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

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **Unitree**

Address: 3rd Floor, Building 1, Fengda Creative Park No.88 Dongliu Road, Binjiang District Hangzhou, Zhejiang China

FCC ID: **2A5PE-YUSHU004**

Product Name: **Quadruped Robot**

Standard(s): **FCC PART 15, Subpart C(15.250)**
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)

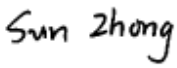
Report Number: **CR231168373-RF-00E**

Date Of Issue: **2024/3/12**

Reviewed By: **Calvin Chen**

Title: RF Engineer

Reviewed 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.

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	CR231168373-RF-00E	Original Report	2024/3/12

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Quadruped Robot
EUT Model:	Go2
Operation Frequency:	6489.6 MHz
Modulation Type:	BPSK
Rated Input Voltage:	26.9V from battery
Serial Number:	2DX0-2
EUT Received Date:	2023/11/23
EUT Received Status:	Good

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
PCB	50	6100-6900MHz	6 dBi

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	Parameters
Adapter	Fuyuang	FY3403500	Input: 100-240V~50/60Hz 1.5A 150VA Output: 34.0V/3.5A 119.0W

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 device support 2T4R, only transmit simultaneously.
Equipment Modifications:	No
EUT Exercise Software:	No
The engineering mode was provided by manufacturer. The maximum power was configured as default setting that was provided by the manufacturer▲:	

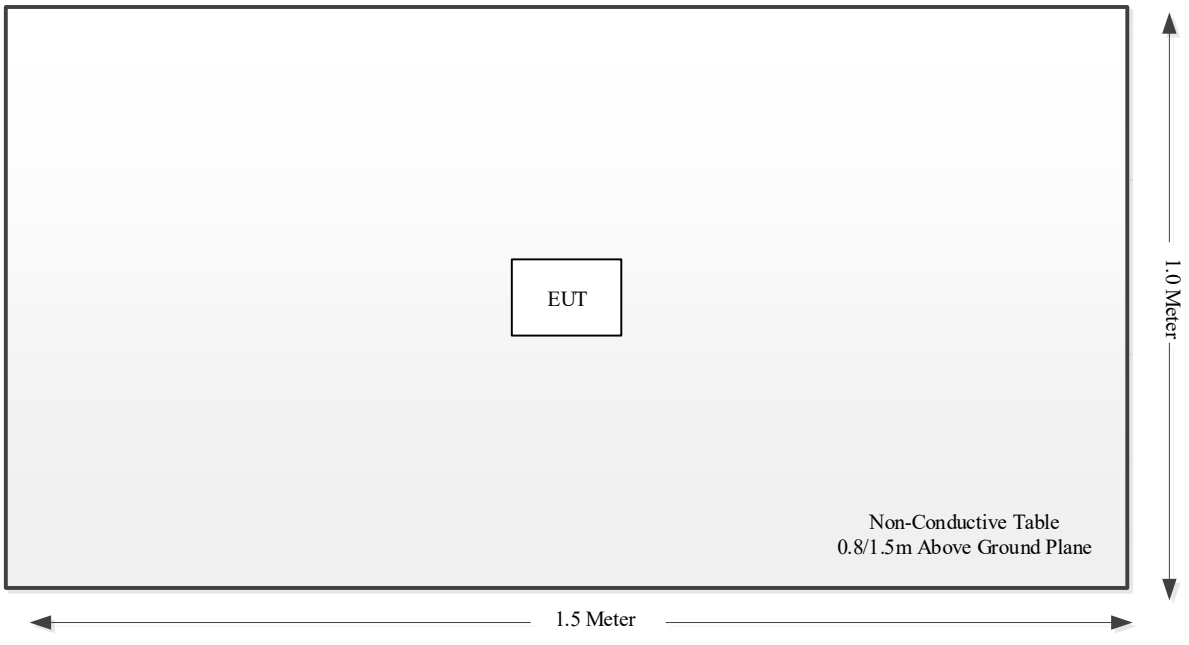
1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

1.2.4 Block Diagram of Test Setup



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 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	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
Unwanted Emissions, conducted	±1.26 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)	AC line conducted emissions	Not Applicable
FCC §15.209, §15.250(d)(4)	Radiated Emissions Below 960MHz	Compliant
FCC §15.250(d)(1)(2)	Radiated Emissions Above 960MHz	Compliant
FCC §15.250(d)(3)	Peak Power	Compliant
FCC §15.250(a)(b)	-10 dB Bandwidth Testing	Compliant
FCC §15.250(a)	Frequency Stability	Compliant
FCC §15.203	Antenna requirement	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:

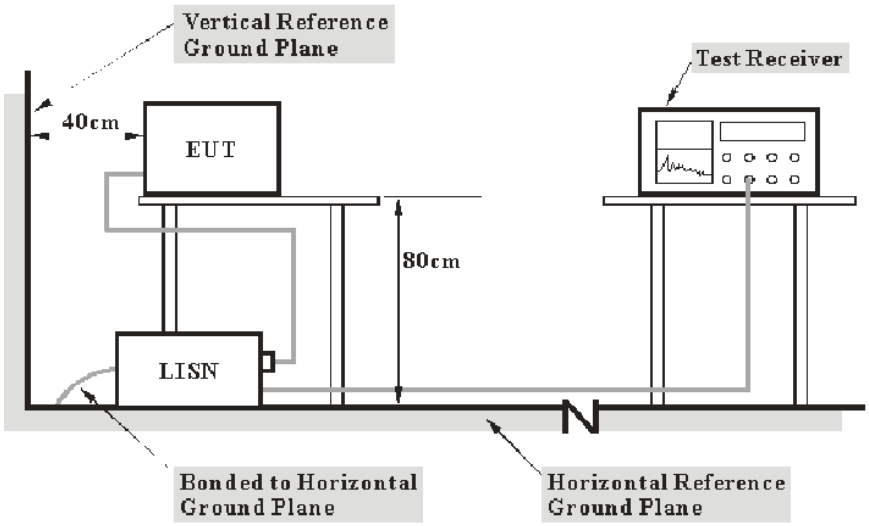
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(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.

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:

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 Below 960 MHz

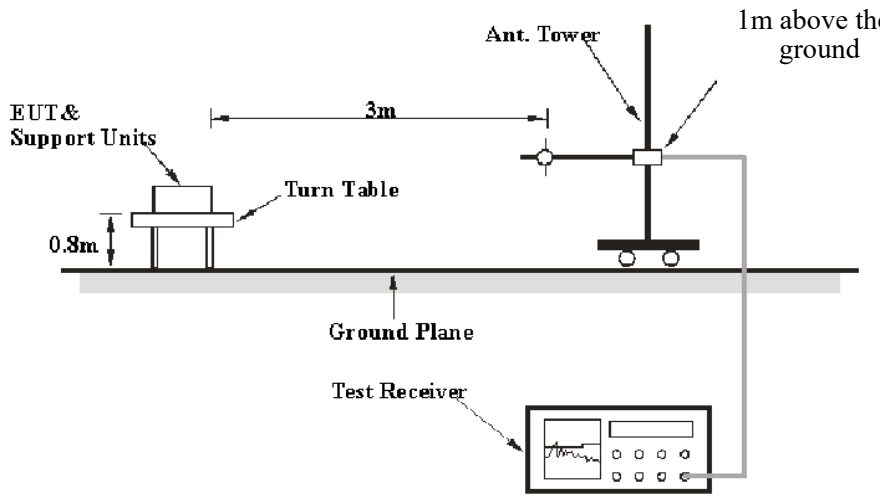
3.2.1 Applicable Standard

FCC §15.250 (d)(4); §15.209

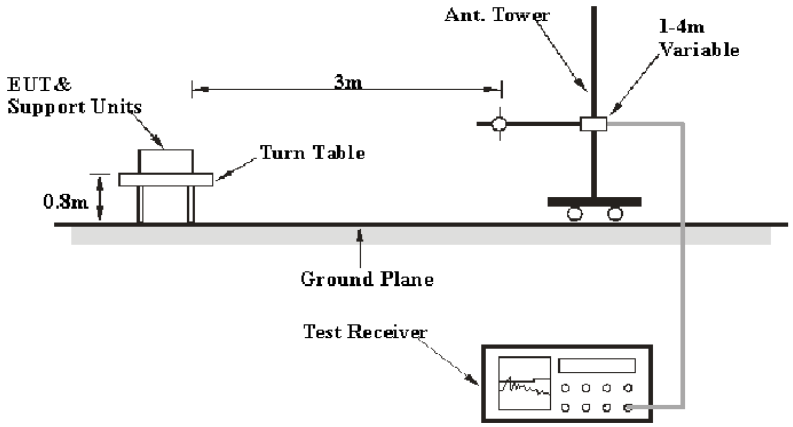
(d)(4) Radiated emissions at or below 960 MHz shall not exceed the emission levels in § 15.209.

3.2.2 EUT Setup

9kHz - 30MHz:



30MHz – 960 MHz:



The radiated emission below 960MHz tests were performed in the 3 meters chamber test site A, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.250 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

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

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

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	300 Hz	1 kHz	/	PK
	/	/	200 Hz	QP
150 kHz – 30 MHz	10 kHz	30 kHz	/	PK
	/	/	9 kHz	QP
30MHz – 960 MHz	100 kHz	300 kHz	/	PK
	/	/	120kHz	QP

If the maximized peak measured value complies with under the QP limit more than 6dB, 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.

