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

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **Hangzhou Meari Technology Co., Ltd.**

Address: Room 604-605,Building 1,No.768 Jianghong Road,Changhe street,Binjiang District,Hangzhou,zhejiang,China

FCC ID: **2AG7C-BELL22T**

Product Name: **Wireless DoorBell**

Model Number: **Bell 22S, Bell 22T, Bell 22Q**

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

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

Report Number: **CR22070051-00A**

Date Of Issue: **2022-08-20**

Reviewed By: **Sun Zhong**

Sun Zhong

Title: Manager

Test Laboratory: **China Certification ICT Co., Ltd (Dongguan)**
No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China
Tel: +86-769-82016888

Test Facility

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

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

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

Declarations

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

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

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CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Wireless DoorBell
EUT Model:	Bell 22S
Multiple Model:	Bell 22T, Bell 22Q
Operation Frequency:	433.92 MHz
Modulation Type:	OOK
Rated Input Voltage:	DC 5V or AC12-24V or DC12-24V
Serial Number:	CR22070051-RF-S1
EUT Received Date:	2022.7.20
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Antenna Information Detail▲:

Antenna Manufacturer	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range	§15.203 Requirement
Hangzhou Meari Technology Co., Ltd.	FPC	50	0.5dBi/433.92MHz	**Compliance**

The Method of §15.203 Compliance:

☒Antenna must be permanently attached to the unit.

☐Antenna must use a unique type of connector to attach to the EUT.

☐Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter-1	Zhuzhou Dachuan Electronic Technology Co.,Ctd.	DCT07W050100US-C1	Input:AC100-240V 50/60Hz 250mA Output: 5V, 1.0A
Adapter-2	SHENZHEN TIANYIN ELECTRONICS CO., LTD	TPA-46B050100UU	Input: AC100-240V 50/60Hz 0.2A Output: 5V, 1000mA
USB Cable	Unknown	Unknown	Unshielded, 1m

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:	Engineering mode
Engineering Mode was provided by manufacturer▲. The maximum power was configured default setting.	

1.2.2 Support Equipment List and Details

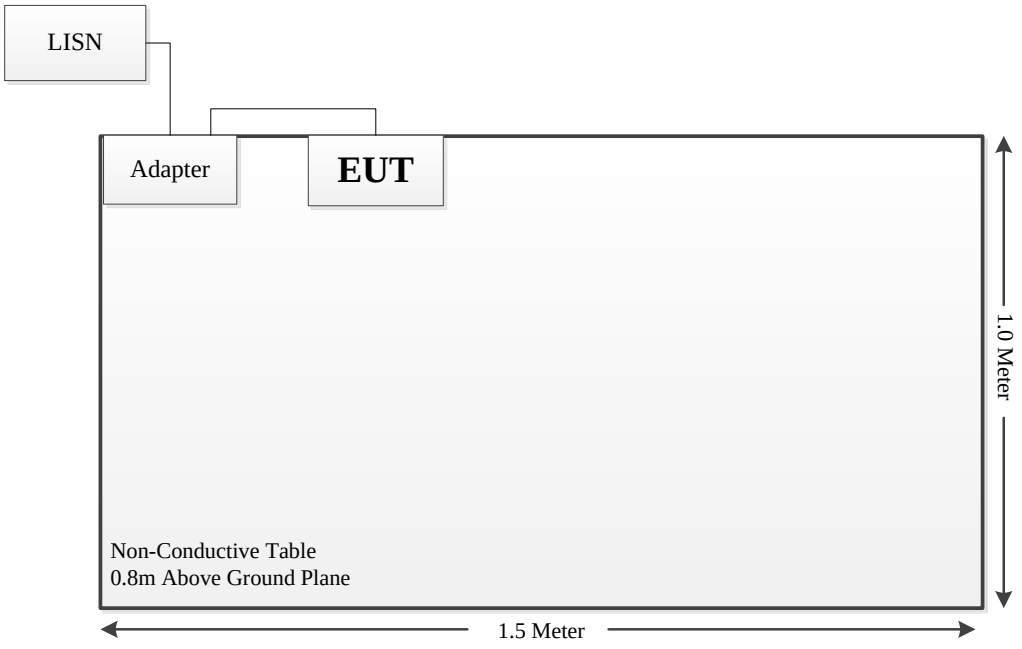
Manufacturer	Description	Model	Serial Number
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386
High Power	AC Power Supply	HPA-1110T	HP2020091202

1.2.3 Support Cable List and Details

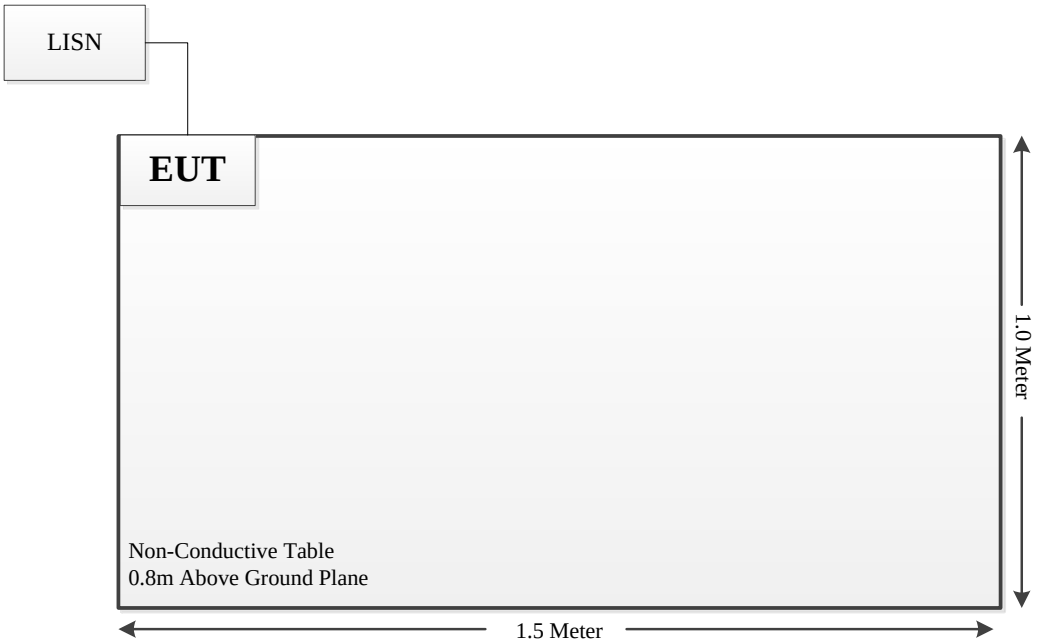
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power Cable	No	No	1.3	EUT	LISN
Power Cable	No	No	1.5	DC Power Supply	EUT
Power Cable	No	No	1.3	LISN	DC Power Supply

1.2.4 Block Diagram of Test Setup

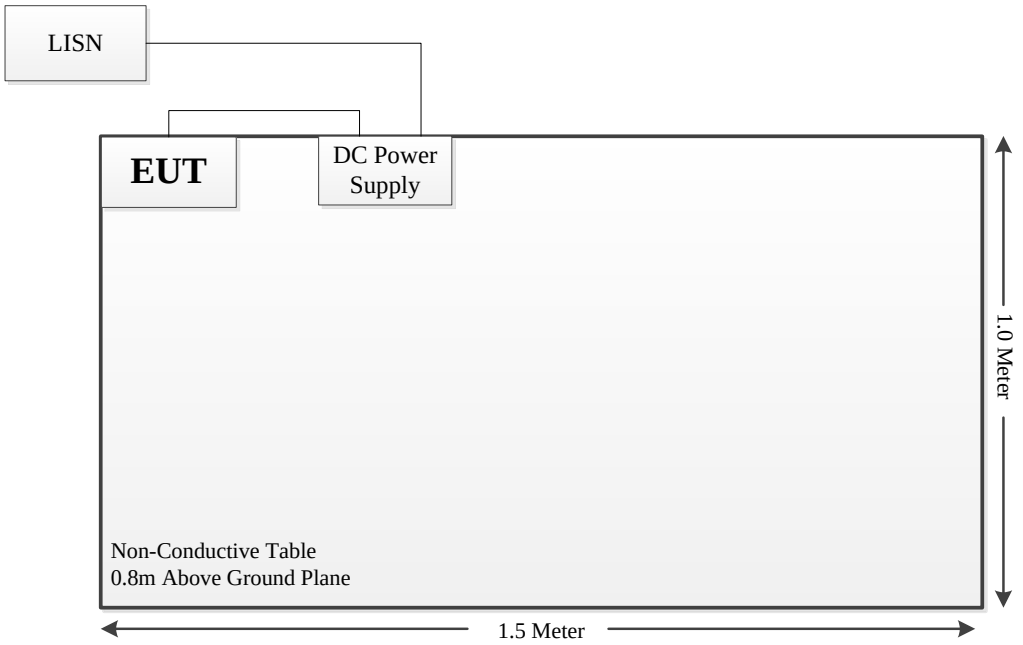
AC line conducted emissions:
For DC 5V (Adapter/USB Port) test:



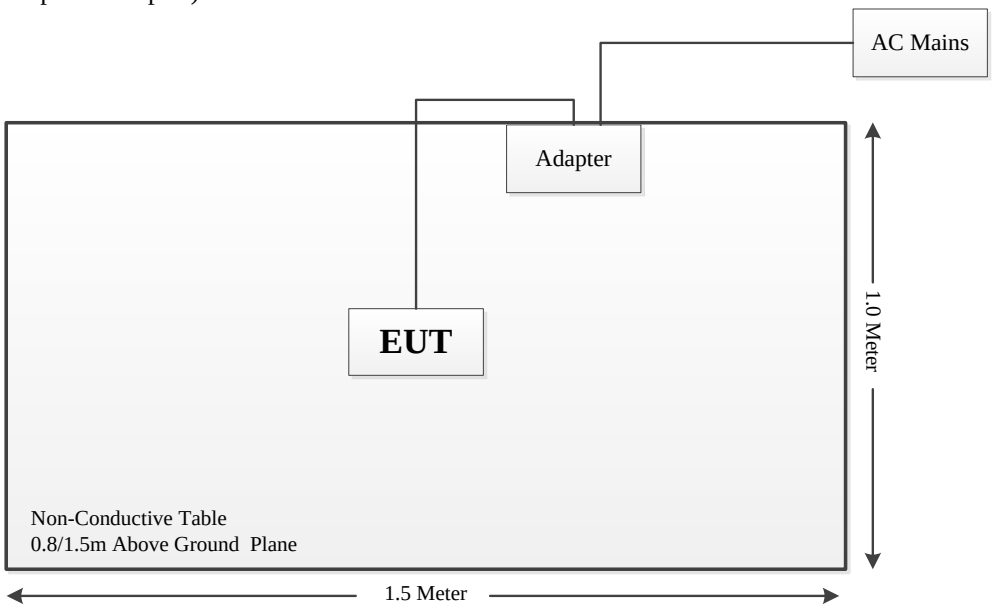
For AC12-24V test:



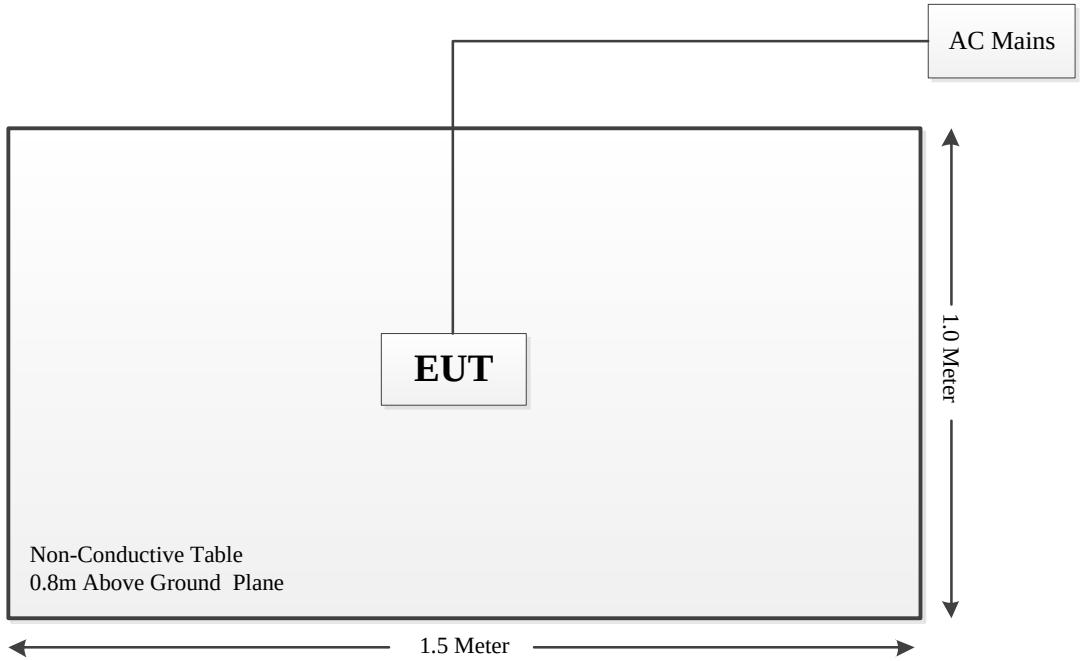
For DC12-24V test:



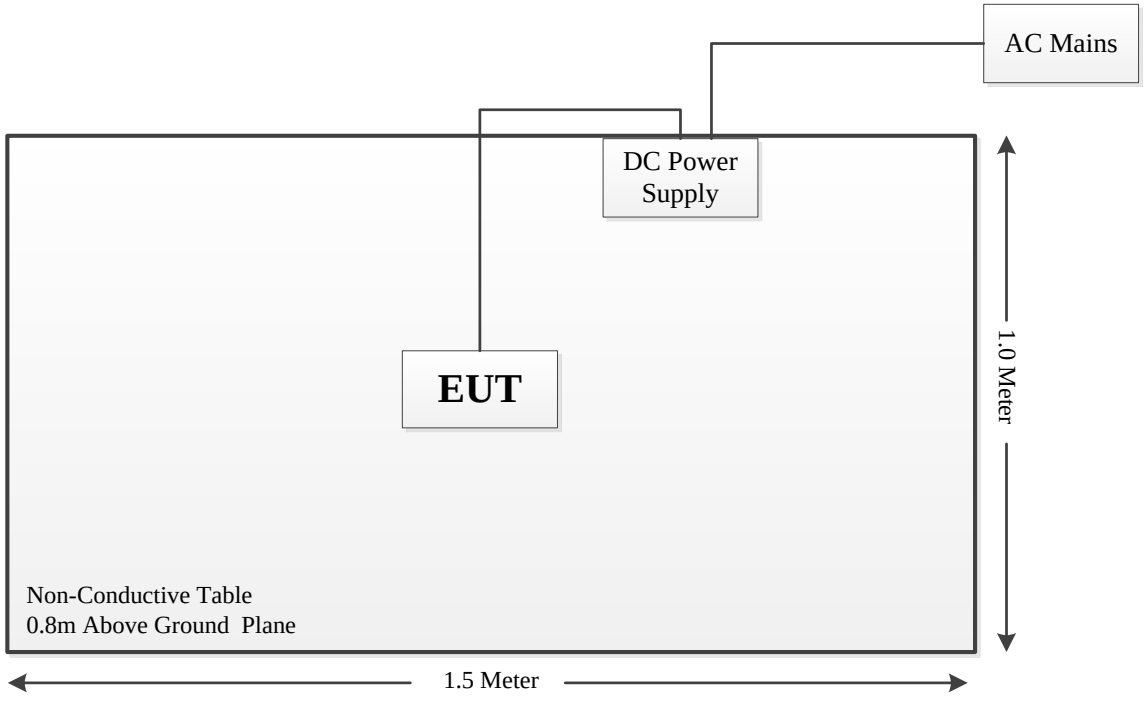
Spurious Emissions:
For DC 5V (Adapter/USB port) test:



For AC12-24V test:



For DC12-24V test:



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	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

Standard(s) Section	Test Items	Result
§15.207 (a)	Conducted Emissions	Compliant
§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

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:

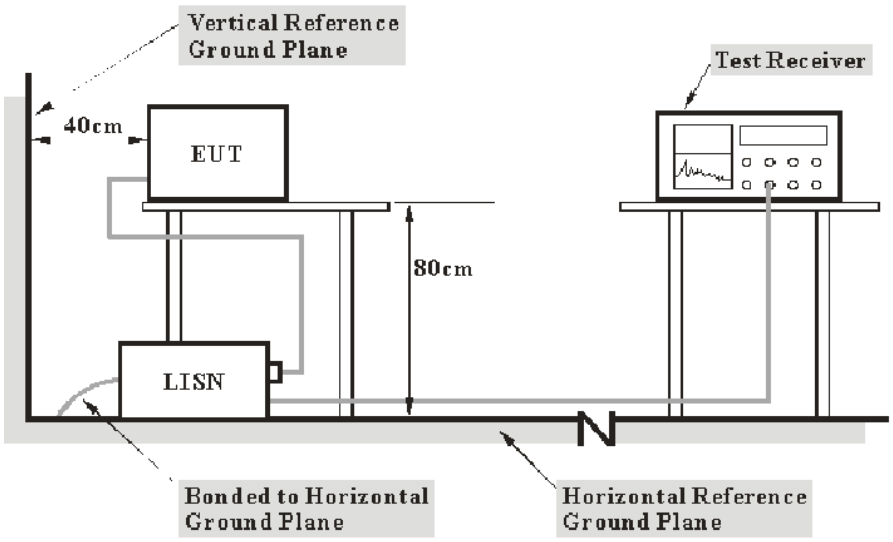
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(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 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:

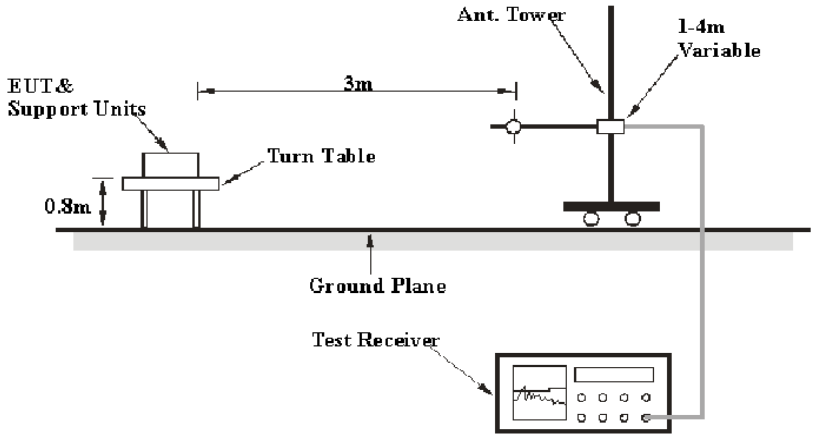
Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	[1]1,250 to 3,750	[1]125 to 375
174-260	3,750	375
260-470	[1]3,750 to 12,500	[1]375 to 1,250
Above 470	12,500	1,250

1Linear interpolations.

