

FCC PART 15.407

TEST REPORT

For

Heilongjiang Huida Technology Co., Ltd

Building 1, Science and Technology Innovation Headquarters, Shenzhen (Harbin) Industrial Park,
No. 288 Zhigu Street, Songbei District, Harbin, China

FCC ID: 2BBNT-HC402

Report Type: Original Report	Product Name: Avionics System
Report Number:	RSHA240322002-00A
Report Date:	2024-12-20
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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	RSHA240322002-00A	R1V1	2024-12-20	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Heilongjiang Huida Technology Co., Ltd		
Product Name:	Avionics System		
Tested Model:	HC402		
Power Supply:	DC 32V		
Operating Frequency:	B1: 5150-5250 MHz, B4: 5725-5850 MHz		
Maximum Average Output Power:	Mode:	5G Wi-Fi Band 1:	Band 4:
	802.11a:	13.05 dBm	9.66 dBm
	802.11ac20:	13.08 dBm	9.97 dBm
	802.11ac40:	13.13 dBm	9.85 dBm
	802.11ac80:	12.08 dBm	9.86 dBm
Channel Number:	B1: 7; B4: 8		
Channel Separation:	802.11a/ac/n20: 20 MHz; 802.11ac/n40: 40 MHz; 802.11ac80: 80 MHz		
Modulation Type:	OFDM		
Antenna Type:	PCB Antenna		
★Maximum Antenna Gain:	Band 1: 3.04 dBi; Band 4: 4.64 dBi		

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

All measurement and test data in this report was gathered from production sample serial number: RSHA240322002-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-03-22.)

Objective

This type approval report is prepared for *Heilongjiang Huida Technology Co., Ltd* in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions' rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Measurement Uncertainty

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

Test Facility

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The system support 802.11a/n ht20/n ht40/ac vht20/ac vht40/ ac vht80, the 802.11 n ht20/n ht40 were reduced since the identical parameters with 802.11ac vht20 and vht40

For **5150~5250 MHz** band, test channel list is as below,

802.11a/ac 20 mode Channel 36, 40, 48 were tested.

802.11ac40 mode Channel 38, 46 were tested.

802.11ac80 mode Channel 42 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For **5725~5850 MHz** band,

802.11a/ac20 mode Channel 149, 157, 165 were tested.

802.11ac40 mode Channel 151, 159 were tested.

802.11ac80 mode Channel 155 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

EUT Exercise Software

RF test tool: Xshell 4

The worst case was performed under:

5150-5250MHz:

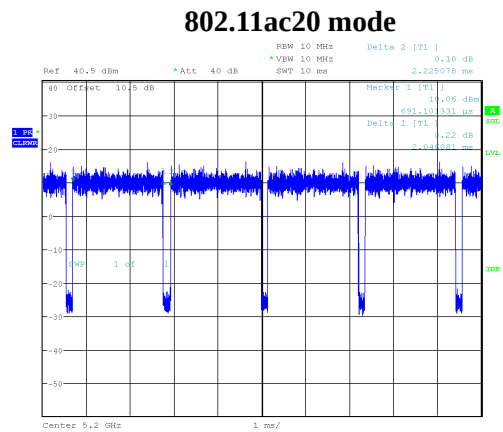
Mode	Data Rate	Channel	★Power Level
802.11a	6 Mbps	5180	45
		5200	45
		5240	45
802.11ac20	MCS0	5180	45
		5200	45
		5240	45
802.11ac40	MCS0	5190	45
		5230	45
802.11ac80	MCS0	5210	43

5725-5850MHz:

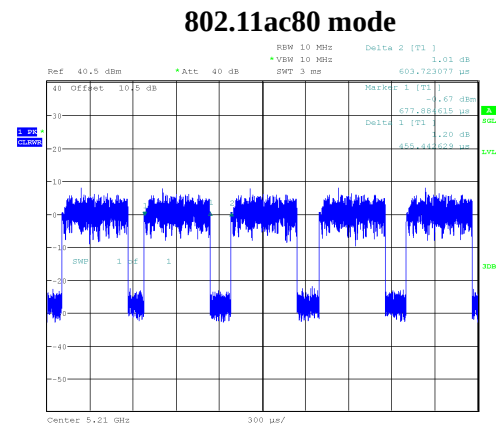
Mode	Data Rate	Channel	★Power Level
802.11a	6 Mbps	5745	45
		5785	45
		5825	45
802.11ac20	MCS0	5745	45
		5785	45
		5825	45
802.11ac40	MCS0	5755	45
		5795	45
802.11ac80	MCS0	5775	45

Note: The power level was declared by the applicant.

5150MHz-5250MHz Band:
802.11a mode

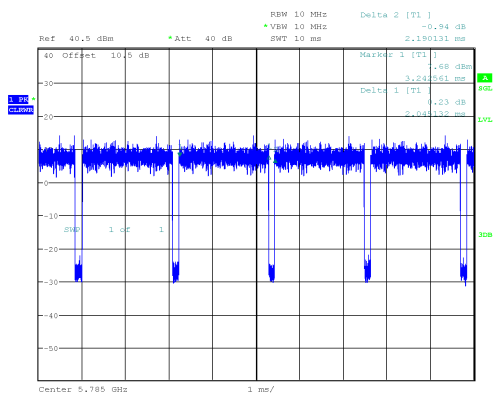


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Date: 13.JUL.2024 13:34:53

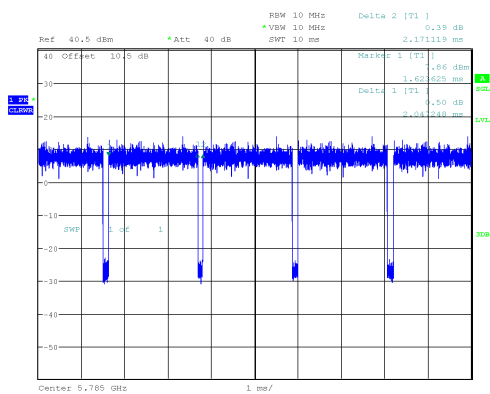


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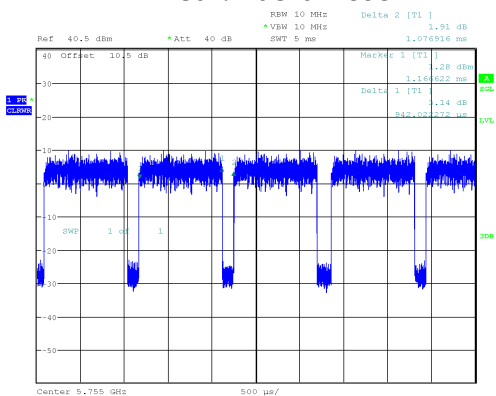
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5725MHz-5850MHz Band:**802.11a mode**

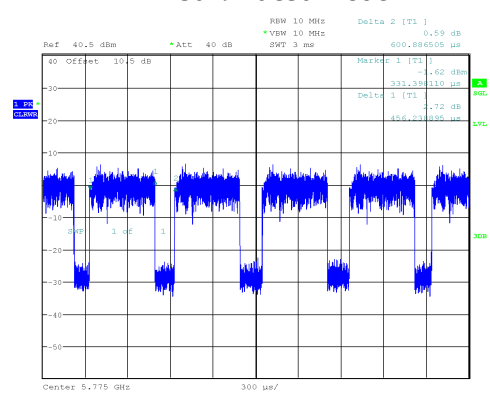
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802.11ac20 mode

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802.11ac40 mode

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Date: 13.JUL.2024 15:26:52

802.11ac80 mode

ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 16:10:20

Note: Offset (10.5dB) = Attenuator(10dB)+Cable loss(0.5dB)

5.2G

Mode	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/Ton (Hz)	VBW Setting (kHz)
a_5200MHz_Chain 0	2.046	2.190	93.42	0.30	489.0	0.500
ac20_5200MHz_Chain 0	2.046	2.225	91.96	0.36	489.0	0.500
ac40_5190MHz_Chain 0	0.948	1.070	88.60	0.53	1055.0	2.000
ac80_5210MHz_Chain 0	0.455	0.604	75.33	1.23	2198.0	3.000

5.8G

Mode	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/Ton (Hz)	VBW Setting (kHz)
a_5785MHz_Chain 0	2.045	2.190	93.38	0.30	489.0	0.500
ac20_5785MHz_Chain 0	2.047	2.171	94.29	0.26	489.0	0.500
ac40_5755MHz_Chain 0	0.942	1.077	87.47	0.58	1062.0	2.000
ac80_5775MHz_Chain 0	0.456	0.601	75.87	1.20	2193.0	3.000

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

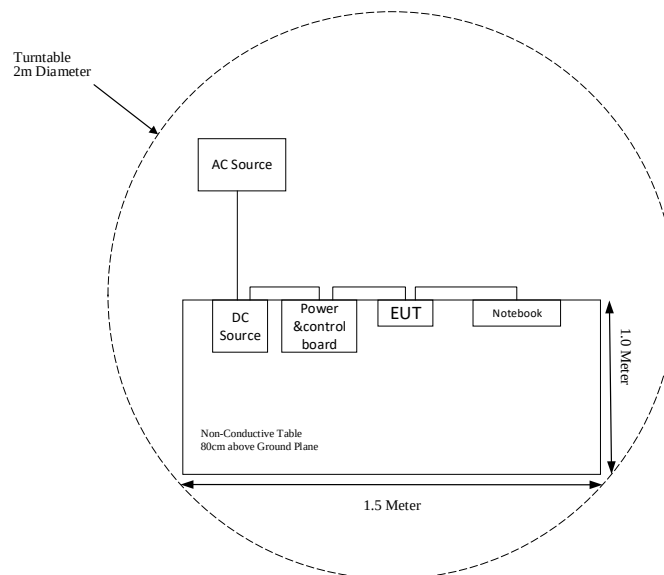
Manufacturer	Description	Model	Serial Number
DELL	Notebook	GX620	D65874152
Heilongjiang Huida Technology Co., Ltd	Power &control board	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
Power Cable	1.0	AC Source	DC Source
Power Cable	2.0	DC Source	Power &control board
Data Cable	0.5	EUT	Notebook

Block Diagram of Test Setup

For Radiated Emissions (Below 1GHz):



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TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2024-04-23	2025-04-22
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
Sonoma Instrument	Amplifier	310N	171205	2024-04-23	2025-04-22
Sonoma Instrument	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	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-8	008	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2023-05-23	2024-05-22
Narda	6dB Attenuator	773-6	10690812-2-1	2023-11-11	2024-11-10
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2023-12-02	2024-12-01
ETS-LINDGREN	Horn Antenna	3116	84159	2023-12-07	2024-12-06
A.H.Systems,inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-24
EM Electronics Corporation	Amplifier	EM18G40G	060726	2024-04-25	2025-04-24
MICRO-TRONICS	Band Reject Filter	BRC50703	G094	2024-04-23	2025-04-22
MICRO-TRONICS	Band Reject Filter	BRC50705	G085	2024-04-23	2025-04-22
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-23	2025-04-22
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	100147	2024-04-01	2025-03-31
Anritsu	Power Sensor	MA24418A	12621	2024-04-23	2025-04-22
N/A	Attenuator	10 dB	010	2024-04-23	2025-04-22
XHFDZ	RG316 Coaxial Cable	SMA-316	XHF-1175	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).

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 & §15.407(b) (9)	AC Power Line Conducted Emissions	Not Applicable (See Note)
§ 15.205 & §15.209 & §15.407(b)	Undesirable Emission & Restricted Bands	Compliant
§§15.407(a) & §15.407(e)	Emission Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant

Note: The EUT only used in drone which powered by battery not connected to the AC power lines.

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/cm²)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

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

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

Calculated Formulary

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/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/cm ²)	MPE Limit (mW/cm ²)	MPE ratio
		(dBi)	(numeric)	(dBm)	(mW)				
2.4G SRD	2411-2466	3.34	2.16	25	316.23	20	0.1357	1.0	0.1357
5G SRD	5180-5240	3.27	2.12	17.7	58.88	20	0.0249	1.0	0.0249
	5735-5805	2.90	1.95	26.5	446.68	20	0.1733	1.0	0.1733
5G Wi-Fi	5150-5250	3.04	2.01	13.5	22.39	20	0.0090	1.0	0.0090
	5725-5850	4.64	2.91	10.5	11.22	20	0.0065	1.0	0.0065

Note:

1. For the above tune up power were declared by the manufacturer.
2. SRD and Wi-Fi can transmit simultaneously, but 2.4G SRD and 5G SRD cannot transmit simultaneously.

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

$$= S_{5G\ Wi-Fi}/S_{limit- 5G\ Wi-Fi} + S_{5G\ SRD}/S_{limit- 5G\ SRD}$$

$$= 0.0090 + 0.1733$$

$$= 0.1823$$

$$< 1.0$$

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

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine 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.
- 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 15.407, 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

Antenna permanently attached to the unit. fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Type	Frequency Range	Max. Antenna Gain	Input impedance
PCB antenna	5150~5250 MHz	3.04 dBi	50Ω
	5725~5850 MHz	4.64 dBi	50Ω

Result: Compliant.

§15.205 & §15.209 & §15.407(B) – UNDESIRABLE EMISSION & RESTRICTED BANDS

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of - 27 dBm/MHz.

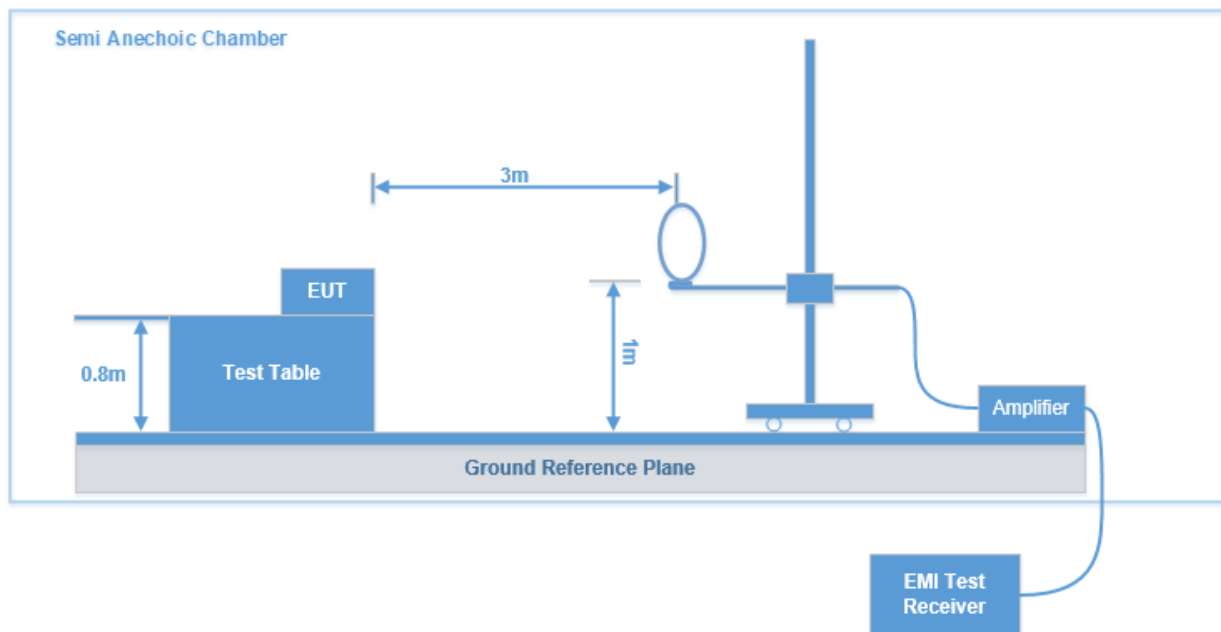
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of – 27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000MHz shall be performed using a minimum resolution bandwidth of 1MHz.

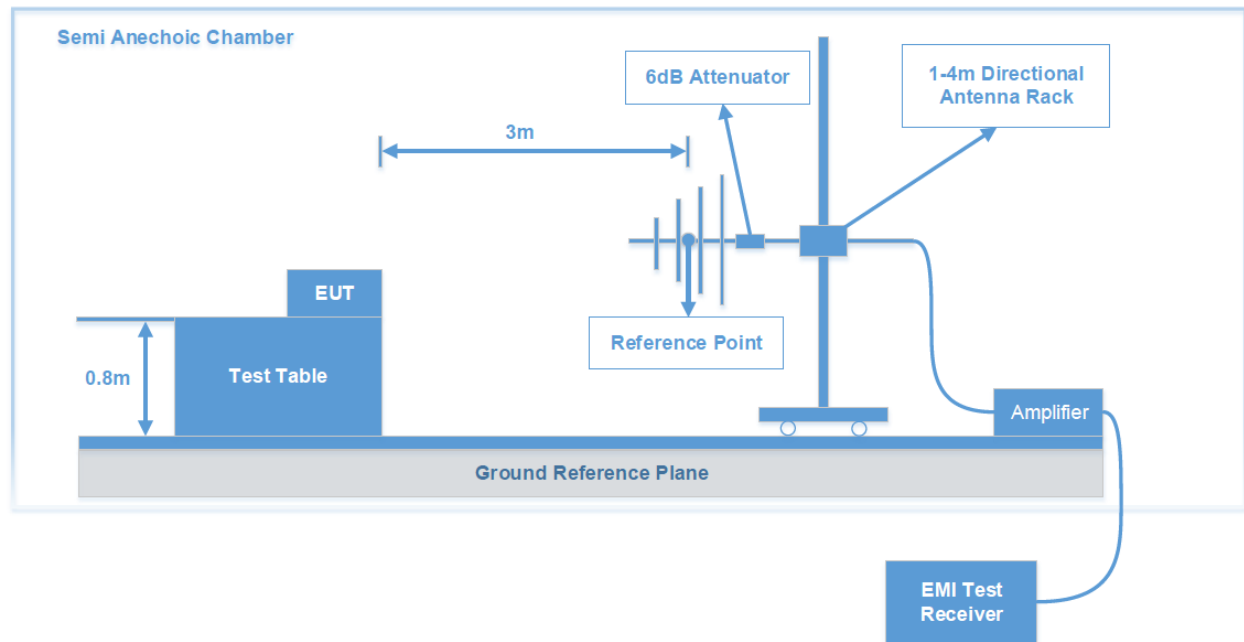
According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: $E \text{ [dB}\mu\text{V/m]} = \text{EIRP [dBm]} + 95.2$, for $d = 3$ meters.