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-960MHz.

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 Radiated Emissions Above 960 MHz

3.3.1 Applicable Standard

FCC §15.205 (d)(1)(2)

(d)(1) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following RMS average limits based on measurements using a 1 MHz resolution bandwidth:

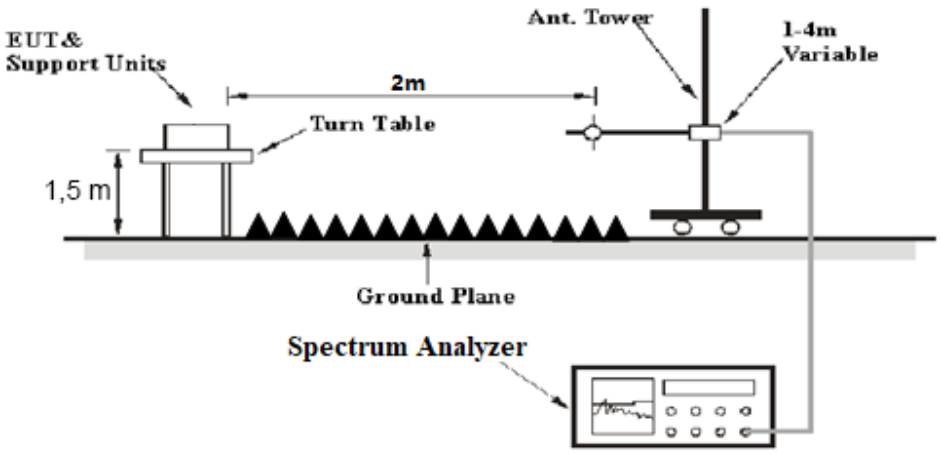
Frequency in MHz	EIRP in dBm
960-1610	−75.3
1610-1990	−63.3
1990-3100	−61.3
3100-5925	-51.3
5925-7250	-41.3
7250-10600	−51.3
Above 10600	−61.3

(2) In addition to the radiated emission limits specified in the table in paragraph (d)(1) of this section, transmitters operating under the provisions of this section shall not exceed the following RMS average limits when measured using a resolution bandwidth of no less than 1 kHz:

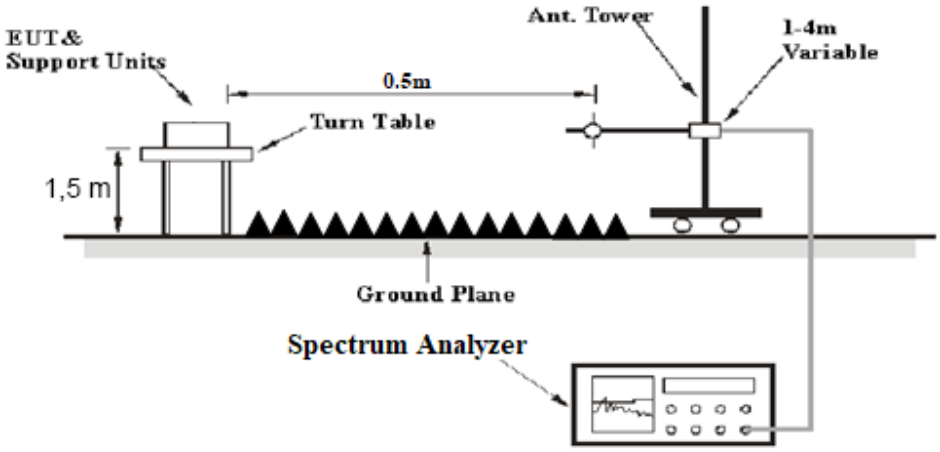
Frequency in MHz	EIRP in dBm
1164-1240	−85.3
1559-1610	−85.3

3.3.2 EUT Setup

960 MHz- 18 GHz:



18 GHz- 40 GHz:



The radiated emission tests were performed in the 3 meters chamber test B, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.250 limits.

3.3.3 Spectrum Analyzer Setup

The system was investigated from 960 MHz to 40 GHz.

During the radiated emission test, the Spectrum Analyzer Setup was set with the following configurations:

Frequency (MHz)	Resolution Bandwidth
960-1610	1MHz
1610-1990	1MHz
1990-3100	1MHz
3100-5925	1MHz
5925-7250	1MHz
7250-10600	1MHz
Above 10600	1MHz
1164-1240	1kHz
1559-1610	1kHz

3.3.4 Test Procedure

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

Data was recorded in RMS detector for frequencies.

According to ANSI C63.10-2013 Clause 10.3.9, emission shall be computed as:
EIRP[dBm]= E [dBµV/m] - 95.3, for d = 3 meters.

According to C63.10, the 960 MHz to 18 GHz test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 2m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [2m]) dB= 3.52 dB

The 18 GHz to 40 GHz test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 0.5m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [0.5m]) dB= 15.56 dB

Frequency (MHz)	EIRP Limit (dBm)	Field Strength limit in 3m (dBμV/m)
960-1610	-75.3	20
1610-1990	-63.3	32
1990-3100	-61.3	34
3100-5925	-51.3	44
5925-7250	-41.3	54
7250-10600	-51.3	44
Above 10600	-61.3	34
1164-1240	-85.3	10
1559-1610	-85.3	10

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

For 9 kHz- 960 MHz:
Factor = Antenna Factor + Cable Loss- Amplifier Gain

For 960MHz- 40 GHz
Factor = Antenna Factor + Cable Loss- Amplifier Gain -Distance extrapolation Factor

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

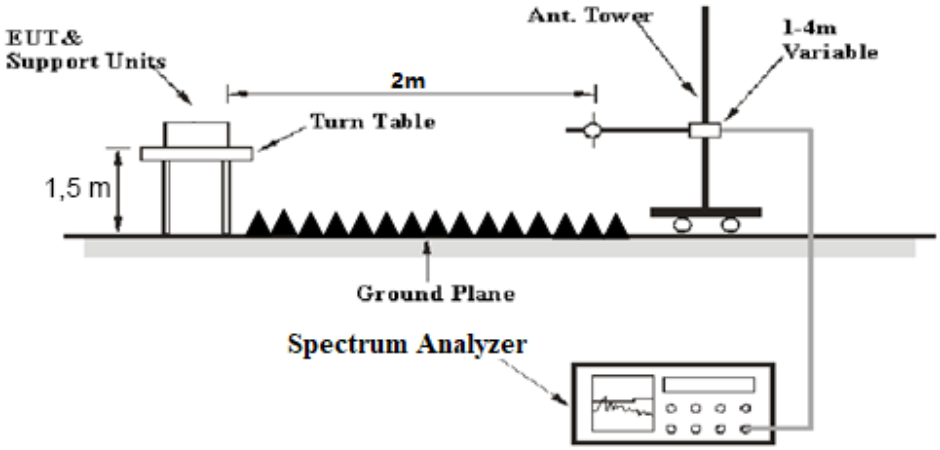
3.4 Peak Power Measurement

3.4.1 Applicable Standard

FCC §15.250(d)(3)

(3) There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs and this 50 MHz bandwidth must be contained within the 5925–7250 MHz band. The peak EIRP limit is 20 log (RBW/50) dBm where RBW is the resolution bandwidth in megahertz that is employed by the measurement instrument. RBW shall not be lower than 1 MHz or greater than 50 MHz. The video bandwidth of the measurement instrument shall not be less than RBW. If RBW is greater than 3 MHz, the application for certification filed with the Commission shall contain a detailed description of the test procedure, calibration of the test setup, and the instrumentation employed in the testing.

3.4.2 EUT Setup



3.4.3Test Procedure

The peak EIRP limit is 20 log (RBW/50) dBm where RBW is the resolution bandwidth in megahertz that is employed by the measurement instrument.

Use 1MHz RBW to measure, so Peak EIRP limit is 20 log (RBW/50) dBm= 20*log(1/50)= -34dBm

According to ANSI C63.10-2013 Clause 10.3.9, emission shall be computed as:
EIRP[dBm]= E [dBµV/m] - 95.3, for d = 3 meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 2m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [2m]) dB= 3.52 dB

Result = Reading + Factor
Factor = Antenna Factor + Cable Loss- Amplifier Gain - Distance extrapolation factor

3.5 -10 dB Bandwidth Testing

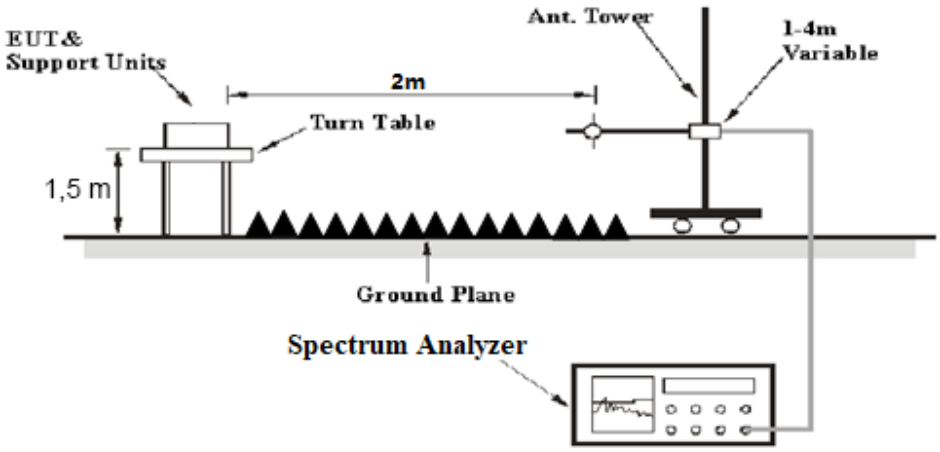
3.5.1 Applicable Standard

FCC §15.250(a)(b)

(a) The −10 dB bandwidth of a device operating under the provisions of this section must be contained within the 5925–7250 MHz band under all conditions of operation including the effects from stepped frequency, frequency hopping or other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

(b) The −10 dB bandwidth of the fundamental emission shall be at least 50 MHz. For transmitters that employ frequency hopping, stepped frequency or similar modulation types, measurement of the −10 dB minimum bandwidth specified in this paragraph shall be made with the frequency hop or step function disabled and with the transmitter operating continuously at a fundamental frequency following the provisions of § 15.31(m).

