FCC PART 15.247
TEST REPORT

For

NARI Technology Co., Ltd.

No.19 Chengxin Avenue, Nan Jing, Jiangsu Province, 211106 China

FCC ID: 2BNCESEA2500-M01

Report Type:	**Product Name:**
Original Report	Wi-SUN Border Router module

Report Number:	RSHA240417001-00A
Report Date:	2025-03-13
Reviewed By:	Bard Liu
Approved By:	Kyle Xu
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

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RSHA240417001-00A	R1V1	2025-03-13	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	NARI Technology Co., Ltd.
Product Name:	Wi-SUN Border Router module
Tested Model:	SEA2500-M01
Power Supply:	DC 4V-4.5V
RF Function:	SRD
Operating Band/Frequency:	902.2-927.8 MHz
Maximum Output Power:	29.11dBm
Modulation Type:	FSK
Antenna Type:	Rod Antenna; FPC Antenna; PCB Antenna
★Maximum Antenna Gain:	Rod Antenna: 0.42 dBi FPC Antenna: 2.38 dBi PCB Antenna: 2.35 dBi

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

All measurement and test data in this report was gathered from production sample serial number: RSHA240417001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-04-17.)

Objective

This type approval report is prepared for *NARI Technology Co., Ltd.* in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commission rules.

The tests were performed in order to determine compliance 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 Compliance Testing of Unlicensed Wireless Devices.

Measurement Uncertainty

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

Justification

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	902.2	34	909	68	915.8	102	922.6
1	902.4	35	909.2	69	916	103	922.8
2	902.6	36	909.4	70	916.2	104	923
3	902.8	37	909.6	71	916.4	105	923.2
4	903	38	909.8	72	916.6	106	923.4
5	903.2	39	910	73	916.8	107	923.6
6	903.4	40	910.2	74	917	108	923.8
7	903.6	41	910.4	75	917.2	109	924
8	903.8	42	910.6	76	917.4	110	924.2
9	904	43	910.8	77	917.6	111	924.4
10	904.2	44	911	78	917.8	112	924.6
11	904.4	45	911.2	79	918	113	924.8
12	904.6	46	911.4	80	918.2	114	925
13	904.8	47	911.6	81	918.4	115	925.2
14	905	48	911.8	82	918.6	116	925.4
15	905.2	49	912	83	918.8	117	925.6
16	905.4	50	912.2	84	919	118	925.8
17	905.6	51	912.4	85	919.2	119	926
18	905.8	52	912.6	86	919.4	120	926.2
19	906	53	912.8	87	919.6	121	926.4
20	906.2	54	913	88	919.8	122	926.6
21	906.4	55	913.2	89	920	123	926.8
22	906.6	56	913.4	90	920.2	124	927
23	906.8	57	913.6	91	920.4	125	927.2
24	907	58	913.8	92	920.6	126	927.4
25	907.2	59	914	93	920.8	127	927.6
26	907.4	60	914.2	94	921	128	927.8
27	907.6	61	914.4	95	921.2	/	/
28	907.8	62	914.6	96	921.4	/	/
29	908	63	914.8	97	921.6	/	/
30	908.2	64	915	98	921.8	/	/
31	908.4	65	915.2	99	922	/	/
32	908.6	66	915.4	100	922.2	/	/
33	908.8	67	915.6	101	922.4	/	/

EUT was tested with channel 0, 64, 128

EUT Exercise Software

"Tera Term" was used during the test.

★Power level: 8

Note: The power level is provided by the applicant.

Support Equipment List and Details

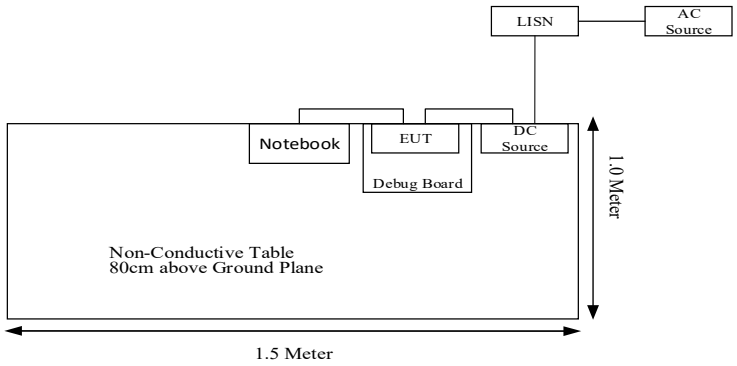
Manufacturer	Description	Model	Serial Number
Shenzhen Zhaoxin Electronic Instrument Equipment Co., Ltd.	DC Source	PS-6005D	18P6005D10724
DELL	Notebook	015K3N	00190-098-766-241
/	Debug board	/	/

External I/O Cable

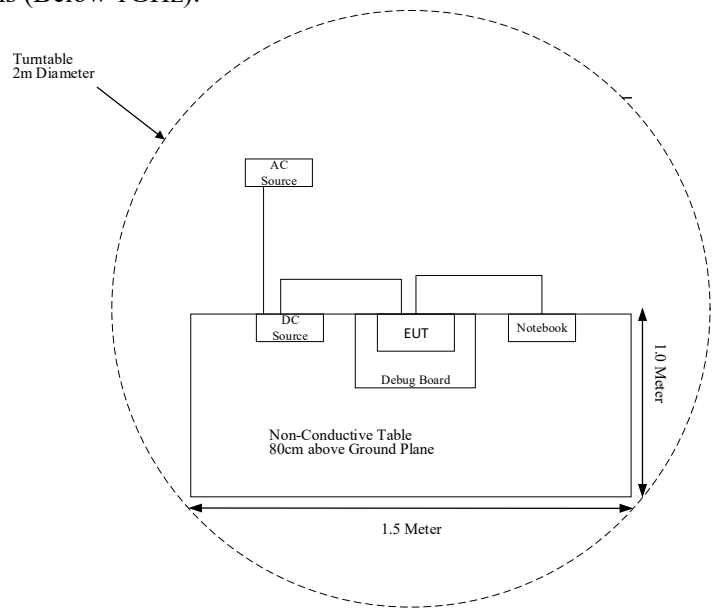
Cable Description	Length (m)	From Port	To Port
Data Cable	1.2	Debug board	Notebook
Power Cable 1	1.0	Debug board	DC Source
Power Cable 2	1.0	DC Source	AC Source/LISN

Block Diagram of Test Setup

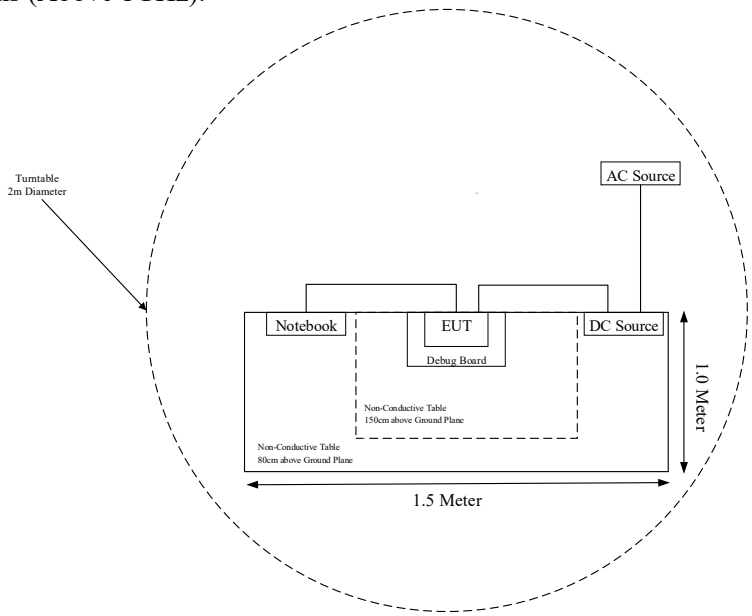
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.209, §15.205 & §15.247(D)	Spurious Emissions	Compliant
§15.247(a)(1)	Channel Separation Test	Compliant
§ 15.247(a) (1) (I)	20 dB Bandwidth	Compliant
§15.247(a) (1) (I)	Time of Occupancy (Dwell Time)	Compliant
§ 15.247(a) (1) (I)	Quantity of hopping channel Test	Compliant
§15.247(b) (2)	Maximum Conducted Output Power	Compliant
§15.247(d)	Band Edge	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber 1#)					
9kHz~30MHz					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2024-04-23	2025-04-22
Sonoma Instrunent	Amplifier	310N	171205	2024-04-23	2025-04-22
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
MICRO-COAX	Coaxial Cable	Cable-8	008	2024-04-25	2025-04-24
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
30MHz~1GHz					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2024-04-23	2025-04-22
Sunol Sciences	Broadband Antenna	JB3	A090314-1	2024-11-08	2027-11-07
Narda	6dB Attenuator	773-6	10690812-2-1	2024-11-08	2027-11-07
Sonoma Instrunent	Amplifier	310N	171205	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-8	008	2024-04-25	2025-04-24
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
Rohde & Schwarz	Test Software	EMC32	100361	N/A	N/A
Eastsheep	Attenuator	20dB	010	2024-04-24	2025-04-23
Microtronics	Band rejection filter	BRC50722	G013	2024-04-24	2025-04-23
Radiated Emission Test (Chamber 2#)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9207-3900	2024-11-03	2027-11-02
A.H.Systems,inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-13	013	2024-04-23	2025-04-22
Rohde & Schwarz	Test Software	EMC32	100361	N/A	N/A
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	0357.8810.54	2024-05-23	2025-05-22
MICRO-COAX	Coaxial Cable	Cable-15	015	2024-04-23	2025-04-22

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSIQ26	100048	2024-04-24	2025-04-23
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2024-04-24	2025-04-23
Eastsheep	Attenuator	20dB	010	2024-04-24	2025-04-23

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

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

Applicable Standard

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

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

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

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

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

Calculated Formulary
Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	**Frequency Range (MHz)**	**Antenna Gain**		**★Tune-up Output Power**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
		(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
SRD	902-928	2.38	1.73	30	1000	20	0.34	0.601

Note:

1. For the above tune up power were declared by the manufacturer.

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

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine Compliant with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

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

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

Antenna Connector Construction

The EUT has a Rod antenna, FPC Antenna and PCB Antenna for SRD, use a unique type of connector to attach to the EUT, fulfill the requirement of this section. Please refer to the EUT photos.

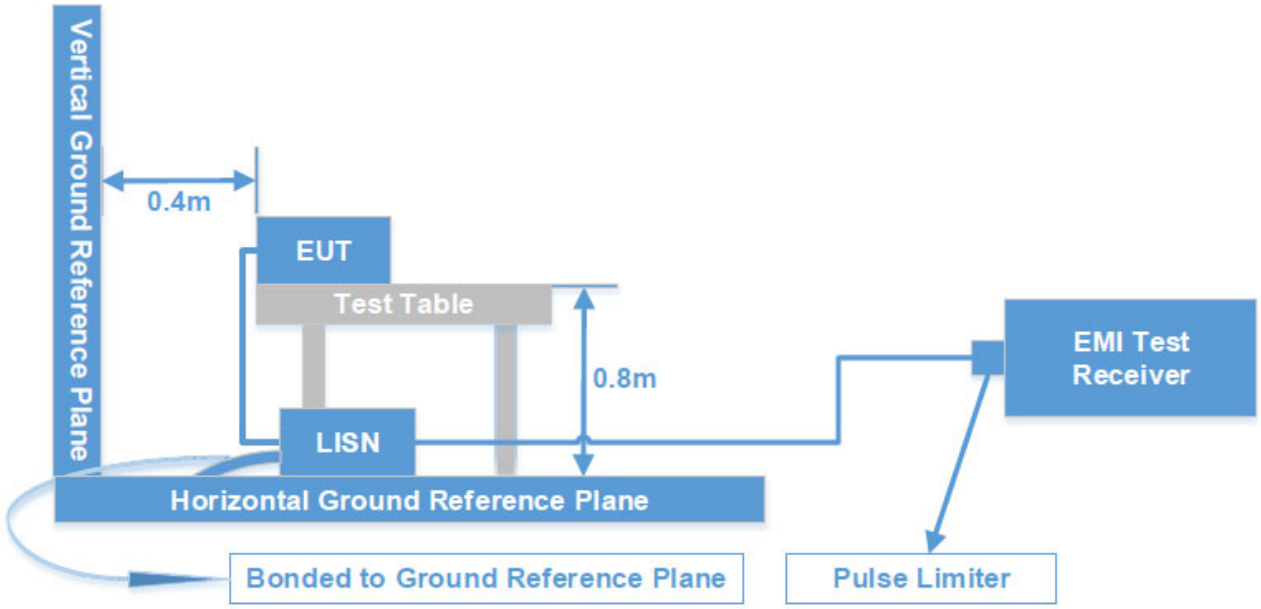
Result: Compliant.

FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Test System 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

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	RBW	VBW
150 kHz - 30 MHz	9 kHz	30 kHz

Test Procedure

ANSI C63.10-2013 clause 6.2

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

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

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

Level & Over Limit Calculation

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

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Level (dBμV) = Read level (dBμV) + Factor (dB)

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

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

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, FCC Part 15.207.

