



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



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
ANSI C63.10-2013**

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

Report Number: CR230850551-00H

Date Of Issue: 2024/5/13

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Title: RF Engineer

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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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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230850551-00H	Original Report	2024/5/13

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:	509.29kHz
Wireless Output Power:	1.7 Watts
Rated Input Voltage:	DC5V from adapter or DC48 V from POE
Serial Number:	RE&CE: 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)
Coil	50
The Method of §15.203 Compliance: <input checked="" type="checkbox"/> Antenna was permanently attached to the unit. <input type="checkbox"/> Antenna use a unique type of connector to attach to the EUT. <input type="checkbox"/> 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:	<p>The system was configured for testing in Engineering Mode, which was provided by the manufacturer.</p> <p>Test Mode: Wireless Charging</p> <p>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 in the DSS report, the worst case is powered by the adapter NBS12E050200UV. So this adapter was chosen for the full test.</p>
Equipment Modifications:	No
EUT Exercise Software:	No
Engineering Mode was provided by manufacturer▲. The maximum power was configured default setting.	

1.2.2 Support Equipment List and Details

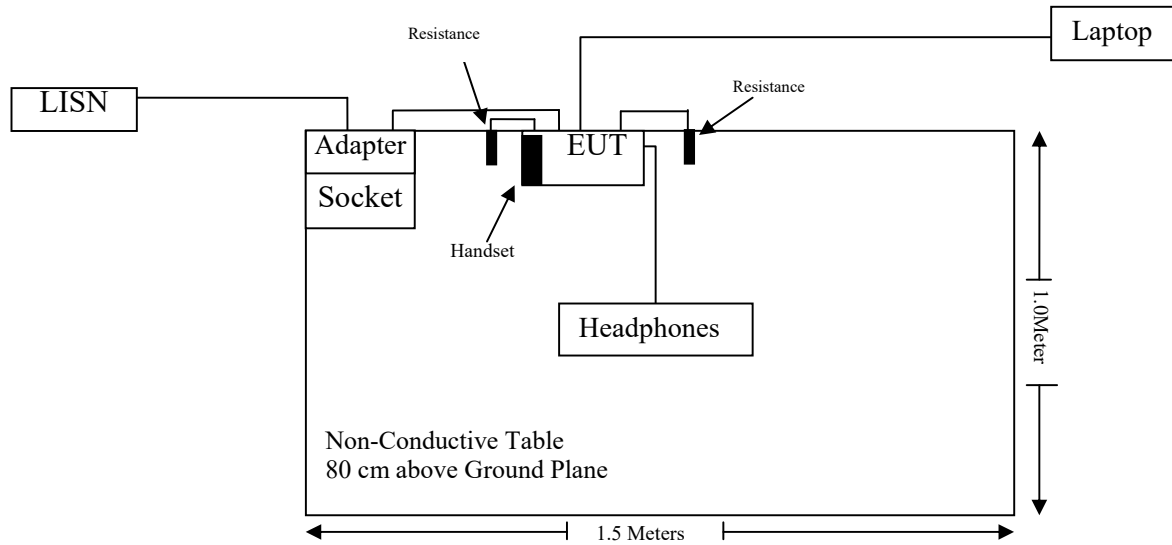
Manufacturer	Description	Model	Serial Number
Unknown	Resistance*2	Unknown	Unknown
DELL	Laptop	E6410	GYXJ3 A00 JSD2
DIGITAL	PoE	G0720-480-050	3TV4E338182
Unknown	Headphones	Unknown	Unknown
VTech	Handset	D8M	Unknown

1.2.3 Support Cable List and Details

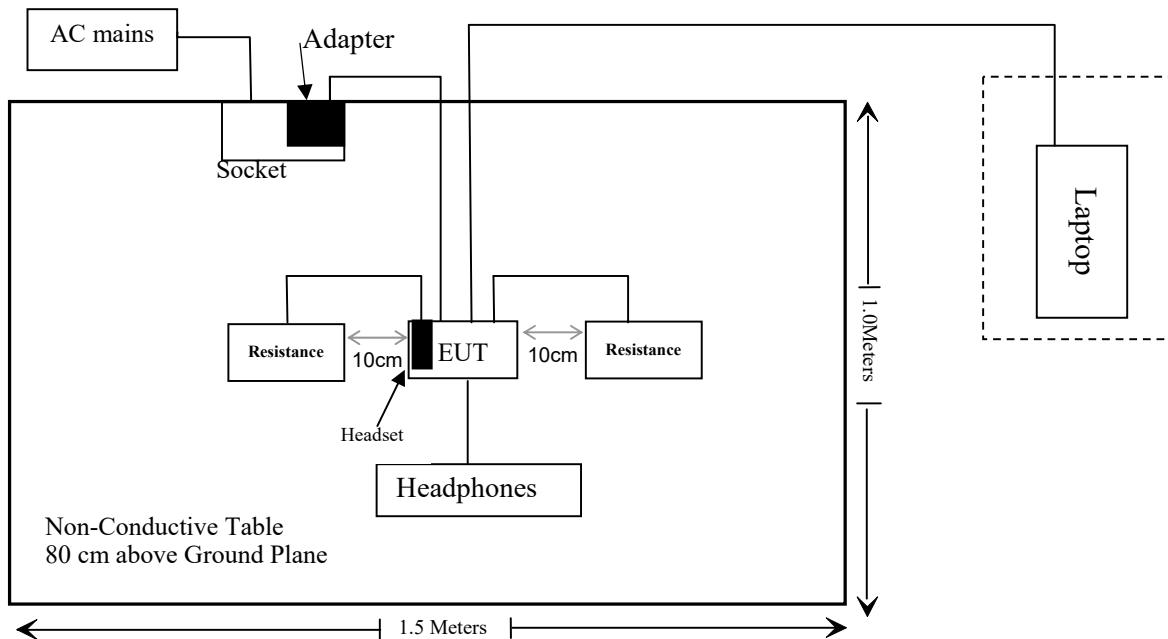
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
AC cable	No	No	1.2	LISN/AC mains	Socket
DC cable	No	No	2.0	Adapter	EUT
USB cable	No	No	0.3	EUT	Resistance
RJ45 cable	No	Yes	8.0	EUT	Laptop
AC cable	No	No	1.2	LISN/AC mains	PoE
RJ45 cable	No	Yes	10	PoE	EUT
RJ11 cable	No	Yes	1.5	EUT	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
radiated Emissions	9kHz~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