3.5.2 EUT Setup



3.5.3Test Procedure

According to C63.10-2013 clause 6.9.2

The −10 dB bandwidth is based on measurement using a peak detector, a 1 MHz resolution bandwidth, and a video bandwidth greater than or equal to the resolution bandwidth.

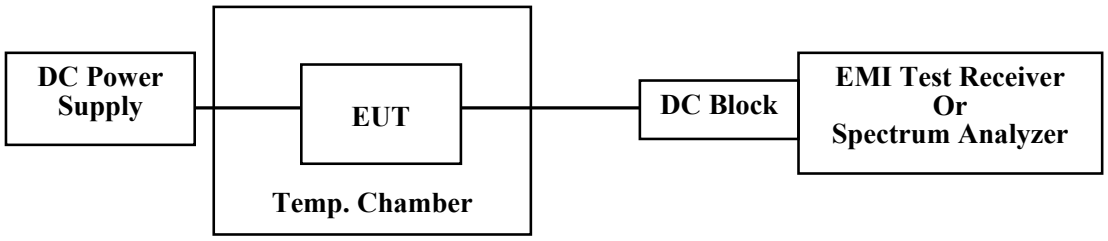
3.6 Frequency Stability

3.6.1 Applicable Standard

FCC Part 15.250(a):

(a) The −10 dB bandwidth of a device operating under the provisions of this section must be contained within the 5925–7250 MHz band under all conditions of operation including the effects from stepped frequency, frequency hopping or other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

3.6.2 EUT Setup



3.6.3 Test Procedure

According to ANSI C63.10-2013 Section 6.8

Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10 °C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 °C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

c) Measure the frequency at each of the frequencies specified in 5.6.

d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in 5.13.

3.7 Antenna Requirement

3.7.1 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.

3.7.2 Judgment

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

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Not Applicable, the device was powered by battery when operating.

4.2 Radiated Emissions Below 960MHz

Serial Number:	2DX0-2	Test Date:	2023/12/29
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.3	Relative Humidity: (%)	43	ATM Pressure: (kPa)	101.5

Test Equipment List and Details:

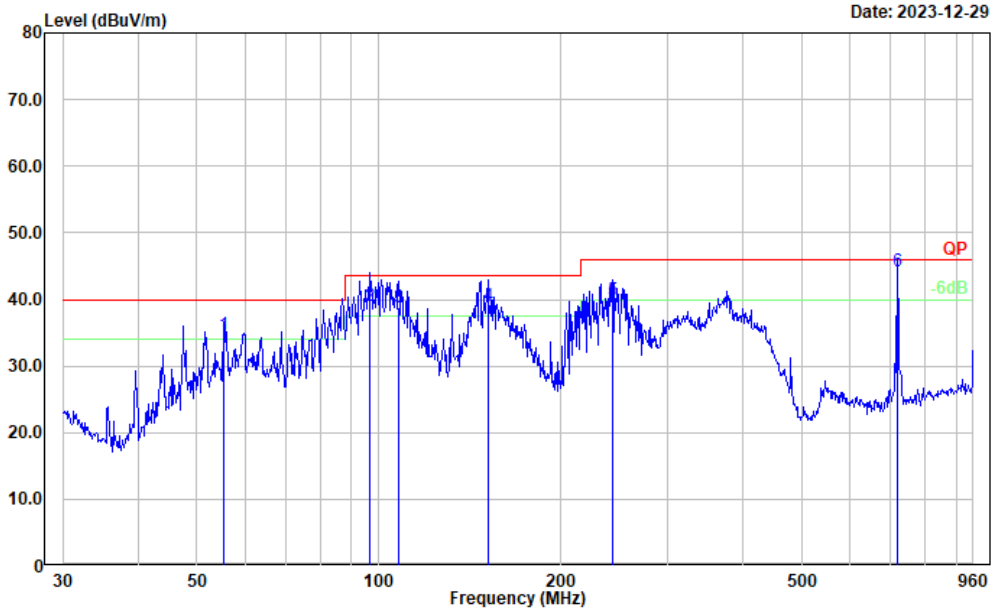
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
BACL	Loop Antenna	1313-1P	3092721	2023/10/20	2026/10/19
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	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:

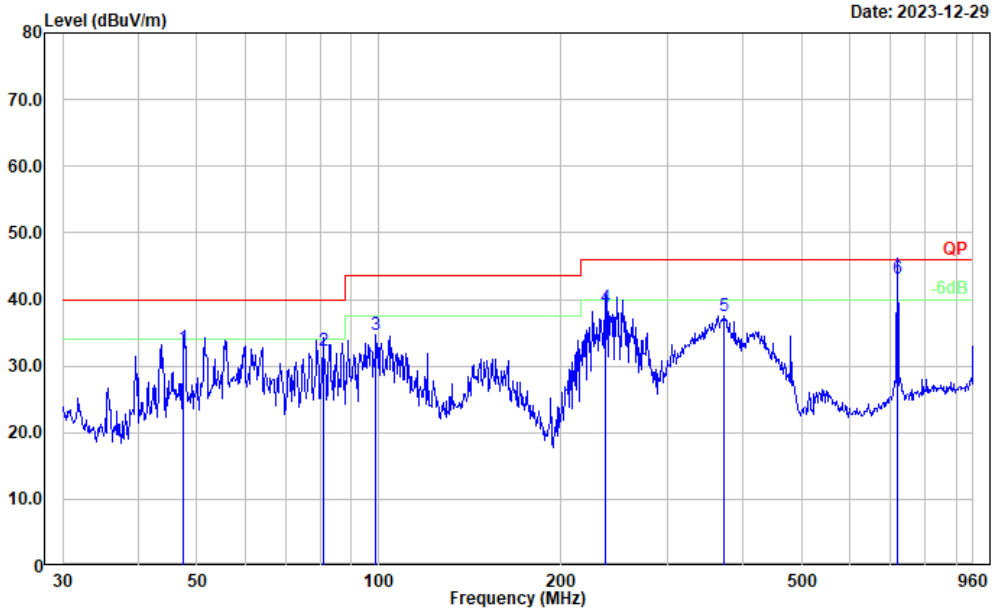
For 9kHz-30MHz, The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

Project No.: CR231168373-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	55.403	52.15	-17.53	34.62	40.00	5.38	QP
2	96.797	54.52	-15.44	39.08	43.50	4.42	QP
3	107.776	51.86	-13.09	38.77	43.50	4.73	QP
4	151.365	51.27	-12.27	39.00	43.50	4.50	QP
5	243.350	53.30	-13.47	39.83	46.00	6.17	QP
6	720.019	47.92	-3.63	44.29	46.00	1.71	QP

Project No.: CR231168373-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	47.567	48.79	-16.04	32.75	40.00	7.25	QP
2	80.834	50.02	-17.75	32.27	40.00	7.73	QP
3	98.831	49.52	-14.89	34.63	43.50	8.87	Peak
4	236.696	52.23	-13.44	38.79	46.00	7.21	QP
5	371.416	47.32	-9.81	37.51	46.00	8.49	Peak
6	720.019	46.82	-3.63	43.19	46.00	2.81	QP

4.3 Radiated Emissions Above 960MHz:

Serial Number:	2DX0-2	Test Date:	2024/3/5
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.1	Relative Humidity: (%)	60	ATM Pressure: (kPa)	101

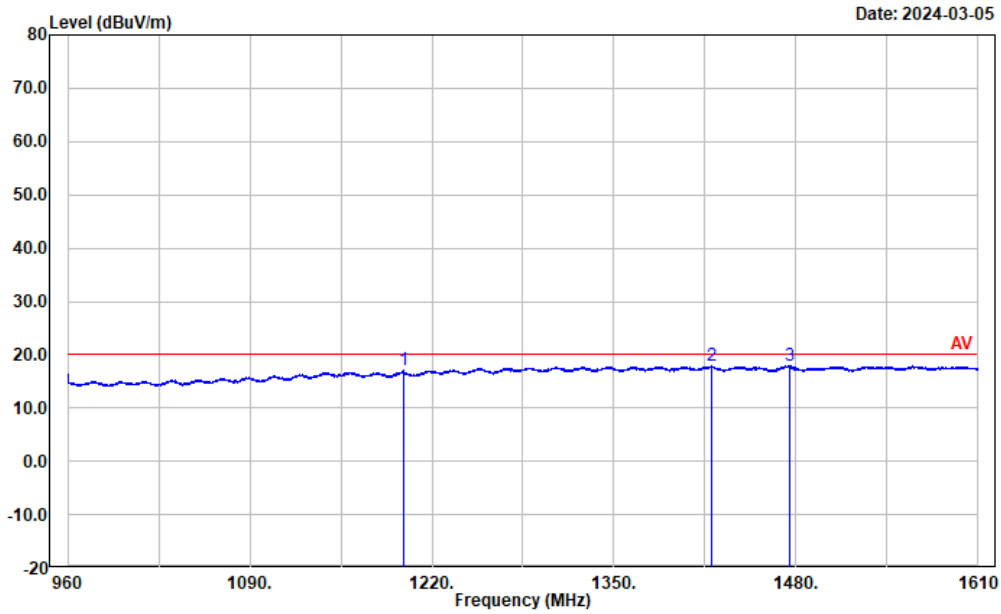
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2024/1/15	2025/1/14
A.H	Preamplifier	PAM-0118P	628	2024/1/15	2025/1/14
Audix	Test Software	E3	191218 (V9)	N/A	N/A
PASTERNACK	Horn Antenna	PE9852/2F-20	112002	2024/2/4	2027/2/3
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2024/1/15	2025/1/14
PASTERNACK	Horn Antenna	PE9850/2F-20	072001	2024/2/4	2027/2/3

