

TEST REPORT

Product Name : X2 Smart Remote
Brand Name : Sofabaton
Model : X2-Hub
Series Model : X2S-Hub, X2 Mini
FCC ID : 2AXDU-X2-HUB
Applicant : **ShenZhen Furrykid Technology Co., Ltd.**
Address : Room 1705B, Zhenye Business Center, 3101 Qianhai Road,
Shenzhen, China
Manufacturer : **ShenZhen Furrykid Technology Co., Ltd.**
Address : Room 1705B, Zhenye Business Center, 3101 Qianhai Road,
Shenzhen, China
Standard(s) : FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of Receipt : Sep 12, 2025
Date of Test : Sep 26, 2025~ Oct 09, 2025
Issued Date : Oct 09, 2025

Issued By: **Dongguan Yaxu (AiT) Technology Limited**
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Reviewed by: Emiya Lin
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Simba Huang



Note: This device has been tested and found to comply with the standard(s) listed, this 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. This report shall not be reproduced except in full, without the written approval of Dongguan Yaxu (AiT) Technology Limited. If there is a need to alter or revise this document, the right belongs to Dongguan Yaxu (AiT) Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.



Report Revise Record

Report Version	Issued Date	Notes
M1	Oct. 09, 2025	Initial Release

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1 TEST SUMMARY

1.1 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](#): American National Standard for Testing Unlicensed Wireless Devices

1.2 Test Summary

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

1.3 Test Facility

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

CNAS-Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2017 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on April 18, 2022

FCC-Registration No.: 703111 Designation Number: CN1313

Dongguan Yaxu (AiT) technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC-Registration No.: 6819 CAB identifier: CN0122

The 3m Semi-anechoic chamber of Dongguan Yaxu (AiT) technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6819A

A2LA-Lab Cert. No.: 6317.01

Dongguan Yaxu (AiT) technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

1.4 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 CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the AiT 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.

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz ± 1.20 dB	(1)
Radiated Emission	9KHz~30MHz ± 3.10 dB	(1)
Radiated Emission	30MHz~1GHz ± 3.75 dB	(1)
Radiated Emission	1GHz~18GHz ± 3.88 dB	(1)
Radiated Emission	18GHz~40GHz ± 3.88 dB	(1)
RF power, conducted	30MHz~6GHz ± 0.16 dB	(1)
RF power density, conducted	± 0.24 dB	(1)
Spurious emissions, conducted	± 0.21 dB	(1)
Temperature	$\pm 1^{\circ}\text{C}$	(1)
Humidity	$\pm 3\%$	(1)
DC and low frequency voltages	$\pm 1.5\%$	(1)
Time	$\pm 2\%$	(1)
Duty cycle	$\pm 2\%$	(1)

The report uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

2 GENERAL INFORMATION

2.1 Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 General Description of EUT

Product Name:	X2 Smart Remote
Model/Type reference:	X2-Hub
Series Model:	X2S-Hub, X2 Mini
Power Rating:	DC 5V from adapter
Adapter information:	Model: HC010A-050200UU Input: 100-240V~ 50/60Hz 0.35A Output: 5.0V=2.0A Manufacturer: Shenzhen Huoniu Technology Co, Ltd.
Hardware Version:	N/A
Software Version:	N/A
Sample(s) Status:	AiTSZ-250909007-1(Normal sample) AiTSZ-250909007-2(Engineer sample)
SRD:	
Operation frequency:	915MHz
Modulation:	GFSK
Channel number:	1
Antenna type:	Spring antenna
Antenna gain:	0.14dBi
Remark: The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual..	

2.3 Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (MHz)
01	915

Note1: The line display in grey was the channel selected for test.

Power setting during the test:

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters:

Test Software Version	Fixed frequency firmware
Frequency	915MHz
Power setting	default

2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
/	/	/	/	/	/
/	/	/	/	/	/

2.5 Equipment List for the Test

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	Spectrum Analyzer	R&S	FSV40	101470	2025.09.26	2026.09.25
2	EMI Measuring Receiver	R&S	ESPI	100773	2025.09.25	2026.09.24
3	Low Noise Pre Amplifier	HP	HP8447E	1937A01855	2025.09.25	2026.09.24
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2025.09.25	2026.09.24
5	Passive Loop	ETS	6512	00165355	2024.09.04	2026.09.03
6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB-9160	9160-3206	2024.08.29	2026.08.28
7	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	452	2024.08.29	2026.08.28
8	SHF-EHF Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367	2023.09.12	2026.09.11
9	EMI Test Receiver	R&S	ESCI	100124	2025.09.25	2026.09.24

10	LISN	R&S	ESH3-Z5	892785/016	2025.09.26	2026.09.25
11	LISN	KYORITSU	KNW-242	8-837-4	2025.09.26	2026.09.25
12	Pro.Temp&Humi.chamber	MENTEK	MHP-150-1C	MAA08112501	2025.09.25	2026.09.24
14	Signal Generator	Agilent	N5182A	MY50143009	2025.09.26	2026.09.25
15	Wideband Radio communication tester	R&S	CMW500	135866	2025.09.23	2026.09.22
17	Pulse Limiter	R&S	ESH3-Z2	03578810.54	2025.09.25	2026.09.24
18	Switch	MFJ Rhinos	MFJ-2702	CZ3457	2025.09.25	2026.09.24
19	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	N/A	N/A
20	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
21	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
23	temporary antenna connector(Note)	NTS	R001	N/A	N/A	N/A
24	Spectrum Analyzer	Agilent	N9020A	MY53421570	2025.09.23	2026.09.22
25	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

