



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: DONGGUAN JOGWAY FITNESS EQUIPMENT CO., LTD

Address: NO.4 plant, shuibeidengwu village, Shipai town, Dongguan, China

FCC ID: 2A3Y6-TMAK101

Product Name: remote control

**Standard(s): 47 CFR Part 15, Subpart C (15.231)
ANSI C63.10-2013**

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

Report Number: CR231058680-00

Date Of Issue: 2023/12/13

Reviewed By: Calvin Chen

Title: RF Engineer

Approved By: Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China

Tel: +86-769-82016888

Test Facility

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

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

Declarations

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

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

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231058680-00	Original Report	2023/12/13

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	remote control
EUT Model:	TM-AK101
Operation Frequency:	433.92MHz
Modulation Type:	OOK
Rated Input Voltage:	DC 3V From battery
Serial Number:	2COX-3
EUT Received Date:	2023/10/9
EUT Received Status:	Good

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
PCB	50	433.92 MHz	0.8 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
/	/	/	/

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition

EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer.
Equipment Modifications:	No
EUT Exercise Software:	No
Engineering Mode was provided by manufacturer ▲. The maximum power was configured default setting.	

1.2.2 Support Equipment List and Details

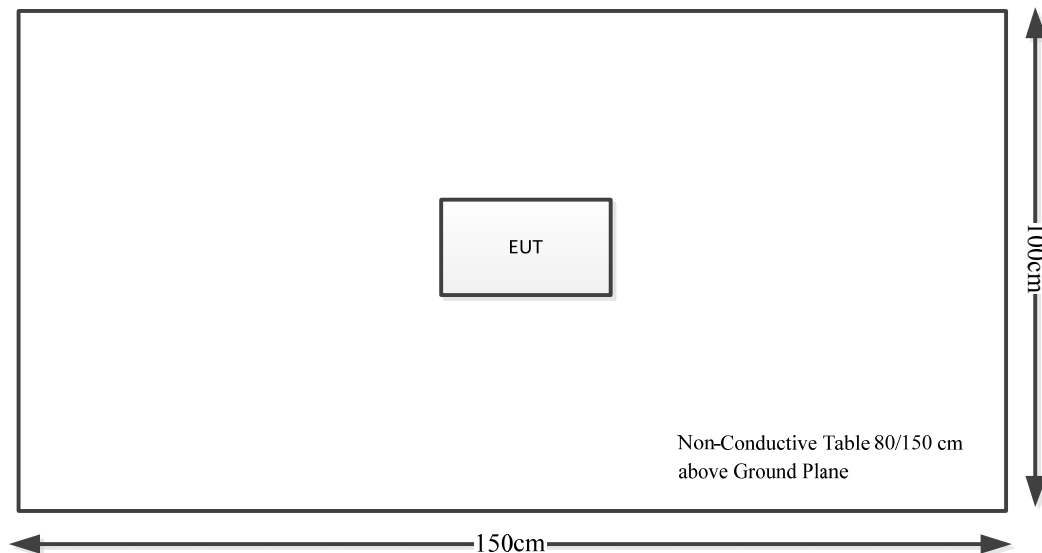
Manufacturer	Description	Model	Serial Number
/	/	/	/

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

Spurious Emissions:



1.3 Measurement Uncertainty

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

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
Unwanted Emissions, radiated	9kHz~30MHz: 4.12 dB, 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 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

2. SUMMARY OF TEST RESULTS

Standard(s) Section	Test Items	Result
§ 15.207 (a)	Conducted Emissions	Not Applicable
§ 15.205, § 15.209, § 15.231 (b)	Radiated Emissions	Compliant
§ 15.231 (c)	20dB Bandwidth	Compliant
§ 15.231 (a)	Deactivation Testing	Compliant
§ 15.203	Antenna Requirement	Compliant
§ 1.1307	RF Exposure Evaluation	Compliant

Note:

Not Applicable: The device was powered by button battery.

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

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

*Decreases with the logarithm of the frequency.

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

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

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

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

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

3.1.4 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 Radiation Spurious Emissions

3.2.1 Applicable Standard

FCC §15.231 (b);

In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹Linear interpolations.

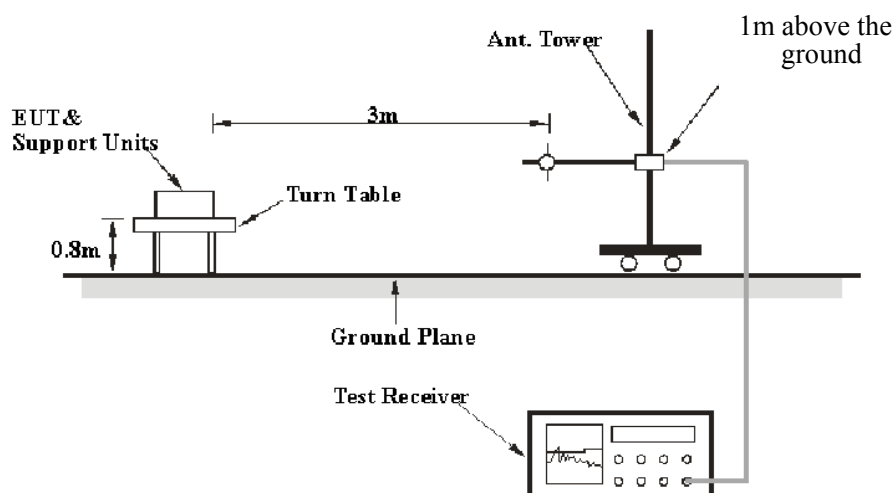
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

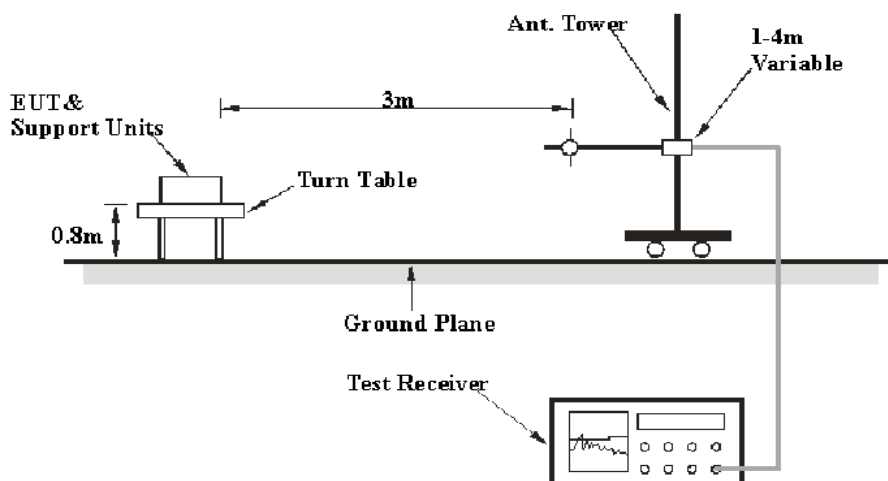
(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

