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

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **Beijing Wiseasy Technology Co.,Ltd.**

Address: Room 01 , 27th Floor, No. 1 Building , No. 36 Xiaoyun Road, Chaoyang District, Beijing, China.

FCC ID: **2AXOJ-T2**
IC: **28320-T2**
HVIN: **P2_1xx_30_xx, P2_1xx_11_xx**
Product Name: **Smart Payment Tablet**
Model Number: **T2**
Standard(s): **47 CFR Part 15, Subpart C(15.225)**
ANSI C63.10-2013
RSS-210 Issue 10, December 2019, Amendment (April 2020)
RSS-Gen, Issue 5, February 2021 Amendment 2

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

Report Number: **CR230524715-00A**

Date Of Issue: **2023/6/8**

Reviewed By: **Sun Zhong** 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.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

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.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk "★".

CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230524715-00A	Original Report	2023/6/8

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Smart Payment Tablet
EUT Model:	T2
Operation Frequency:	13.56 MHz
Modulation Type:	ASK
Rated Input Voltage:	5/9/12Vdc from adapter or 3.87Vdc from Battery
Serial Number:	25K9-3
EUT Received Date:	2023/05/09
EUT Received Status:	Good

EUT Config Detail

Config	Description	Actual HV
#1	With microphone and Front camera	P2_1xx_30_xx
#2	Without microphone and Front camera	P2_1xx_11_xx
EUT have two different configs. Conducted emission and radiated emission test performs on #2 since the worst is mode: #2 per test for DSS report.		

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	/Frequency Range	Antenna Gain
Loop	50	13.56MHz	Unknown
The Method of §15.203 Compliance: ☒Antenna must be permanently attached to the unit. ☐Antenna must use a unique type of connector to attach to the EUT. ☐Unit must be 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	Shenzhen Baijunda Electronic Co., Ltd	235A-020A-1A1C

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.
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

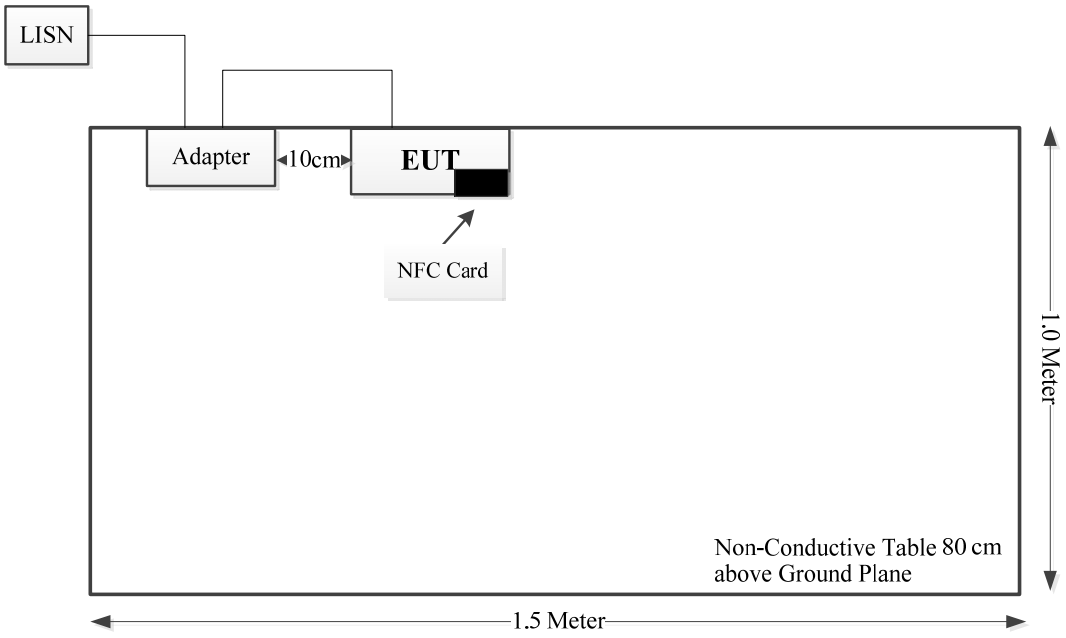
Manufacturer	Description	Model	Serial Number
Unknown	NFC Card	Unknown	Unknown

1.2.3 Support Cable List and Details

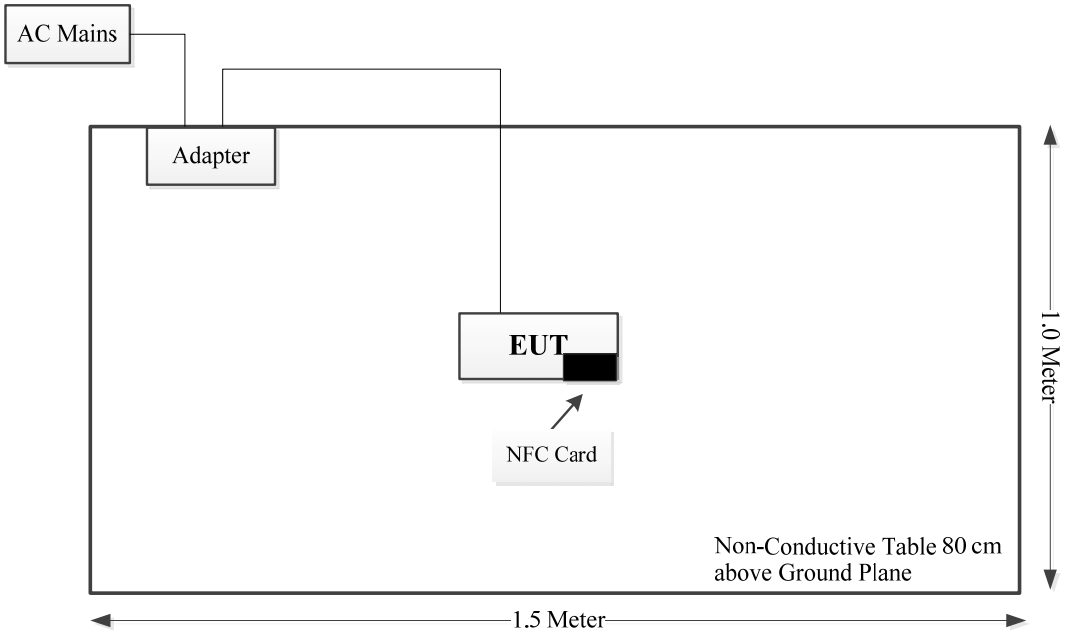
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	No	No	1	EUT	Adapter

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) RSS-Gen Clause 8.8	Conducted Emissions	Compliant
§15.225 §15.209 §15.205 RSS-Gen Clause 8.10 RSS-210 Annex B.6 (a)	Radiated Emission Test	Compliant
§15.225(e) RSS-210 Annex B.6 (b)	Frequency Stability	Compliant
§15.215(c)	20 dB Bandwidth	Compliant
RSS-Gen Clause 6.7	99% Occupied Bandwidth	Compliant
§15.203 RSS-GEN Clause 6.8	Antenna Requirement	Compliant
& §1.1310 & §2.1093	RF Exposure	Compliant
RSS-102 Clause 2.5.1	Exemption Limits For Routine Evaluation-SAR Evaluation	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.

