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

ACCREDITED
Certificate #6356.01

TEST REPORT

Applicant: **Xiamen Milesight IoT Co., Ltd.**

Address: 4/F,NO. 63-2 Wanghai Road, 2nd Software Park,Xiamen, China

FCC ID: **2AYHY-UG65DSS**

Product Name: **LoRaWAN Gateway**

Model Number: **UG65-L00AF-915M-EA, UG65-L04AF-915M-EA, UG65-915M-EA, UG65-915M, UG65-L00AF-915M-EA-H32, UG65-L04AF-915M-EA-H32, UG65-915M-EA-H32, UG65-L00AF-915M, UG65-L04AF-915M**

Standard(s): **47 CFR Part 15, Subpart C(15.247)**
ANSI C63.10-2013
KDB 558074 D01 15.247 Meas Guidance v05r02

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

Report Number: **CR21100088-00AA1**

Date Of Issue: **2021-12-17**

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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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	LoRaWAN Gateway
EUT Model:	UG65-L00AF-915M-EA
Multiple Models:	UG65-L04AF-915M-EA,UG65-915M-EA,UG65-915M, UG65-L00AF-915M-EA-H32,UG65-L04AF-915M-EA-H32, UG65-915M-EA-H32, UG65-L00AF-915M, UG65-L04AF-915M
Operation Frequency:	902.3-914.9MHz(Lora-FHSS, 125kHz mode)
Maximum Peak Output Power (Conducted):	13.22 dBm
Modulation Type:	FSK
Rated Input Voltage:	DC 12V from adapter or DC 48V from PoE
Serial Number:	CR21100088-RF-A1-S1
EUT Received Date:	2021.09.28
EUT Received Status:	Good
Note: The Multiple models are identical with Test model, please refer to the declaration letter for more detail, which was provided by manufacturer.	

Operation Frequency Detail:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	902.3	33	908.7
2	902.5	34	908.9
…	…	…	…
…	…	…	…
31	908.3	63	914.7
32	908.5	64	914.9

Per section 15.31(m), the lowest frequency, middle frequency, and highest frequency were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	902.3
Middle	908.5
Highest	914.9

Antenna Information Detail▲:

Antenna	Manufacturer	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range	§15.203 Requirement
Lora-External Tx Antenna	Xiamen Milesight IoT Co., Ltd.	Monopole	50	1.5 dBi/902-928MHz	**Compliance**
Lora-internal Tx Antenna	Xiamen Milesight IoT Co., Ltd.	PCB	50	0 dBi/902-928MHz	**Compliance**
Lora-internal Rx Antenna	Xiamen Milesight IoT Co., Ltd.	PCB	50	0 dBi/902-928MHz	**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.					
Note: Model: UG65-L00AF-915M, UG65-L04AF-915M without Lora-External Tx Antenna.					

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
RJ45 Cable	Unknown	Unknown	Un-shield, 1.0 m
Adapter	ORIENTAL HERO ELE.FTY	OH-1015A1201000U3-UL	Input: 100-240V~50/60Hz 0.35A Output: 12V 1A

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

The software " Engineering "was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer▲:

Test Modes	Power Level Setting		
	Lowest Channel	Middle Channel	Highest Channel
Lora-FHSS	11	11	11

1.2.2 Support Equipment List and Details

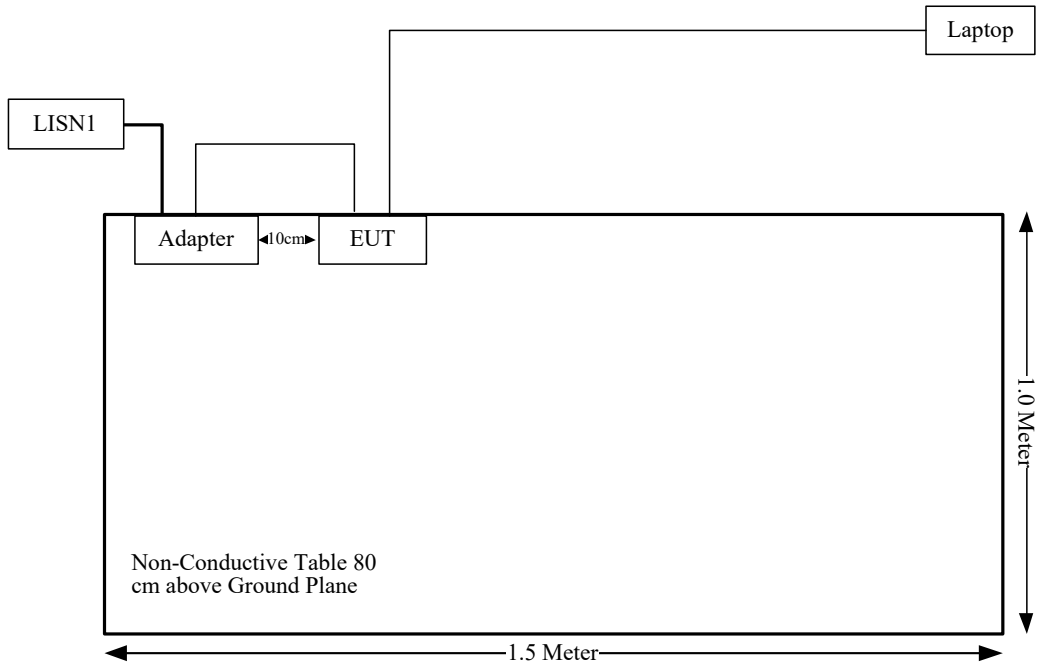
Manufacturer	Description	Model	Serial Number
DELL	Laptop	E6410	9T215

1.2.3 Support Cable List and Details

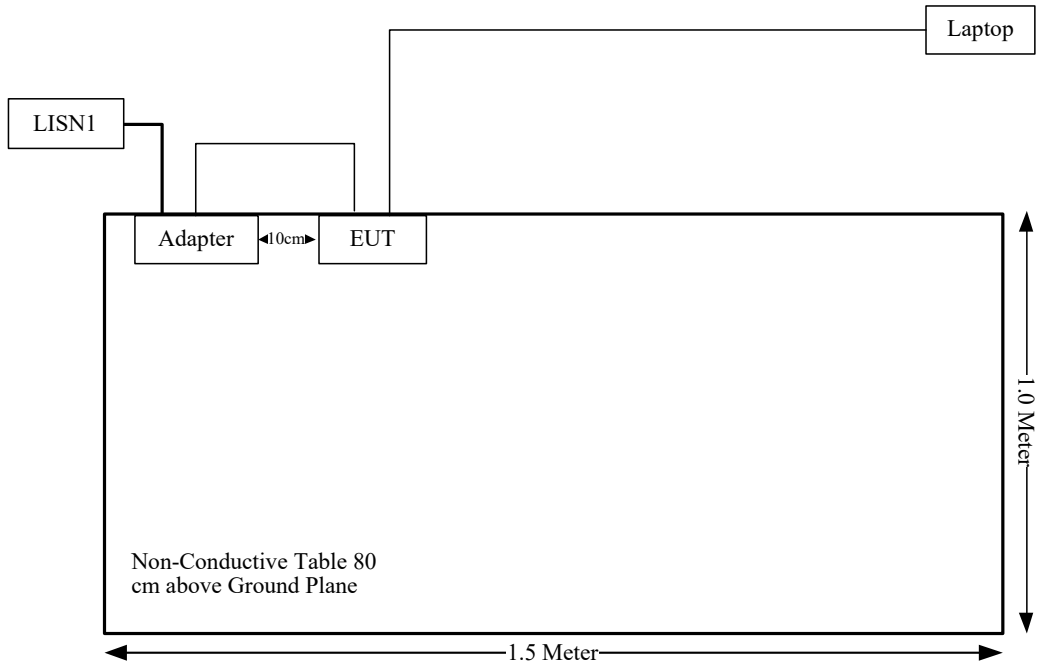
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	No	No	3	Ethernet port of EUT	POE
RJ45 Cable	No	No	3	Ethernet port of POE	Laptop
RJ45 Cable	No	No	3	Ethernet port of EUT	Laptop

1.2.4 Block Diagram of Test Setup

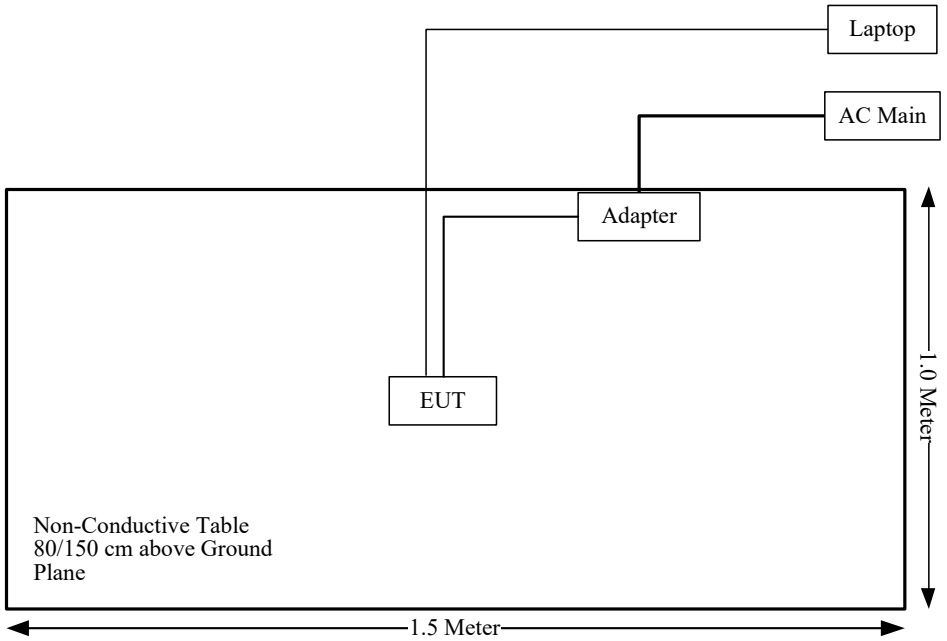
AC Power Lines Conducted Emission:
Adapter Mode:



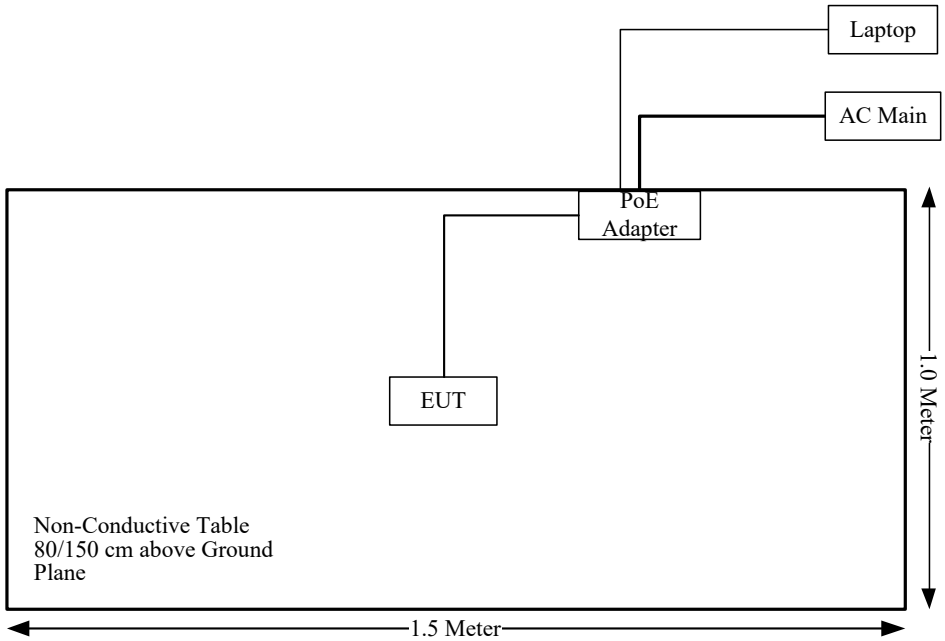
PoE Mode:



Spurious emissions:
Adapter Mode:



PoE Mode:



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	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	Compliance
FCC §15.205, §15.209, §15.247(d)	Spurious emissions	Compliance
FCC §15.247(a)(1)	20 dB bandwidth	Compliance
FCC §15.247(a)(1)	Channel separation	Compliance
FCC §15.247(a)(1)(i)	Number of hopping Frequency	Compliance
FCC §15.247(a)(1)(i)	Time of occupancy (dwell time)	Compliance
FCC §15.247(b)(2)	Peak output power measurement	Compliance
FCC §15.247(d)	Band edges	Compliance
FCC §15.203	Antenna requirement	Compliance
§15.247 (i) & §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance

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:

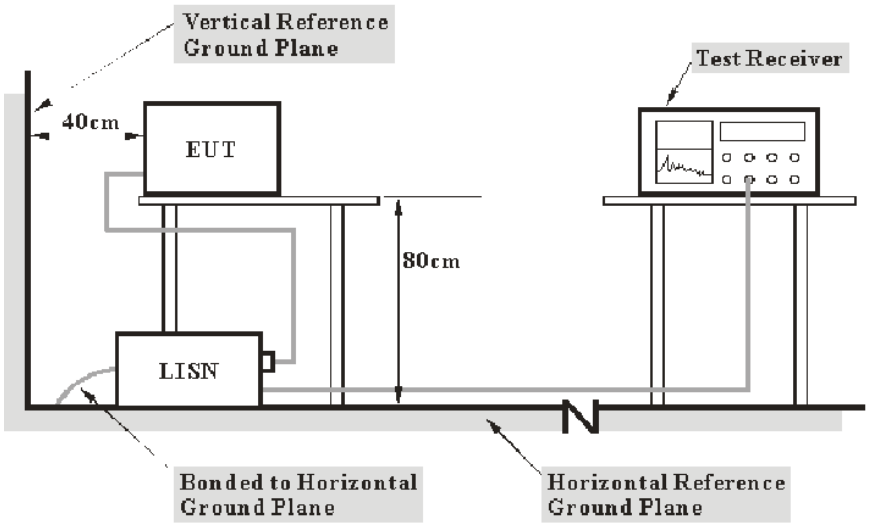
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(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

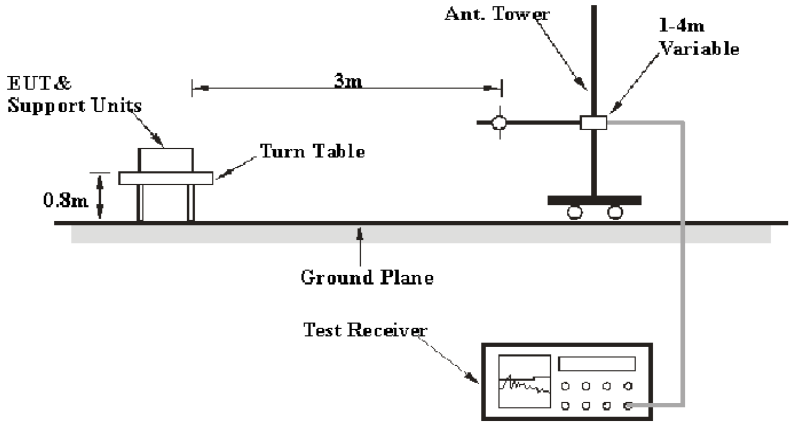
3.2.1 Applicable Standard

FCC §15.247 (d);

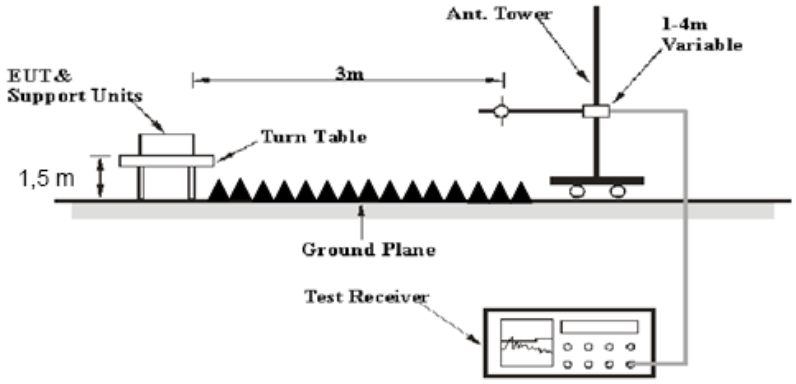
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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 15.209, and FCC 15.247 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.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	AV

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 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

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

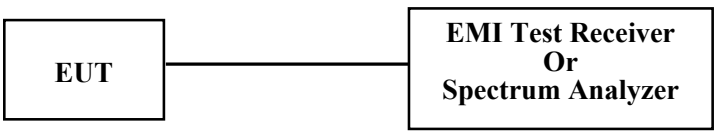
3.3 20 dB Bandwidth

3.3.1 Applicable Standard

FCC §15.247 (a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

3.3.2 EUT Setup



3.3.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

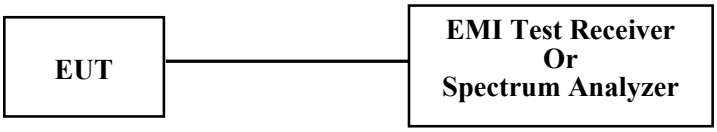
3.4 Channel Separation

3.4.1 Applicable Standard

FCC §15.247 (a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

3.4.2 EUT Setup



3.4.3Test Procedure

According to ANSI C63.10-2013 Section 7.8.2

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

a) Span: Wide enough to capture the peaks of two adjacent channels.
b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
c) Video (or average) bandwidth (VBW) ≥ RBW.
d) Sweep: Auto.
e) Detector function: Peak.
f) Trace: Max hold.
g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

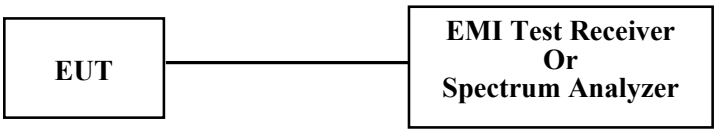
3.5 Number Of Hopping Frequency

3.5.1 Applicable Standard

FCC §15.247 (a)(1)(i)

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

3.5.2 EUT Setup



3.5.3Test Procedure

According to ANSI C63.10-2013 Section 7.8.3

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
c) VBW ≥ RBW.
d) Sweep: Auto.
e) Detector function: Peak.
f) Trace: Max hold.
g) Allow the trace to stabilize

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

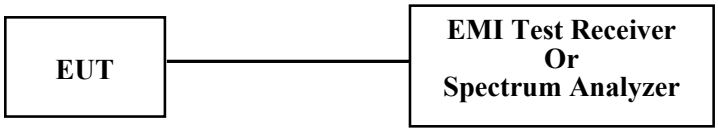
3.6 Time Of Occupancy(Dwell Time)

3.6.1 Applicable Standard

FCC §15.247 (a)(1)(i)

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

3.6.2 EUT Setup



3.6.3Test Procedure

The EUT was worked in channel hopping; the time of single pulses was tested.

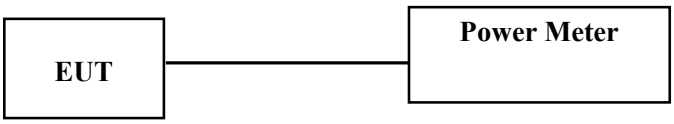
3.7 Peak Output Power

3.7.1 Applicable Standard

FCC §15.247 (b)(2)

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

3.7.2 EUT Setup



3.7.3Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
2. Add a correction factor to the display.

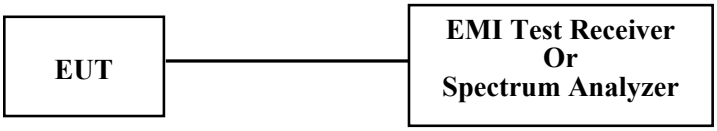
3.8 100 kHz Bandwidth of Frequency Band Edge

3.8.1 Applicable Standard

FCC §15.247 (d);

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

3.8.2 EUT Setup



3.8.3 Test Procedure

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100 kHz.
c) Set the VBW ≥ [3 × RBW].
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

3.9 Antenna Requirement

3.9.1 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.

3.9.2 Judgment

Please refer to the Antenna Information detail in Section 1.

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	CR21100088-S1	Test Date:	2021-10-25 & 2021-11-20
Test Site:	CE	Test Mode:	Transmitting
Tester:	Alex Hu	Test Result:	Pass

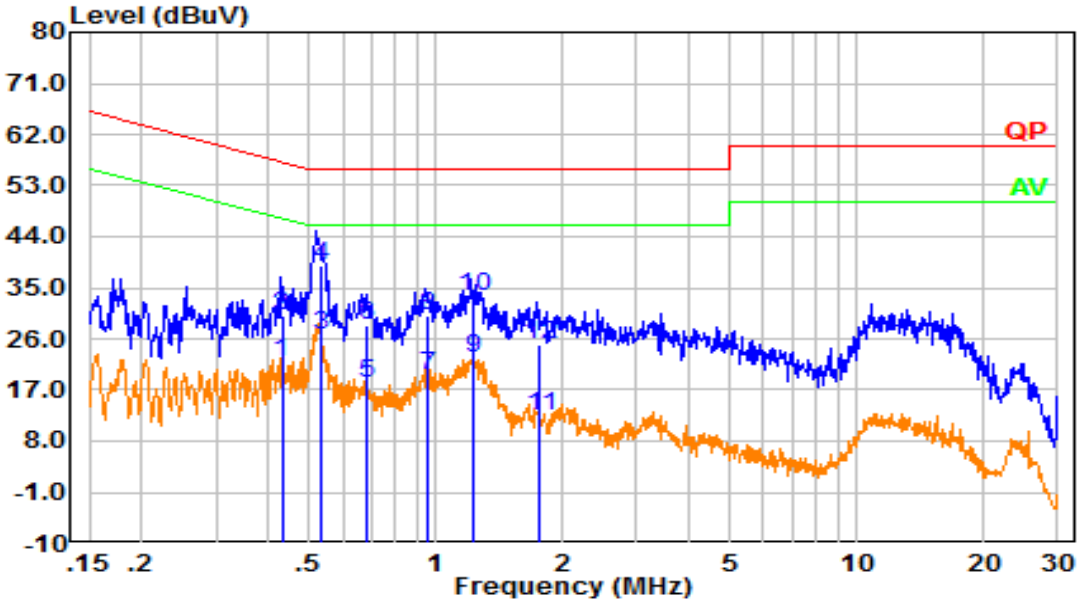
Environmental Conditions:					
Temperature: (℃)	23.5~24.9	Relative Humidity: (%)	69~70	ATM Pressure: (kPa)	100.4~100.7

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101132	2021-04-25	2022-04-24
R&S	EMI Test Receiver	ESR3	102726	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2021-08-08	2022-08-07
Audix	Test Software	E3	190306 (V9)	N/A	N/A

