FCC PART 15.247
TEST REPORT

For

Hoymiles Power Electronics Inc.

No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China

FCC ID: 2ARNB-HMS102

Report Type:	**Product Name:**
Original Report	Sub-1G Module

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RSHA240711001-00A	R1V1	2025-01-07	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Hoymiles Power Electronics Inc.
Product Name:	Sub-1G Module
Tested Model	HM-S102
Power Supply:	DC 3.3V
RF Function:	SRD
Operating Band/Frequency:	915.25-927.50 MHz
Maximum Output Power:	16.0 dBm
Channel Number:	50
Modulation Type:	GFSK
Antenna Type:	External Omnidirectional Antenna; PCB Antenna
★Maximum Antenna Gain:	External Omnidirectional Antenna: 0.84 dBi; PCB Antenna: 0.82 dBi

Note: The maximum antenna gain was declared by the manufacturer.

All measurement and test data in this report was gathered from production sample serial number: RSHA240711001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-07-11.)

Objective

This test report is prepared for *Hoymiles Power Electronics Inc.* 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 Compliance with FCC Part 15, Subpart C, 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 and 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

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

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	915.25	14	918.50	27	921.75	40	925
2	915.50	15	918.75	28	922	41	925.25
3	915.75	16	919	29	923.25	42	925.50
4	916	17	919.25	30	923.50	43	925.75
5	916.25	18	919.50	31	923.75	44	926
6	916.50	19	919.75	32	923	45	926.25
7	916.75	20	920	33	923.25	46	926.50
8	917	21	920.25	34	923.50	47	926.75
9	917.25	22	920.50	35	923.75	48	927
10	917.50	23	920.75	36	924	49	927.25
11	917.75	24	921	37	924.25	50	927.50
12	918	25	921.25	38	924.50	/	/
13	918.25	26	921.50	39	924.75	/	/

EUT was tested with Channel 1, 26 and 50.

EUT Exercise Software

RF Test Tool: Engineering mode

Mode	Channel	★Power level:
SRD	915.25	Default
	921.50	Default
	927.50	Default

Note: 1.The power level was declared by the applicant.
2. The same antenna type, the antenna with the maximum antenna gain was selected for testing.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

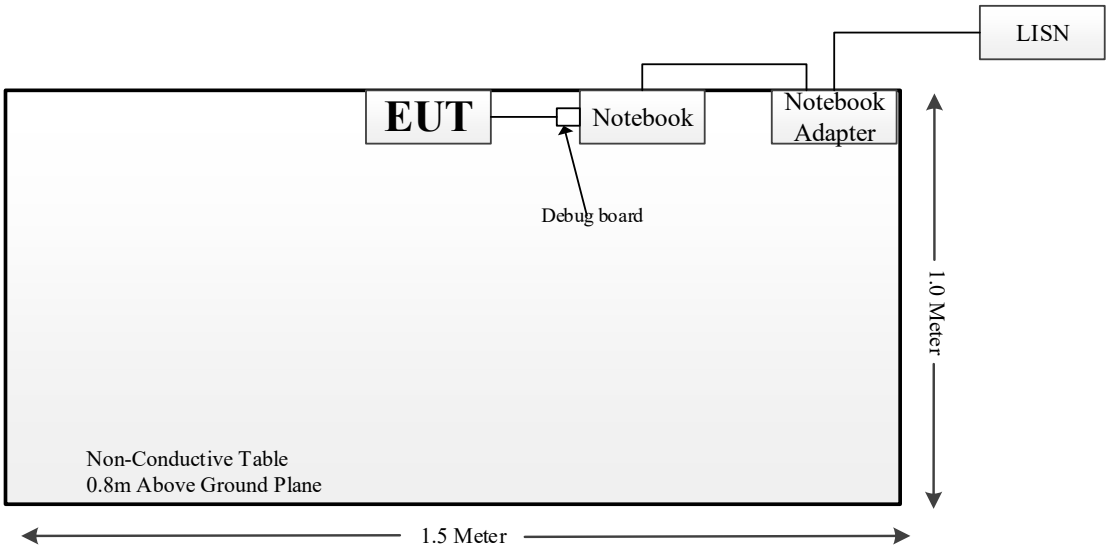
Manufacturer	Description	Model	Serial Number
Dell	Notebook	E6410	3094742521
Dell	Notebook adapter	Unknown	Unknown
Unknown	Debug borad	Unknown	Unknown

External I/O Cable

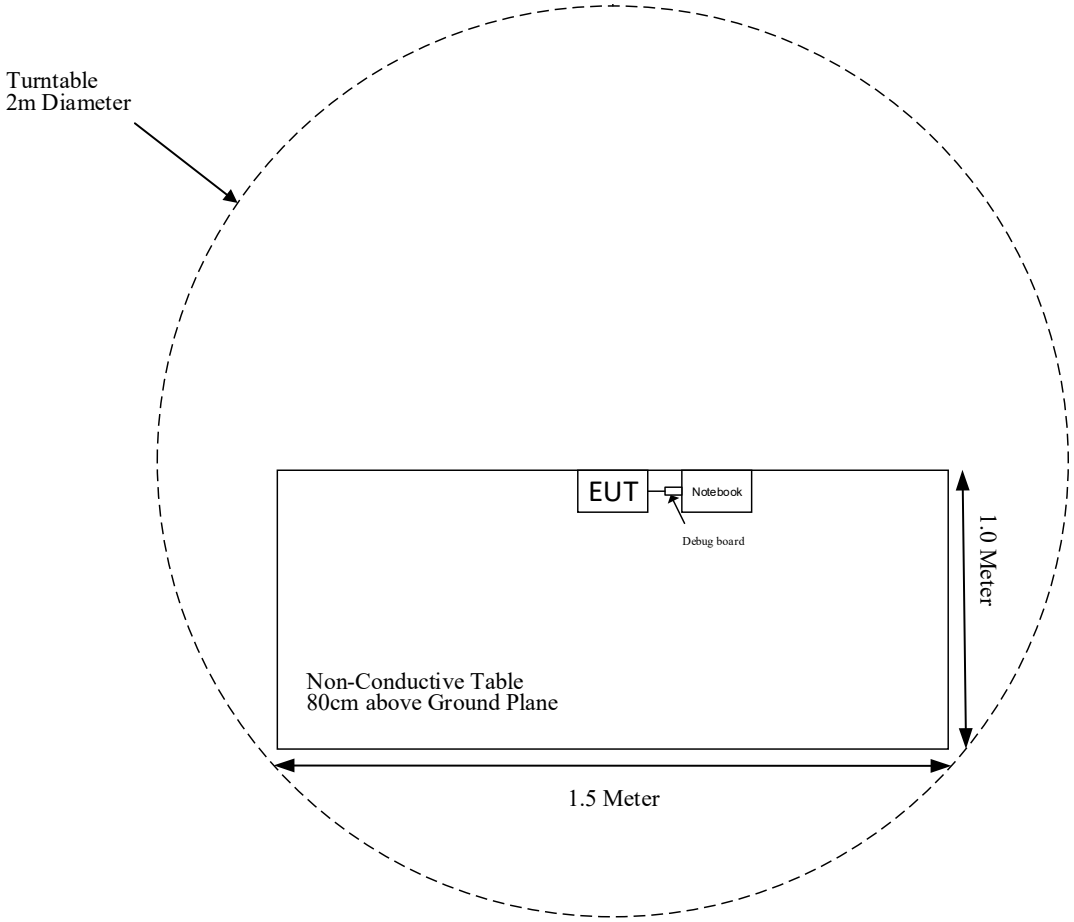
Cable Description	Length (m)	From Port	To Port
Power Cable 1	1.0	AC Source/LISN	Adapter
Power Cable 2	1.0	Adapter	Notebook
USB Cable	0.1	EUT	Debug board

Block Diagram of Test Setup

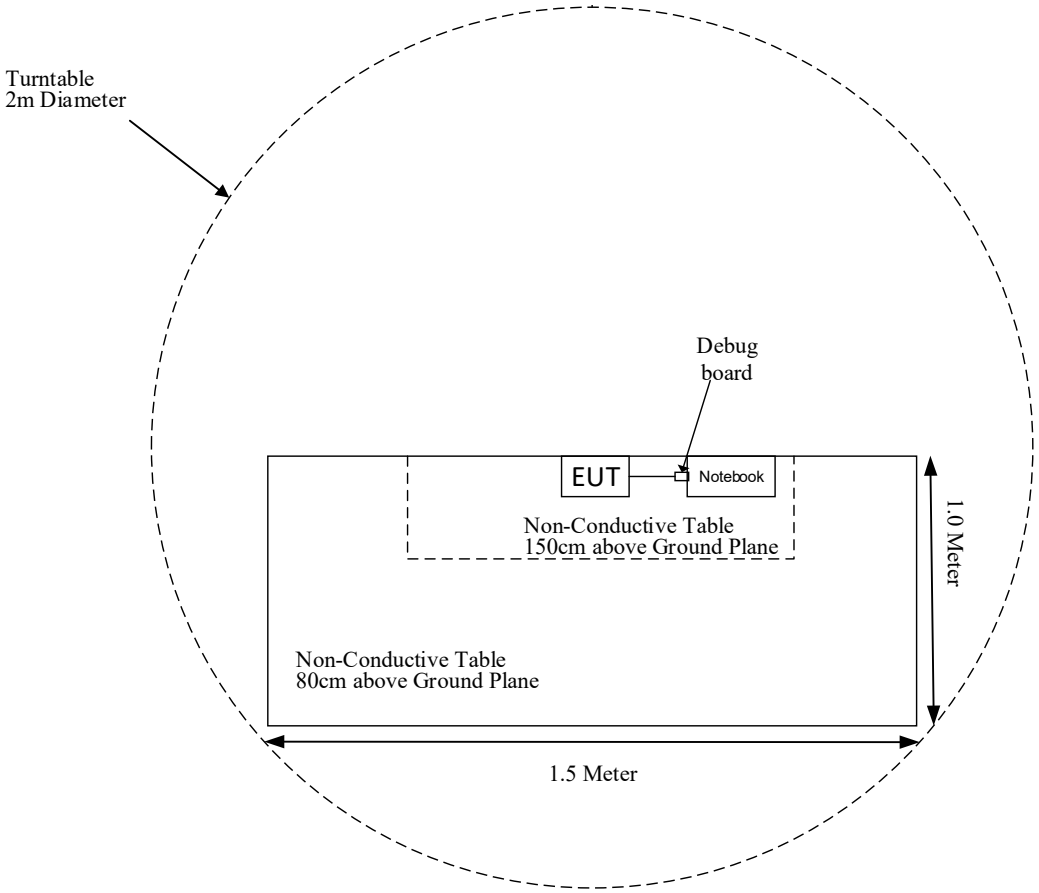
For Conducted Emissions:



For Radiated Emissions(Below 1GHz):



For Radiated Emissions (Above 1 GHz):



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
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
A.H.Systems, inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-24
Oulitong	Band Reject Filter	OBSF-902-928-40S	OE02104362	2024-06-04	2025-06-03
Narda	Attenuator	10dB	010	2024-04-25	2025-04-24
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	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	2024-04-25	2025-04-24
RF Conducted Test					
R&S	Spectrum Analyzer	FSU26	100147	2024-04-01	2025-03-31
Narda	Attenuator	10dB	010	2024-04-25	2025-04-24
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	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-15	015	2024-04-25	2025-04-24

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).