Standard(s) Section	Description of Test	Result
FCC§15.207	AC Line Conducted Emission	Compliant
FCC§15.209 §15.205	Radiated Emission Test	Compliant
FCC§15.215	20 dB Emission Bandwidth	Compliant
FCC§15.203	Antenna Requirement	Compliant
FCC§1.1310 §2.1091	Maximum Permissible Exposure (MPE)	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 μ H/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.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	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:

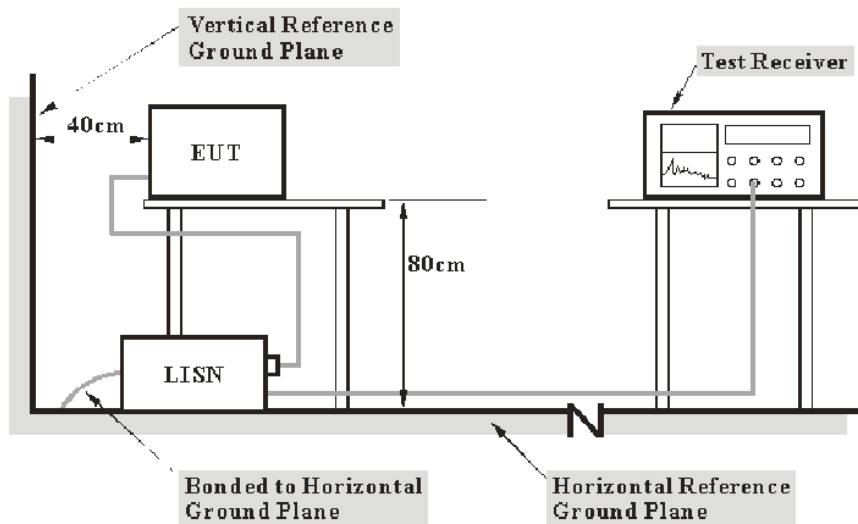
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/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, obtaining 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

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.

3.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$\text{Result} = \text{Reading} + \text{Factor}$$

$$\text{Factor} = \text{attenuation caused by cable loss} + \text{voltage division factor of AMN}$$

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:

$$\text{Margin} = \text{Limit} - \text{Result}$$

3.2 Radiation Spurious Emissions

3.2.1 Applicable Standard

FCC §15.209

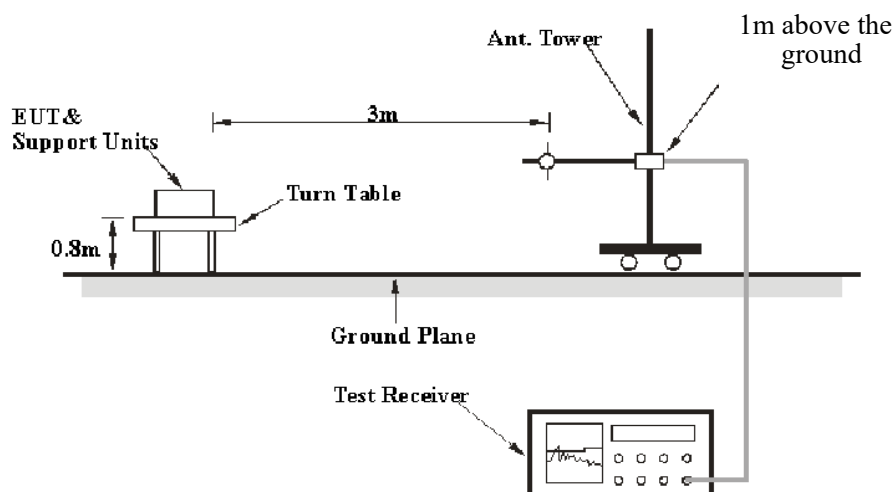
(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

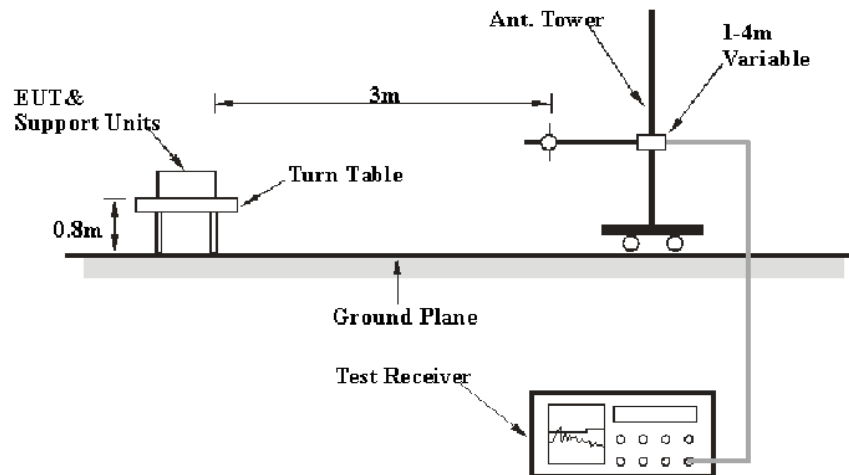
**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this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

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. The specification used was the FCC 15.209 limits.

The spacing between the peripherals was 10 cm.

