



FCC PART 15.247

TEST REPORT

For

Shanghai Sunmi Technology Co.,Ltd.

Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China

FCC ID: 2AH25T5940

Report Type: CIIPC Report	Product Type: Wireless data POS System
Report Number: <u>RKSA240109002-00B</u>	
Report Date: <u>2024-09-25</u>	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Kunshan). This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, or any agency of the U.S.Government.

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DOCUMENT HISTORY

Revision	Release Date	Description of Revision	Report Number
R1V1	2021-06-04	Original Report	RKSA210422002-00A
R1V2	2024-09-25	CIIPC Report	RKSA240109002-00B

FILING DESCRIPTION

Report Number	Information about Changes
RKSA210422002-00A	First Release
RKSA240109002-00B	Adapter, LCD, Stepping Motor, Scan Engine, Modify part of the circuit

Note:

This is a CIIPC report application based on RKSA210422002-00A, grant date: 7/20/2021, the details as below:

For version B-B:

1. Delete an adapter: UC13US.
2. Add an LCD, its model is HS55ET16T6F, the supplier is Huashi Opto-Electronic Co., Ltd. and the specification is 5.45inch.
3. Add a stepping motor, its model is 15BY25-098, the supplier is SHENZHEN YOFON ELECTRONIC CO., LTD and the specification is 5Vdc.
4. Add a scan engine, its model is NG004, the supplier is shanghai Sunmi Technology Co.,Ltd. and the specification is 3.3Vdc.
5. Modify part of the circuit which not affect RF performance

For above differences, we tested “Conducted Output Power”, “Conducted Emissions” and “Radiated Emissions below 1GHz”, updated relate photos, other data and photos should be referred to the original report RKSA210422002-00A that issued on 2021-06-04 by BACL (Kunshan).

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Product Type:	Wireless data POS System
Tested Model:	T5940
Power Supply:	DC 7.7 V from battery and DC 5.0V from adapter
Maximum peak Output Power:	2.4G Wi-Fi: 802.11b: 21.25 dBm 802.11g: 21.42 dBm 802.11n20: 20.85 dBm 802.11n40: 19.05 dBm BLE(1Mbps): -2.68 dBm BLE(2Mbps): -2.62 dBm
RF Function:	2.4G Wi-Fi, BLE(1Mbps), BLE(2Mbps)
Operating Band/Frequency:	2.4G Wi-Fi: 2412-2462 MHz(802.11b/g/n20), 2422-2452 MHz(802.11n40) BLE(1Mbps)/BLE(2Mbps): 2402-2480 MHz
Channel Number:	2.4G Wi-Fi: 11(802.11b/g/n20), 7(802.11n40) BLE(1Mbps)/BLE(2Mbps): 40
Channel Separation:	2.4G Wi-Fi: 5 MHz, BLE(1Mbps)/BLE(2Mbps): 2 MHz
Modulation Type:	2.4G Wi-Fi: OFDM,DSSS; BLE(1Mbps)/BLE(2Mbps): GFSK
Antenna Type:	2.4G Wi-Fi/BLE: FPC Antenna
★Maximum Antenna Gain:	2.4G Wi-Fi/BLE: 2.0 dBi

Adapter-1 Information:

Model: TPA-23A050200UU01

Input: AC100-240V 50/60Hz 0.3A

Output: DC5.0V, 2000mA

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: RKSA240109002-1
(Assigned by the BACL. The EUT supplied by the applicant was received on 2024-01-09.)*

Objective

This report is prepared for *Shanghai Sunmi Technology Co.,Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's 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 Compliant Testing of Unlicensed Wireless Devices and FCC 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°C	
Humidity	6%	

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN5055.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Test channel list is as below:

For 802.11b, 802.11g and 802.11n-HT20 mode, EUT was tested with Channel 1, 6 and 11;

For 802.11n-HT40 mode, EUT was tested with Channel 3, 6 and 9;

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

For BLE mode, EUT was tested with channel 0, 19 and 39.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404
...
...
18	2438	38	2478
19	2440	39	2480

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

RF test software: The EUT tested in engineering mode.

Pre-scan with all the data rates, and the worst case was performed as below:

Mode	Data Rate	Channel	Power Level setting
802.11b	1 Mbps	Low	20
		Middle	20
		High	20
802.11g	6 Mbps	Low	15
		Middle	15
		High	15
802.11n-HT20	MCS0	Low	14
		Middle	14
		High	14
802.11n-HT40	MCS0	Low	12
		Middle	12
		High	12
BLE	1Mbps	Low	Default
		Middle	Default
		High	Default
	2Mbps	Low	Default
		Middle	Default
		High	Default

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

Support Equipment List and Details

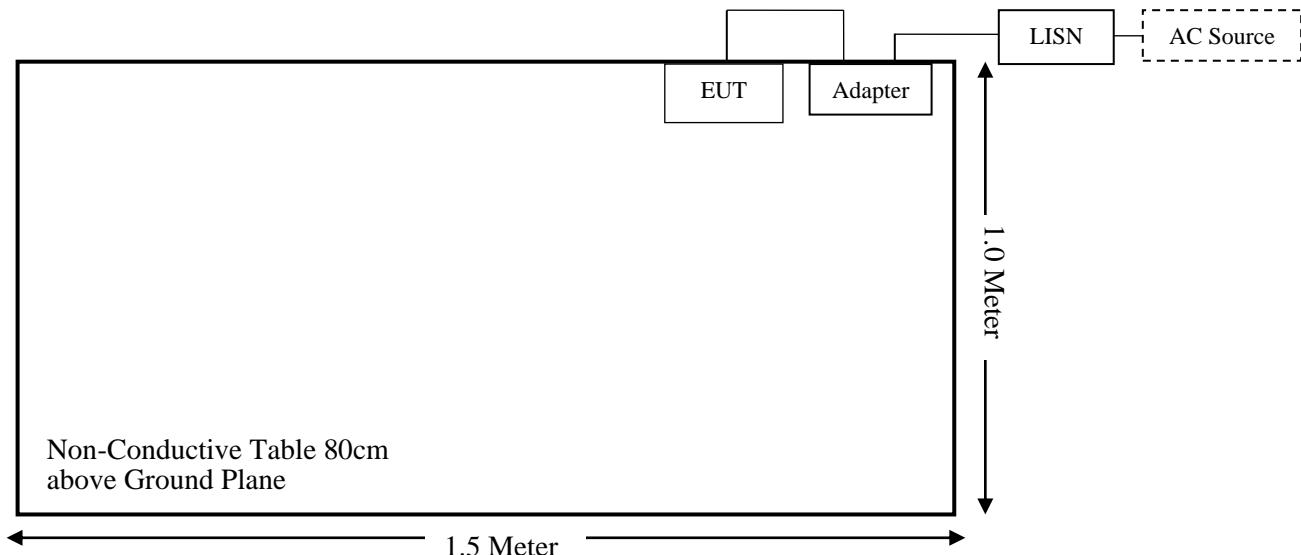
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