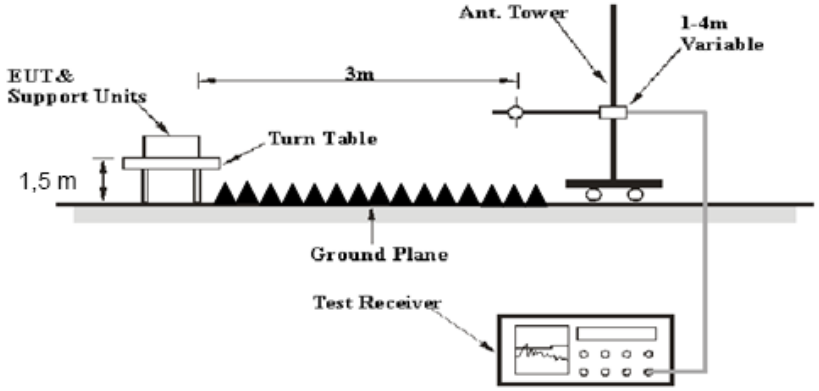
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.
(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, 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

Below 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 portable device, test should be performed at X.Y.Z Axis:

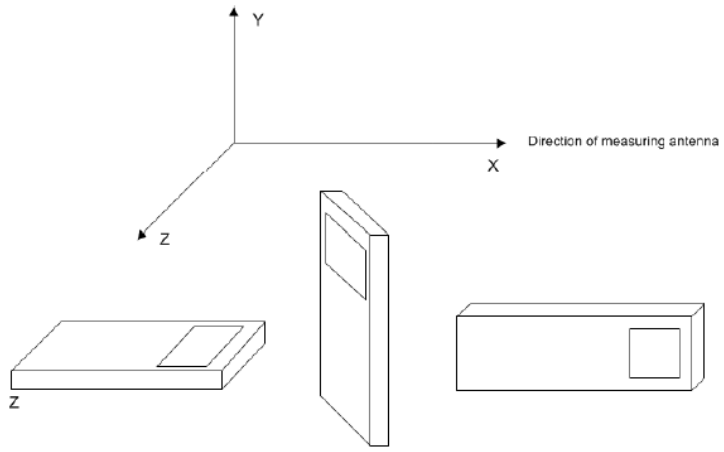


Figure 8—EUT configuration positions (see 6.3.1)

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
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

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

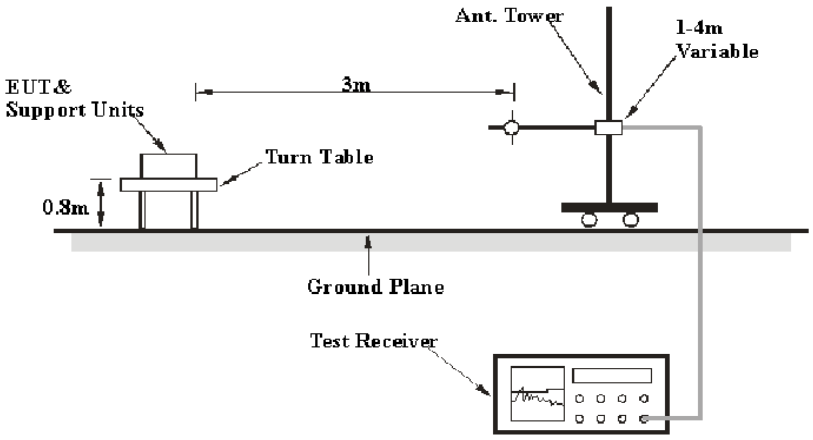
3.3 20 dB Emission Bandwidth:

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



3.3.3Test Procedure

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

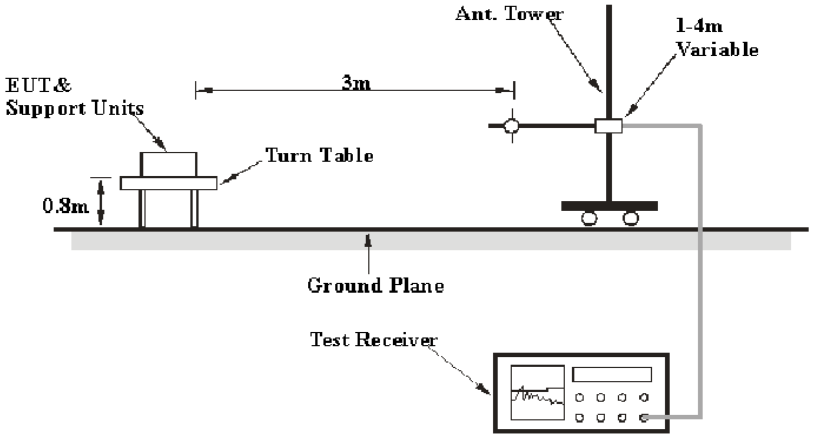
3.4 DEACTIVATION TESTING

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



3.4.3Test 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 ≥ OBW if possible; otherwise, set RBW to the largest available value.
3) Set VBW ≥ 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

Please refer to the Antenna Information detail in Section 1.

4. Test DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	CR22070051-RF-S1	Test Date:	2022-08-02
Test Site:	CE	Test Mode:	Transmitting
Tester:	Vic Du	Test Result:	Pass

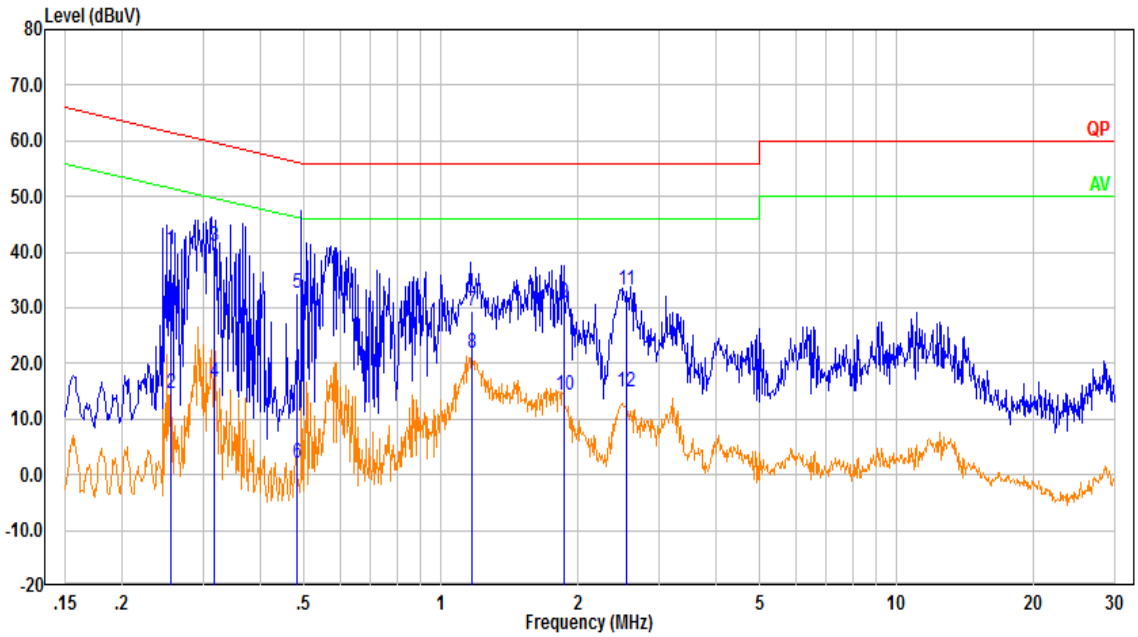
Environmental Conditions:					
Temperature: (℃)	27.9	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.3

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2022-04-01	2023-03-31
R&S	EMI Test Receiver	ESR3	102726	2022-07-15	2023-07-14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2021-08-08	2022-08-07
Audix	Test Software	E3	190306 (V9)	N/A	N/A

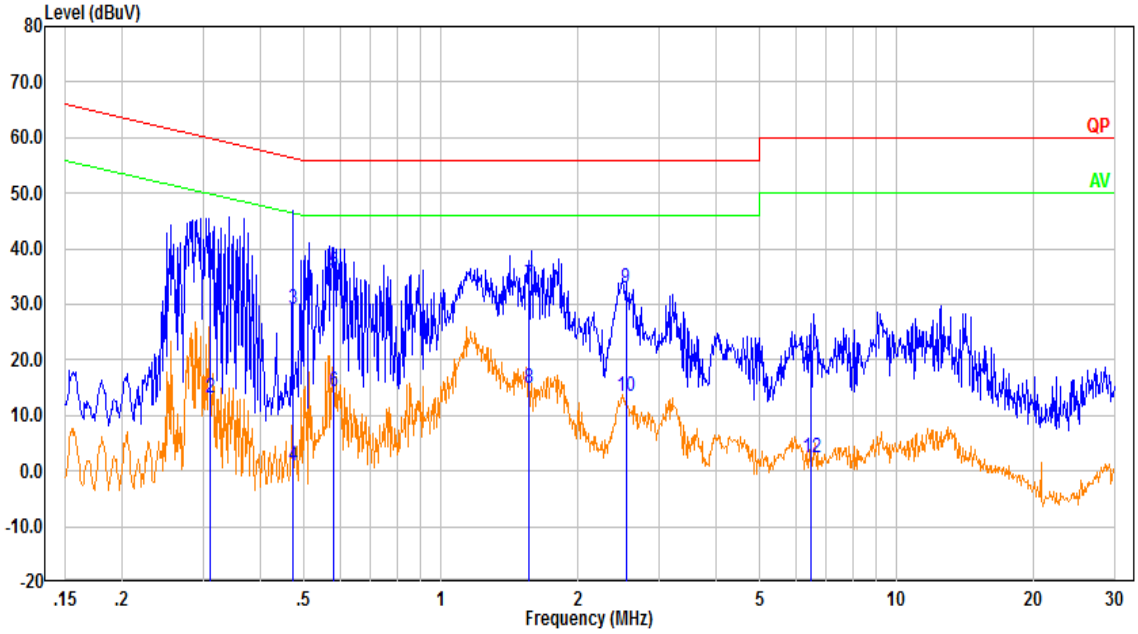
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

AC 12V :
Line:



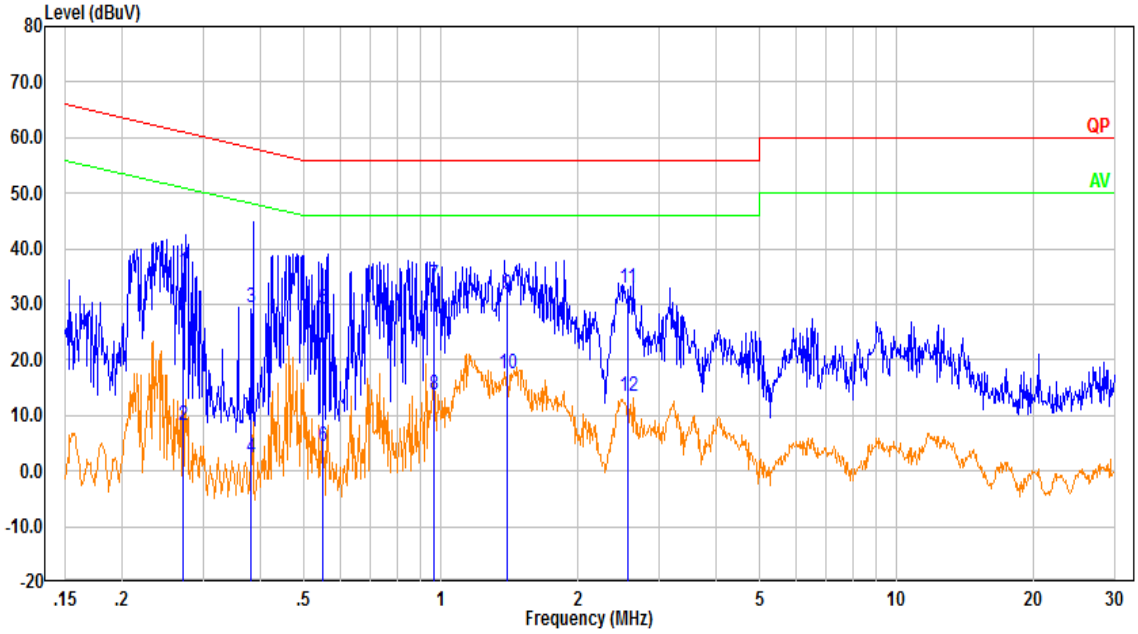
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.255	30.82	9.61	40.43	61.59	21.16	QP
2	0.255	5.06	9.61	14.67	51.59	36.92	Average
3	0.318	31.33	9.61	40.94	59.76	18.82	QP
4	0.318	6.90	9.61	16.51	49.76	33.25	Average
5	0.484	23.03	9.61	32.64	56.27	23.63	QP
6	0.484	-7.39	9.61	2.22	46.27	44.05	Average
7	1.166	19.86	9.62	29.48	56.00	26.52	QP
8	1.166	12.21	9.62	21.83	46.00	24.17	Average
9	1.860	21.27	9.63	30.90	56.00	25.10	QP
10	1.860	4.55	9.63	14.17	46.00	31.83	Average
11	2.544	23.57	9.64	33.21	56.00	22.79	QP
12	2.544	5.10	9.64	14.74	46.00	31.26	Average

