

TEST REPORT

Applicant: Sichuan AI-Link Technology Co., Ltd.
Address: Anzhou, Industrial park, Mianyang, Sichuan, P.R.C
Equipment Type: WIFI Module
Model Name: WF-R51B-ESA1
Brand Name: AI-LINK
FCC ID: 2AOKI-AL8851B
ISED Number: 23460-AL8851B
Test Standard: 47 CFR Part 15 Subpart C
RSS-Gen Issue 5
RSS-247 Issue 3
(refer to section 3.1)
Sample Arrival Date: Aug. 18, 2025
Test Date: Aug. 26, 2025 - Sep. 09, 2025
Date of Issue: Sep 22, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Yang Wenxuan**Checked by:** Ye Hongji**Approved by:** Sunny Zou
(Technical Director)

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Sep. 22, 2025</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Sichuan AI-Link Technology Co., Ltd.
Address	Anzhou, Industrial park, Mianyang, Sichuan, P.R.C

2.2 Manufacturer Information

Manufacturer	N/A
Address	N/A

2.3 General Description for Equipment under Test (EUT)

EUT Name	WIFI Module
Model Name Under Test	WF-R51B-ESA1
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	A4298561B6BB
Hardware Version	1.0
Software Version	1.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	Bluetooth (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.11ax
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The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n/ax(20 MHz): 2.412 GHz - 2.462 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 1 to 11. 802.11n/ax(40 MHz): 2.422 GHz - 2.452 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 3 to 9.	
Modulation Technology	DSSS, OFDM, OFDMA	
Product Type	☒ Mobile ☐ Portable ☐ Fix Location	
Antenna System (eg., MIMO, Smart Antenna)	Cyclic Delay Diversity (CDD) for 802.11b/g Multi Input Multi Output (MIMO) for 802.11n/ax/	
Categorization as Correlated or Completely Uncorrelated	Categorization as Correlated for 802.11b/g Categorization as Uncorrelated for 802.11n/ax	
Antenna Type	ANT 0 ANT 1	PIFA Antenna
Antenna Gain	ANT 0 ANT 1	1.92 dBi
Total directional gain	For power spectral density (PSD) measurements	Correlated: 4.93 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 1.92 dBi Formulas: Directional gain = G_{ANT}
	For power measurements	Correlated: 4.93 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 1.92 dBi Formulas: Directional gain = G_{ANT}
	For Conducted Out-of-Band and Spurious Measurements	Correlated: 4.93 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 1.92 dBi Formulas: Directional gain = G_{ANT}

About the Product	Only the WIFI 802.11b, 802.11g, 802.11n (HT20/40), 802.11ax (HE20/40) was tested in this report.
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Mode	Antenna	
	ANT 0	ANT 1
802.11b	√	√
802.11g	√	√
802.11n20	√	√
802.11n40	√	√
802.11ax20	√	√
802.11ax40	√	√

Note: All the configurations were tested, but only the worst data was shown in this report.

802.11ax RU configuration table					
Mode	Full RU (SU)	RU_26	RU_52	RU_106	RU_242
802.11ax20	√	--	--	--	--
802.11ax40	√	--	--	--	--

Modulation technology	Modulation Type	Transfer Rate (Mbps)(Single RF path)
DSSS (802.11b)	DBPSK	1
	DQPSK	2
	CCK	5.5/11
OFDM (802.11g)	BPSK	6/9
	QPSK	12/18
	16QAM	24/36
	64QAM	48/54
OFDM (802.11n-20 MHz)	BPSK	6.5/7.2
	QPSK	13/19.5/14.4/21.7
	16QAM	26/39/28.9/43.3
	64QAM	52/58.5/65/57.8/65/72.2
OFDM (802.11n-40 MHz)	BPSK	13.5/15
	QPSK	27/40.5/30/45
	16QAM	54/81/60/90
	64QAM	108/121.5/135/120/150
OFDMA (802.11ax-20 MHz)	BPSK	4
	QPSK	16/24/17/26
	16QAM	33/49/34/52
	64QAM	65/73/81/69/77/86
	256QAM	98/108/103/115
	1024QAM	122/135/129/143
OFDMA (802.11ax-40 MHz)	BPSK	8/9
	QPSK	33/49/34/52
	16QAM	65/98/69/103

	64QAM	130/146/163/138/155/172
	256QAM	195/217/207/229
	1024QAM	244/271/258/287

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	
Output Power	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Occupied Bandwidth	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Conducted Spurious Emission	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Conducted Emission	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Radiated Spurious Emission	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Band Edge	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9
Power spectral density (PSD)	11b/11g/11n20/11n40/ 11ax20/11ax40	1/6/6.5/13.5/ 4/8 Mbps	1/6/11	3/6/9

Note: The above EUT information in section 2.4 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Intentional radiators of radio frequency equipment
2	RSS-Gen Issue 5	General Requirements for Compliance of Radio Apparatus
3	RSS-247 Issue 3	Digital Transmission Systems (DTSS), Frequency Hopping Systems(FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices
4	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
5	ANSI C63.10-2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
6	KDB Publication 558074 D01v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES

3.2 Test Verdict

No.	Description	FCC PART No.	ISED Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	RSS-247, 5.4 (f)	N/A	Pass ^{Note 1}
2	Output Power	15.247 (b)	RSS-247, 5.4 (d)	ANNEX A.1	Pass
3	Occupied Bandwidth	15.247 (a)	RSS-GEN, 6.7; RSS-247, 5.2 (a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247 (d)	RSS-247, 5.5	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.247 (d)	RSS-GEN, 8.9; RSS-247, 5.5	ANNEX A.4	Pass
6	Conducted Emission	15.207	RSS-GEN, 8.8	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247 (d)	RSS-247, 5.5	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247 (d)	RSS-247, 5.5	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247 (e)	RSS-247, 5.2 (b)	ANNEX A.8	Pass
10	Receiver Spurious Emissions	N/A	RSS-Gen, 7.3	N/A	N/A ^{Note 2}

Note¹: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note²: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	45% to 69%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+20.8℃ to +26.2℃
Working Voltage of the EUT	NV (Normal Voltage)	3.3V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2024.12.16	2025.12.15
Spectrum Analyzer	KEYSIGHT	N9020A	MY46471071	2025.06.16	2026.06.15
Signaling Unit	ROHDE&SCHWARZ	CMW500	142028	2025.04.28	2026.04.27
Power Sensor	KEYSIGHT	U2063XA	MY58000247	2025.06.16	2026.06.15
Spectrum Analyzer	KEYSIGHT	N9020A	MY52510065	2025.06.16	2026.06.15
Signaling Unit	ROHDE&SCHWARZ	CMW500	171150	2025.04.28	2026.04.27
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01631	2025.02.22	2028.02.21
Test Antenna-Horn	A-INFO	LB-180400KF	J211060273	2024.06.15	2027.06.14
Anechoic Chamber	RAINFORD	9m*6m*6m	144	2025.01.04	2028.01.03
Amplifier	COM-MV	LSCX_LNA1-12G-01	180602	2025.06.17	2026.06.16
Amplifier	COM-MV	XKu_LNA7-18G-01	180601	2025.06.17	2026.06.16
Amplifier	COM-MV	KA LNA18 40G-01	18050001	2024.12.05	2025.12.04
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2025.06.16	2026.06.15
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-01162	2023.08.04	2026.08.03
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2024.01.23	2027.01.22
Amplifier	COM-MV	ZT30-1000M	B2018054558	2024.11.28	2025.11.27
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	130	2024.07.13	2027.07.12
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2025.06.16	2026.06.15
LISN	SCHWARZBECK	NSLK 8127	8127-687	2025.04.29	2026.04.28
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	2025.02.14	2028.02.13

4.3 Test Software List

Description	Manufacturer	Software Version	Serial No.	Applicable test Setup
BL410R	BALUN	V2.1.1.488	N/A	The section 4.5.1
BL410E	BALUN	V22.930	N/A	The section 4.5.2&4.5.3&4.5.4&4.5.5

4.4 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8°C
Humidity	4%

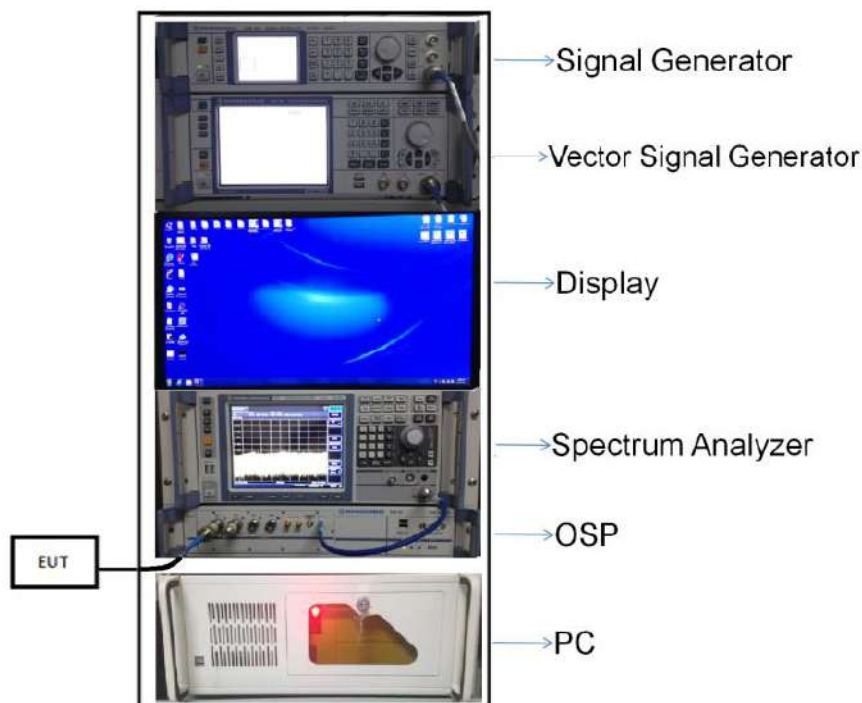
4.5 Description of Test Setup

4.5.1 For Antenna Port Test

Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

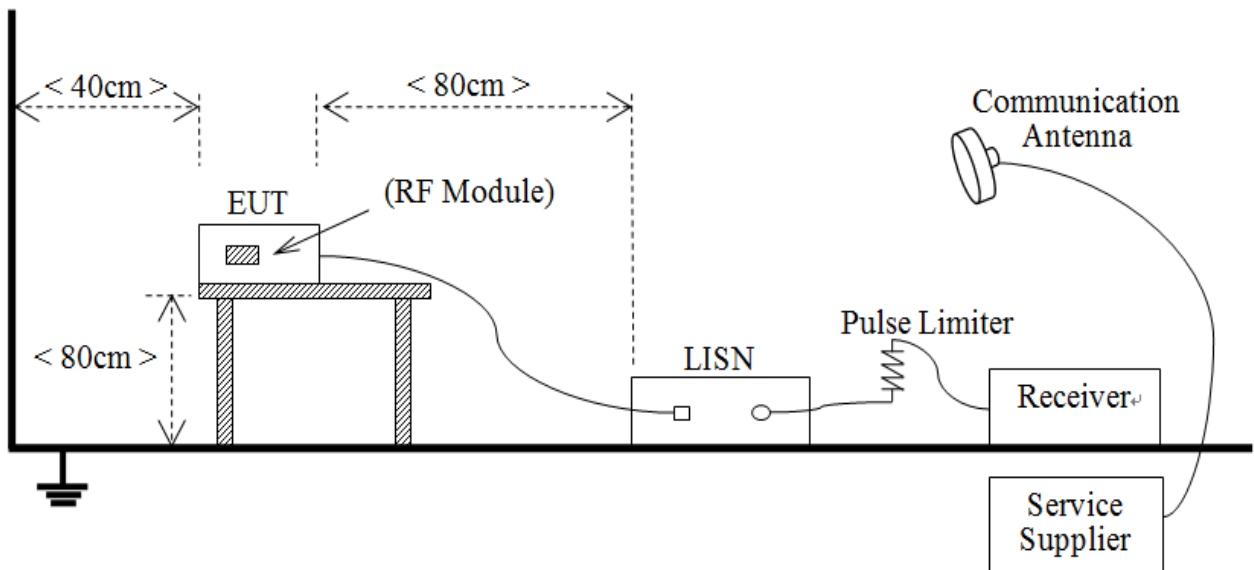
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:

Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



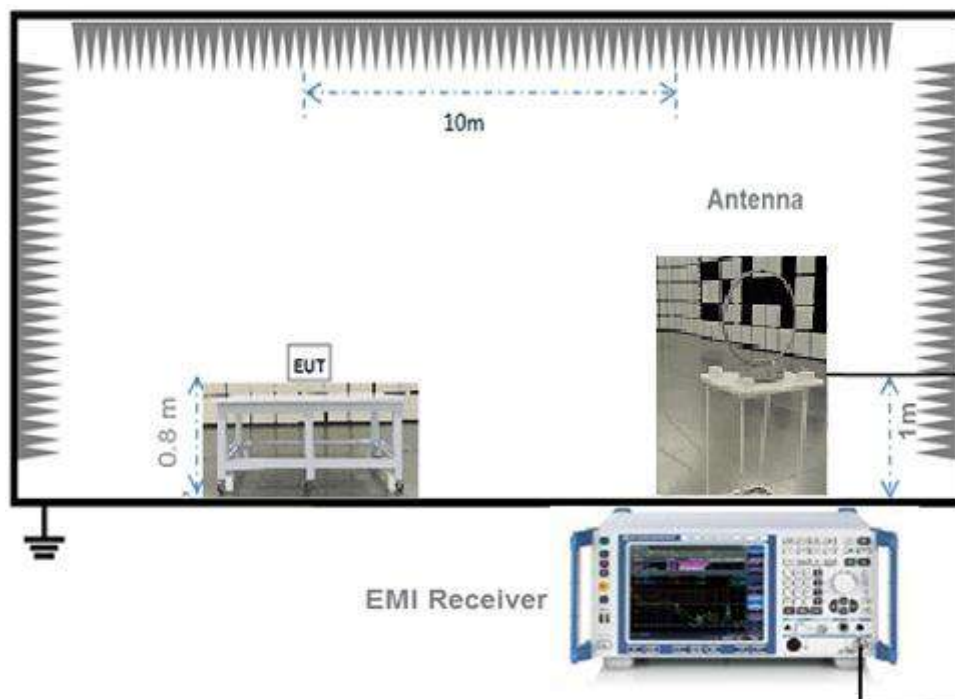
(Diagram 1)

