

FCC PART 15.247

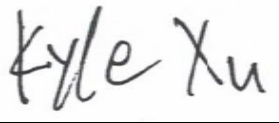
TEST REPORT

For

Ningbo Betta Technology Co., Ltd.

3rd Foold, Building 1, No. 211 Xingguang Road, High-techZone, NingBo City, Zhejiang
Province, China

FCC ID: 2BS32-BETTAGW25

Report Type: Original Report	Product Name: Betta Gateway
Report Number:	RKSC250925001-00B
Report Date:	2025-12-05
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Kunshan). This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, or any agency of the U.S.Government.

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RKSC250925001-00B	R1V1	2025-12-05	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Ningbo Betta Technology Co. ,Ltd.
Product Name:	Betta Gateway
Tested Model:	BETTAGW25
Power Supply:	DC 5V from adapter
RF Function:	SRD
Operating Band/Frequency:	915 MHz
Maximum Peak Output Power:	14.19 dBm
Channel Number:	1
Modulation Type:	chirp spread spectrum (CSS)
Antenna Type:	Dipole Antenna
★Maximum Antenna Gain:	-1.73 dBi

Adapter information:

Model: BS05A-0501000US

Input: AC 100-240V, 50/60Hz, 0.25A Max

Output: DC 5.0V, 1000mA

Note: The maximum antenna gain was provided by the applicant.

All measurement and test data in this report was gathered from production sample serial number: RKSC250925001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2025-09-25.)

Objective

This report is prepared for *Ningbo Betta Technology Co. ,Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions' rules.

The tests were performed in order to determine Compliant with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices and FCC 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0°C
Humidity		6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No.: CN5055.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Test channel list as below:

Channel	Frequency (MHz)
1	915

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

The system was configured for testing in an engineering mode, which was provided by manufacturer.

RF Test Software: BetaGatewayTest

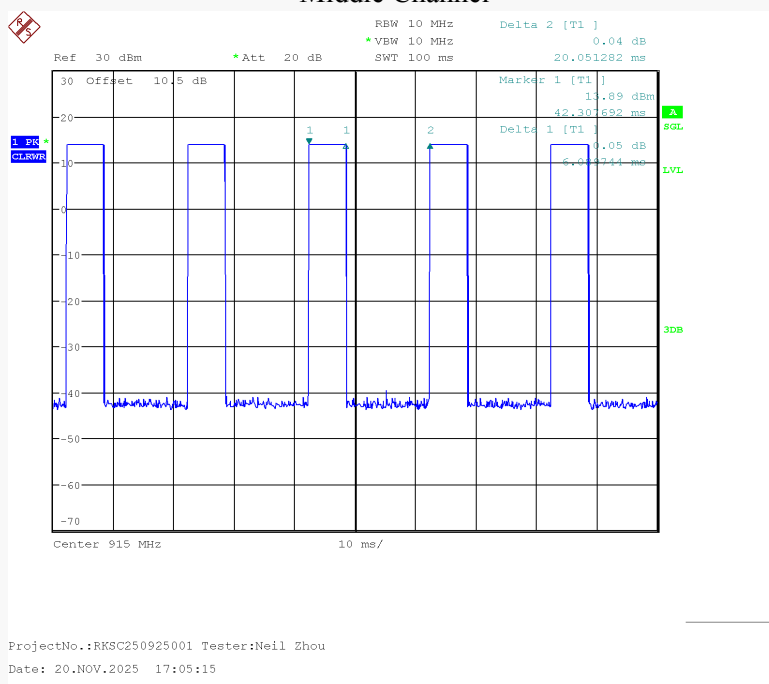
Mode	Frequency (MHz)	★Power Level
SRD	915	15

Note: The power level was declared by the applicant.

Environmental Conditions & Test Information

Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Engineer:	Neil Zhou

Test Mode	Channel (MHz)	Duty Cycle (%)	Ton(ms)	Ton+off(ms)	10log(1/x) (dB)
SRD	915	30.37	6.09	20.05	5.18

Duty Cycle:**Middle Channel****Note:**

1. “x” means the Duty Cycle.
2. Offset (10.5dB) = Attenuator (10dB) + cable loss (0.5dB)

Support Equipment List and Details

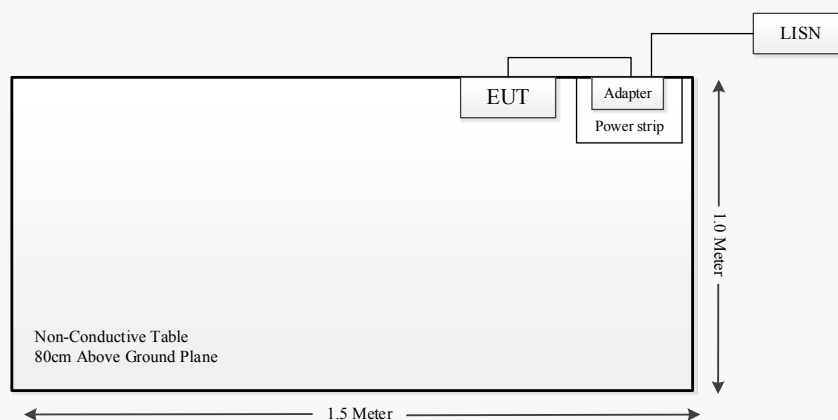
Manufacturer	Description	Model	Serial Number
/	Power strip	/	/

External I/O Cable

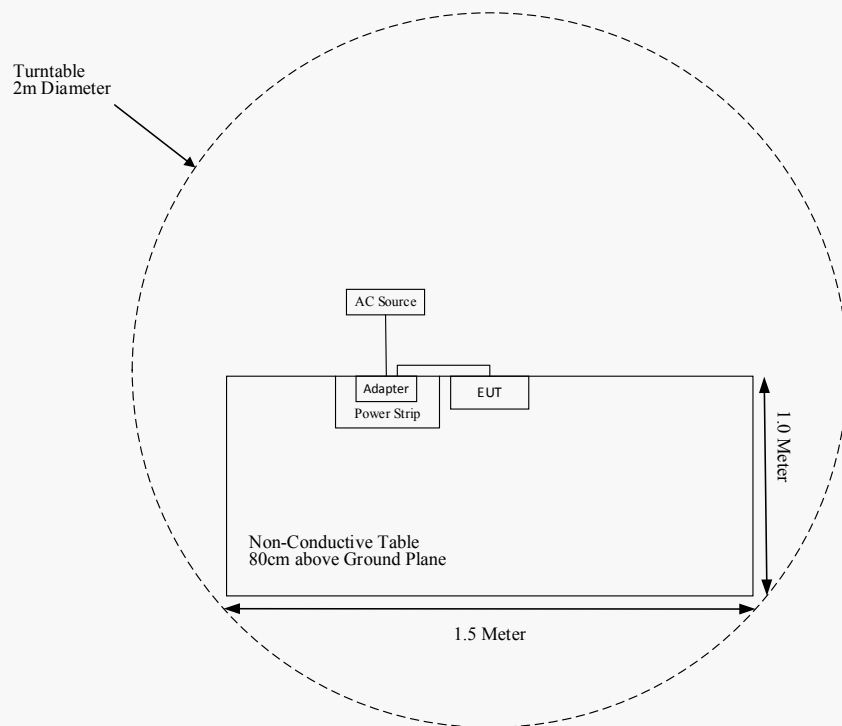
Cable Description	Length(m)	From Port	To Port
Power Cable 1	1.0	Power strip	AC Source/LISN
Power Cable 2	1.0	EUT	Adapter