Test Data: See Exhibit A

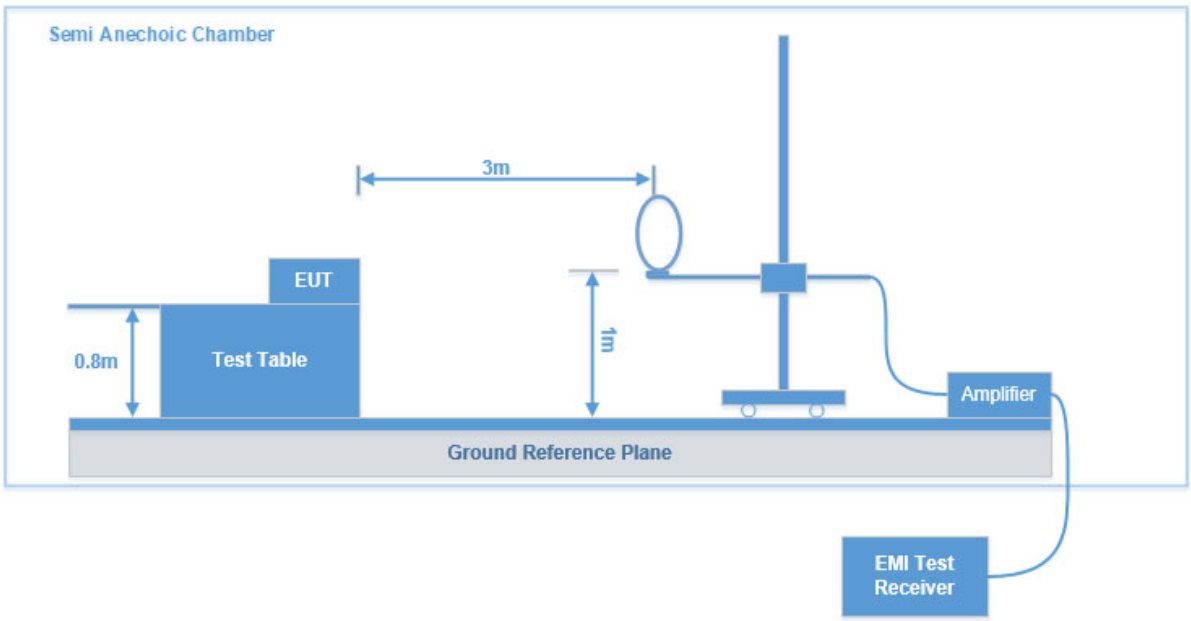
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

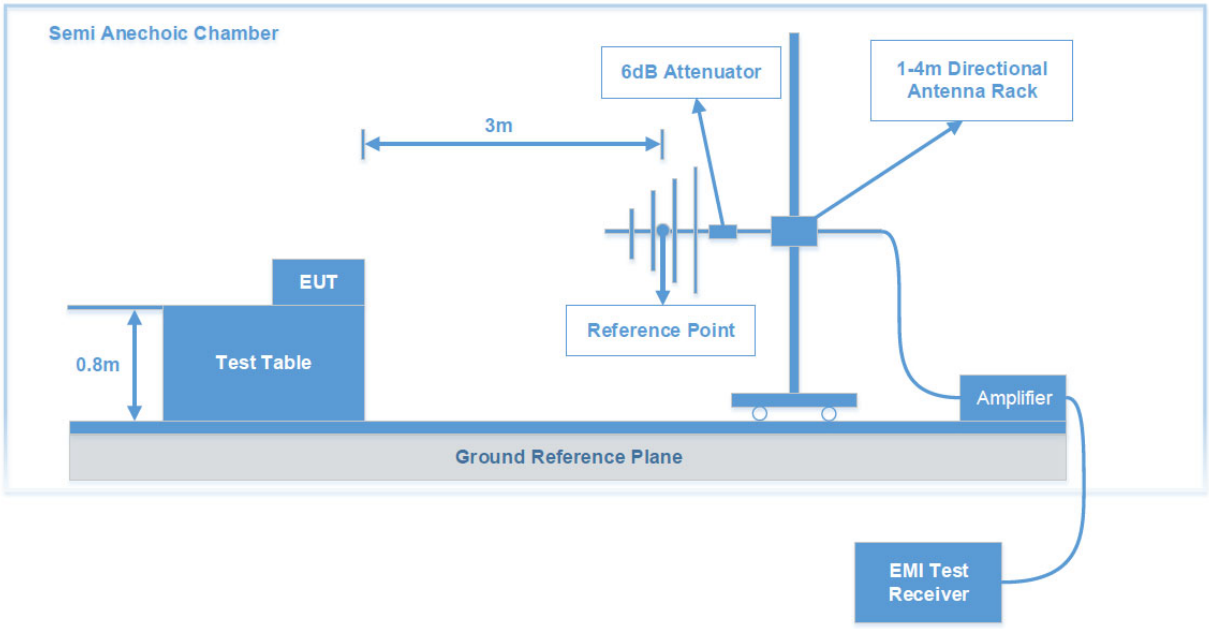
FCC §15.247 (d); §15.209; §15.205;

Test System Setup

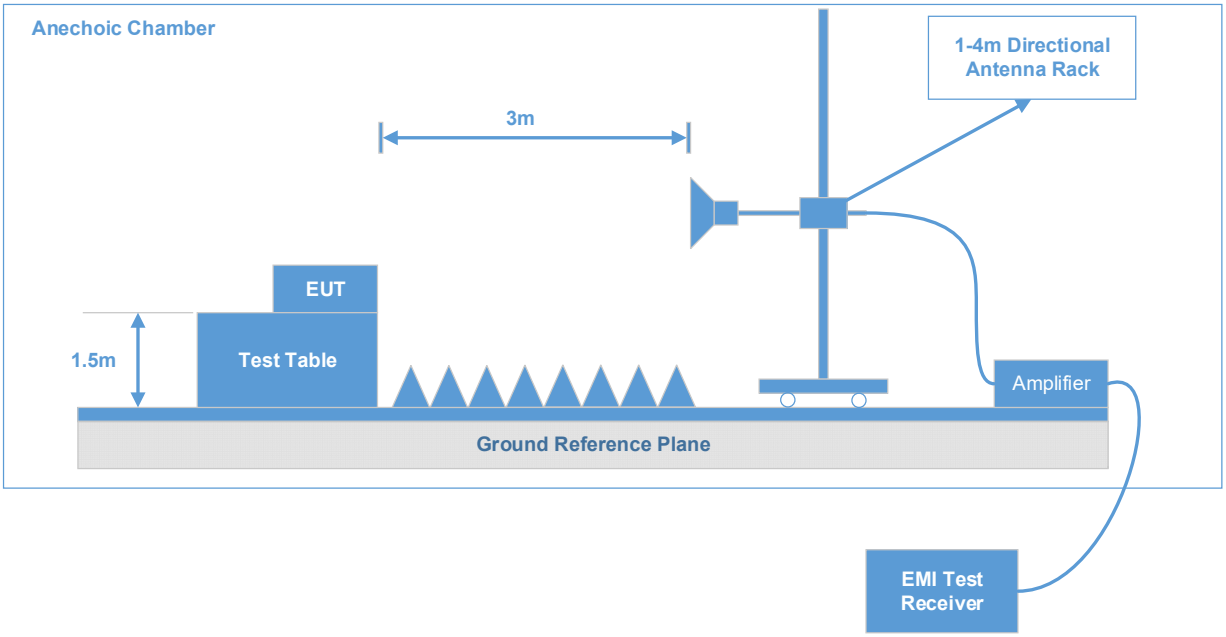
9 kHz-30MHz:



30MHz-1GHz:



Above 1 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

The system was investigated from 9 kHz to 9.5 GHz.

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

Frequency Range	RBW	VBW	IF B/W	Detector
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

Note: If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform a QP/Average measurement.

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.

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-1 GHz except 9–90 kHz, 110–490 kHz, employing an average detector, peak and Average detection modes for frequencies above 1GHz.

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)

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

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 Exhibit A

FCC §15.247(a) (1)-CHANNEL SEPARATION TEST

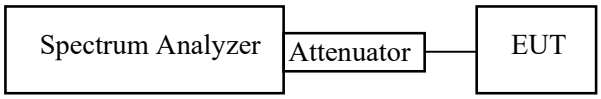
Applicable Standard

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test Procedure

1. Set the EUT in transmitting mode, maxhold the channel.
2. Set the adjacent channel of the EUT and maxhold another trace.

Measure the channel separation.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Exhibit A

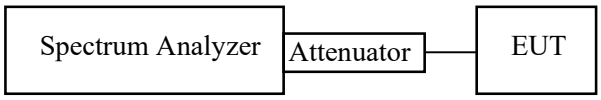
FCC §15.247(a) (1) (i) – 20 dB BANDWIDTH TESTING

Applicable Standard

For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Procedure

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 on the test table without connection to measurement instrument. Turn on the EUT. 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 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Exhibit A

FCC §15.247(a) (1) (i)-QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

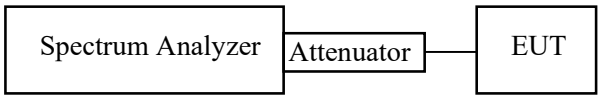
(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.

2. Set the EUT in hopping mode from first channel to last.

By using the max-hold function record the quantity of the channel.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Exhibit A

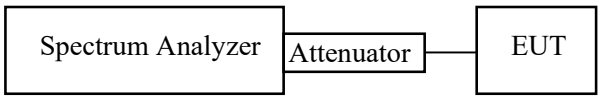
FCC §15.247(a) (1) (i) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 20 (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Exhibit A

FCC §15.247(b) (2) - MAXIMUM CONDUCTED OUTPUT POWER

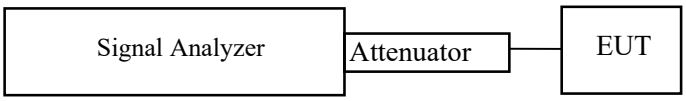
Applicable Standard

According to §15.247(b) (2), For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Test Procedure

a. Use the following spectrum analyzer settings:
   1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
   2) RBW > 20 dB bandwidth of the emission being measured.
   3) VBW ≥ RBW.
   4) Sweep: Auto.
   5) Detector function: Peak.
   6) Trace: Max hold.

b. Allow trace to stabilize.
c. Use the marker-to-peak function to set the marker to the peak of the emission.
d. The indicated level is the peak output power, after any corrections for external attenuators and cables.
e. A plot of the test results and setup description shall be included in the test report.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Exhibit A

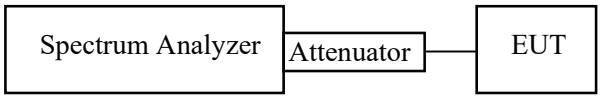
FCC §15.247(d) – BAND EDGE

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)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Note：Offset（20.5dB）= Attenuator (20dB)+cable loss（0.5dB）

Test Data: See Appendix

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.

EXHIBIT A - TEST DATA

Environmental Conditions & Test Information

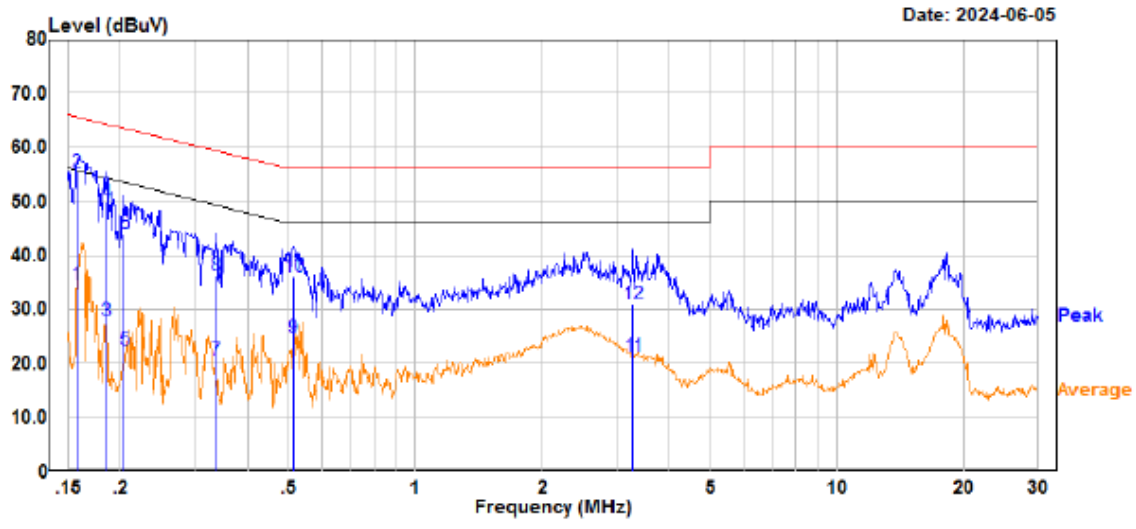
Test Item:	AC LINE CONDUCTED EMISSIONS	SPURIOUS EMISSIONS			CHANNEL SEPARATION TEST
		9 kHz - 30 MHz	30 MHz - 1 GHz	1 GHz – 9.5 GHz	
Test Date:	2024-06-05	2024-06-01	2025-03-10&2025-03-11	2024-12-17	2024-06-20
Temperature:	24.6 ℃	23 ℃	17.3 ℃~18℃	15.4℃	20.7℃
Relative Humidity:	66 %	51 %	54%~60 %	41 %	55%
ATM Pressure:	101.5 kPa	101.2 kPa	101.2 kPa ~101.6kPa	102.6 kPa	100.1 kPa
Test Result:	Pass	Pass	Pass	Pass	Pass
Test Engineer:	David Yang	Leah Li	Jerry Yan	Klein Zhu	Hardy Huang

Test Item:	20 DB BANDWIDTH TESTING	QUANTITY OF HOPPING CHANNEL TEST	TIME OF OCCUPANCY (DWELL TIME)	MAXIMUM CONDUCTED OUTPUT POWER	BAND EDGE
Test Date:	2024-06-20	2025-03-12	2025-03-12	2024-06-20	2024-06-24 to 2025-03-11
Temperature:	20.7℃	22.3℃	22.3℃	20.7℃	17.3-21.4℃
Relative Humidity:	55%	35%	35%	55%	57 % - 67 %
ATM Pressure:	100.1kPa	101.0kPa	101.0kPa	100.1kPa	100.6kPa - 101.6kPa
Test Result:	Pass	Pass	Pass	Pass	Pass
Test Engineer:	Hardy Huang	Neil Zhou	Neil Zhou	Hardy Huang	Hardy Huang & Neil Zhou

AC LINE CONDUCTED EMISSIONS

Test mode： Transmitting in maximum output power channel (middle channel) with Rod Antenna