Neutral:



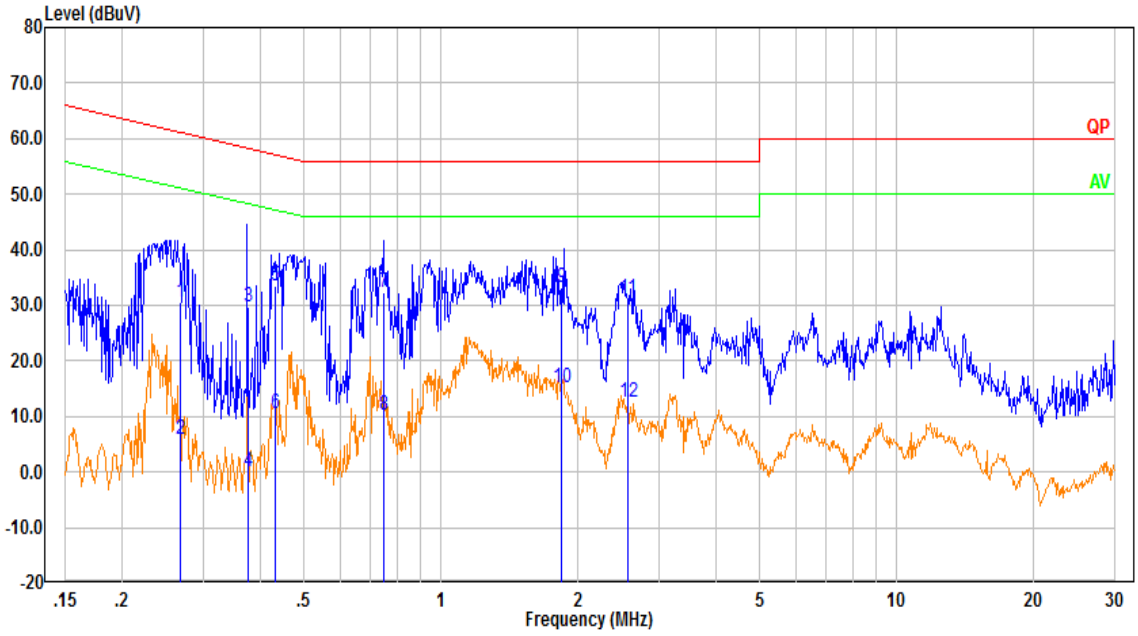
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.311	26.92	9.61	36.53	59.93	23.40	QP
2	0.311	3.65	9.61	13.26	49.93	36.67	Average
3	0.472	19.38	9.61	28.99	56.47	27.48	QP
4	0.472	-8.74	9.61	0.87	46.47	45.60	Average
5	0.580	26.31	9.62	35.93	56.00	20.07	QP
6	0.580	4.77	9.62	14.39	46.00	31.61	Average
7	1.560	23.89	9.63	33.52	56.00	22.48	QP
8	1.560	5.32	9.63	14.95	46.00	31.05	Average
9	2.544	23.19	9.64	32.83	56.00	23.17	QP
10	2.544	3.83	9.64	13.47	46.00	32.53	Average
11	6.504	9.54	9.66	19.20	60.00	40.80	QP
12	6.504	-7.33	9.66	2.33	50.00	47.67	Average

AC 24V:
Line:



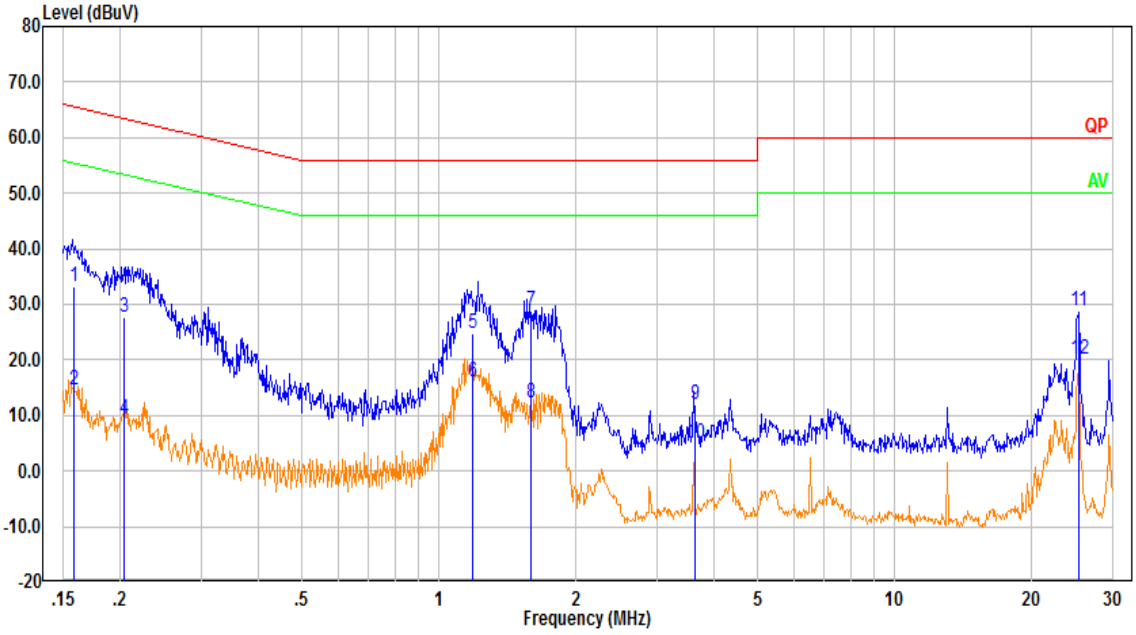
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.272	26.20	9.61	35.81	61.05	25.24	QP
2	0.272	-1.53	9.61	8.08	51.05	42.97	Average
3	0.382	19.95	9.61	29.56	58.23	28.67	QP
4	0.382	-7.30	9.61	2.31	48.23	45.92	Average
5	0.550	19.62	9.62	29.23	56.00	26.77	QP
6	0.550	-5.29	9.62	4.33	46.00	41.67	Average
7	0.962	23.87	9.62	33.49	56.00	22.51	QP
8	0.962	4.01	9.62	13.63	46.00	32.37	Average
9	1.393	21.99	9.62	31.61	56.00	24.39	QP
10	1.393	7.80	9.62	17.42	46.00	28.58	Average
11	2.568	23.24	9.64	32.89	56.00	23.11	QP
12	2.568	3.81	9.64	13.45	46.00	32.55	Average

Neutral:



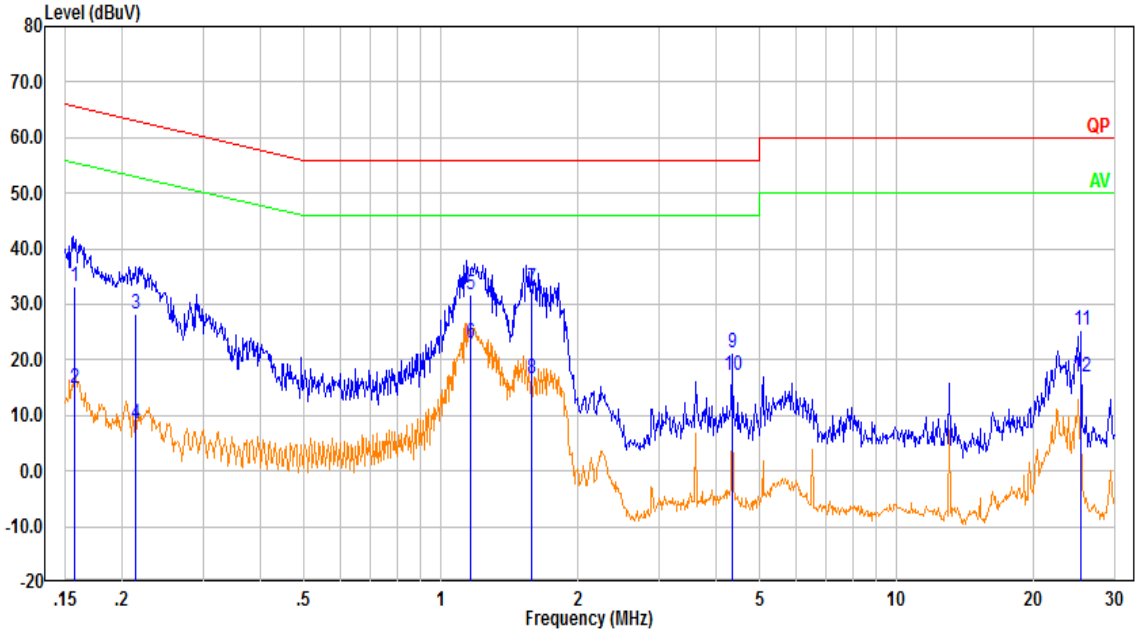
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.268	21.07	9.61	30.68	61.17	30.49	QP
2	0.268	-3.76	9.61	5.85	51.17	45.32	Average
3	0.377	20.07	9.61	29.68	58.34	28.66	QP
4	0.377	-9.58	9.61	0.03	48.34	48.31	Average
5	0.433	23.99	9.61	33.60	57.20	23.60	QP
6	0.433	0.77	9.61	10.38	47.20	36.82	Average
7	0.750	22.75	9.62	32.37	56.00	23.63	QP
8	0.750	0.51	9.62	10.13	46.00	35.87	Average
9	1.837	23.70	9.63	33.32	56.00	22.68	QP
10	1.837	5.68	9.63	15.31	46.00	30.69	Average
11	2.568	21.53	9.64	31.17	56.00	24.83	QP
12	2.568	2.96	9.64	12.60	46.00	33.40	Average