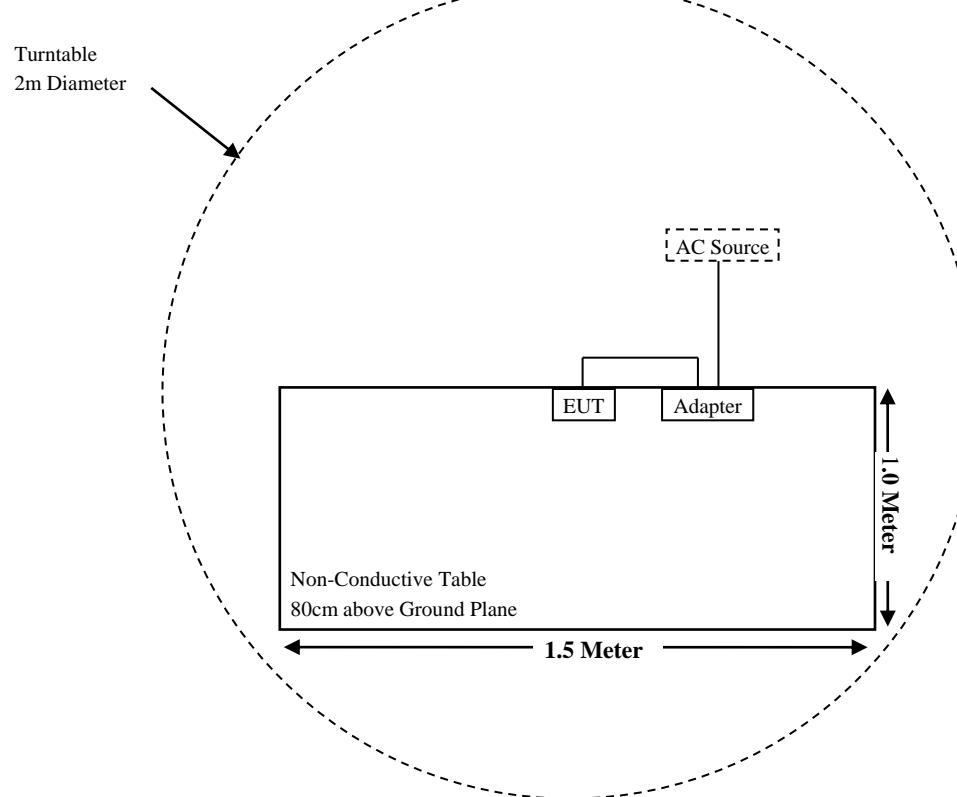
Cable Description	Length (m)	From Port	To
Power cable1	1.0	EUT	Adapter
Power cable2	1.0	Adapter	LISN/AC Source

Block Diagram of Test Setup

For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b)(1) & §2.1093	RF Exposure Information	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions below 1GHz	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions above 1GHz	Compliant*
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant*
§15.247(b)(3)	Maximum Conducted Output Power	Reporting
§15.247(d)	Band Edge	Compliant*
§15.247(e)	Power Spectral Density	Compliant*

Compliant*: The changes will not affect test data, the data refer to the original report RKSA210422002-00A that issued on 2021-06-04 by BACL (Kunshan).

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	2023-05-23	2024-05-22
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	2023-05-23	2024-05-22
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2023-05-23	2024-05-22
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2023-07-28	2024-07-27
Rohde & Schwarz	LISN	ENV216	101115	2023-05-23	2024-05-22
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-15	015	2023-05-23	2024-05-22
RF Conducted Test					
Anritsu	Power Sensor	MA24418A	12621	2024-04-23	2025-04-22
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22
Unknown	RF Cable	RF Cable C01	C01	Each Time	N/A

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 §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

According to §15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Test Result

For Wi-Fi:

Compliant, please refer to the SAR report: RKSA240109002-20B.

For BLE:

For worst case:

Mode	Frequency Range (MHz)	Max Tune-up Conducted Power★		Calculated Distance (mm)	Calculated Value	Threshold (1-g SAR)	SAR Test Exclusion
		(dBm)	(mW)				
BLE(1Mbps)	2402-2480	-2.0	0.63	5.0	0.2	3.0	Yes
BLE(2Mbps)	2402-2480	-2.0	0.63	5.0	0.2	3.0	Yes

Note: The Tune-up power provided by applicant

Result: So the standalone SAR evaluation is not necessary.

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 Compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

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

Antenna Connector Construction

The EUT has an FPC antenna for 2.4G Wi-Fi and BLE which the antenna gain is 2.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