4.5.2 For AC Power Supply Port Test



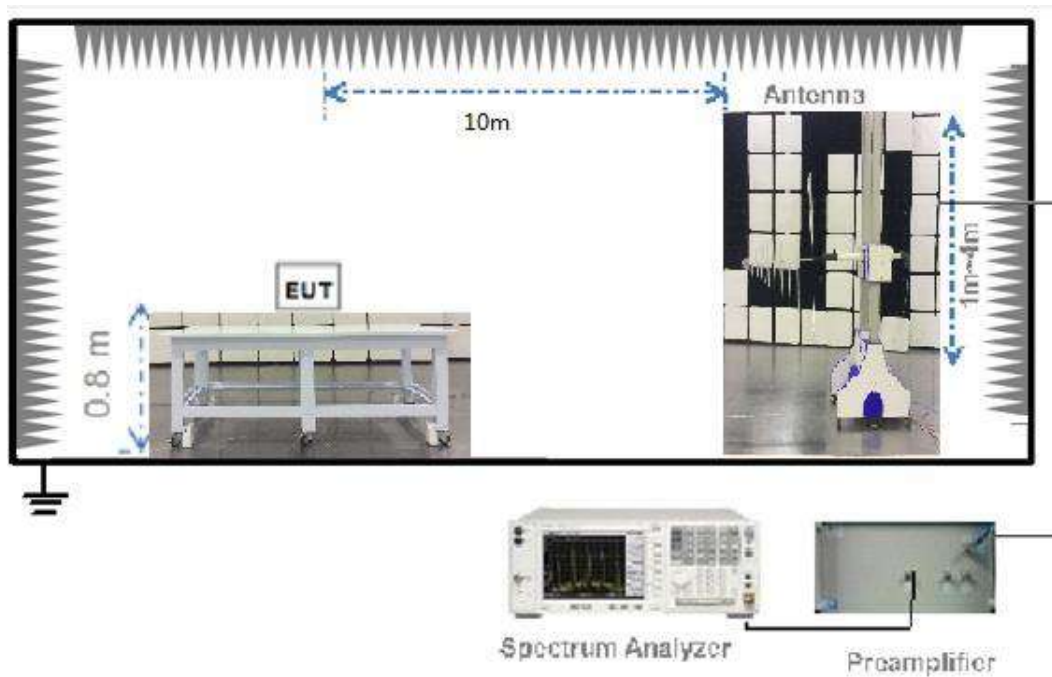
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



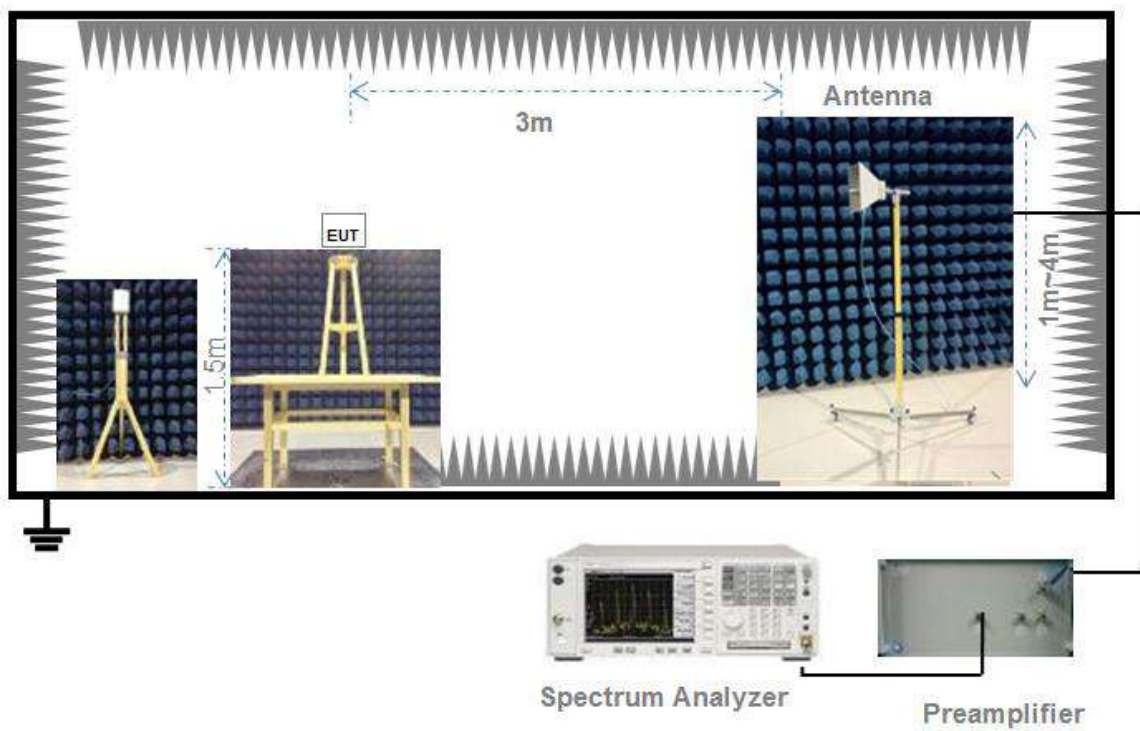
(Diagram 3)

4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.6 Measurement Results Explanation Example

4.6.1 For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

4.6.2 For radiated band edges and spurious emission test:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

EIRP = Measure Conducted output power Value (dBm) + Maximum transmit antenna gain (dBi) + the appropriate maximum ground reflection factor (dB)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203; RSS-247, 5.4 (f)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is embedded in the product.	An embedded-in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b); RSS-247, 5.4 (d)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements.

5.2.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Maximum peak conducted output power

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 utilize a fast-responding diode detector.

The EUT shall be transmitted at its maximum power control level.

$EIRP = \text{Maximum peak conducted output power} + \text{Antenna Gain}$.

Maximum conducted (average) output power (Reporting Only)

a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

- 1) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.
 - 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
 - 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- b) If the transmitter does not transmit continuously, measure the duty cycle (x) of the transmitter output signal.
- c) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- d) Adjust the measurement in dBm by adding $10\log(1/x)$, where x is the duty cycle.

Measurements of duty cycle

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission.

Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.

Set $VBW \geq RBW$. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC §15.247(a); RSS-GEN, 6.7; RSS-247, 5.2 (a)

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.

5.3.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ≥ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

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.

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d); RSS-247, 5.5

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.

5.4.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

- a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).
- b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).
- c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

The following procedures shall be used to demonstrate compliance to these limits. Note that these procedures can be used in either an antenna-port conducted or radiated test set-up. Radiated tests must conform to the test site requirements and utilize maximization procedures defined herein.

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW $\geq 3 \times$ RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.

Emission level measurement

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

Set the RBW = 100 kHz.

Set the VBW $\geq 3 \times$ RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in 11.1 a) or 11.1 b). Report the three highest emissions relative to the limit.

5.4.4 Test Result

Please refer to ANNEX A.3.

5.5 Band Edge (Authorized-band band-edge)

5.5.1 Limit

FCC §15.247(d); RSS-GEN, 8.9, RSS-247, 5.5

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.

5.5.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle $\geq 98\%$). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

When using a peak detector to measure unwanted emissions at or near the band edge (within 2 MHz of the authorized band), the following integration procedure can be used.

Set instrument center frequency to the frequency of the emission to be measured (must be within 2 MHz of the authorized band edge).

Set span to 2 MHz

RBW = 100 kHz.

VBW $\geq 3 \times$ RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweep to continue until the trace stabilizes (required measurement time may increase for low duty cycle applications)

Compute the power by integrating the spectrum over 1 MHz using the analyzer's band power measurement function with band limits set equal to the emission frequency (femission) ± 0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission ± 0.5 MHz.

Standard method(The 99% OBW of the fundamental emission is without 2 MHz of the authorized band):

Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.

Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW/RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2.

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

5.5.4 Test Result

Please refer to ANNEX A.4.

5.6 Conducted Emission

5.6.1 Limit

FCC §15.207; RSS-GEN, 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.6.2 Test Setup

See section 4.5.2 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.6.4 Test Result

Please refer to ANNEX A.5.

5.7 Radiated Spurious Emission

5.7.1 Limit

FCC §15.209&15.247(d); RSS-247, 5.5

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.7.2 Test Setup

See section 4.5.3 to 4.5.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

- a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
- b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
- c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
- d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
- e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

- f) Compare the resultant electric field strength level to the applicable limit.
- g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be

longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

- a) The EUT shall be configured to operate at the maximum achievable duty cycle.
- b) Measure the duty cycle, x , of the transmitter output signal as described in section 6.0.
- c) RBW = 1 MHz (unless otherwise specified).
- d) VBW $\geq 3 \times$ RBW.
- e) Detector = RMS, if $\text{span}/(\# \text{ of points in sweep}) \leq (\text{RBW}/2)$. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
- f) Averaging type = power (i.e., RMS).
 - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
 - 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- g) Sweep time = auto.
- h) Perform a trace average of at least 100 traces.
- i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
 - 1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.
 - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is $20 \log(1/x)$, where x is the duty cycle.
 - 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.7.4 Test Result

Please refer to ANNEX A.6.

5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d); RSS-247, 5.5

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.8.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.8.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

For transmitters operating above 1 GHz repeat the measurement with an average detector.

5.8.4 Test Result

Please refer to ANNEX A.7.

5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e); RSS-247, 5.2 (b)

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

5.9.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.

Set the VBW $\geq 3 \text{ RBW}$.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.9.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 Output Power

Note: All the configurations were pre tested, only the worst configuration has been reported in this report.

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle	Duty Factor
802.11b	0.8185	0.8299	98.63%	0.06
802.11g	1.3580	1.4620	92.89%	0.32
802.11n-20 MHz	1.2690	1.3730	92.43%	0.34
802.11n-40 MHz	0.6287	0.7345	85.60%	0.68
802.11ax-20 MHz	1.1600	1.2670	91.55%	0.38
802.11ax-40 MHz	0.6140	0.7180	85.52%	0.68

ANT 0Peak Power Test Data

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.43	69.66	30	1000	Pass
Middle	18.02	63.39			Pass
High	18.04	63.68			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.97	198.15	30	1000	Pass
Middle	23.81	240.44			Pass
High	23.51	224.39			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.69	185.78	30	1000	Pass
Middle	22.95	197.24			Pass
High	22.91	195.43			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.02	159.22	30	1000	Pass
Middle	22.07	161.06			Pass
High	21.98	157.76			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.86	243.22	30	1000	Pass
Middle	24.01	251.77			Pass
High	23.89	244.91			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.92	155.60	30	1000	Pass
Middle	21.91	155.24			Pass
High	21.85	153.11			Pass

Average Power Test Data

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.93	39.17	30	1000	Pass
Middle	15.64	36.64			Pass
High	15.69	37.07			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.85	38.46	30	1000	Pass
Middle	16.02	39.99			Pass
High	15.93	39.17			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.82	38.19	30	1000	Pass
Middle	15.88	38.73			Pass
High	15.78	37.84			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.50	44.67	30	1000	Pass
Middle	16.52	44.87			Pass
High	16.43	43.95			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.72	37.33	30	1000	Pass
Middle	15.79	37.93			Pass
High	15.74	37.50			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.47	44.36	30	1000	Pass
Middle	16.45	44.16			Pass
High	16.39	43.55			Pass

E.I.R.P Test Data (For ISSED)

802.11b Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	20.35	108.39	36	4	Pass
Middle	19.94	98.63			Pass
High	19.96	99.08			Pass

802.11g Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	24.89	308.32	36	4	Pass
Middle	25.73	374.11			Pass
High	25.43	349.14			Pass

802.11n-20 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	24.61	289.07	36	4	Pass
Middle	24.87	306.90			Pass
High	24.83	304.09			Pass

802.11n-40 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	23.94	247.74	36	4	Pass
Middle	23.99	250.61			Pass
High	23.90	245.47			Pass

802.11ax-20 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	25.78	378.44	36	4	Pass
Middle	25.93	391.74			Pass
High	25.81	381.07			Pass

802.11ax-40 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	23.84	242.10	36	4	Pass
Middle	23.83	241.55			Pass
High	23.77	238.23			Pass

ANT 1**Peak Power Test Data****802.11b Mode:**

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.01	63.24	30	1000	Pass
Middle	18.07	64.12			Pass
High	18.05	63.83			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.01	199.99	30	1000	Pass
Middle	24.01	251.77			Pass
High	23.93	247.17			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.23	264.85	30	1000	Pass
Middle	24.07	255.27			Pass
High	24.25	266.07			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.84	152.76	30	1000	Pass
Middle	21.87	153.82			Pass
High	21.34	136.14			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.17	261.22	30	1000	Pass
Middle	24.24	265.46			Pass
High	24.11	257.63			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.91	155.24	30	1000	Pass
Middle	22.01	158.85			Pass
High	21.21	132.13			Pass

Average Power Test Data

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.69	37.07	30	1000	Pass
Middle	15.83	38.28			Pass
High	15.67	36.90			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.92	39.08	30	1000	Pass
Middle	16.03	40.09			Pass
High	16.09	40.64			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.95	39.36	30	1000	Pass
Middle	16.00	39.81			Pass
High	15.93	39.17			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.60	45.71	30	1000	Pass
Middle	16.65	46.24			Pass
High	16.09	40.64			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.89	38.82	30	1000	Pass
Middle	15.82	38.19			Pass
High	15.89	38.82			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.57	45.39	30	1000	Pass
Middle	16.66	46.34			Pass
High	16.03	40.09			Pass

E.I.R.P Test Data (For ISSED)

802.11b Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	19.93	98.40	36	4	Pass
Middle	19.99	99.77			Pass
High	19.97	99.31			Pass

802.11g Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	24.93	311.17	36	4	Pass
Middle	25.93	391.74			Pass
High	25.85	384.59			Pass

802.11n-20 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	26.15	412.10	36	4	Pass
Middle	25.99	397.19			Pass
High	26.17	414.00			Pass

802.11n-40 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	23.76	237.68	36	4	Pass
Middle	23.79	239.33			Pass
High	23.26	211.84			Pass

802.11ax-20 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	26.09	406.44	36	4	Pass
Middle	26.16	413.05			Pass
High	26.03	400.87			Pass

802.11ax-40 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	23.83	241.55	36	4	Pass
Middle	23.93	247.17			Pass
High	23.13	205.59			Pass

A.2 Occupied Bandwidth

Note ¹: All the configurations were pre tested, only the worst configuration has been reported in this report.

