



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street,
Bao'an District, Shenzhen, China

TEST REPORT FCC Rules and Regulations Part PART 15.249

Report Reference No.....: CTA26061601703

FCC ID.....: 2AUZX-MGW2ULU

Compiled by

(position+printed name+signature) .: File administrators Zoey Cao

Supervised by

(position+printed name+signature) .: Project Engineer Ace Chai

Approved by

(position+printed name+signature) .: RF Manager Eric Wang

Date of issue: Jul. 13, 2026

Testing Laboratory Name.....: Shenzhen CTA Testing Technology Co., Ltd.

Address: Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community,
Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name: UBITECH LIMITED

Address: 14F, Wing Hong Centre, 18 Wing Hong Street Chueng Sha Wan,
Kowloon, Hong Kong, 999077 Hong Kong

Standard.....: FCC Rules and Regulations Part PART 15.249

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Test item description.....: Micro Gateway 2

Trade Mark.....: N/A

Manufacturer: UBITECH LIMITED

Model/Type reference: MGW2ULU

Listed Models: N/A

Modulation: Lora

Frequency: 919.303MHz, 923.303MHz

Ratings: Input: DC 5V

Result: PASS

TEST REPORT

Equipment under Test : Micro Gateway 2

Model /Type : MGW2ULU

Listed Models : N/A

Applicant : **UBITECH LIMITED**

Address : 14F, Wing Hong Centre, 18 Wing Hong Street Chueng Sha Wan,
Kowloon, Hong Kong, 999077 Hong Kong

Manufacturer : **UBITECH LIMITED**

Address : 14F, Wing Hong Centre, 18 Wing Hong Street Chueng Sha Wan,
Kowloon, Hong Kong, 999077 Hong Kong

Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

[**FCC Rules Part 15.249:**](#) Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

[**ANSI C63.10-2020 +COR. 1-2023+ C63.10A-2024+ ERRATA TO C63.10A-2024:**](#) American National Standard for Testing Unlicensed Wireless Devices

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Jun. 16, 2026
Testing commenced on	:	Jun. 16, 2026
Testing concluded on	:	Jul. 13, 2026

2.2. Product Description

Name of EUT	Micro Gateway 2
Model Number	MGW2ULU
Power supply:	Input: DC 5V
Hardware version:	V2.1
Software version:	MGW2_V06
Sample ID:	CTA260616017-1# (Engineer sample) CTA260616017-2# (Normal sample)
Operation frequency:	919.303MHz, 923.303MHz
Modulation:	Lora
Antenna Type:	PCB antenna
Antenna Gain:	2.51 dBi

2.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	☐ 230V / 50 Hz	☐ 120V / 60Hz
		☐ 12 V DC	☐ 24 V DC
		☒ Other (specified in blank below)	

Input: DC 5V

2.4. Short description of the Equipment under Test (EUT)

This is a Micro Gateway 2.

For more details, refer to the user's manual of the EUT.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- ☐ - supplied by the manufacturer
- ☒ - supplied by the lab

☒ Adapter information (Auxiliary test supplied by test Lab)	Model: HW-100225C00 Input: AC 100-240V 50/60Hz Output: DC5V 2A, DC9V 2A, DC10V 2.25A
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2.6. EUT operation mode

For more details, refer to the user's manual of the EUT.

Test Software Version	Tools software(ADB command)		
Frequency	919.303 MHz	923.303MHz	/
LoRa	Default	Default	/

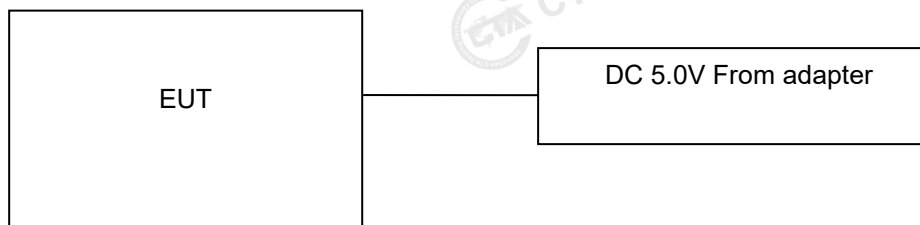
Channel	Frequency(MHz)
01	919.303
02	923.303

Testing Frequency:

Channel	Frequency(MHz)
01	919.303
02	923.303

2.7. Block Diagram of Test Setup

Conducted Test/ Radiated Test/ RF Conducted Test



2.8. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. TEST FACILITY

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

Industry Canada Registration Number. Is: 27890 CAB identifier: CN0127

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Radiated Emission:

Temperature:	25 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

AC Main Conducted testing:

Temperature:	24 ° C
Humidity:	47 %
Atmospheric pressure:	950-1050mbar

Conducted testing:

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4. Summary of measurement results

FCC PART 15.249		
FCC Part 15.249(a)	Field Strength of Fundamental	PASS
FCC Part 15.209	Spurious Emission	PASS
FCC Part 15.209	Band edge	PASS
FCC Part 15.215(c)	20dB bandwidth	PASS
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.203	Antenna Requirement	PASS

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)
Time	/	± 2%	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

