



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



TEST REPORT

Applicant: Iconnect

Address: No.9, Aly. 58, Ln. 112, Ruiguang Rd., Neihu Dist., Taipei City, Taiwan

FCC ID: 2AB876108

Product Name: IEEE 802.11ah sub 1 GHz Devices

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: 2403U79820E-RF-00B

Date Of Issue: 2024/8/2

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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	Report Number	Description of Revision	Date of Revision
1.0	2403U79820E-RF-00B	Original Report	2024/8/2

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	IEEE 802.11ah sub 1 GHz Devices
Trade Name:	ALFA
EUT Model:	HaLow-R
Multiple Models:	HaLow-M485, HaLow-ON, HaLow-ON2, HaLow-RM, HaLow-R2, HaLow-ONM, HaLow-ONM2, HaLow-RM2, HaLow-M4852, HaLow-XXXXX(X: Any alphanumeric character or blank)
Operation Frequency:	1MHz Bandwidth: 903.5-926.5 MHz 2MHz Bandwidth: 905-925 MHz 4MHz Bandwidth: 906-926 MHz 8MHz Bandwidth: 908-924 MHz
Maximum Peak Output Power (Conducted):	23.88 dBm
Modulation Type:	OFDM with BPSK, QPSK, 16-QAM, 64-QAM
Rated Input Voltage:	DC 12V from adapter
Serial Number:	2MM7-1 (for RF Conducted Test) 2MM7-2(for Radiated Spurious Emissions Test) 2MM7-3(for AC Line Conducted Emissions Test)
EUT Received Date:	2024/6/7
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Operation Frequency Detail: For 1MHz Bandwidth:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	903.5	10	912.5	19	921.5
2	904.5	11	913.5	20	922.5
3	905.5	12	914.5	21	923.5
4	906.5	13	915.5	22	924.5
5	907.5	14	916.5	23	925.5
6	908.5	15	917.5	24	926.5
7	909.5	16	918.5	/	/
8	910.5	17	919.5	/	/
9	911.5	18	920.5	/	/

Per section 15.31(m), the below frequencies were performed the test :

Test Channel	Frequency (MHz)
Lowest	903.5
Middle	914.5
Highest	926.5

For 2MHz Bandwidth:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	905	7	917
2	907	8	919
3	909	9	921
4	911	10	923
5	913	11	925
6	915	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	905
Middle	915
Highest	925

For 4MHz Bandwidth:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	906	4	918
2	910	5	922
3	914	6	926

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	906
Middle	914
Highest	926

For 8MHz Bandwidth:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	908	/	/
2	916	/	/
3	924	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	908
Middle	916
Highest	924

Antenna Information Detail▲:

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
Dipole	50	902-928	2 dBi

The Method of §15.203 Compliance:

- Antenna was permanently attached to the unit.
 Antenna use a unique type of connector to attach to the EUT.
 Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Accessory Information:

Accessory Description	Manufacturer	Model
Adapter	XIAMEN CASTEC ELECTRONIC INDUSTRY CO., LTD	MN012K-L120100

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:	mm_rf_tester.exe

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

Test Modes	Data Rate	Power Level Setting		
		Lowest	Middle	Highest
1MHz Bandwidth	MCS0	-15	-15	-15
2MHz Bandwidth	MCS0	-15	-15	-15
4MHz Bandwidth	MCS0	-15	-15	-15
8MHz Bandwidth	MCS0	-15	-15	-15

Note: The above are the worst-case data rates, which are determined for each mode based upon investigations by measuring the power and PSD across all data rates, bandwidths, and modulations.

1.2.2 Support Equipment List and Details

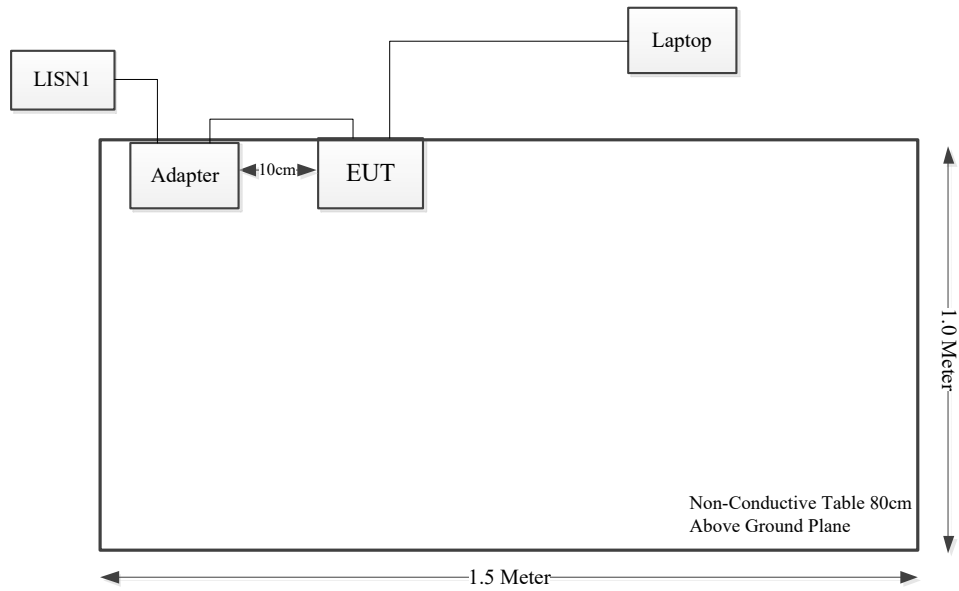
Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	T460S	60PDTEK7

1.2.3 Support Cable List and Details

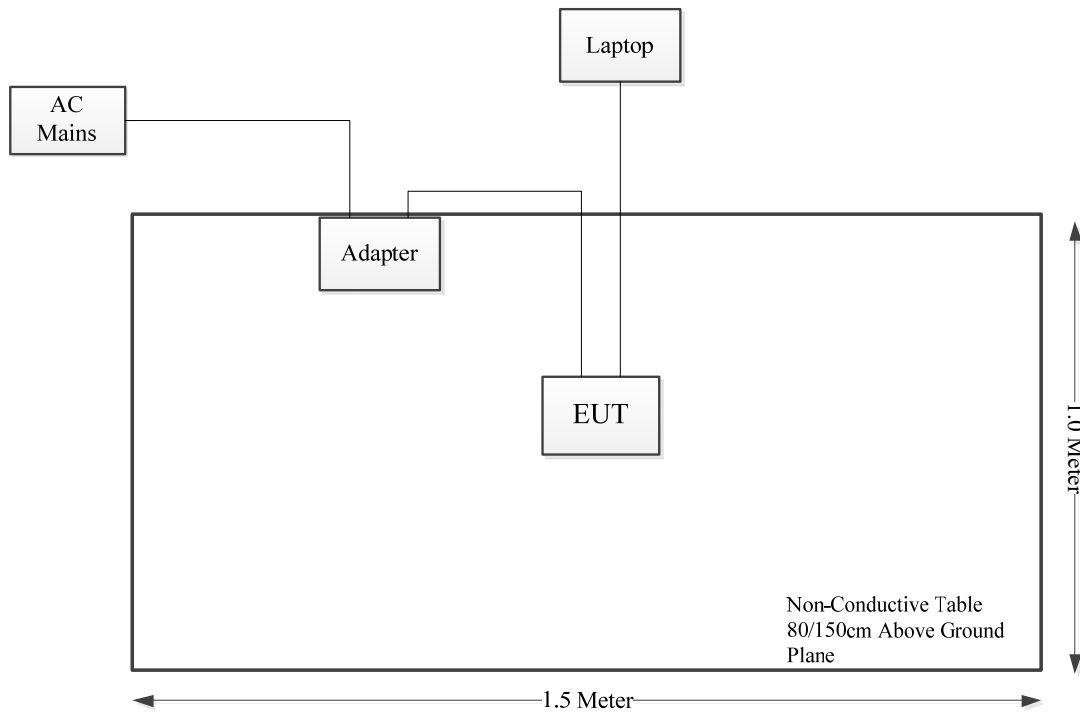
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	No	Yes	10	Laptop	EUT
Power Cable	No	No	1.2	Adapter	EUT

1.2.4 Block Diagram of Test Setup

Conducted emissions:



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
Unwanted Emissions, radiated	9k~30MHz:4.12dB, 30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

2. SUMMARY OF TEST RESULTS

Standard(s) Section	Test Items	Result
§15.207(a)	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.

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

*Decreases with the logarithm of the frequency.

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

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

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

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

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

3.1.2 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.