Note ²: All antenna were pre tested, but only the worst case has been reported in this report.

Test Data

ANT 1

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	10.200000	13.978000	≥500
Middle	10.200000	13.978000	≥500
High	10.200000	13.972000	≥500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200000	16.380000	≥500
Middle	15.300000	16.369000	≥500
High	15.400000	16.376000	≥500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.300000	17.435000	≥500
Middle	15.300000	17.454000	≥500
High	15.200000	17.446000	≥500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.200000	35.806000	≥500
Middle	35.200000	35.823000	≥500
High	35.200000	35.784000	≥500

802.11ax-20 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	16.600000	18.772000	≥500
Middle	16.600000	18.741000	≥500
High	16.600000	18.765000	≥500

802.11ax-40 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.400000	37.384000	≥ 500
Middle	35.200000	37.360000	≥ 500
High	35.300000	37.381000	≥ 500

Test Plots

6 dB Bandwidth

802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



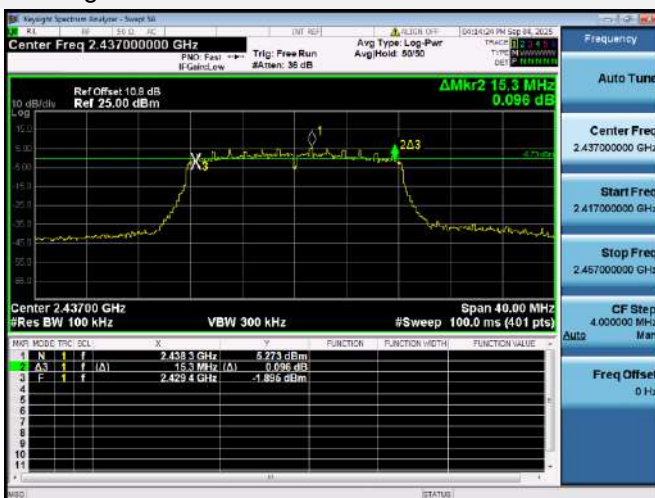
802.11b HIGH CHANNEL



802.11g LOW CHANNEL



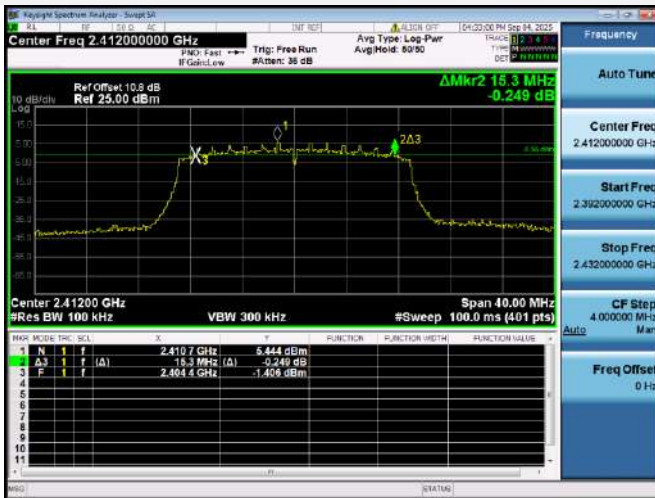
802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL



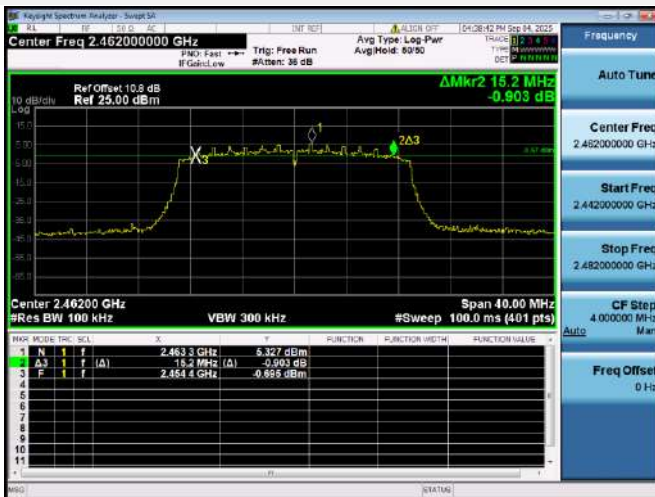
802.11n-20 MHz LOW CHANNEL



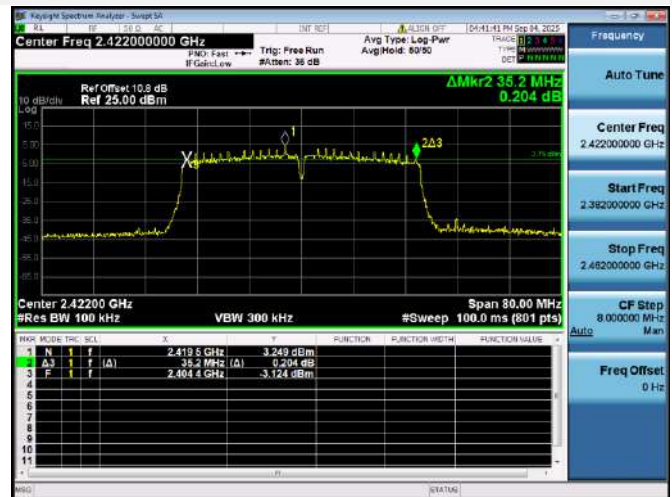
802.11n-20 MHz MIDDLE CHANNEL



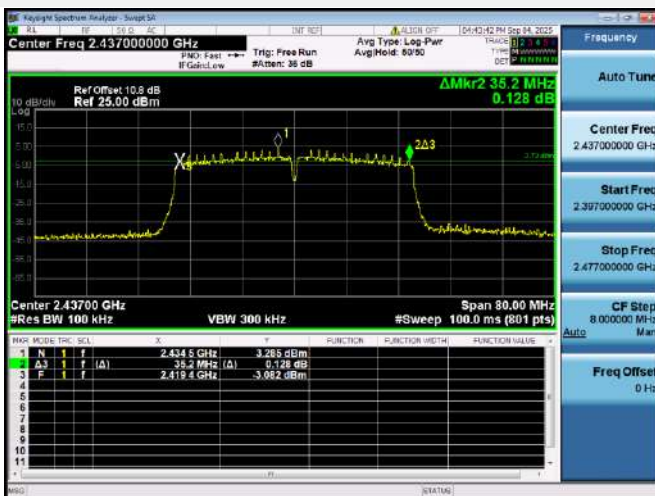
802.11n-20 MHz HIGH CHANNEL



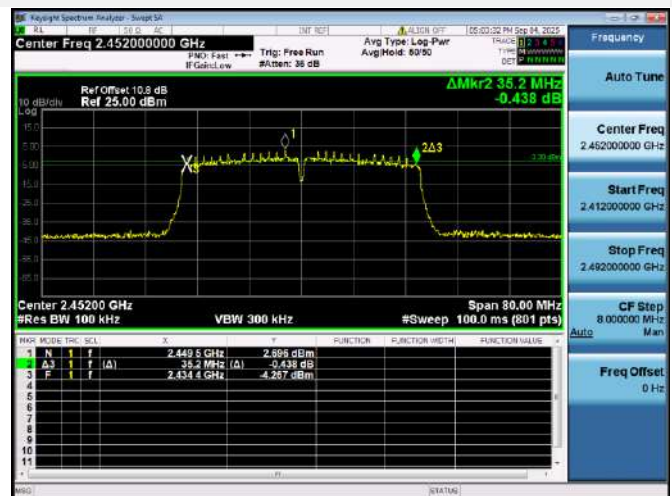
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



802.11ax-20 MHz(SU) LOW CHANNEL



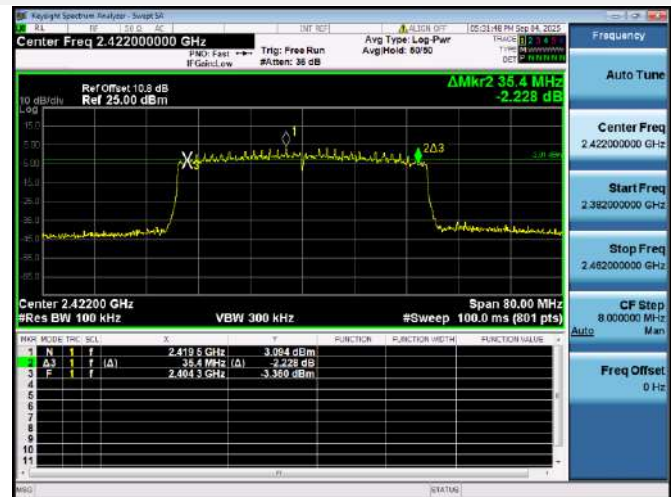
802.11ax-20 MHz(SU) MIDDLE CHANNEL



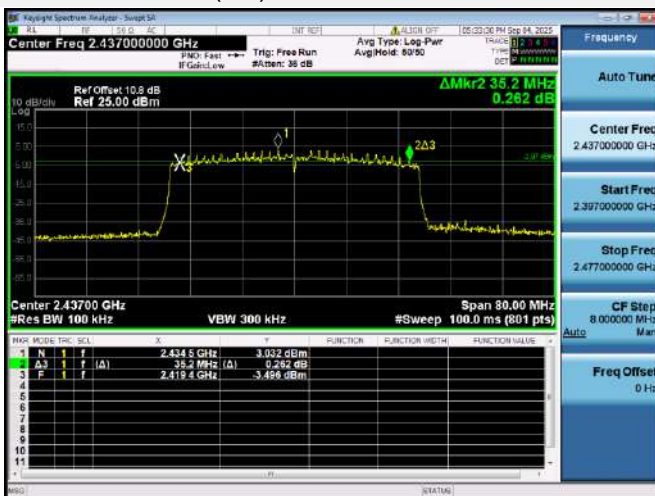
802.11ax-20 MHz(SU) HIGH CHANNEL



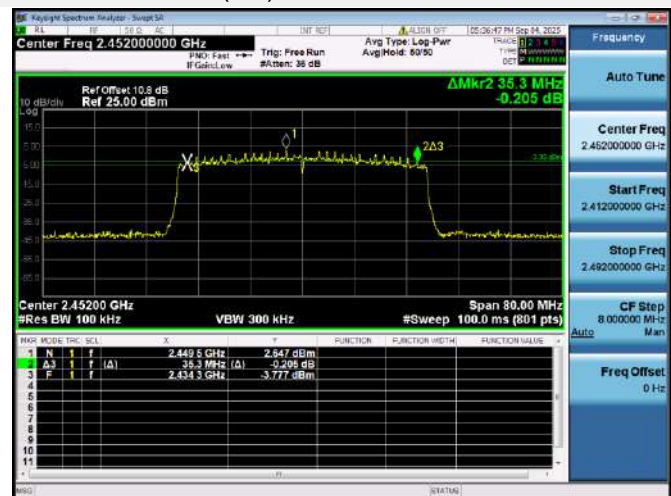
802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



99% Bandwidth

802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



802.11b HIGH CHANNEL



802.11g LOW CHANNEL



802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL



802.11n-20 MHz LOW CHANNEL



802.11n-20 MHz MIDDLE CHANNEL



802.11n-20 MHz HIGH CHANNEL



802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



802.11ax-20 MHz(SU) LOW CHANNEL



802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL



802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



A.3 Conducted Spurious Emissions

Note ¹: All the configurations were pre tested, only the worst configuration has been reported in this report.

Note ²: All antenna were pre tested, but only the worst case has been reported in this report.

