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-YUSHU005**

Product Name: **Tracking Remote Control**

Standard(s): **FCC PART 15, Subpart F**
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: **CR231168380-00AM1**

Date Of Issue: **2024/4/22**

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.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231168380-00A	Original Report	2024/3/25
2.0	CR231168380-00AM1	Update Section 4.6	2024/4/22

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Tracking Remote Control
EUT Model:	DW03
Operation Frequency:	6489.6 MHz
Modulation Type:	BPSK
Rated Input Voltage:	DC 5V charging from Type-C or DC 3.7V from battery
Serial Number:	2DXP-1
EUT Received Date:	2023/11/24
EUT Received Status:	Good

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
Monopole	50	6000-7000MHz	2.57 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:

No.

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
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

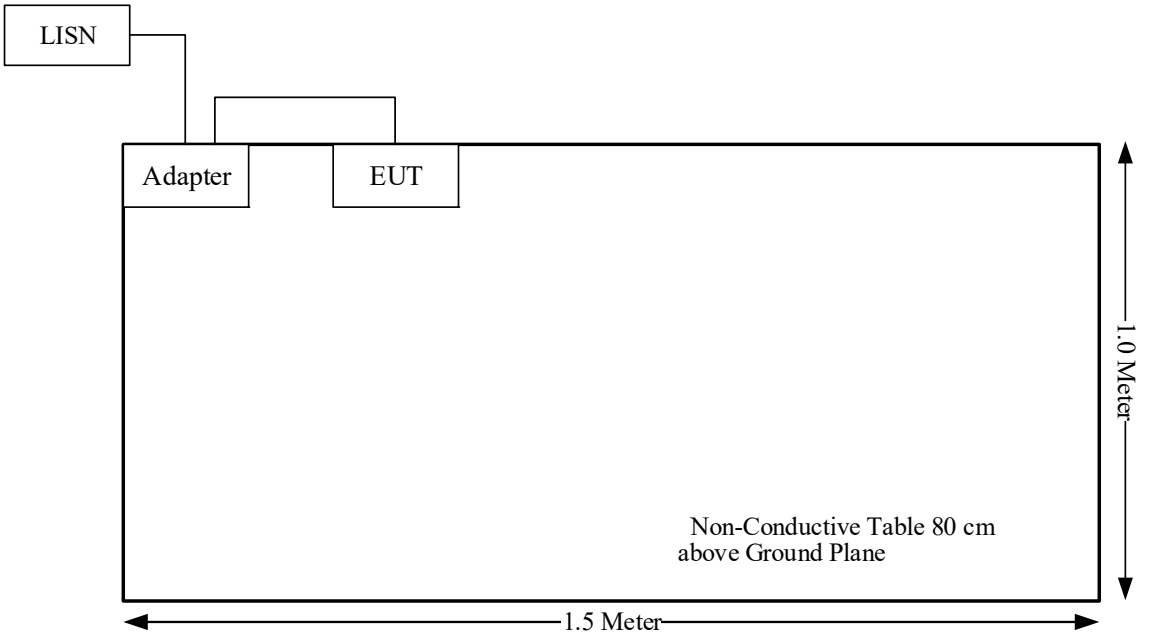
Manufacturer	Description	Model	Serial Number
GPO	Adapter	GTA92-0501000US	AD220930004

1.2.3 Support Cable List and Details

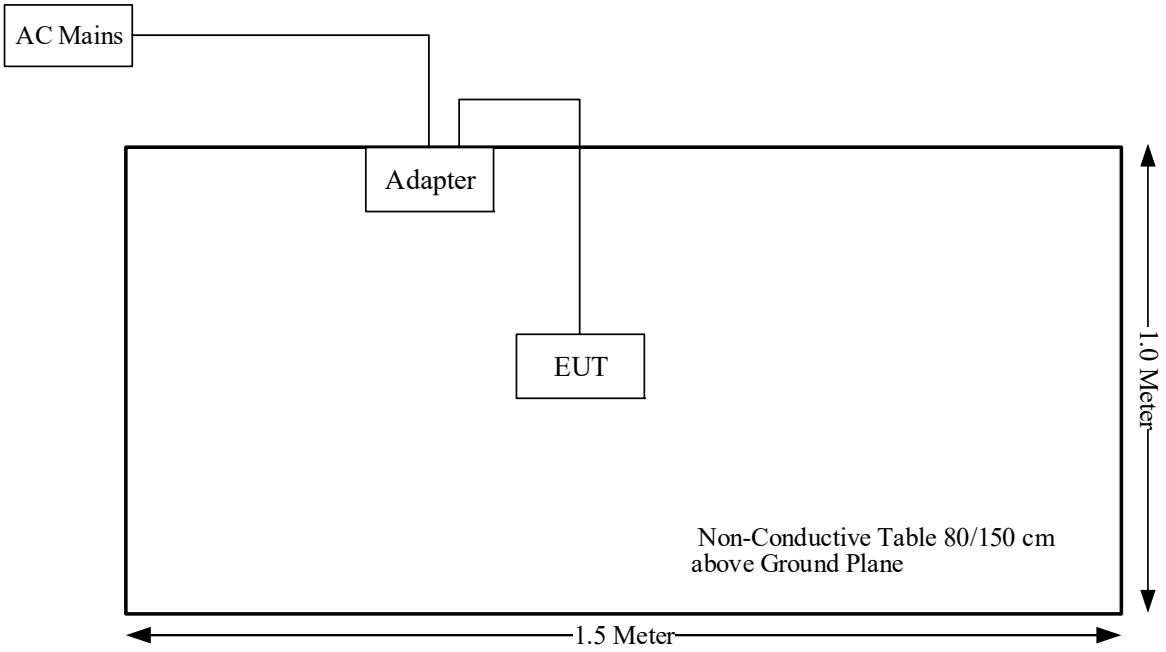
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power Cable	No	No	1.2	Adapter	EUT

1.2.4 Block Diagram of Test Setup

AC line conducted emissions:



Radiated 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 %
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	Compliant
FCC §15.209, §15.519(c)	Radiated Emissions Below 960MHz	Compliant
FCC §15.519(c)(d)	Radiated Emissions Above 960MHz	Compliant
FCC §15.519(e)	Peak Power	Compliant
FCC §15.503(a)(b)(c)(d), §15.519(b)	-10 dB Bandwidth Testing	Compliant
FCC §15.519 (a)(1)	Transmission Time	Compliant
FCC §15.203	Antenna requirement	Compliant
FCC §1.1307	RF Exposure 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:

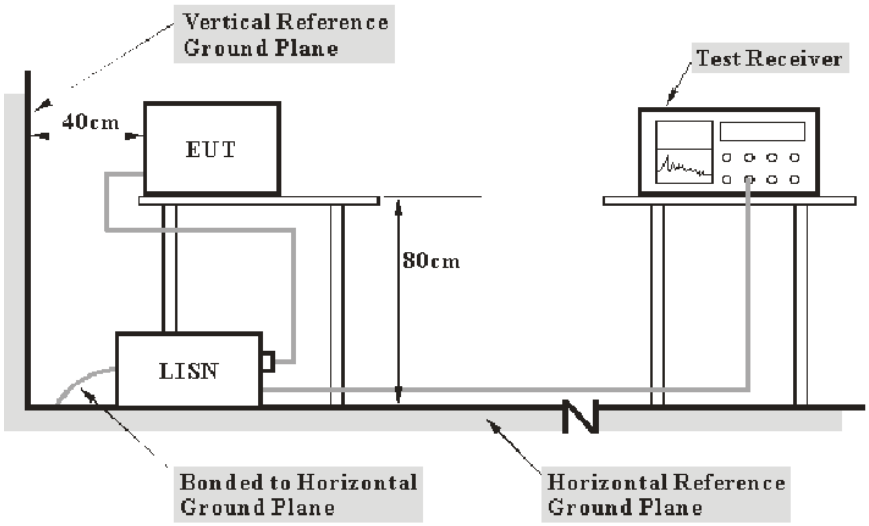
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(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.

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:

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

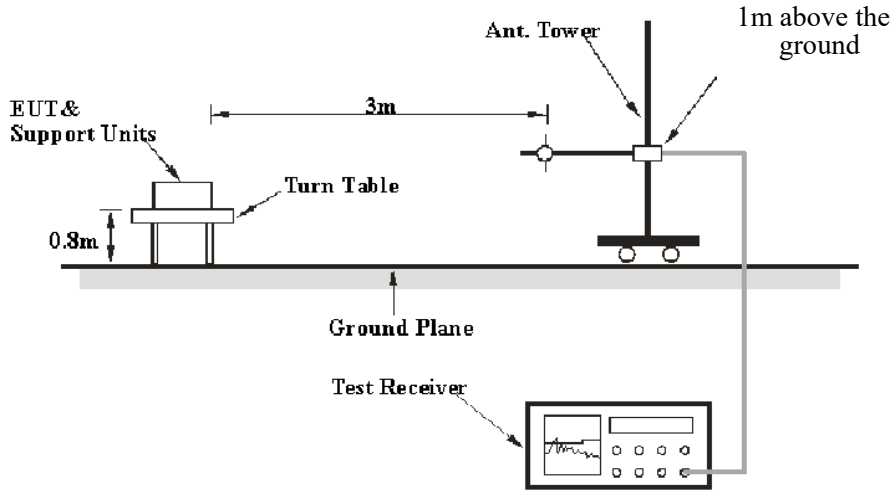
3.2.1 Applicable Standard

FCC §15.519 (c); §15.209

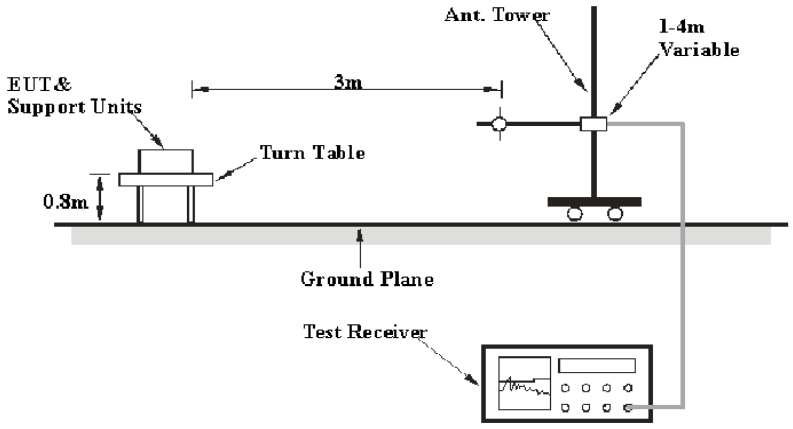
(c) The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209.

