TEST REPORT

Applicant Name :	SolarEdge Technologies Ltd
Address :	1 HaMada Street, Herzeliya 467335 Israel
Report Number :	SZ1240126-06326E-RF
FCC ID:	2AGPT-ENET2
IC:	20916-ENET2

Test Standard (s)

FCC PART 15.247; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2; RSS-247 ISSUE 3, AUGUST 2023

Sample Description

Product Type:	SolarEdge Energy Net
Model No.:	ENET2
Multiple Model(s) No.:	N/A
Trade Mark:	solaredge
Date Received:	2024/01/26
Issue Date:	2024/07/10

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

April Zhang

April Zhang
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ1240126-06326E-RF	Original Report	2024/07/10

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

HVIN	AP1547-SG-18, AP1547-SG-20, AP1547-SG-19, AP1547-SG-17, AP1547-SG-21
FVIN	V4
Product	SolarEdge Energy Net
Tested Model	ENET2
Multiple Model(s)	N/A
Frequency Range	906-924MHz
Transmit Power	18.67dBm
Modulation Technique	OQPSK
Antenna Specification#	AS4034-1/AS4035-1: 0dBi AS4038-1: 2dBi (It is provided by the manufacturer)
Voltage Range	DC 3.3V
Sample serial number	With UFL Connector: 27OT-2 With SMA Connector: 27OT-1 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023 of the Innovation, Science and Economic Development Canada 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, and RSS-GEN, RSS-247.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9 kHz~150 KHz	3.94dB(k=2, 95% level of confidence)
	150 kHz ~30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode.

Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	906	6	916
2	908	7	918
3	910	8	920
4	912	9	922
5	914	10	924

EUT was test on channel 1, 5, 10.

Equipment Modifications

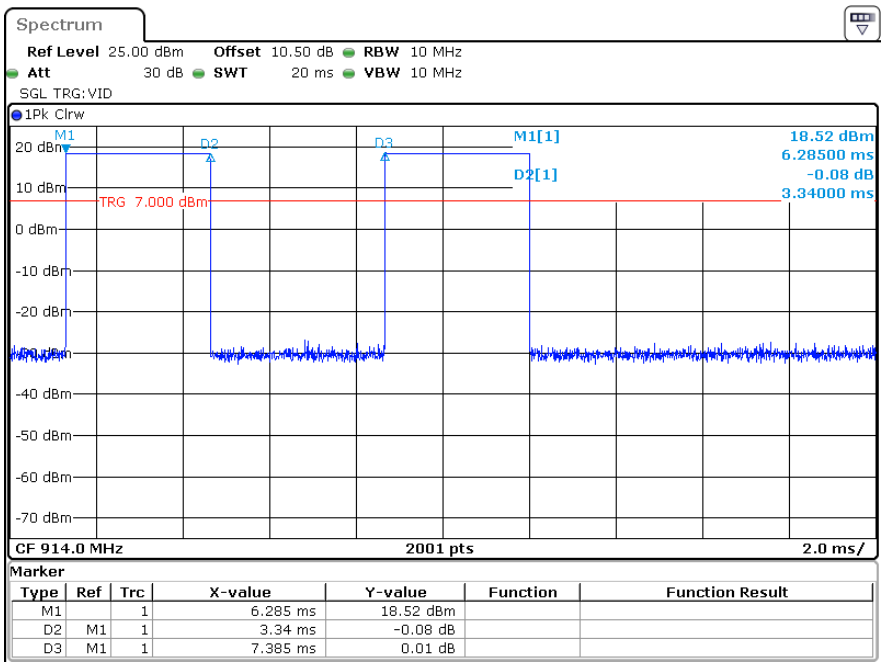
No modification was made to the EUT tested.

EUT Exercise Software

"SolarEdge Mercurymon.applicationg.exe #" exercise software was used and the power level is 20#. The software and power level was provided by the manufacturer.

Duty cycle

Test Frequency (MHz)	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	VBW Setting (Hz)
914	3.34	/	/	299	300
Test only was performed at the module with UFL Connector.					



ProjectNo.:SZ1240126-06326E Tester:Bamboo Zhan

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Support Equipment List and Details

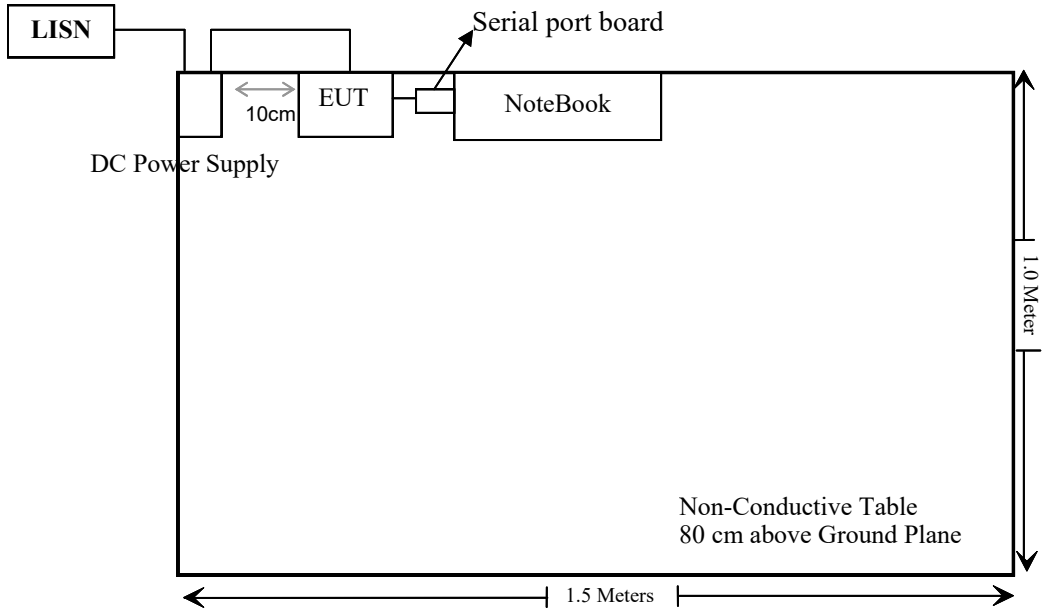
Manufacturer	Description	Model	Serial Number
TDK	DC power supply	Unknown	Unknown
Lenovo	Notebook	Lenovo G40-70m	YB08745628
Unknown	Serial port board	Unknown	Unknown

External I/O Cable

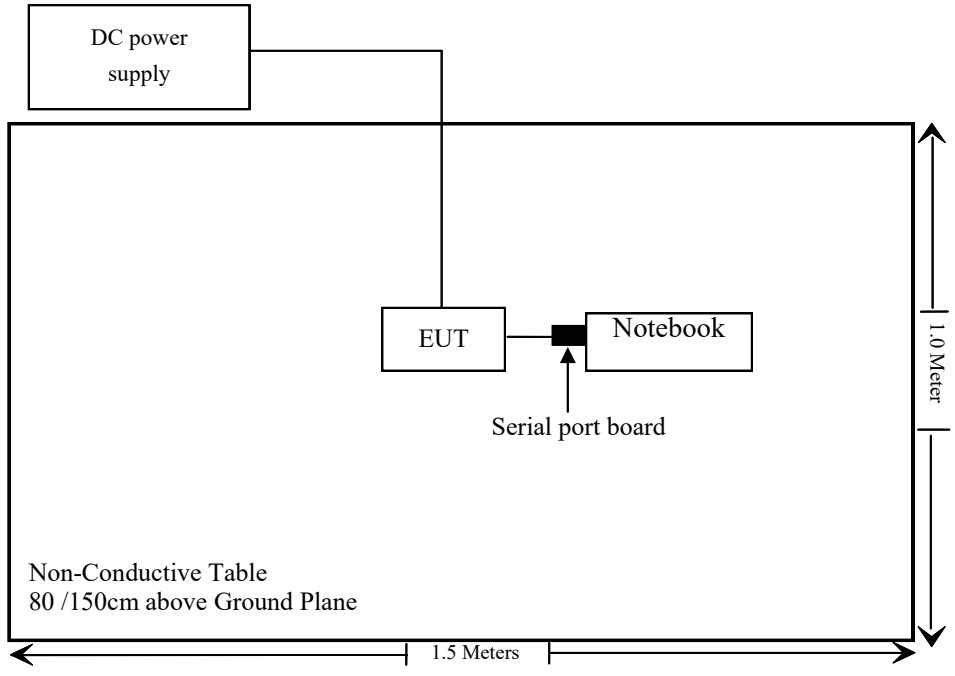
Cable Description	Length (m)	From Port	To
Un-shielding Detachable DC Cable	1.0	EUT	DC Power supply
Un-shielding Detachable AC Cable	1.5	LISN	DC Power supply

Block Diagram of Test Setup

For Conducted Emission:



For Radiate Emissions:



SUMMARY OF TEST RESULTS

FCC Rules	ISEDC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091	/	MPE-Based Exemption	Compliant
/	RSS-102	Exemption Limits for Routine Evaluation – RF Exposure Evaluation	Compliant
FCC §15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
FCC §15.207(a)	RSS-Gen §8.8	AC Line Conducted Emissions	Compliant
FCC §15.205, §15.209, §15.247(d)	RSS-GEN § 8.10 & RSS-247 § 5.5	Spurious Emissions	Compliant
FCC §15.247 (a)(2)	RSS- Gen§6.7 RSS-247 § 5.2 (a)	6 dB Emission Bandwidth & Occupied Bandwidth	Compliant
FCC §15.247(b)(3)	RSS-247 § 5.4(d)	Maximum Conducted Output Power	Compliant
FCC §15.247(d)	RSS-247 § 5.5	100 kHz Bandwidth of Frequency Band Edge	Compliant
FCC §15.247(e)	RSS-247 § 5.2 (b)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2023/08/03	2024/08/02
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218	NCR	NCR
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2024/07/19
ETS	Passive Loop Antenna	6512	29604	2023/07/07	2024/07/06
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Antenna	BBHA9120D (1201)	1143	2023/07/26	2024/07/25
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
JD	Filter Switch Unit	DT7210FSU	DQ77930	NCR	NCR
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	NCR	NCR
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
RF Conducted Test					
R&S	SPECTRUM ANALYZER	FSU26	200120	2024/01/08	2025/01/07
R&S	spectrum analyzer	FSV40	101942	2023/12/18	2024/12/17
Unknown	10dB Attenuator	Unknown	F-03-EM190	2023/07/04	2024/07/03
ANRITSU	Microwave peak power sensor	MA24418A	12622	2023/08/08	2024/08/07
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2023/06/08	2024/06/07
Unknown	RF Cable	65475	01670515	2023/07/04	2024/07/03

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

FCC §15.247 (i) & §1.1307 (B) (3) & §2.1091- RF EXPOSURE

Applicable Standard

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power. For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

f = frequency in MHz;
R = minimum separation distance from the body of a nearby person (appropriate units, e.g., m);

Result

For worst case:

Mode	Frequency (MHz)	Tune up conducted power#	Antenna Gain#		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
OQPSK	906-924	19.5	2	-0.15	19.35	86.10	0.2	464

Note 1: The tune-up power and antenna gain was declared by the applicant.
Note 2: 0dBd=2.15dBi.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant

RSS-102 § 2.5.2 –EXEMPTION LIMITS FOR ROUTINE EVALUATION-RF EXPOSURE EVALUATION

Applicable Standard

According to RSS-102 § (2.5.2):

2.5.2 Exemption Limits for Routine Evaluation — RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz[6] and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $22.48/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Calculated Data:

For worst case:

Mode	Frequency (MHz)	Maximum tune-up conducted power	Antenna Gain#	Maximum tune-up EIRP		Evaluation Distance (cm)	Limit (mW)
		(dBm)	(dBi)	(dBm)	(mW)		
OQPSK	906-924	19.5	2	21.50	141.25	20	1375

Note: The tune up conducted power and antenna gain was declared by the applicant.

