中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **VTech Telecommunications Ltd**

Address: 23/F Tai Ping Ind Center Block 1 57 Ting Kok Rd Tai Po NT, Hong Kong

FCC ID: **EW780-S108-00**

Product Name: **SIP Phone**

Standard(s): **47 CFR Part 15, Subpart C(15.225)**
ANSI C63.10-2013

The above device has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: **CR230850551-00E**

Date Of Issue: **2023/12/7**

Reviewed By: **Calvin Chen**
Title: RF Engineer

Approved By: **Sun Zhong**
Title: Manager

Test Laboratory: **China Certification ICT Co., Ltd (Dongguan)**
No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China
Tel: +86-769-82016888

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230850551-00E	Original Report	2023/12/7

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	SIP Phone
EUT Model:	D895M
Multiple Model(s):	D895
Trade Name:	SNOM
Operation Frequency:	13.56 MHz
Modulation Type:	ASK
Rated Input Voltage:	DC5V from adapter or DC48V from PoE
Serial Number:	2AQA-4
EUT Received Date:	2023/8/31
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
PCB	50	13.56MHz	Unknown
The Method of §15.203 Compliance: ☒Antenna was permanently attached to the unit. ☐Antenna use a unique type of connector to attach to the EUT. ☐Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.			

Accessory Information:

Accessory Description	Manufacturer	Model
Adapter	Mass Power Electronic Limited	NBS12E050200UV
Adapter	/	VT07EUS05200

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The EUT can be powered by two different adapters and PoE. According to the test data of AC line conducted emission and radiated emission below 1GHz, the worst case is powered by the adapter NBS12E050200UV. So this adapter was chosen for the full test.
Equipment Modifications:	No
EUT Exercise Software:	SecureCRT
Engineering Mode was provided by manufacturer▲. The maximum power was configured default setting.	

1.2.2 Support Equipment List and Details

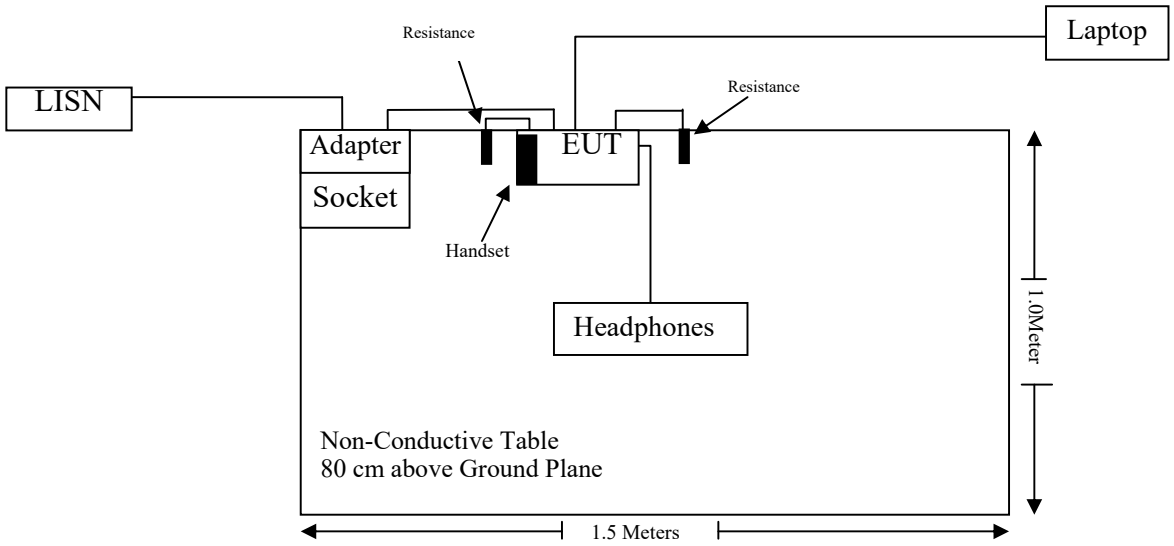
Manufacturer	Description	Model	Serial Number
Unknown	Resistance*2	Unknown	Unknown
DELL	Laptop	E6410	GYXJ3 A00 JSD2
DIGITAL	PoE	G0720-480-050	3TV4E338182
Unknown	Headphones	Unknown	Unknown
VTech	Handset	D8M	Unknown
Hengpu	AC Power	HPA-1110T	HP2020091203

1.2.3 Support Cable List and Details

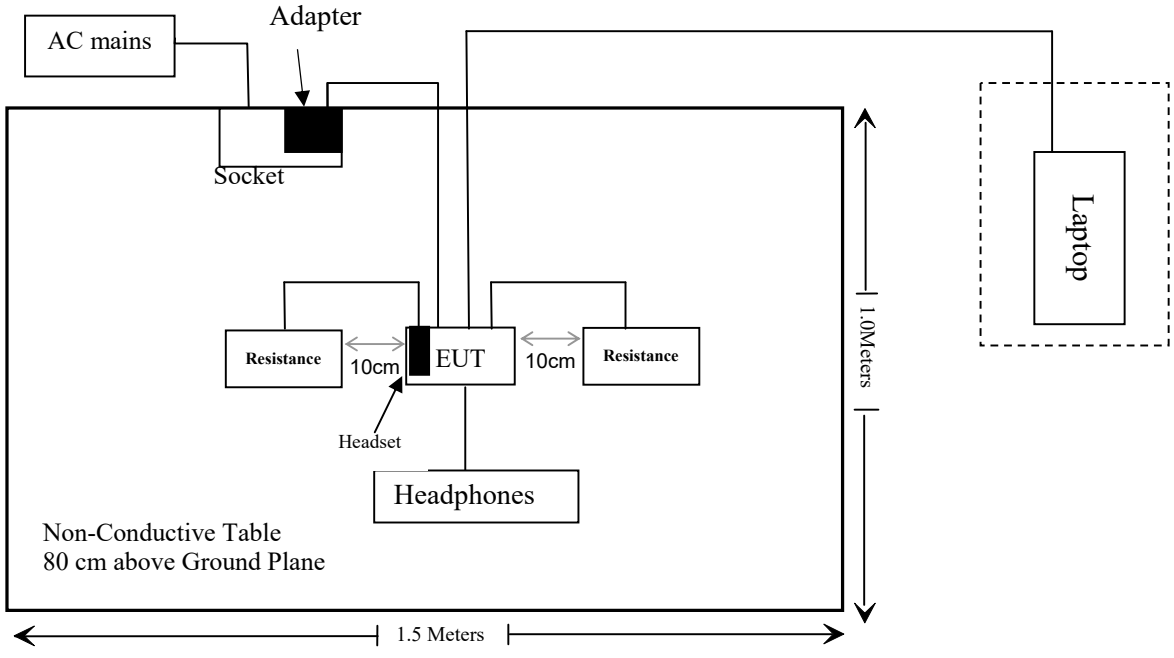
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
AC cable	No	No	1.2	LISN/AC mains	Socket
DC cable	No	No	2.0	Adapter	EUT
USB cable	No	No	0.3	EUT	Resistance
RJ45 cable	No	Yes	8.0	EUT	Laptop
AC cable	No	No	1.2	LISN/AC mains	PoE
RJ45 cable	No	Yes	10	PoE	EUT
RJ11 cable	No	Yes	1.5	EUT	Headphones