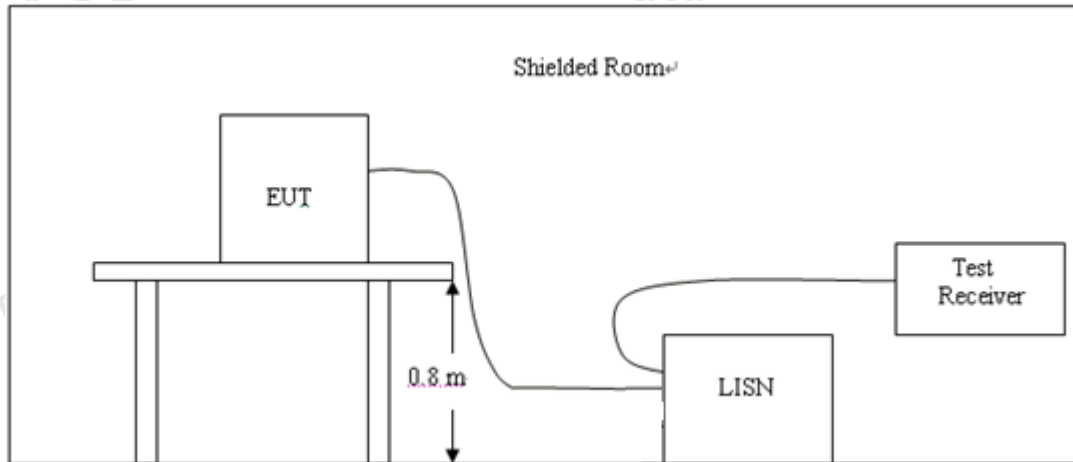
Item.	Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
AC Conducted Test Equipment						
☒ 1	LISN	R&S	ENV216	CTA-308	2025/08/04	2026/08/03
☒ 2	LISN	R&S	ENV216	CTA-314	2025/07/30	2026/07/29
☒ 3	EMI Test Receiver	R&S	ESPI	CTA-307	2025/07/30	2026/07/29
☒ 4	CE Cable	SKET	RF Cable (9kHz-30MHz)	CTA-367	2025/07/30	2026/07/29
☒ 5	Temperature and humidity meter	Chigo	ZG-7020	CTA-327	2025/07/31	2026/07/30
☒ 6	EMI Test Software	Tonscend	TS@JS32-CE	5.0.0.1	N/A	N/A
RF Radiation Test Equipment						
☒ 1	EMI Test Receiver	R&S	ESCI	CTA-306	2025/07/30	2026/07/29
☒ 2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2025/05/17	2026/05/16
					2026/05/16	2027/05/15
☒ 3	Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2026/10/16
☒ 4	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2026/10/12
☒ 5	Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2026/10/16
☒ 6	Horn Antenna	Schwarzbeck	BBHA 9170	CTA-346	2025/05/18	2028/05/17
☒ 7	Amplifier	Schwarzbeck	BBV9745	CTA-312	2025/07/30	2026/07/29
☒ 8	Amplifier	Tonscend	TAP-011840	CTA-313	2025/07/30	2026/07/29
☒ 9	Amplifier	SKET	LNPA 1840G-50	CTA-345	2025/05/17	2026/05/16
					2026/05/16	2027/05/15
☒ 10	6dB attenuator	Shanghaihuaxiang	GZL-TS5-6-6	CTA-347	2025/05/17	2026/05/16
					2026/05/16	2027/05/15
☒ 11	RF cable	SKET	RF Cable (9kHz-1GHz)	CTA-360	2025/09/25	2026/09/24
☒ 12	RF cable	SKET	RF Cable (1GHz-18GHz)	CTA-361	2025/09/25	2026/09/24
☒ 13	Coaxialcable (1GHz-40GHz)	SKET	RE-04-D	CTA-348	2025/05/20	2026/05/19
					2026/05/16	2027/05/15
☒ 14	Coaxialcable (1GHz-40GHz)	SKET	RE-04-M	CTA-349	2025/05/20	2026/05/19
					2026/05/16	2027/05/15
☒ 15	Coaxialcable (1GHz-40GHz)	SKET	RE-04-L	CTA-350	2025/05/20	2026/05/19
					2026/05/16	2027/05/15
☒ 16	Temperature and humidity meter	Chigo	ZG-7020	CTA-328	2025/07/31	2026/07/30
☐ 17	2.4GFilter	HX Microwave	HXLBQ-DZA61	CTA-365	2025/07/31	2026/07/30
☐ 18	5GFilter	CONCEPT	CNF05150M058 50Q16A	CTA-366	2025/07/31	2026/07/30
☐ 19	High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2025/07/30	2026/07/29
☐ 20	High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2025/07/30	2026/07/29
☐ 21	High-Pass Filter	XingBo	XBLBQ-GTA10	CTA-364	2025/07/30	2026/07/29
☒ 22	EMI Test Software	Tonscend	TS@JS32-RE	5.0.0.2	N/A	N/A
RF Conducted Test Equipment						
☒ 1	Spectrum Analyzer	Agilent	N9020A	CTA-342	2025/07/30	2026/07/29
☐ 2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2025/05/17	2026/05/16
					2026/05/16	2027/05/15

☒ 3	RF Coaxial Cable	SKET	RF Cable (9kHz-40GHz)	CTA-368	2025/07/30	2026/07/29
☒ 4	Temperature and humidity meter	ZG-7020	Chigo	CTA-329	2025/07/31	2026/07/30
☐ 5	Programmable Constant Temperature And Humidity Test Chamber	DONGGUAN JINGYU	HT-H-408	CTA-053	2025/07/30	2026/07/29
☐ 6	Vector Signal generator	Agilent	N5182A	CTA-305	2025/07/30	2026/07/29
☐ 7	Analog Signal Generator	R&S	E4421B	CTA-304	2025/07/30	2026/07/29
☐ 8	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	CTA-302	2025/07/30	2026/07/29
☒ 9	Automatic control unit	Tonscend	JS0806-2	CTA-351	2025/07/30	2026/07/29
☒ 10	RF Test Software	Tonscend	TS@JS1120-3	3.1.65	N/A	N/A
☒ 11	RF Test Software	Tonscend	TS@JS1120	3.1.46	N/A	N/A
☒ 12	RF Connection Cable	N/A	N/A	1#	Each time	N/A

4. TEST CONDITIONS AND RESULTS

4.1. AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following :

Frequency range (MHz)	Limit (dBuV)	
	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.

