



TEST REPORT

Applicant:	Xiamen Milesight IoT Co., Ltd.
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Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China

FCC ID: 2AYHY-UG63V2

Product Name: LoRaWAN Gateway

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

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

Report Number: CR231167606-00C

Date Of Issue: 2024/1/29

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Test Facility

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

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

Declarations

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DOCUMENT REVISION HISTORY

Revision Number	n Number Report Number Description of Revision		Date of Revision
1.0	CR231167606-00C	Original Report	2024/1/29

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	LoRaWAN Gateway
EUT Model:	UG63-L09NA-915M
Operation Frequency:	903-926.9 MHz
Maximum Peak Output Power (Conducted):	14.79dBm
Modulation Type:	Chirp Spread Spectrum (CSS)
Rated Input Voltage:	DC 12V from Adapter or DC 5V from Adapter by USB or DC 5V from PoE Splitter
Serial Number:	2DY0-3(For RF Conducted Test) 2DY0-1(For RE/CE Test)
EUT Received Date:	2023/11/21
EUT Received Status:	Good

Operation Frequency Detail:

Channel Frequency (MHz)		Channel	Frequency (MHz)
1	903	9	923.3
2	904.6	10	923.9
3	906.2	11	924.5
4	907.8	12	925.1
5	909.4	13	925.7
6	911	14	926.3
7	912.6	15	926.9
8	914.2	/	/
Per section 15.31(m), the	below frequencies were perforn	ned the test as below:	·
Test Channel			equency MHz)
Lowest		903	
N	liddle	9	914.2
Н	ighest	9	926.9

Antenna Information Detail▲:

Antenna Manufacturer	Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain		
Dongguan Zhongchi Electronic Technology Co.,LtdDipole50902-928MHz-1.87dBi						
The Method of §15.203 Compliance:						
Antenna was permanently attached to the unit.						
Antenna use a unique type of connector to attach to the EUT.						
Unit was professionally installed, and installer shall be responsible for verifying that the correct						
antenna is employed with the unit.						

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter #1	DONG GUAN ORIENTAL HERO ELECTRICAL FACTORY	OH-1015A0502000U4U-UL	Input: 100-240Vac~50/60Hz 0.5A Output: DC5V, 2A
Adapter #2	HUIZHOU FUJIAAPPLIANCE TECH,CO.,LTD.	FJ-SW2120502000U	Input: 100-240Vac~50/60Hz 0.4A Max Output: DC5V, 2A
Adapter #3	HUIZHOU FUJIAAPPLIANCE TECH,CO.,LTD.	FJ-SW2050501000U	Input: 100-240Vac~50/60Hz 0.25A Max Output: DC5V, 1A
PoE Splitter	Unknown	TYPEC0502	Input: DC37-57V Output: DC5V, 2.4A

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

	11.			
EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer. Per 2.4G Wifi test report, Powered by Adapter 2# was the worst.			
Equipment Modifications:	No			
EUT Exercise Software: SecureCRT				
The software was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer				

Test Medes	Power Level Setting		
Test Modes	Lowest	Middle	Highest
Lora-DTS	13	14	15

1.2.2 Support Equipment List and Details

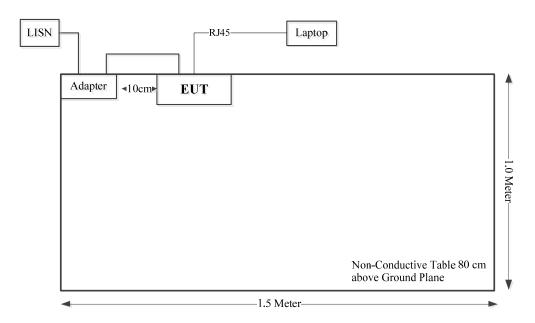
Manufacturer	Description	Model	Serial Number
Lenovo	Lenovo Laptop		CB30920865

1.2.3 Support Cable List and Details

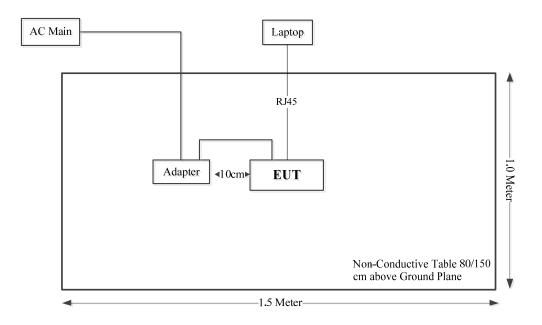
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
USB Cable	No	No	1.2	Adapter #2	EUT
RJ45 Cable	No	No	10	Laptop	EUT

1.2.4 Block Diagram of Test Setup

AC Line Conducted Emissions :



Radiation Spurious Emissions:



1.3 Measurement Uncertainty

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

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
	9k~30MHz:4.12dB, 30M~200MHz: 4.15 dB,200M~1GHz: 5.61
Unwanted Emissions, radiated	dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB,
	18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1°C
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 0.4\%$
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)	AC line conducted emissions	Compliant
§15.205, §15.209, §15.247(d)	Radiated Spurious emissions	Compliant
§15.247 (a)(2)	6 dB Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	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 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

	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:

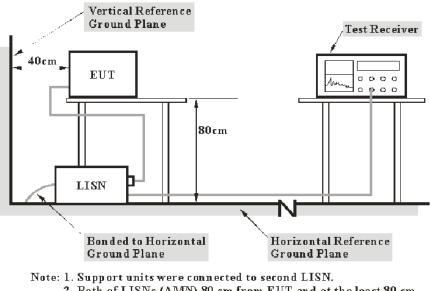
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

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

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

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

3.1.2 EUT Setup



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 frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the reported for each of the current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductor, 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

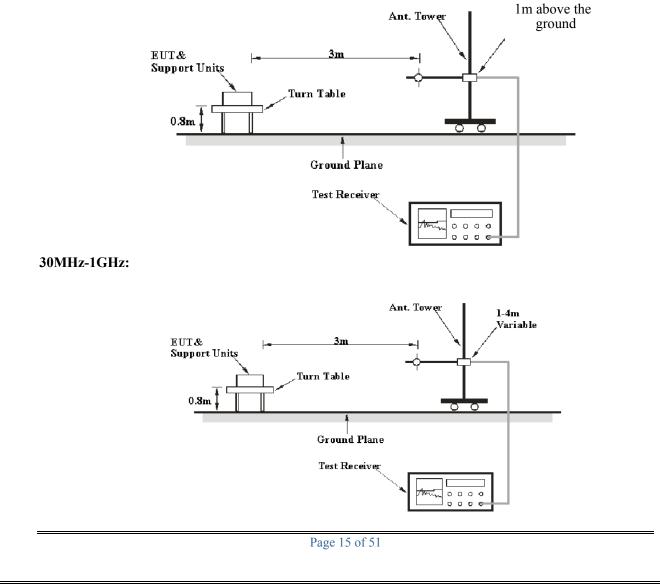
3.2.1 Applicable Standard

FCC §15.247 (d);