**** 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).*

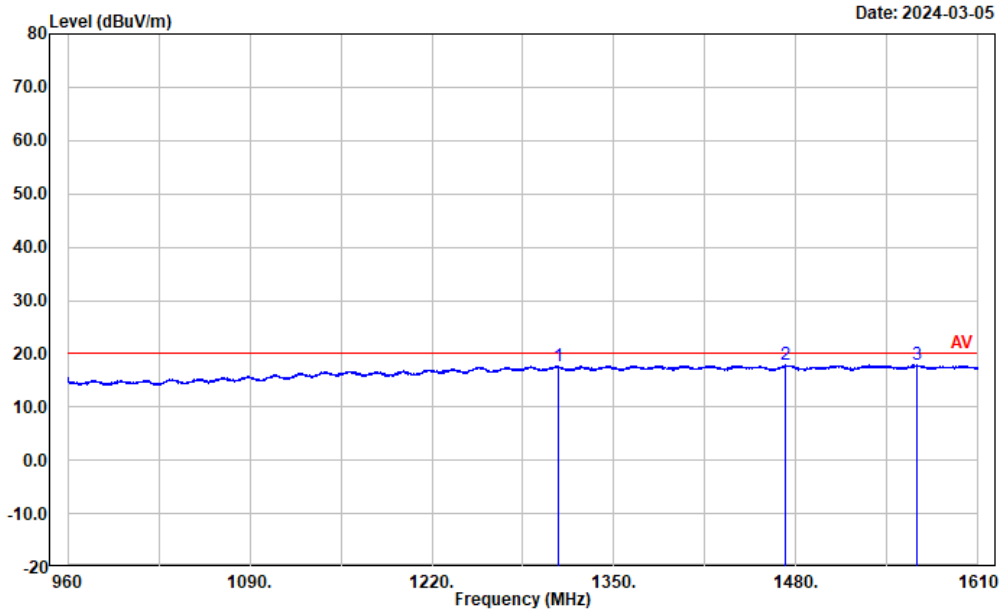
960-1610MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1199.980	37.36	-20.16	17.20	20.00	2.80	Average
2	1420.070	36.83	-19.02	17.81	20.00	2.19	Average
3	1475.580	36.89	-19.02	17.87	20.00	2.13	Average

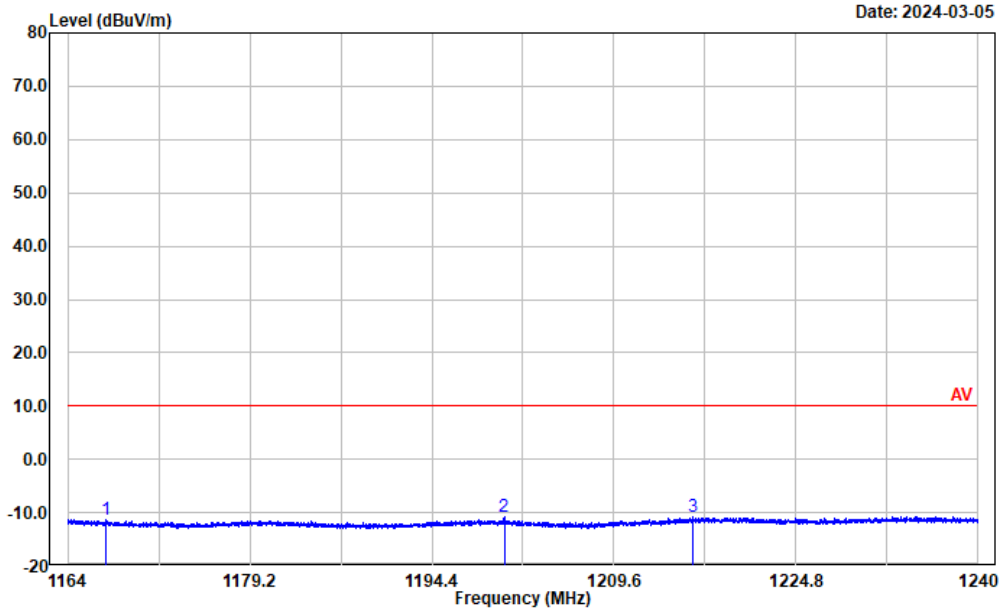
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1309.830	36.91	-19.19	17.72	20.00	2.28	Average
2	1472.590	36.84	-19.03	17.81	20.00	2.19	Average
3	1566.450	36.81	-18.90	17.91	20.00	2.09	Average

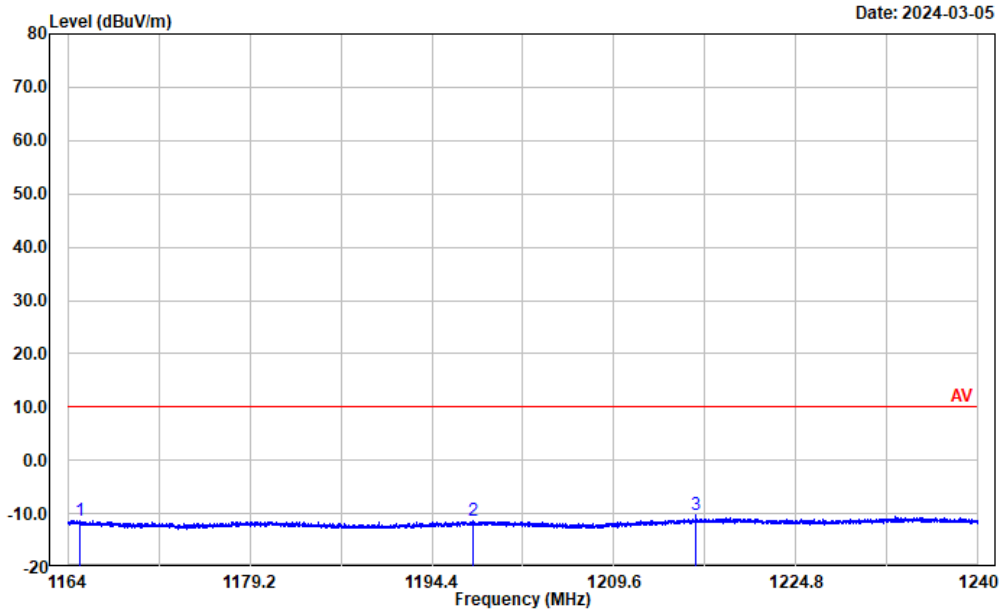
1164-1240MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1167.177	8.68	-20.12	-11.44	10.00	21.44	Average
2	1200.434	9.30	-20.16	-10.86	10.00	20.86	Average
3	1216.166	9.09	-19.92	-10.83	10.00	20.83	Average

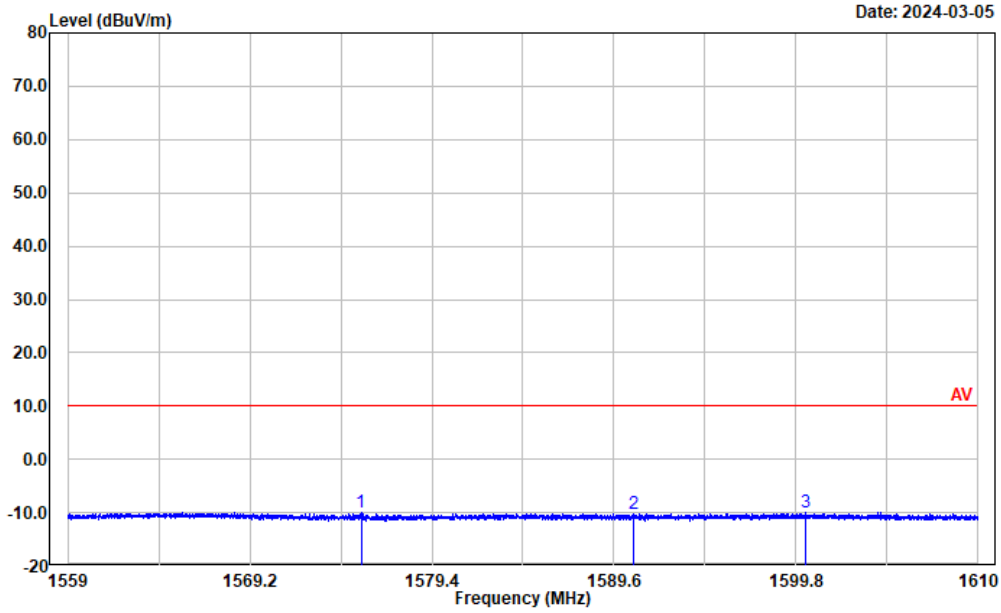
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1165.034	8.82	-20.13	-11.31	10.00	21.31	Average
2	1197.896	8.74	-20.16	-11.42	10.00	21.42	Average
3	1216.470	9.66	-19.91	-10.25	10.00	20.25	Average