3 TEST CONDITIONS AND RESULTS

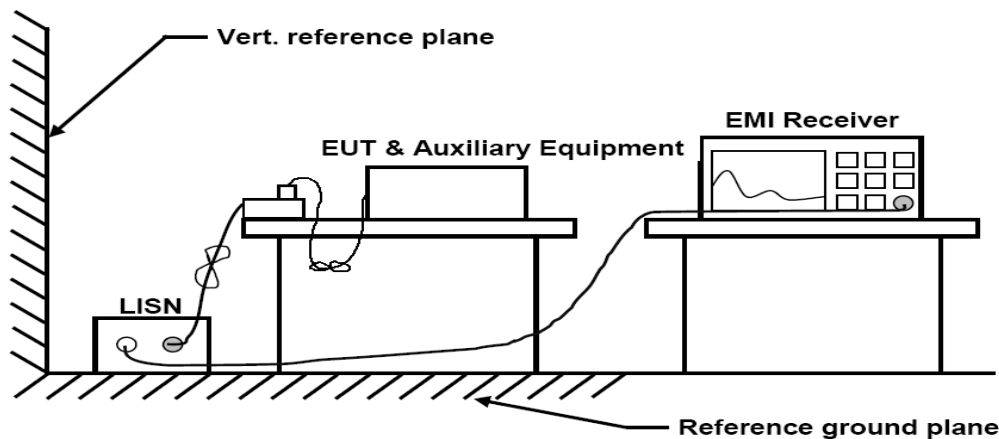
3.1 Conducted Emissions Test

LIMIT

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 CONFIGURATION



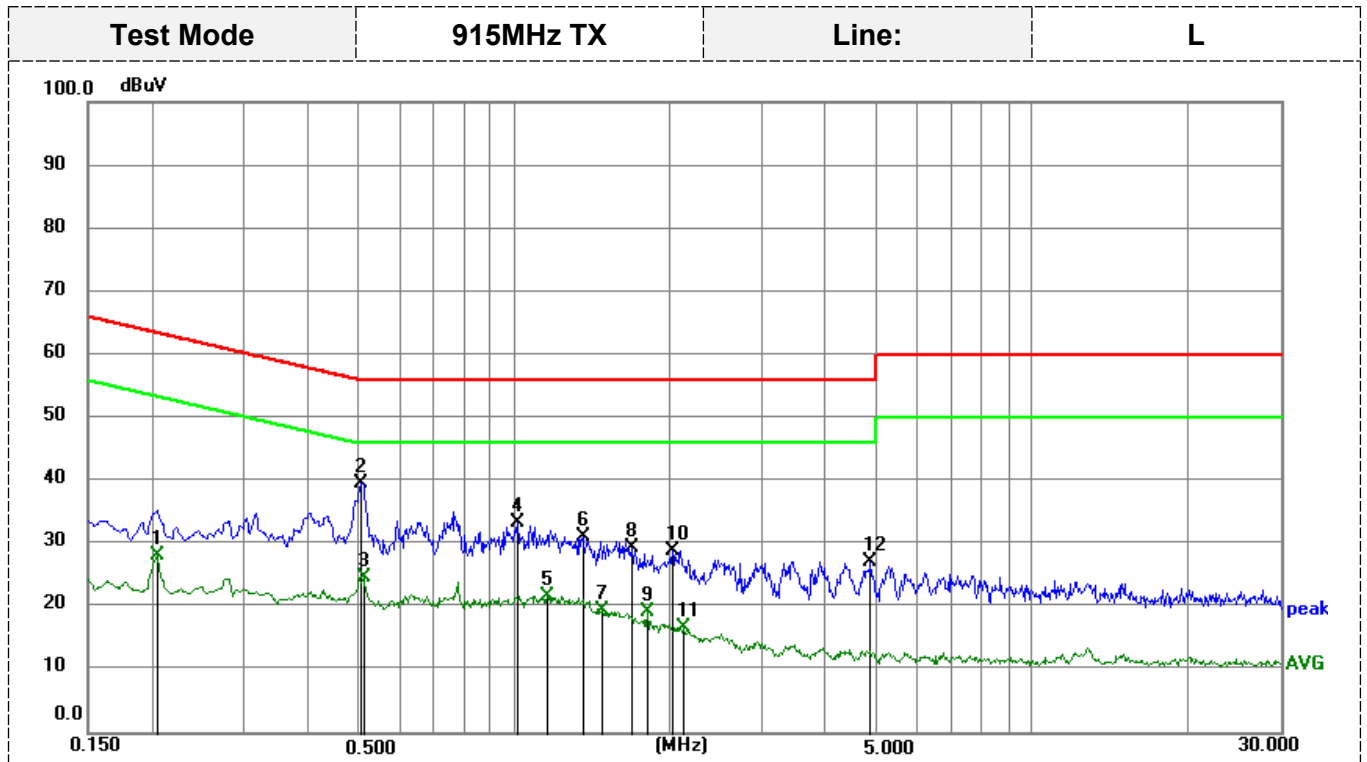
TEST PROCEDURE

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 C63.10:2020.
2. Support equipment, if needed, was placed as per ANSI C63.10:2020.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2020.
4. The adapter received AC120V/60Hz 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.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