DC 12V :
Line:



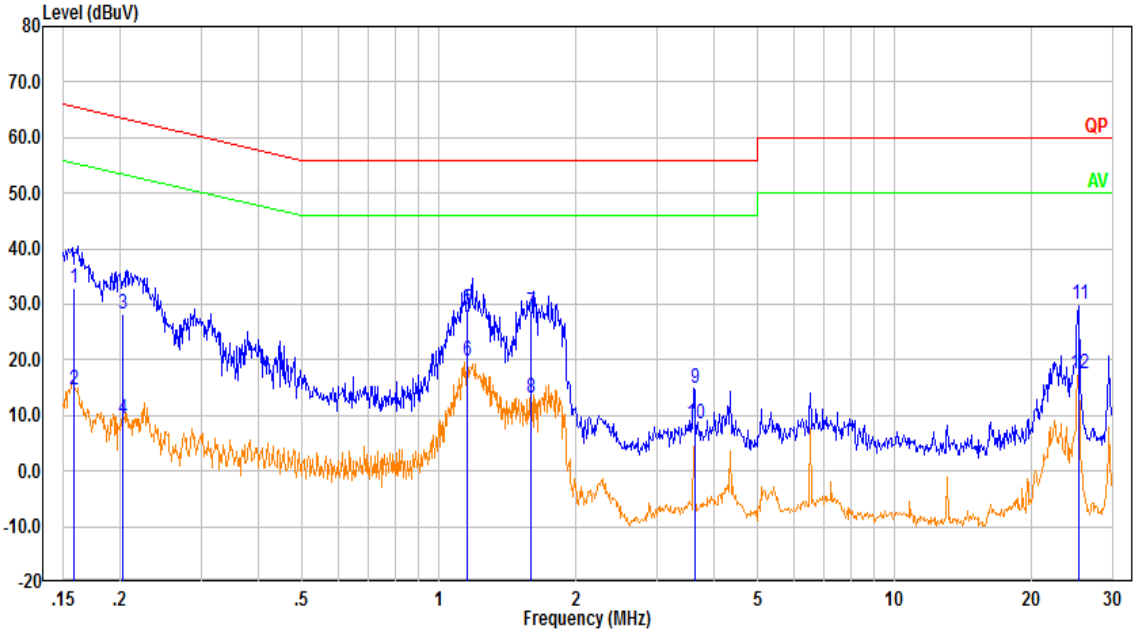
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.158	23.48	9.61	33.09	65.58	32.49	QP
2	0.158	4.98	9.61	14.59	55.58	40.99	Average
3	0.203	17.93	9.61	27.54	63.49	35.95	QP
4	0.203	-0.21	9.61	9.40	53.49	44.09	Average
5	1.186	15.09	9.62	24.71	56.00	31.29	QP
6	1.186	6.47	9.62	16.09	46.00	29.91	Average
7	1.590	19.08	9.63	28.70	56.00	27.30	QP
8	1.590	2.71	9.63	12.34	46.00	33.66	Average
9	3.636	2.24	9.65	11.89	56.00	44.11	QP
10	3.636	-4.55	9.65	5.10	46.00	40.90	Average
11	25.348	18.90	9.81	28.71	60.00	31.29	QP
12	25.348	10.21	9.81	20.03	50.00	29.97	Average

Neutral:



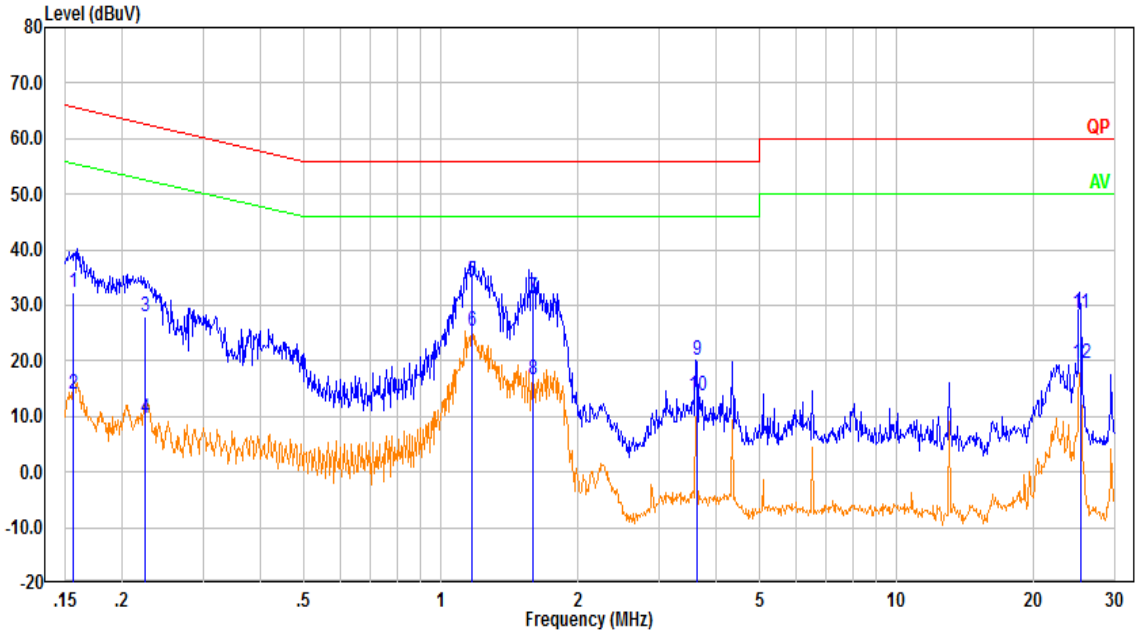
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.157	23.60	9.61	33.21	65.65	32.44	QP
2	0.157	5.24	9.61	14.85	55.65	40.80	Average
3	0.214	18.63	9.61	28.24	63.04	34.80	QP
4	0.214	-1.19	9.61	8.42	53.04	44.62	Average
5	1.157	22.11	9.62	31.73	56.00	24.27	QP
6	1.157	13.52	9.62	23.14	46.00	22.86	Average
7	1.577	23.19	9.63	32.82	56.00	23.18	QP
8	1.577	7.04	9.63	16.67	46.00	29.33	Average
9	4.364	11.65	9.65	21.31	56.00	34.69	QP
10	4.364	7.49	9.65	17.15	46.00	28.85	Average
11	25.383	15.57	9.77	25.33	60.00	34.67	QP
12	25.383	7.09	9.77	16.86	50.00	33.14	Average

DC 24V:
Line:



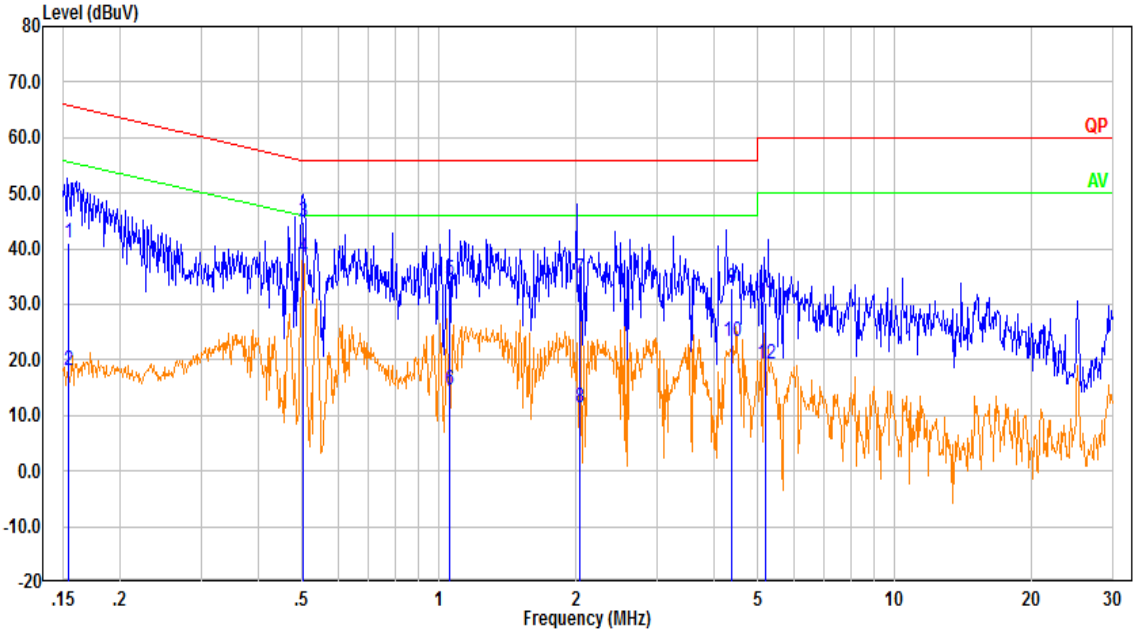
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.158	23.20	9.61	32.81	65.58	32.77	QP
2	0.158	5.02	9.61	14.63	55.58	40.95	Average
3	0.202	18.74	9.61	28.35	63.55	35.20	QP
4	0.202	-0.16	9.61	9.45	53.55	44.10	Average
5	1.156	19.51	9.62	29.13	56.00	26.87	QP
6	1.156	10.17	9.62	19.79	46.00	26.21	Average
7	1.590	18.91	9.63	28.54	56.00	27.46	QP
8	1.590	3.52	9.63	13.15	46.00	32.85	Average
9	3.635	5.32	9.65	14.97	56.00	41.03	QP
10	3.635	-1.22	9.65	8.43	46.00	37.57	Average
11	25.403	20.28	9.81	30.09	60.00	29.91	QP
12	25.403	7.75	9.81	17.56	50.00	32.44	Average