1.2.4 Block Diagram of Test Setup

AC line conducted emissions:



Spurious Emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
Unwanted Emissions, radiated	9k~30MHz:4.12dB 30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC§15.207 (a)	Conducted Emissions	Compliant
§15.225 §15.209 §15.205	Radiated Emission Test	Compliant
§15.225(e)	Frequency Stability	Compliant
§15.215(c)	20 dB Bandwidth	Compliant
§15.203	Antenna Requirement	Compliant
FCC §2.1091	Maximum Permissible exposure	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, 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 or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

	Conducted limit (dBμV)	
Frequency of emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

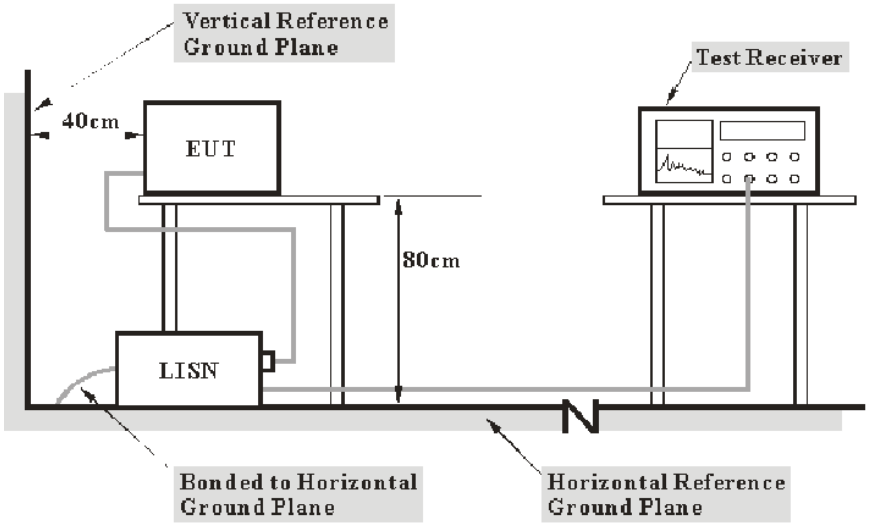
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

3.1.2 EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

3.1.4 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

According FCC publication number 174176,for a device with a permanent antenna operating at or below 30 MHz, the measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions: (1) perform the AC line conducted tests with the permanent antenna to determine compliance with the Section 15.207 limits outside the transmitter's fundamental emission band; (2) retest with a dummy load in lieu of the permanent antenna to determine compliance with the Section 15.207 limits within the transmitter's fundamental emission band.

3.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor
Factor = attenuation caused by cable loss + voltage division factor of AMN

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.2 Radiated Emissions

3.2.1 Applicable Standard

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.

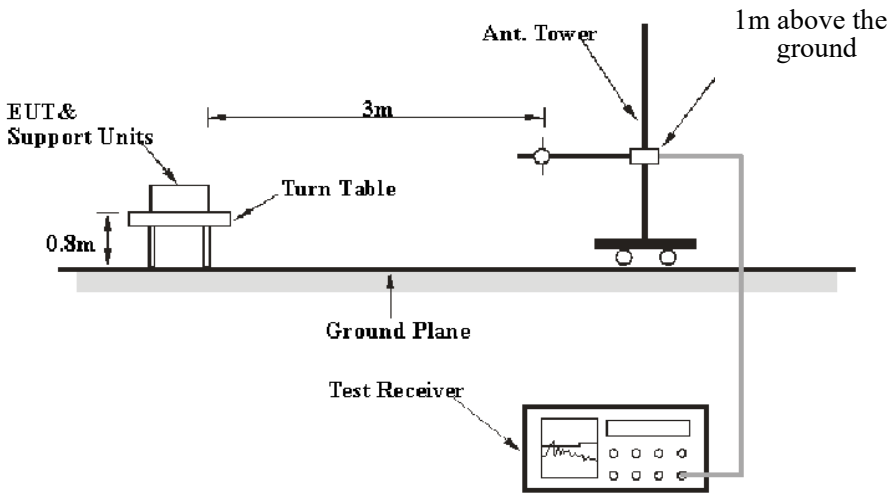
(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(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.

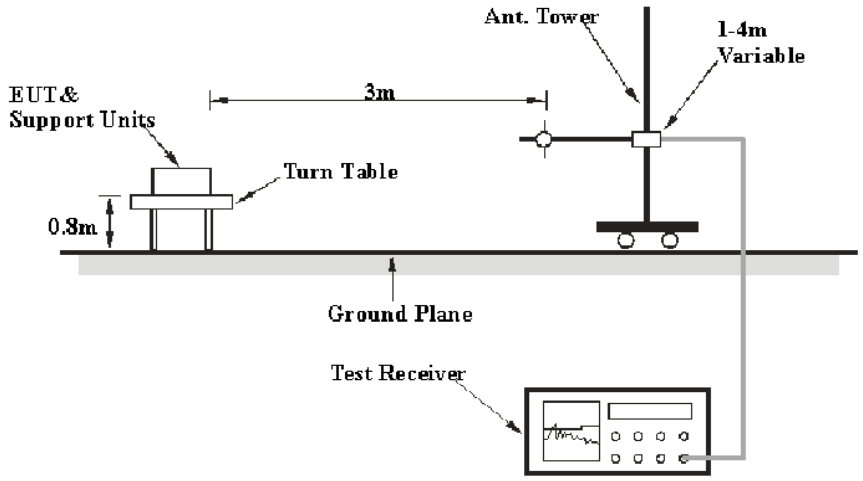
(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

3.2.2 EUT Setup

9kHz-30MHz:



30MHz-1GHz:



The radiated emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.10-2013.

For 9kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 1 GHz.