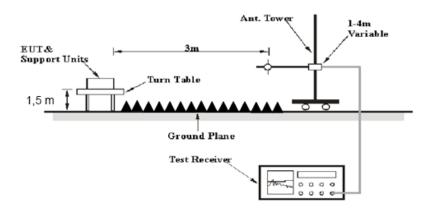
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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

9 kHz-30MHz:



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.

For 9kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 10 GHz.

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

9 kHz -1000 MHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP/AV
9 KHZ - 130 KHZ	300 Hz	1 kHz	/	РК
150111 201011	/	/	9 kHz	QP/AV
150 kHz – 30 MHz	10 kHz	30 kHz	/	РК
20 MIIa - 1000 MIIa	/	/	120 kHz	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	/	РК

1GHz-25GHz:

Measurement	Duty cycle	RBW	Video B/W
РК	Any	1MHz	3 MHz
417	>98%	1MHz	10 Hz
AV	<98%	1MHz	≥1/T

Note: T is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.4 Test Procedure

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

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-1 GHz except 9–90 kHz, 110–490 kHz, employing an average detector, peak and Average detection modes for frequencies above 1 GHz.

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

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor Factor = Antenna Factor + Cable Loss- Amplifier Gain

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

Margin = Limit – Result

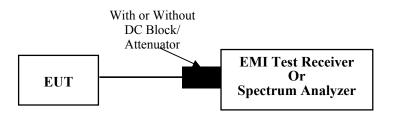
3.3 6 dB Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.247 (a)(2)

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

3.3.2 EUT Setup



3.3.3 Test Procedure

According to ANSI C63.10-2013 Section 11.8

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times RBW$.
- 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 6 dB relative to the maximum level measured in the fundamental emission.

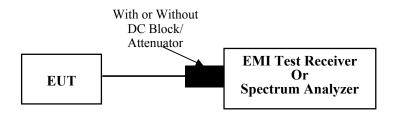
3.4 Maximum Conducted Output Power:

3.4.1 Applicable Standard

FCC §15.247 (b)(3)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

3.4.2 EUT Setup



3.4.3 Test Procedure

According to ANSI C63.10-2013 Section 11.9.1.1

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW \geq DTS bandwidth.

b) Set VBW $\geq [3 \times RBW]$.

c) Set span $\geq [3 \times \text{RBW}]$.

d) Sweep time = auto couple.

e) Detector = peak.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

h) Use peak marker function to determine the peak amplitude level.

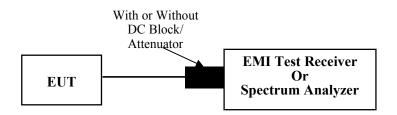
3.5 Maximum power spectral density:

3.5.1 Applicable Standard

FCC §15.247 (e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

3.5.2 EUT Setup



3.5.3 Test Procedure

According to ANSI C63.10-2013 Section 11.10.2

a) Set analyzer center frequency to DTS channel center frequency.

b) Set the span to 1.5 times the DTS bandwidth.

c) Set the RBW to 3 kHz \leq RBW \leq 100 kHz.

d) Set the VBW \geq [3×RBW].

e) Detector = peak.

f) Sweep time = auto couple.

g) Trace mode = max hold.

h) Allow trace to fully stabilize.

i) Use the peak marker function to determine the maximum amplitude level within the RBW.

j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

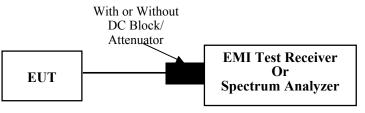
3.6 100 kHz Bandwidth of Frequency Band Edge:

3.6.1 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)).

3.6.2 EUT Setup



3.6.3 Test Procedure

According to ANSI C63.10-2013 Section 11.11

a) Set the center frequency and span to encompass frequency range to be measured.

b) Set the RBW = 100 kHz.

c) Set the VBW \geq [3 × RBW].

d) Detector = peak.

e) Sweep time = auto couple.

f) Trace mode = max hold.

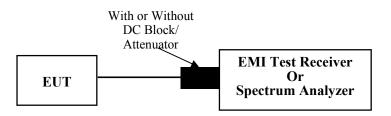
g) Allow trace to fully stabilize.

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.

3.7 Duty Cycle:

3.7.1 EUT Setup



3.7.2 Test Procedure

According to ANSI C63.10-2013 Section 11.6

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 $RBW \ge OBW$ if possible; otherwise, set RBW to the largest available value.

3) Set VBW \geq RBW. Set detector = peak or average.

4) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \le 16.7 \mu s$.)

3.8 Antenna Requirement

3.8.1 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.

3.8.2 Judgment

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

4. Test DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	2DY0-1	Test Date:	2023/12/28
Test Site:	CE	Test Mode:	Transmitting (maximum output power mode(Low channel) was tested)
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

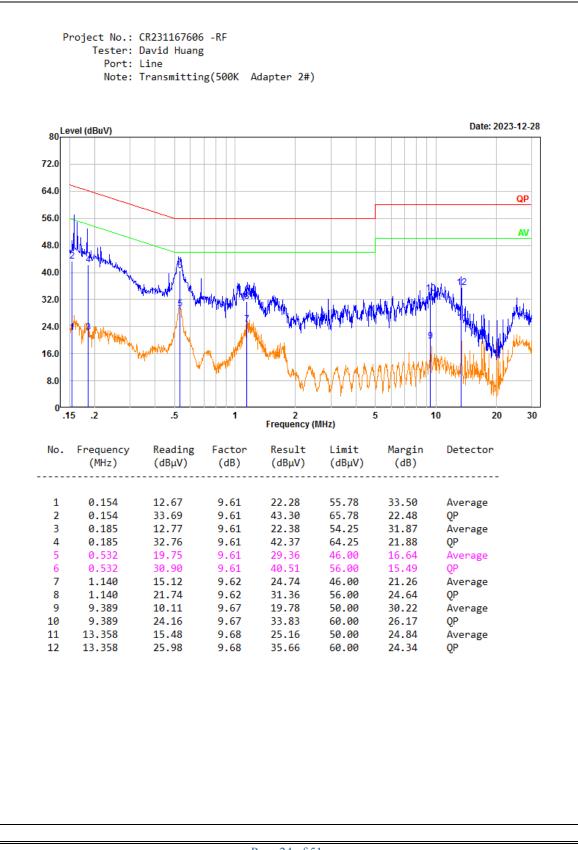
Temperature: (°C) 21.6	Relative Humidity: (%) 45	ATM Pressure: (kPa) 101.6
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Test Equipment List and Details:

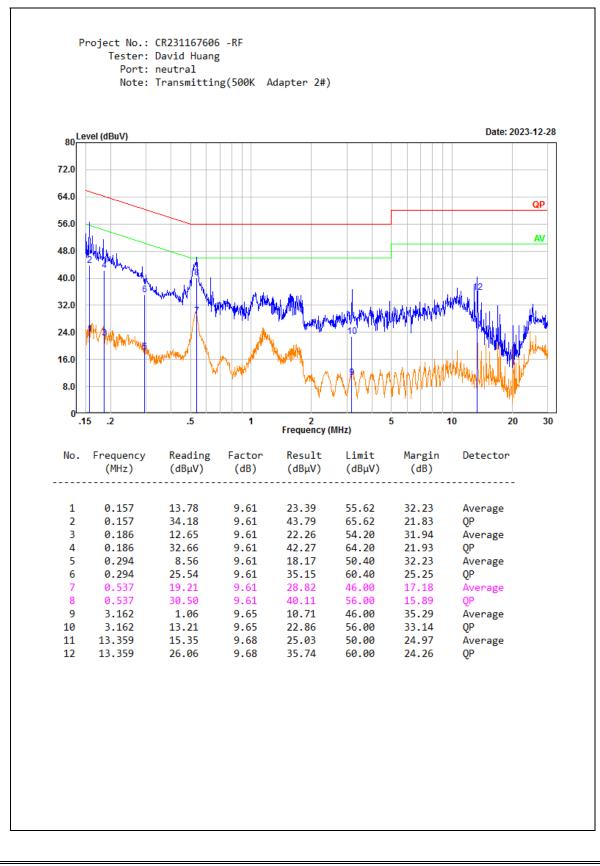
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/3/31	2024/3/30
R&S	EMI Test Receiver	ESR3	102726	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/8/6	2024/8/5
Audix	Test Software	E3	190306 (V9)	N/A	N/A

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

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4.2 Radiation Spurious Emissions

Serial Number:	2DY0-1	Test Date:	2024/1/2-2024/1/20
Test Site:	966-1, 966-2	Test Mode:	Transmitting
Tester:	Vic Du, coco Tian	Test Result:	Pass

Environmental	Conditions:				
Temperature: (°C)	25~25.5	Relative Humidity: (%)	43~47	ATM Pressure: (kPa)	101.1~101.5

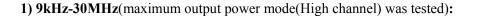
Test Equipment List and Details:

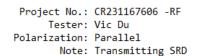
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
BACL	Loop Antenna	1313-1A	3110611	2023/12/4	2026/12/3
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A
AH	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200- 70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362- 300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7

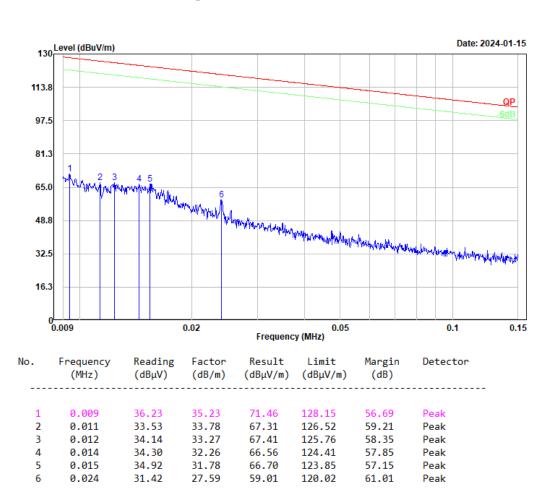
* *Statement of Traceability:* China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

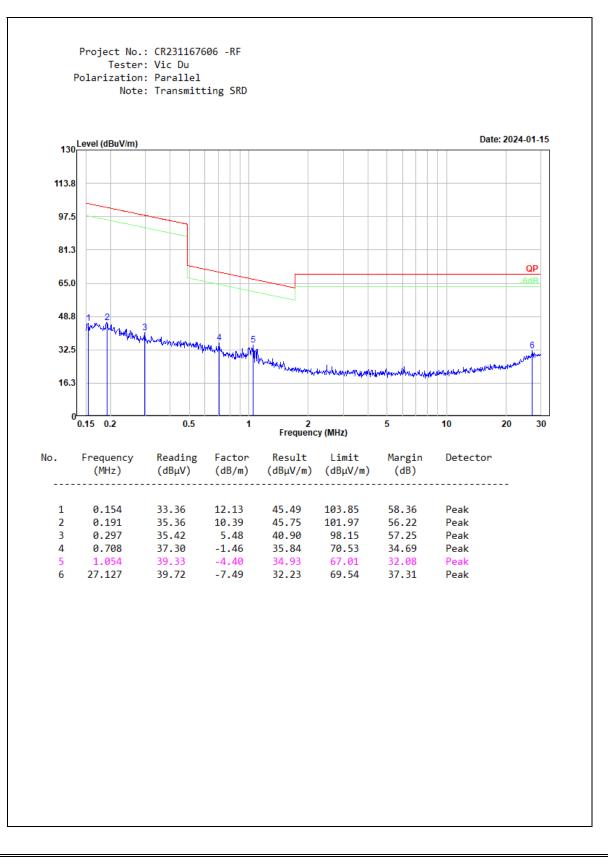
Test Data:

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

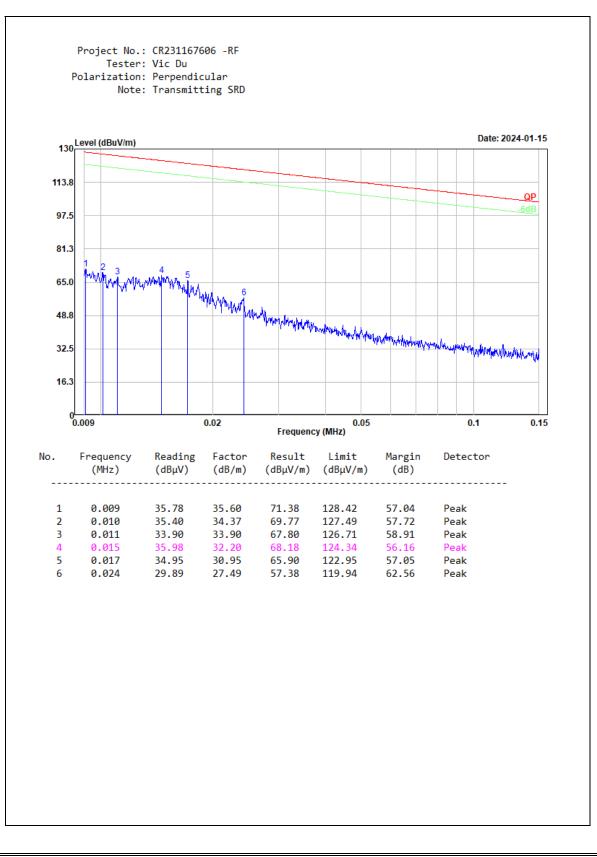




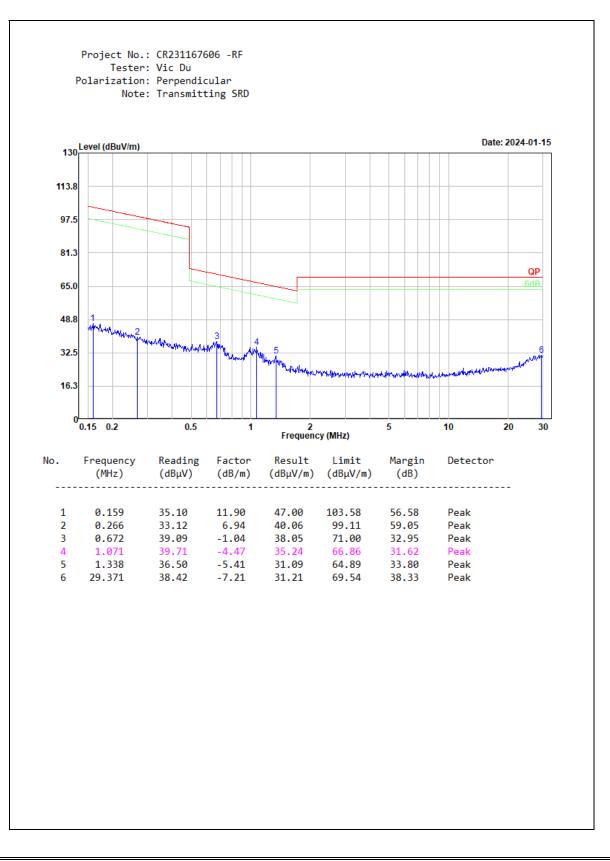


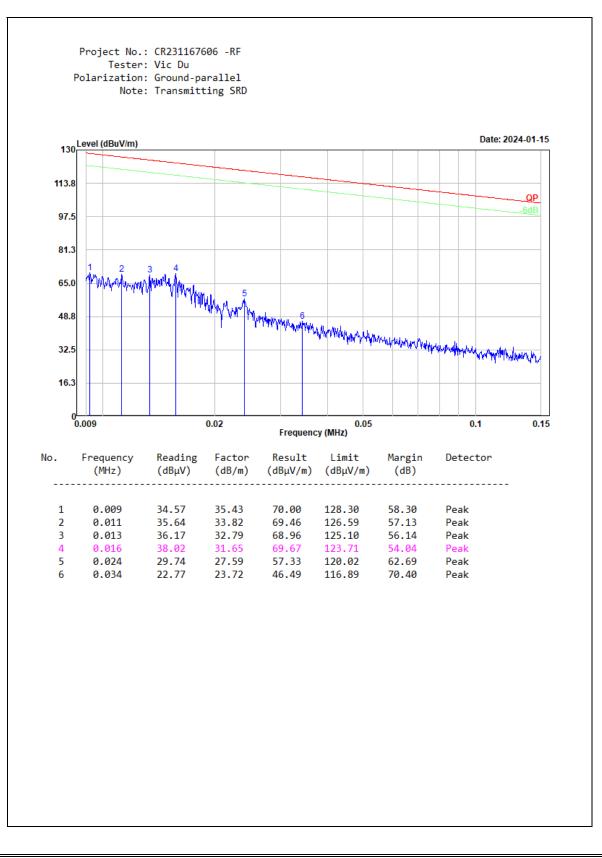


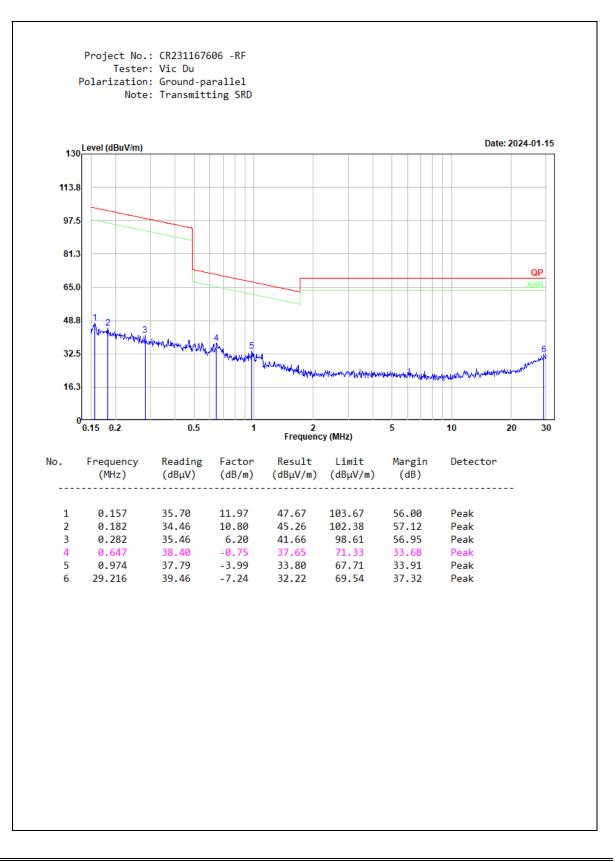
Report No.: CR231167606-00C

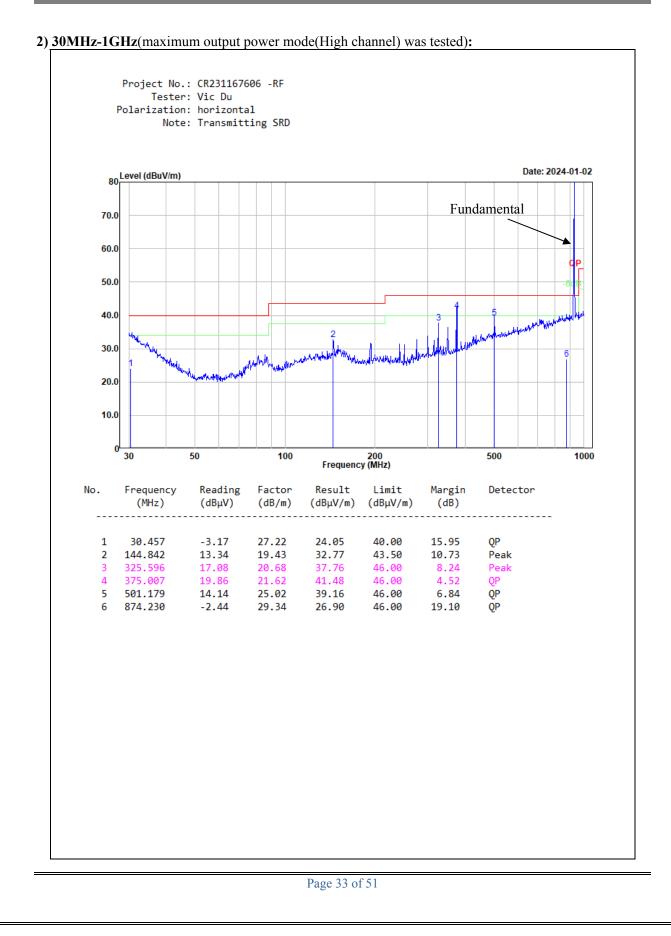


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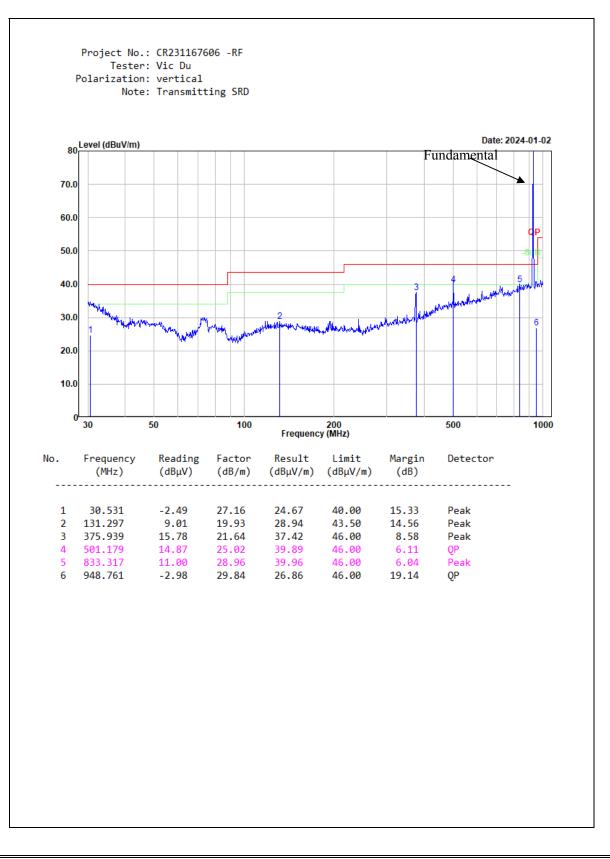








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2) Band edge and 1-10GHz

Frequency (MHz)	Receiver		Dalar	Fastan	D 14	T insit	Manain
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Low Chan		Channel:	903	MHz		
903.00	68.00	QP	Н	29.47	97.47	N/A	N/A
903.00	79.81	QP	V	29.47	109.28	N/A	N/A
902.00	18.90	QP	V	29.46	48.36	89.28	40.92
1806.000	40.35	РК	Н	0.59	40.94	74.00	33.06
1806.000	30.95	AV	Н	0.59	31.54	54.00	22.46
1806.000	48.67	РК	V	0.59	49.26	74.00	24.74
1806.000	39.15	AV	V	0.59	39.74	54.00	14.26
2709.000	38.97	РК	Н	4.82	43.79	74.00	30.21
2709.000	29.43	AV	Н	4.82	34.25	54.00	19.75
2709.000	43.38	РК	V	4.82	48.20	74.00	25.80
2709.000	33.75	AV	V	4.82	38.57	54.00	15.43
3612.000	35.26	РК	Н	7.19	42.45	74.00	31.55
3612.000	25.89	AV	Н	7.19	33.08	54.00	20.92
3612.000	34.62	РК	V	7.19	41.81	74.00	32.19
3612.000	24.96	AV	V	7.19	32.15	54.00	21.85

