



FCC PART 15.247

TEST REPORT

For

Infinite Clouds

Office 406, Road 3307, Block 333, Um Al Hassam Manama Bahrain

FCC ID: 2BE3S110

Report Type: Original Report	Product Name: Wireless Router
Report Number: RKSA240228002-00B	
Report Date: 2024-06-18	
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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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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RKSA240228002-00B	R1V1	2024-06-18	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Infinite Clouds
Tested Model	Infinite 110
Product Type	Wireless Router
Power Supply	DC 12V from DC Jack or 51V from PoE
RF Function:	2.4G Wi-Fi
Maximum Peak Output Power:	802.11b: 27.92 dBm 802.11g: 28.03 dBm 802.11n20: 28.00 dBm 802.11n40: 24.76 dBm
Operating Band/Frequency:	2412~2462 MHz(802.11b/g/n20), 2422~2452 MHz(802.11n40)
Channel Number:	11(802.11b/g/n20), 7(802.11n40)
Channel Separation:	5 MHz
Modulation Type:	DSSS, OFDM
Antenna Type:	PCB antenna
★Maximum Antenna Gain:	Chain 0:5.4 dBi Chain 1:6 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: RKSA240228002-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-02-28.)

Objective

This report is prepared for *Infinite Clouds* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions' rules.

The tests were performed in order to determine Compliant with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices and FCC 558074 D01 15.247 Meas Guidance v05r02.

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, 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	/	/

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

RF test software: QSPR

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

Mode	Data rate	★Power Level					
		Low Channel		Middle Channel		High Channel	
		Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
802.11b	1Mbps	15	15	15	15	15	15
802.11g	6Mbps	15	15	15	15	14	14
802.11n-HT20	MCS0	15	15	14	14	13	13
802.11n-HT40	MCS0	11	11	11	11	11	11

Note: The power level was declared by the applicant.

Note:

1. The power level was declared by the applicant.

2. 802.11b/g supports SISO, 802.11n20/n40 supports SISO and MIMO mode.

For Radiated Emission, according to pretest, the worst case for 802.11n20/n40 is MIMO mode.

So 802.11n20/n40 MIMO mode test data were recorded in the report.

3. For Conducted Test:

802.11b & 802.11g & 802.11n: each transmit chains were tested.

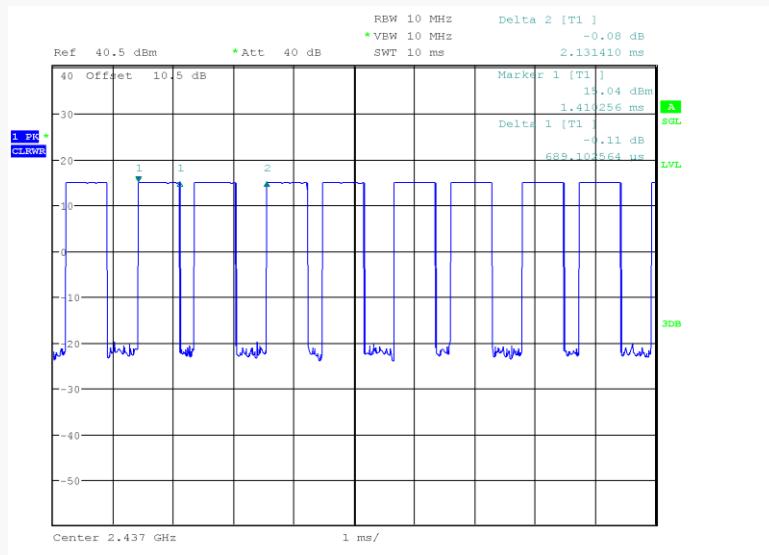
For Radiated Test:

802.11b & 802.11g, SISO for each transmit chain

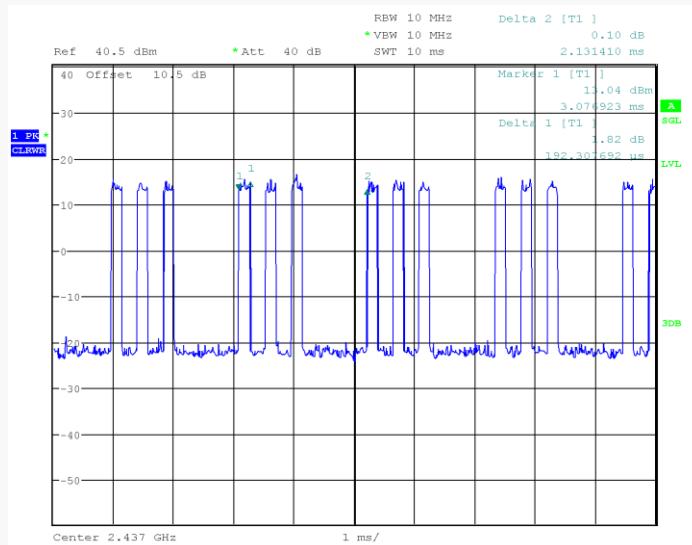
802.11n: MIMO for two transmit chains

Duty Cycle:

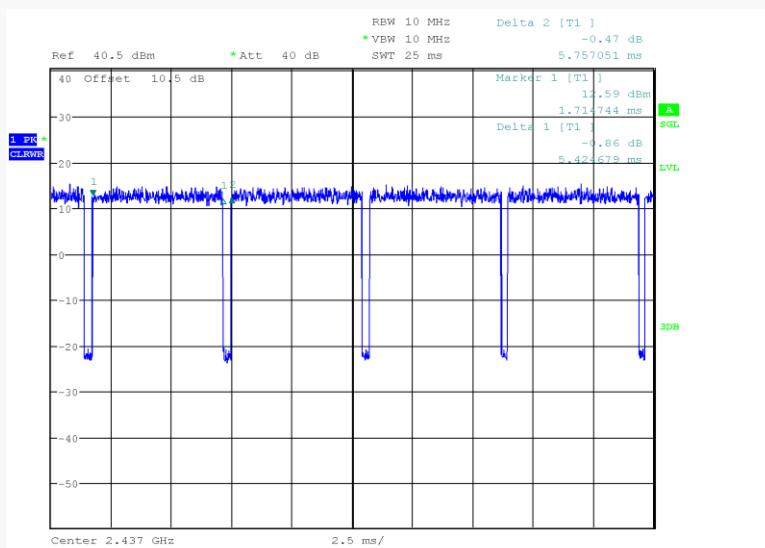
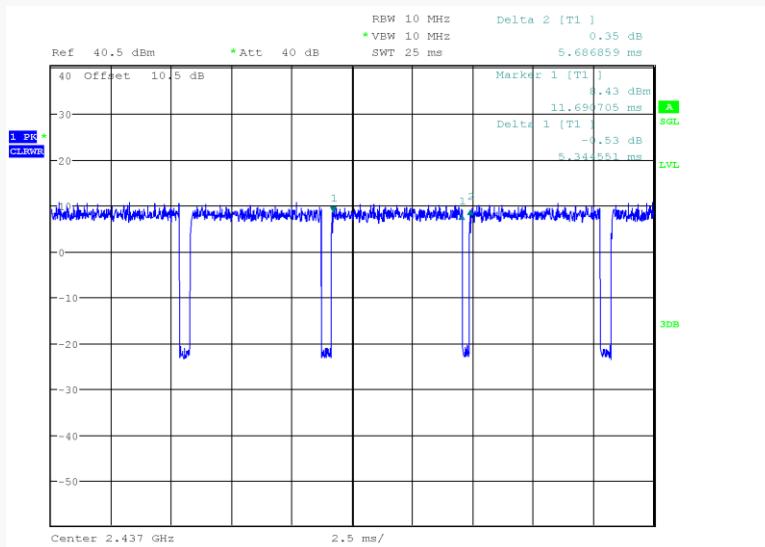
Chain 0:

802.11b Mode Middle Channel

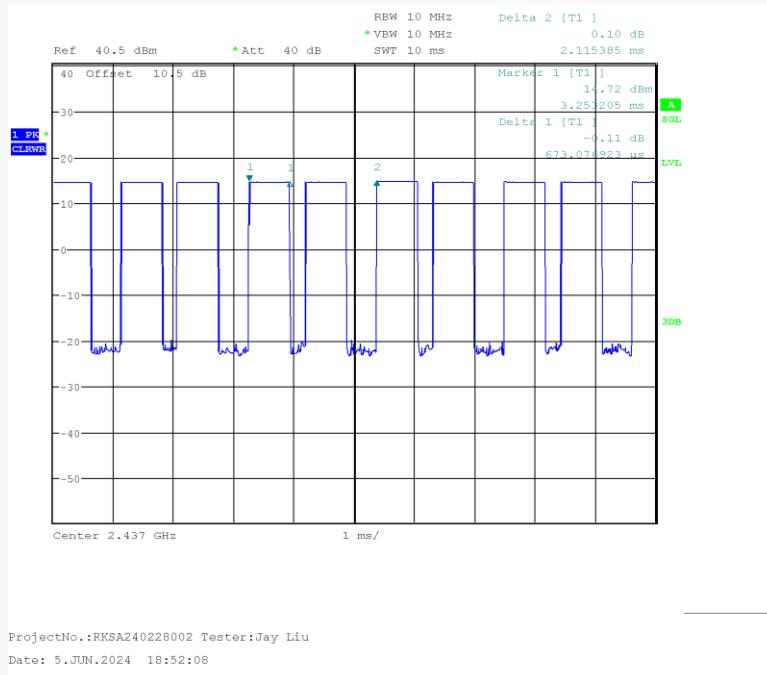
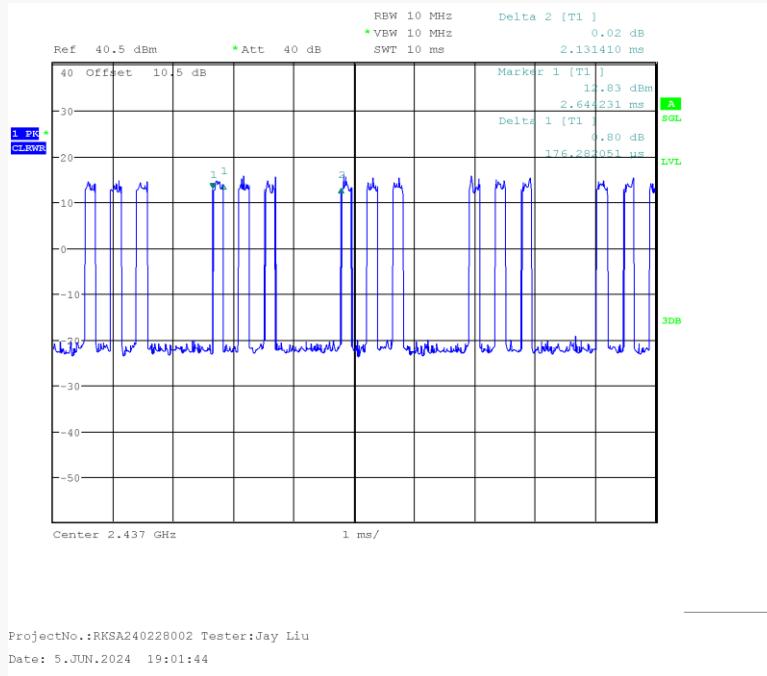
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Date: 5.JUN.2024 18:50:50

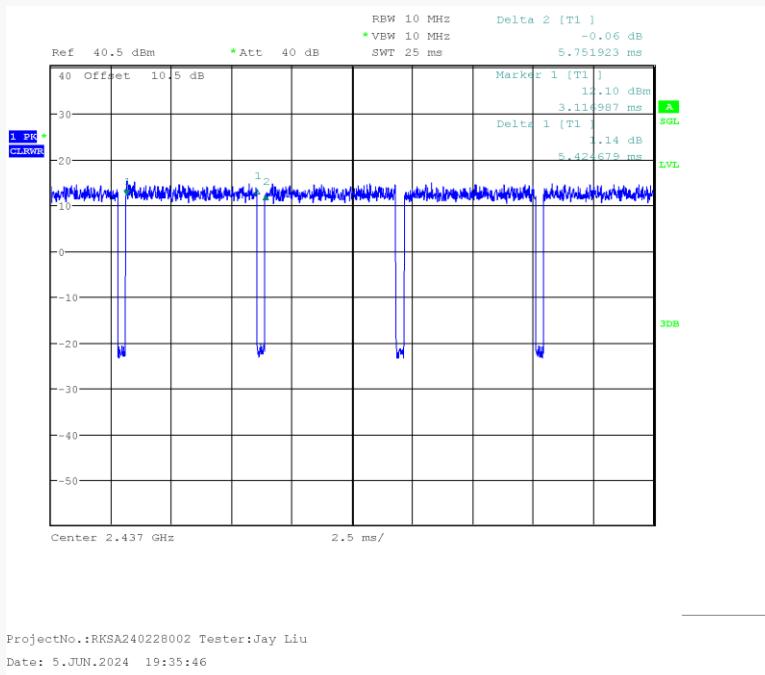
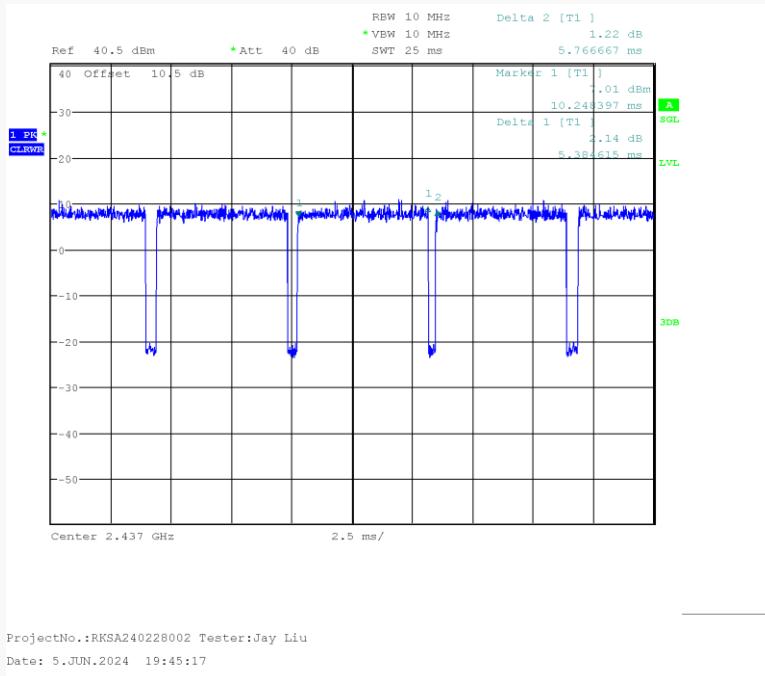
802.11g Mode Middle Channel

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Date: 5.JUN.2024 19:00:34

802.11n-HT20 Mode Middle Channel**802.11n-HT40 Mode Middle Channel**

Chain 1:

802.11b Mode Middle Channel**802.11g Mode Middle Channel**

802.11n-HT20 Mode Middle Channel**802.11n-HT40 Mode Middle Channel**

Test Mode	Antenna	Channel (MHz)	Transmission Duration (ms)	Transmission Period	Duty Cycle (%)
802.11b	Chain 0	2437	1.38	2.13	64.79
802.11g		2437	0.58	2.13	27.23
802.11n-HT20		2437	5.42	5.76	94.10
802.11n-HT40		2437	5.34	5.69	93.85
802.11b	Chain 1	2437	1.35	2.12	63.68
802.11g		2437	0.53	2.13	24.88
802.11n-HT20		2437	5.42	5.75	94.26
802.11n-HT40		2437	5.38	5.77	93.24

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Unknown	PoE Injector	PSE30G	Unknown
Lenovo	Notebook 1	Y700P	PF2B7PL5
Dell	Notebook 2	E6410	3094742521
Unknown	Socket	/	/
Unknown	Adapter	/	/

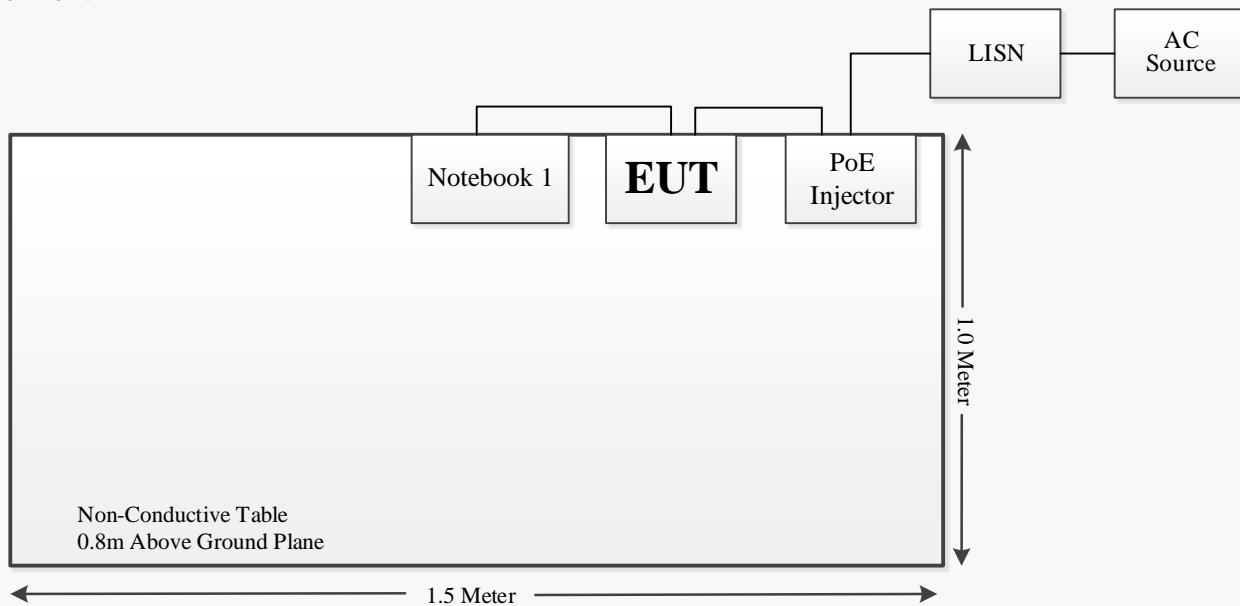
External I/O Cable

Cable Description	Length (m)	From Port	To
Power Cable 1	1.0	AC Source/LISN	PoE Injector
RJ45 Cable	1.5	PoE Injector	EUT
RJ45 Cable	2.0	PoE Injector	EUT
RJ45 Cable	1.5	EUT	Notebook 1
RJ45 Cable	7.0	EUT	Notebook 1
RJ45 Cable	7.0	EUT	Notebook 2
Power Cable 2	1.0	EUT	Adapter