During the radiated emission test, the EMI test Receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
9 kHz – 150 kHz	300 Hz	1 kHz	200Hz	QP
150 kHz – 30 MHz	10 kHz	30 kHz	9kHz	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	120kHz	QP

If the maximized peak measured value complies with the limit, then it is unnecessary to perform an QP measurement

3.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor
Factor = Antenna Factor + Cable Loss- Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

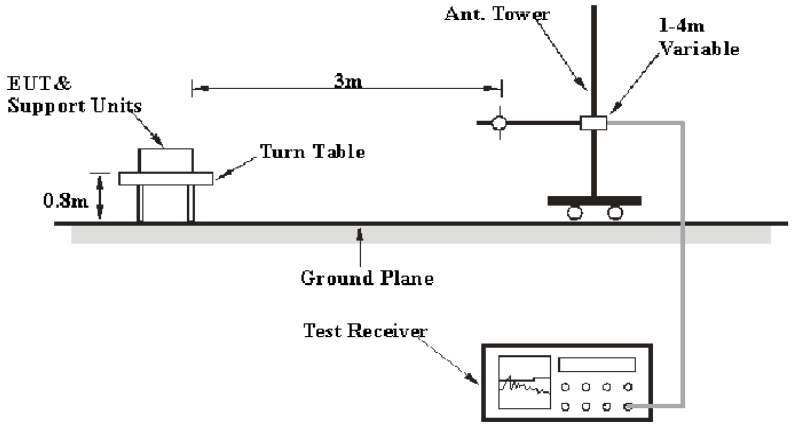
3.3 20 dB Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.215

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.

3.3.2 EUT Setup



3.3.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. 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.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

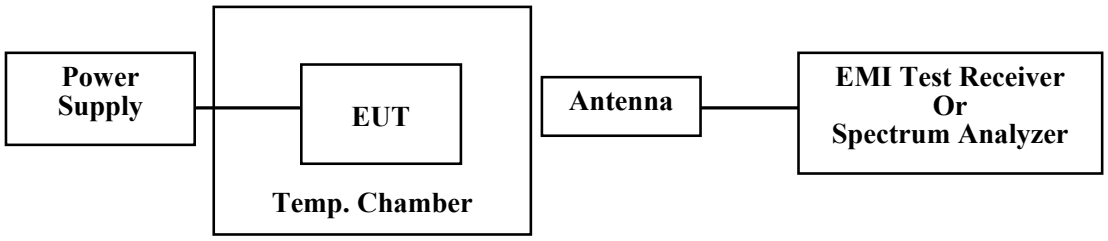
3.4 Frequency Stability

3.4.1 Applicable Standard

As per FCC Part 15.225:

The frequency tolerance of the carrier signal shall be maintained within ±0.01% 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.

3.4.2 EUT Setup



3.4.3 Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power.

The EUT was placed inside the temperature chamber.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.

Frequency Stability vs. Voltage: An external variable power supply Source. The voltage was set to the end point of the battery. The output frequency was recorded for each voltage.

3.5 Antenna Requirement

3.5.1 Applicable Standard

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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

3.5.2 Judgment

Result: Compliant. Please refer to the Antenna Information detail in Section 1.

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	2AQA-4	Test Date:	2023/12/06
Test Site:	CE	Test Mode:	Transmitting
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

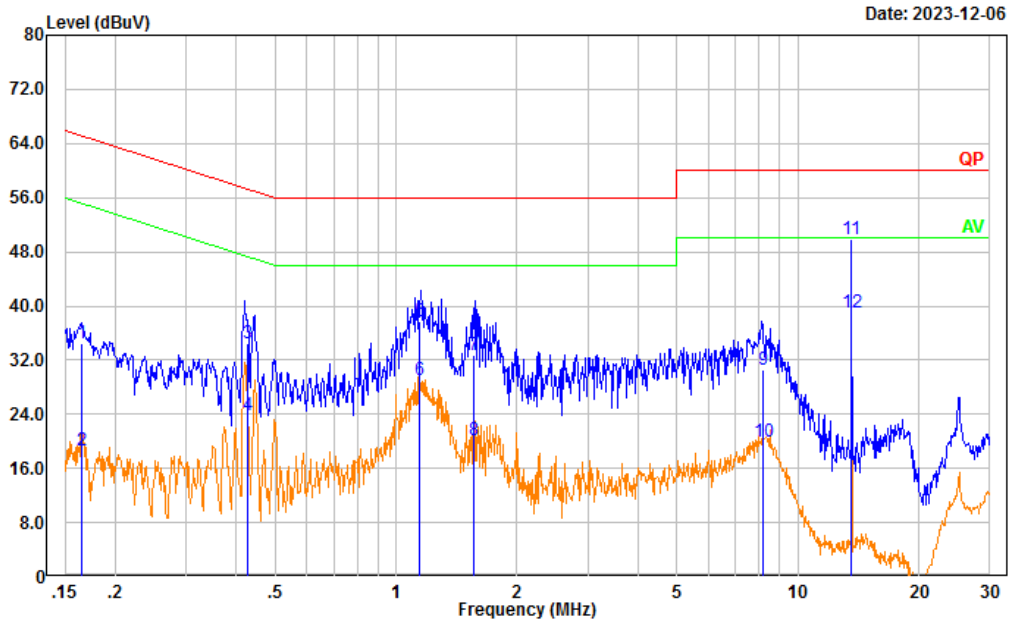
Temperature: (℃)	26.9	Relative Humidity: (%)	47	ATM Pressure: (kPa)	101

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/03/31	2024/03/30
R&S	EMI Test Receiver	ESR3	102726	2023/03/31	2024/03/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/08/06	2024/08/05
Audix	Test Software	E3	190306 (V9)	N/A	N/A

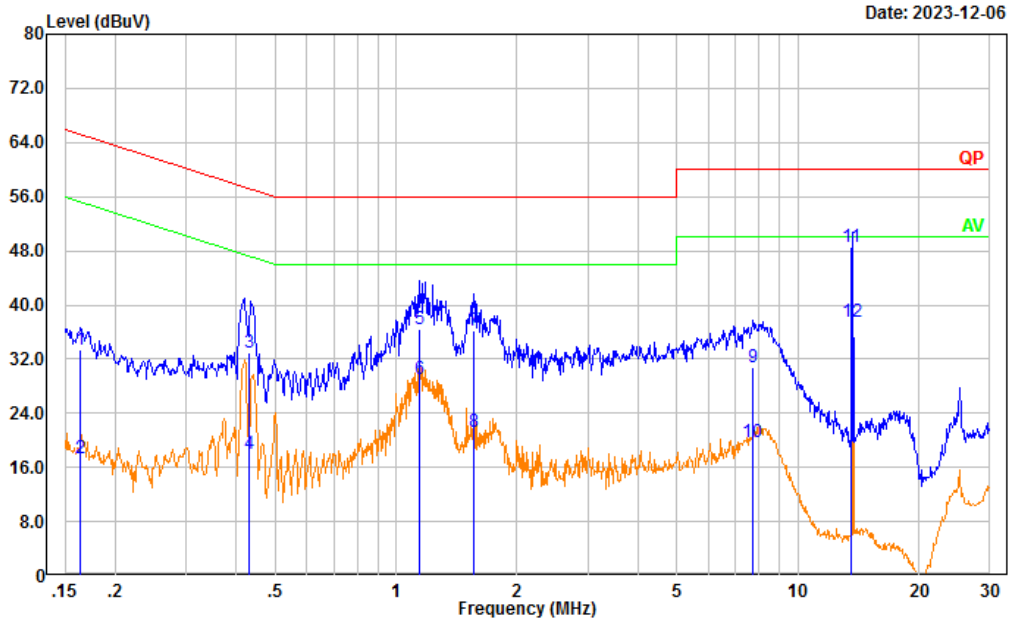
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Project No.: CR230850551-RF
Tester: David Huang
Port: Line
Note: Transmitting(NFC)