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
§15.205, §15.209 & §15.247(d)	Radiated Emissions & Restricted Bands Emissions	Compliant
§15.247(a)(1) (i)	20 dB Emission Bandwidth	Compliant
§15.247(a)(1)	Channel Separation Test	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)	Peak Output Power Measurement	Compliant
§15.247(d)	Band edges	Compliant

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	915.25-927.5	0.84	1.24	16.5	44.67	20	0.0108	0.6102

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 FCC § 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 use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has two PCB antennas and six external omnidirectional antennas for SRD, and the PCB antenna gain is 0.82 dBi (Max.) and permanently attached to the EUT, the omnidirectional antenna gain is 0.84 dBi (Max.) and use a unique type of connector to attach to the EUT, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Type	Antenna Model	Antenna Gain (dBi)	Max. Antenna Gain (dBi)	Input impedance
PCB	SLEingE100090329	0.82	0.82	50Ω
	SLEingE100090329-C03	0.67		
External Omnidirectional	F06254409910002	0.3	0.84	50Ω
	WTTX230006B	0.82		
	WTTX220039B	0.84		
	F062A9209110001	-0.93		
	SLEingA201400120-F01	-0.13		
	SLEingA201400120-F02	-0.13		

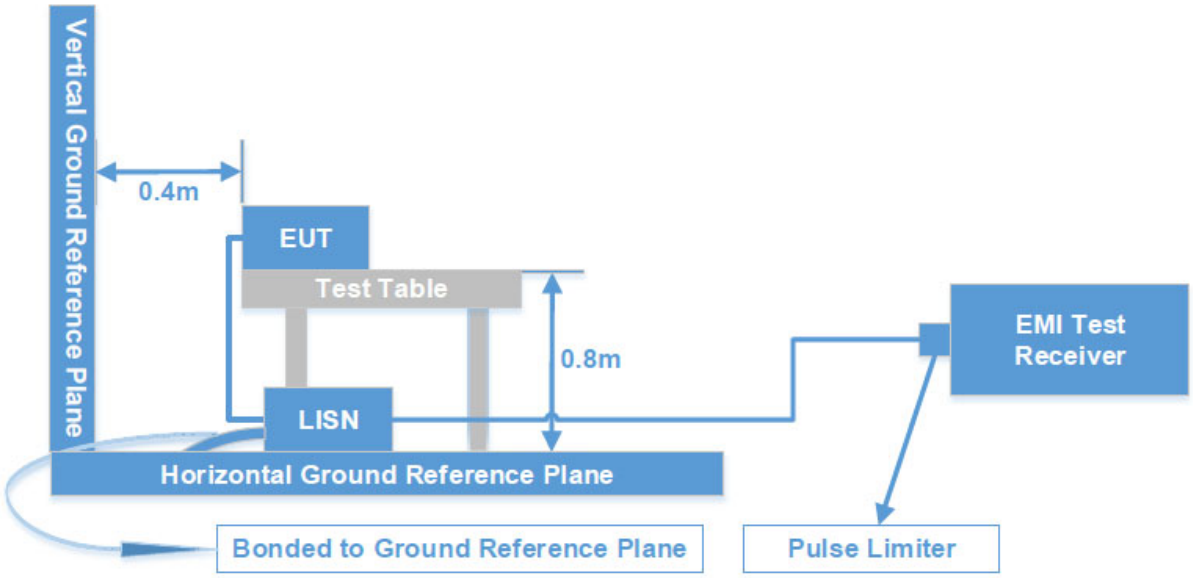
Result: Compliant.

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.

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 or adapter was connected to the outlet of the LISN.

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

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

Level & Over Limit Calculation

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

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

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

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

Test Results Summary

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

Test Data: See Appendix

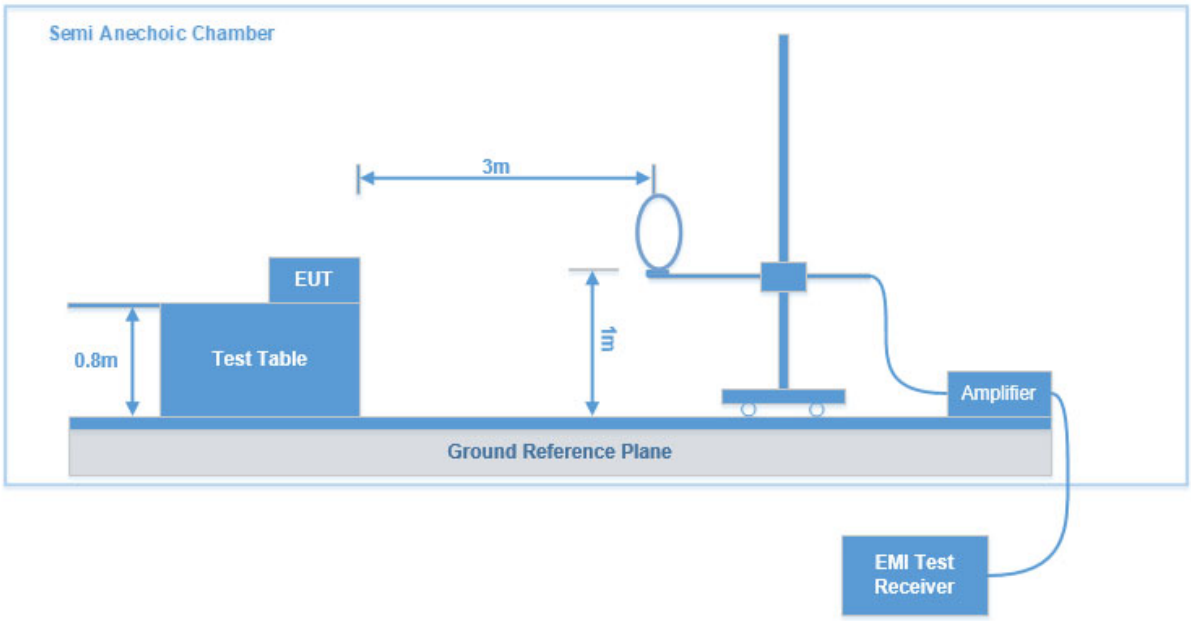
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

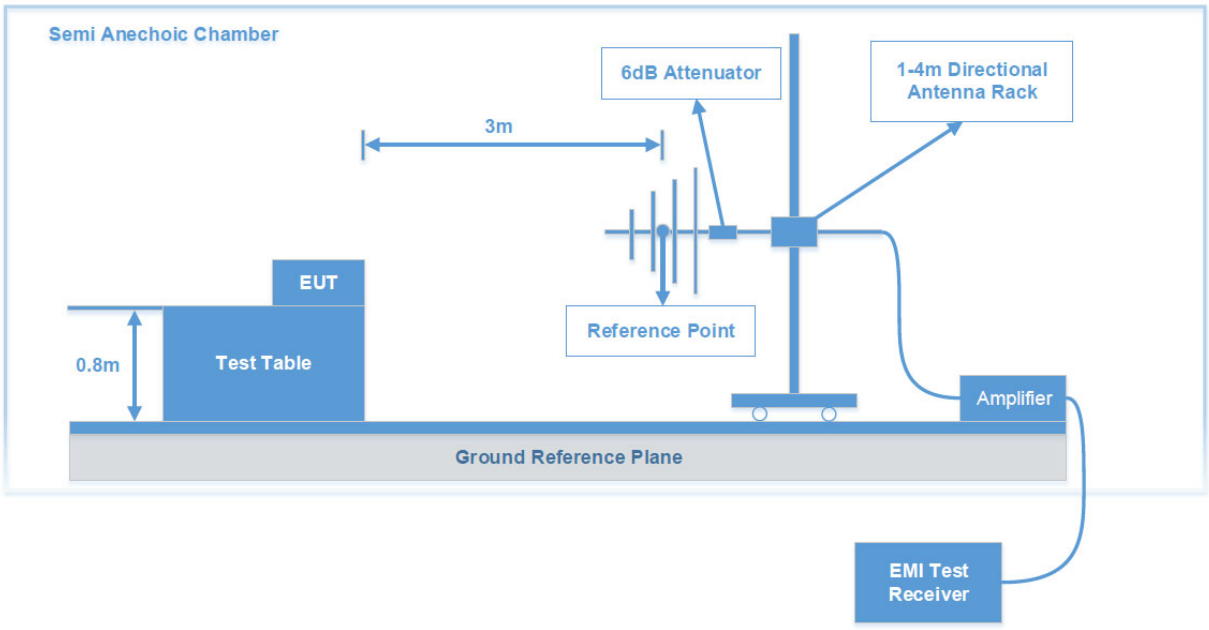
FCC §15.205; §15.209; §15.247(d)

Test System Setup

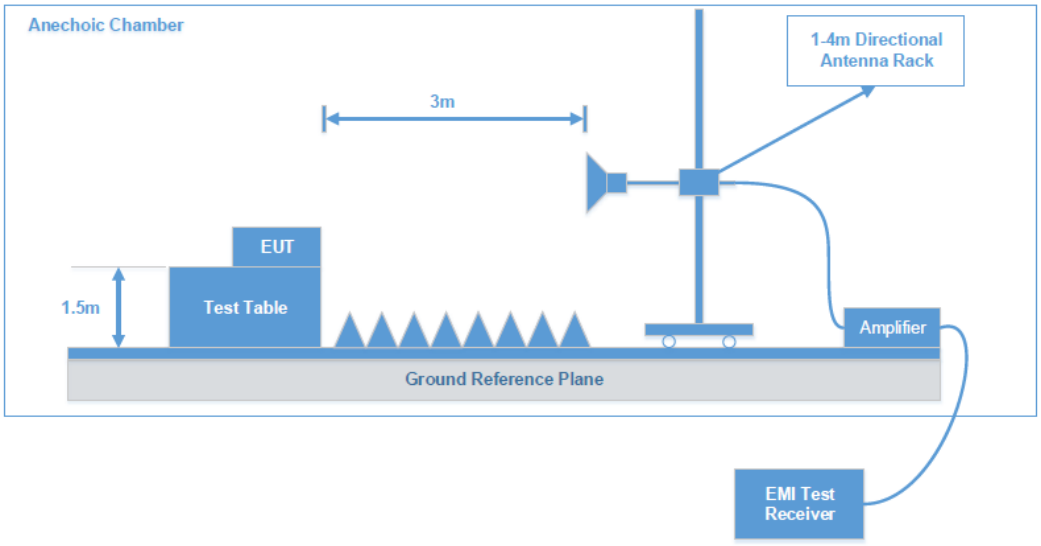
9 kHz - 30 MHz:



30 MHz - 1 GHz:



Above 1 GHz:



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

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)

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

Test Results Summary

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

Test Data: See Appendix

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

Applicable Standard

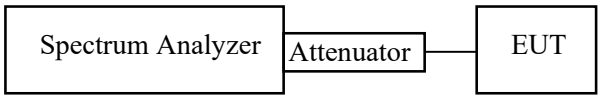
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that 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

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

a. Span: Wide enough to capture the peaks of two adjacent channels.
b. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
c. Video (or average) bandwidth (VBW) ≥ RBW.
d. Sweep: Auto.
e. Detector function: Peak.
f. Trace: Max hold.
g. Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels.



