

FCC PART 15.247

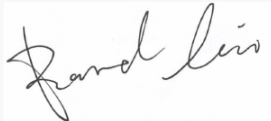
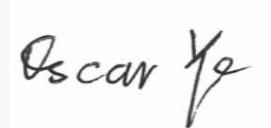
TEST REPORT

For

ACSL Ltd.

Hulic Kasai Rinkai Bldg. 2F, 3-6-4 Rinkaicho, Edogawa-ku, Tokyo, Japan 134-0086

FCC ID: 2A8JK-GS5US-FALCON

Report Type: Original Report	Product Name: Smart Controller
Report Number:	RSHA240424001-00D
Report Date:	2024-08-06
Reviewed By:	Bard Liu 
Approved By:	Oscar Ye 
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-512-86175000 Fax: +86-512-88934268 www.baclcorp.com.cn

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	RSHA240424001-00D	R1 V1	2024-08-06	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	ACSL Ltd.
Manufacturer:	Aerora North America, Inc.
Product Name:	Smart Controller
Tested Model:	TENSO-F3
Power Supply:	DC 3.7V
RF Function:	2.4G SRD
Operating Band/Frequency:	2412-2467 MHz
Maximum Average Output Power:	19.05 dBm
Channel Number:	12
Channel Separation:	5 MHz
Modulation Type:	OFDM
Antenna Type:	Omni Antenna
★Maximum Antenna Gain:	1.96 dBi

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: RSHA240424001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-04-24.)

Objective

This report is prepared on behalf of *ACSL 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 C63.10-2013, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices and FCC 558074 D01 15.247 Meas Guidance v05r02.

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

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	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)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	12	2467

EUT was tested with Channel 1, 7 and 12.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

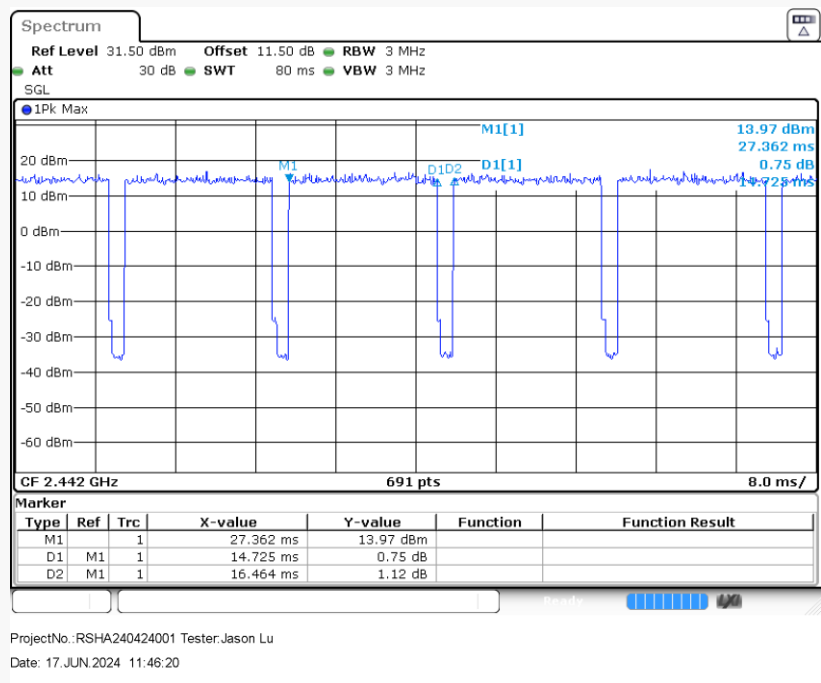
“Sscom” was used to test.

Mode	Channel	★Power Level Setting
SRD	Low	19
	Middle	19
	High	19

Note: The power level setting was declared by the applicant.

Duty Cycle:

Middle Channel



Mode	Duty Cycle (%)	T(ms)	1/T(kHz)	10log(1/x)
SRD	89.44	14.725	0.068	0.485

Note: “x” means the Duty Cycle.

Support Equipment List and Details

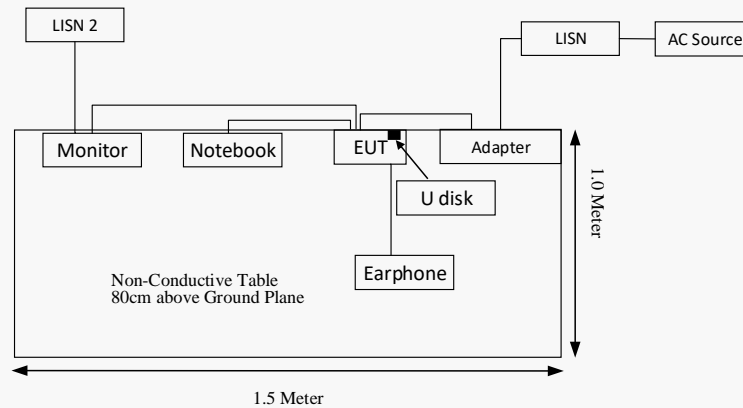
Manufacturer	Description	Model	Serial Number
XIAOMI	Monitor	P24FBA-RA	50715/313100001953
Lenovo	NOTEBOOK	LJJ6K3U	9DD96DBA
Lenovo	USB flash disk	T180	0A1266865200521
Unknown	Earphone	Unknown	Unknown

External I/O Cable

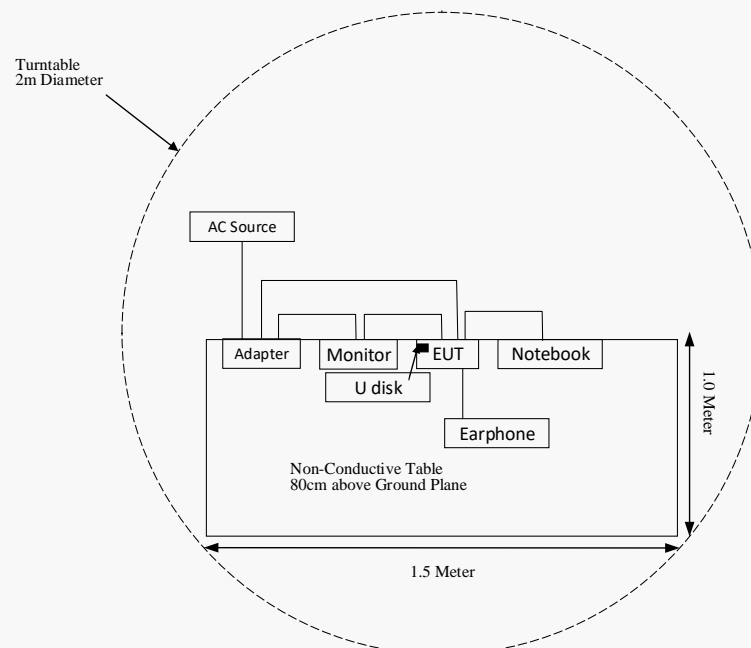
Cable Description	Length (m)	From Port	To
Power Cable	1.0	LISN/AC Source	Adapter
USB Cable	1.0	Adapter	EUT
RJ45	1.0	Notebook	EUT
HDMI Cable	2.0	Monitor	EUT

Block Diagram of Test Setup

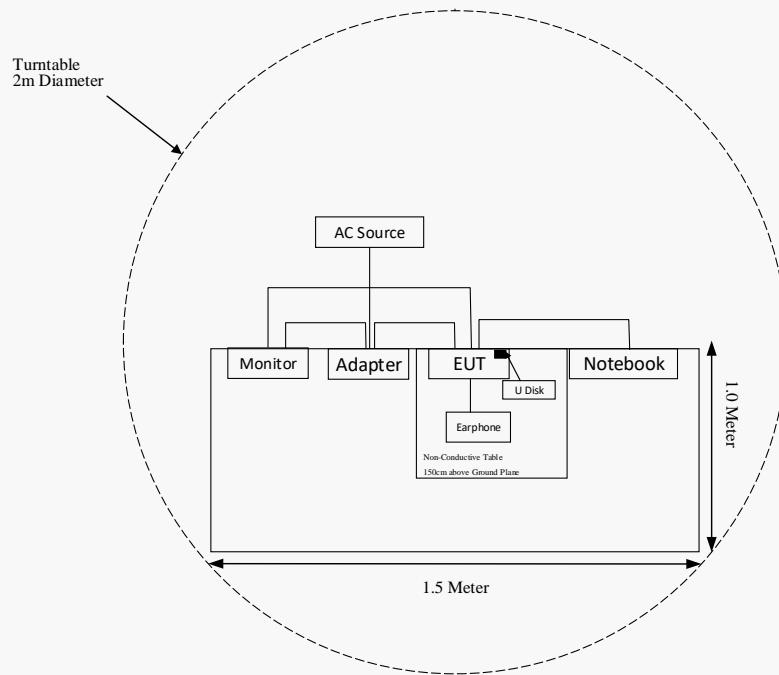
For Conducted Emissions:



For Radiated Emissions(Below 1GHz):



For Radiated Emissions(Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	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	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	2024-04-23	2025-04-22
Sunol Sciences	Broadband Antenna	JB3	A090314-1	2023-11-11	2024-11-10
Narda	6dB Attenuator	773-6	10690812-2-1	2023-11-11	2024-11-10
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
Sonoma Instrument	Pre-amplifier	310N	171205	2024-04-23	2025-04-22
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2024-04-23	2025-04-22
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2023-12-02	2024-12-01
ETS-LINDGREN	Horn Antenna	3116	2516	2023-12-08	2024-12-07
A.H.Systems, inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-24
SELECTOR	Amplifier	EM18G40G	060726	2024-04-25	2025-04-24
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2023-08-05	2024-08-04
Narda	Attenuator	10dB	010	2023-08-15	2024-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-13	013	2024-04-23	2025-04-22
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2024-04-24	2025-04-23
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22
Anritsu	Power Sensor	MA24418A	12621	2023-09-27	2024-09-26
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	103298	2024-04-24	2025-04-23
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	101746	2024-04-23	2025-04-22
Rohde & Schwarz	LISN	ENV216	101115	2024-04-23	2025-04-22
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-15	015	2024-04-23	2025-04-22

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 §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.

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 an Omni Antenna for SRD and the antenna gain is 1.96 dBi, the antenna was permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

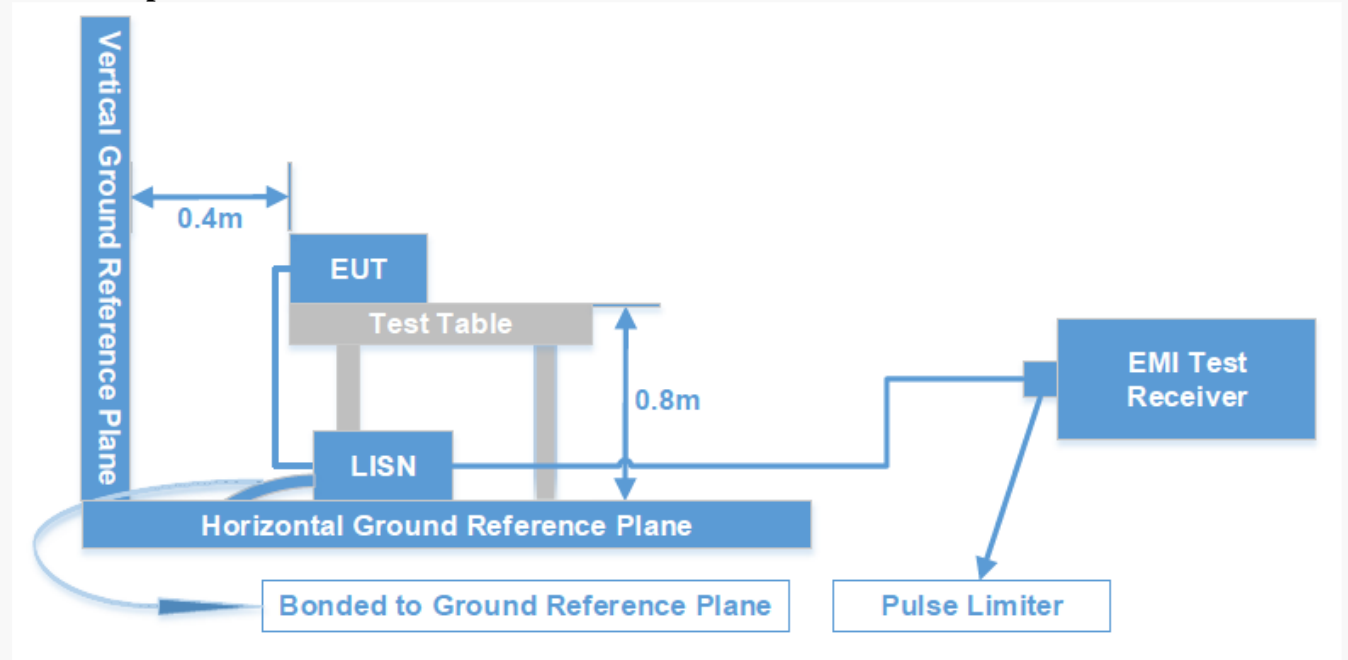
Result: Compliant.

FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

EUT Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

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

ANSI C63.10-2013 clause 6.2

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.

Factor & Over Limit Calculation

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

$$\text{Factor (dB)} = \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Transient Limiter Attenuation (dB)}$$

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:

$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

Test Results Summary

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

Test Data: See Appendix

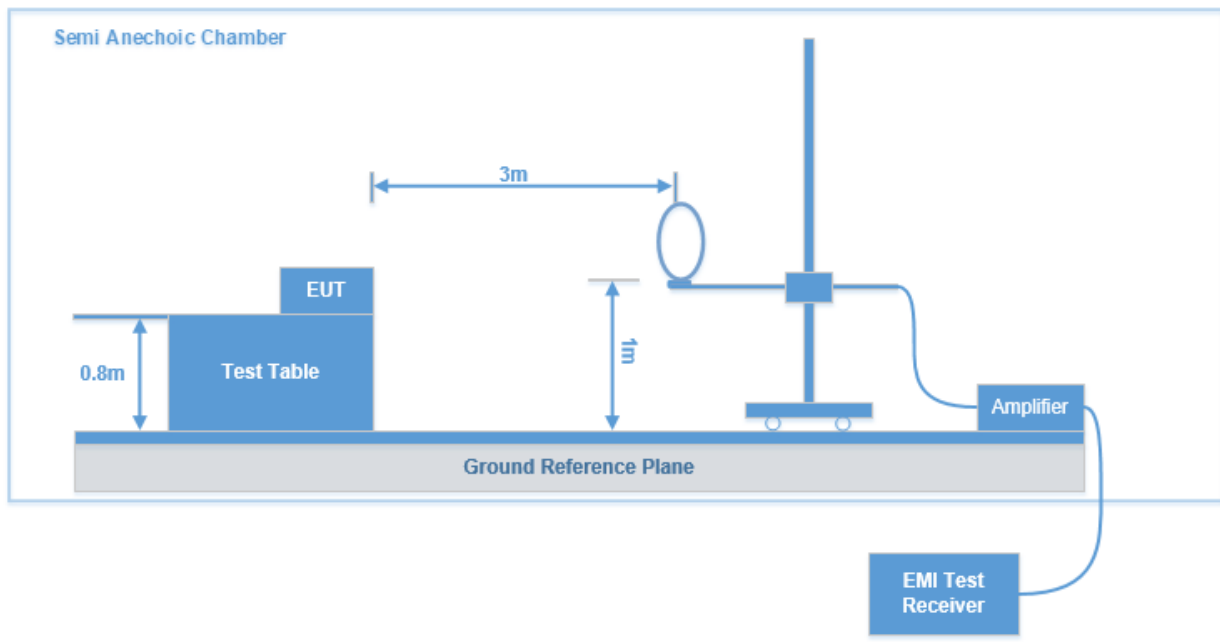
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