Test Data

ANT 1

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-33.30	5.88	-14.12	Pass
Middle	-34.39	6.07	-13.93	Pass
High	-35.61	6.16	-13.84	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-35.13	5.75	-14.25	Pass
Middle	-34.29	6.09	-13.91	Pass
High	-35.48	5.99	-14.02	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-34.82	5.98	-14.03	Pass
Middle	-34.39	5.60	-14.40	Pass
High	-33.31	5.93	-14.07	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.89	3.25	-16.75	Pass
Middle	-39.14	3.39	-16.61	Pass
High	-39.15	2.80	-17.20	Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.47	5.70	-14.30	Pass
Middle	-34.90	5.86	-14.14	Pass
High	-35.18	5.56	-14.44	Pass

802.11ax-40 MHz(SU) Mode:

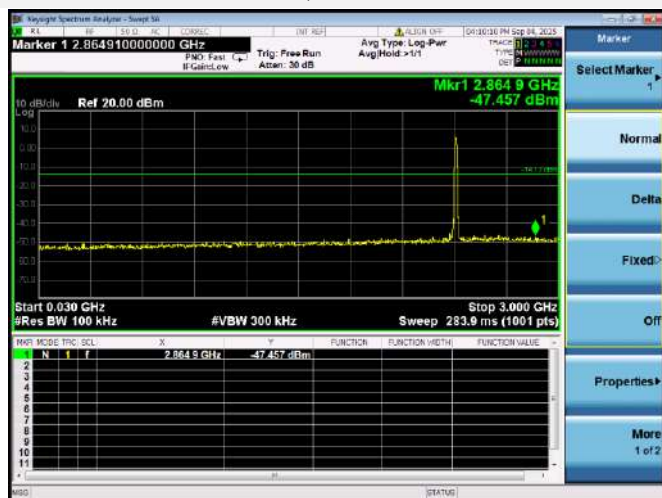
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-39.25	3.18	-16.82	Pass
Middle	-39.88	3.11	-16.89	Pass
High	-38.82	2.68	-17.32	Pass

Test Plots

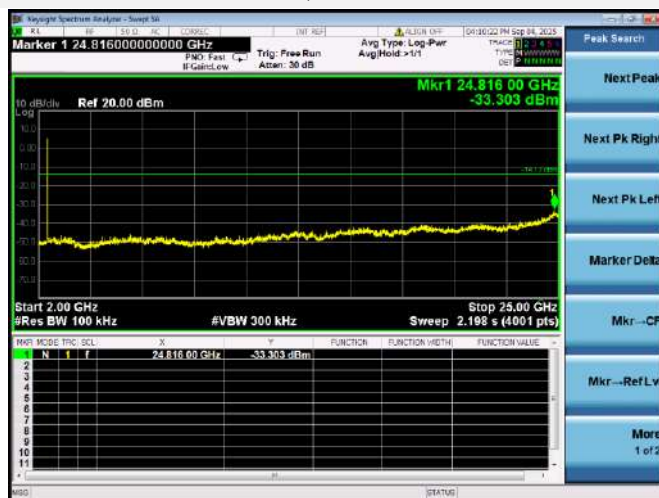
802.11b LOW CHANNEL CARRIER LEVEL



802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



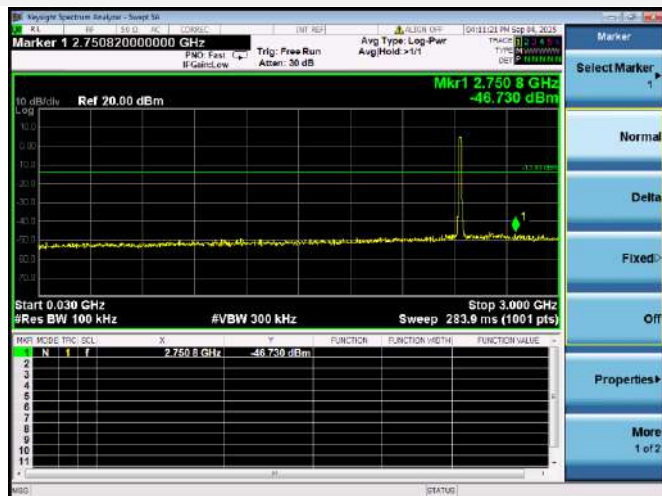
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



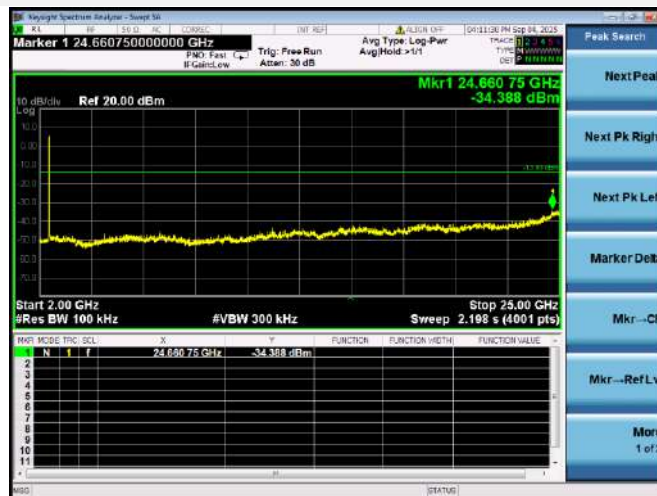
802.11b MIDDLE CHANNEL CARRIER LEVEL



802.11b MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



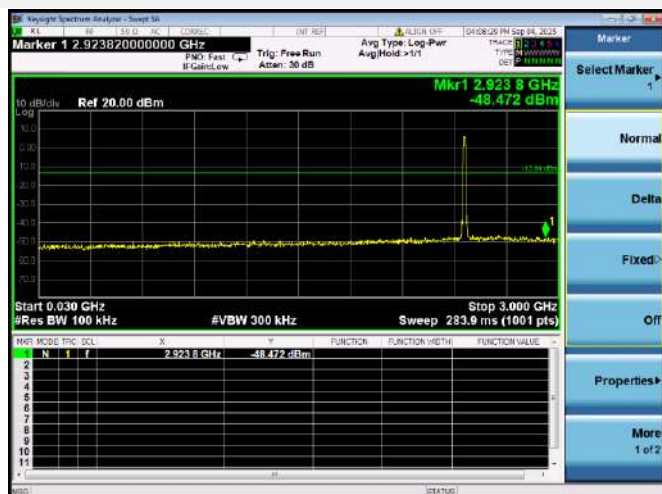
802.11b MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



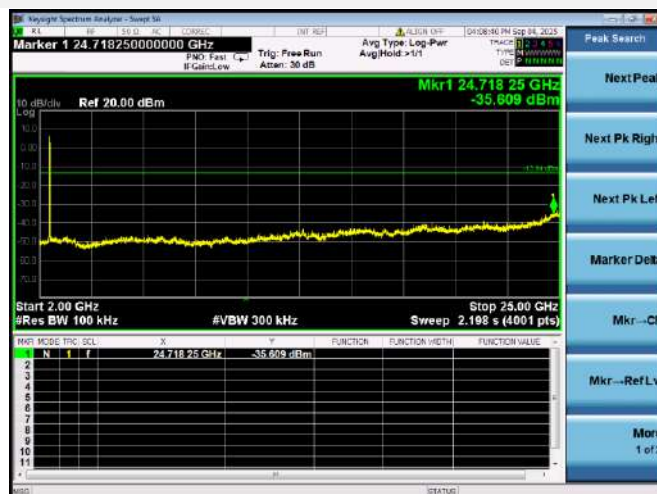
802.11b HIGH CHANNEL CARRIER LEVEL



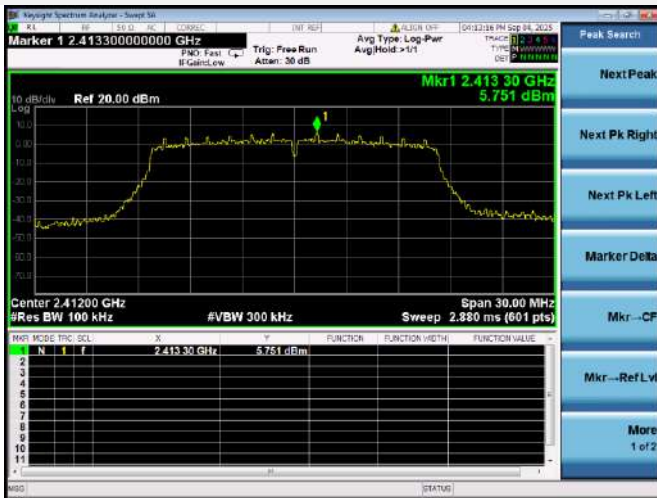
802.11b HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



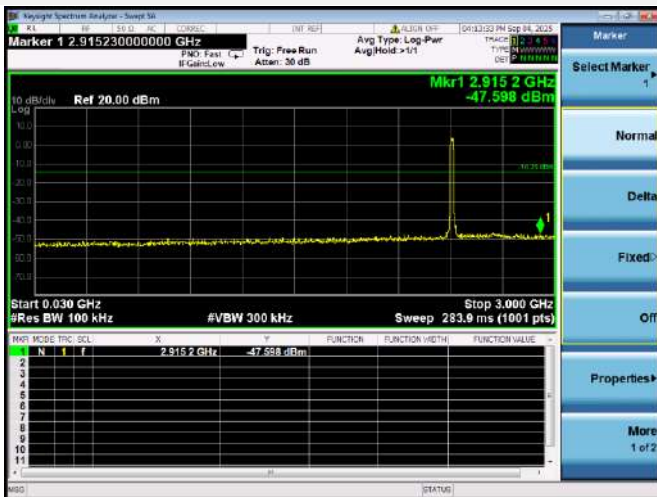
802.11b HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



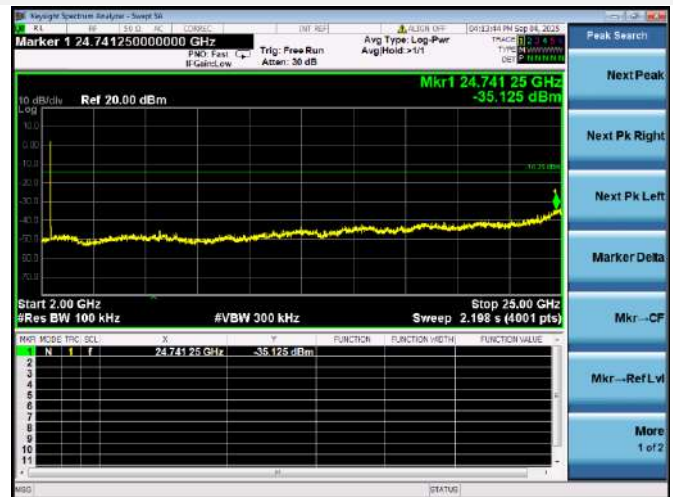
802.11g LOW CHANNEL CARRIER LEVEL



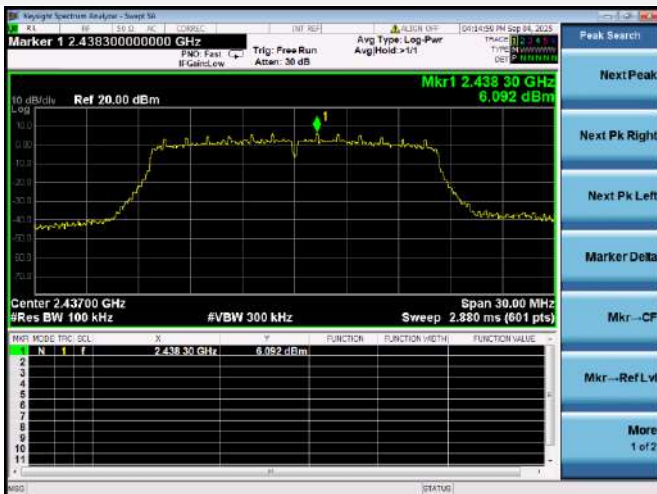
802.11g LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



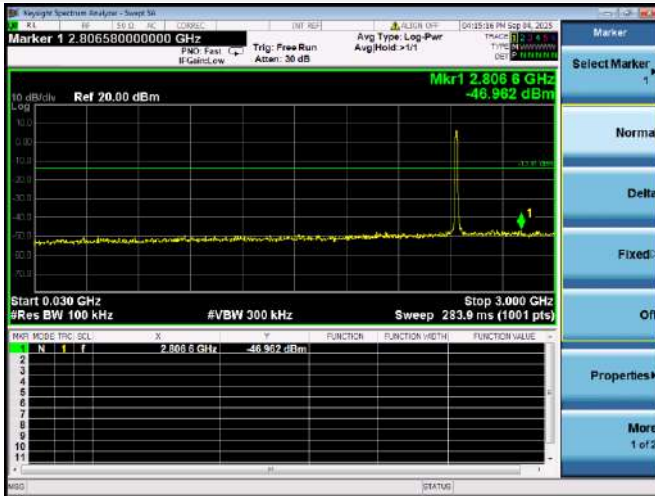
802.11g LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



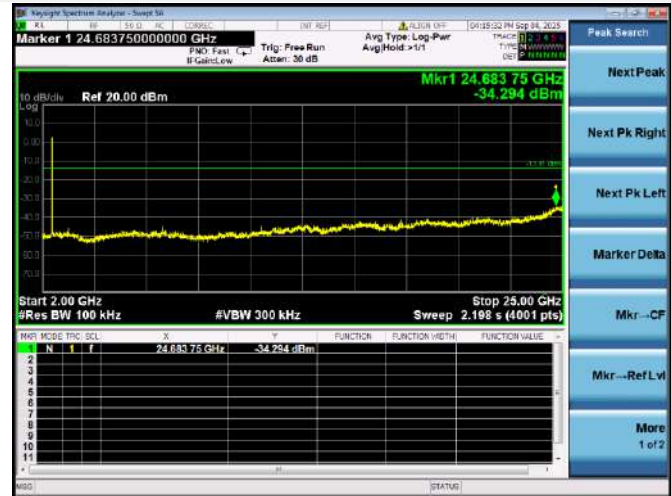
802.11g MIDDLE CHANNEL CARRIER LEVEL



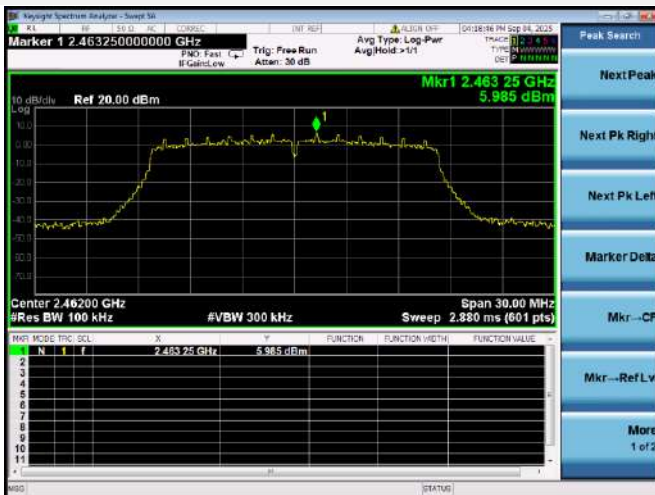
802.11g MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



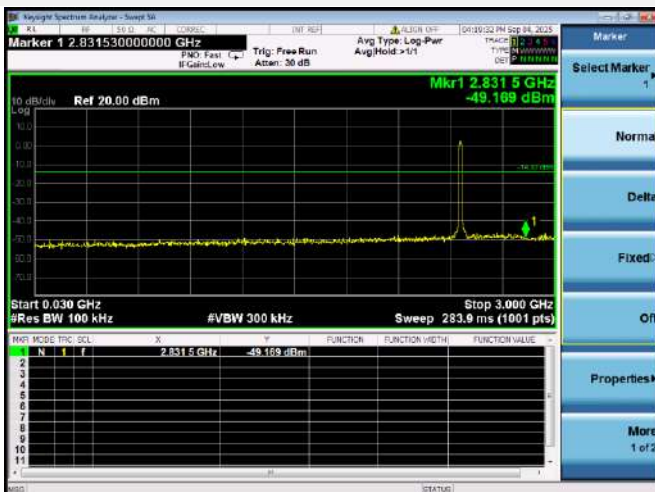
802.11g MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