Test System Setup

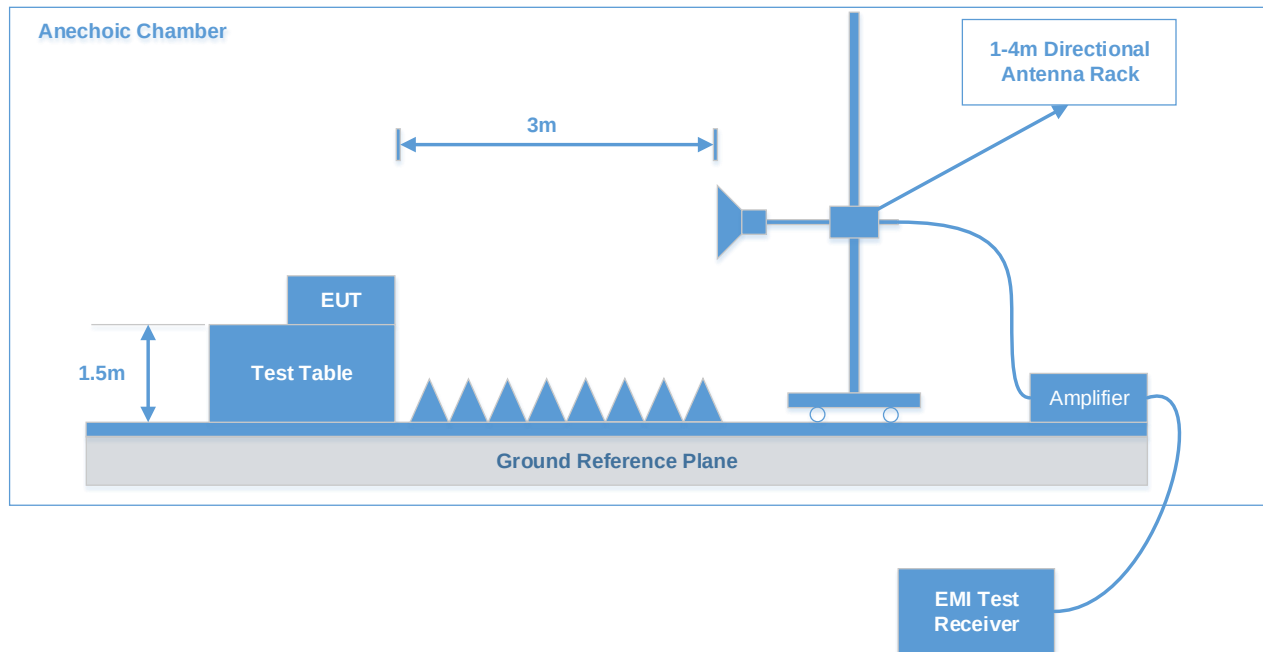
9 kHz - 30 MHz:

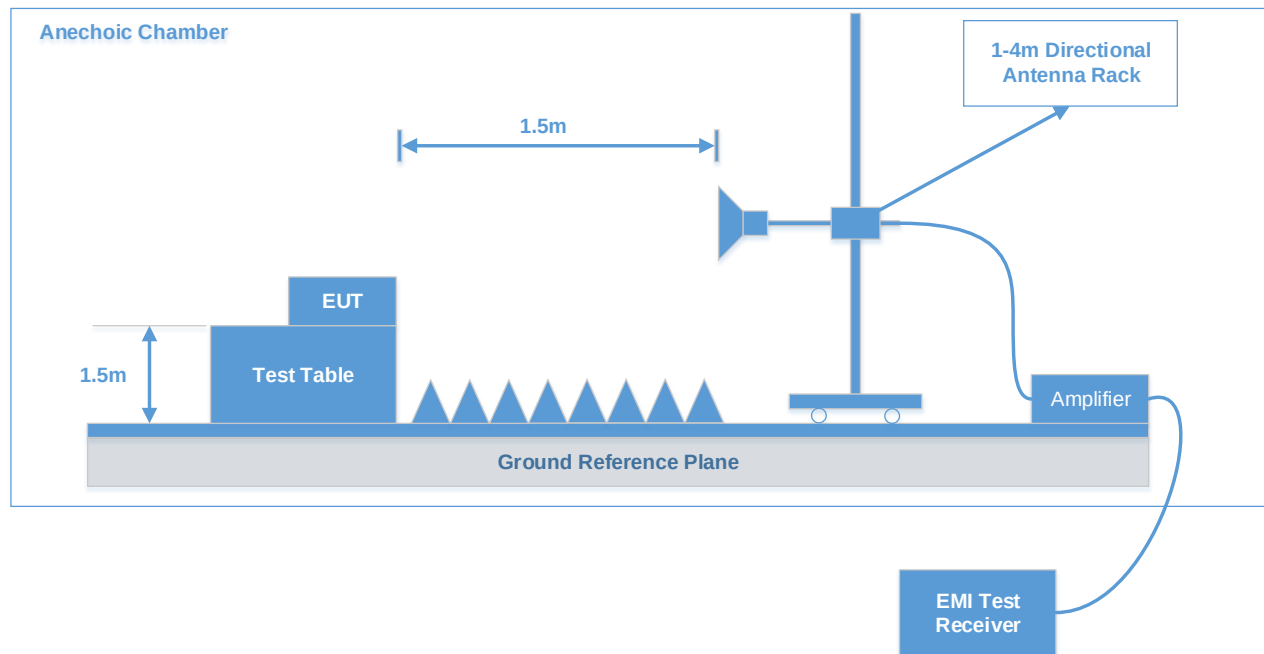


30 MHz - 1 GHz:



1 GHz - 18 GHz:



18 GHz - 40 GHz:

The radiated emission tests were performed in the 3 meters test site for below 18GHz and 1.5m for 18-40 GHz, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.407 limits. The limit at 1.5m for 18-40 GHz is 80dB μ V/m (Peak) and 60dB μ V/m (Average)

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 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

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

Frequency Range	RBW	VBW	IF B/W	Measurement
9 kHz - 150 kHz	200 Hz	1 kHz	200 Hz	QP/Average
150 kHz - 30 MHz	9 kHz	30 kHz	9 kHz	QP/ Average
30 MHz - 1000 MHz	100 kHz	300 kHz	/	Peak
	/	/	120 kHz	QP
Above 1GHz	1MHz	3 MHz	/	Peak
	1MHz	3 MHz	/	Average

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.

Test Procedure

During the radiated emission test, the adapter was connected to AC floor outlet. 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.

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:

$$\text{Corrected Amplitude (dB}\mu\text{V/m)} = \text{Meter Reading (dB}\mu\text{V)} + \text{Corrected factor (dB/m)}$$

$$\text{Corrected factor (dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Amplifier Gain (dB)}$$

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:

$$\text{Margin (dB)} = \text{Limit (dB}\mu\text{V/m)} - \text{Corrected Amplitude (dB}\mu\text{V/m)}$$

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

Test Data: See Appendix

FCC §15.407(a) & §15.407(e) – EMISSION BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz band is made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

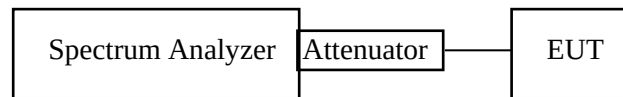
- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3. Occupied bandwidth

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.

- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Note: Offset (10.5dB) = Attenuator(10dB) + Cable loss(0.5dB)

Test Data: See Appendix

FCC §15.407(a) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

According to §15.407(a)(1)

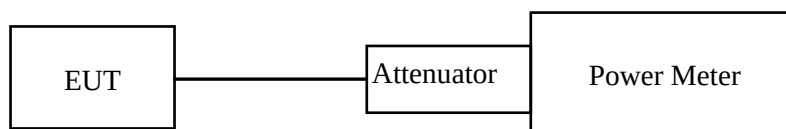
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

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



Test Data: See Appendix

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

According to §15.407(a) (1)

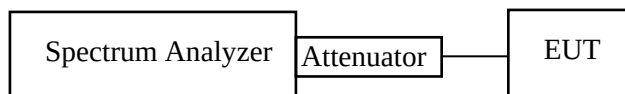
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to C63.10:2013 11.10 method SA-2 used



Note: Offset (10.5dB) = Attenuator(10dB) + Cable loss(0.5dB)

Test Data: See Appendix

EUT PHOTOGRAPHS

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

TEST SETUP PHOTOGRAPHS

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

APPENDIX - TEST DATA

Environmental Conditions & Test Information

Test Item:	UNWANTED EMISSIONS & RESTRICTED FREQUENCY BANDS				Duty Cycle
	9 kHz – 30MHz	30MHz~1GHz	1 GHz – 18 GHz	18 GHz - 40 GHz	
Test Date:	2024-04-22	2024-07-17	2024-07-20	2024-07-13	2024-07-13
Temperature:	25 °C	23.4 °C	22.8 °C	25.5 °C	24.9 °C
Relative Humidity:	55 %	52 %	53 %	52 %	60 %
ATM Pressure:	101.5 kPa	100.9 kPa	100.5kPa	100.5kPa	100.1kPa
Test Result:	Pass	Pass	Pass	Pass	Pass
Test Engineer:	Leah Li	Leah Li	Peter Wang & Klein Zhu	Hugh Wu	Neil Zhou

Test Item:	EMISSION BANDWIDTH	CONDUCTED TRANSMITTER OUTPUT POWER	POWER SPECTRAL DENSITY
Test Date:	2024-07-13	2024-07-13	2024-07-13
Temperature:	24.9 °C	24.9 °C	24.9 °C
Relative Humidity:	60 %	60 %	60 %
ATM Pressure:	100.1kPa	100.1kPa	100.1kPa
Test Result:	Pass	Pass	Pass
Test Engineer:	Neil Zhou	Neil Zhou	Neil Zhou

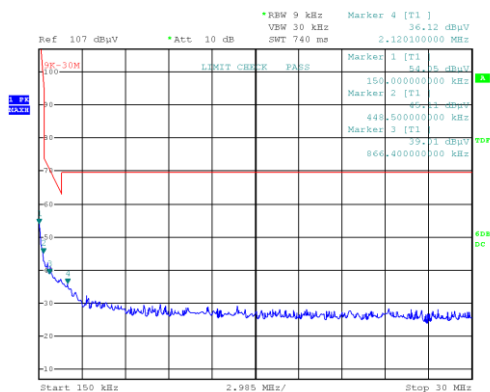
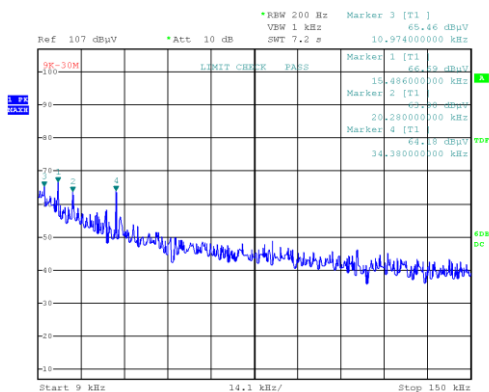
Transmitter Unwanted Emissions & Restricted frequency bands

EUT operation mode: Transmitting

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

9 kHz - 30 MHz: (Transmitting in maximum output power mode 802.11ac40 5230MHz)

(Parallel worst)



Project No.RSHA240322002
Date: 22.APR.2024 17:20:59

Tester:Leah Li

Project No.RSHA240322002
Date: 22.APR.2024 17:23:33

Tester:Leah Li

9 kHz - 150 kHz

Frequency (MHz)	Corrected Amplitude (dBμV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBμV/m) @3m	Margin (dB)
0.010974	65.46	PK	55.74	126.80	61.337
0.015486	66.69	PK	52.87	123.81	57.115
0.02028	63.90	PK	49.92	121.46	57.563
0.03438	64.18	PK	46.06	116.88	52.698

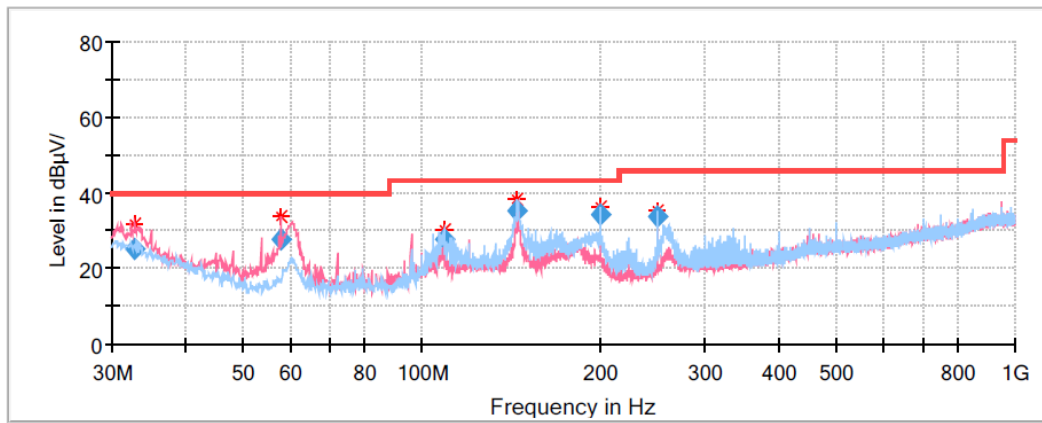
150 kHz - 30 MHz

Frequency (MHz)	Corrected Amplitude (dBμV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBμV/m) @3m	Margin (dB)
0.15000	54.05	PK	50.90	104.08	50.03
0.44850	45.11	PK	24.52	94.57	49.46
0.86640	39.01	PK	18.88	68.85	29.84
2.12010	36.12	PK	13.90	69.54	33.42

30MHz-1GHz(5150-5250MHz Band): (Transmitting in maximum output power mode 802.11ac40)
Low Channel: 5190 MHz

Common Information

Project No: RSHA240322002
Test Mode: 5G WIFI
Standard: FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.407
Test Engineer: Leah Li



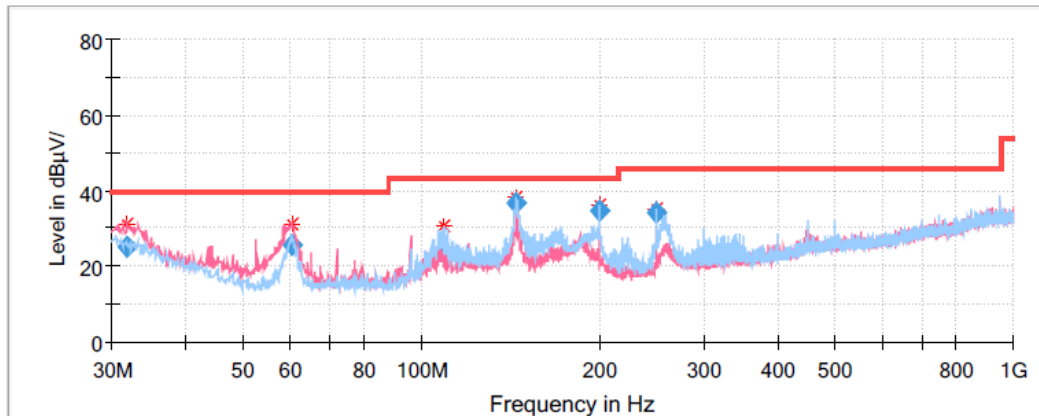
Final Result

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
32.780000	25.26	40.00	14.74	V	-5.8
57.880000	27.86	40.00	12.14	V	-17.4
108.810000	27.76	43.50	15.74	H	-13.2
144.700000	35.03	43.50	8.47	H	-11.8
199.990000	34.23	43.50	9.27	H	-12.5
249.940000	33.72	46.00	12.28	H	-12.7

High Channel: 5230 MHz

Common Information

Project No: RSHA240322002
Test Mode: 5G WIFI
Standard: FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.407
Test Engineer: Leah Li



Final Result

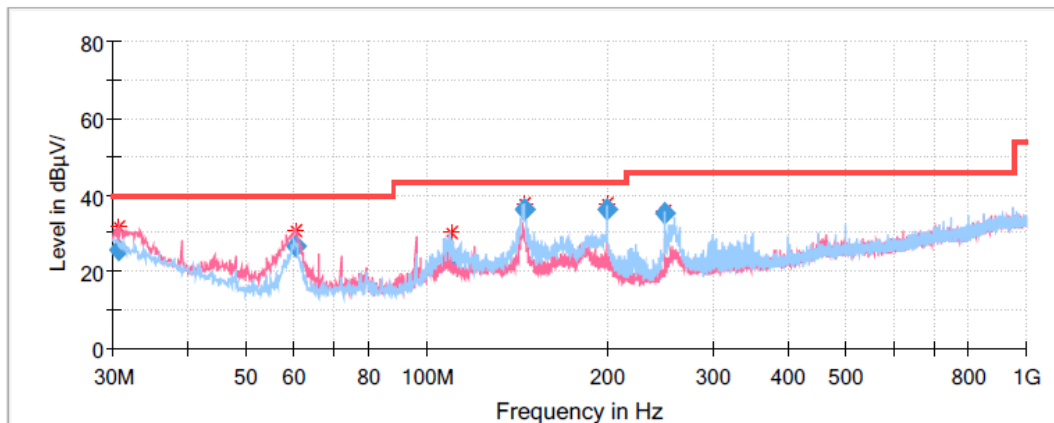
Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
31.940000	25.35	40.00	14.65	V	-5.4
60.310000	25.63	40.00	14.37	V	-17.5
109.540000	23.75	43.50	19.75	H	-13.0
144.580000	36.69	43.50	6.81	H	-11.8
199.990000	34.69	43.50	8.81	H	-12.5
249.940000	34.22	46.00	11.78	H	-12.7