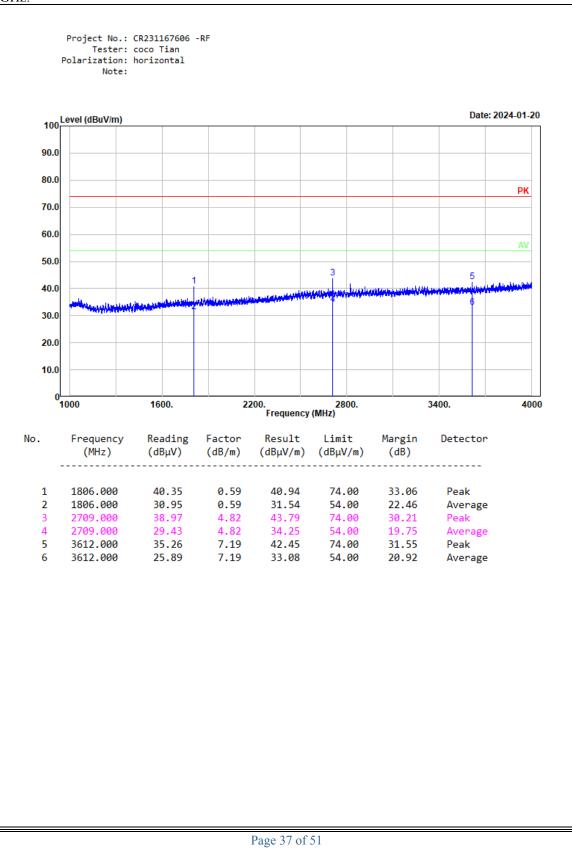
Frequency (MHz)	Receiver		D.1	D avida a	D 1/	T · · ·/	
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Middle Channel:			914.2	MHz		
914.20	68.73	QP	Н	29.62	98.35	N/A	N/A
914.20	80.99	QP	V	29.62	110.61	N/A	N/A
1828.400	38.97	РК	Н	0.66	39.63	74.00	34.37
1828.400	29.14	AV	Н	0.66	29.80	54.00	24.20
1828.400	41.35	РК	V	0.66	42.01	74.00	31.99
1828.400	31.69	AV	V	0.66	32.35	54.00	21.65
2742.600	35.76	РК	Н	4.87	40.63	74.00	33.37
2742.600	25.29	AV	Н	4.87	30.16	54.00	23.84
2742.600	36.67	PK	V	4.87	41.54	74.00	32.46
2742.600	26.17	AV	V	4.87	31.04	54.00	22.96
3656.800	34.83	РК	Н	7.24	42.07	74.00	31.93
3656.800	24.48	AV	Н	7.24	31.72	54.00	22.28
3656.800	35.64	PK	V	7.24	42.88	74.00	31.12
3656.800	25.09	AV	V	7.24	32.33	54.00	21.67

Frequency (MHz)	Receiver		D 1		D li	T · · ·	Manala
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	High Channel:			926.9	MHz		
926.90	67.17	QP	Н	29.69	96.86	N/A	N/A
926.90	82.67	QP	V	29.69	112.36	N/A	N/A
928.00	26.60	QP	V	29.70	56.30	92.36	36.06
1853.800	42.39	РК	Н	0.76	43.15	74.00	30.85
1853.800	32.68	AV	Н	0.76	33.44	54.00	20.56
1853.800	43.54	РК	V	0.76	44.30	74.00	29.70
1853.800	33.76	AV	V	0.76	34.52	54.00	19.48
2780.700	37.67	РК	Н	4.91	42.58	74.00	31.42
2780.700	26.79	AV	Н	4.91	31.70	54.00	22.30
2780.700	37.42	РК	V	4.91	42.33	74.00	31.67
2780.700	27.14	AV	V	4.91	32.05	54.00	21.95
3707.600	35.47	РК	Н	7.46	42.93	74.00	31.07
3707.600	24.87	AV	Н	7.46	32.33	54.00	21.67
3707.600	36.34	РК	V	7.46	43.80	74.00	30.20
3707.600	25.76	AV	V	7.46	33.22	54.00	20.78

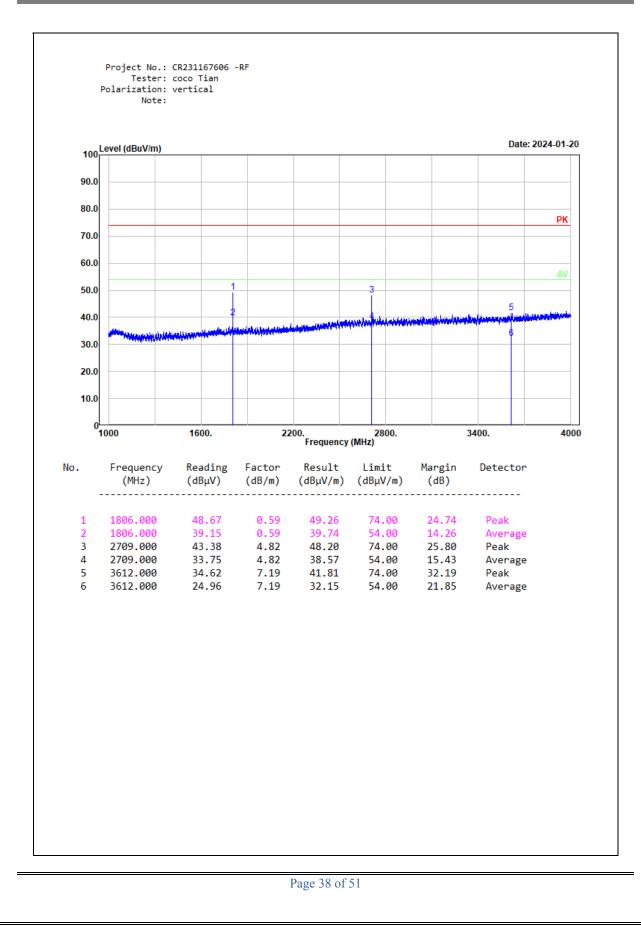
Report No.: CR231167606-00C

Worst Test plots (Low channel)