3.2.2 EUT Setup

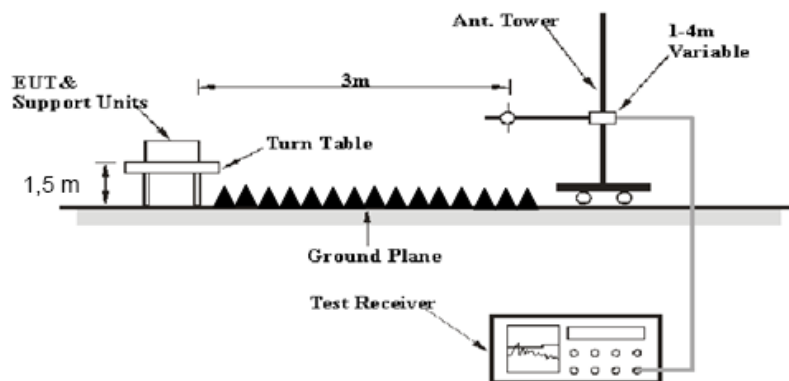
9kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.205, 15.209, and FCC 15.231 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 & Spectrum Analyzer Setup

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

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	300 Hz	1 kHz	300 Hz	PK
150 kHz – 30 MHz	10 kHz	30 kHz	100 kHz	PK
30 MHz – 1000 MHz	100 kHz	300 kHz	100 kHz	PK
Above 1 GHz	1 MHz	3 MHz	/	PK

3.2.4 Test Procedure

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

According to §15.231, Intentional radiators operating under the provisions of this Section shall demonstrate compliance with the limits on the field strength of emissions, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector

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

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- Amplifier Gain

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

Margin = Limit – Result

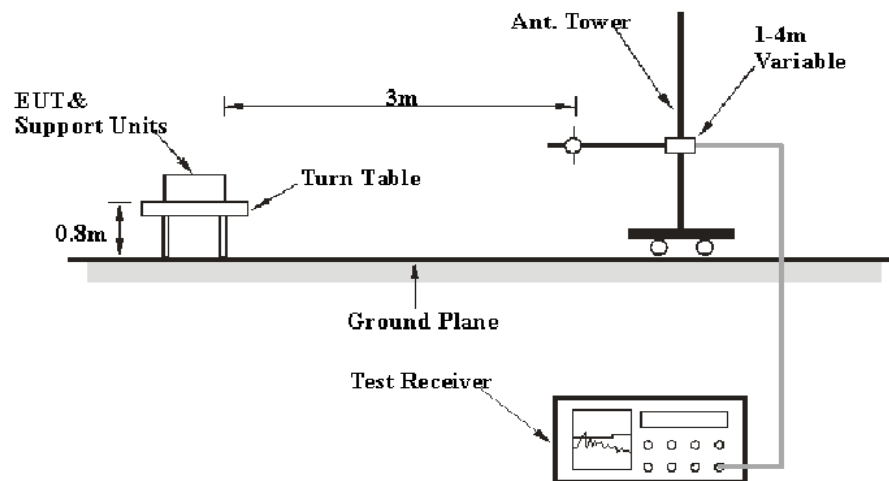
3.3 20 dB Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.231(c)

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

3.3.2 EUT Setup



3.3.3 Test Procedure

According to ANSI C63.10-2013 Section 6.9.2

- The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, unless otherwise specified by the applicable requirement.
- Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

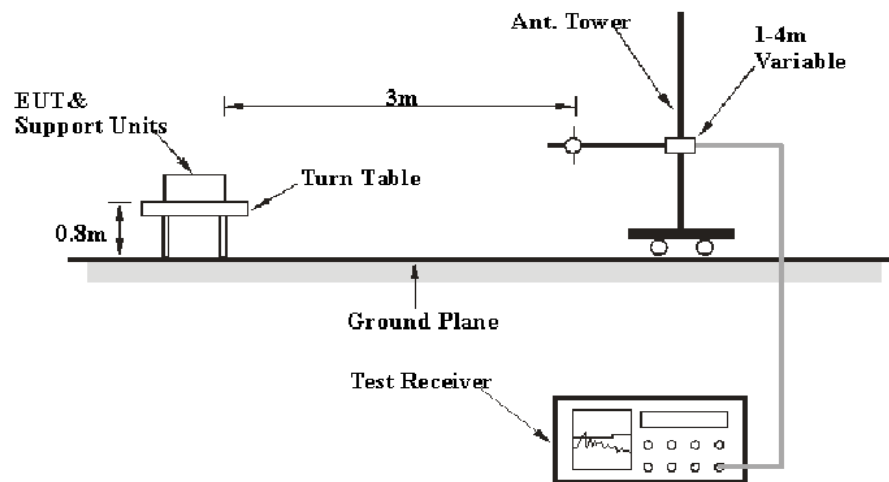
3.4 DEACTIVATION TESTING

3.4.1 Applicable Standard

FCC §15.231 (a)(1)

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

3.4.2 EUT Setup



3.4.3 Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

- 1) Set the center frequency of the instrument to the center frequency of the transmission.
- 2) Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
- 3) Set $VBW \geq RBW$. Set detector = peak or average.

3.5 Antenna Requirement

3.5.1 Applicable Standard

FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the 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.

3.5.2 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 Radiation Spurious Emissions

Serial Number:	2COX-3	Test Date:	Below 1GHz: 2023/11/29 Above 1GHz: 2023/12/4
Test Site:	966-1, 966-2	Test Mode:	Transmitting
Tester:	Vic Du, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6~26.3	Relative Humidity: (%)	46~59	ATM Pressure: (kPa)	100.9~101.2
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Spurious Emissions Below 1GHz					
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
BACL	Loop Antenna	1313-1P	3092721	2023/11/9	2026/11/8
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
Radiation Spurious Emissions Above 1GHz					
AH	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7
Audix	Test Software	E3	201021 (V9)	N/A	N/A

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

Test Data:

1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data packets and keys. Tested at worst case emissions from Pre-Scan: “+” key, as shown in the following figure:



2. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the **Z axis** positioning which it is worse case.