3.2.2 EUT Setup

9kHz - 30MHz:



30MHz - 1GHz:



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 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/AV
150 kHz – 30 MHz	10 kHz	30 kHz	/	PK
	/	/	9 kHz	QP/AV
30MHz – 960 MHz	120 kHz	300 kHz	/	PK
	/	/	120kHz	QP

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average 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 except 9–90 kHz, 110–490 kHz, employing an average detector

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 §15.519 (c)(d)

(c) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

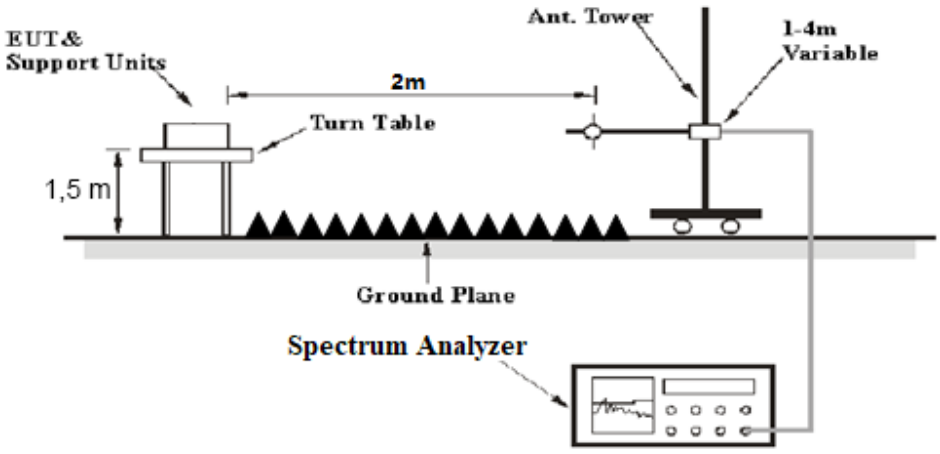
Frequency in MHz	EIRP in dBm
960-1610	−75.3
1610-1990	−63.3
1990-3100	−61.3
3100-10600	−41.3
Above 10600	−61.3

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

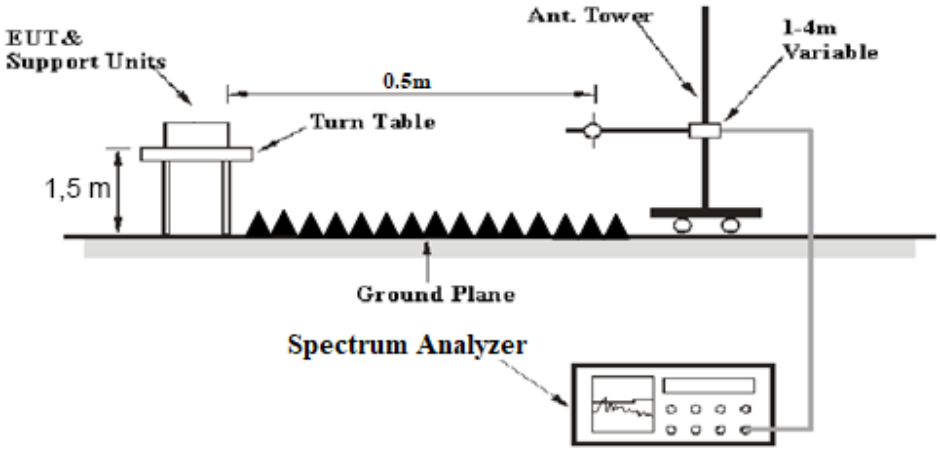
Frequency in MHz	EIRP in dBm
1164-1240	−85.3
1559-1610	−85.3

3.3.2 EUT Setup

960 MHz- 18 GHz:



18 GHz- 40 GHz:



The antenna is scanned around the entire perimeter surface of the EUT, in both horizontal and vertical polarizations, at the distance of 2 m from 1 GHz to 18 GHz, and 0.5 m from 18 GHz to 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 15.519 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
3100-10600	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
3100-10600	-41.3	54
Above 10600	-61.3	34
1164-1240	-85.3	10
1559-1610	-85.3	10

3.3.5 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

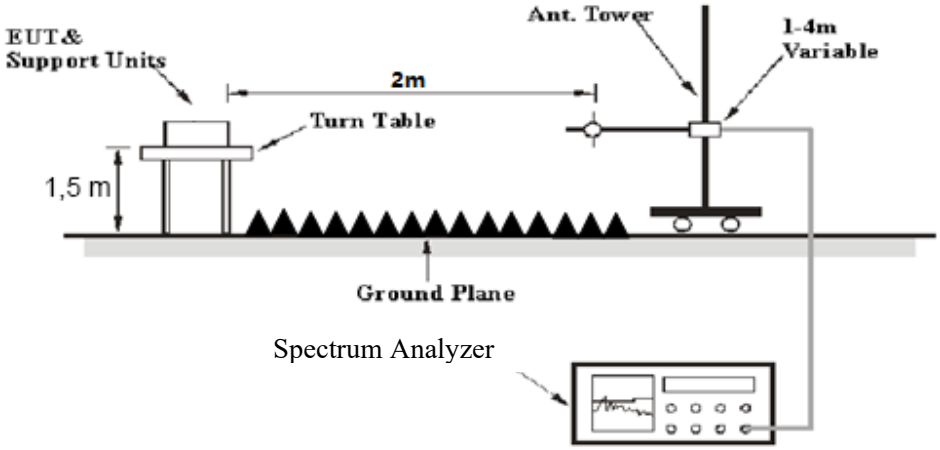
3.4 Peak Power Measurement

3.4.1 Applicable Standard

FCC §15.519 (e)

(e) 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, fM. That limit is 0 dBm EIRP. It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in §15.521.

3.4.2 EUT Setup



3.4.3Test Procedure

According to C63.10-2013 clause 10.3.6

It is acceptable to employ an RBW of less than 50 MHz (but no less than 1 MHz) when performing the required peak power measurements. When this approach is employed, the peak emissions EIRP limit (0 dBm / 50 MHz) is onverted to a limit commensurate with the RBW by employing a [20 log (RBW/50 MHz)] relationship. For example, the peak power limit could be expressed in a 1 MHz bandwidth as follows in Equation

$$EIRP_{1\,MHz} = EIRP_{50\,MHz} + 20\log(1\,MHz/50\,MHz) = 0\,dBm + (-34\,dB) = -34\,dBm$$

When a resolution bandwidth of less than 50 MHz is used, this measurement shall be performed over a 50 MHz span centered on the frequency associated with the highest detected average emission level.

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 §15.503(a)(b)(c)(d)

(a) UWB bandwidth. For the purpose of this subpart, the UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated f_H and the lower boundary is designated f_L. The frequency at which the highest radiated emission occurs is designated f_M.

(b) Center frequency. The center frequency, f_C, equals $(f_H + f_L)/2$.

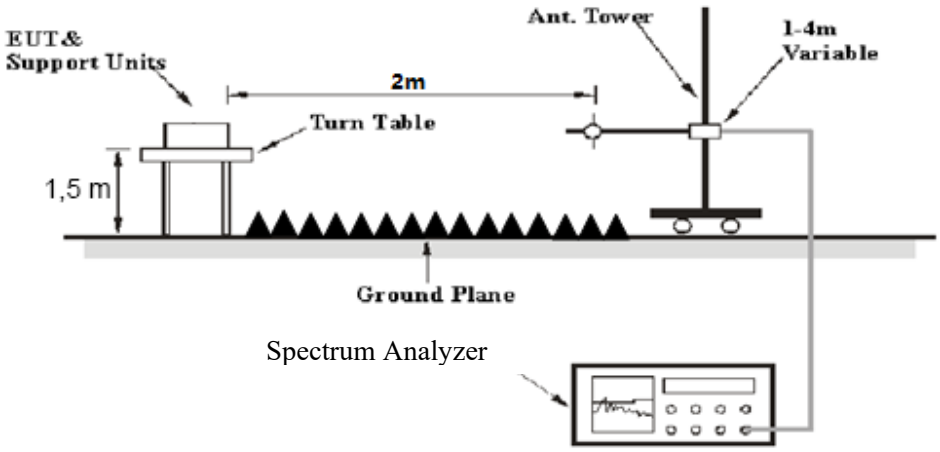
(c) Fractional bandwidth. The fractional bandwidth equals $2(f_H - f_L)/ (f_H + f_L)$.

(d) Ultra-wideband (UWB) transmitter. An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

FCC §15.519(b)

(b) The UWB bandwidth of a device operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

3.5.2 EUT Setup



3.5.3Test Procedure

According to C63.10-2013 clause 10.1

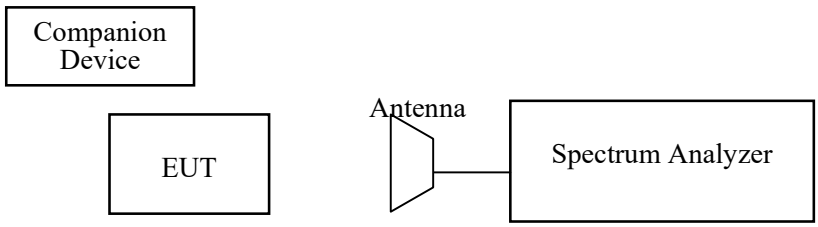
3.6 Transmission Time

3.6.1 Applicable Standard

FCC §15.519(a)(1)

(a)(1) A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

3.6.2 EUT Setup



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

Serial Number:	2DXP-1	Test Date:	2023/12/30
Test Site:	CE	Test Mode:	Transmitting
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

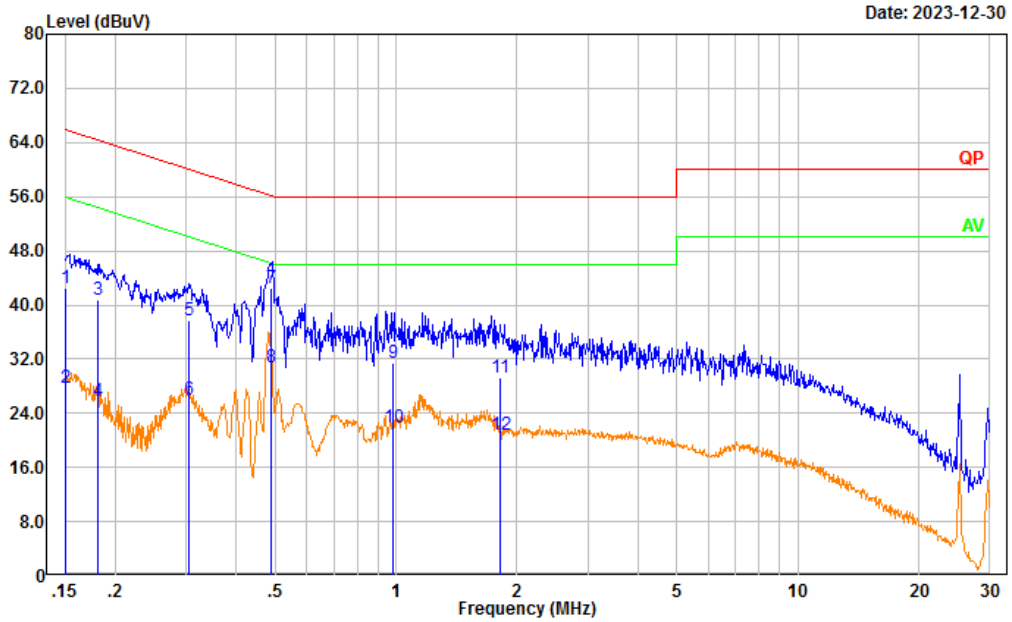
Temperature: (℃)	21.6	Relative Humidity: (%)	49	ATM Pressure: (kPa)	101.6

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/3/31	2024/3/30
R&S	EMI Test Receiver	ESR3	102726	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/8/6	2024/8/5
Audix	Test Software	E3	190306 (V9)	N/A	N/A

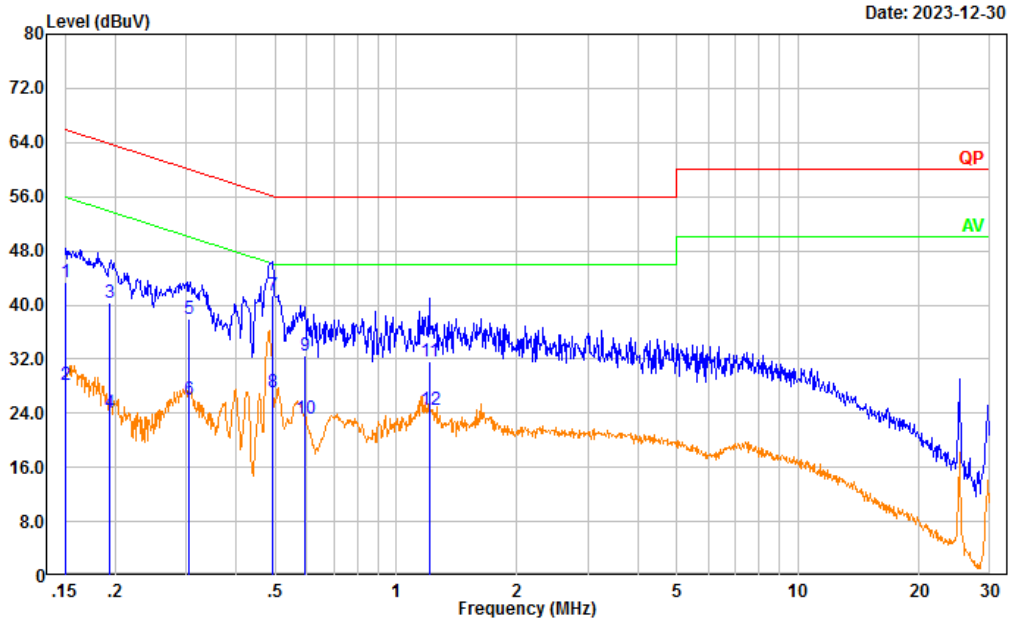
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Project No.: CR231168380-RF
Tester: David Huang
Port: Line
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.151	32.96	9.61	42.57	65.94	23.37	QP
2	0.151	18.12	9.61	27.73	55.94	28.21	Average
3	0.181	31.09	9.61	40.70	64.45	23.75	QP
4	0.181	16.14	9.61	25.75	54.45	28.70	Average
5	0.305	28.22	9.61	37.83	60.10	22.27	QP
6	0.305	16.41	9.61	26.02	50.10	24.08	Average
7	0.491	32.82	9.61	42.43	56.16	13.73	QP
8	0.491	21.28	9.61	30.89	46.16	15.27	Average
9	0.984	21.92	9.62	31.54	56.00	24.46	QP
10	0.984	12.19	9.62	21.81	46.00	24.19	Average
11	1.810	19.56	9.63	29.19	56.00	26.81	QP
12	1.810	11.25	9.63	20.88	46.00	25.12	Average