30MHz-1GHz(5725-5850MHz Band): (Transmitting in maximum output power mode 802.11ac20)

Low Channel: 5745 MHz

Common Information

Project No:	RSHA240322002
Test Mode:	5G WIFI
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.407
Test Engineer:	Leah Li

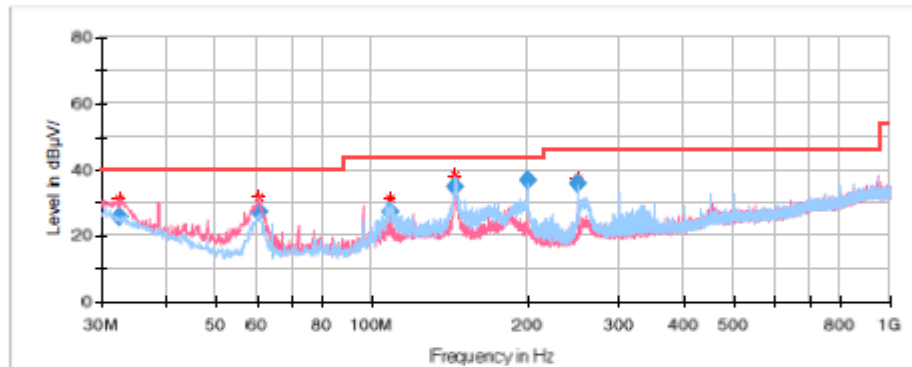


Final Result

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
30.600000	25.63	40.00	14.37	V	-5.4
60.398600	26.61	40.00	13.39	V	-17.5
109.743400	23.54	43.50	19.96	H	-13.0
145.430000	36.12	43.50	7.38	H	-11.8
199.994600	36.41	43.50	7.09	H	-12.5
250.017400	35.13	46.00	10.87	H	-12.7

Middle Channel: 5785 MHz**Common Information**

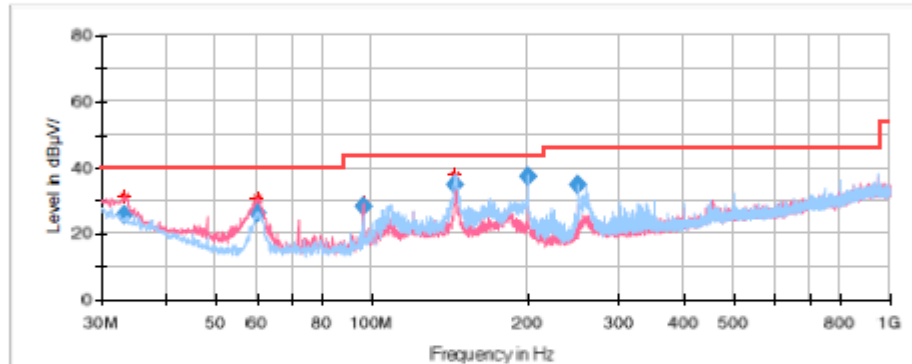
Project No:	RSHA240322002
Test Mode:	5G WIFI
Standard:	FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer:	Leah Li

**Final Result**

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
32.540000	25.66	40.00	14.34	V	-6.4
60.310000	27.08	40.00	12.92	V	-17.5
108.756400	27.10	43.50	16.40	H	-13.2
144.690350	34.84	43.50	8.66	H	-11.8
199.994000	36.53	43.50	6.97	H	-12.5
249.990100	35.95	46.00	10.05	H	-12.7

High Channel: 5825 MHz**Common Information**

Project No: RSHA240322002
Test Mode: 5G WIFI
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Leah Li

**Final Result**

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
33.270000	25.46	40.00	14.54	V	-6.4
59.940000	26.22	40.00	13.78	V	-17.4
95.960000	28.16	43.50	15.34	V	-15.7
145.060000	34.90	43.50	8.60	H	-11.8
199.990000	37.24	43.50	6.26	H	-12.5
249.940000	34.73	46.00	11.27	H	-12.7

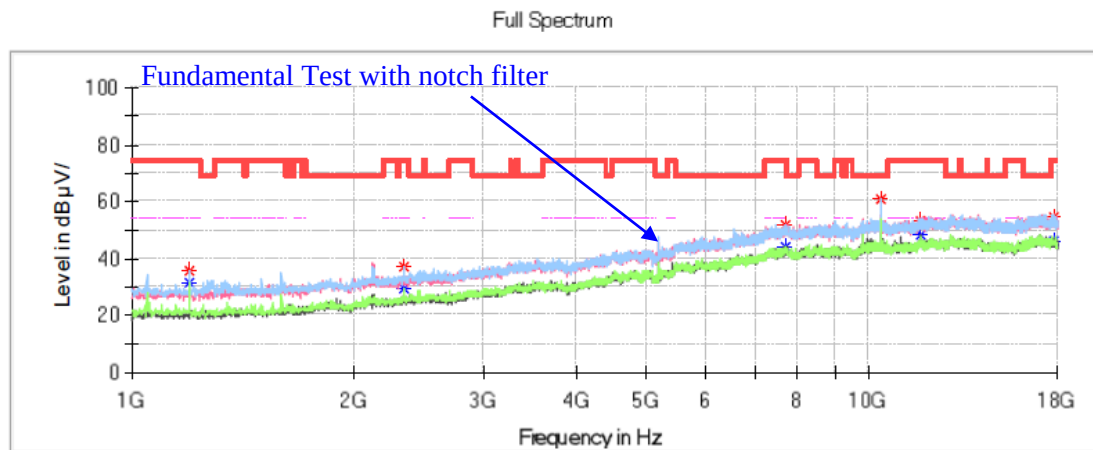
1GHz - 18GHz(5150-5250MHz Band):

802.11a Mode:

Low Channel: 5180MHz

Common Information

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11a mode 5180 channel
Standard:	FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer:	Klein Zhu



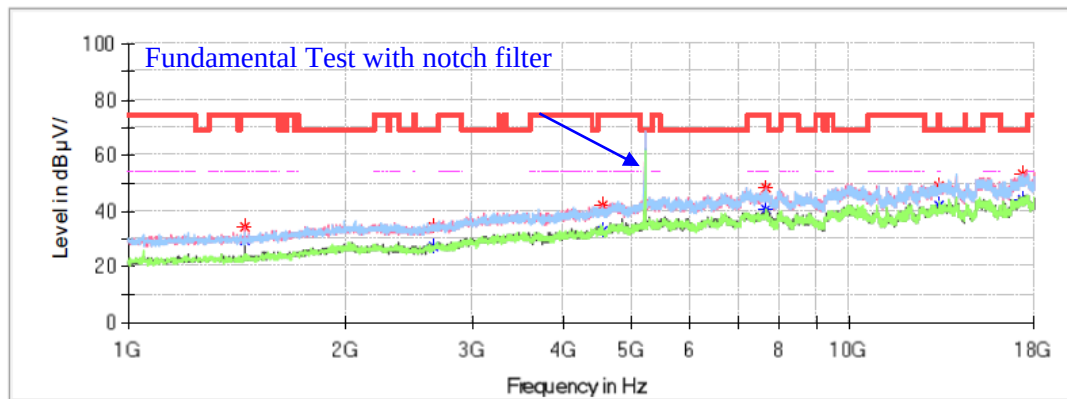
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1198.900000	---	31.67	54.00	22.33	H	-15.2
1198.900000	35.43	---	74.00	38.57	H	-15.2
2339.600000	---	29.28	54.00	24.72	H	-10.7
2339.600000	37.15	---	74.00	36.85	H	-10.7
7692.900000	---	44.05	54.00	9.95	H	3.9
7692.900000	52.02	---	74.00	21.98	H	3.9
10355.100000	60.91	---	68.20	7.29	H	7.1
11759.300000	53.47	---	74.00	20.53	V	8.9
11759.300000	---	48.01	54.00	5.99	V	8.9
17762.000000	---	45.89	54.00	8.11	V	11.8
17762.000000	54.86	---	74.00	19.14	V	11.8

Middle Channel: 5200MHz**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11a mode 5200 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum

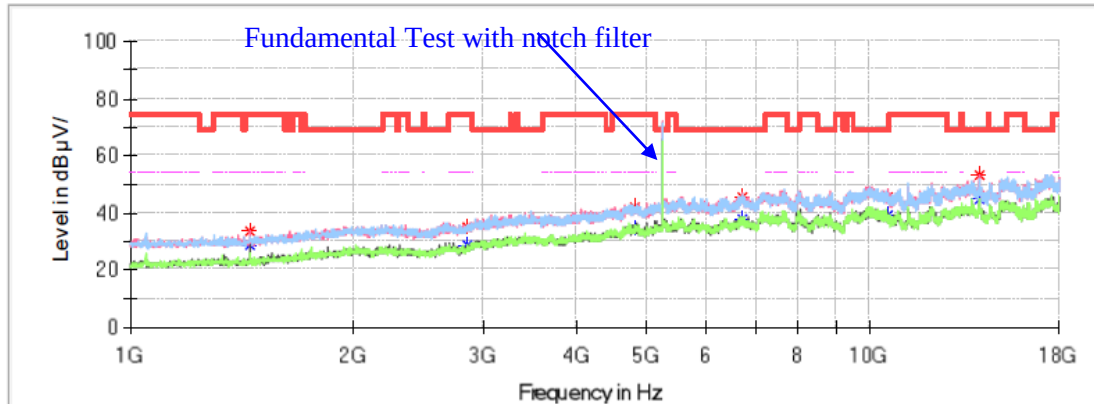
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1448.800000	---	29.70	54.00	24.30	V	-14.1
1448.800000	34.33	---	74.00	39.67	V	-14.1
2647.300000	34.60	---	68.20	33.60	V	-9.2
4542.800000	---	33.01	54.00	20.99	V	-3.6
4542.800000	41.65	---	74.00	32.35	V	-3.6
7640.200000	---	40.26	54.00	13.74	H	4.1
7640.200000	48.56	---	74.00	25.44	H	4.1
13316.500000	---	41.62	54.00	12.38	V	10.3
13316.500000	48.82	---	74.00	25.18	V	10.3
17321.700000	53.37	---	68.20	14.83	H	13.2

High Channel: 5240MHz**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11a mode 5240 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum

**Critical_Freqs**

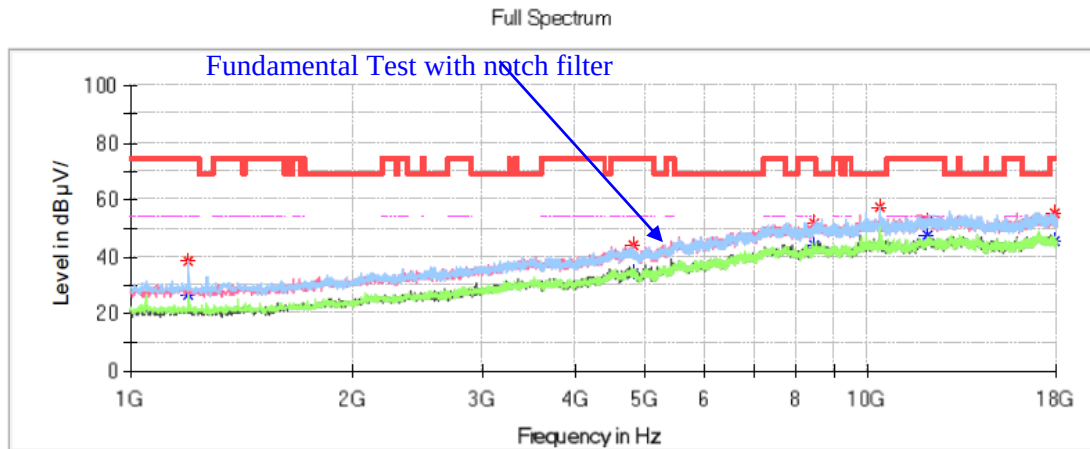
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1448.800000	33.29	---	74.00	40.71	H	-14.1
1448.800000	---	28.61	54.00	25.39	H	-14.1
2847.900000	---	28.77	54.00	25.23	V	-8.5
2847.900000	35.01	---	74.00	38.99	V	-8.5
4789.300000	---	34.55	54.00	19.45	V	-2.3
4789.300000	41.80	---	74.00	32.20	V	-2.3
6703.500000	45.17	---	68.20	23.03	V	2.0
10554.000000	45.67	---	68.20	22.53	V	7.2
14001.600000	53.35	---	68.20	14.85	H	10.5

802.11ac20 Mode:

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
Low Channel: 5180MHz						
1549.100000	31.40	---	74.00	42.60	H	-14.4
1549.100000	---	23.38	54.00	30.62	H	-14.4
4762.100000	43.32	---	74.00	30.68	V	-3.3
4762.100000	---	34.98	54.00	19.02	V	-3.3
7334.200000	51.67	---	74.00	22.33	V	3.5
7334.200000	---	44.16	54.00	9.84	V	3.5
10378.900000	59.25	---	68.20	8.95	H	7.1
12087.400000	55.91	---	74.00	18.09	H	9.1
12087.400000	---	47.62	54.00	6.38	H	9.1
17884.400000	---	46.51	54.00	7.49	H	11.9
17884.400000	55.19	---	74.00	18.81	H	11.9
Middle Channel: 5200MHz						
1448.800000	---	30.24	54.00	23.76	V	-14.1
1448.800000	35.46	---	74.00	38.54	V	-14.1
2820.700000	---	30.87	54.00	23.13	V	-8.6
2820.700000	34.76	---	74.00	39.24	V	-8.6
4724.700000	---	35.19	54.00	18.81	H	-2.6
4724.700000	40.54	---	74.00	33.46	H	-2.6
7638.500000	---	39.56	54.00	14.44	V	4.1
7638.500000	48.76	---	74.00	25.24	V	4.1
13066.600000	50.77	---	68.20	17.43	H	9.3
17614.100000	51.59	---	68.20	16.61	V	13.1
High Channel: 5240MHz						
1499.800000	31.66	---	74.00	42.34	V	-14.7
1499.800000	---	22.63	54.00	31.37	V	-14.7
4568.300000	43.64	---	74.00	30.36	H	-4.0
4568.300000	---	33.53	54.00	20.47	H	-4.0
8406.900000	51.75	---	74.00	22.25	H	5.1
8406.900000	---	42.84	54.00	11.16	H	5.1
11745.700000	52.41	---	74.00	21.59	V	8.9
11745.700000	---	47.62	54.00	6.38	V	8.9
17068.400000	56.40	---	68.20	11.80	V	12.2
17882.700000	---	47.03	54.00	6.97	V	11.9
17882.700000	55.80	---	74.00	18.20	V	11.9

802.11ac40 Mode:**Low Channel: 5190MHz****Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5190 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

**Critical_Freqs**

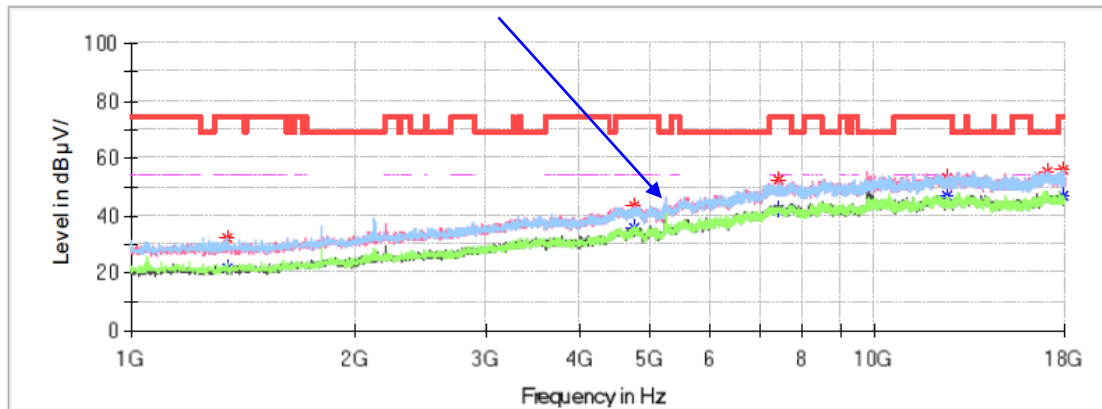
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1198.900000	38.39	---	74.00	35.61	H	-15.2
1198.900000	---	26.23	54.00	27.77	H	-15.2
4813.100000	43.84	---	74.00	30.16	V	-3.1
4813.100000	---	34.12	54.00	19.88	V	-3.1
8432.400000	51.98	---	74.00	22.02	V	5.2
8432.400000	---	43.90	54.00	10.10	V	5.2
10363.600000	57.68	---	68.20	10.52	H	7.1
11997.300000	52.63	---	74.00	21.37	V	9.0
11997.300000	---	47.34	54.00	6.66	V	9.0
17889.500000	---	45.76	54.00	8.24	V	11.9
17889.500000	54.99	---	74.00	19.01	V	11.9