To maintain compliance with the IC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: The RF Exposure evaluation can be exempted.

FCC §15.203& RSS-GEN §6.8 - 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 compliance 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 one antenna arrangement which was permanently attached by an UFL Connector, and three external antennas with unique antenna connector, the detail information as follows, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Connector	Antenna Mode	Antenna Type	Antenna Gain# (dBi)	Impedance	Frequency Range (MHz)
UFL (Permanently attached)	AS4035-1	PCB	0	50Ω	902-928
SMA (Unique type)	AS4034-1	Monopole	0	50Ω	902-928
	AS4035-1	PCB	0	50Ω	902-928
	AS4038-1	Dipole	2	50Ω	902-928

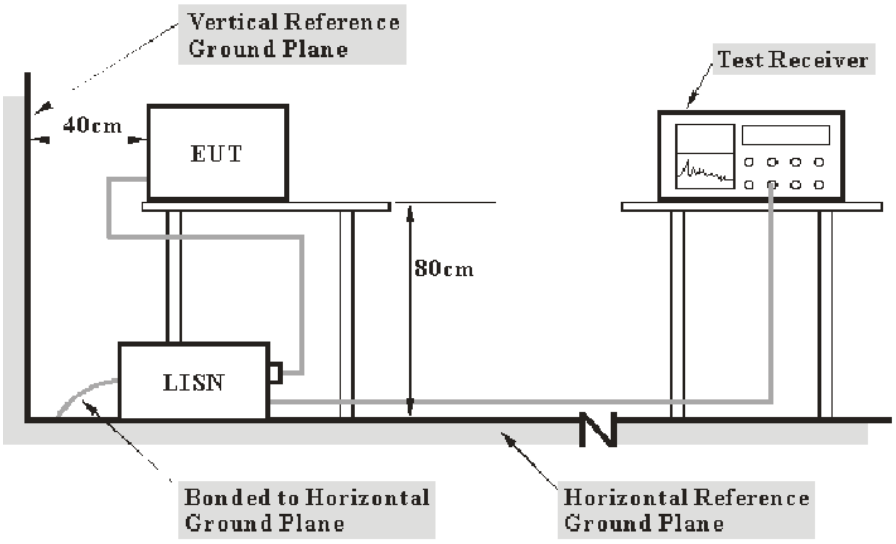
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

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.

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

Test Procedure

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

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

All final data was recorded in the Quasi-peak and average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

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 below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit
Level = Read Level + Factor

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

Environmental Conditions

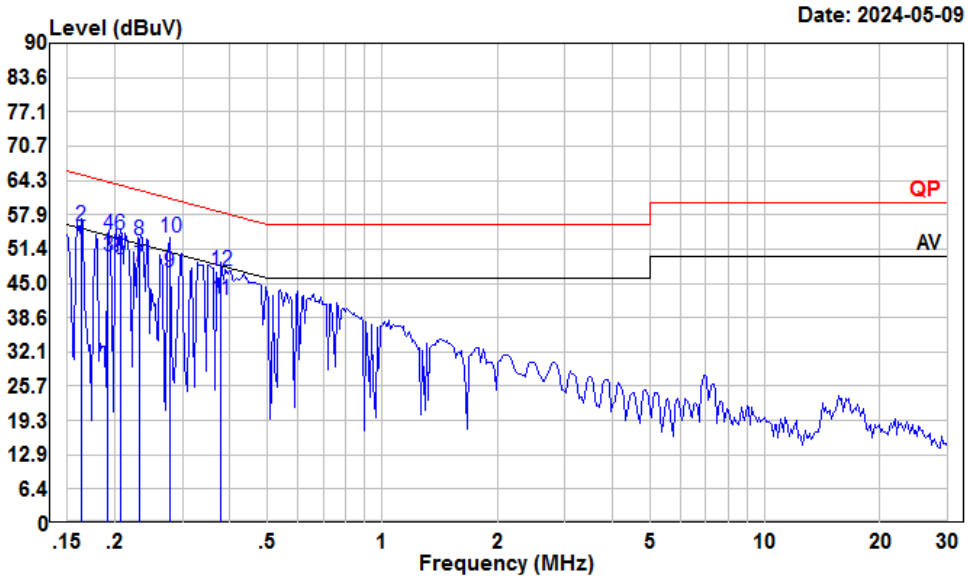
Temperature:	26 ℃
Relative Humidity:	70 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-05-09.

EUT operation mode: Transmitting (Maximum output power mode, Low Channel)

With UFL Connector:

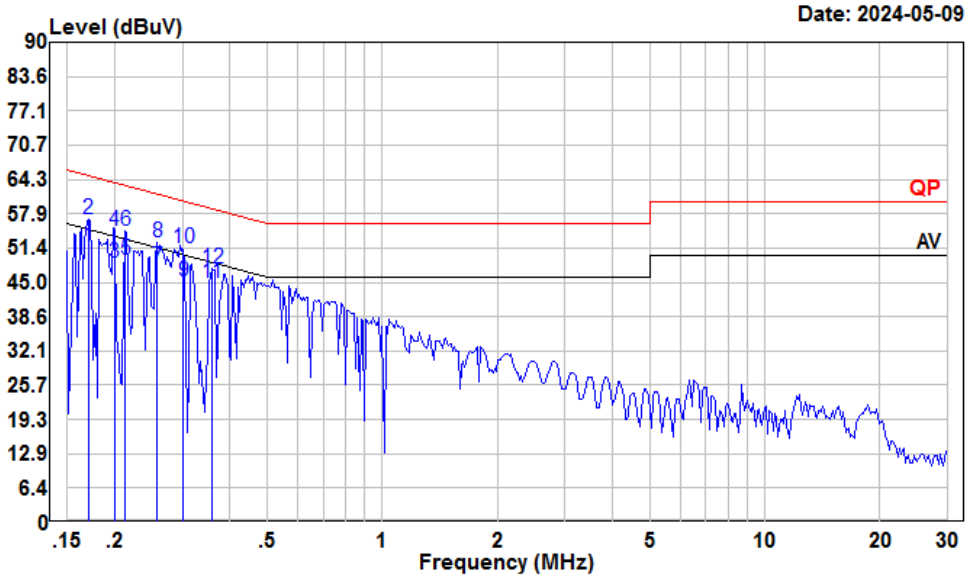
AC 120V/60 Hz, Line



Condition: Line
Project : SZ1240126-06326E-RF
Tester : Macy shi
Note : Lora DTS

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	31.69	52.24	10.40	10.15	55.30	-3.06	Average
2	0.16	35.31	55.86	10.40	10.15	65.30	-9.44	QP
3	0.19	29.60	50.11	10.40	10.11	53.98	-3.87	Average
4	0.19	33.56	54.07	10.40	10.11	63.98	-9.91	QP
5	0.21	29.09	49.58	10.39	10.10	53.36	-3.78	Average
6	0.21	33.76	54.25	10.39	10.10	63.36	-9.11	QP
7	0.23	27.68	48.22	10.37	10.17	52.39	-4.17	Average
8	0.23	32.37	52.91	10.37	10.17	62.39	-9.48	QP
9	0.28	26.68	47.17	10.33	10.16	50.90	-3.73	Average
10	0.28	33.03	53.52	10.33	10.16	60.90	-7.38	QP
11	0.38	21.40	41.85	10.26	10.19	48.34	-6.49	Average
12	0.38	26.74	47.19	10.26	10.19	58.34	-11.15	QP

AC 120V/60 Hz, Neutral

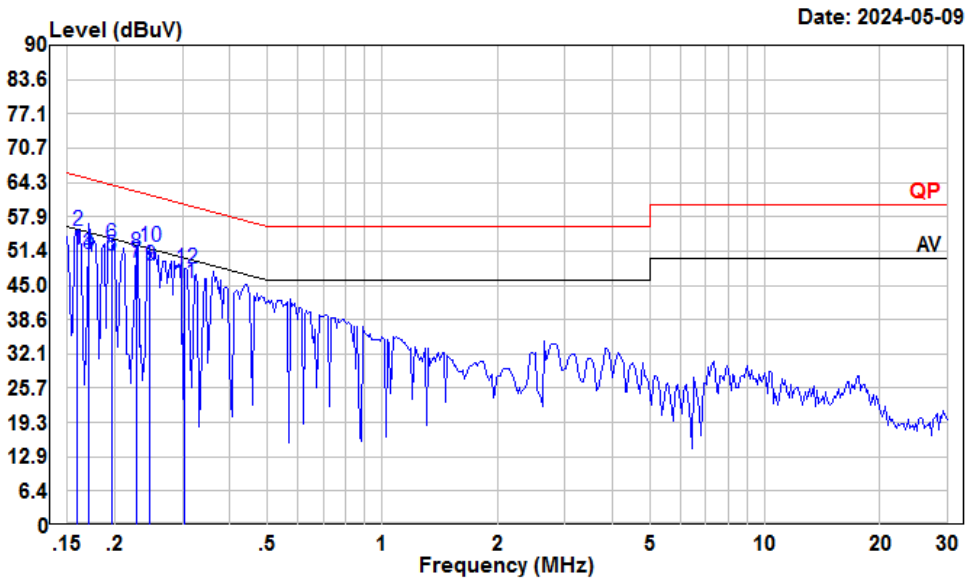


Condition: Neutral
Project : SZ1240126-06326E-RF
Tester : Macy shi
Note : Lora DTS