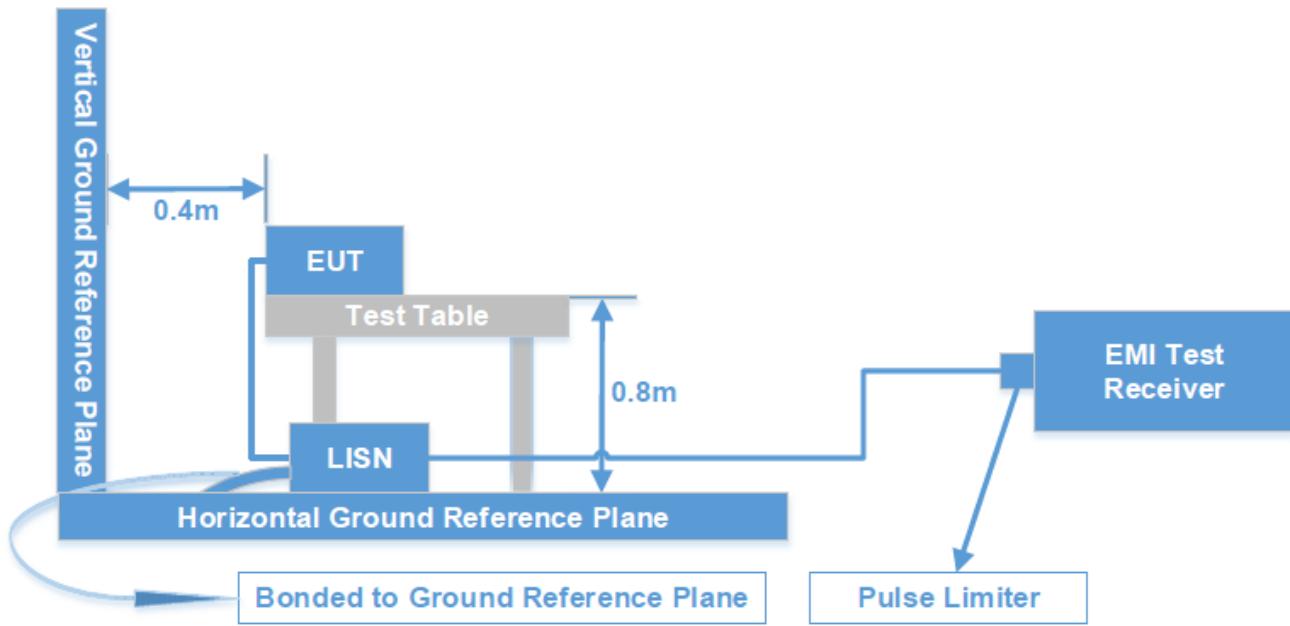
Result: Compliant.

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 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 (dB μ V) = Read level (dB μ V) + 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 (dB μ V) - Limit (dB μ V)

Test Results Summary

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

Test Data: See Appendix

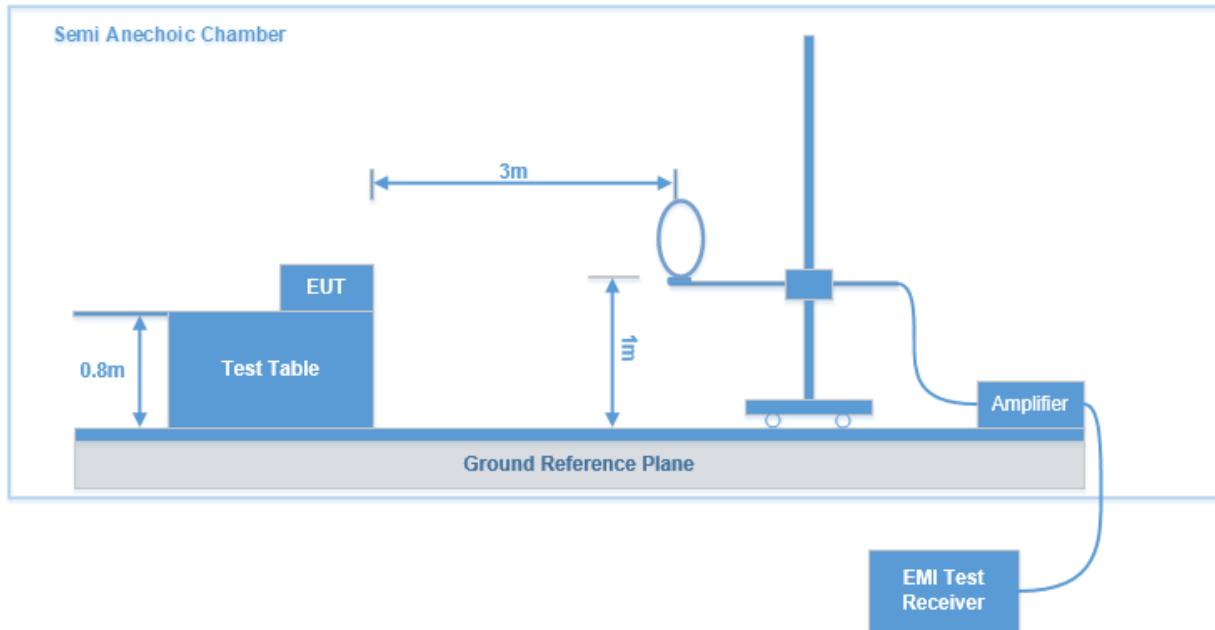
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

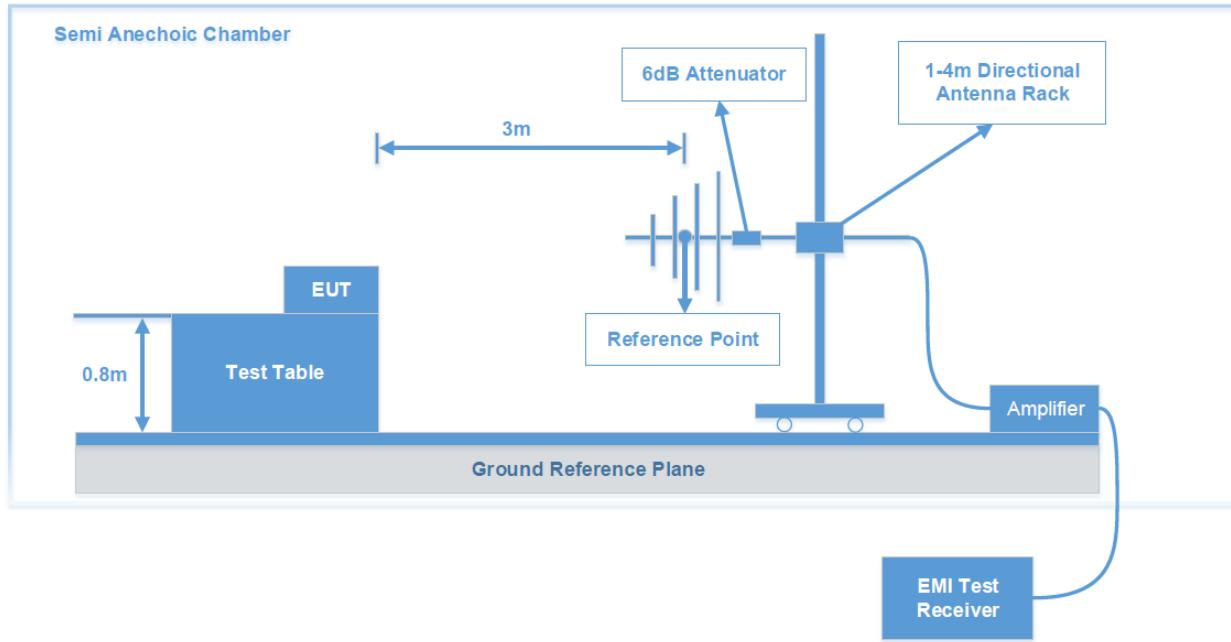
FCC §15.247 (d); §15.209; §15.205;

Test System Setup

9 kHz-30MHz:



30MHz-1GHz:



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 1 GHz.