High Channel: 5230 MHz

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5230 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Fundamental Test with notch filter Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dB μV/m)	Average (dB μV/m)	Limit (dB μV/m)	Margin (dB)	Pol	Corr. (dB/m)
1343.400000	---	21.77	54.00	32.23	H	-15.0
1343.400000	32.35	---	74.00	41.65	H	-15.0
4741.700000	---	35.35	54.00	18.65	H	-3.4
4741.700000	43.27	---	74.00	30.73	H	-3.4
7424.300000	---	42.18	54.00	11.82	V	3.7
7424.300000	52.31	---	74.00	21.69	V	3.7
12497.100000	53.17	---	74.00	20.83	H	9.7
12497.100000	---	47.19	54.00	6.81	H	9.7
17032.700000	55.49	---	68.20	12.71	V	12.2
17872.500000	56.21	---	74.00	17.79	H	11.9
17872.500000	---	47.13	54.00	6.87	H	11.9

802.11ac80 Mode:

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
Channel: 5210MHz						
1448.800000	---	28.89	54.00	25.11	V	-14.1
1448.800000	33.62	---	74.00	40.38	V	-14.1
2764.600000	---	28.13	54.00	25.87	H	-8.8
2764.600000	36.83	---	74.00	37.17	H	-8.8
4675.400000	---	34.39	54.00	19.61	V	-2.9
4675.400000	43.64	---	74.00	30.36	V	-2.9
7713.300000	---	36.93	54.00	17.07	H	4.0
7713.300000	47.39	---	74.00	26.61	H	4.0
10861.700000	---	41.23	54.00	12.77	V	6.6
10861.700000	47.79	---	74.00	26.21	V	6.6
14003.300000	53.31	---	68.20	14.89	V	10.5

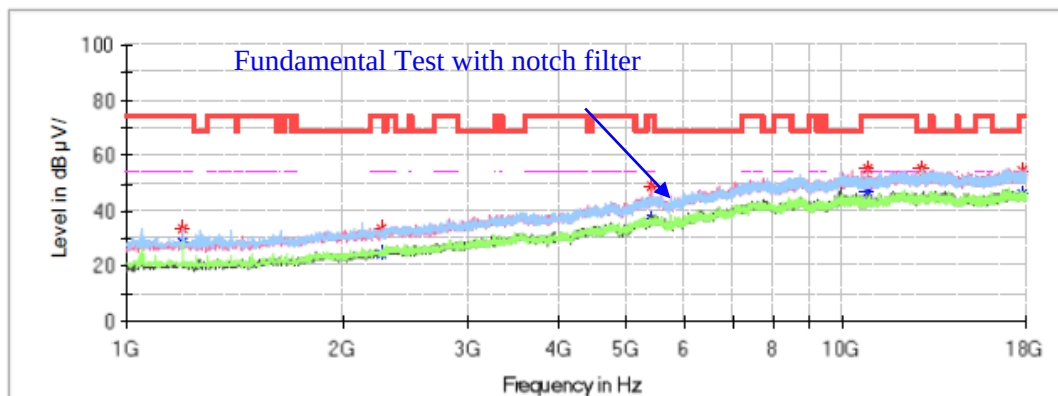
1GHz-18GHz(5725-5850MHz Band):
802.11a Mode:

Low Channel: 5745MHz

Common Information

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11a mode 5745 channel
Standard:	FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer:	Klein Zhu

Full Spectrum



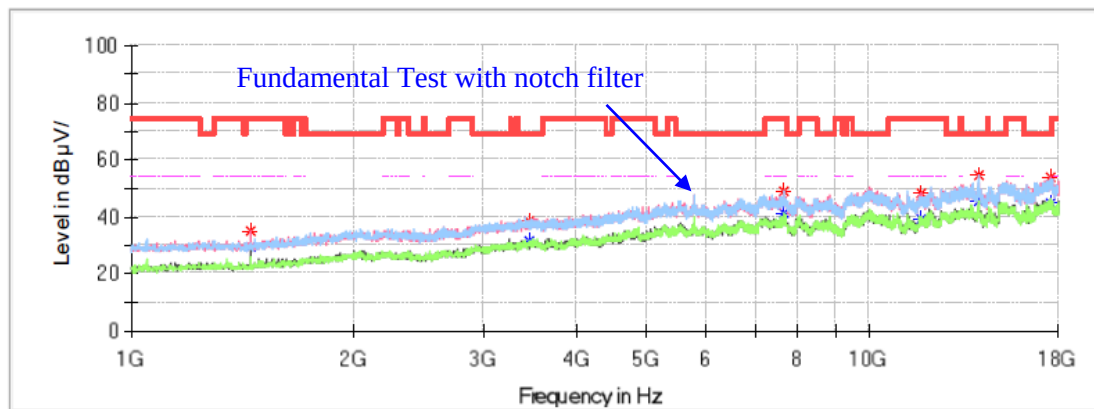
Critical Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1197.200000	---	28.86	54.00	25.14	H	-15.2
1197.200000	33.30	---	74.00	40.70	H	-15.2
2261.400000	---	24.69	54.00	29.31	V	-10.9
2261.400000	33.53	---	74.00	40.47	V	-10.9
5404.700000	---	37.20	54.00	16.80	V	-0.7
5404.700000	48.95	---	74.00	25.05	V	-0.7
10807.300000	---	47.10	54.00	6.90	V	7.2
10807.300000	54.93	---	74.00	19.07	V	7.2
12883.000000	55.30	---	68.20	12.90	H	9.7
17809.600000	---	45.96	54.00	8.04	V	11.8
17809.600000	54.55	---	74.00	19.45	V	11.8

Middle Channel: 5785MHz**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11a mode 5785 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

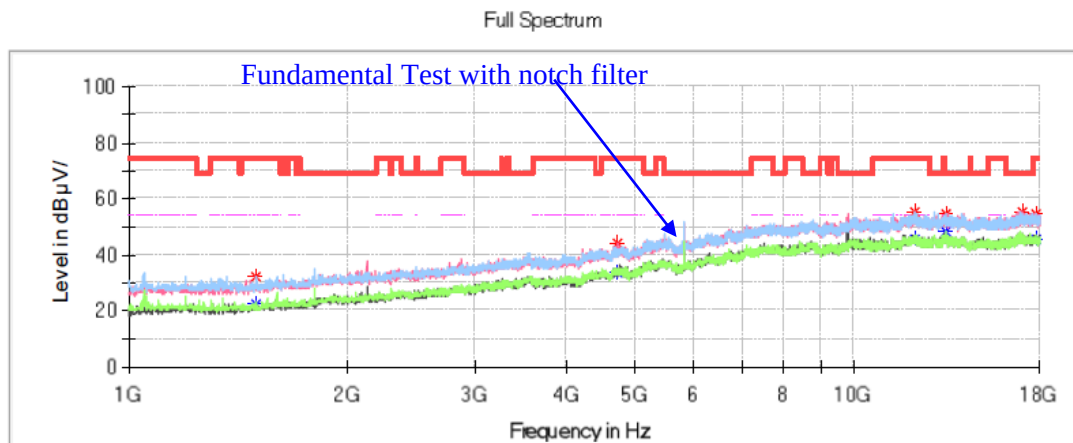
Full Spectrum

**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)
1448.800000	---	29.58	54.00	24.42	V	-14.1
1448.800000	34.76	---	74.00	39.24	V	-14.1
3461.600000	38.28	---	68.20	29.92	V	-6.3
7648.700000	---	41.20	54.00	12.80	H	4.1
7648.700000	48.71	---	74.00	25.29	H	4.1
11745.700000	---	38.96	54.00	15.04	V	7.1
11745.700000	47.95	---	74.00	26.05	V	7.1
14001.600000	54.36	---	68.20	13.84	H	10.5
17559.700000	53.56	---	68.20	14.64	V	13.4

High Channel: 5825MHz**Common Information**

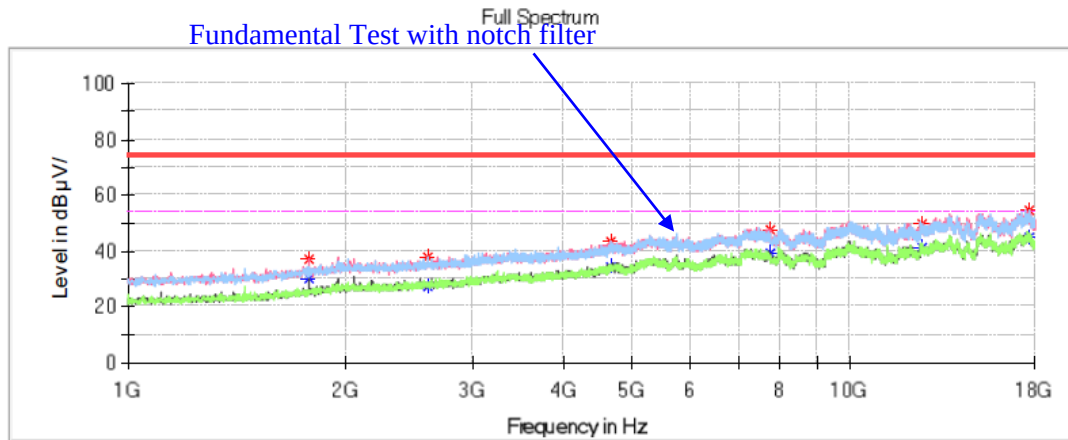
Project No.: RSHA240322002
 Test Mode: Transmitting in 802.11a mode 5825 channel
 Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
 Test Engineer: Klein Zhu

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1499.800000	31.92	---	74.00	42.08	H	-14.7
1499.800000	---	22.69	54.00	31.31	H	-14.7
4706.000000	43.87	---	74.00	30.13	V	-3.5
4706.000000	---	33.24	54.00	20.76	V	-3.5
12092.500000	55.32	---	74.00	18.68	H	9.1
12092.500000	---	45.25	54.00	8.75	H	9.1
13350.500000	54.62	---	74.00	19.38	H	9.6
13350.500000	---	48.48	54.00	5.52	H	9.6
16974.900000	55.58	---	68.20	12.62	V	12.2
17765.400000	54.60	---	74.00	19.40	H	11.8
17765.400000	---	45.23	54.00	8.77	H	11.8

802.11ac20 Mode:**Low Channel: 5745MHz****Common Information**

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11ac20 mode 5745 channel
Standard:	FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer:	Klein Zhu

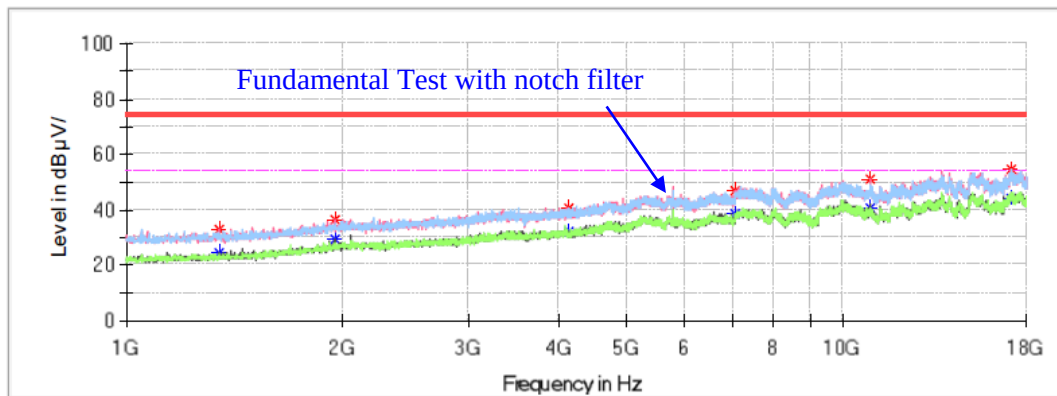
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1782.000000	---	30.24	54.00	23.76	V	-12.0
1782.000000	37.08	---	74.00	36.92	V	-12.0
2594.600000	---	27.51	54.00	26.49	V	-9.4
2594.600000	37.88	---	74.00	36.12	V	-9.4
4663.500000	---	34.26	54.00	19.74	H	-3.0
4663.500000	43.67	---	74.00	30.33	H	-3.0
7720.100000	---	39.04	54.00	14.96	V	4.0
7720.100000	47.82	---	74.00	26.18	V	4.0
12566.800000	49.48	---	74.00	24.52	H	8.5
12566.800000	---	41.25	54.00	12.75	H	8.5
17665.100000	---	45.02	54.00	8.98	V	12.9
17665.100000	54.23	---	74.00	19.77	V	12.9

Middle Channel: 5785MHz**Common Information**

Project No.: RSHA240322002
 Test Mode: Transmitting in 802.11ac20 mode 5785 channel
 Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
 Test Engineer: Klein Zhu

Full Spectrum

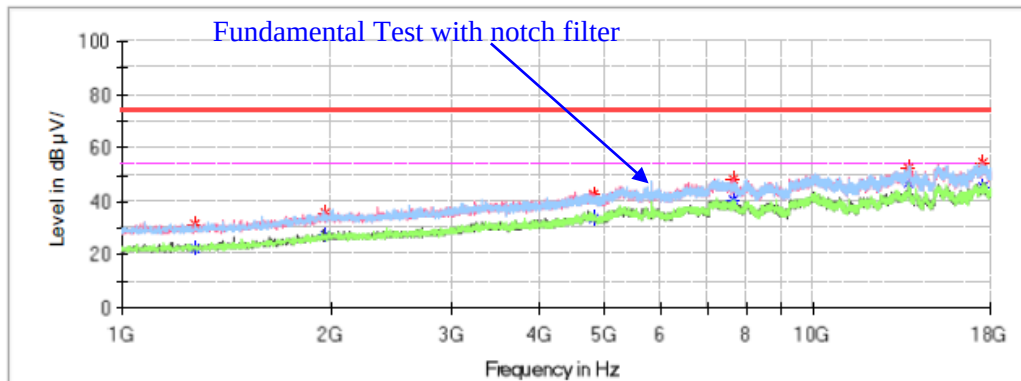
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1348.500000	---	24.43	54.00	29.57	V	-14.4
1348.500000	32.71	---	74.00	41.29	V	-14.4
1948.600000	---	29.60	54.00	24.40	V	-10.9
1948.600000	36.57	---	74.00	37.43	V	-10.9
4138.200000	40.70	---	74.00	33.30	H	-4.7
4138.200000	---	31.98	54.00	22.02	H	-4.7
7063.900000	47.16	---	74.00	26.84	V	3.8
7063.900000	---	38.54	54.00	15.46	V	3.8
10870.200000	---	40.66	54.00	13.34	H	6.6
10870.200000	50.86	---	74.00	23.14	H	6.6
17175.500000	---	44.05	54.00	9.95	H	12.8
17175.500000	54.71	---	74.00	19.29	H	12.8

High Channel: 5825MHz**Common Information**

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11ac20 mode 5825 channel
Standard:	FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer:	Klein Zhu

Full Spectrum

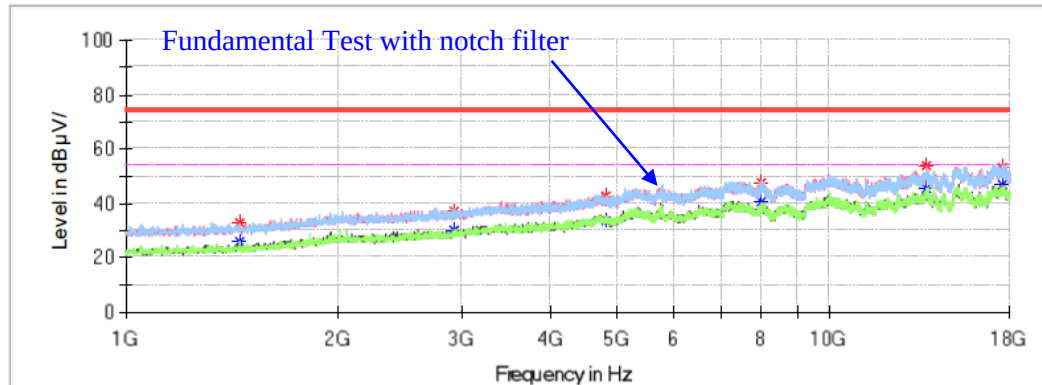
**Critical Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1273.700000	31.40	---	74.00	42.60	H	-14.6
1273.700000	---	22.56	54.00	31.44	H	-14.6
1965.600000	---	27.13	54.00	26.87	V	-10.8
1965.600000	35.96	---	74.00	38.04	V	-10.8
4801.200000	---	33.57	54.00	20.43	V	-2.2
4801.200000	42.40	---	74.00	31.60	V	-2.2
7640.200000	---	40.41	54.00	13.59	H	4.1
7640.200000	48.51	---	74.00	25.49	H	4.1
13676.900000	---	46.69	54.00	7.31	H	10.8
13676.900000	52.73	---	74.00	21.27	H	10.8
17573.300000	---	45.17	54.00	8.83	V	13.3
17573.300000	54.34	---	74.00	19.66	V	13.3

802.11ac40 Mode:**Low Channel: 5755MHz****Common Information**

Project No.: RSHA240322002
 Test Mode: Transmitting in 802.11ac40 mode 5755 channel
 Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
 Test Engineer: Klein Zhu