Block Diagram of Test Setup

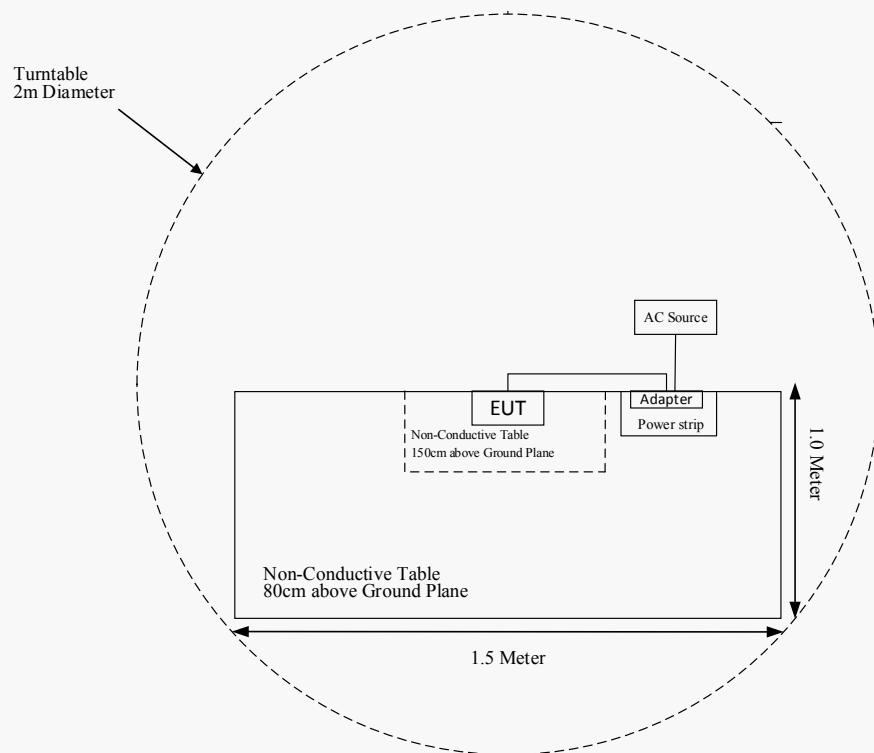
For conducted emissions:



For Radiated Emissions(Below 1GHz):



For Radiated Emissions(Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (I), §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge & Conducted spurious emission	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2025-04-09	2026-04-08
Sunol Sciences	Hybrid Antenna	JB3	A090314-1	2024-11-08	2027-11-07
BACL	Active Loop Antenna	1313-1A	4041511	2024-11-22	2027-11-21
Sonoma Instrument	Amplifier	310N	171205	2025-04-09	2026-04-08
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-9	009	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-10	010	2025-04-09	2026-04-08
Narda	6dB Attenuator	773-6	10690812-2-1	2024-11-08	2027-11-07
Microtronics	High-pass filter	BRC50722	G013	2025-04-09	2026-04-08
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2025-04-09	2026-04-08
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2024-12-02	2025-12-01
A.H.Systems, inc	Amplifier	PAM-0118P	512	2025-04-09	2026-04-08
Narda	Attenuator	10dB	010	2025-04-08	2026-04-07
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-11	011	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-12	012	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-13	013	2025-04-09	2026-04-08
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2025-04-09	2026-04-08
N/A	Attenuator	10 dB	N/A	2025-04-09	2026-04-08
XHFDZ	RG316 Coaxial Cable	SMA-316	XHF-1175	Each time	N/A
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	101746	2025-04-09	2026-04-08
Rohde & Schwarz	LISN	ENV216	101115	2025-04-08	2026-04-07
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse Limiter	ESH3-Z2	0357.8810.54	2025-04-08	2026-04-07
MICRO-COAX	Coaxial Cable	Cable-15	015	2025-04-08	2026-04-07

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1310 & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

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

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

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

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

Calculated Formulary

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

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

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

Calculated Data:

Module 1

Mode	Frequency Range (MHz)	Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	MPE ratio
		(dBi)	(numeric)	(dBm)	(mW)				
SRD	915	-1.73	0.67	14.50	28.18	20	0.0038	0.61	0.0062

Module 2(contains FCC ID: 2ANDL-WBR3D):

Mode	Frequency Range (MHz)	Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	MPE ratio
		(dBi)	(numeric)	(dBm)	(mW)				
2.4G Wi-Fi	2412~2462	2	1.58	18.5	70.79	20	0.0222	1.0	0.0222
BT	2402~2480	2	1.58	9	7.94	20	0.0025	1.0	0.0025
5G Wi-Fi	5150-5250	2.6	1.82	16	39.81	20	0.0144	1.0	0.0144
	5250-5350	2.6	1.82	16	39.81	20	0.0144	1.0	0.0144
	5470-5725	2.6	1.82	16	39.81	20	0.0144	1.0	0.0144
	5725-5850	2.6	1.82	16	39.81	20	0.0144	1.0	0.0144

Note:

1. For the above tune up power were declared by the manufacturer.
2. The contain module FCC ID: 2ANDL-WBR3D (Grant on: 12/12/2019).
WLAN operation in 5600 MHz ~ 5650 MHz is notched.
3. Module 1 and Module 2 can transmit simultaneously

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

$$=0.0062+0.0222$$

$$=0.0284$$

$$< 1.0$$

Result: The device meet FCC MPE at 20 cm distance.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine Compliant with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

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

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has a dipole antenna for SRD and the antenna gain is -1.73 dBi, the antenna use a unique type of connector to attach to the EUT. Please refer to the EUT photos.