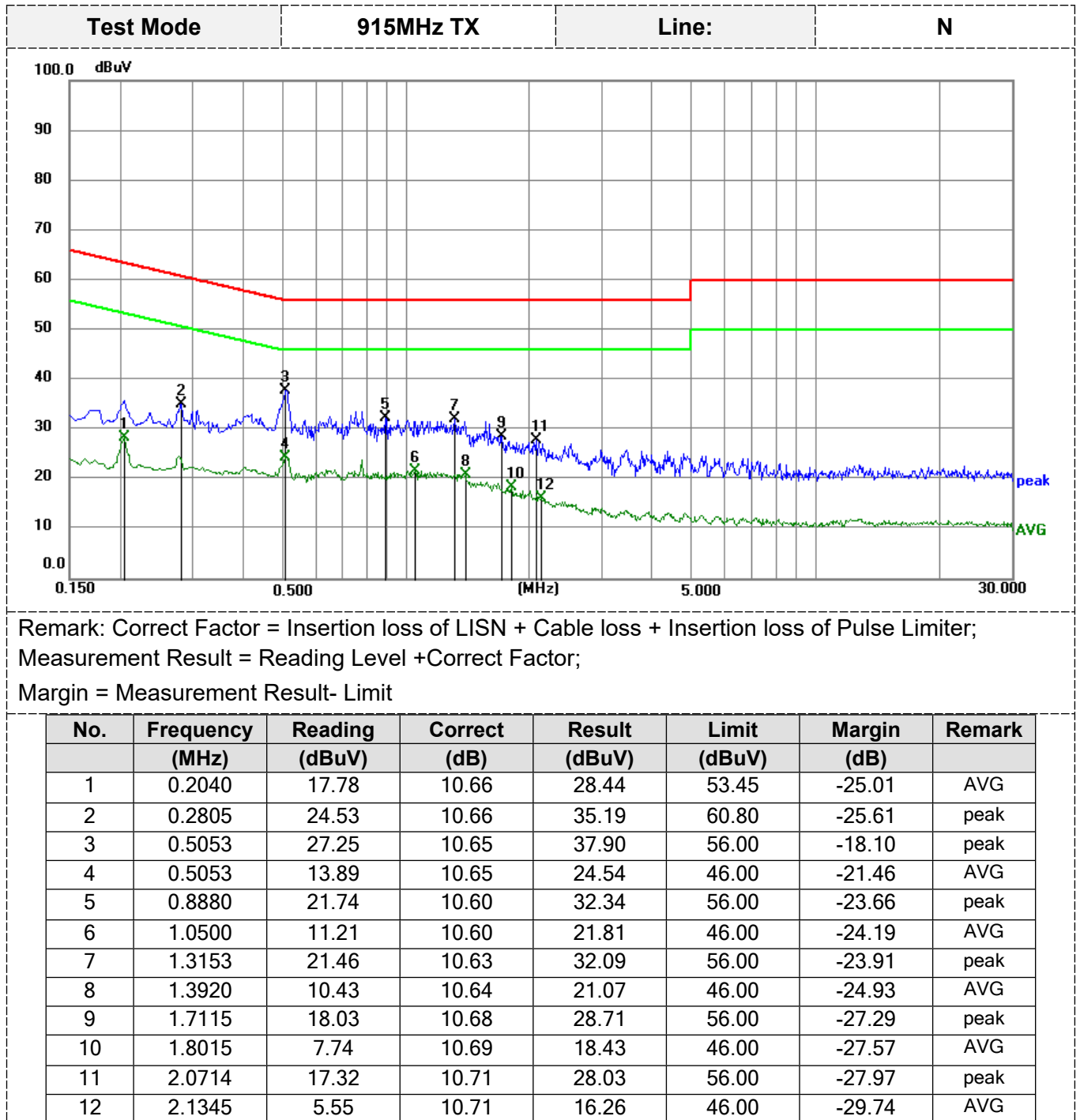
Remark:

- 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:



Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;
Measurement Result = Reading Level + Correct Factor;
Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2040	17.43	10.66	28.09	53.45	-25.36	AVG
2	0.5055	29.04	10.65	39.69	56.00	-16.31	peak
3	0.5100	14.03	10.65	24.68	46.00	-21.32	AVG
4	1.0140	22.68	10.59	33.27	56.00	-22.73	peak
5	1.1580	11.19	10.61	21.80	46.00	-24.20	AVG
6	1.3560	20.54	10.63	31.17	56.00	-24.83	peak
7	1.4775	8.76	10.65	19.41	46.00	-26.59	AVG
8	1.6845	18.80	10.67	29.47	56.00	-26.53	peak
9	1.8015	8.59	10.69	19.28	46.00	-26.72	AVG
10	2.0220	18.24	10.71	28.95	56.00	-27.05	peak
11	2.1210	6.08	10.71	16.79	46.00	-29.21	AVG
12	4.8570	16.35	10.89	27.24	56.00	-28.76	peak



3.2 Radiated Emissions and Band Edge

Limit

According 15.249, the field strength of emissions from intentional radiators operated within 902-928 MHz shall not exceed 94dB μ V/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.