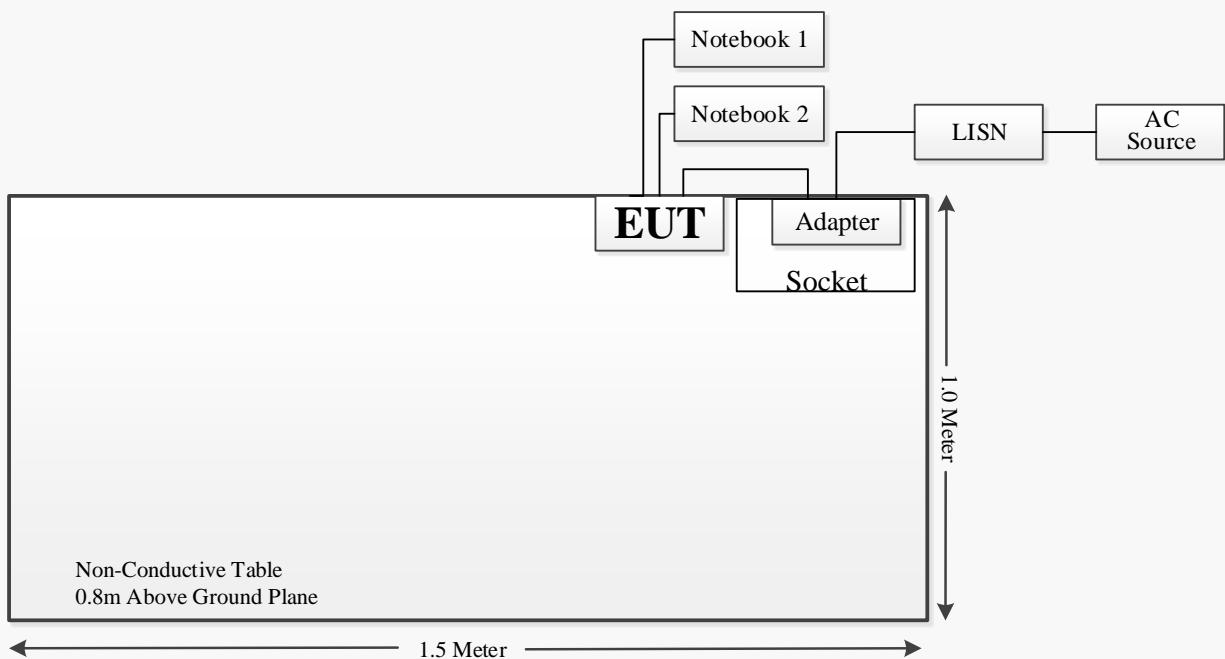
Block Diagram of Test Setup

For Conducted Emissions:

For PoE:

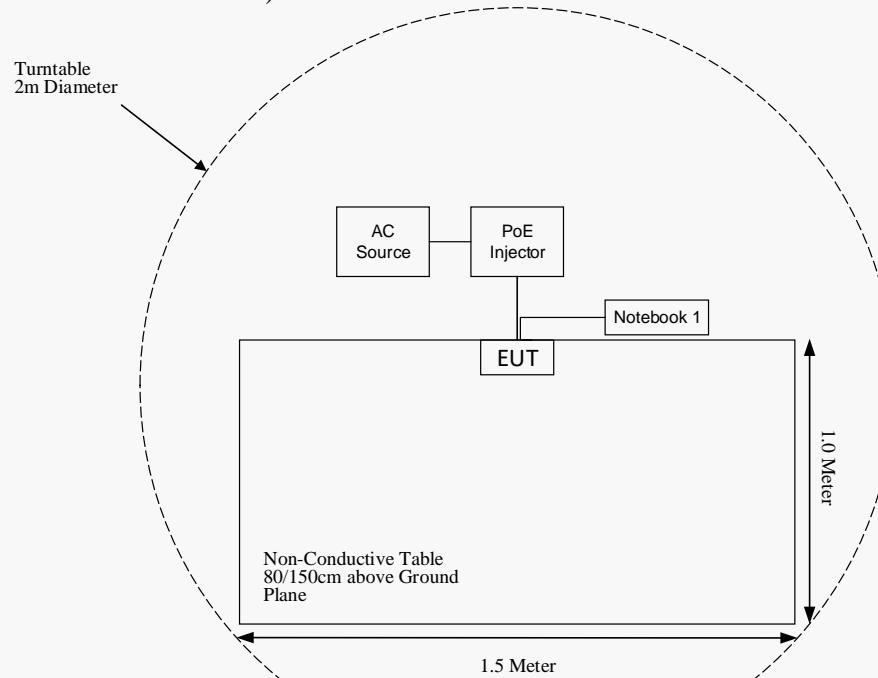


For Adapter:

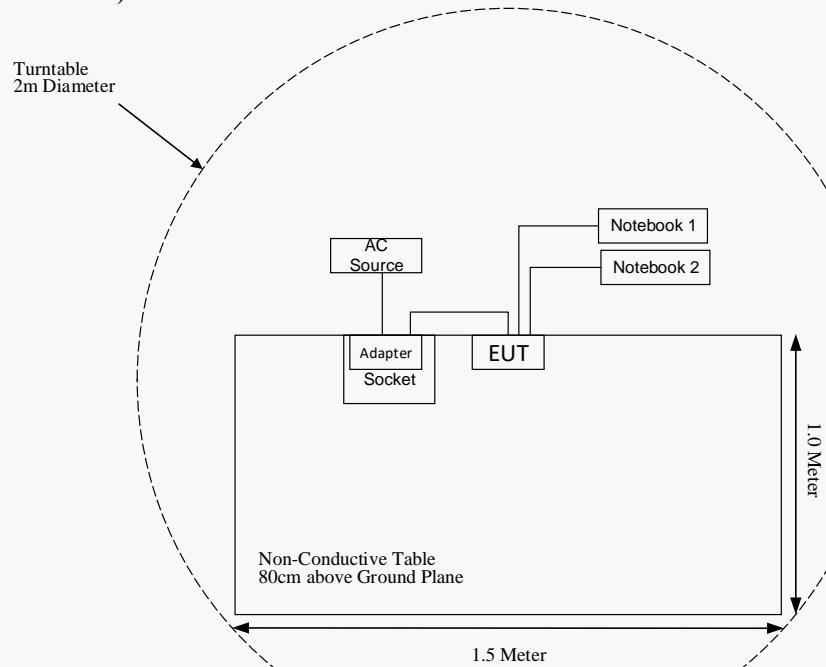


For Radiated Emissions:

For PoE(Below 1GHz&Above 1 GHz):



For Adapter(Below 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (I), §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)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber 1#)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2023-05-23	2024-05-22
Sunol Sciences	Hybrid Antenna	JB3	A090314-1	2023-11-11	2024-11-10
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
Narda	6dB Attenuator	773-6	10690812-2-1	2023-11-11	2024-11-10
Sonoma Instrument	Amplifier	310N	171205	2023-05-23	2024-05-22
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
Rohde & Schwarz	Test Software	EMC32	100361	N/A	N/A
Radiated Emission Test (Chamber 2#)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2023-05-23	2024-05-22
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9207-3900	2023-06-27	2024-06-26
ETS-LINDGREN	Horn Antenna	3116	2516	2023-12-08	2024-12-07
A.H.Systems, inc	Amplifier	PAM-0118P	512	2023-05-23	2024-05-22
A.H.Systems, inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-24
EM Electronics Corporation	Amplifier	EM18G40G	060726	2023-05-23	2024-05-22
EM Electronics Corporation	Amplifier	EM18G40G	060726	2024-04-25	2025-04-24
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2023-05-23	2024-05-22
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2024-04-25	2025-04-24
Narda	Attenuator	20dB	020	2023-05-23	2024-05-22
Narda	Attenuator	20dB	020	2024-04-24	2025-04-23
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-6	006	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-12	012	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-13	013	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-13	013	2024-04-25	2025-04-24

RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2023-05-23	2024-05-22
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2024-04-24	2025-04-23
Anritsu	Power Sensor	MA24418A	12621	2023-09-27	2024-09-26
Narda	Attenuator	20dB	020	2023-05-23	2024-05-22
Narda	Attenuator	20dB	020	2024-04-24	2025-04-23
XHFDZ	RG316 Coaxial Cable	SMA-316	XHF-1175	Each time	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	2024-04-23	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).

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/4πR² = power density (in appropriate units, e.g. mW/cm²);

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);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm²)	MPE Limit (mW/cm²)	MPE Ratio
		(dBi)	(numerical)	(dBm)	(mW)				
2.4G WIFI	2412~2462	6	3.98	28.50	707.95	30	0.2491	1.0	0.2491
5G WIFI	5150~5250	6	3.98	30.00	1000	30	0.3520	1.0	0.3520
	5725~5850	6	3.98	30.00	1000	30	0.3520	1.0	0.3520

Note:

1. For the above tune up power were declared by the manufacturer.
2. 2.4G Wi-Fi and 5G WIFI can transmit simultaneously.

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.2491/1.00 + 0.3520/1 = 0.2491 + 0.3520 = 0.6011 < 1.0$$

Result: The device meet FCC MPE at 30 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 two PCB antennas for 2.4G Wi-Fi, and maximum antenna gain are chain 0:5. 4dBi, chain 1:6. 0dBi, which is permanently attached to the unit, fulfill the requirement of this section. Please refer to the EUT photos.

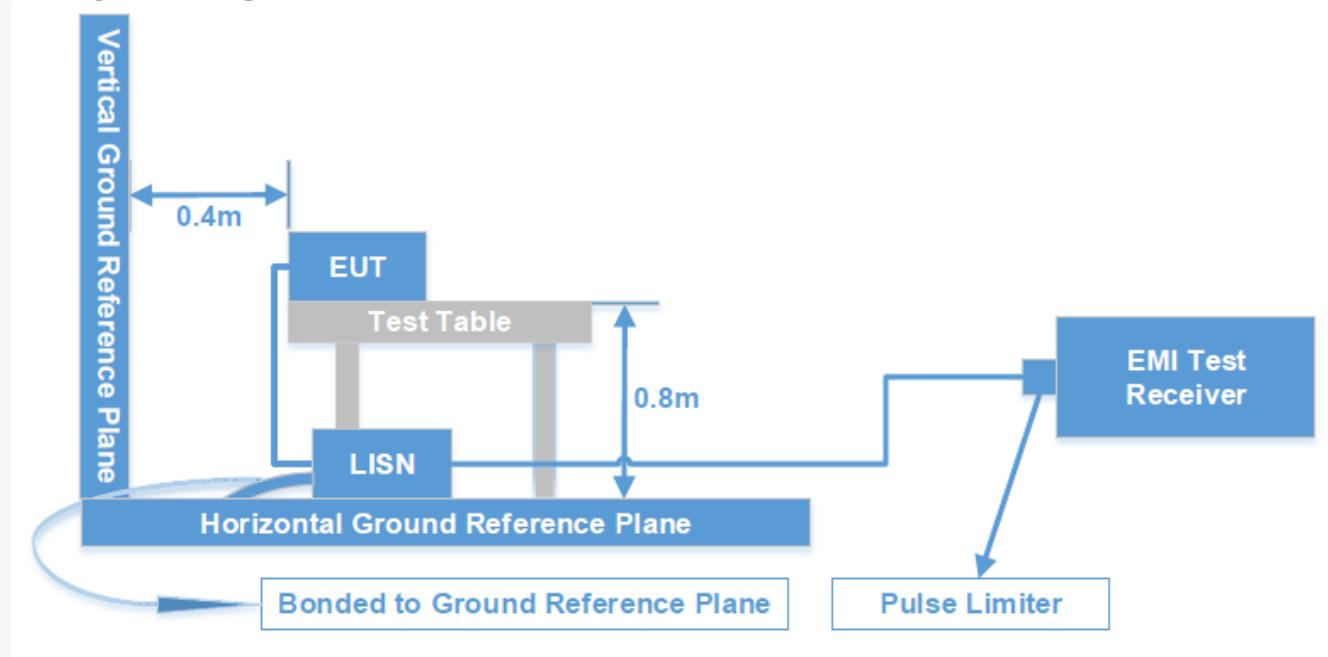
Result: Compliant.

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:

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

$$\text{Level (dB}\mu\text{V)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)}$$

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:

$$\text{Over Limit (dB)} = \text{Level (dB}\mu\text{V)} - \text{Limit (dB}\mu\text{V)}$$

Test Results Summary

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

Test Data: See Appendix

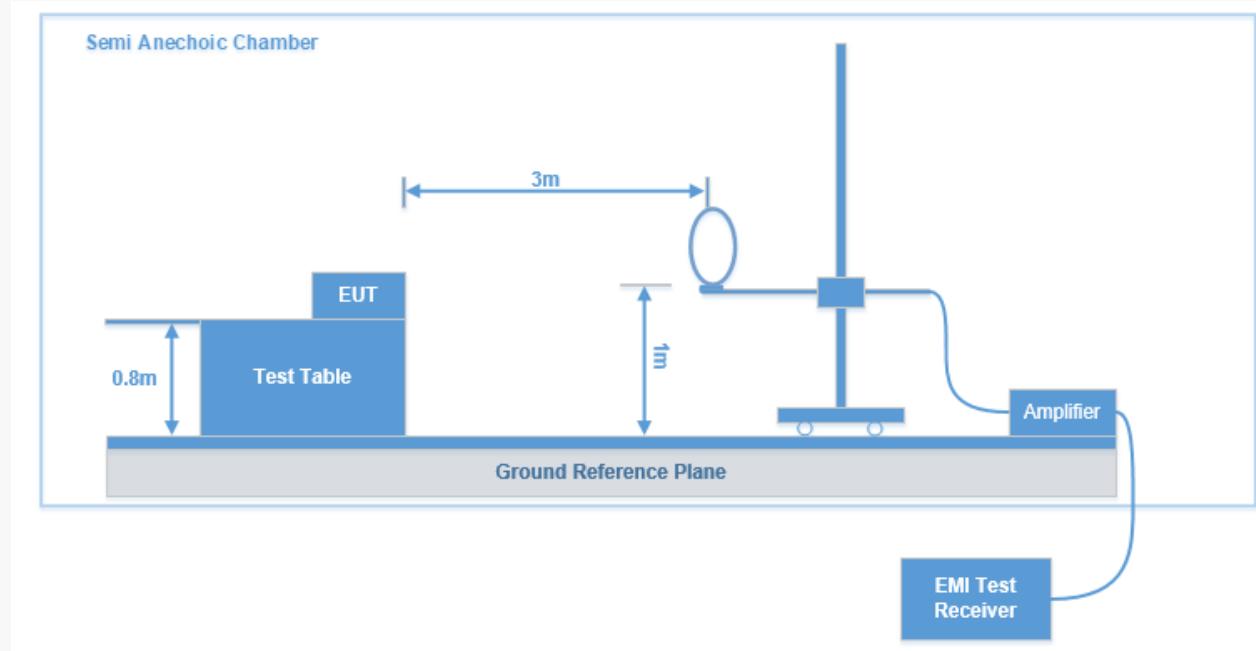
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

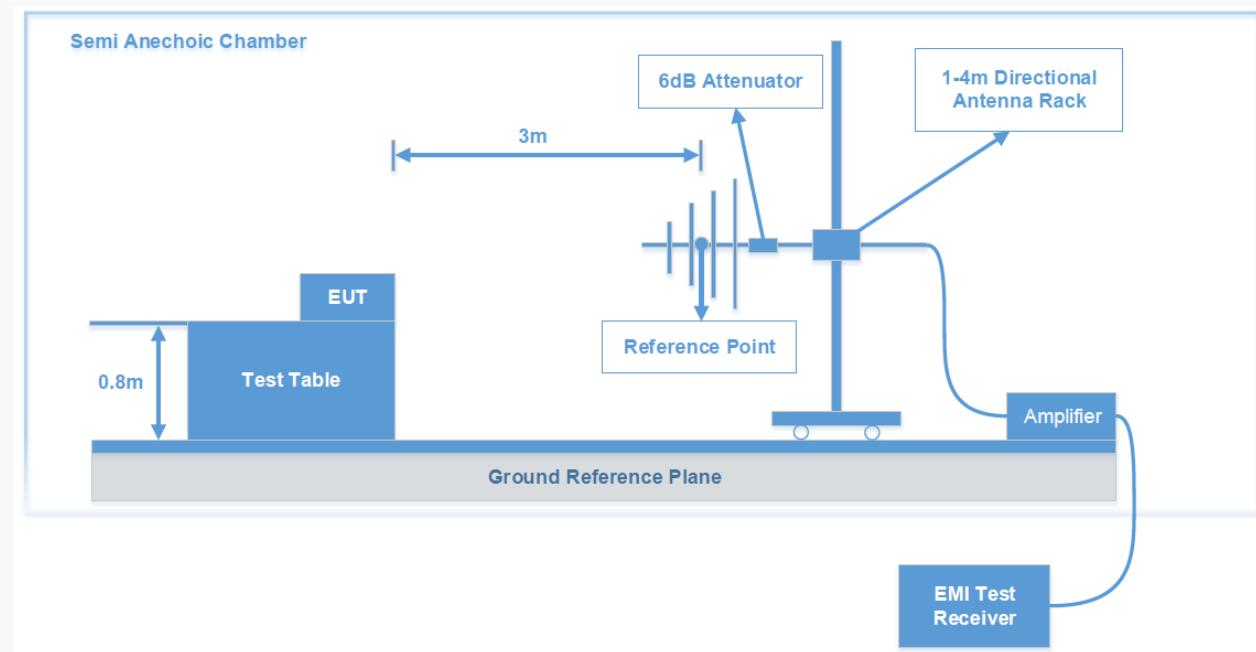
FCC §15.247 (d); §15.209; §15.205;

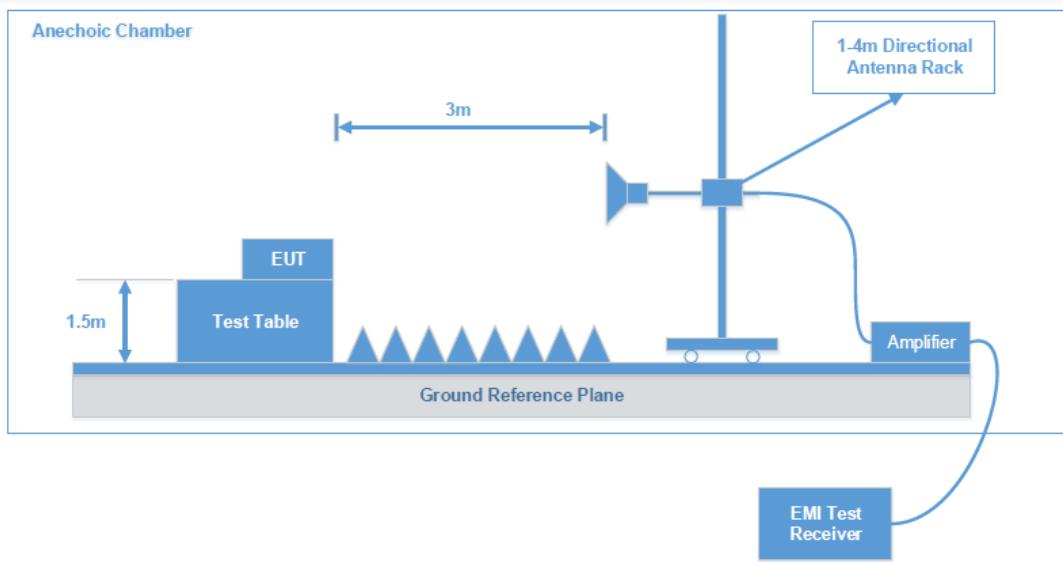
Test System Setup

9kHz - 30MHz:



30 MHz - 1 GHz:



Above 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 25 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

Test Procedure

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

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

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

For 9 kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude (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(A) (2) - 6 DB EMISSION BANDWIDTH

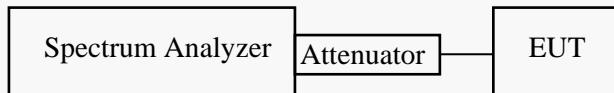
Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.8.1

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



Test Data: See Appendix

FCC §15.247(B) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

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

Test Procedure

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

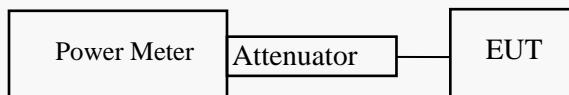
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

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

11.9.2.3.2 Method AVGPM-G

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

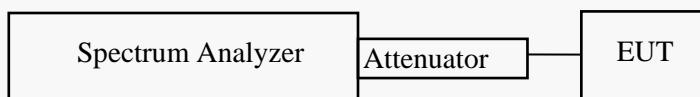
Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter,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



According to ANSI C63.10-2013 sub-clause 11.9.1.1

For BLE:

1. Set the RBW \geq DTS bandwidth.
2. Set VBW $\geq 3 * \text{RBW}$.
3. Set span $\geq 3 * \text{RBW}$
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.



