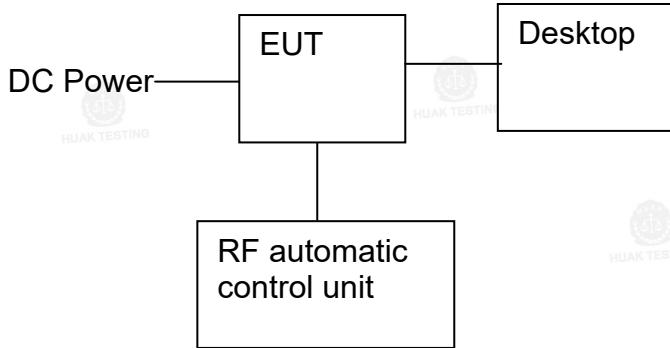
## Operation of EUT during radiation below 1GHz testing:



## Operation of EUT during radiation above 1GHz testing



## Operation of EUT during RF conducted testing:

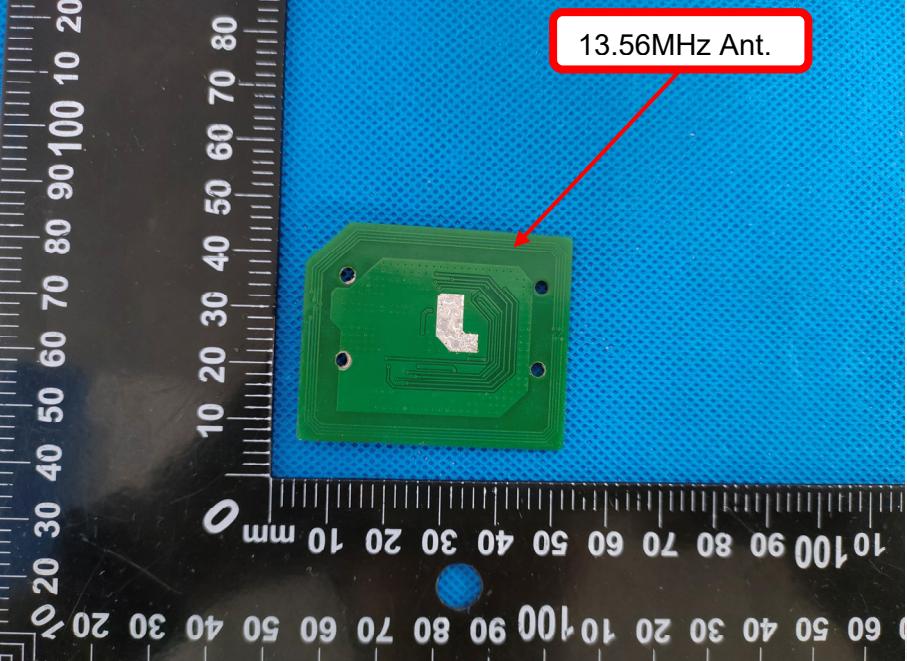


The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. The worst case is X position



## 4. Test Results and Measurement Data

## 4.1 Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 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, 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.	
E.U.T Antenna:	PCB antenna
The antenna used in this product is a PCB Antenna, which have non-standard antenna jack. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 0dBi.	
	

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## 4.2 AC Conducted Emission

#### 4.2.1 Conducted Power Line Emission Limit

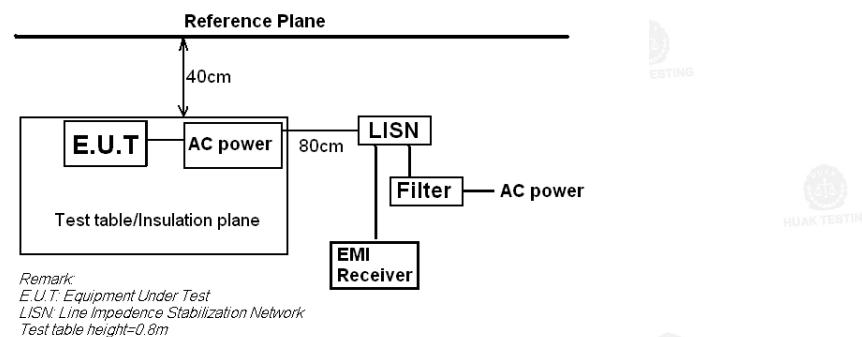
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following.