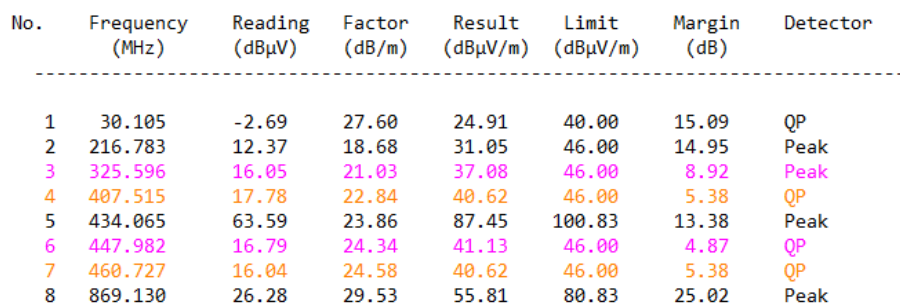
Please refer to the below table and plots.

1) 9kHz~30MHz

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30MHz-1GHz _ Z axis _ Horizontal

Date: 2023-11-29

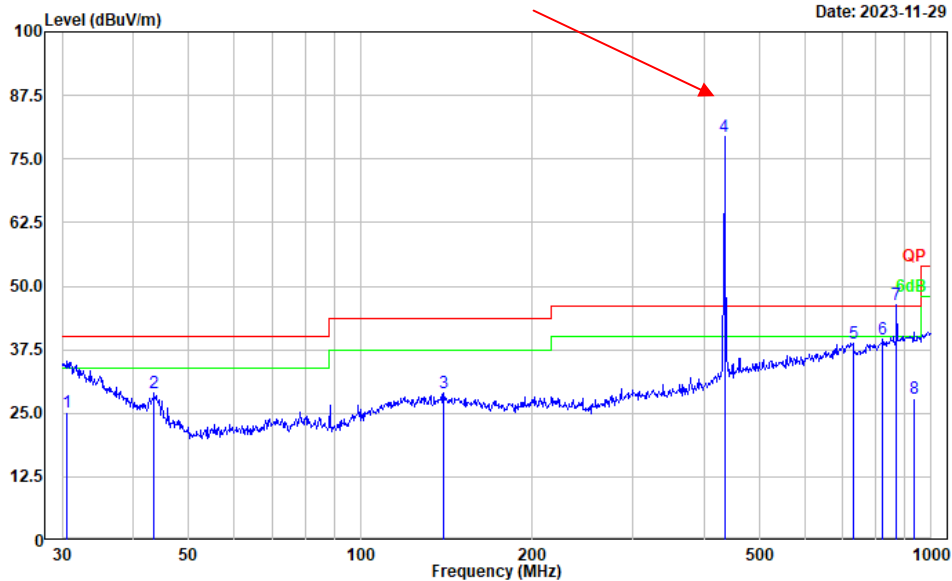


30MHz-1GHz _ Z axis _ Vertical

Project No.: CR231058680-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting

Fundamental

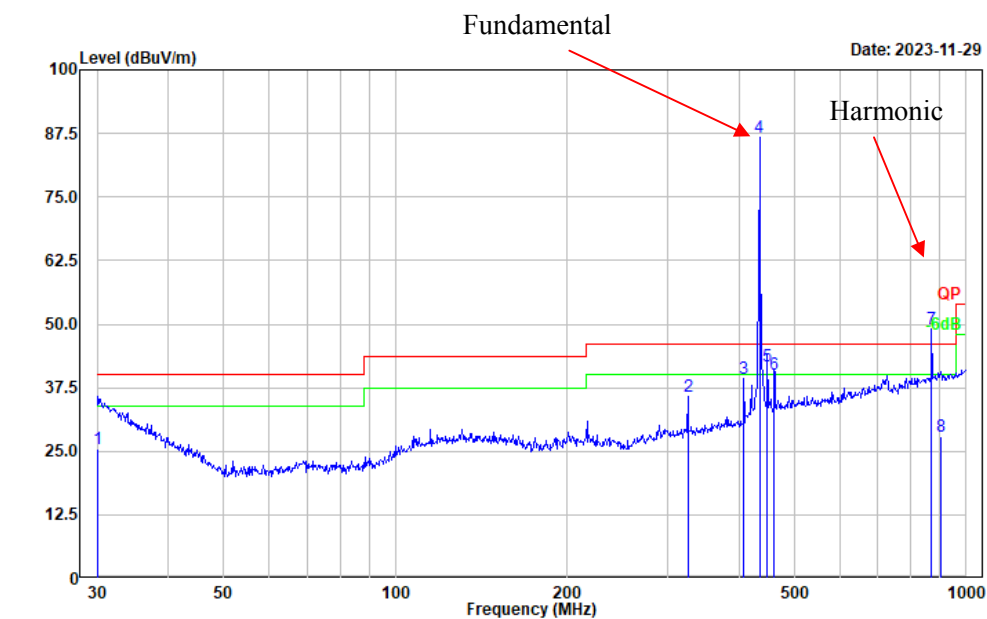
Date: 2023-11-29



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.638	-2.06	27.19	25.13	40.00	14.87	QP
2	43.506	10.98	18.10	29.08	40.00	10.92	Peak
3	139.851	9.25	19.76	29.01	43.50	14.49	Peak
4	434.065	55.60	23.86	79.46	100.83	21.37	Peak
5	729.358	10.74	28.04	38.78	46.00	7.22	Peak
6	821.710	10.37	29.20	39.57	46.00	6.43	Peak
7	869.130	16.90	29.53	46.43	80.83	34.40	Peak
8	932.272	-1.88	29.92	28.04	46.00	17.96	QP

30MHz-1GHz _ X axis _ Horizontal

Project No.: CR231058680-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting



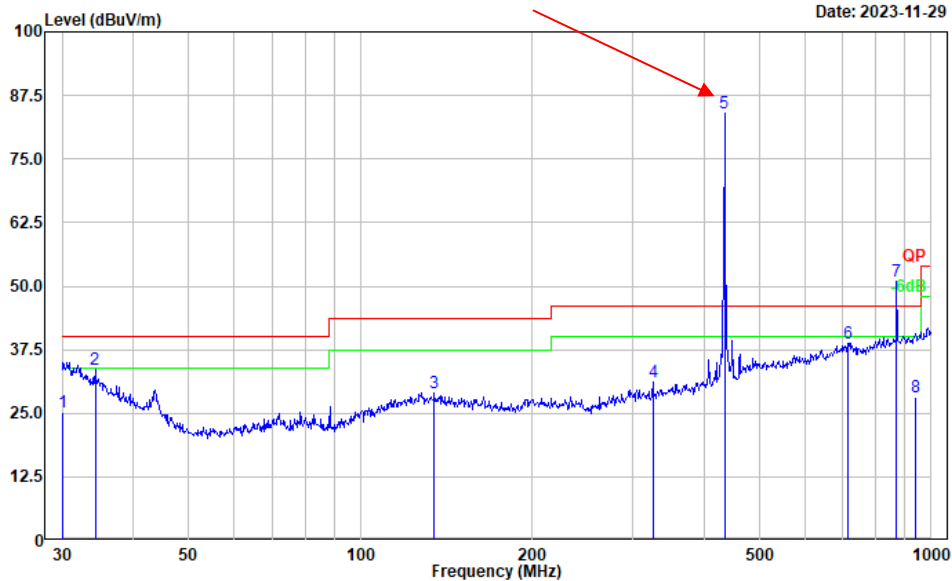
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.000	-2.14	27.68	25.54	40.00	14.46	QP
2	325.596	14.82	21.03	35.85	46.00	10.15	Peak
3	407.515	16.42	22.84	39.26	46.00	6.74	Peak
4	434.065	62.88	23.86	86.74	100.83	14.09	Peak
5	447.982	17.50	24.34	41.84	46.00	4.16	QP
6	460.727	15.60	24.58	40.18	46.00	5.82	QP
7	869.130	19.44	29.53	48.97	80.83	31.86	Peak
8	903.309	-1.81	29.83	28.02	46.00	17.98	QP

30MHz-1GHz _ X axis _ Vertical

Project No.: CR231058680-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting

Fundamental

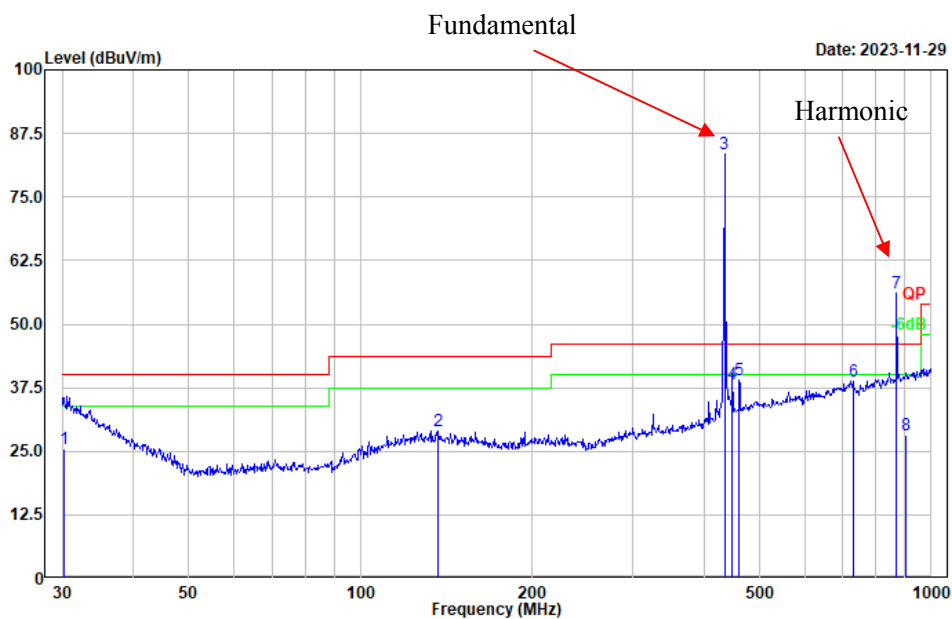
Date: 2023-11-29



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.105	-2.35	27.60	25.25	40.00	14.75	QP
2	34.276	9.14	24.43	33.57	40.00	6.43	Peak
3	134.559	8.99	19.97	28.96	43.50	14.54	Peak
4	325.596	10.08	21.03	31.11	46.00	14.89	Peak
5	434.065	60.06	23.86	83.92	100.83	16.91	Peak
6	714.173	10.81	27.89	38.70	46.00	7.30	Peak
7	869.130	21.31	29.53	50.84	80.83	29.99	Peak
8	938.833	-1.71	30.00	28.29	46.00	17.71	QP

30MHz-1GHz _ Y axis _ Horizontal

Project No.: CR231058680-RF
Tester: Vic Du
Polarization: horizontal
Note: Transmitting



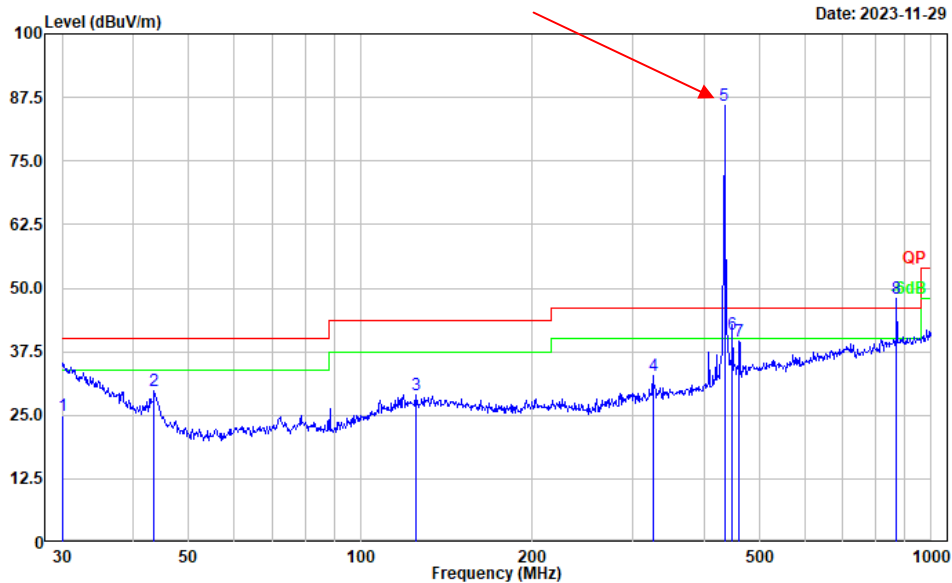
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.211	-2.02	27.52	25.50	40.00	14.50	QP
2	136.939	9.19	19.88	29.07	43.50	14.43	Peak
3	434.065	59.52	23.86	83.38	100.83	17.45	Peak
4	447.982	13.99	24.34	38.33	46.00	7.67	QP
5	460.727	14.48	24.58	39.06	46.00	6.94	Peak
6	729.358	10.67	28.04	38.71	46.00	7.29	Peak
7	869.130	26.68	29.53	56.21	80.83	24.62	Peak
8	903.309	-1.64	29.83	28.19	46.00	17.81	QP