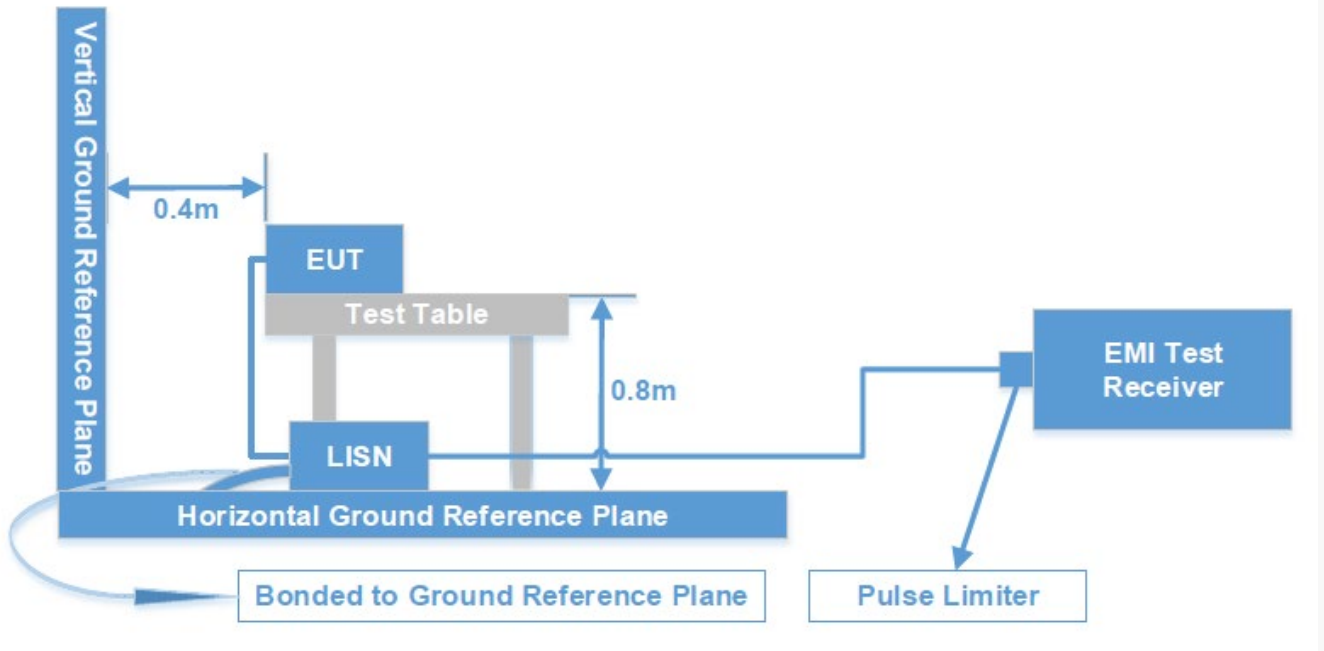
Result: Compliant.

FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Test System Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2020. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

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	RBW
150 kHz - 30 MHz	9 kHz

Test Procedure

ANSI C63.10-2020 clause 6.2

During the conducted emission test, the EUT or adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

If the maximum peak value of the emissions is below the average limit, the QP value and average value measurement will not need to be performed and only record the maximum peak measured value to meet the requirements.

Level & Over Limit Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)

Level (dBμV) = Read level (dBμV) + Factor (dB)

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7 dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

Over Limit (dB) = Level (dBμV) - Limit (dBμV)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data: See Appendix

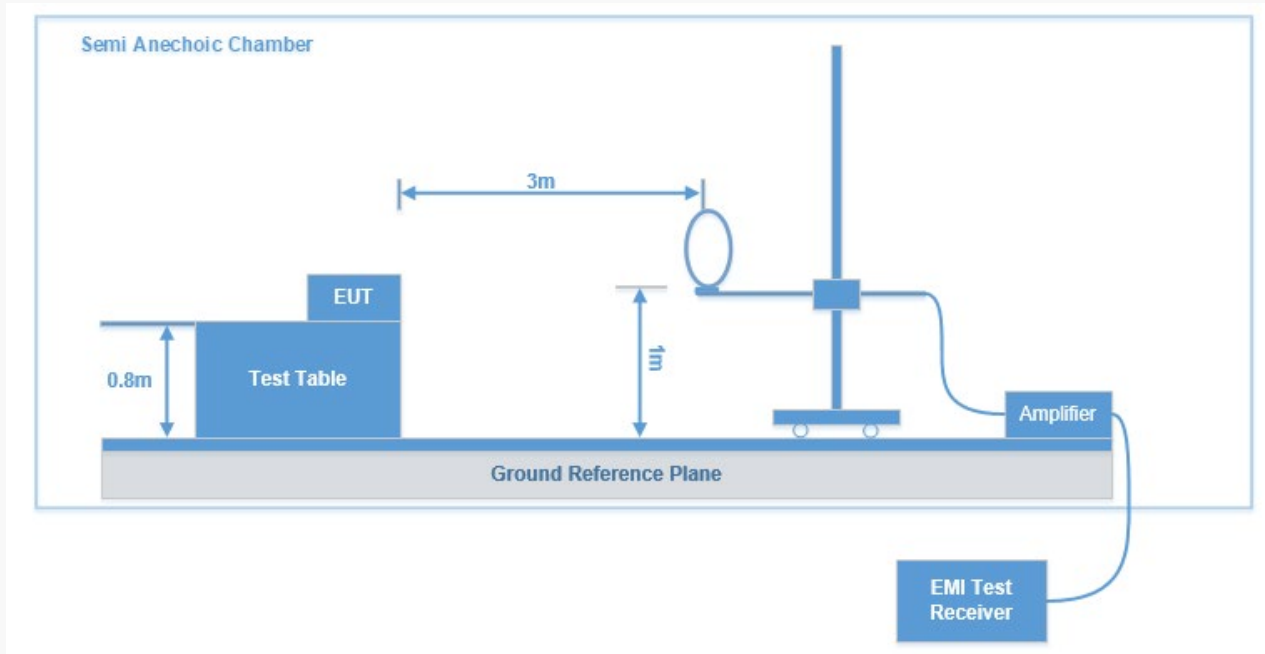
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