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

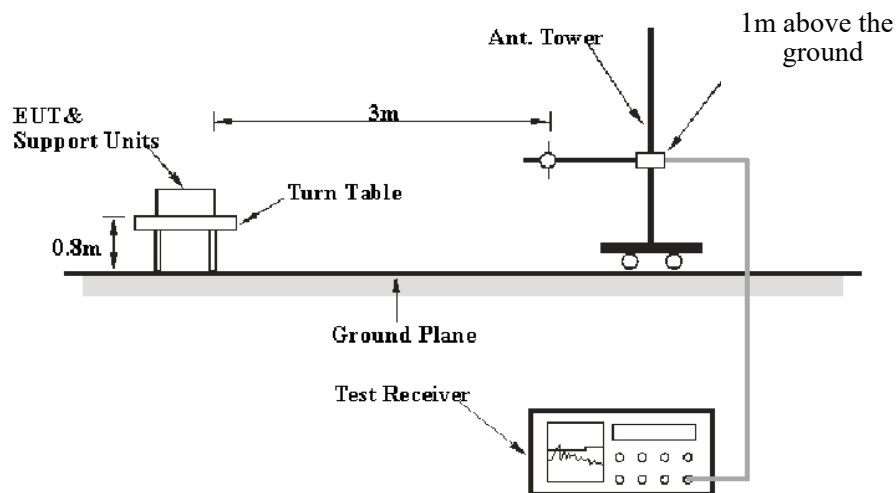
3.2.1 Applicable Standard

FCC §15.247 (d);

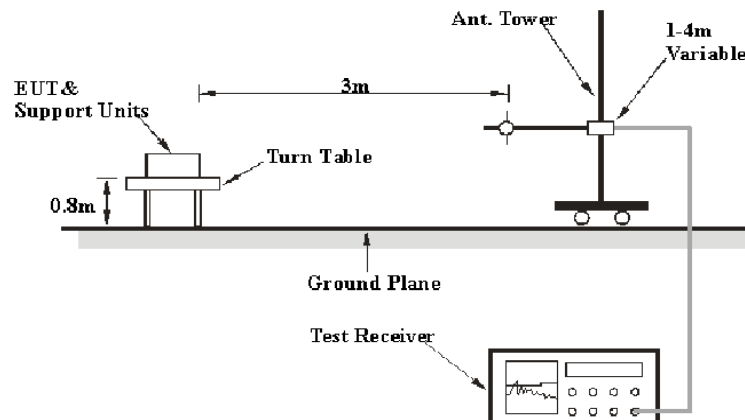
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

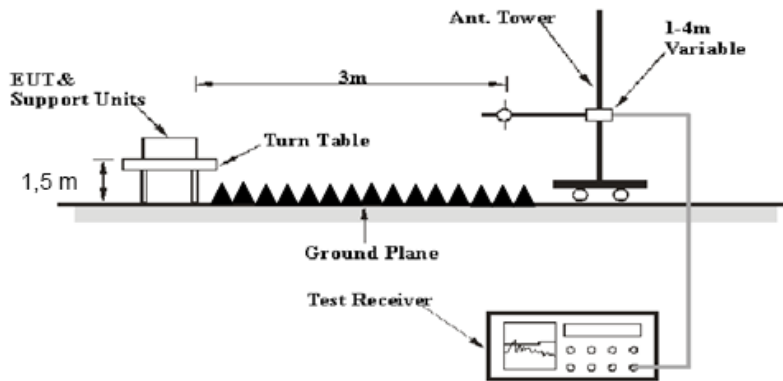
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, 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
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP/AV
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

1GHz- 10GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<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

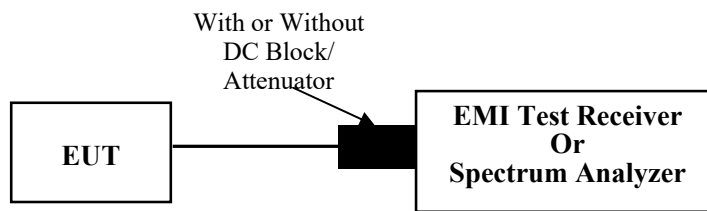
3.3 6 dB Emission Bandwidth:

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.

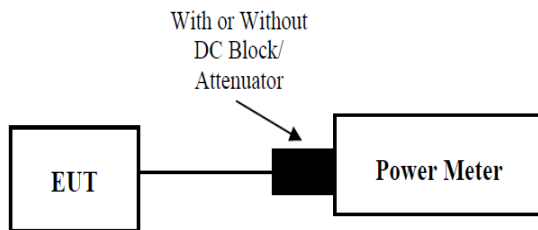
3.4 Maximum Conducted Output Power:

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 11.9.1.3

PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

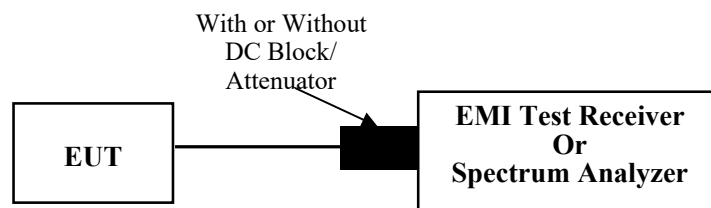
3.5 Maximum power spectral density:

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 $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d) Set the VBW $\geq [3 \times \text{RBW}]$.
- 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.

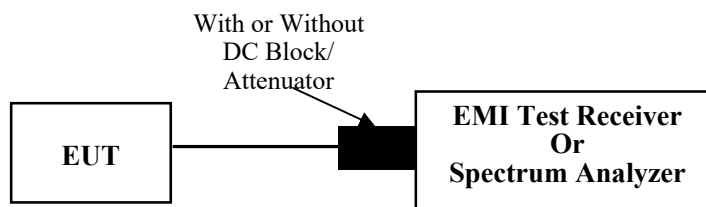
3.6 100 kHz Bandwidth of Frequency Band Edge:

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

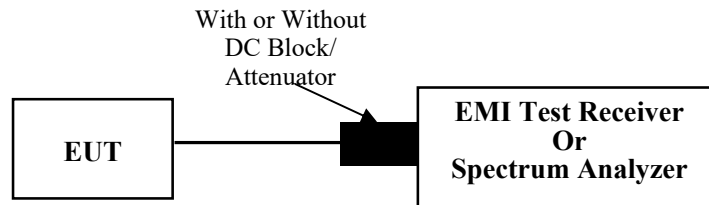
According to ANSI C63.10-2013 Section 11.11

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- 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 $RBW \geq OBW$ 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 $T \leq 16.7 \mu s$.)

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:	2MM7-3	Test Date:	2024/6/20
Test Site:	CE	Test Mode:	Transmitting (maximum output power mode, 8MHz Bandwidth low channel)
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.4	Relative Humidity: (%)	58	ATM Pressure: (kPa)	100.1
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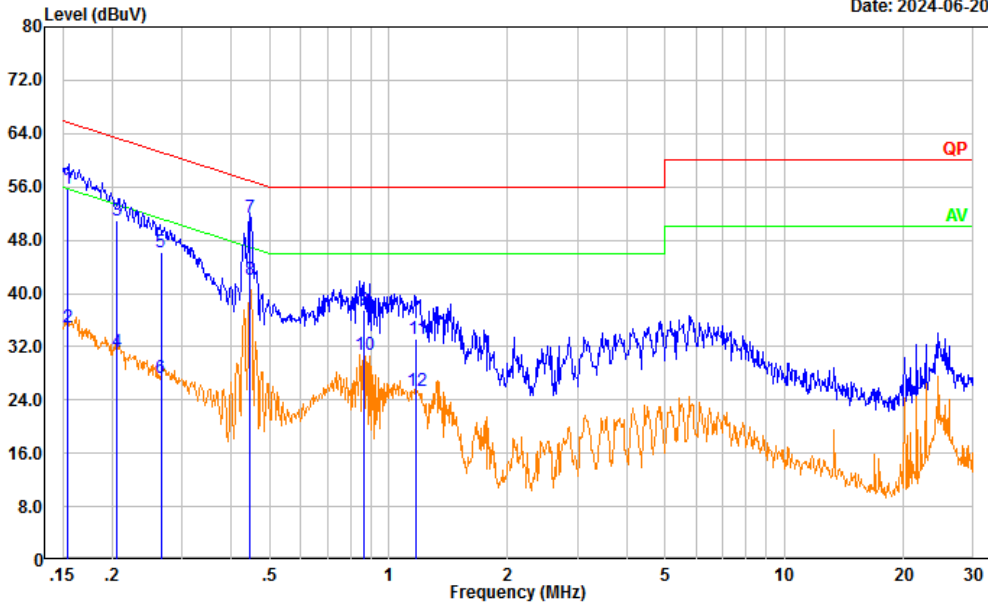
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101132	2024/4/1	2025/3/31
R&S	EMI Test Receiver	ESR3	103104	2024/5/10	2025/5/9
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2024/1/15	2025/1/14
Audix	Test Software	E3	191218 (V9)	N/A	N/A

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

Project No.: 2403U79820E-RF
 Tester: David Huang
 Port: Line
 Note: Transmitting(SRD)