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.165	24.92	9.61	34.53	65.20	30.67	QP
2	0.165	9.05	9.61	18.66	55.20	36.54	Average
3	0.427	24.92	9.61	34.53	57.32	22.79	QP
4	0.427	14.16	9.61	23.77	47.32	23.55	Average
5	1.144	28.18	9.62	37.80	56.00	18.20	QP
6	1.144	19.51	9.62	29.13	46.00	16.87	Average
7	1.561	23.07	9.63	32.70	56.00	23.30	QP
8	1.561	10.47	9.63	20.10	46.00	25.90	Average
9	8.183	20.84	9.67	30.51	60.00	29.49	QP
10	8.183	10.34	9.67	20.01	50.00	29.99	Average
11	13.551	40.18	9.68	49.86	60.00	10.14	QP
12	13.551	29.33	9.68	39.01	50.00	10.99	Average

Project No.: CR230850551-RF
Tester: David Huang
Port: neutral
Note: Transmitting(NFC)



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.164	23.73	9.61	33.34	65.26	31.92	QP
2	0.164	7.67	9.61	17.28	55.26	37.98	Average
3	0.431	23.38	9.61	32.99	57.23	24.24	QP
4	0.431	8.48	9.61	18.09	47.23	29.14	Average
5	1.144	26.76	9.62	36.38	56.00	19.62	QP
6	1.144	19.37	9.62	28.99	46.00	17.01	Average
7	1.565	26.54	9.63	36.17	56.00	19.83	QP
8	1.565	11.63	9.63	21.26	46.00	24.74	Average
9	7.688	21.05	9.67	30.72	60.00	29.28	QP
10	7.688	10.12	9.67	19.79	50.00	30.21	Average
11	13.551	38.96	9.68	48.64	60.00	11.36	QP
12	13.551	27.91	9.68	37.59	50.00	12.41	Average

4.2 Radiation Spurious Emissions

Serial Number:	2AQA-4	Test Date:	2023/10/31~2023/11/2
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	27~26.1	Relative Humidity: (%)	62~57	ATM Pressure: (kPa)	101.2~100.9

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A

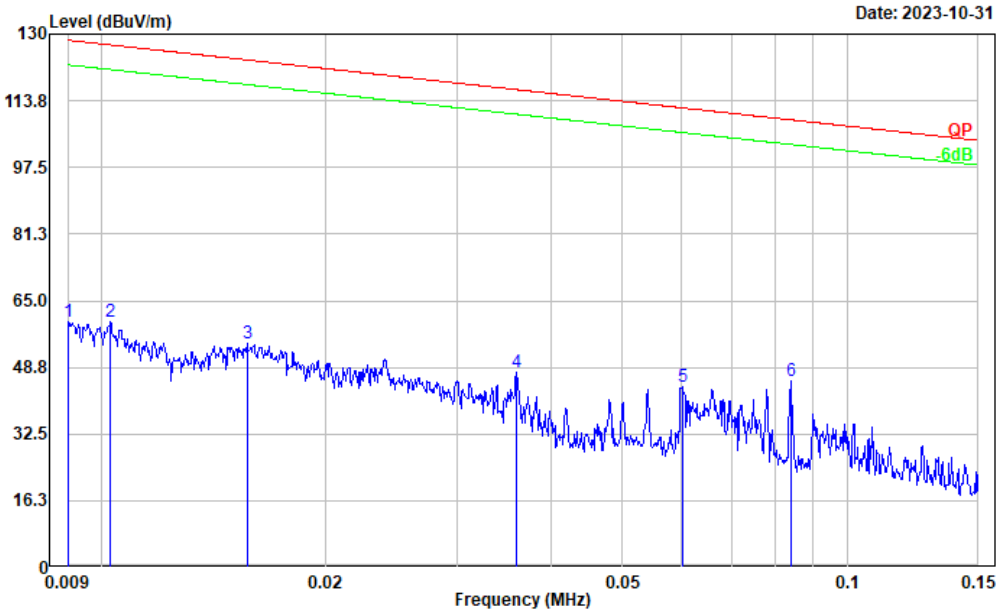
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test data:

1) 9kHz ~30MHz:

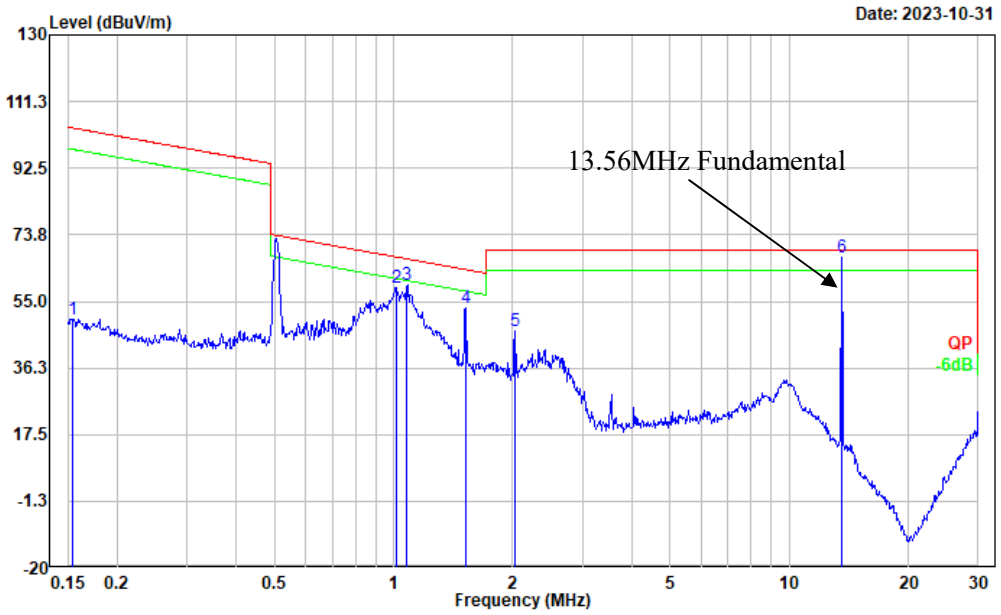
Parallel:

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Parallel
Note:



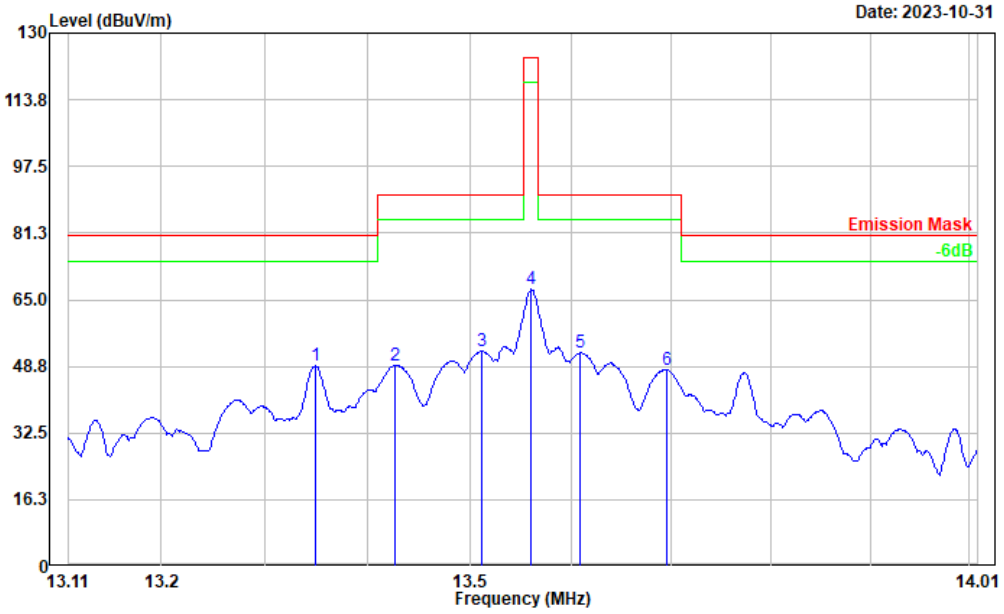
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	0.88	59.09	59.97	128.52	68.55	Peak
2	0.010	2.15	57.79	59.94	127.37	67.43	Peak
3	0.016	1.59	53.07	54.66	123.71	69.05	Peak
4	0.036	3.06	44.40	47.46	116.47	69.01	Peak
5	0.060	4.17	40.04	44.21	112.02	67.81	Peak
6	0.084	8.85	36.59	45.44	109.12	63.68	Peak

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.155	17.96	32.14	50.10	103.81	53.71	Peak
2	1.016	42.24	16.77	59.01	67.33	8.32	Peak
3	1.082	43.30	16.39	59.69	66.77	7.08	Peak
4	1.519	39.34	13.93	53.27	63.76	10.49	Peak
5	2.023	35.60	11.14	46.74	69.54	22.80	Peak
6	13.551	73.82	-6.36	67.46	69.54	2.08	Peak

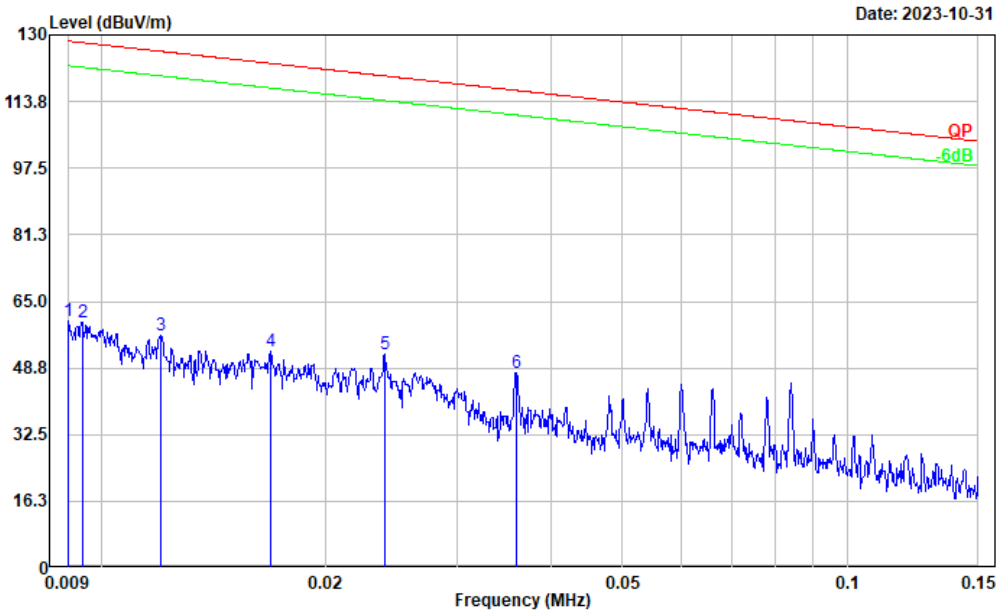
Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.349	54.62	-5.76	48.86	80.51	31.65	Peak
2	13.427	55.07	-6.00	49.07	90.47	41.40	Peak
3	13.512	58.62	-6.24	52.38	90.47	38.09	Peak
4	13.561	73.88	-6.39	67.49	124.00	56.51	Peak
5	13.610	58.54	-6.54	52.00	90.47	38.47	Peak
6	13.695	54.80	-6.80	48.00	90.47	42.47	Peak

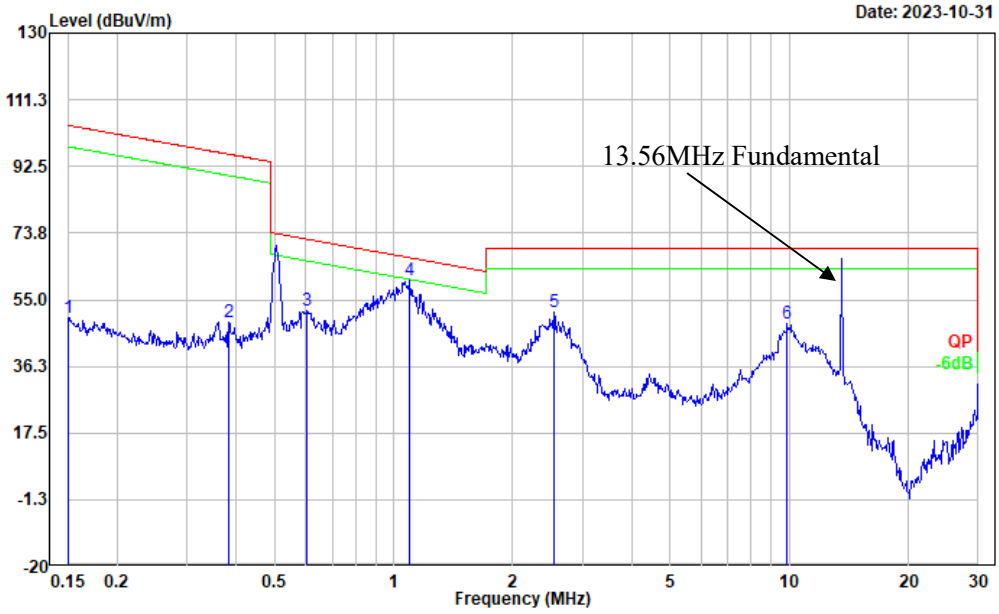
Perpendicular:

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Perpendicular
Note:



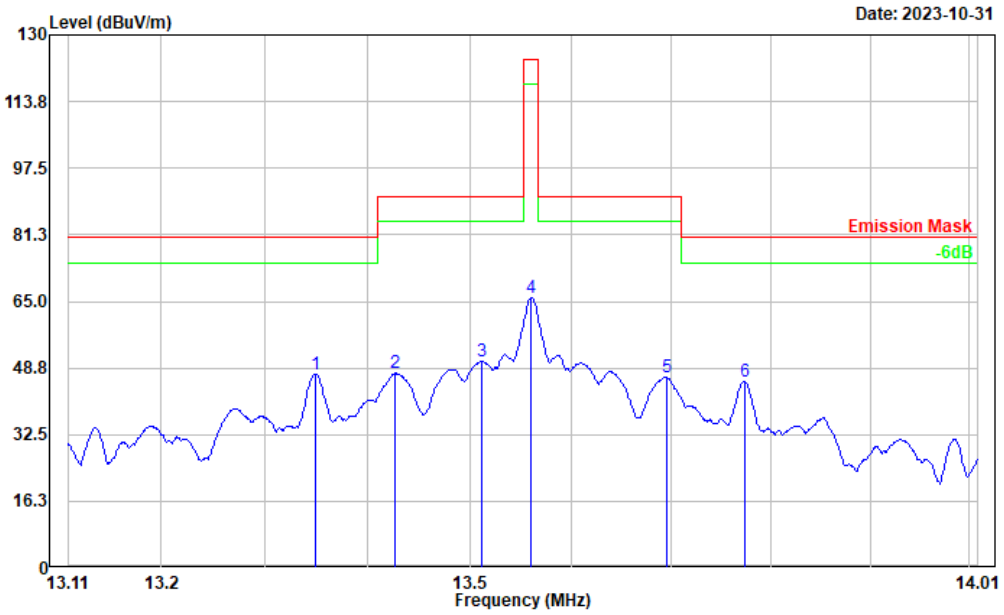
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	1.17	59.09	60.26	128.52	68.26	Peak
2	0.009	1.38	58.65	60.03	128.13	68.10	Peak
3	0.012	0.55	56.25	56.80	126.00	69.20	Peak
4	0.017	0.80	52.03	52.83	123.07	70.24	Peak
5	0.024	4.34	47.82	52.16	120.02	67.86	Peak
6	0.036	3.27	44.40	47.67	116.47	68.80	Peak

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Perpendicular
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.151	17.43	32.37	49.80	104.04	54.24	Peak
2	0.383	24.40	24.35	48.75	95.94	47.19	Peak
3	0.604	31.22	20.87	52.09	71.94	19.85	Peak
4	1.100	44.02	16.29	60.31	66.63	6.32	Peak
5	2.540	41.78	9.65	51.43	69.54	18.11	Peak
6	9.861	43.80	4.46	48.26	69.54	21.28	Peak

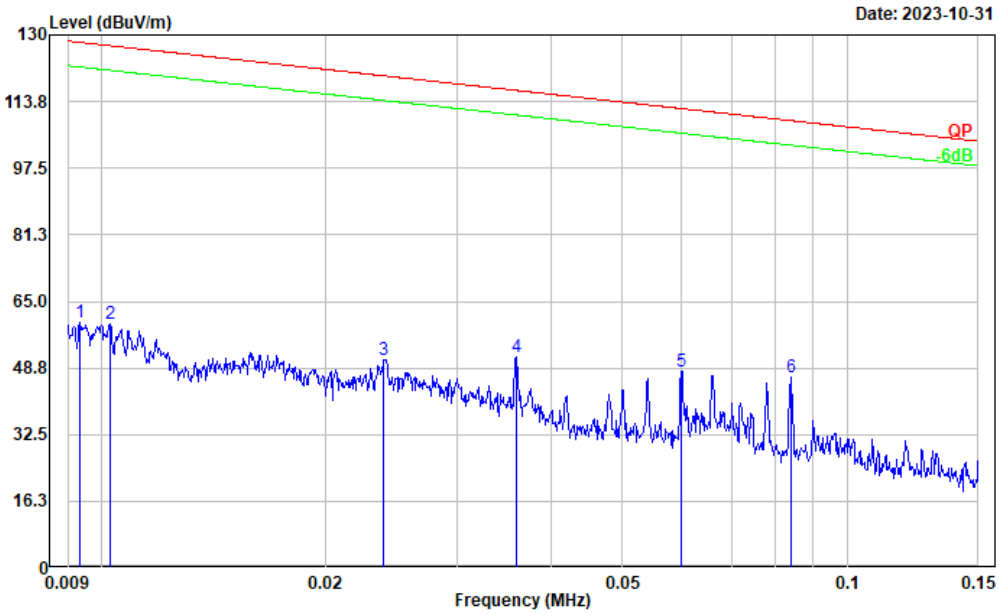
Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Perpendicular
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.349	52.96	-5.76	47.20	80.51	33.31	Peak
2	13.427	53.44	-6.00	47.44	90.47	43.03	Peak
3	13.512	56.50	-6.24	50.26	90.47	40.21	Peak
4	13.561	72.22	-6.39	65.83	124.00	58.17	Peak
5	13.695	53.19	-6.80	46.39	90.47	44.08	Peak
6	13.773	52.54	-7.04	45.50	80.51	35.01	Peak

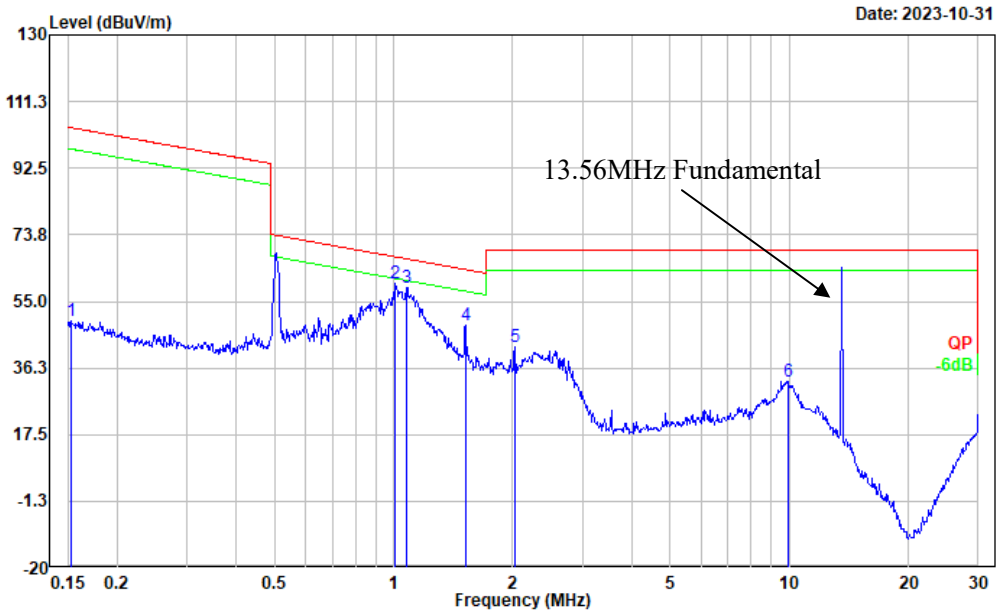
Ground-parallel:

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Ground-parallel
Note:



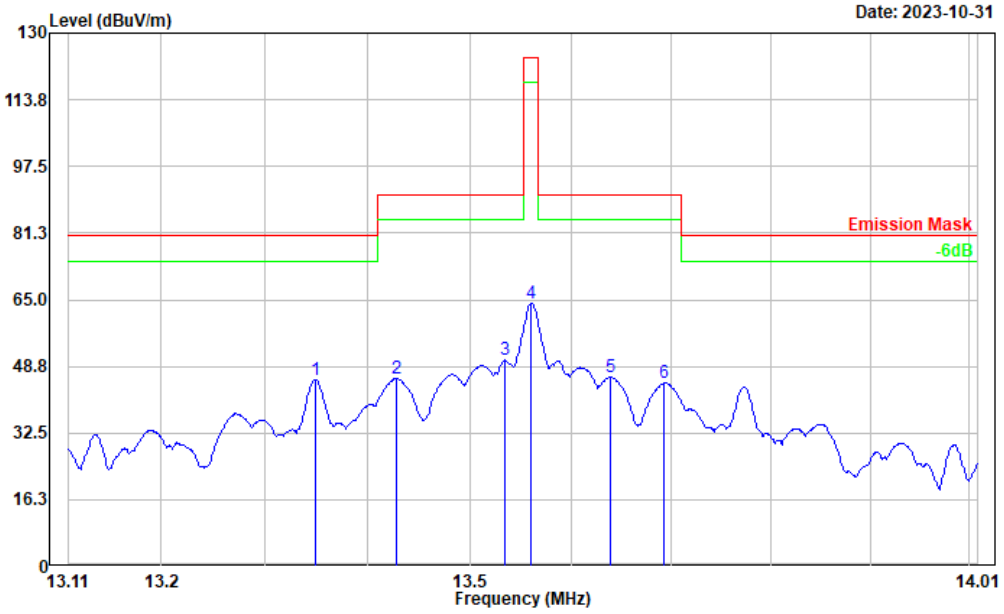
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	1.12	58.73	59.85	128.20	68.35	Peak
2	0.010	1.63	57.81	59.44	127.40	67.96	Peak
3	0.024	3.00	47.85	50.85	120.04	69.19	Peak
4	0.036	7.21	44.40	51.61	116.47	64.86	Peak
5	0.060	8.01	40.07	48.08	112.05	63.97	Peak
6	0.084	10.00	36.59	46.59	109.12	62.53	Peak

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Ground-parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.153	17.10	32.24	49.34	103.90	54.56	Peak
2	1.010	43.36	16.80	60.16	67.38	7.22	Peak
3	1.077	42.57	16.42	58.99	66.82	7.83	Peak
4	1.519	34.52	13.93	48.45	63.76	15.31	Peak
5	2.023	31.09	11.14	42.23	69.54	27.31	Peak
6	9.966	28.04	4.45	32.49	69.54	37.05	Peak

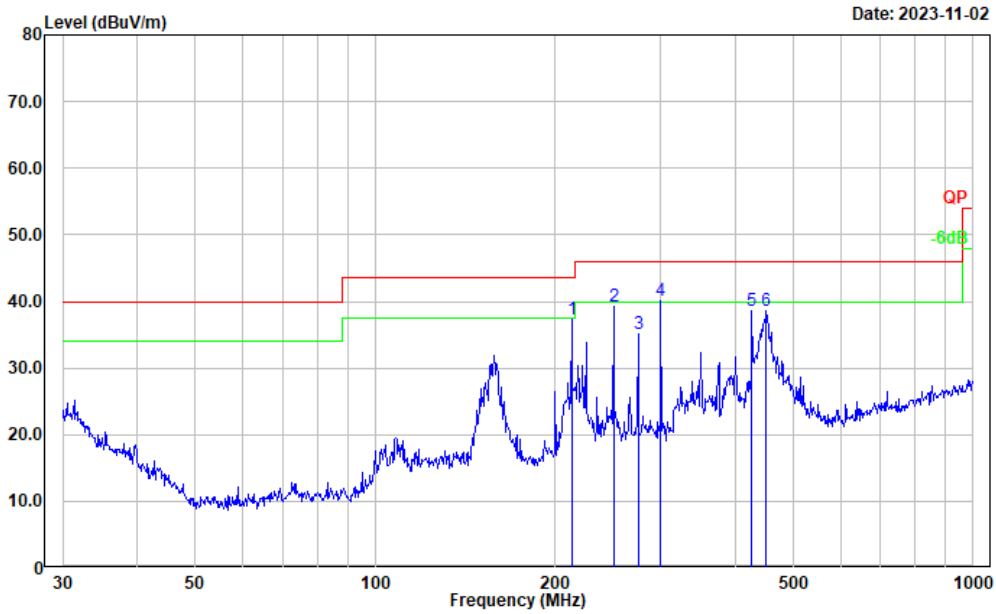
Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Ground-parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.349	51.17	-5.76	45.41	80.51	35.10	Peak
2	13.428	51.67	-6.00	45.67	90.47	44.80	Peak
3	13.535	56.56	-6.31	50.25	90.47	40.22	Peak
4	13.561	70.54	-6.39	64.15	124.00	59.85	Peak
5	13.639	52.80	-6.63	46.17	90.47	44.30	Peak
6	13.693	51.48	-6.79	44.69	90.47	45.78	Peak