Project No.: CR231168380-RF
Tester: David Huang
Port: neutral
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.151	33.69	9.61	43.30	65.96	22.66	QP
2	0.151	18.65	9.61	28.26	55.96	27.70	Average
3	0.194	30.73	9.61	40.34	63.87	23.53	QP
4	0.194	14.38	9.61	23.99	53.87	29.88	Average
5	0.305	28.30	9.61	37.91	60.10	22.19	QP
6	0.305	16.42	9.61	26.03	50.10	24.07	Average
7	0.494	31.72	9.61	41.33	56.10	14.77	QP
8	0.494	17.49	9.61	27.10	46.10	19.00	Average
9	0.592	22.89	9.62	32.51	56.00	23.49	QP
10	0.592	13.66	9.62	23.28	46.00	22.72	Average
11	1.211	22.08	9.62	31.70	56.00	24.30	QP
12	1.211	14.90	9.62	24.52	46.00	21.48	Average

4.2 Radiated Emissions Below 960MHz

Serial Number:	2DXP-1	Test Date:	Below 30MHz: 2024/1/25 Above 30MHz: 2023/12/30
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Carl Xue	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	21.6~23.7	Relative Humidity: (%)	42~49	ATM Pressure: (kPa)	101.6~102.5

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 30MHz					
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
Audix	Test Software	E3	201021 (V9)	N/A	N/A
Above 30MHz					
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30
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

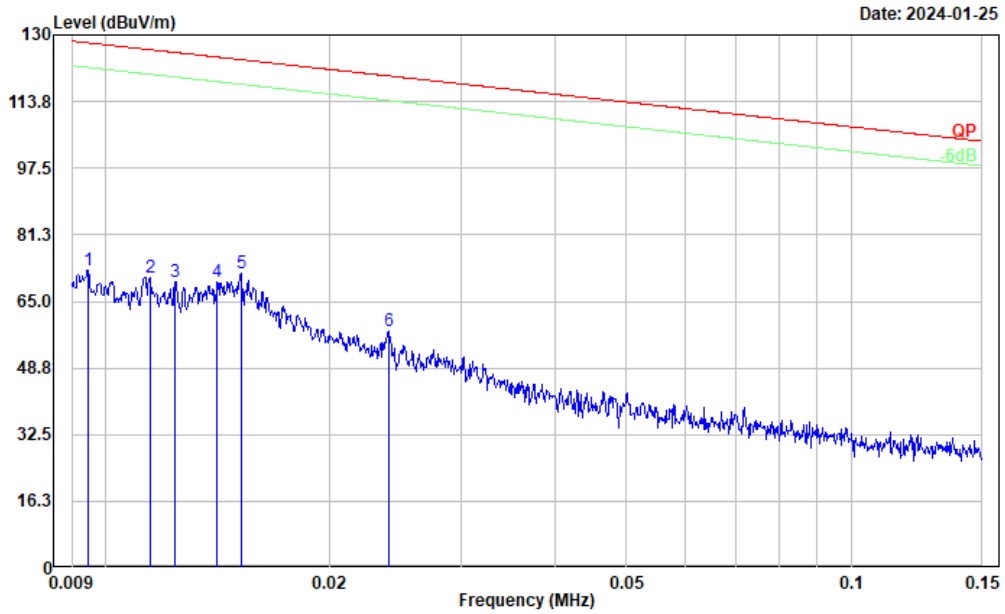
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

After pre-scan in the X, Y and Z axes of orientation, the worst case is refer to plots.

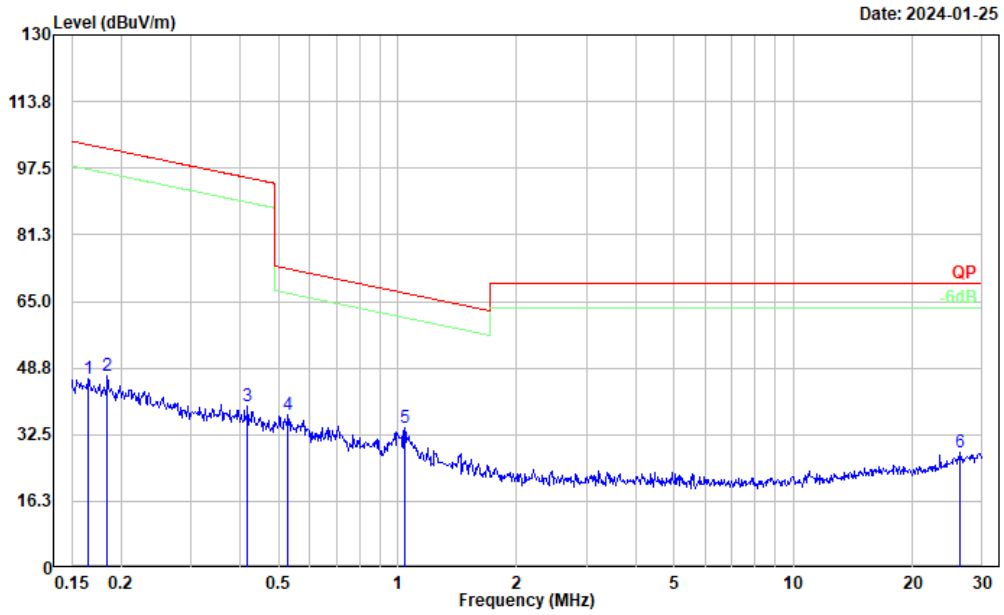
9kHz-30MHz:

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Parallel
Note: Transmitting



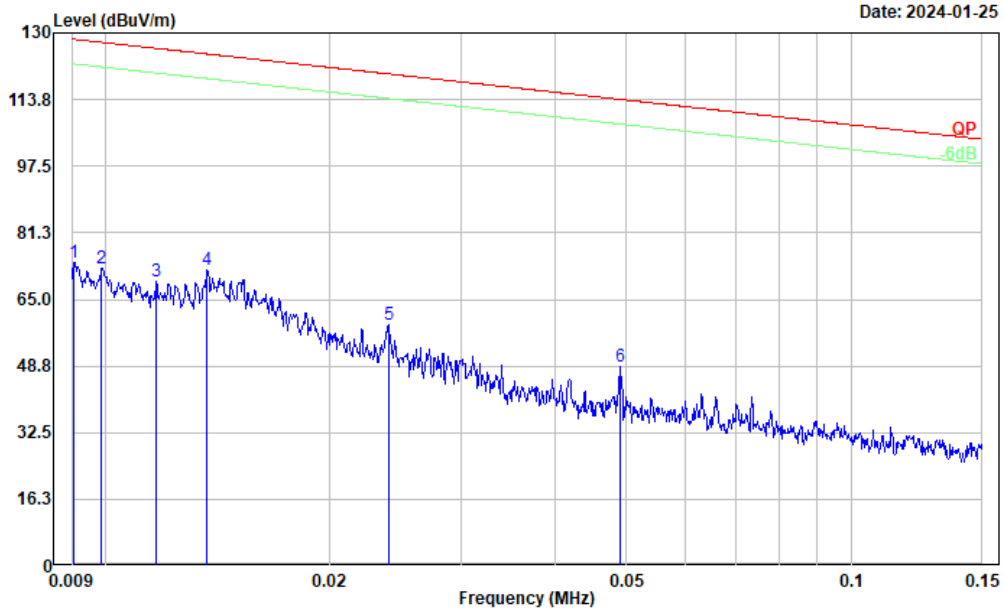
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	37.49	35.12	72.61	128.08	55.47	Peak
2	0.011	37.04	33.71	70.75	126.42	55.67	Peak
3	0.012	36.54	33.25	69.79	125.73	55.94	Peak
4	0.014	37.38	32.41	69.79	124.61	54.82	Peak
5	0.015	39.95	31.89	71.84	123.97	52.13	Peak
6	0.024	30.23	27.59	57.82	120.02	62.20	Peak

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Parallel
Note: Transmitting



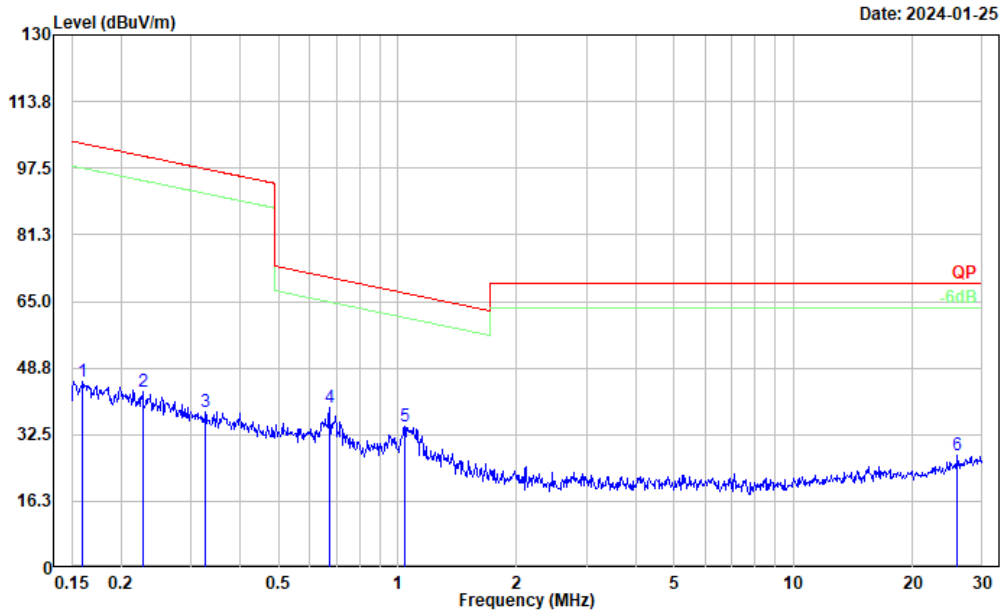
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.165	34.50	11.62	46.12	103.25	57.13	Peak
2	0.184	35.98	10.71	46.69	102.29	55.60	Peak
3	0.417	36.82	2.77	39.59	95.20	55.61	Peak
4	0.529	36.86	0.62	37.48	73.11	35.63	Peak
5	1.043	38.65	-4.36	34.29	67.10	32.81	Peak
6	26.418	35.73	-7.54	28.19	69.54	41.35	Peak

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Perpendicular
Note: Transmitting



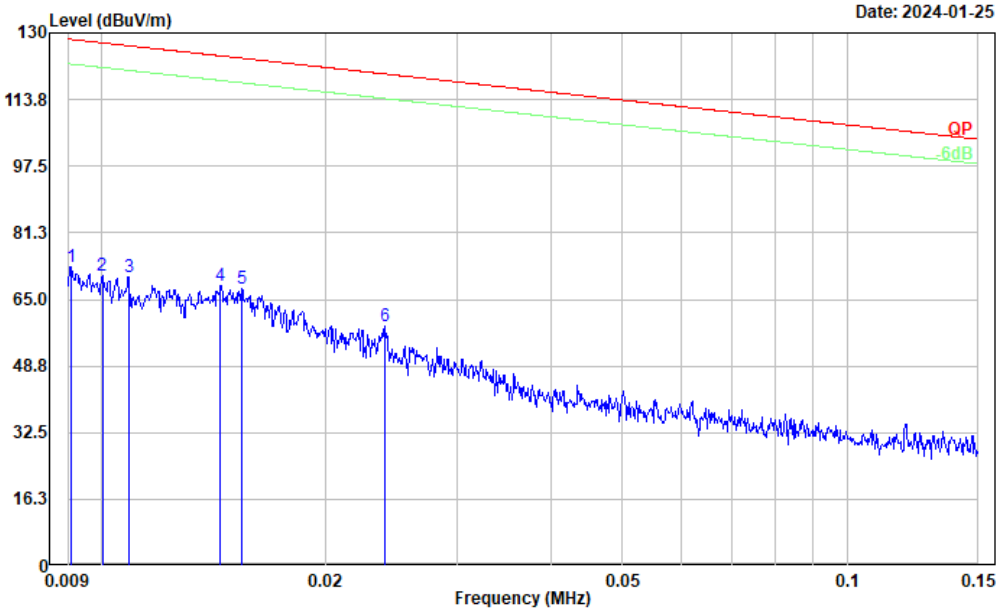
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	38.50	35.63	74.13	128.45	54.32	Peak
2	0.010	38.06	34.59	72.65	127.71	55.06	Peak
3	0.012	35.87	33.60	69.47	126.25	56.78	Peak
4	0.014	39.66	32.62	72.28	124.88	52.60	Peak
5	0.024	31.34	27.59	58.93	120.02	61.09	Peak
6	0.049	27.89	20.65	48.54	113.81	65.27	Peak