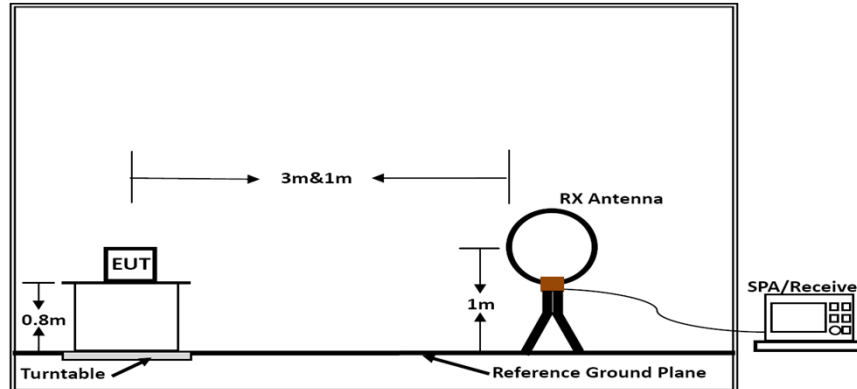
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/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

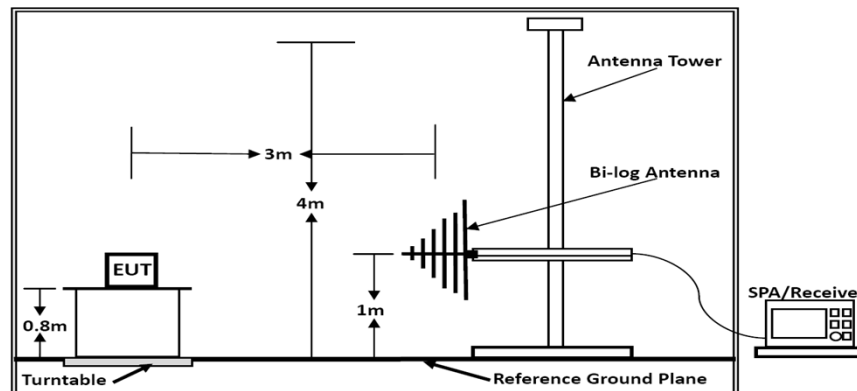
TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



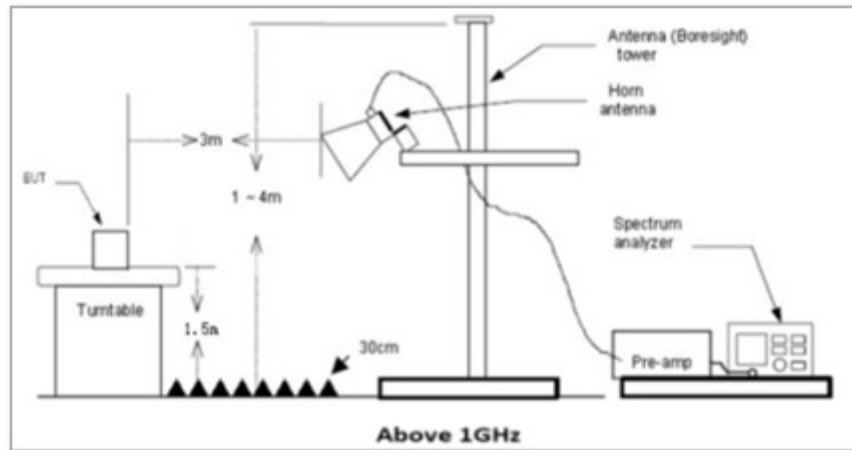
Below 30MHz

(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



Below 1GHz

(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Test Procedure

- Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until all frequency measurements have been completed.
- Radiated emission test frequency band from 9KHz to 10GHz.
- 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	Bilog Antenna	3
1GHz-10GHz	Horn Antenna	3

- Setting test receiver/spectrum as following table states:

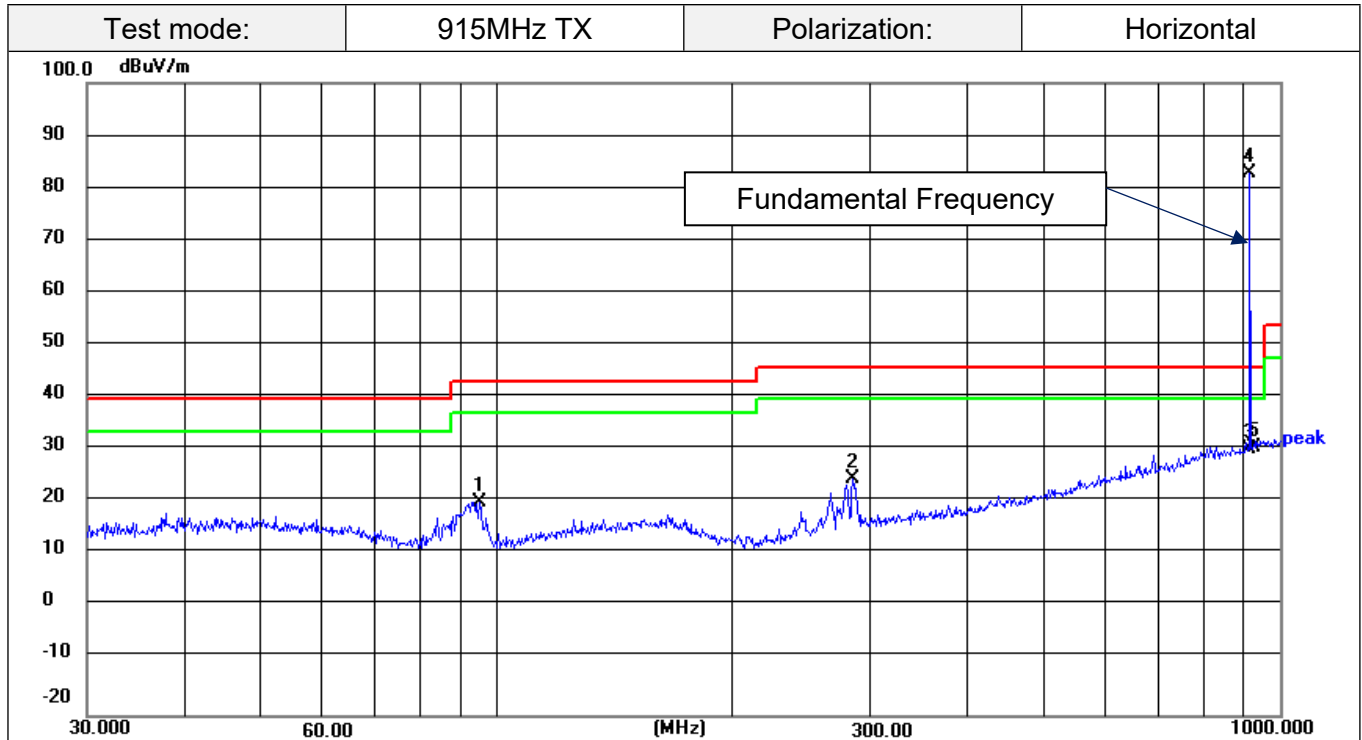
Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-10GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz,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

TEST RESULTS

Remark:

- Radiated Emission measured from 9 KHz to 10GHz and recorded worst case.
- For below 1GHz testing recorded worst at highest channel.
- Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and the emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report.

For 30MHz-1GHz



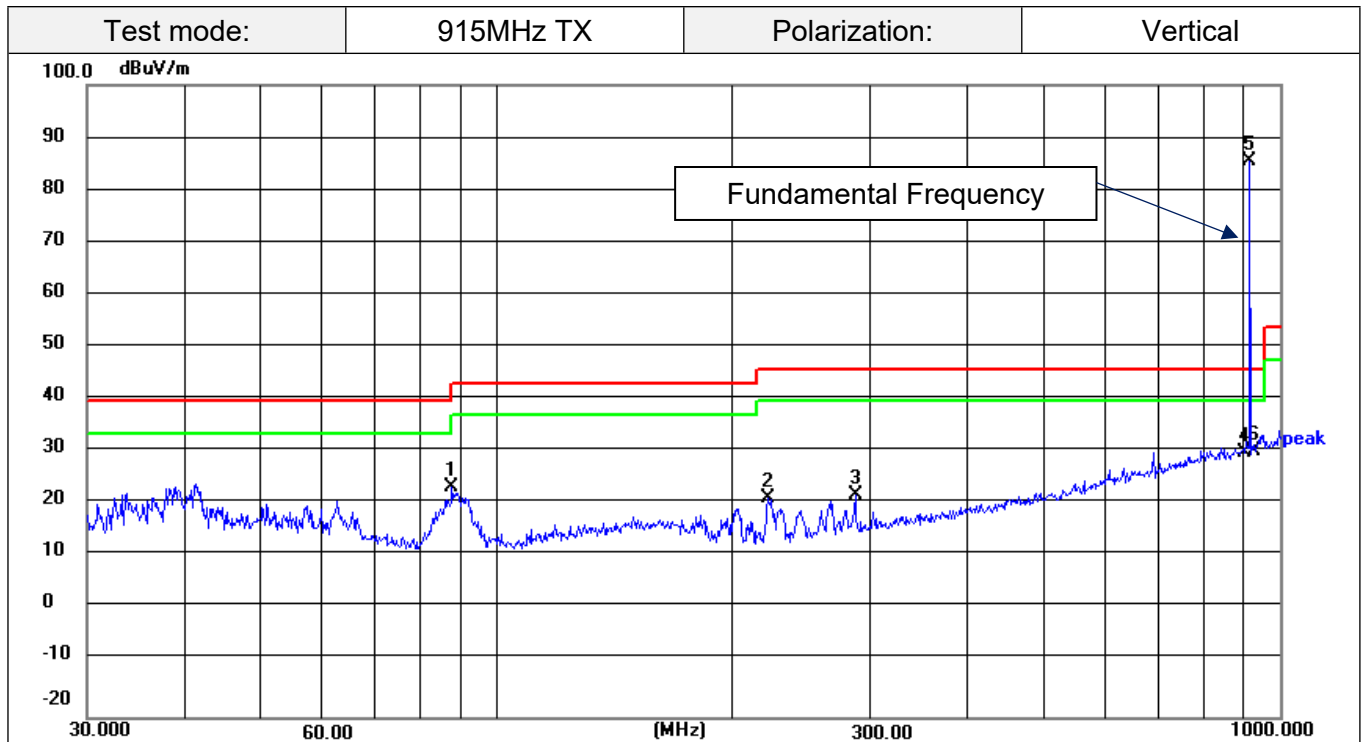
Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	95.0930	41.30	-20.65	20.65	43.50	-22.85	peak
2	284.9766	42.28	-17.37	24.91	46.00	-21.09	peak
3	902.0000	35.33	-4.77	30.56	46.00	-15.44	peak
4	915.0000	87.25	-4.40	82.85	114.00	-31.15	peak
4	915.0000	84.85	-4.40	80.45	94.00	-13.55	QP
5	928.0000	35.10	-4.09	31.01	46.00	-14.99	peak



Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	87.7246	44.81	-20.98	23.83	40.00	-16.17	peak
2	222.1697	41.79	-20.18	21.61	46.00	-24.39	peak
3	286.9823	39.62	-17.31	22.31	46.00	-23.69	peak
4	902.0000	35.03	-4.77	30.26	46.00	-15.74	peak
5	916.0000	90.04	-4.40	85.64	114.00	-28.36	peak
5	916.0000	87.65	-4.40	83.25	94.00	-10.75	QP
6	928.0000	34.87	-4.09	30.78	46.00	-15.22	peak

GFSK (above 1GHz)

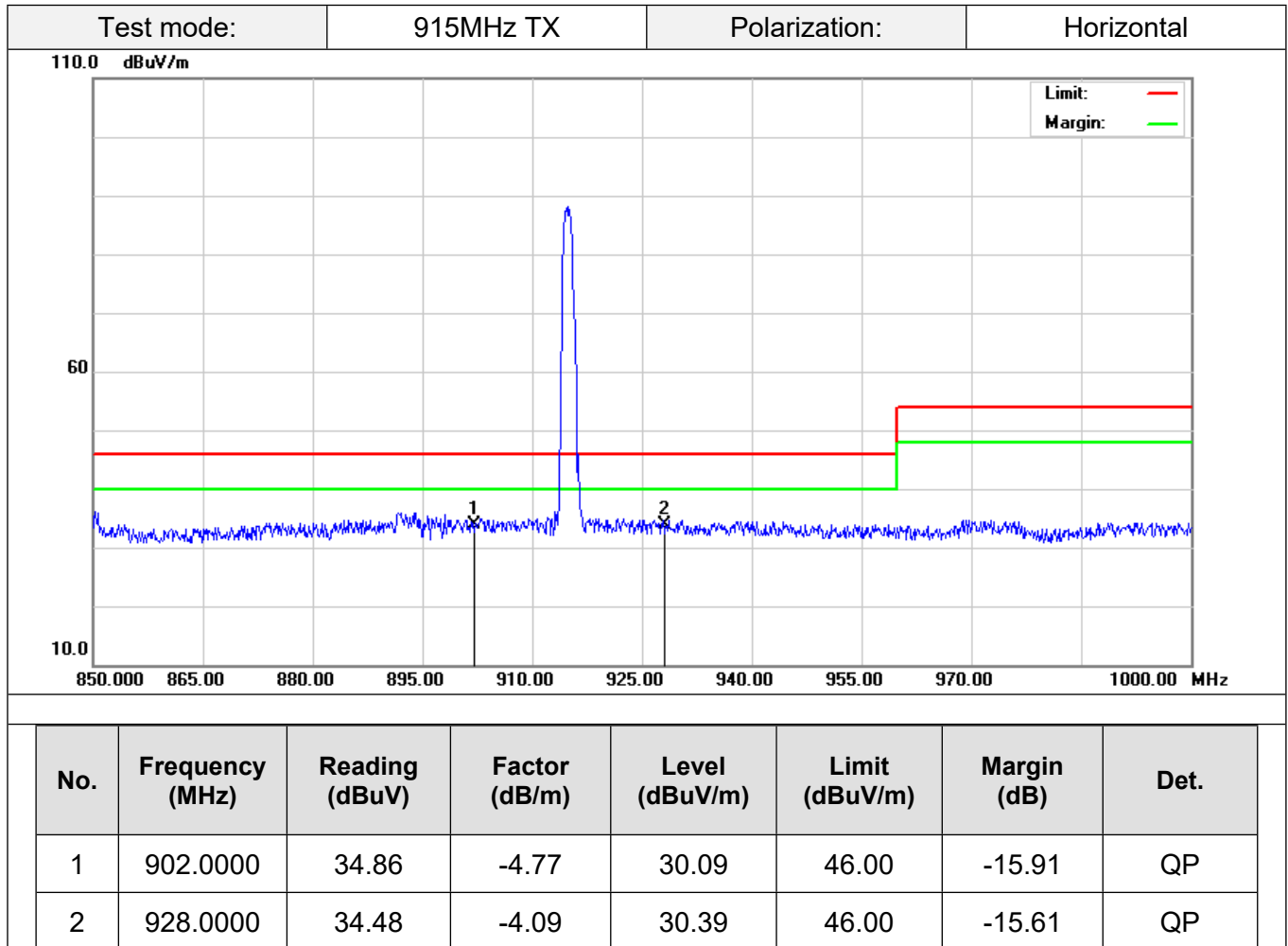
Frequency(MHz):		915MHz		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
1830.00	76.73	-16.46	60.27	74	-13.73	PEAK
1830.00	67.31	-16.46	50.85	54	-3.15	AVG
2745.30	71.04	-12.53	58.51	74	-15.49	PEAK
2745.30	61.21	-12.53	48.68	54	-5.32	AVG
3660.00	66.94	-10.06	56.88	74	-17.12	PEAK
3660.00	59.32	-10.06	49.26	54	-4.74	AVG