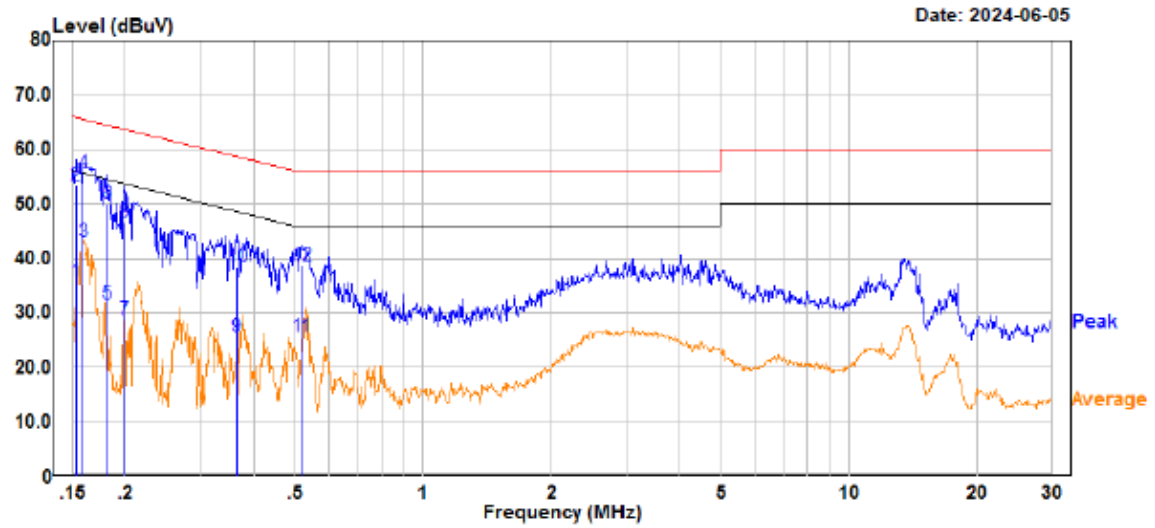
Line:




```
Site                 : CE
Condition            : limit\FCC PART 15C QP.csv Line
                     : DET:Peak
Project No.          : RSHA240417001
Model                : SEA2500-M01
Phase                : L
Voltage              : 120V/60Hz
Mode                 : Transmitting in SRD mode middle channel
Test Equipment       : ENV216,ESR
Temperature          : 24.6℃
Humidity             : 66%
Atmospheric pressure: 101.5kPa
Test Engineer        : David Yang
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	14.41	20.11	34.52	55.59	-21.07	Average
2	0.158	35.31	20.11	55.42	65.59	-10.17	QP
3	0.185	7.60	20.11	27.71	54.26	-26.55	Average
4	0.185	29.80	20.11	49.91	64.26	-14.35	QP
5	0.204	2.40	20.11	22.51	53.43	-30.92	Average
6	0.204	24.00	20.11	44.11	63.43	-19.32	QP
7	0.336	0.30	20.19	20.49	49.29	-28.80	Average
8	0.336	16.10	20.19	36.29	59.29	-23.00	QP
9	0.514	4.50	20.12	24.62	46.00	-21.38	Average
10	0.514	16.00	20.12	36.12	56.00	-19.88	QP
11	3.281	1.11	20.23	21.34	46.00	-24.66	Average
12	3.281	10.61	20.23	30.84	56.00	-25.16	QP

Neutral:




```
Site                  : CE
Condition             : limit\FCC PART 15C.csv Line
                      : DET:Peak
Project No.           : RSHA240417001
Model                 : SEA2500-M01
Phase                 : N
Voltage               : 120V/60Hz
Mode                  : Transmitting in SRD mode Middle channel
Test Equipment        : ENV216,ESR
Temperature           : 24.6℃
Humidity              : 66%
Atmospheric pressure: 101.5kPa
Test Engineer         : David Yang
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	15.70	20.12	35.82	55.83	-20.01	Average
2	0.153	33.30	20.12	53.42	65.83	-12.41	QP
3	0.159	22.90	20.11	43.01	55.50	-12.49	Average
4	0.159	35.40	20.11	55.51	65.50	-9.99	QP
5	0.181	11.49	20.12	31.61	54.43	-22.82	Average
6	0.181	29.99	20.12	50.11	64.43	-14.32	QP
7	0.198	8.60	20.11	28.71	53.68	-24.97	Average
8	0.198	26.60	20.11	46.71	63.68	-16.97	QP
9	0.364	5.50	20.20	25.70	48.63	-22.93	Average
10	0.364	18.20	20.20	38.40	58.63	-20.23	QP
11	0.516	5.40	20.12	25.52	46.00	-20.48	Average
12	0.516	18.60	20.12	38.72	56.00	-17.28	QP

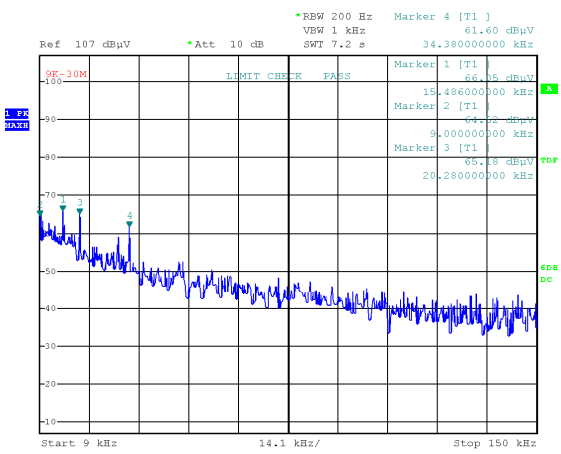
SPURIOUS EMISSIONS

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

Rod Antenna:

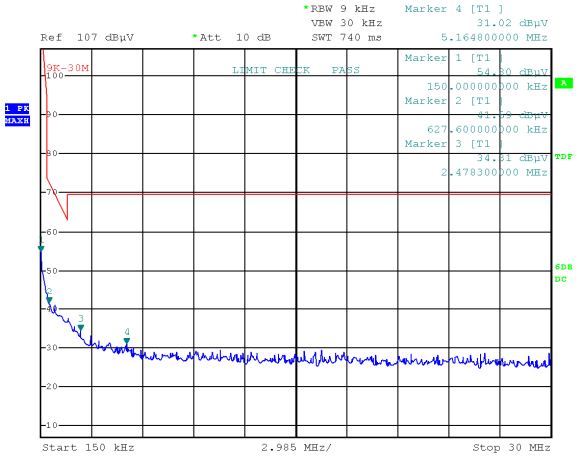
9 kHz-30 MHz: *Transmitting in maximum output power channel (middle channel)*
Parallel(worst case)

9kHz-150kHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:10:03

150kHz-30MHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:17:13

9 kHz-150 kHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.009000	64.52	PK	57.00	128.52	64.00
0.015486	66.05	PK	52.87	123.81	57.76
0.020280	65.18	PK	49.92	121.46	56.28
0.034380	61.60	PK	46.06	116.88	55.28

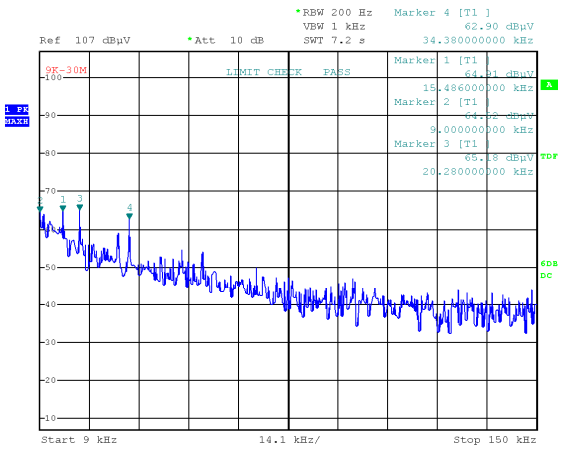
150 kHz-30 MHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.15000	54.80	PK	50.90	104.08	49.28
0.62760	41.59	PK	21.51	71.65	30.06
2.47830	34.31	PK	12.39	69.54	35.23
5.16480	31.02	PK	8.12	69.54	38.52

FPC Antenna:

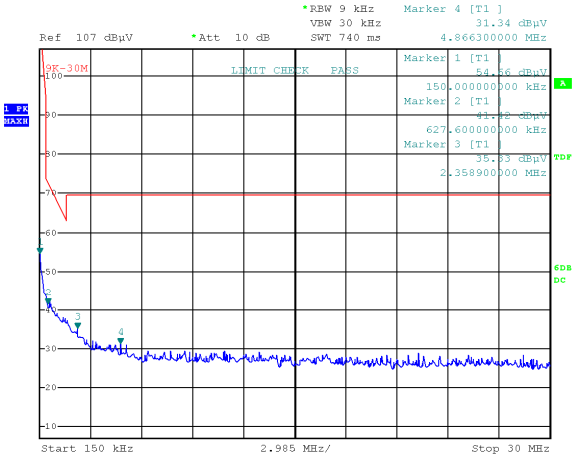
9 kHz-30 MHz: *Transmitting in maximum output power channel (middle channel)*
Parallel(worst case)

9kHz-150kHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:07:22

150kHz-30MHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:20:10

9 kHz-150 kHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.009000	64.52	PK	57.00	128.52	64.00
0.015486	64.91	PK	52.87	123.81	58.90
0.020280	65.18	PK	49.92	121.46	56.28
0.034380	62.90	PK	46.06	116.88	53.98

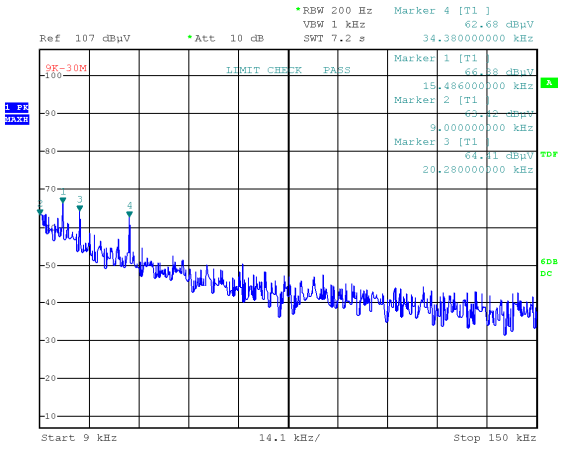
150 kHz-30 MHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.15000	54.66	PK	50.90	104.08	49.42
0.62760	41.42	PK	21.51	71.65	30.23
2.35890	35.33	PK	12.89	69.54	34.21
4.86630	31.34	PK	9.73	69.54	38.20

PCB Antenna:

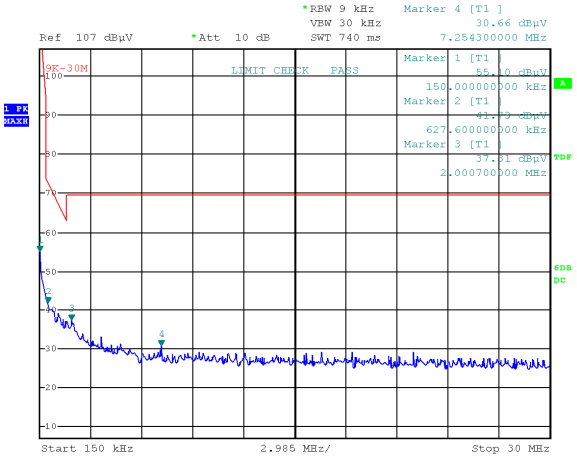
9 kHz-30 MHz: *Transmitting in maximum output power channel (middle channel)*
Parallel(worst case)

9kHz-150kHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:04:47

150kHz-30MHz



Project No.RSHA240417001 Tester:Leah Li
Date: 1.JUN.2024 16:14:15

9 kHz-150 kHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.009000	63.42	PK	57.00	128.52	65.10
0.015486	66.38	PK	52.87	123.81	57.43
0.020280	64.41	PK	49.92	121.46	57.05
0.034380	62.68	PK	46.06	116.88	54.20

150 kHz-30 MHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.15000	55.10	PK	50.90	104.08	48.98
0.62760	41.73	PK	21.51	71.65	29.92
2.00070	37.31	PK	14.40	69.54	32.23
7.25430	30.66	PK	6.70	69.54	38.88

Rod Antenna:

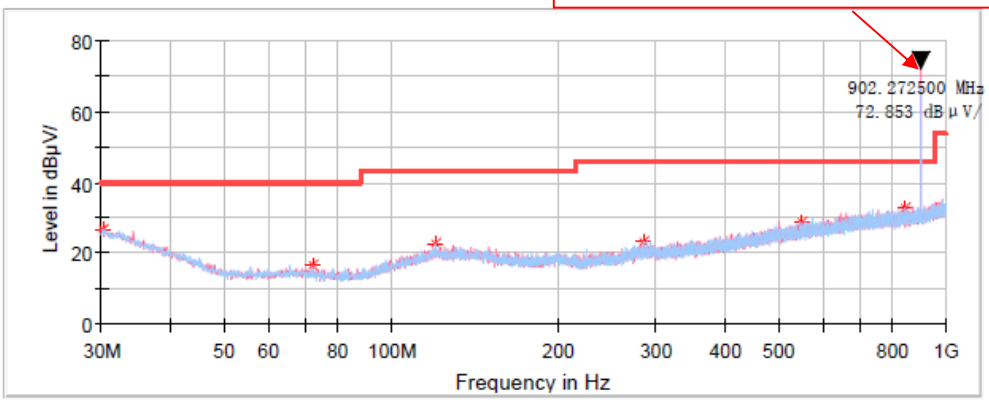
30 MHz - 1 GHz:

Low channel: 902.2 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11

Fundamental Test with Band rejection filter



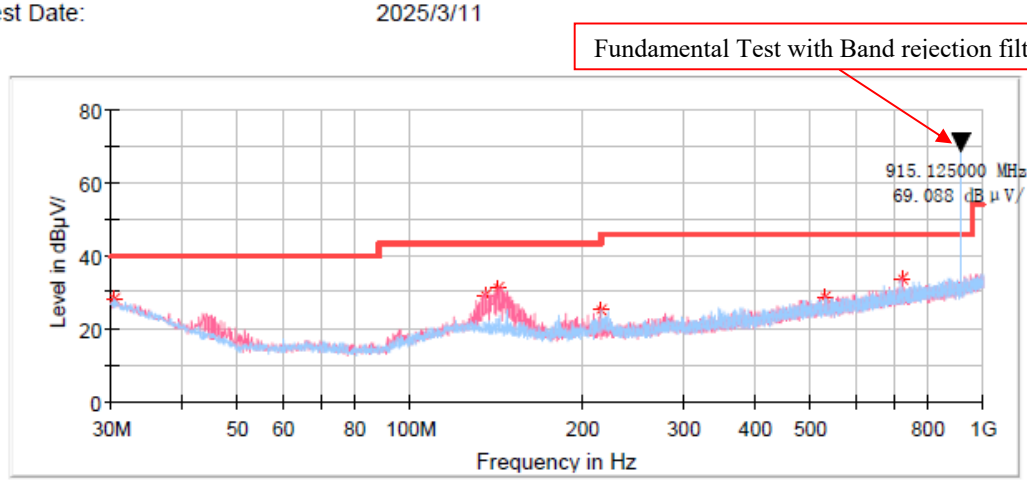
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.242500	26.82	40.00	13.18	V	-4.9
72.437500	16.63	40.00	23.37	V	-16.7
120.573750	22.57	43.50	20.93	H	-10.9
285.716250	23.15	46.00	22.85	H	-10.3
548.707500	28.59	46.00	17.41	V	-4.7
844.072500	32.91	46.00	13.09	H	-0.4

Middle channel: 915 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode middle channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



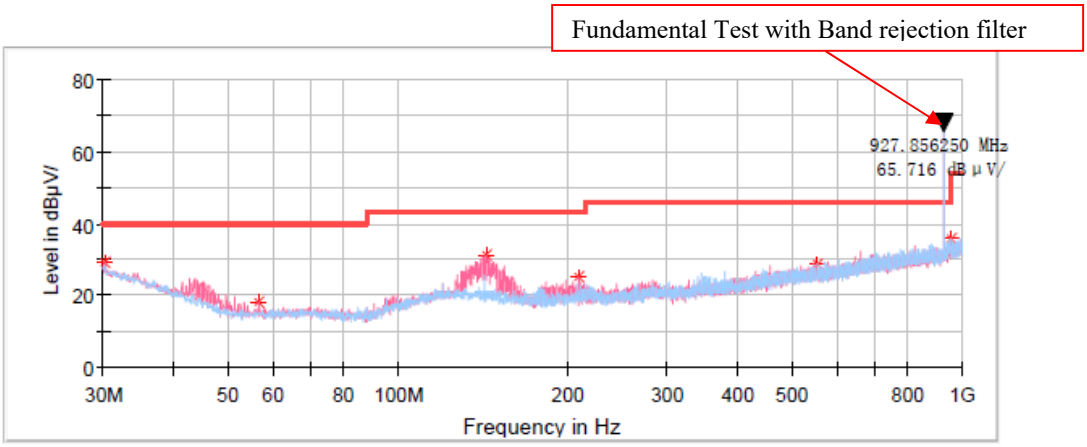
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.363750	28.32	40.00	11.68	H	-5.0
135.608750	29.36	43.50	14.14	V	-11.1
142.398750	31.20	43.50	12.30	V	-11.3
215.997500	25.23	43.50	18.27	H	-13.1
531.611250	28.78	46.00	17.22	V	-4.9
722.216250	33.86	46.00	12.14	V	-1.9

High Channel: 927.8 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.242500	28.95	40.00	11.05	V	-4.9
56.796250	18.32	40.00	21.68	V	-17.0
143.490000	31.30	43.50	12.20	V	-11.4
209.571250	25.38	43.50	18.12	V	-12.7
553.800000	28.67	46.00	17.33	H	-4.6
953.925000	35.60	46.00	10.40	H	1.5

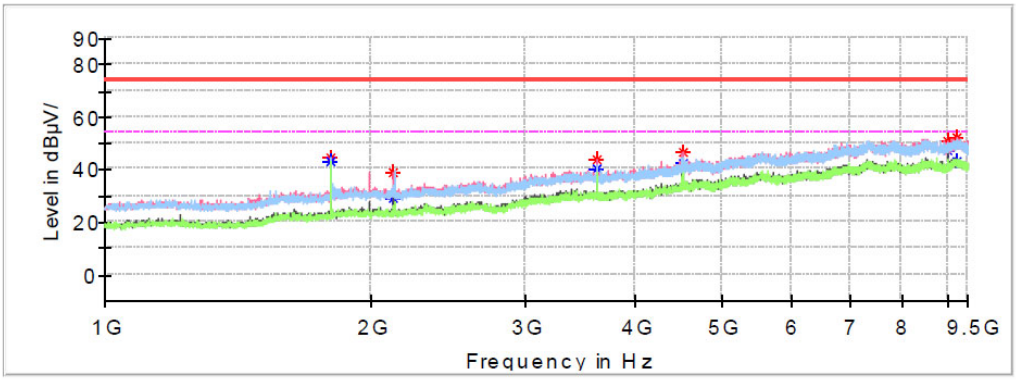
1 GHz – 9.5 GHz:

Low Channel: 902.2 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

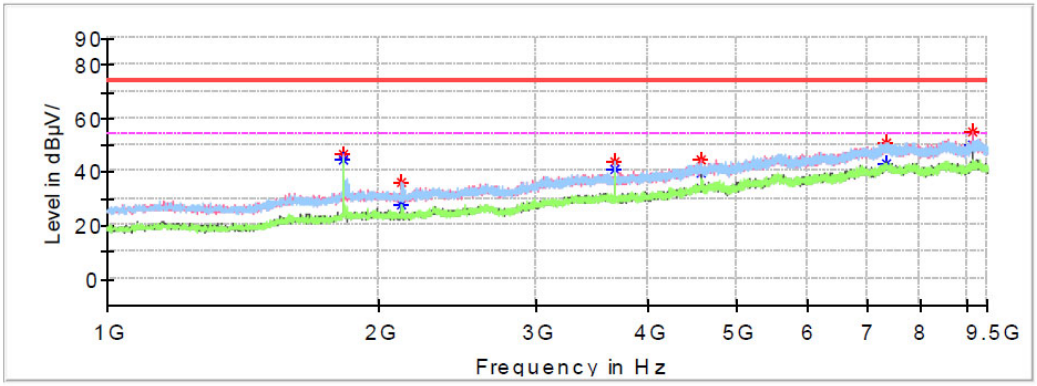
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1804.100000	---	43.12	54.00	10.88	H	-12.9
1804.100000	44.66	---	74.00	29.34	H	-12.9
2126.250000	---	29.00	54.00	25.00	V	-11.3
2126.250000	39.08	---	74.00	34.92	V	-11.3
3608.650000	---	40.08	54.00	13.92	V	-6.2
3608.650000	44.05	---	74.00	29.95	V	-6.2
4511.350000	---	42.59	54.00	11.41	V	-4.2
4511.350000	46.88	---	74.00	27.12	V	-4.2
9022.300000	50.89	---	74.00	23.11	V	5.4
9022.300000	---	47.51	54.00	6.49	V	5.4
9239.900000	51.99	---	74.00	22.01	V	5.4
9239.900000	---	43.21	54.00	10.79	V	5.4

Middle Channel: 915 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



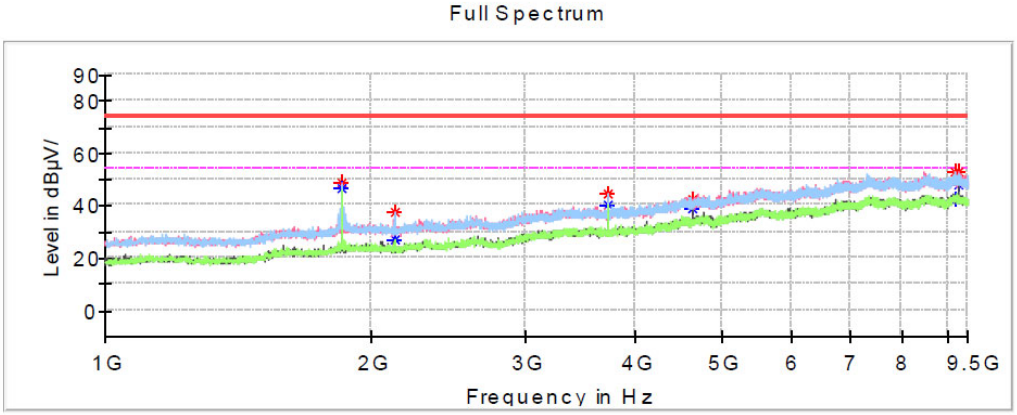
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1829.600000	---	44.57	54.00	9.43	H	-12.8
1829.600000	46.49	---	74.00	27.51	H	-12.8
2126.250000	---	27.65	54.00	26.35	H	-11.3
2126.250000	35.90	---	74.00	38.10	H	-11.3
3659.650000	---	41.08	54.00	12.92	V	-6.2
3659.650000	43.91	---	74.00	30.09	V	-6.2
4575.100000	---	39.69	54.00	14.31	V	-4.0
4575.100000	44.62	---	74.00	29.38	V	-4.0
7345.250000	---	43.14	54.00	10.86	V	3.5
7345.250000	50.92	---	74.00	23.08	V	3.5
9150.650000	---	50.17	54.00	3.83	V	5.4
9150.650000	54.81	---	74.00	19.19	V	5.4

High Channel: 927.8 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu



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)
1855.100000	---	46.96	54.00	7.04	V	-12.6
1855.100000	48.86	---	74.00	25.14	V	-12.6
2127.100000	---	27.40	54.00	26.60	H	-11.3
2127.100000	37.79	---	74.00	36.21	H	-11.3
3710.650000	---	40.54	54.00	13.46	H	-6.2
3710.650000	44.88	---	74.00	29.12	H	-6.2
4638.850000	---	38.82	54.00	15.18	V	-3.8
4638.850000	42.57	---	74.00	31.43	V	-3.8
9191.450000	---	42.70	54.00	11.30	H	5.4
9191.450000	53.04	---	74.00	20.96	H	5.4
9278.150000	---	47.75	54.00	6.25	V	5.4
9278.150000	52.70	---	74.00	21.30	V	5.4

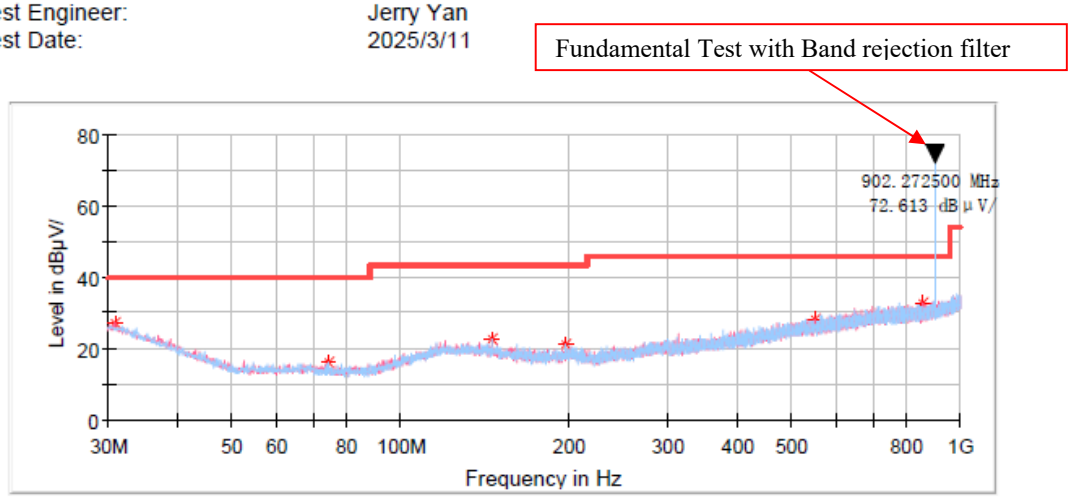
FPC Antenna:

30 MHz - 1 GHz:

Low channel: 902.2 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



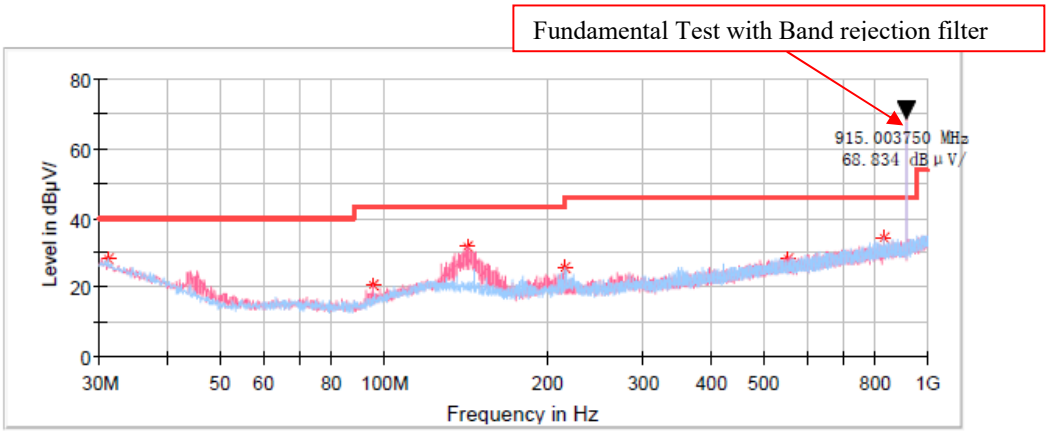
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.848750	26.97	40.00	13.03	V	-5.3
74.498750	16.21	40.00	23.79	H	-16.8
145.551250	22.54	43.50	20.96	H	-11.5
196.840000	21.06	43.50	22.44	H	-12.2
547.980000	28.26	46.00	17.74	V	-4.7
855.955000	32.78	46.00	13.22	V	-0.3

Middle channel: 915 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode middle channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