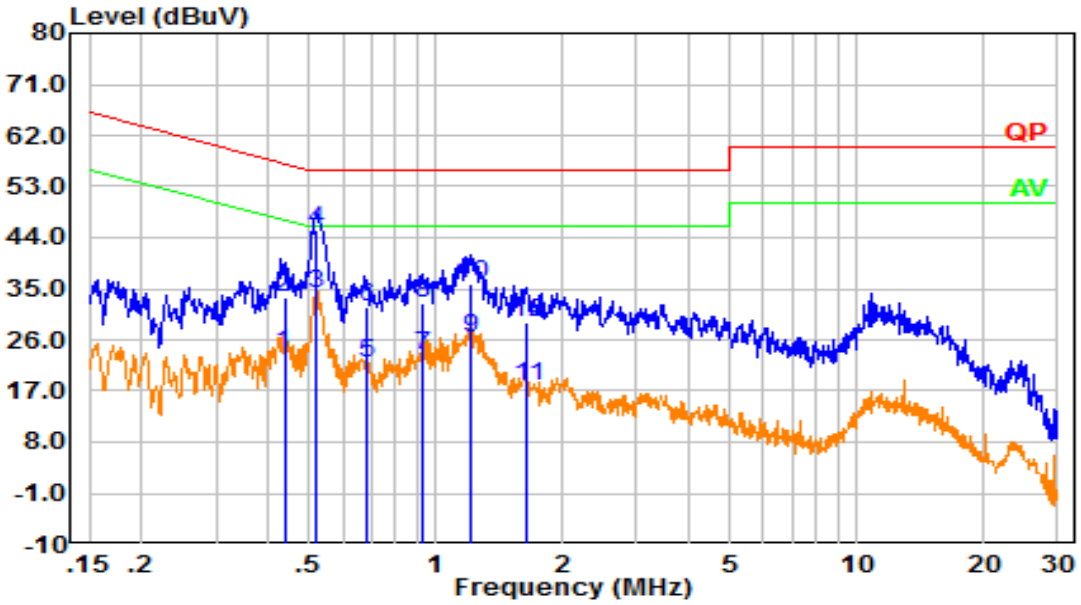
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Adapter mode:
Line:



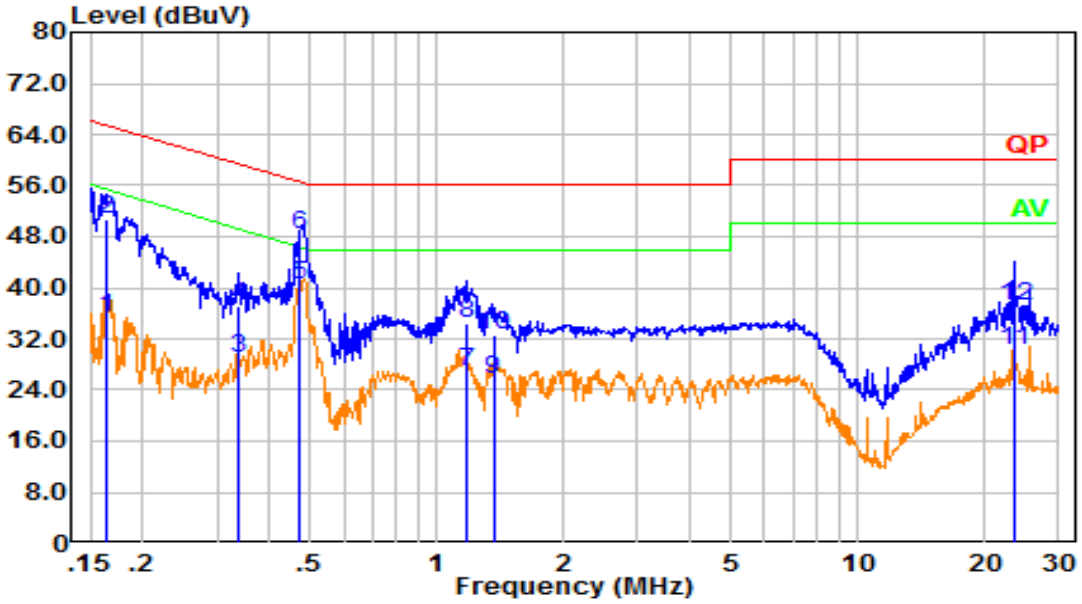
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.430	12.32	9.61	21.93	47.25	25.32	Average
2	0.430	20.48	9.61	30.09	57.25	27.17	QP
3	0.530	17.19	9.61	26.80	46.00	19.20	Average
4	0.530	29.35	9.61	38.96	56.00	17.04	QP
5	0.687	8.57	9.62	18.19	46.00	27.81	Average
6	0.687	18.64	9.62	28.26	56.00	27.74	QP
7	0.960	9.85	9.62	19.47	46.00	26.53	Average
8	0.960	20.33	9.62	29.95	56.00	26.05	QP
9	1.229	12.93	9.62	22.56	46.00	23.44	Average
10	1.229	23.95	9.62	33.57	56.00	22.43	QP
11	1.769	2.65	9.63	12.28	46.00	33.72	Average
12	1.769	15.29	9.63	24.92	56.00	31.08	QP

Neutral:



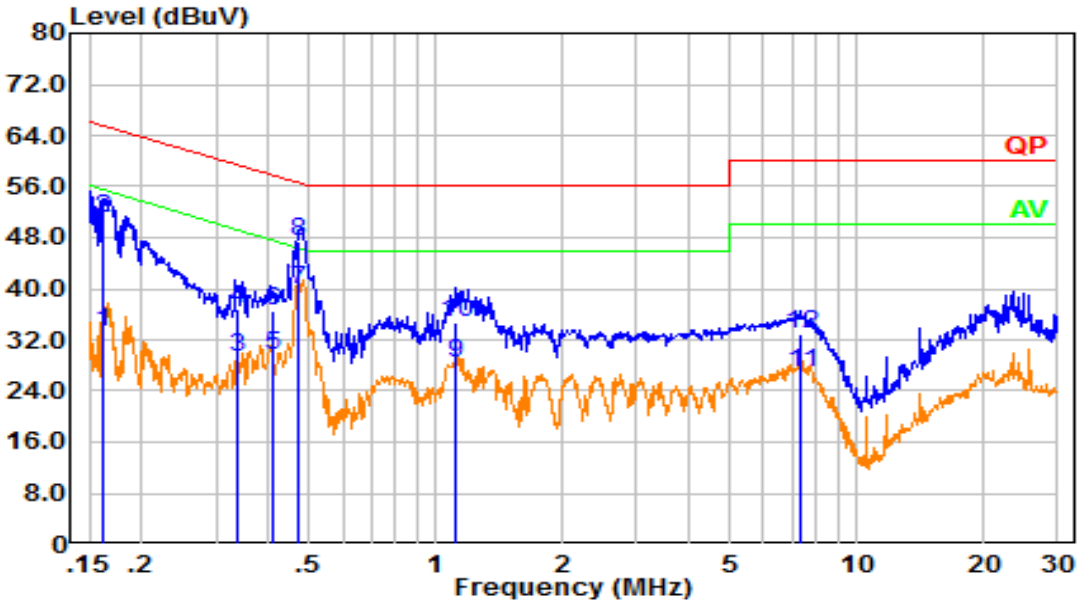
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.436	14.06	9.61	23.67	47.14	23.47	Average
2	0.436	24.02	9.61	33.63	57.14	23.51	QP
3	0.519	24.42	9.61	34.03	46.00	11.97	Average
4	0.519	35.80	9.61	45.41	56.00	10.59	QP
5	0.688	12.47	9.62	22.09	46.00	23.91	Average
6	0.688	22.11	9.62	31.73	56.00	24.27	QP
7	0.923	13.52	9.62	23.14	46.00	22.86	Average
8	0.923	22.83	9.62	32.45	56.00	23.55	QP
9	1.202	16.64	9.62	26.26	46.00	19.74	Average
10	1.202	26.18	9.62	35.81	56.00	20.19	QP
11	1.649	8.29	9.63	17.92	46.00	28.08	Average
12	1.649	19.49	9.63	29.11	56.00	26.89	QP

POE Mode:
Line:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.164	25.76	9.61	35.37	55.26	19.89	Average
2	0.164	41.17	9.61	50.78	65.26	14.48	QP
3	0.337	19.51	9.61	29.12	49.27	20.14	Average
4	0.337	27.43	9.61	37.04	59.27	22.23	QP
5	0.473	30.86	9.61	40.47	46.46	5.99	Average
6	0.473	38.55	9.61	48.16	56.46	8.30	QP
7	1.182	17.13	9.62	26.75	46.00	19.25	Average
8	1.182	24.92	9.62	34.54	56.00	21.46	QP
9	1.361	16.17	9.62	25.79	46.00	20.21	Average
10	1.361	22.85	9.62	32.47	56.00	23.53	QP
11	23.578	20.51	9.81	30.32	50.00	19.68	Average
12	23.578	27.34	9.81	37.15	60.00	22.85	QP

Neutral:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.161	23.55	9.61	33.16	55.39	22.24	Average
2	0.161	41.33	9.61	50.94	65.39	14.45	QP
3	0.337	19.64	9.61	29.25	49.29	20.04	Average
4	0.337	27.29	9.61	36.90	59.29	22.39	QP
5	0.408	19.99	9.61	29.60	47.68	18.09	Average
6	0.408	26.86	9.61	36.47	57.68	21.21	QP
7	0.473	30.18	9.61	39.79	46.47	6.67	Average
8	0.473	37.76	9.61	47.37	56.47	9.10	QP
9	1.117	18.80	9.62	28.42	46.00	17.58	Average
10	1.117	25.21	9.62	34.83	56.00	21.17	QP
11	7.396	17.19	9.66	26.86	50.00	23.14	Average
12	7.396	23.26	9.66	32.93	60.00	27.07	QP

4.2 Radiation Spurious Emissions

Serial Number:	CR21100088-S1	Test Date:	2021-10-13~2021-11-20
Test Site:	966-1/966-2	Test Mode:	Transmitting
Tester:	Alex Hu	Test Result:	Pass

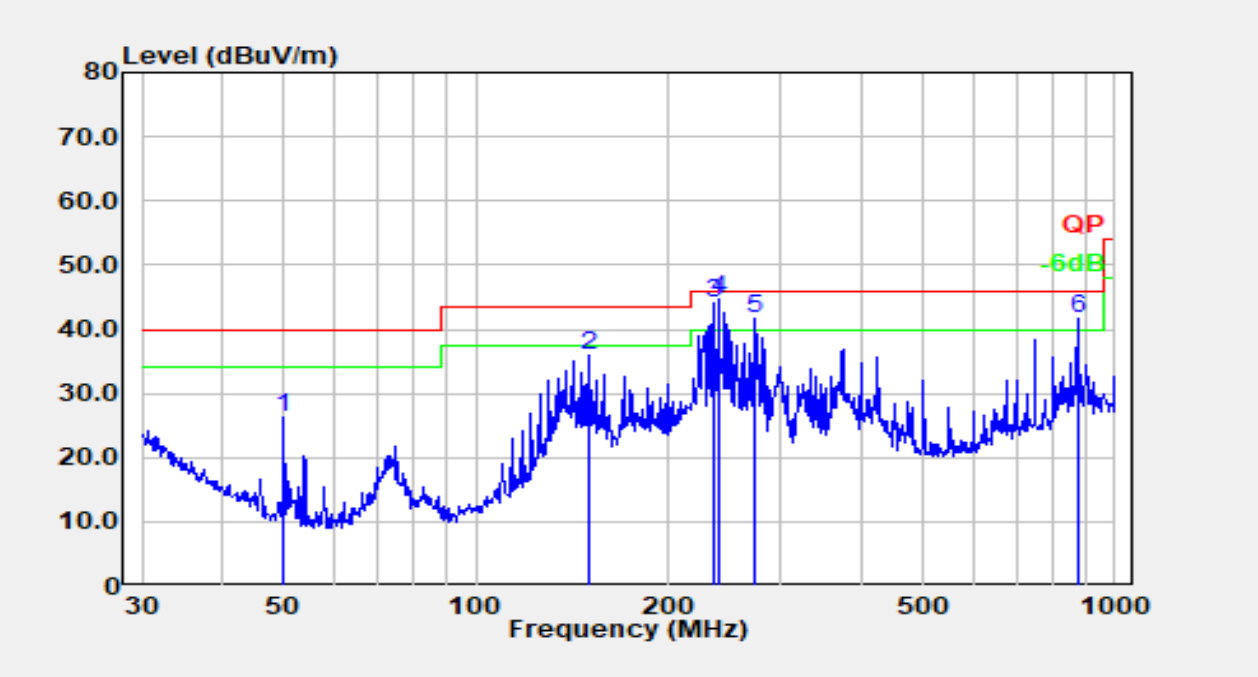
Environmental Conditions:					
Temperature: (℃)	26.2~27	Relative Humidity: (%)	65~67	ATM Pressure: (kPa)	100.7~100.8