Full Spectrum

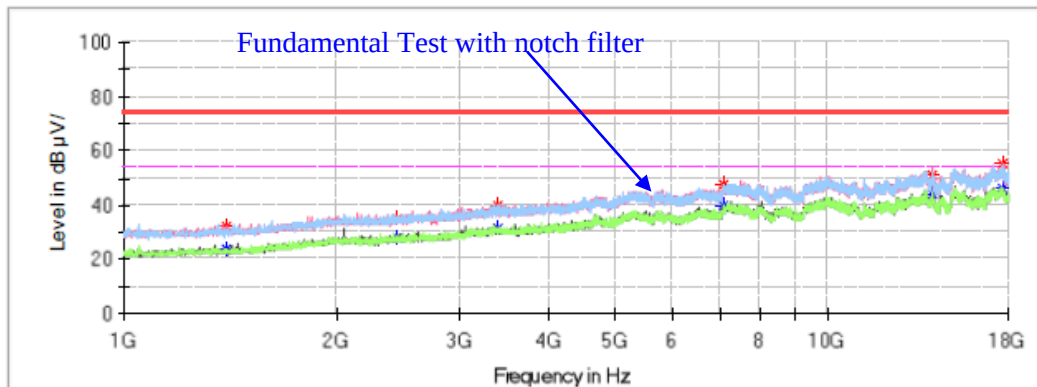
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1448.800000	32.91	---	74.00	41.09	V	-14.1
1448.800000	---	25.64	54.00	28.36	V	-14.1
2929.500000	---	29.87	54.00	24.13	V	-8.3
2929.500000	36.93	---	74.00	37.07	V	-8.3
4791.000000	---	33.55	54.00	20.45	H	-2.3
4791.000000	42.63	---	74.00	31.37	H	-2.3
7998.900000	---	40.37	54.00	13.63	V	3.8
7998.900000	47.34	---	74.00	26.66	V	3.8
13678.600000	---	45.14	54.00	8.86	H	10.8
13678.600000	53.77	---	74.00	20.23	H	10.8
17609.000000	53.23	---	74.00	20.77	V	13.2
17609.000000	---	46.86	54.00	7.14	V	13.2

High Channel: 5795MHz**Common Information**

Project No.: RSHA240322002
 Test Mode: Transmitting in 802.11ac40 mode 5795 channel
 Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
 Test Engineer: Klein Zhu

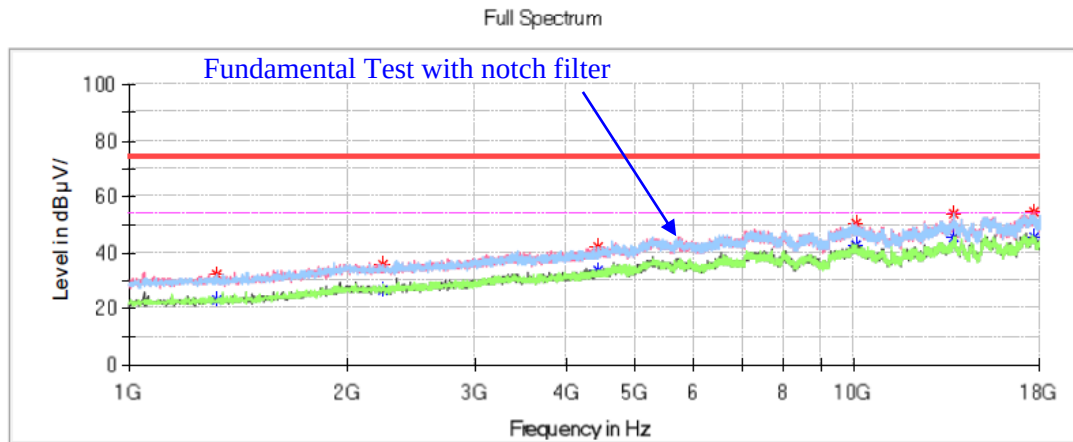
Full Spectrum

**Critical Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1399.500000	---	23.78	54.00	30.22	H	-14.2
1399.500000	32.36	---	74.00	41.64	H	-14.2
2448.400000	35.26	---	74.00	38.74	V	-9.8
2448.400000	---	27.74	54.00	26.26	V	-9.8
3402.100000	---	31.48	54.00	22.52	H	-6.5
3402.100000	39.82	---	74.00	34.18	H	-6.5
7096.200000	---	39.59	54.00	14.41	H	3.9
7096.200000	47.29	---	74.00	26.71	H	3.9
14001.600000	---	44.27	54.00	9.73	V	10.5
14001.600000	50.88	---	74.00	23.12	V	10.5
17646.400000	---	46.09	54.00	7.91	H	13.0
17646.400000	54.93	---	74.00	19.07	H	13.0

802.11ac80 Mode:**Middle Channel: 5775MHz****Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac80 mode 5775 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Klein Zhu

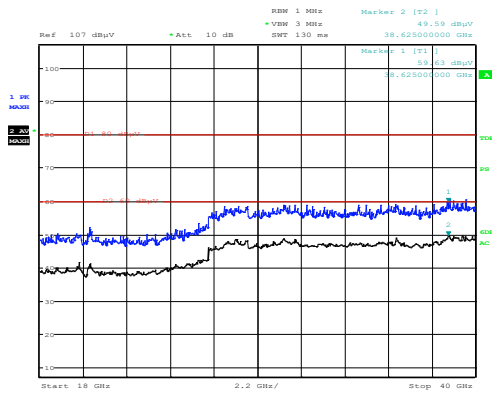
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1321.300000	---	23.30	54.00	30.70	H	-14.5
1321.300000	31.85	---	74.00	42.15	H	-14.5
2244.400000	---	26.26	54.00	27.74	H	-10.2
2244.400000	35.89	---	74.00	38.11	H	-10.2
4437.400000	---	33.56	54.00	20.44	V	-4.0
4437.400000	41.96	---	74.00	32.04	V	-4.0
10016.800000	---	42.68	54.00	11.32	V	7.8
10016.800000	50.33	---	74.00	23.67	V	7.8
13678.600000	53.89	---	74.00	20.11	H	10.8
13680.300000	---	45.66	54.00	8.34	H	10.8
17673.600000	---	45.29	54.00	8.71	V	12.9
17673.600000	54.33	---	74.00	19.67	V	12.9

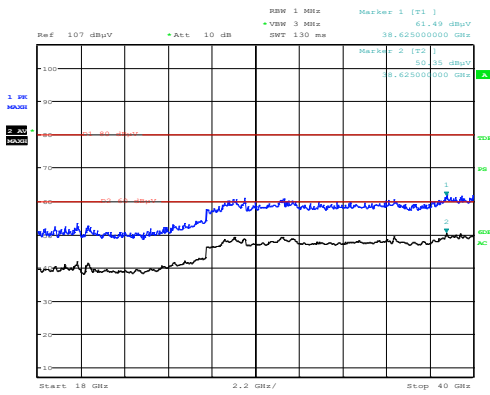
18GHz-40GHz:

Pre-scan with 802.11a, 802.11ac20, 802.11ac40, 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case **802.11ac40 mode (5230MHz)** was recorded

Horizontal



Vertical



Project No : RSHA240322002
Date: 13.JUL.2024 00:50:22

Tester :Hugh Wu

Project No : RSHA240322002
Date: 13.JUL.2024 00:59:30

Tester :Hugh Wu

Note: The test distance is 1.5m. The limit is 80dBμV/m (Peak) and 60dBμV/m (Average).

Restricted Bands Emissions Test (5150-5250MHz Band):

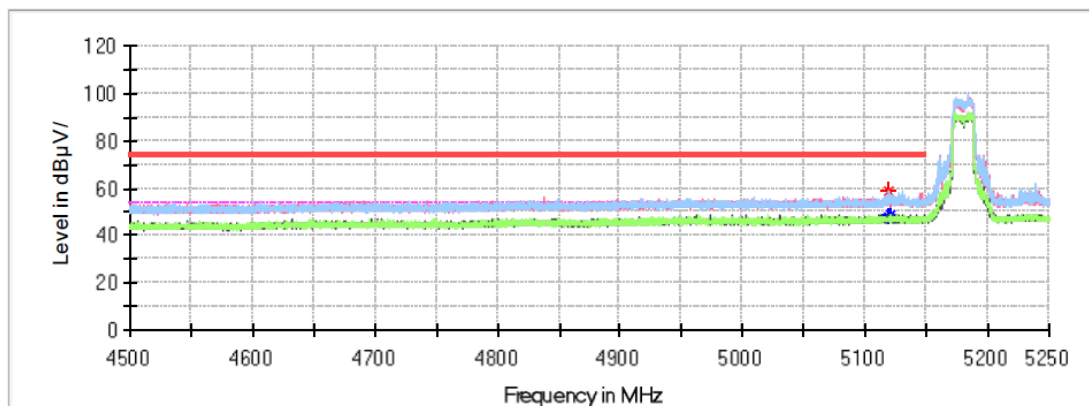
Note:

1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude

802.11a Mode:**Common Information**

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11a mode 5180 channel
Standard:	FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer:	Peter Wang

Full Spectrum

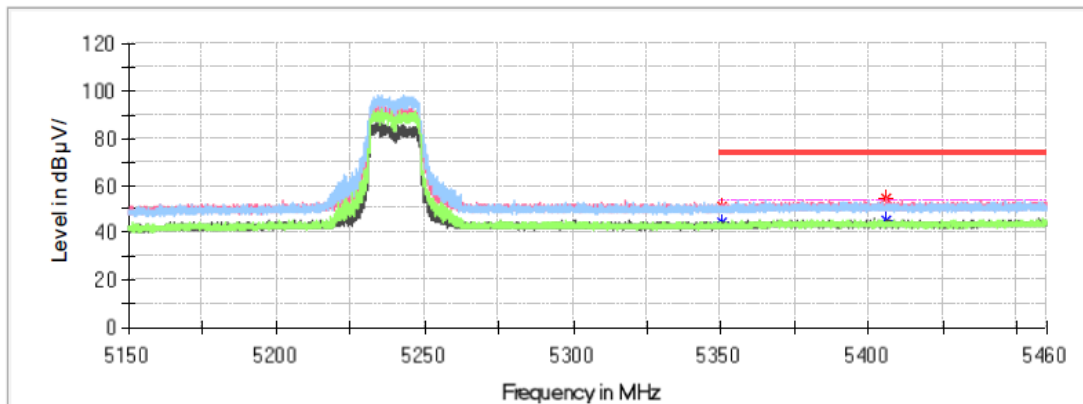
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5119.875000	---	47.54	54.00	6.46	H	9.3
5119.875000	58.91	---	74.00	15.09	H	9.3
5121.075000	---	49.06	54.00	4.94	V	9.3
5121.075000	54.38	---	74.00	19.62	V	9.3

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11a mode 5240 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Full Spectrum



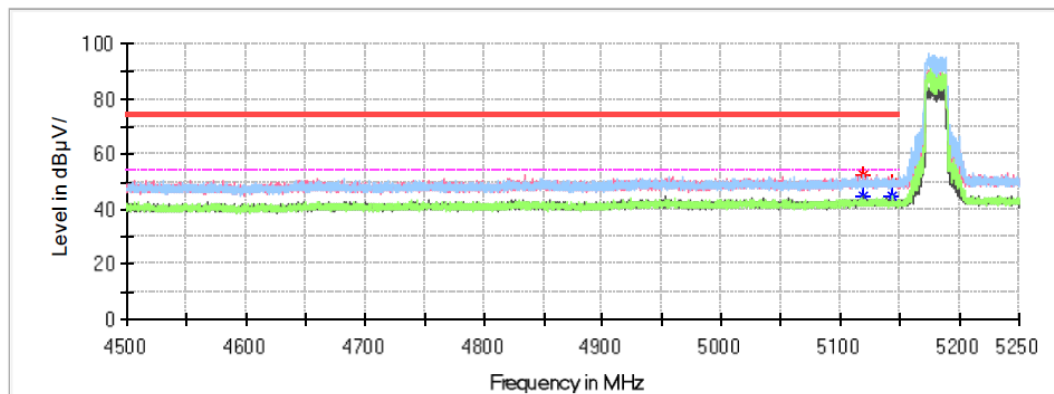
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5350.508000	51.10	---	74.00	22.90	V	4.7
5350.508000	---	44.40	54.00	9.60	V	4.7
5405.781000	---	45.30	54.00	8.70	V	4.9
5405.781000	54.95	---	74.00	19.05	V	4.9

802.11ac20 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac20 mode 5180 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Full Spectrum

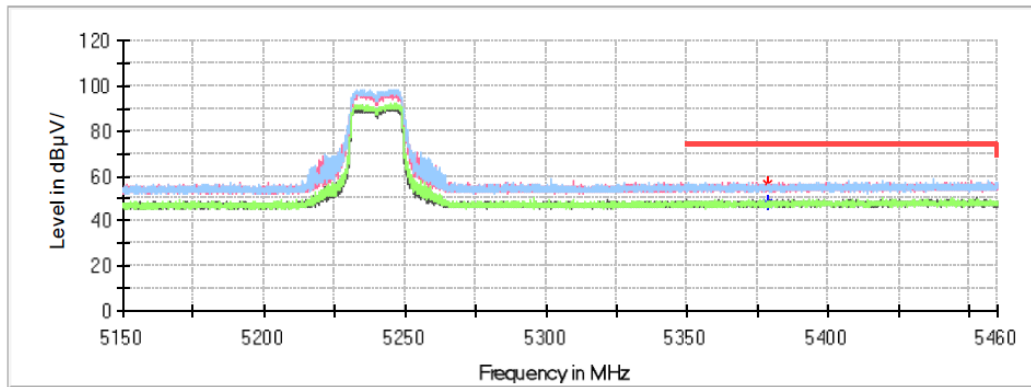
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5118.525000	52.24	---	74.00	21.76	H	4.1
5118.525000	---	44.57	54.00	9.43	H	4.1
5143.800000	49.82	---	74.00	24.18	V	4.2
5143.800000	---	44.76	54.00	9.24	V	4.2

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac20 mode 5240 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum



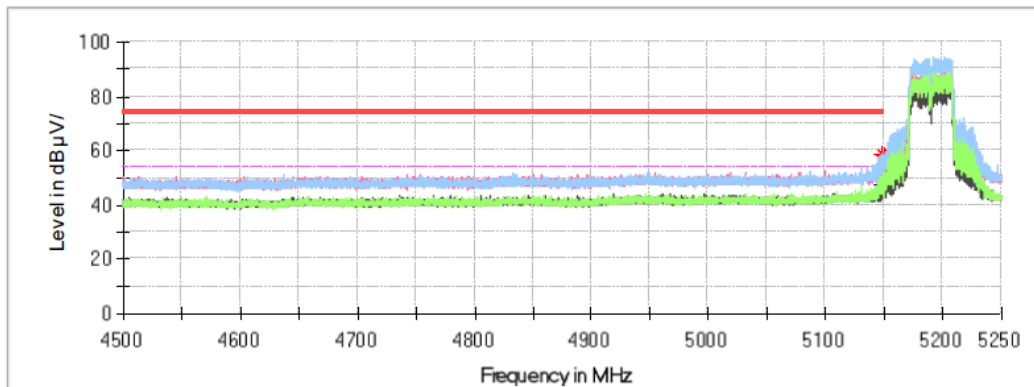
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5378.718000	---	47.75	54.00	6.25	H	10.3
5378.718000	56.07	---	74.00	17.93	H	10.3

802.11ac40 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5190 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Full Spectrum

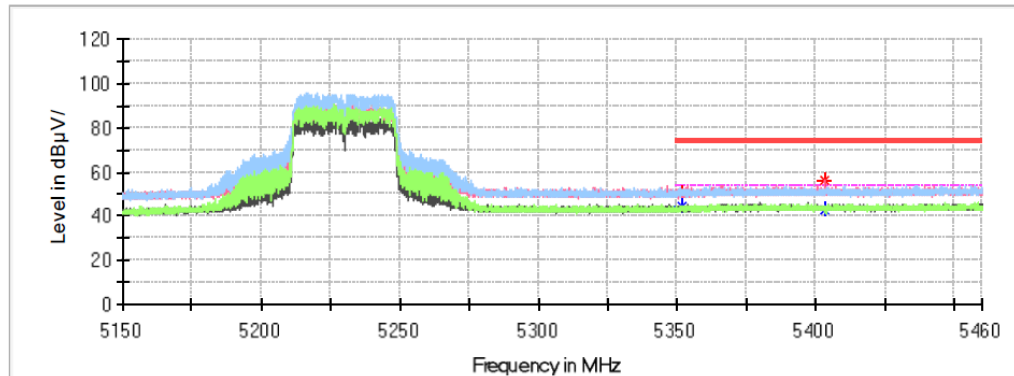
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5148.825000	---	47.45	54.00	6.55	H	4.2
5148.825000	58.64	---	74.00	15.36	H	4.2
5149.275000	---	51.67	54.00	2.33	H	4.2
5149.275000	57.91	---	74.00	16.09	H	4.2

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5230 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Full Spectrum



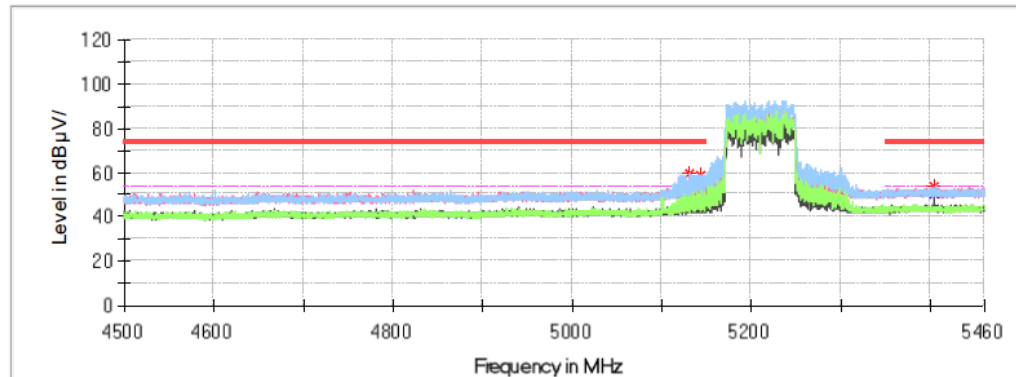
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5352.089000	50.00	---	74.00	24.00	H	4.7
5352.089000	---	44.47	54.00	9.53	H	4.7
5402.991000	---	43.05	54.00	10.95	V	4.9
5402.991000	56.02	---	74.00	17.98	V	4.9