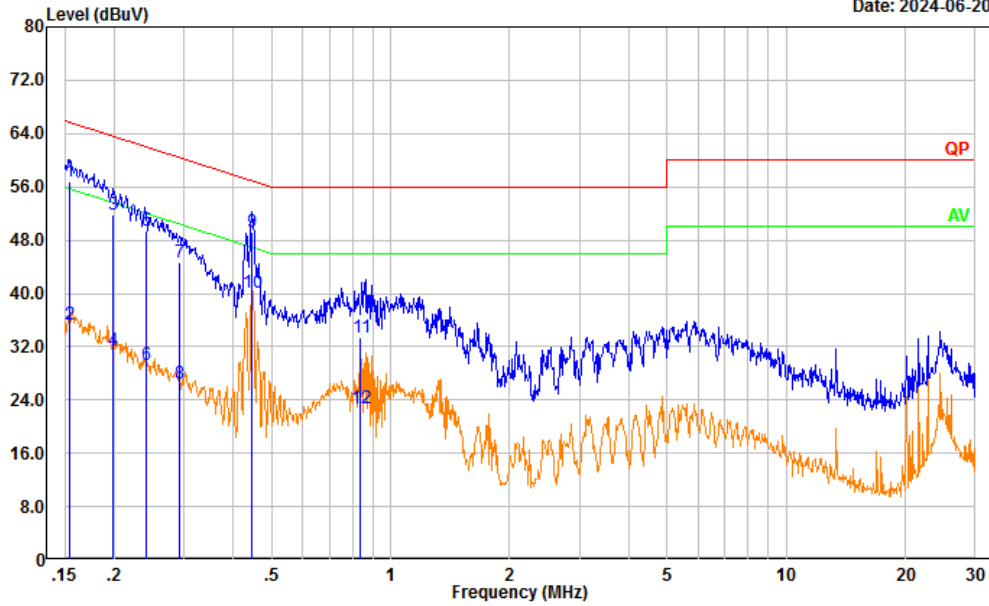
Date: 2024-06-20



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.154	45.23	10.38	55.61	65.79	10.18	QP
2	0.154	24.55	10.38	34.93	55.79	20.86	Average
3	0.206	40.92	10.02	50.94	63.38	12.44	QP
4	0.206	21.25	10.02	31.27	53.38	22.11	Average
5	0.266	36.01	10.12	46.13	61.25	15.12	QP
6	0.266	17.12	10.12	27.24	51.25	24.01	Average
7	0.446	40.88	10.42	51.30	56.95	5.65	QP
8	0.446	31.59	10.42	42.01	46.95	4.94	Average
9	0.864	26.81	10.66	37.47	56.00	18.53	QP
10	0.864	20.08	10.66	30.74	46.00	15.26	Average
11	1.176	22.63	10.53	33.16	56.00	22.84	QP
12	1.176	14.75	10.53	25.28	46.00	20.72	Average

Project No.: 2403U79820E-RF
 Tester: David Huang
 Port: neutral
 Note: Transmitting(SRD)

Date: 2024-06-20



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.155	46.30	10.49	56.79	65.73	8.94	QP
2	0.155	24.96	10.49	35.45	55.73	20.28	Average
3	0.198	41.60	10.32	51.92	63.69	11.77	QP
4	0.198	21.11	10.32	31.43	53.69	22.26	Average
5	0.240	39.05	10.34	49.39	62.08	12.69	QP
6	0.240	18.97	10.34	29.31	52.08	22.77	Average
7	0.293	34.32	10.37	44.69	60.44	15.75	QP
8	0.293	15.99	10.37	26.36	50.44	24.08	Average
9	0.444	38.72	10.47	49.19	56.98	7.79	QP
10	0.444	29.58	10.47	40.05	46.98	6.93	Average
11	0.840	22.96	10.35	33.31	56.00	22.69	QP
12	0.840	12.44	10.35	22.79	46.00	23.21	Average

4.2 Radiation Spurious Emissions

Serial Number:	2MM7-2	Test Date:	2024/7/6-2024/7/29
Test Site:	966-2,966-1	Test Mode:	Transmitting
Tester:	Carl Xue, Tao Zhu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.8-25.3	Relative Humidity: (%)	52-59	ATM Pressure: (kPa)	100.2-100.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30
BACL	Loop Antenna	1313-1A	3110611	2023/12/4	2026/12/3
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0300-01	2024/1/11	2025/1/10
Daruikang	Coaxial Cable	BNC-JJ-RG58	C-0500-01	2024/1/11	2025/1/10
R&S	EMI Test Receiver	ESR3	102724	2024/2/29	2025/2/28
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0100-03	2023/12/4	2024/12/3
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0370-01	2023/12/4	2024/12/3
XQY	Coaxial Cable	XQY-CMR400UF-NJ-NJ-7M	24056379	2024/6/11	2025/6/10
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5
R&S	Spectrum Analyzer	FSV40	101591	2024/4/1	2025/3/31
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2024/1/15	2025/1/14
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2024/1/15	2025/1/14
BACL	Preamplifier	1313-A20M18G	4032311	2024/4/1	2025/3/31
Audix	Test Software	E3	191218 (V9)	N/A	N/A

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

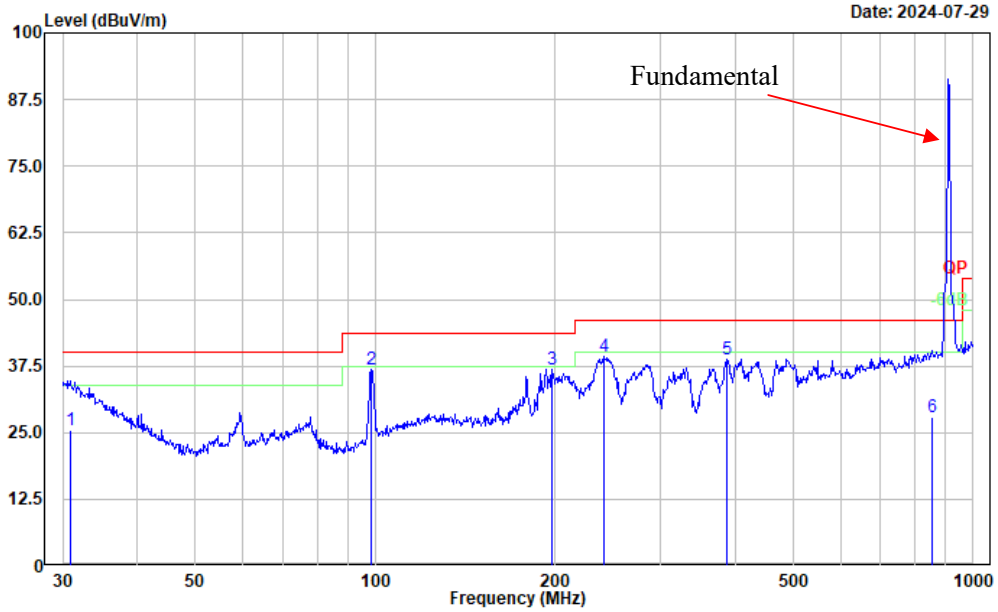
Test Data:

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

For 9kHz-30MHz, The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be reported.

1) 30MHz-1GHz(maximum output power mode, 8MHz Bandwidth low channel):

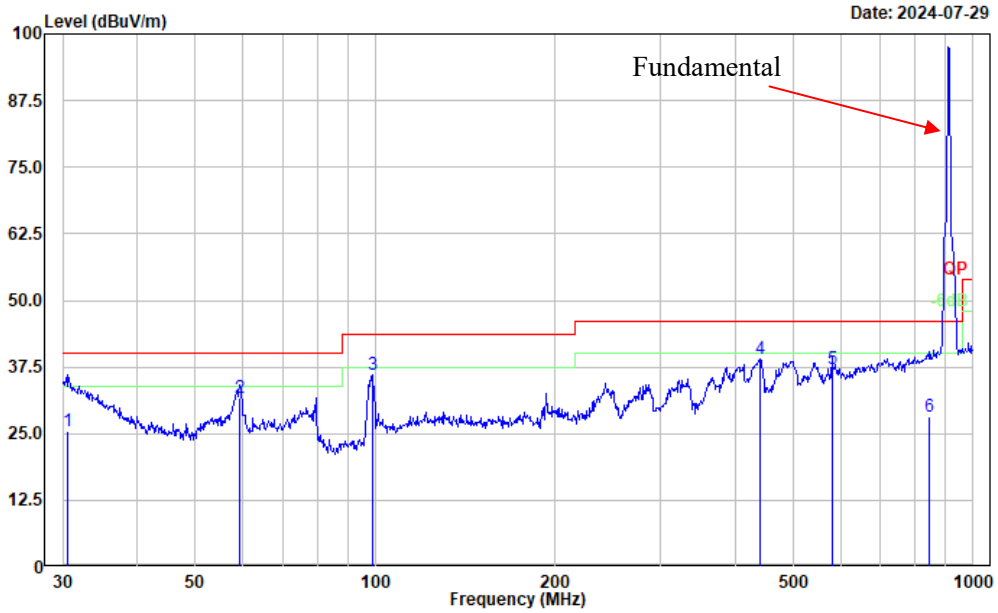
Project No.: 2403U79820E-RF
 Tester: Carl Xue
 Polarization: horizontal
 Note: Transmitting 15.247 SRD



Date: 2024-07-29

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.853	-1.87	27.38	25.51	40.00	14.49	QP
2	98.487	20.01	16.72	36.73	43.50	6.77	Peak
3	197.200	18.29	18.63	36.92	43.50	6.58	Peak
4	240.830	20.61	18.68	39.29	46.00	6.71	Peak
5	386.634	16.03	22.80	38.83	46.00	7.17	Peak
6	854.025	-2.28	30.18	27.90	46.00	18.10	QP