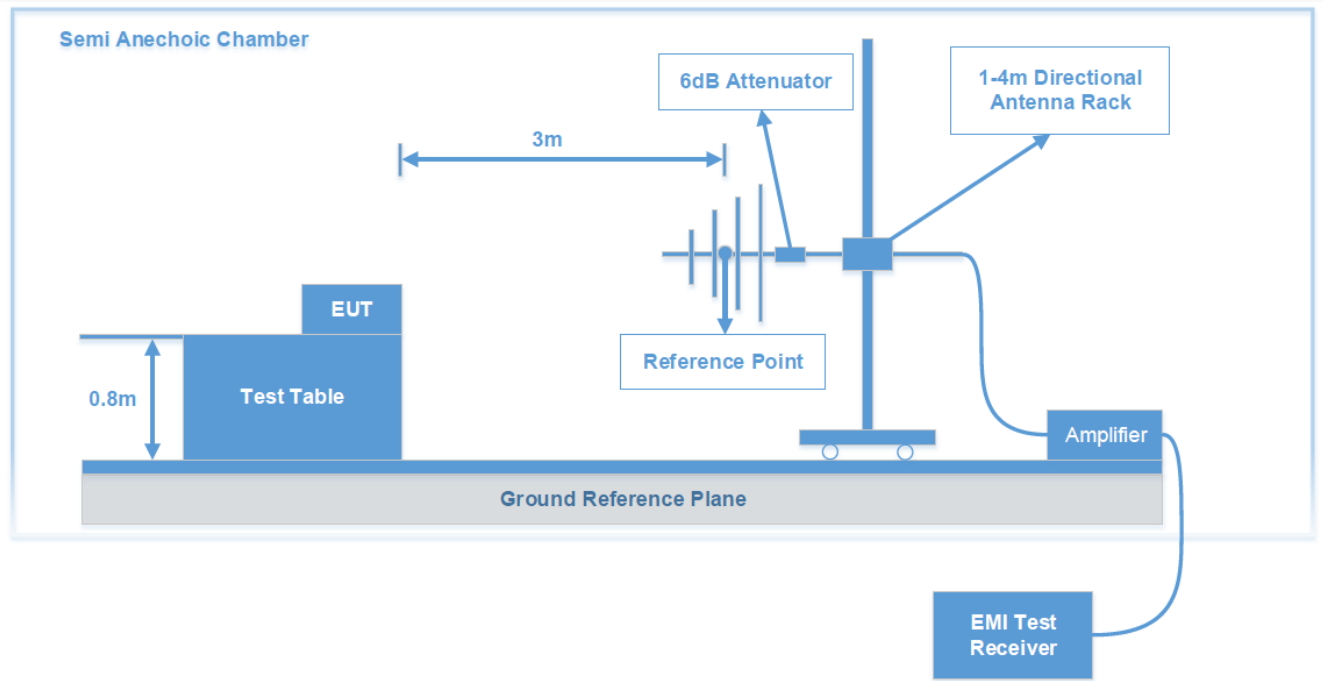
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

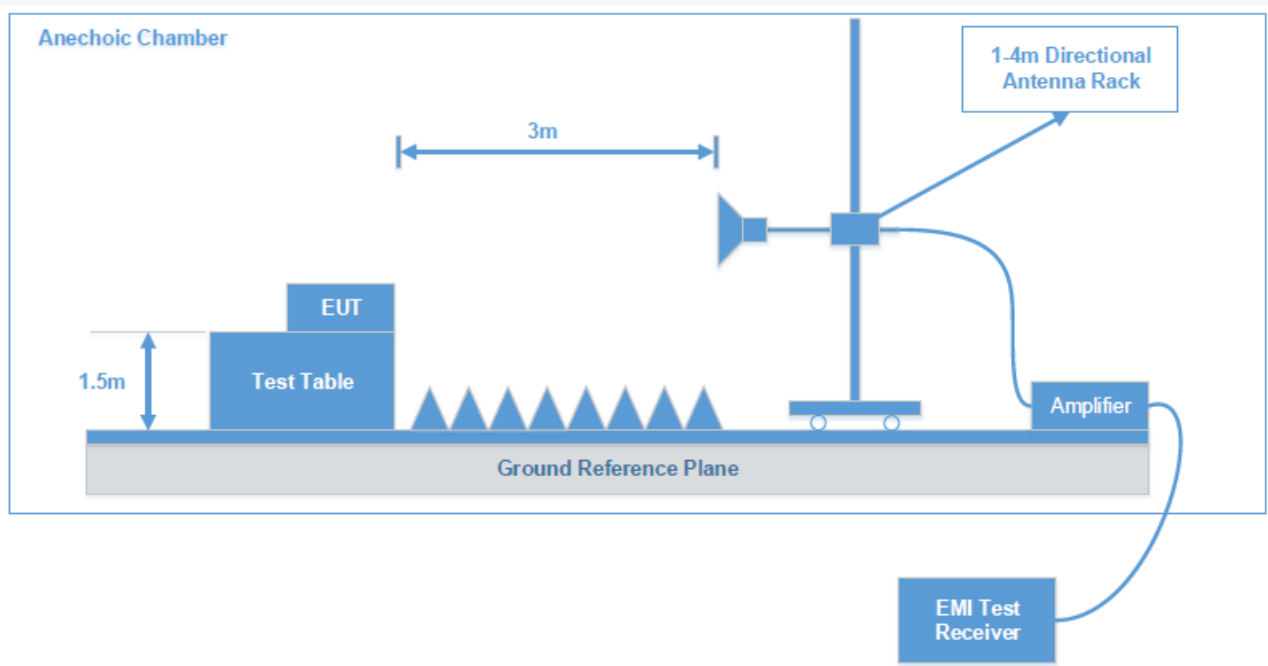
9 kHz – 30 MHz:



30 MHz - 1 GHz:



1 GHz – 25 GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. 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
9 kHz - 150 kHz	200 Hz	1 kHz	200 Hz	QP/Average
150 kHz - 30 MHz	9 kHz	30 kHz	9 kHz	QP/ Average
30 MHz - 1000 MHz	100 kHz	300 kHz	/	Peak
	/	/	120 kHz	QP
Above 1GHz	1MHz	3 MHz	/	Peak
	1MHz	3 MHz	/	Average

Test Procedure

According to ANSI C63.10-2013 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.

If the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

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.

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 (dBμV/m) = Meter Reading (dBμV) + 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 (dBμV/m) – Corrected Amplitude (dBμV/m)

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

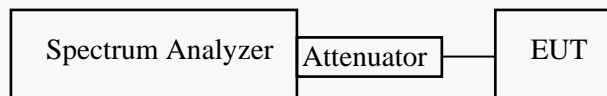
Applicable Standard

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 C63.10-2013 sub-clause 11.8.1

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 * \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



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.

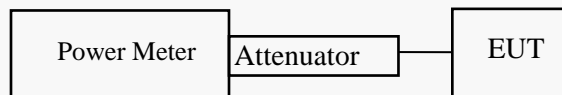
Test Procedure

According to ANSI C63.10-2013 sub-clause 11.9.2.3.2

Method AVGPM-G is a measurement using a gated RF average power meter.

Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

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: See Appendix

FCC §15.247(D) – 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

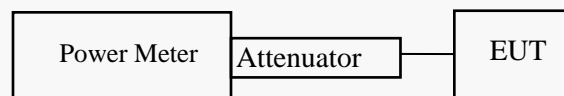
Applicable Standard

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 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 C63.10-2013 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.



Test Data: See Appendix

FCC §15.247(E) - POWER SPECTRAL DENSITY

Applicable Standard

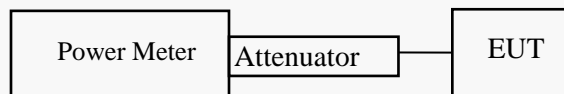
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of 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 C63.10-2013 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 to 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.