Critical_Freqs

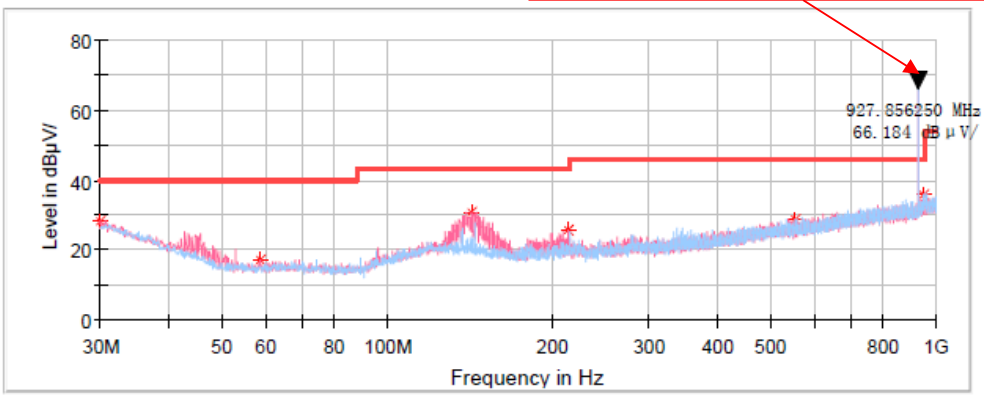
Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
31.091250	28.28	40.00	11.72	H	-5.5
95.717500	20.80	43.50	22.70	V	-15.4
142.398750	31.75	43.50	11.75	V	-11.3
215.997500	25.83	43.50	17.67	H	-13.1
553.315000	28.38	46.00	17.62	V	-4.6
832.068750	34.14	46.00	11.86	H	-0.5

High Channel: 927.8 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11

Fundamental Test with Band rejection filter



Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.000000	28.32	40.00	11.68	V	-4.8
58.615000	17.30	40.00	22.70	V	-17.0
142.398750	30.86	43.50	12.64	V	-11.3
214.300000	25.63	43.50	17.87	V	-13.0
552.345000	28.56	46.00	17.44	H	-4.6
951.863750	35.96	46.00	10.04	H	1.5

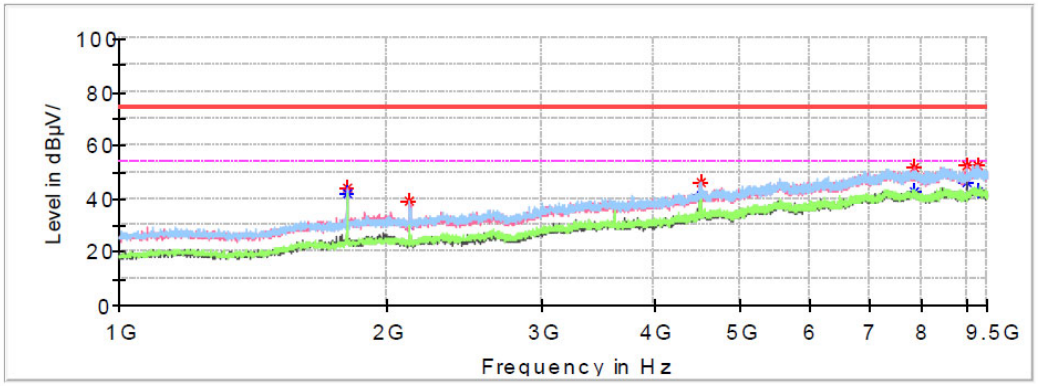
1 GHz – 9.5 GHz:

Low Channel: 902.2 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

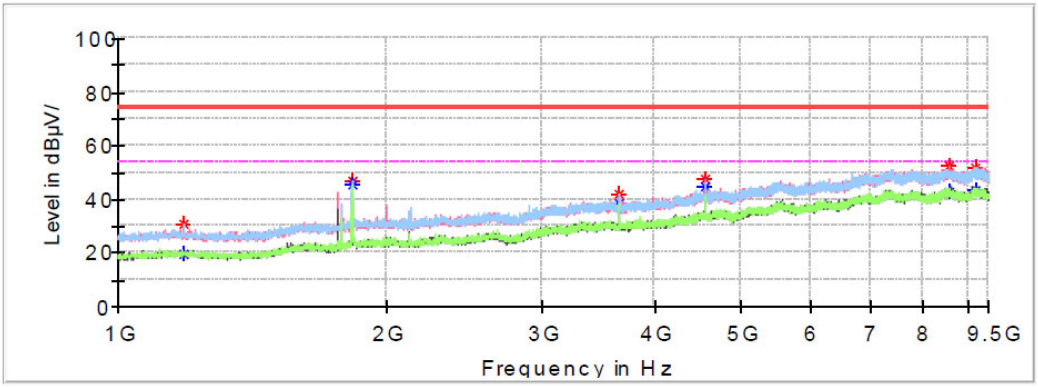
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1804.100000	44.10	---	74.00	29.90	H	-12.9
1804.100000	---	41.85	54.00	12.15	H	-12.9
2123.700000	---	29.74	54.00	24.26	H	-11.3
2123.700000	38.85	---	74.00	35.15	H	-11.3
4511.350000	---	40.94	54.00	13.06	V	-4.2
4511.350000	46.14	---	74.00	27.86	V	-4.2
7868.000000	---	42.74	54.00	11.26	V	3.9
7868.000000	51.47	---	74.00	22.53	V	3.9
9022.300000	---	46.04	54.00	7.96	V	5.4
9022.300000	52.26	---	74.00	21.74	V	5.4
9289.200000	---	43.00	54.00	11.00	H	5.4
9289.200000	52.61	---	74.00	21.39	H	5.4

Middle Channel: 915 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



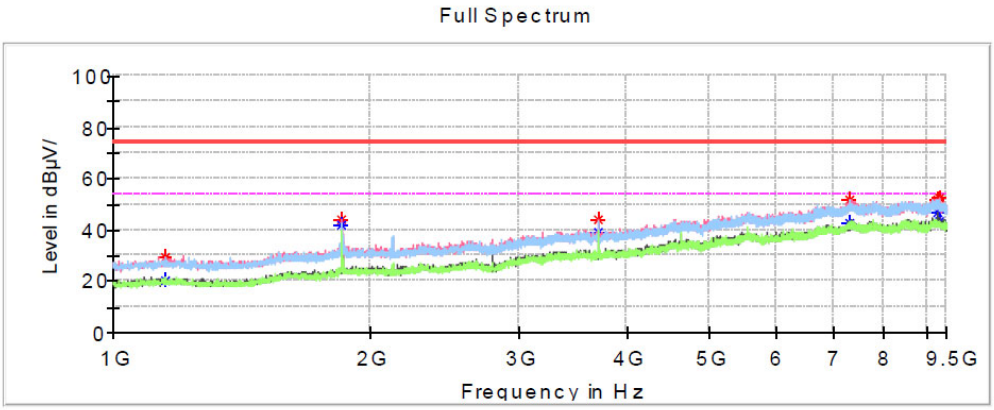
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1187.000000	30.45	---	74.00	43.55	H	-15.2
1187.000000	---	19.85	54.00	34.15	H	-15.2
1829.600000	---	45.33	54.00	8.67	H	-12.8
1829.600000	46.84	---	74.00	27.16	H	-12.8
3659.650000	42.12	---	74.00	31.88	V	-6.2
3659.650000	---	38.69	54.00	15.31	V	-6.2
4575.100000	47.72	---	74.00	26.28	V	-4.0
4575.100000	---	44.96	54.00	9.04	V	-4.0
8563.300000	52.26	---	74.00	21.74	H	5.4
8563.300000	---	42.37	54.00	11.63	H	5.4
9203.350000	---	43.69	54.00	10.31	V	5.4
9203.350000	51.88	---	74.00	22.12	V	5.4

High Channel: 927.8 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu



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)
1153.000000	---	20.48	54.00	33.52	V	-15.2
1153.000000	29.62	---	74.00	44.38	V	-15.2
1855.100000	---	41.77	54.00	12.23	V	-12.6
1855.100000	43.99	---	74.00	30.01	V	-12.6
3710.650000	---	39.15	54.00	14.85	V	-6.2
3710.650000	44.30	---	74.00	29.70	V	-6.2
7306.150000	---	42.84	54.00	11.16	H	3.4
7306.150000	51.61	---	74.00	22.39	H	3.4
9278.150000	---	46.74	54.00	7.26	V	5.4
9278.150000	51.78	---	74.00	22.22	V	5.4
9299.400000	---	43.02	54.00	10.98	V	5.4
9299.400000	52.18	---	74.00	21.82	V	5.4

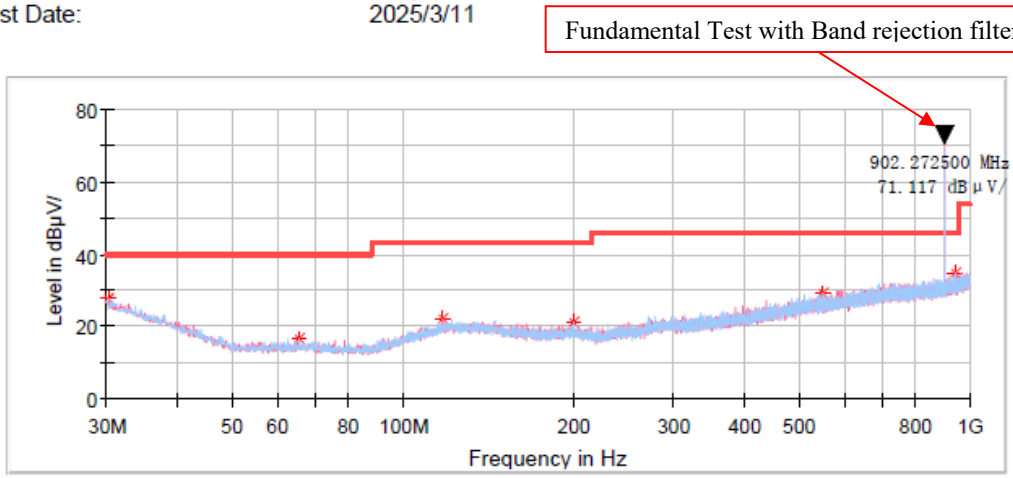
PCB Antenna:

30 MHz - 1 GHz:

Low channel: 902.2 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



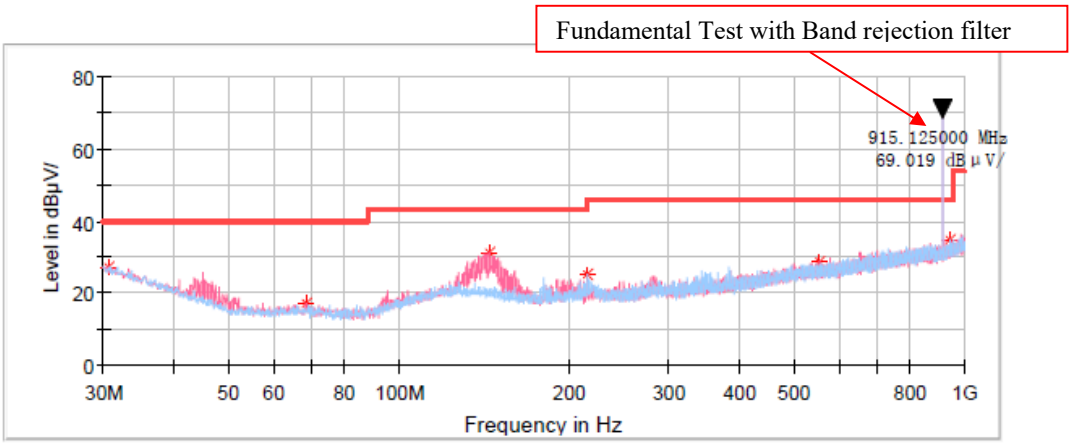
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.121250	27.56	40.00	12.44	H	-4.8
65.526250	16.52	40.00	23.48	H	-16.8
117.178750	22.33	43.50	21.17	V	-11.4
200.113750	21.34	43.50	22.16	H	-12.0
548.950000	29.30	46.00	16.70	H	-4.7
943.861250	34.64	46.00	11.36	H	1.3

Middle channel: 915 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode middle channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



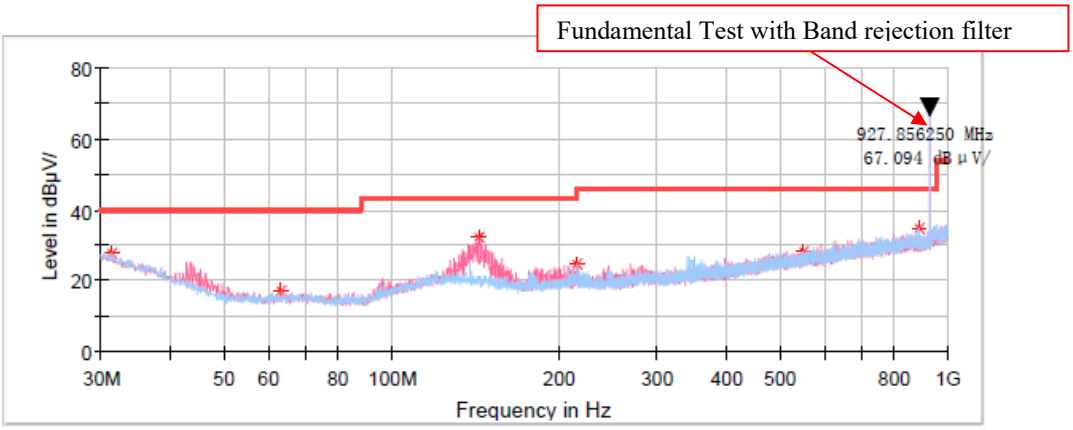
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.727500	27.23	40.00	12.77	H	-5.2
68.436250	17.01	40.00	22.99	V	-16.6
144.217500	31.09	43.50	12.41	V	-11.4
215.997500	25.29	43.50	18.21	H	-13.1
555.740000	28.46	46.00	17.54	V	-4.6
944.952500	34.79	46.00	11.21	H	1.3