Project No.: 2403U79820E-RF
 Tester: Carl Xue
 Polarization: vertical
 Note: Transmitting 15.247 SRD



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.531	-1.97	27.57	25.60	40.00	14.40	QP
2	59.232	17.63	14.07	31.70	40.00	8.30	QP
3	98.833	19.10	16.83	35.93	43.50	7.57	Peak
4	440.196	14.53	24.49	39.02	46.00	6.98	Peak
5	580.703	10.32	26.84	37.16	46.00	8.84	QP
6	845.088	-2.13	30.19	28.06	46.00	17.94	QP

2) 1-10GHz:**1M**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Low Channel:				903.5	MHz		
1807.000	63.68	PK	H	1.53	65.21	74.00	8.79
1807.000	31.34	AV	H	1.53	32.87	54.00	21.13
1807.000	69.95	PK	V	1.53	71.48	74.00	2.52
1807.000	36.68	AV	V	1.53	38.21	54.00	15.79
2710.500	65.36	PK	H	4.13	69.49	74.00	4.51
2710.500	29.97	AV	H	4.13	34.10	54.00	19.90
2710.500	67.41	PK	V	4.13	71.54	74.00	2.46
2710.500	34.21	AV	V	4.13	38.34	54.00	15.66
3614.000	36.52	PK	H	7.00	43.52	74.00	30.48
3614.000	23.17	AV	H	7.00	30.17	54.00	23.83
3614.000	36.33	PK	V	7.00	43.33	74.00	30.67
3614.000	23.17	AV	V	7.00	30.17	54.00	23.83

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Middle Channel:				914.5	MHz		
1829.000	56.19	PK	H	1.75	57.94	74.00	16.06
1829.000	34.69	AV	H	1.75	36.44	54.00	17.56
1829.000	66.99	PK	V	1.75	68.74	74.00	5.26
1829.000	36.37	AV	V	1.75	38.12	54.00	15.88
2743.500	62.06	PK	H	4.22	66.28	74.00	7.72
2743.500	35.85	AV	H	4.22	40.07	54.00	13.93
2743.500	65.62	PK	V	4.22	69.84	74.00	4.16
2743.500	39.93	AV	V	4.22	44.15	54.00	9.85
3658.000	34.81	PK	H	7.12	41.93	74.00	32.07
3658.000	20.95	AV	H	7.12	28.07	54.00	25.93
3658.000	35.39	PK	V	7.12	42.51	74.00	31.49
3658.000	22.15	AV	V	7.12	29.27	54.00	24.73

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
High Channel:				926.5	MHz		
1853.000	58.62	PK	H	1.99	60.61	74.00	13.39
1853.000	26.69	AV	H	1.99	28.68	54.00	25.32
1853.000	69.86	PK	V	1.99	71.85	74.00	2.15
1853.000	36.64	AV	V	1.99	38.63	54.00	15.37
2779.500	56.21	PK	H	4.21	60.42	74.00	13.58
2779.500	24.39	AV	H	4.21	28.60	54.00	25.40
2779.500	64.45	PK	V	4.21	68.66	74.00	5.34
2779.500	32.65	AV	V	4.21	36.86	54.00	17.14
3706.000	35.21	PK	H	7.33	42.54	74.00	31.46
3706.000	22.41	AV	H	7.33	29.74	54.00	24.26
3706.000	35.39	PK	V	7.33	42.72	74.00	31.28
3706.000	22.29	AV	V	7.33	29.62	54.00	24.38

2M

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Low Channel:				905	MHz		
1810.000	55.45	PK	H	1.56	57.01	74.00	16.99
1810.000	33.68	AV	H	1.56	35.24	54.00	18.76
1810.000	63.00	PK	V	1.56	64.56	74.00	9.44
1810.000	31.28	AV	V	1.56	32.84	54.00	21.16
2715.000	63.12	PK	H	4.13	67.25	74.00	6.75
2715.000	32.52	AV	H	4.13	36.65	54.00	17.35
2715.000	65.78	PK	V	4.13	69.91	74.00	4.09
2715.000	35.28	AV	V	4.13	39.41	54.00	14.59
3620.000	35.78	PK	H	7.02	42.80	74.00	31.20
3620.000	22.41	AV	H	7.02	29.43	54.00	24.57
3620.000	36.36	PK	V	7.02	43.38	74.00	30.62
3620.000	23.32	AV	V	7.02	30.34	54.00	23.66

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Middle Channel:				915	MHz		
1830.000	56.19	PK	H	1.76	57.95	74.00	16.05
1830.000	34.69	AV	H	1.76	36.45	54.00	17.55
1830.000	66.99	PK	V	1.76	68.75	74.00	5.25
1830.000	36.37	AV	V	1.76	38.13	54.00	15.87
2745.000	62.06	PK	H	4.21	66.27	74.00	7.73
2745.000	35.85	AV	H	4.21	40.06	54.00	13.94
2745.000	65.62	PK	V	4.21	69.83	74.00	4.17
2745.000	39.93	AV	V	4.21	44.14	54.00	9.86
3660.000	34.81	PK	H	7.13	41.94	74.00	32.06
3660.000	20.95	AV	H	7.13	28.08	54.00	25.92
3660.000	35.39	PK	V	7.13	42.52	74.00	31.48
3660.000	22.15	AV	V	7.13	29.28	54.00	24.72

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
High Channel:				925	MHz		
1850.000	59.67	PK	H	1.96	61.63	74.00	12.37
1850.000	30.21	AV	H	1.96	32.17	54.00	21.83
1850.000	66.60	PK	V	1.96	68.56	74.00	5.44
1850.000	32.58	AV	V	1.96	34.54	54.00	19.46
2775.000	56.18	PK	H	4.22	60.40	74.00	13.60
2775.000	31.20	AV	H	4.22	35.42	54.00	18.58
2775.000	60.21	PK	V	4.22	64.43	74.00	9.57
2775.000	34.85	AV	V	4.22	39.07	54.00	14.93
3700.000	37.52	PK	H	7.23	44.75	74.00	29.25
3700.000	24.66	AV	H	7.23	31.89	54.00	22.11
3700.000	38.20	PK	V	7.23	45.43	74.00	28.57
3700.000	25.38	AV	V	7.23	32.61	54.00	21.39

4M

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Low Channel:				906	MHz		
1812.000	54.32	PK	H	1.59	55.91	74.00	18.09
1812.000	25.77	AV	H	1.59	27.36	54.00	26.64
1812.000	60.36	PK	V	1.59	61.95	74.00	12.05
1812.000	28.74	AV	V	1.59	30.33	54.00	23.67
2718.000	56.32	PK	H	4.15	60.47	74.00	13.53
2718.000	24.78	AV	H	4.15	28.93	54.00	25.07
2718.000	59.88	PK	V	4.15	64.03	74.00	9.97
2718.000	26.88	AV	V	4.15	31.03	54.00	22.97
3624.000	35.82	PK	H	7.03	42.85	74.00	31.15
3624.000	22.69	AV	H	7.03	29.72	54.00	24.28
3624.000	36.41	PK	V	7.03	43.44	74.00	30.56
3624.000	23.47	AV	V	7.03	30.50	54.00	23.50

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Middle Channel:				914	MHz		
1828.000	56.63	PK	H	1.74	58.37	74.00	15.63
1828.000	28.65	AV	H	1.74	30.39	54.00	23.61
1828.000	59.68	PK	V	1.74	61.42	74.00	12.58
1828.000	31.58	AV	V	1.74	33.32	54.00	20.68
2742.000	55.42	PK	H	4.21	59.63	74.00	14.37
2742.000	27.41	AV	H	4.21	31.62	54.00	22.38
2742.000	58.32	PK	V	4.21	62.53	74.00	11.47
2742.000	29.66	AV	V	4.21	33.87	54.00	20.13
3656.000	35.31	PK	H	7.12	42.43	74.00	31.57
3656.000	22.18	AV	H	7.12	29.30	54.00	24.70
3656.000	36.41	PK	V	7.12	43.53	74.00	30.47
3656.000	23.42	AV	V	7.12	30.54	54.00	23.46

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
High Channel:				926	MHz		
1852.000	58.63	PK	H	1.98	60.61	74.00	13.39
1852.000	29.64	AV	H	1.98	31.62	54.00	22.38
1852.000	63.37	PK	V	1.98	65.35	74.00	8.65
1852.000	36.68	AV	V	1.98	38.66	54.00	15.34
2778.000	50.68	PK	H	4.22	54.90	74.00	19.10
2778.000	21.39	AV	H	4.22	25.61	54.00	28.39
2778.000	55.23	PK	V	4.22	59.45	74.00	14.55
2778.000	25.63	AV	V	4.22	29.85	54.00	24.15
3704.000	36.32	PK	H	7.29	43.61	74.00	30.39
3704.000	23.32	AV	H	7.29	30.61	54.00	23.39
3704.000	35.58	PK	V	7.29	42.87	74.00	31.13
3704.000	23.47	AV	V	7.29	30.76	54.00	23.24