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

Test Procedure

According to ANSI C63.10-2013 clause 6.5, 6.6 and 6.7.

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

If the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 10 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 (dB μ V/m) = Meter Reading (dB μ V) + 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 (dB μ V/m) – Corrected Amplitude (dB μ V/m)

Test Results Summary

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

Test Data: See Appendix

FCC §15.247(b) (3) - Maximum Conducted Output Power

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, Compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

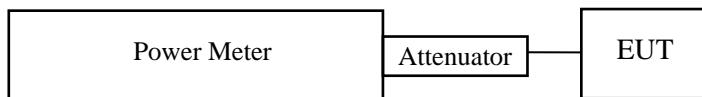
Test Procedure

According to ANSI C63.10-2013 sub-clause 11.9.1.3

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

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

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



Test Data: See Appendix

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT B-EUT EXTERNAL PHOTOGRAPHS and EXHIBIT C-EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT D-TEST SETUP PHOTOGRAPHS.

Appendix - TEST DATA

Environmental Conditions & Test Information

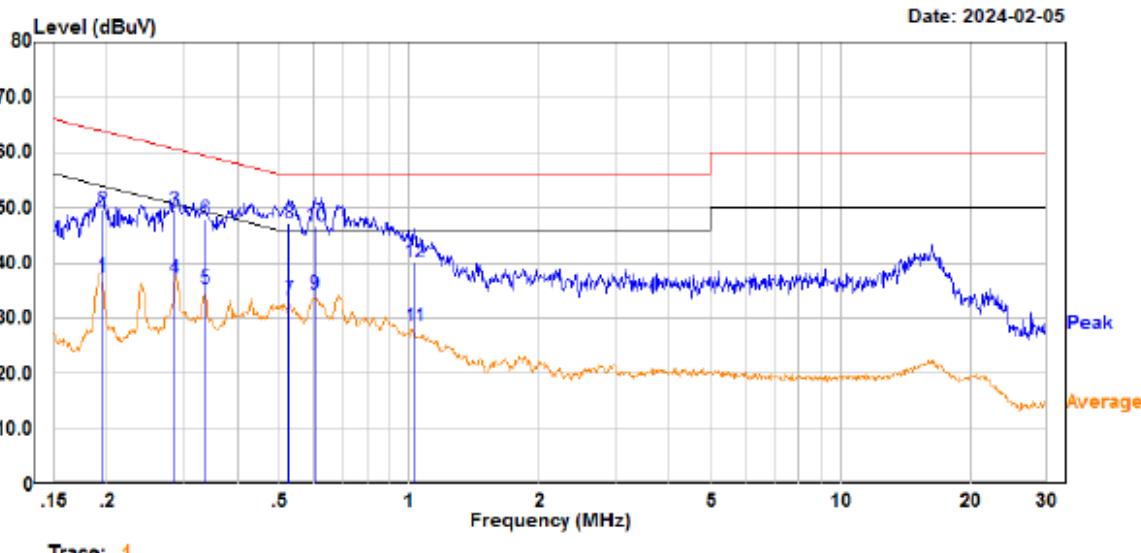
Test Item:	AC LINE CONDUCTED EMISSIONS	RADIATED EMISSIONS 9kHz - 1GHz	Maximum Conducted Output Power
Test Date:	2024-02-05	2024-04-13	2024-09-25
Temperature:	23.1 °C	19.8 °C	21.8 °C
Relative Humidity:	33 %	61 %	51 %
ATM Pressure:	102.1kPa	101.5kPa	101.8kPa
Test Result:	Pass	Pass	Pass
Test Engineer:	Aaron Sun	Leah Li	Bard Liu

AC LINE CONDUCTED EMISSIONS

For Wi-Fi Mode:

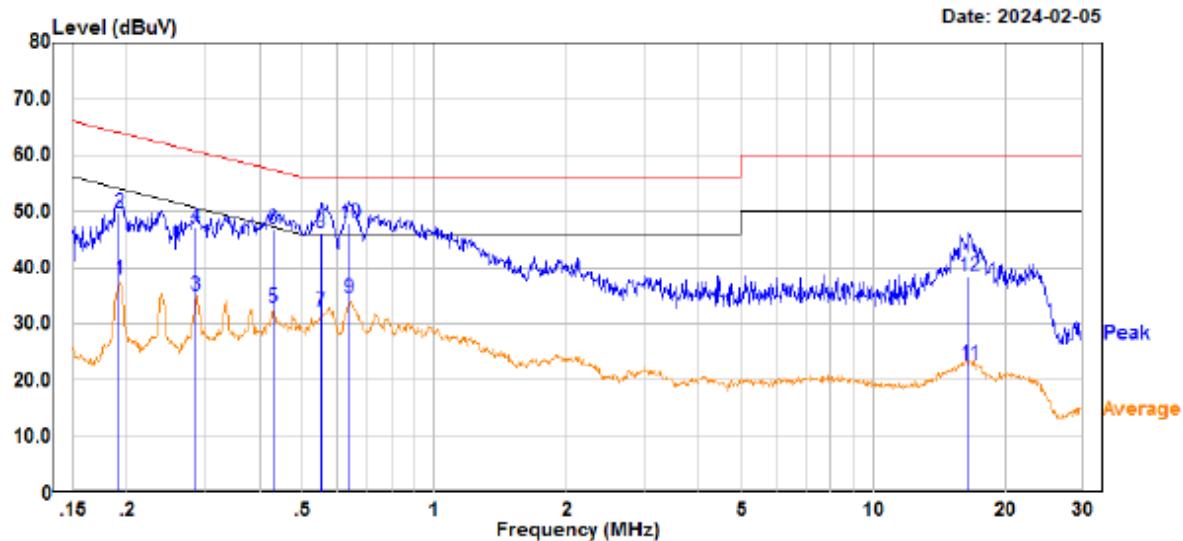
EUT operation mode: Transmitter in maximum output mode 802.11g high channel