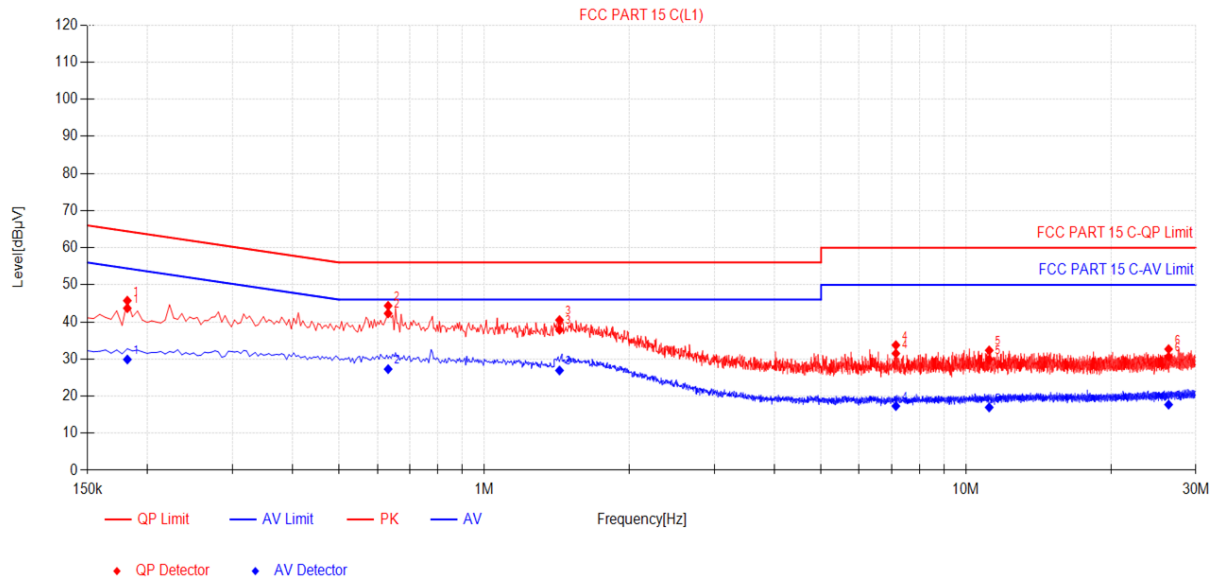
TEST RESULTS

Remark:

1. We tested at Low and High channel; only the worst result of LoRa low channel was reported as below:
2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

Polarization:

L



Final Data List

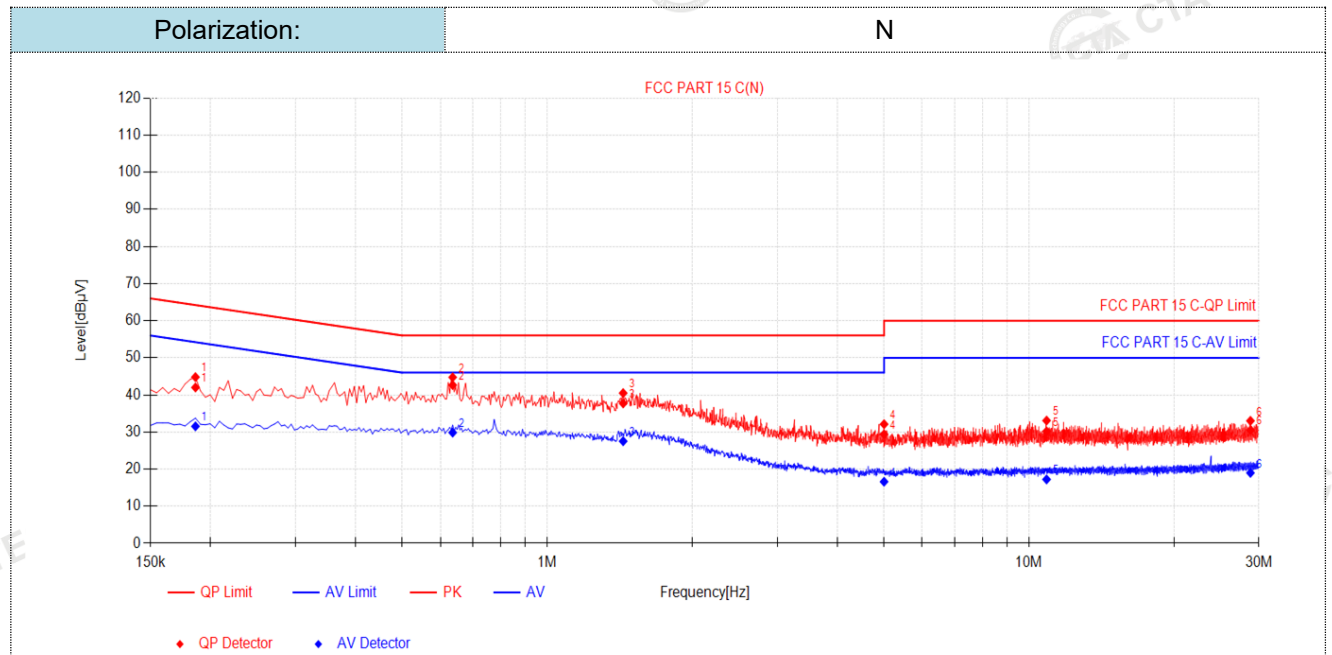
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1815	9.95	33.74	43.69	64.42	20.73	19.93	29.88	54.42	24.54	PASS
2	0.6315	10.22	32.07	42.29	56.00	13.71	17.06	27.28	46.00	18.72	PASS
3	1.4325	10.45	27.42	37.87	56.00	18.13	16.46	26.91	46.00	19.09	PASS
4	7.152	11.13	20.36	31.49	60.00	28.51	6.20	17.33	50.00	32.67	PASS
5	11.175	11.71	18.17	29.88	60.00	30.12	5.25	16.96	50.00	33.04	PASS
6	26.3445	13.32	17.31	30.63	60.00	29.37	4.39	17.71	50.00	32.29	PASS

Note:1). QP Value (dBμV) = QP Reading (dBμV) + Factor (dB)

2). Factor (dB) = insertion loss of LISN (dB) + Cable loss (dB)

3). QPMargin (dB) = QP Limit (dBμV) - QP Value (dBμV)

4). AVMargin (dB) = AV Limit (dBμV) - AV Value (dBμV)