8M

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Low Channel:				908	MHz		
1816.000	55.74	PK	H	1.62	57.36	74.00	16.64
1816.000	27.65	AV	H	1.62	29.27	54.00	24.73
1816.000	58.57	PK	V	1.62	60.19	74.00	13.81
1816.000	30.63	AV	V	1.62	32.25	54.00	21.75
2724.000	53.31	PK	H	4.17	57.48	74.00	16.52
2724.000	24.39	AV	H	4.17	28.56	54.00	25.44
2724.000	56.62	PK	V	4.17	60.79	74.00	13.21
2724.000	27.65	AV	V	4.17	31.82	54.00	22.18
3632.000	35.36	PK	H	7.06	42.42	74.00	31.58
3632.000	21.71	AV	H	7.06	28.77	54.00	25.23
3632.000	35.20	PK	V	7.06	42.26	74.00	31.74
3632.000	22.39	AV	V	7.06	29.45	54.00	24.55

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
Middle Channel:				916	MHz		
1832.000	52.87	PK	H	1.78	54.65	74.00	19.35
1832.000	26.32	AV	H	1.78	28.10	54.00	25.90
1832.000	55.68	PK	V	1.78	57.46	74.00	16.54
1832.000	29.63	AV	V	1.78	31.41	54.00	22.59
2748.000	50.32	PK	H	4.23	54.55	74.00	19.45
2748.000	23.71	AV	H	4.23	27.94	54.00	26.06
2748.000	53.21	PK	V	4.23	57.44	74.00	16.56
2748.000	25.32	AV	V	4.23	29.55	54.00	24.45
3664.000	34.52	PK	H	7.14	41.66	74.00	32.34
3664.000	21.52	AV	H	7.14	28.66	54.00	25.34
3664.000	35.23	PK	V	7.14	42.37	74.00	31.63
3664.000	22.39	AV	V	7.14	29.53	54.00	24.47

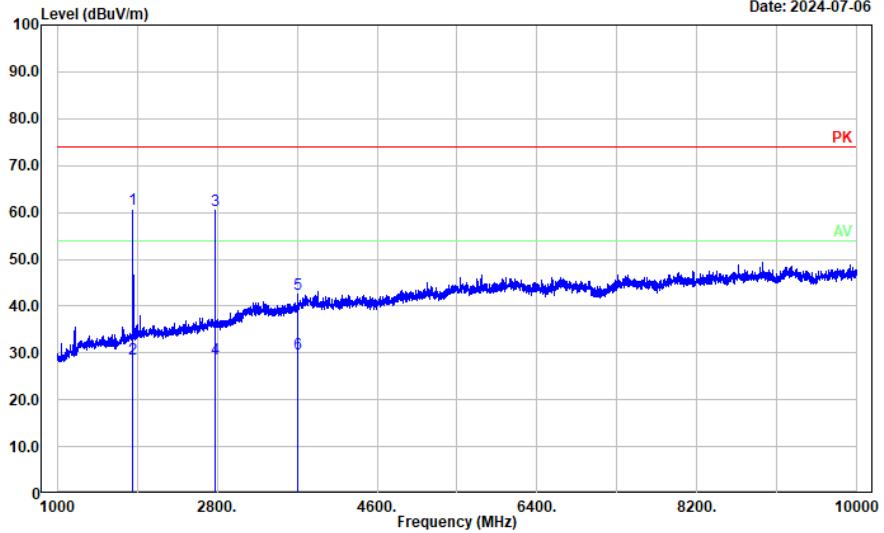
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector					
High Channel:				924	MHz		
1848.000	54.62	PK	H	1.94	56.56	74.00	17.44
1848.000	26.31	AV	H	1.94	28.25	54.00	25.75
1848.000	57.57	PK	V	1.94	59.51	74.00	14.49
1848.000	29.65	AV	V	1.94	31.59	54.00	22.41
2772.000	51.36	PK	H	4.22	55.58	74.00	18.42
2772.000	25.49	AV	H	4.22	29.71	54.00	24.29
2772.000	54.32	PK	V	4.22	58.54	74.00	15.46
2772.000	27.82	AV	V	4.22	32.04	54.00	21.96
3696.000	34.78	PK	H	7.22	42.00	74.00	32.00
3696.000	22.02	AV	H	7.22	29.24	54.00	24.76
3696.000	35.20	PK	V	7.22	42.42	74.00	31.58
3696.000	22.67	AV	V	7.22	29.89	54.00	24.11

Worst radiation spurious emissions margin test plots

Horizontal

Project No.: 2403U79820E-RF
 Tester: Tao Zhu
 Polarization: horizontal
 Note: SRD 1M High

Date: 2024-07-06



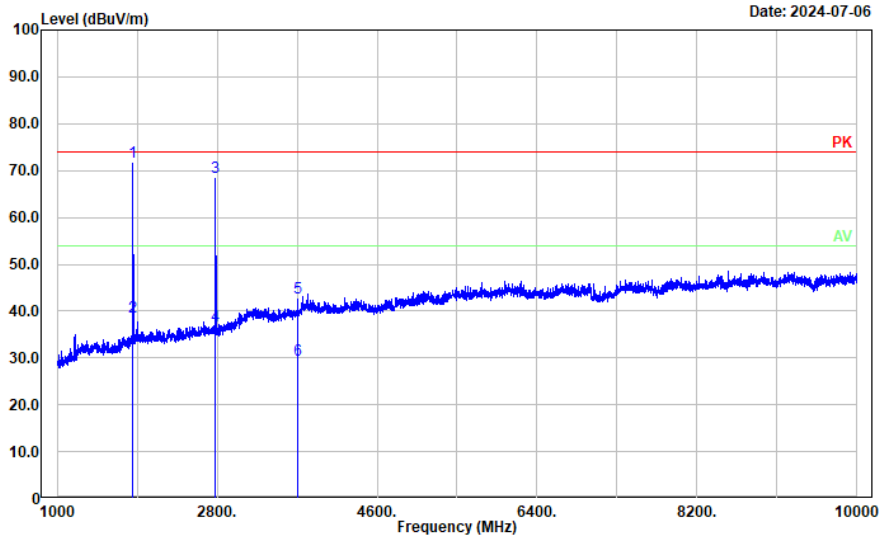
1-10GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1853.000	58.62	1.99	60.61	74.00	13.39	Peak
2	1853.000	26.69	1.99	28.68	54.00	25.32	Average
3	2779.500	56.21	4.21	60.42	74.00	13.58	Peak
4	2779.500	24.39	4.21	28.60	54.00	25.40	Average
5	3706.000	35.21	7.33	42.54	74.00	31.46	Peak
6	3706.000	22.41	7.33	29.74	54.00	24.26	Average

Vertical

Project No.: 2403U79820E-RF
 Tester: Tao Zhu
 Polarization: vertical
 Note: SRD 1M High

Date: 2024-07-06



1-10GHz

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1853.000	69.86	1.99	71.85	74.00	2.15	Peak
2	1853.000	36.64	1.99	38.63	54.00	15.37	Average
3	2779.500	64.45	4.21	68.66	74.00	5.34	Peak
4	2779.500	32.65	4.21	36.86	54.00	17.14	Average
5	3706.000	35.39	7.33	42.72	74.00	31.28	Peak
6	3706.000	22.29	7.33	29.62	54.00	24.38	Average

4.3 6 dB Emission Bandwidth:

Serial Number:	2MM7-1	Test Date:	2024/7/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin Qin	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.7	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2024/4/1	2025/5/31
zhuoxiang	Coaxial Cable	SMA-178	211001	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 Mode	Test Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
1MHz Bandwidth	903.5	0.813	≥ 0.5
	914.5	0.813	≥ 0.5
	926.5	0.806	≥ 0.5
2MHz Bandwidth	905	1.741	≥ 0.5
	915	1.722	≥ 0.5
	925	1.715	≥ 0.5
4MHz Bandwidth	906	3.61	≥ 0.5
	914	3.597	≥ 0.5
	926	3.564	≥ 0.5
8MHz Bandwidth	908	7.058	≥ 0.5
	916	7.635	≥ 0.5
	924	7.322	≥ 0.5