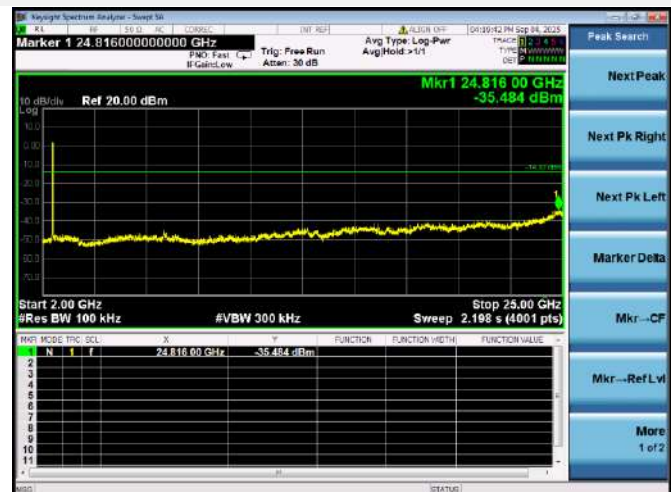
802.11g HIGH CHANNEL CARRIER LEVEL



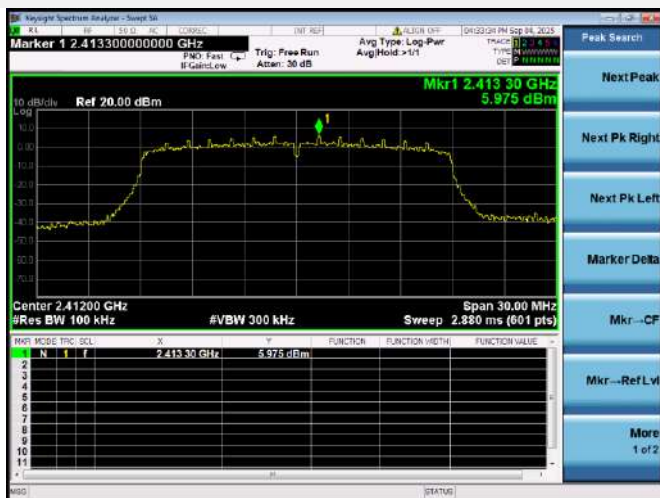
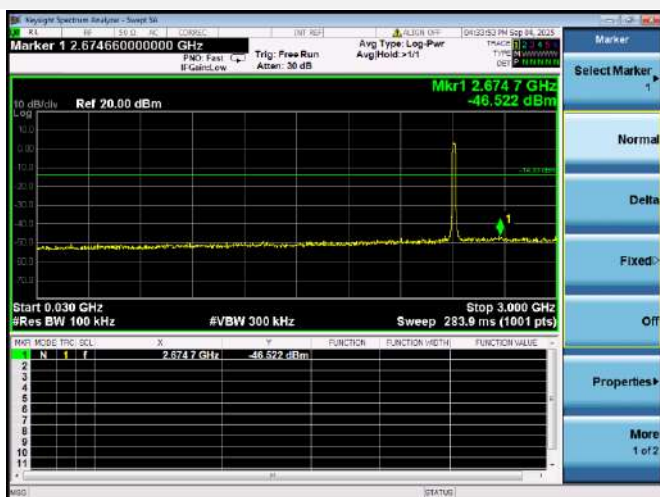
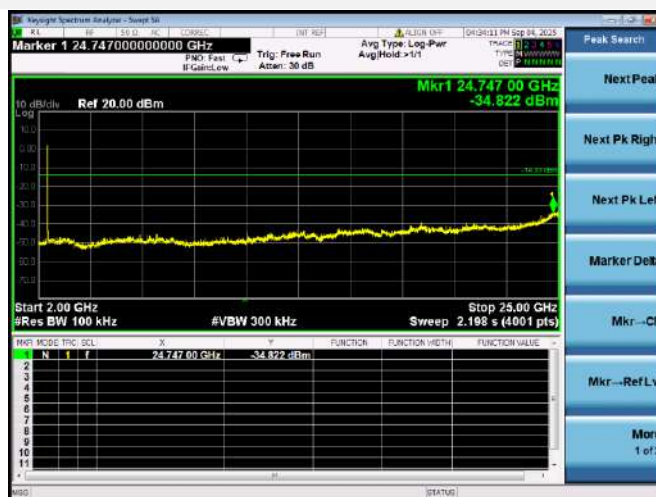
802.11g HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



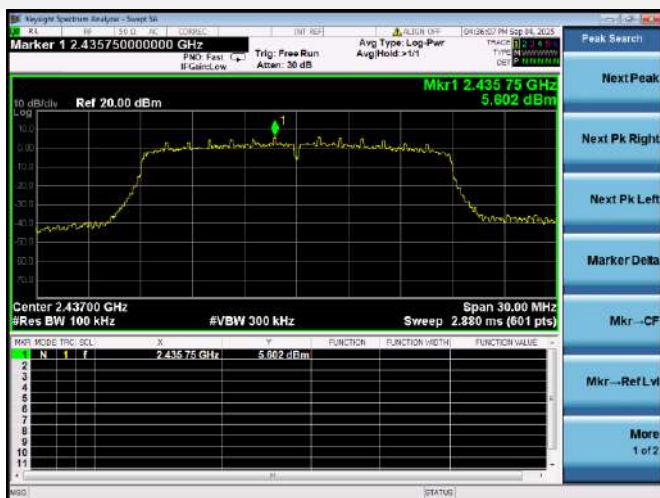
802.11g HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



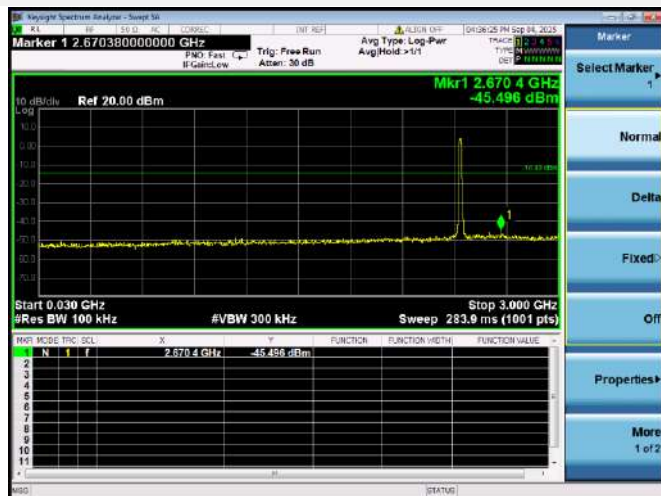
802.11n-20 MHz LOW CHANNEL CARRIER LEVEL

802.11n-20 MHz LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz802.11n-20 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

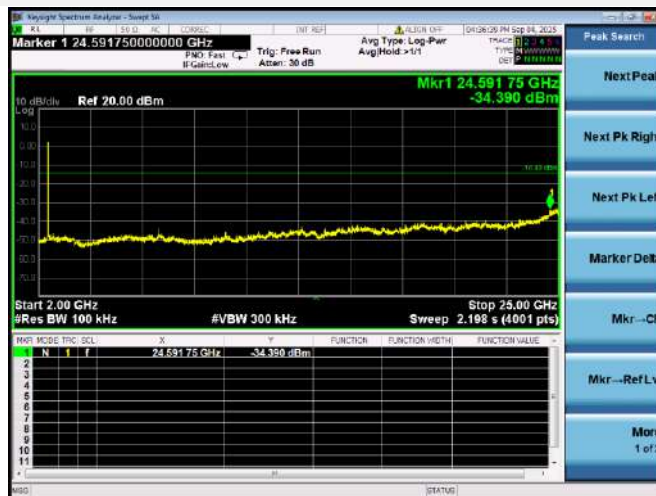
802.11n-20 MHz MIDDLE CHANNEL CARRIER LEVEL



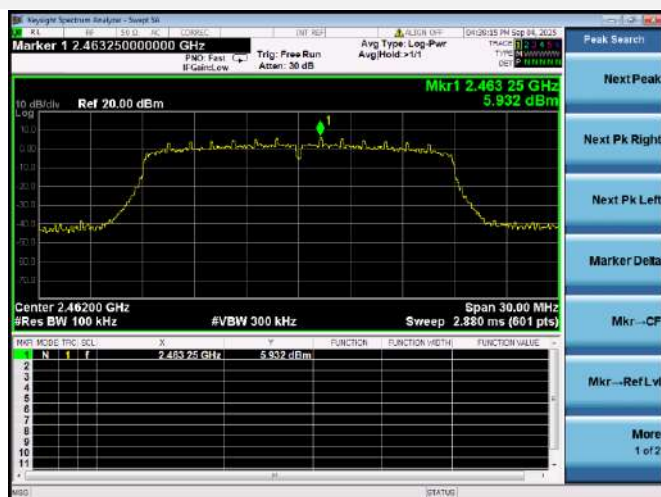
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



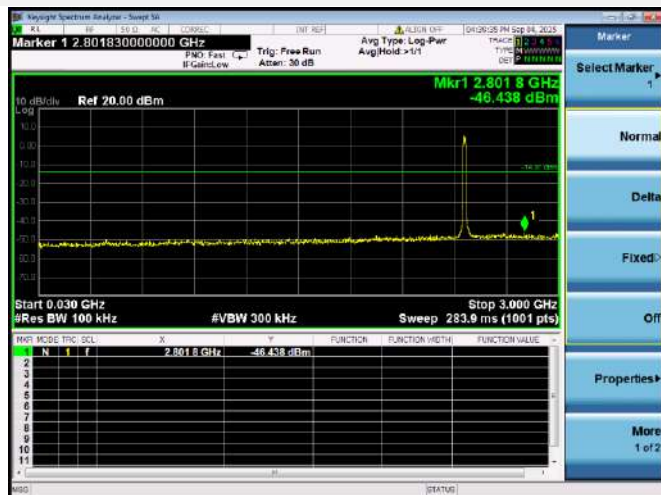
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



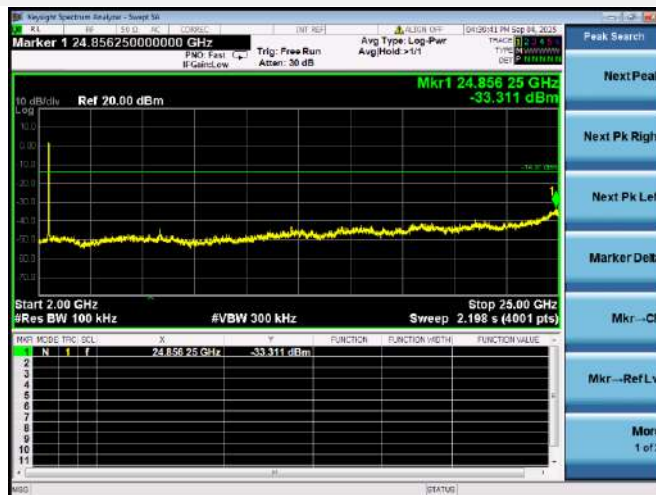
802.11n-20 MHz HIGH CHANNEL CARRIER LEVEL



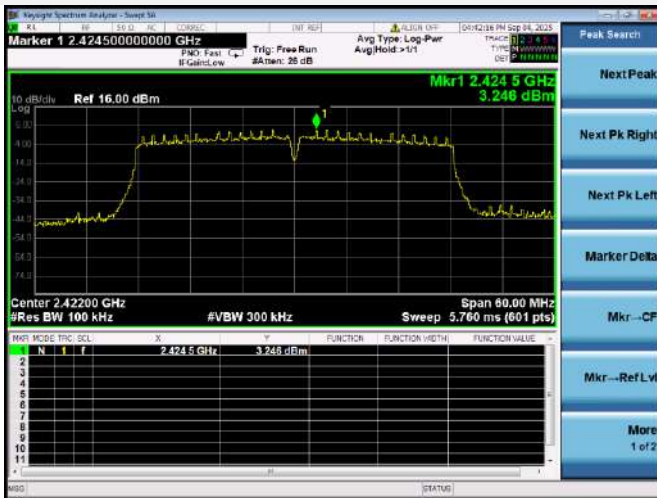
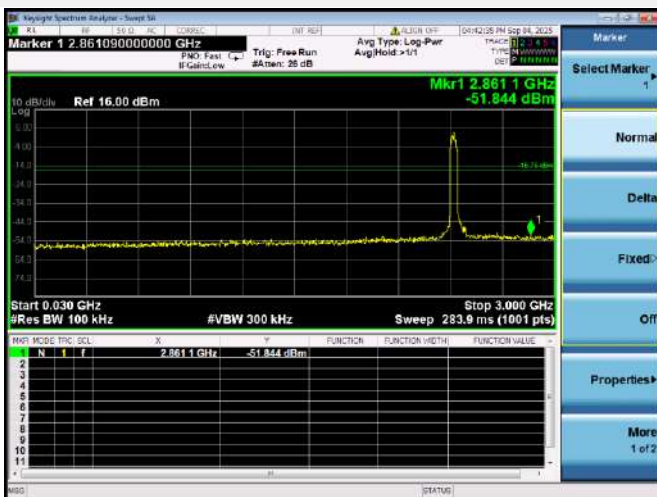
802.11n-20 MHz HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



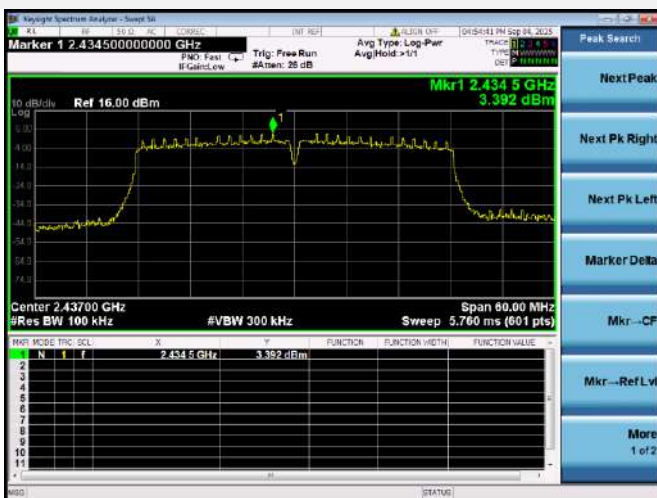
802.11n-20 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