Test Data: See Appendix

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

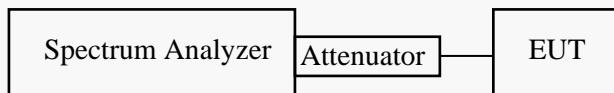
Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates Compliant with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

According to ANSI C63.10-2013 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data: See Appendix

FCC §15.247(E) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine Compliant, and it is optional if the maximum conducted (average) output power was used to determine Compliant:

1. Set the RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
2. Set the VBW $\geq 3 * \text{RBW}$.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data: See Appendix

Appendix - TEST DATA

Environmental Conditions & Test Information

Test Item:	AC LINE CONDUCTED EMISSIONS	RADIATED EMISSIONS		
		9 kHz-1 GHz	1 GHz - 18 GHz	18 GHz -25 GHz
Test Date:	2024-05-10 to 2024-06-14	2024-03-04	2024-04-03	2024-05-28
Temperature:	23.1-25.5 °C	15.8 °C	20.3 °C	22.5 °C
Relative Humidity:	49-58 %	47 %	52 %	45 %
ATM Pressure:	100.3-101.6 kPa	101.6 kPa	101.5kPa	101.6 kPa
Test Result:	Pass	Pass	Pass	Pass
Test Engineer:	Frank Liu	Loki Shi	Peter Wang	Hugh Wu

Test Item:	6 DB EMISSION BANDWIDTH	POWER SPECTRAL DENSITY	TRANSMITTER OUTPUT POWER MEASUREMENT	OUT OF BAND EMISSIONS	DUTY CYCLE
Test Date:	2024-04-17	2024-04-17	2024-04-17	2024-04-17	2024-06-05
Temperature:	22.3 °C	22.3 °C	22.3 °C	22.3 °C	23.5 °C
Relative Humidity:	46 %	46 %	46 %	46 %	52 %
ATM Pressure:	101.6kPa	101.6kPa	101.6kPa	101.6kPa	100.4 kPa
Test Result:	Pass	Pass	Pass	Pass	Pass
Test Engineer:	Loki Shi	Loki Shi	Loki Shi	Loki Shi	Jay Liu

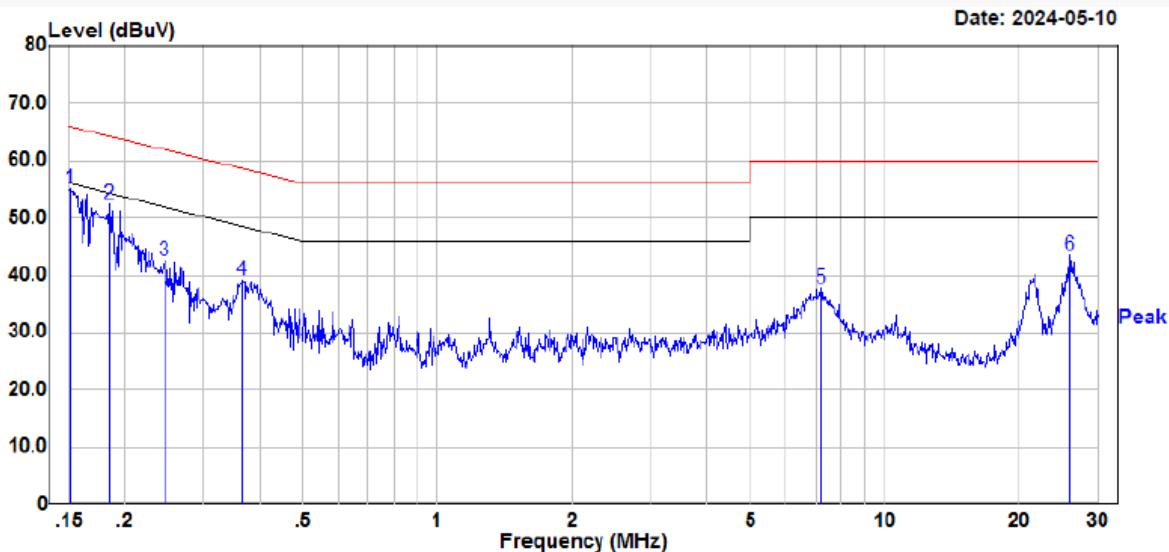
AC LINE CONDUCTED EMISSIONS

For Wi-Fi Mode:

EUT operation mode: Transmitting in maximum output power mode 802.11g mode middle channel (chain 1)

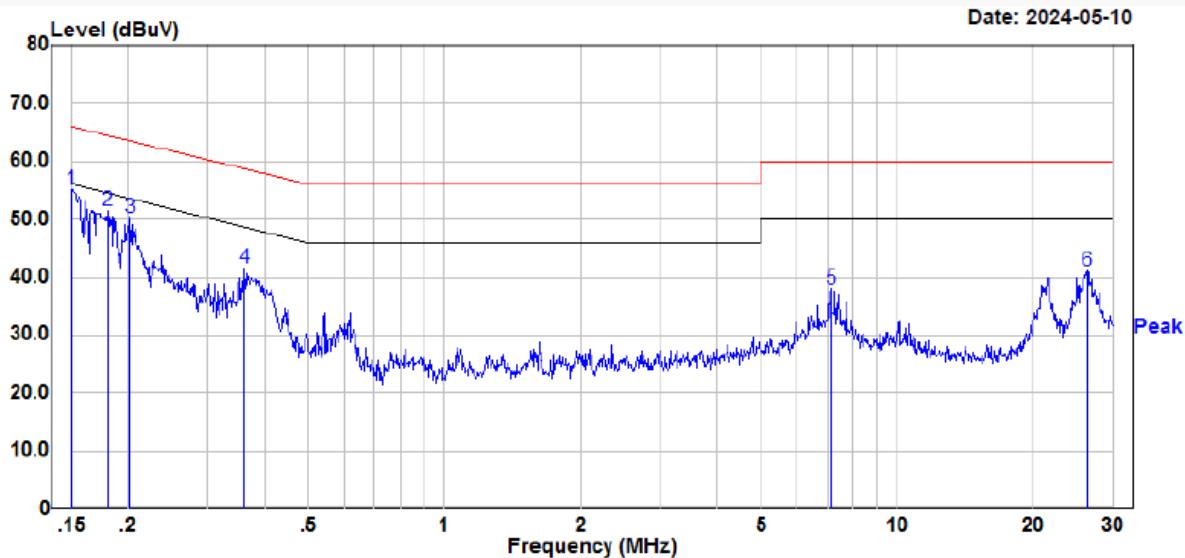
For PoE:

Line:



Site : CE
 Condition : limit\FCC PART 15.207
 : DET:Peak
 Project No. : RKSA240228002
 Model : Infinite 110
 Phase : L
 Voltage : 120V/60Hz
 Mode : 2.4G WIFI
 Test Equipment : ENV216,ESR
 Temperature : 23.1°C
 Humidity : 49%
 Atmospheric pressure: 101.6kPa
 Test Engineer : Frank Liu

Freq	Read		Limit	Over	Remark
	MHz	dBuV			
			dBuV	dB	
1	0.151	35.17	19.89	55.06	65.96 -10.90 Peak
2	0.184	32.57	19.93	52.50	64.30 -11.80 Peak
3	0.244	22.49	19.98	42.47	61.94 -19.47 Peak
4	0.364	19.08	20.05	39.13	58.63 -19.50 Peak
5	7.212	17.42	20.22	37.64	60.00 -22.36 Peak
6	25.962	23.60	19.97	43.57	60.00 -16.43 Peak

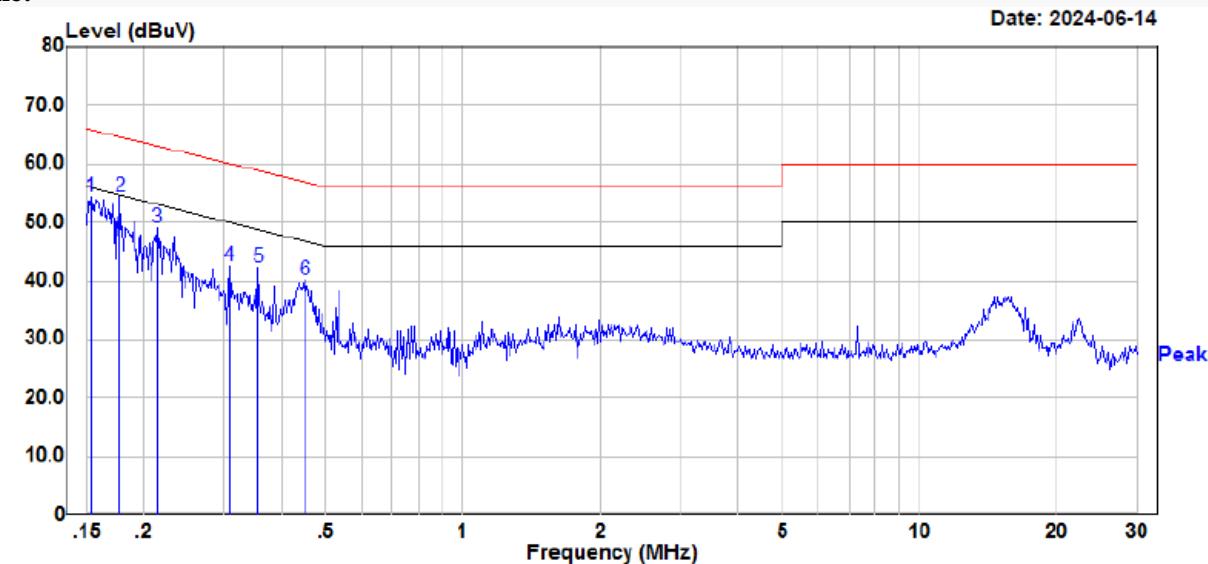
Neutral:

Site : CE
Condition : limit\FCC PART 15.207.csv Line
: DET:Peak
Project No. : RKSA240228002
Model : Infinite 110
Phase : N
Voltage : 120V/60Hz
Mode : 2.4G WIFI
Test Equipment : ENV216, ESR
Temperature : 23.1°C
Humidity : 49%
Atmospheric pressure: 101.6kPa
Test Engineer : Frank Liu

Freq	Read			Limit Line	Over Limit	Remark
	MHz	Level	Factor			
1	0.150	35.29	19.89	55.18	66.00	-10.82 Peak
2	0.180	31.47	19.93	51.40	64.47	-13.07 Peak
3	0.201	30.34	19.95	50.29	63.56	-13.27 Peak
4	0.361	21.45	20.04	41.49	58.71	-17.22 Peak
5	7.140	17.66	20.23	37.89	60.00	-22.11 Peak
6	26.354	21.20	19.97	41.17	60.00	-18.83 Peak

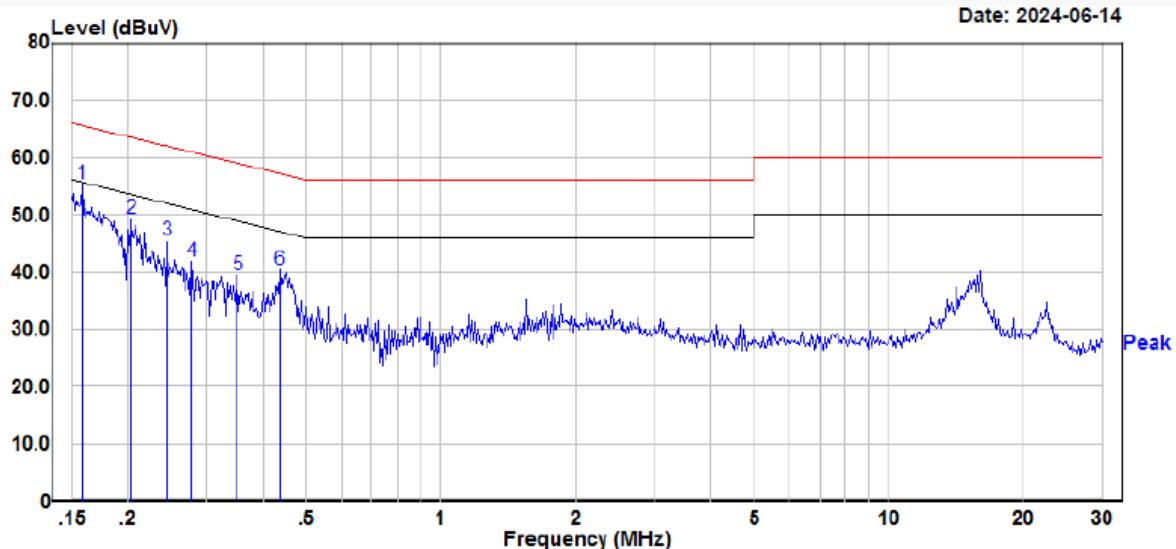
For Adapter:

Line:



Site : CE
 Condition : FCC Part 15.207
 : DET:Peak
 Project No. : RKSA240228002
 Model : Infinite 110
 Phase : L
 Voltage : 120V/60Hz
 Mode : maximum output power 802.11g mode middle channel (chain 1)
 Test Equipment : ENV216, ESR
 Temperature : 25.5°C
 Humidity : 58%
 Atmospheric pressure: 100.3kPa
 Test Engineer : Frank Liu

	Read Freq	Level	Factor	Limit Level	Line	Over Limit	Remark
	MHz	dBuV		dB	dBuV	dB	
1	0.153	34.20	20.12	54.32	65.83	-11.51	Peak
2	0.177	34.37	20.12	54.49	64.61	-10.12	Peak
3	0.214	28.97	20.12	49.09	63.05	-13.96	Peak
4	0.308	22.27	20.17	42.44	60.04	-17.60	Peak
5	0.356	22.08	20.19	42.27	58.82	-16.55	Peak
6	0.451	19.96	20.23	40.19	56.85	-16.66	Peak

Neutral:

Site : CE
Condition : FCC Part 15.207
: DET:Peak
Project No. : RKSA240228002
Model : Infinite 110
Phase : N
Voltage : 120V/60Hz
Mode : maximum output power 802.11g mode middle channel (chain 1)
Test Equipment : ENV216, ESR
Temperature : 25.5°C
Humidity : 58%
Atmospheric pressure: 100.3kPa
Test Engineer : Frank Liu

Freq	Read		Limit	Over	Remark	
	Freq	Level				
	MHz	dBuV	dB	dBuV	dB	
1	0.158	35.36	20.11	55.47	65.59 -10.12	Peak
2	0.202	29.29	20.11	49.40	63.51 -14.11	Peak
3	0.244	25.22	20.13	45.35	61.95 -16.60	Peak
4	0.277	21.78	20.15	41.93	60.90 -18.97	Peak
5	0.351	19.18	20.19	39.37	58.94 -19.57	Peak
6	0.436	20.03	20.23	40.26	57.14 -16.88	Peak

SPURIOUS EMISSIONS

Test Result: Compliant

EUT operation mode: Transmitting

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

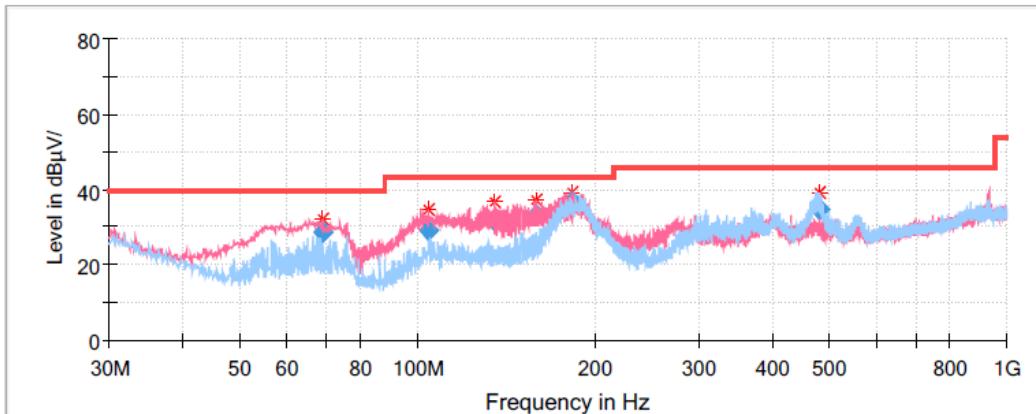
For Adapter:

30MHz-1GHz (Transmitting in maximum output power mode 802.11g (Chain 1)):

Low channel: 2412MHz

Common Information

Project No:	RKSA240228002
Test Mode:	Transmitting in maximum output power mode 802.11g (Chain 1) low channel
Standard:	FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer:	Leah Li

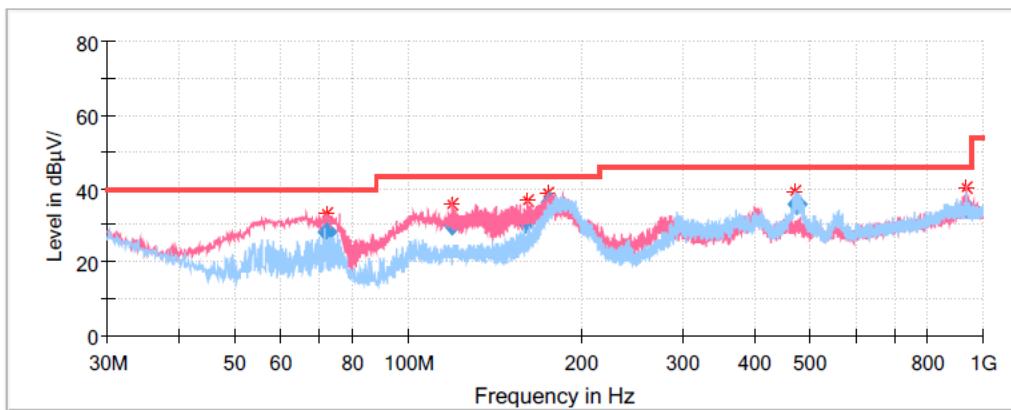


Final Result

Frequency (MHz)	Corrected Amplitude QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
69.045000	28.54	40.00	11.46	V	-17.2
104.205000	29.08	43.50	14.42	V	-13.9
135.233850	31.65	43.50	11.85	V	-11.3
158.736200	33.31	43.50	10.19	V	-12.1
182.810650	36.64	43.50	6.86	V	-12.9
480.656100	34.80	46.00	11.20	H	-5.9