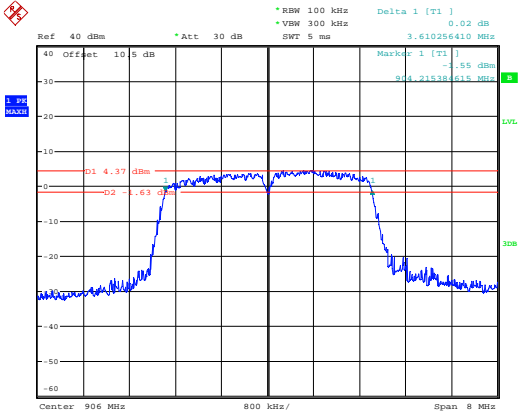
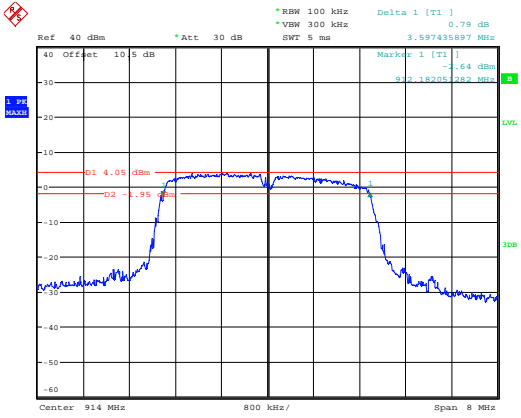
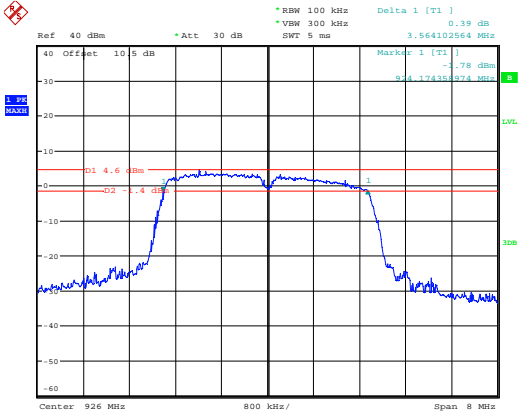
1M:

6dB Emission Bandwidth	
Lowest Channel	<p> *RBW 100 kHz Delta 1 [T1] -0.44 dB *VBW 300 kHz 812.820519831 MHz *Att 30 dB SWF 2.5 ms Ref 40 dBm *Offset 10.5 dB Markers 1 [T1] -0.44 dB 812.820519831 MHz 1.71 dBm 813.100000000 MHz -02 9.47 dBm -02 3.7 dBm Center 903.5 MHz 200 kHz/ Span 2 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:34:24</p>
Middle Channel	<p> *RBW 100 kHz Delta 1 [T1] -0.22 dB *VBW 300 kHz 812.820512821 MHz *Att 30 dB SWF 2.5 ms Ref 40 dBm *Offset 10.5 dB Markers 1 [T1] -0.22 dB 812.820512821 MHz 0.46 dBm 813.098798722 MHz -02 9.47 dBm -02 3.7 dBm Center 914.5 MHz 200 kHz/ Span 2 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:31:57</p>
Highest Channel	<p> *RBW 100 kHz Delta 1 [T1] -0.29 dB *VBW 300 kHz 806.410256410 MHz *Att 30 dB SWF 2.5 ms Ref 40 dBm *Offset 10.5 dB Markers 1 [T1] -0.29 dB 806.410256410 MHz 0.45 dBm 816.038078233 MHz -02 9.47 dBm -02 3.6 dBm Center 926.5 MHz 200 kHz/ Span 2 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:59:51</p>

2M:

6dB Emission Bandwidth	
Lowest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:22:01</p>
Middle Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:23:53</p>
Highest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:58:11</p>

4M:

6dB Emission Bandwidth	
Lowest Channel	 <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:20:26</p>
Middle Channel	 <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:56:07</p>
Highest Channel	 <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:17:16</p>

8M:

6dB Emission Bandwidth	
Lowest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:44:07</p>
Middle Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:47:49</p>
Highest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 20:50:19</p>

4.4 Maximum Conducted Output Power:

Serial Number:	2MM7-1	Test Date:	2024/7/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin Qin	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	26.7	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.6

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Anritsu	Power Meter	ML2495A	1106009	2023/8/4	2024/8/3
Anritsu	Pulse Power Sensor	MA2411A	10780	2023/8/4	2024/8/3

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

Test Data:

Test Mode	Test Frequency (MHz)	Maximum Conducted Peak Output Power (dBm)	Limit (dBm)
1MHz Bandwidth	903.5	19.45	≤30
	914.5	19.72	≤30
	926.5	18.75	≤30
2MHz Bandwidth	905	19.64	≤30
	915	19.72	≤30
	925	21.38	≤30
4MHz Bandwidth	906	21.02	≤30
	914	20.12	≤30
	926	19.64	≤30
8MHz Bandwidth	908	23.88	≤30
	916	20.09	≤30
	924	21.24	≤30

4.5 Maximum power spectral density:

Serial Number:	2MM7-1	Test Date:	2024/7/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin Qin	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.7	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2024/4/1	2025/5/31
zhuoxiang	Coaxial Cable	SMA-178	211001	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 Mode	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
1MHz Bandwidth	903.5	-0.32	≤8.00
	914.5	-0.43	≤8.00
	926.5	-1.54	≤8.00
2MHz Bandwidth	905	-5.77	≤8.00
	915	-6.72	≤8.00
	925	-5.66	≤8.00
4MHz Bandwidth	906	-8.58	≤8.00
	914	-9.06	≤8.00
	926	-9.32	≤8.00
8MHz Bandwidth	908	-10.19	≤8.00
	916	-12.93	≤8.00
	924	-11.15	≤8.00

1M:

Maximum power spectral density	
Lowest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:15:57</p>
Middle Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:16:43</p>
Highest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:17:26</p>

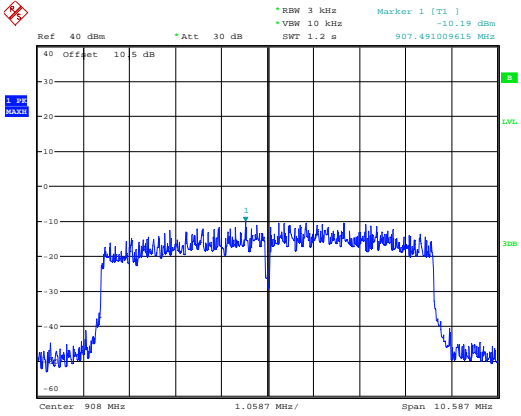
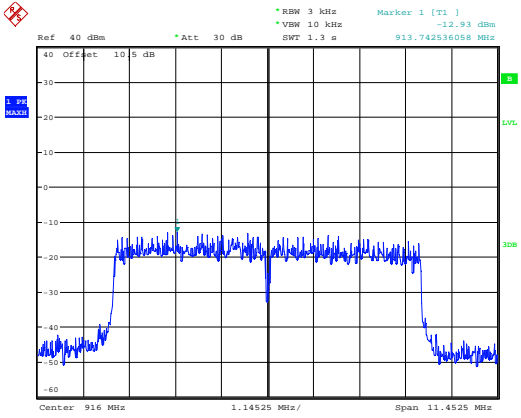
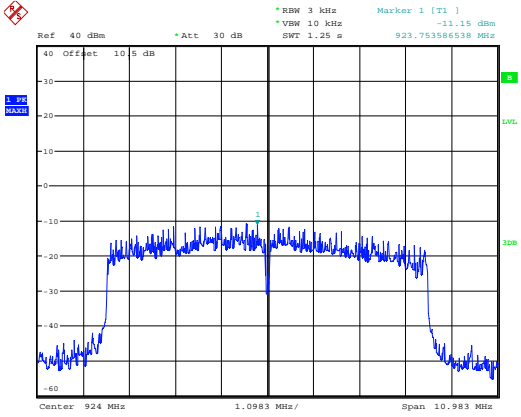
2M:

Maximum power spectral density	
Lowest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:18:39</p>
Middle Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:19:24</p>
Highest Channel	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:20:08</p>

4M:

Maximum power spectral density	
Lowest Channel	<p> Ref 40 dBm *Att 30 dB *RBW 3 kHz Marker 1 [T1] -8.58 dBm *VBW 10 kHz *SWT 620 ms 906.503317308 MHz 40 Offset 10 5 dB 1. PE MAX -30 -20 -10 0 10 20 30 40 50 60 Center 906 MHz 541.5 kHz/ Span 5.415 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:21:09</p>
Middle Channel	<p> Ref 40 dBm *Att 30 dB *RBW 3 kHz Marker 1 [T1] -9.06 dBm *VBW 10 kHz *SWT 600 ms 913.247742786 MHz 40 Offset 10 5 dB 1. PE MAX -30 -20 -10 0 10 20 30 40 50 60 Center 914 MHz 539.55 kHz/ Span 5.3955 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:22:20</p>
Highest Channel	<p> Ref 40 dBm *Att 30 dB *RBW 3 kHz Marker 1 [T1] -9.32 dBm *VBW 10 kHz *SWT 600 ms 925.245076923 MHz 40 Offset 10 5 dB 1. PE MAX -30 -20 -10 0 10 20 30 40 50 60 Center 926 MHz 534.6 kHz/ Span 5.346 MHz </p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:23:17</p>

8M:

Maximum power spectral density	
Lowest Channel	 <p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 1.2 s Marker 1 [T1] -10.19 dBm 907.491009615 MHz</p> <p>40 Offset 10 5 dB</p> <p>1. Pk MAX</p> <p>Center 908 MHz 1.0587 MHz/ Span 10.587 MHz</p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:24:08</p>
Middle Channel	 <p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 1.3 s Marker 1 [T1] -12.93 dBm 913.742836056 MHz</p> <p>40 Offset 10 5 dB</p> <p>1. Pk MAX</p> <p>Center 916 MHz 1.14525 MHz/ Span 11.4525 MHz</p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:25:01</p>
Highest Channel	 <p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 1.25 s Marker 1 [T1] -11.15 dBm 923.753866138 MHz</p> <p>40 Offset 10 5 dB</p> <p>1. Pk MAX</p> <p>Center 924 MHz 1.0983 MHz/ Span 10.983 MHz</p> <p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 21:25:52</p>