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Perpendicular
Note: Transmitting



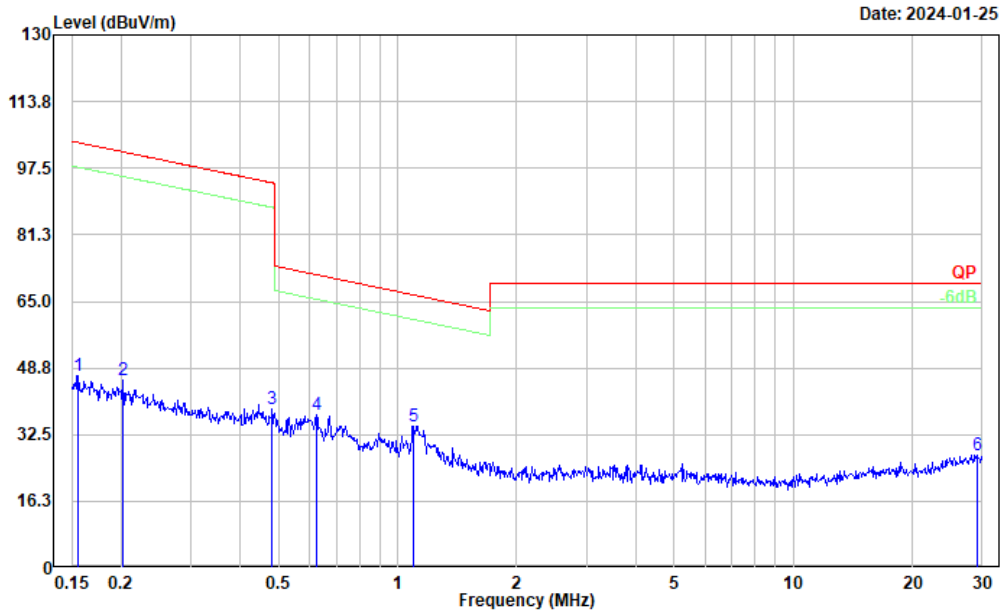
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.160	33.48	11.86	45.34	103.53	58.19	Peak
2	0.227	34.13	8.75	42.88	100.49	57.61	Peak
3	0.327	33.18	4.76	37.94	97.32	59.38	Peak
4	0.672	40.07	-1.04	39.03	71.00	31.97	Peak
5	1.043	38.72	-4.36	34.36	67.10	32.74	Peak
6	26.001	35.00	-7.56	27.44	69.54	42.10	Peak

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Ground-parallel
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.009	37.23	35.60	72.83	128.42	55.59	Peak
2	0.010	36.35	34.42	70.77	127.59	56.82	Peak
3	0.011	36.43	34.01	70.44	126.88	56.44	Peak
4	0.014	36.13	32.26	68.39	124.41	56.02	Peak
5	0.015	35.78	31.78	67.56	123.85	56.29	Peak
6	0.024	30.91	27.59	58.50	120.02	61.52	Peak

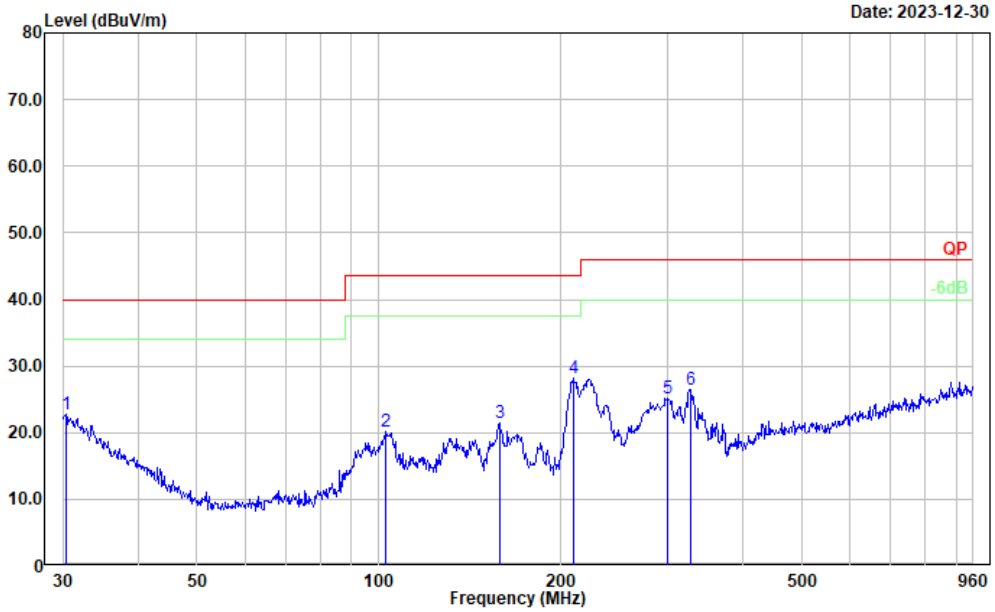
Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: Ground-parallel
Note: Transmitting



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.156	34.90	12.05	46.95	103.76	56.81	Peak
2	0.202	36.02	9.91	45.93	101.51	55.58	Peak
3	0.481	37.45	1.37	38.82	93.96	55.14	Peak
4	0.624	37.85	-0.47	37.38	71.66	34.28	Peak
5	1.094	39.18	-4.55	34.63	66.68	32.05	Peak
6	29.216	34.89	-7.24	27.65	69.54	41.89	Peak

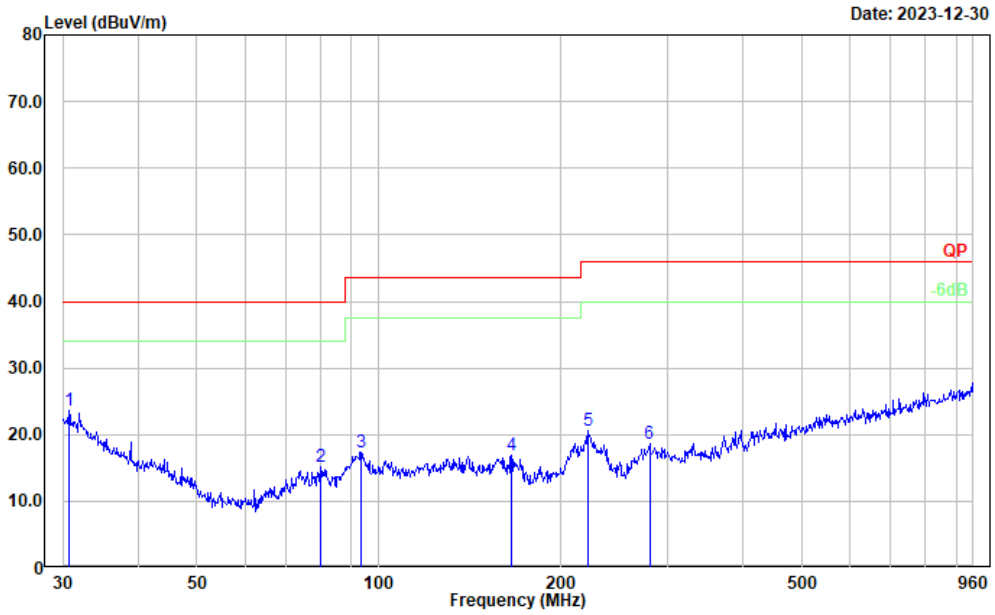
30MHz-960MHz :

Project No.: CR231168380-RF
Tester: Carl Xue
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	30.424	27.17	-4.45	22.72	40.00	17.28	Peak
2	102.719	34.32	-14.08	20.24	43.50	23.26	Peak
3	158.112	33.83	-12.36	21.47	43.50	22.03	Peak
4	209.313	41.03	-12.92	28.11	43.50	15.39	Peak
5	300.367	36.18	-11.05	25.13	46.00	20.87	Peak
6	326.740	37.05	-10.66	26.39	46.00	19.61	Peak

Project No.: CR231168380-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	30.745	28.35	-4.69	23.66	40.00	16.34	Peak
2	80.081	32.90	-17.81	15.09	40.00	24.91	Peak
3	93.440	33.77	-16.35	17.42	43.50	26.08	Peak
4	165.487	29.79	-12.79	17.00	43.50	26.50	Peak
5	221.392	33.83	-13.19	20.64	46.00	25.36	Peak
6	280.024	30.58	-12.02	18.56	46.00	27.44	Peak

4.3 Radiated Emissions Above 960MHz:

Serial Number:	2DXP-1	Test Date:	2024/2/28
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	22	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101.1

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

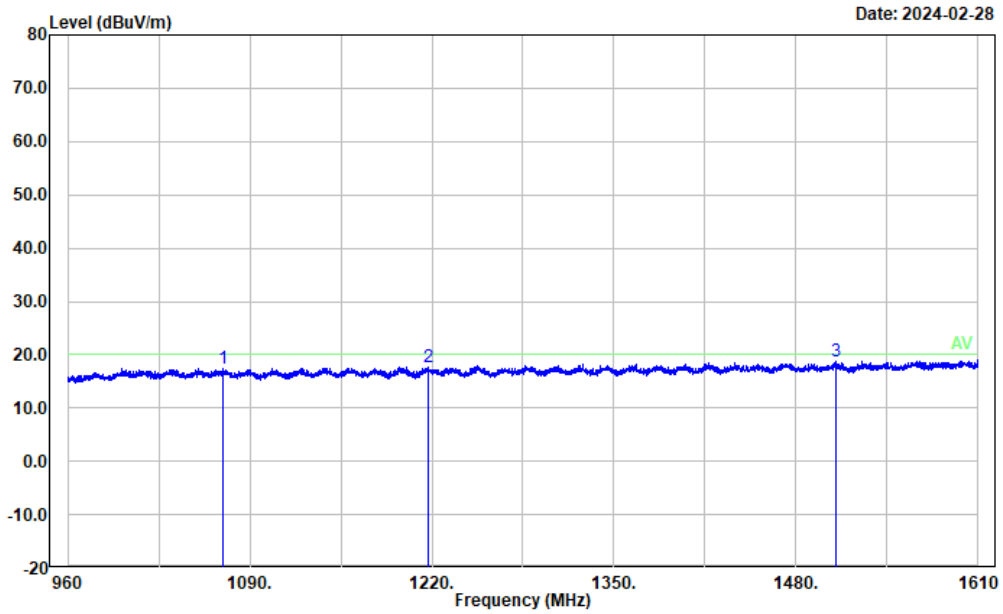
**** Statement of Traceability:** China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

After pre-scan in the X, Y and Z axes of orientation, the worst case is refer to plots.