Frequency (MHz)	Maximum RF Line Voltage (dB $\mu$ V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

\* Decreasing linearly with the logarithm of the frequency.

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

### 4.2.2 Test Setup



### 4.2.3 Test Procedure

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

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#### 4.2.4 Test Result

Not applicable.

Note: EUT power supply by DC Power, so this test item not applicable.

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## 4.3 Radiated Emission Measurement

### 4.3.1 Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.225(a) and 15.209				
<b>Test Method:</b>	ANSI C63.10: 2020				
<b>Frequency Range:</b>	9 kHz to 1 GHz				
<b>Measurement Distance:</b>	3 m				
<b>Antenna Polarization:</b>	Horizontal & Vertical				
<b>Receiver Setup:</b>	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	<ol style="list-style-type: none"> <li>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber in below 1GHz. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>3. 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.</li> <li>4. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>6. 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.</li> </ol>				

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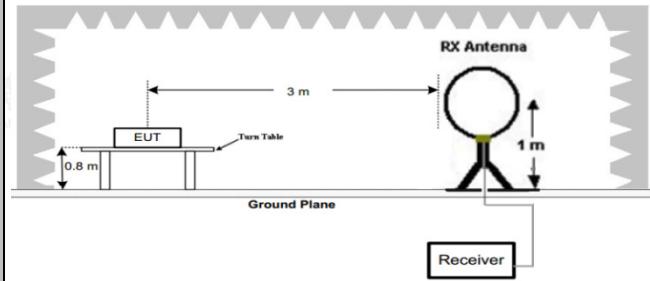


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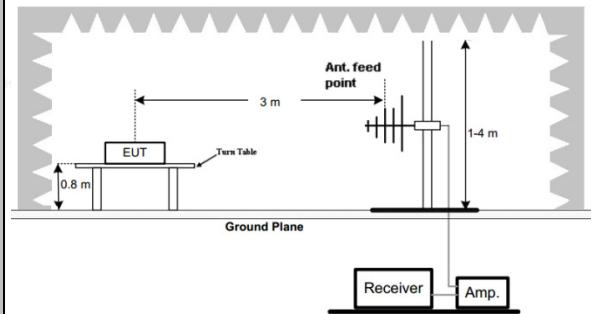


### Test Setup:

For radiated emissions



30MHz to 1GHz



**Test Mode:**

Transmitting Mode

**Test Results:**

PASS

#### 4.3.2 Limit

- (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) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

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#### 4.3.3 Frequencies in restricted band are complied to limit on Paragraph 15.209

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)	Field strength (microvolts/meter)
0.009-0.490	300	20log 2400/F (kHz)	2400/F (kHz)
0.490-1.705	30	20log 24000/F (kHz)	24000/F (kHz)
1.705-30	30	20log 30	30
30-88	3	40.0	100**
88-216	3	43.5	150**
216-960	3	46.0	200**
Above 960	3	54.0	500

**NOTE:**

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., S 15.231 and 15.241.

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#### 4.3.4 Test Instruments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	1 Year
2.	L.I.S.N.	R&S	ENV216	HKE-002	Feb. 19, 2025	1 Year
3.	L.I.S.N.	R&S	ENV216	HKE-059	Feb. 19, 2025	1 Year
4.	EMI Test Receiver	R&S	ESR	HKE-005	Feb. 19, 2025	1 Year
5.	Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	1 Year
6.	Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 19, 2025	1 Year
7.	Preamplifier	EMCI	EMC051845S	HKE-006	Feb. 19, 2025	1 Year
8.	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 19, 2025	1 Year
9.	Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 19, 2025	1 Year
10.	6dB Attenuator	Pasternack	6db	HKE-184	Feb. 19, 2025	1 Year
11.	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 19, 2025	1 Year
12.	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	Feb. 21, 2024	2 Year
13.	Loop Antenna	COM-POWER	AL-130R	HKE-014	Feb. 21, 2024	2 Year
14.	Horn Antenna	Schwarzbeck	9120D	HKE-013	Feb. 21, 2024	2 Year
15.	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
16.	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
17.	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 19, 2025	1 Year
18.	RF Automatic control unit	Tonscend	JS0806-2	HKE-060	2025/02/19	1 Year