802.11ac80 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac80 mode 5210 channel
Standard: FCC Part 15.205& FCC Part 15.209& FCC Part 15.407
Test Engineer: Klein Zhu

Full Spectrum

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5131.488000	59.62	---	74.00	14.38	H	4.2
5131.488000	---	47.28	54.00	6.72	H	4.2
5144.064000	58.45	---	74.00	15.55	H	4.2
5144.064000	---	51.84	54.00	2.16	H	4.2
5404.128000	---	50.37	54.00	3.63	V	4.9
5404.128000	53.86	---	74.00	20.14	V	4.9

Restricted Bands Emissions Test (5725-5850MHz Band):

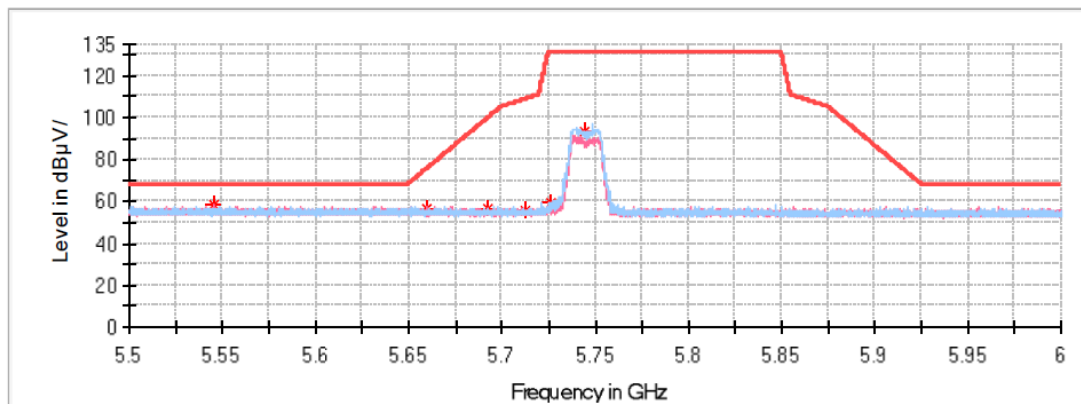
Note:

1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude

802.11a Mode:**Common Information**

Project No.:	RSHA240322002
Test Mode:	Transmitting in 802.11a mode 5745 channel
Standard:	FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer:	Peter Wang

Full Spectrum

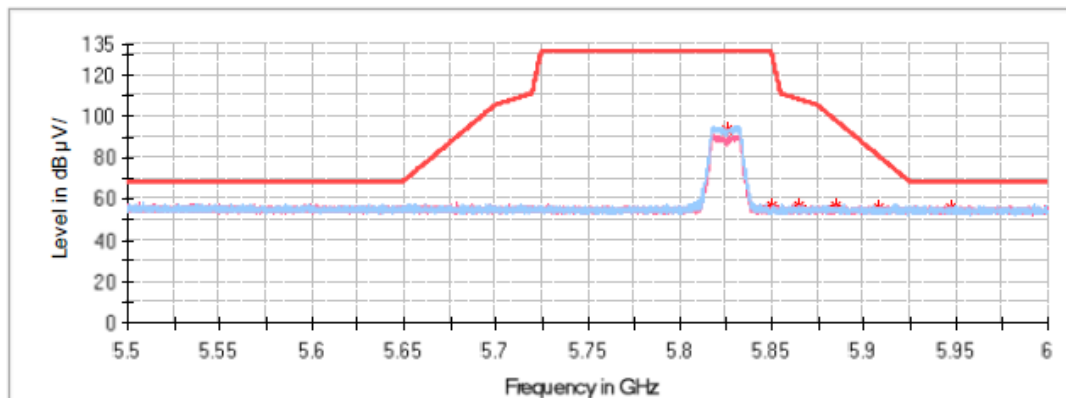
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5545.000000	58.20	---	68.20	10.00	V	10.8
5659.600000	57.08	---	75.30	18.22	V	10.6
5692.550000	56.44	---	99.69	43.25	V	10.6
5712.900000	56.04	---	108.81	52.77	V	10.6

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11a mode 5825 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum



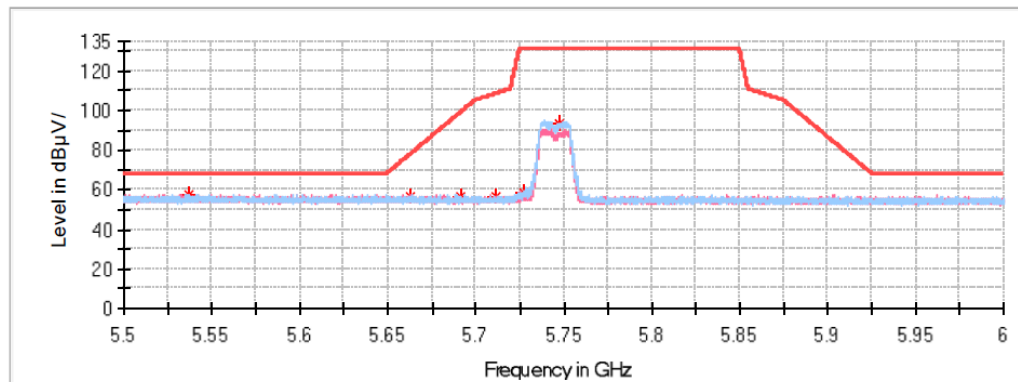
Critical Freqs

Frequency (MHz)	MaxPeak (dB μV/m)	Average (dB μV/m)	Limit (dB μV/m)	Margin (dB)	Pol	Corr. (dB/m)
5850.100000	56.24	---	130.79	74.55	H	10.4
5864.950000	57.00	---	108.01	51.01	V	10.4
5884.950000	56.29	---	97.84	41.55	V	10.3
5908.500000	55.48	---	80.41	24.93	V	10.3
5947.500000	56.12	---	68.20	12.08	V	10.3

802.11ac20 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac20 mode 5745 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum

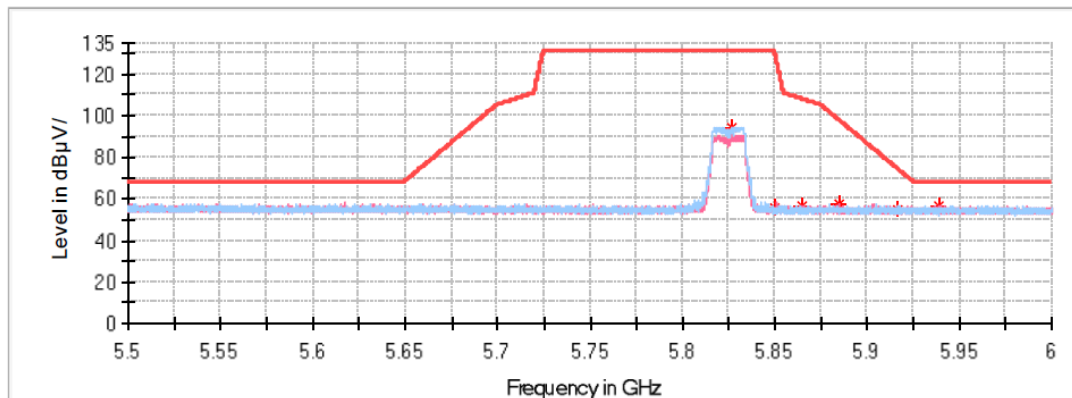
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5537.300000	58.02	---	68.20	10.18	V	10.8
5662.500000	56.63	---	77.45	20.82	V	10.6
5691.700000	56.26	---	99.06	42.80	V	10.6
5711.250000	56.73	---	108.35	51.62	V	10.6

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac20 mode 5825 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum



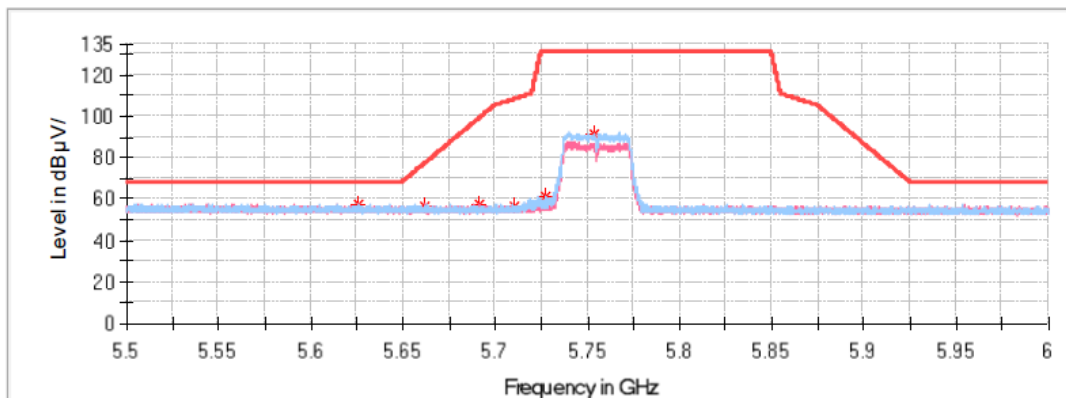
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5865.200000	56.39	---	107.94	51.56	V	10.4
5884.450000	57.13	---	98.21	41.08	V	10.3
5916.300000	54.35	---	74.64	20.29	V	10.3
5939.150000	56.27	---	68.20	11.93	V	10.3

802.11ac40 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5755 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum

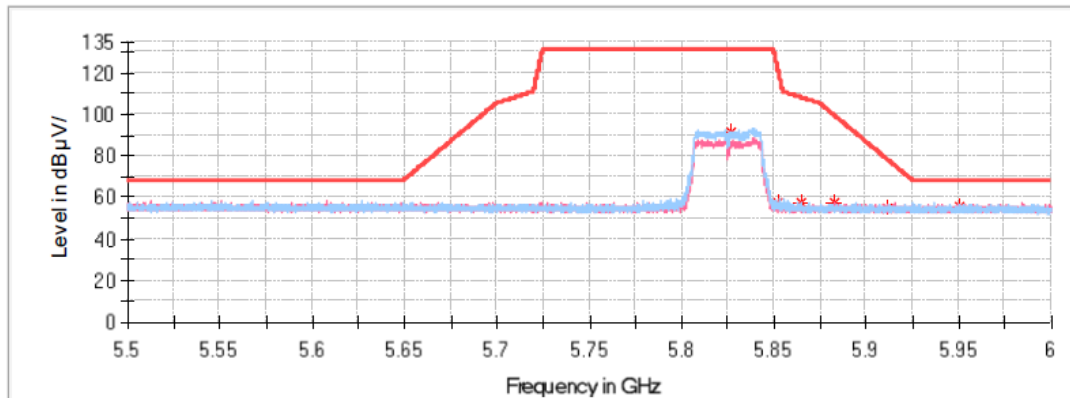
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5625.750000	57.95	---	68.20	10.25	H	10.7
5661.400000	56.69	---	76.64	19.95	H	10.6
5691.150000	57.19	---	98.65	41.46	V	10.6
5710.850000	56.96	---	108.24	51.28	V	10.6

Common Information

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac40 mode 5795 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
Test Engineer: Peter Wang

Full Spectrum



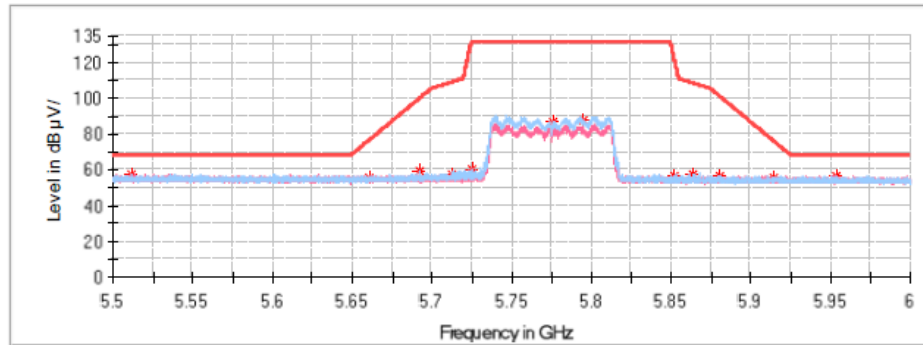
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
5852.350000	57.58	---	121.61	64.03	H	10.4
5864.350000	57.39	---	108.18	50.79	H	10.4
5882.600000	57.58	---	99.58	41.99	H	10.3
5911.700000	54.41	---	78.04	23.63	V	10.3
5950.500000	55.87	---	68.20	12.33	V	10.3

802.11ac80 Mode:**Common Information**

Project No.: RSHA240322002
Test Mode: Transmitting in 802.11ac80 mode 5775 channel
Standard: FCC Part 15.205&FCC Part 15.209&FCC Part 15.407
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)
5511.500000	57.82	---	68.20	10.38	H	10.8
5661.150000	56.13	---	76.45	20.32	H	10.6
5692.550000	59.34	---	99.69	40.34	H	10.6
5711.950000	57.41	---	108.55	51.14	H	10.6
5851.500000	56.39	---	125.08	68.69	H	10.4
5863.900000	57.71	---	108.31	50.60	V	10.4
5880.850000	56.28	---	100.87	44.59	V	10.3
5913.850000	55.85	---	76.45	20.61	V	10.3
5953.150000	56.19	---	68.20	12.01	V	10.3

EMISSION BANDWIDTH**Test Result:** Compliant*5150-5250 MHz:*

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11 a	Low	5180	21.218	16.650
	Middle	5200	21.218	16.600
	High	5240	21.321	16.600
802.11 ac20	Low	5180	21.321	16.650
	Middle	5200	21.269	16.600
	High	5240	21.270	16.600
802.11 ac40	Low	5190	43.300	36.600
	High	5230	42.200	36.600
802.11 ac80	Middle	5210	82.600	76.000

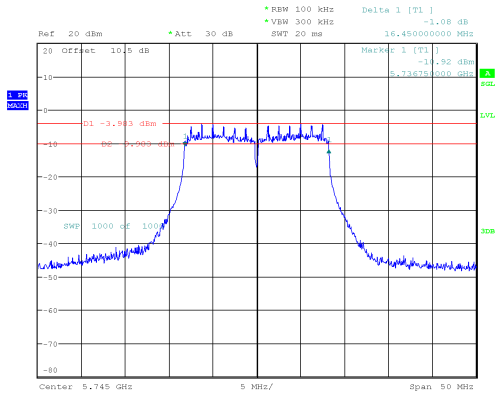
Note: the 99% Occupied Bandwidth have not fall into the band 5250-5350MHz.

5725-5850MHz:

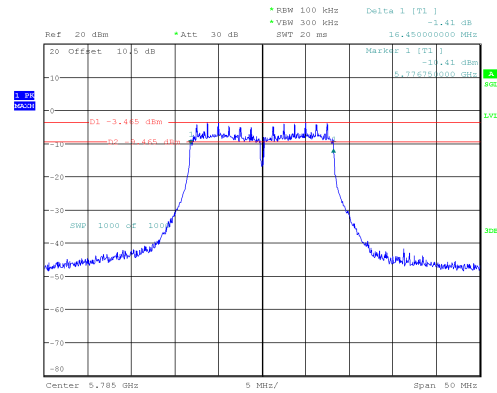
Test mode	Channel	Frequency (MHz)	99% Bandwidth (MHz)
802.11 a	Low	5745	16.550
	Middle	5785	16.600
	High	5825	16.600
802.11 ac20	Low	5745	16.550
	Middle	5785	16.600
	High	5825	16.600
802.11 ac40	Low	5755	36.500
	High	5795	36.400
802.11 ac80	Middle	5775	76.000

Note: the 99% Occupied Bandwidth have not fall into the band 5470-5725MHz.