Test Datd: See Appendix

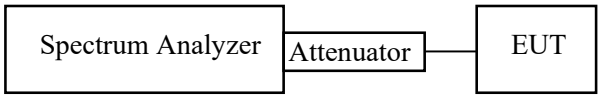
FCC §15.247(a) (1) (i) – 20 dB EMISSION BANDWIDTH

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 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Data: See Appendix

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

Applicable Standard

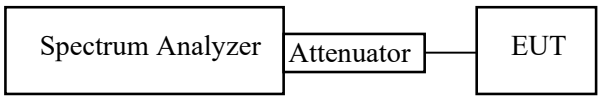
For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period;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

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

a. Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
b. RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
c. VBW ≥ RBW.
d. Sweep: Auto.
e. Detector function: Peak.
f. Trace: Max hold.
g. Allow the trace to stabilize.

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies.



Test Data: See Appendix

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

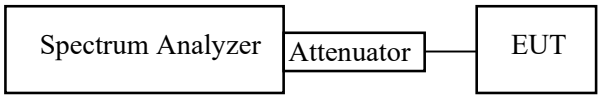
Applicable Standard

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

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

a Span: Zero span, centered on a hopping channel.
b RBW shall be ≤ channel spacing and where possible RBW should be set ≥ 1 / T, where T is the expected dwell time per channel.
c Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
d Detector function: Peak.
e Trace: Max hold.



Test Data: See Appendix

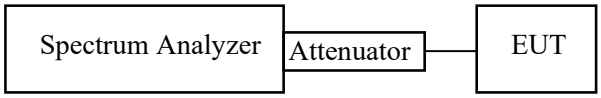
FCC §15.247(b) (2) - PEAK OUTPUT POWER MEASUREMENT

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.



Test Data: See Appendix

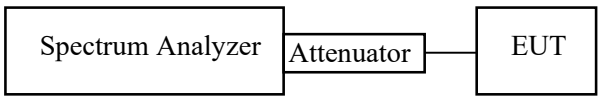
FCC §15.247(d) - BAND EDGES TESTING

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.



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.

APPENDIX - TEST DATA

Environmental Conditions & Test Information

Test Item:	AC LINE CONDUCTED EMISSIONS	RADIATED EMISSIONS			RESTRICTED BANDS EMISSIONS	CHANNEL SEPARATION TEST
		9 kHz-30 MHz	30 MHz – 1 GHz	1-10 GHz		
Test Date:	2024-07-23	2024-09-11	2024-09-10 to 2024-11-07	2024-08-29	2024-08-21 to 2024-09-16	2024-10-09
Temperature:	29.1 ℃	25.9 ℃	20.3-26.8 ℃	24.3 ℃	25.3-26.8 ℃	23.3 ℃
Relative Humidity:	50 %	47 %	47-57 %	52 %	47-60 %	55 %
ATM Pressure:	100.4 kPa	100.7 kPa	100.7-102.8 kPa	100.8 kPa	100.6-101.0 kPa	101.1 kPa
Test Result:	Pass	Pass	Pass	Pass	Pass	Pass
Test Engineer:	Leah Li	Grace Luo	Grace Luo & Jerry Yan	Klein Zhu	Grace Luo	Neil Zhou

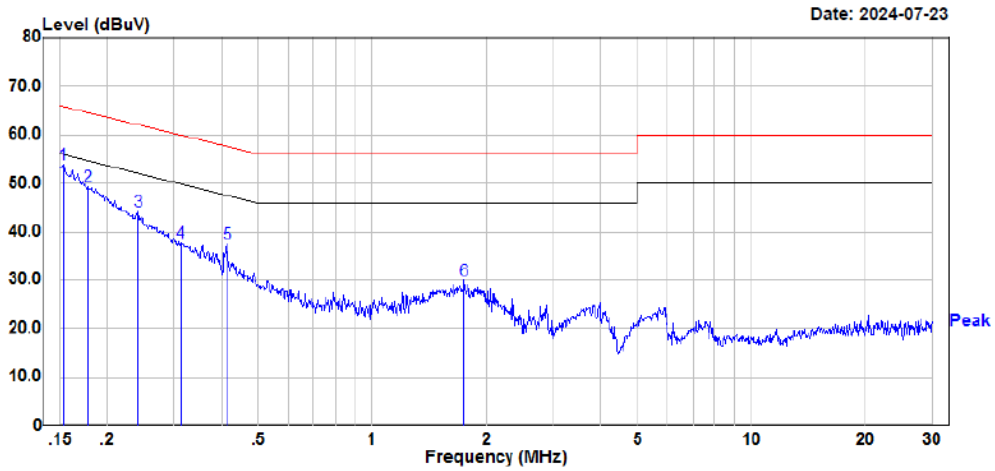
Test Item:	20 DB BANDWIDTH TEST	Quantity Of Hopping Channel Test	Time Of Occupancy (Dwell Time)		PEAK OUTPUT POWER MEASUREMENT	BAND EDGES TESTING	
Test Date:	2024-10-09	2024-10-25	2024-10-09	2025-01-07	2024-10-09	2024-10-09 to 2024-10-22	2025-01-07
Temperature:	23.3 ℃	22.3 ℃	23.3 ℃	21.1 ℃	23.3 ℃	22.7-23.3 ℃	21.1 ℃
Relative Humidity:	55 %	55 %	55 %	51 %	55 %	55-60 %	51 %
ATM Pressure:	101.1 kPa	101.9 kPa	101.1 kPa	102.8 kPa	101.1 kPa	101.1-102.0 kPa	102.8 kPa
Test Result:	Pass	Pass	Pass		Pass	Pass	
Test Engineer:	Neil Zhou	Neil Zhou	Neil Zhou		Neil Zhou	Neil Zhou	

AC LINE CONDUCTED EMISSIONS

EUT operation mode: Transmitting in Low channel (maximum output power mode)

For external Omnidirectional Antenna:

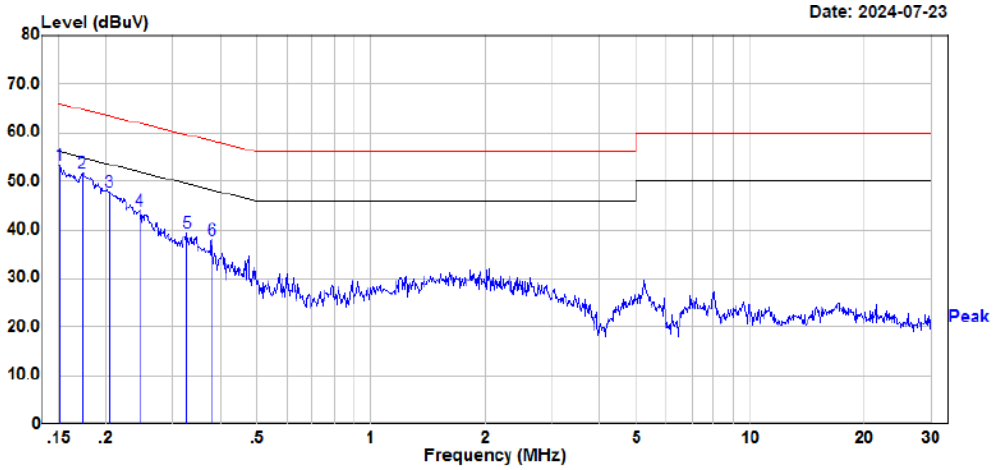
AC 120V/60 Hz, Line




```
Site                : CE
Condition           : FCC PART 15.207
                    : DET:Peak
Project             : RSHA240711001
Model               : HM-S102
Phase               : L
Voltage             : 120V/60Hz
Mode                : Transmitting
Test Equipment      : ENV216,ESR
Temperature         : 29.1℃
Humidity            : 50%
Atmospheric pressure: 100.4kPa
Test Engineer       : Leah Li
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	33.90	20.12	54.02	65.83	-11.81	Peak
2	0.178	29.22	20.12	49.34	64.59	-15.25	Peak
3	0.241	24.05	20.13	44.18	62.07	-17.89	Peak
4	0.312	17.42	20.17	37.59	59.91	-22.32	Peak
5	0.413	17.14	20.21	37.35	57.60	-20.25	Peak
6	1.742	9.86	20.07	29.93	56.00	-26.07	Peak

AC 120V/60 Hz, Neutral

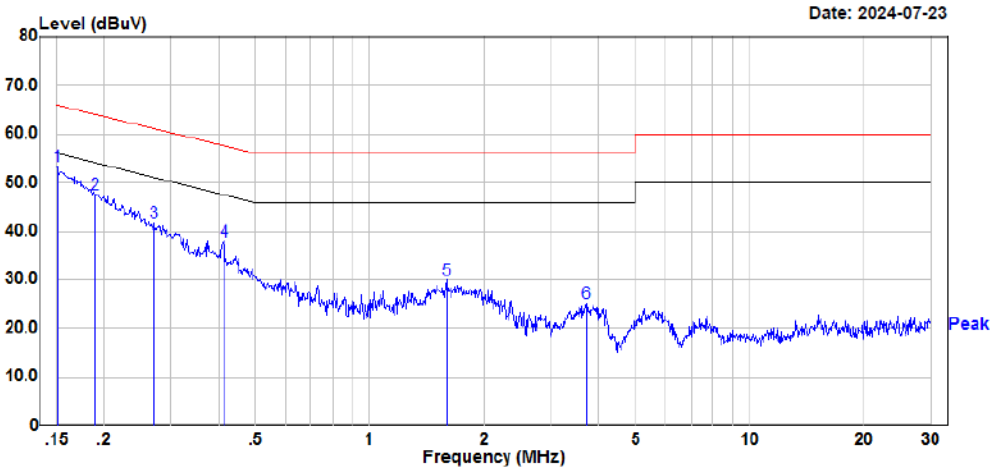



```
Site                : CE
Condition           : FCC PART 15.207
                    : DET:Peak
Project             : RSHA240711001
Model               : HM-S102
Phase               : N
Voltage             : 120V/60Hz
Mode                : Transmitting
Test Equipment      : ENV216,ESR
Temperature         : 29.1℃
Humidity            : 50%
Atmospheric pressure: 100.4kPa
Test Engineer       : Leah Li
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	33.30	20.12	53.42	65.96	-12.54	Peak
2	0.172	31.60	20.11	51.71	64.84	-13.13	Peak
3	0.203	27.87	20.11	47.98	63.47	-15.49	Peak
4	0.244	23.78	20.13	43.91	61.94	-18.03	Peak
5	0.326	19.33	20.18	39.51	59.54	-20.03	Peak
6	0.379	17.88	20.19	38.07	58.30	-20.23	Peak