### 4.3.5 Test Data

PASS

Note: this EUT was tested for all models and the worst case model (DC12V) data was reported.

## Field Strength of Fundamental

Frequency (MHz)	Reading (dBuV/m)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar (H/V)	Detector
13.21	46.23	15.82	62.05	80.51	18.46	H	QP
13.21	45.22	15.82	61.04	80.51	19.47	V	QP
13.85	47.46	15.82	63.28	80.51	17.23	H	QP
13.85	48.19	15.82	64.01	80.51	16.50	V	QP
13.56	78.66	12.33	90.99	124	33.01	H	Peak
13.56	77.48	12.33	89.81	124	34.19	V	Peak
13.45	54.03	15.82	69.85	90.47	20.62	H	QP
13.45	53.22	15.82	69.04	90.47	21.43	V	QP
13.62	47.04	15.82	62.86	90.47	27.61	H	QP
13.62	46.31	15.82	62.13	90.47	28.34	V	QP

Remark: Margin = Limit - Result

Result = Reading + Correction Factor

Correction Factor = Antenna Factor + Cable Factor

## Spurious Emissions

### Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Limit@3m (dB $\mu$ V/m)
--	--	--
--	--	--
--	--	--
--	--	--

**Note:** 1. Emission Level=Reading+ Cable loss+ Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

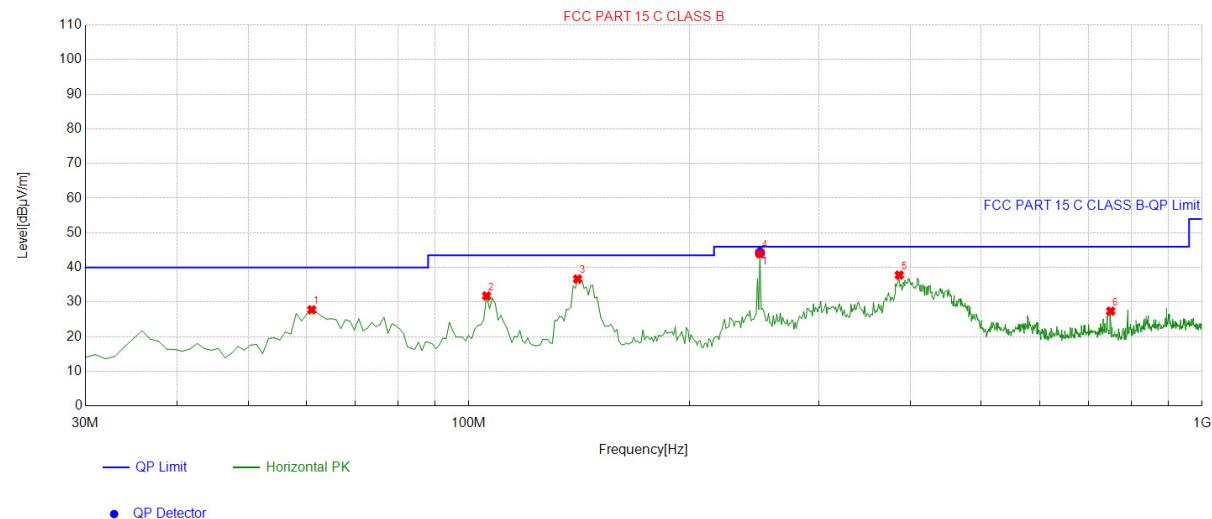


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## About 30MHz-1GHz

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Antenna polarity: H



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	61.0711	-13.82	41.60	27.78	40.00	12.22	100	183	Horizontal
2	105.7357	-14.49	46.26	31.77	43.50	11.73	100	150	Horizontal