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.17	31.20	51.75	10.40	10.15	54.94	-3.19	Average
2	0.17	36.26	56.81	10.40	10.15	64.94	-8.13	QP
3	0.20	28.19	48.68	10.40	10.09	53.62	-4.94	Average
4	0.20	34.30	54.79	10.40	10.09	63.62	-8.83	QP
5	0.21	28.69	49.20	10.39	10.12	53.10	-3.90	Average
6	0.21	34.16	54.67	10.39	10.12	63.10	-8.43	QP
7	0.26	27.25	47.79	10.34	10.20	51.51	-3.72	Average
8	0.26	31.90	52.44	10.34	10.20	61.51	-9.07	QP
9	0.30	24.68	45.11	10.31	10.12	50.19	-5.08	Average
10	0.30	30.92	51.35	10.31	10.12	60.19	-8.84	QP
11	0.36	24.30	44.74	10.27	10.17	48.78	-4.04	Average
12	0.36	27.16	47.60	10.27	10.17	58.78	-11.18	QP

With SMA Connector:

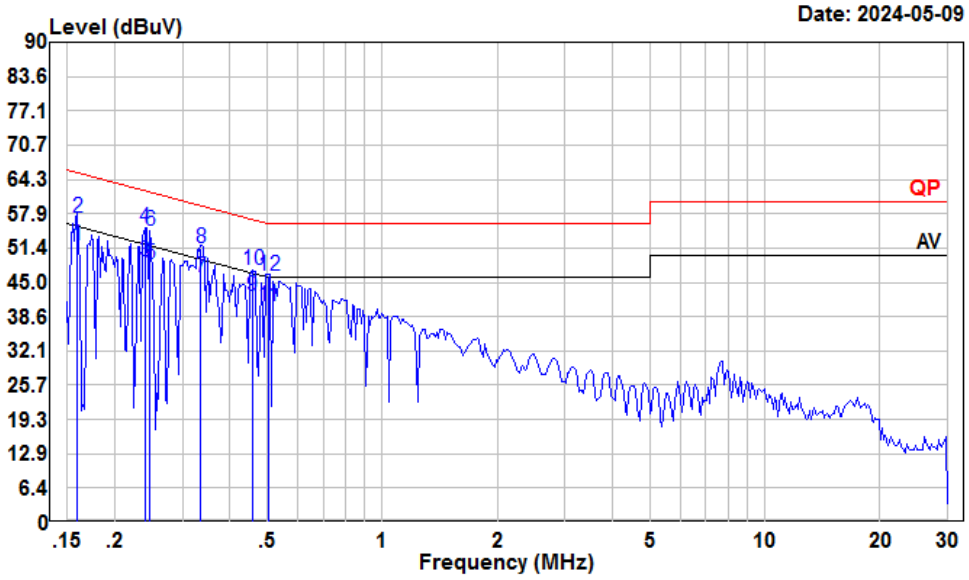
AC 120V/60 Hz, Line



Condition: Line
Project : SZ1240126-06326E-RF
Tester : Macy shi
Note : Lora DTS

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	31.08	51.63	10.40	10.15	55.47	-3.84	Average
2	0.16	34.66	55.21	10.40	10.15	65.47	-10.26	QP
3	0.17	30.20	50.75	10.40	10.15	64.94	-14.19	Average
4	0.17	30.20	50.75	10.40	10.15	64.94	-14.19	QP
5	0.20	30.01	50.51	10.40	10.10	53.80	-3.29	Average
6	0.20	32.36	52.86	10.40	10.10	63.80	-10.94	QP
7	0.23	28.66	49.18	10.37	10.15	52.57	-3.39	Average
8	0.23	30.72	51.24	10.37	10.15	62.57	-11.33	QP
9	0.25	28.11	48.66	10.35	10.20	51.86	-3.20	Average
10	0.25	31.75	52.30	10.35	10.20	61.86	-9.56	QP
11	0.31	24.96	45.39	10.31	10.12	50.10	-4.71	Average
12	0.31	27.60	48.03	10.31	10.12	60.10	-12.07	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : SZ1240126-06326E-RF
Tester : Macy shi
Note : Lora DTS

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	31.53	51.97	10.29	10.15	55.47	-3.50	Average
2	0.16	36.61	57.05	10.29	10.15	65.47	-8.42	QP
3	0.24	28.21	49.03	10.64	10.18	52.13	-3.10	Average
4	0.24	34.37	55.19	10.64	10.18	62.13	-6.94	QP
5	0.25	27.58	48.43	10.65	10.20	51.86	-3.43	Average
6	0.25	33.72	54.57	10.65	10.20	61.86	-7.29	QP
7	0.34	25.21	46.07	10.71	10.15	49.31	-3.24	Average
8	0.34	30.54	51.40	10.71	10.15	59.31	-7.91	QP
9	0.46	21.55	42.51	10.78	10.18	46.76	-4.25	Average
10	0.46	26.29	47.25	10.78	10.18	56.76	-9.51	QP
11	0.50	19.54	40.49	10.80	10.15	46.00	-5.51	Average
12	0.50	25.22	46.17	10.80	10.15	56.00	-9.83	QP

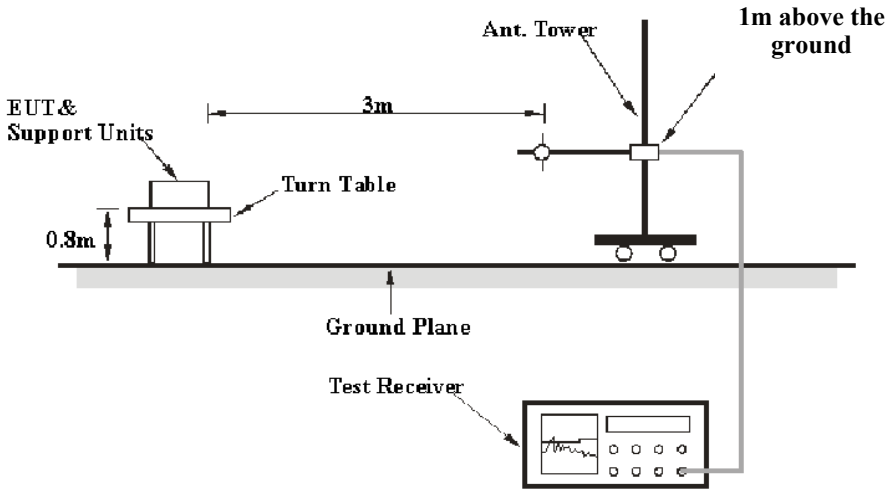
FCC §15.209, §15.205 & §15.247(d) & RSS-GEN § 8.10 & RSS-247 § 5.5 - SPURIOUS EMISSIONS

Applicable Standard

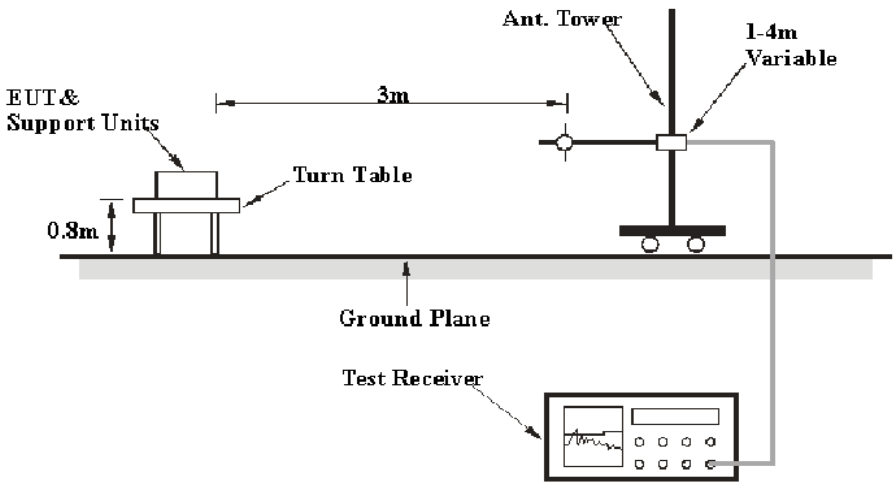
FCC §15.247 (d), §15.209, §15.205; RSS-GEN §8.10, RSS-247 § 5.5.

EUT Setup

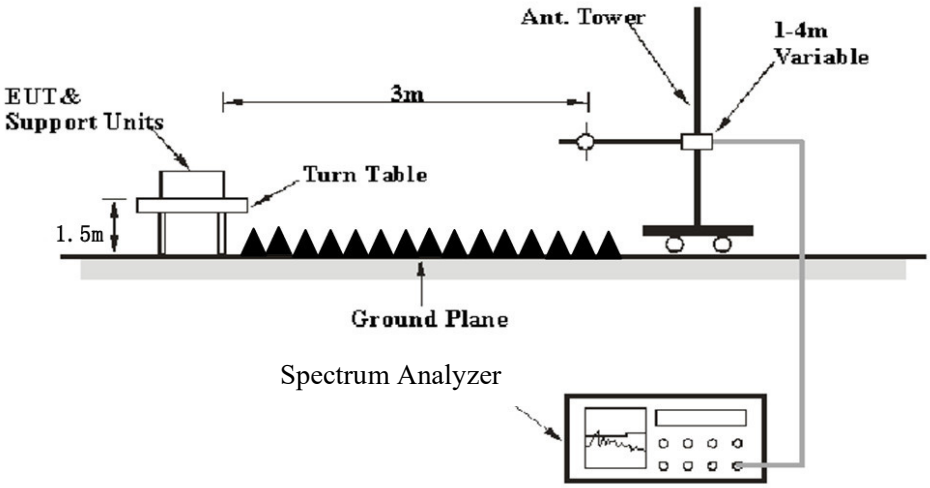
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247, RSS-Gen and RSS-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.

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-1GHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

1-10 GHz:

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

Note: Ton 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.

Test Procedure

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

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

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

Factor & Over Limit/ Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Results Summary

According to the data in the following table, the EUT complied with the FCC 15.205, FCC 15.209, FCC 15.247, RSS-Gen and RSS-247.

Test Data

Environmental Conditions

Temperature:	23~25.6 ℃
Relative Humidity:	50~55 %
ATM Pressure:	101 kPa

The testing was performed by Warren Huang on 2024-03-07 for below 1GHz and Dylan Yang on 2024-04-18 for above 1GHz.

EUT operation mode: Transmitting

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation was recorded.