Middle channel: 2437MHz**Common Information**

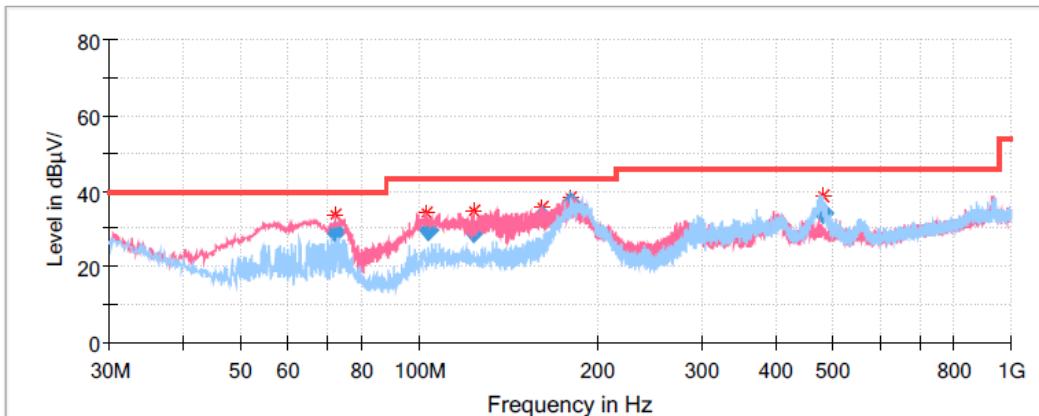
Project No: RKSA240228002
Test Mode: Transmitting in maximum output power mode 802.11g (Chain 1) middle channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer: Leah Li

**Final Result**

Frequency (MHz)	Corrected Amplitude QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
72.070000	27.93	40.00	12.07	V	-17.1
119.255800	30.26	43.50	13.24	V	-11.0
160.568200	30.55	43.50	12.95	V	-12.2
176.096650	35.98	43.50	7.52	V	-12.8
473.845950	35.85	46.00	10.15	H	-6.1
933.795350	34.61	46.00	11.39	V	1.5

High Channel: 2462MHz**Common Information**

Project No: RKSA240228002
Test Mode: Transmitting in maximum output power mode 802.11g (Chain 1) high channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer: Leah Li

**Final Result**

Frequency (MHz)	Corrected Amplitude QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
72.310000	28.98	40.00	11.02	V	-17.1
103.897950	29.61	43.50	13.89	V	-13.8
124.219350	29.06	43.50	14.44	V	-11.0
161.336850	32.99	43.50	10.51	V	-12.2
179.928200	36.51	43.50	6.99	V	-13.0
480.114000	34.15	46.00	11.85	H	-5.9

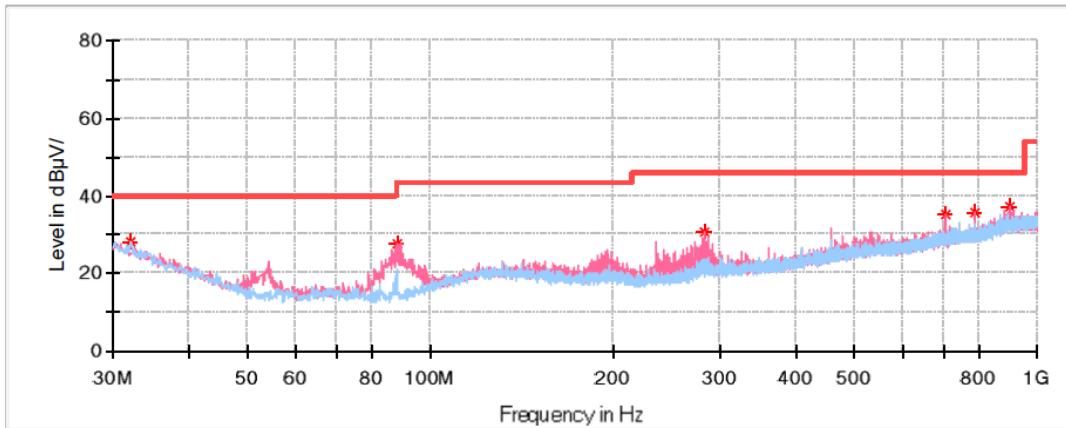
For PoE:

30MHz-1GHz (Transmitting in maximum output power mode 802.11g (Chain 1)):

Low channel: 2412MHz

Common Information

Project No: RKSA240228002
 Test Mode: Transmitting in maximum output power mode 802.11g (Chain 1) low channel
 Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
 Test Engineer: Loki Shi

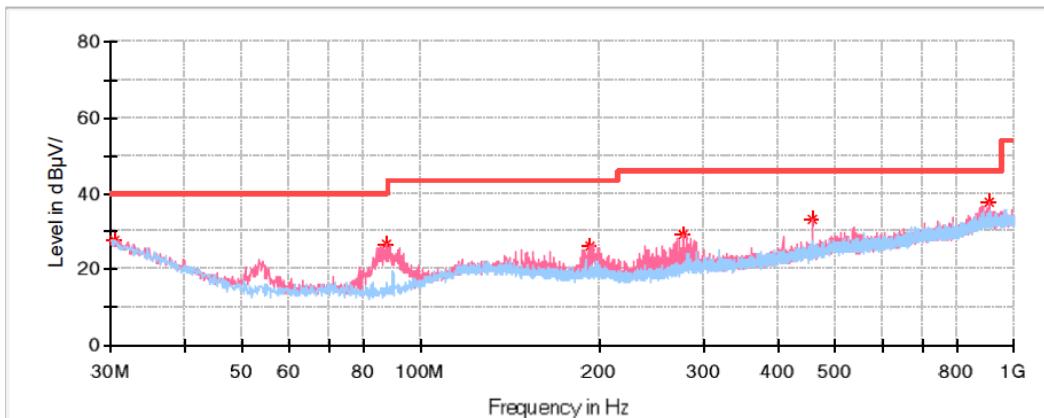


Critical Freqs

Frequency (MHz)	Corrected Amplitude QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
32.061250	27.99	40.00	12.01	H	-5.8
87.836250	27.48	40.00	12.52	V	-17.2
282.442500	30.74	46.00	15.26	V	-11.1
704.271250	35.40	46.00	10.60	V	-2.4
792.056250	35.95	46.00	10.05	V	-1.5
903.606250	37.31	46.00	8.69	V	1.3

Middle channel: 2437MHz**Common Information**

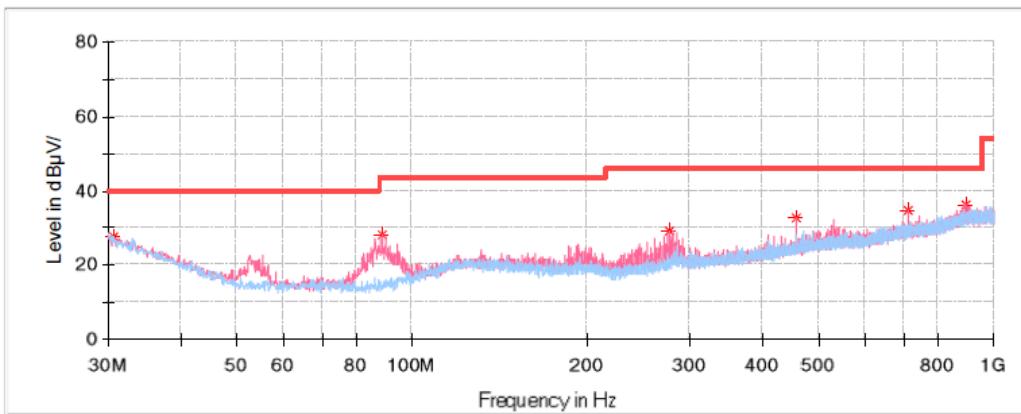
Project No: RKSA240228002
Test Mode: Transmitting in maximum output power mode 802.11g (Chain 1) middle channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer: Loki Shi

**Critical Freqs**

Frequency (MHz)	Corrected Amplitude QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.485000	27.79	40.00	12.21	H	-4.8
87.230000	26.55	40.00	13.45	V	-17.3
193.445000	26.33	43.50	17.17	V	-12.8
277.713750	29.23	46.00	16.77	V	-11.2
455.951250	33.27	46.00	12.73	V	-7.0
907.607500	37.83	46.00	8.17	V	1.3

High Channel: 2462MHz**Common Information**

Project No: RKSA240228002
Test Mode: Transmitting in maximum output power mode 802.11g (Chain 1) high channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer: Loki Shi

**Critical_Freqs**

Frequency (MHz)	Corrected Amplitude QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
30.606250	27.57	40.00	12.43	H	-4.9
88.806250	28.24	43.50	15.26	V	-17.2
277.471250	29.39	46.00	16.61	V	-11.2
456.072500	32.87	46.00	13.13	V	-7.0
713.122500	34.77	46.00	11.23	V	-2.3
892.693750	36.44	46.00	9.56	V	1.1

1GHz-18GHz:

802.11b Mode (chain 1):

Low Channel: 2412MHz

Common Information

Project No.:

PKSA240228002

Test Mode:

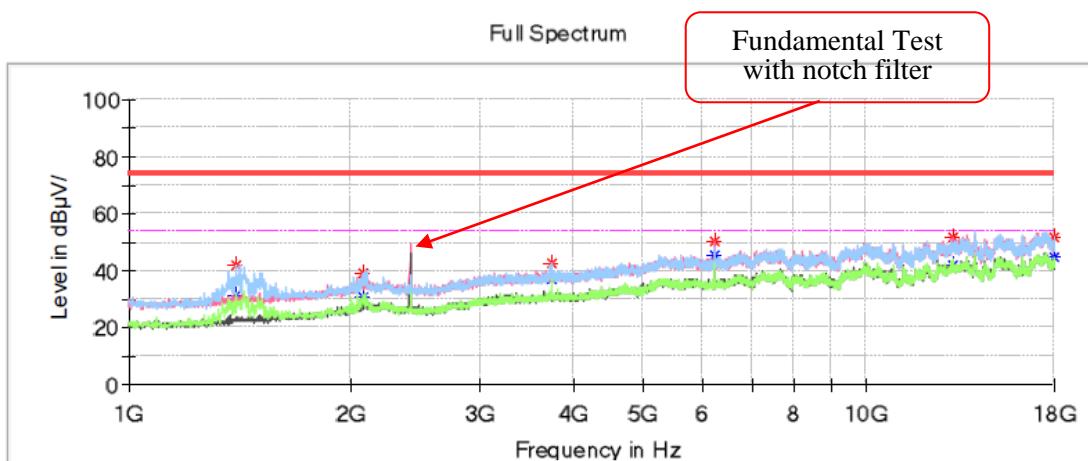
2.4G Wi-Fi 802.11b Mode of Low Channel (Chain1)

Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

**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)
1397.800000	---	31.58	54.00	22.42	H	-14.3
1397.800000	41.68	---	74.00	32.32	H	-14.3
2082.900000	---	30.85	54.00	23.15	H	-10.4
2082.900000	38.88	---	74.00	35.12	H	-10.4
3748.900000	---	36.73	54.00	17.27	H	-5.6
3748.900000	42.33	---	74.00	31.67	H	-5.6
6249.600000	---	45.79	54.00	8.21	V	0.5
6249.600000	50.39	---	74.00	23.61	V	0.5
13092.100000	---	41.73	54.00	12.27	H	9.4
13092.100000	51.86	---	74.00	22.14	H	9.4
18000.000000	---	44.91	54.00	9.09	H	11.5
18000.000000	51.94	---	74.00	22.06	H	11.5

Middle Channel: 2437MHz**Common Information**

Project No.:

PKSA240228002

Test Mode:

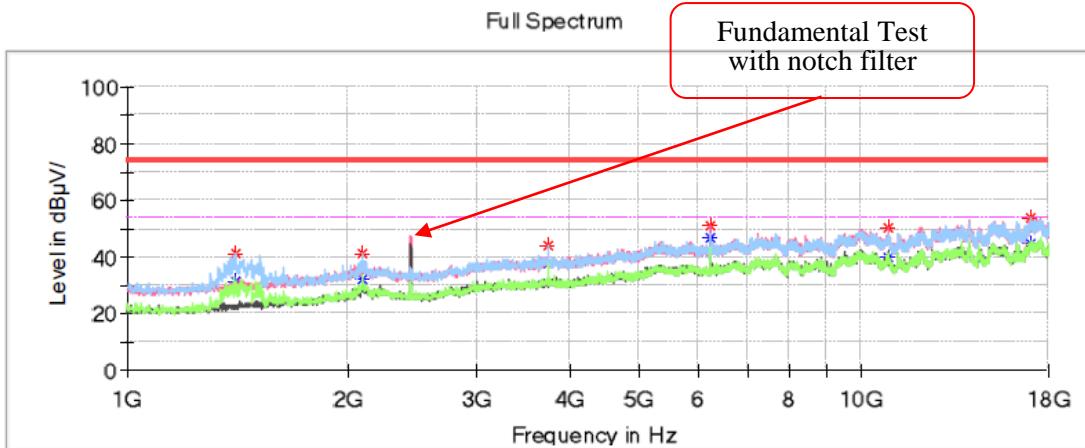
2.4G Wi-Fi 802.11b Mode of Middle Channel (Chain1)

Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

**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)
1402.900000	---	31.22	54.00	22.78	H	-14.2
1402.900000	41.13	---	74.00	32.87	H	-14.2
2094.800000	---	31.98	54.00	22.02	H	-10.4
2094.800000	41.38	---	74.00	32.62	H	-10.4
3748.900000	---	37.79	54.00	16.21	H	-5.6
3748.900000	44.22	---	74.00	29.78	H	-5.6
6249.600000	---	46.55	54.00	7.45	V	0.5
6249.600000	51.31	---	74.00	22.69	V	0.5
10870.200000	50.13	---	74.00	23.87	H	6.6
10870.200000	---	40.20	54.00	13.80	H	6.6
17005.500000	---	44.80	54.00	9.20	H	12.4
17005.500000	53.56	---	74.00	20.44	H	12.4

High Channel: 2462MHz**Common Information**

Project No.:

PKSA240228002

Test Mode:

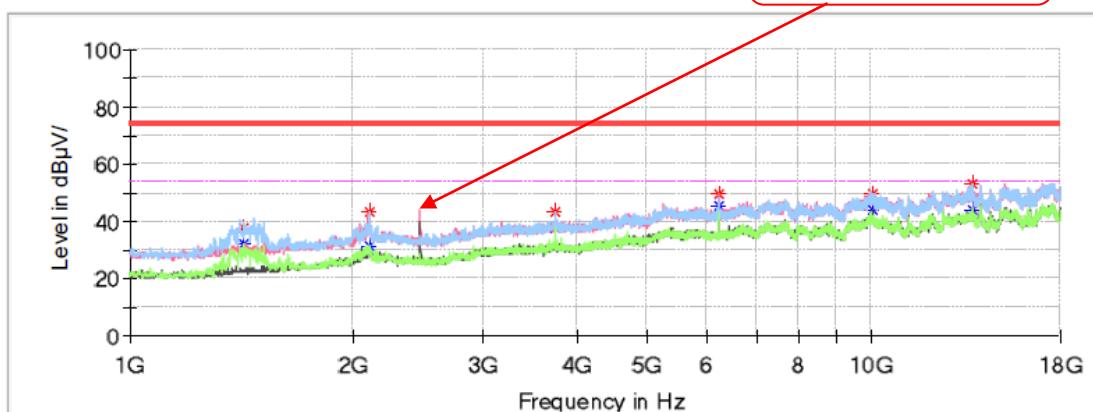
2.4G Wi-Fi 802.11b Mode of High Channel (Chain1)

Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

Fundamental Test
with notch filter**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)
1426.700000	---	32.08	54.00	21.92	H	-14.2
1426.700000	37.72	---	74.00	36.28	H	-14.2
2108.400000	---	31.50	54.00	22.50	H	-10.4
2108.400000	43.26	---	74.00	30.74	H	-10.4
3748.900000	---	37.83	54.00	16.17	H	-5.6
3748.900000	43.09	---	74.00	30.91	H	-5.6
6249.600000	---	45.79	54.00	8.21	V	0.5
6249.600000	49.87	---	74.00	24.13	V	0.5
10018.500000	---	44.31	54.00	9.69	V	7.8
10018.500000	49.64	---	74.00	24.36	V	7.8
13676.900000	---	43.88	54.00	10.12	H	10.8
13676.900000	53.18	---	74.00	20.82	H	10.8

802.11b Mode (chain 0):

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
1399.100000	---	30.58	54.00	23.42	H	-14.3
1399.100000	43.48	---	74.00	30.52	H	-14.3
2172.900000	---	29.85	54.00	24.15	H	-10.4
2172.900000	37.88	---	74.00	36.12	H	-10.4
3548.900000	---	35.73	54.00	18.27	H	-5.6
3548.900000	40.33	---	74.00	33.67	H	-5.6
6589.700000	---	44.69	54.00	9.31	V	0.5
6589.700000	50.39	---	74.00	23.61	V	0.5
13592.200000	---	40.73	54.00	13.27	H	9.4
13592.200000	49.86	---	74.00	24.14	H	9.4
18000.000000	---	43.81	54.00	10.19	H	11.5
18000.000000	51.79	---	74.00	22.21	H	11.5
Middle Channel: 2437 MHz						
1599.500000	---	28.57	54.00	25.43	H	-14.3
1599.500000	42.48	---	74.00	31.52	H	-14.3
2772.900000	---	27.84	54.00	26.16	H	-10.4
2772.900000	37.88	---	74.00	36.12	H	-10.4
3748.500000	---	34.72	54.00	19.28	H	-5.6
3748.500000	40.33	---	74.00	33.67	H	-5.6
6589.400000	---	43.65	54.00	10.35	V	0.5
6589.400000	50.39	---	74.00	23.61	V	0.5
13592.300000	---	38.73	54.00	15.27	H	9.4
13592.300000	49.83	---	74.00	24.17	H	9.4
15592.500000	---	41.8	54.00	12.2	H	11.5
15592.500000	51.73	---	74.00	22.27	H	11.5
High Channel: 2462 MHz						
1679.500000	---	27.57	54.00	26.43	H	-14.3
1679.500000	41.48	---	74.00	32.52	H	-14.3
2872.900000	---	26.83	54.00	27.17	H	-10.4
2872.900000	36.78	---	74.00	37.22	H	-10.4
3948.500000	---	33.71	54.00	20.29	H	-5.6
3948.500000	40.33	---	74.00	33.67	H	-5.6
6889.400000	---	43.64	54.00	10.36	V	0.5
6889.400000	50.39	---	74.00	23.61	V	0.5
14592.600000	---	38.72	54.00	15.28	H	9.4
14592.600000	49.85	---	74.00	24.19	H	9.4
16592.200000	---	41.75	54.00	12.25	H	11.5
16592.200000	50.71	---	74.00	23.29	H	11.5

802.11g Mode (chain 0):