For PCB Antenna:

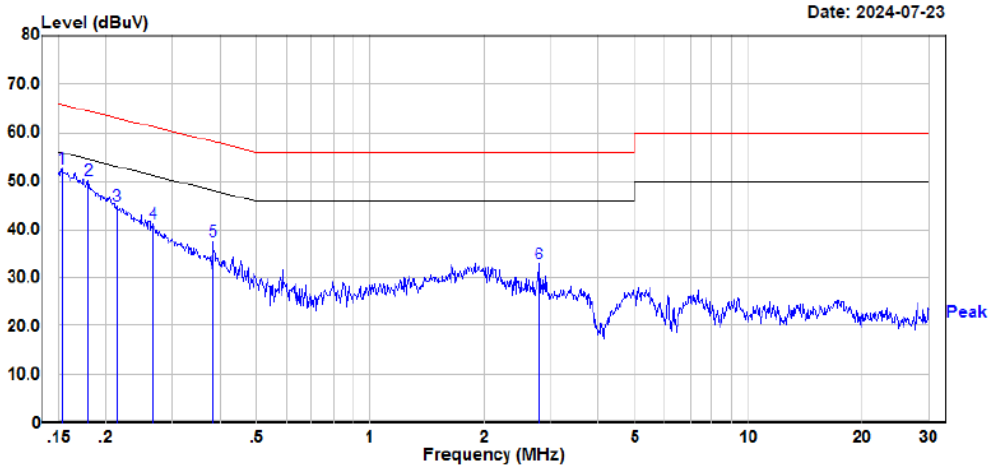
AC 120V/60 Hz, Line




```
Site                : CE
Condition           : FCC PART 15.207
                    : DET:Peak
Project             : RSHA240711001
Model               : HM-S102
Phase               : L
Voltage             : 120V/60Hz
Mode                : Transmitting
Test Equipment      : ENV216,ESR
Temperature         : 29.1℃
Humidity            : 50%
Atmospheric pressure: 100.4kPa
Test Engineer       : Leah Li
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	33.36	20.12	53.48	65.96	-12.48	Peak
2	0.189	27.54	20.11	47.65	64.10	-16.45	Peak
3	0.270	21.59	20.15	41.74	61.11	-19.37	Peak
4	0.413	17.85	20.21	38.06	57.60	-19.54	Peak
5	1.593	10.01	20.01	30.02	56.00	-25.98	Peak
6	3.716	4.84	20.25	25.09	56.00	-30.91	Peak

AC 120V/60 Hz, Neutral




```
Site                 : CE
Condition            : FCC PART 15.207
                     : DET:Peak
Project              : RSHA240711001
Model                : HM-S102
Phase                : N
Voltage              : 120V/60Hz
Mode                 : Transmitting
Test Equipment       : ENV216,ESR
Temperature          : 29.1℃
Humidity             : 50%
Atmospheric pressure: 100.4kPa
Test Engineer        : Leah Li
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	32.61	20.12	52.73	65.83	-13.10	Peak
2	0.179	30.06	20.12	50.18	64.51	-14.33	Peak
3	0.214	24.90	20.12	45.02	63.06	-18.04	Peak
4	0.266	21.20	20.15	41.35	61.24	-19.89	Peak
5	0.383	17.51	20.20	37.71	58.22	-20.51	Peak
6	2.797	12.72	20.22	32.94	56.00	-23.06	Peak

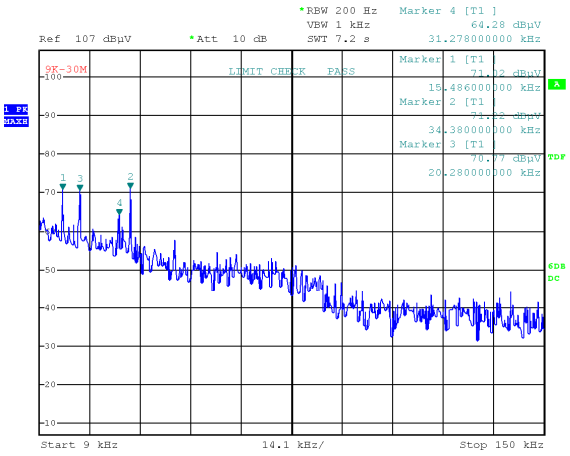
RADIATED EMISSIONS & RESTRICTED BANDS EMISSIONS

EUT operation mode: Transmitting

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

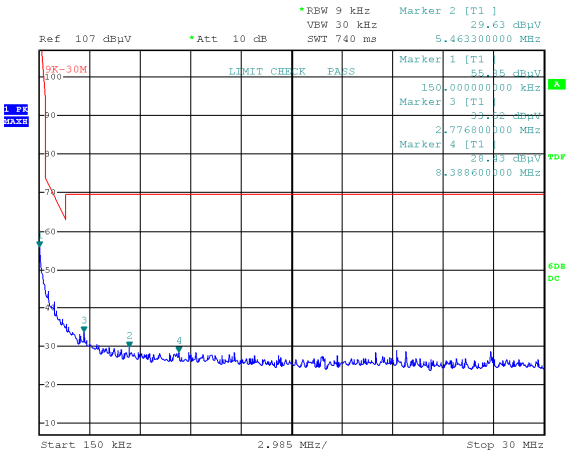
9 kHz-30 MHz: (*Transmitting maximum output power low channel)*
Parallel(worst case)
For external Omnidirectional Antenna:

9 kHz-150kHz



Project No.RSHA240711001 Tester:Grace Luo
Date: 11.SEP.2024 22:48:50

150 kHz -30 MHz



Project No.RSHA240711001 Tester:Grace Luo
Date: 11.SEP.2024 22:45:59

9 kHz-150 kHz

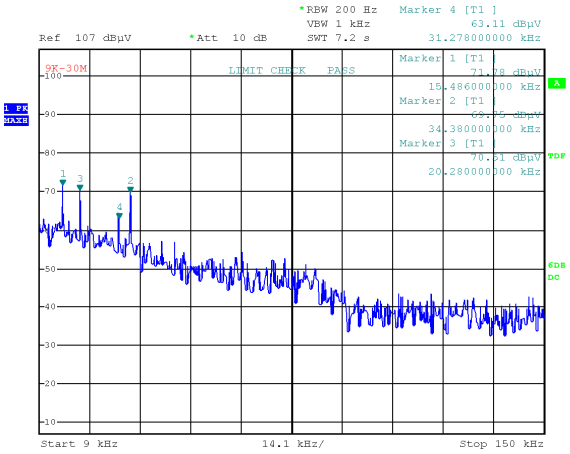
Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.015486	71.02	PK	52.87	123.81	52.79
0.03438	71.22	PK	46.06	116.88	45.66
0.02028	70.77	PK	49.92	121.46	50.69
0.031278	64.28	PK	46.87	117.70	53.42

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	55.85	PK	50.90	104.08	48.23
5.46330	29.63	PK	7.79	69.54	39.91
2.77680	33.52	PK	11.14	69.54	36.02
8.38860	28.43	PK	6.40	69.54	41.11

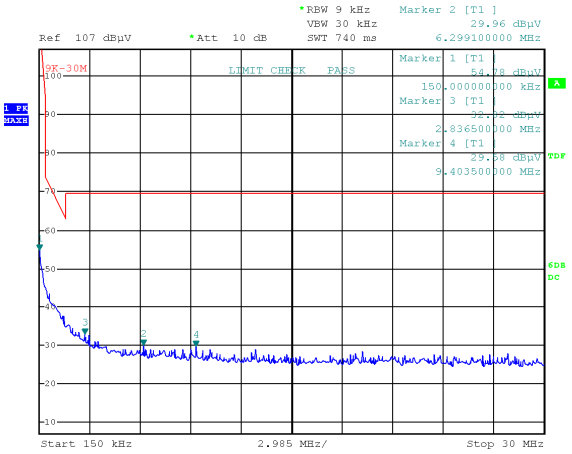
For PCB Antenna

9 kHz-150kHz



Project No.RSHA240711001 Tester:Grace Luo
Date: 11.SEP.2024 22:32:42

150 kHz -30 MHz



Project No.RSHA240711001 Tester:Grace Luo
Date: 11.SEP.2024 22:04:44

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)
0.015486	71.78	PK	52.87	123.81	52.03
0.03438	69.75	PK	46.06	116.88	47.13
0.02028	70.51	PK	49.92	121.46	50.95
0.031278	63.11	PK	46.87	117.70	54.59

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	54.78	PK	50.90	104.08	49.30
6.29910	29.96	PK	7.08	69.54	39.58
2.83650	32.82	PK	10.89	69.54	36.72
9.40350	29.58	PK	6.40	69.54	39.96

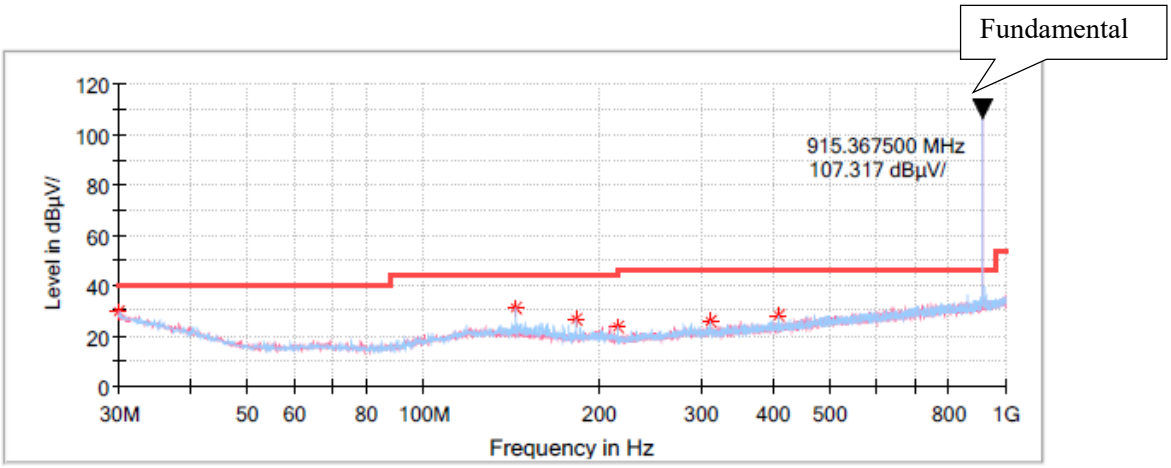
For external Omnidirectional Antenna:

30 MHz - 1 GHz:

Low Channel: 915.25 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	20.3℃
Humidity:	57%
Barometric Pressure:	102.8kPa
Test Engineer:	Jerry Yan
Test Date:	2024/11/07