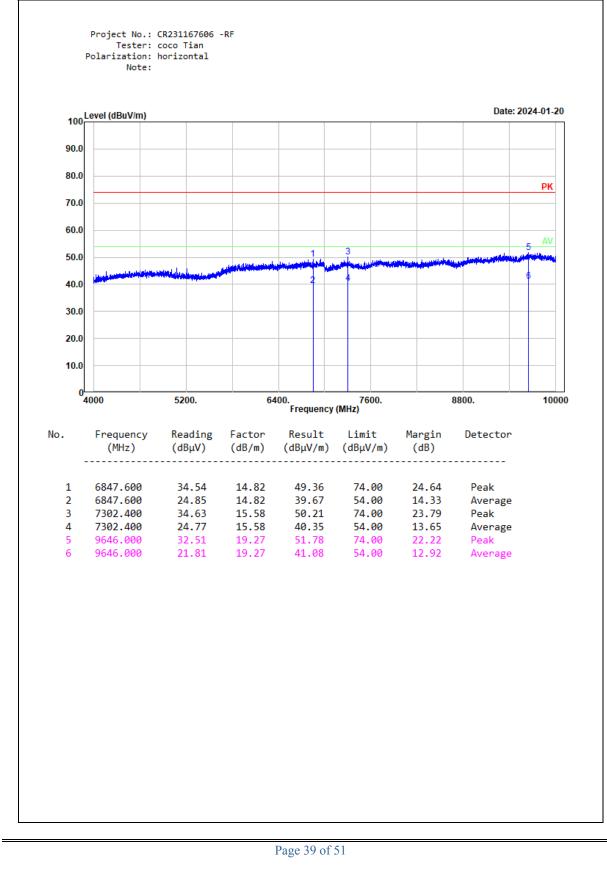
1-<u>4GHz:</u>



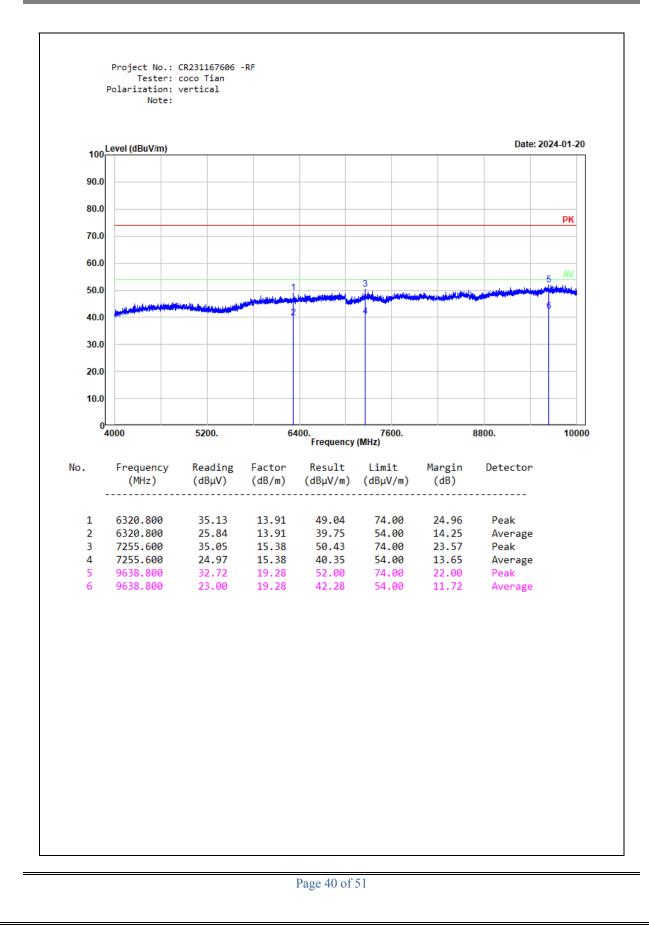
Report No.: CR231167606-00C



4-10GHz:



Report No.: CR231167606-00C



4.3 6 dB Emission Bandwidth:

Serial Number:	2DY0-3	Test Date:	2023/12/13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	25.3	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.3

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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 Channel	Test Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
Lowest	903	0.636	≥0.5
Middle	914.2	0.630	≥0.5
Highest	926.9	0.636	≥0.5

Report No.: CR231167606-00C

	6dB Emission Bandwidth	
1	Spectrum Spectrum 2 X Spectrum 3 X Spectrum 4 X	Ē
	RefLevel 30.00 dBm Offset 10.50 dB ● RBW 100 kHz ● Att 30 dB SWT 1 ms ● VBW 300 kHz Mode Sweep	
	19k Max [1]	8.59 dBm
	20 dBm 01[1]	12.68400 MHz -0.21 dB
	01 14.480 dBm 01 10 dBm 02 0.480 dBm 02 0.480 dBm 02 0.480 dBm	636.00 kHz
	0 d8m	
	-10 dBm	
	AB ⁰ dBm	
owest Channel	-30 dBm	
	-40 dBm	
	-50 dBm	
	Marker	pan 1.0 MHz
	Type Ref Trc X-value Y-value Function Function Res M1 1 902.684 MHz 8.59 dBm 01 01 M1 636.0 KHz -0.21 dB 01	ult
		13.12.2023
	ProjectNo.:CR231167606 Tester:Jim Wei	
	Date: 13.DBC.2023 22:43:53	
	Spectrum Spectrum 2 Spectrum 3 Spectrum 4 Spectrum 4 Ref Level 30.00 dbm Offset 10.50 db RBW 100 kHz	
	● Att 30 dB SWT 1 ms ● VBW 300 kHz Mode Sweep ● 1Pk Max	9,49 dBm
	20 dBm 01[1]	9.49 dBm 13.89000 MHz -1.13 dB
	01 14.510 dBm	630.00 kHz
	0 d8m	
	-10 dBm	
	-20 dem	-
iddle Channel	-3p dem	
	-40 dBm	
	-50 dBm	
	-60 dBm	
	CF 914.2 MHz 501 pts S Marker	pan 1.0 MHz
	Type Ref Trc X-value Y-value Function Function Res M1 1 913.89 MHz 9.49 dBm Function Function <td< td=""><td>ult</td></td<>	ult
	D1 M1 1 630.0 kHz -1.13 dB	13.12.2023
	ProjectNo.:CR231167606 Tester:Jim Wei	
	Date: 13.DEC.2023 22:45:24	
	Spectrum Spectrum 2 Spectrum 3 Spectrum 4 X Ref Level 30.00 dBm Offset 10.00 dB RBW 100 kHz	
	Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep	
	M1[1] 97	8.37 dBm 6.58400 MHz
	20 dBm 01 14.320 dBm 01(1)	-0.16 dB -636.00 kHz
	10.dBm 02 (7.330 dBm)	
	-10 dBm -	
	-30 dent	mo
about Channal	-30 dBm	
ghest Channel	-40 dBm-	
	-50 dBm-	
	-60 dBm-	
	CF 926.9 MHz 501 pts S	pan 1.0 MHz
	Marker Type Ref Trc X-value Y-value Function Function Res	
	M1 1 926.584 MHz 9.37 dBm D1 M1 1 636.0 kHz -0.16 dB	
		10,10,0000
	ProjectNo.:CR231167606 Tester:Jim Wei	

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4.4 Maximum Conducted Output Power:

Serial Number:	2DY0-3	Test Date:	2023/12/13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	25.3	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.3

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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 Channel	Test Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	Limit (dBm)
Lowest	903	14.79	≤30
Middle	914.2	14.77	≤30
Highest	926.9	14.59	≤30