Neutral:



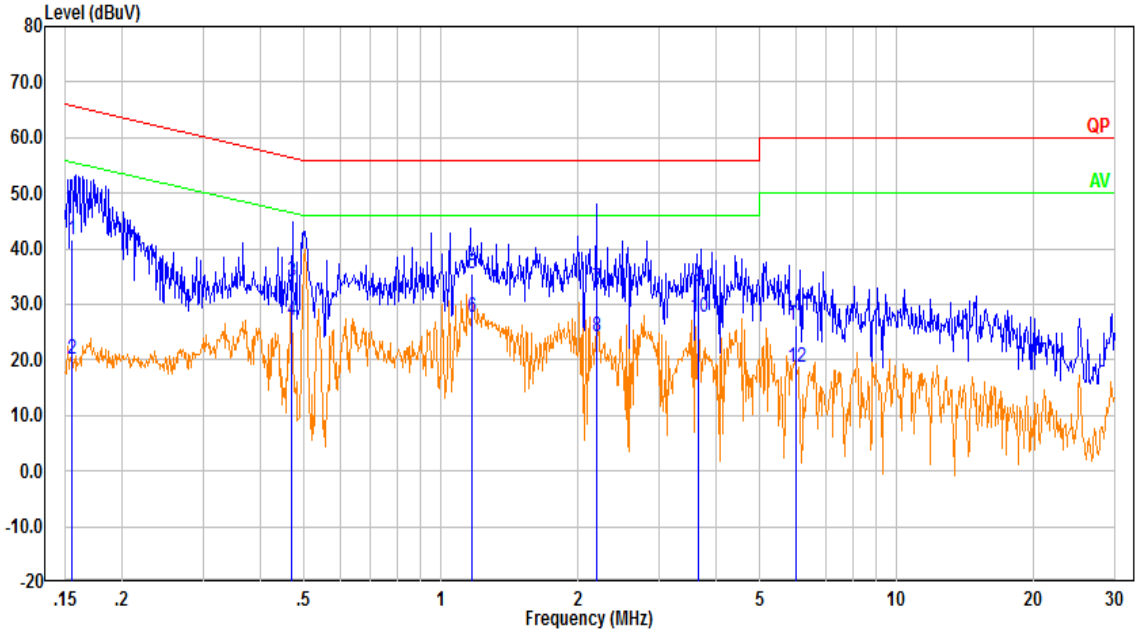
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.156	22.76	9.61	32.37	65.66	33.29	QP
2	0.156	4.36	9.61	13.97	55.66	41.69	Average
3	0.223	18.39	9.61	28.00	62.69	34.69	QP
4	0.223	0.10	9.61	9.71	52.69	42.98	Average
5	1.169	24.70	9.62	34.32	56.00	21.68	QP
6	1.169	15.79	9.62	25.41	46.00	20.59	Average
7	1.589	21.92	9.63	31.55	56.00	24.45	QP
8	1.589	7.11	9.63	16.74	46.00	29.26	Average
9	3.637	10.50	9.65	20.15	56.00	35.85	QP
10	3.637	4.00	9.65	13.65	46.00	32.35	Average
11	25.349	18.68	9.77	28.44	60.00	31.56	QP
12	25.349	9.79	9.77	19.55	50.00	30.45	Average

Adapter 1 :
Line:



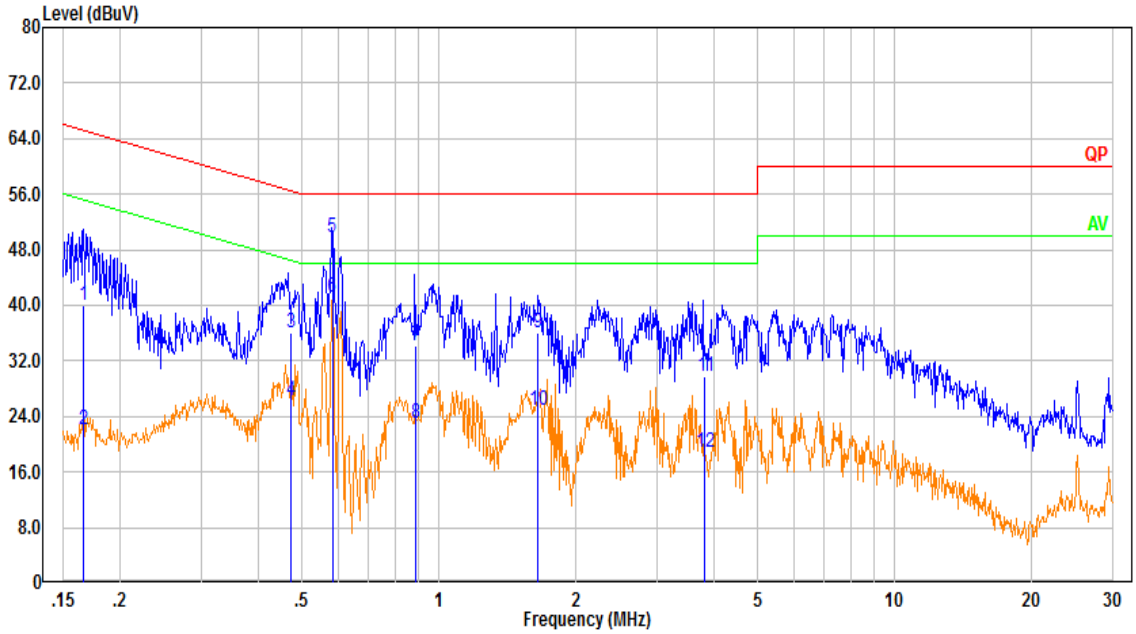
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.154	31.49	9.61	41.10	65.78	24.68	QP
2	0.154	8.55	9.61	18.16	55.78	37.62	Average
3	0.502	35.21	9.61	44.82	56.00	11.18	QP
4	0.502	28.90	9.61	38.51	46.00	7.49	Average
5	1.057	24.79	9.62	34.41	56.00	21.59	QP
6	1.057	5.01	9.62	14.63	46.00	31.37	Average
7	2.036	24.89	9.63	34.52	56.00	21.48	QP
8	2.036	1.79	9.63	11.42	46.00	34.58	Average
9	4.399	23.32	9.65	32.97	56.00	23.03	QP
10	4.399	13.69	9.65	23.35	46.00	22.65	Average
11	5.199	20.70	9.66	30.36	60.00	29.64	QP
12	5.199	9.55	9.66	19.21	50.00	30.79	Average

Neutral:



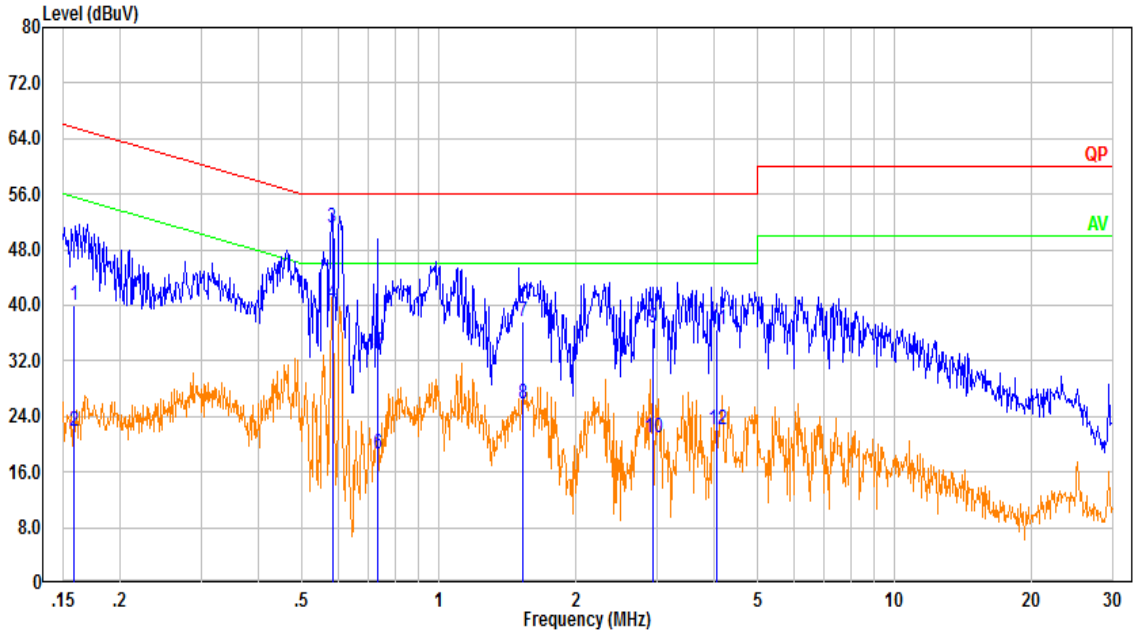
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.155	32.04	9.61	41.65	65.73	24.08	QP
2	0.155	10.40	9.61	20.01	55.73	35.72	Average
3	0.470	24.34	9.61	33.95	56.51	22.56	QP
4	0.470	17.35	9.61	26.96	46.51	19.55	Average
5	1.166	25.89	9.62	35.51	56.00	20.49	QP
6	1.166	18.08	9.62	27.71	46.00	18.29	Average
7	2.194	23.21	9.63	32.85	56.00	23.15	QP
8	2.194	14.58	9.63	24.21	46.00	21.79	Average
9	3.665	23.62	9.65	33.27	56.00	22.73	QP
10	3.665	17.95	9.65	27.60	46.00	18.40	Average
11	6.014	16.47	9.66	26.13	60.00	33.87	QP
12	6.014	9.10	9.66	18.76	50.00	31.24	Average

Adapter 2:
Line:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.166	30.29	9.61	39.90	65.15	25.25	QP
2	0.166	12.46	9.61	22.07	55.15	33.08	Average
3	0.473	26.45	9.61	36.06	56.45	20.39	QP
4	0.473	16.59	9.61	26.20	46.45	20.25	Average
5	0.583	40.14	9.62	49.76	56.00	6.24	QP
6	0.583	31.58	9.62	41.20	46.00	4.80	Average
7	0.888	24.65	9.62	34.27	56.00	21.73	QP
8	0.888	13.36	9.62	22.98	46.00	23.02	Average
9	1.642	26.52	9.63	36.15	56.00	19.85	QP
10	1.642	15.31	9.63	24.94	46.00	21.06	Average
11	3.833	20.18	9.65	29.83	56.00	26.17	QP
12	3.833	9.09	9.65	18.74	46.00	27.26	Average