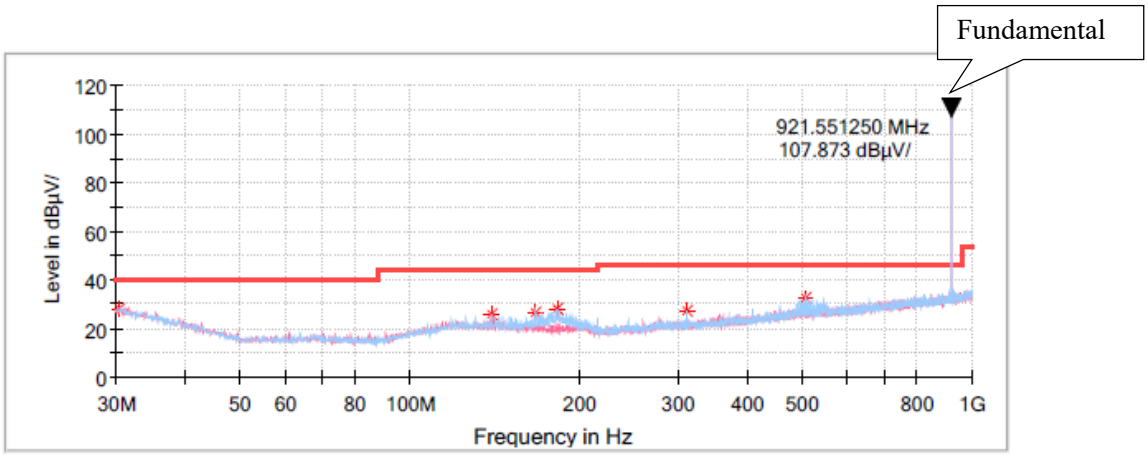
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.000000	29.77	40.00	10.23	V	-4.8
143.975000	30.57	43.50	12.93	H	-11.4
183.138750	26.23	43.50	17.27	H	-12.8
215.997500	23.45	43.50	20.05	H	-13.1
312.027500	26.03	46.00	19.97	H	-10.0
407.936250	27.59	46.00	18.41	H	-7.8

Middle Channel: 921.50 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	20.3℃
Humidity:	57%
Barometric Pressure:	102.8kPa
Test Engineer:	Jerry Yan
Test Date:	2024/11/07



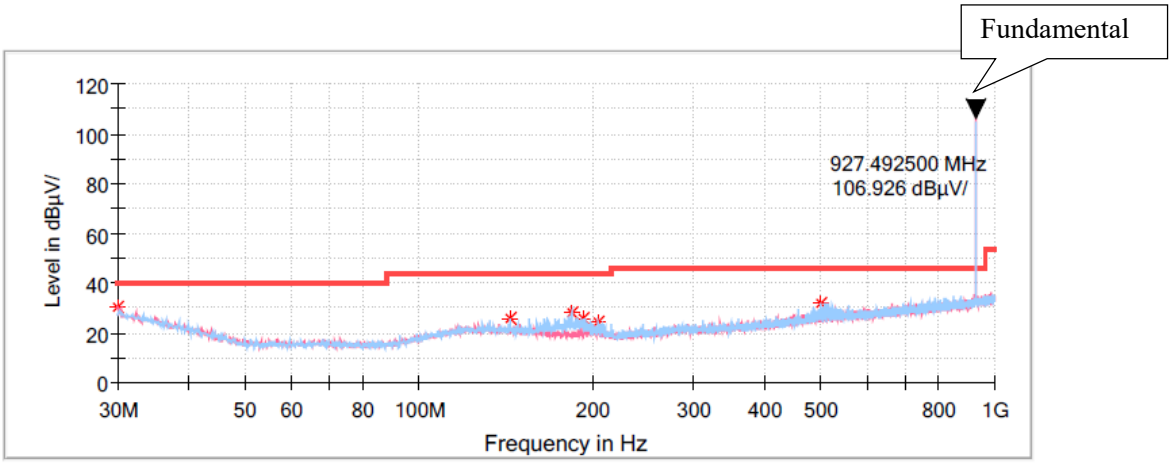
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.363750	28.29	40.00	11.71	V	-5.0
140.095000	25.29	43.50	18.21	H	-11.2
167.982500	26.08	43.50	17.42	H	-12.4
183.381250	27.70	43.50	15.80	H	-12.8
312.027500	27.33	46.00	18.67	H	-10.0
508.210000	32.54	46.00	13.46	H	-5.2

High Channel: 927.50 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	20.3℃
Humidity:	57%
Barometric Pressure:	102.8kPa
Test Engineer:	Jerry Yan
Test Date:	2024/11/07



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.000000	30.55	40.00	9.45	V	-4.8
143.975000	25.31	43.50	18.19	H	-11.4
183.987500	28.20	43.50	15.30	H	-12.7
192.596250	25.62	43.50	17.88	H	-12.4
205.327500	24.11	43.50	19.39	H	-12.4
498.510000	31.58	46.00	14.42	H	-5.4

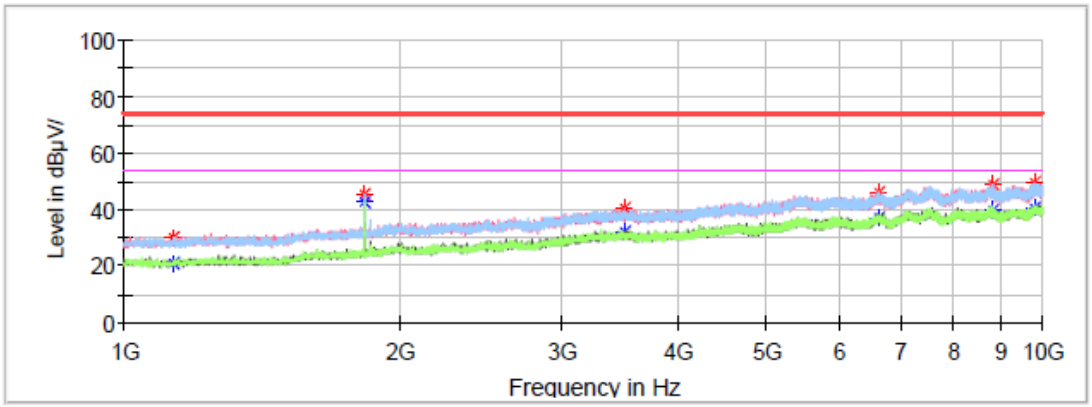
1 GHz - 10 GHz:

Low Channel: 915.25 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

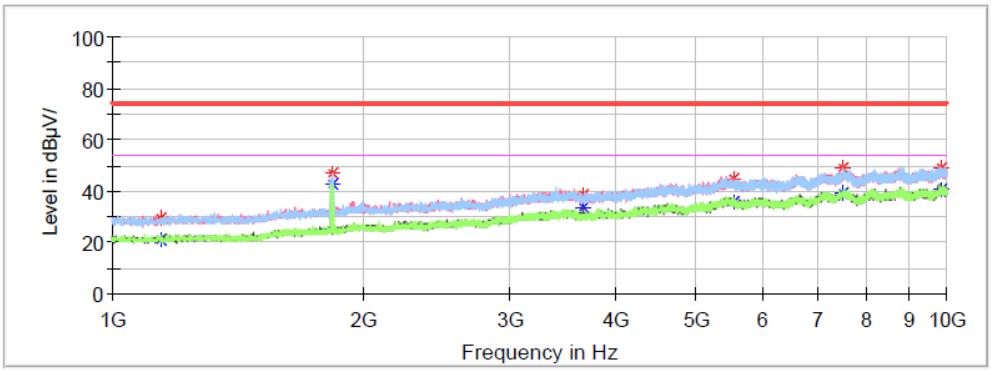
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1133.200000	29.79	---	74.00	44.21	H	-15.3
1133.200000	---	20.88	54.00	33.12	H	-15.3
1828.900000	---	42.80	54.00	11.20	H	-12.8
1828.900000	45.25	---	74.00	28.75	H	-12.8
3503.800000	40.30	---	74.00	33.70	V	-6.3
3503.800000	---	32.33	54.00	21.67	V	-6.3
6647.500000	46.09	---	74.00	27.91	H	1.1
6647.500000	---	36.84	54.00	17.16	H	1.1
8824.600000	49.19	---	74.00	24.81	H	5.4
8824.600000	---	40.00	54.00	14.00	H	5.4
9796.600000	---	40.64	54.00	13.36	V	6.4
9796.600000	49.42	---	74.00	24.58	V	6.4

Middle Channel: 921.50 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

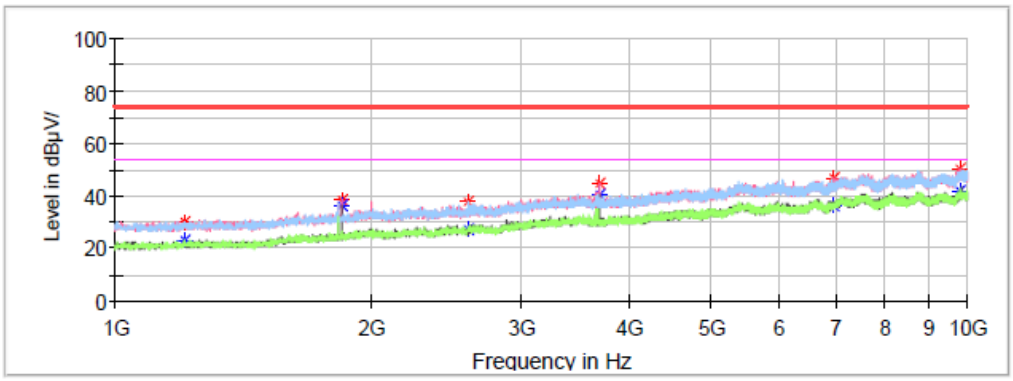
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1144.900000	29.09	---	74.00	44.91	V	-15.2
1144.900000	---	21.11	54.00	32.89	V	-15.2
1839.700000	---	42.98	54.00	11.02	H	-12.7
1839.700000	46.62	---	74.00	27.38	H	-12.7
3659.500000	38.79	---	74.00	35.21	V	-6.2
3659.500000	---	33.70	54.00	20.30	V	-6.2
5559.400000	44.90	---	74.00	29.10	V	-0.3
5559.400000	---	35.35	54.00	18.65	V	-0.3
7504.300000	48.80	---	74.00	25.20	H	3.9
7504.300000	---	38.89	54.00	15.11	H	3.9
9862.300000	---	40.87	54.00	13.13	V	6.7
9862.300000	49.13	---	74.00	24.87	V	6.7