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	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2021-07-18	2022-07-17
Sonoma	Amplifier	310N	186165	2021-07-18	2022-07-17
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2021-08-08	2022-08-07
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2021-08-08	2022-08-07
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2021-08-08	2022-08-07
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2021-08-08	2022-08-07
Audix	Test Software	E3	201021 (V9)	N/A	N/A

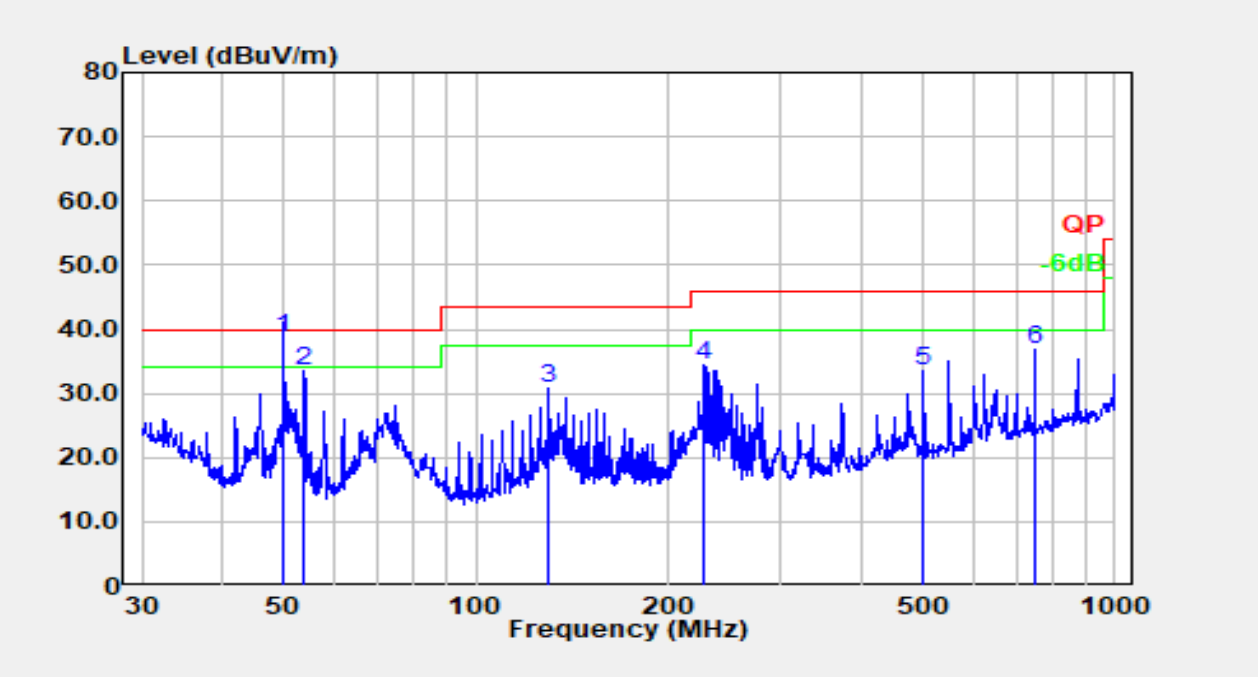
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

1) 30MHz-1GHz(Low channel was the worst)
Adapter Mode:
Horizontal:



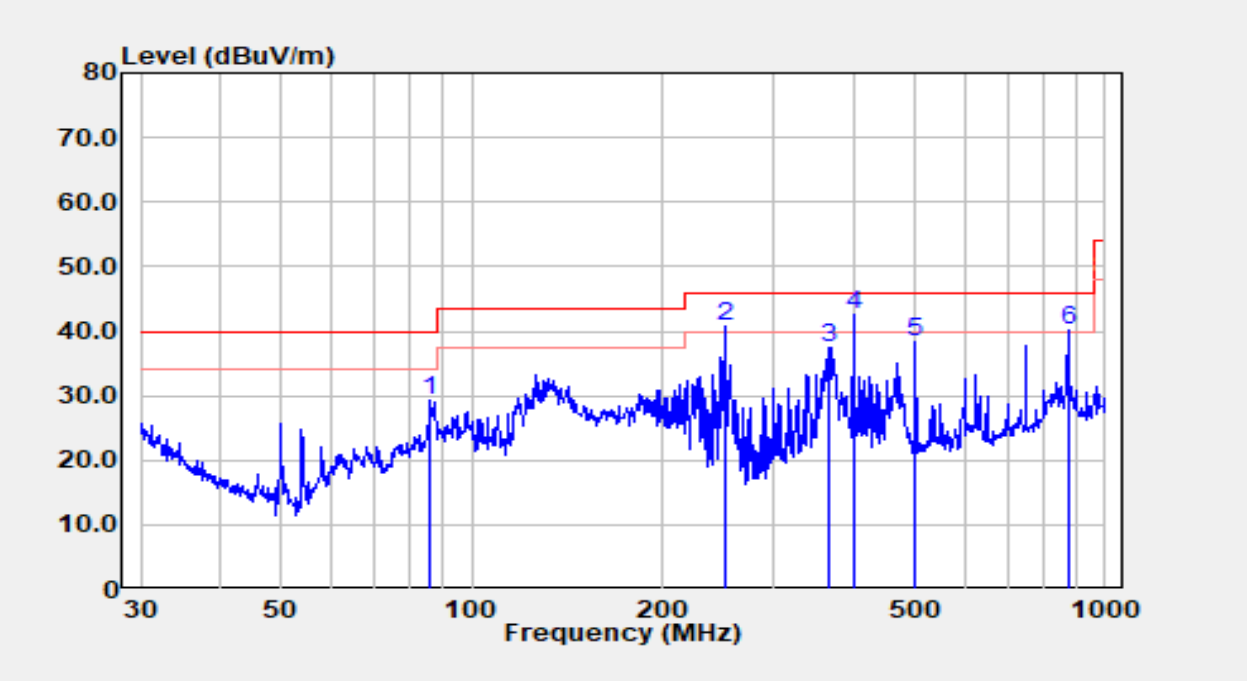
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	49.881	43.58	-17.31	26.27	40.00	13.73	Peak
2	150.011	48.09	-12.26	35.83	43.50	7.67	Peak
3	235.816	57.24	-13.24	44.00	46.00	2.00	Peak
4	239.987	57.90	-13.17	44.73	46.00	1.27	Peak
5	272.278	53.74	-12.20	41.54	46.00	4.46	Peak
6	875.247	42.97	-1.41	41.56	46.00	4.44	Peak

Vertical:



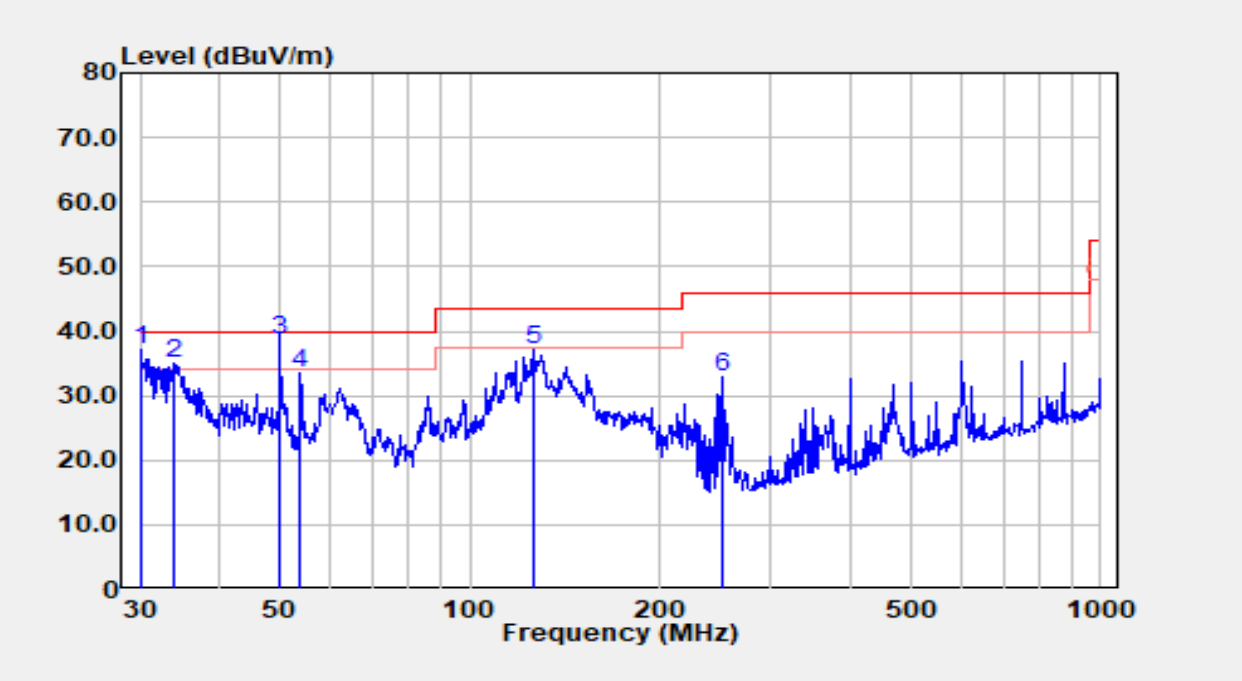
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	49.881	56.10	-17.31	38.79	40.00	1.21	Peak
2	53.882	51.08	-17.48	33.60	40.00	6.40	Peak
3	129.923	42.47	-11.55	30.92	43.50	12.58	Peak
4	227.691	47.61	-13.10	34.51	46.00	11.49	Peak
5	501.179	39.85	-6.22	33.63	46.00	12.37	Peak
6	750.108	40.07	-3.24	36.83	46.00	9.17	Peak

PoE mode:
Horizontal:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	85.898	46.77	-17.39	29.38	40.00	10.62	Peak
2	250.301	53.88	-13.25	40.63	46.00	5.37	QP
3	365.539	47.32	-9.87	37.46	46.00	8.54	Peak
4	400.432	51.52	-9.00	42.52	46.00	3.48	QP
5	501.179	44.41	-6.22	38.19	46.00	7.81	Peak
6	875.247	41.60	-1.41	40.19	46.00	5.81	QP

Vertical:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	30.000	40.79	-3.79	37.00	40.00	3.00	QP
2	33.799	41.81	-6.71	35.10	40.00	4.90	QP
3	49.881	55.99	-17.31	38.68	40.00	1.32	QP
4	53.882	51.13	-17.48	33.65	40.00	6.35	Peak
5	125.886	48.55	-11.54	37.01	43.50	6.49	Peak
6	252.063	45.93	-13.15	32.78	46.00	13.22	Peak

2) 1-10GHz:

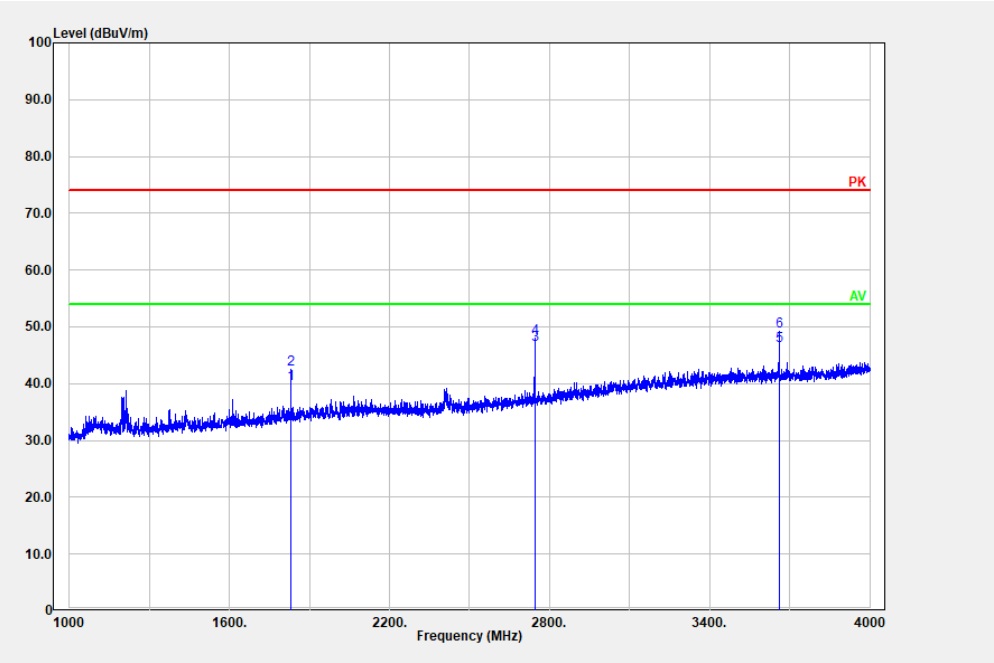
Internal Antenna:

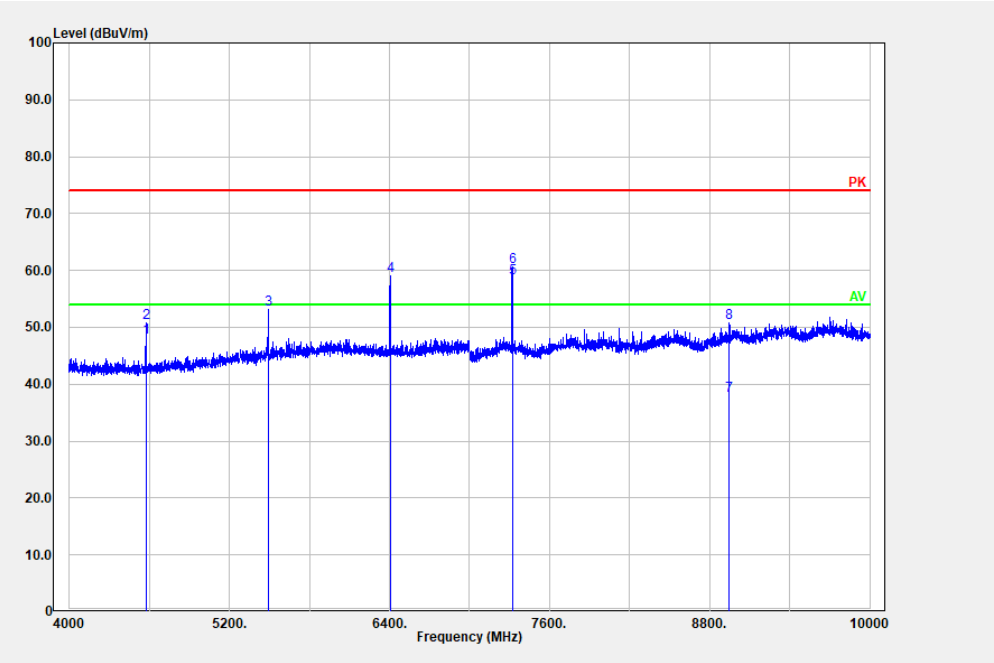
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 902.3MHz							
902.30	75.30	QP	H	23.42	98.72	N/A	N/A
902.30	69.20	QP	V	23.42	92.62	N/A	N/A
902.00	21.20	QP	H	23.42	44.62	78.72	34.10
1804.60	42.23	PK	H	1.55	43.78	74.00	30.22
1804.60	34.87	AV	H	1.55	36.42	54.00	17.58
2706.90	33.35	PK	H	4.79	38.14	74.00	35.86
2706.90	21.36	AV	H	4.79	26.15	54.00	27.85
3609.20	34.26	PK	H	9.04	43.30	74.00	30.70
3609.20	22.51	AV	H	9.04	31.55	54.00	22.45
4511.50	35.92	PK	H	9.69	45.61	74.00	28.39
4511.50	23.65	AV	H	9.69	33.34	54.00	20.66
Middle Channel: 908.5MHz							
908.50	74.70	QP	H	23.53	98.23	N/A	N/A
908.50	68.00	QP	V	23.53	91.53	N/A	N/A
1817.00	34.26	PK	H	1.60	35.86	74.00	38.14
1817.00	22.16	AV	H	1.60	23.76	54.00	30.24
2725.50	39.12	PK	H	4.88	44.00	74.00	30.00
2725.50	35.25	AV	H	4.88	40.13	54.00	13.87
3634.00	35.24	PK	H	9.03	44.27	74.00	29.73
3634.00	23.54	AV	H	9.03	32.57	54.00	21.43
High Channel: 914.9 MHz							
914.90	77.80	QP	H	23.56	101.36	N/A	N/A
914.90	73.10	QP	V	23.56	96.66	N/A	N/A
928.00	8.50	QP	H	23.67	32.17	81.36	49.19
1829.80	41.26	PK	H	1.63	42.89	74.00	31.11
1829.80	38.24	AV	H	1.63	39.87	54.00	14.13
2744.70	43.48	PK	H	4.96	48.44	74.00	25.56
2744.70	41.89	AV	H	4.96	46.85	54.00	7.15
3659.60	40.72	PK	H	9.04	49.76	74.00	24.24
3659.60	37.54	AV	H	9.04	46.58	54.00	7.42
4574.50	40.51	PK	H	10.02	50.53	74.00	23.47
4574.50	38.24	AV	H	10.02	48.26	54.00	5.74
5489.40	41.43	PK	H	12.63	54.06	74.00	19.94
6404.30	44.65	PK	H	13.25	57.90	74.00	16.10
7319.20	41.52	PK	H	14.30	55.82	74.00	18.18
7319.20	36.16	AV	H	14.30	50.46	54.00	3.54

External Antenna:

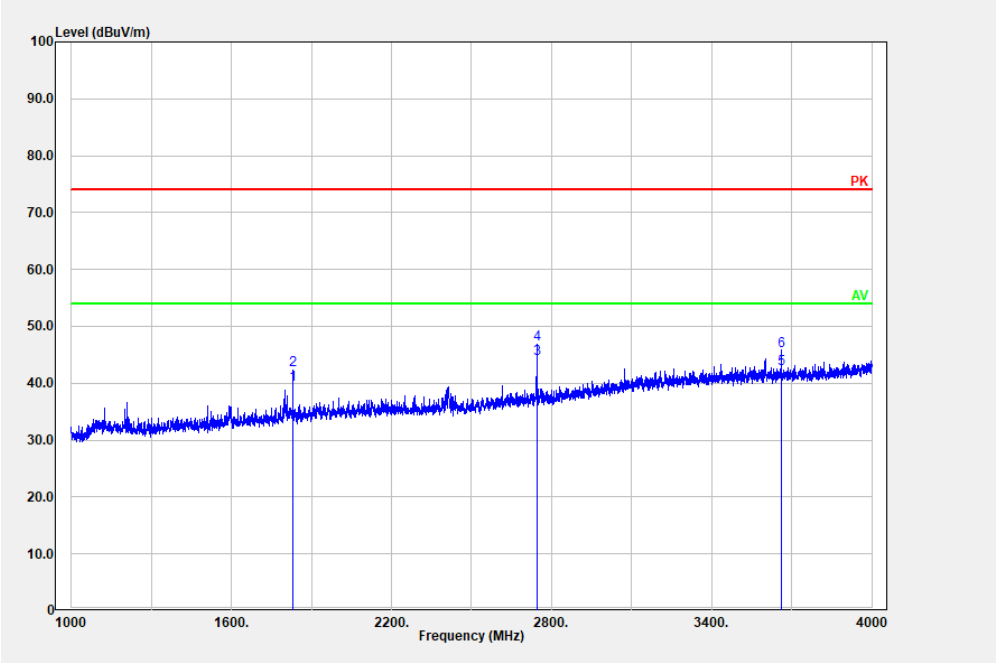
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 902.3MHz							
902.30	76.70	QP	H	23.42	100.12	N/A	N/A
902.30	79.55	QP	V	23.42	102.97	N/A	N/A
902.00	23.30	QP	H	23.42	46.72	82.97	36.25
1804.60	39.65	PK	H	1.55	41.20	74.00	32.80
1804.60	29.34	AV	H	1.55	30.89	54.00	23.11
2706.90	35.62	PK	H	4.79	40.41	74.00	33.59
2706.90	23.54	AV	H	4.79	28.33	54.00	25.67
3609.20	35.36	PK	H	9.04	44.40	74.00	29.60
3609.20	23.51	AV	H	9.04	32.55	54.00	21.45
Middle Channel: 908.5MHz							
908.50	77.60	QP	H	23.53	101.13	N/A	N/A
908.50	82.30	QP	V	23.53	105.83	N/A	N/A
1817.00	38.75	PK	H	1.60	40.35	74.00	33.65
1817.00	35.24	AV	H	1.60	36.84	54.00	17.16
2725.50	35.62	PK	H	4.88	40.50	74.00	33.50
2725.50	23.14	AV	H	4.88	28.02	54.00	25.98
3634.00	34.87	PK	H	9.03	43.90	74.00	30.10
3634.00	23.65	AV	H	9.03	32.68	54.00	21.32
High Channel: 914.9 MHz							
914.90	75.40	QP	H	23.56	98.96	N/A	N/A
914.90	79.50	QP	V	23.56	103.06	N/A	N/A
928.00	8.40	QP	V	23.67	32.07	83.06	50.99
1829.80	35.62	PK	H	1.63	37.25	74.00	36.75
1829.80	23.54	AV	H	1.63	25.17	54.00	28.83
2744.70	35.87	PK	H	4.96	40.83	74.00	33.17
2744.70	23.54	AV	H	4.96	28.50	54.00	25.50
3659.60	34.59	PK	H	9.04	43.63	74.00	30.37
3659.60	22.85	AV	H	9.04	31.89	54.00	22.11