30MHz-1GHz _ Y axis _ Vertical

Project No.: CR231058680-RF
Tester: Vic Du
Polarization: vertical
Note: Transmitting

Fundamental

Date: 2023-11-29



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.105	-2.67	27.60	24.93	40.00	15.07	QP
2	43.506	11.80	18.10	29.90	40.00	10.10	Peak
3	125.007	8.88	20.13	29.01	43.50	14.49	Peak
4	325.596	11.86	21.03	32.89	46.00	13.11	Peak
5	434.065	62.12	23.86	85.98	100.83	14.85	Peak
6	447.982	16.48	24.34	40.82	46.00	5.18	QP
7	460.727	15.07	24.58	39.65	46.00	6.35	Peak
8	869.130	18.45	29.53	47.98	80.83	32.85	Peak

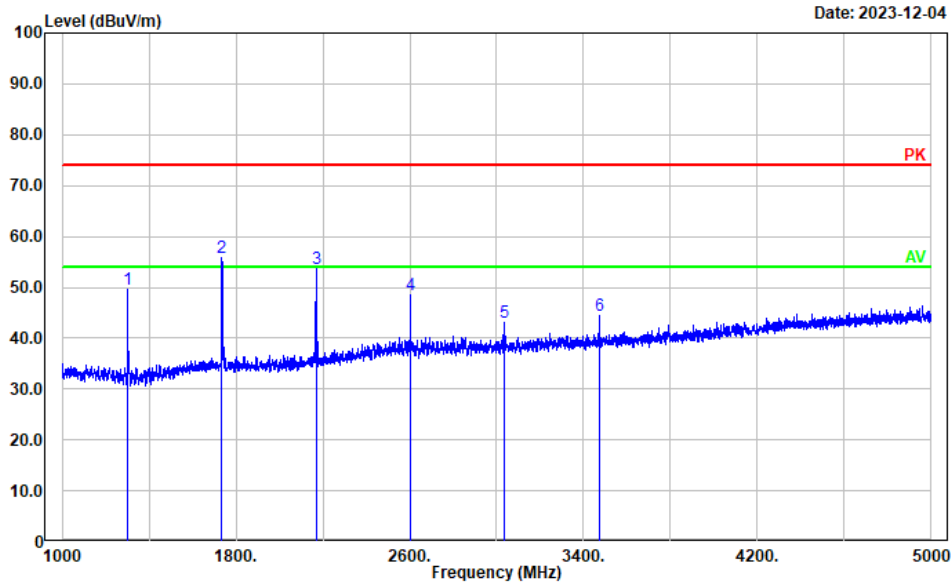
3) Above 1GHz

Note: The worst-case axis Z axis performed to 1~5GHz Radiated Emission test.

1GHz-5GHz _ Peak Strength _ Z axis _ Horizontal

Project No.: CR231058680-RF
Tester: Mack Huang
Polarization: horizontal
Note:

Date: 2023-12-04

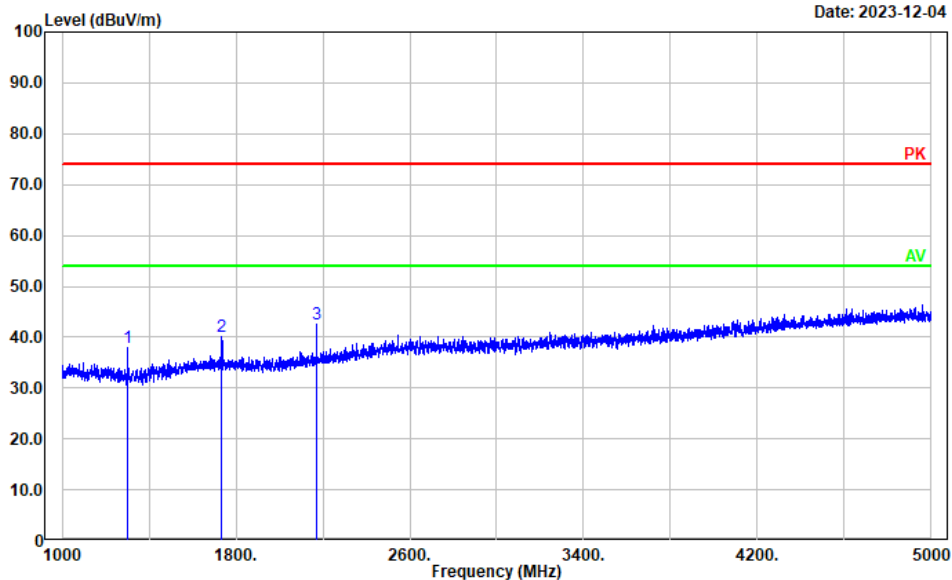


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1301.760	50.97	-1.50	49.47	74.00	24.53	Peak
2	1735.680	55.45	0.27	55.72	74.00	18.28	Peak
3	2169.600	51.13	2.40	53.53	74.00	20.47	Peak
4	2603.520	43.90	4.58	48.48	74.00	25.52	Peak
5	3037.440	37.63	5.48	43.11	74.00	30.89	Peak
6	3471.360	37.51	6.83	44.34	74.00	29.66	Peak

1GHz-5GHz _ Peak Strength _ Z axis _ Vertical

Project No.: CR231058680-RF
Tester: Mack Huang
Polarization: vertical
Note:

Date: 2023-12-04



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1301.760	39.37	-1.50	37.87	74.00	36.13	Peak
2	1735.680	39.89	0.27	40.16	74.00	33.84	Peak
3	2169.600	40.10	2.40	42.50	74.00	31.50	Peak