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.186	9.94	32.06	42.00	64.21	22.21	21.59	31.53	54.21	22.68	PASS
2	0.636	10.26	32.39	42.65	56.00	13.35	19.59	29.85	46.00	16.15	PASS
3	1.437	10.41	27.29	37.70	56.00	18.30	17.11	27.52	46.00	18.48	PASS
4	5.001	10.92	18.49	29.41	60.00	30.59	5.68	16.60	50.00	33.40	PASS
5	10.878	11.74	18.45	30.19	60.00	29.81	5.49	17.23	50.00	32.77	PASS
6	28.824	13.72	16.76	30.48	60.00	29.52	5.26	18.98	50.00	31.02	PASS

Note:1). QP Value (dBμV) = QP Reading (dBμV) + Factor (dB)

2). Factor (dB) = insertion loss of LISN (dB) + Cable loss (dB)

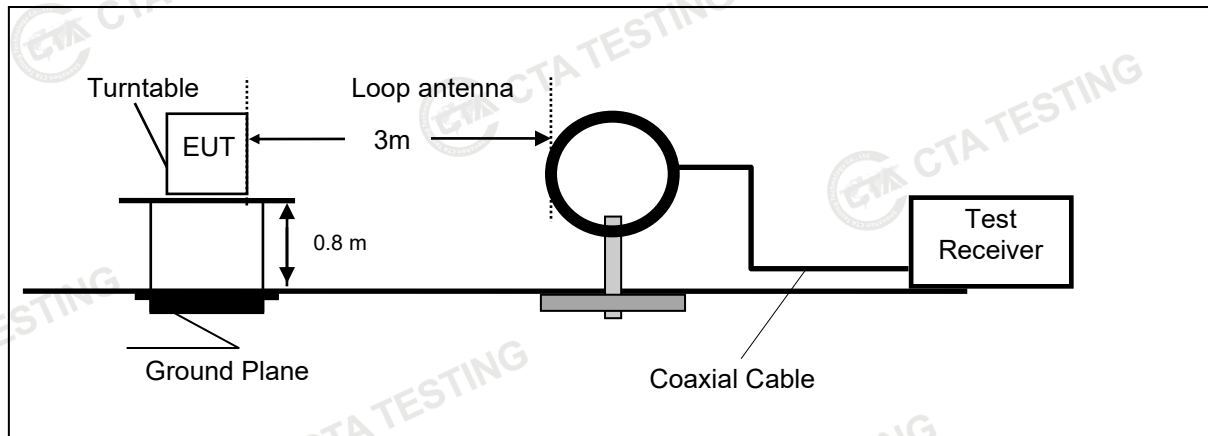
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)