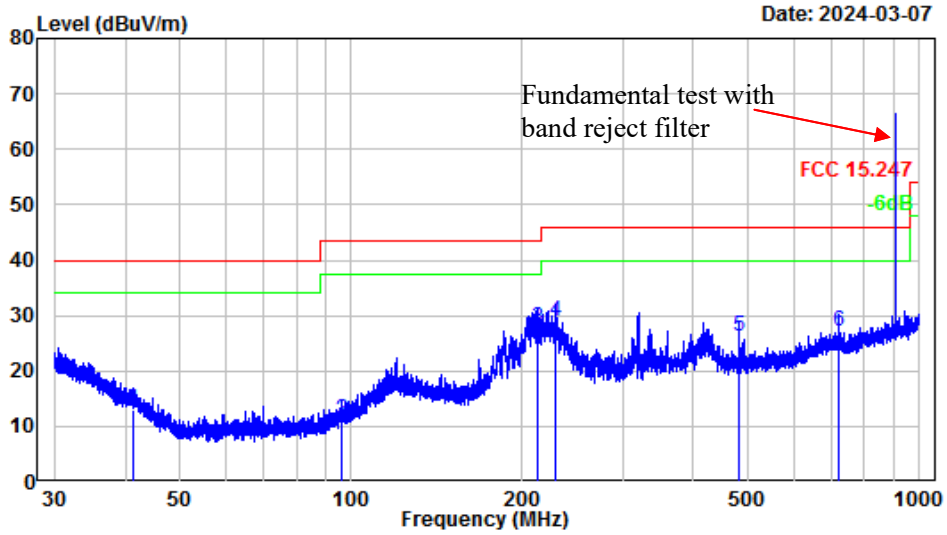
9 kHz-30MHz: *(Maximum output power mode, Low Channel)*

The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

30 MHz~1 GHz:

With UFL Connector: *(Maximum output power mode, Low Channel)*

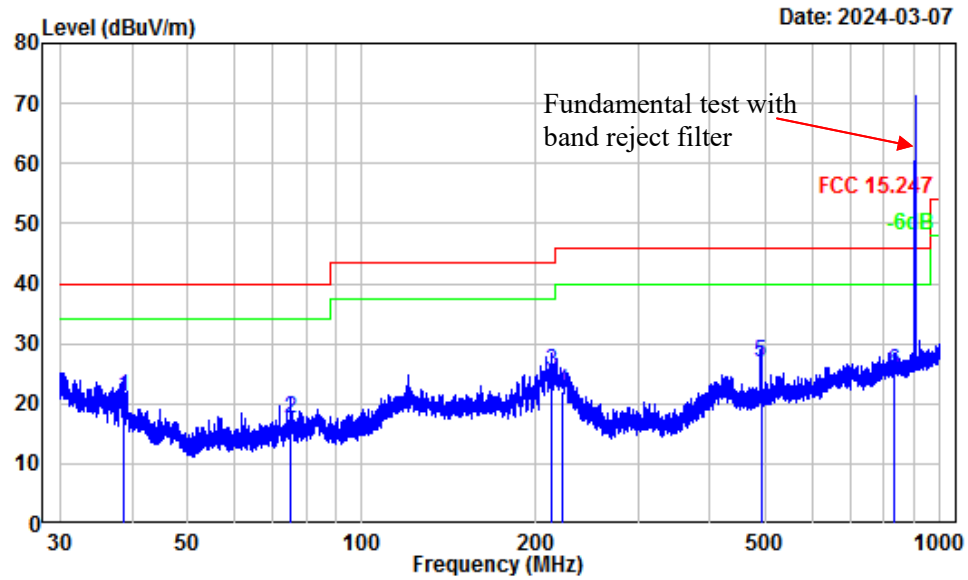
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.33	-11.24	24.21	12.97	40.00	-27.03	QP
2	96.06	-14.84	25.91	11.07	43.50	-32.43	QP
3	213.30	-11.25	39.15	27.90	43.50	-15.60	QP
4	229.29	-11.51	40.48	28.97	46.00	-17.03	QP
5	480.11	-5.28	31.41	26.13	46.00	-19.87	QP
6	722.04	-1.58	28.61	27.03	46.00	-18.97	QP

Vertical



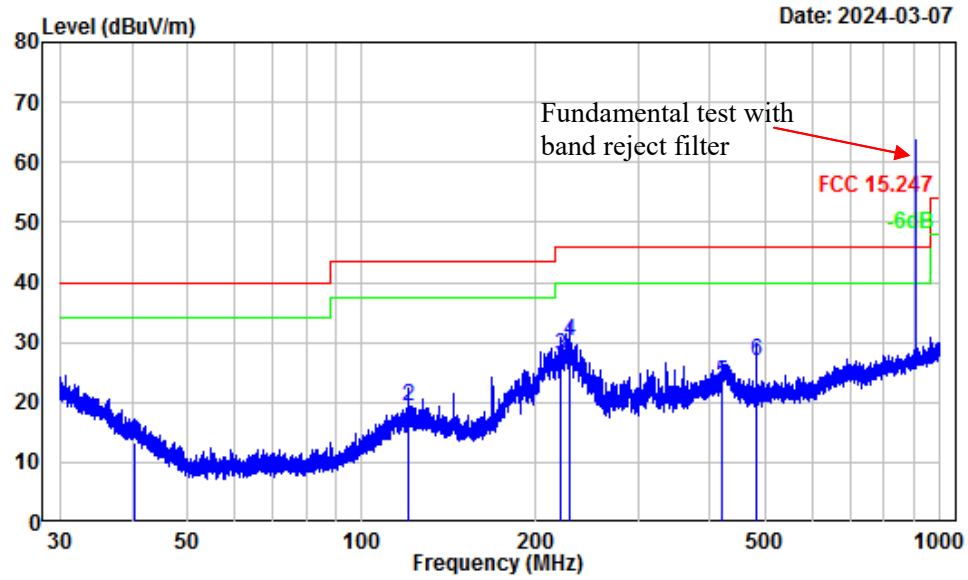
Site : chamber
Condition : 3m Vertical
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	38.60	-11.02	32.20	21.18	40.00	-18.82	QP
2	75.15	-17.26	34.63	17.37	40.00	-22.63	QP
3	212.83	-12.23	37.50	25.27	43.50	-18.23	QP
4	222.07	-12.24	34.37	22.13	46.00	-23.87	QP
5	490.10	-5.42	32.28	26.86	46.00	-19.14	QP
6	834.41	-0.27	25.68	25.41	46.00	-20.59	QP

With SMA Connector: *(Maximum output power mode, Low Channel)*

For ANT AS4034-1:

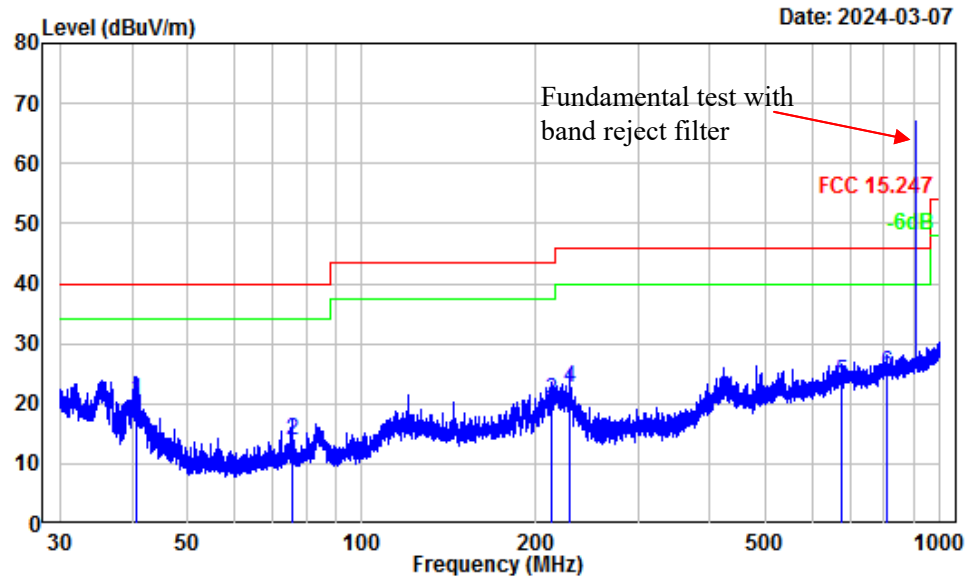
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.36	-10.62	23.86	13.24	40.00	-26.76	QP
2	120.01	-10.35	29.80	19.45	43.50	-24.05	QP
3	221.00	-11.37	39.15	27.78	46.00	-18.22	QP
4	229.29	-11.51	41.63	30.12	46.00	-15.88	QP
5	418.37	-6.72	30.05	23.33	46.00	-22.67	QP
6	480.11	-5.28	32.24	26.96	46.00	-19.04	QP

Vertical

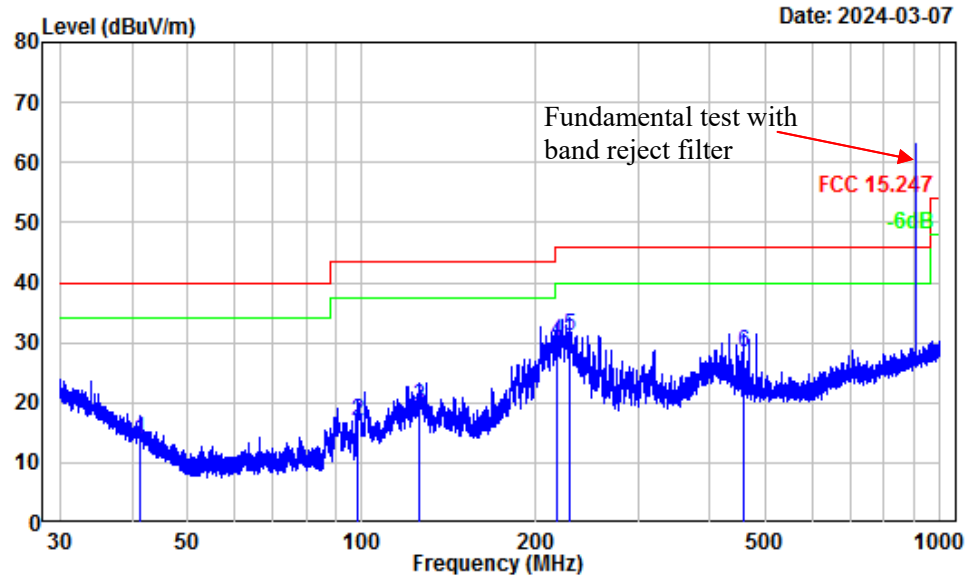


Site : chamber
Condition : 3m Vertical
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.61	-12.23	32.79	20.56	40.00	-19.44	QP
2	75.88	-17.25	31.20	13.95	40.00	-26.05	QP
3	212.64	-12.23	32.65	20.42	43.50	-23.08	QP
4	229.29	-12.24	34.92	22.68	46.00	-23.32	QP
5	676.39	-2.35	26.03	23.68	46.00	-22.32	QP
6	806.72	-0.58	25.74	25.16	46.00	-20.84	QP