RSS-Gen Clause 8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.
For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 4 – AC power-line conducted emissions limits

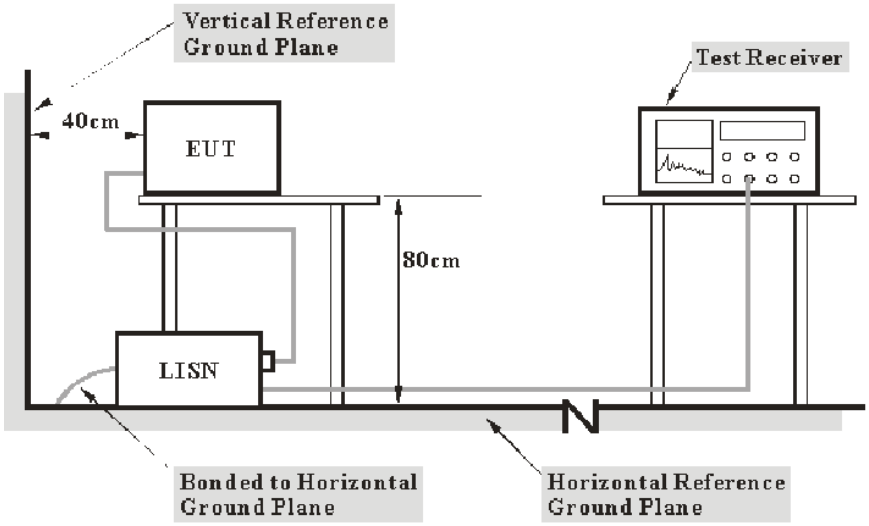
Frequency (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56[1]	56 to 46[1]
0.5 – 5	56	46
5 – 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:
(a) Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.

(b) Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

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,RSS-Gen 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.

As per RSS-210 B.6(a)

(a) the field strength of any emission shall not exceed the following limits:

(i) 15.848 mV/m (84 dBµV/m) at 30 m, within the band 13.553-13.567 MHz

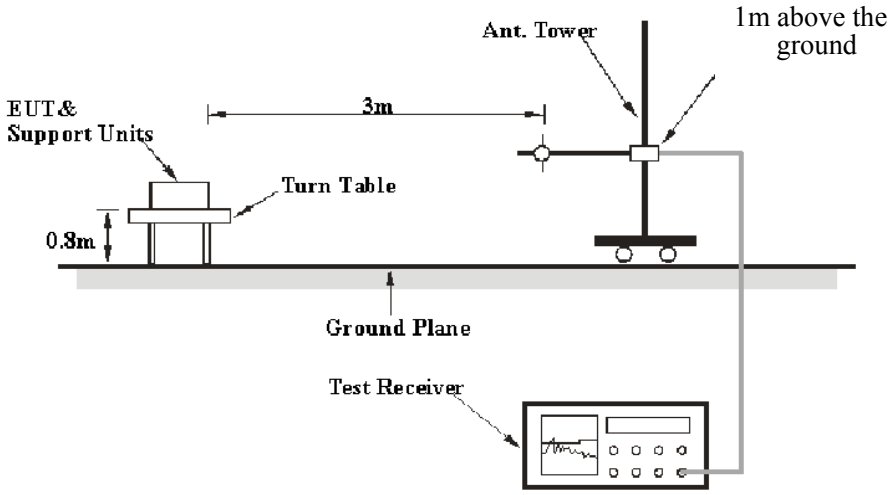
(ii) 334 µV/m (50.5 dBµV/m) at 30 m, within the bands 13.410-13.553 MHz and 13.567-13.710 MHz

(iii) 106 µV/m (40.5 dBµV/m) at 30 m, within the bands 13.110-13.410 MHz and 13.710-14.010 MHz

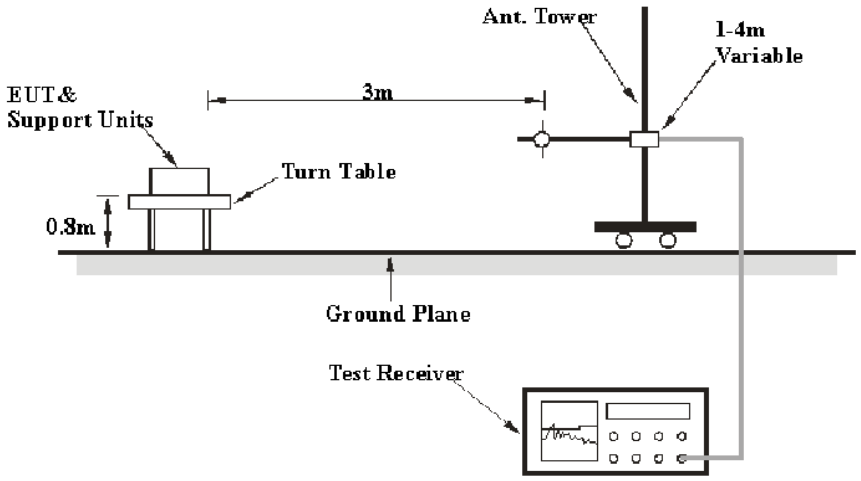
(iv) RSS-Gen general field strength limits for frequencies outside the band 13.110-14.010 MHz

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	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	QP
150 kHz – 30 MHz	9 kHz	30 kHz	QP
30 MHz – 1000 MHz	120 kHz	300 kHz	QP

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

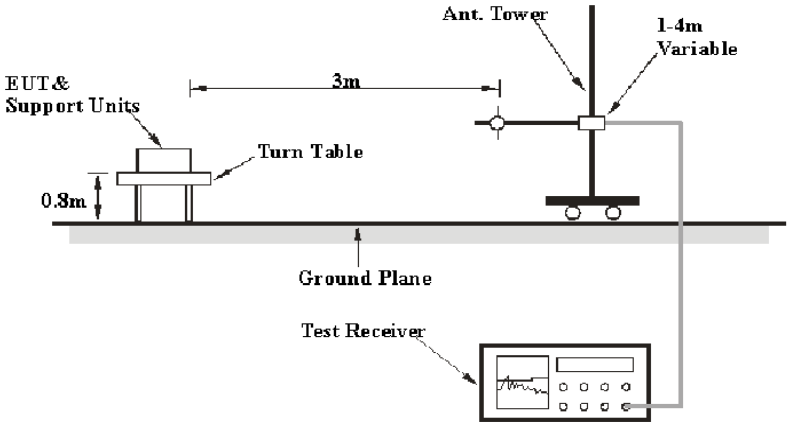
3.3 20 dB Emission Bandwidth:

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. 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.