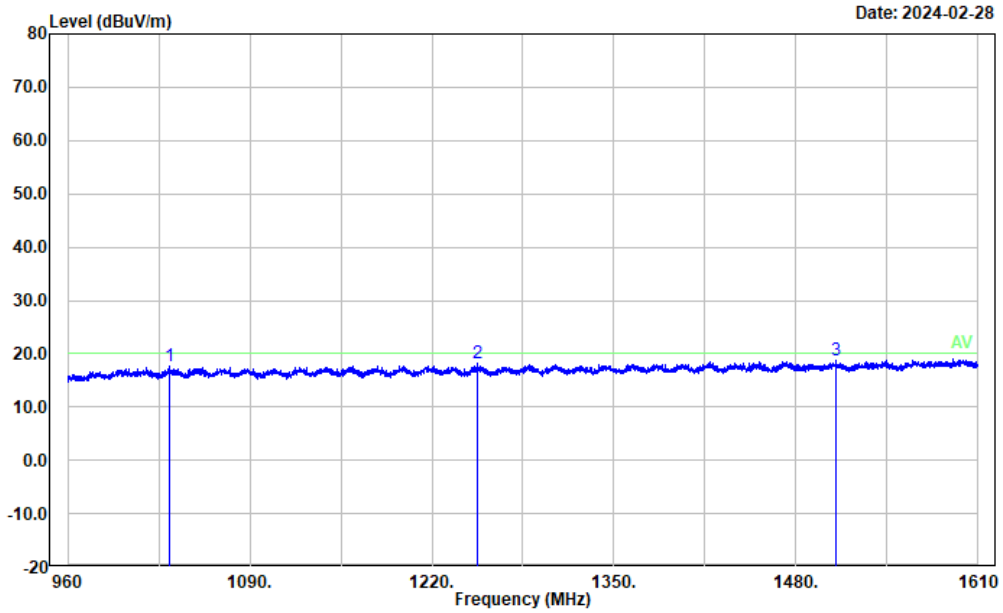
960-1610MHz

Project No.: CR231168380-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	1070.630	38.46	-21.00	17.46	20.00	2.54	Average
2	1217.400	38.35	-20.60	17.75	20.00	2.25	Average
3	1508.860	38.49	-19.78	18.71	20.00	1.29	Average

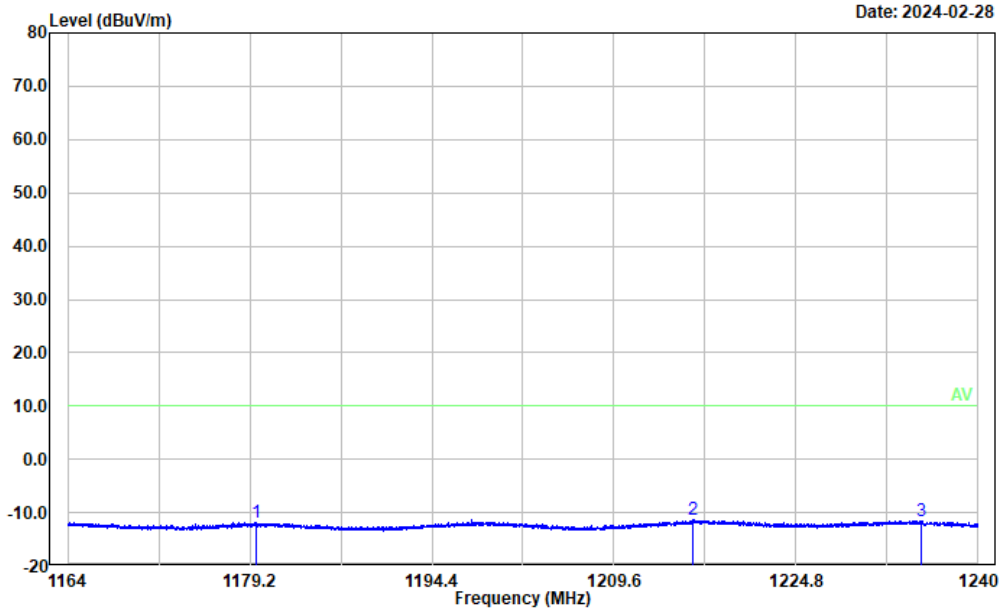
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1032.800	38.70	-21.09	17.61	20.00	2.39	Average
2	1252.110	38.69	-20.44	18.25	20.00	1.75	Average
3	1508.600	38.44	-19.78	18.66	20.00	1.34	Average

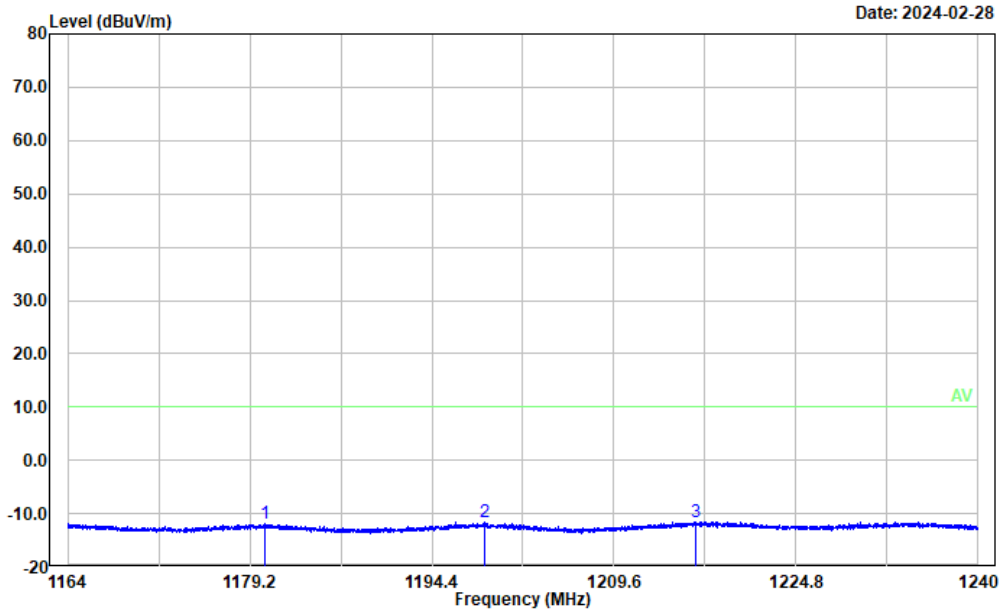
1164-1240MHz

Project No.: CR231168380-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	1179.796	8.82	-20.68	-11.86	10.00	21.86	Average
2	1216.146	9.23	-20.60	-11.37	10.00	21.37	Average
3	1235.241	9.02	-20.51	-11.49	10.00	21.49	Average

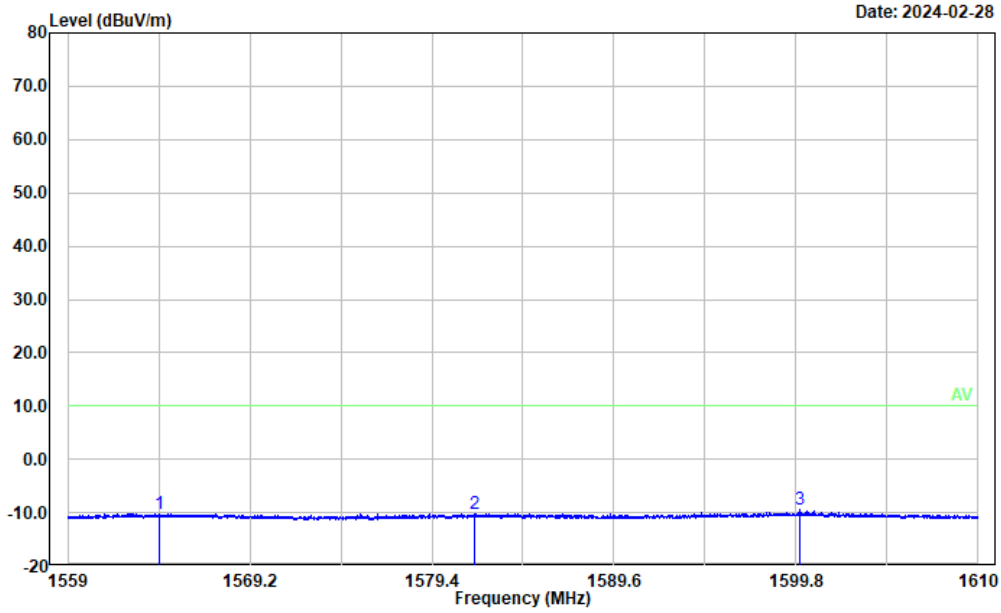
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1180.495	8.76	-20.68	-11.92	10.00	21.92	Average
2	1198.861	9.05	-20.68	-11.63	10.00	21.63	Average
3	1216.435	9.13	-20.60	-11.47	10.00	21.47	Average

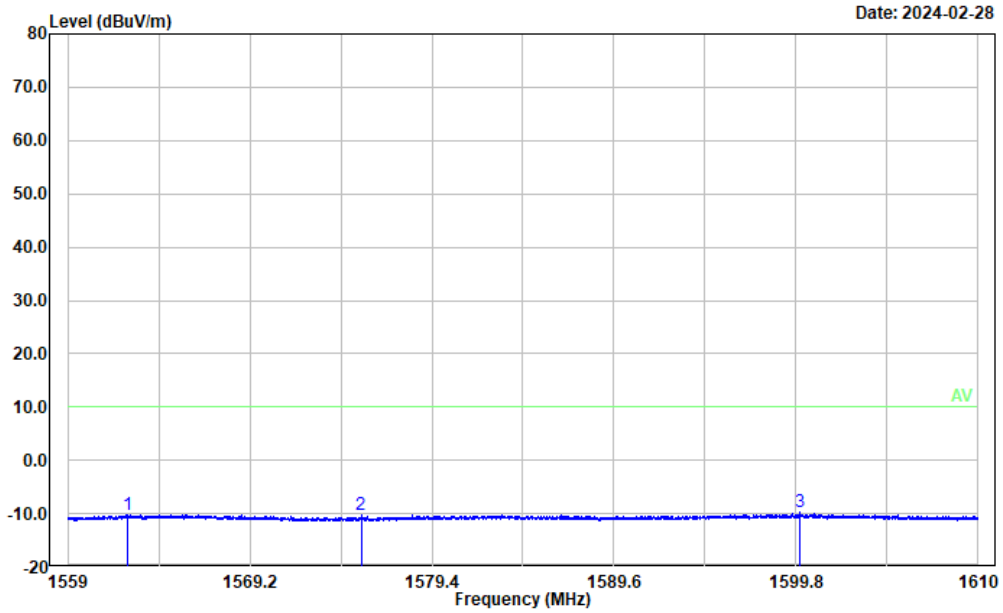
1559-1610MHz

Project No.: CR231168380-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	1564.100	9.22	-19.50	-10.28	10.00	20.28	Average
2	1581.766	9.21	-19.38	-10.17	10.00	20.17	Average
3	1600.004	9.71	-19.24	-9.53	10.00	19.53	Average

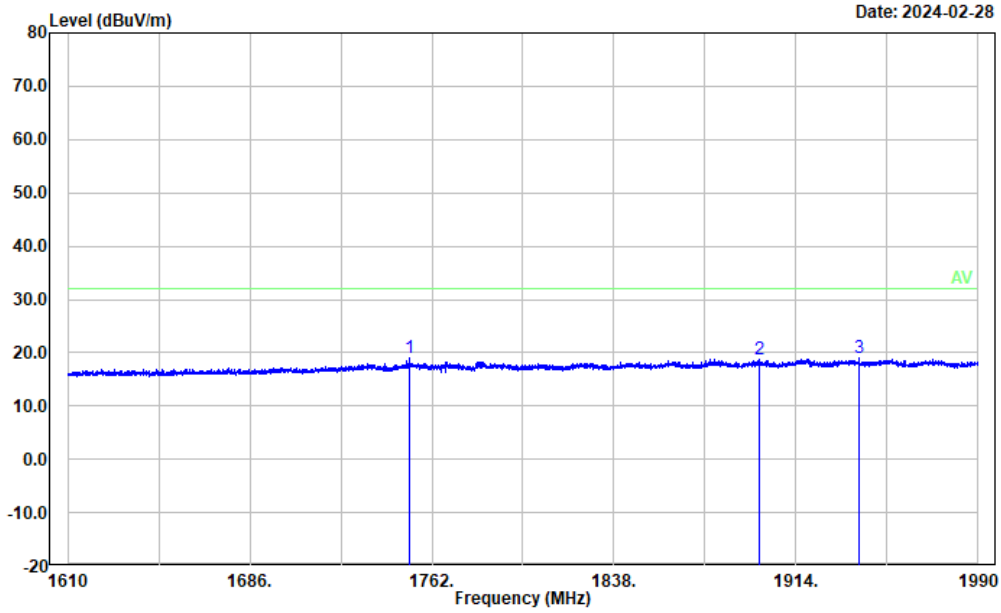
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1562.386	9.27	-19.51	-10.24	10.00	20.24	Average
2	1575.432	9.14	-19.41	-10.27	10.00	20.27	Average
3	1600.035	9.41	-19.24	-9.83	10.00	19.83	Average