High Channel: 927.8 MHz

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	60%
Barometric Pressure:	101.6kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/11



Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
31.455000	27.92	40.00	12.08	H	-5.7
63.343750	17.29	40.00	22.71	V	-16.9
143.490000	31.99	43.50	11.51	V	-11.4
215.997500	24.43	43.50	19.07	H	-13.1
548.465000	28.38	46.00	17.62	H	-4.7
886.388750	34.78	46.00	11.22	H	0.0

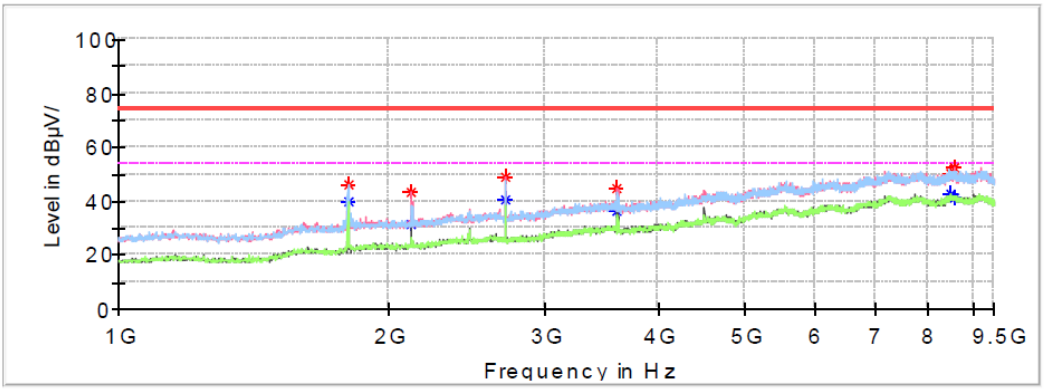
1 GHz – 9.5 GHz:

Low Channel: 902.2 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247&FCC Part 15.205&FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

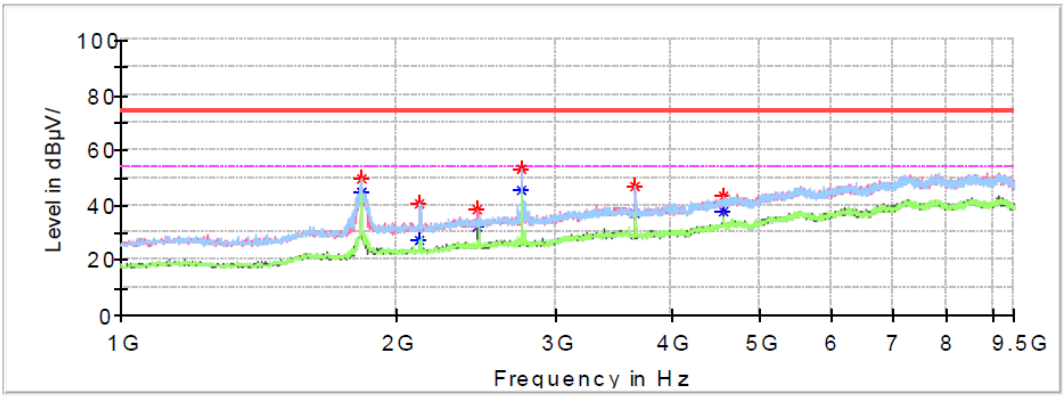
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1804.100000	---	39.93	54.00	14.07	H	-12.9
1804.100000	45.83	---	74.00	28.17	H	-12.9
2123.700000	---	31.32	54.00	22.68	V	-11.3
2123.700000	43.38	---	74.00	30.62	V	-11.3
2706.800000	49.25	---	74.00	24.75	V	-9.4
2706.800000	---	40.66	54.00	13.34	V	-9.4
3607.800000	---	36.36	54.00	17.64	V	-6.2
3607.800000	44.66	---	74.00	29.34	V	-6.2
8488.500000	50.42	---	74.00	23.58	H	5.4
8488.500000	---	42.77	54.00	11.23	H	5.4
8582.000000	52.30	---	74.00	21.70	H	5.4
8582.000000	---	41.33	54.00	12.67	H	5.4

Middle Channel: 915 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247&FCC Part 15.205&FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

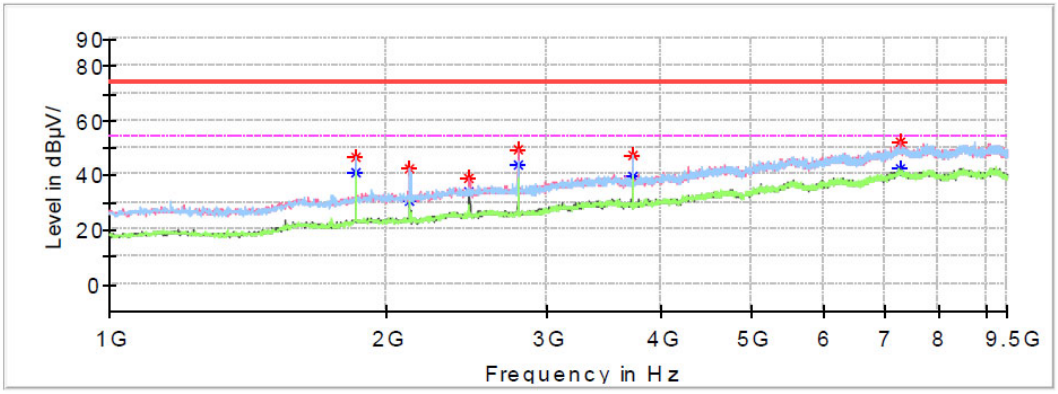
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1829.600000	---	44.67	54.00	9.33	H	-12.8
1829.600000	49.73	---	74.00	24.27	H	-12.8
2125.400000	---	27.12	54.00	26.88	H	-11.3
2125.400000	40.73	---	74.00	33.27	H	-11.3
2458.600000	---	32.39	54.00	21.61	V	-10.3
2458.600000	38.70	---	74.00	35.30	V	-10.3
2744.200000	52.82	---	74.00	21.18	H	-9.3
2744.200000	---	45.51	54.00	8.49	H	-9.3
3658.800000	---	37.23	54.00	16.77	H	-6.2
3658.800000	46.52	---	74.00	27.48	H	-6.2
4575.100000	---	37.61	54.00	16.39	V	-4.0
4575.100000	43.66	---	74.00	30.34	V	-4.0

High Channel: 927.8 MHz

Common Information

Project No.:	RSHA240417001
Test Mode:	SRD
Standard:	FCC Part 15.247&FCC Part 15.205&FCC Part 15.209
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Test Engineer:	Klein Zhu

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)
1855.100000	---	41.28	54.00	12.72	H	-12.6
1855.100000	46.59	---	74.00	27.41	H	-12.6
2123.700000	---	30.46	54.00	23.54	H	-11.3
2123.700000	42.73	---	74.00	31.27	H	-11.3
2465.400000	---	34.14	54.00	19.86	V	-10.3
2465.400000	38.63	---	74.00	35.37	V	-10.3
2783.300000	---	43.67	54.00	10.33	V	-9.2
2783.300000	49.48	---	74.00	24.52	V	-9.2
3711.500000	47.28	---	74.00	26.72	V	-6.2
3711.500000	---	39.62	54.00	14.38	V	-6.2
7269.600000	---	42.34	54.00	11.66	V	3.3
7269.600000	51.95	---	74.00	22.05	V	3.3

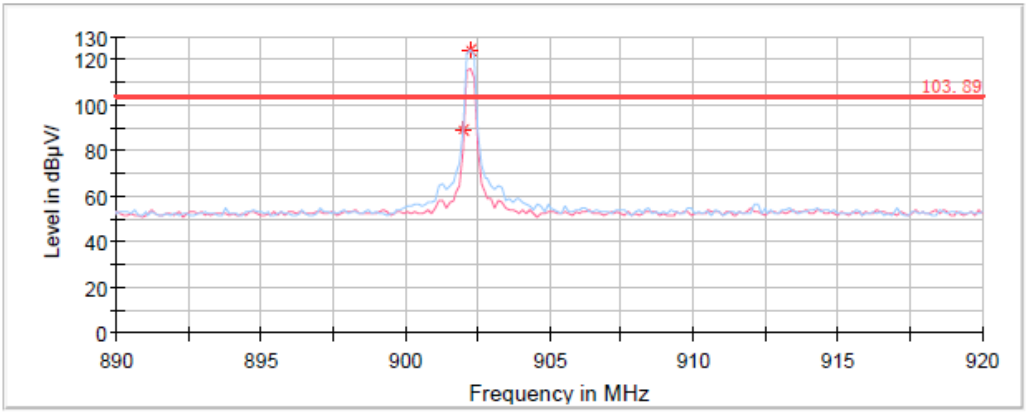
Band Edge:

Rod Antenna

Left Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



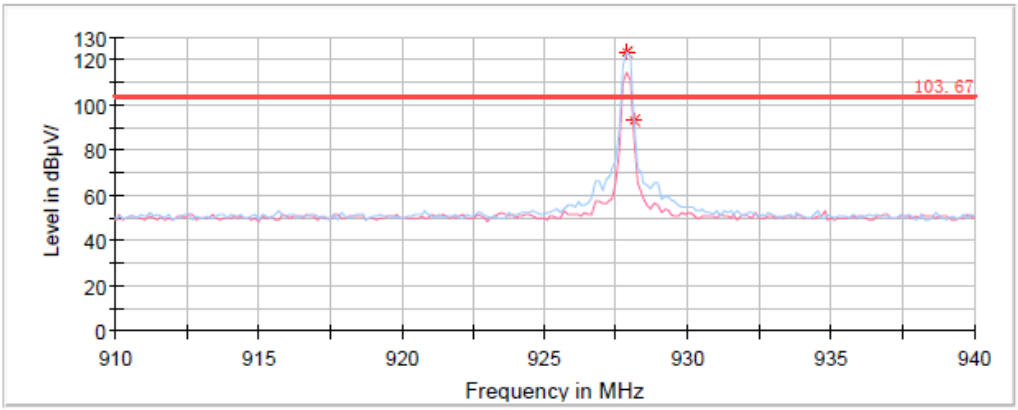
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
902.000000	88.80	103.89	15.09	H	21.6
902.272500	123.89	/	/	H	21.6

Right Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



Critical_Freqs

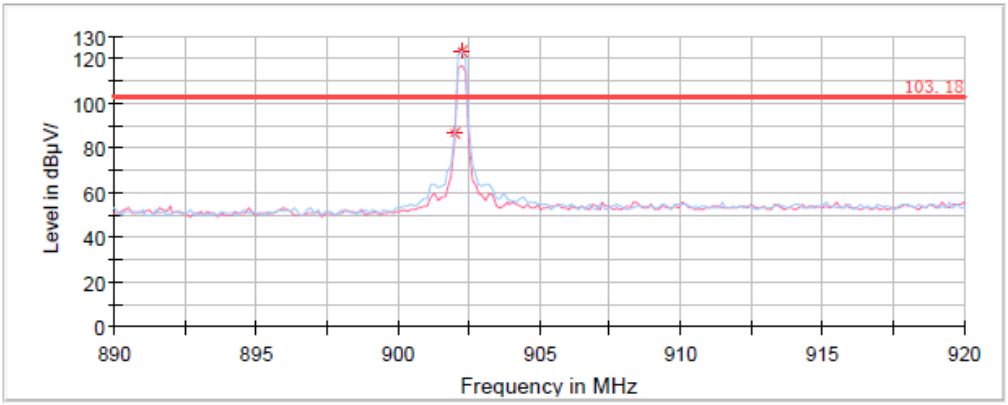
Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
927.856250	123.67	/	/	H	19.9
928.098750	93.26	103.67	10.41	H	19.9

FPC Antenna

Left Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



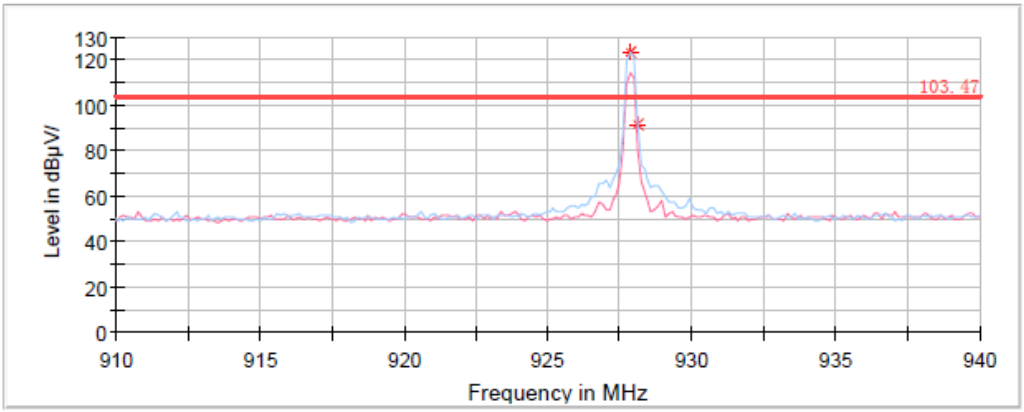
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
902.000000	86.29	103.18	16.89	H	22.7
902.272500	123.18	/	/	H	22.7