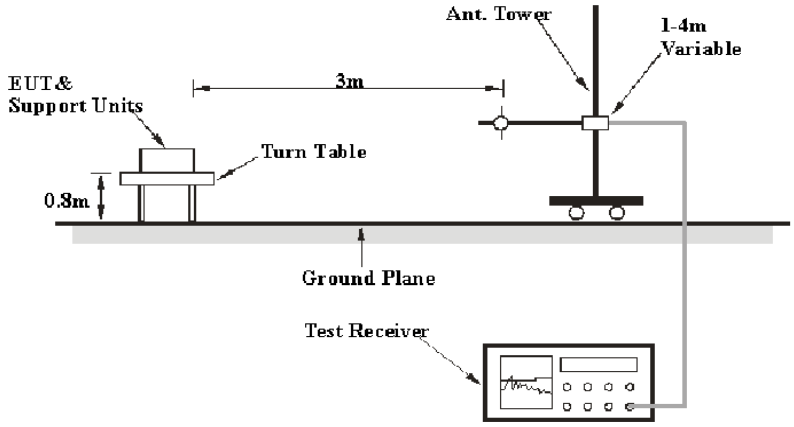
3.4 99% Occupied Bandwidth:

3.4.1 Applicable Standard

RSS-210, Annex A, A.1.3

The occupied bandwidth of momentarily operated devices shall be less than or equal to 0.25% of the centre frequency for devices operating between 70 MHz and 900 MHz. For devices operating above 900 MHz, the occupied bandwidth shall be less than or equal to 0.5% of the centre frequency.

3.4.2 EUT Setup



3.4.3Test Procedure

a) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, unless otherwise specified by the applicable requirement.
b) Set the video bandwidth (VBW) ≥ 3×RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) use the 99% Occupied bandwidth function to test the bandwidth.

3.5 Frequency Stability

3.5.1 Applicable Standard

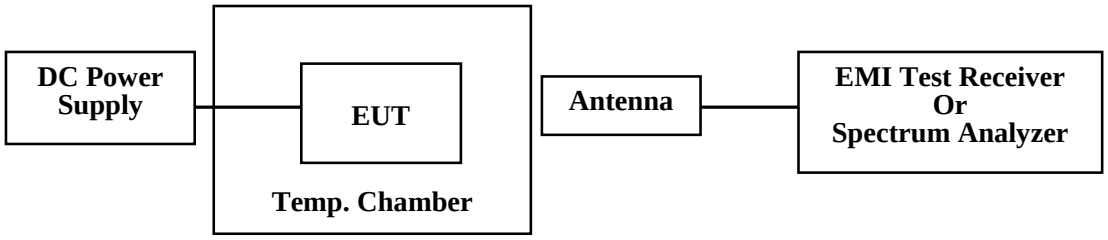
As per FCC Part 15.225:

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.

As per RSS-210 B.6(b):

(b) the carrier frequency stability shall not exceed ±100 ppm

3.5.2 EUT Setup



3.5.3 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 DC power supply Source. The voltage was set to the end point of the battery. The output frequency was recorded for each voltage.

3.6 Antenna Requirement

3.6.1 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.

RSS-Gen §6.8

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.
For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).
When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.
For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

3.6.2 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:	25K9-4	Test Date:	2023/05/12
Test Site:	CE	Test Mode:	Transmitting
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.3	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.3

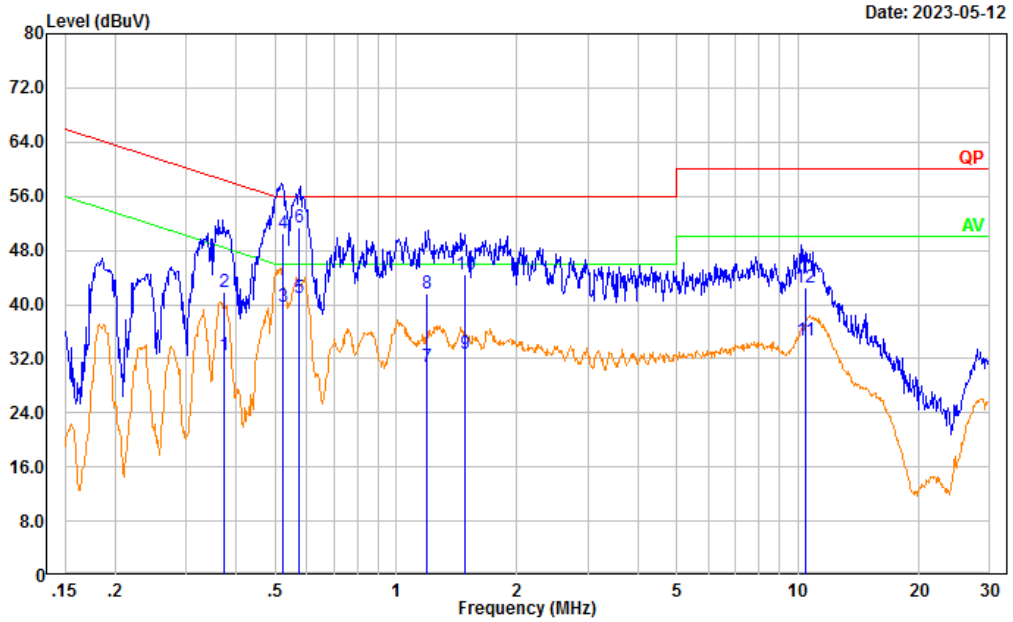
Test Equipment List and Details:

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	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022/08/07	2023/08/06
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).*

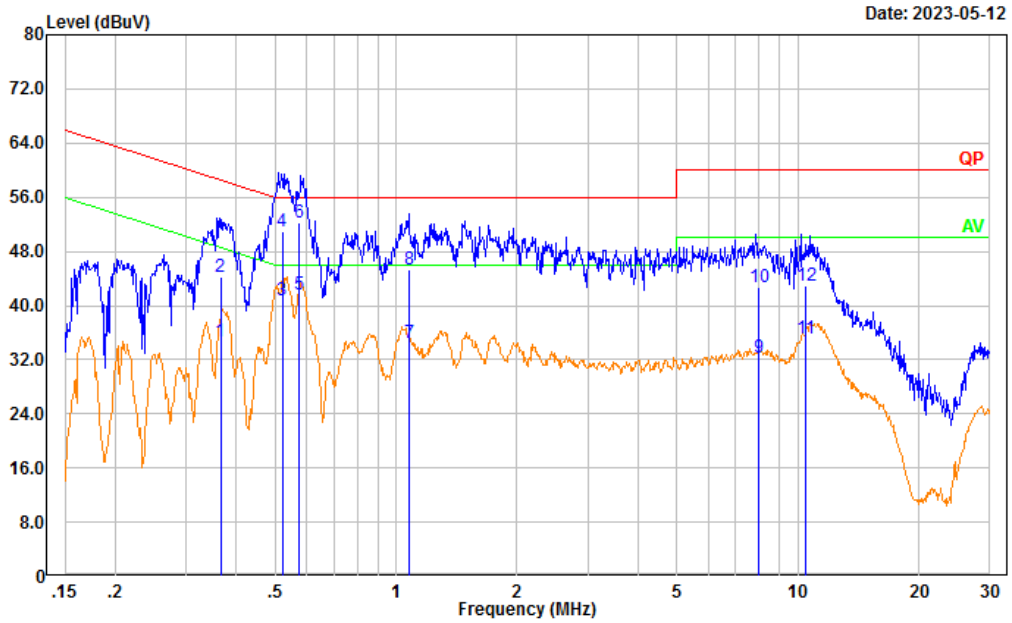
#2:

Test Mode: Transmitting
Port: Line
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.373	22.82	9.61	32.43	48.43	16.00	Average
2	0.373	32.29	9.61	41.90	58.43	16.53	QP
3	0.522	30.02	9.61	39.63	46.00	6.37	Average
4	0.522	40.94	9.61	50.55	56.00	5.45	QP
5	0.575	31.25	9.62	40.87	46.00	5.13	Average
6	0.575	41.75	9.62	51.37	56.00	4.63	QP
7	1.189	21.26	9.62	30.88	46.00	15.12	Average
8	1.189	31.93	9.62	41.55	56.00	14.45	QP
9	1.489	23.22	9.62	32.84	46.00	13.16	Average
10	1.489	34.93	9.62	44.55	56.00	11.45	QP
11	10.403	24.91	9.67	34.58	50.00	15.42	Average
12	10.403	32.90	9.67	42.57	60.00	17.43	QP

Test Mode: Transmitting
Port: neutral
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.366	25.15	9.61	34.76	48.60	13.84	Average
2	0.366	34.69	9.61	44.30	58.60	14.30	QP
3	0.521	31.04	9.61	40.65	46.00	5.35	Average
4	0.521	41.41	9.61	51.02	56.00	4.98	QP
5	0.573	31.96	9.62	41.58	46.00	4.42	Average
6	0.573	42.71	9.62	52.33	56.00	3.67	QP
7	1.076	24.82	9.62	34.44	46.00	11.56	Average
8	1.076	35.77	9.62	45.39	56.00	10.61	QP
9	8.013	22.58	9.67	32.25	50.00	17.75	Average
10	8.013	33.13	9.67	42.80	60.00	17.20	QP
11	10.423	25.48	9.67	35.15	50.00	14.85	Average
12	10.423	33.21	9.67	42.88	60.00	17.12	QP

4.2 Radiation Spurious Emissions

Serial Number:	25K9-4	Test Date:	2023/05/25
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.7	Relative Humidity: (%)	63	ATM Pressure: (kPa)	100.5

Test Equipment List and Details:

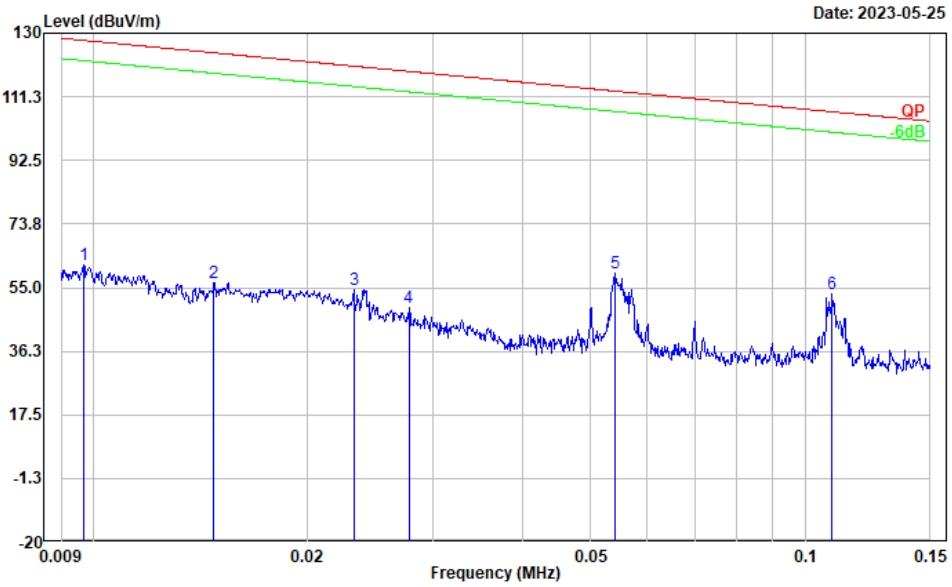
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
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).*

1) 9k-30MHz:
#2:
Parallel:

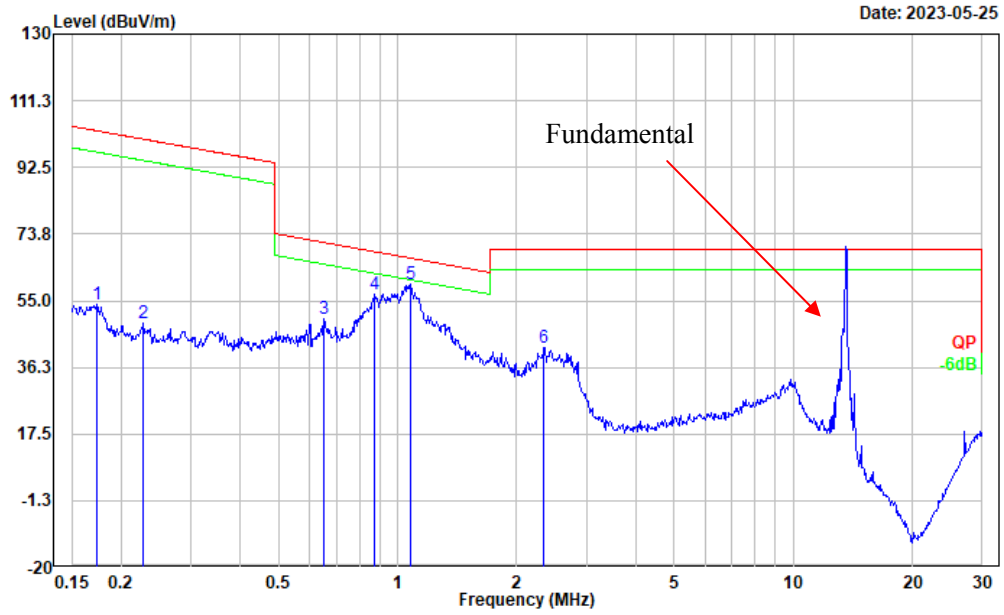
Test Mode: Transmitting

Note:



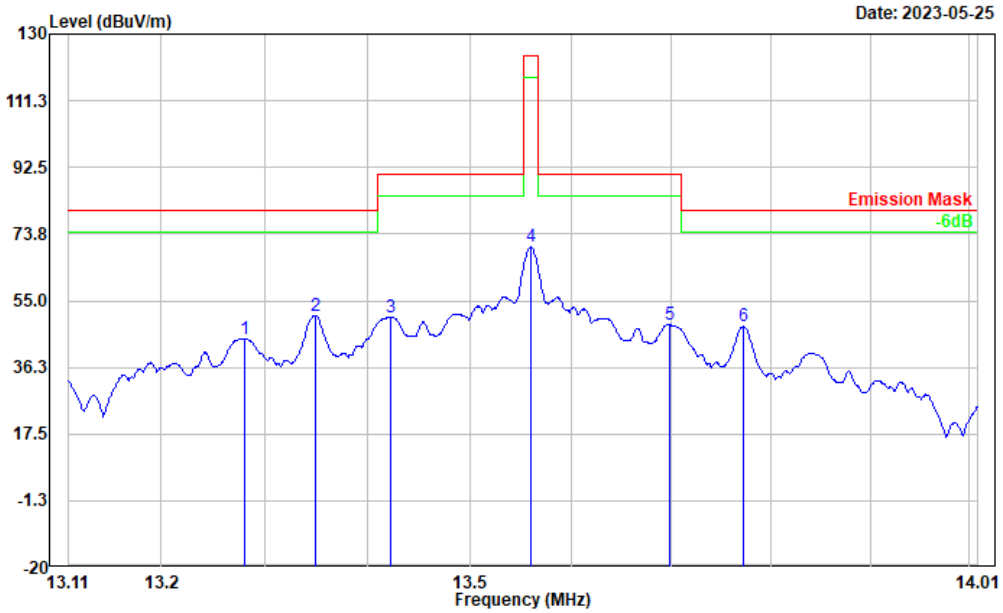
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.010	3.19	58.36	61.55	127.88	66.33	Peak
2	0.015	2.46	53.85	56.31	124.22	67.91	Peak
3	0.023	6.19	48.09	54.28	120.28	66.00	Peak
4	0.028	2.70	46.44	49.14	118.74	69.60	Peak
5	0.054	17.87	41.35	59.22	112.93	53.71	Peak
6	0.109	18.30	34.73	53.03	106.84	53.81	Peak

Test Mode: Transmitting
Polarization: Parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.174	22.81	31.05	53.86	102.79	48.93	Peak
2	0.228	19.94	28.57	48.51	100.45	51.94	Peak
3	0.651	29.61	20.28	49.89	71.28	21.39	Peak
4	0.876	39.08	17.91	56.99	68.65	11.66	Peak
5	1.077	43.25	16.42	59.67	66.81	7.14	Peak
6	2.346	31.37	10.22	41.59	69.54	27.95	Peak

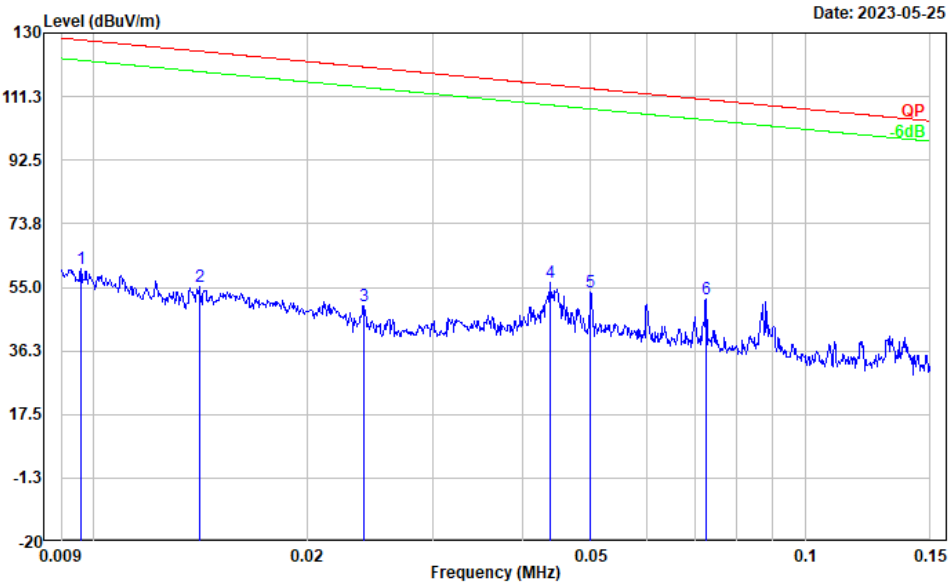
Test Mode: Transmitting
Polarization: Parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.280	49.78	-5.55	44.23	80.51	36.28	Peak
2	13.349	56.69	-5.76	50.93	80.51	29.58	Peak
3	13.422	56.32	-5.98	50.34	90.47	40.13	Peak
4	13.560	76.50	-6.38	70.12	124.00	53.88	Peak
5	13.698	55.01	-6.80	48.21	90.47	42.26	Peak
6	13.772	54.75	-7.03	47.72	80.51	32.79	Peak

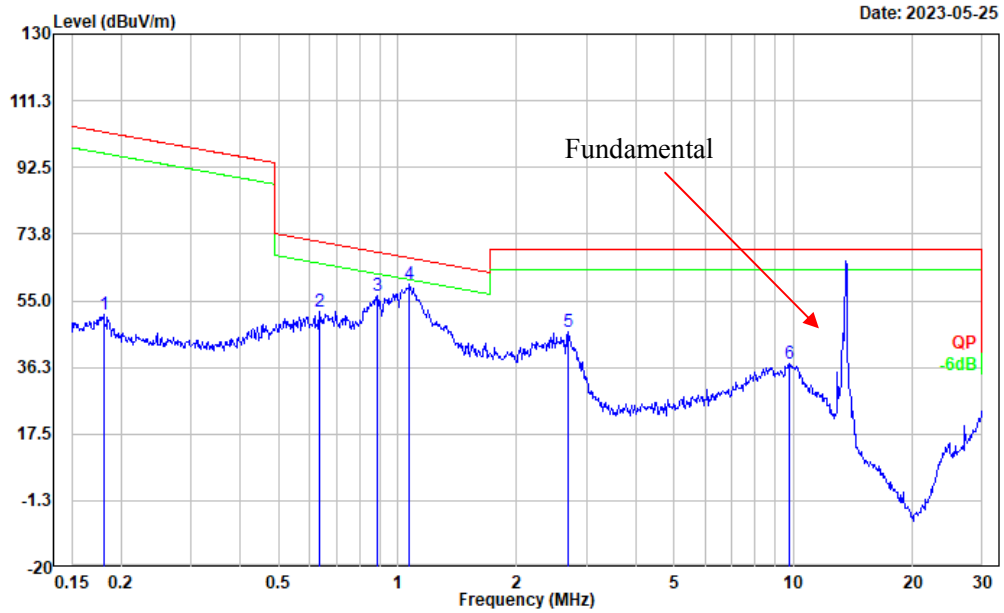
Perpendicular:

Test Mode: Transmitting
Polarization: Perpendicular



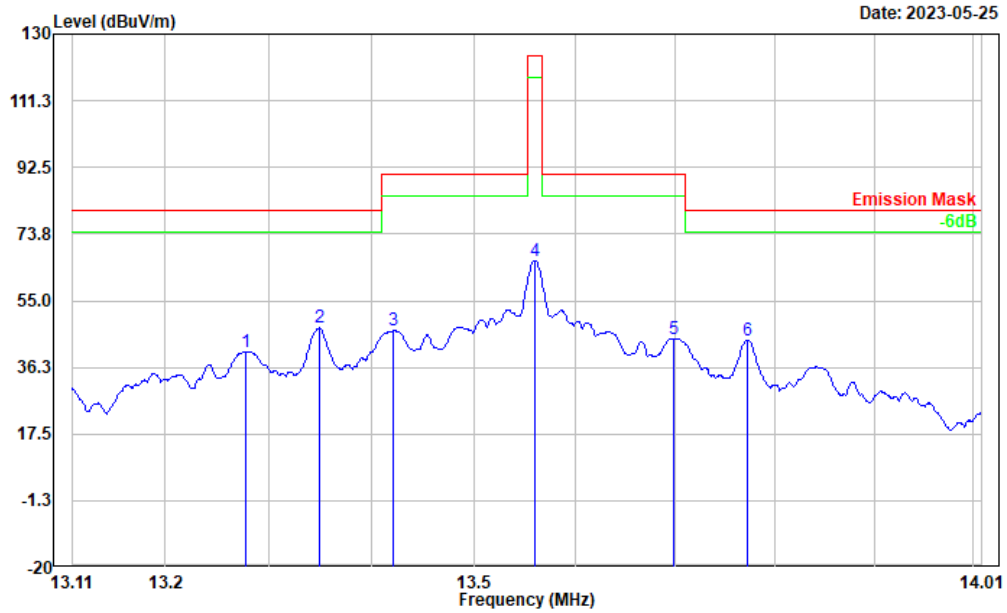
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.010	1.85	58.46	60.31	127.96	67.65	Peak
2	0.014	0.87	54.46	55.33	124.63	69.30	Peak
3	0.024	1.82	47.82	49.64	120.02	70.38	Peak
4	0.044	13.44	43.10	56.54	114.79	58.25	Peak
5	0.050	11.19	42.29	53.48	113.64	60.16	Peak
6	0.073	13.54	37.97	51.51	110.39	58.88	Peak

Test Mode: Transmitting
Polarization: Perpendicular
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.181	20.29	30.68	50.97	102.47	51.50	Peak
2	0.634	31.29	20.49	51.78	71.52	19.74	Peak
3	0.885	38.43	17.85	56.28	68.56	12.28	Peak
4	1.071	43.26	16.46	59.72	66.86	7.14	Peak
5	2.692	36.95	9.21	46.16	69.54	23.38	Peak
6	9.757	32.77	4.47	37.24	69.54	32.30	Peak

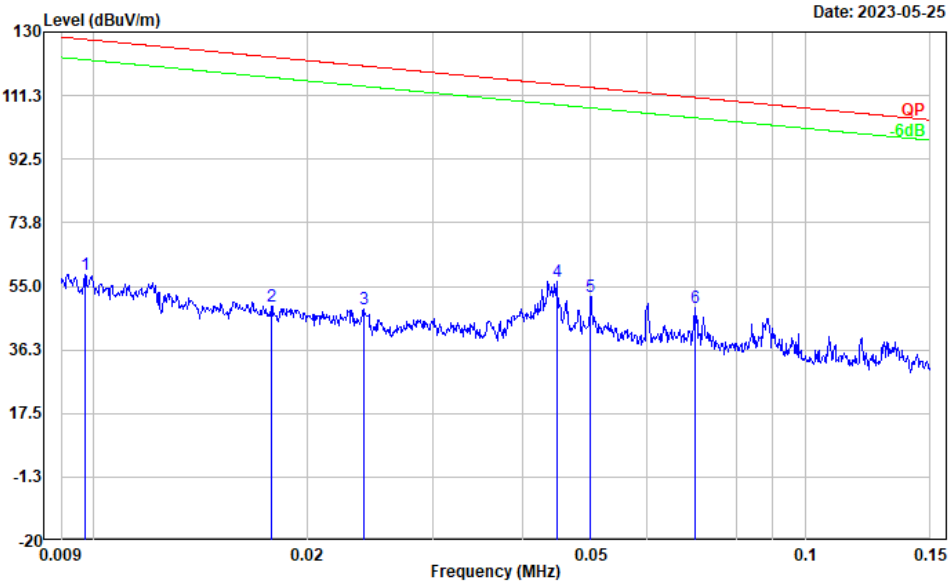
Test Mode: Transmitting
Polarization: Perpendicular
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.277	46.11	-5.54	40.57	80.51	39.94	Peak
2	13.349	53.05	-5.76	47.29	80.51	33.22	Peak
3	13.421	52.50	-5.98	46.52	90.47	43.95	Peak
4	13.560	72.63	-6.38	66.25	124.00	57.75	Peak
5	13.698	51.12	-6.80	44.32	90.47	46.15	Peak
6	13.772	50.97	-7.03	43.94	80.51	36.57	Peak

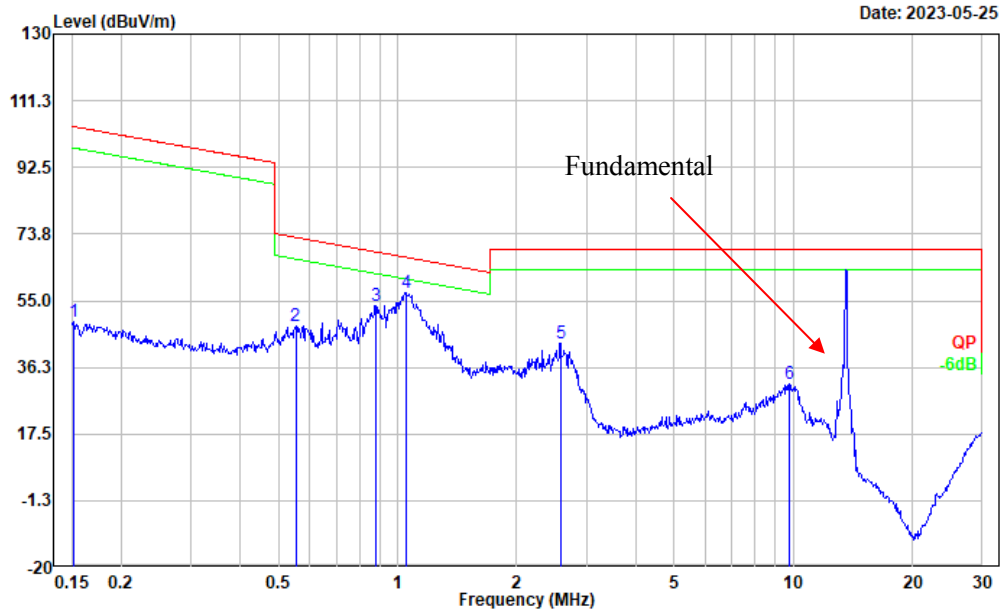
Ground-parallel:

Test Mode: Transmitting
Polarization: Ground-parallel
Note:



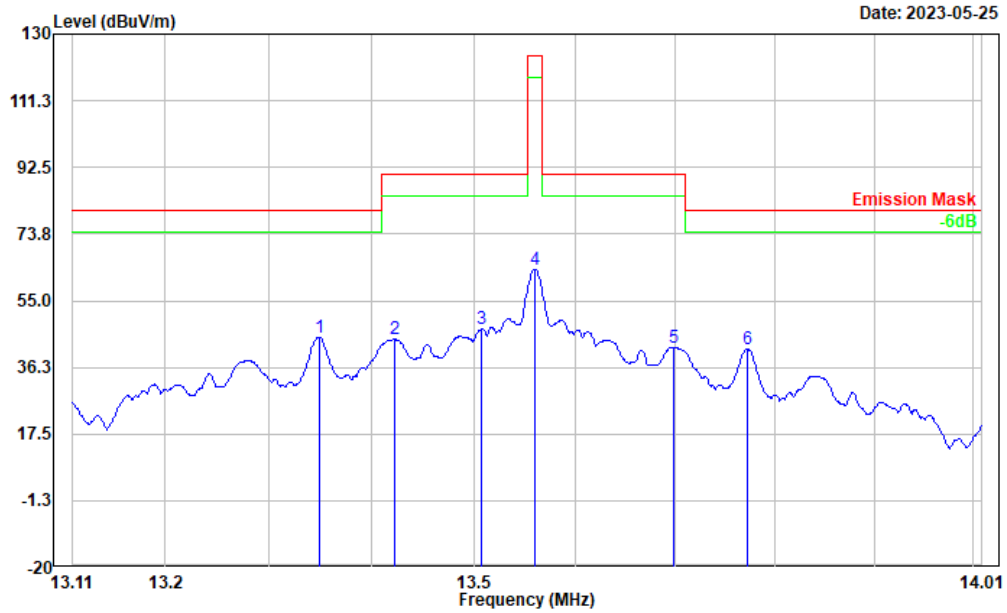
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.010	0.24	58.30	58.54	127.84	69.30	Peak
2	0.018	-1.99	51.23	49.24	122.61	73.37	Peak
3	0.024	0.35	47.82	48.17	120.02	71.85	Peak
4	0.045	13.34	42.97	56.31	114.59	58.28	Peak
5	0.050	9.77	42.29	52.06	113.64	61.58	Peak
6	0.070	10.36	38.23	48.59	110.68	62.09	Peak

Test Mode: Transmitting
Polarization: Ground-parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.152	16.73	32.28	49.01	103.94	54.93	Peak
2	0.552	26.49	21.55	48.04	72.74	24.70	Peak
3	0.880	35.78	17.88	53.66	68.60	14.94	Peak
4	1.049	40.79	16.58	57.37	67.05	9.68	Peak
5	2.581	33.54	9.54	43.08	69.54	26.46	Peak
6	9.757	27.29	4.47	31.76	69.54	37.78	Peak

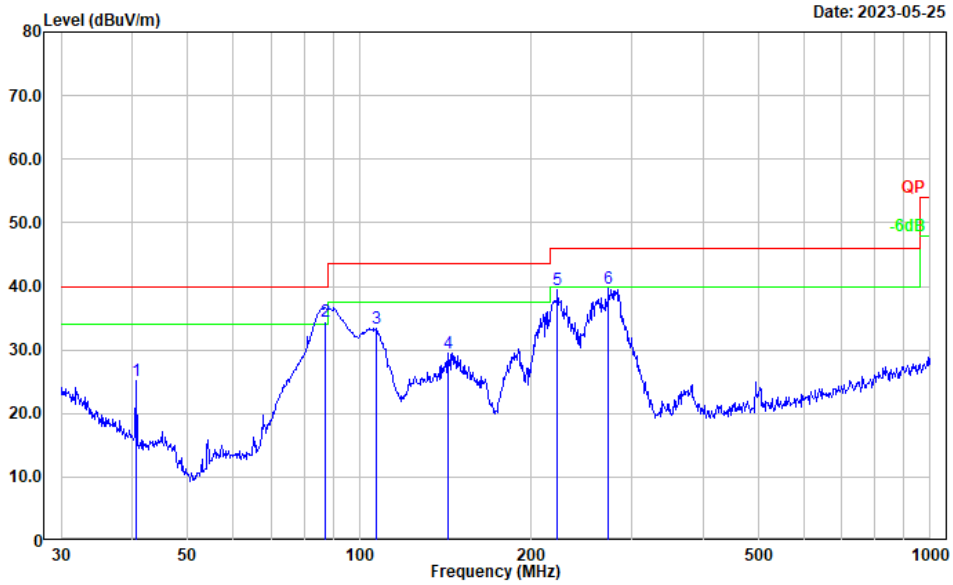
Test Mode: Transmitting
Polarization: Ground-parallel
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	13.349	50.49	-5.76	44.73	80.51	35.78	Peak
2	13.422	50.07	-5.98	44.09	90.47	46.38	Peak
3	13.508	53.31	-6.22	47.09	90.47	43.38	Peak
4	13.560	70.19	-6.38	63.81	124.00	60.19	Peak
5	13.698	48.66	-6.80	41.86	90.47	48.61	Peak
6	13.772	48.42	-7.03	41.39	80.51	39.12	Peak

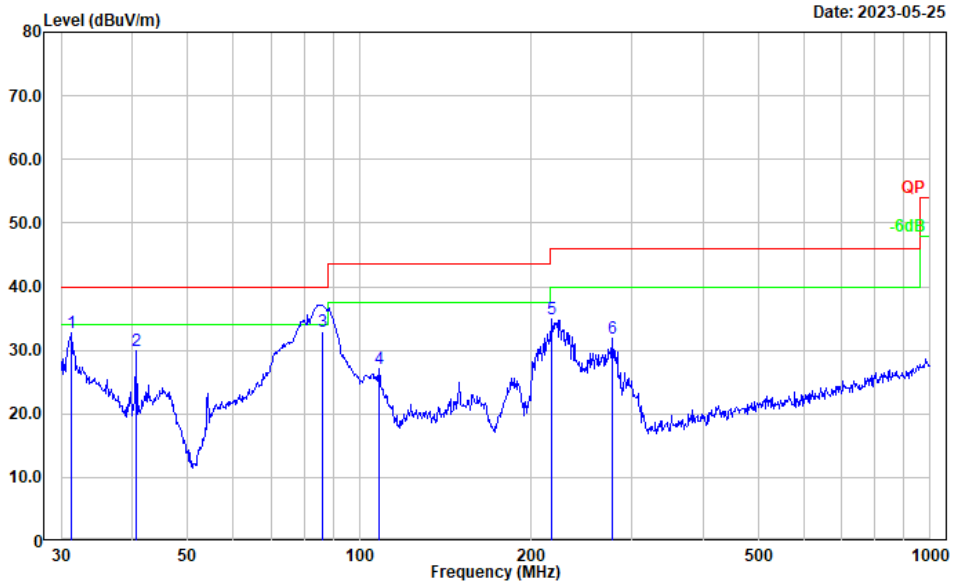
2) 30-1000MHz:
#2:

Test Mode: Transmitting
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	40.559	36.83	-11.65	25.18	40.00	14.82	Peak
2	87.240	51.51	-17.08	34.43	40.00	5.57	QP
3	106.759	46.33	-12.96	33.37	43.50	10.13	Peak
4	142.824	41.43	-11.91	29.52	43.50	13.98	Peak
5	222.170	52.25	-12.83	39.42	46.00	6.58	Peak
6	273.234	51.72	-11.96	39.76	46.00	6.24	Peak

Test Mode: Transmitting
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	31.289	37.29	-4.59	32.70	40.00	7.30	Peak
2	40.559	41.54	-11.65	29.89	40.00	10.11	Peak
3	86.198	50.00	-17.13	32.87	40.00	7.13	QP
4	108.267	39.64	-12.64	27.00	43.50	16.50	Peak
5	217.544	47.56	-12.73	34.83	46.00	11.17	Peak
6	277.094	43.67	-11.80	31.87	46.00	14.13	Peak

4.3 20 dB Emission Bandwidth

Serial Number:	25K9-4	Test Date:	2023/05/25
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.7	Relative Humidity: (%)	63	ATM Pressure: (kPa)	100.5

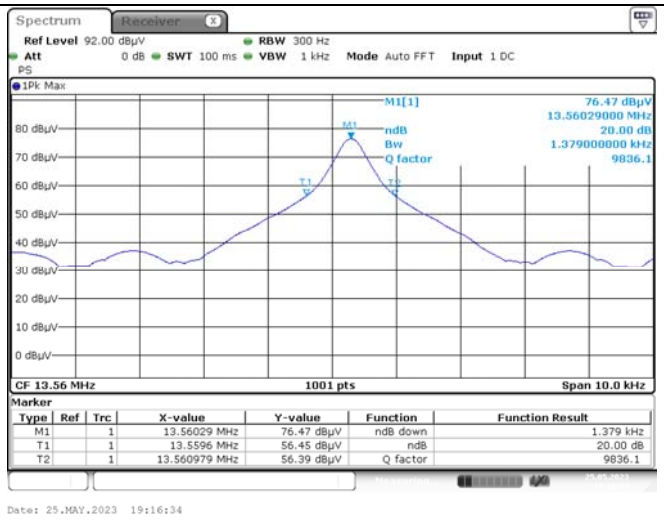
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Manufacturer	Description
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
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:

Test Channel	Test Frequency (MHz)	20 dB Bandwidth (kHz)
Middle	13.56	1.379

20dB Emission Bandwidth


4.4 99% Occupied Bandwidth

Serial Number:	25K9-4	Test Date:	2023/05/25
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.7	Relative Humidity: (%)	63	ATM Pressure: (kPa)	100.5

Test Equipment List and Details:

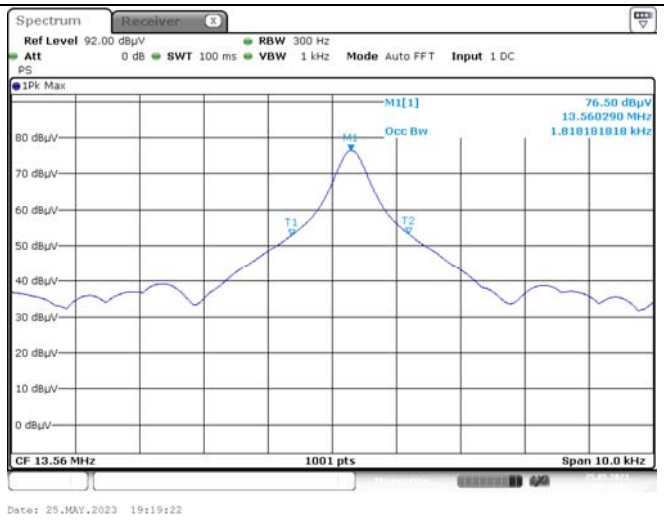
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMCO	Passive Loop Antenna	6512	9706-1209	2023/2/15	2026/2/14
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
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:

Test Channel	Test Frequency (MHz)	99% Occupied Bandwidth (kHz)
Middle	13.56	1.818

99% Occupied Bandwidth



4.5 Frequency Stability

Serial Number:	25K9-4	Test Date:	2023/05/25
Test Site:	RF	Test Mode:	Transmit
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.4	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.5

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	2022/07/15	2023/07/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/03/31	2024/03/30
YINSAIGE	Coaxial Cable	SS402	SJ0300001	Each time	N/A
UNI-T	Multimeter	UT39A+	C210582554	2022/09/29	2023/09/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	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:

f_o = 13.56 MHz				
Temperature	**Voltage**	**Measured frequency**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**MHz**	**Hz**	**Hz**
-20	3.87	13.5601256	125.6	±1356
-10		13.5604732	473.2	±1356
0		13.5602547	254.7	±1356
10		13.5601782	178.2	±1356
20		13.5602900	290.0	±1356
25		13.5601537	153.7	±1356
30		13.5602258	225.8	±1356
40		13.5601675	167.5	±1356
50		13.5602417	241.7	±1356
20	3.47	13.5601782	178.2	±1356
20	4.45	13.5602275	227.5	±1356

5. RF EXPOSURE EVALUATION

5.1 FCC SAR test exclusion

5.1.1 Applicable Standard

According to KDB447498 D01 General RF Exposure Guidance v06: 4.3. General SAR test exclusion guidance
c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):
1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/f(MHz))]
2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½
3) SAR measurement procedures are not established below 100 MHz

5.1.2 Measurement Result

For NFC, the power of EUT: E Field@3m is 70.12dBuV/m = -25.08 dBm(0.003mW)
Note: E[dBμV/m] = EIRP[dBm] + 95.2 for d = 3 m.

SAR test exclusion threshold for NFC(13.56MHz) separation distance < 50mm

=[474*(1 + log(100/$f_{(MHz)}$))]/2

= 443mW

>0.003mW

Result: Compliant. The stand-alone SAR test is not necessary.

5.2 Exemption limits for Routine Evaluation – SAR Evaluation

5.2.1 Applicable Standard

According to RSS-102 § (2.5.1):

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5.

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance[4,5]

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

5.2.2 Measurement Result:

For NFC, the power of EUT: E Field@3m is 70.12dBuV/m = -25.08 dBm(0.003mW) < 1W
Note: E[dBμV/m] = EIRP[dBm] + 95.2 for d = 3 m.

The exemption power(P) limits for routine evaluation in 13.56MHz is:
71mW > 0.003 mW

So the stand-alone SAR test can be exempted.

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