3	140.6907	-18.24	54.90	36.66	43.50	6.84	100	34	Horizontal
4	249.4394	-13.41	57.37	43.96	46.00	2.04	100	258	Horizontal
5	386.3463	-9.19	46.99	37.80	46.00	8.20	100	233	Horizontal
6	750.4605	-3.85	31.24	27.39	46.00	18.61	100	208	Horizontal

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dB $\mu$ V/m]	QP Value [dB $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	249.439	-13.41	57.72	44.31	46.00	1.69	100	258	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor;  
Margin = Limit – Level

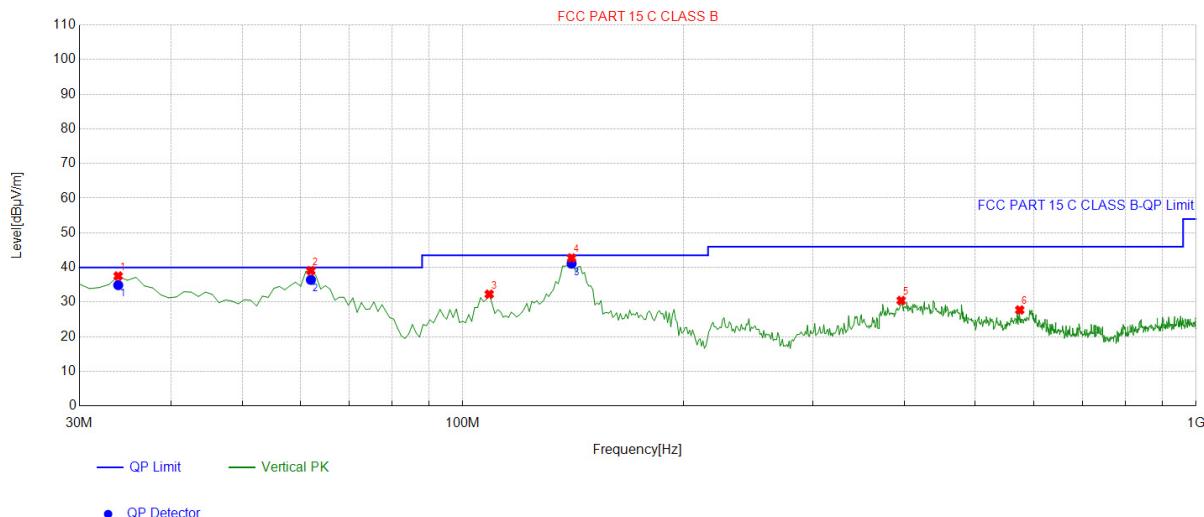
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Antenna polarity: V



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.8839	-15.16	52.68	37.52	40.00	2.48	100	232	Vertical
2	62.0420	-14.29	53.34	39.05	40.00	0.95	100	253	Vertical
3	108.6486	-14.02	46.30	32.28	43.50	11.22	100	98	Vertical
4	140.6907	-18.24	60.97	42.73	43.50	0.77	100	54	Vertical
5	396.0561	-9.26	39.71	30.45	46.00	15.55	100	174	Vertical
6	574.7147	-5.48	33.20	27.72	46.00	18.28	100	58	Vertical

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dB $\mu$ V/m]	QP Value [dB $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.884	-15.16	50.06	34.90	40.00	5.10	100	232	Vertical
2	62.042	-14.29	50.72	36.43	40.00	3.57	100	253	Vertical
3	140.691	-18.24	59.35	41.11	43.50	2.39	100	54	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor;  
Margin = Limit – Level