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	Measurement
9 kHz – 150 kHz	200 Hz	1 kHz	QP/Average
150 kHz – 30 MHz	9 kHz	30 kHz	QP/Average
30 MHz – 1000 MHz	100 kHz	300 kHz	QP

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

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

3.2.4 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

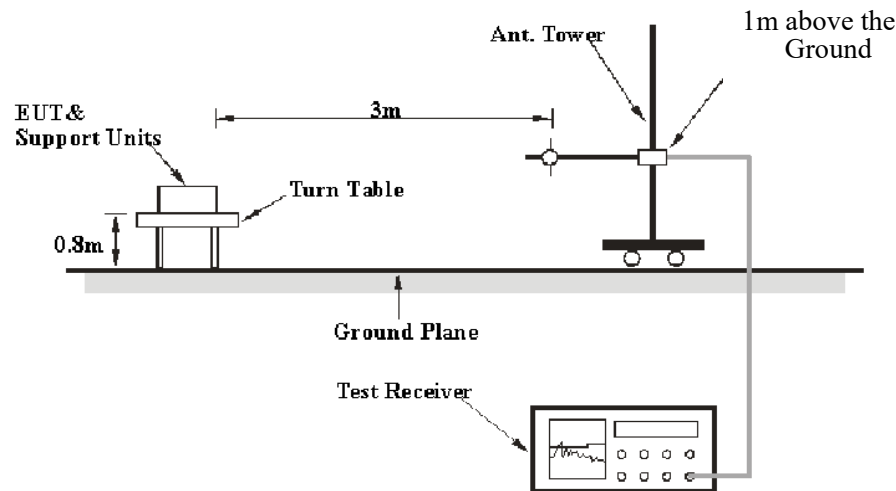
3.3 20 dB Emission Bandwidth:

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. 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.
2. 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. Measure the 99% Occupied bandwidth use the 99% Occupied bandwidth function of the test equipment.

3.4 Antenna Requirement

3.4.1 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 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 §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. 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 §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.

3.4.2 Judgment

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:	2023/11/01
Test Site:	CE	Test Mode:	Transmitting
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.8	Relative Humidity: (%)	55	ATM Pressure: (kPa)	101.2
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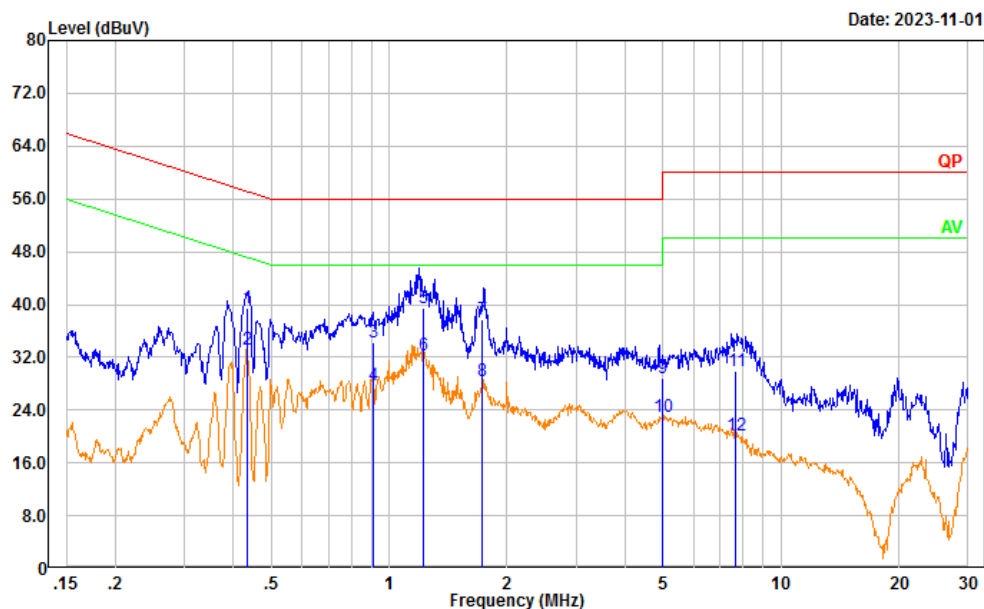
Test Equipment List and Details:

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).

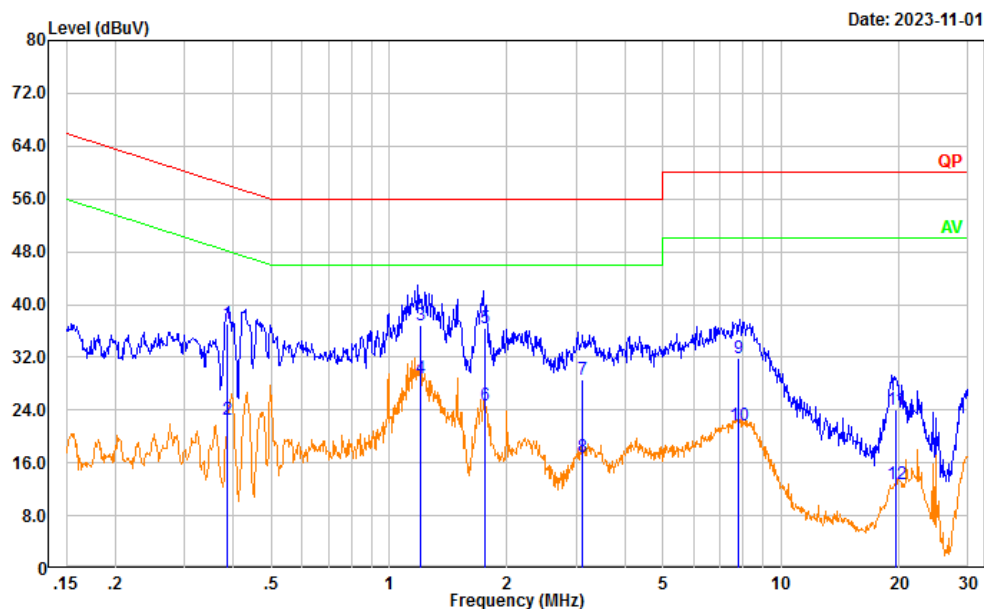
Test Data:

Project No.: CR230850551-RF
Tester: David Huang
Port: Line
Note: Transmitting(15C)