Report No.: CR231167606-00C

	Maximum Conducted Output Power	
İ	Spectrum Spectrum 2 (8) Spectrum 3 (8) Spectrum 4	X)
	RefLevel 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Sweep	
	1Pk Max M1[1]	14.79 dBm
	20 dBm	902.98200 MHz
	10 dBm	
	0 d8m	
	-10 dBm	
	-20 dBm	
Lowest Channel	-30 dBm	
	-40 dBm	
	-50 dBm	
	-60 dBm	
	CF 903.0 MHz 501 pts	Span 3.0 MHz
	Marker Type Ref Trc X-value Y-value Function	Function Result
	M1 1 902.982 MHz 14.79 dBm Second	1.12.2020
	ProjectNo.:CR231167606 Tester:Jim Wei	
	Date: 13.DEC.2023 23:03:37	
	Ref Level 30.00 dBm Offset 10.50 dB 👄 RBW 1 MHz	X
	Att 30 dB SWT 1 ms VBW 3 MHz Mode Sweep IPk Max	
	M1[1]	14.77 dBn 914.20600 MH
	20 dBm M1	
	10 dBm	
	0 dBm	
	-10 dBm	
C 1 11 C1 1	-20 dBm	
Middle Channel	-30 dBm-	
	-40 dBm-	
	-50 dBm-	
	-60 dBm	
	CF 914.2 MHz 501 pts Marker	Span 3.0 MHz
	Type Ref Trc X-value Y-value Function M1 1 914.206 MHz 14.77 dBm	Function Result
	Measuring	B. 122023
	ProjectNo.:CR231167606 Tester:Jim Wei Date: 13.DEC.2023 23:04:41	
	Spectrum Spectrum 2 (8) Spectrum 3 (8) Spectrum 4	X
	RefLevel 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Sweep	
	1Pk Max M1[1]	14.59 dBm
	20 dBm // 1	926.91200 MHz
	10 dBm	-
	0 dBm	
	-10 dBm	
	-20 dBm-	
ighest Channel	-30 dBm	
	-40 dBm-	
	-50 dBm-	
	-60 dBm	
	CF 926.9 MHz 501 pts	Span 3.0 MHz
	Loc azora muzz 501 bts	span 3.0 MHz
	Marker	Function Descrit
		Function Result
	Type Ref Trc X-value Y-value Function	Function Result

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4.5 Maximum power spectral density:

Serial Number:	2DY0-3	Test Date:	2023/12/13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	25.3	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.3

Test Equipment List and Details:

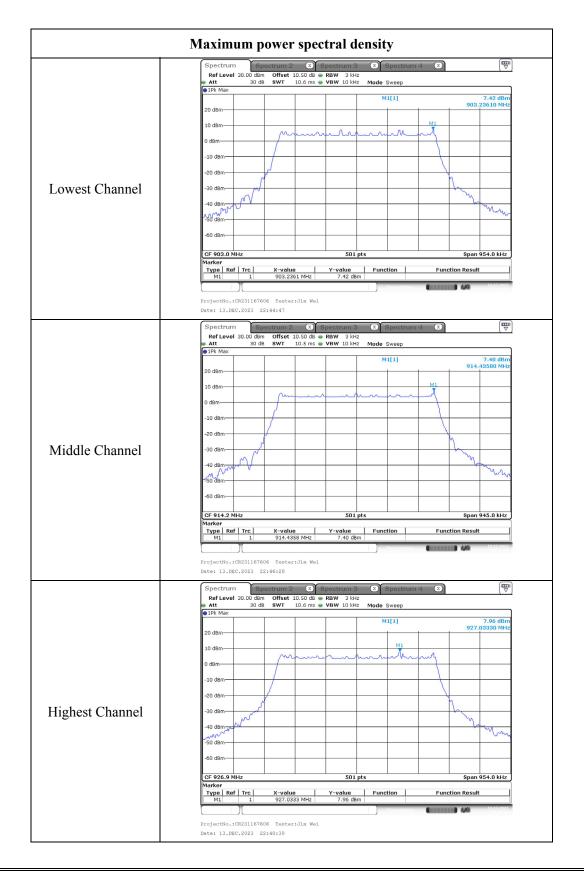
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each 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 Channel	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
Lowest	903	7.42	≤8.00
Middle	914.2	7.40	≤8.00
Highest	926.9	7.96	≤8.00

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4.6 100 kHz Bandwidth of Frequency Band Edge:

Serial Number:	2DY0-3	Test Date:	2023/12/13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

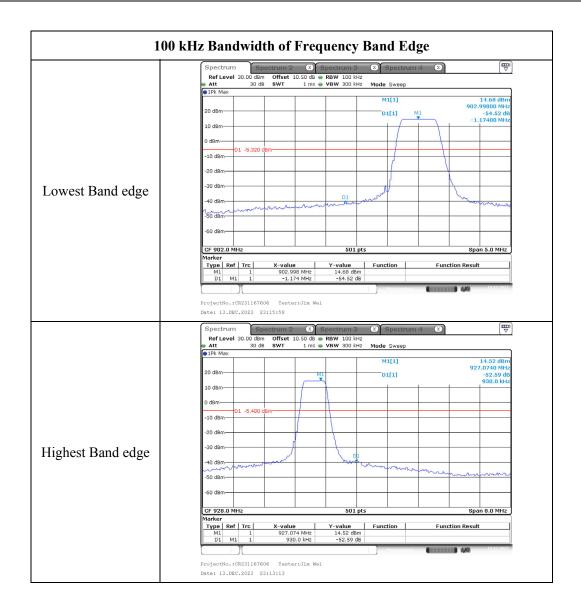
Environmental Conditions:						
Temperature: (°C)	25.3	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.3	

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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).

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4.7 Duty Cycle:

Serial Number:	2DY0-3	Test Date:	2023/12/13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:						
Temperature: (℃)	25.3	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.3	

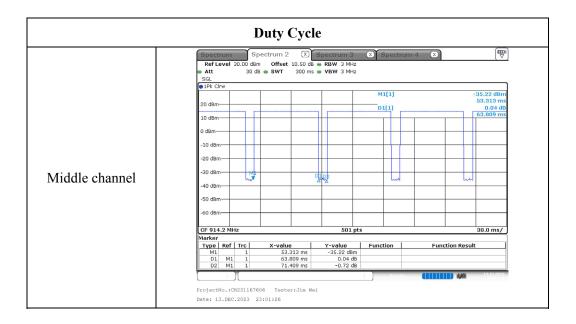
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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 Frequency	Ton	Ton+off	Duty cycle	1/T	VBW Setting
(MHz)	(ms)	(ms)	(%)	(Hz)	(kHz)
914.2	63.809	71.409	89.36	16	0.02



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5. EUT PHOTOGRAPHS

Please refer to the attachment CR231167606-EXP EUT EXTERNAL PHOTOGRAPHS and CR231167606-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231167606-00C-TSP TEST SETUP PHOTOGRAPHS.

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