4.6 100 kHz Bandwidth of Frequency Band Edge:

Serial Number:	2MM7-1	Test Date:	2024/7/16~2024/7/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin Qin	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.4-26.7	Relative Humidity: (%)	54-57	ATM Pressure: (kPa)	100.3-100.6
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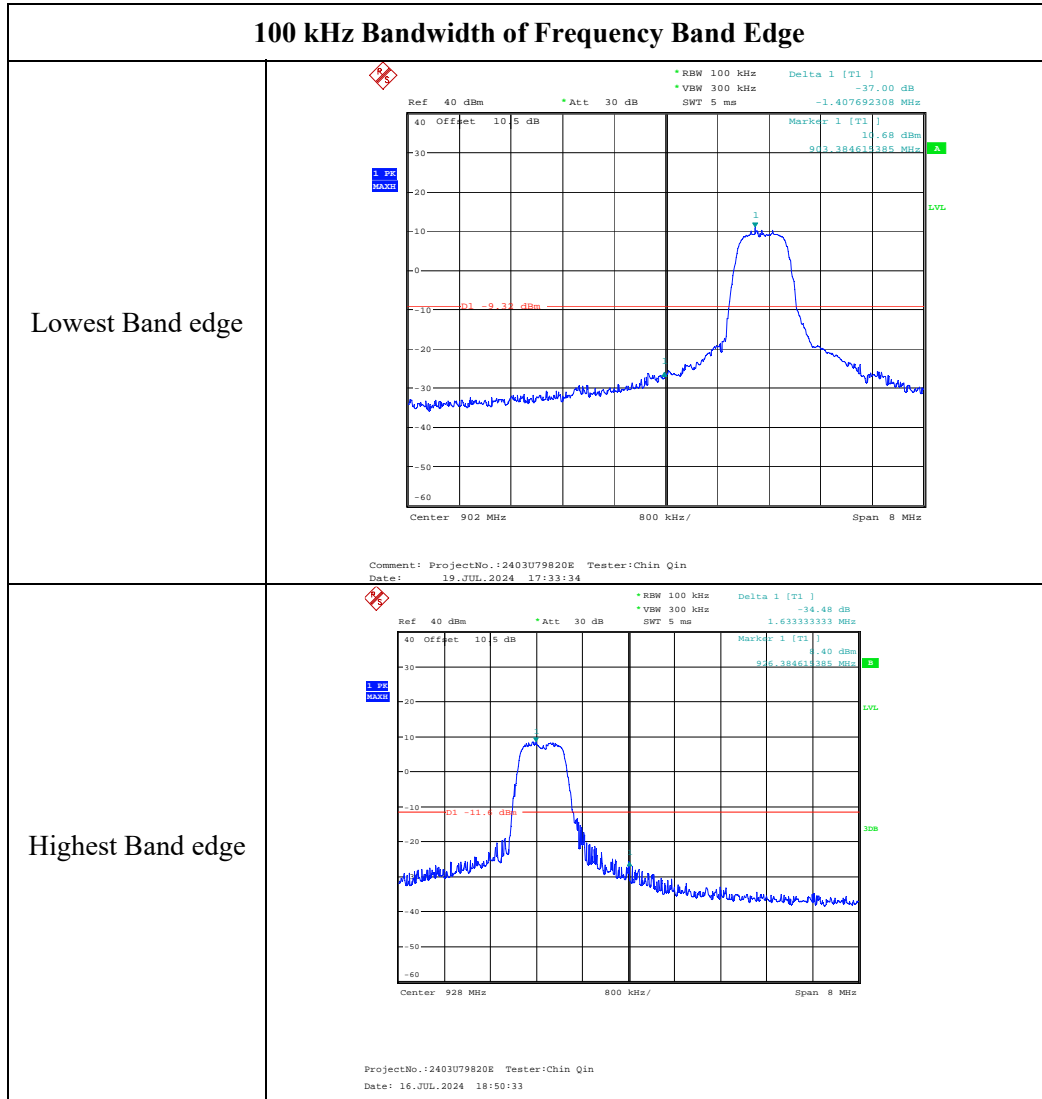
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	100147	2024/4/1	2025/5/31
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
R&S	Spectrum Analyzer	FSU26	200256	2024/4/1	2025/5/31

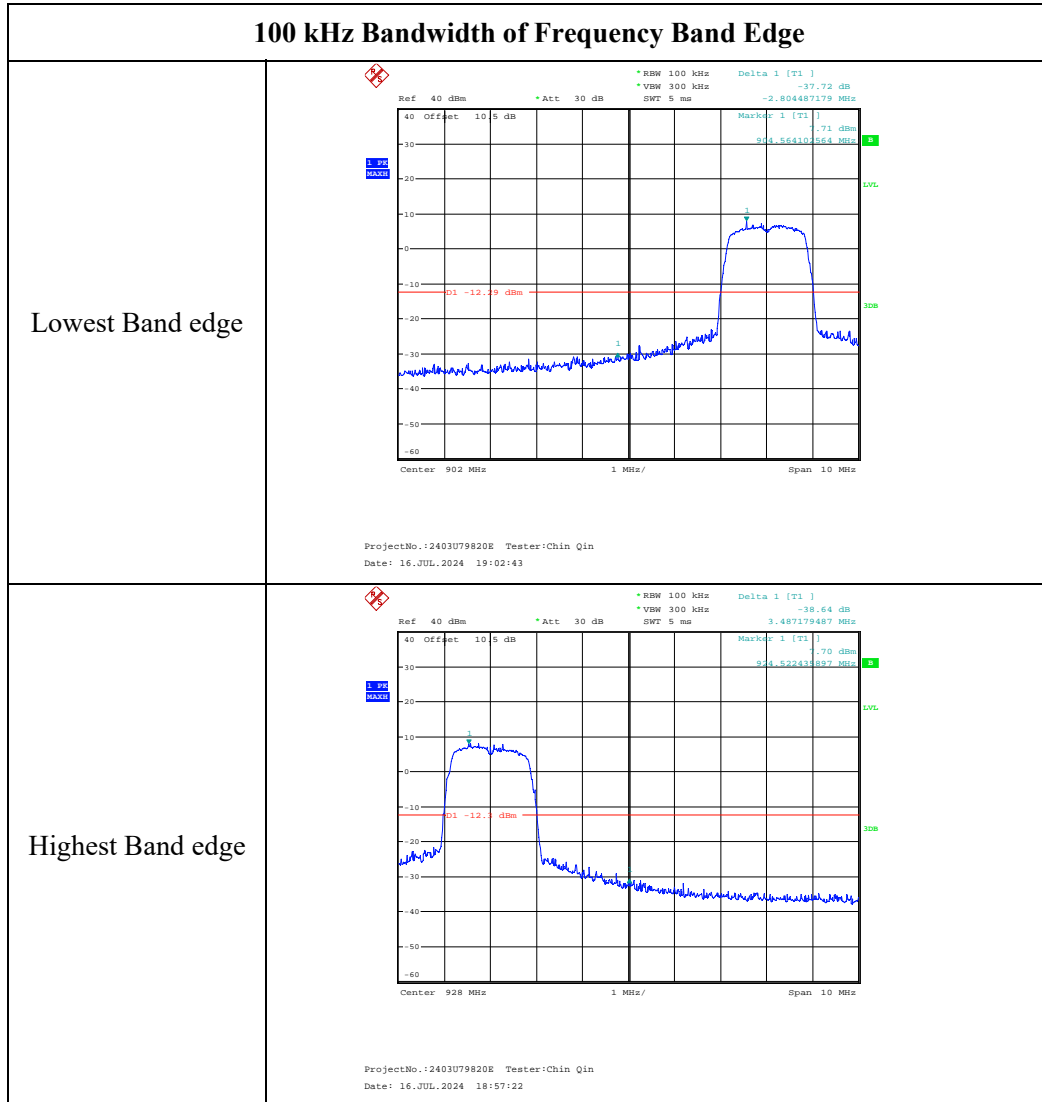
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Mode	Test Frequency (MHz)	Result (dB)	Limit (dB)
1MHz Bandwidth	903.5	37.00	≥20
	926.5	34.48	≥20
2MHz Bandwidth	905	37.72	≥20
	925	38.64	≥20
4MHz Bandwidth	906	34.14	≥20
	926	22.78	≥20
8MHz Bandwidth	908	33.45	≥20
	924	24.89	≥20