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.433	29.77	9.61	39.38	57.19	17.81	QP
2	0.433	23.55	9.61	33.16	47.19	14.03	Average
3	0.910	24.59	9.62	34.21	56.00	21.79	QP
4	0.910	18.08	9.62	27.70	46.00	18.30	Average
5	1.227	29.94	9.62	39.56	56.00	16.44	QP
6	1.227	22.60	9.62	32.22	46.00	13.78	Average
7	1.733	28.17	9.63	37.80	56.00	18.20	QP
8	1.733	18.81	9.63	28.44	46.00	17.56	Average
9	4.986	19.28	9.66	28.94	56.00	27.06	QP
10	4.986	13.23	9.66	22.89	46.00	23.11	Average
11	7.667	20.18	9.67	29.85	60.00	30.15	QP
12	7.667	10.50	9.67	20.17	50.00	29.83	Average

Project No.: CR230850551-RF
 Tester: David Huang
 Port: neutral
 Note: Transmitting(15C)



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
<hr/>							
1	0.388	27.40	9.61	37.01	58.12	21.11	QP
2	0.388	13.01	9.61	22.62	48.12	25.50	Average
3	1.205	27.29	9.62	36.91	56.00	19.09	QP
4	1.205	19.23	9.62	28.85	46.00	17.15	Average
5	1.755	26.69	9.63	36.32	56.00	19.68	QP
6	1.755	15.03	9.63	24.66	46.00	21.34	Average
7	3.100	18.91	9.65	28.56	56.00	27.44	QP
8	3.100	7.24	9.65	16.89	46.00	29.11	Average
9	7.773	22.11	9.67	31.78	60.00	28.22	QP
10	7.773	12.09	9.67	21.76	50.00	28.24	Average
11	19.635	14.35	9.70	24.05	60.00	35.95	QP
12	19.635	3.06	9.70	12.76	50.00	37.24	Average

4.2 Radiation Spurious Emissions

Serial Number:	2AQA-4	Test Date:	2024/5/11
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Carl Xue & Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	26.4	Relative Humidity: (%)	63	ATM Pressure: (kPa)	101.1

Test Equipment List and Details:

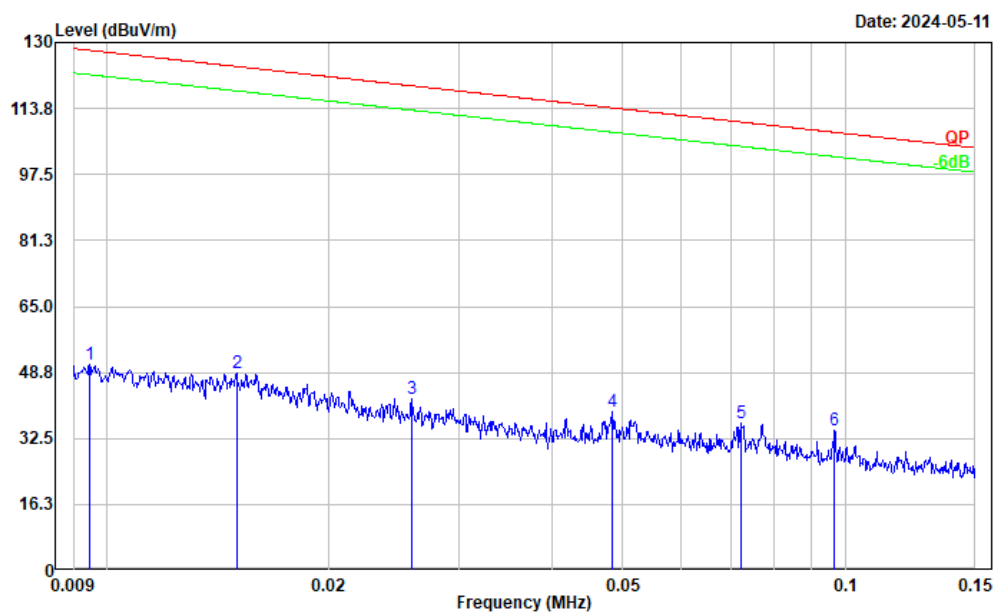
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
BACL	Loop Antenna	1313-1A	3110611	2023/12/4	2026/12/3
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0300-01	2024/1/11	2025/1/10
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0500-01	2024/1/11	2025/1/10
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30
R&S	EMI Test Receiver	ESR3	102724	2024/2/29	2025/2/28
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0100-03	2023/12/4	2024/12/3
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0370-01	2023/12/4	2024/12/3
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/12/4	2024/12/3
Sonoma	Amplifier	310N	186165	2023/12/4	2024/12/3
Audix	Test Software	E3	191218 (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:

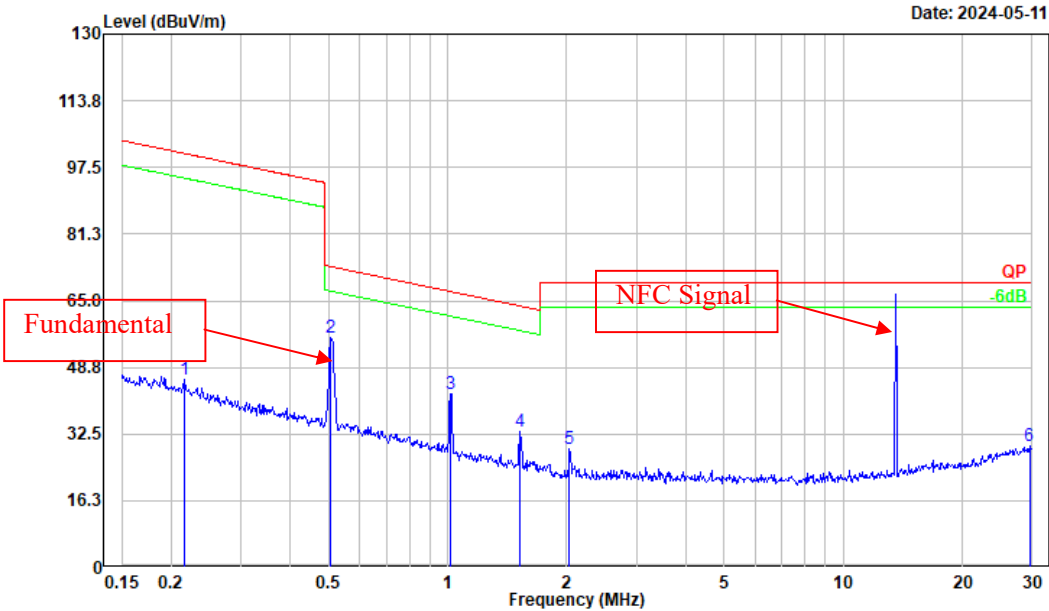
2) 9 kHz- 30MHz

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



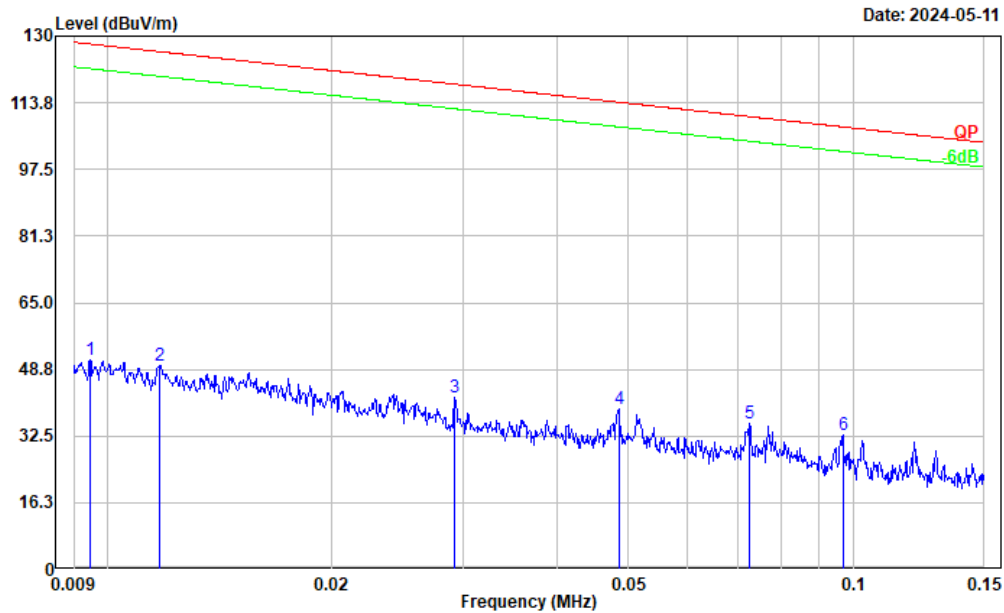
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	0.009	15.57	35.12	50.69	128.08	77.39	Peak
2	0.015	16.46	31.99	48.45	124.10	75.65	Peak
3	0.026	15.70	26.66	42.36	119.36	77.00	Peak
4	0.048	18.27	20.79	39.06	113.93	74.87	Peak
5	0.072	18.77	17.40	36.17	110.44	74.27	Peak
6	0.097	19.55	14.92	34.47	107.89	73.42	Peak

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



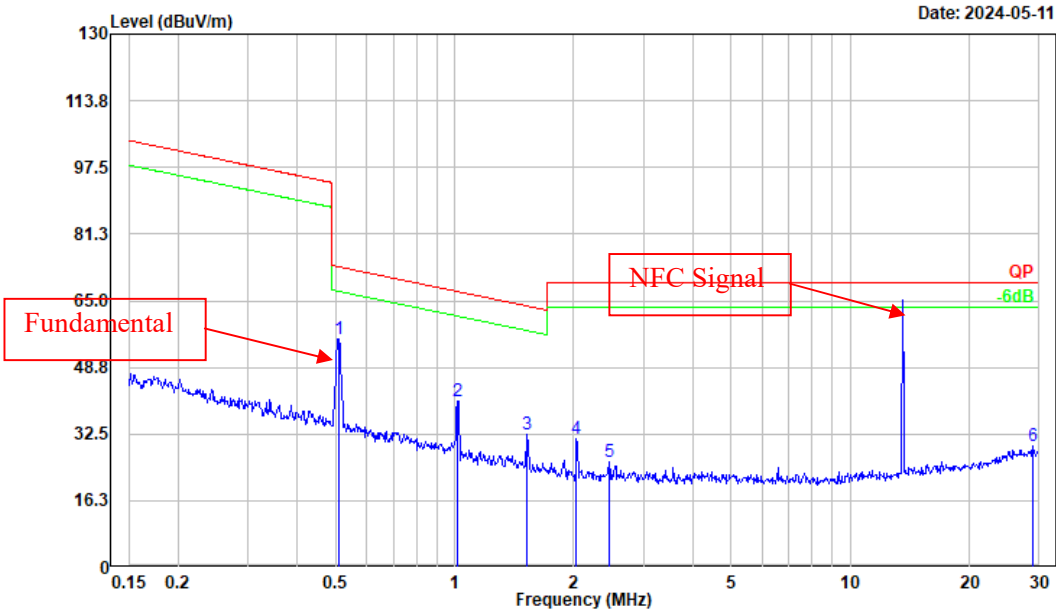
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	0.216	36.59	9.24	45.83	100.91	55.08	Peak
2	0.507	55.24	0.87	56.11	73.49	17.38	Peak
3	1.016	46.62	-4.27	42.35	67.33	24.98	Peak
4	1.527	39.36	-6.08	33.28	63.72	30.44	Peak
5	2.033	36.69	-7.78	28.91	69.54	40.63	Peak
6	29.527	36.66	-7.18	29.48	69.54	40.06	Peak