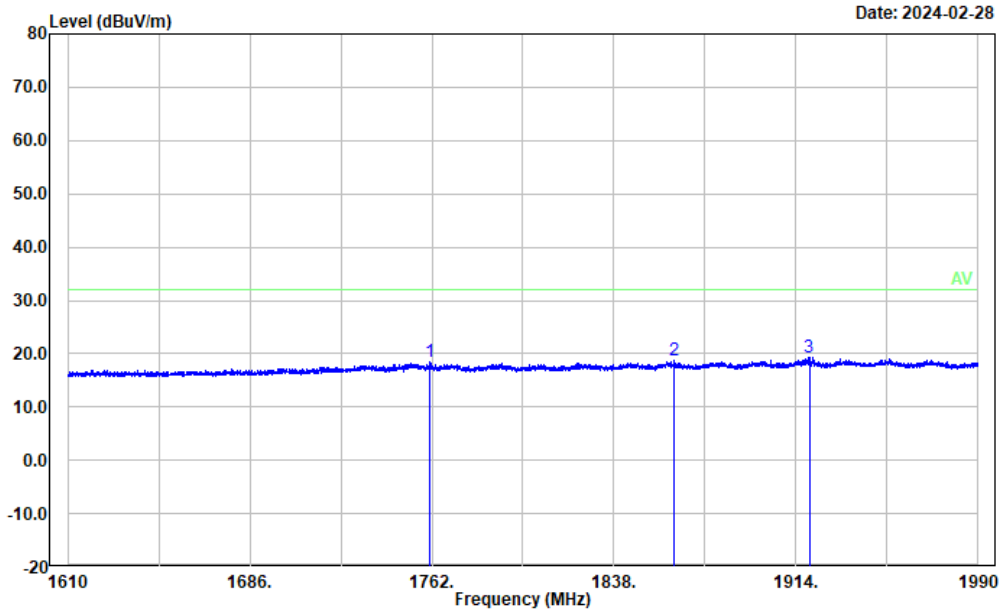
1610-1990MHz

Project No.: CR231168380-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	1752.576	39.37	-20.40	18.97	32.00	13.03	Average
2	1898.420	38.65	-19.89	18.76	32.00	13.24	Average
3	1940.144	38.66	-19.71	18.95	32.00	13.05	Average

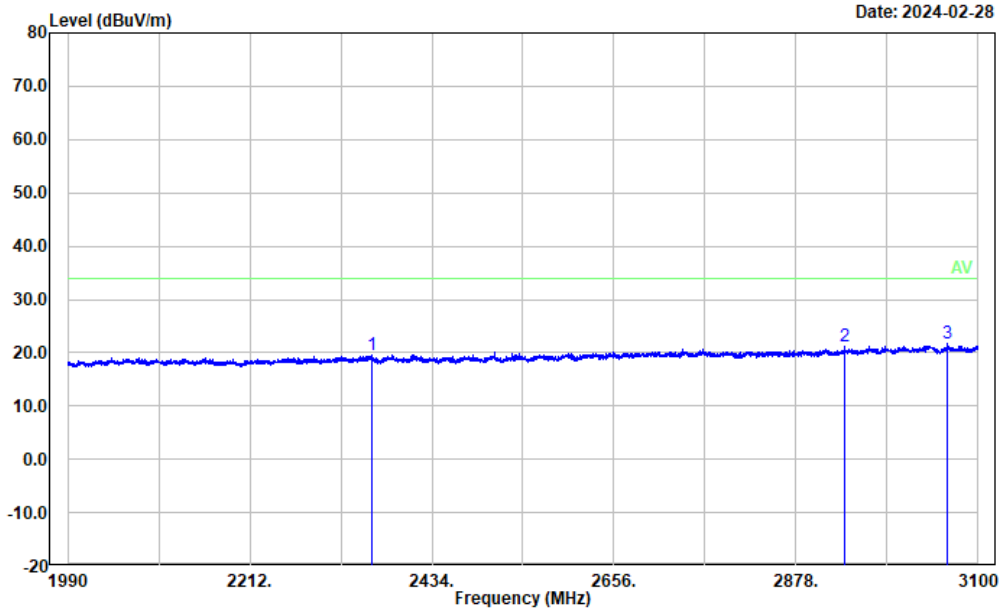
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1761.164	38.82	-20.43	18.39	32.00	13.61	Average
2	1863.080	38.84	-20.14	18.70	32.00	13.30	Average
3	1919.472	39.06	-19.80	19.26	32.00	12.74	Average

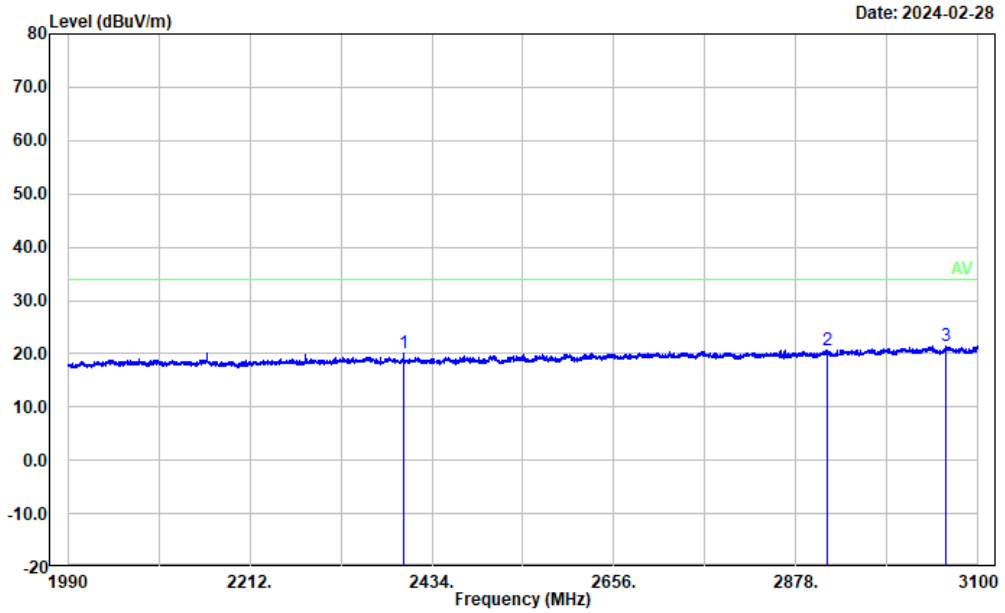
1990-3100MHz

Project No.: CR231168380-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	2360.962	38.37	-18.80	19.57	34.00	14.43	Average
2	2937.052	38.68	-17.61	21.07	34.00	12.93	Average
3	3062.704	38.40	-16.77	21.63	34.00	12.37	Average

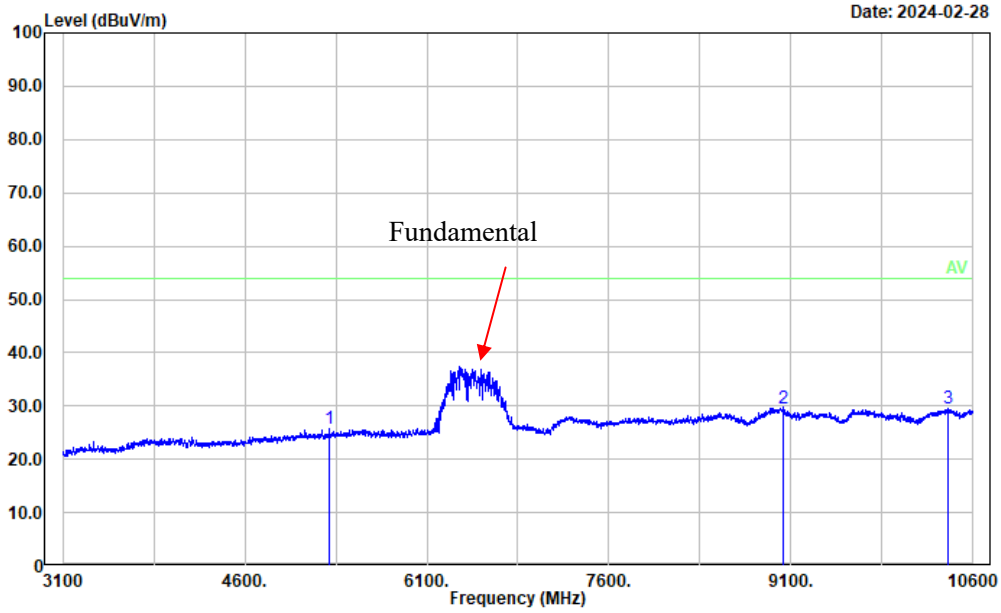
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2400.256	39.12	-18.90	20.22	34.00	13.78	Average
2	2915.740	38.54	-17.77	20.77	34.00	13.23	Average
3	3060.928	38.23	-16.78	21.45	34.00	12.55	Average

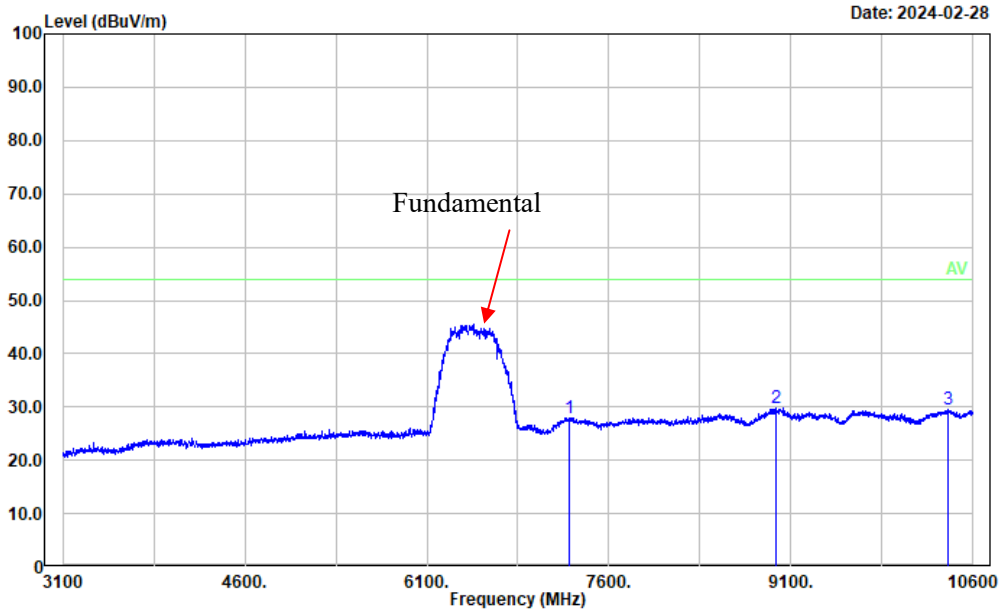
3100-10600MHz

Project No.: CR231168380-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	5297.500	38.81	-13.19	25.62	54.00	28.38	Average
2	9040.000	35.87	-6.20	29.67	54.00	24.33	Average
3	10396.000	36.19	-6.62	29.57	54.00	24.43	Average

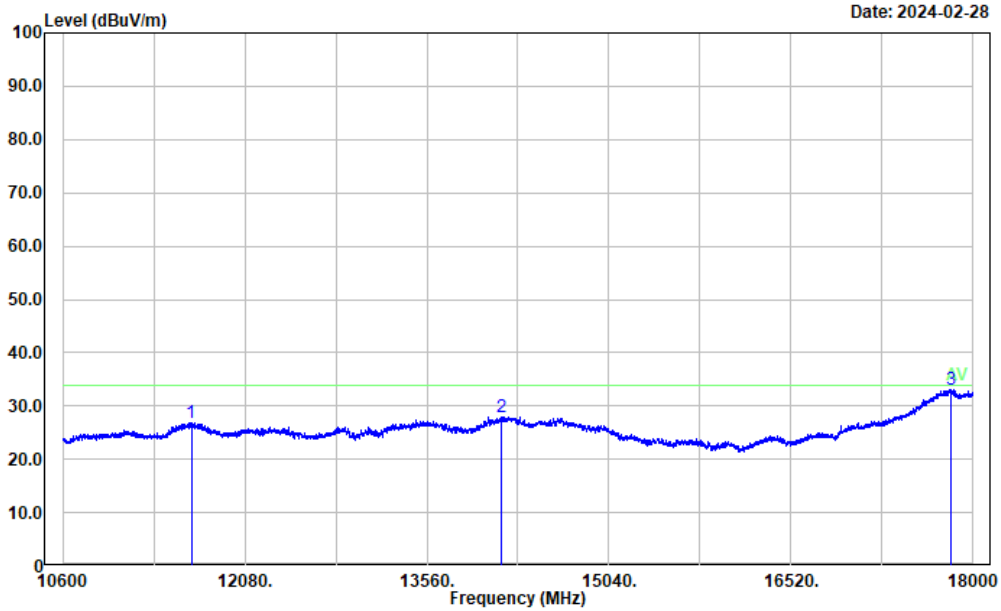
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	7274.500	37.68	-9.64	28.04	54.00	25.96	Average
2	8974.000	36.25	-6.51	29.74	54.00	24.26	Average
3	10396.000	36.19	-6.62	29.57	54.00	24.43	Average