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
1299.100000	---	26.57	54.00	27.43	H	-14.3
1299.100000	43.48	---	74.00	30.52	H	-14.3
2772.600000	---	27.82	54.00	26.18	H	-10.4
2772.600000	37.68	---	74.00	36.22	H	-10.4
3148.500000	---	34.72	54.00	19.28	H	-5.6
3148.500000	40.33	---	74.00	33.67	H	-5.6
6689.400000	---	43.65	54.00	10.35	V	0.5
6689.400000	48.39	---	74.00	25.61	V	0.5
13692.300000	---	38.73	54.00	15.27	H	9.4
13692.300000	49.83	---	74.00	24.17	H	9.4
15572.100000	---	41.8	54.00	12.2	H	11.5
15572.100000	50.71	---	74.00	23.29	H	11.5
Middle Channel: 2437 MHz						
1999.100000	---	30.58	54.00	23.42	H	-14.3
1999.100000	43.48	---	74.00	30.52	H	-14.3
2272.700000	---	29.85	54.00	24.15	H	-10.4
2272.700000	37.88	---	74.00	36.12	H	-10.4
3548.900000	---	35.73	54.00	18.27	H	-5.6
3548.900000	40.33	---	74.00	33.67	H	-5.6
6589.700000	---	44.69	54.00	9.31	V	0.5
6589.700000	50.39	---	74.00	23.61	V	0.5
13598.800000	---	40.73	54.00	13.27	H	9.4
13598.800000	49.86	---	74.00	24.14	H	9.4
18000.000000	---	43.81	54.00	10.19	H	11.5
18000.000000	51.79	---	74.00	22.21	H	11.5
High Channel: 2462 MHz						
2099.400000	---	29.57	54.00	24.43	H	-14.3
2099.400000	42.45	---	74.00	31.55	H	-14.3
2272.200000	---	29.85	54.00	24.15	H	-10.4
2272.200000	34.88	---	74.00	38.12	H	-10.4
3548.900000	---	35.71	54.00	18.29	H	-5.6
3548.900000	40.33	---	74.00	33.67	H	-5.6
6589.100000	---	44.69	54.00	9.31	V	0.5
6589.100000	50.39	---	74.00	23.61	V	0.5
14598.200000	---	40.63	54.00	13.37	H	9.4
14598.200000	49.86	---	74.00	24.14	H	9.4
16001.500000	---	43.81	54.00	10.19	H	11.5
16001.500000	48.77	---	74.00	25.23	H	11.5

802.11g Mode (chain 1):

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
1447.100000	40.31	---	74.00	33.69	H	-14.1
1447.100000	---	32.09	54.00	21.91	H	-14.1
2091.400000	39.56	---	74.00	34.44	V	-10.4
2091.400000	---	32.34	54.00	21.66	V	-10.4
3748.900000	43.01	---	74.00	30.99	H	-5.6
3748.900000	---	37.84	54.00	16.16	H	-5.6
6249.600000	48.02	---	74.00	25.98	H	0.5
6249.600000	---	42.99	54.00	11.01	H	0.5
10360.200000	49.83	---	74.00	24.17	H	7.4
10360.200000	---	43.06	54.00	10.94	H	7.4
17042.900000	52.84	---	74.00	21.16	V	12.4
17042.900000	---	46.88	54.00	7.12	V	12.4
Middle Channel: 2437 MHz						
1402.900000	---	29.58	54.00	24.42	H	-14.2
1402.900000	43.19	---	74.00	30.81	H	-14.2
2067.600000	---	32.27	54.00	21.73	H	-10.5
2067.600000	38.79	---	74.00	35.21	H	-10.5
3748.900000	---	37.19	54.00	16.81	V	-5.6
3748.900000	43.16	---	74.00	30.84	V	-5.6
6249.600000	---	42.51	54.00	11.49	H	0.5
6249.600000	48.30	---	74.00	25.70	H	0.5
10091.600000	---	40.06	54.00	13.94	H	7.7
10091.600000	50.66	---	74.00	23.34	H	7.7
17473.000000	---	45.95	54.00	8.05	V	13.6
17473.000000	54.19	---	74.00	19.81	V	13.6
High Channel: 2462 MHz						
1399.500000	---	31.09	54.00	22.91	H	-14.2
1399.500000	40.95	---	74.00	33.05	H	-14.2
2079.500000	---	32.67	54.00	21.33	V	-10.4
2079.500000	39.46	---	74.00	34.54	V	-10.4
3748.900000	---	36.99	54.00	17.01	H	-5.6
3748.900000	42.63	---	74.00	31.37	H	-5.6
6249.600000	---	43.28	54.00	10.72	V	0.5
6249.600000	47.87	---	74.00	26.13	V	0.5
10027.000000	---	40.36	54.00	13.64	H	7.8
10027.000000	50.68	---	74.00	23.32	H	7.8
16305.100000	---	44.37	54.00	9.63	V	9.7
16305.100000	52.59	---	74.00	21.41	V	9.7

For chain 0+chain 1

802.11n-HT20 Mode :

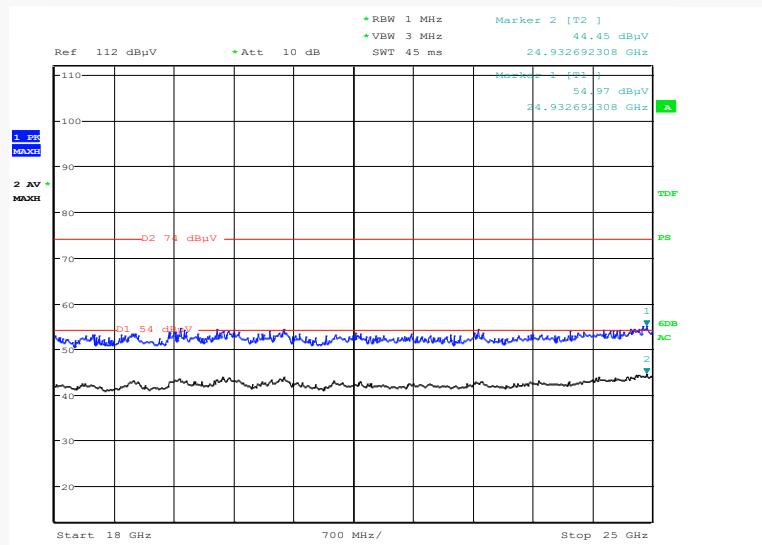
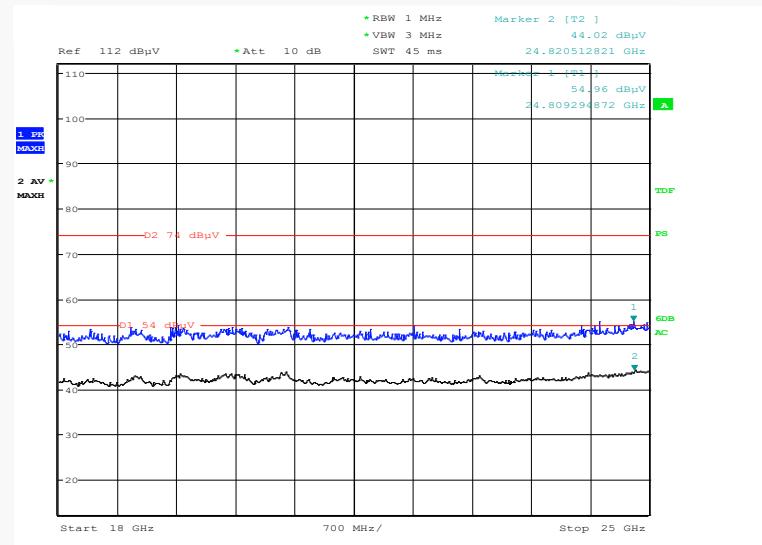
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
1336.600000	40.56	---	74.00	33.44	H	-14.4
1336.600000	---	29.89	54.00	24.11	H	-14.4
2096.500000	43.63	---	74.00	30.37	V	-10.4
2096.500000	---	33.54	54.00	20.46	V	-10.4
3748.900000	42.42	---	74.00	31.58	H	-5.6
3748.900000	---	37.49	54.00	16.51	H	-5.6
6249.600000	48.37	---	74.00	25.63	V	0.5
6249.600000	---	42.77	54.00	11.23	V	0.5
9962.400000	48.43	---	74.00	25.57	H	7.7
9962.400000	---	41.44	54.00	12.56	H	7.7
17505.300000	51.25	---	74.00	22.75	V	13.6
17505.300000	---	46.26	54.00	7.74	V	13.6
Middle Channel: 2437 MHz						
1436.900000	---	33.47	54.00	20.53	H	-14.1
1436.900000	40.47	---	74.00	33.53	H	-14.1
2081.200000	---	34.37	54.00	19.63	V	-10.4
2081.200000	43.66	---	74.00	30.34	V	-10.4
3748.900000	---	37.39	54.00	16.61	H	-5.6
3748.900000	42.50	---	74.00	31.50	H	-5.6
6249.600000	---	43.51	54.00	10.49	V	0.5
6249.600000	48.10	---	74.00	25.90	V	0.5
10360.200000	---	43.70	54.00	10.30	H	7.4
10360.200000	49.48	---	74.00	24.52	H	7.4
15189.900000	---	43.39	54.00	10.61	H	10.8
15189.900000	52.66	---	74.00	21.34	H	10.8
High Channel: 2462 MHz						
1372.300000	---	30.79	54.00	23.21	H	-14.3
1372.300000	39.69	---	74.00	34.31	H	-14.3
2096.500000	---	32.59	54.00	21.41	V	-10.4
2096.500000	40.40	---	74.00	33.60	V	-10.4
3748.900000	---	37.86	54.00	16.14	H	-5.6
3748.900000	44.18	---	74.00	29.82	H	-5.6
6249.600000	---	43.66	54.00	10.34	V	0.5
6249.600000	49.48	---	74.00	24.52	V	0.5
9999.800000	---	42.49	54.00	11.51	H	7.8
9999.800000	48.63	---	74.00	25.37	H	7.8
15140.600000	---	43.43	54.00	10.57	V	10.6
15140.600000	53.06	---	74.00	20.94	V	10.6

802.11n-HT40 Mode :

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2422 MHz						
1399.500000	39.76	---	74.00	34.24	V	-14.2
1399.500000	---	28.96	54.00	25.04	V	-14.2
2101.600000	---	34.97	54.00	19.03	H	-10.4
2101.600000	43.12	---	74.00	30.88	H	-10.4
3748.900000	---	37.72	54.00	16.28	V	-5.6
3748.900000	43.32	---	74.00	30.68	V	-5.6
6249.600000	---	43.14	54.00	10.86	H	0.5
6249.600000	48.67	---	74.00	25.33	H	0.5
10006.600000	---	41.78	54.00	12.22	H	7.8
10006.600000	50.10	---	74.00	23.90	H	7.8
15195.000000	---	44.57	54.00	9.43	V	10.8
15195.000000	52.38	---	74.00	21.62	V	10.8
Middle Channel: 2437 MHz						
1513.400000	---	34.98	54.00	19.02	H	-13.8
1513.400000	46.93	---	74.00	27.07	H	-13.8
2096.500000	---	30.15	54.00	23.85	V	-10.4
2096.500000	41.37	---	74.00	32.63	V	-10.4
3748.900000	---	37.98	54.00	16.02	H	-5.6
3748.900000	44.17	---	74.00	29.83	H	-5.6
6249.600000	---	42.53	54.00	11.47	V	0.5
6249.600000	48.23	---	74.00	25.77	V	0.5
9957.300000	48.07	---	74.00	25.93	V	7.7
9957.300000	---	43.53	54.00	10.47	V	7.7
16306.800000	---	43.96	54.00	10.04	H	9.7
16306.800000	53.20	---	74.00	20.80	H	9.7
High Channel: 2452 MHz						
1494.700000	---	31.35	54.00	22.65	H	-13.9
1494.700000	40.04	---	74.00	33.96	H	-13.9
3748.900000	---	37.45	54.00	16.55	V	-5.6
3748.900000	43.95	---	74.00	30.05	V	-5.6
6249.600000	48.18	---	74.00	25.82	H	0.5
6249.600000	---	42.87	54.00	11.13	H	0.5
10360.200000	---	43.28	54.00	10.72	H	7.4
10360.200000	50.76	---	74.00	23.24	H	7.4
14001.600000	---	45.34	54.00	8.66	V	10.5
14001.600000	52.67	---	74.00	21.33	V	10.5
17559.700000	---	46.70	54.00	7.30	H	13.4
17559.700000	53.72	---	74.00	20.28	H	13.4

18GHz-25GHz:

Transmitting in 802.11g mode middle channel chain 1 is worst case
Horizontal

**Vertical**

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

Band Edge:

802.11b Mode (chain 1):

Low Channel**Common Information**

Project No.:

PKSA240228002

Test Mode:

802.11b Mode of Low Channel (Chain1)

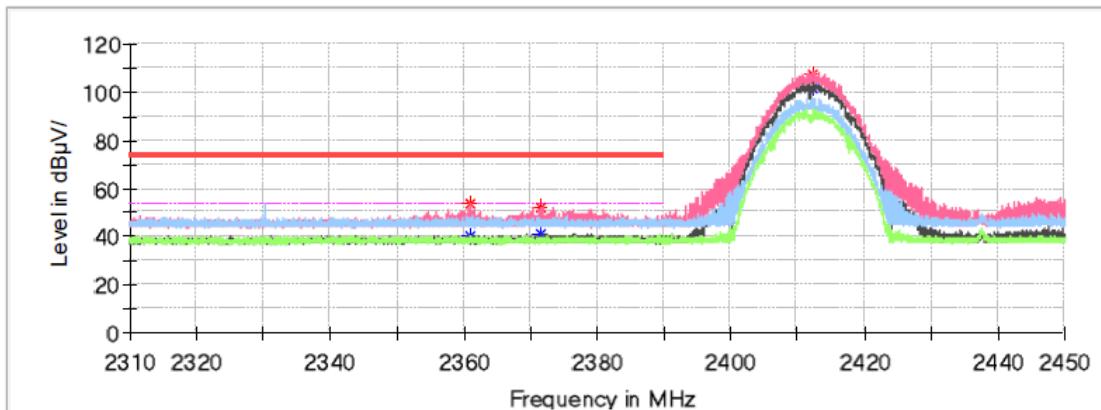
Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

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)
2360.876000	---	40.68	54.00	13.32	V	0.0
2360.876000	53.77	---	74.00	20.23	V	0.0
2371.572000	---	41.19	54.00	12.81	V	0.0
2371.572000	52.36	---	74.00	21.64	V	0.0
2412.200000	---	101.18	---	---	V	0.1
2412.200000	107.50	---	---	---	V	0.1

High Channel**Common Information**

Project No.:

PKSA240228002

Test Mode:

802.11b Mode of High Channel (Chain1)

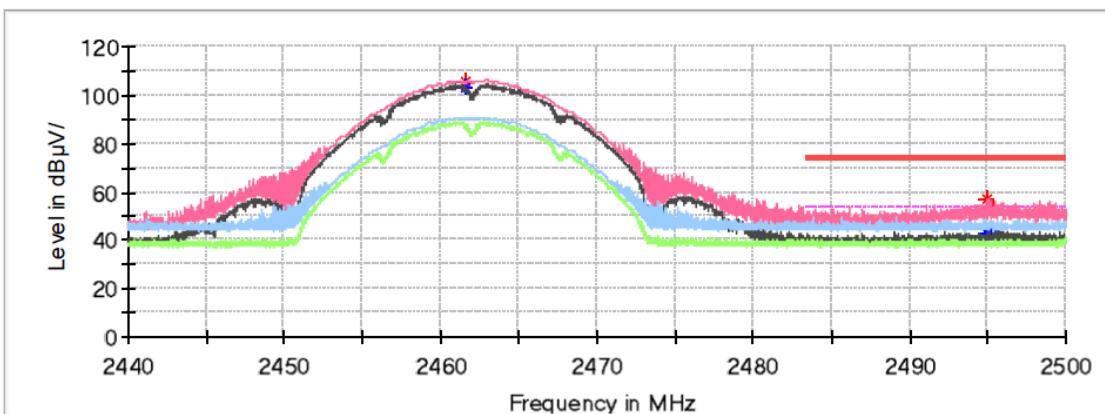
Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

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)
2461.630000	---	103.55	---	---	V	0.2
2461.630000	105.78	---	---	---	V	0.2
2495.002000	---	42.53	54.00	11.47	V	0.2
2495.002000	56.73	---	74.00	17.27	V	0.2
2495.302000	---	43.99	54.00	10.01	V	0.2
2495.302000	52.78	---	74.00	21.22	V	0.2

802.11b Mode (chain 0):

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
2365.976000	---	39.68	54.00	14.32	V	0
2365.976000	52.77	---	74.00	21.23	V	0
2373.471000	---	40.08	54.00	13.92	V	0.1
2373.471000	51.39	---	74.00	22.61	V	0.1
High Channel: 2462 MHz						
2490.102000	---	41.53	54.00	12.47	V	0.2
2490.102000	54.73	---	74.00	18.27	V	0.2
2493.301000	---	41.99	54.00	12.01	V	0.3
2493.301000	50.78	---	74.00	22.22	V	0.3

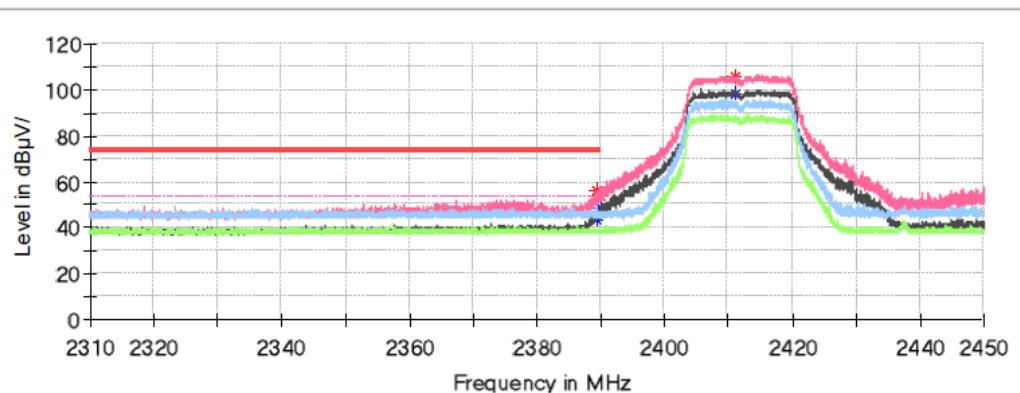
802.11g Mode (chain 0):

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 2412 MHz						
2389.408000	---	42.92	54.00	11.08	V	0.2
2389.408000	55.51	---	74.00	18.49	V	0.2
2389.941000	53.01	---	74.00	20.99	V	0.2
2389.941000	---	46.31	54.00	7.69	V	0.2
High Channel: 2462 MHz						
2488.176000	---	49.68	54.00	4.32	V	0.2
2488.176000	60.74	---	74.00	13.26	V	0.2
2485.567000	---	47.42	54.00	6.58	V	0.2
2485.567000	59.74	---	74.00	14.26	V	0.2

802.11g Mode (chain 1 is worst):**Low Channel****Common Information**

Project No.: PKSA240228002
Test Mode: 802.11g Mode of Low Channel (Chain1)
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Peter Wang