Right Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



Critical_Freqs

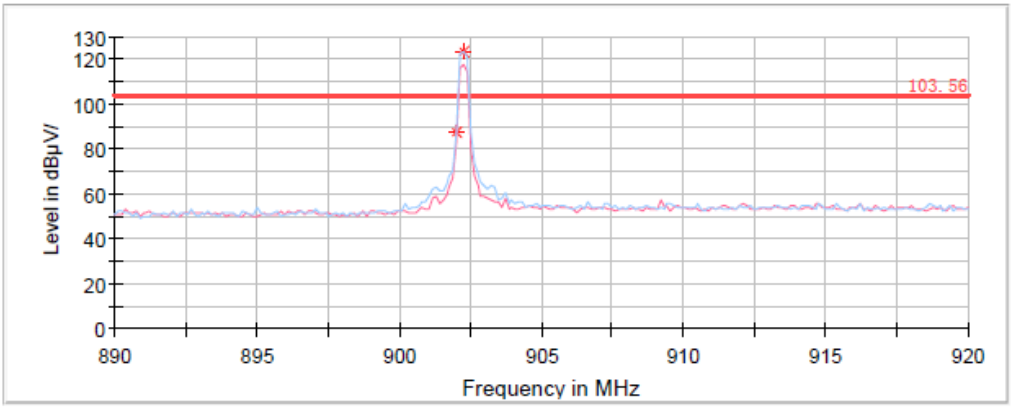
Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
927.856250	123.47	/	/	H	19.9
928.098750	91.86	103.47	11.61	H	19.9

PCB Antenna

Left Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



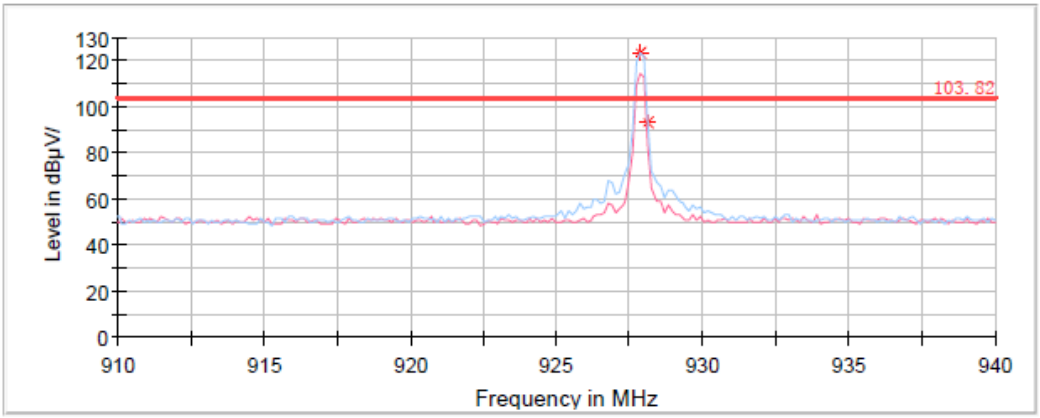
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
902.000000	87.59	103.56	15.97	H	22.7
902.272500	123.56	/	/	H	22.7

Right Side

Common Information

Project No:	RSHA240417001
EUT Model:	SEA2500-M01
Test Mode:	Transmitting in SRD mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	17.3℃
Humidity:	36%
Barometric Pressure:	102.2kPa
Test Engineer:	Jerry Yan
Test Date:	2025/3/10



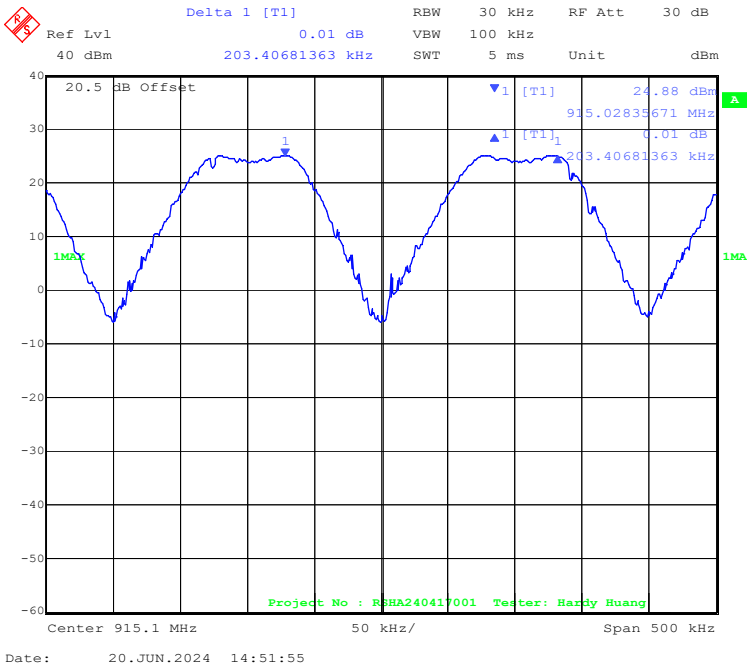
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
927.856250	123.82	/	/	H	19.9
928.098750	93.01	103.82	10.81	H	19.9

CHANNEL SEPARATION TEST

EUT operation mode: Transmitting

Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Middle	915	0.203	≥0.101	Pass



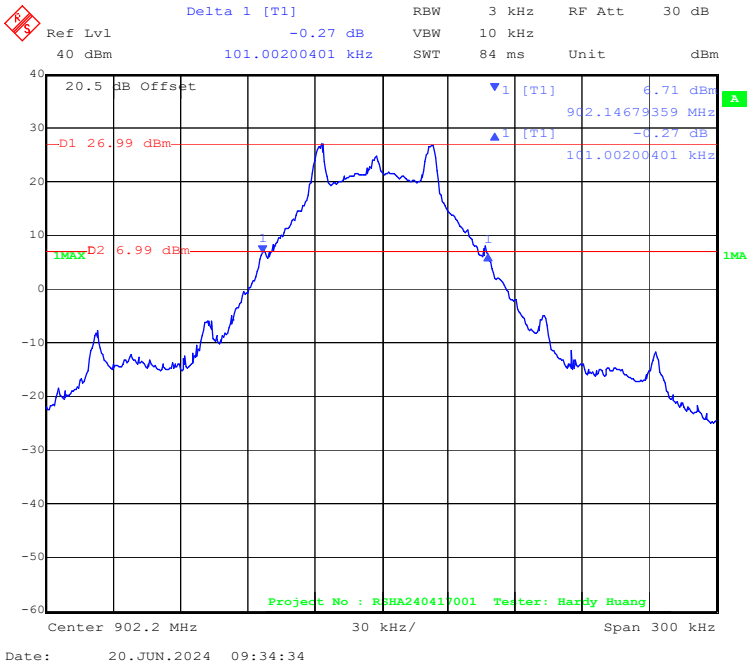
20 dB BANDWIDTH TESTING

Test Result: Compliant.

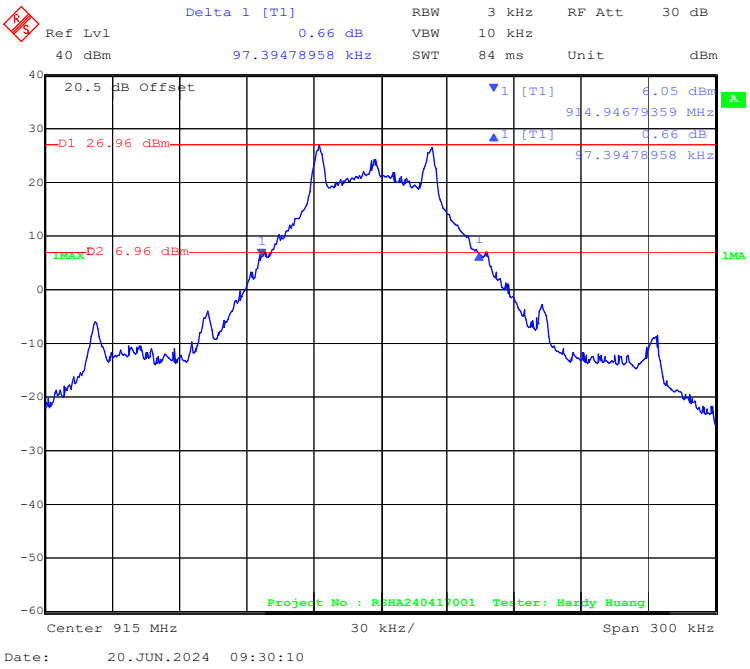
EUT operation mode: Transmitting

Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)	Limit (kHz)
Low	902.2	0.101	≤500
Middle	915	0.097	≤500
High	927.8	0.099	≤500

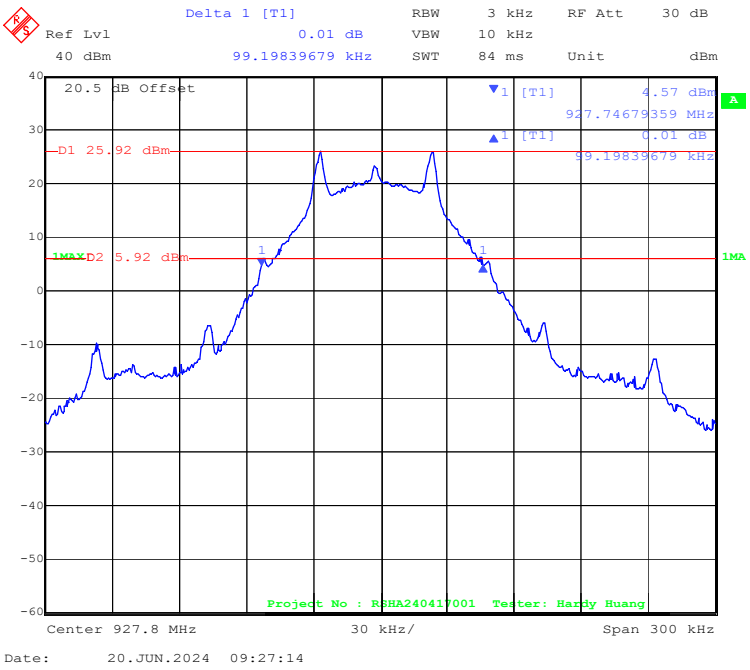
Low Channel



Middle Channel



High Channel



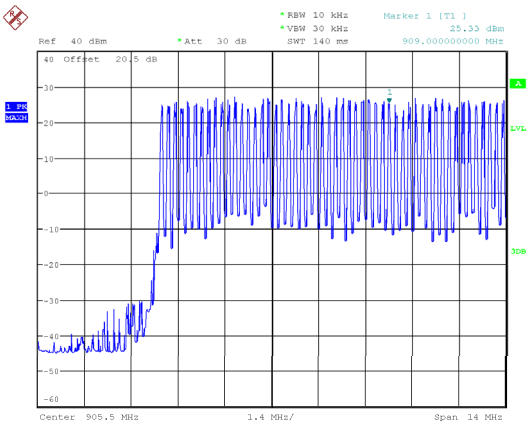
QUANTITY OF HOPPING CHANNEL TEST

EUT operation mode: Hopping

Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)
902-928 MHz	129	≥50

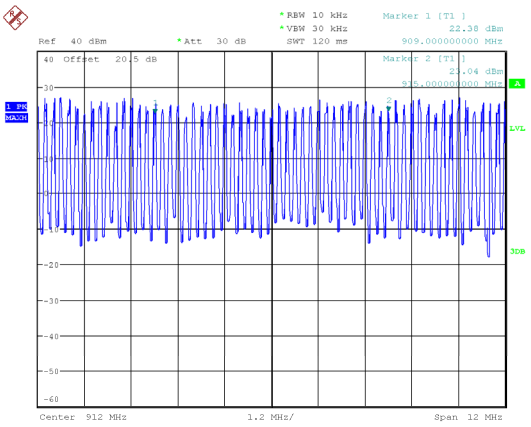
Number of Hopping Channels

902M~909M



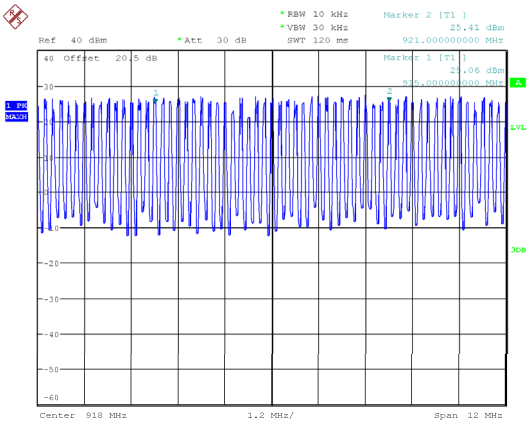
ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 12.MAR.2025 13:21:31

909M~915M



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 12.MAR.2025 14:11:07

915M~921M



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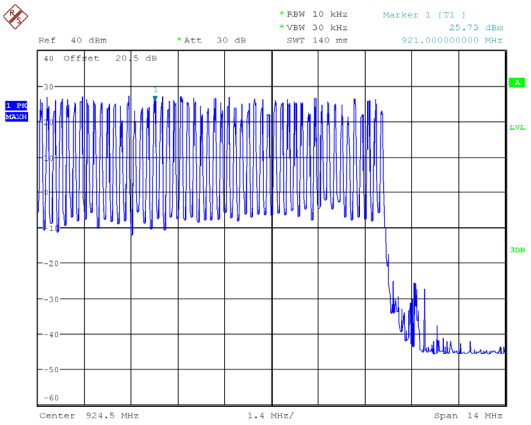
Date: 12.MAR.2025 14:57:05

921M~928M



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 12.MAR.2025 15:26:36

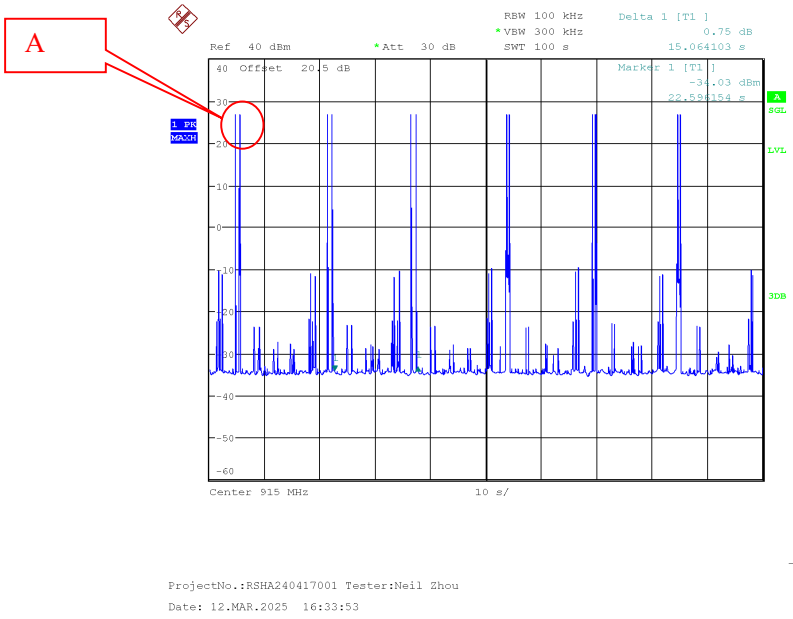
TIME OF OCCUPANCY (DWELL TIME)