Test Data: See Appendix

APPENDIX - TEST DATA

Environmental Conditions & Test Information

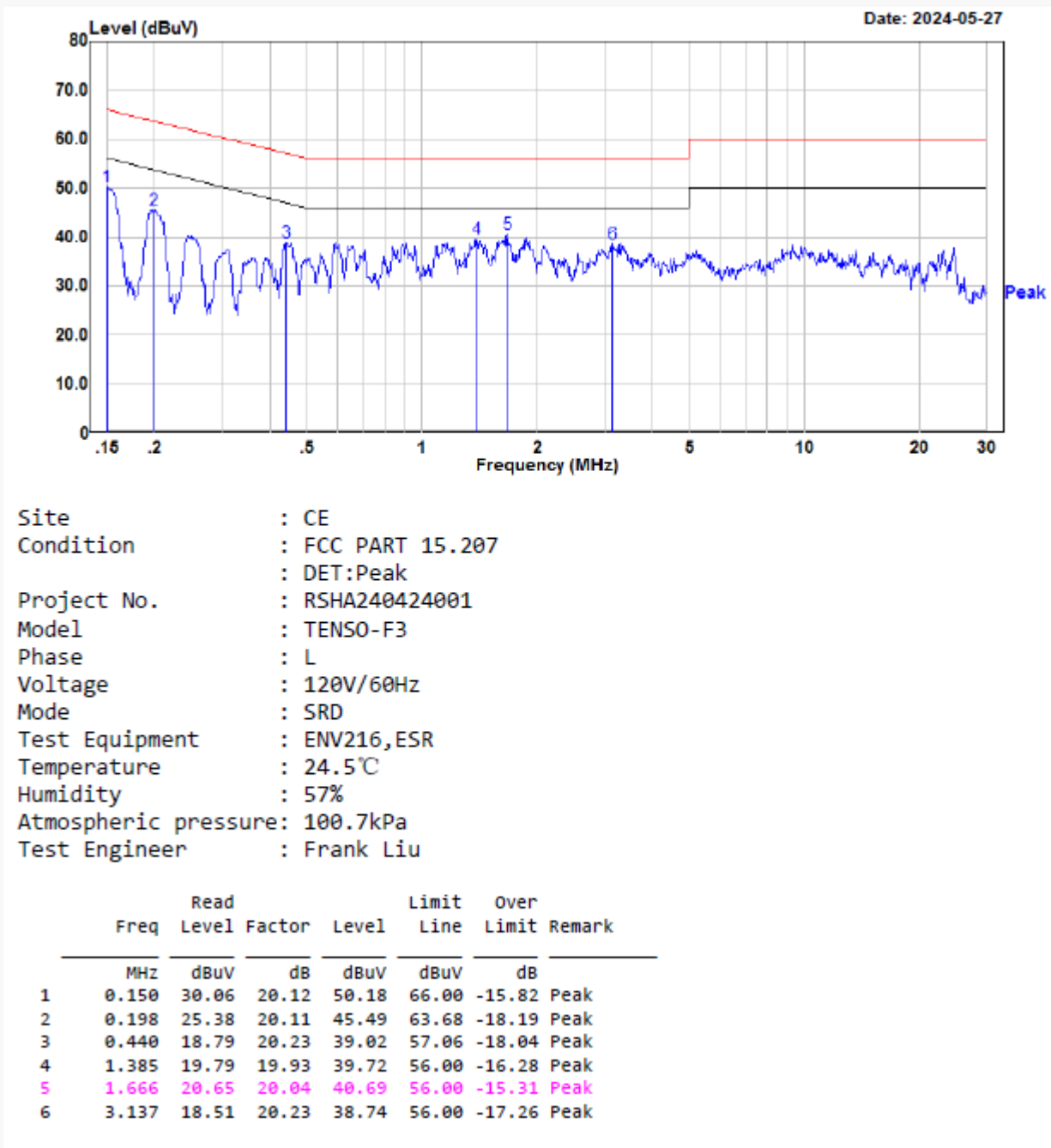
Test Item:	AC LINE CONDUCTED EMISSIONS	SPURIOUS EMISSIONS
		9 kHz - 25GHz
Test Date:	2024-05-27	2024-05-11 to 2024-07-28
Temperature:	24.5 °C	20.0 °C - 22.8 °C
Relative Humidity:	57 %	50 % - 53 %
ATM Pressure:	100.7kPa	100.5kPa - 101.2kPa
Test Result:	Pass	Pass
Test Engineer:	Frank Liu	Leah Li/Hugh Wu

Test Item:	6 DB EMISSION BANDWIDTH	MAXIMUM CONDUCTED OUTPUT POWER	100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	POWER SPECTRAL DENSITY
Test Date:	2024-06-17	2024-06-17	2024-08-06	2024-06-17
Temperature:	21.3 °C	21.3 °C	22.3 °C	21.3 °C
Relative Humidity:	53 %	53 %	51 %	53 %
ATM Pressure:	101.2kPa	101.2kPa	101.0 kPa	101.2kPa
Test Result:	Pass	Pass	Pass	Pass
Test Engineer:	Jason Lu	Jason Lu	Neil Zhou	Jason Lu

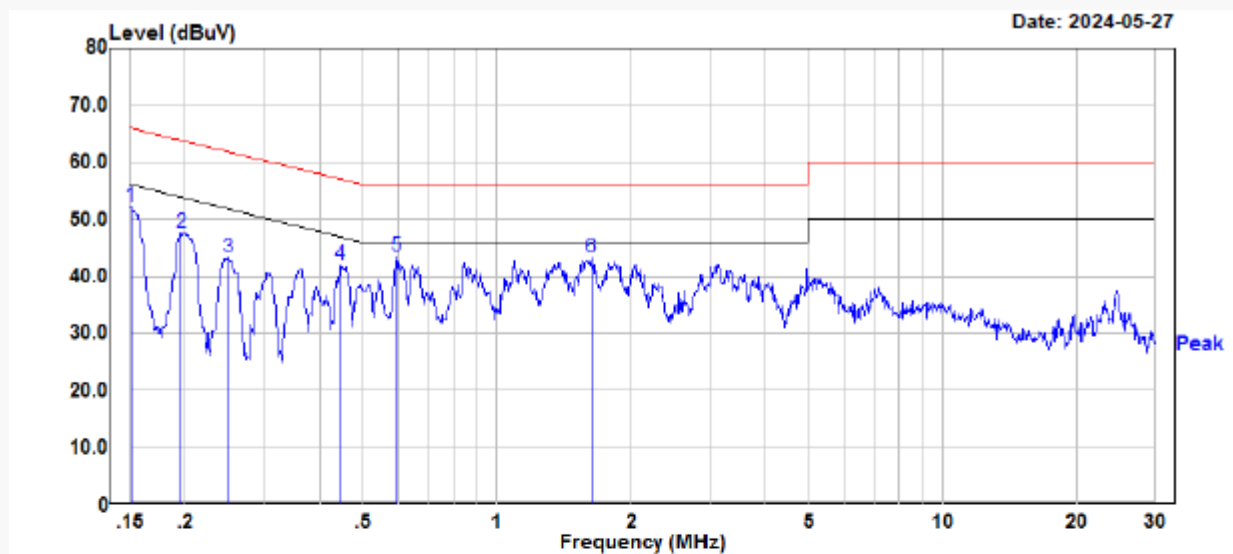
AC LINE CONDUCTED EMISSIONS

EUT operation mode: Transmitting in high channel (worst case)

Line



Neutral



Site : CE
Condition : FCC PART 15.207
: DET:Peak
Project No. : RSHA240424001
Model : TENS0-F3
Phase : N
Voltage : 120V/60Hz
Mode : SRD
Test Equipment : ENV216,ESR
Temperature : 24.5°C
Humidity : 57%
Atmospheric pressure: 100.7kPa
Test Engineer : Frank Liu

	Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.151	32.06	20.12	52.18	65.96	-13.78 Peak
2	0.195	27.61	20.11	47.72	63.81	-16.09 Peak
3	0.249	23.13	20.14	43.27	61.78	-18.51 Peak
4	0.445	21.81	20.23	42.04	56.98	-14.94 Peak
5	0.597	23.37	20.10	43.47	56.00	-12.53 Peak
6	1.625	23.27	20.02	43.29	56.00	-12.71 Peak

SPURIOUS EMISSIONS

EUT operation mode: Transmitting

9 kHz – 30 MHz: (Transmitting in maximum output power mode and channel)

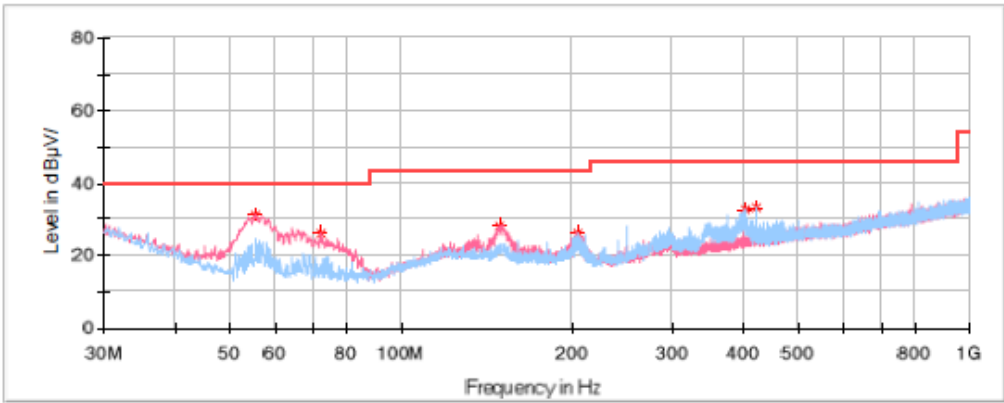
The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