Full Spectrum

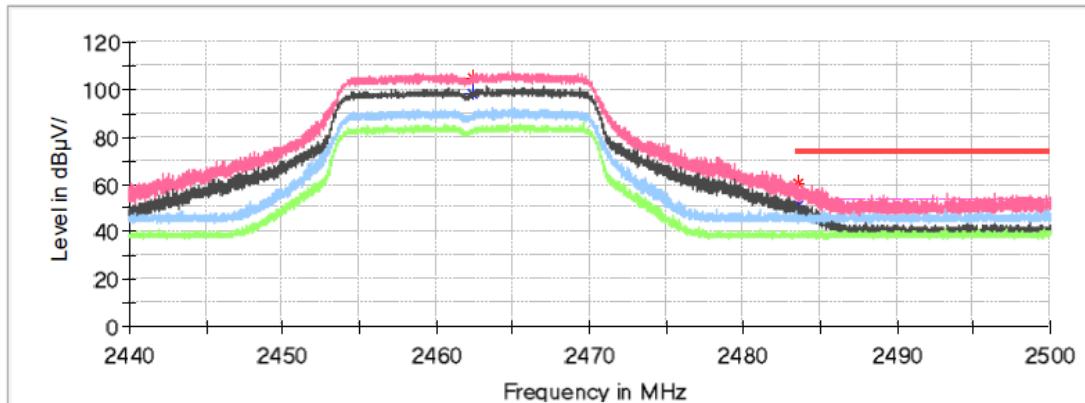
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2389.408000	---	43.92	54.00	10.08	V	0.1
2389.408000	56.51	---	74.00	17.49	V	0.1
2389.940000	54.01	---	74.00	19.99	V	0.1
2389.940000	---	48.31	54.00	5.69	V	0.1
2411.066000	---	97.86	---	---	V	0.1
2411.066000	105.92	---	---	---	V	0.1

High Channel**Common Information**

Project No.: PKSA240228002
Test Mode: 802.11g Mode of High Channel (Chain1)
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Peter Wang

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)
2462.386000	---	98.32	---	---	V	0.2
2462.386000	104.80	---	---	---	V	0.2
2483.566000	---	51.42	54.00	2.58	V	0.2
2483.566000	60.74	---	74.00	13.26	V	0.2

For chain0+chain 1
802.11n-HT20 Mode:

Low Channel

Common Information

Project No.:

PKSA240228002

Test Mode:

802.11n20 Mode of Low Channel (Chain0+Chain1)

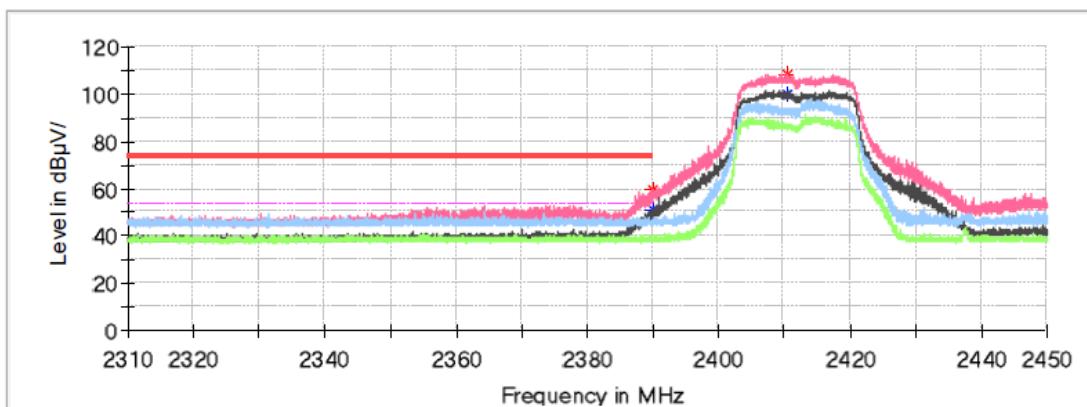
Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

Full Spectrum



Critical_Freqs

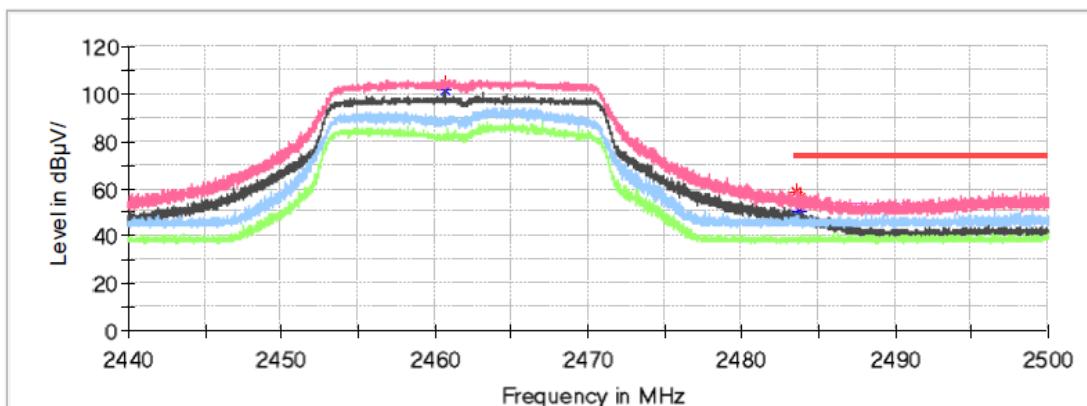
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2389.982000	---	51.11	54.00	2.89	V	0.1
2389.982000	59.66	---	74.00	14.34	V	0.1
2410.380000	108.41	---	---	---	V	0.1
2410.380000	---	99.79	---	---	V	0.1

High Channel

Common Information

Project No.: PKSA240228002
Test Mode: 802.11n20 Mode of High Channel (Chain0+Chain1)
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Peter Wang

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)
2460.712000	---	101.17	---	---	V	0.2
2460.712000	104.13	---	---	---	V	0.2
2483.590000	---	48.54	54.00	5.46	V	0.2
2483.590000	58.72	---	74.00	15.28	V	0.2
2483.860000	---	50.39	54.00	3.61	V	0.2
2483.860000	56.60	---	74.00	17.40	V	0.2

802.11n-HT40 Mode:**Low Channel****Common Information**

Project No.:

PKSA240228002

Test Mode:

802.11n40 Mode of Low Channel (Chain0+Chain1)

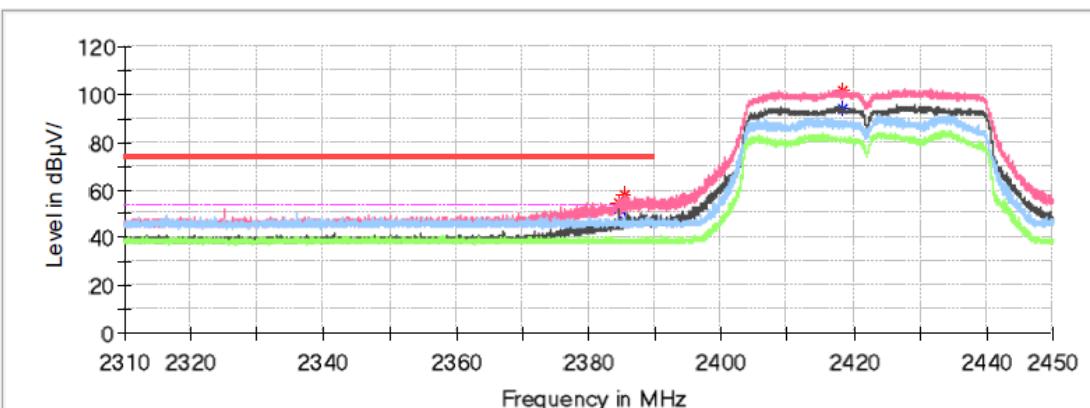
Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

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)
2384.578000	---	51.62	54.00	2.38	V	0.1
2384.578000	54.16	---	74.00	19.84	V	0.1
2385.306000	---	47.37	54.00	6.63	V	0.1
2385.306000	57.68	---	74.00	16.32	V	0.1
2418.416000	---	94.24	---	---	V	0.1
2418.416000	101.92	---	---	---	V	0.1

High Channel**Common Information**

Project No.:

PKSA240228002

Test Mode:

802.11n40 Mode of High Channel (Chain0+Chain1)

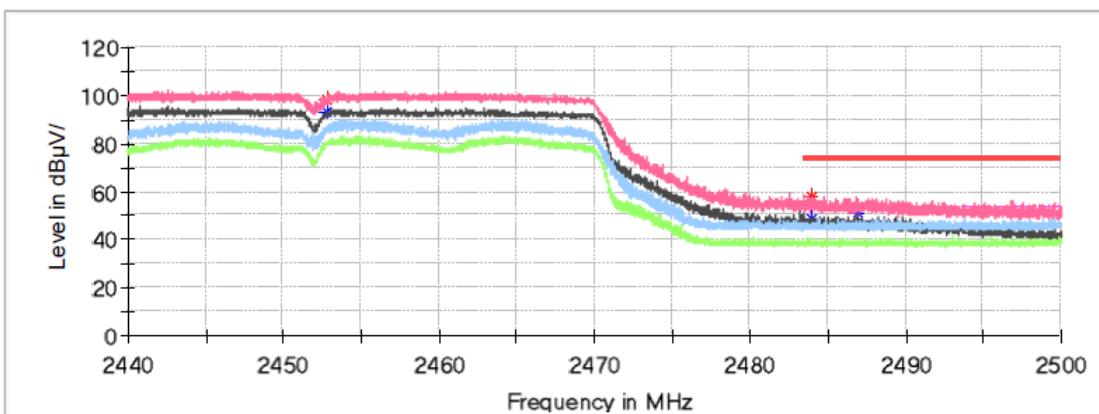
Standard:

FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209

Test Engineer:

Peter Wang

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)
2452.804000	---	92.75	---	---	V	0.2
2452.804000	98.08	---	---	---	V	0.2
2483.962000	---	48.50	54.00	5.50	V	0.2
2483.962000	58.04	---	74.00	15.96	V	0.2
2486.938000	---	51.58	54.00	2.42	V	0.2
2486.938000	53.96	---	74.00	20.04	V	0.2

6 dB EMISSION BANDWIDTH

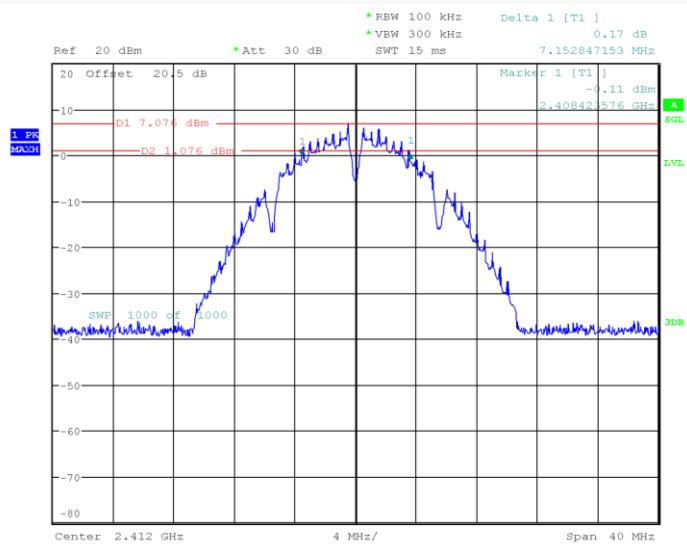
Test Result: Compliant.

EUT operation mode: Transmitting

Mode	Value (MHz)	Limit (MHz)	Result
b_2412MHz_Chain 0	7.153	0.5	Pass
b_2412MHz_Chain 1	8.152	0.5	Pass
b_2437MHz_Chain 0	8.152	0.5	Pass
b_2437MHz_Chain 1	8.152	0.5	Pass
b_2462MHz_Chain 0	8.192	0.5	Pass
b_2462MHz_Chain 1	8.192	0.5	Pass
g_2412MHz_Chain 0	16.424	0.5	Pass
g_2412MHz_Chain 1	16.184	0.5	Pass
g_2437MHz_Chain 0	16.144	0.5	Pass
g_2437MHz_Chain 1	15.744	0.5	Pass
g_2462MHz_Chain 0	16.384	0.5	Pass
g_2462MHz_Chain 1	16.144	0.5	Pass
n20_2412MHz_Chain 0	16.863	0.5	Pass
n20_2412MHz_Chain 1	17.023	0.5	Pass
n20_2437MHz_Chain 0	17.263	0.5	Pass
n20_2437MHz_Chain 1	16.903	0.5	Pass
n20_2462MHz_Chain 0	17.023	0.5	Pass
n20_2462MHz_Chain 1	16.863	0.5	Pass
n40_2422MHz_Chain 0	36.523	0.5	Pass
n40_2422MHz_Chain 1	36.284	0.5	Pass
n40_2437MHz_Chain 0	36.523	0.5	Pass
n40_2437MHz_Chain 1	35.564	0.5	Pass
n40_2452MHz_Chain 0	35.964	0.5	Pass
n40_2452MHz_Chain 1	36.523	0.5	Pass

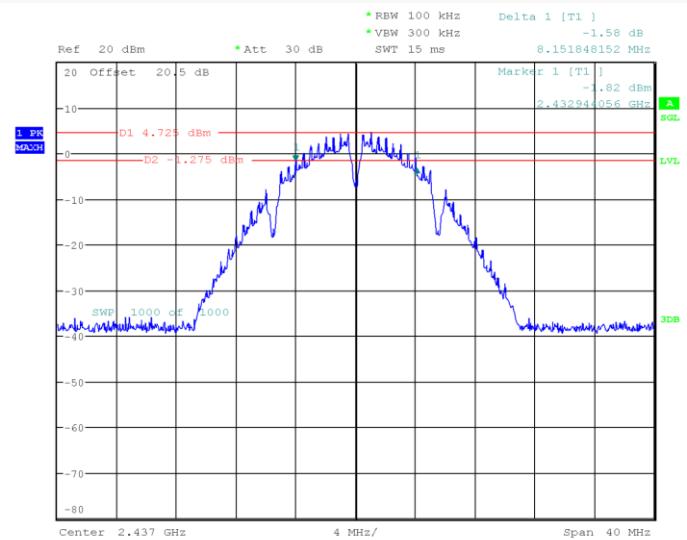
For Chain 0:

802.11b Mode Low Channel

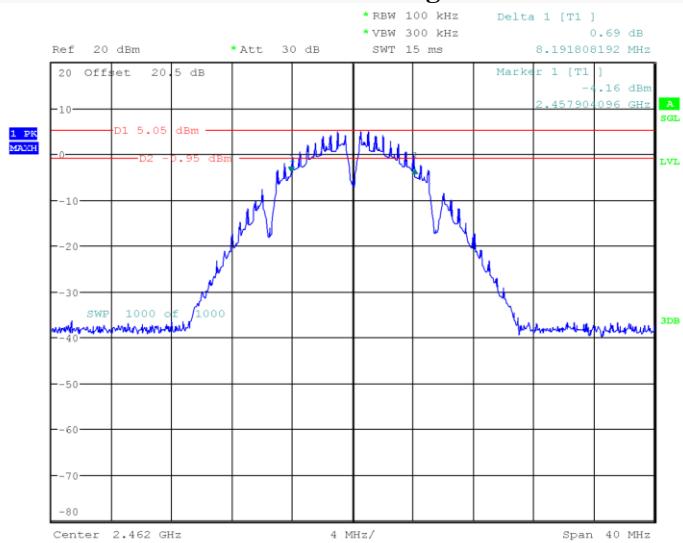
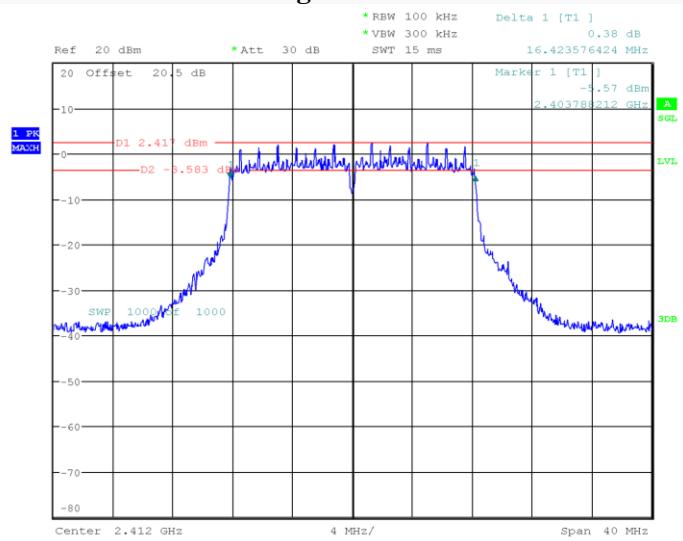


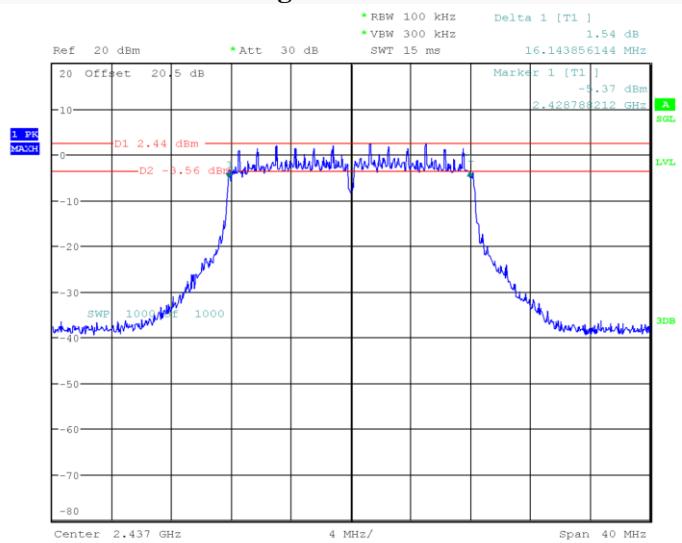
ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 15:12:30

802.11b Mode Middle Channel

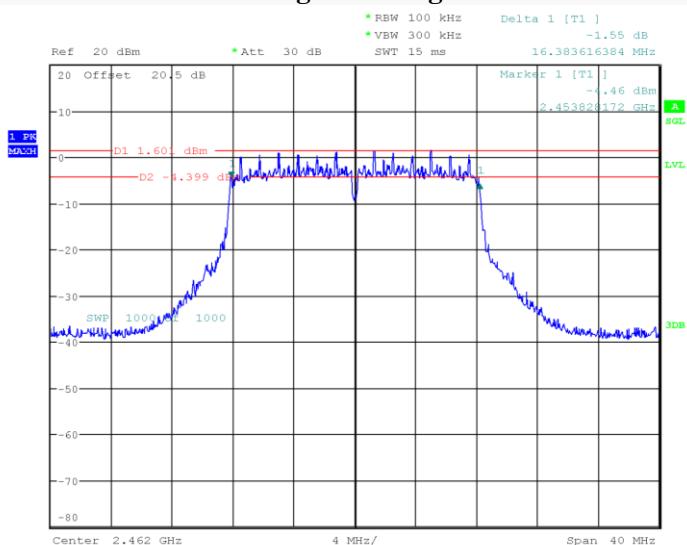


ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 15:18:59

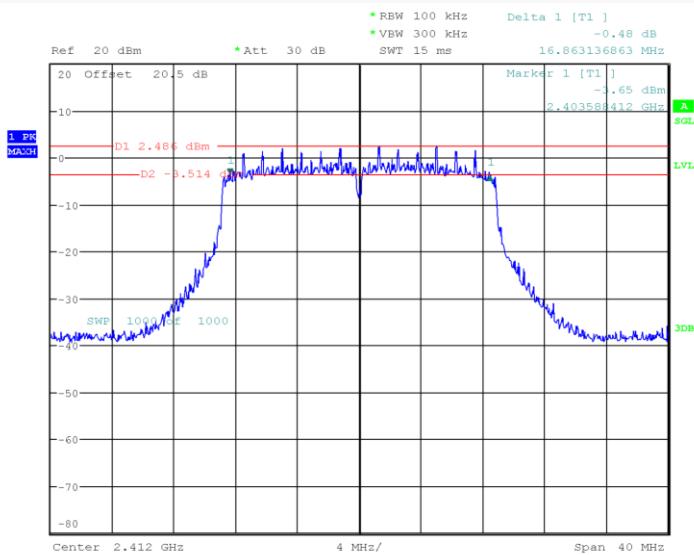
802.11b Mode High Channel**802.11g Mode Low Channel**