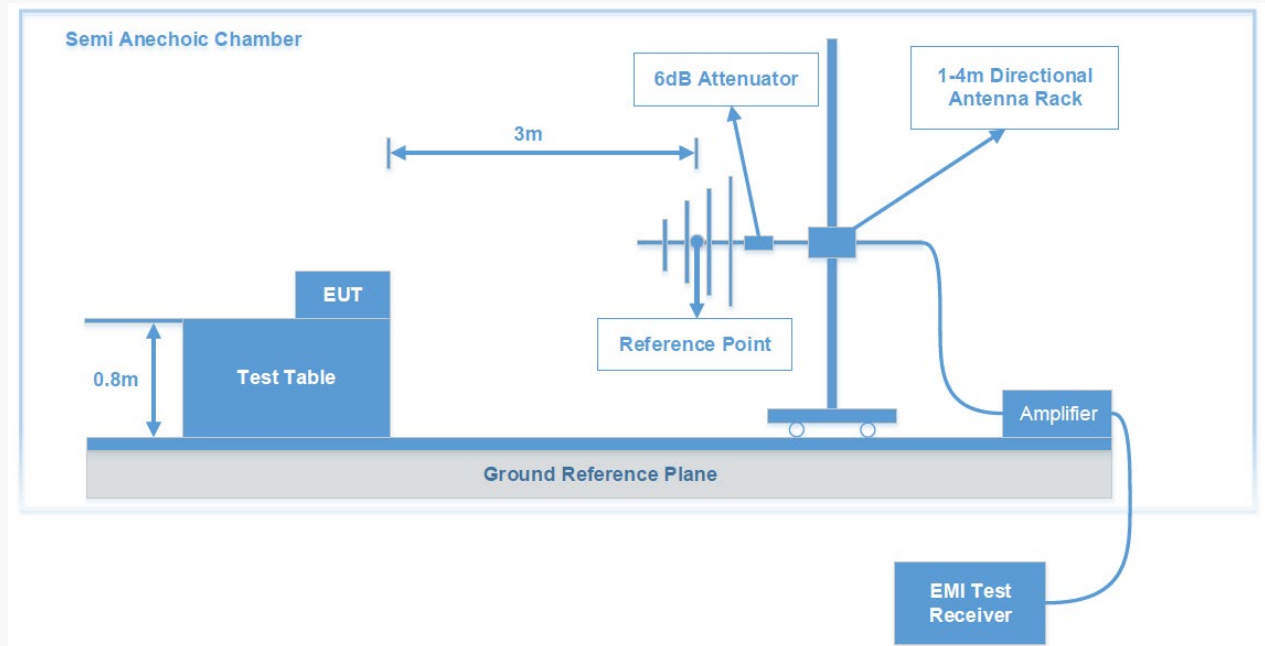
FCC §15.247 (d); §15.209; §15.205;

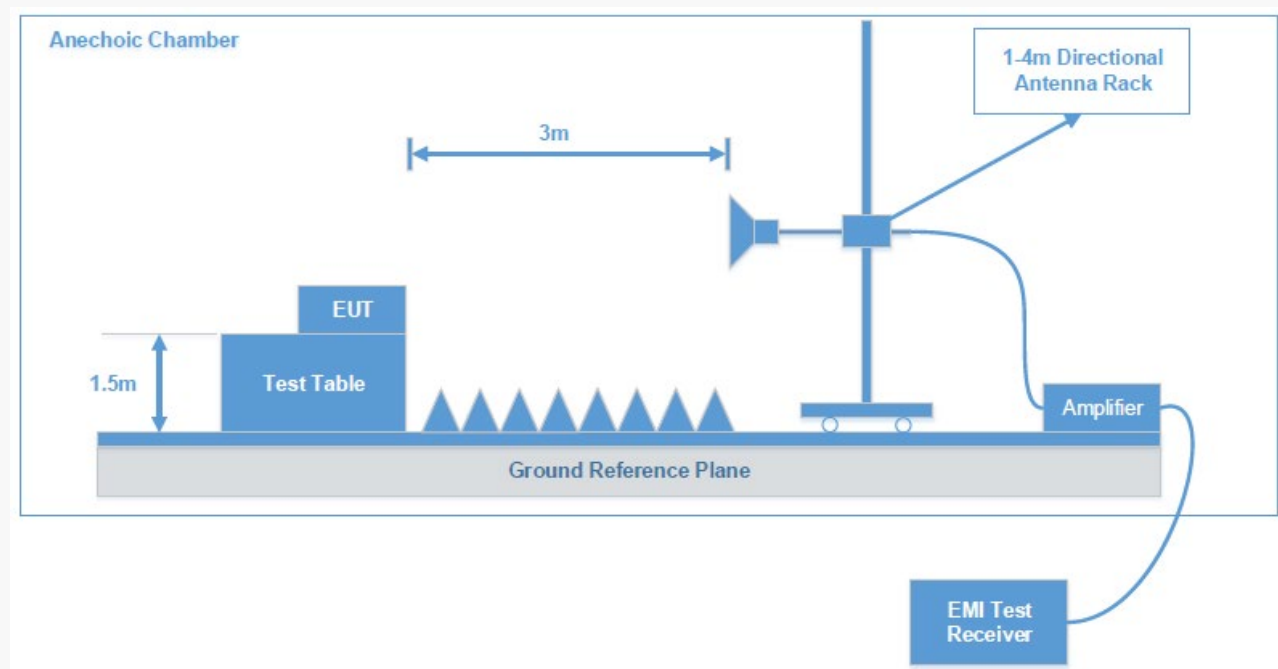
Test System Setup

9 kHz - 30 MHz:



30 MHz - 1 GHz:



1 GHz - 10 GHz:

Note: The antenna of the EUT located at a height of 1.5 m above the floor.

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.247 limits.

EMI Test Receiver Setup

During the radiated emission test, the EMI test receiver setup was set with the following configurations:

Frequency Range	RBW	VBW	IF B/W	Measurement	Detector
9 kHz - 150 kHz	200 Hz	1 kHz	200 Hz	Peak/QP/Average	Peak/QP/Average
150 kHz - 30 MHz	9 kHz	30 kHz	9 kHz	Peak/QP/Average	Peak/QP/Average
30 MHz - 1000 MHz	100 kHz	300 kHz	/	Peak	Peak
	/	/	120 kHz	QP	QP
Above 1GHz	1MHz	3 MHz	/	Peak	Peak
	1MHz	3 MHz	/	Average	Average

For 9 kHz-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.

Test Procedure

According to ANSI C63.10-2020 clause 6.5, 6.6 and 6.7.

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 - 1GHz, peak and Average detection mode for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (dB μ V/m) = Meter Reading (dB μ V) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

The “**Margin**” column of the following data tables indicates the degree of Compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)

Note: The QuasiPeak (dB μ V/m), MaxPeak (dB μ V/m), Average (dB μ V/m) which shown in the data table are all Corrected Amplitude.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data: See Appendix

FCC §15.247(A) (2) - 6 DB EMISSION BANDWIDTH

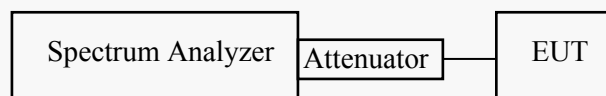
Applicable Standard

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.

Test Procedure

According to ANSI C63.10-2020 sub-clause 11.8.1

- a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- b) Set the VBW $\geq [3 \times \text{RBW}]$.
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “–6 dB down amplitude”. If a marker is below this “–6 dB down amplitude” value, then it shall be as close as possible to this value.