Line:



Site : CE
 Condition : FCC part 15.207
 : DET:Peak
 Project No : RKSA240109002
 Phase : L
 Voltage : 120V/60Hz
 Mode : 2.4G WIFI
 Test Equipment : ENV216, ESR
 Temperature : 23.1°C
 Humidity : 33%
 Atmospheric pressure: 102.1kPa
 Test Engineer : Aaron

Freq	Read		Limit		Over	Remark
	MHz	dBuV	dB	dBuV		
1	0.194	17.60	19.94	37.54	53.85	-16.31 Average
2	0.194	29.70	19.94	49.64	63.85	-14.21 QP
3	0.287	29.50	20.01	49.51	60.62	-11.11 QP
4	0.287	17.30	20.01	37.31	60.62	-23.31 QP
5	0.336	15.29	20.04	35.33	49.29	-13.96 Average
6	0.336	27.89	20.04	47.93	59.29	-11.36 QP
7	0.527	13.30	20.10	33.40	46.00	-12.60 Average
8	0.527	27.10	20.10	47.20	56.00	-8.80 QP
9	0.606	14.29	20.09	34.38	46.00	-11.62 Average
10	0.606	26.49	20.09	46.58	56.00	-9.42 QP
11	1.027	8.80	19.77	28.57	46.00	-17.43 Average
12	1.027	20.40	19.77	40.17	56.00	-15.83 QP

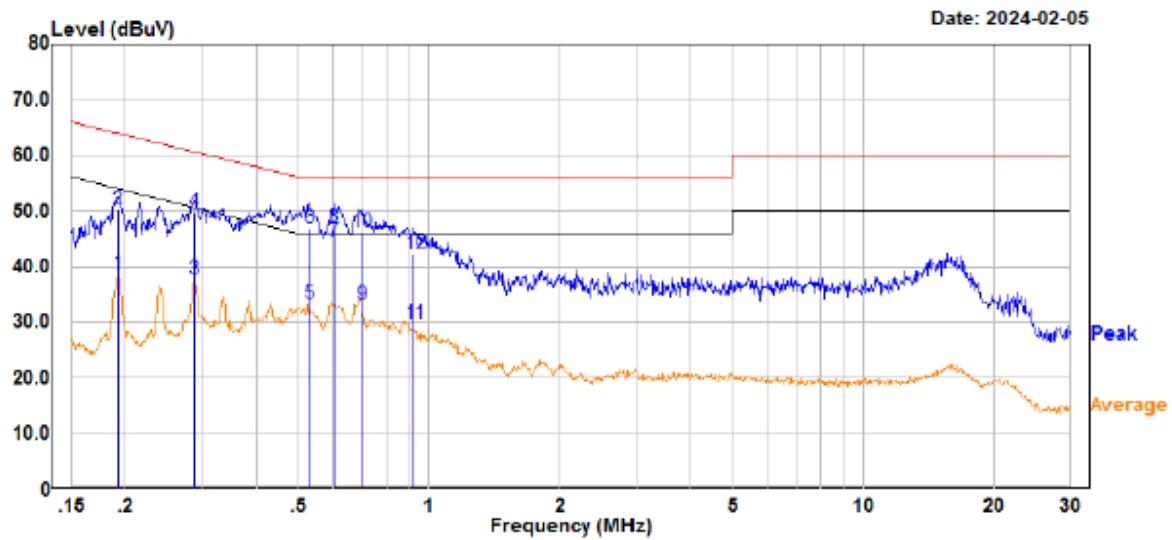
Neutral:

Site : CE
 Condition : FCC part 15.207
 : DET:Peak
 Project No : RKSA240109002
 Phase : N
 Voltage : 120V/60Hz
 Mode : 2.4G WIFI
 Test Equipment : ENV216, ESR
 Temperature : 23.1°C
 Humidity : 33%
 Atmospheric pressure: 102.1kPa
 Test Engineer : Aaron

	Read		Limit	Over			
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV		dB	dBuV	dB	
1	0.192	17.90	19.94	37.84	53.97	-16.13	Average
2	0.192	29.90	19.94	49.84	63.97	-14.13	QP
3	0.287	15.10	20.01	35.11	50.62	-15.51	Average
4	0.287	27.20	20.01	47.21	60.62	-13.41	QP
5	0.429	12.70	20.08	32.78	47.26	-14.48	Average
6	0.429	26.70	20.08	46.78	57.26	-10.48	QP
7	0.551	12.01	20.09	32.10	46.00	-13.90	Average
8	0.551	26.11	20.09	46.20	56.00	-9.80	QP
9	0.640	14.40	20.08	34.48	46.00	-11.52	Average
10	0.640	27.70	20.08	47.78	56.00	-8.22	QP
11	16.495	3.00	19.81	22.81	50.00	-27.19	Average
12	16.495	18.70	19.81	38.51	60.00	-21.49	QP

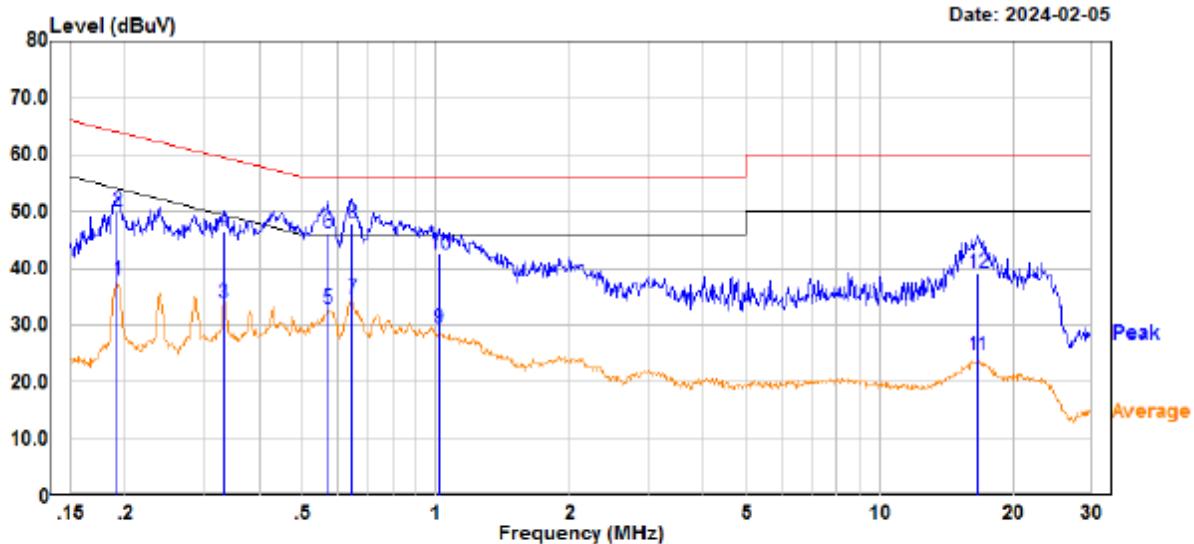
For BLE Mode:**BLE 1Mbps(Transmitter in maximum output mode middle channel):**