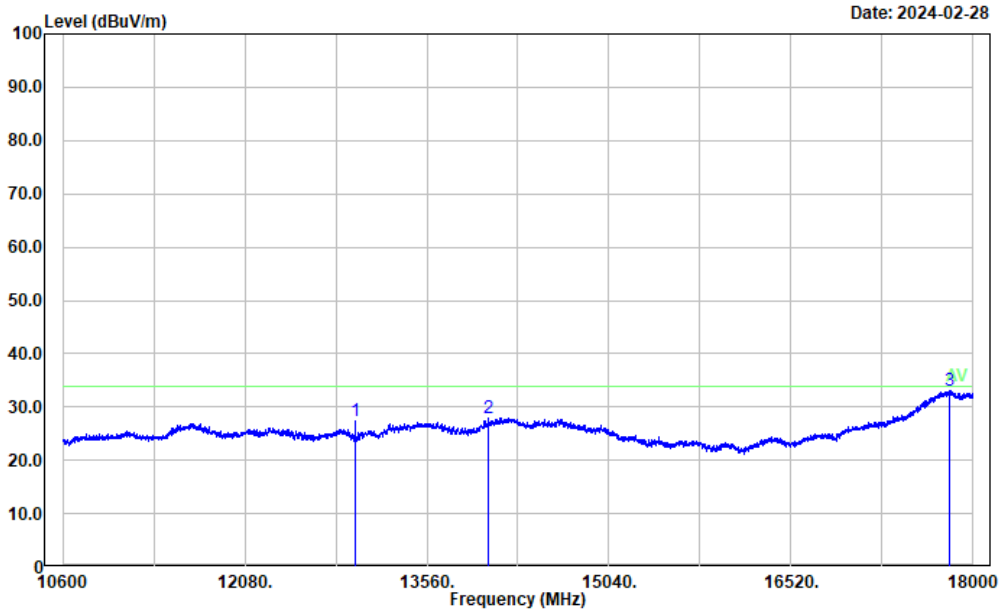
10600-18000MHz

Project No.: CR231168380-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	11644.880	33.25	-6.39	26.86	34.00	7.14	Average
2	14160.880	33.44	-5.44	28.00	34.00	6.00	Average
3	17816.480	32.90	0.18	33.08	34.00	0.92	Average

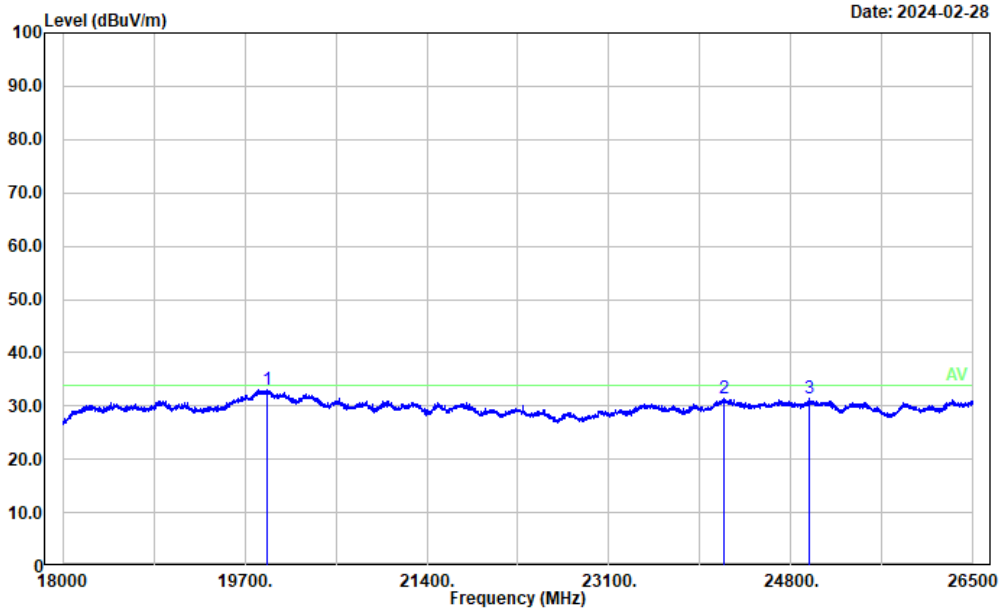
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	12978.360	34.66	-7.38	27.28	34.00	6.72	Average
2	14058.760	33.91	-5.90	28.01	34.00	5.99	Average
3	17803.160	32.93	0.19	33.12	34.00	0.88	Average

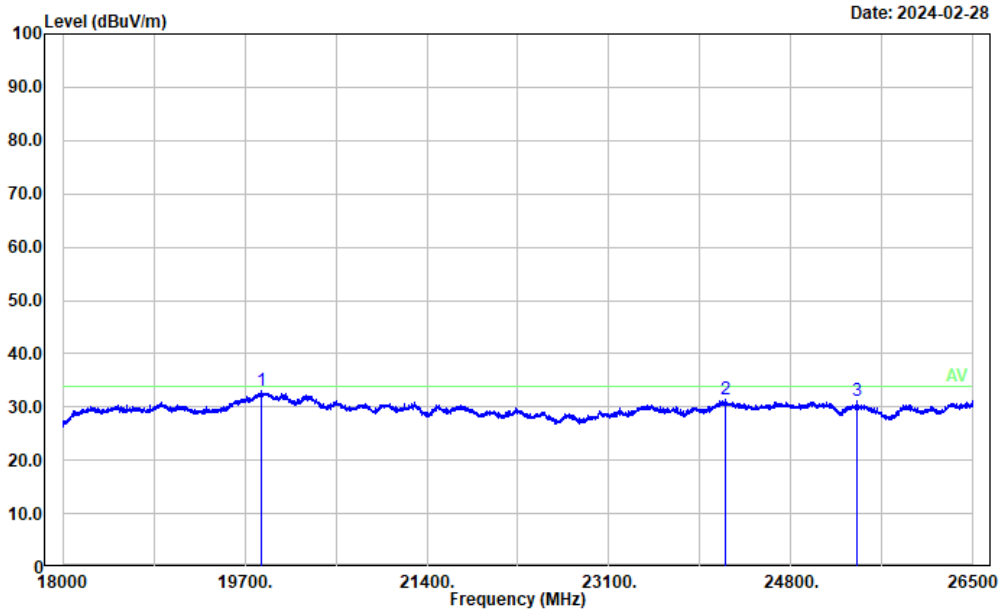
18000-26500MHz

Project No.: CR231168380-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	19909.100	40.60	-7.63	32.97	34.00	1.03	Average
2	24177.800	41.84	-10.32	31.52	34.00	2.48	Average
3	24966.600	41.29	-9.75	31.54	34.00	2.46	Average

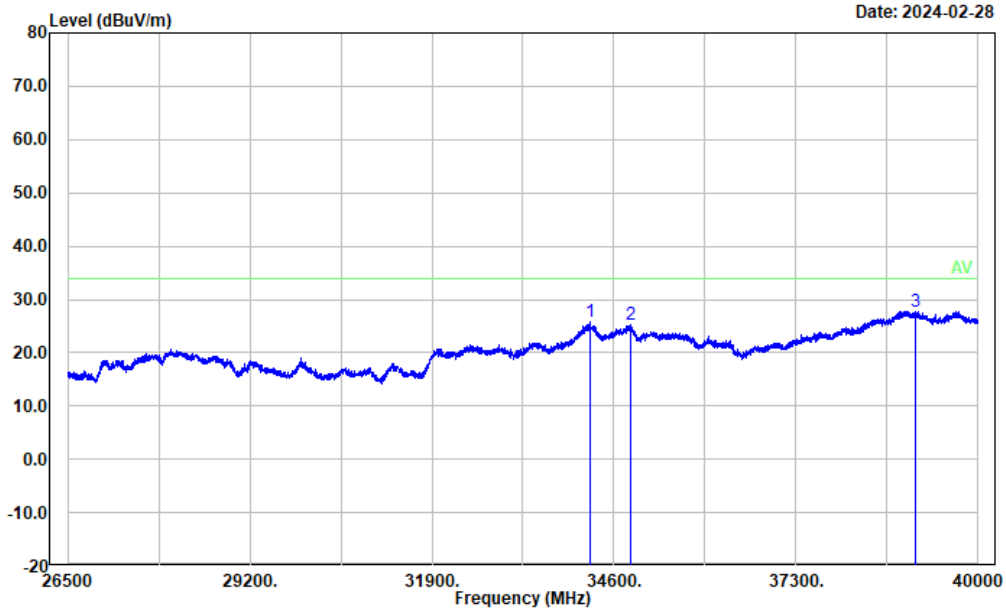
Project No.: CR231168380-RF
Tester: coco Tian
Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	19854.700	40.53	-7.60	32.93	34.00	1.07	Average
2	24184.600	41.65	-10.29	31.36	34.00	2.64	Average
3	25418.800	41.57	-10.50	31.07	34.00	2.93	Average

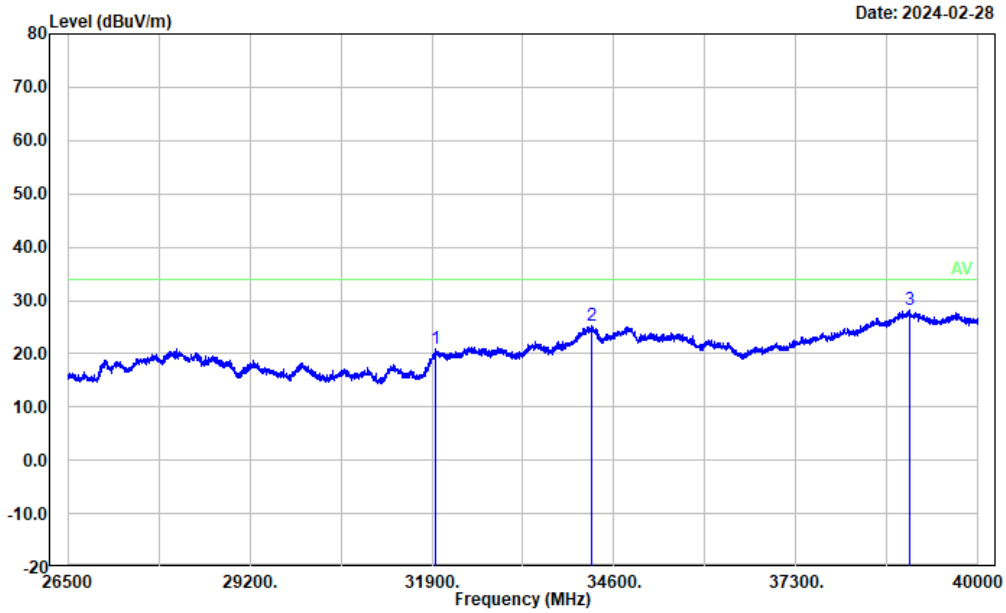
26500-40000MHz

Project No.: CR231168380-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	34243.600	28.05	-2.26	25.79	34.00	8.21	Average
2	34843.000	27.44	-2.08	25.36	34.00	8.64	Average
3	39079.300	28.70	-0.98	27.72	34.00	6.28	Average

Project No.: CR231168380-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	31954.000	25.97	-5.18	20.79	34.00	13.21	Average
2	34276.000	27.44	-2.20	25.24	34.00	8.76	Average
3	38979.400	29.08	-0.91	28.17	34.00	5.83	Average

4.4 Peak Power Measurement:

Serial Number:	2DXP-1	Test Date:	2024/3/25
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.2	Relative Humidity: (%)	60	ATM Pressure: (kPa)	101