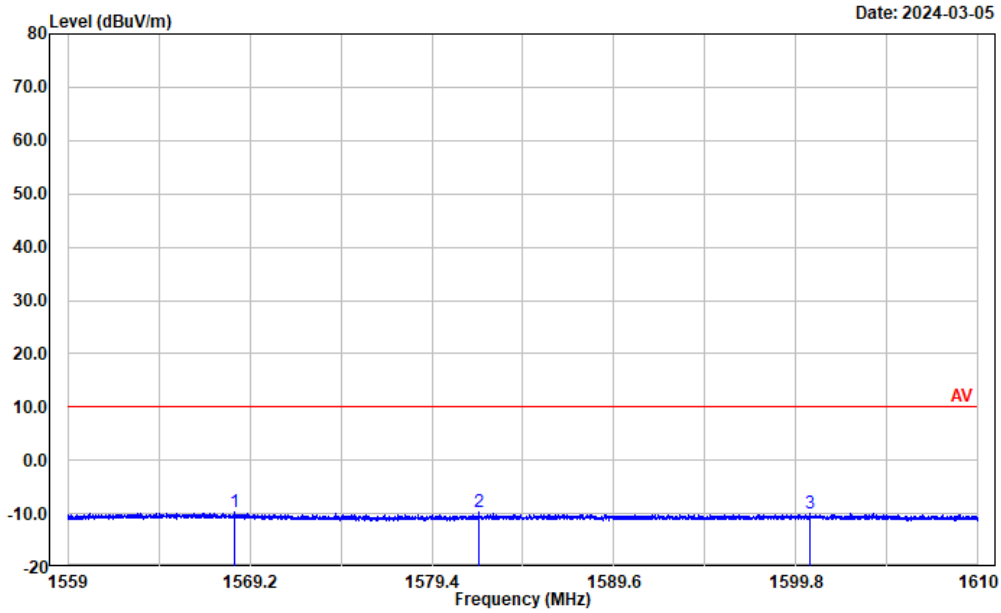
1559-1610MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1575.432	9.00	-18.91	-9.91	10.00	19.91	Average
2	1590.732	8.72	-18.92	-10.20	10.00	20.20	Average
3	1600.300	9.02	-18.94	-9.92	10.00	19.92	Average

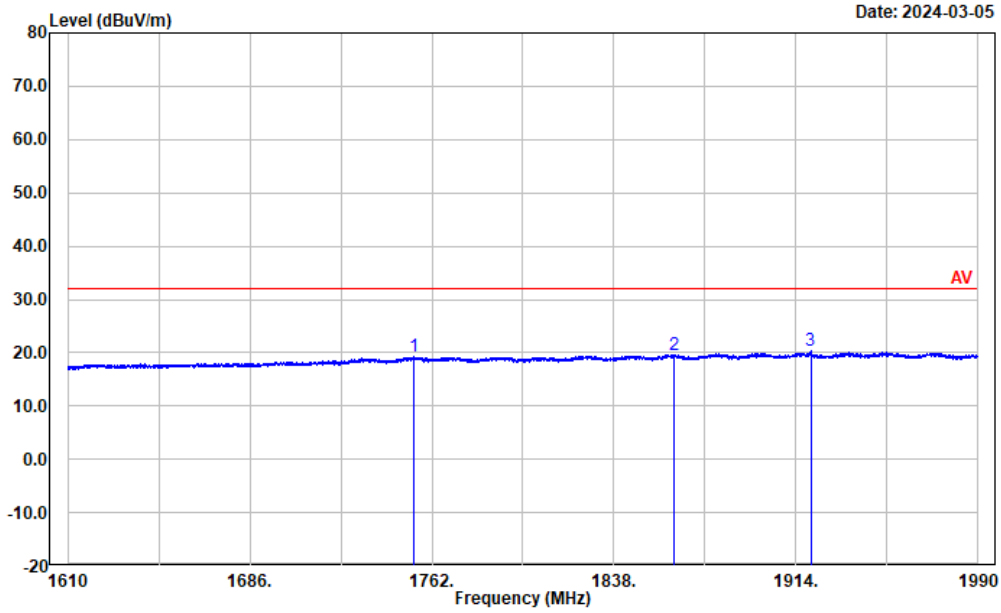
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1568.323	9.07	-18.90	-9.83	10.00	19.83	Average
2	1582.062	9.16	-18.92	-9.76	10.00	19.76	Average
3	1600.545	8.89	-18.94	-10.05	10.00	20.05	Average

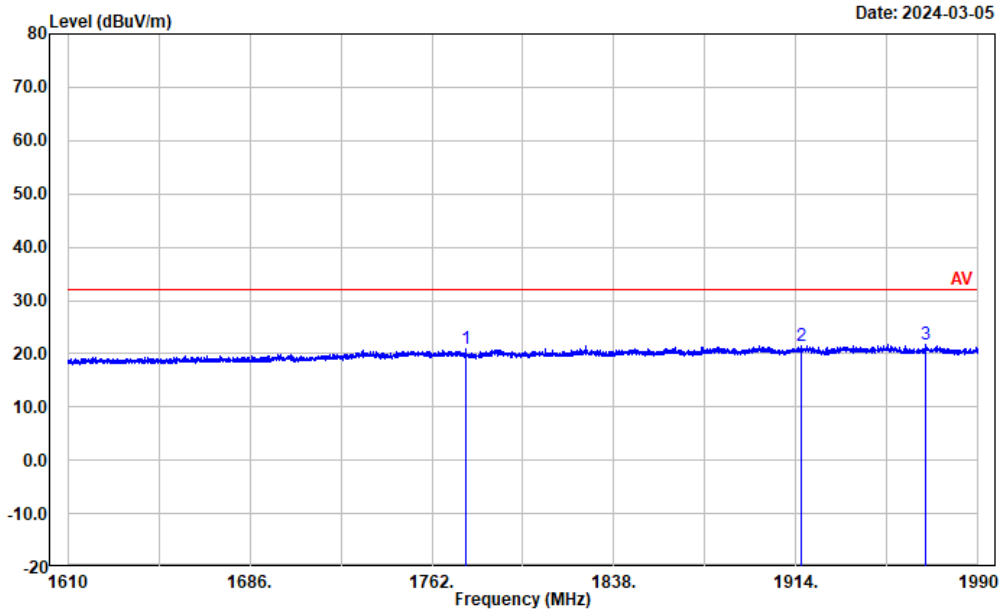
1610-1990MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1754.476	36.70	-17.51	19.19	32.00	12.81	Average
2	1862.776	36.59	-17.05	19.54	32.00	12.46	Average
3	1920.080	37.15	-16.72	20.43	32.00	11.57	Average

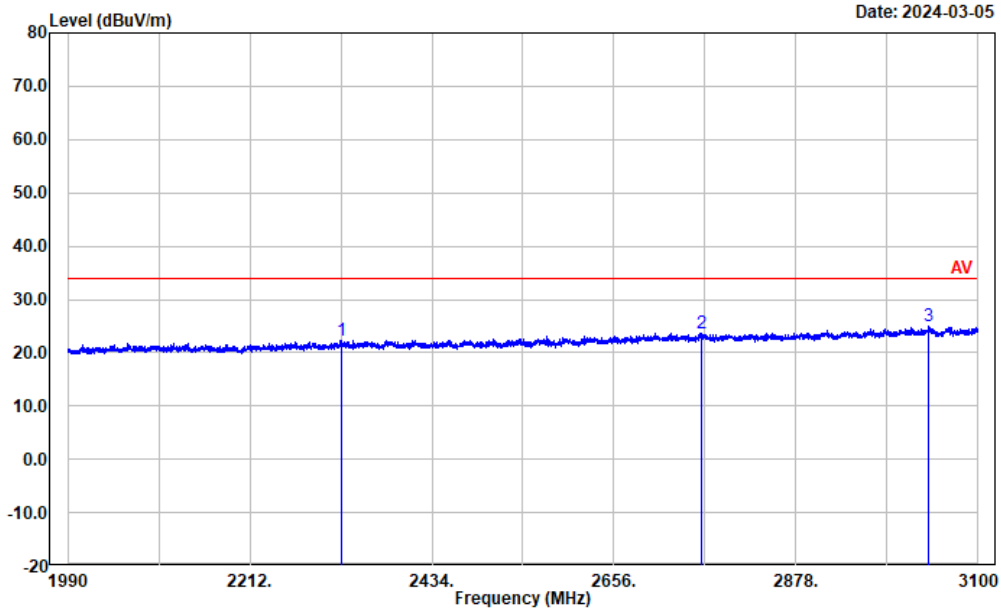
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1776.136	38.41	-17.51	20.90	32.00	11.10	Average
2	1916.280	38.31	-16.72	21.59	32.00	10.41	Average
3	1967.960	38.47	-16.76	21.71	32.00	10.29	Average