4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

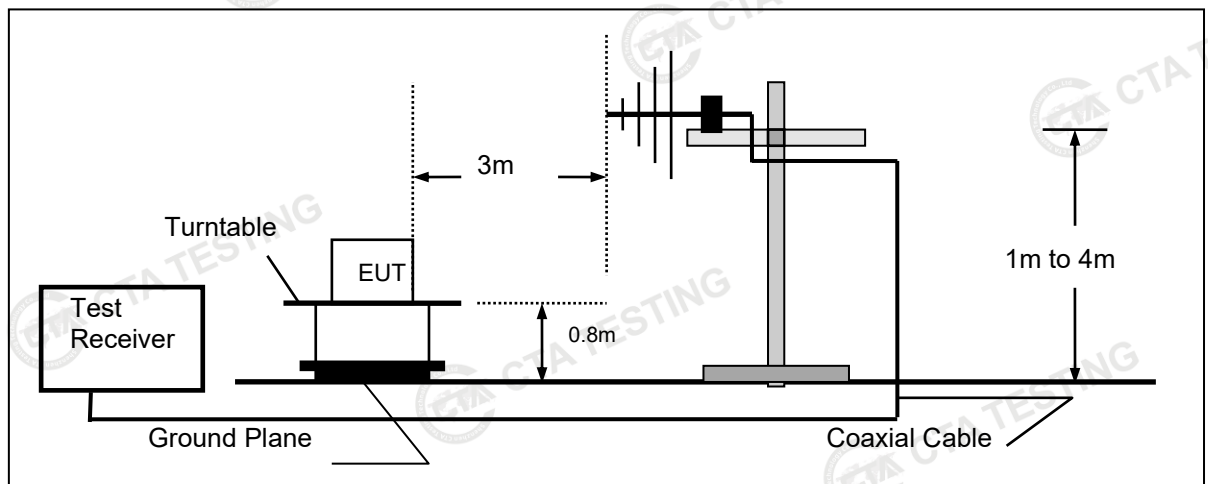
4.2. Radiated Emission and Band Edges

TEST CONFIGURATION

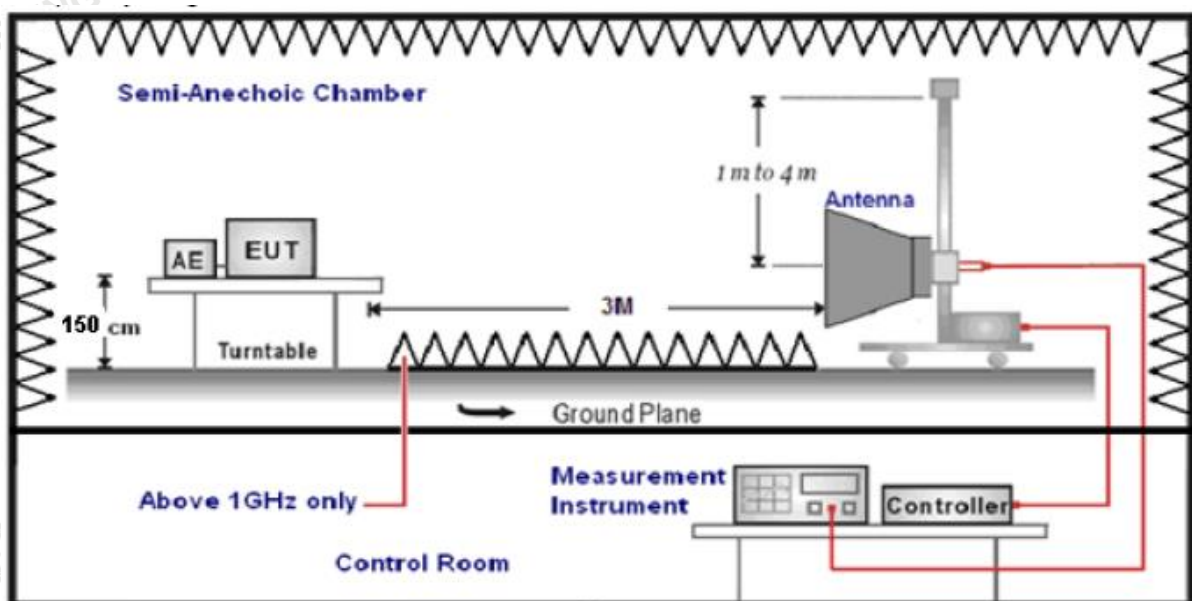
Frequency range 9 KHz – 30MHz

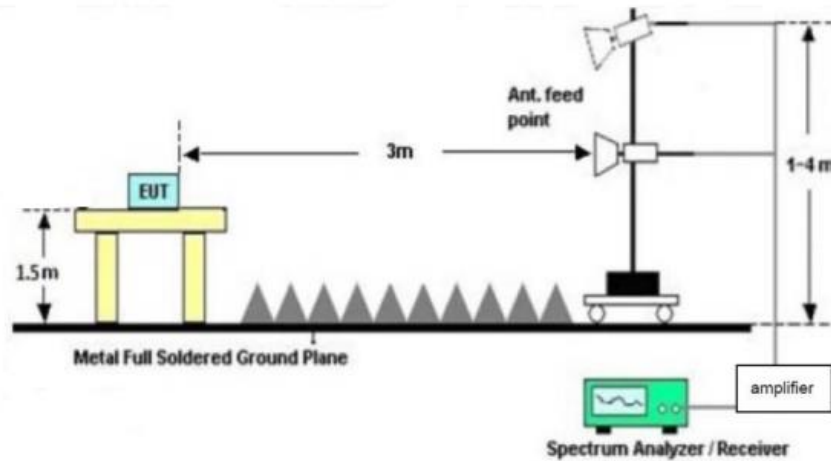


Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz





TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT minimum operation frequency was 26MHz and maximum operation frequency was 1910MHz.so radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Antenna	3

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

$$\text{Transd} = AF + CL - AG$$

RADIATION LIMIT

According 15.249, the field strength of emissions from intentional radiators operated within 2400MHz-2483.5 MHz shall not exceed 94dBμV/m (50mV/m):

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

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)

Radiated emission limits

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST RESULTS

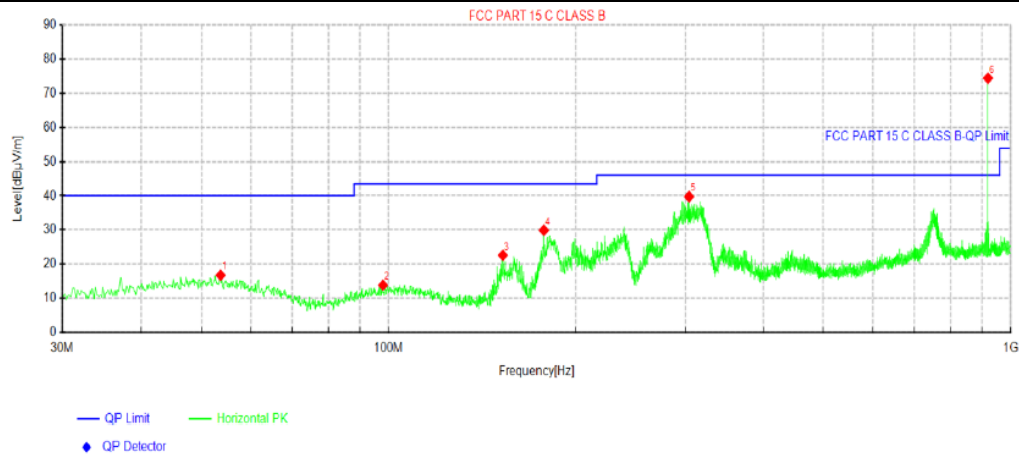
Remark:

1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

919.303MHz

Horizontal



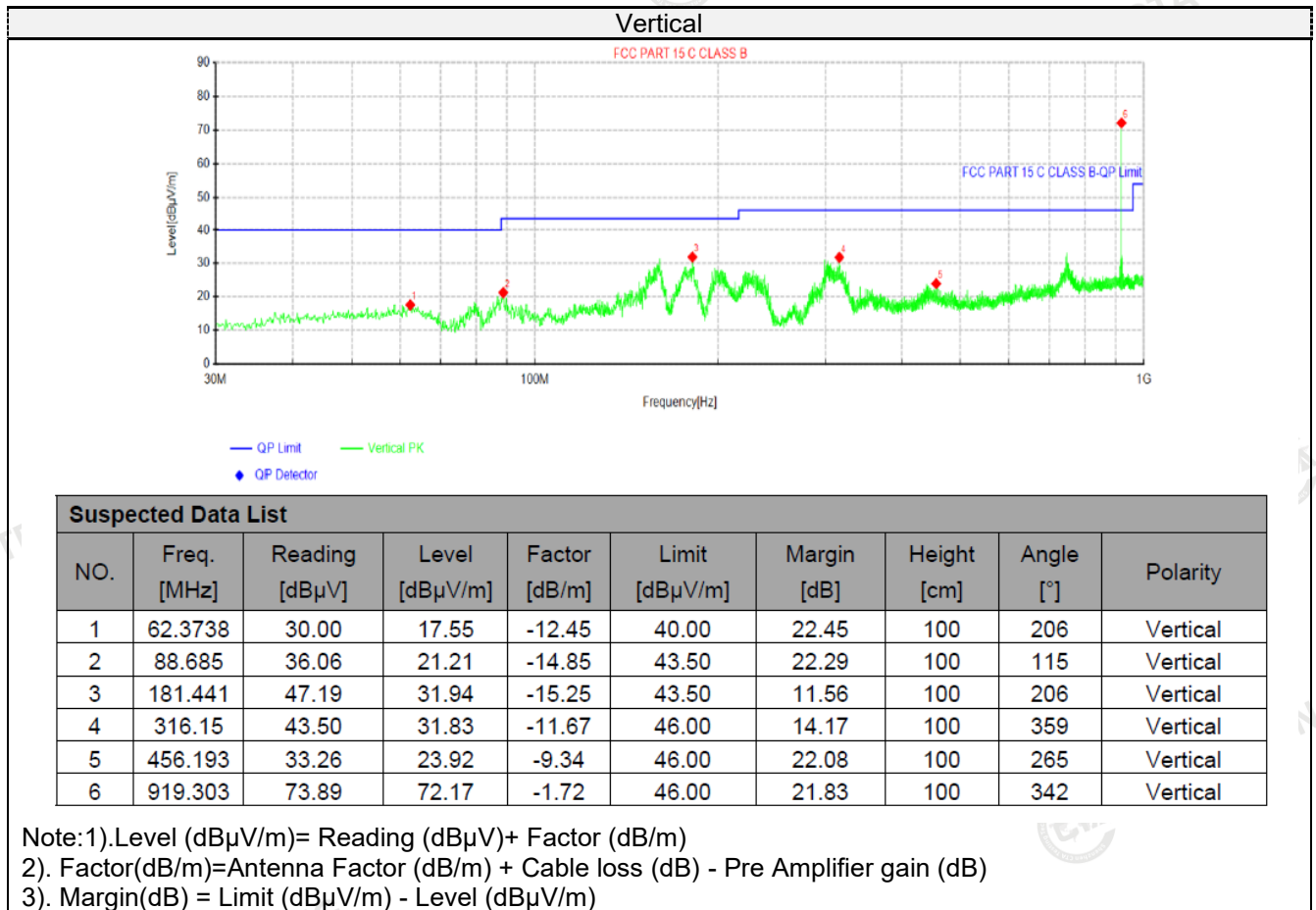
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	53.6438	27.51	16.73	-10.78	40.00	23.27	100	167	Horizontal
2	97.9	26.78	13.84	-12.94	43.50	29.66	100	190	Horizontal
3	152.583	39.11	22.57	-16.54	43.50	20.93	100	190	Horizontal
4	177.682	45.51	29.90	-15.61	43.50	13.60	100	167	Horizontal
5	304.025	51.67	39.76	-11.91	46.00	6.24	100	190	Horizontal
6	919.303	76.18	74.46	-1.72	46.00	23.04	100	0	Horizontal

Note: 1). Level (dBμV/m) = Reading (dBμV) + Factor (dB/m)

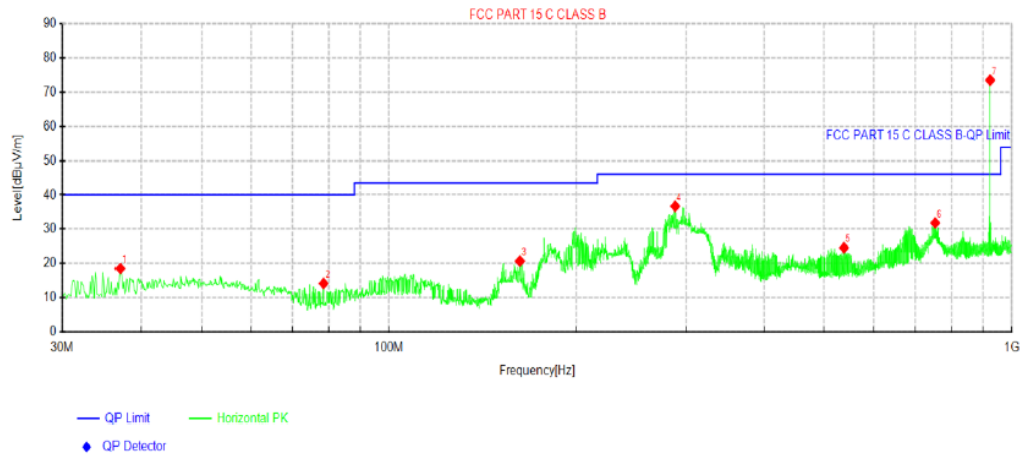
2). Factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin (dB) = Limit (dBμV/m) - Level (dBμV/m)