30MHz-1GHz

Low Channel: 2412 MHz

Common Information

Project No:	RSHA240424001
EUT Model:	TENSO-F3
Test Mode:	SRD
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESCI, JB3, 310N
Temperature:	23.4°C
Humidity:	57%
Barometric Pressure:	100.5kPa
Test Engineer:	Leah Li
Test Date:	2024/6/12

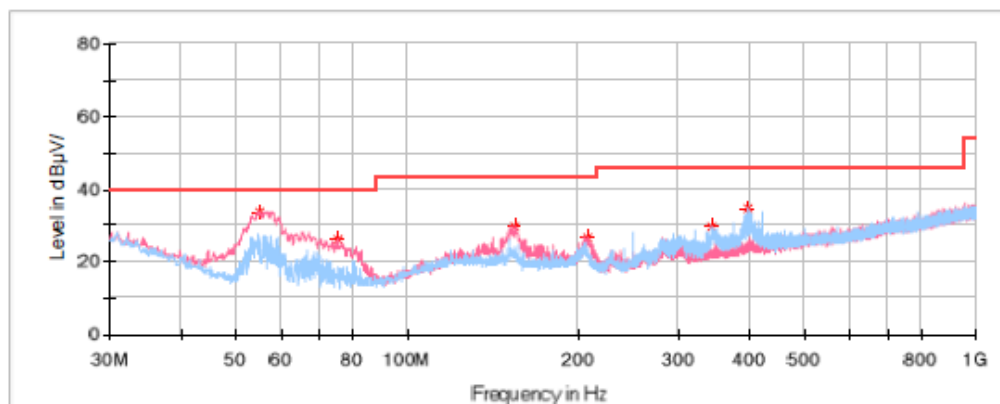


Critical Freqs

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
55.462500	31.28	40.00	8.72	V	-17.2
72.316250	26.37	40.00	13.63	V	-17.1
149.310000	28.11	43.50	15.39	V	-11.8
205.085000	26.17	43.50	17.33	H	-12.5
402.965000	32.60	46.00	13.40	H	-7.9
421.637500	32.97	46.00	13.03	H	-7.4

Middle Channel: 2437 MHz**Common Information**

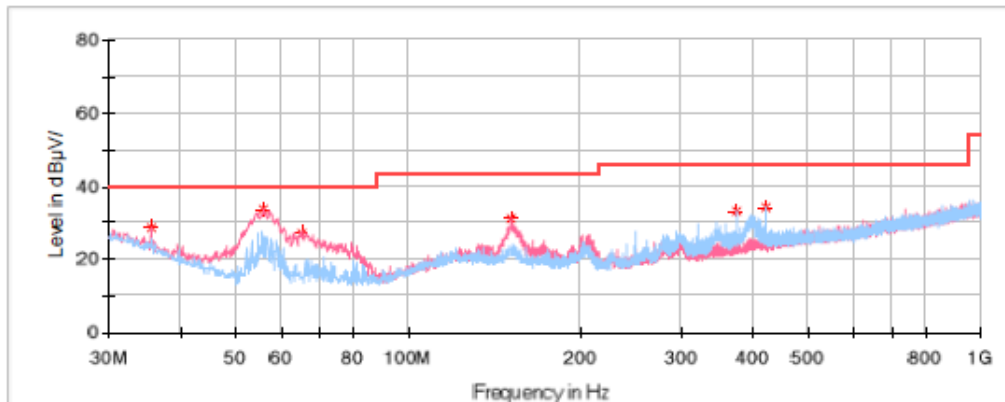
Project No: RSHA240424001
EUT Model: TENSO-F3
Test Mode: SRD
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment: ESCI, JB3, 310N
Temperature: 23.4°C
Humidity: 57%
Barometric Pressure: 100.5kPa
Test Engineer: Leah Li
Test Date: 2024/6/12

**Critical Freqs**

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
54.977500	33.90	40.00	6.10	V	-17.2
75.226250	26.01	40.00	13.99	V	-17.2
154.402500	29.91	43.50	13.59	V	-11.9
207.510000	26.76	43.50	16.74	V	-12.7
342.582500	29.58	46.00	16.42	H	-9.4
397.145000	34.79	46.00	11.21	H	-8.1

High Channel: 2462 MHz**Common Information**

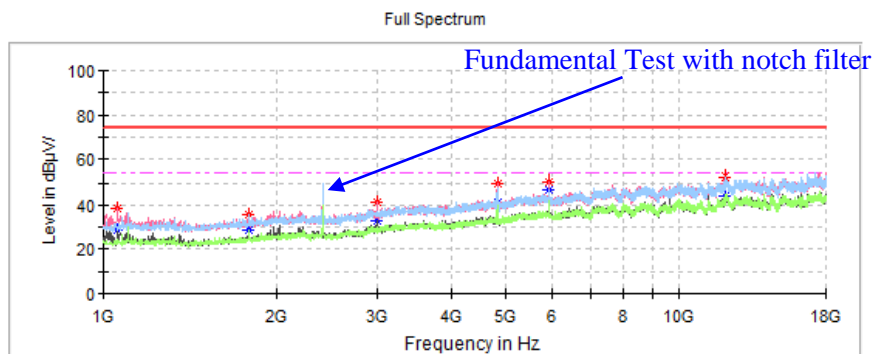
Project No: RSHA240424001
EUT Model: TENSO-F3
Test Mode: SRD
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment: ESCI, JB3, 310N
Temperature: 23.4°C
Humidity: 57%
Barometric Pressure: 100.5kPa
Test Engineer: Leah Li
Test Date: 2024/6/12

**Critical Freqs**

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
35.456250	28.50	40.00	11.50	V	-8.4
55.826250	33.52	40.00	6.48	V	-17.2
64.920000	27.12	40.00	12.88	V	-17.3
150.886250	31.19	43.50	12.31	V	-11.8
375.077500	33.29	46.00	12.71	H	-8.6
421.637500	34.40	46.00	11.60	H	-7.4

1GHz - 18GHz:**Low Channel: 2412 MHz****Common Information**

Project No.: RSHA240424001
 Test Mode: SRD
 Standard: FCC Part 15.247
 Test Engineer: Hugh Wu

**Critical Freqs**

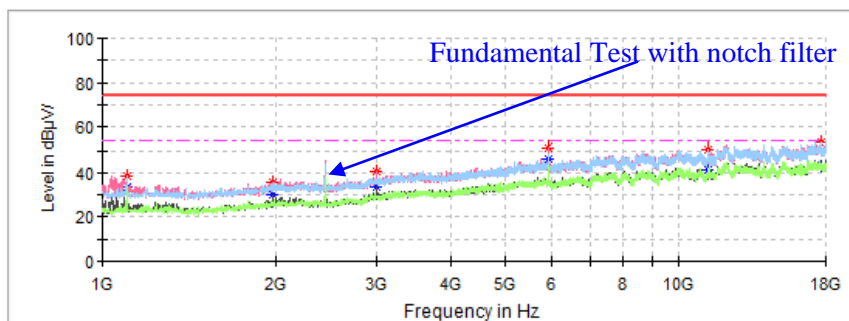
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1056.100000	---	28.80	54.00	25.20	V	-15.4
1056.100000	38.44	---	74.00	35.56	V	-15.4
1792.200000	---	28.65	54.00	25.35	H	-13.0
1792.200000	35.69	---	74.00	38.31	H	-13.0
2990.700000	---	33.08	54.00	20.92	V	-8.5
2990.700000	41.15	---	74.00	32.85	V	-8.5
4821.600000	---	41.39	54.00	12.61	V	-3.1
4821.600000	49.73	---	74.00	24.27	V	-3.1
5933.400000	50.57	---	74.00	23.43	V	0.0
5933.400000	---	46.70	54.00	7.30	V	0.0
12055.100000	---	44.18	54.00	9.82	H	9.0
12055.100000	52.32	---	74.00	21.68	H	9.0