For ANT AS4035-1

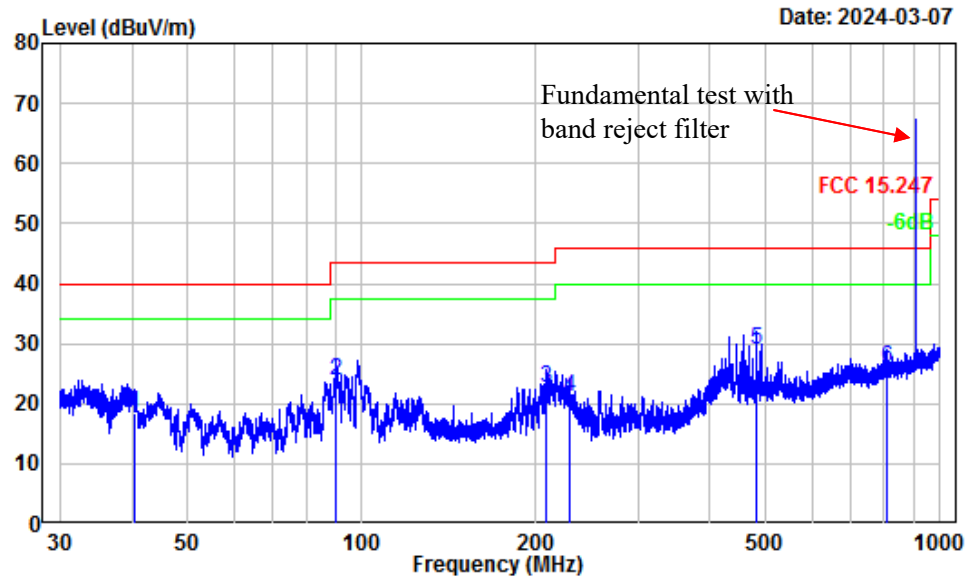
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.24	-11.18	24.96	13.78	40.00	-26.22	QP
2	98.53	-14.15	31.10	16.95	43.50	-26.55	QP
3	125.45	-10.32	29.69	19.37	43.50	-24.13	QP
4	217.35	-11.32	41.37	30.05	46.00	-15.95	QP
5	229.29	-11.51	42.60	31.09	46.00	-14.91	QP
6	456.11	-5.55	34.05	28.50	46.00	-17.50	QP

Vertical

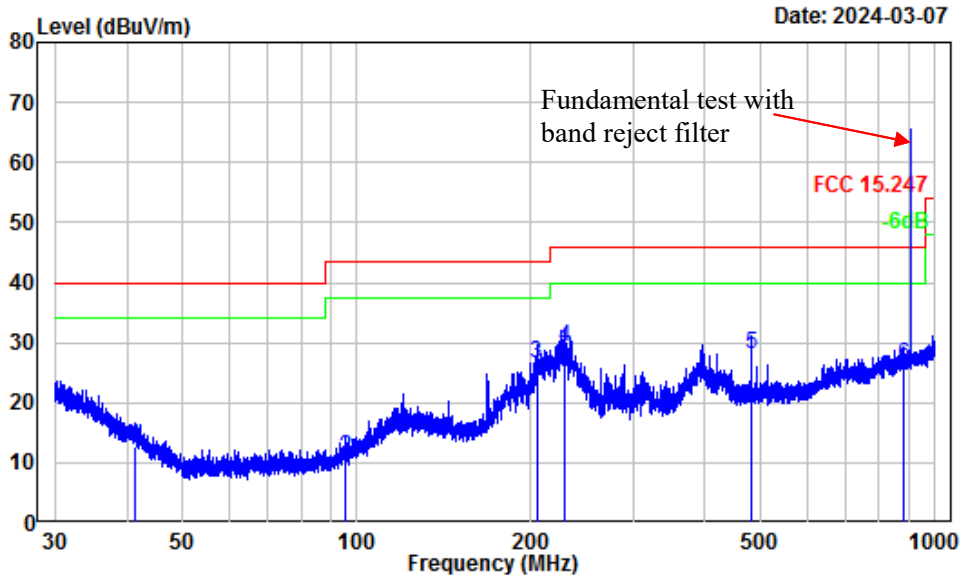


Site : chamber
Condition : 3m Vertical
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.51	-12.17	30.47	18.30	40.00	-21.70	QP
2	89.87	-17.36	41.10	23.74	43.50	-19.76	QP
3	208.95	-12.24	34.78	22.54	43.50	-20.96	QP
4	229.29	-12.24	33.31	21.07	46.00	-24.93	QP
5	480.11	-5.60	34.59	28.99	46.00	-17.01	QP
6	810.62	-0.54	26.47	25.93	46.00	-20.07	QP

For ANT AS4038-1

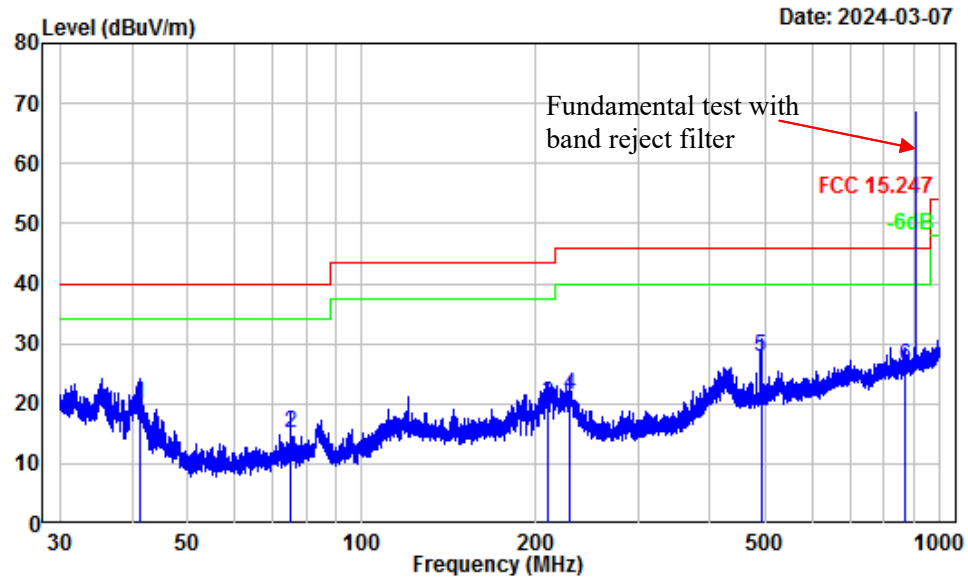
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.24	-11.18	23.76	12.58	40.00	-27.42	QP
2	95.64	-14.97	25.96	10.99	43.50	-32.51	QP
3	204.51	-11.10	37.61	26.51	43.50	-16.99	QP
4	229.19	-11.50	40.81	29.31	46.00	-16.69	QP
5	480.11	-5.28	33.39	28.11	46.00	-17.89	QP
6	882.57	0.73	25.40	26.13	46.00	-19.87	QP

Vertical



Site : chamber
Condition : 3m Vertical
Project Number: SZ1240126-06326E-RF
Note : Lora DTS
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.19	-12.56	32.56	20.00	40.00	-20.00	QP
2	75.45	-17.25	32.23	14.98	40.00	-25.02	QP
3	209.13	-12.24	32.31	20.07	43.50	-23.43	QP
4	229.29	-12.24	33.64	21.40	46.00	-24.60	QP
5	490.10	-5.42	33.20	27.78	46.00	-18.22	QP
6	870.27	0.18	26.14	26.32	46.00	-19.68	QP

1 GHz - 10 GHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
With UFL Connector							
Low Channel 906MHz							
2718.00	62.56	PK	H	-2.49	60.07	74	-13.93
2718.00	58.11	AV	H	-2.49	55.62	54	1.62
2718.00	56.61	PK	V	-2.49	54.12	74	-19.88
2718.00	51.48	AV	V	-2.49	48.99	54	-5.01
3624.00	63.57	PK	H	-1.94	61.63	74	-12.37
3624.00	54.11	AV	H	-1.94	52.17	54	-1.83
3624.00	60.59	PK	V	-1.94	58.65	74	-15.35
3624.00	48.43	AV	V	-1.94	46.49	54	-7.51
Middle Channel 914MHz							
2742.00	63.35	PK	H	-2.49	60.86	74	-13.14
2742.00	50.93	AV	H	-2.49	48.44	54	-5.56
2742.00	56.64	PK	V	-2.49	54.15	74	-19.85
2742.00	50.27	AV	V	-2.49	47.78	54	-6.22
3656.00	63.44	PK	H	-1.84	61.60	74	-12.40
3656.00	53.25	AV	H	-1.84	51.41	54	-2.59
3656.00	59.48	PK	V	-1.84	57.64	74	-16.36
3656.00	52.76	AV	V	-1.84	50.92	54	-3.08
High Channel 924MHz							
2772.00	61.76	PK	H	-2.46	59.30	74	-14.70
2772.00	54.07	AV	H	-2.46	51.61	54	-2.39
2772.00	55.71	PK	V	-2.46	53.25	74	-20.75
2772.00	47.55	AV	V	-2.46	45.09	54	-8.91
3696.00	64.92	PK	H	-1.74	63.18	74	-10.82
3696.00	49.26	AV	H	-1.74	47.52	54	-6.48
3696.00	60.74	PK	V	-1.74	59.00	74	-15.00
3696.00	46.59	AV	V	-1.74	44.85	54	-9.15

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
With SMA Connector_ANT AS4034-1							
Low Channel 906MHz							
2718.00	58.97	PK	H	-2.49	56.48	74	-17.52
2718.00	52.44	AV	H	-2.49	49.95	54	-4.05
2718.00	59.72	PK	V	-2.49	57.23	74	-16.77
2718.00	53.46	AV	V	-2.49	50.97	54	-3.03
3624.00	53.93	PK	H	-1.94	51.99	74	-22.01
3624.00	42.79	AV	H	-1.94	40.85	54	-13.15
3624.00	57.92	PK	V	-1.94	55.98	74	-18.02
3624.00	45.23	AV	V	-1.94	43.29	54	-10.71
Middle Channel 914MHz							
2742.00	60.06	PK	H	-2.49	57.57	74	-16.43
2742.00	51.21	AV	H	-2.49	48.72	54	-5.28
2742.00	55.85	PK	V	-2.49	53.36	74	-20.64
2742.00	50.62	AV	V	-2.49	48.13	54	-5.87
3656.00	52.94	PK	H	-1.84	51.10	74	-22.90
3656.00	44.35	AV	H	-1.84	42.51	54	-11.49
3656.00	57.52	PK	V	-1.84	55.68	74	-18.32
3656.00	45.74	AV	V	-1.84	43.90	54	-10.10
High Channel 924MHz							
2772.00	51.88	PK	H	-2.46	49.42	74	-24.58
2772.00	42.54	AV	H	-2.46	40.08	54	-13.92
2772.00	52.96	PK	V	-2.46	50.50	74	-23.50
2772.00	44.22	AV	V	-2.46	41.76	54	-12.24
3696.00	55.22	PK	H	-1.74	53.48	74	-20.52
3696.00	44.71	AV	H	-1.74	42.97	54	-11.03
3696.00	57.25	PK	V	-1.74	55.51	74	-18.49
3696.00	45.88	AV	V	-1.74	44.14	54	-9.86