Neutral:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.158	30.38	9.61	39.99	65.56	25.57	QP
2	0.158	12.18	9.61	21.79	55.56	33.77	Average
3	0.583	41.55	9.62	51.17	56.00	4.83	QP
4	0.583	30.61	9.62	40.23	46.00	5.77	Average
5	0.732	23.73	9.62	33.35	56.00	22.65	QP
6	0.732	9.05	9.62	18.67	46.00	27.33	Average
7	1.523	28.13	9.63	37.76	56.00	18.24	QP
8	1.523	16.16	9.63	25.79	46.00	20.21	Average
9	2.944	27.15	9.65	36.79	56.00	19.21	QP
10	2.944	11.29	9.65	20.94	46.00	25.06	Average
11	4.080	26.77	9.65	36.42	56.00	19.58	QP
12	4.080	12.49	9.65	22.14	46.00	23.86	Average

4.2 Radiation Spurious Emissions

Serial Number:	CR22070051-RF-S1	Test Date:	2022-08-01~2022-08-18
Test Site:	966-2	Test Mode:	Transmitting
Tester:	Gary Ling	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	25.7~28.5	Relative Humidity: (%)	52~58	ATM Pressure: (kPa)	100.1~100.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2022-07-15	2023-07-14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022-07-17	2023-07-16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022-07-17	2023-07-16
Sonoma	Amplifier	310N	186165	2022-07-17	2023-07-16
Audix	Test Software	E3	201021 (V9)	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2022-07-15	2023-07-14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022-08-07	2023-08-06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022-08-07	2023-08-06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2021-11-10	2022-11-09

** 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).*

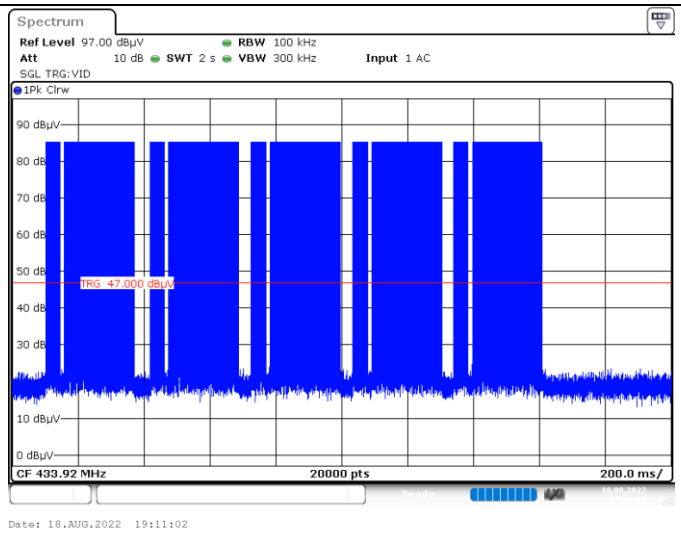
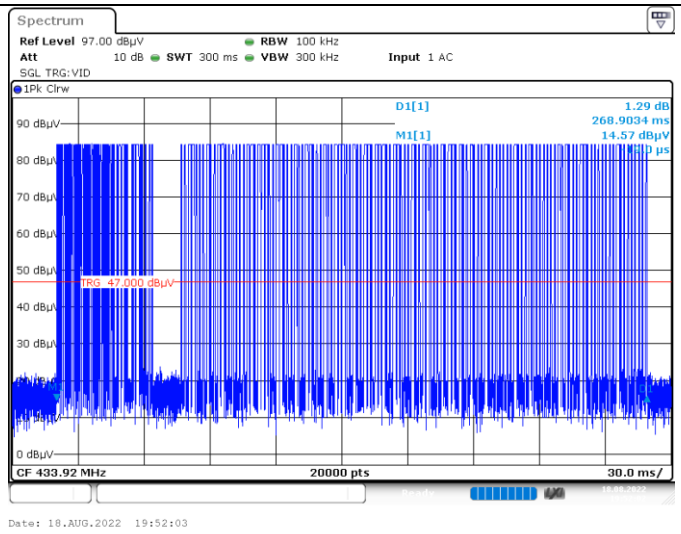
Test Data(Adapte-1 mode was the worst**):**
30MHz-5GHz:
Peak Strength

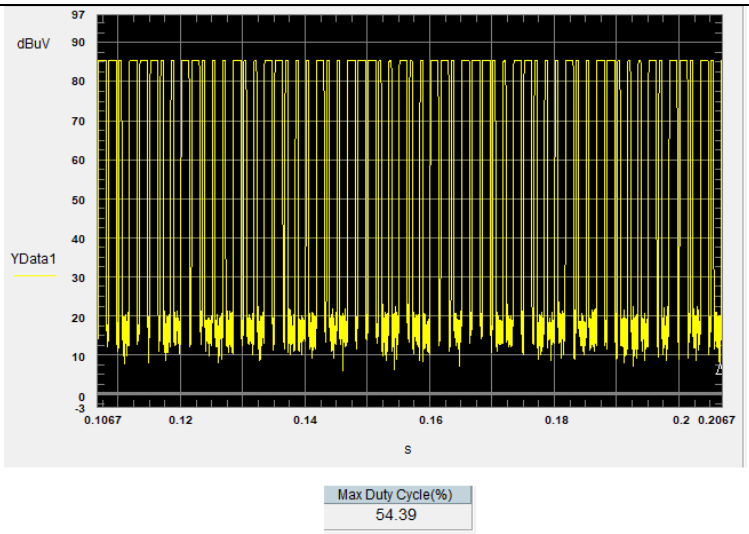
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
433.92	92.96	PK	H	-7.58	85.38	100.83	15.45
433.92	88.46	PK	V	-7.58	80.88	100.83	19.95
867.84	44.18	PK	H	-1.45	42.73	80.83	38.10
867.84	34.93	PK	V	-1.45	33.48	80.83	47.35
1301.76	54.21	PK	H	-1.71	52.50	74.00	21.50
1301.76	59.61	PK	V	-1.71	57.90	74.00	16.10
1735.68	36.85	PK	H	0.90	37.75	80.83	43.08
1735.68	37.11	PK	V	0.90	38.01	80.83	42.82
2603.52	37.31	PK	H	4.25	41.56	80.83	39.27
2603.52	37.09	PK	V	4.25	41.34	80.83	39.49
3037.44	35.65	PK	H	6.19	41.84	80.83	38.99
3037.44	35.46	PK	V	6.19	41.65	80.83	39.18
3471.36	36.16	PK	H	7.53	43.69	80.83	37.14
3471.36	36.05	PK	V	7.53	43.58	80.83	37.25
4339.20	34.96	PK	H	9.77	44.73	74.00	29.27
4339.20	35.68	PK	V	9.77	45.45	74.00	28.55

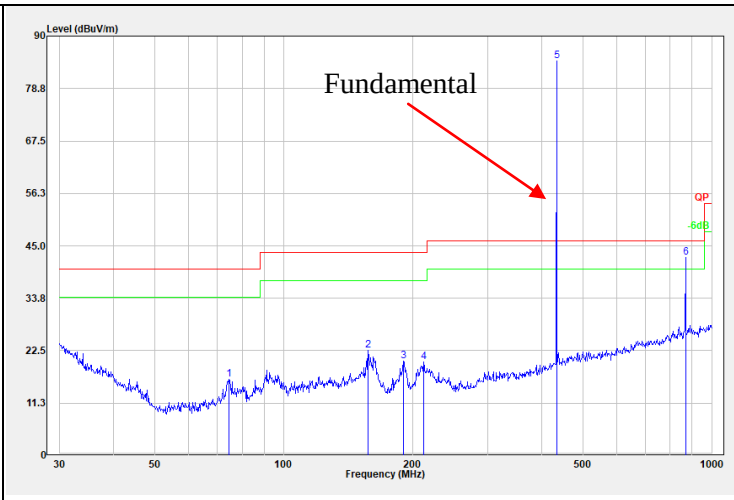
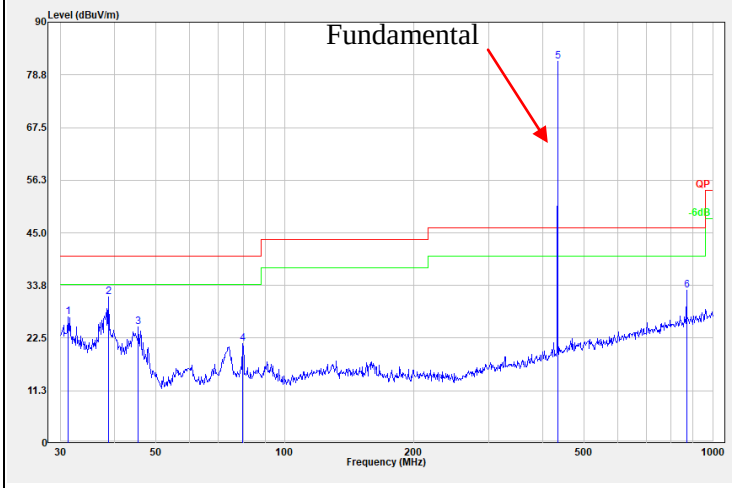
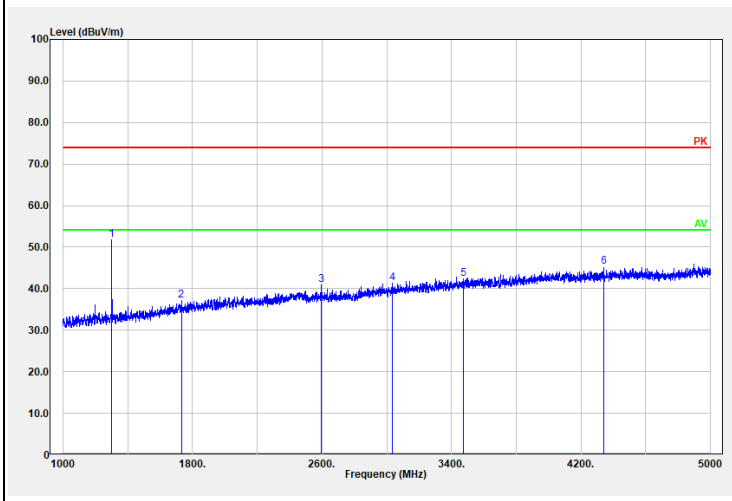
Average Strength