Middle Channel: 2442MHz

Common Information

Project No.: RSHA240424001
Test Mode: SRD
Standard: FCC Part 15.247
Test Engineer: Hugh Wu

Full Spectrum

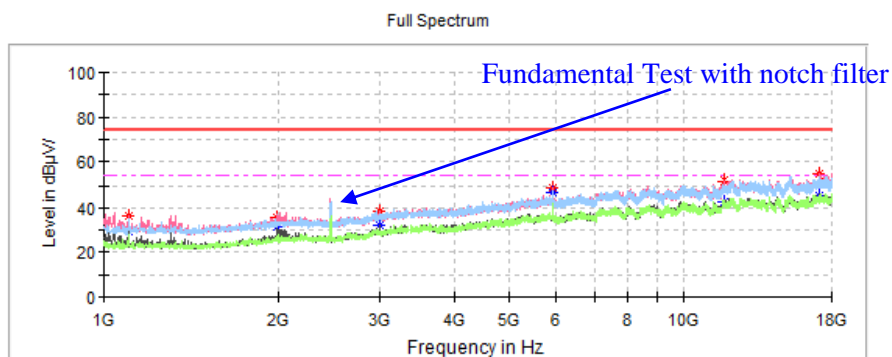


Critical Freqs

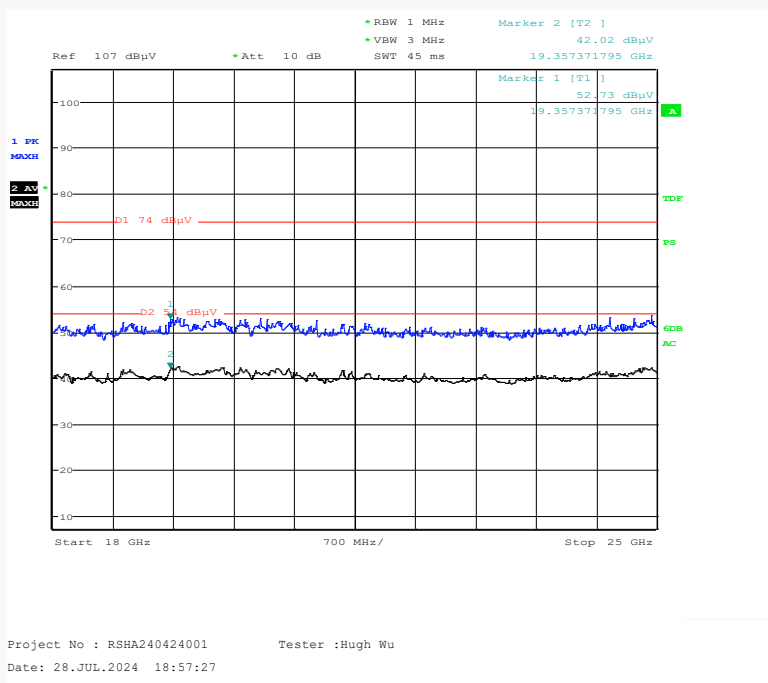
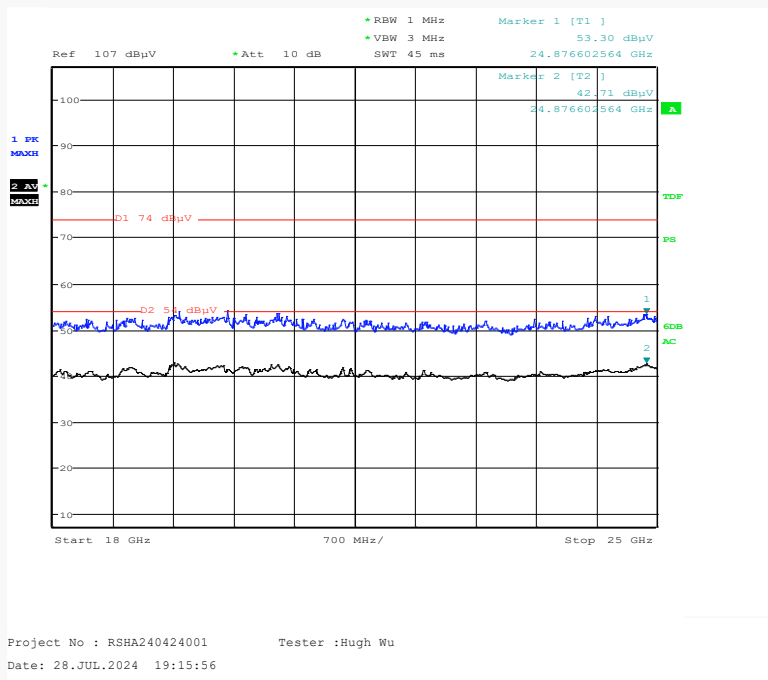
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1103.700000	38.39	---	74.00	35.61	H	-15.3
1103.700000	---	33.57	54.00	20.43	H	-15.3
1977.500000	35.33	---	74.00	38.67	V	-11.9
1977.500000	---	30.36	54.00	23.64	V	-11.9
2990.700000	40.47	---	74.00	33.53	V	-8.5
2990.700000	---	33.39	54.00	20.61	V	-8.5
5933.400000	51.06	---	74.00	22.94	V	0.0
5933.400000	---	46.40	54.00	7.60	V	0.0
11205.100000	---	41.50	54.00	12.50	V	7.9
11205.100000	50.53	---	74.00	23.47	V	7.9
17694.000000	---	42.53	54.00	11.47	H	11.7
17694.000000	52.84	---	74.00	21.16	H	11.7

High Channel: 2467MHz**Common Information**

Project No.: RSHA240424001
 Test Mode: SRD
 Standard: FCC Part 15.247
 Test Engineer: Hugh Wu

**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)
1102.000000	36.47	---	74.00	37.53	V	-15.3
1102.000000	---	29.17	54.00	24.83	V	-15.3
1991.100000	35.40	---	74.00	38.60	V	-11.8
1991.100000	---	31.14	54.00	22.86	V	-11.8
2990.700000	---	32.30	54.00	21.70	V	-8.5
2990.700000	38.50	---	74.00	35.50	V	-8.5
5933.400000	49.23	---	74.00	24.77	V	0.0
5933.400000	---	46.66	54.00	7.34	V	0.0
11745.700000	---	42.69	54.00	11.31	V	8.9
11745.700000	51.84	---	74.00	22.16	V	8.9
17144.900000	---	45.32	54.00	8.68	H	12.1
17144.900000	54.45	---	74.00	19.55	H	12.1

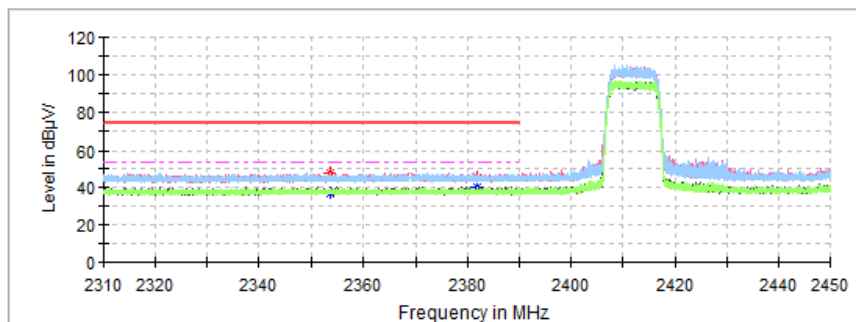
18GHz-25GHz: (Transmitting in maximum output power mode high channel)**Horizontal****Vertical**

Note: The test distance is 3m. The limit is 74dBμV/m(Peak) and 54dBμV/m(Average).