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



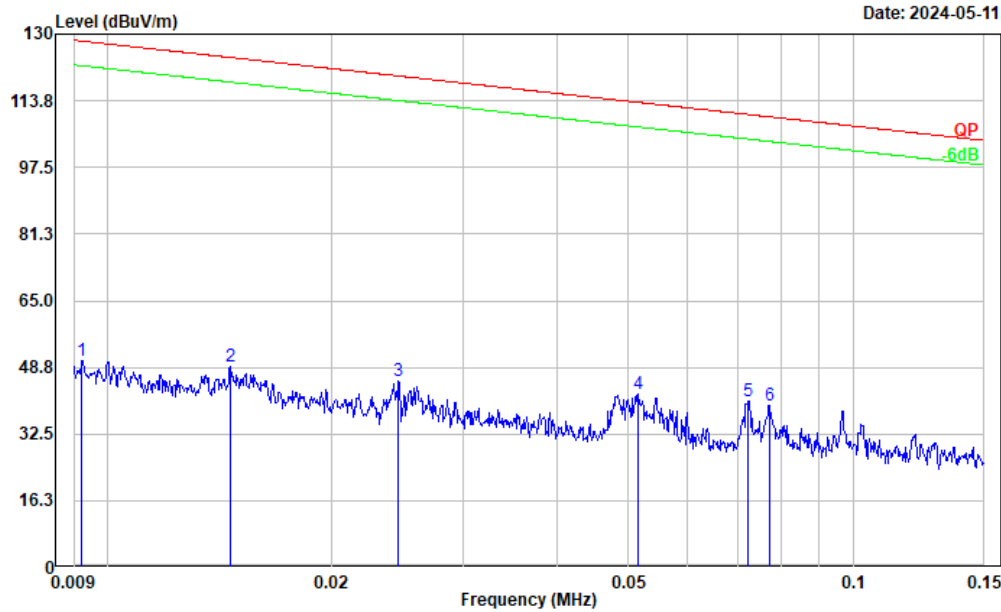
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	0.009	15.99	35.12	51.11	128.08	76.97	Peak
2	0.012	16.17	33.57	49.74	126.20	76.46	Peak
3	0.029	16.91	25.00	41.91	118.28	76.37	Peak
4	0.049	18.52	20.74	39.26	113.88	74.62	Peak
5	0.073	18.12	17.34	35.46	110.39	74.93	Peak
6	0.097	17.80	14.90	32.70	107.87	75.17	Peak

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



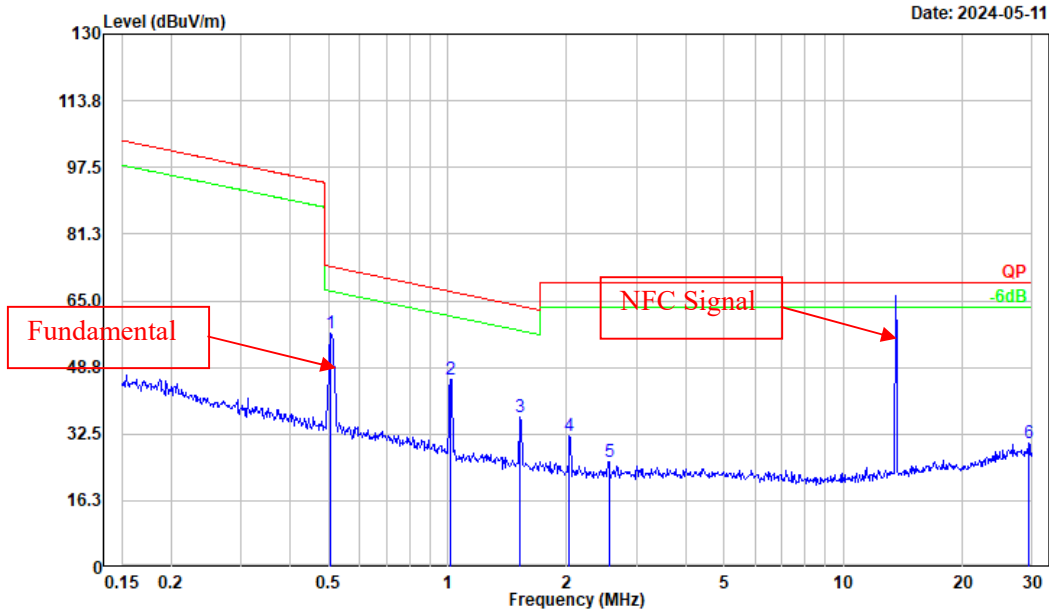
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	0.510	54.87	0.84	55.71	73.44	17.73	Peak
2	1.016	44.95	-4.27	40.68	67.33	26.65	Peak
3	1.527	38.51	-6.08	32.43	63.72	31.29	Peak
4	2.033	39.30	-7.78	31.52	69.54	38.02	Peak
5	2.461	33.66	-8.02	25.64	69.54	43.90	Peak
6	28.908	36.77	-7.28	29.49	69.54	40.05	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	0.009	15.07	35.43	50.50	128.30	77.80	Peak
2	0.015	16.63	32.18	48.81	124.32	75.51	Peak
3	0.025	18.25	27.29	45.54	119.80	74.26	Peak
4	0.051	21.97	20.23	42.20	113.37	71.17	Peak
5	0.072	23.03	17.37	40.40	110.41	70.01	Peak
6	0.077	22.92	16.71	39.63	109.85	70.22	Peak