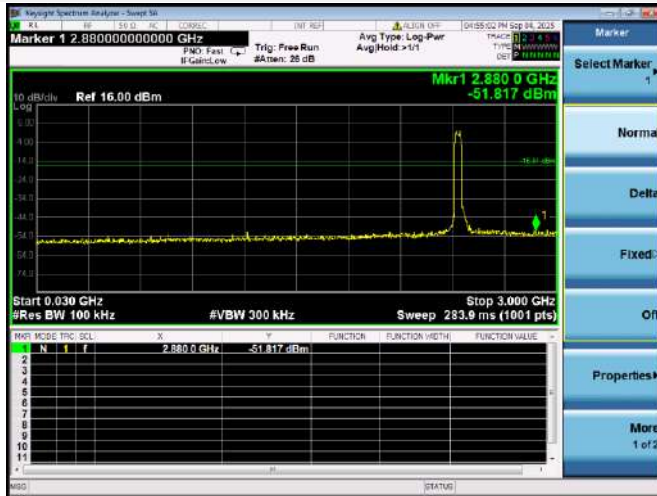
802.11n-40 MHz LOW CHANNEL CARRIER LEVEL

802.11n-40 MHz LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz802.11n-40 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

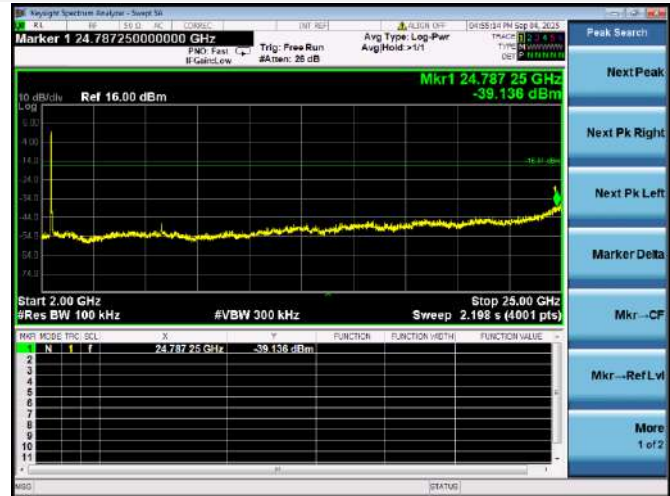
802.11n-40 MHz MIDDLE CHANNEL CARRIER LEVEL



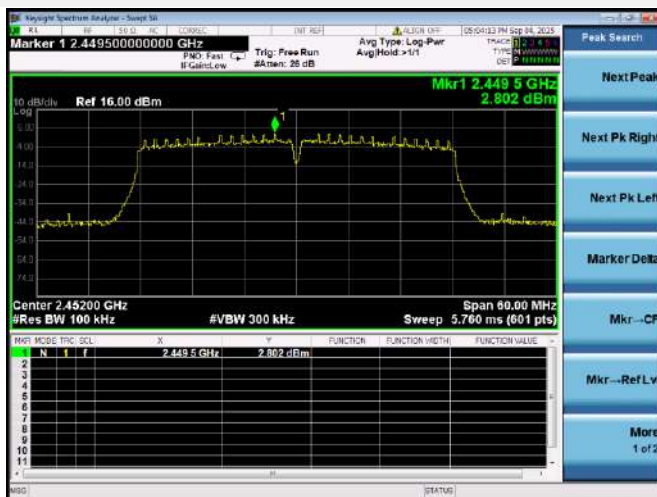
802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



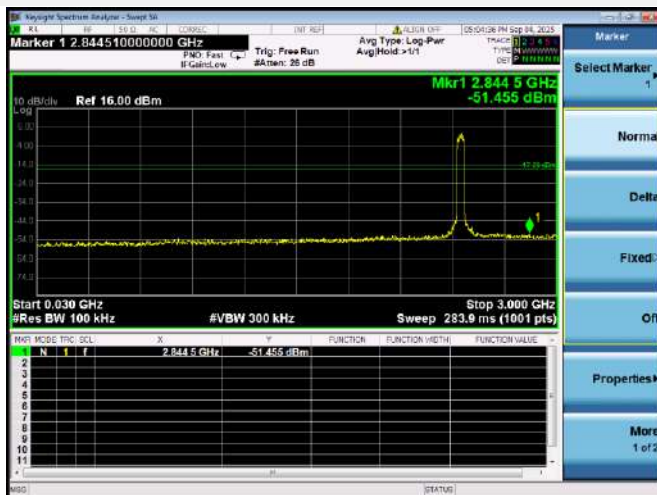
802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



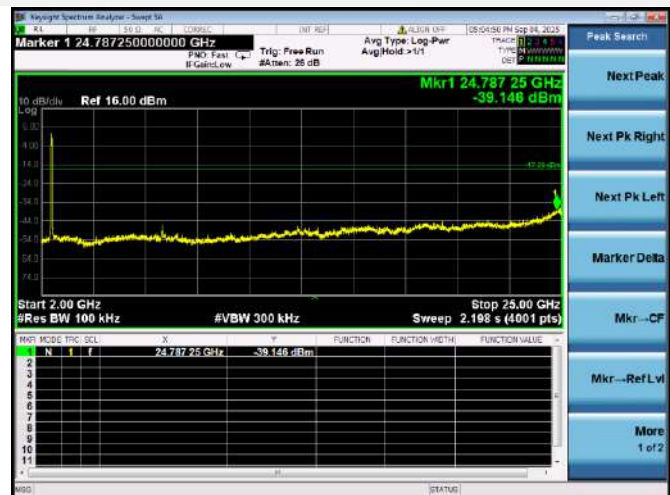
802.11n-40 MHz HIGH CHANNEL CARRIER LEVEL



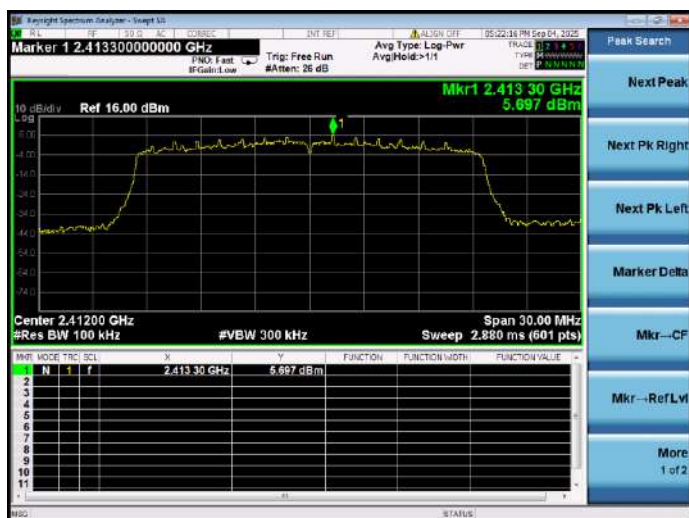
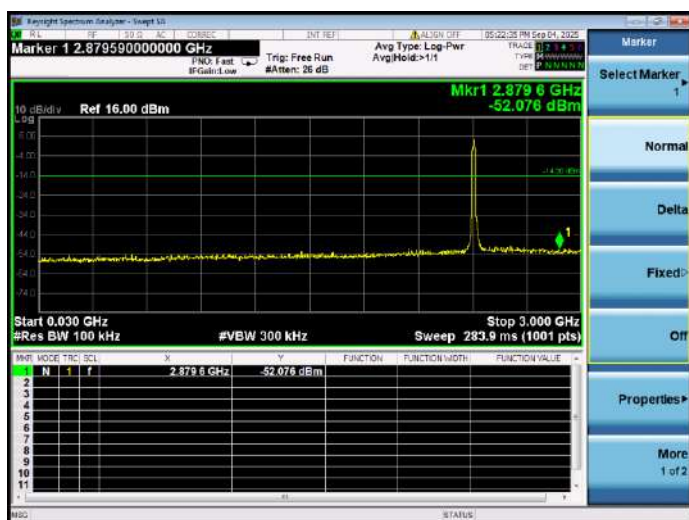
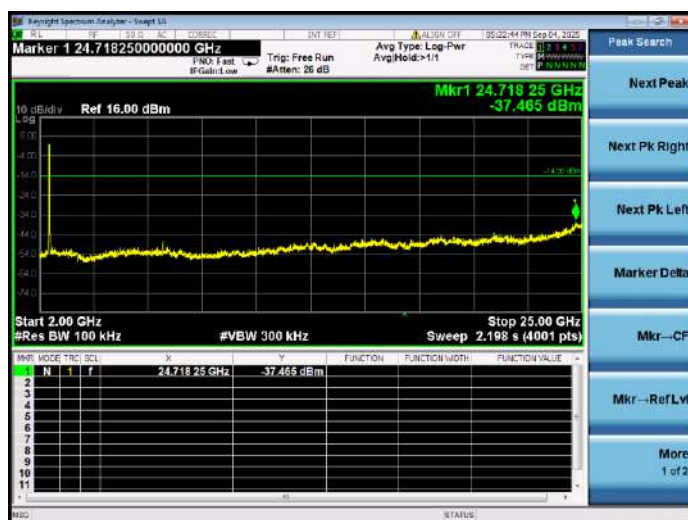
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



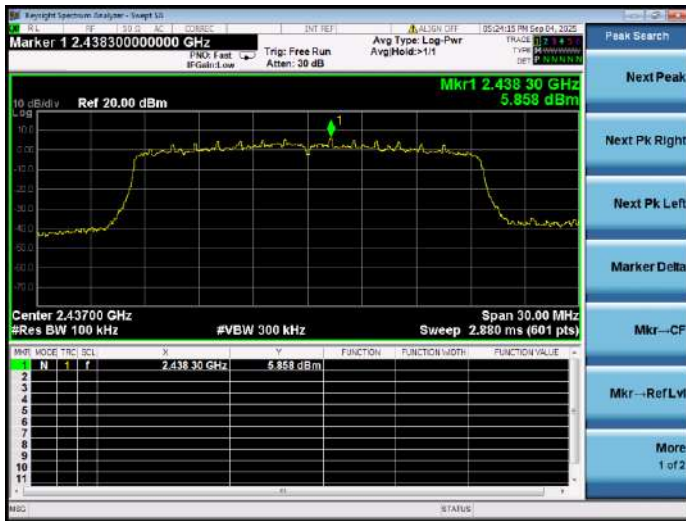
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



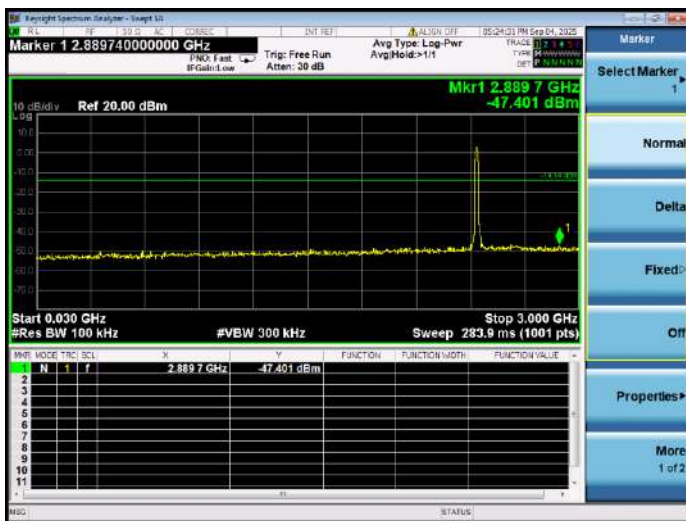
802.11ax-20 MHz(SU) LOW CHANNEL CARRIER LEVEL

802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

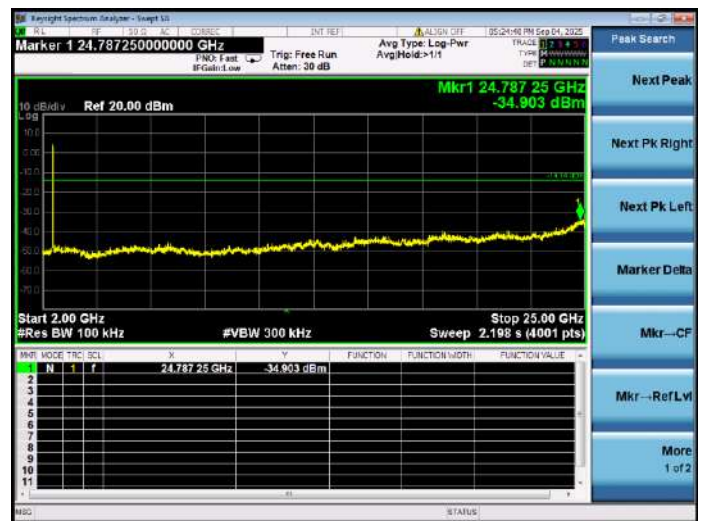
802.11ax-20 MHz(SU) MIDDLE CHANNEL CARRIER LEVEL



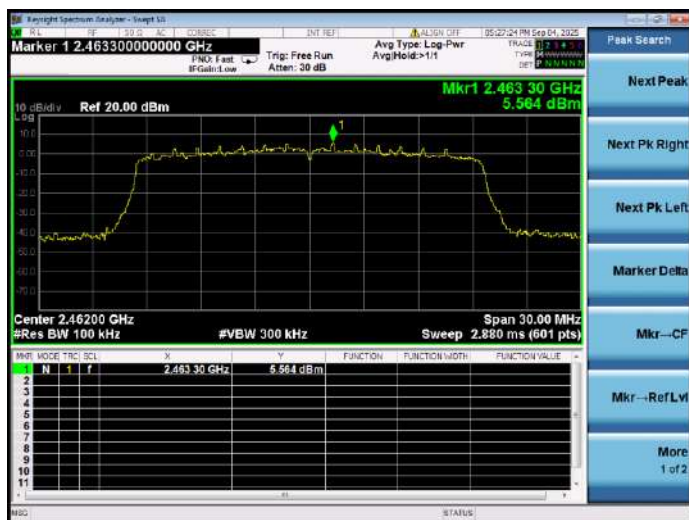
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