Band Edge**Common Information**

Project No.: RSHA240424001
Test Mode: SRD
Standard: FCC Part 15.247
Test Engineer: Hugh Wu

Full Spectrum

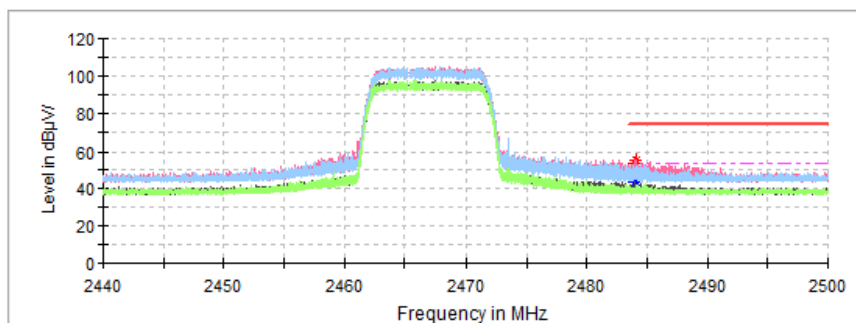
**Critical Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2353.820000	48.12	---	74.00	25.88	H	-0.7
2353.820000	---	36.98	54.00	17.02	H	-0.7
2381.890000	45.57	---	74.00	28.43	H	-0.6
2381.890000	---	40.51	54.00	13.49	H	-0.6

Common Information

Project No.: RSHA240424001
Test Mode: SRD
Standard: FCC Part 15.247
Test Engineer: Hugh Wu

Full Spectrum

**Critical Freqs**

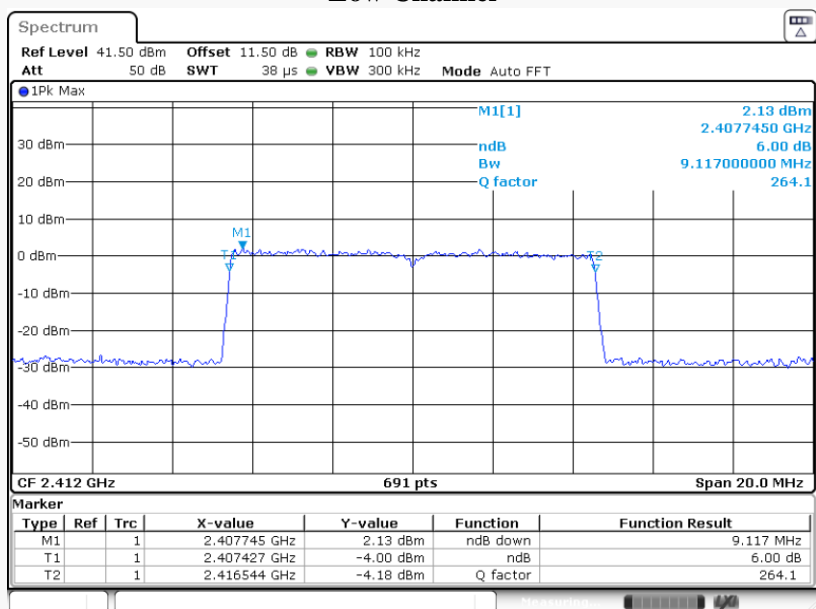
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.926000	---	43.49	54.00	10.51	V	-0.3
2483.926000	53.50	---	74.00	20.50	V	-0.3
2484.082000	---	41.61	54.00	12.39	V	-0.3
2484.082000	55.53	---	74.00	18.47	V	-0.3

6 dB EMISSION BANDWIDTH

EUT operation mode: Transmitting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
Low	2412	9.12	≥ 0.5
Middle	2442	9.12	≥ 0.5
High	2467	9.12	≥ 0.5

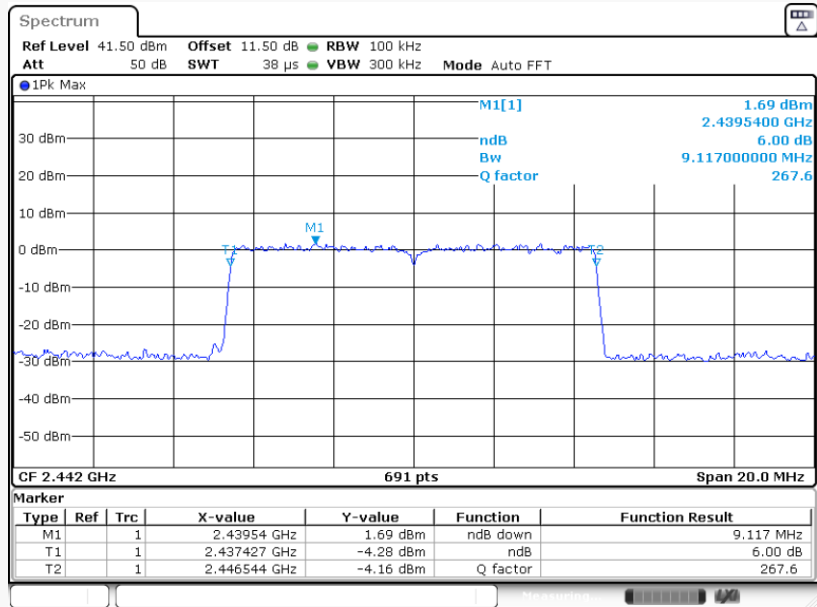
Low Channel



ProjectNo.: RSHA240424001 Tester: Jason Lu

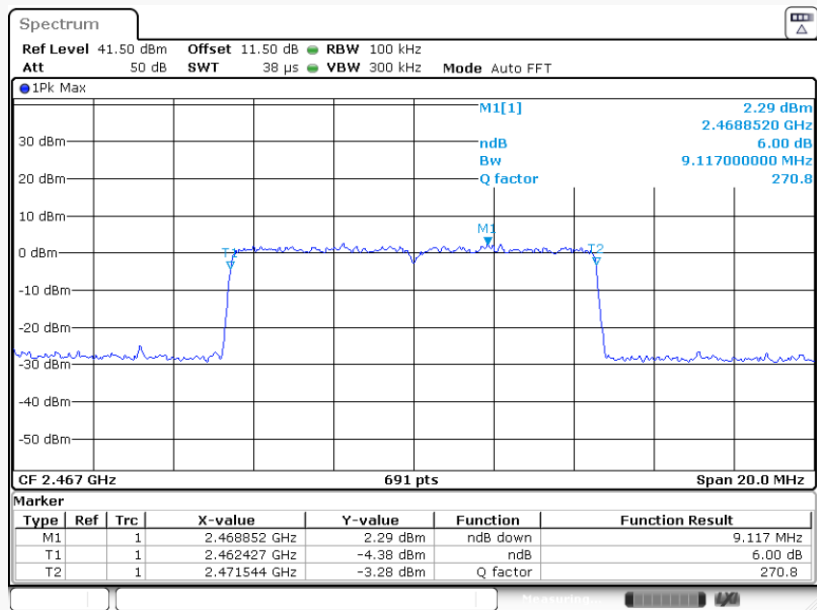
Date: 17 JUN 2024 11:31:15

Middle Channel



ProjectNo.: RSHA240424001 Tester: Jason Lu
Date: 17 JUN 2024 11:30:31

High Channel



ProjectNo.: RSHA240424001 Tester: Jason Lu
Date: 17 JUN 2024 11:29:55

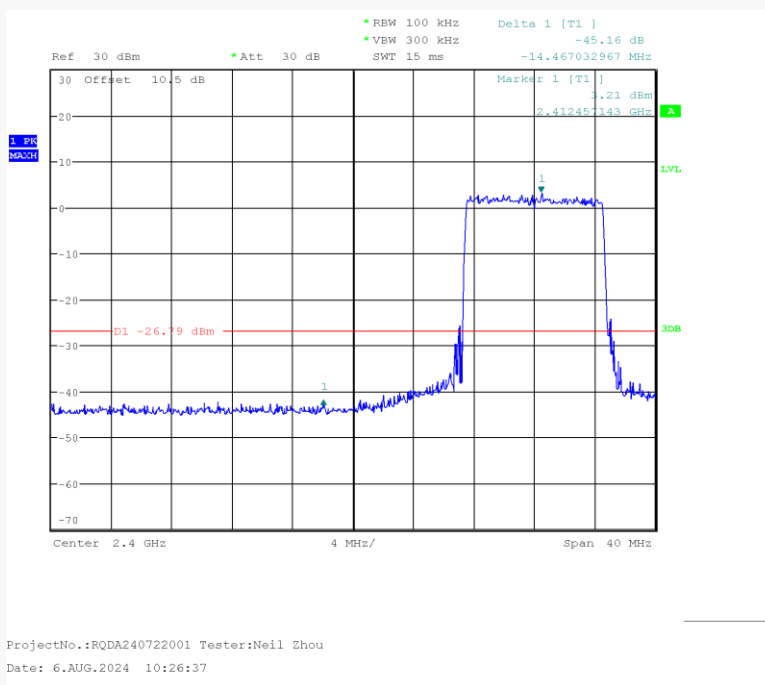
MAXIMUM CONDUCTED OUTPUT POWER*EUT operation mode: Transmitting*