Test Equipment List and Details:

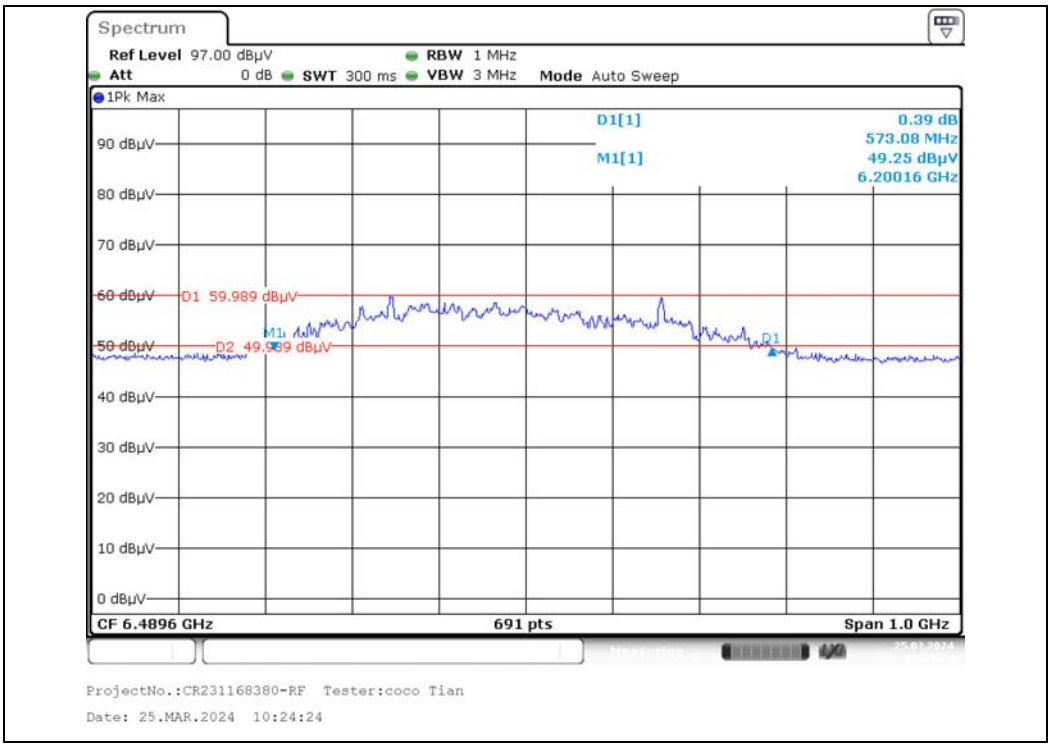
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable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

**** 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)	EIRP (dBm/50MHz)	Limit (dBm/50MHz)	Margin (dB)
6489.6	59.99	Peak	V	-5.77	-41.08	-7.1	0	7.1

Note:
EIRP[dBm/MHz]= Result [dBμV/m] - 95.3
Result=Reading + Factor
Factor = Antenna Factor + Cable Loss- Amplifier Gain - Distance extrapolation factor
EIRP[dBm/50MHz]=EIRP[dBm/MHz]-20 log(1MHz/50MHz)


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB SWT 300 ms VBW 3 MHz Mode Auto Sweep
1Pk Max
D1[1] 0.39 dB
573.08 MHz
M1[1] 49.25 dBµV
6.20016 GHz
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
D1 59.989 dBµV
D2 49.989 dBµV
CF 6.4896 GHz
691 pts
Span 1.0 GHz
ProjectNo.:CR231168380-RF Tester:coco Tian
Date: 25.MAR.2024 10:24:24

4.5 -10 dB Bandwidth Testing:

Serial Number:	2DXP-1	Test Date:	2024/3/25
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.2	Relative Humidity: (%)	60	ATM Pressure: (kPa)	101

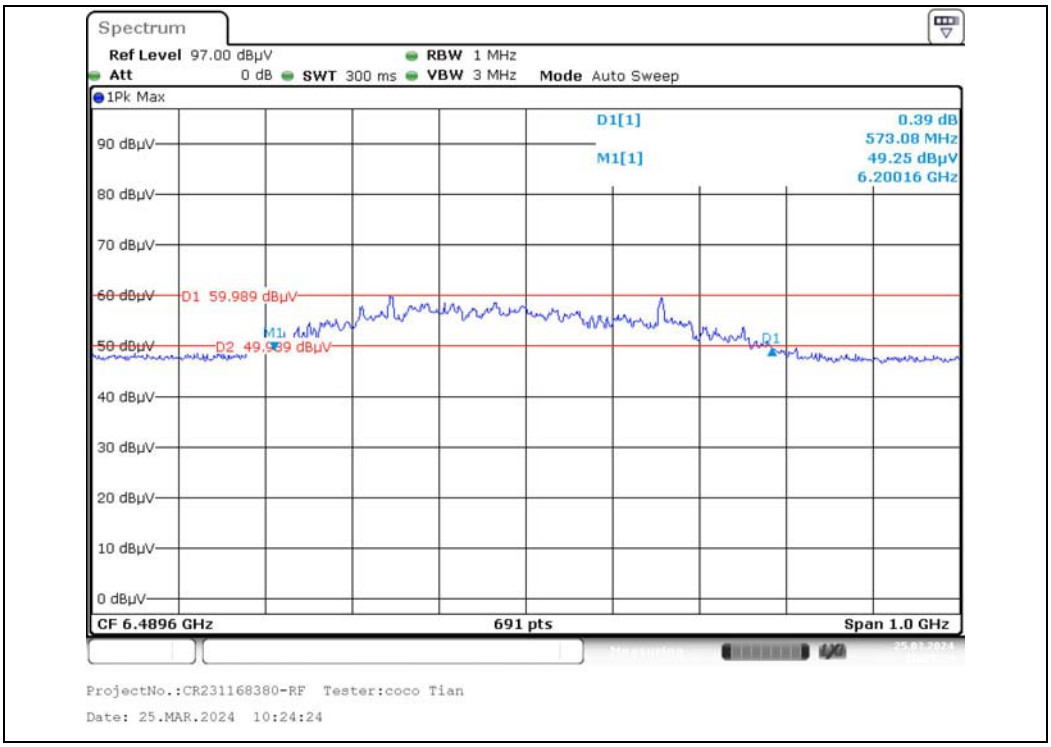
Test Equipment List and Details:

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

**** 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)	f_C (MHz)
6489.6	6200.16	6773.24	Within 3100 MHz to 10600 MHz	573.08	≥500	6486.7


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB SWT 300 ms VBW 3 MHz Mode Auto Sweep
1Pk Max
D1[1] 0.39 dB
573.08 MHz
M1[1] 49.25 dBµV
6.20016 GHz
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
D1 59.989 dBµV
D2 49.989 dBµV
CF 6.4896 GHz
691 pts
Span 1.0 GHz
ProjectNo.:CR231168380-RF Tester:coco Tian
Date: 25.MAR.2024 10:24:24

4.6 Transmission Time:

Serial Number:	2DXP-1	Test Date:	2024/4/20
Test Site:	966-1	Test Mode:	Transmitting
Tester:	coco Tian	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.8	Relative Humidity: (%)	65	ATM Pressure: (kPa)	100.1

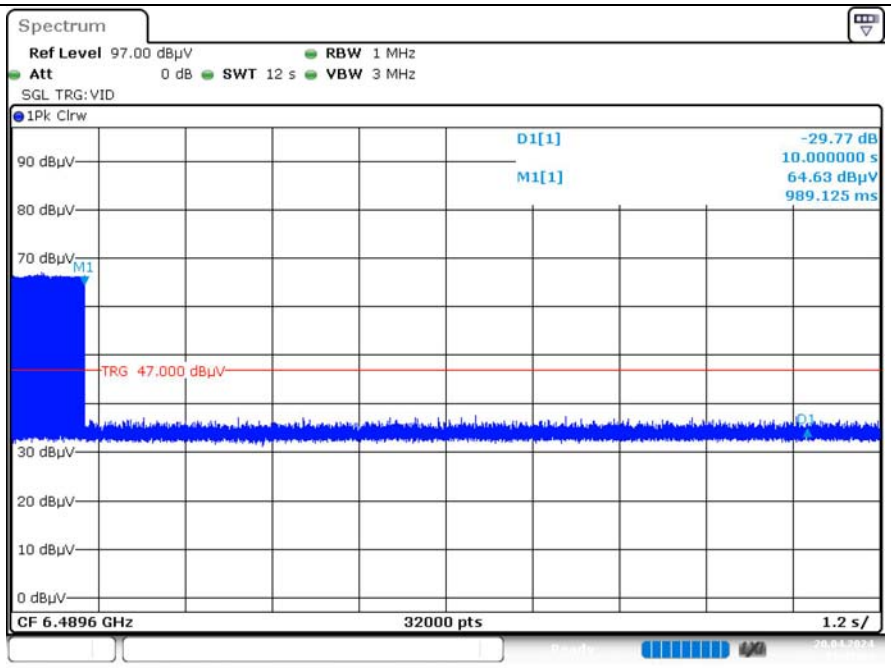
Test Equipment List and Details:

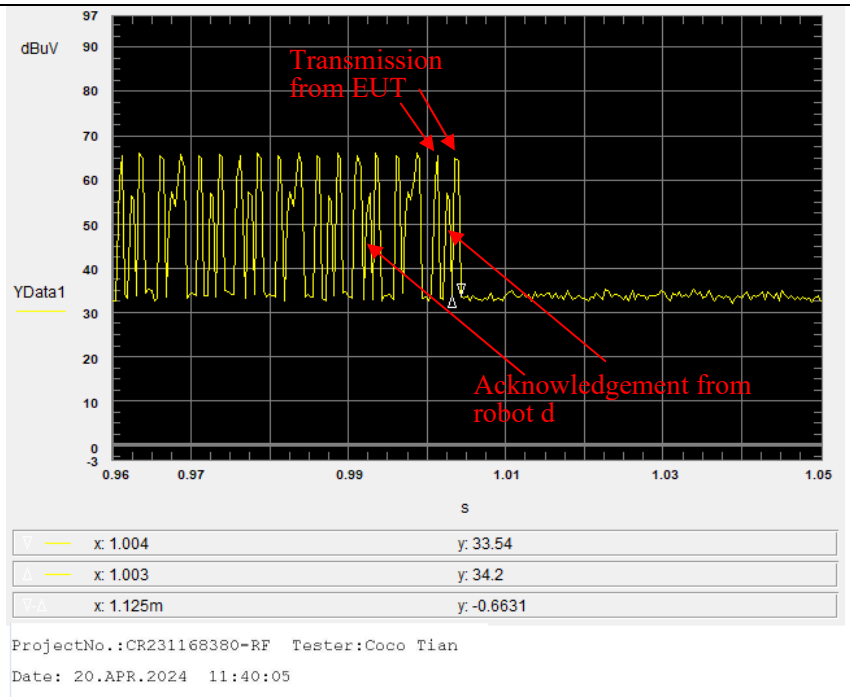
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable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

**** 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 Frequency (MHz)	Cease Transmission Time (s)	Limit (s)
6489.6	0.001	≤10

Take away robot dog





5. RF EXPOSURE EVALUATION

5.1 Applicable Standard

According to §1.1307(b)(3)(ii)(A)

the 1-mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, according one of the following criteria:

a) When maximum available power each individual transmitting antenna within the same time averaging period is ≤ 1 mW, and the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by at least 2 cm.

b) When the aggregate maximum available power of all transmitting antennas is ⩽ 1 mW in the same time averaging period.

This exemption may not be combined with any other exemption.

5.2 Measurement Result

Radio	Frequency (MHz)	Conducted output power including Tune-up Tolerance	Antenna Gain (dBi)	The Greater of Conducted Power or ERP	
		(dBm)		dBm	mW
UWB	6489.6	/	/	-9	0.13

Note:
1. Maximum EIRP of UWB is -7.1 dBm, so EPR is -9.25dBm, the tune –up ERP is -9dBm.
2. ERP (dBm) = EIRP (dBm)-2.15dB

Result: The device compliant the 1-mW Test Exemption.

6. EUT PHOTOGRAPHS

Please refer to the attachment CR231168380-EXP EUT EXTERNAL PHOTOGRAPHS and CR231168380-INP EUT INTERNAL PHOTOGRAPHS

7. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231168380-00A-TSP TEST SETUP PHOTOGRAPHS.

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