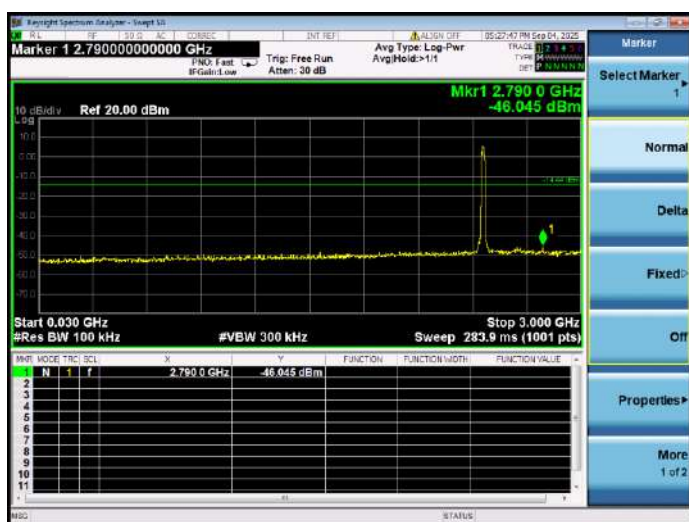
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



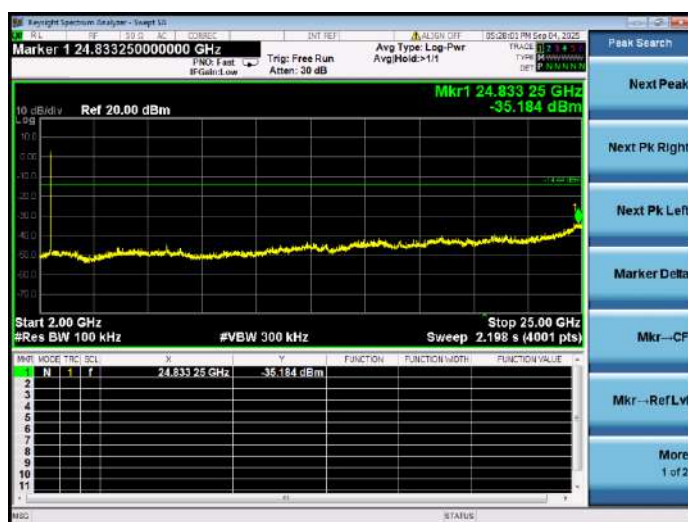
802.11ax-20 MHz(SU) HIGH CHANNEL CARRIER LEVEL



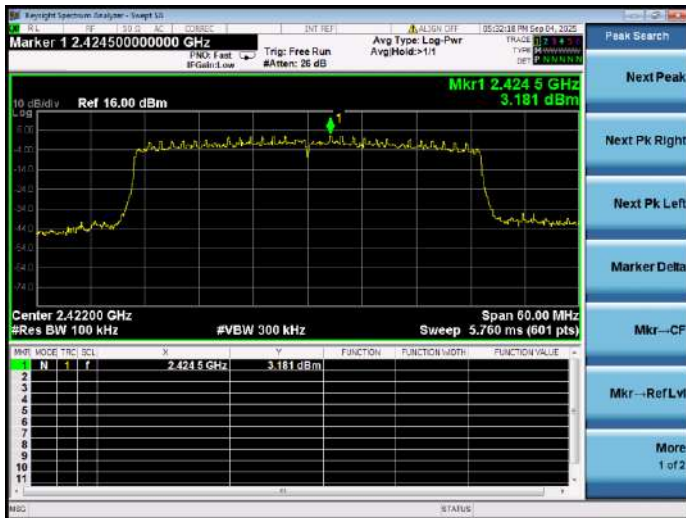
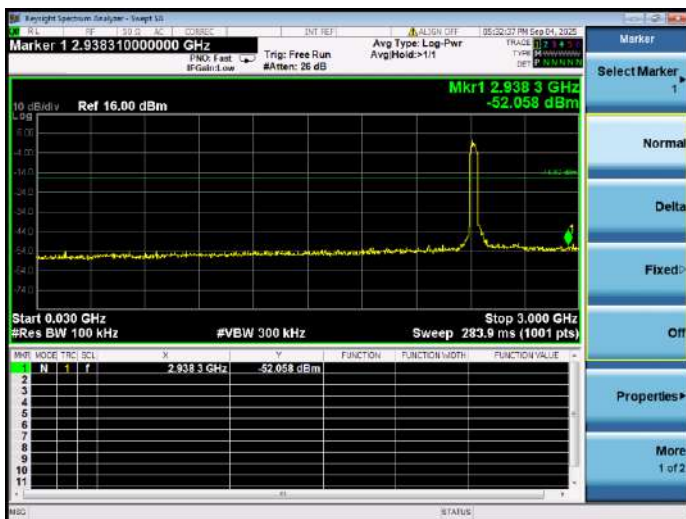
802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



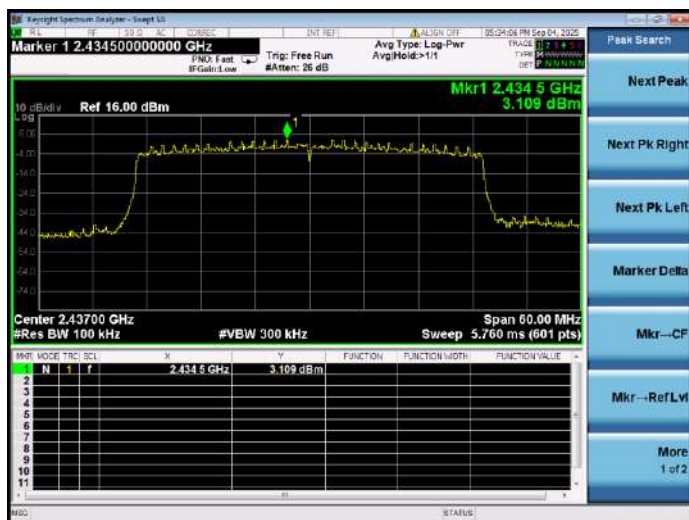
802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



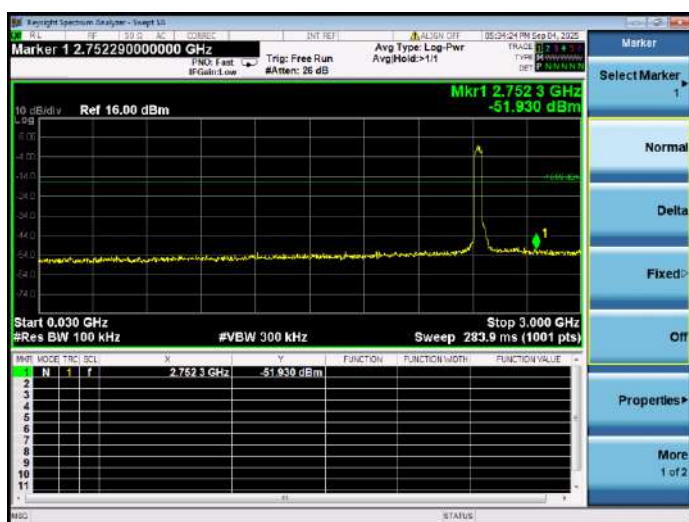
802.11ax-40 MHz(SU) LOW CHANNEL CARRIER LEVEL

802.11ax-40 MHz(SU) LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz802.11ax-40 MHz(SU) LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

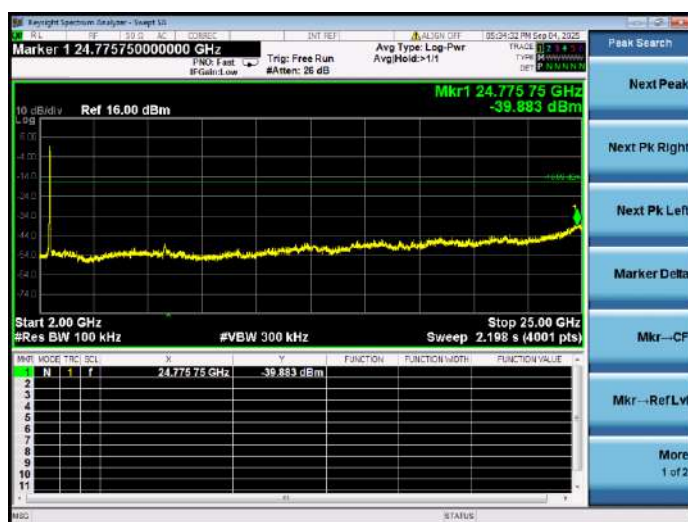
802.11ax-40 MHz(SU) MIDDLE CHANNEL CARRIER LEVEL



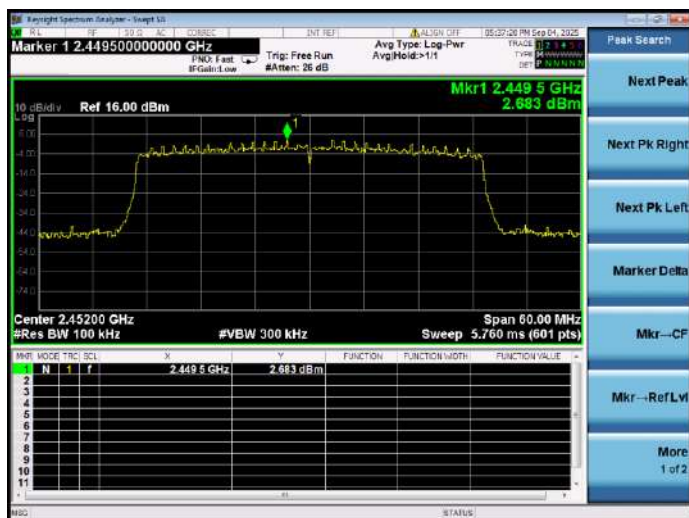
802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



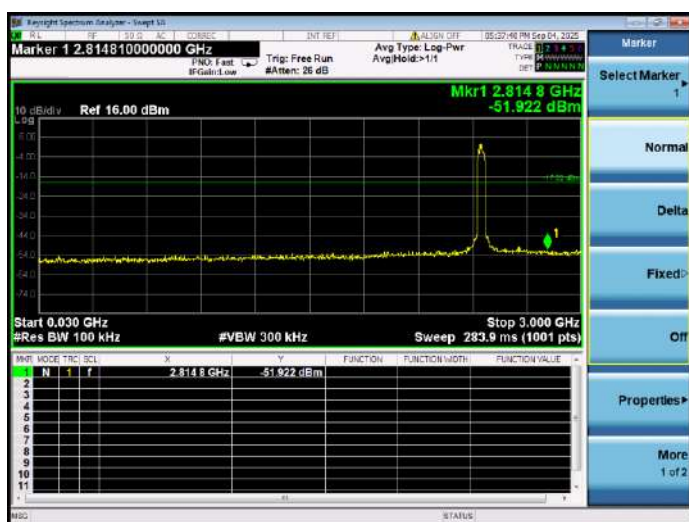
802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



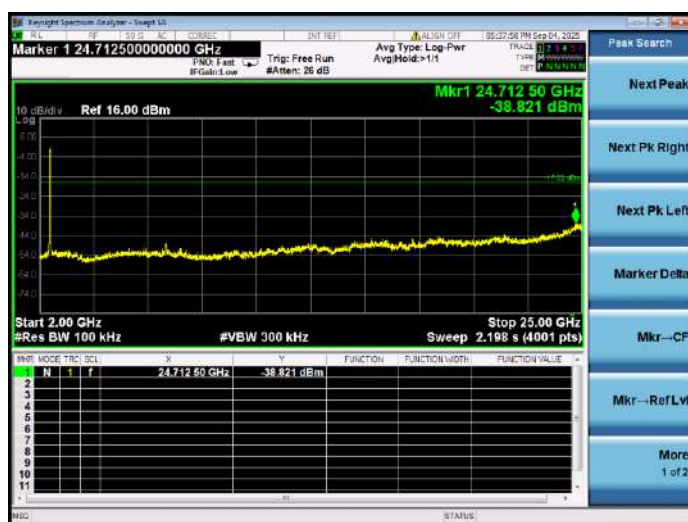
802.11ax-40 MHz(SU) HIGH CHANNEL CARRIER LEVEL



802.11ax-40 MHz(SU) HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-40 MHz(SU) HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



A.4 Band Edge (Authorized-band band-edge)

Note¹: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.

Note²: All the configurations were pre tested, only the worst configuration has been reported in this report.

Note³: All antenna were pre tested, but only the worst case has been reported in this report.