923.303MHz

Horizontal



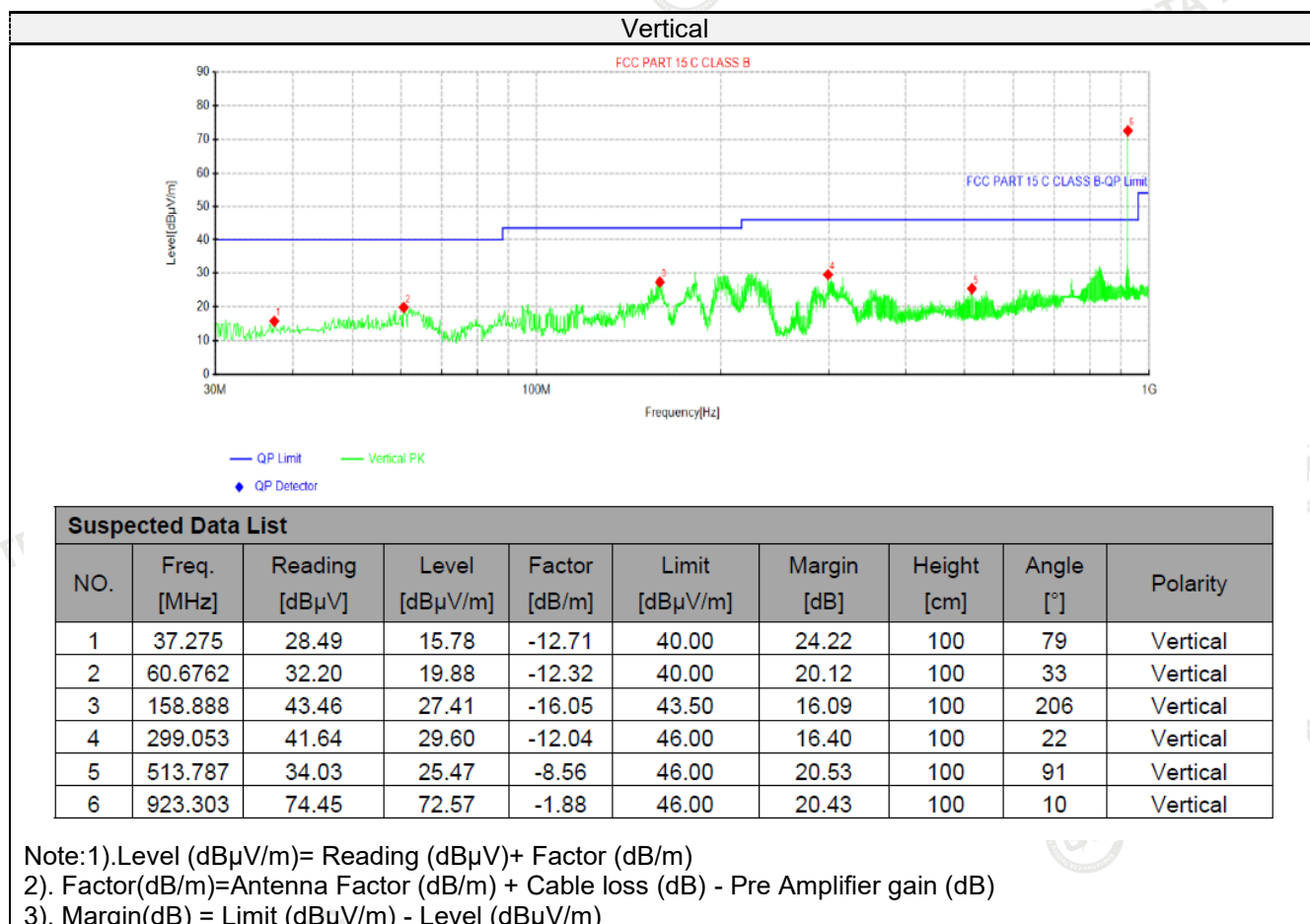
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.0325	31.32	18.50	-12.82	40.00	21.50	100	5	Horizontal
2	78.5	31.22	14.15	-17.07	40.00	25.85	100	0	Horizontal
3	162.283	36.74	20.67	-16.07	43.50	22.83	100	190	Horizontal
4	288.02	48.99	36.70	-12.29	46.00	9.30	100	5	Horizontal
5	537.916	32.66	24.55	-8.11	46.00	21.45	100	122	Horizontal
6	753.498	35.68	31.80	-3.88	46.00	14.20	100	40	Horizontal
7	923.303	75.43	73.55	-1.88	46.00	22.95	100	134	Horizontal

Note: 1). Level (dBμV/m) = Reading (dBμV) + Factor (dB/m)

2). Factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin (dB) = Limit (dBμV/m) - Level (dBμV/m)



For 1GHz to 25GHz

Lora (above 1GHz)

Frequency(MHz):			919.303		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1838.606	47.56	PK	74	26.44	71.59	25.76	4.08	53.87	-24.03
1838.606	30.67	AV	54	23.33	54.70	25.76	4.08	53.87	-24.03
2757.909	43.97	PK	74	30.03	64.22	29.1	4.35	53.7	-20.25
2757.909	33.24	AV	54	20.76	53.49	29.1	4.35	53.7	-20.25

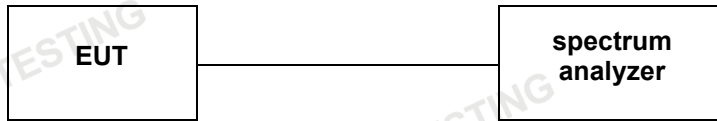
Frequency(MHz):			919.303		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1838.606	45.74	PK	74	28.26	69.77	25.76	4.08	53.87	-24.03
1838.606	27.79	AV	54	26.21	51.82	25.76	4.08	53.87	-24.03
2757.909	41.27	PK	74	32.73	61.52	29.1	4.35	53.7	-20.25
2757.909	31.58	AV	54	22.42	51.83	29.1	4.35	53.7	-20.25

Frequency(MHz):			923.303		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1846.606	47.60	PK	74	26.40	71.60	25.79	4.09	53.88	-24.00
1846.606	30.18	AV	54	23.82	54.18	25.79	4.09	53.88	-24.00
2769.909	43.75	PK	74	30.25	63.99	29.1	4.35	53.69	-20.24
2769.909	33.79	AV	54	20.21	54.03	29.1	4.35	53.69	-20.24

Frequency(MHz):			923.303		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1846.606	44.67	PK	74	29.33	68.67	25.79	4.09	53.88	-24.00
1846.606	28.44	AV	54	25.56	52.44	25.79	4.09	53.88	-24.00
2769.909	41.80	PK	74	32.20	62.04	29.1	4.35	53.69	-20.24
2769.909	32.08	AV	54	21.92	52.32	29.1	4.35	53.69	-20.24

4.3. 20dB bandwidth

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10KHz RBW and 30KHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Occupied Bandwidth is defined as the average power emitted out-of-band below its lower frequency limit or above the upper frequency limit is each equal to 0.5% of the total average power of a given emission.