Average Strength

Frequency (MHz)	Peak (dBμV/m)	Polar (H/V)	Duty Cycle Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
433.92	87.45	H	-8.05	79.40	80.83	1.43
433.92	79.46	V	-8.05	71.41	80.83	9.42
867.84	55.81	H	-8.05	47.76	60.83	13.07
867.84	46.43	V	-8.05	38.38	60.83	22.45
1301.760	49.47	H	-8.05	41.42	54.00	12.58
1301.760	37.87	V	-8.05	29.82	54.00	24.18
1735.680	55.72	H	-8.05	47.67	60.83	13.16
1735.680	40.16	V	-8.05	32.11	60.83	28.72
2169.600	53.53	H	-8.05	45.48	60.83	15.35
2169.600	42.50	V	-8.05	34.45	60.83	26.38
2603.520	48.48	H	-8.05	40.43	60.83	20.40
3037.440	43.11	H	-8.05	35.06	60.83	25.77
3471.360	44.34	H	-8.05	36.29	60.83	24.54

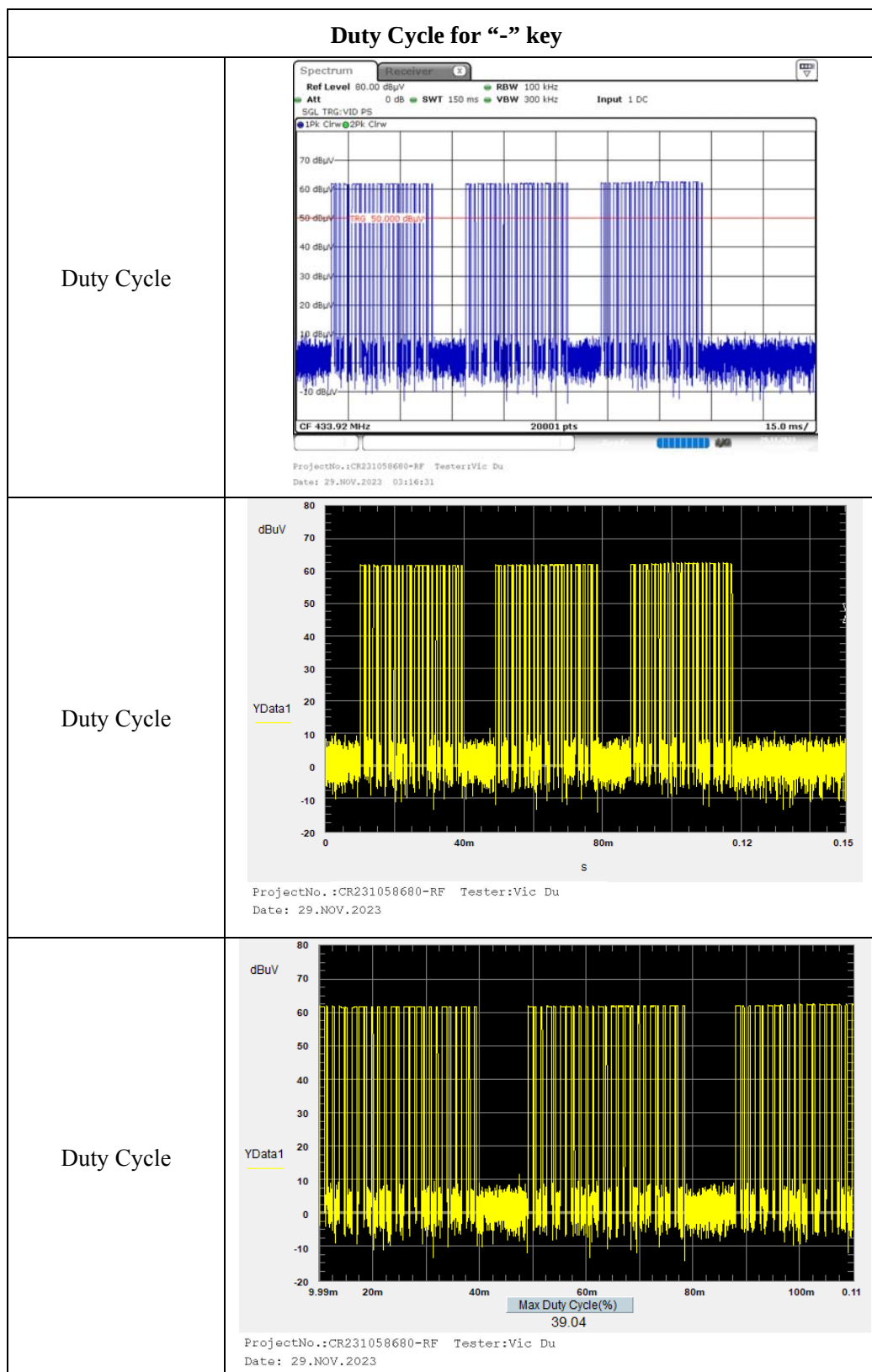
Duty Cycle:

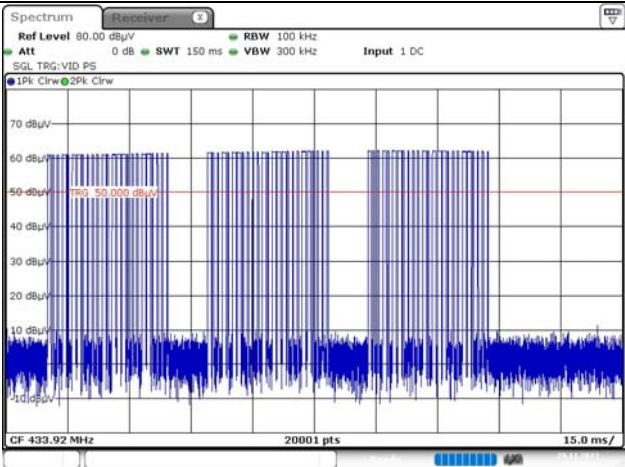
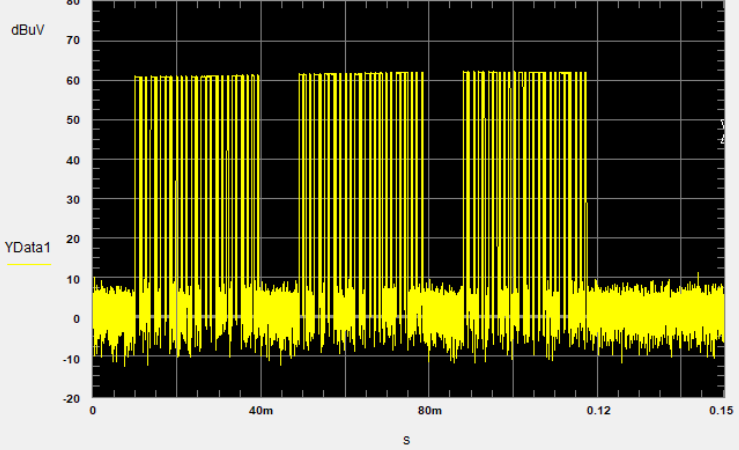
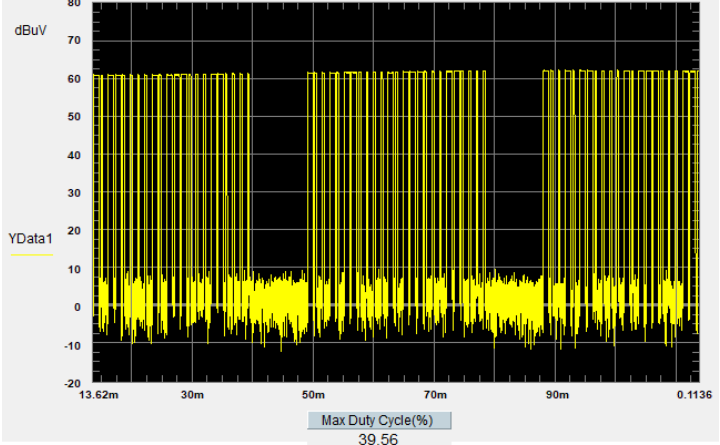
Test Key	Duty Cycle (%)	Duty Cycle Factor (dB)
+	39.56	-8.05
Play	39.04	-8.17
-	39.04	-8.17