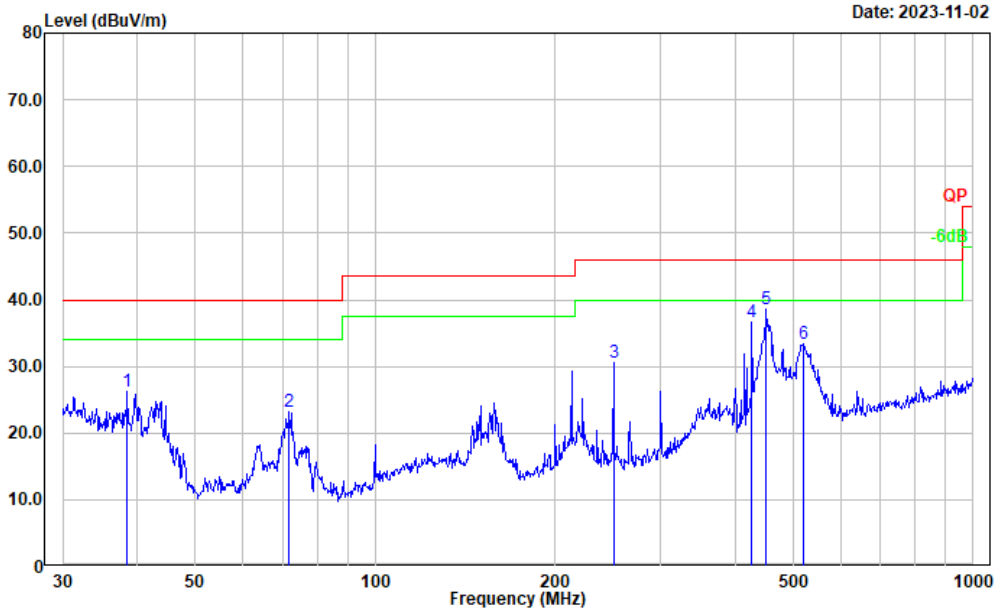
1) 30MHz-1GHz:

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	213.015	49.75	-12.57	37.18	43.50	6.32	Peak
2	250.301	52.48	-13.18	39.30	46.00	6.70	Peak
3	275.157	47.04	-11.94	35.10	46.00	10.90	Peak
4	300.367	50.71	-10.63	40.08	46.00	5.92	Peak
5	426.521	46.22	-7.65	38.57	46.00	7.43	Peak
6	451.135	45.52	-6.91	38.61	46.00	7.39	Peak

Project No.: CR230850551-RF
Tester: Vic Du
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	38.481	36.35	-10.22	26.13	40.00	13.87	Peak
2	71.832	40.02	-16.74	23.28	40.00	16.72	Peak
3	250.301	43.70	-13.18	30.52	46.00	15.48	Peak
4	426.521	44.20	-7.65	36.55	46.00	9.45	Peak
5	451.135	45.58	-6.91	38.67	46.00	7.33	Peak
6	519.065	39.13	-5.84	33.29	46.00	12.71	Peak

4.3 20 dB Emission Bandwidth

Serial Number:	2AQA-4	Test Date:	2023/10/31
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	27	Relative Humidity: (%)	62	ATM Pressure: (kPa)	101.2

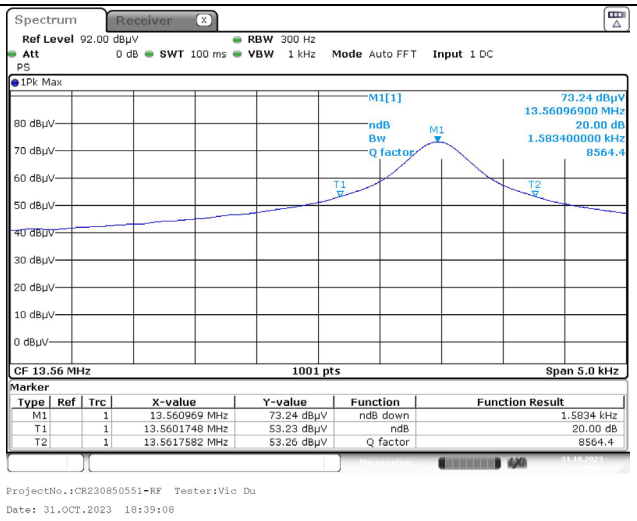
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15

**** Statement of Traceability:*** *China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Test Frequency (MHz)	20 dB Emission Bandwidth (Hz)
13.56	1583.4

20dB Emission Bandwidth


4.4 Frequency Stability

Serial Number:	2AQA-4	Test Date:	2023/10/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	27	Relative Humidity: (%)	62	ATM Pressure: (kPa)	101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0300001	Each time	N/A
Hengpu	AC Power	HPA-1110T	HP2020091203	NCR	NCR
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27

**** Statement of Traceability:*** *China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

f_o = 13.56 MHz				
Temperature	**Voltage**	**Measured frequency**	**Frequency Error**	**Limit**
℃	**V_{AC}**	**MHz**	**Hz**	**Hz**
-20	120	13.560785	785	±1356
-10		13.560947	947	±1356
0		13.560281	281	±1356
10		13.560583	583	±1356
20		13.560969	969	±1356
25		13.560274	274	±1356
30		13.560532	532	±1356
40		13.560289	289	±1356
50		13.560786	786	±1356
20	102	13.560745	745	±1356
20	138	13.560971	971	±1356

5. RF EXPOSURE EVALUATION

5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1.1 Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (Minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

5.1.2 Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \le 1$$

Mode	Frequency (MHz)	Tune Up Conducted Power (dBm)	Antenna Gain (dBi)	Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
Bluetooth	2402-2480	7.0	1.0	20	0.001	1.0
BLE	2402-2480	17.0	1.0	20	0.013	1.0
2.4G Wi-Fi	2412-2462	26.5	0	20	0.089	1.0
5G Wi-Fi	5180-5240	20.5	2.0	20	0.035	1.0
	5260-5320	20.0	2.0	20	0.032	1.0
	5500-5700	20.0	2.0	20	0.032	1.0
	5745-5825	21.5	2.0	20	0.045	1.0
DECT	1921.536 - 1928.448	20.0	0	20	0.020	1.0
NFC	13.56	/	/	20	＜0.0001	0.98

Note:

1) The tune up conducted power was declared by the applicant.

2) NFC field strength is 67.49dBuV/m@3m= -27.7dBm (0.0017mW)

3) The Bluetooth, NFC, Wi-Fi and DECT can transmit simultaneously. The 2.4G Wi-Fi can't transmit with 5G Wi-Fi at the same time.

The ratio=$MPE_{Bluetooth}$/limit+$MPE_{2.4G\ Wi\text{-}Fi}$/limit+MPE_{DECT}/limit
=0.013+0.089+0.020=0.122＜1.0, simultaneous exposure is not required.

4) The power of the NFC and WPT is extreme low, which not affect the simultaneous exposure evaluation result.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

6 .EUT PHOTOGRAPHS

Please refer to the attachment CR230850551-EXP EUT EXTERNAL PHOTOGRAPHS and CR230850551-INP EUT INTERNAL PHOTOGRAPHS

7 .EST SETUP PHOTOGRAPHS

Please refer to the attachment CR230850551-00E-TSP TEST SETUP PHOTOGRAPHS.

===== END OF REPORT =====