Frequency(MHz):		915MHz		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
1830.00	77.30	-16.46	60.84	74	-13.16	PEAK
1830.00	67.74	-16.46	51.28	54	-2.72	AVG
2745.30	71.21	-12.53	58.68	74	-15.32	PEAK
2745.30	60.55	-12.53	48.02	54	-5.98	AVG
3660.00	67.55	-10.06	57.49	74	-16.51	PEAK
3660.00	59.50	-10.06	49.44	54	-4.56	AVG

REMARKS:

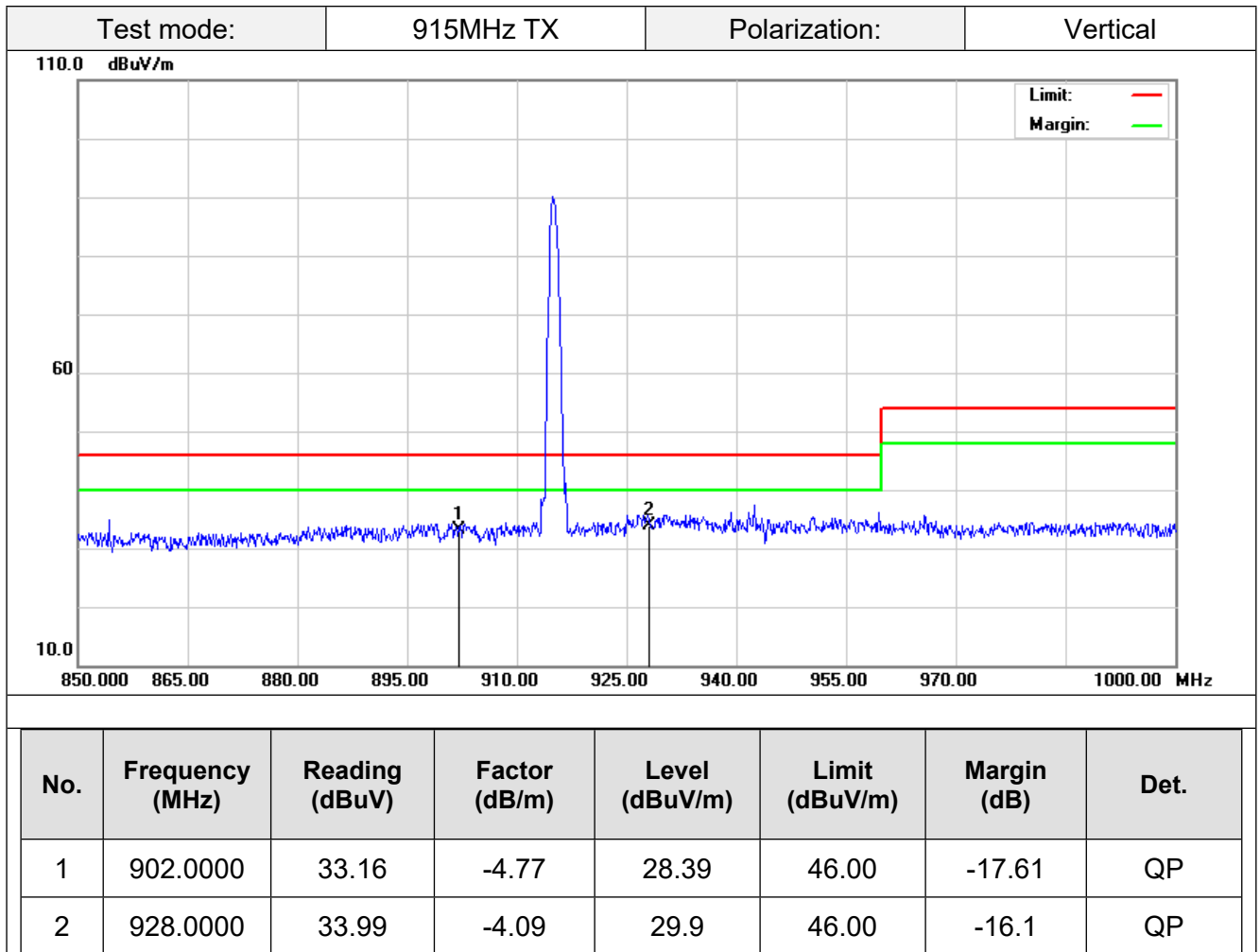
1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Radiation Restricted band



REMARKS:

1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
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REMARKS:

1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
4. Other emission levels are attenuated 20dB below the limit and not recorded in report.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

3.3 20dB Bandwidth

Limit

N/A

Test Procedure

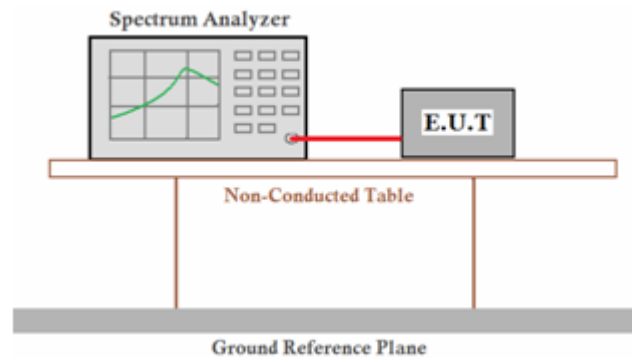
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Place the EUT on the table and set it in transmitting mode.