Channel	Frequency (MHz)	Max Conducted Average Output Power (dBm)	Limit (dBm)	Result
Low	2412	19.01	30	Pass
Middle	2442	18.89	30	Pass
High	2467	19.05	30	Pass

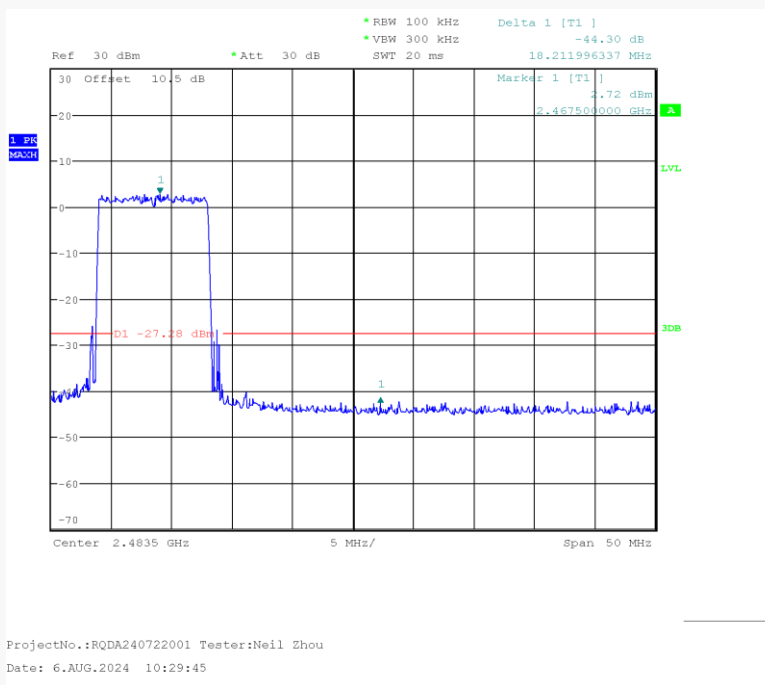
100 kHz Bandwidth of Frequency Band Edge

EUT operation mode: Transmitting

Left Side



Right Side

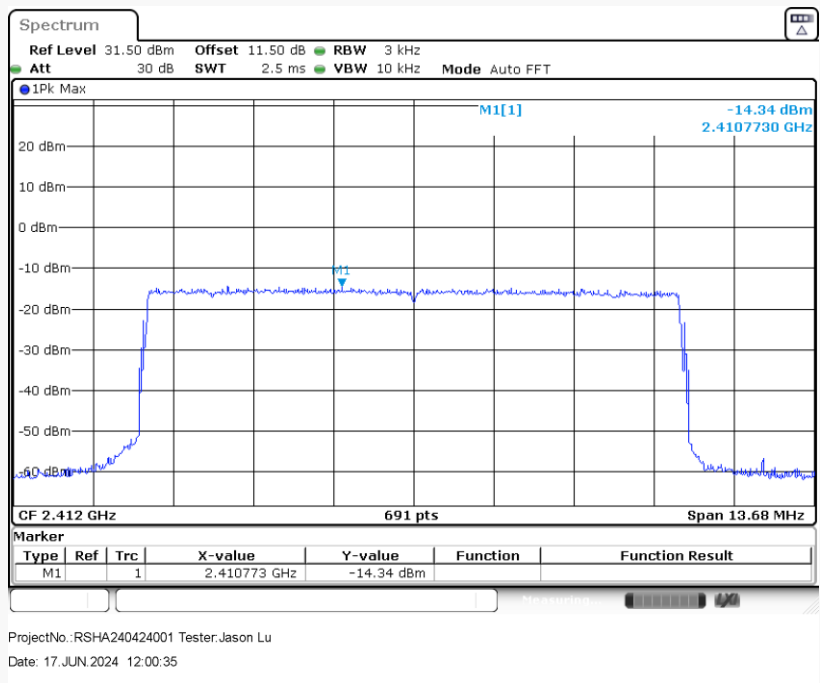


Power Spectral Density

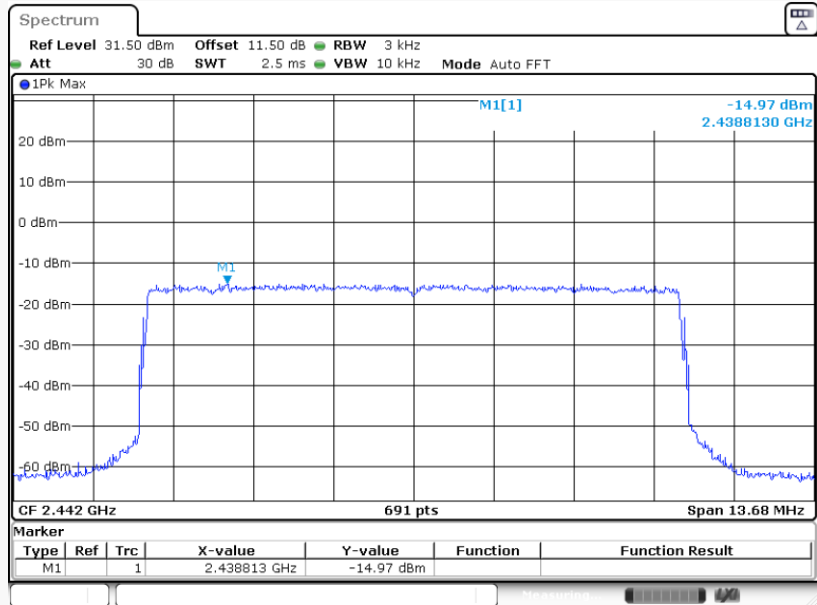
EUT operation mode: Transmitting

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Low	2412	-14.34	≤ 8
Middle	2442	-14.97	≤ 8
High	2467	-14.06	≤ 8

Low Channel



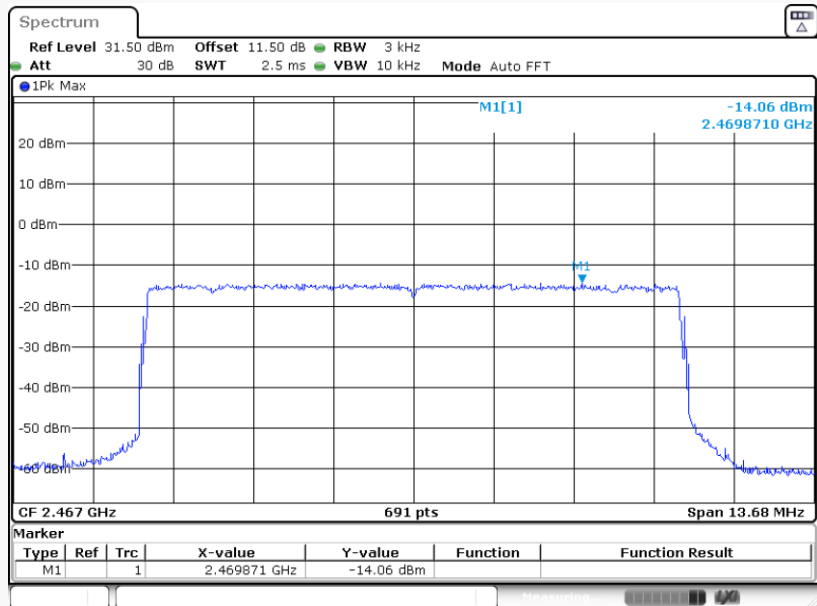
Middle Channel



ProjectNo.: RSHA240424001 Tester: Jason Lu

Date: 17 JUN 2024 12:00:13

High Channel



ProjectNo.: RSHA240424001 Tester: Jason Lu

Date: 17 JUN 2024 11:59:43

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 *******