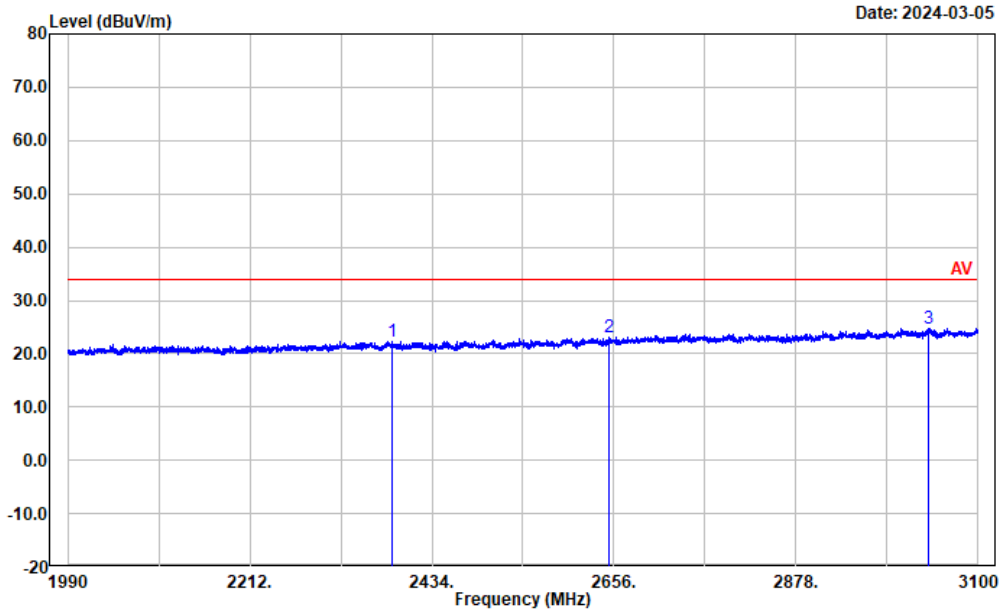
1990-3100MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2323.444	38.03	-15.66	22.37	34.00	11.63	Average
2	2761.894	38.27	-14.53	23.74	34.00	10.26	Average
3	3039.616	37.89	-12.99	24.90	34.00	9.10	Average

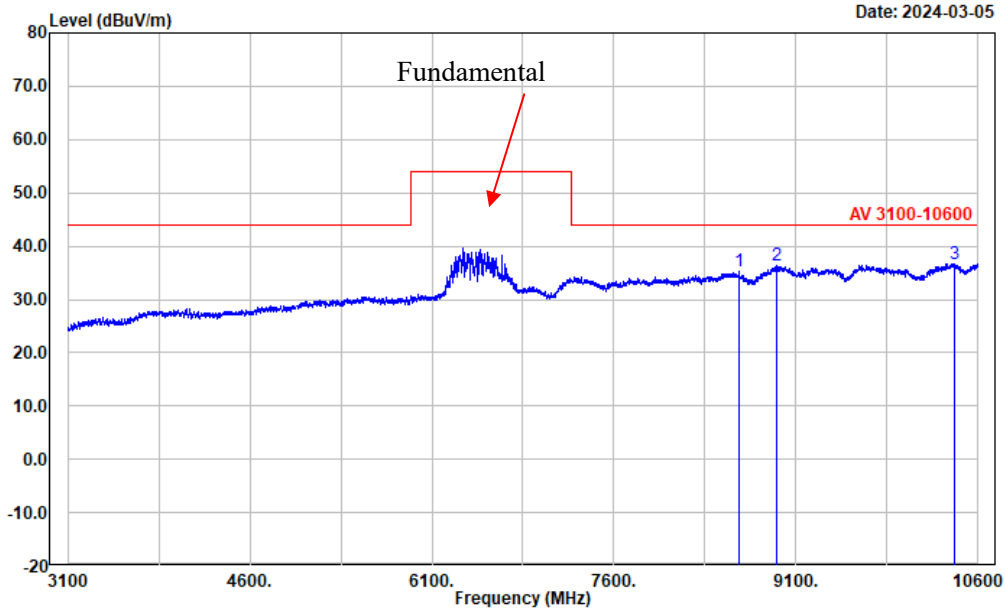
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2386.048	37.84	-15.51	22.33	34.00	11.67	Average
2	2650.228	37.86	-14.88	22.98	34.00	11.02	Average
3	3039.838	37.80	-12.99	24.81	34.00	9.19	Average

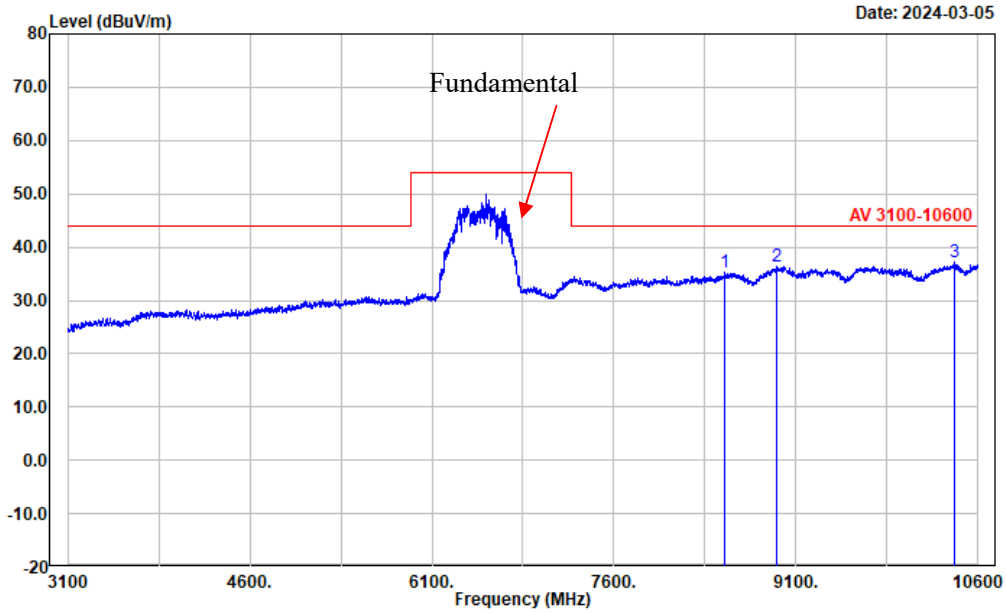
3100-10600MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	8626.000	36.15	-0.89	35.26	44.00	8.74	Average
2	8942.500	36.01	0.38	36.39	44.00	7.61	Average
3	10402.000	35.67	1.00	36.67	44.00	7.33	Average

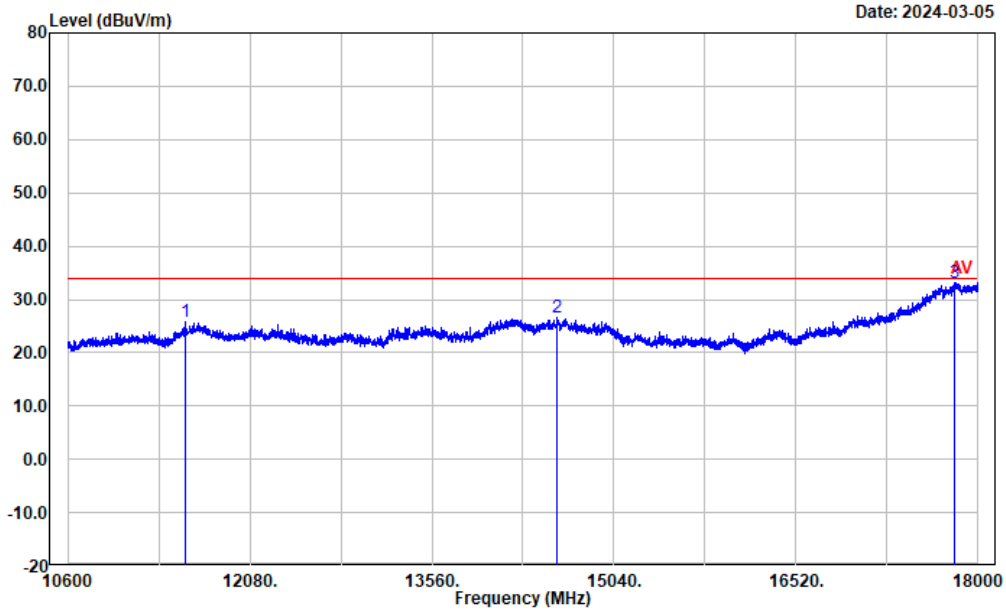
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	8513.500	36.59	-1.21	35.38	44.00	8.62	Average
2	8945.500	35.86	0.42	36.28	44.00	7.72	Average
3	10403.500	36.06	1.00	37.06	44.00	6.94	Average