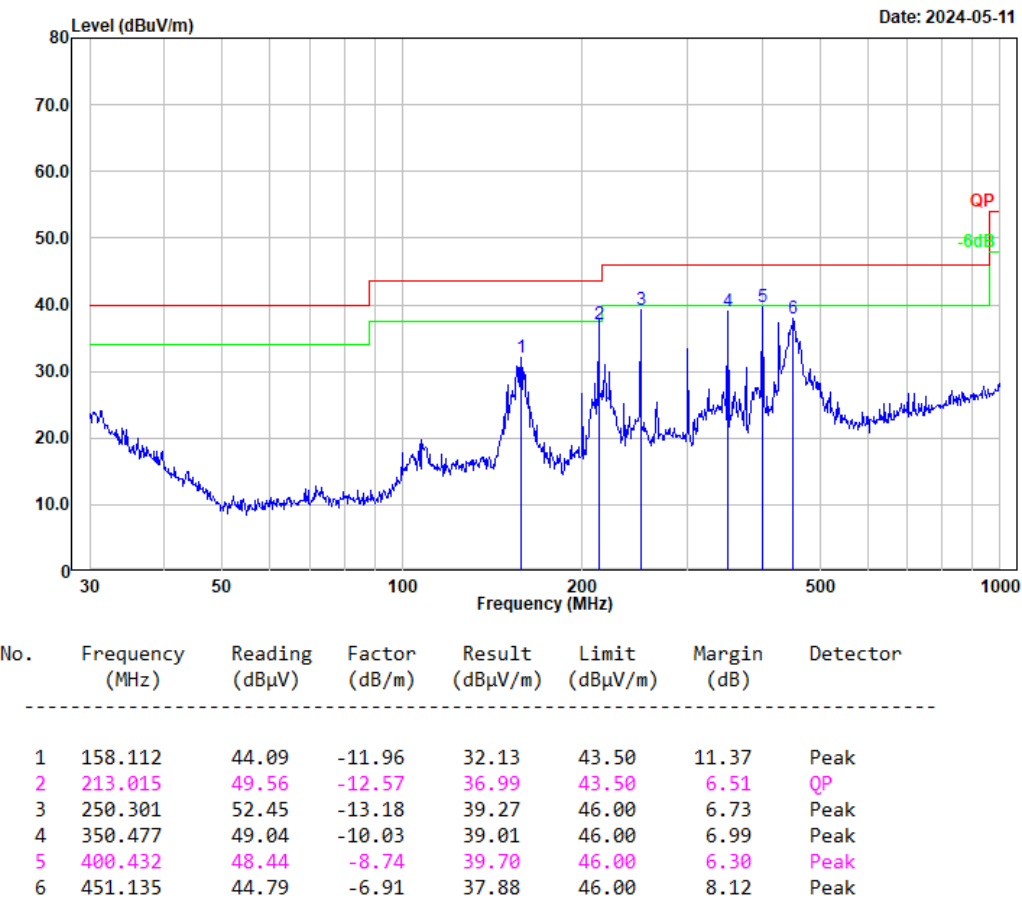
Project No.: CR230850551-RF
Tester: Vic Du
Polarization: Ground-parallel
Note:



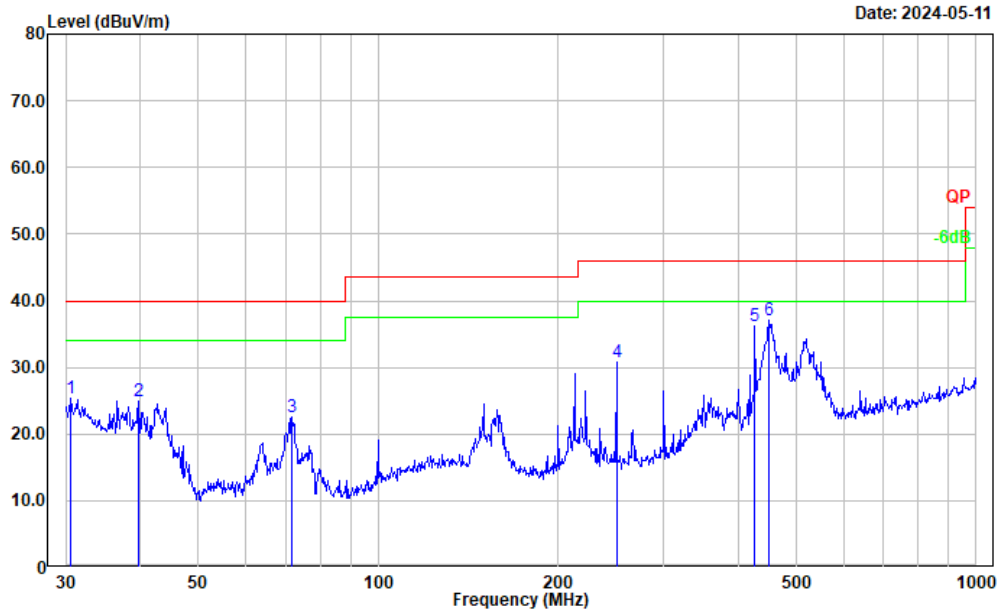
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	0.507	56.06	0.87	56.93	73.49	16.56	Peak
2	1.016	50.05	-4.27	45.78	67.33	21.55	Peak
3	1.527	42.74	-6.08	36.66	63.72	27.06	Peak
4	2.033	39.99	-7.78	32.21	69.54	37.33	Peak
5	2.554	33.94	-8.06	25.88	69.54	43.66	Peak
6	29.371	37.40	-7.21	30.19	69.54	39.35	Peak

2) 30MHz- 1GHz

Project No.: CR230850551-RF
Tester: Carl Xue
Polarization: horizontal
Note:



Project No.: CR230850551-RF
Tester: Carl Xue
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.638	29.63	-4.28	25.35	40.00	14.65	Peak
2	39.715	36.07	-11.19	24.88	40.00	15.12	Peak
3	71.832	39.33	-16.74	22.59	40.00	17.41	Peak
4	250.301	43.89	-13.18	30.71	46.00	15.29	Peak
5	426.521	43.78	-7.65	36.13	46.00	9.87	Peak
6	449.556	44.10	-6.97	37.13	46.00	8.87	Peak

4.3 20 dB Emission Bandwidth

Serial Number:	2AQA-4	Test Date:	2024/5/11
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Carl Xue	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	26.4	Relative Humidity: (%)	63	ATM Pressure: (kPa)	101.1

Test Equipment List and Details:

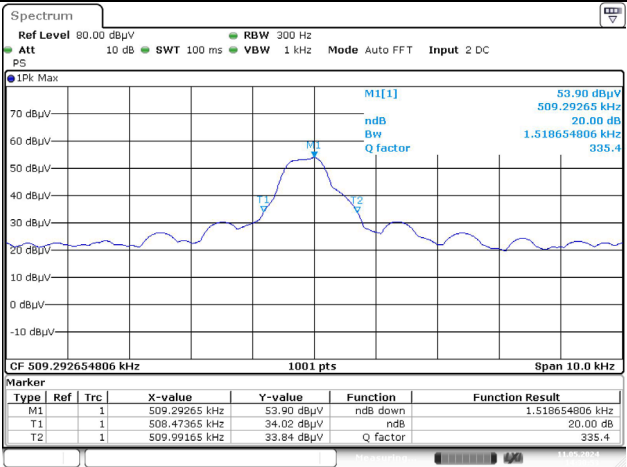
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
BACL	Loop Antenna	1313-1A	3110611	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2024/2/29	2025/2/28
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0300-01	2024/1/11	2025/1/10
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0500-01	2024/1/11	2025/1/10

** 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 (kHz)	20 dB Emission Bandwidth (Hz)
509.29	1518.65

20 dB Bandwidth



ProjectNo.:CR230850551-RF Tester:Carl Xue
Date: 11.MAY.2024 14:30:53

5 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1 Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) 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;

According with 680106 D01 Wireless Power Transfer v04 clause 3.2

Accordingly, for § 2.1091-*Mobile* devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-*Portable* devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

Furthermore, consistent with FCC's equipment authorization RF exposure guidance, any device (both portable and mobile) operating at frequencies below 100 kHz is considered compliant for the purpose of equipment authorization when the external (unperturbed) temporal peak field strengths do not exceed the following reference levels:

83 V/m for the electric field strength (*E*)

and

90 A/m for the magnetic field strength (*H*).

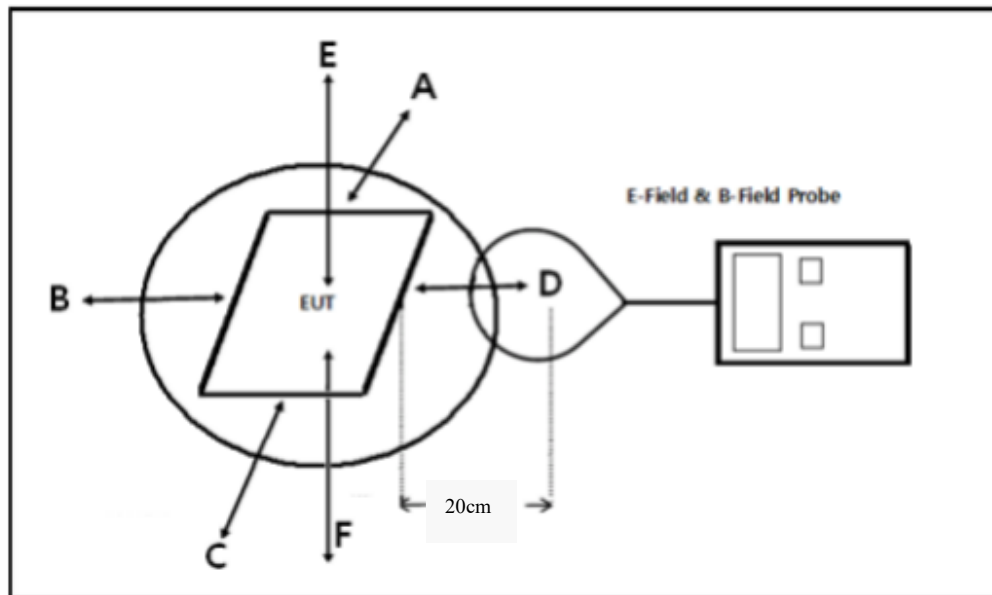
These data may be provided through measurements and/or numerical simulations, and for all the positions in space relevant for any possible body exposure.

According to 680106 D01 Wireless Power Transfer v04 clause 5.2

There might be situations where the WPT RF emissions are limited enough that even operations in a “crowded” environment, where many similar WPT devices are present, do not pose significant EMC and RF exposure concerns. In this scenario, and for devices operating within a one-meter distance from the receiver, as defined above, a manufacturer will not have to submit an “Equipment Compliance Review” KDB, and receive FCC concurrence before proceeding with equipment authorization. This exception to the requirement of submitting the ECR to obtain FCC concurrence only applies when all the following criteria (1) through (6) are met:

- (1) The power transfer frequency is below 1 MHz.
- (2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.
- (3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
- (4) Only § 2.1091-*Mobile* exposure conditions apply (i.e., this provision does not cover § 2.1093-*Portable* exposure conditions).
- (5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a $1/d$ (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.
- (6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

5.2 Block Diagram of Test Setup



5.3 Test Data:

Serial Number:	2AQA-4	Test Date:	2024/5/11
Test Site:	RF	Test Mode:	Transmitting
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24	Relative Humidity: (%)	55	ATM Pressure: (kPa)	100.8
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Narda	Electric and Magnetic Field Probe-Analyzer	EHP-200AC	180ZX10204	2021/06/07	2024/06/06

** 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:**H-Field Strength:**

Frequency (kHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	50% Limit (A/m)	Limit (A/m)
509.29	0.1564	0.1452	0.1426	0.1465	0.1423	0.815	1.63

E-Field Strength:

Frequency (kHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	50% Limit (V/m)	Limit (V/m)
509.29	1.2455	1.2757	1.2463	1.2481	1.2385	307	614

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

Considerations of compliance 680106 D01 Wireless Power Transfer v04 clause 5.2:

(1) Power transfer frequency is less than 1 MHz

Yes, the operation frequency is 509.29kHz.

(2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

Yes, the maximum output power of primary coil is **1.7 Watts**.

(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)

Yes, client device is placed directly in contact with the transmitter

(4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

Yes, mobile exposure conditions only.

(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

Yes, the test result for H and E-field strength less than 50% of the MPE limit.

(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

Yes, the device only has one coil.

6. EUT PHOTOGRAPHS

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

7. TEST SETUP PHOTOGRAPHS

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

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