Line



Site : CE
 Condition : FCC part 15.207
 : DET:Peak
 Project No : RKSA240109002
 Phase : L
 Voltage : 120V/60Hz
 Mode : BLE 1M
 Test Equipment : ENV216, ESR
 Temperature : 23.1°C
 Humidity : 33%
 Atmospheric pressure: 102.1kPa
 Test Engineer : Aaron

	Read		Limit	Over		
Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.192	18.70	19.94	38.64	53.93	-15.29 Average
2	0.192	30.40	19.94	50.34	63.93	-13.59 QP
3	0.288	17.80	20.01	37.81	50.58	-12.77 Average
4	0.288	29.70	20.01	49.71	60.58	-10.87 QP
5	0.529	13.30	20.10	33.40	46.00	-12.60 Average
6	0.529	26.90	20.10	47.00	56.00	-9.00 QP
7	0.606	24.29	20.09	44.38	46.00	-1.62 Average
8	0.606	26.99	20.09	47.08	56.00	-8.92 QP
9	0.700	13.10	20.07	33.17	46.00	-12.83 Average
10	0.700	26.00	20.07	46.07	56.00	-9.93 QP
11	0.925	9.81	19.81	29.62	46.00	-16.38 Average
12	0.925	22.51	19.81	42.32	56.00	-13.68 QP

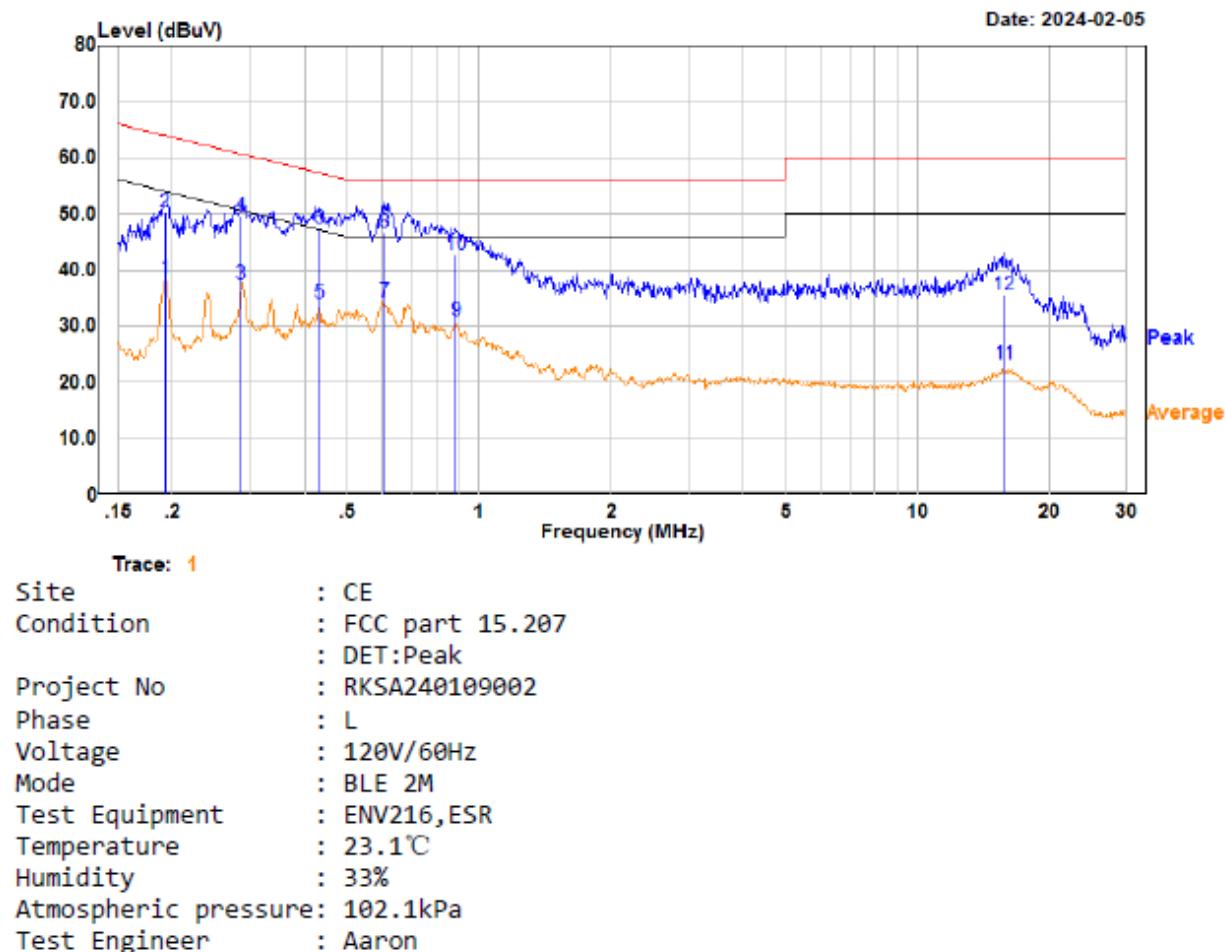
Neutral

Site : CE
 Condition : FCC part 15.207
 : DET:Peak
 Project No : RKSA240109002
 Phase : N
 Voltage : 120V/60Hz
 Mode : BLE 1M
 Test Equipment : ENV216,ESR
 Temperature : 23.1°C
 Humidity : 33%
 Atmospheric pressure: 102.1kPa
 Test Engineer : Aaron