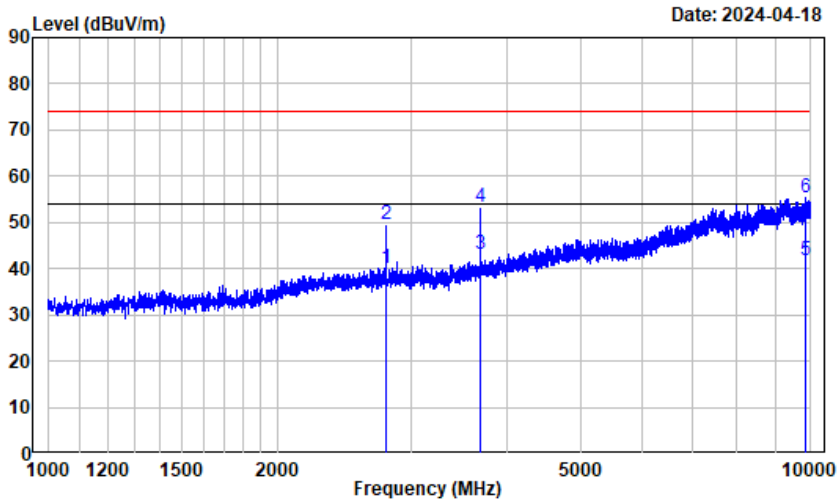
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
With SMA Connector_ ANT AS4035-1							
Low Channel 906MHz							
2718.00	60.67	PK	H	-2.49	58.18	74	-15.82
2718.00	54.78	AV	H	-2.49	52.29	54	-1.71
2718.00	56.38	PK	V	-2.49	53.89	74	-20.11
2718.00	49.19	AV	V	-2.49	46.70	54	-7.30
3624.00	53.82	PK	H	-1.94	51.88	74	-22.12
3624.00	43.56	AV	H	-1.94	41.62	54	-12.38
3624.00	53.88	PK	V	-1.94	51.94	74	-22.06
3624.00	43.53	AV	V	-1.94	41.59	54	-12.41
Middle Channel 914MHz							
2742.00	59.95	PK	H	-2.49	57.46	74	-16.54
2742.00	50.34	AV	H	-2.49	47.85	54	-6.15
2742.00	55.74	PK	V	-2.49	53.25	74	-20.75
2742.00	50.05	AV	V	-2.49	47.56	54	-6.44
3656.00	52.00	PK	H	-1.84	50.16	74	-23.84
3656.00	44.18	AV	H	-1.84	42.34	54	-11.66
3656.00	57.22	PK	V	-1.84	55.38	74	-18.62
3656.00	45.06	AV	V	-1.84	43.22	54	-10.78
High Channel 924MHz							
2772.00	57.75	PK	H	-2.46	55.29	74	-18.71
2772.00	50.98	AV	H	-2.46	48.52	54	-5.48
2772.00	53.28	PK	V	-2.46	50.82	74	-23.18
2772.00	46.76	AV	V	-2.46	44.30	54	-9.70
3696.00	54.87	PK	H	-1.74	53.13	74	-20.87
3696.00	43.62	AV	H	-1.74	41.88	54	-12.12
3696.00	55.59	PK	V	-1.74	53.85	74	-20.15
3696.00	44.29	AV	V	-1.74	42.55	54	-11.45

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
With SMA Connector_ANT AS4038-1							
Low Channel 906MHz							
2718.00	54.44	PK	H	-2.49	51.95	74	-22.05
2718.00	48.66	AV	H	-2.49	46.17	54	-7.83
2718.00	54.51	PK	V	-2.49	52.02	74	-21.98
2718.00	49.21	AV	V	-2.49	46.72	54	-7.28
3624.00	52.65	PK	H	-1.94	50.71	74	-23.29
3624.00	41.88	AV	H	-1.94	39.94	54	-14.06
3624.00	58.45	PK	V	-1.94	56.51	74	-17.49
3624.00	47.95	AV	V	-1.94	46.01	54	-7.99
Middle Channel 914MHz							
2742.00	52.11	PK	H	-2.49	49.62	74	-24.38
2742.00	44.23	AV	H	-2.49	41.74	54	-12.26
2742.00	52.49	PK	V	-2.49	50.00	74	-24.00
2742.00	44.66	AV	V	-2.49	42.17	54	-11.83
3656.00	54.77	PK	H	-1.84	52.93	74	-21.07
3656.00	42.33	AV	H	-1.84	40.49	54	-13.51
3656.00	58.11	PK	V	-1.84	56.27	74	-17.73
3656.00	46.91	AV	V	-1.84	45.07	54	-8.93
High Channel 924MHz							
2772.00	51.14	PK	H	-2.46	48.68	74	-25.32
2772.00	43.11	AV	H	-2.46	40.65	54	-13.35
2772.00	52.76	PK	V	-2.46	50.30	74	-23.70
2772.00	45.35	AV	V	-2.46	42.89	54	-11.11
3696.00	53.82	PK	H	-1.74	52.08	74	-21.92
3696.00	43.94	AV	H	-1.74	42.20	54	-11.80
3696.00	56.87	PK	V	-1.74	55.13	74	-18.87
3696.00	48.17	AV	V	-1.74	46.43	54	-7.57

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

Test plots for example as below:

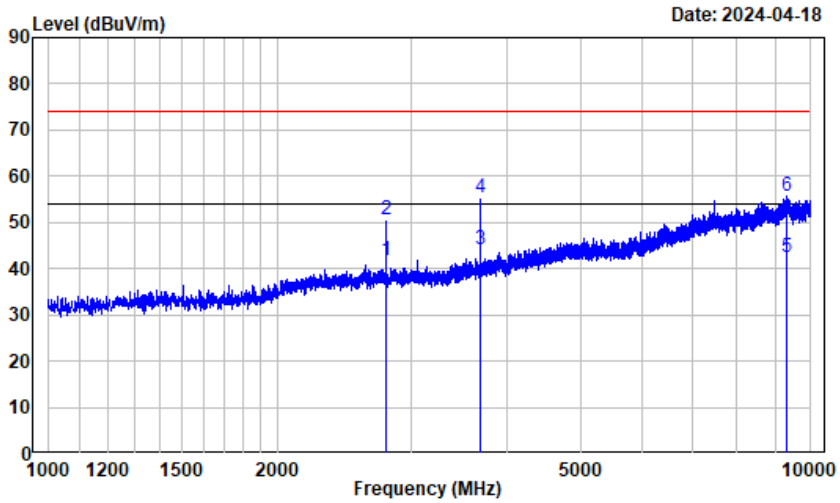
Listed with the harmonic test plot: *With SMA Connector_ ANT AS4034-1, High Channel*

Horizontal	
1-10GHz	 Condition : Horizontal Project No.: SZ1240126-06326E Tester : Dylan Note : Lora_DTS_ANT_AS4034-1

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2772.000	-2.46	42.54	40.08	54.00	-13.92	Average
2	2772.000	-2.46	51.88	49.42	74.00	-24.58	Peak
3	3696.000	-1.74	44.71	42.97	54.00	-11.03	Average
4	3696.000	-1.74	55.22	53.48	74.00	-20.52	Peak
5	9861.625	12.11	29.81	41.92	54.00	-12.08	Average
6	9861.625	12.11	43.25	55.36	74.00	-18.64	Peak

Vertical

1-10GHz



Condition : Vertical
Project No.: SZ1240126-06326E
Tester : Dylan
Note : Lora_DTS_ANT_AS4034-1

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2772.000	-2.46	44.22	41.76	54.00	-12.24	Average
2	2772.000	-2.46	52.96	50.50	74.00	-23.50	Peak
3	3696.000	-1.74	45.88	44.14	54.00	-9.86	Average
4	3696.000	-1.74	57.25	55.51	74.00	-18.49	Peak
5	9294.625	11.80	30.69	42.49	54.00	-11.51	Average
6	9294.625	11.80	43.84	55.64	74.00	-18.36	Peak

FCC §15.247(a) (2), RSS-GEN § 6.7 & RSS-247 § 5.2 (a) – 6 dB EMISSION BANDWIDTH & OCCUPIED 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.

According to RSS-247 §5.2 a)
The minimum 6 dB bandwidth shall be 500 kHz.

According to RSS-Gen §6.7
The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.
In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.
The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

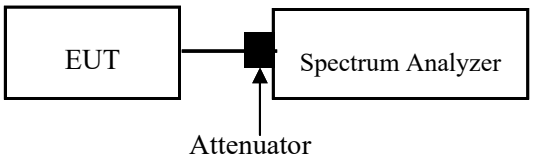
Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.
For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.8.1 & Clause 6.9.3

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 it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

99% Occupied bandwidth test:
Use Occupied bandwidth test function, measure the 99% Occupied bandwidth.
Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	48 %
ATM Pressure:	101.0 kPa

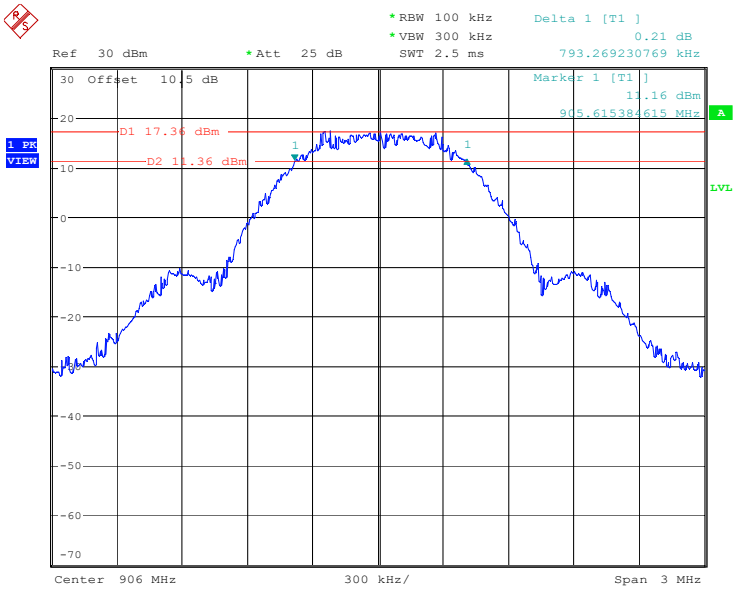
The testing was performed by Hanic Pan on 2024-04-02.