Use the following spectrum analyzer settings:

- 1) Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW $\geq 1\%$ of the 20 dB bandwidth, VBW $\geq$ RBW.
- 3) Detector function = peak.
- 4) Trace = max hold.

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

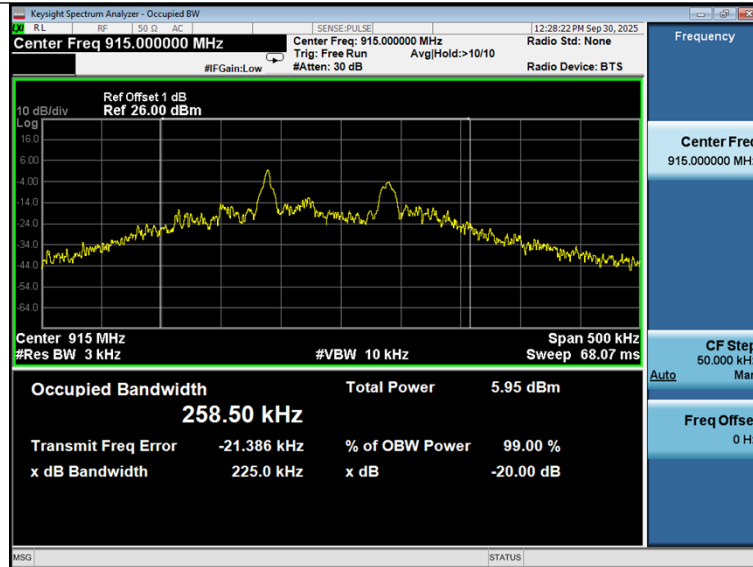
Test Configuration



Test Results

Modulation	Test Frequency (MHz)	20dB bandwidth (MHz)	Result
GFSK	915	0.225	Pass

Test plot as follows:



915 MHz

3.4 Antenna Requirement

Standard Applicable

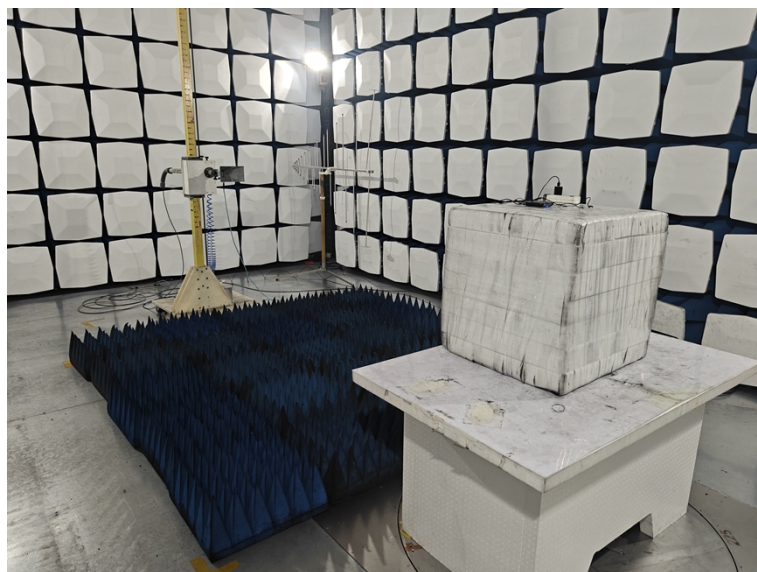
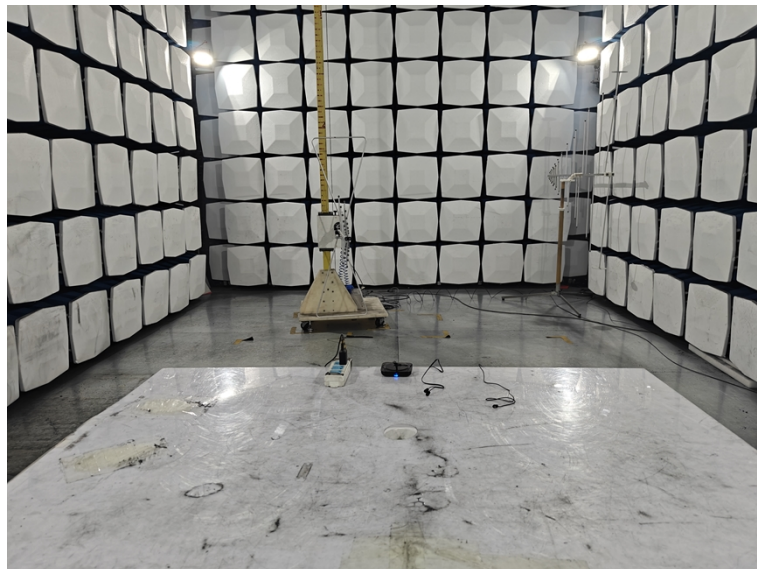
For intentional device, according to FCC 47 CFR Section 15.203:

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, 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

Test Result

EUT has an internal Spring antenna for 915MHz that complied with 15.203 antenna requirement.

4 Test Setup Photographs of EUT





5 Photos of EUT

Please refer to test Report No.: AiTSZ-250909007FW1.

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