High Channel: 927.50 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

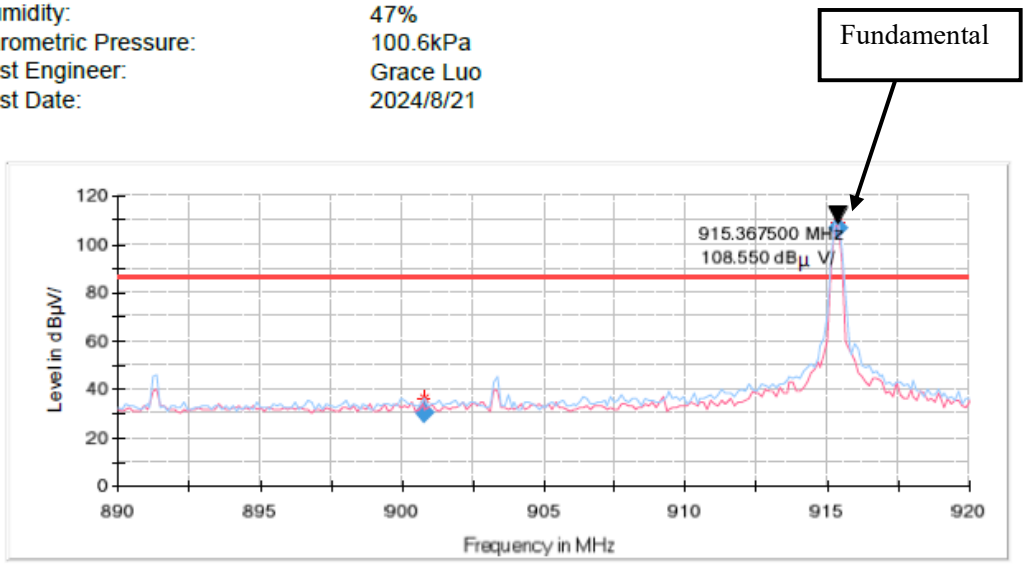
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1204.300000	29.77	---	74.00	44.23	H	-15.2
1204.300000	---	23.04	54.00	30.96	H	-15.2
1846.900000	38.66	---	74.00	35.34	V	-12.7
1846.900000	---	36.02	54.00	17.98	V	-12.7
2600.200000	38.06	---	74.00	35.94	H	-9.8
2600.200000	---	27.57	54.00	26.43	H	-9.8
3706.300000	44.42	---	74.00	29.58	V	-6.2
3706.300000	---	40.31	54.00	13.69	V	-6.2
6975.100000	46.71	---	74.00	27.29	H	2.5
6975.100000	---	36.57	54.00	17.43	H	2.5
9817.300000	---	41.70	54.00	12.30	V	6.5
9817.300000	50.10	---	74.00	23.90	V	6.5

Band Edge:

Left Side

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	Low channel
Standard	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.8℃
Humidity:	47%
Barometric Pressure:	100.6kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/21



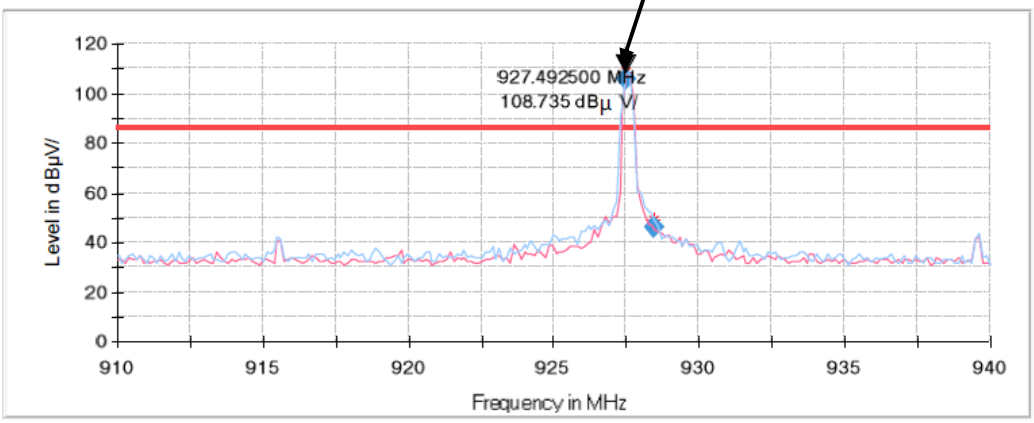
Final_Result

Frequency (MHz)	QuasiPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
900.817000	29.88	86.18	56.30	H	1.0
915.367500	106.18	/	/	H	1.0

Right Side

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	High channel
Standard	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.8℃
Humidity:	47%
Barometric Pressure:	100.6kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/21



Final_Result

Frequency (MHz)	QuasiPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
927.492000	105.80	/	/	H	1.4
928.462000	46.05	85.80	39.75	H	1.4

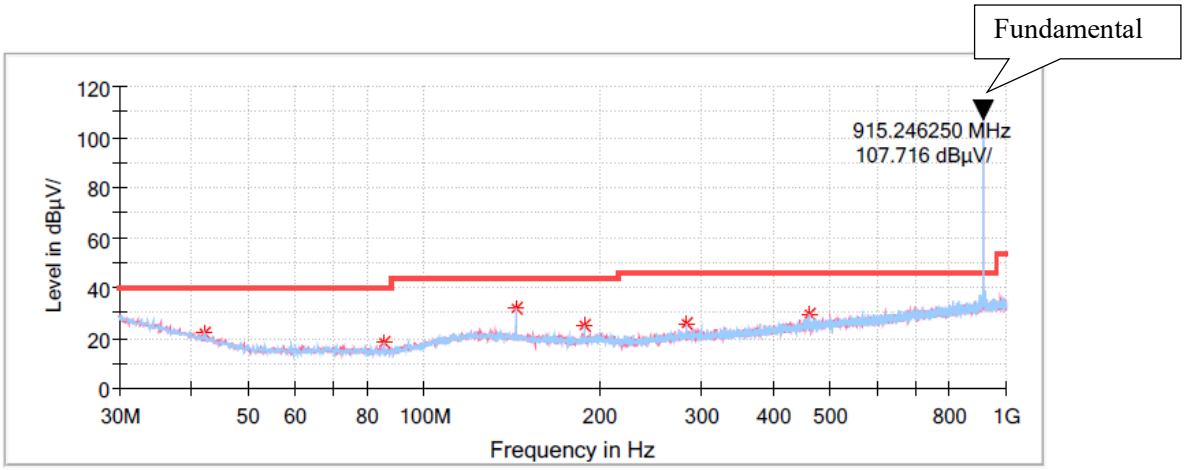
For PCB Antenna:

30 MHz - 1 GHz:

Low Channel: 915.25 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	26.8℃
Humidity:	60%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/9/11



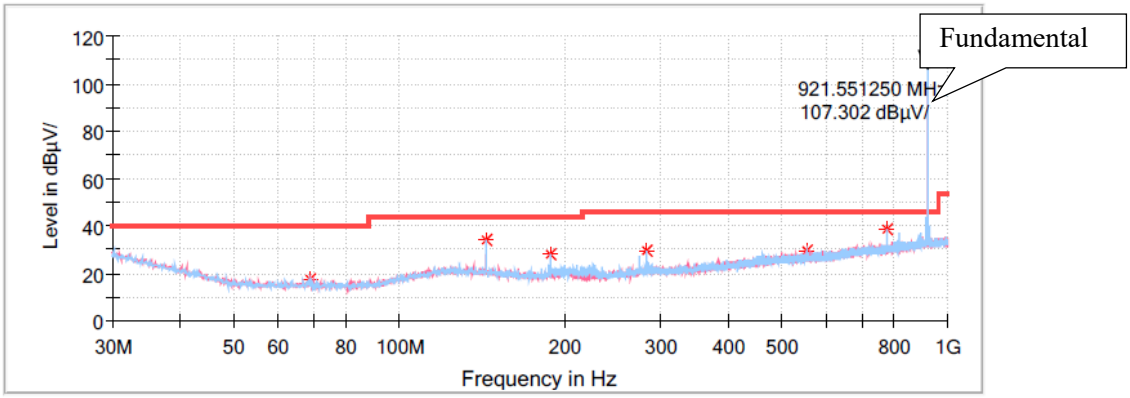
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
42.125000	21.92	40.00	18.08	H	-12.6
85.290000	17.88	40.00	22.12	H	-17.1
143.975000	31.36	43.50	12.14	H	-11.6
188.716250	24.71	43.50	18.79	H	-12.7
283.170000	25.95	46.00	20.05	H	-10.6
457.891250	29.13	46.00	16.87	H	-6.5

Middle Channel: 921.50 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.3℃
Humidity:	47%
Barometric Pressure:	101.1kPa
Test Engineer:	Grace Luo
Test Date:	2024/9/10



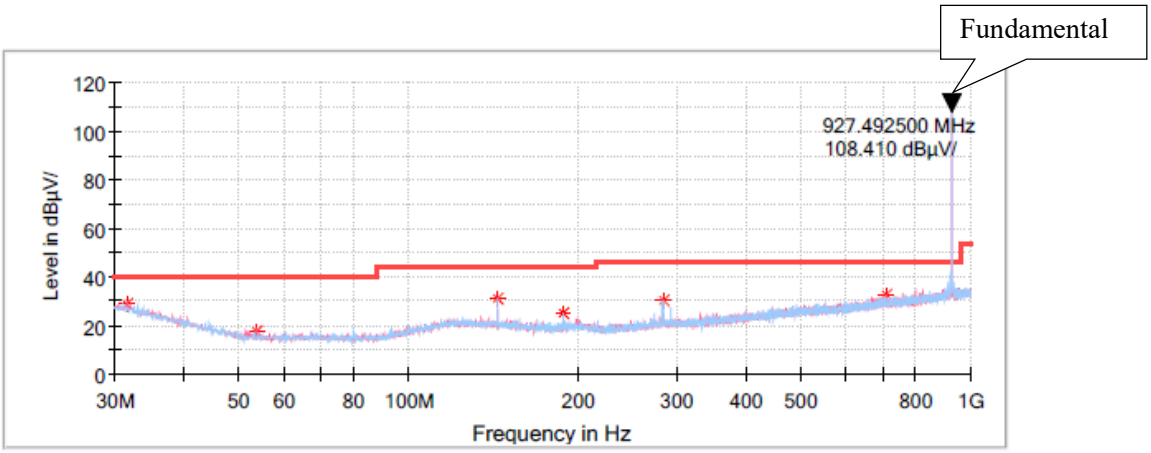
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
68.557500	17.05	40.00	22.95	V	-17.1
143.975000	33.63	43.50	9.87	H	-11.6
188.958750	27.65	43.50	15.85	H	-12.7
283.533750	29.62	46.00	16.38	H	-10.6
555.133750	29.52	46.00	16.48	V	-4.8
777.627500	38.59	46.00	7.41	H	-1.1

High Channel: 927.50 MHz

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	SRD
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.3℃
Humidity:	49%
Barometric Pressure:	100.7kPa
Test Engineer:	Grace Luo
Test Date:	2024/9/16



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
31.576250	28.55	40.00	11.45	V	-5.8
53.886250	17.52	40.00	22.48	V	-17.1
143.975000	31.11	43.50	12.39	H	-11.6
189.201250	24.99	43.50	18.51	H	-12.6
283.897500	30.22	46.00	15.78	H	-10.6
709.848750	32.17	46.00	13.83	V	-1.9