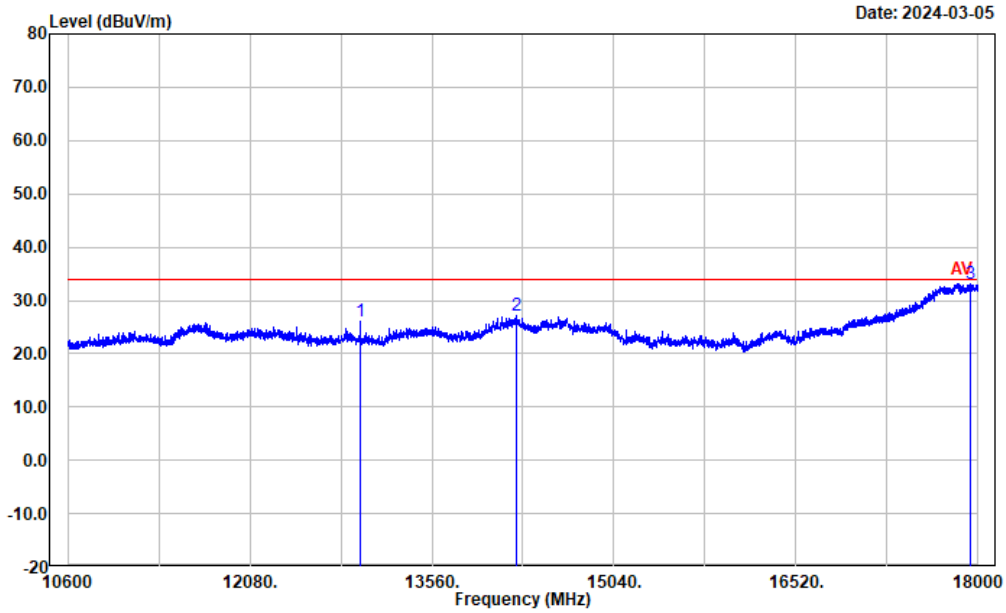
10600-18000MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	11551.640	28.02	-2.16	25.86	34.00	8.14	Average
2	14581.200	28.13	-1.39	26.74	34.00	7.26	Average
3	17803.160	26.50	6.66	33.16	34.00	0.84	Average

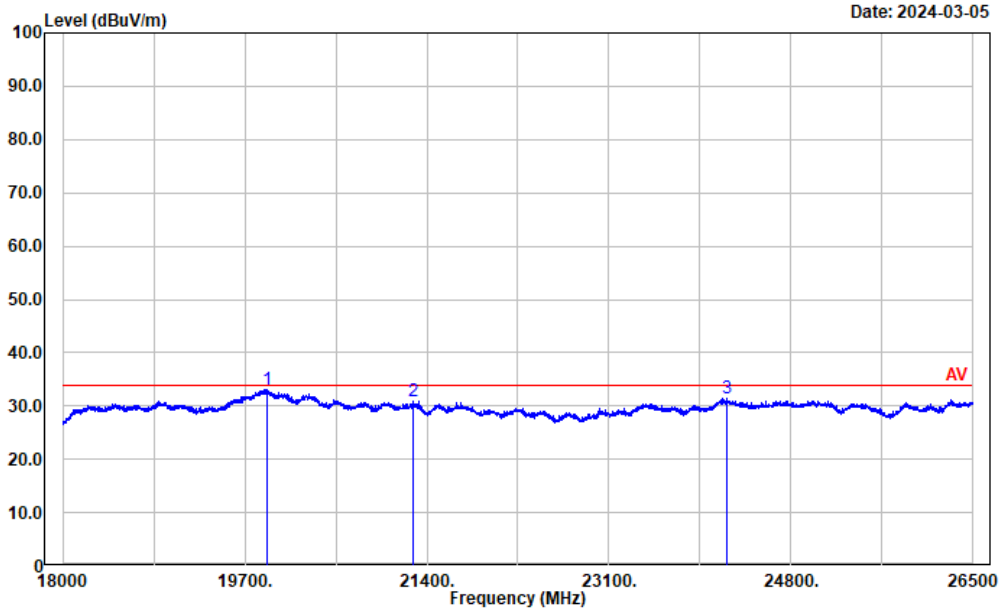
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	12978.360	29.22	-3.12	26.10	34.00	7.90	Average
2	14242.280	28.28	-1.04	27.24	34.00	6.76	Average
3	17940.800	26.71	6.52	33.23	34.00	0.77	Average

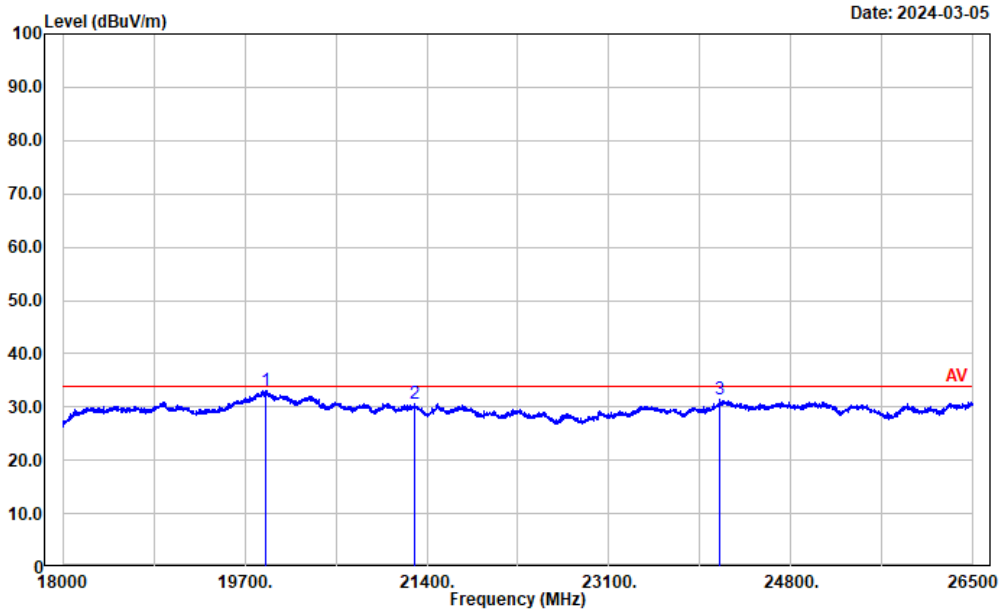
18000-26500MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	19910.800	40.72	-7.65	33.07	34.00	0.93	Average
2	21267.400	41.64	-10.78	30.86	34.00	3.14	Average
3	24201.600	41.76	-10.24	31.52	34.00	2.48	Average

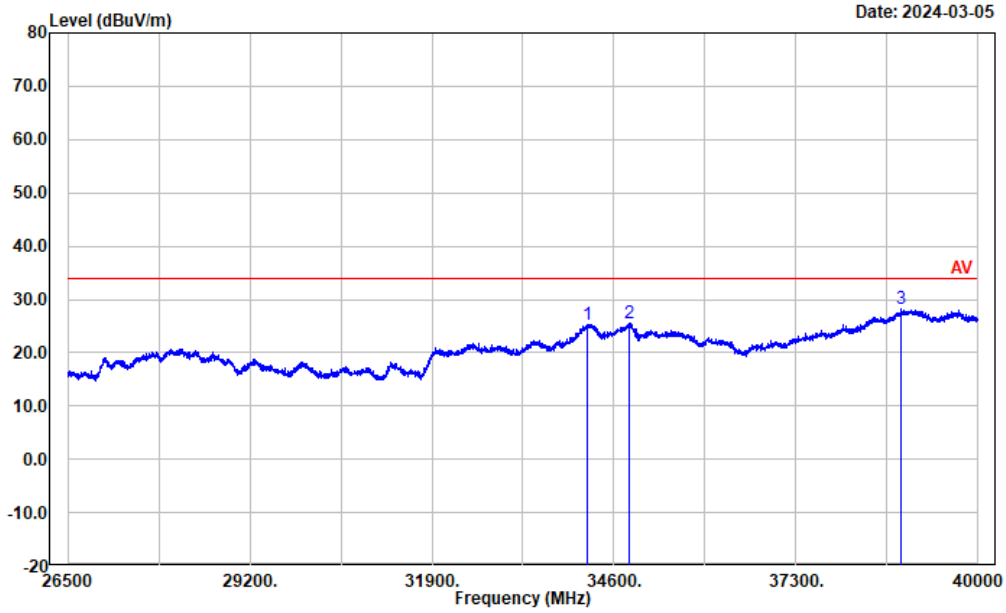
Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	19897.200	40.62	-7.58	33.04	34.00	0.96	Average
2	21289.500	41.34	-10.74	30.60	34.00	3.40	Average
3	24137.000	41.95	-10.48	31.47	34.00	2.53	Average

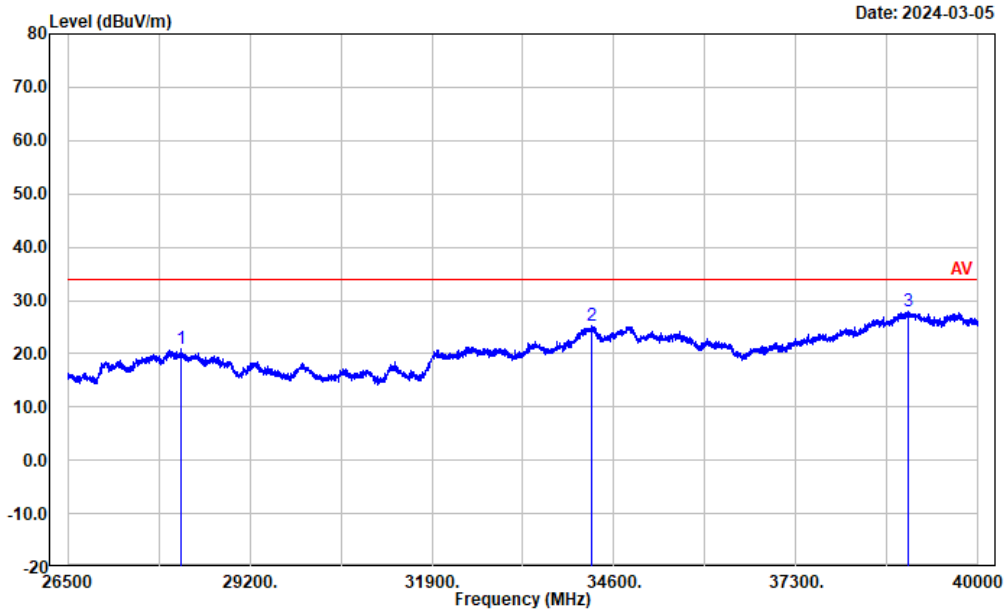
26500-40000MHz

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	34208.500	15.60	9.77	25.37	34.00	8.63	Average
2	34824.100	15.48	10.03	25.51	34.00	8.49	Average
3	38857.900	16.93	11.21	28.14	34.00	5.86	Average