Note: Offset (10.5dB) = Attenuator (10dB) + cable loss (0.5dB)

Test Data: See Appendix

FCC §15.247(B) (3) - MAXIMUM CONDUCTED OUTPUT POWER

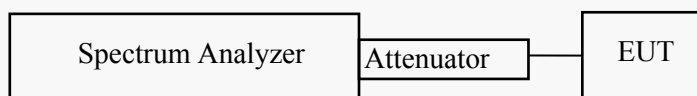
Applicable Standard

According to 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, Compliant 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.

Test Procedure

According to ANSI C63.10:2020 sub-clause 11.9.1.1

- a) Set the RBW $\geq$ DTS bandwidth.
- b) Set VBW $\geq [3 \times \text{RBW}]$.
- c) Set span $\geq [3 \times \text{RBW}]$.
- d) Sweep time = No faster than coupled (auto) time.
- 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.



Note: Offset (10.5dB) = Attenuator (10dB) + cable loss (0.5dB)

Test Data: See Appendix

FCC §15.247(D) - 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE & CONDUCTED SPURIOUS EMISSION

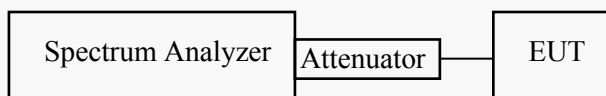
Applicable Standard

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 Compliant 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)).

Test Procedure

According to ANSI C63.10-2020 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Note: Offset (10.5dB) = Attenuator (10dB) + cable loss (0.5dB)

Conducted Spurious Emission

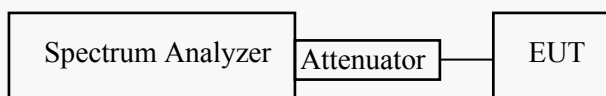
Applicable Standard

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)).

Test Procedure

According to ANSI C63.10-2020 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 = No faster than coupled (auto) time.
 - 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.



Note: Offset (11dB) = Attenuator (10dB) + Cable Loss (1.0dB)

Test Data: See Appendix

FCC §15.247(E) - POWER SPECTRAL DENSITY

Applicable Standard

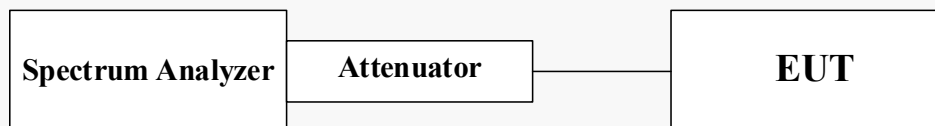
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of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

Test Procedure

According to ANSI C63.10-2020 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine Compliant, and it is optional if the maximum conducted (average) output power was used to determine Compliant:

1. Set the RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
2. Set the VBW $\geq 3 * \text{RBW}$.
3. Set the span > 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Note: Offset (10.5dB) = Attenuator (10dB) + cable loss (0.5dB)

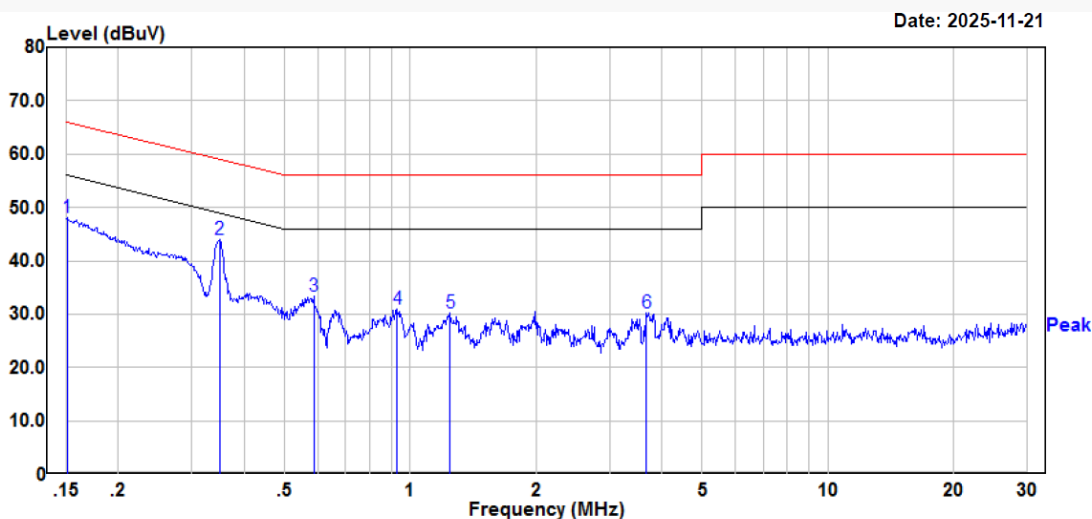
Test Data: See Appendix

APPENDIX - TEST DATA

AC LINE CONDUCTED EMISSIONS

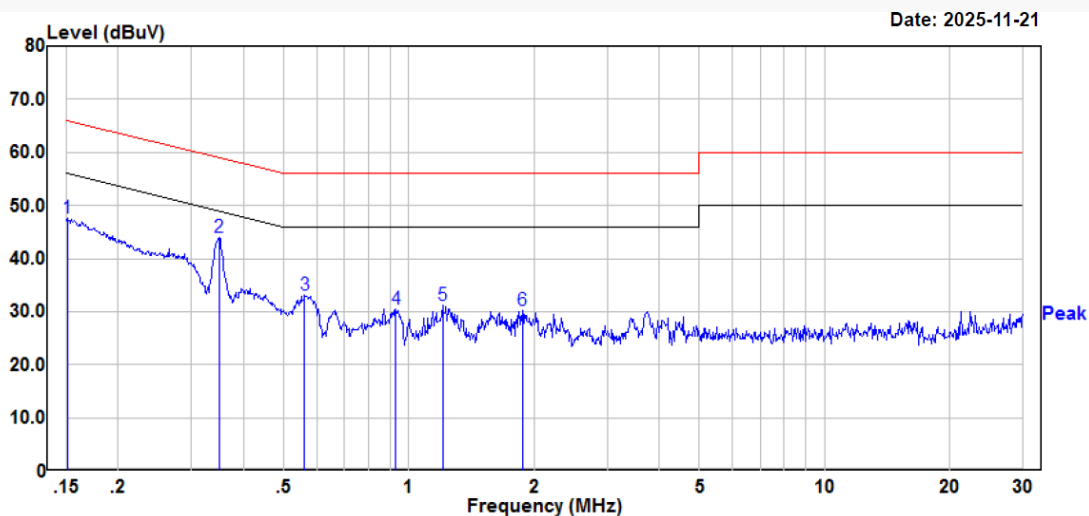
Environmental Conditions & Test Information