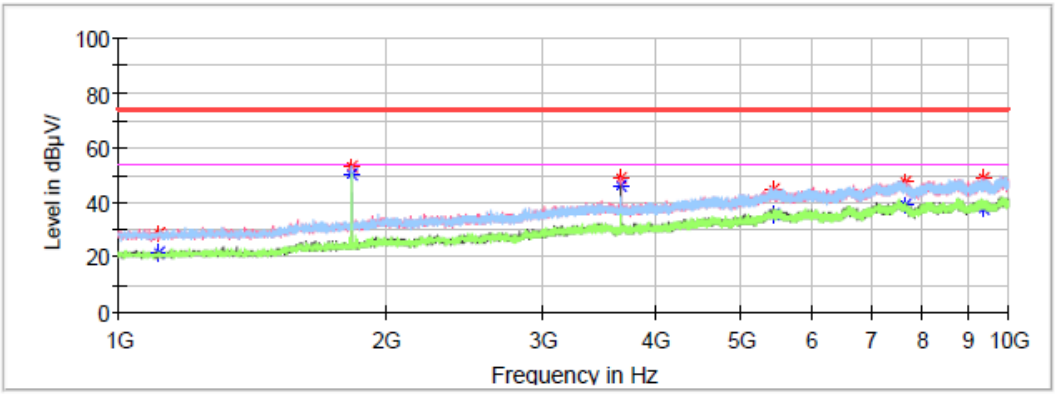
1 GHz - 10 GHz:

Low Channel: 915.25 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

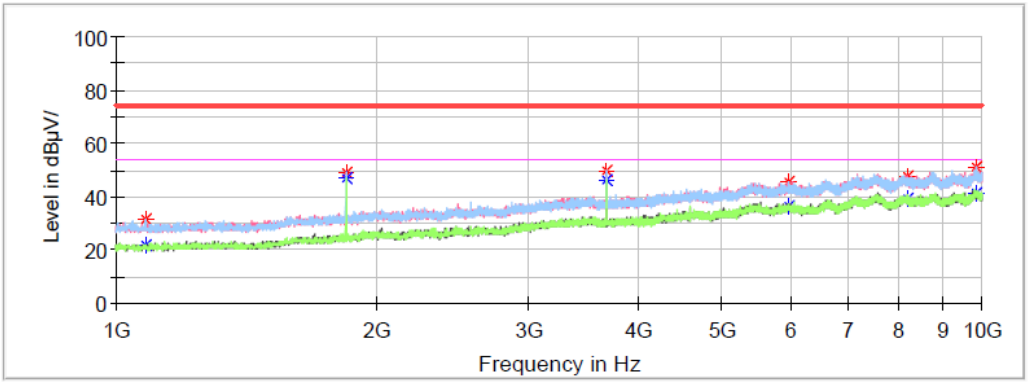
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1108.000000	---	22.00	54.00	32.00	V	-15.3
1108.000000	29.01	---	74.00	44.99	V	-15.3
1829.800000	---	50.52	54.00	3.48	H	-12.8
1829.800000	53.01	---	74.00	20.99	H	-12.8
3660.400000	---	46.16	54.00	7.84	V	-6.2
3660.400000	49.16	---	74.00	24.84	V	-6.2
5455.000000	---	35.89	54.00	18.11	V	-0.5
5455.000000	45.04	---	74.00	28.96	V	-0.5
7643.800000	---	39.20	54.00	14.80	V	3.9
7643.800000	47.50	---	74.00	26.50	V	3.9
9367.300000	---	37.94	54.00	16.06	V	5.4
9367.300000	48.84	---	74.00	25.16	V	5.4

Middle Channel: 921.50 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

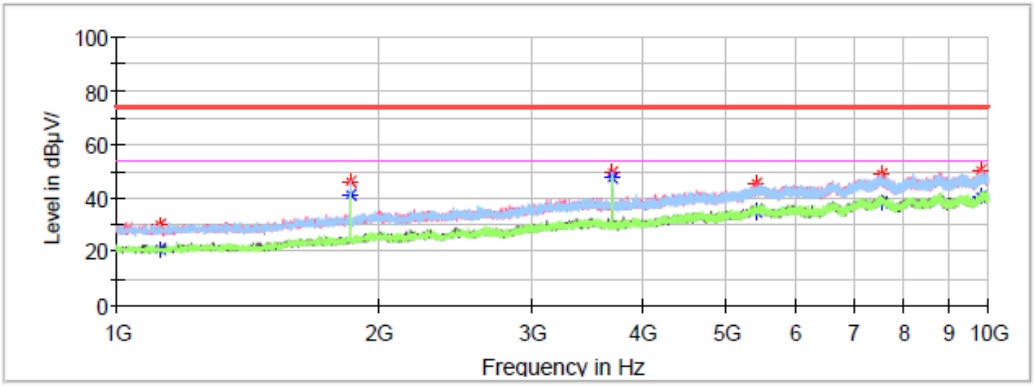
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1080.100000	31.37	---	74.00	42.63	V	-15.3
1080.100000	---	21.59	54.00	32.41	V	-15.3
1842.400000	---	46.95	54.00	7.05	H	-12.7
1842.400000	49.05	---	74.00	24.95	H	-12.7
3685.600000	49.33	---	74.00	24.67	H	-6.2
3685.600000	---	46.48	54.00	7.52	H	-6.2
5973.400000	45.13	---	74.00	28.87	V	0.0
5973.400000	---	36.37	54.00	17.63	V	0.0
8193.700000	47.69	---	74.00	26.31	V	4.5
8193.700000	---	39.38	54.00	14.62	V	4.5
9874.000000	---	41.58	54.00	12.42	H	6.7
9874.000000	51.13	---	74.00	22.87	H	6.7

High Channel: 927.50 MHz

Common Information

Project No.:	RSHA240711001
Test Mode:	SRD
Standard:	FCC PART 15.247 & 15.209 & 15.205
Test Engineer:	Klein Zhu

Full Spectrum



Critical_Freqs

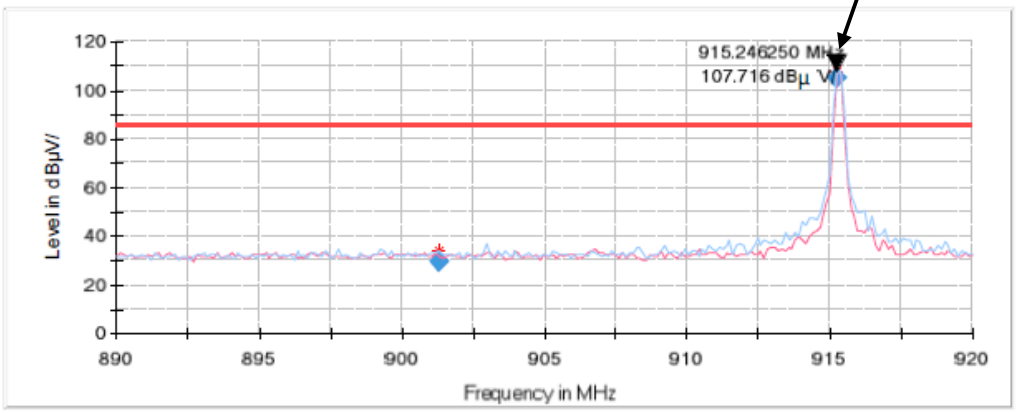
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1119.700000	---	21.08	54.00	32.92	H	-15.3
1119.700000	30.10	---	74.00	43.90	H	-15.3
1854.100000	---	40.93	54.00	13.07	H	-12.6
1854.100000	45.86	---	74.00	28.14	H	-12.6
3709.900000	---	47.30	54.00	6.70	H	-6.2
3709.900000	49.80	---	74.00	24.20	H	-6.2
5428.900000	45.26	---	74.00	28.74	V	-0.6
5428.900000	---	35.03	54.00	18.97	V	-0.6
7549.300000	48.80	---	74.00	25.20	H	3.9
7549.300000	---	38.59	54.00	15.41	H	3.9
9817.300000	---	40.62	54.00	13.38	V	6.5
9817.300000	50.17	---	74.00	23.83	V	6.5

Band Edge:

Left Side

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	Low channel
Test Equipment:	ESCI, JB3, 310N
Standard	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Temperature:	26.8℃
Humidity:	60%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/9/11



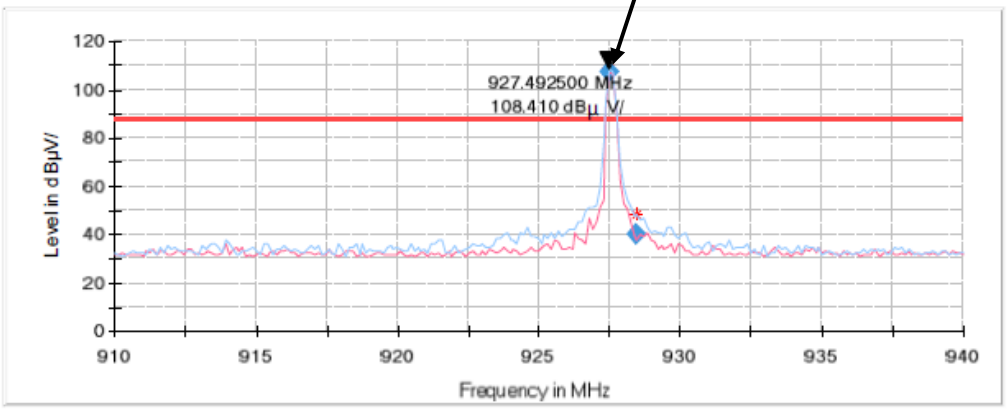
Final_Result

Frequency (MHz)	QuasiPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
901.302500	29.33	85.14	55.81	H	1.0
915.246200	105.14	/	/	H	1.2

Right Side

Common Information

Project No:	RSHA240711001
EUT Model:	HM-S102
Test Mode:	High channel
Test Equipment:	ESCI, JB3, 310N
Standard	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Temperature:	25.3℃
Humidity:	49%
Barometric Pressure:	100.7kPa
Test Engineer:	Grace Luo
Test Date:	2024/9/16



Final_Result

Frequency (MHz)	QuasiPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
927.492500	107.47	/	/	H	1.4
928.462500	40.28	87.47	47.19	H	1.4

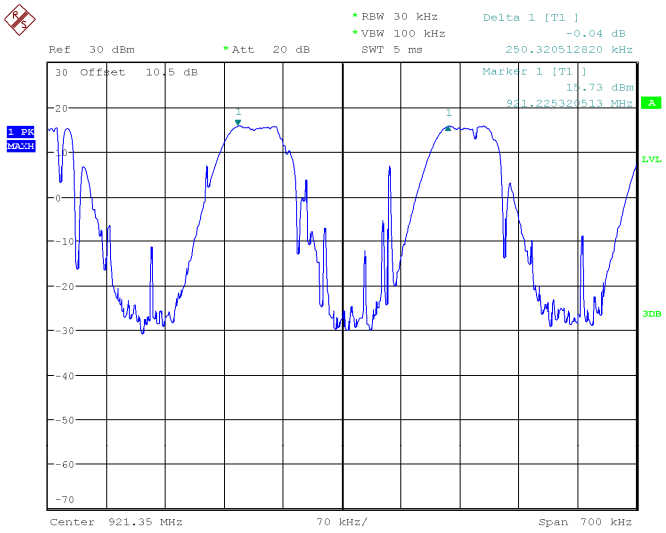
CHANNEL SEPARATION TEST

EUT operation mode: Transmitting

Test Mode	Channel	Result (MHz)	Limit (MHz)	Verdict
SRD	921.50	0.25	≥0.061	PASS

Note: Limit = 20 dB bandwidth

921.50 MHz



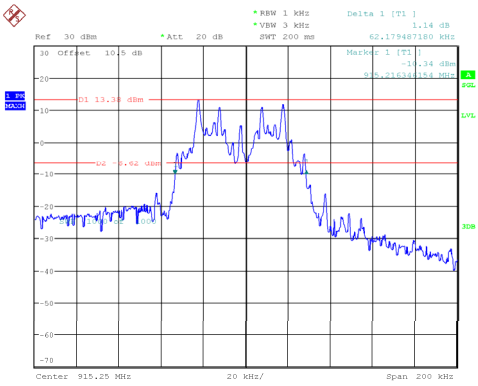
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 16:43:51