802.11g Mode Middle Channel

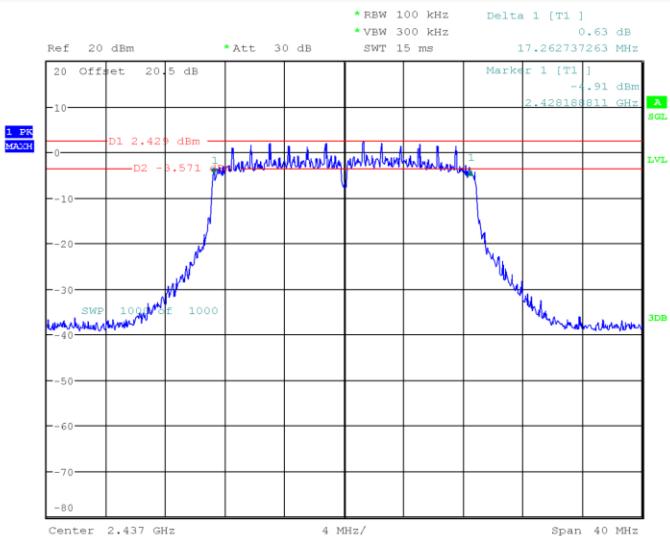
ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 15:47:24

802.11g Mode High Channel

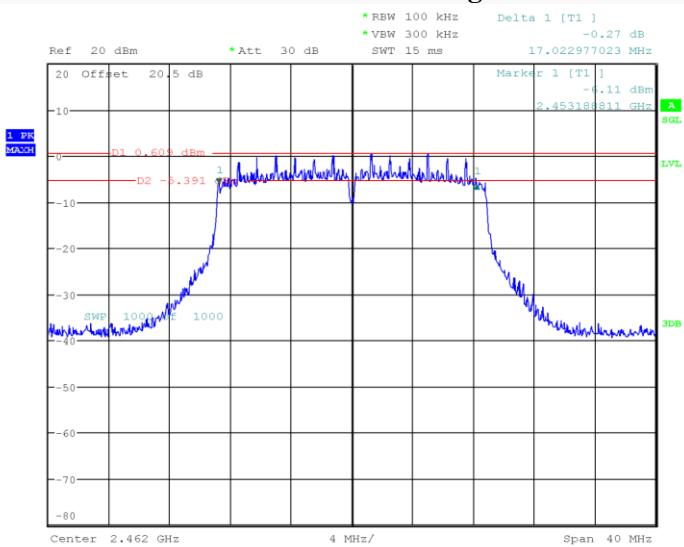
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Date: 17.APR.2024 15:55:55

802.11n-HT20 Mode Low Channel

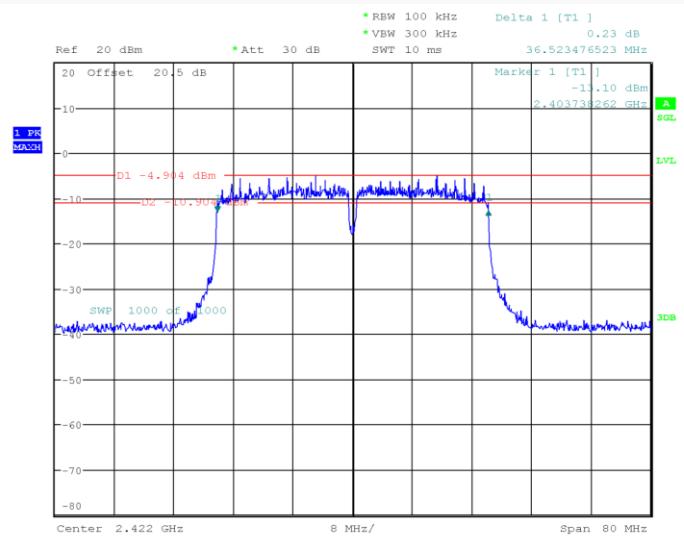
ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 16:04:44

802.11n-HT20 Mode Middle Channel

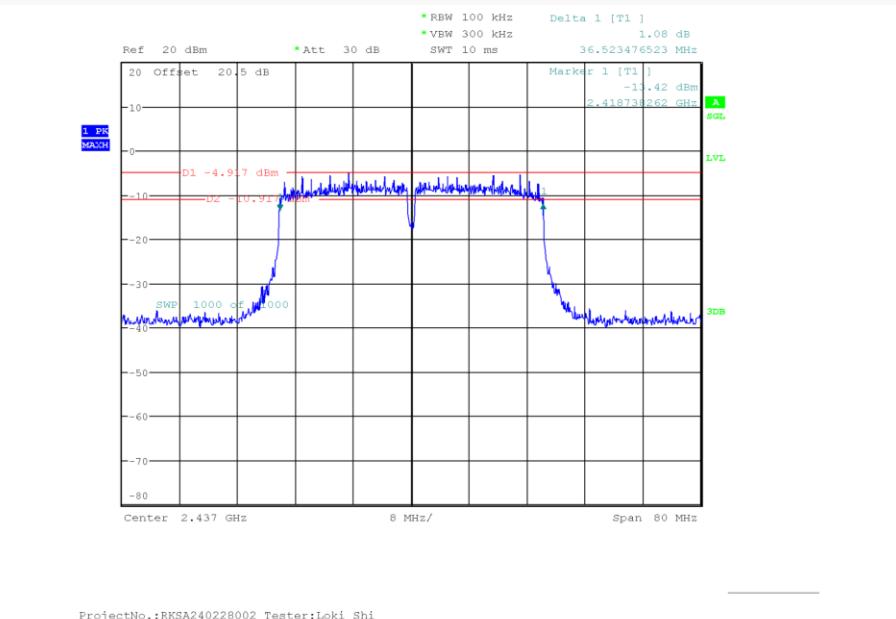
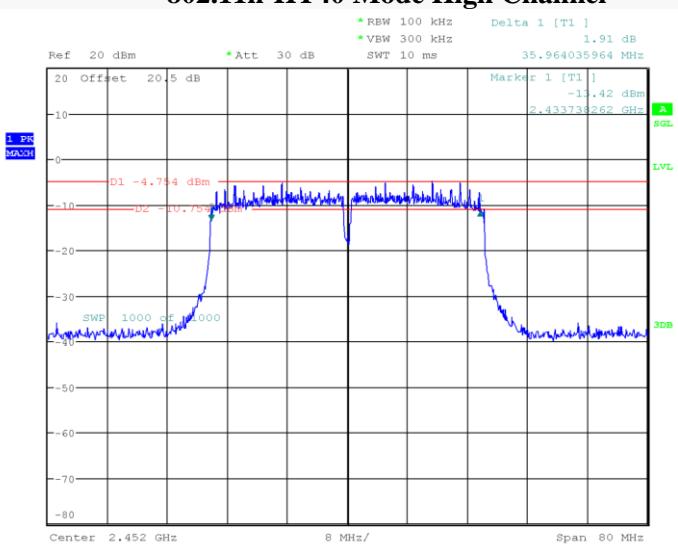
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Date: 17.APR.2024 16:12:10

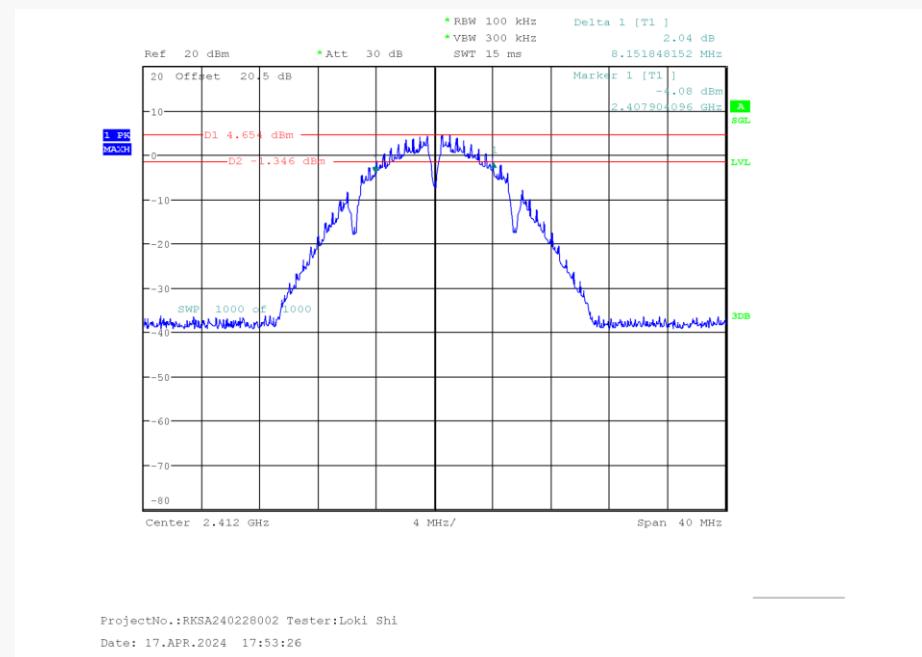
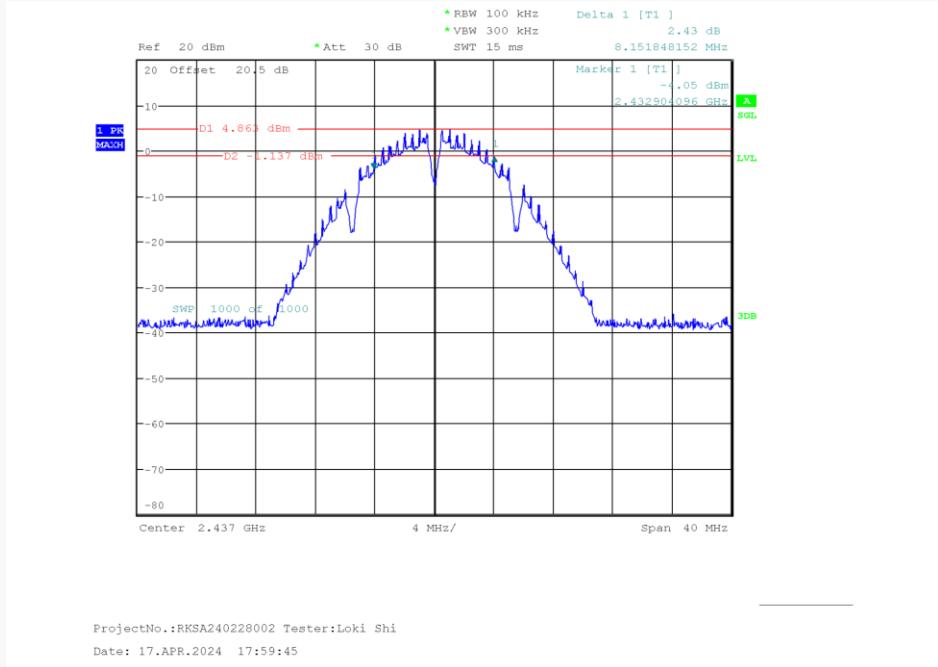
802.11n-HT20 Mode High Channel

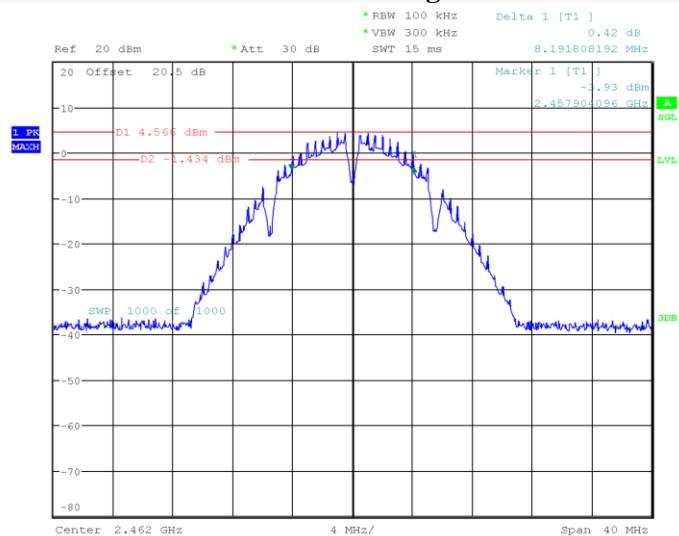
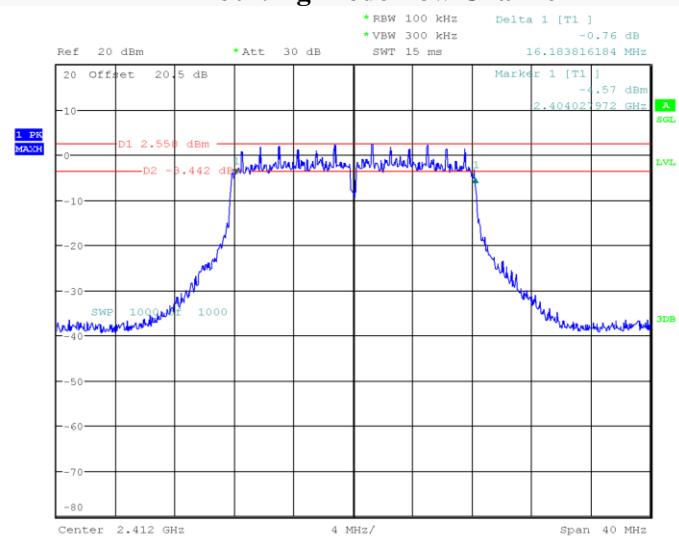
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Date: 17.APR.2024 16:20:41

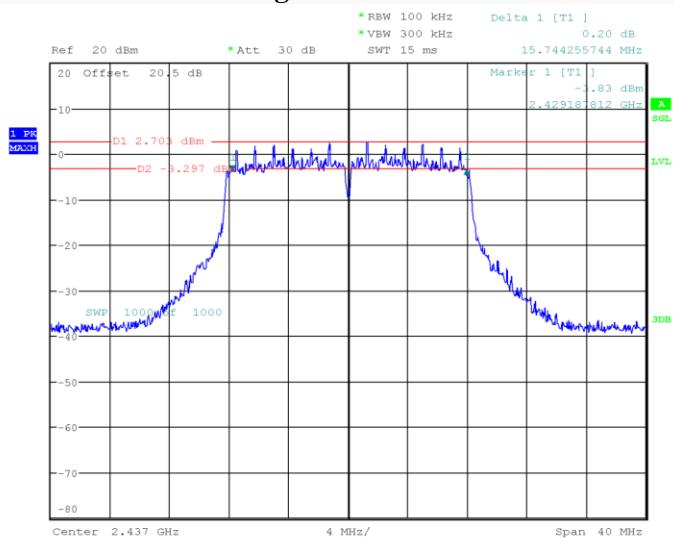
802.11n-HT40 Mode Low Channel

ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 16:29:05

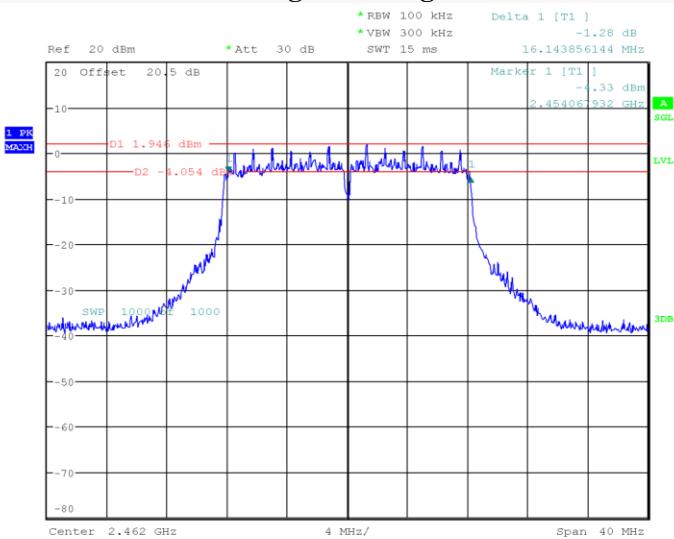
802.11n-HT40 Mode Middle Channel**802.11n-HT40 Mode High Channel**

For Chain 1:**802.11b Mode Low Channel****802.11b Mode Middle Channel**

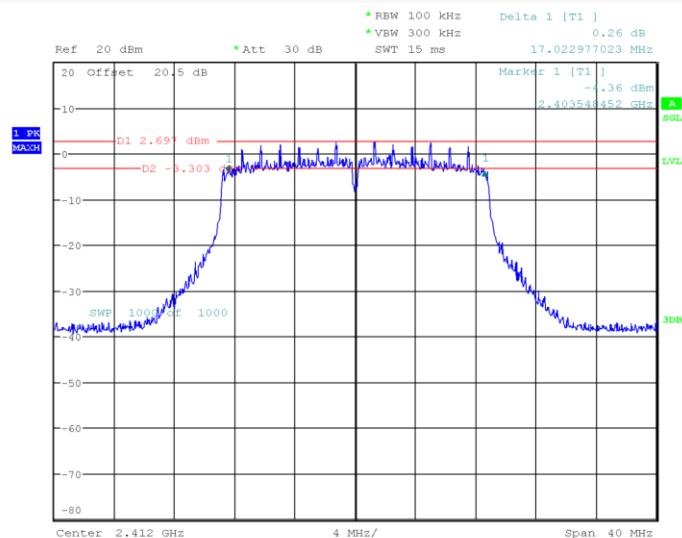
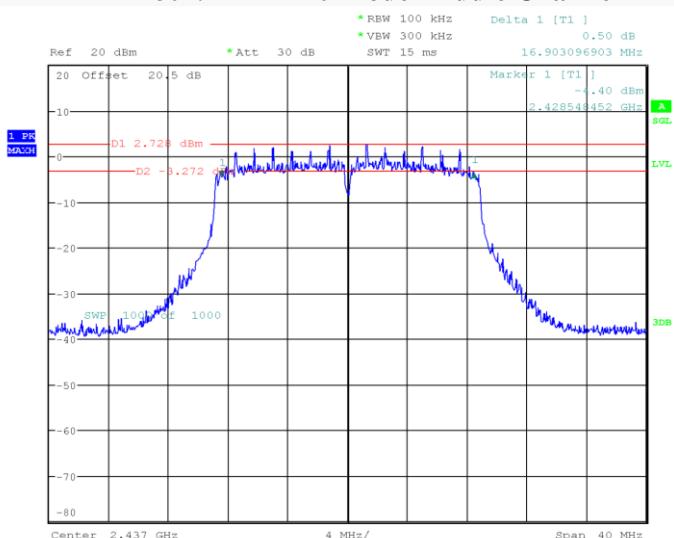
802.11b Mode High Channel**802.11g Mode Low Channel**