EUT operation mode: Transmitting

***Test Result: Compliant**. Please refer to following table and plots.*

Test Channel	Test Frequency (MHz)	Occupied Bandwidth (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
Lowest	906	1.115	0.793	≥0.5
Middle	914	1.115	0.784	≥0.5
Highest	924	1.115	0.779	≥0.5
Test only was performed at the module with UFL Connector.				

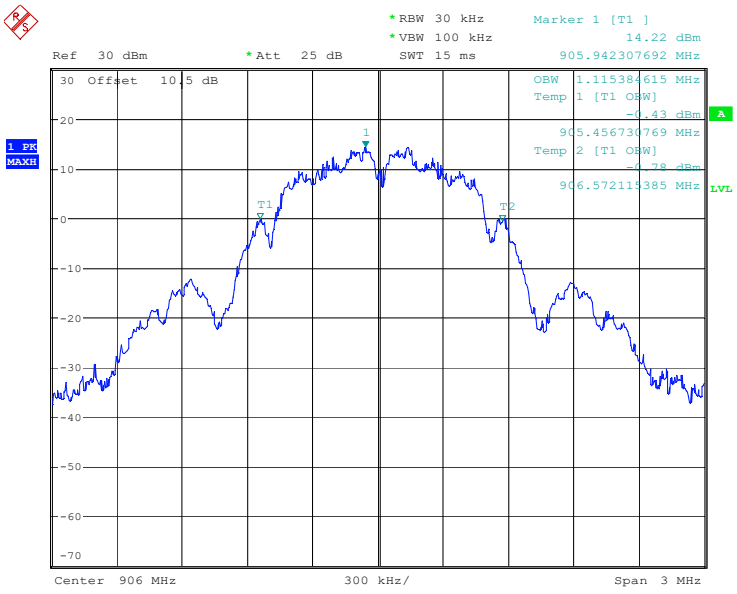
6 dB Emission Bandwidth, Low Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 16:21:04

Occupied Bandwidth, Low Channel



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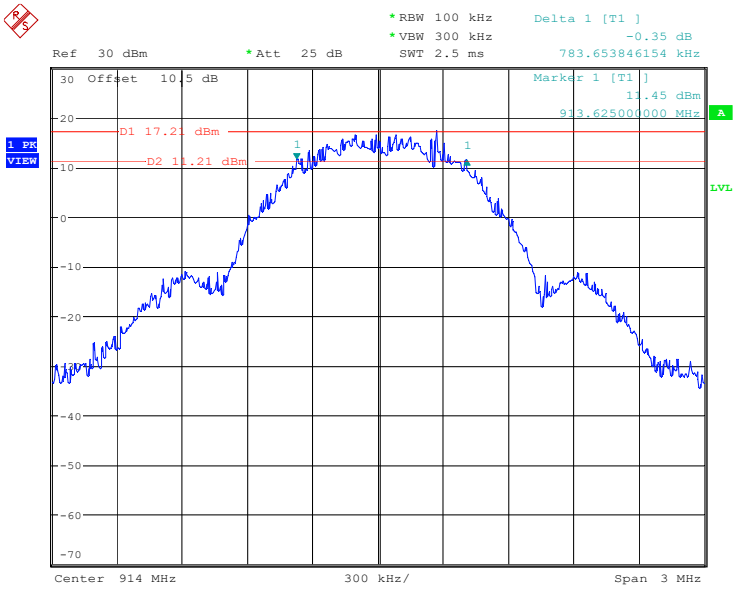
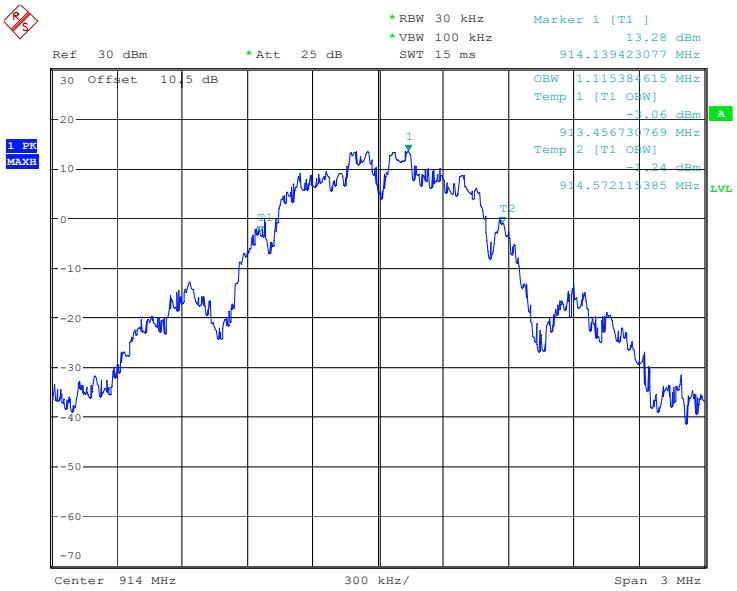
6 dB Emission Bandwidth, Middle Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 19:31:48

Occupied Bandwidth, Middle Channel



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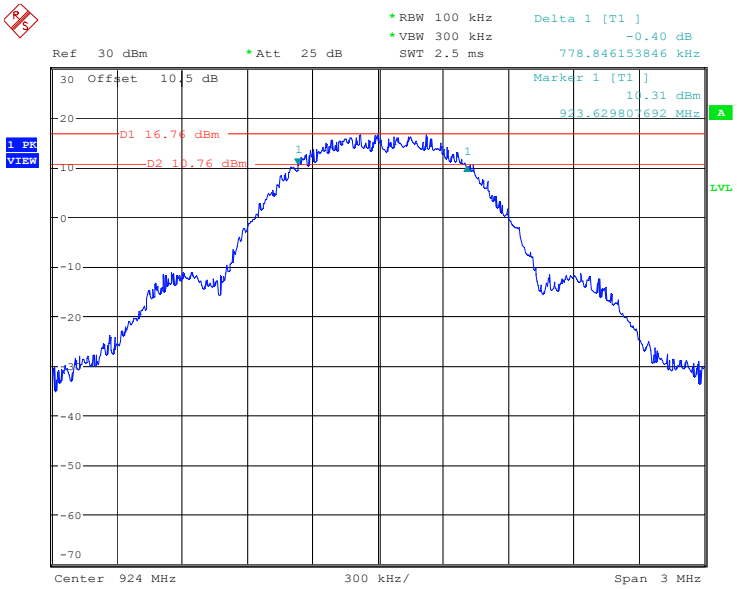
Date: 2.APR.2024 19:33:47

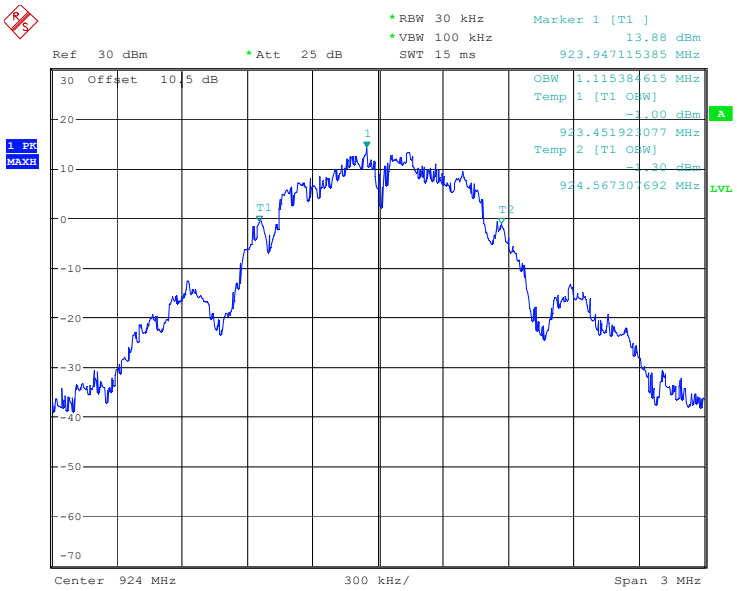
6 dB Emission Bandwidth, High Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 17:24:29

Occupied Bandwidth, High Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 17:29:28

FCC §15.247(b) (3), RSS-247 §5.4 (d) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

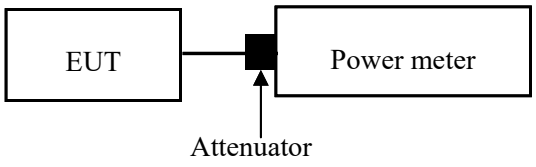
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted 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.

According to RSS-247§5.4 d) For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(e), the e.i.r.p. shall not exceed 4 W.
As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling 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 transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.9.2.3.2

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	48 %
ATM Pressure:	101.0 kPa

The testing was performed by Hanic Pan from 2024-04-02 to 2024-04-03.

EUT operation mode: Transmitting

***Test Result: Compliant**. Please refer to following table and plots.*

With UFL Connector:

Channel	Frequency (MHz)	Maximum AVG Conducted Output Power (dBm)	Limit (dBm)	Maximum EIRP (dBm)	Limit (dBm)
Lowest	906	18.67	≤30	18.67	≤36
Middle	914	18.39	≤30	18.39	≤36
Highest	924	18.18	≤30	18.18	≤36

With SMA Connector:

Channel	Frequency (MHz)	Maximum AVG Conducted Output Power (dBm)	Limit (dBm)	Maximum EIRP (dBm)	Limit (dBm)
Lowest	906	17.96	≤30	19.96	≤36
Middle	914	17.77	≤30	19.77	≤36
Highest	924	17.64	≤30	19.64	≤36

FCC §15.247(d) & RSS-247 §5.5 – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

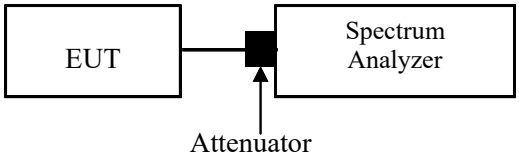
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.11

1. Set the RBW =100 kHz.
2. Set the VBW ≥ 3×RBW.
3. Detector = peak
4. Sweep time = auto couple.
5. Trace mode=max hold
6. All trace to fully stabilize
7. Use the peak marker function to determine the maximum amplitude level.
   Ensure that amplitude of all unwanted emissions outside of the authorized frequency band(excluding restricted frequency bands) is attenuated by at least the minimum requirement specified in 11.11.
   Report the three highest emissions relative to the limit.



Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

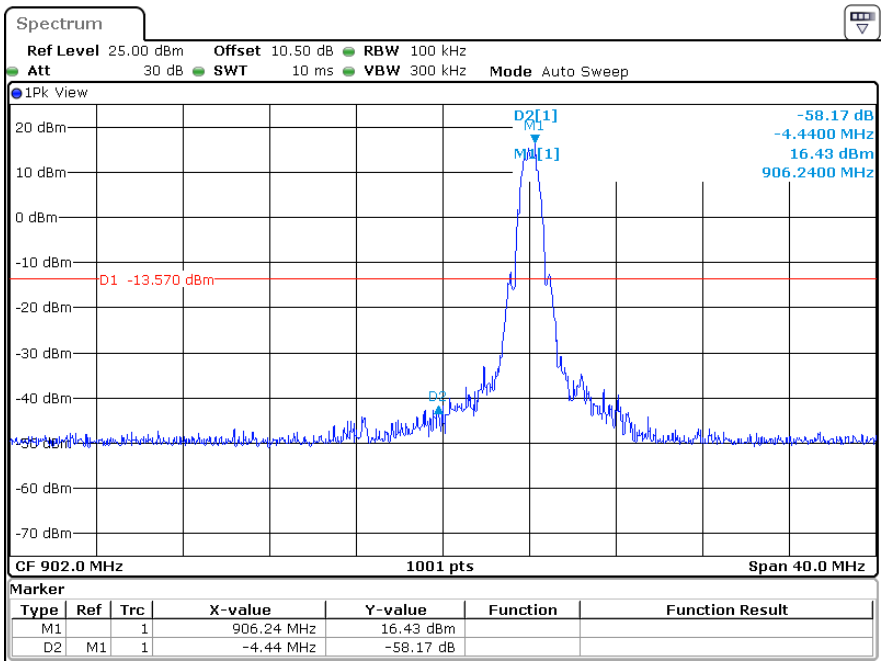
The testing was performed by Hanic Pan on 2024-04-25.

EUT operation mode: Transmitting

***Test Result: Compliant**. Please refer to following table and plots.*

Note: Test only was performed at the module with UFL Connector.

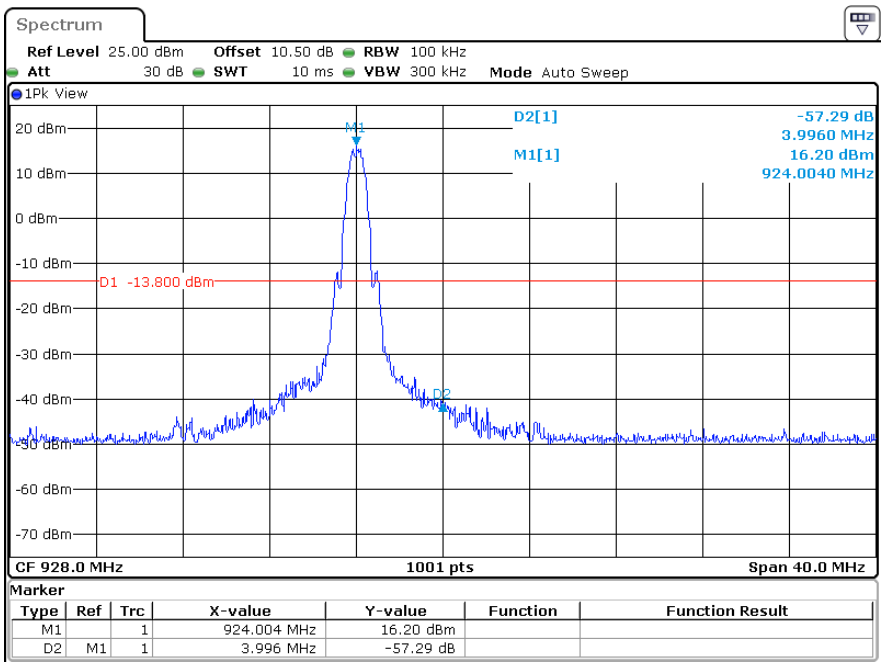
Low Channel



ProjectNo.:SZ1240126-06326E Tester:Bamboo Zhan

Date: 25.APR.2024 15:31:43

High Channel



ProjectNo.:SZ1240126-06326E Tester:Bamboo Zhan

Date: 25.APR.2024 15:55:40

FCC §15.247(e) , RSS-247 §5.2 (b) - 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.

According to RSS-247 §5.2 b):

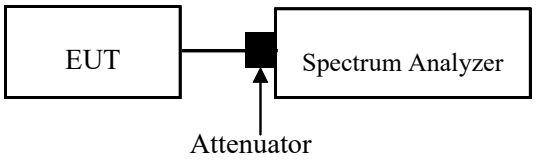
b) The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.10.7 Method AVGPSD-3

Use this procedure when the maximum average conducted output power in the fundamental emission is used to demonstrate compliance.

1. Set the instrument span to a minimum of 1.5 times the OBW.
2. Set sweep trigger to “free run.”
3. Set the RBW to: 3kHz≤ RBW≤100 kHz.
4. Set the VBW ≥ 3×RBW.
5. Ensure that the number of measurement points in the sweep ≥ [2 × span / RBW].
6. Sweep time ≤ (number of points in sweep) × *T*, where *T* is defined in ANSI C63.10-2013 11.6.
7. Detector = RMS (power averaging)..
8. Trace mode = max hold..
9. Allow max hold to run for at least 60 s or longer as needed to allow the trace to stabilize.
10. Use the peak marker function to determine the maximum amplitude level.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	48 %
ATM Pressure:	101.0 kPa

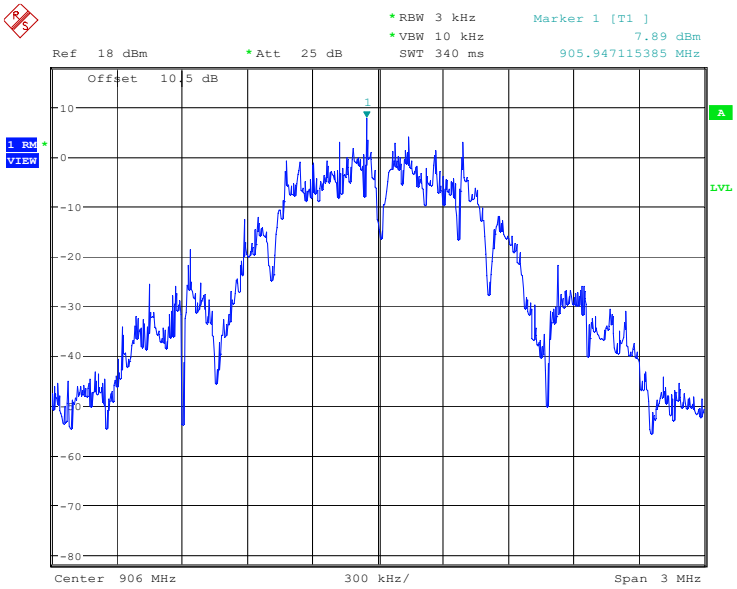
The testing was performed by Hanic Pan on 2024-04-02.

EUT operation mode: Transmitting

Test Result: Compliant. *Please refer to following table and plots.*

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Lowest	906	7.89	≤8.00
Middle	914	5.79	≤8.00
Highest	924	4.91	≤8.00
Test only was performed at the module with UFL Connector.			

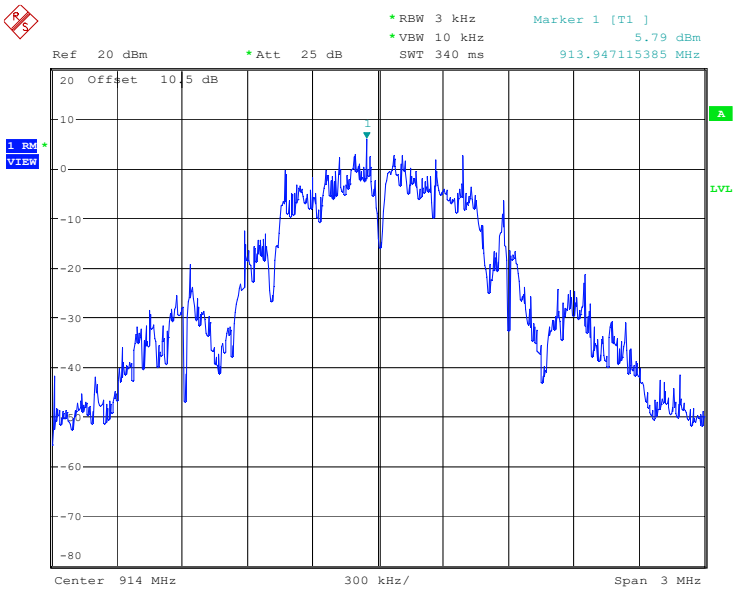
Low Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 16:16:35

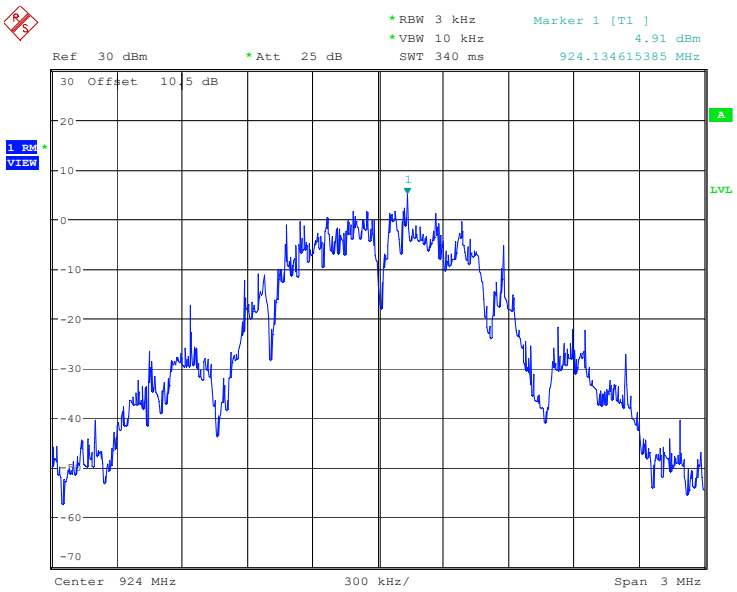
Middle Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 19:29:03

High Channel



ProjectNo.:SZ1240126-06326E Tester:Hanic Pan

Date: 2.APR.2024 17:42:04

EUT PHOTOGRAPHS

Please refer to the attachment SZ1240126-06326E-RF External photo and SZ1240126-06326E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment SZ1240126-06326E-RF Test Setup photo.

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