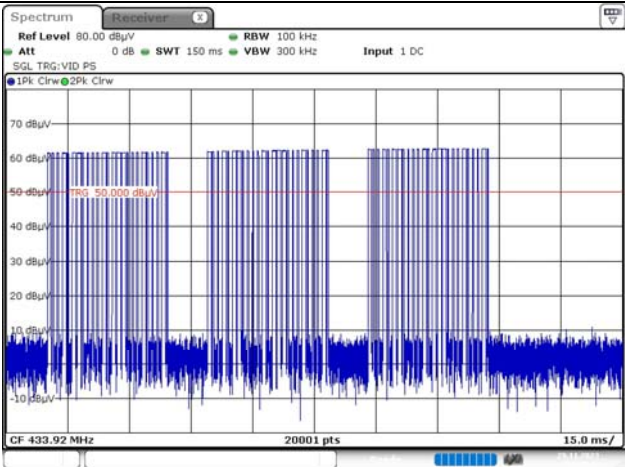
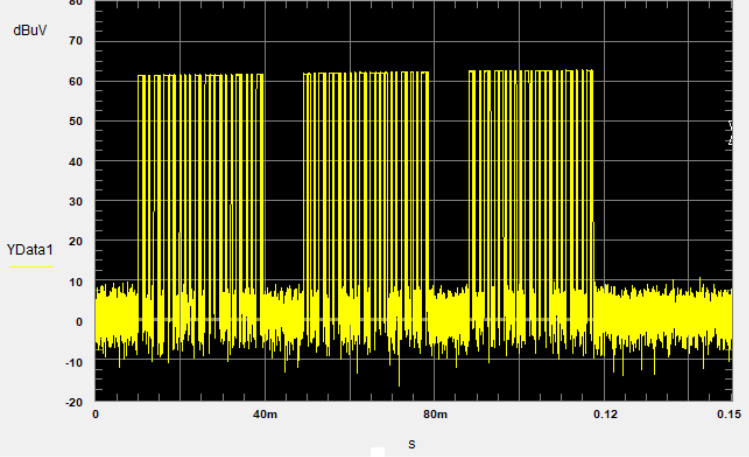
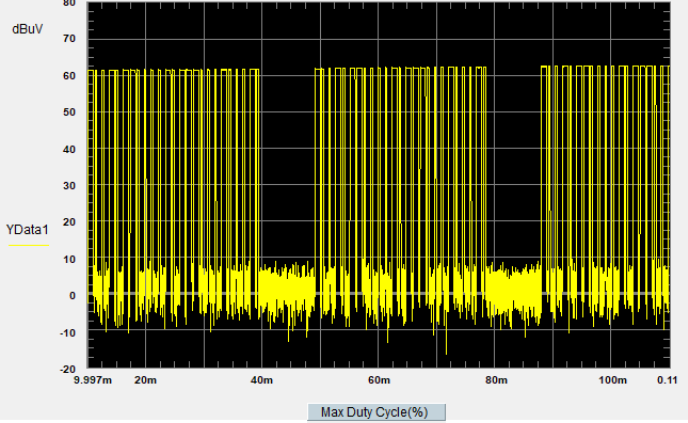
Note:

1. Duty Cycle Factor= $20 \times \log(\text{Duty cycle})$
2. Average Strength=Peak Strength + duty Cycle Factor
3. the "+" key was the worst key

Test Plots for Duty Cycle:



Duty Cycle	Duty Cycle for “+” key  ProjectNo.: CR231058680-RF Tester:Vic Du Date: 29.NOV.2023 03:35:38
Duty Cycle	 ProjectNo.: CR231058680-RF Tester:Vic Du Date: 29.NOV.2023
Duty Cycle	 ProjectNo.: CR231058680-RF Tester:Vic Du Date: 29.NOV.2023

Duty Cycle	Duty Cycle for “Play” key  ProjectNo.:CR231058680-RF Tester:Vic Du Date: 29.NOV.2023 03:10:19
Duty Cycle	 ProjectNo.:CR231058680-RF Tester:Vic Du Date: 29.NOV.2023
Duty Cycle	 Max Duty Cycle(%) 39.04 ProjectNo.:CR231058680-RF Tester:Vic Du Date: 29.NOV.2023

4.3 20 dB Emission Bandwidth

Serial Number:	2COX-3	Test Date:	2023/11/29
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.2
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Test Equipment List and Details:

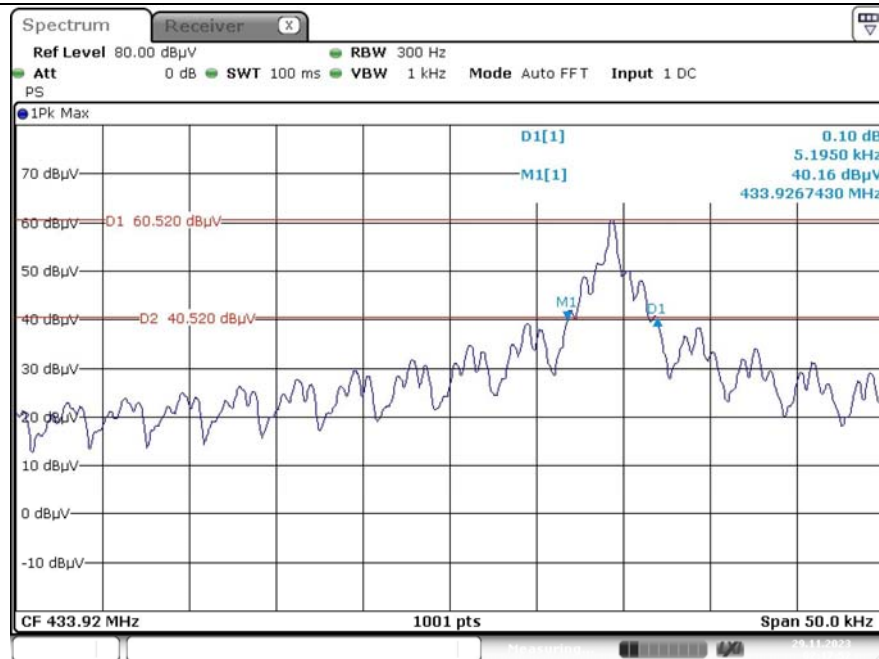
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15

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

Test Data:

Test Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)
433.92	5.195	1084.800

20dB Emission Bandwidth



ProjectNo.:CR231058680-RF Tester:Vic Du
Date: 29.NOV.2023 02:17:52

4.4 DEACTIVATION TESTING:

Serial Number:	2COX-3	Test Date:	2023/11/29
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.2
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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
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0780-01	2023/7/16	2024/7/15

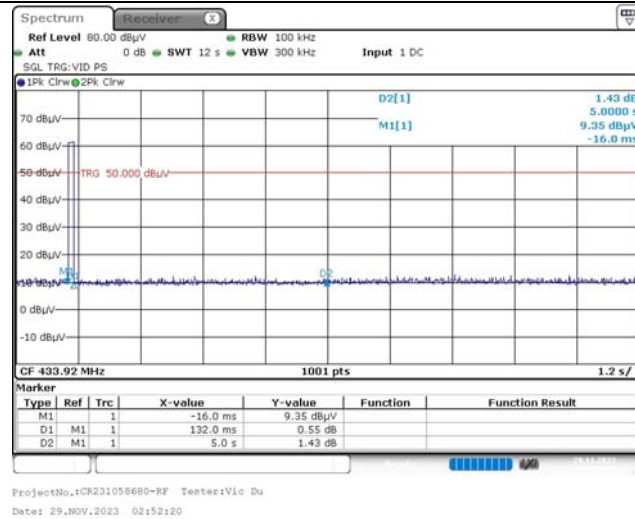
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

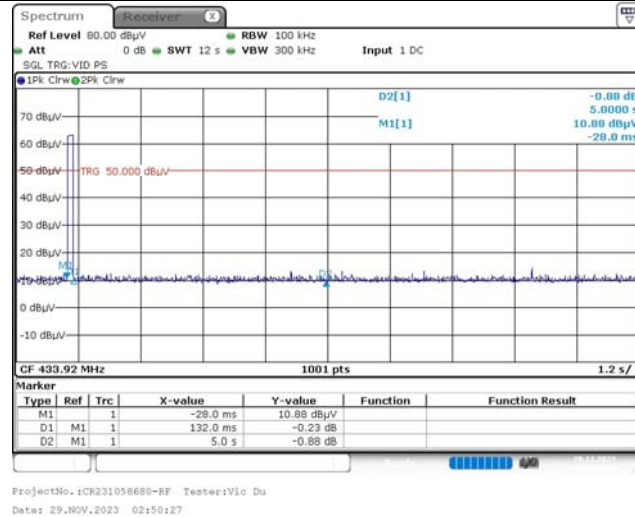
Test Frequency (MHz)	Maximum Deactivate Time (s)	Limit (s)
433.92	0.132	<5

DEACTIVATION TESTING

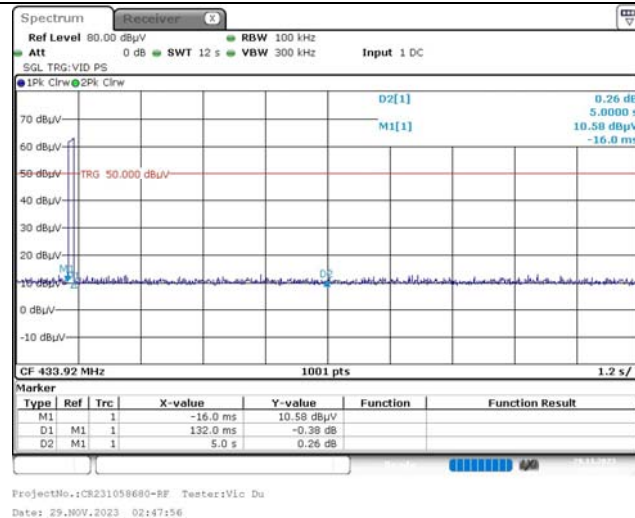
“-” key



“+” key



Play key



5. RF EXPOSURE EVALUATION

5.1 Applicable Standard

§1.1307(b)(3)(i) For single RF sources (*i.e.*, any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

5.2 Measurement Result

Frequency (MHz)	Maximum EIRP (dBm)	Antenna Gain (dBi)	Maximum Conducted Output Power		1-mW Test Exemption
			dBm	mW	
433.92	-7.75	0.8	-8.55	0.14	Compliant

Note:

1. Chose the maximum power to do RF Exposure Evaluation.
2. This device maximum E-Field level is 87.45 dB μ V/m at 3m, so the EIRP power is -7.75 dBm.
3. Pout EIRP (dBm)=Field Strength of Fundamental(dBuV/m)-95.2
4. Conducted Output Power = EIRP - Antenna Gain

Result: Compliant. RF Exposure is exemption.

6. EUT PHOTOGRAPHS

Please refer to the attachment CR231058680-EXP EUT EXTERNAL PHOTOGRAPHS and CR231058680-INP EUT INTERNAL PHOTOGRAPHS

7. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231058680-00-TSP TEST SETUP PHOTOGRAPHS.

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