20 dB BANDWIDTH TEST

EUT operation mode: Transmitting

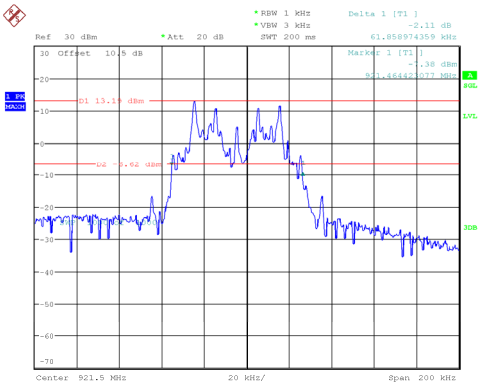
Test Mode	Channel (MHz)	20db EBW (MHz)
SRD	915.25	0.062
	921.50	0.062
	927.50	0.062

Channel: 915.25 MHz



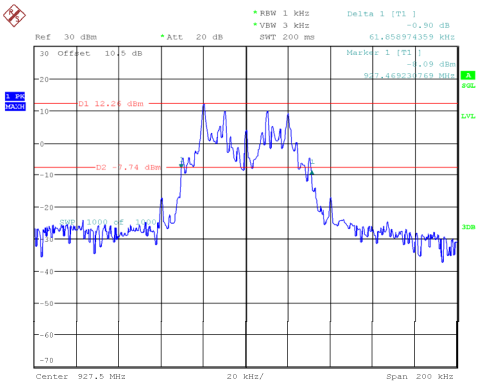
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 13:53:59

Channel: 921.50 MHz



ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 14:30:01

Channel: 927.50 MHz



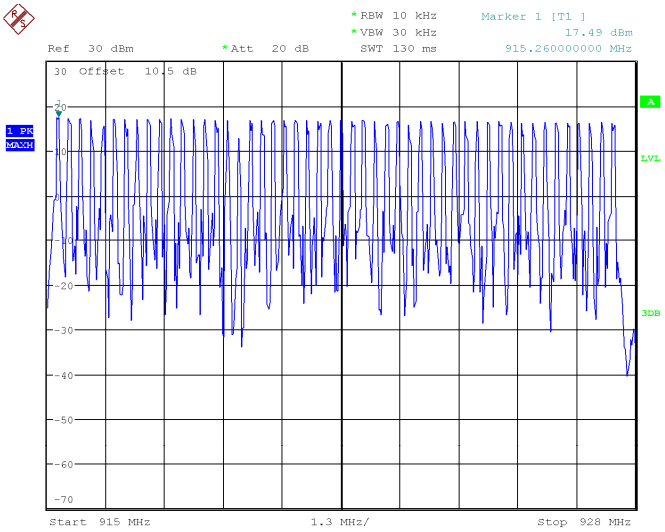
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 14:51:51

QUANTITY OF HOPPING CHANNEL TEST

EUT operation mode: Hopping

Test Mode	Channel	Result (Num)	Limit (Num)	Verdict
SRD	Hop	50	≥50	PASS

Number of Hopping Channels



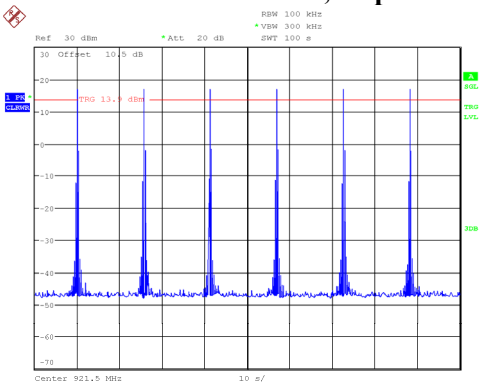
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 25.OCT.2024 10:15:06

TIME OF OCCUPANCY (DWELL TIME)

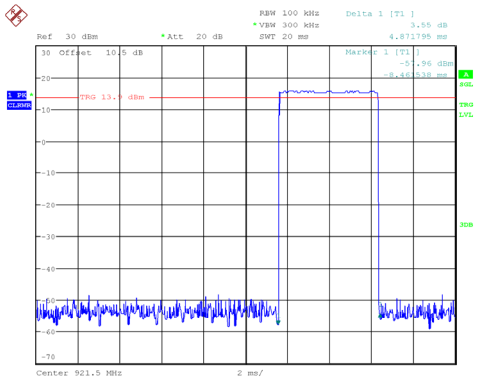
EUT operation mode: Hopping

Test Mode	Channel	BurstWidth (ms)	TotalHops (Num)	Result (s)	Limit (s)	Verdict
SRD	921.50	4.872	2	0.009744	≤0.4	PASS

Channel: 921.50 MHz, Hops in 100s



Pulse time , Channel: 921.50 MHz



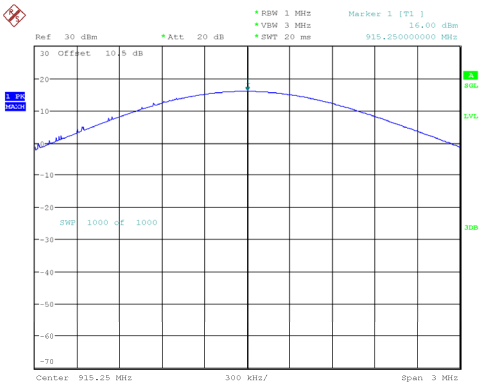
Total Hops is 2 in 20s

PEAK OUTPUT POWER MEASUREMENT

EUT operation mode: Transmitting

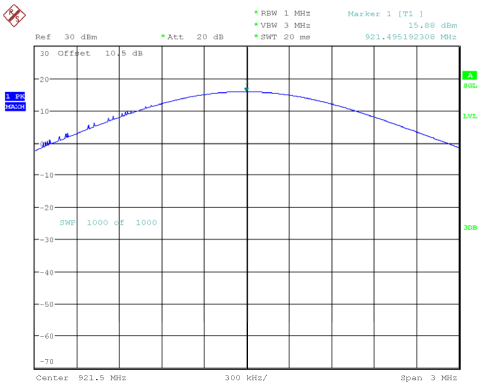
Mode	Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)
SRD	Low	915.25	16.00	30
	Middle	921.50	15.88	
	High	927.50	14.85	

Channel: 915.25 MHz



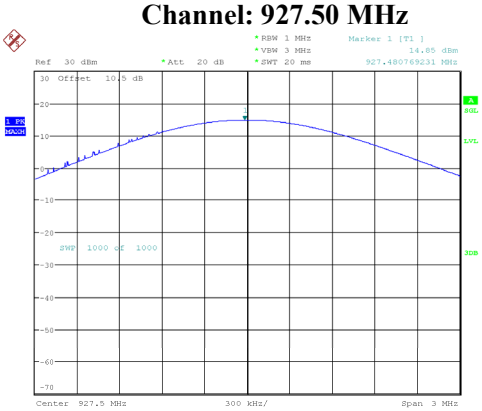
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 19:14:55

Channel: 921.50 MHz



ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 19:16:54

Channel: 927.50 MHz



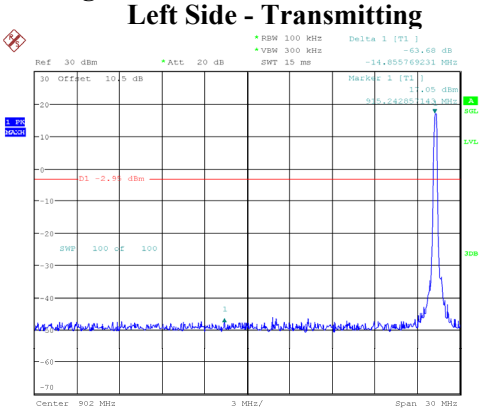
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 19:20:26

BAND EDGES

EUT operation mode: Transmitting & Hopping
Test Result: Compliant.

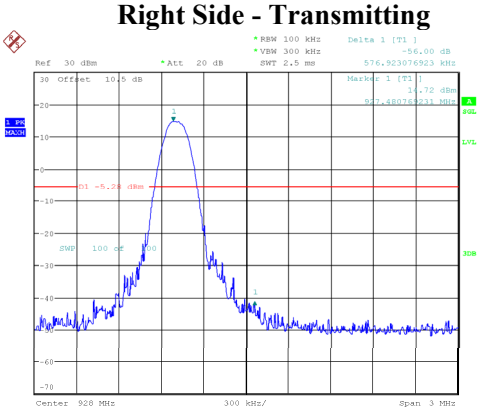
Band Edge

Left Side - Transmitting



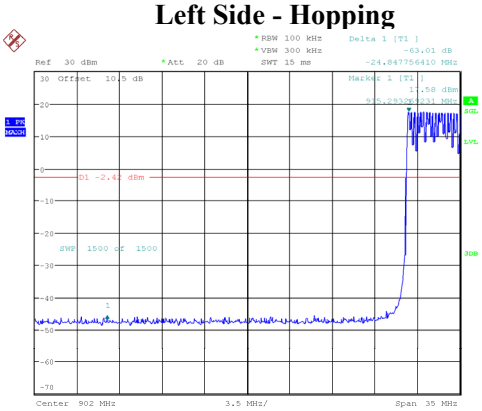
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 7.JAN.2025 14:58:35

Right Side - Transmitting



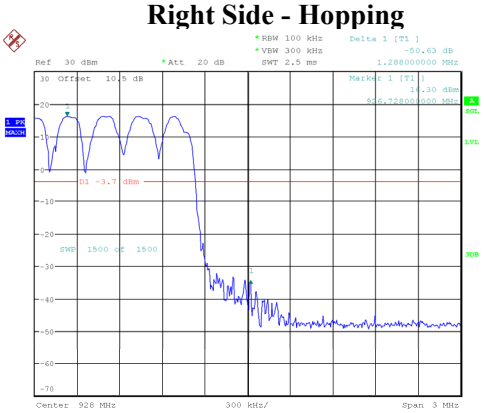
ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 9.OCT.2024 14:40:45

Left Side - Hopping



ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 7.JAN.2025 12:26:25

Right Side - Hopping



ProjectNo.:RSHA240711001 Tester:Neil Zhou
Date: 22.OCT.2024 15:44:09

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 *******