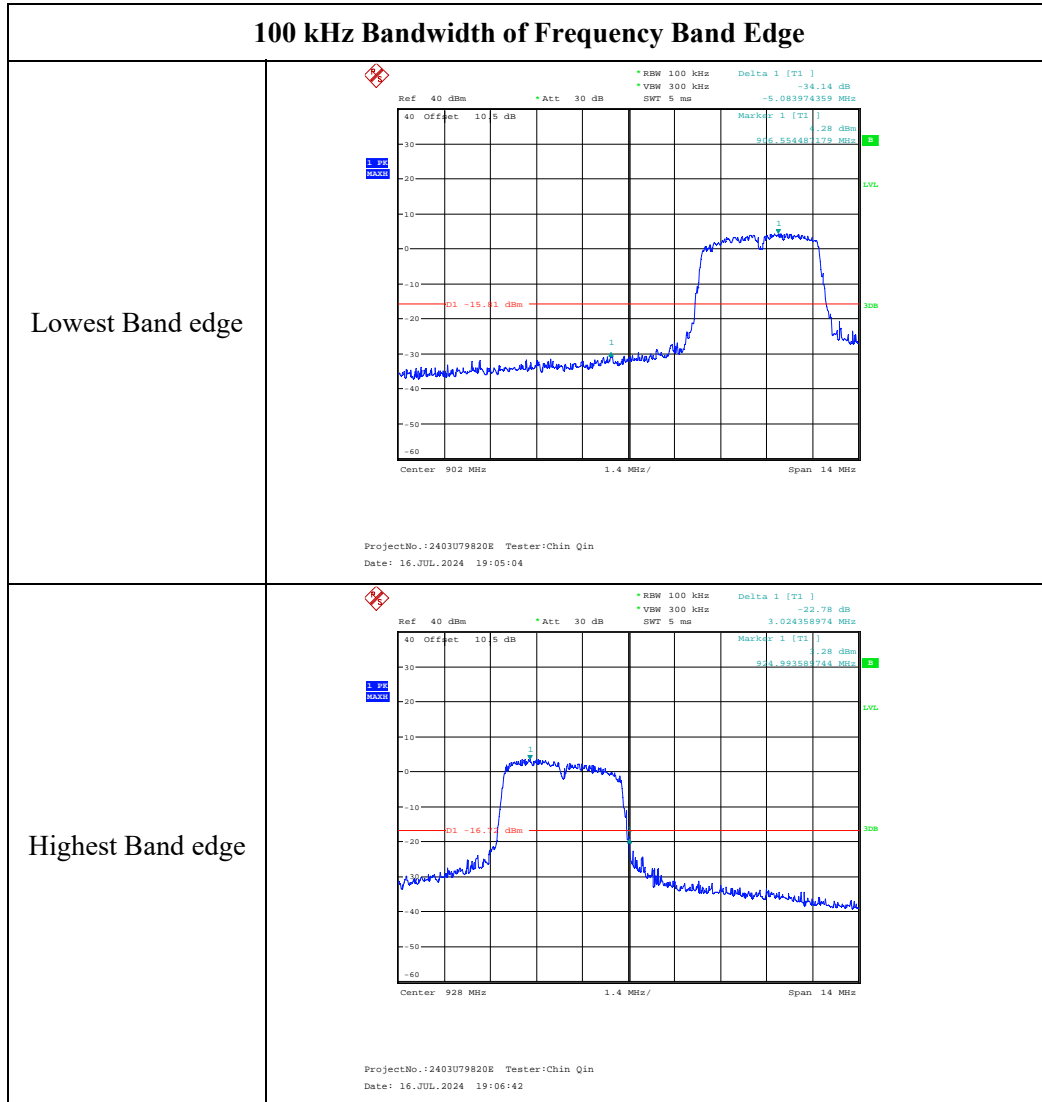
1M:



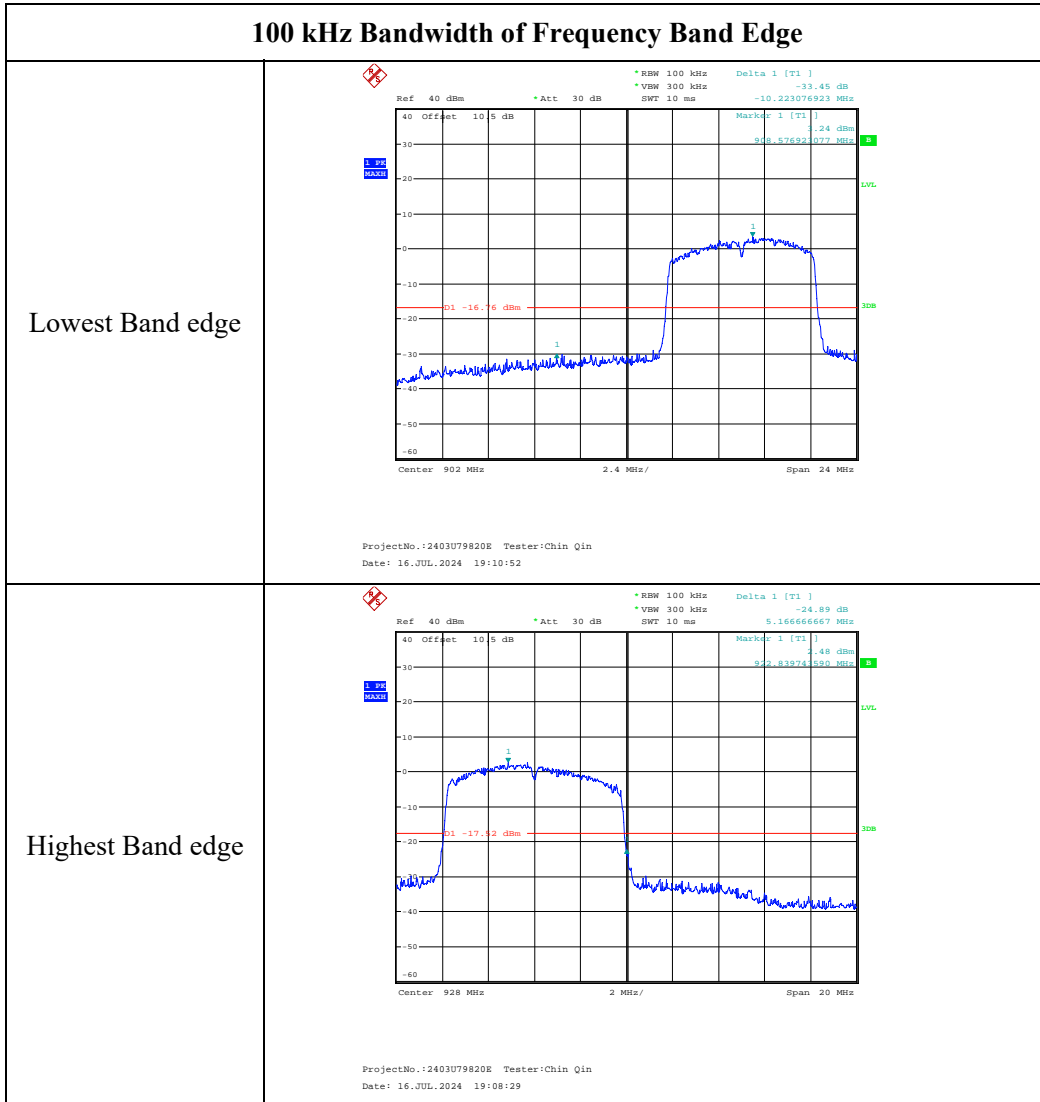
2M:



4M:



8M:



4.7 Duty Cycle:

Serial Number:	2MM7-1	Test Date:	2024/7/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin Qin	Test Result:	N/A

Environmental Conditions:

Temperature: (°C)	26.7	Relative Humidity: (%)	57	ATM Pressure: (kPa)	100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2024/4/1	2025/5/31
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

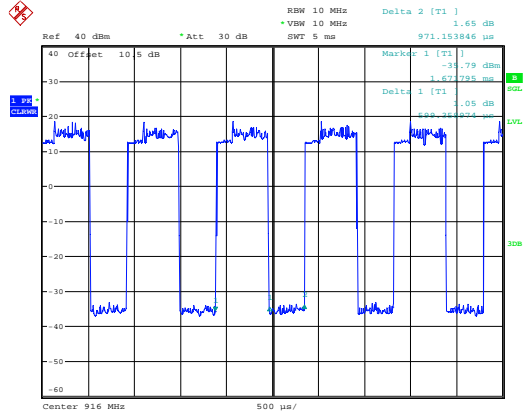
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Test Mode	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	VBW Setting (kHz)
1MHz Bandwidth	3.514	3.851	91.25	285	0.3
2MHz Bandwidth	1.613	1.988	81.14	620	1
4MHz Bandwidth	0.92	1.292	71.21	1087	2
8MHz Bandwidth	0.599	0.971	61.69	1669	2

Duty Cycle	
1MHz	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 19:58:41</p>
2MHz	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 19:55:55</p>
4MHz	<p>ProjectNo.:2403U79820E Tester:Chin Qin Date: 16.JUL.2024 19:47:30</p>

8MHz



ProjectNo.:2403U79820E Tester:Chin Qin
Date: 16.JUL.2024 19:46:16

5. EUT PHOTOGRAPHS

Please refer to the attachment 2403U79820E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2403U79820E-RF-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2403U79820E-RF-00B-TSP TEST SETUP PHOTOGRAPHS.

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