Project No.: CR231168373-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	28184.800	28.17	-7.26	20.91	34.00	13.09	Average
2	34276.000	27.54	-2.20	25.34	34.00	8.66	Average
3	38965.900	28.94	-0.89	28.05	34.00	5.95	Average

4.4 Peak Power Measurement:

Serial Number:	2DX0-2	Test Date:	2024/3/6
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	23.8	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.4

Test Equipment List and Details:

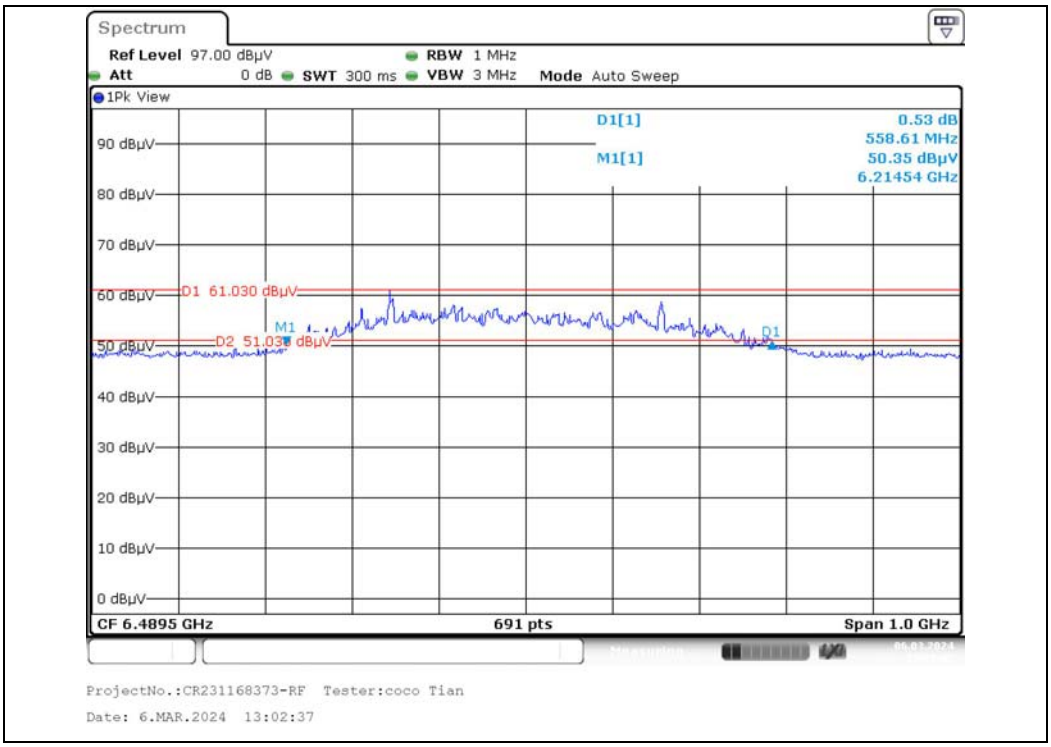
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2024/1/15	2025/1/14
A.H	Preamplifier	PAM-0118P	628	2024/1/15	2025/1/14
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:

Frequency (MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)	EIRP (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
6489.6	61.03	Peak	V	-5.77	-40.04	-34	6.04

Note:
EIRP[dBm/MHz]= Result [dBμV/m] - 95.3
Result=Reading + Factor
Factor = Antenna Factor + Cable Loss- Amplifier Gain - Distance extrapolation factor


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB SWT 300 ms VBW 3 MHz Mode Auto Sweep
1Pk View
D1[1] 0.53 dB
558.61 MHz
M1[1] 50.35 dBµV
6.21454 GHz
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
D1 61.030 dBµV
M1
D2 51.03 dBµV
D1
CF 6.4895 GHz
691 pts
Span 1.0 GHz
ProjectNo.:CR231168373-RF Tester:coco Tian
Date: 6.MAR.2024 13:02:37

4.5 -10 dB Bandwidth Testing:

Serial Number:	2DX0-2	Test Date:	2024/3/6
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	23.8	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.4

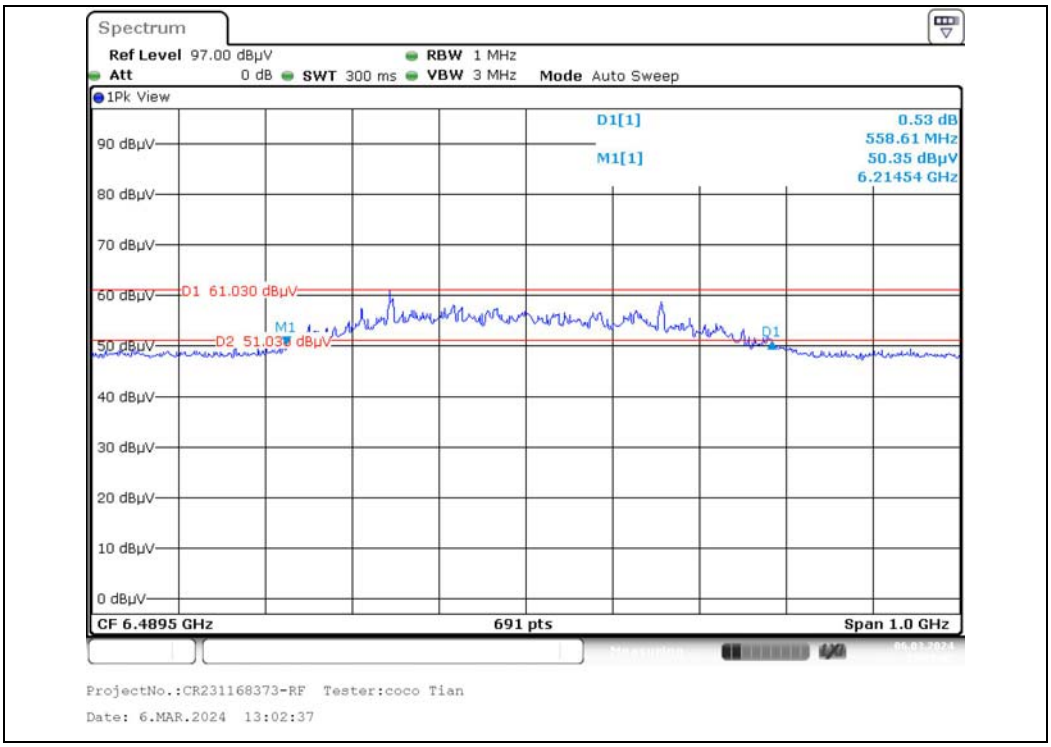
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2024/1/15	2025/1/14
A.H	Preamplifier	PAM-0118P	628	2024/1/15	2025/1/14
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:

f_M (MHz)	f_L (MHz)	f_H (MHz)	Limit	-10dB Bandwidth (MHz)	Bandwidth Limit (MHz)
6489.6	6214.54	6773.15	Within 5925 MHz to 7250 MHz	558.61	⩾50


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB SWT 300 ms VBW 3 MHz Mode Auto Sweep
1Pk View
D1[1] 0.53 dB
558.61 MHz
M1[1] 50.35 dBµV
6.21454 GHz
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
D1 61.030 dBµV
M1
D2 51.03 dBµV
D1
CF 6.4895 GHz
691 pts
Span 1.0 GHz
ProjectNo.:CR231168373-RF Tester:coco Tian
Date: 6.MAR.2024 13:02:37

4.6 Frequency Stability

Serial Number:	2DX0-2	Test Date:	2024/3/6
Test Site:	RF	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.2	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100004	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108043	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
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:

Temperature	Voltage	Frequency (MHz)			
℃	V_{DC}	f_L	f_H	f_L Limit	f_H Limit
-30	26.9	6214.51	6773.15	5925	7250
-20	26.9	6214.51	6773.14	5925	7250
-10	26.9	6214.52	6773.13	5925	7250
0	26.9	6214.53	6773.14	5925	7250
10	26.9	6214.52	6773.16	5925	7250
20	26.9	6214.54	6773.15	5925	7250
25	26.9	6214.52	6773.14	5925	7250
30	26.9	6214.54	6773.16	5925	7250
40	26.9	6214.52	6773.17	5925	7250
50	26.9	6214.5	6773.15	5925	7250
20	22.87	6214.55	6773.16	5925	7250
20	30.94	6214.56	6773.12	5925	7250

5. EUT PHOTOGRAPHS

Please refer to the attachment CR231168373-EXP EUT EXTERNAL PHOTOGRAPHS and CR231168373-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231168373-RF-00E-TSP TEST SETUP PHOTOGRAPHS.

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