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## 4.4 Occupied Bandwidth

#### 4.4.1 Test Specification

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## 4.5 Frequency Stability

## 4.5.1 Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.225
<b>Test Method:</b>	ANSI C63.10: 2020
<b>Limit:</b>	+/-0.01%
	<ol style="list-style-type: none"> <li>1. The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>2. RF output was connected to a spectrum analyzer.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to - 20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.</li> </ol>
<b>Test Setup:</b>	 <p><b>Spectrum Analyzer</b></p> <p><b>EUT</b></p>
<b>Test Mode:</b>	Transmitting Mode
<b>Test Results:</b>	PASS

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#### 4.5.2 Test Data

**PASS**

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Note: this EUT was tested for all models and the worst case model (DC12V) data was reported.

Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Deviation (%)	Limit (%)
12.0	-20	13.560041	0.00030%	+/-0.01%
12.0	-10	13.560385	0.00284%	
12.0	0	13.560399	0.00294%	
12.0	10	13.560038	0.00028%	
12.0	20	13.560062	0.00046%	
12.0	30	13.559811	-0.00139%	
12.0	40	13.559992	-0.00006%	
12.0	50	13.559846	-0.00114%	
10.2	-20	13.560163	0.00120%	
10.2	-10	13.560058	0.00043%	
10.2	0	13.559988	-0.00009%	+/-0.01%
10.2	10	13.560112	0.00083%	
10.2	20	13.559879	-0.00089%	
10.2	30	13.559881	-0.00088%	
10.2	40	13.559865	-0.00100%	
10.2	50	13.560255	0.00188%	
13.8	-20	13.560071	0.00052%	
13.8	-10	13.559881	-0.00088%	
13.8	0	13.560312	0.00230%	
13.8	10	13.559877	-0.00091%	
13.8	20	13.559982	-0.00013%	
13.8	30	13.559842	-0.00117%	
13.8	40	13.559719	-0.00207%	
13.8	50	13.559911	-0.00066%	

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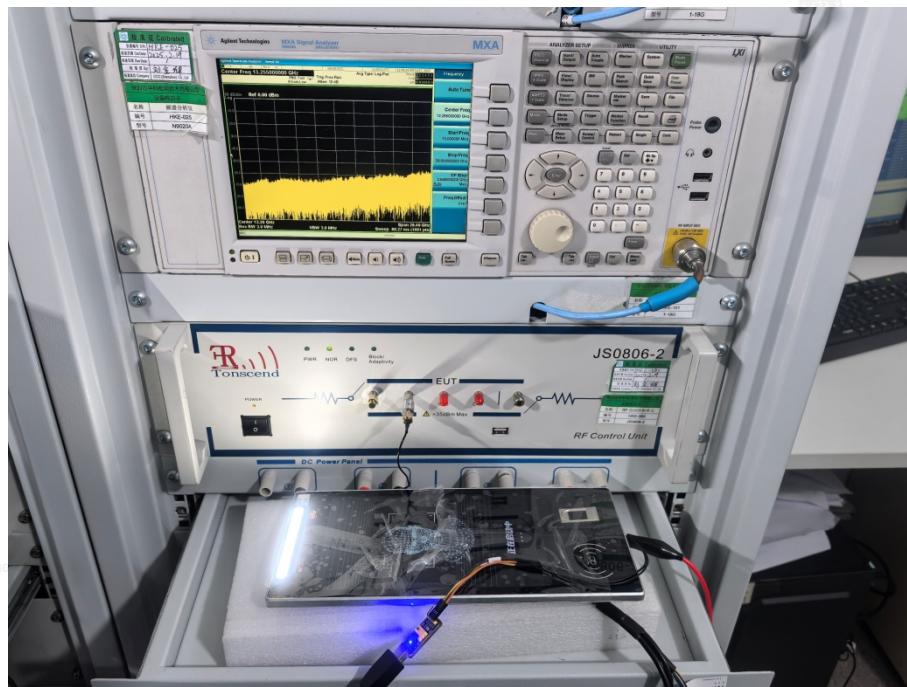
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## RF Conducted Emission



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## 6. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

-----End of test report-----