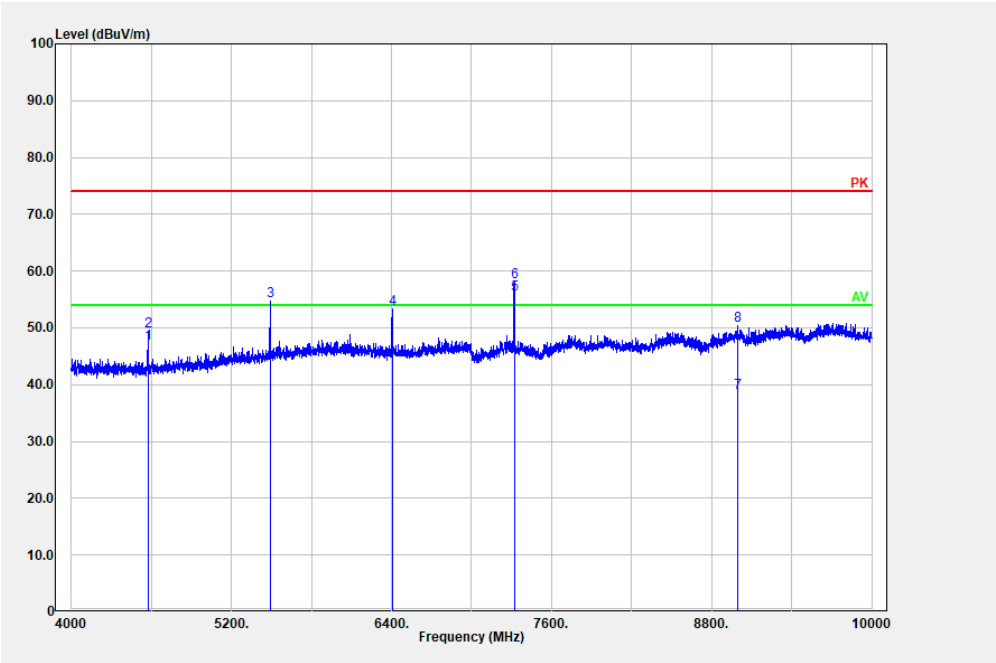
Worst Test plots(High channel was the worst)
Horizontal:





Vertical:


Level (dBuV/m)
100
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
PK
AV
1
2
3
4
5
6
1000
1600.
2200.
2800.
3400.
4000
Frequency (MHz)


Level (dBuV/m)
100
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
PK
AV
1
2
3
4
5
6
7
8
4000
5200.
6400.
7600.
8800.
10000
Frequency (MHz)

4.3 20 dB Emission Bandwidth:

Serial Number:	CR21100088-S1	Test Date:	2021.10.12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Wolf Mo	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	26.6	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.2

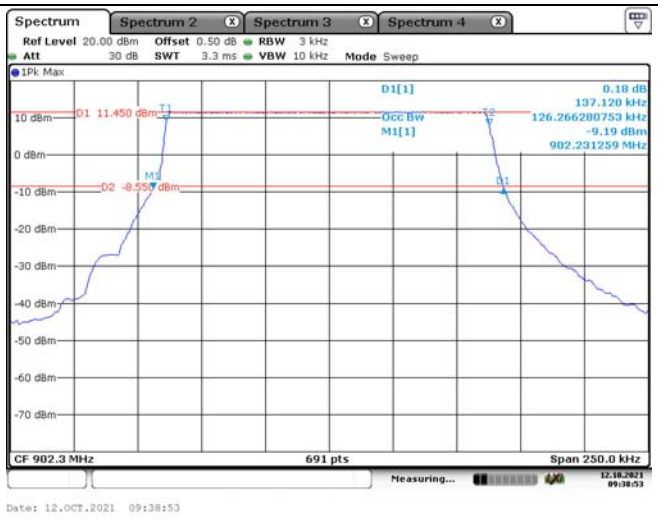
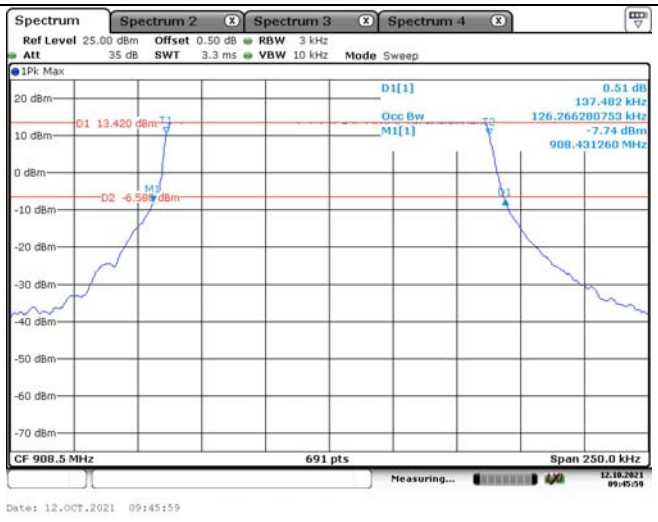
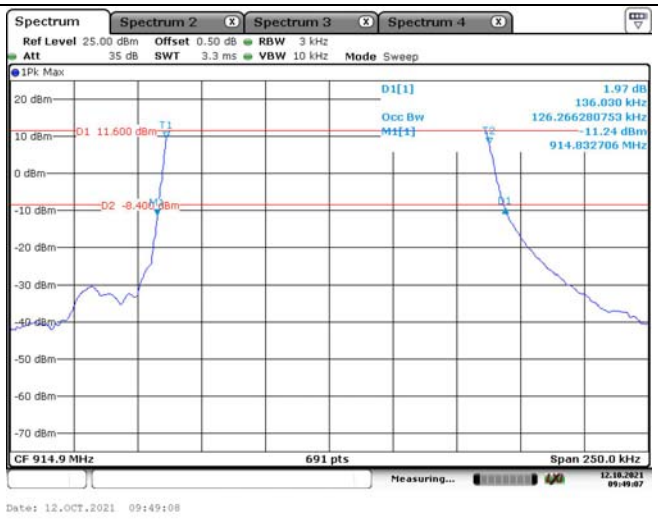
Test Equipment List and Details:

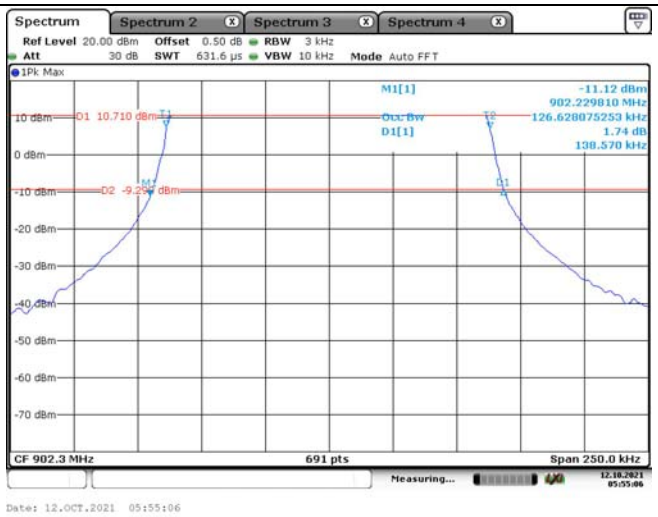
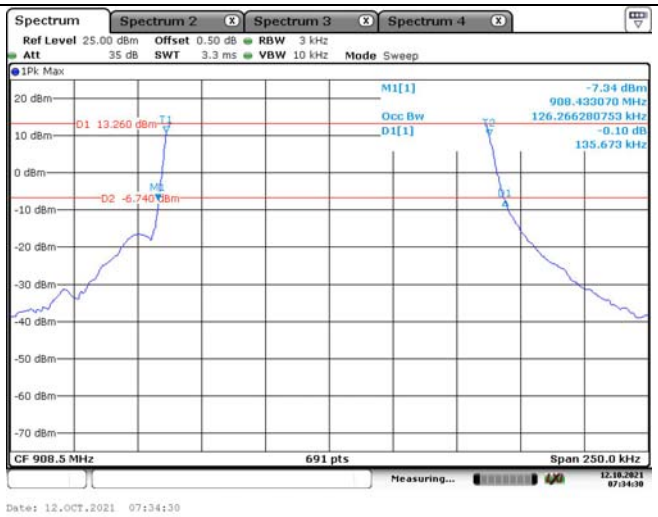
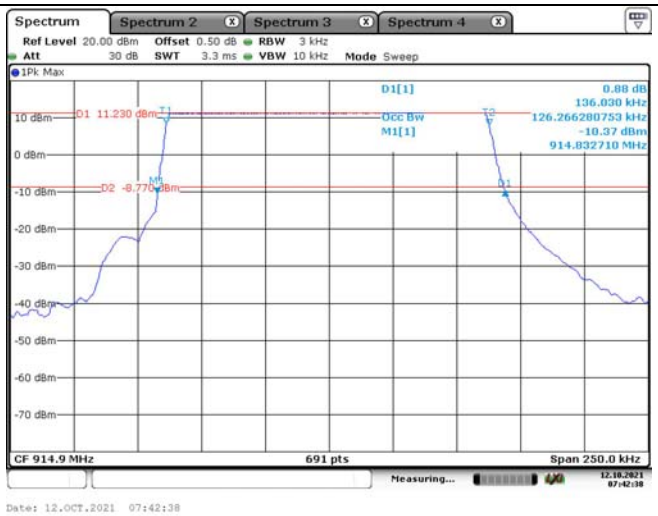
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A

** 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:

Antenna	Test Channel	Test Frequency (MHz)	20 dB Bandwidth (MHz)	Limits (MHz)
Internal Antenna	Lowest	902.3	0.137	≤0.5
	Middle	908.5	0.137	≤0.5
	Highest	914.9	0.136	≤0.5
External Antenna	Lowest	902.3	0.139	≤0.5
	Middle	908.5	0.136	≤0.5
	Highest	914.9	0.136	≤0.5

Internal Antenna	
Lowest Channel	
Middle Channel	
Highest Channel	

External Antenna	
Lowest Channel	
Middle Channel	
Highest Channel	

4.4 Channel Separation:

Serial Number:	CR21100088-S1	Test Date:	2021.10.12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Wolf Mo	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	26.6	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.2

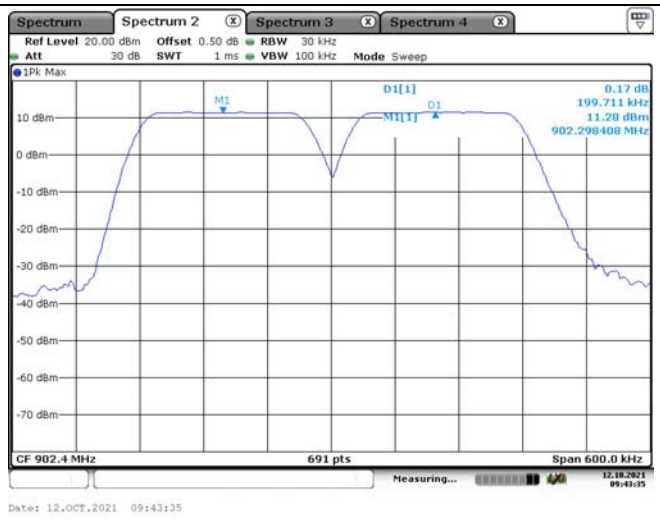
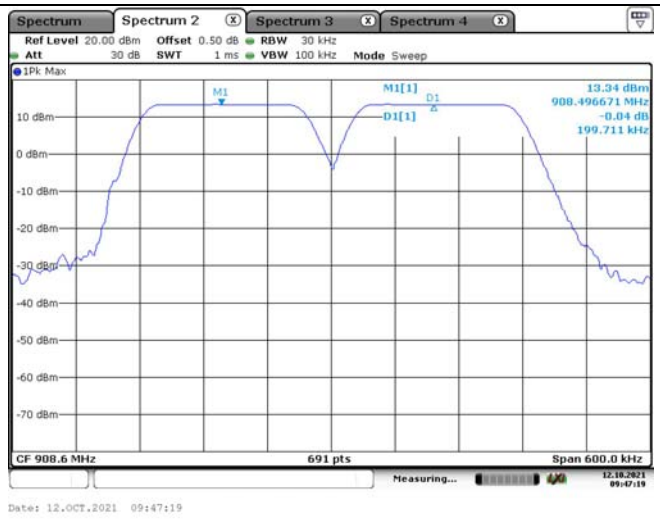
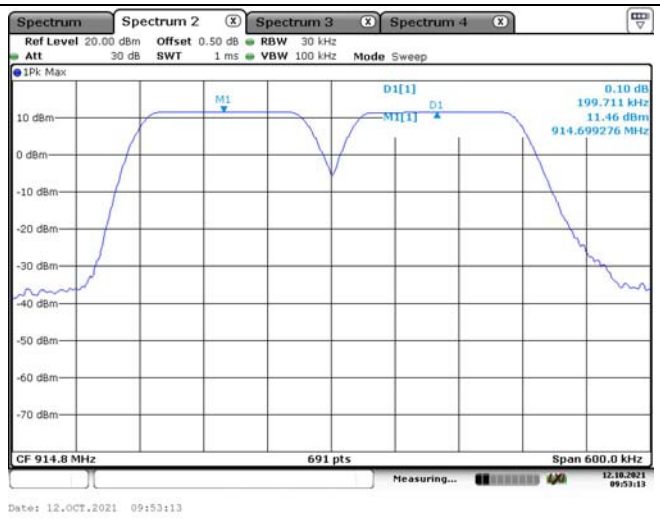
Test Equipment List and Details:

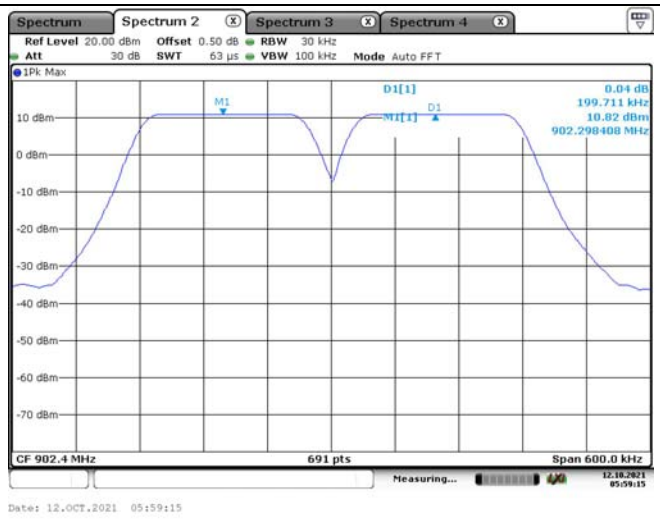
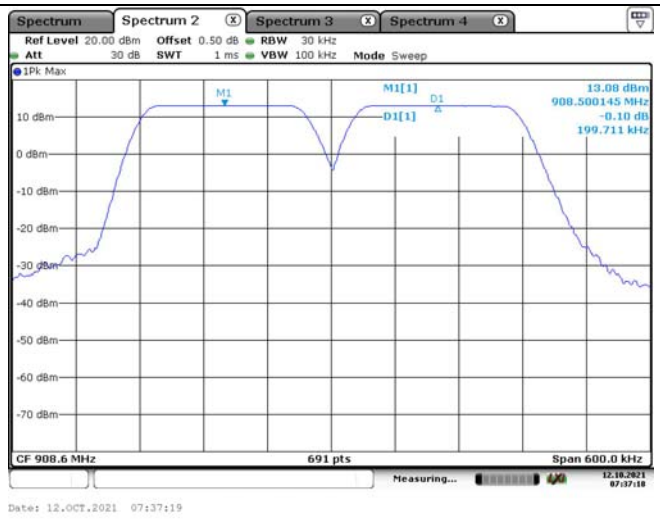
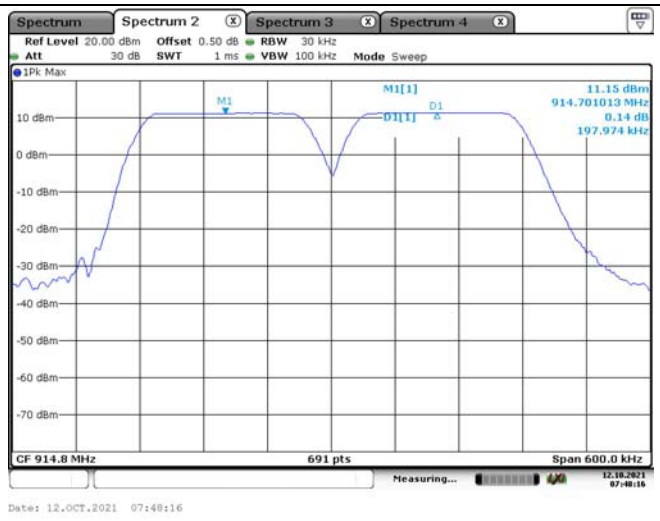
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A

** 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 Modes	Test Frequency (MHz)	Channel Separation (MHz)	Limits (MHz)
Internal Antenna	902.3	0.2	0.137
	908.5	0.2	0.137
	914.9	0.2	0.136
External Antenna	902.3	0.2	0.139
	908.5	0.2	0.136
	914.9	0.198	0.136

Internal Antenna	
Lowest Channel	
Middle Channel	
Highest Channel	

External Antenna	
Lowest Channel	
Middle Channel	
Highest Channel	

4.5 Number Of Hopping Frequency:

Serial Number:	CR21100088-S1	Test Date:	2021.10.13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Wolf Mo	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	26.3	Relative Humidity: (%)	56	ATM Pressure: (kPa)	100.3

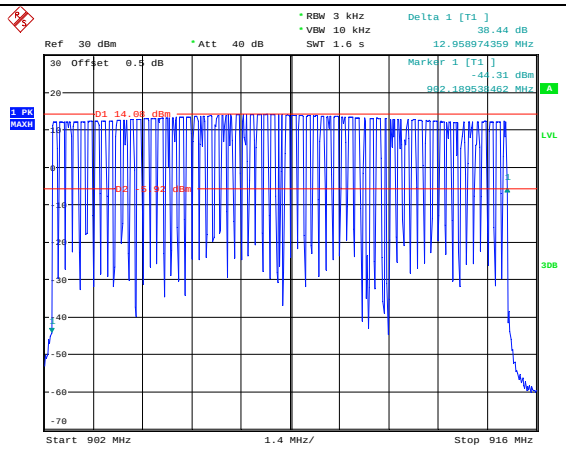
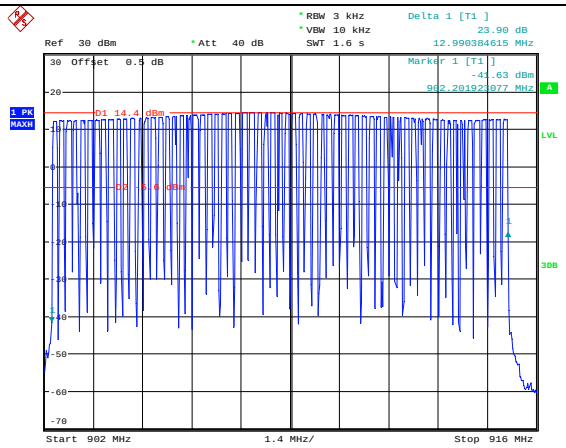
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	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 Modes	Frequency Range (MHz)	Number of Hopping Channel	Limits
Internal Antenna	902-928	64	≥50
External Antenna	902-928	64	≥50

Internal Antenna	 Date: 13.OCT.2021 16:35:12
External Antenna	 Date: 13.OCT.2021 19:17:59

4.6 Time Of Occupancy(Dwell Time):

Serial Number:	CR21100088-S1	Test Date:	2021.10.19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Wolf Mo	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	25.9	Relative Humidity: (%)	58	ATM Pressure: (kPa)	101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	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).*

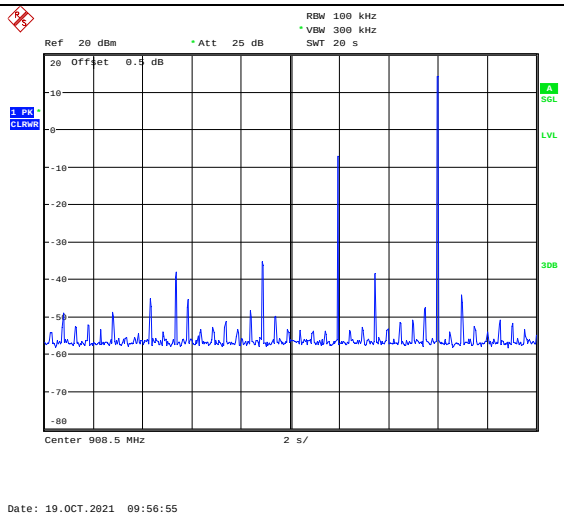
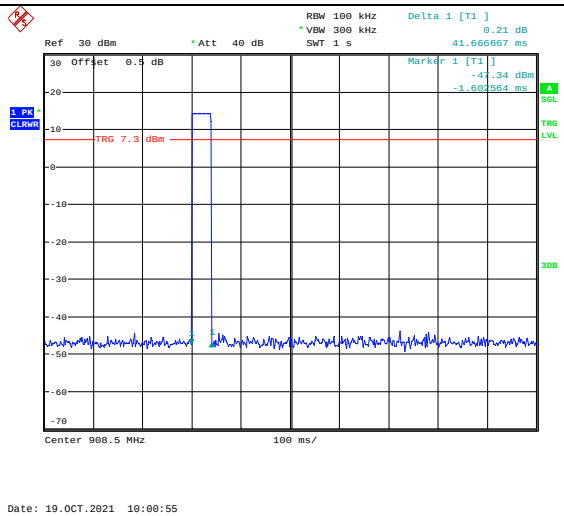
Test Data:

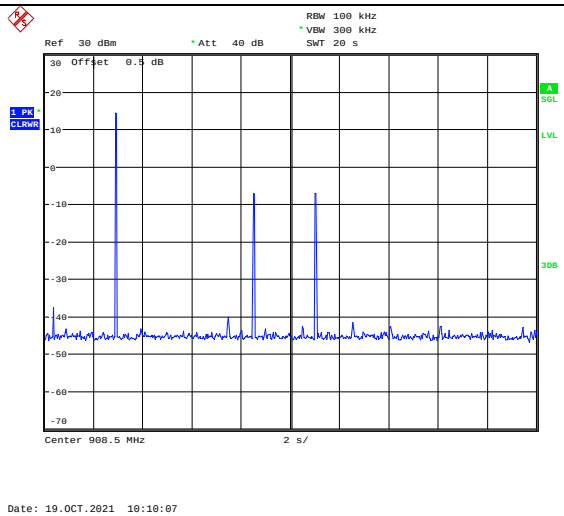
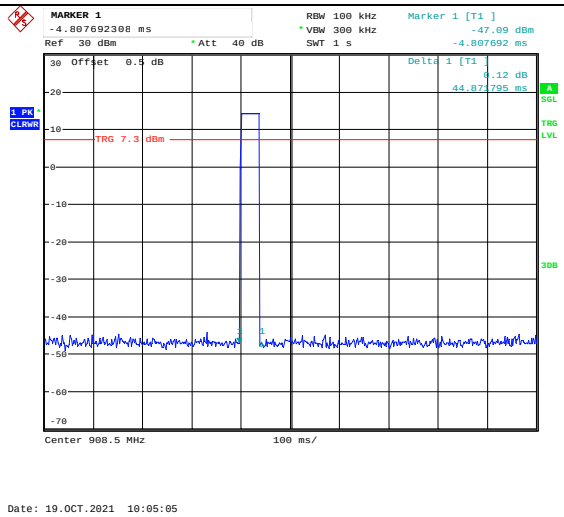
Internal Antenna:

Test Frequency (MHz)	Puse width (ms)	Observation time (s)	Hopping Numbers in Observation time (ms)	Dwell Time (s)	Limit (s)
908.5	41.670	20	1	0.042	0.400
Note: Observation time= 20s					

External Antenna:

Test Frequency (MHz)	Puse width (ms)	Observation time (s)	Hopping Numbers in Observation time (ms)	Dwell Time (s)	Limit (s)
908.5	44.872	20	1	0.044	0.400
Note: Observation time= 20s					

Internal Antenna	
Hopping Numbers in Observation time	
Pulse width	

External Antenna	
Hopping Numbers in Observation time	
Pulse width	

4.7 Peak Conducted Output Power:

Serial Number:	CR21090086-00A	Test Date:	2021-10-19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Wolf Mo	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.9	Relative Humidity: (%)	58	ATM Pressure: (kPa)	101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	USB Wideband Power Sensor	U2021XA	MY54080015	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	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:

Mode	Test Frequency (MHz)	Peak Conducted Output Power (dBm)	Limit (dBm)
Internal Antenna	902.3	11.32	30
	908.5	13.22	30
	914.9	11.39	30
External Antenna	902.3	10.98	30
	908.5	13.03	30
	914.9	11.21	30

4.8 100 kHz Bandwidth of Frequency Band Edge:

Serial Number:	CR21100088-S1	Test Date:	2021.10.12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Le Qiao	Test Result:	Pass

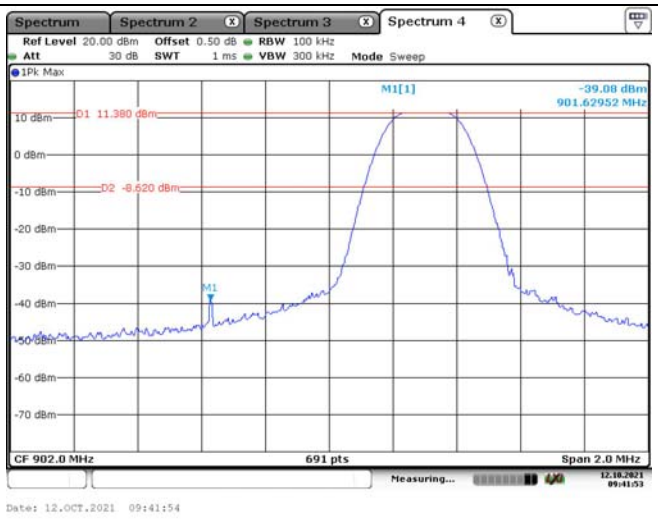
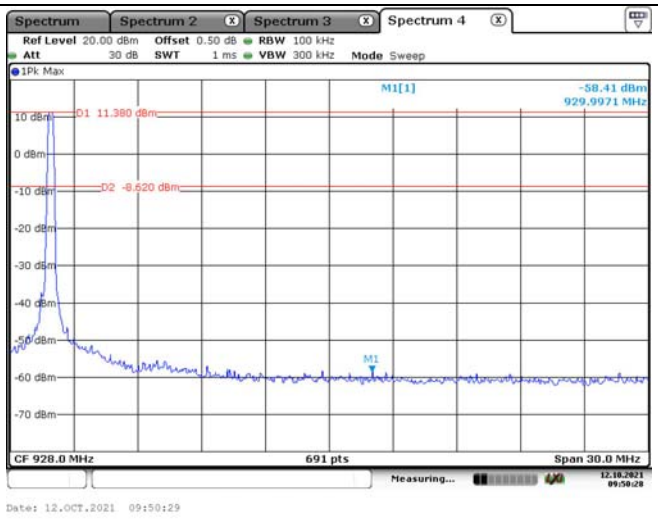
Environmental Conditions:					
Temperature: (℃)	25.9	Relative Humidity: (%)	60	ATM Pressure: (kPa)	100.2

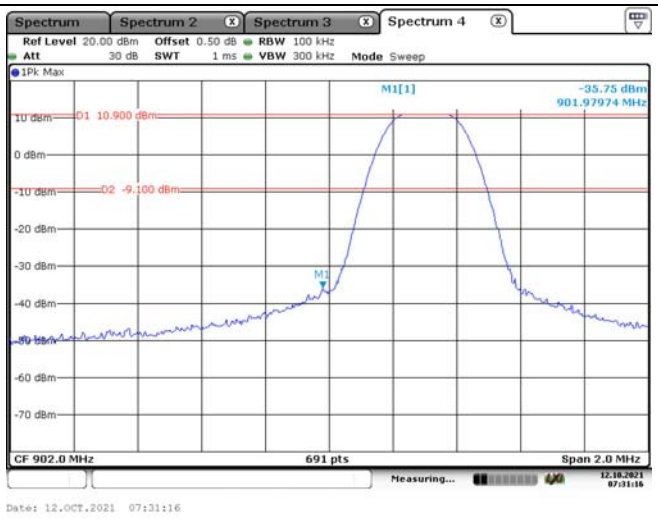
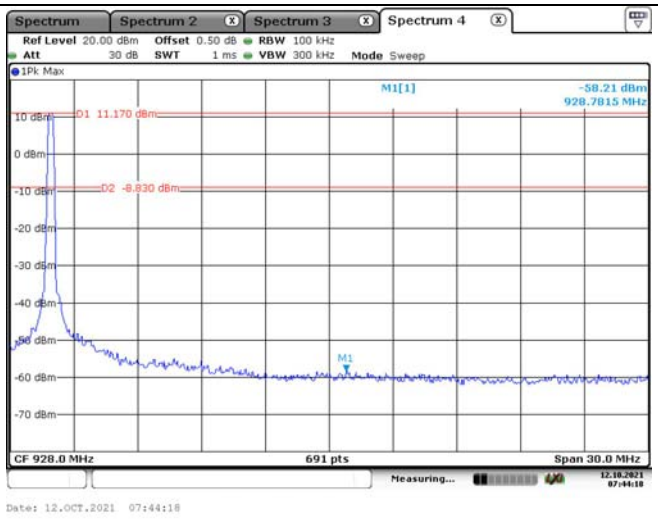
Test Equipment List and Details:

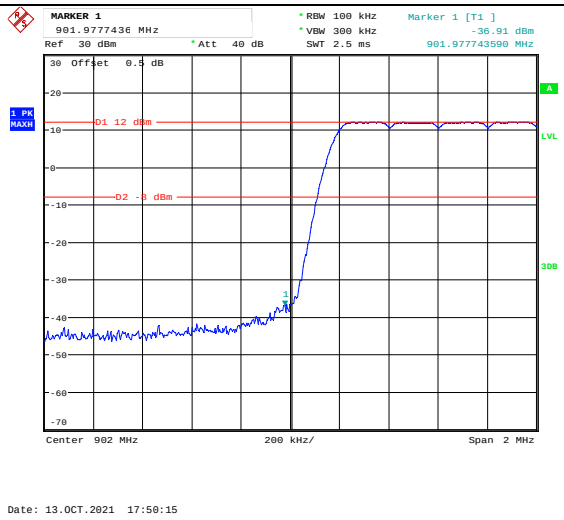
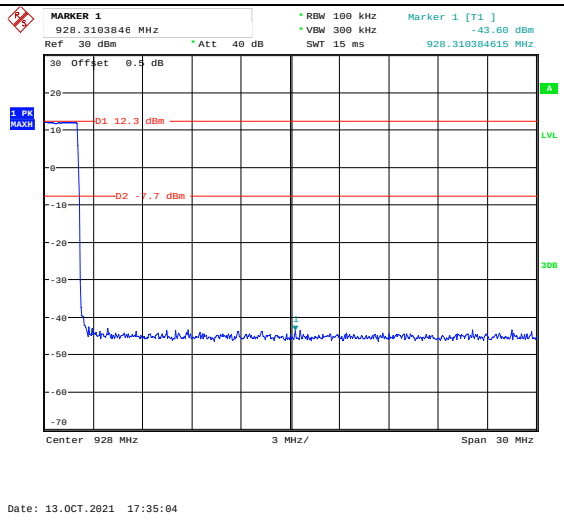
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021-07-22	2022-07-21
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A

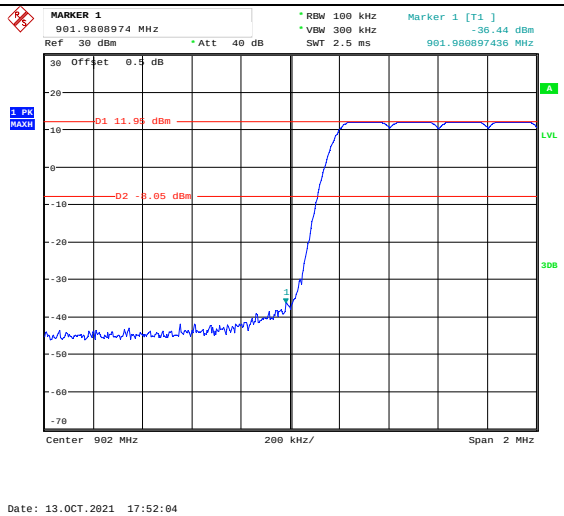
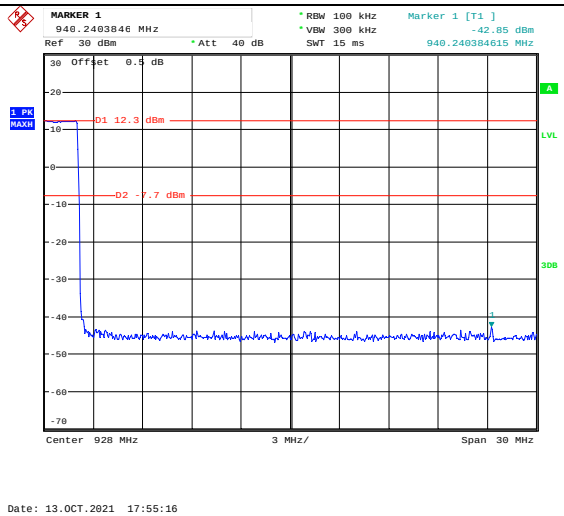
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Non-Hopping Internal Antenna	
Band Edge, Left Side	
Band Edge, Right Side	

Non-Hopping External Antenna	
Band Edge, Left Side	
Band Edge, Right Side	

Hopping Mode, Internal Antenna	
Band Edge, Left Side	
Band Edge, Right Side	

Hopping Mode, External Anetnna	
Band Edge, Left Side	
Band Edge, Right Side	

5. RF EXPOSURE EVALUATION

5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1.1 Applicable Standard

FCC §15.247 (i) & §1.1310 & §2.1091

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §1.1307(b)(1) of this chapter.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

5.1.2 Procedure

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

5.1.3 Calculated Result

Modes	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
	(dBi)	(numeric)	(dBm)	(mW)			
Lora-DTS 903-914.2 MHz	1.5	1.41	14	25.12	20.00	0.007	0.60
Lora-FHSS 902.3-914.9MHz	1.5	1.41	14	25.12	20.00	0.007	0.60
WLAN	1.5	1.41	18	63.10	20.00	0.018	1.0
WWAN	1.5	1.41	23.5	223.87	20.00	0.063	0.422

Note: WWAN limit was used is the worst of all frequency bands(LTE B71).

Simultaneous Transmission:

The Lora, WLAN and WWAN can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$=S_{Lora}/S_{limit-\ Lora}+ S_{WLAN}/S_{limit-WLAN}+ S_{WWAN}/S_{limit-WWAN}$

=0.007/0.60+0.018/1+0.063/0.422

=0.18

< 1.0

Result: The device meet FCC MPE at 20 cm distance

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