Test Date:	2025-11-21
Temperature:	17.6 °C
Relative Humidity:	41 %
ATM Pressure:	102.9 kPa
Test Result:	Pass
Test Engineer:	Jack He

EUT operation mode: Transmitting

Site : CE
Condition : limit\FCC PART 15.207\FCC 15.207 QP.csv Line
DET:Peak
Project No. : RKSC250925001
Model : BETTAGW25
Phase : L
Voltage : 120V/60Hz
Mode : LoRa
Test Equipment : ENV216,ESR3
Receiver Setting : RBW: 9 kHz, Sweep Time: Auto
Temperature : 17.6℃
Humidity : 41%
Atmospheric pressure: 102.9kPa
Test Engineer : Jack He

		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.151	27.69	20.41	48.10	65.96	-17.86 Peak
2	0.350	23.66	20.34	44.00	58.96	-14.96 Peak
3	0.588	13.05	20.22	33.27	56.00	-22.73 Peak
4	0.930	10.79	20.19	30.98	56.00	-25.02 Peak
5	1.248	10.08	20.21	30.29	56.00	-25.71 Peak
6	3.680	9.98	20.20	30.18	56.00	-25.82 Peak



Site : CE
Condition : limit\FCC PART 15.207\FCC 15.207 QP.csv Neutral
: DET:Peak
Project No. : RKSC250925001
Model : BETTAGW25
Phase : N
Voltage : 120V/60Hz
Mode : LoRa
Test Equipment : ENV216,ESR3
Receiver Setting : RBW: 9 kHz, Sweep Time: Auto
Temperature : 17.6℃
Humidity : 41%
Atmospheric pressure: 102.9kPa
Test Engineer : Jack He

	Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.151	27.27	20.39	47.66	65.96	-18.30 Peak
2	0.350	23.66	20.34	44.00	58.96	-14.96 Peak
3	0.562	12.92	20.22	33.14	56.00	-22.86 Peak
4	0.930	10.18	20.19	30.37	56.00	-25.63 Peak
5	1.205	10.87	20.21	31.08	56.00	-24.92 Peak
6	1.877	9.91	20.27	30.18	56.00	-25.82 Peak

SPURIOUS EMISSIONS

Environmental Conditions & Test Information

Test Item:	SPURIOUS EMISSIONS		
	9kHz - 30MHz	30MHz - 1GHz	1 GHz - 10 GHz
Test Date:	2025-12-01	2025-11-20	2025-11-20
Temperature:	24.6 °C	18.5 °C	17.0 °C
Relative Humidity:	47 %	39 %	42 %
ATM Pressure:	102.0 kPa	103.3 kPa	103.3 kPa
Test Result:	Pass	Pass	Pass
Test Engineer:	Scarf Yang	Scarf Yang	Destine Hu

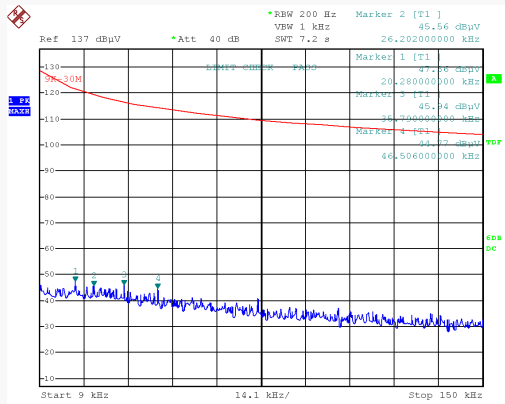
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

EUT operation mode: Transmitting

9kHz~30MHz:

Parallel(worst case)

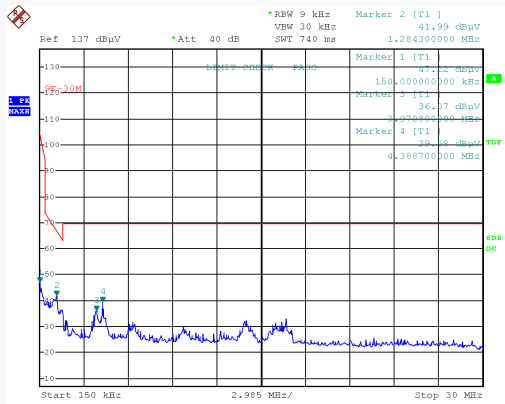
9kHz~150kHz



Project No.RKSC250925001
Date: 1.DEC.2025 17:36:23

Tester:Scarf Yang

150kHz~30MHz



Project No.RKSC250925001
Date: 1.DEC.2025 17:41:45

Tester:Scarf Yang

9 kHz~150 kHz

Frequency (kHz)	Corrected Amplitude (dB μ V/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dB μ V/m) @3m	Margin (dB)
0.02028	47.36	PK	-0.56	121.46	74.1
0.026202	45.56	PK	-0.59	119.24	73.68
0.03579	45.94	PK	-1.54	116.53	70.59
0.046506	44.77	PK	-3.25	114.25	69.48

150 kHz~30 MHz

Frequency (MHz)	Corrected Amplitude (dB μ V/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dB μ V/m) @3m	Margin (dB)
0.150000	47.22	PK	-11.34	104.08	56.86
1.284300	41.99	PK	-28.55	65.43	23.44
3.970800	36.07	PK	-31.90	69.54	33.47
4.388700	39.58	PK	-31.97	69.54	29.96

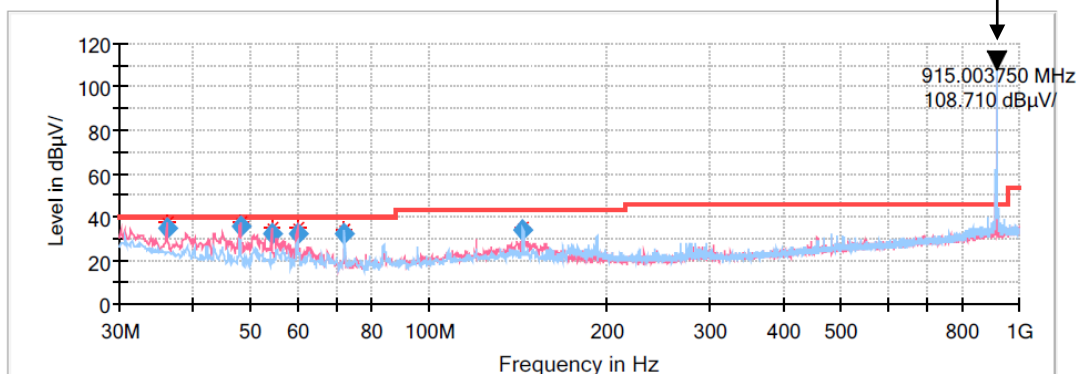
30MHz - 1GHz

Channel: 915 MHz

Common Information

Project No: RKSC250925001
EUT Model: BETTAGW25
Test Mode: 915MHz
Standard: FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Equipment: ESCI, JB3, 310N
Receiver Setting: RBW: 100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature: 18.5°C
Humidity: 39%
Barometric Pressure: 103.3kPa
Test Engineer: Scarf Yang
Test Date: 2025/11/20