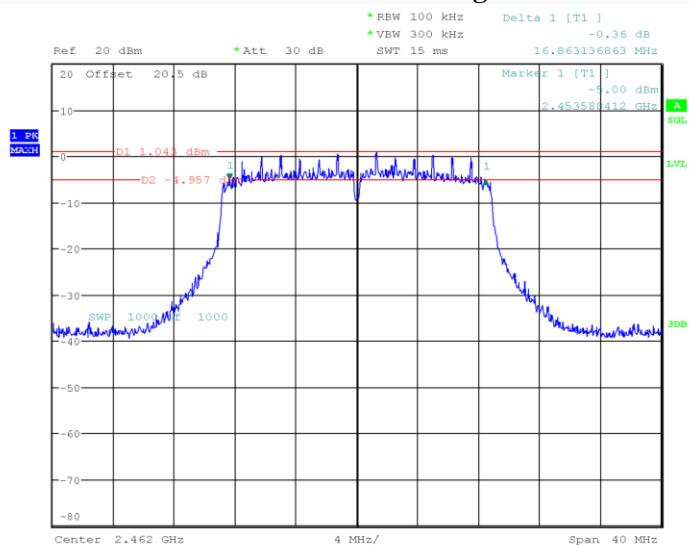
802.11g Mode Middle Channel

ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 18:30:40

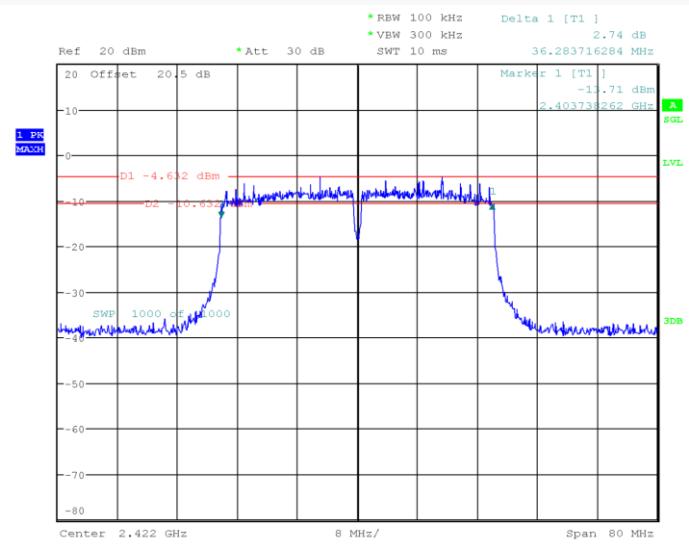
802.11g Mode High Channel

ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 18:52:47

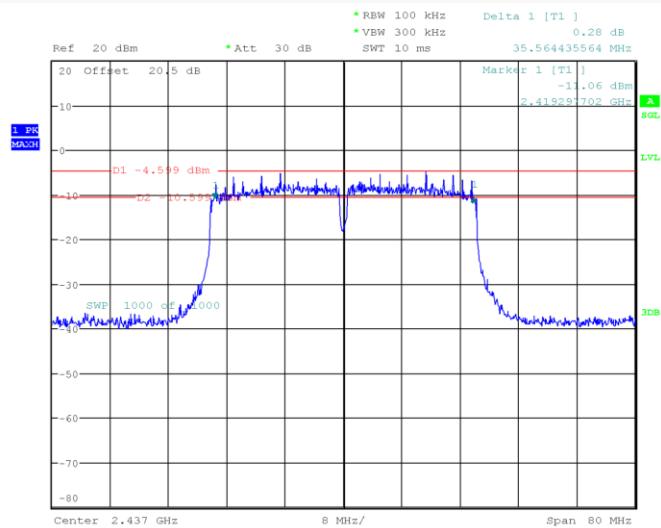
802.11n-HT20 Mode Low Channel**802.11n-HT20 Mode Middle Channel**

802.11n-HT20 Mode High Channel

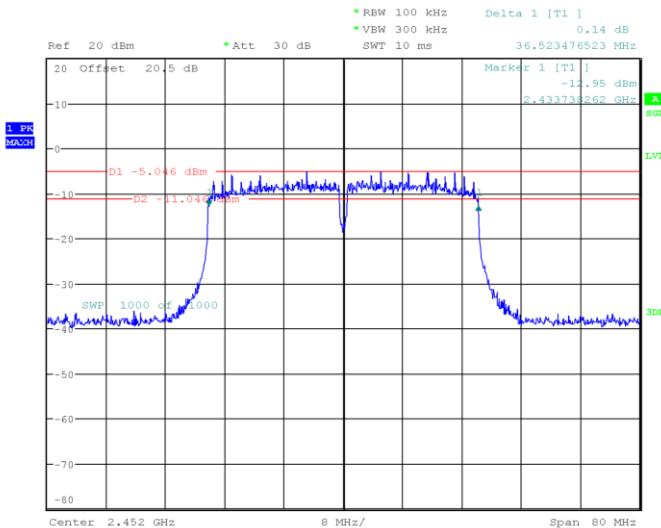
ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 19:17:51

802.11n-HT40 Mode Low Channel

ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 19:27:15

802.11n-HT40 Mode Middle Channel

ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 19:39:52

802.11n-HT40 Mode High Channel

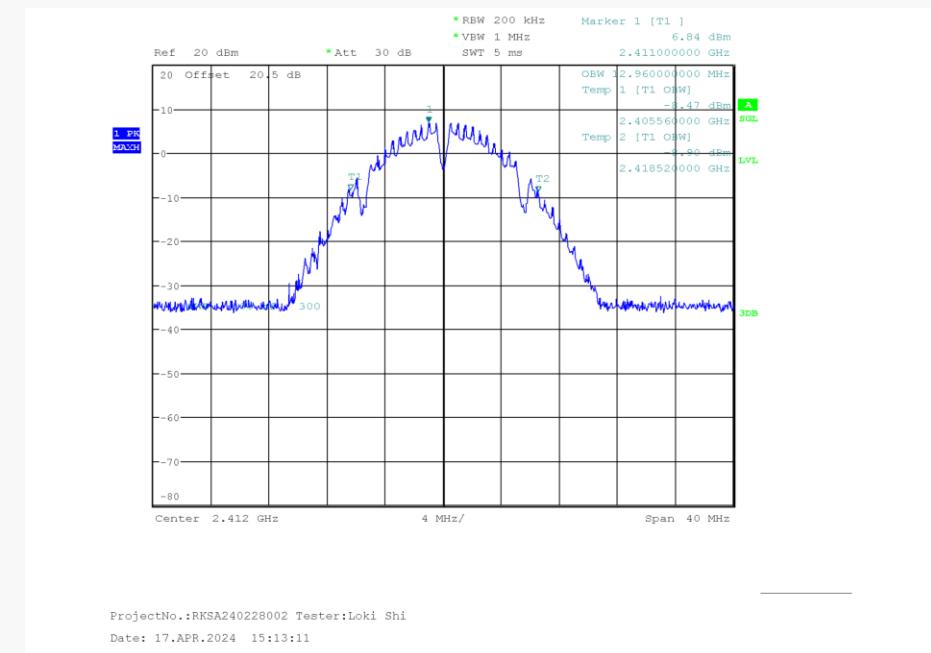
ProjectNo.:RKSA240228002 Tester:Loki Shi
Date: 17.APR.2024 19:53:07

OCCUPIED BANDWIDTH*EUT operation mode: Transmitting*

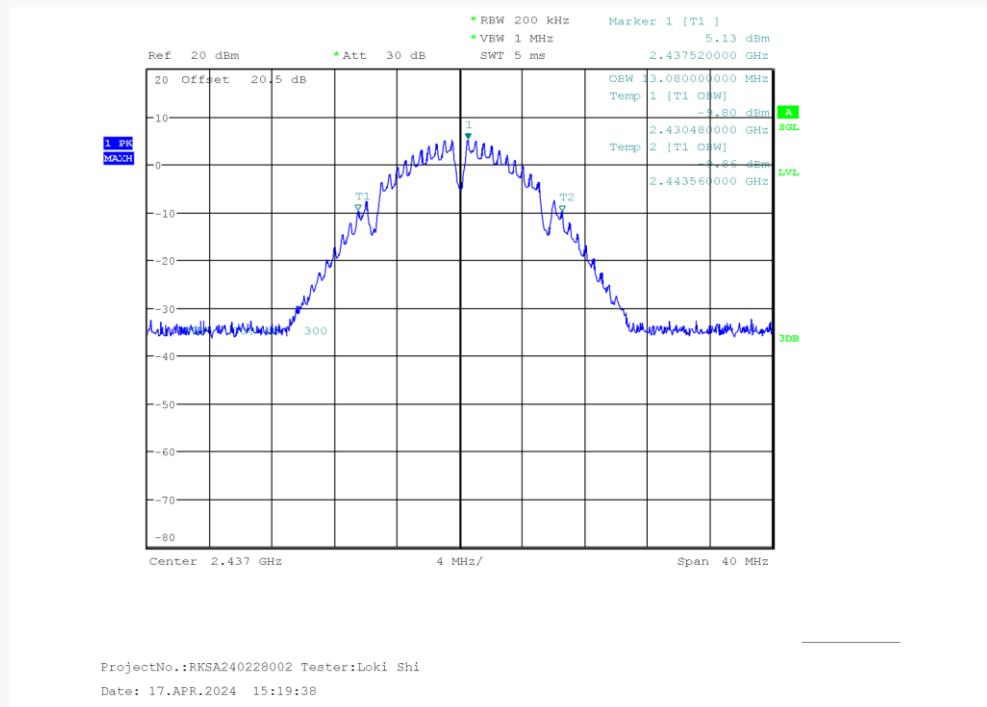
Mode	99% OBW (MHz)
b_2412MHz_Chain 0	12.960
b_2412MHz_Chain 1	13.120
b_2437MHz_Chain 0	13.080
b_2437MHz_Chain 1	13.080
b_2462MHz_Chain 0	13.080
b_2462MHz_Chain 1	13.080
g_2412MHz_Chain 0	16.440
g_2412MHz_Chain 1	16.400
g_2437MHz_Chain 0	16.440
g_2437MHz_Chain 1	16.440
g_2462MHz_Chain 0	16.440
g_2462MHz_Chain 1	16.440
n20_2412MHz_Chain 0	17.640
n20_2412MHz_Chain 1	17.640
n20_2437MHz_Chain 0	17.640
n20_2437MHz_Chain 1	17.640
n20_2462MHz_Chain 0	17.640
n20_2462MHz_Chain 1	17.640
n40_2422MHz_Chain 0	36.240
n40_2422MHz_Chain 1	36.240
n40_2437MHz_Chain 0	36.240
n40_2437MHz_Chain 1	36.240
n40_2452MHz_Chain 0	36.240
n40_2452MHz_Chain 1	36.160

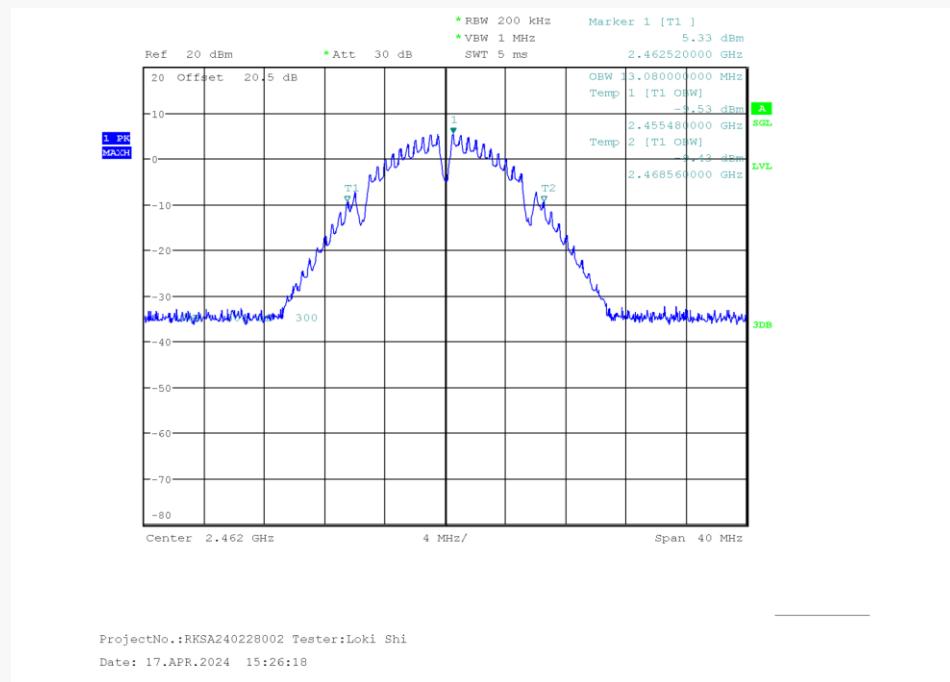
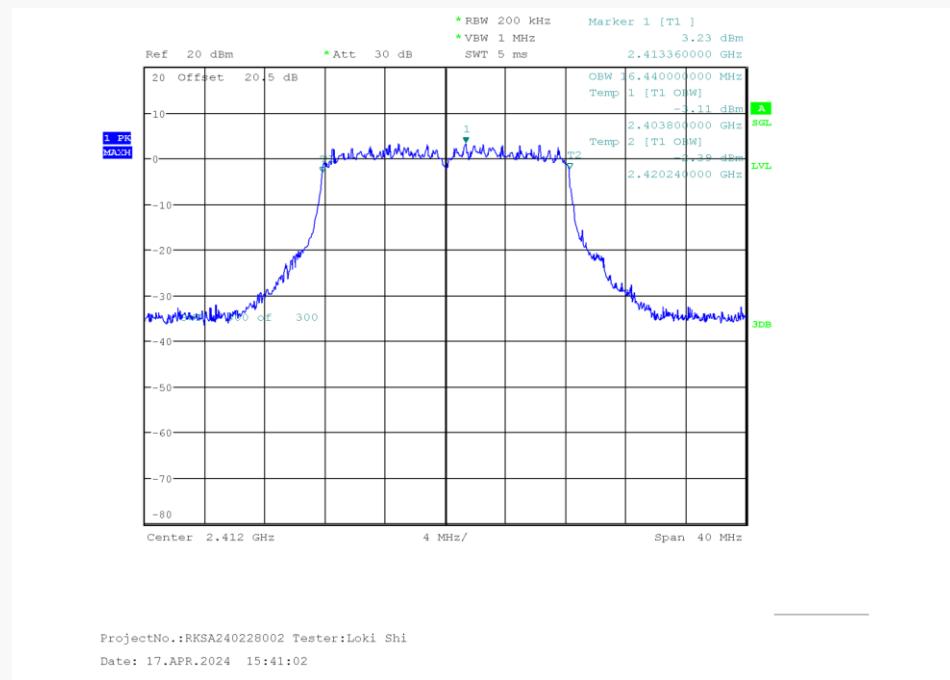
For Chain 0:

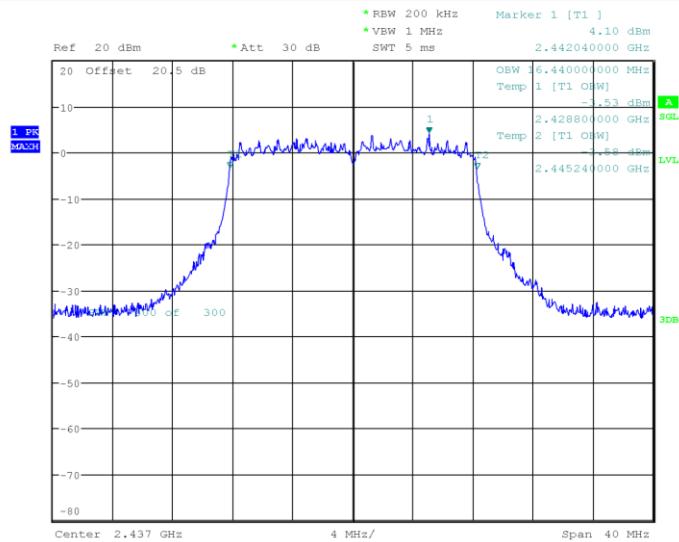
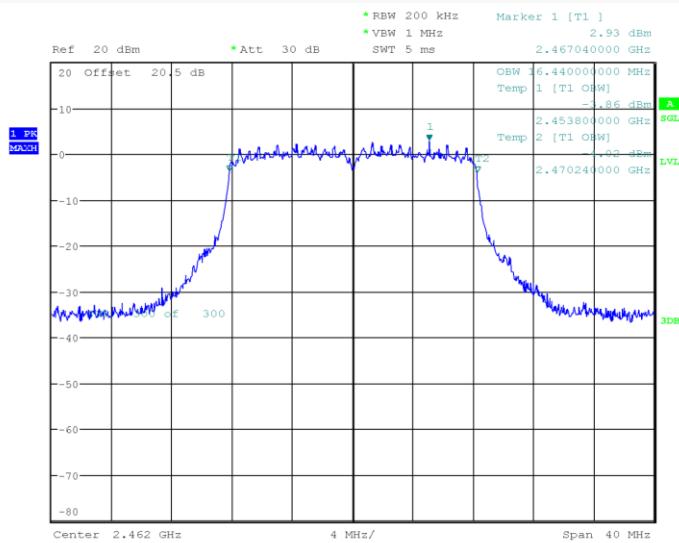
802.11b Mode Low Channel

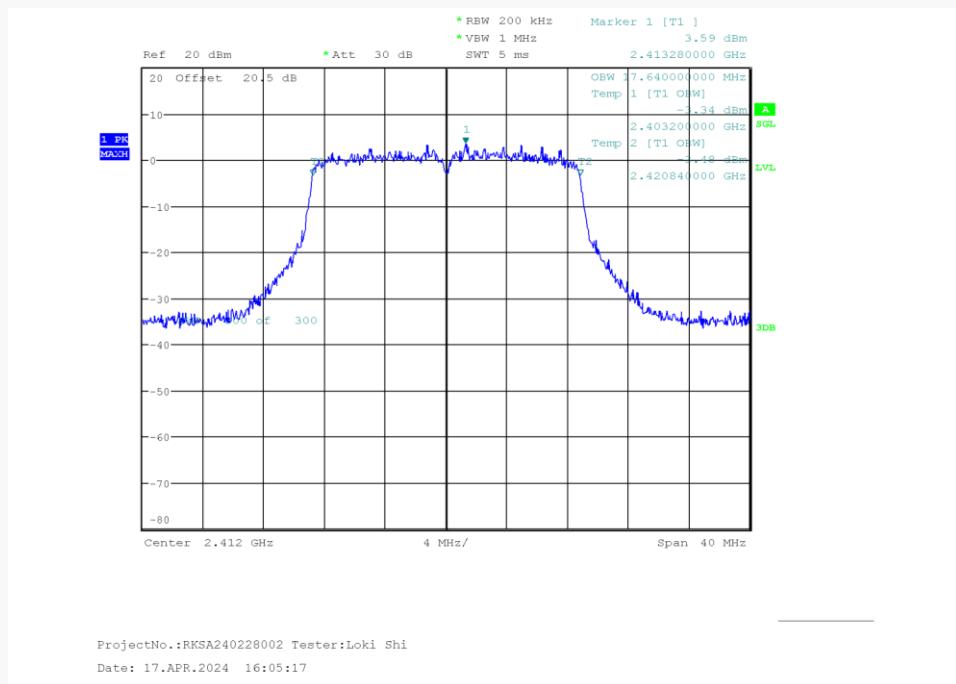


802.11b Mode Middle Channel



802.11b Mode High Channel**802.11g Mode Low Channel**

802.11g Mode Middle Channel**802.11g Mode High Channel**

802.11n-HT20 Mode Low Channel**802.11n-HT20 Mode Middle Channel**