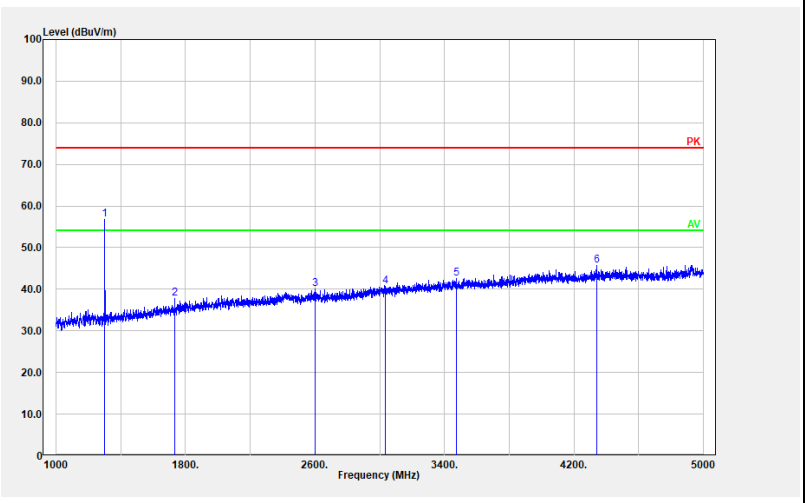
Frequency (MHz)	Peak (dBμV/m)	Polar (H/V)	Duty Cycle Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
433.92	85.38	H	-5.29	80.09	80.83	0.74
433.92	80.88	V	-5.29	75.59	80.83	5.24
867.84	42.73	H	-5.29	37.44	60.83	23.39
867.84	33.48	V	-5.29	28.19	60.83	32.64
1301.76	52.50	H	-5.29	47.21	54.00	6.79
1301.76	57.90	V	-5.29	52.61	54.00	1.39
1735.68	37.75	H	-5.29	32.46	60.83	28.37
1735.68	38.01	V	-5.29	32.72	60.83	28.11
2603.52	41.56	H	-5.29	36.27	60.83	24.56
2603.52	41.34	V	-5.29	36.05	60.83	24.78
3037.44	41.84	H	-5.29	36.55	60.83	24.28
3037.44	41.65	V	-5.29	36.36	60.83	24.47
3471.36	43.69	H	-5.29	38.40	60.83	22.43
3471.36	43.58	V	-5.29	38.29	60.83	22.54
4339.20	44.73	H	-5.29	39.44	54.00	14.56
4339.20	45.45	V	-5.29	40.16	54.00	13.84

Note:
Duty Cycle Correction Factor= 20*log(Duty cycle)=20*log(54.39%) = -5.29 dB
The maximum duty cycle was test by software: Duty cycle test
N is the number of spectrum analyzer points showing a device transmission, Dwell Time is the dwell time per points (Dwell Time = S/N=300ms/20000=0.015ms, S is the sweep time: 300ms)
Duty cycle= (Dwell time*Tx points in 100ms)/100ms
100ms points = 100ms/0.015ms=6667 points
Maximum duty cycle= max {duty cyclepoints 1-6667, duty cyclepoints 2-6668,duty cyclepoints 3-6669……duty cyclepoints 13334-20000}
Average Strength=Peak+duty cycle Factor

Duty Cycle	
	 Spectrum Ref Level 97.00 dBµV RBW 100 kHz Att 10 dB SWT 2 s VBW 300 kHz Input 1 AC SGL TRG:VID 1Pk Clrw 90 dBµV 80 dB 70 dB 60 dB 50 dB TRG 47.000 dBµV 40 dB 30 dB 10 dBµV 0 dBµV CF 433.92 MHz 20000 pts 200.0 ms/ Date: 18.AUG.2022 19:11:02
	 Spectrum Ref Level 97.00 dBµV RBW 100 kHz Att 10 dB SWT 300 ms VBW 300 kHz Input 1 AC SGL TRG:VID 1Pk Clrw D1[1] 1.29 dB M1[1] 268.9034 ms 14.57 dBµV 90 dBµV 80 dBµV 70 dBµV 60 dBµV 50 dBµV TRG 47.000 dBµV 40 dBµV 30 dBµV 0 dBµV CF 433.92 MHz 20000 pts 30.0 ms/ Date: 18.AUG.2022 19:52:03

Duty Cycle	
	 dBuV 97 90 80 70 60 50 40 30 20 10 0 -3 YData1 0.1067 0.12 0.14 0.16 0.18 0.2 0.2067 s Max Duty Cycle(%) 54.39

Worst Test Plots	
30MHz -1GHz Horizontal	
30MHz -1GHz Vertical	
1GHz -5GHz Horizontal	

1GHz-5GHz Vertical	

4.3 20 dB Emission Bandwidth:

Serial Number:	CR22070051-RF-S1	Test Date:	2022-08-18
Test Site:	966-2	Test Mode:	Transmit
Tester:	Gary Ling	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	28.5	Relative Humidity: (%)	58	ATM Pressure: (kPa)	100.1

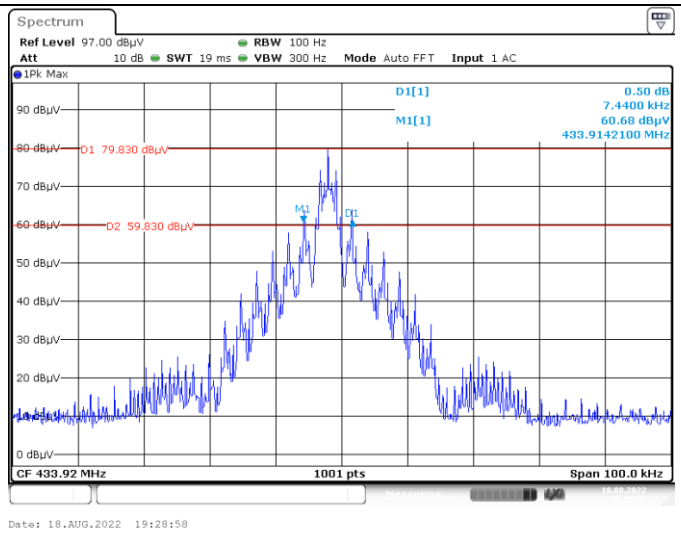
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2022-07-15	2023-07-14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022-07-17	2023-07-16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022-07-17	2023-07-16
Sonoma	Amplifier	310N	186165	2022-07-17	2023-07-16
Audix	Test Software	E3	201021 (V9)	N/A	N/A

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

Test Data:

Test Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)
433.92	7.440	1084.800

20dB Emission Bandwidth	
	

4.4 DEACTIVATION TESTING:

Serial Number:	CR22070051-RF-S1	Test Date:	2022-08-18
Test Site:	966-2	Test Mode:	Transmit
Tester:	Gary Ling	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	28.5	Relative Humidity: (%)	58	ATM Pressure: (kPa)	100.1

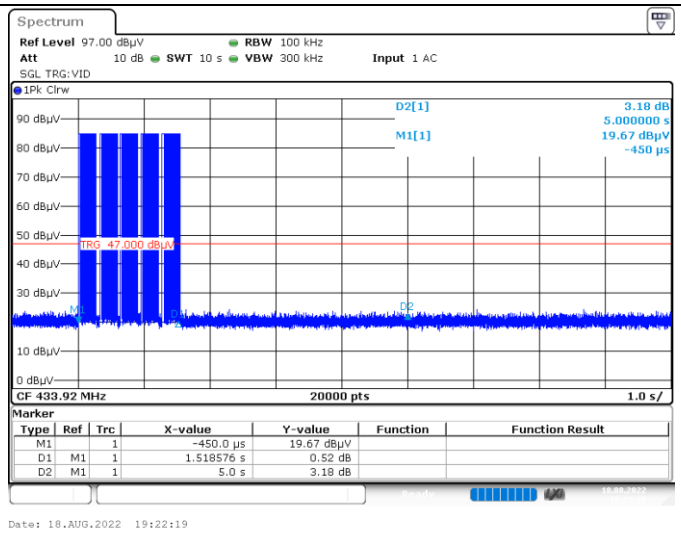
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2022-07-15	2023-07-14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022-07-17	2023-07-16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022-07-17	2023-07-16
Sonoma	Amplifier	310N	186165	2022-07-17	2023-07-16
Audix	Test Software	E3	201021 (V9)	N/A	N/A

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

Test Data:

Test Frequency (MHz)	Maximum Deactivate Time (s)	Limit (s)
433.92	1.519	<5

DEACTIVATION TESTING	
5s	

5. RF EXPOSURE EVALUATION

5.1 Applicable Standard

According to §1.1307(b)(3)(ii)(B)

Simultaneous Transmission with both SAR-based and MPE-Based Test Exemptions

This case is described in detail in § 1.1307(b)(3)(ii)(B) and covers the situations where both SAR-based and MPE-based exemption may be considered for test exemption in fixed, mobile, or portable device exposure conditions. For these cases, a device with multiple RF sources transmitting simultaneously will be considered an RF exempt device if the condition of Formula (1) is satisfied.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\leq 1 \qquad (1)$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th}, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source *i* at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source *i*.

ERP_j = the ERP of fixed, mobile, or portable RF source *j*.

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source *j*, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

$Evaluated_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source *k* either in the device or at the transmitter site from an existing evaluation at the location of exposure.

$Exposure\ Limit_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source *k*, as applicable from § 1.1310 of this chapter.

5.2 Measurement Result

Radio	Frequency (MHz)	λ /2 Π (mm)	Distance (mm)	Exemption ERP (mW)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	ERP	
							dBm	mW
WLAN	2412-2462	19.80	200	768	19.5	1.94	19.29	84.92
SRD	433.92	110.04	200	222	-2	0.50	-3.65	0.43

Note:
The WLAN and SRD can transmit simultaneously.

$$\sum_{i=1}^{a}\frac{P_i}{P_{\mathrm{th},i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{\mathrm{th},j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}$$

$=ERP_{WLAN} / ERP_{th} + ERP_{SRD} / ERP_{th}$

$=84.92/768 + 0.43/222$

$=0.113$

< 1.0

Result: The device compliant the MPE-Based Exemption at 20cm distances.

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