SRD Fundamental



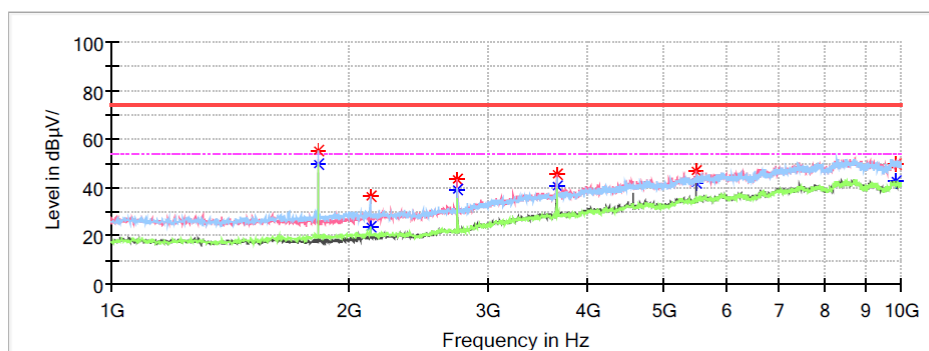
Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
36.062500	35.15	40.00	4.85	V	-8.6
48.187500	35.47	40.00	4.53	V	-16.0
54.250000	32.10	40.00	7.90	V	-17.1
59.948750	32.33	40.00	7.67	V	-17.1
72.195000	32.35	40.00	7.65	H	-16.7
144.702500	34.23	43.50	9.27	H	-11.4

1GHz - 10GHz:**915 MHz****Common Information**

Project No.: RKSC250925001
EUT Model: BETTAGW25
Test Mode: LoRa
Standard: FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment: ESU40,3115,PAM-0118P
Receiver Setting: RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature: 17.0°C
Humidity: 42%
Atmospheric Pressure: 103.3kPa
Test Engineer: Destine Hu
Test Date: 2025/11/20

Full Spectrum

**Critical Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1829.800000	---	49.32	54.00	4.68	H	-11.2
1829.800000	54.90	---	74.00	19.10	H	-11.2
2125.000000	---	23.63	54.00	30.37	H	-9.9
2125.000000	36.12	---	74.00	37.88	H	-9.9
2744.200000	---	39.23	54.00	14.77	V	-8.8
2744.200000	43.18	---	74.00	30.82	V	-8.8
3660.400000	45.64	---	74.00	28.36	V	-5.9
3660.400000	---	40.88	54.00	13.12	V	-5.9
5491.000000	---	41.77	54.00	12.23	V	-1.7
5491.000000	46.69	---	74.00	27.31	V	-1.7
9845.200000	49.59	---	74.00	24.41	V	5.9
9845.200000	---	42.61	54.00	11.39	V	5.9

6 dB EMISSION BANDWIDTH

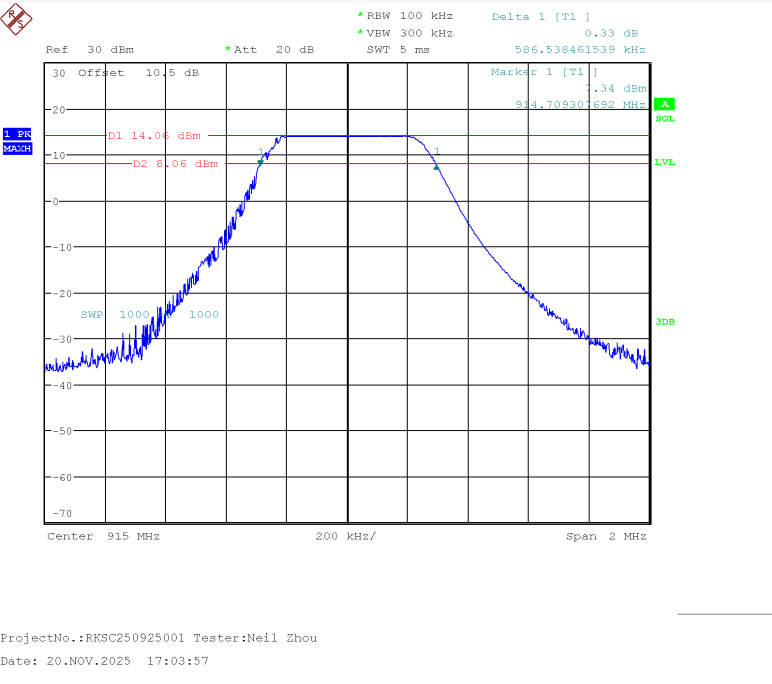
Environmental Conditions & Test Information

Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

EUT operation mode: Transmitting

Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
915	0.587	≥ 0.5

915 MHz



MAXIMUM CONDUCTED OUTPUT POWER

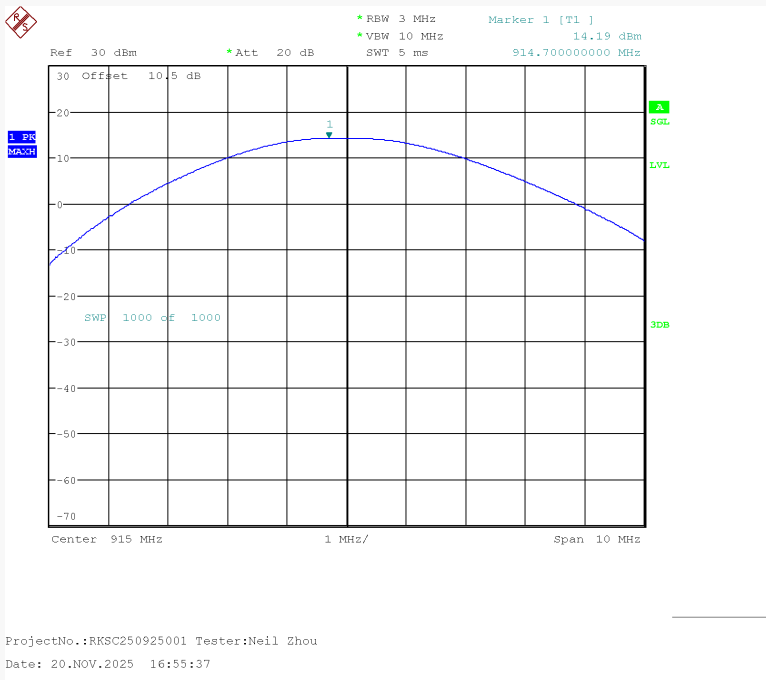
Environmental Conditions & Test Information

Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

EUT operation mode: Transmitting

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
915	14.19	30	Pass

915 MHz



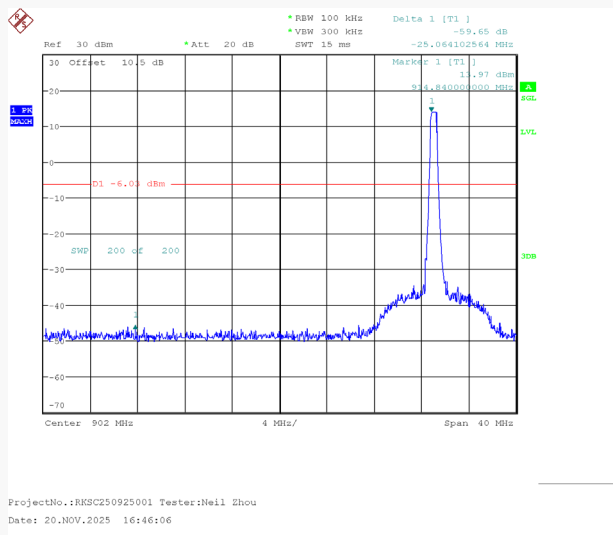
100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

Environmental Conditions & Test Information

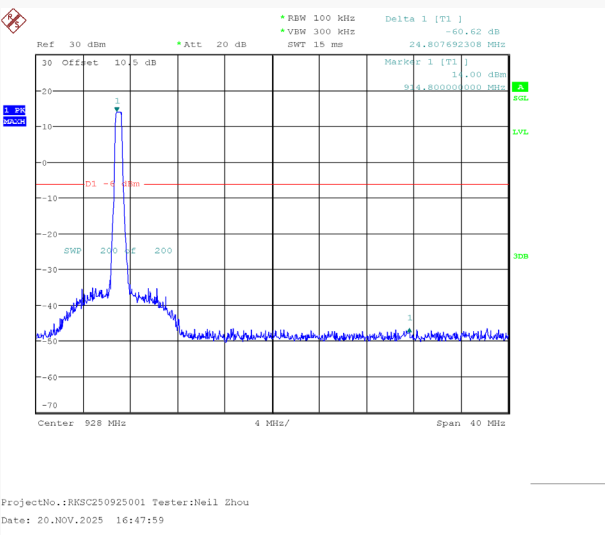
Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

EUT operation mode: Transmitting

Left Side



Right Side



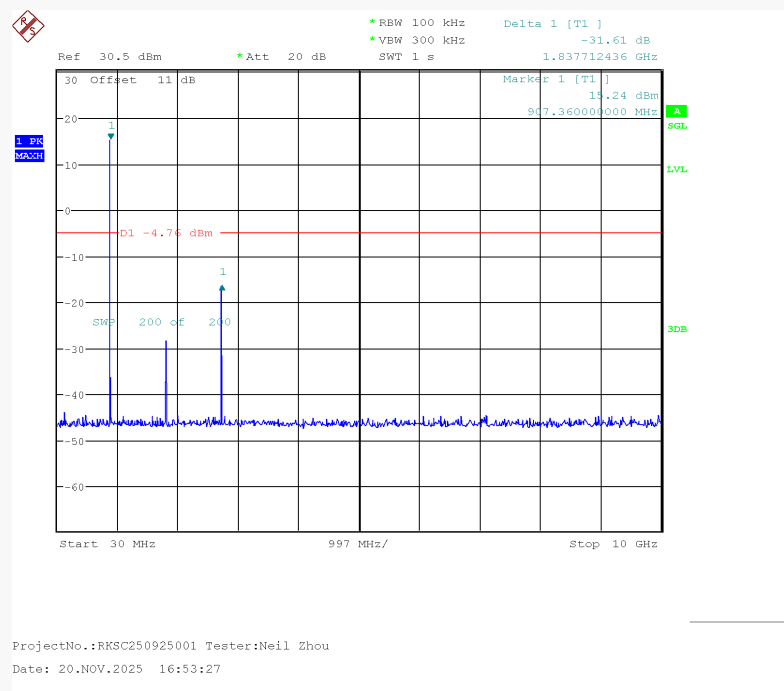
CONDUCTED SPURIOUS EMISSION

Environmental Conditions & Test Information

Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

Frequency (MHz)	Result (dB)	Limit (dB)	Result
915	31.61	20	Pass

915 MHz



Power Spectral Density

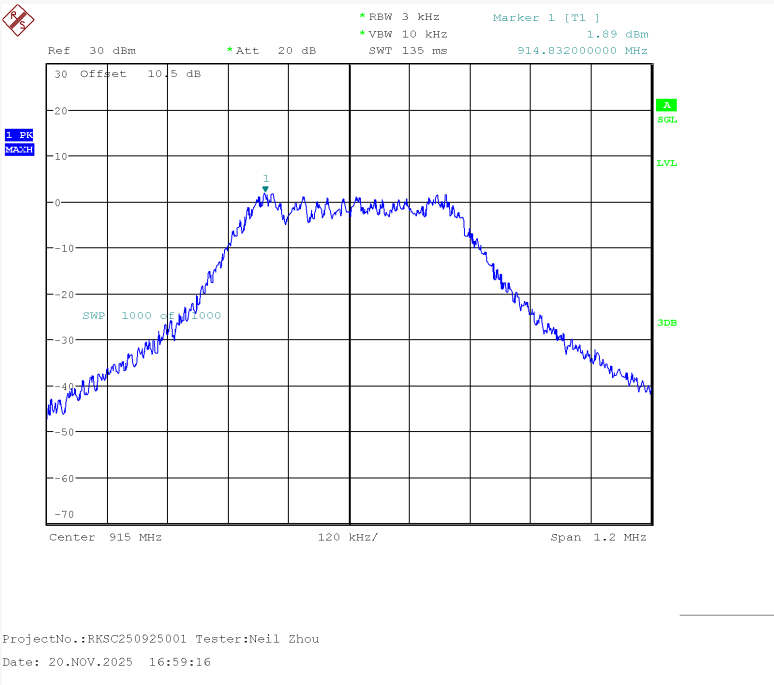
Environmental Conditions & Test Information

Test Date:	2025-11-20
Temperature:	18.5 °C
Relative Humidity:	39 %
ATM Pressure:	103.3 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

EUT operation mode: Transmitting

Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
915	1.89	≤ 8

915 MHz



EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A - EUT EXTERNAL PHOTOGRAPHS and EXHIBIT B - EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C - TEST SETUP PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with “★”.
2. The test data was only valid for the test sample(s).
3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor $k=2$ with the 95.45% confidence interval.

******* END OF REPORT *******