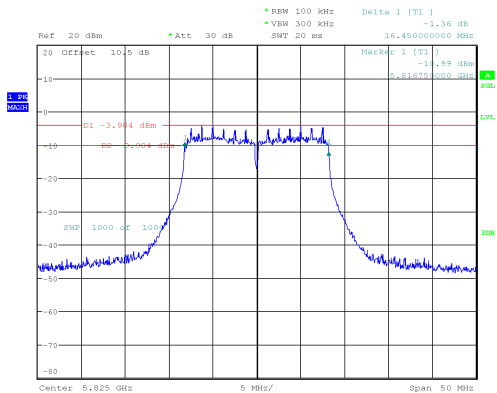
Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
802.11 a	Low	5745	16.450	0.5
	Middle	5785	16.450	
	High	5825	16.450	
802.11 ac20	Low	5745	16.450	
	Middle	5785	16.450	
	High	5825	16.450	
802.11 ac40	Low	5755	35.500	
	High	5795	35.700	
802.11 ac80	Middle	5775	75.600	

**6dB Bandwidth
5725-5850 MHz Band****802.11a mode, 5745MHz**

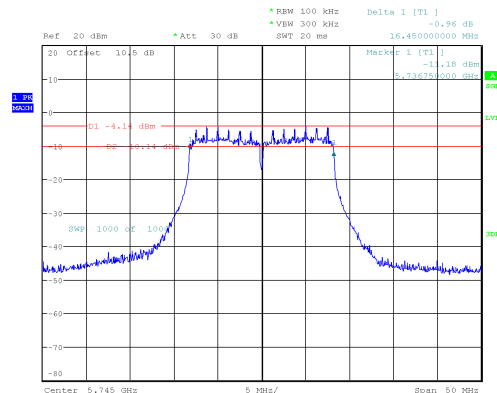
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:47:53

802.11a mode, 5785MHz

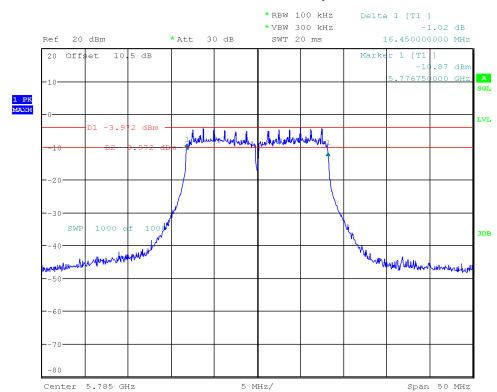
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:53:08

802.11a mode, 5825MHz

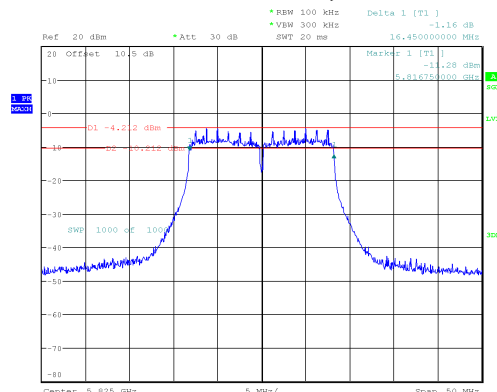
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:01:21

802.11ac20 mode, 574MHz

ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:20:10

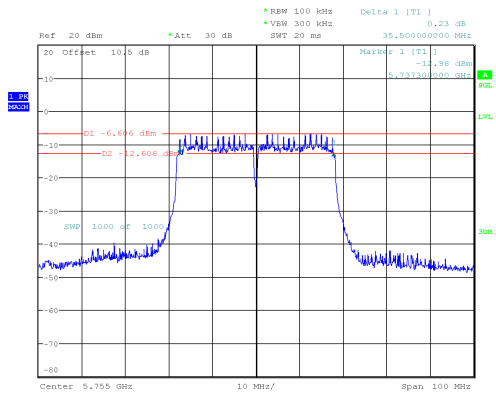
802.11ac20 mode, 5785MHz

ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:24:34

802.11 ac20 mode, 5825MHz

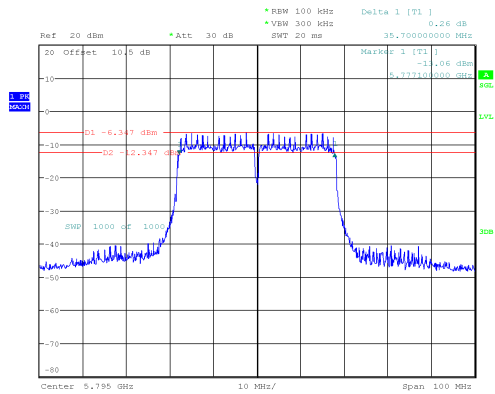
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:29:20

802.11ac40 mode, 5755MHz



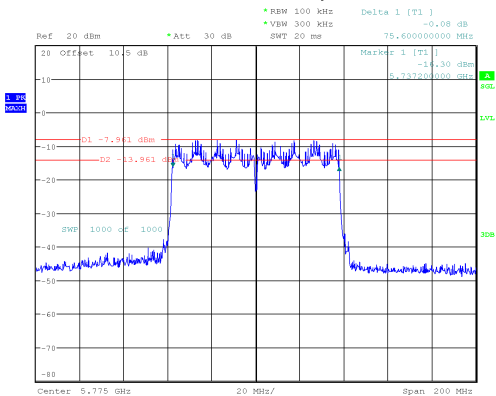
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:28:34

802.11ac40 mode, 5795MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:39:15

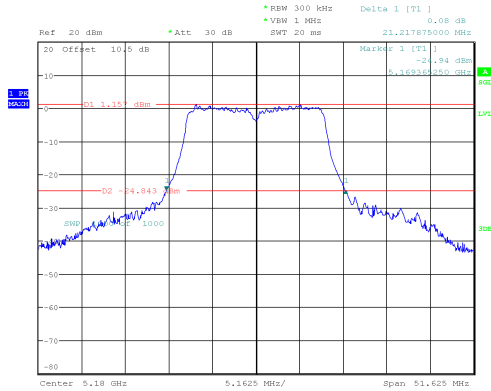
802.11ac80 mode, 5775MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 16:11:59

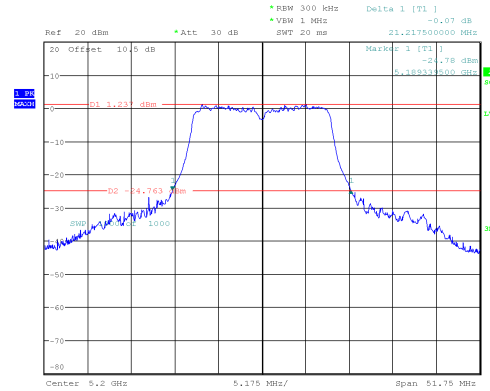
26 Bandwidth 5150-5250 MHz Band:

802.11a mode, 5180MHz



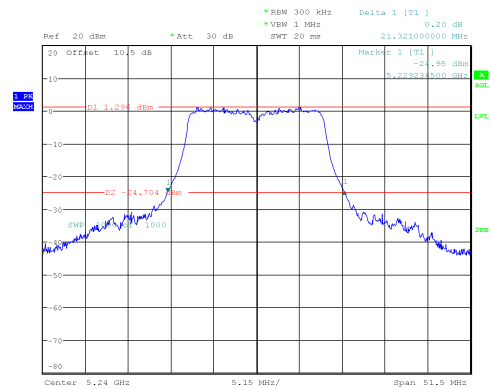
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:51:23

802.11a mode, 5200MHz



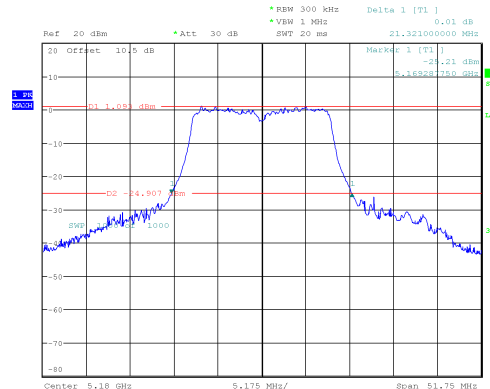
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:57:17

802.11a mode, 5240MHz



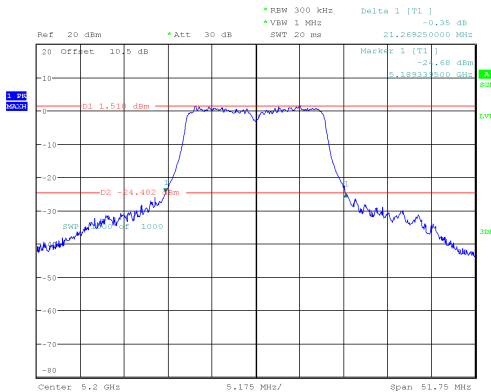
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:03:55

802.11ac20 mode, 5180MHz



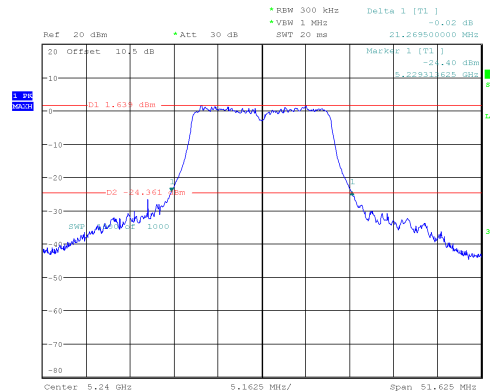
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:57:03

802.11ac20 mode, 5200MHz



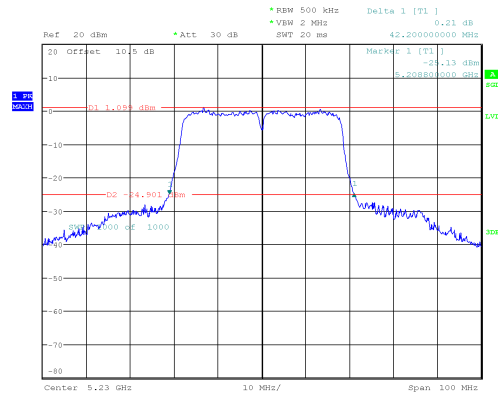
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:36:48

802.11 ac20 mode, 5240MHz

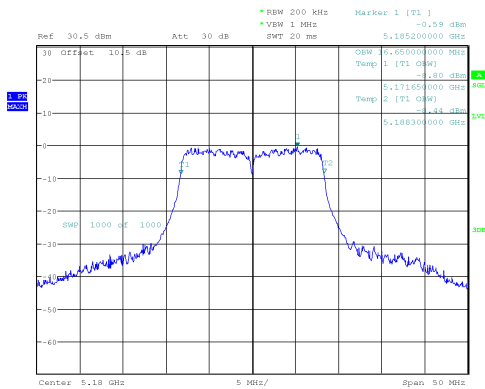


ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:42:31

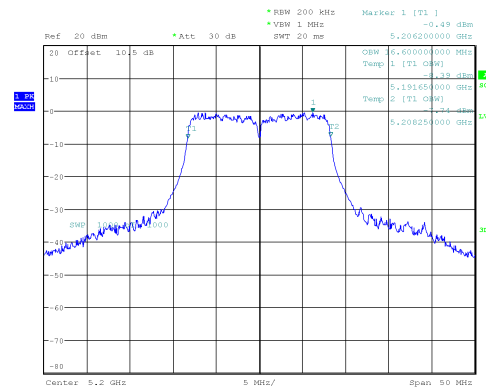
802.11ac40 mode, 5230MHz



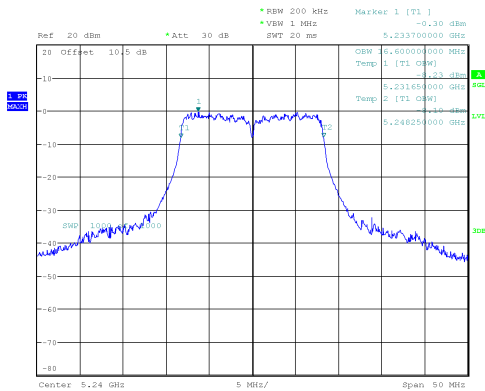
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:59:03

99% Occupied Bandwidth**5150-5250 MHz Band:****802.11a mode, 5180MHz**

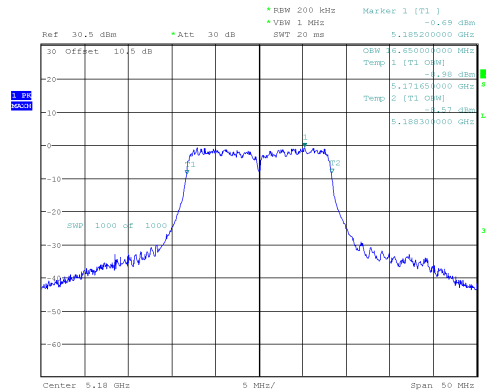
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:48:11

802.11a mode, 5200MHz

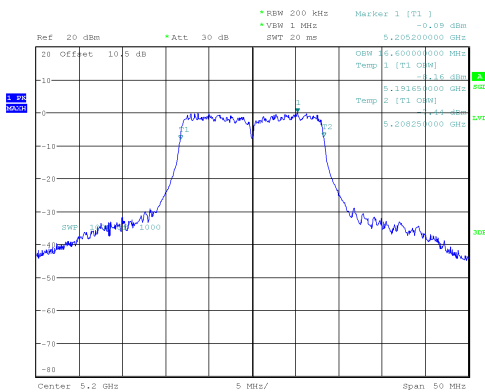
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:54:13

802.11a mode, 5240MHz

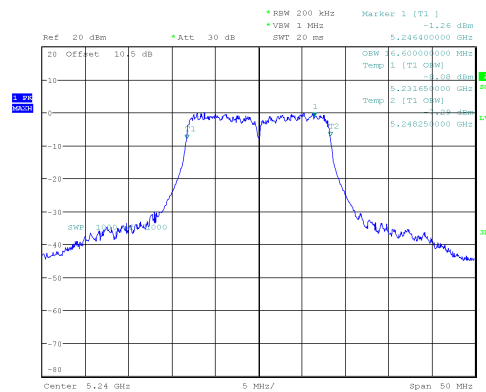
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:00:10

802.11ac20 mode, 5180MHz

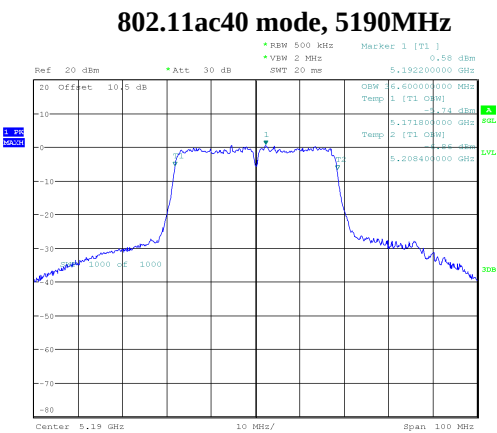
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:53:47

802.11ac20 mode, 5200MHz

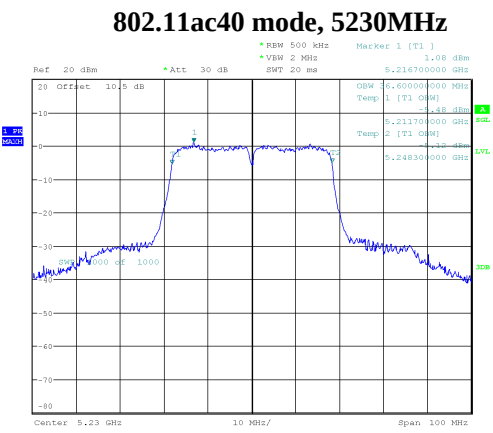
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:33:29

802.11 ac20 mode, 5240MHz

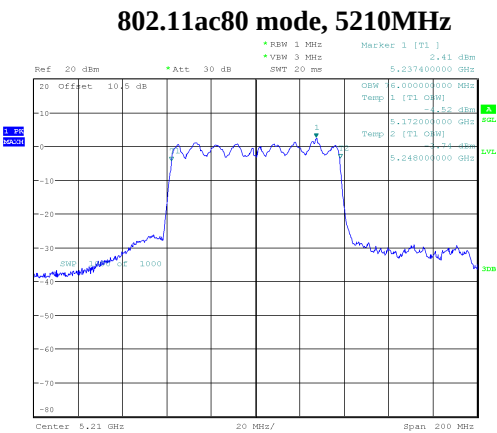
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:39:06



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:49:56



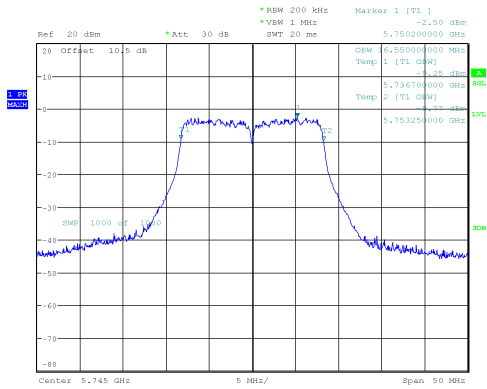
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Date: 13.JUL.2024 14:55:50



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:59:31

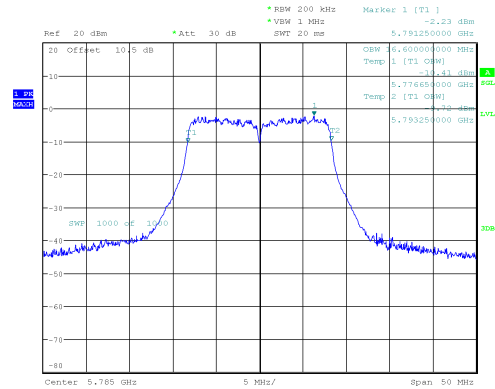
5725-5850 MHz Band:

802.11a mode, 5745MHz



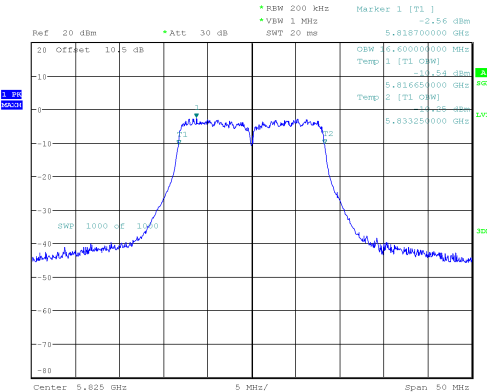
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:44:51

802.11a mode, 5785MHz



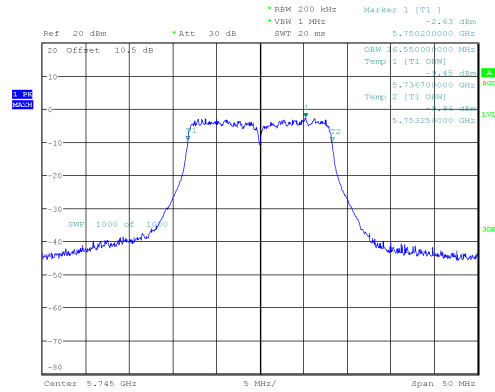
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:50:55