LIMIT

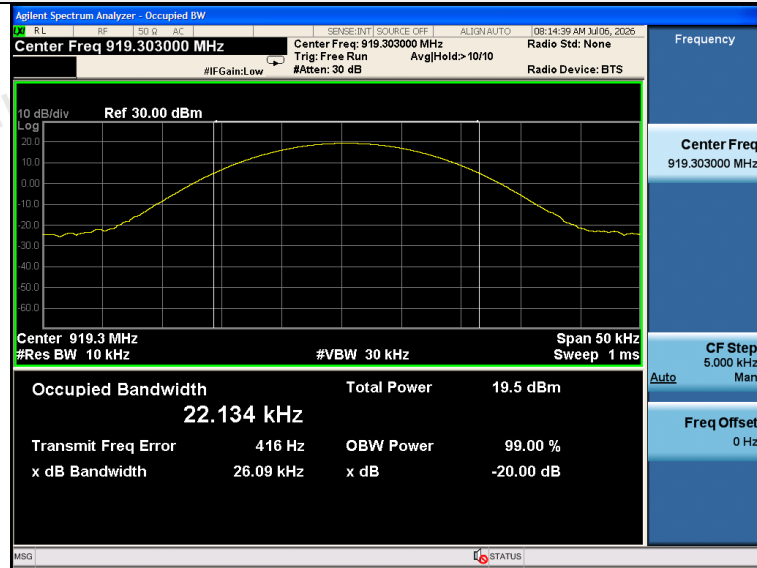
N/A

TEST RESULTS

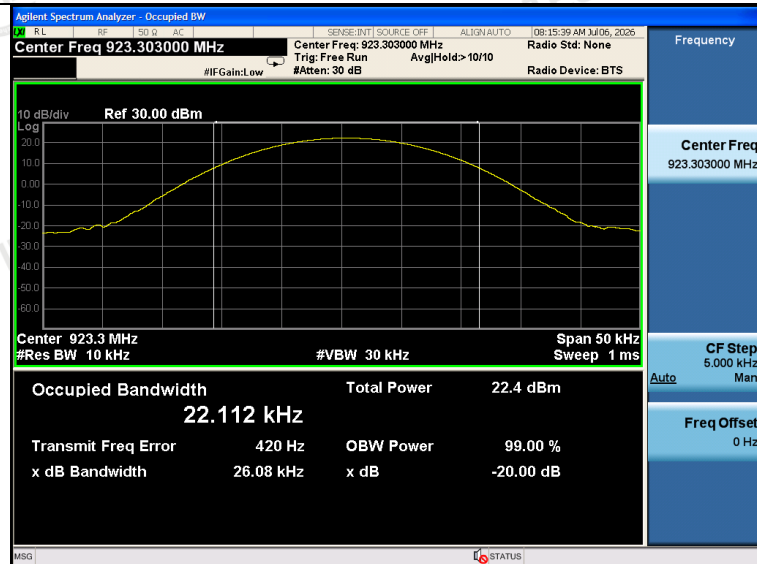
Modulation	Channel	20dB bandwidth (kHz)	Result
Lora	01	26.09	Pass
Lora	02	26.08	Pass

Note: 1. The test results including the cable loss.

Lora Modulation



Channel 01



Channel 02

4.4. Antenna Requirement

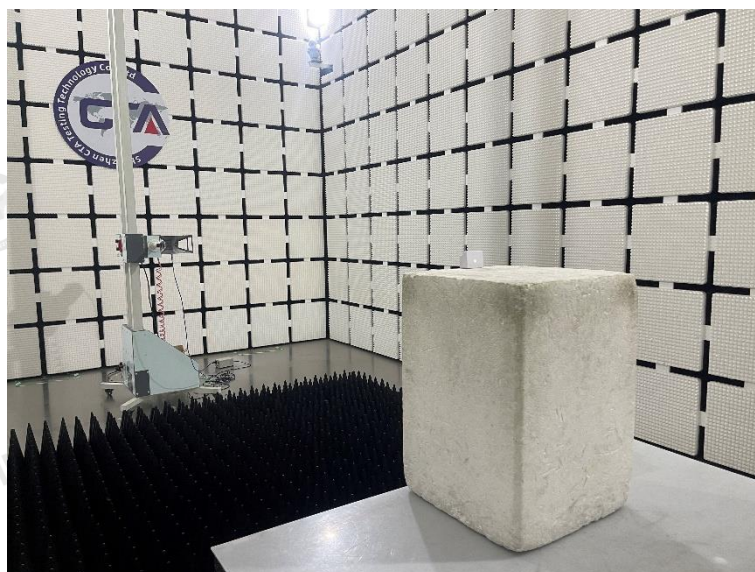
Standard Applicable

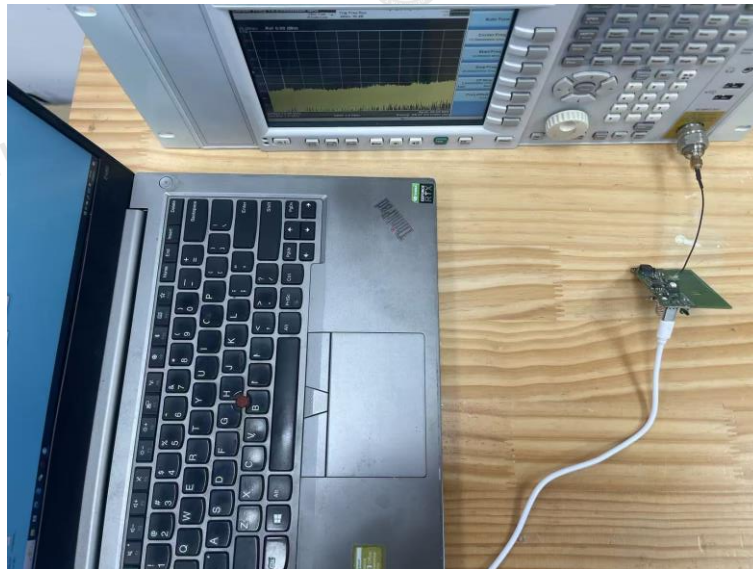
According to RSS-Gen, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered 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.

Antenna Information

The directional gains of antenna used for transmitting is 2.51 dBi, and the antenna is connect to PCB board and no consideration of replacement. Please see EUT photo for details.

5. Test Setup Photos of the EUT





6. Photos of the EUT

Reference to the test report No. CTA26061601701

.....**End of Report**.....