EUT operation mode: Hopping

Channel	Frequency (MHz)	Burst Width (ms)	Total Hops (Num)	Dwell time (s)	Limit (s)	Result
Middle	915	29.16	2	0.05832	≤0.4	Pass

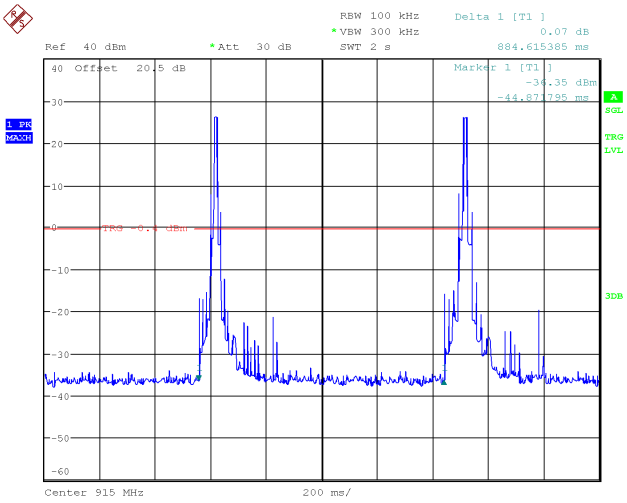
Burst Width(ms)=14.58*2=29.16ms

Middle Channel, 100s



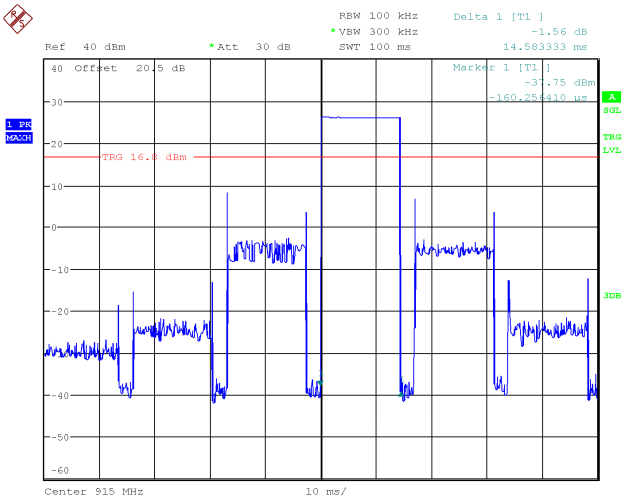
Note：Total Hops is 2 in 20s

Zoom in A



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 12.MAR.2025 17:38:20

Pulse time, Middle Channel, 100ms



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 12.MAR.2025 17:45:29

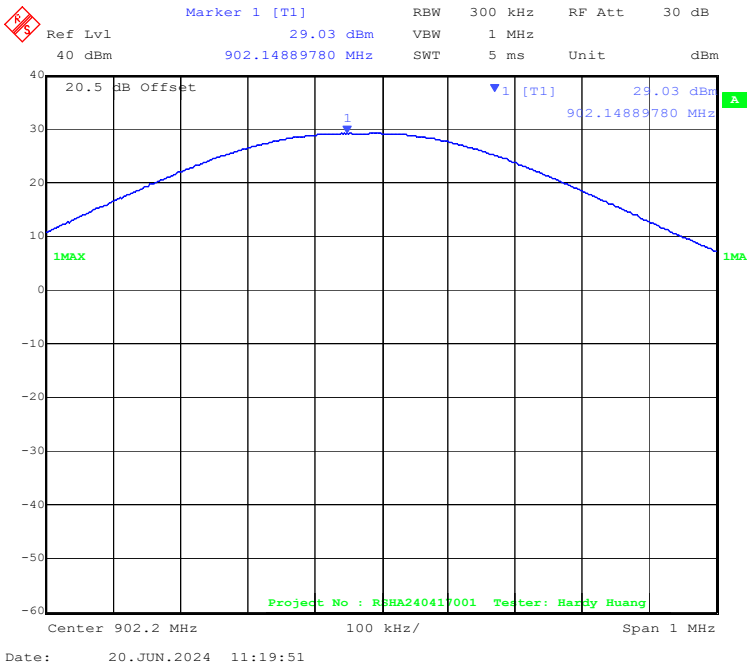
MAXIMUM CONDUCTED OUTPUT POWER

Test Result: Compliant.

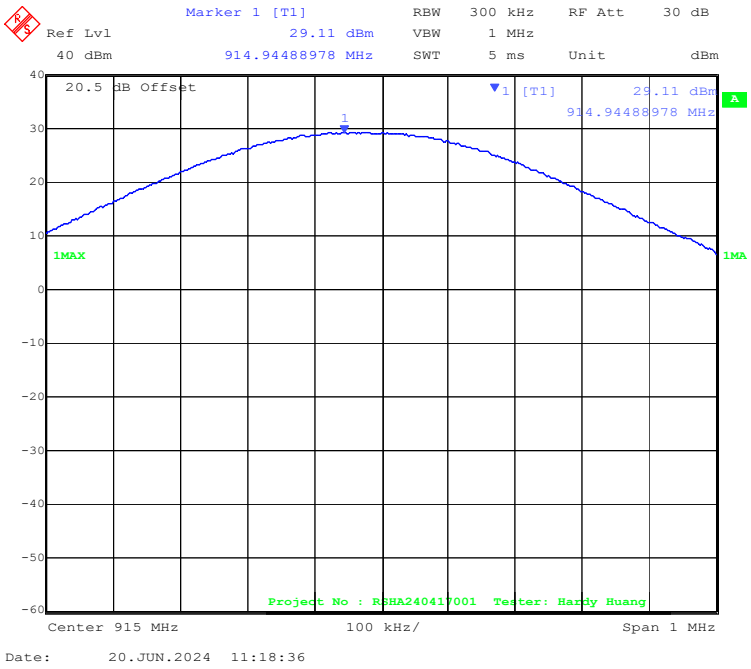
EUT operation mode: Transmitting

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
Low	902.2	29.03	30	Pass
Middle	915	29.11	30	Pass
High	927.8	27.89	30	Pass

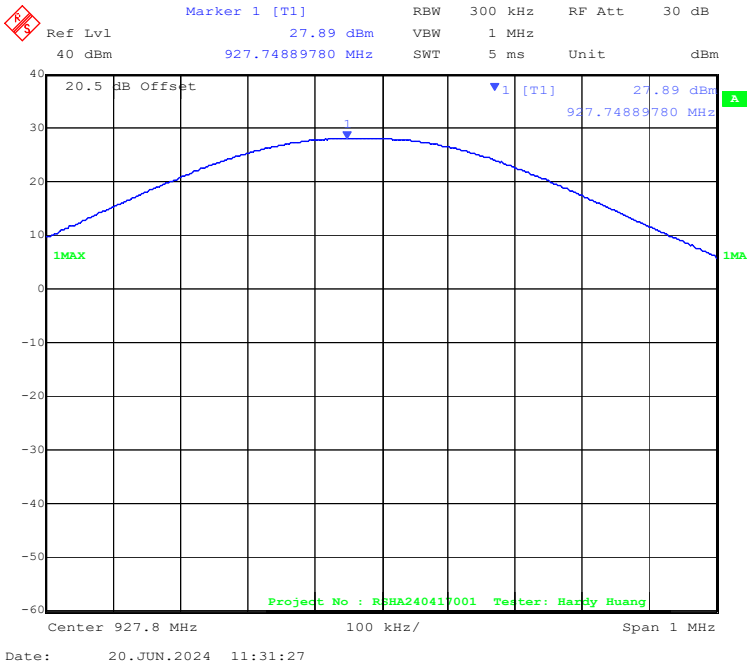
Low Channel



Middle Channel



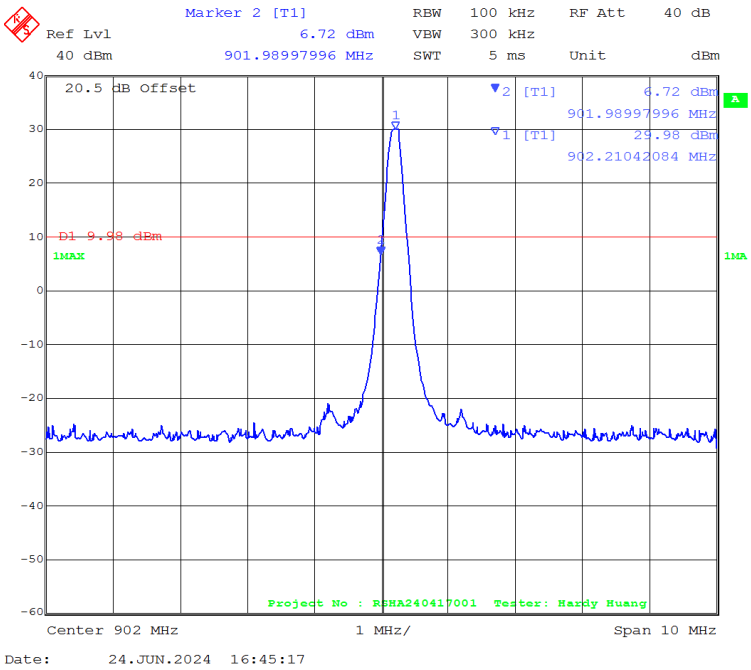
High Channel



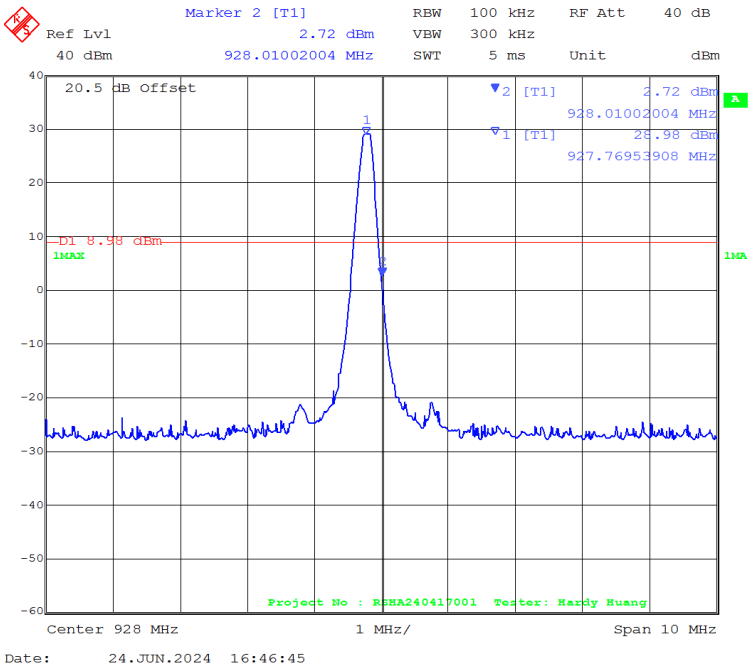
BAND EDGE

Test Result: Compliant.
EUT operation mode: Transmitting

Left Side

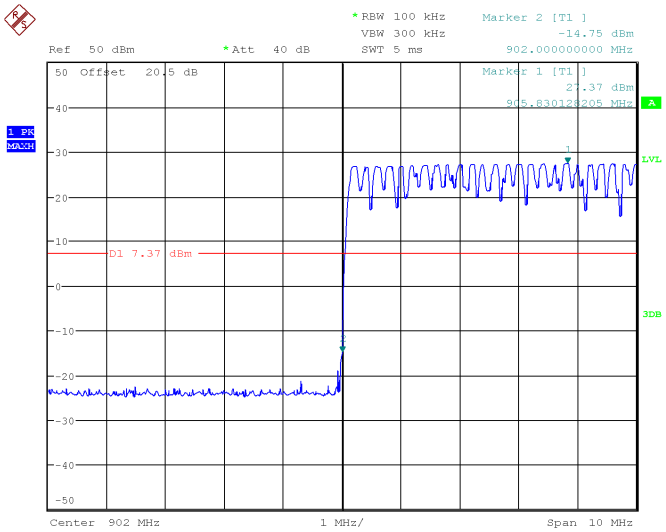


Right Side



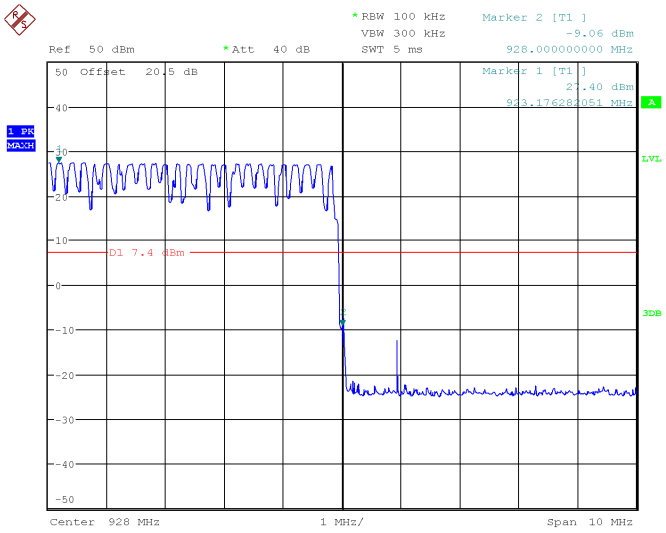
Hopping

Left Side



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 11.MAR.2025 15:15:56

Right Side



ProjectNo.:RSHA240417001 Tester:Neil Zhou
Date: 11.MAR.2025 16:08:45

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*******