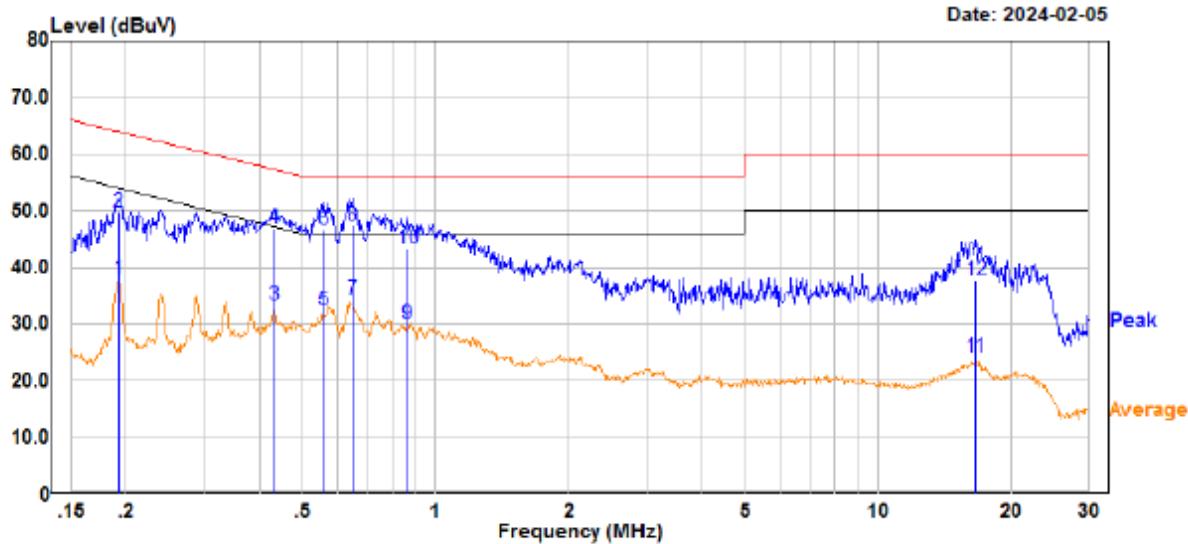
	Read	Limit	Over			
Freq	Level	Factor	Level	Line	Limit	Remark
1	0.192	18.00	19.94	37.94	53.97	-16.03 Average
2	0.192	30.20	19.94	50.14	63.97	-13.83 QP
3	0.333	13.79	20.04	33.83	49.38	-15.55 Average
4	0.333	26.29	20.04	46.33	59.38	-13.05 QP
5	0.570	12.89	20.10	32.99	46.00	-13.01 Average
6	0.570	26.19	20.10	46.29	56.00	-9.71 QP
7	0.646	14.51	20.07	34.58	46.00	-11.42 Average
8	0.646	27.71	20.07	47.78	56.00	-8.22 QP
9	1.017	9.80	19.76	29.56	46.00	-16.44 Average
10	1.017	22.80	19.76	42.56	56.00	-13.44 QP
11	16.578	4.90	19.81	24.71	50.00	-25.29 Average
12	16.578	19.30	19.81	39.11	60.00	-20.89 QP

BLE 2Mbps(Transmitter in maximum output mode high channel):

Line



Freq	Read			Limit		Over
	MHz	dBuV	Factor	Level	Line	
1	0.192	18.60	19.94	38.54	53.93	-15.39 Average
2	0.192	30.40	19.94	50.34	63.93	-13.59 QP
3	0.287	17.40	20.01	37.41	50.62	-13.21 Average
4	0.287	29.50	20.01	49.51	60.62	-11.11 QP
5	0.432	14.00	20.08	34.08	47.22	-13.14 Average
6	0.432	27.40	20.08	47.48	57.22	-9.74 QP
7	0.609	14.20	20.08	34.28	46.00	-11.72 Average
8	0.609	26.60	20.08	46.68	56.00	-9.32 QP
9	0.885	11.00	19.86	30.86	46.00	-15.14 Average
10	0.885	22.90	19.86	42.76	56.00	-13.24 QP
11	15.693	3.49	19.81	23.30	50.00	-26.70 Average
12	15.693	15.69	19.81	35.50	60.00	-24.50 QP

Neutral

Site : CE
 Condition : FCC part 15.207
 : DET:Peak
 Project No : RKSA240109002
 Phase : N
 Voltage : 120V/60Hz
 Mode : BLE 2M
 Test Equipment : ENV216, ESR
 Temperature : 23.1°C
 Humidity : 33%
 Atmospheric pressure: 102.1kPa
 Test Engineer : Aaron

Freq	Read		Limit Line	Over Limit	Remark
	MHz	dBuV	dB		
1	0.192	17.90	19.94	37.84	53.93 -16.09 Average
2	0.192	29.90	19.94	49.84	63.93 -14.09 QP
3	0.432	13.20	20.08	33.28	47.22 -13.94 Average
4	0.432	26.90	20.08	46.98	57.22 -10.24 QP
5	0.559	12.20	20.09	32.29	46.00 -13.71 Average
6	0.559	26.50	20.09	46.59	56.00 -9.41 QP
7	0.649	14.21	20.07	34.28	46.00 -11.72 Average
8	0.649	27.41	20.07	47.48	56.00 -8.52 QP
9	0.863	10.20	19.88	30.08	46.00 -15.92 Average
10	0.863	23.40	19.88	43.28	56.00 -12.72 QP
11	16.578	4.30	19.81	24.11	50.00 -25.89 Average
12	16.578	18.00	19.81	37.81	60.00 -22.19 QP

UNWANTED EMISSIONS & RESTRICTED FREQUENCY BANDS

Test Result: Compliant

EUT operation mode: Transmitting

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

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

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

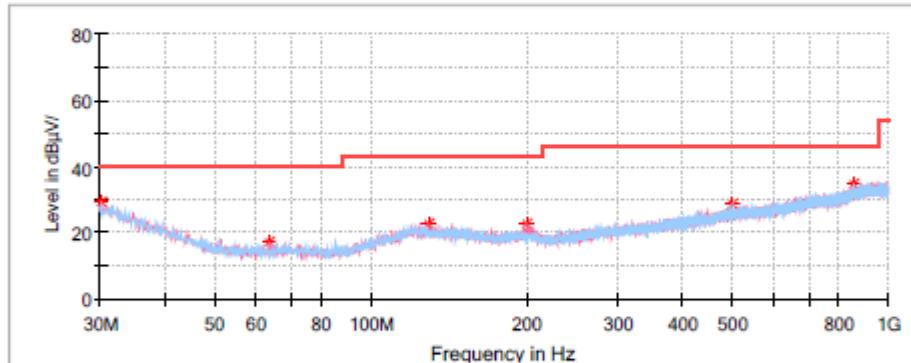
For Wi-Fi Mode:

30MHz-1GHz *(Transmitter in maximum output mode 802.11g high channel)* :

High Channel: 2462MHz

Common Information

Project No:	RKSA240109002
EUT Model:	T5940
Test Mode:	2.4G WIFI
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESCI, JB3, 310N
Temperature:	19.8°C
Humidity:	61%
Barometric Pressure:	101.5kPa
Test Engineer:	Leah Li
Test Date:	2024/4/13

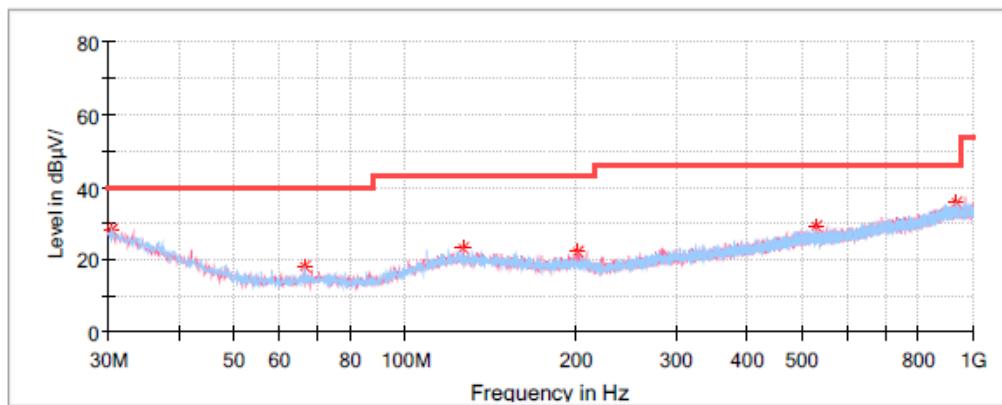


Critical Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.121250	29.15	40.00	10.85	V	-4.5
63.586250	16.93	40.00	23.07	V	-17.2
129.546250	22.82	43.50	20.68	V	-11.4
200.113750	22.65	43.50	20.85	V	-12.5
499.722500	28.79	46.00	17.21	H	-5.8
859.350000	34.82	46.00	11.18	H	0.2

For BLE Mode:**BLE 1Mps:****30MHz-1GHz(Transmitter in maximum output middle channel):****Middle channel: 2440MHz****Common Information**

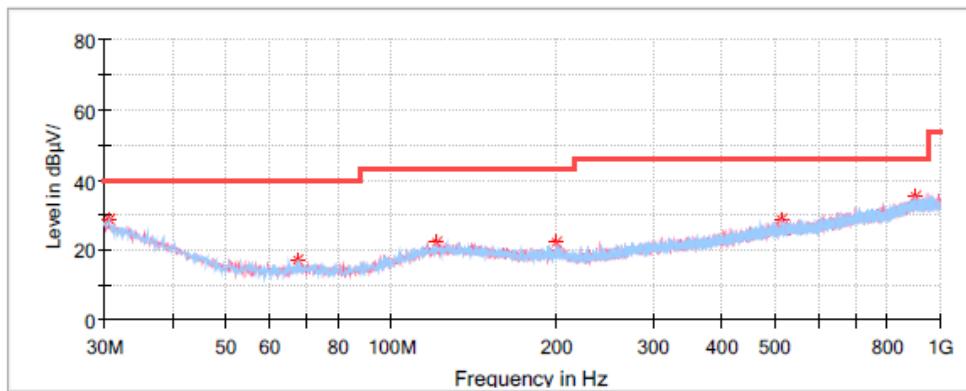
Project No:	RKSA210422002
EUT Model:	T5940
Test Mode:	BLE 1M
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESCI、JB3、310N
Temperature:	19.8°C
Humidity:	61%
Barometric Pressure:	101.5kPa
Test Engineer:	Leah Li
Test Date:	2024/4/13

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.363750	28.18	40.00	11.82	H	-4.7
66.375000	18.04	40.00	21.96	H	-17.0
126.878750	23.06	43.50	20.44	V	-11.3
201.811250	21.96	43.50	21.54	V	-12.6
528.337500	29.07	46.00	16.93	V	-5.5
936.465000	35.49	46.00	10.51	H	1.4

For BLE Mode:**BLE 2Mps:****30MHz-1GHz(Transmitter in maximum output high channel):****High channel: 2480MHz****Common Information**

Project No:	RKSA240109002
EUT Model:	T5940
Test Mode:	BLE 2M
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESCI, JB3, 310N
Temperature:	19.8°C
Humidity:	61%
Barometric Pressure:	101.5kPa
Test Engineer:	Leah Li
Test Date:	2024/4/13

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.606250	28.45	40.00	11.55	H	-4.9
67.345000	17.29	40.00	22.71	H	-17.0
120.816250	22.31	43.50	21.19	V	-11.2
199.871250	21.91	43.50	21.59	V	-12.5
515.242500	28.89	46.00	17.11	H	-5.6
899.120000	35.10	46.00	10.90	H	1.3

Spot Check With Maximum Conducted Output Power

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Max Conducted Average Power (dBm)	Limit (dBm)	Result
802.11b Mode					
Low	2412	21.12	16.52	30	Pass
Middle	2437	21.05	16.41	30	Pass
High	2462	21.25	16.51	30	Pass
802.11g Mode					
Low	2412	21.15	14.01	30	Pass
Middle	2437	21.32	13.98	30	Pass
High	2462	21.42	13.95	30	Pass
802.11n-HT20 Mode					
Low	2412	20.26	13.15	30	Pass
Middle	2437	20.35	13.26	30	Pass
High	2462	20.85	13.31	30	Pass
802.11n-HT40 Mode					
Low	2422	18.85	11.84	30	Pass
Middle	2437	19.05	11.75	30	Pass
High	2452	18.96	11.86	30	Pass
BLE (1Mbps) Mode					
Low	2402	-3.75	/	30	Pass
Middle	2440	-2.68	/	30	Pass
High	2480	-2.75	/	30	Pass
BLE (2Mbps) Mode					
Low	2402	-3.78	/	30	Pass
Middle	2440	-2.65	/	30	Pass
High	2480	-2.62	/	30	Pass

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*****