802.11a mode, 5825MHz



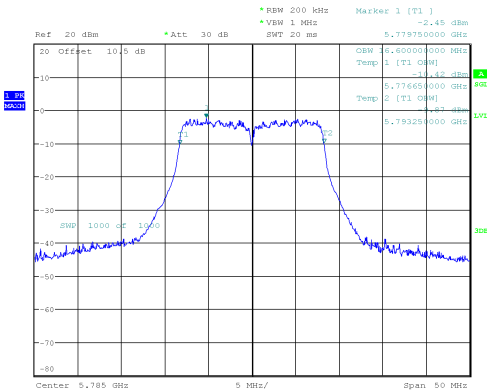
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:58:28

802.11ac20 mode, 5745MHz



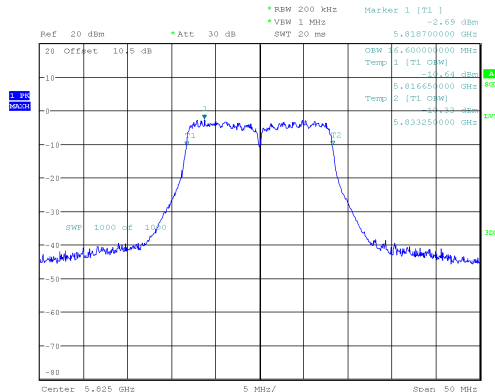
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:17:18

802.11ac20 mode, 5785MHz

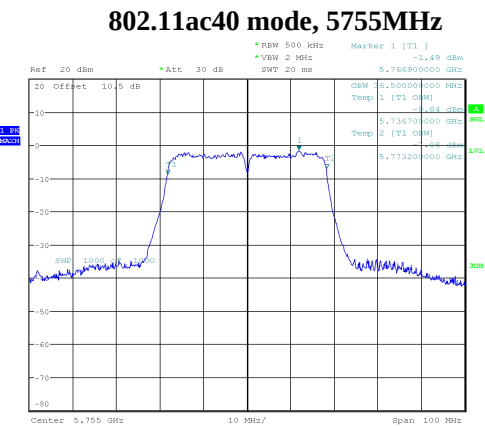


ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:22:28

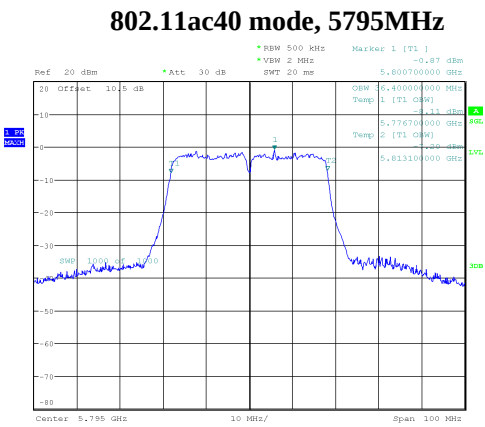
802.11 ac20 mode, 5825MHz



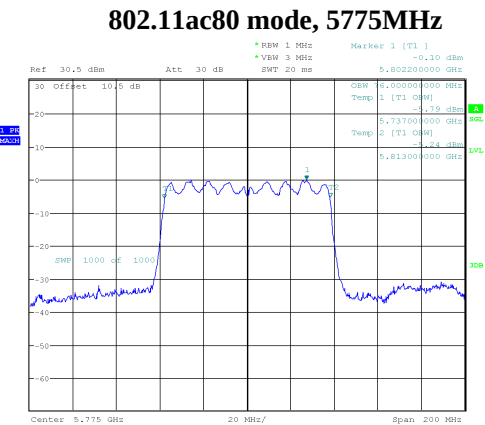
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:26:51



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:23:33



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:32:36



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 16:07:00

CONDUCTED TRANSMITTER OUTPUT POWER*Test Mode: Transmitting*

Band	Mode	Frequency (MHz)	Conducted Average Power (dBm)	Limit (dBm)
5150-5250 MHz	802.11 a	5180	12.94	24
		5200	13.05	
		5240	13.03	
	802.11 ac20	5180	12.81	
		5200	13.03	
		5240	13.08	
	802.11 ac40	5190	13.01	
		5230	13.13	
	802.11 ac80	5210	12.08	

Note: The EUT is client devices

Band	Mode	Frequency (MHz)	Conducted Average Power (dBm)	Limit (dBm)
5725-5850 MHz	802.11 a	5745	9.64	30
		5785	9.66	
		5825	9.19	
	802.11 ac20	5745	9.97	
		5785	9.96	
		5825	9.34	
	802.11 ac40	5755	9.85	
		5795	9.62	
	802.11 ac80	5775	9.86	

POWER SPECTRAL DENSITY*Test Mode: Transmitting*

Band	Mode	Channel	Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor (dB)	PSD (dBm/MHz)	Limit (dBm/MHz)
5150-5250 MHz	802.11 a	Low	5180	-2.16	0.30	-1.86	11
		Middle	5200	-1.98	0.30	-1.68	
		High	5240	-1.97	0.30	-1.67	
	802.11ac20	Low	5180	-2.11	0.36	-1.75	
		Middle	5200	-1.66	0.36	-1.30	
		High	5240	-1.68	0.36	-1.32	
	802.11ac40	Low	5190	-5.03	0.53	-4.50	
		High	5230	-4.79	0.53	-4.26	
	802.11ac80	Middle	5210	-7.78	1.23	-6.55	

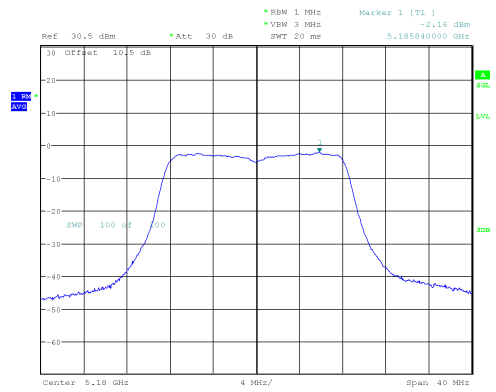
Note: The EUT is client devices

Band	Mode	Channel	Frequency (MHz)	Reading (dBm/500kHz)	Duty Cycle Factor (dB)	PSD (dBm/500kHz)	Limit (dBm/500kHz)
5725-5850 MHz	802.11 a	Low	5745	-6.97	0.30	-6.67	30
		Middle	5785	-6.95	0.30	-6.65	
		High	5825	-7.33	0.30	-7.03	
	802.11ac20	Low	5745	-7.26	0.26	-7.00	
		Middle	5785	-7.11	0.26	-6.85	
		High	5825	-7.46	0.26	-7.20	
	802.11ac40	Low	5755	-9.99	0.58	-9.41	
		High	5795	-10.20	0.58	-9.62	
	802.11ac80	Middle	5775	-12.33	1.20	-11.13	

Note: PSD=Reading+ Duty Cycle Factor.

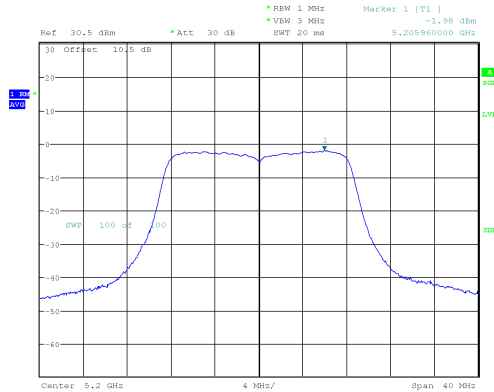
5150-5250 MHz Band:

802.11a mode, 5180MHz



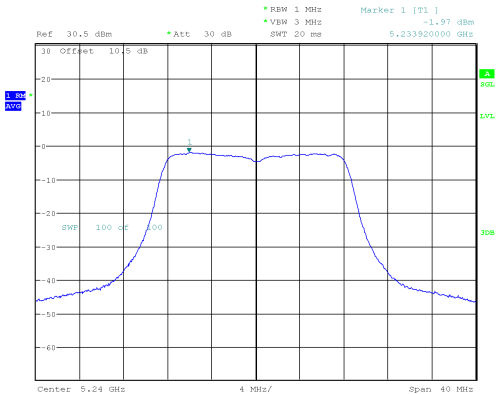
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:51:38

802.11a mode, 5200MHz



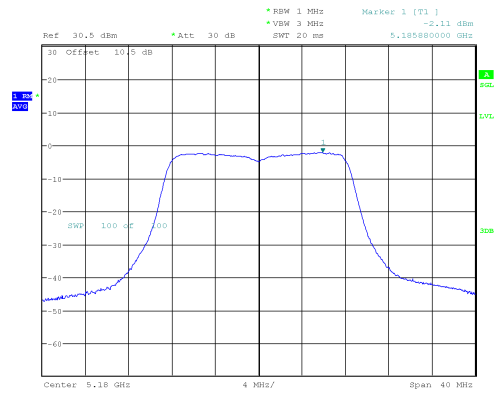
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 10:57:32

802.11a mode, 5240MHz



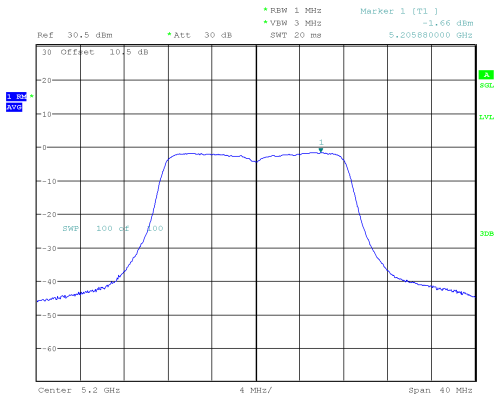
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:04:10

802.11ac20 mode, 5180MHz



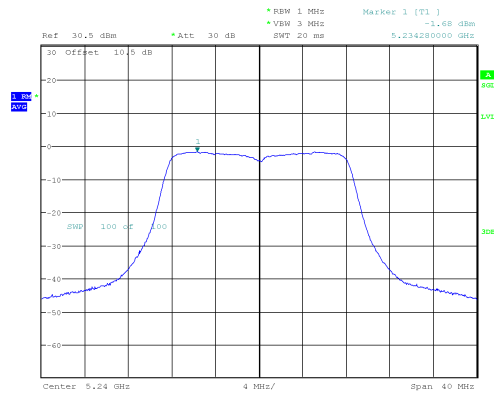
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 11:57:18

802.11ac20 mode, 5200MHz



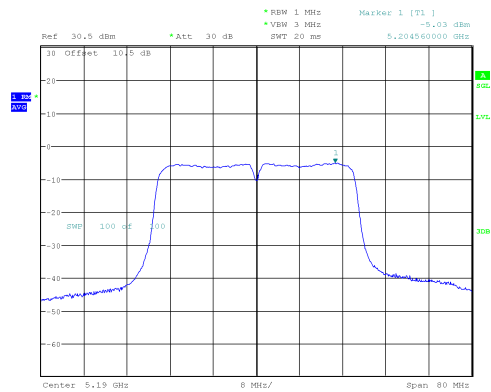
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:37:03

802.11 ac20 mode, 5240MHz



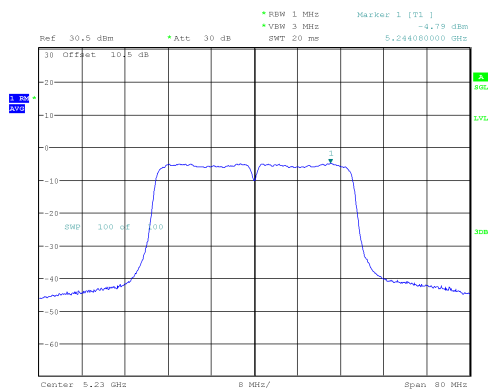
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:42:46

802.11ac40 mode, 5190MHz



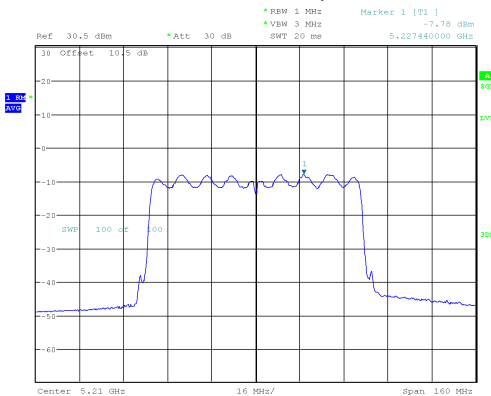
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:53:12

802.11ac40 mode, 5230MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:59:18

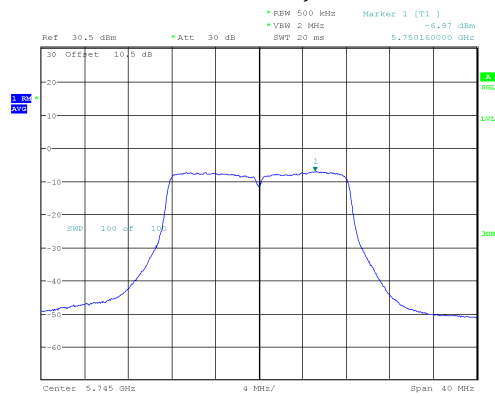
802.11ac80 mode, 5210MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 16:14:53

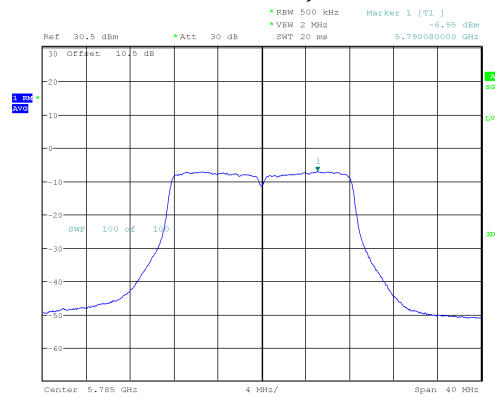
5725-5850 MHz Band:

802.11a mode, 5745MHz



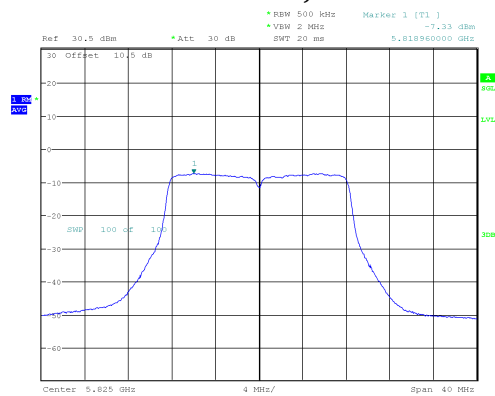
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:48:11

802.11a mode, 5785MHz



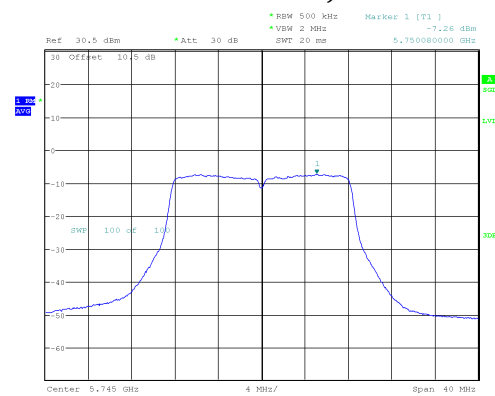
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 13:53:26

802.11a mode, 5825MHz



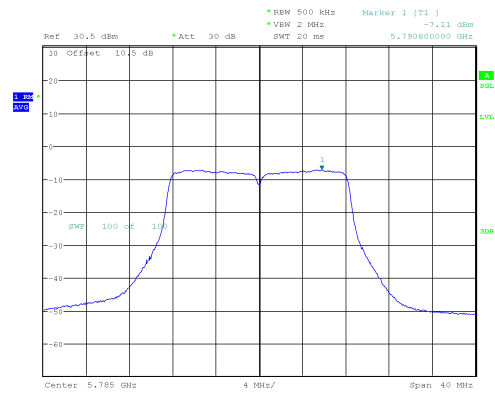
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:01:38

802.11ac20 mode, 5745MHz



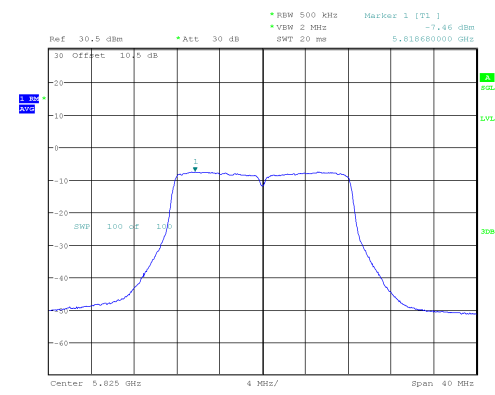
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:20:36

802.11ac20 mode, 5785MHz



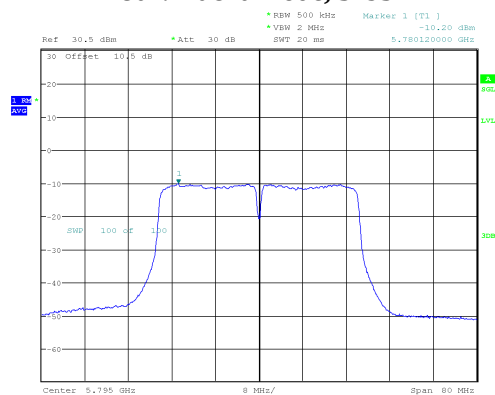
ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:24:52

802.11 ac20 mode, 5825MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 14:29:37

802.11ac40 mode, 5795MHz



ProjectNo.:RSHA240322002 Tester:Neil Zhou
Date: 13.JUL.2024 15:39:34

Ref 30.5 dBm *Att 30 dB RSM 500 kHz Hacker 1 [T1] ~12.33 dBm
VSWR 2 Hz SWT 20 ms S.R02529000 GWS

30 OffSet 10.5 dB

dBm

100 dB

SWF 100 dB

Center 5.775 GHz 16 MHz/Span 160 MHz

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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 *******