Test Data

ANT 1

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-35.16	5.88	-14.12	Pass
High Channel	-46.92	6.16	-13.84	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-40.89	5.75	-14.25	Pass
High Channel	-44.06	5.99	-14.02	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-40.48	5.98	-14.03	Pass
High Channel	-44.38	5.93	-14.07	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-39.57	3.25	-16.75	Pass
High Channel	-44.38	2.80	-17.20	Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-39.34	5.70	-14.30	Pass
High Channel	-33.24	5.56	-14.44	Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-40.56	3.18	-16.82	Pass
High Channel	-44.24	2.68	-17.32	Pass

Test Plots

802.11b LOW CHANNEL, CARRIER LEVEL



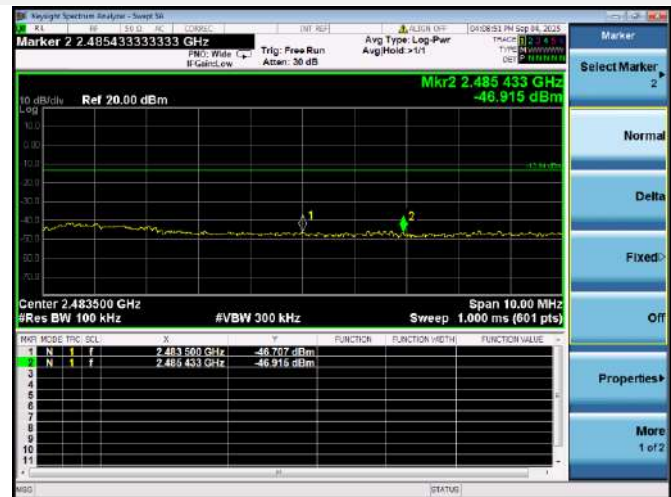
802.11b LOW CHANNEL, BAND EDGE



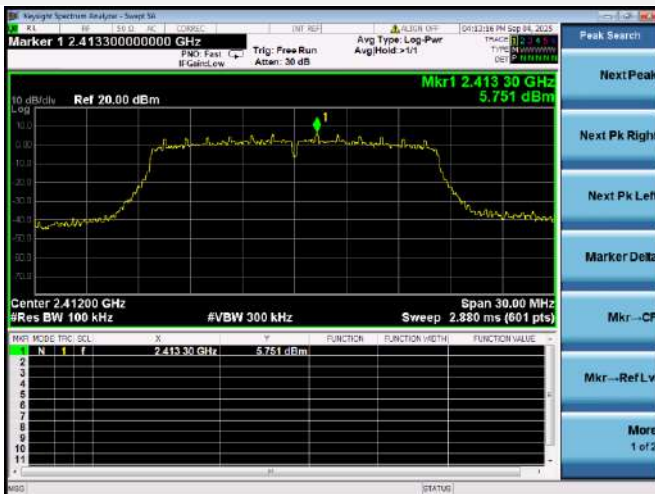
802.11b HIGH CHANNEL, CARRIER LEVEL



802.11b HIGH CHANNEL, BAND EDGE



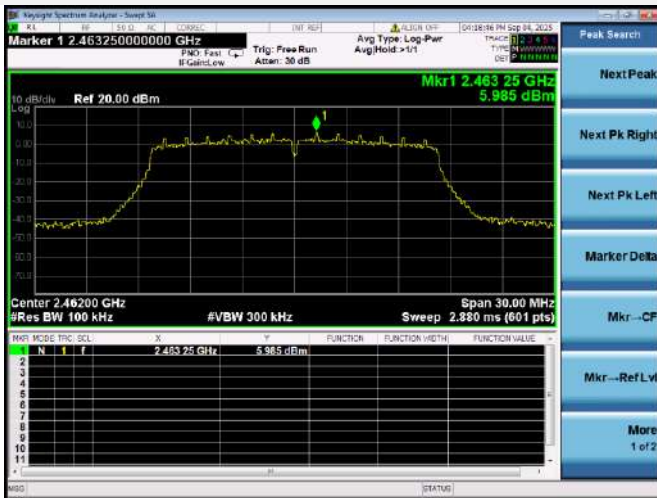
802.11g LOW CHANNEL, CARRIER LEVEL



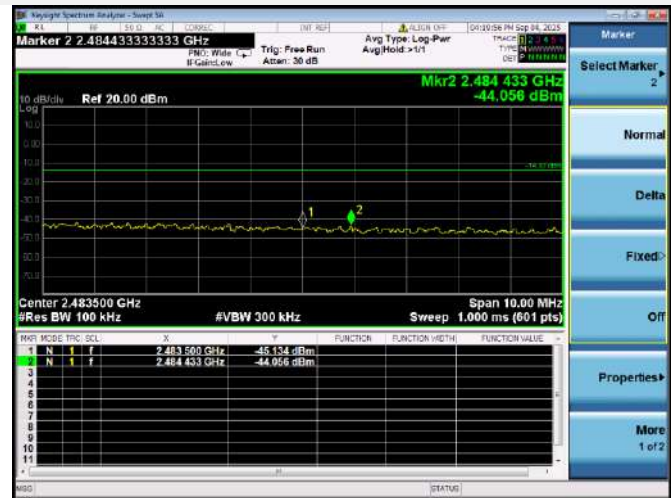
802.11g LOW CHANNEL, BAND EDGE



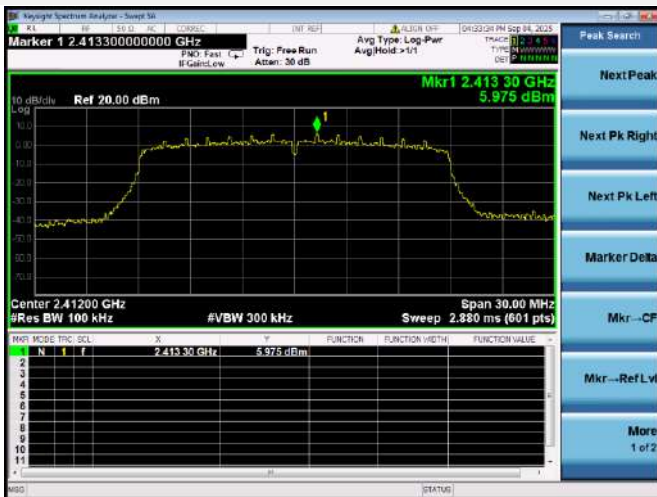
802.11g HIGH CHANNEL, CARRIER LEVEL



802.11g HIGH CHANNEL, BAND EDGE



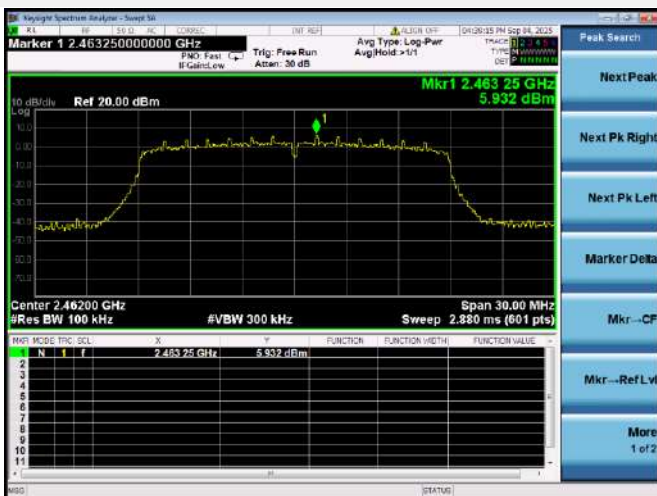
802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL



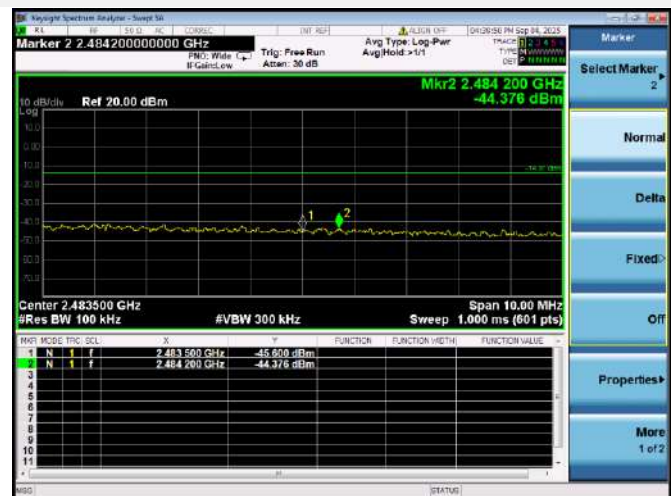
802.11n-20 MHz LOW CHANNEL, BAND EDGE



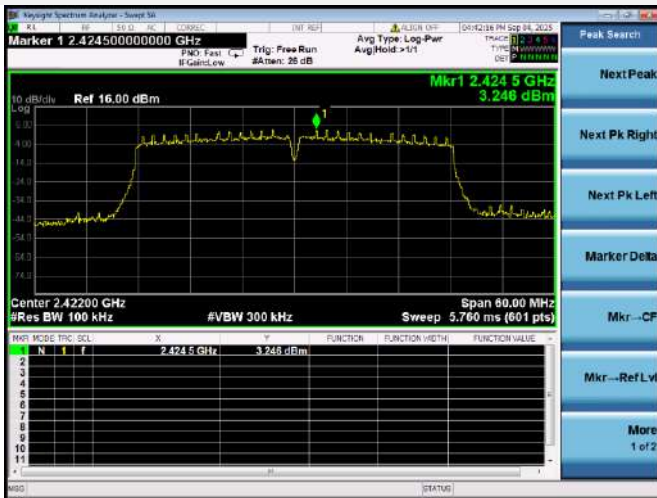
802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL



802.11n-20 MHz HIGH CHANNEL, BAND EDGE



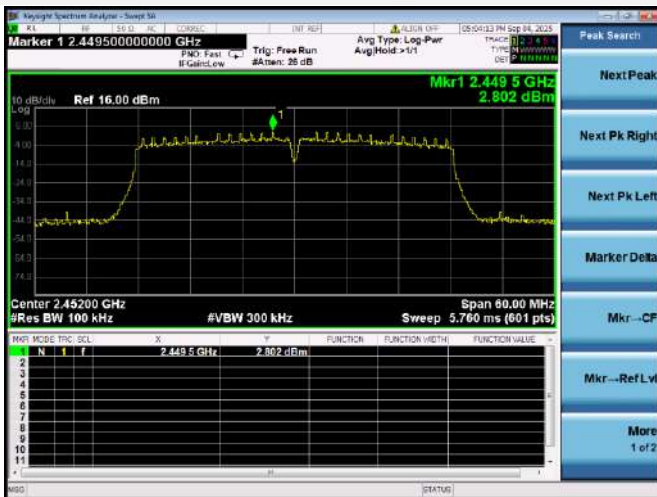
802.11n-40 MHz LOW CHANNEL, CARRIER LEVEL



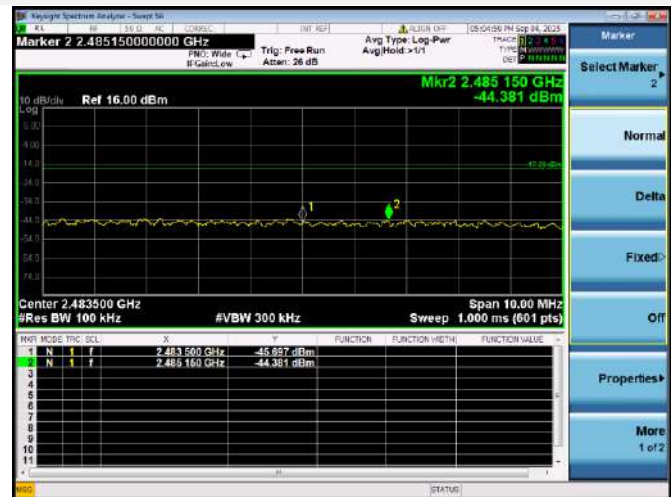
802.11n-40 MHz LOW CHANNEL, BAND EDGE



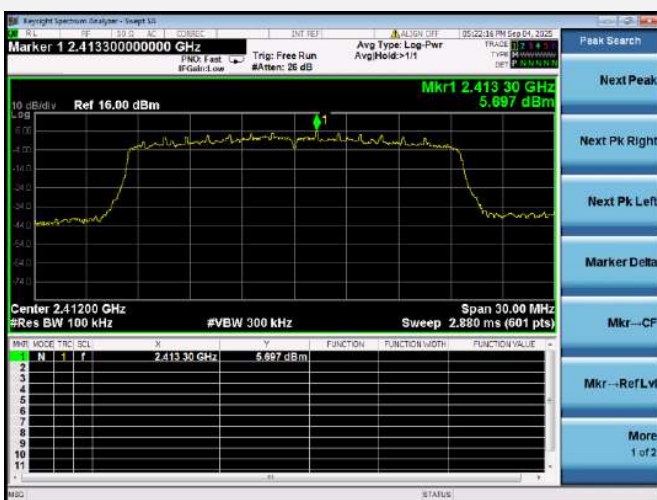
802.11n-40 MHz HIGH CHANNEL, CARRIER LEVEL



802.11n-40 MHz HIGH CHANNEL, BAND EDGE



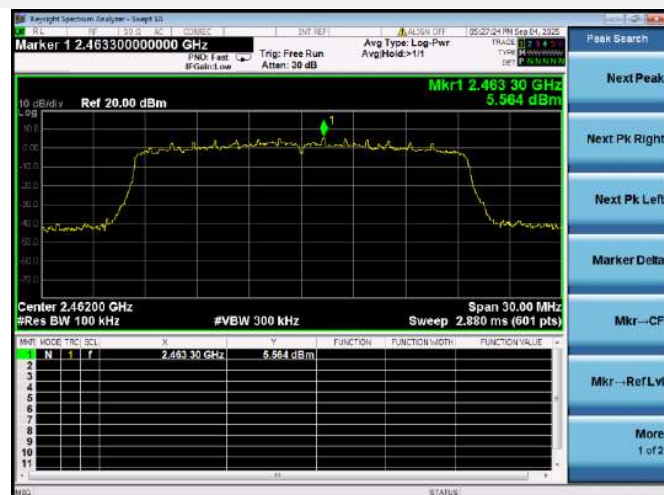
802.11ax-20 MHz(SU) LOW CHANNEL, CARRIER LEVEL



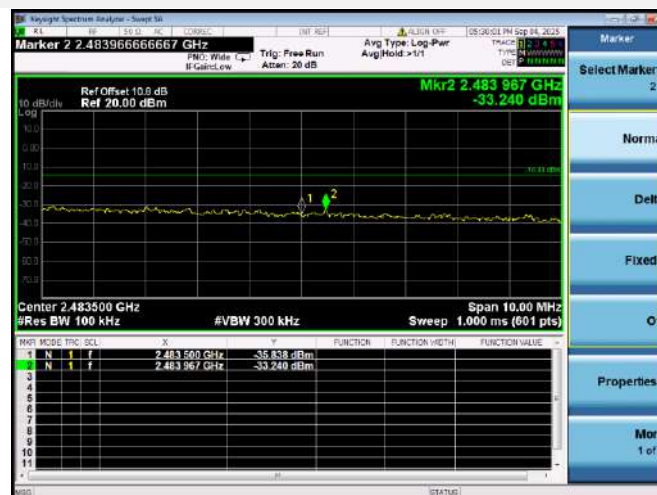
802.11ax-20 MHz(SU) LOW CHANNEL, BAND EDGE



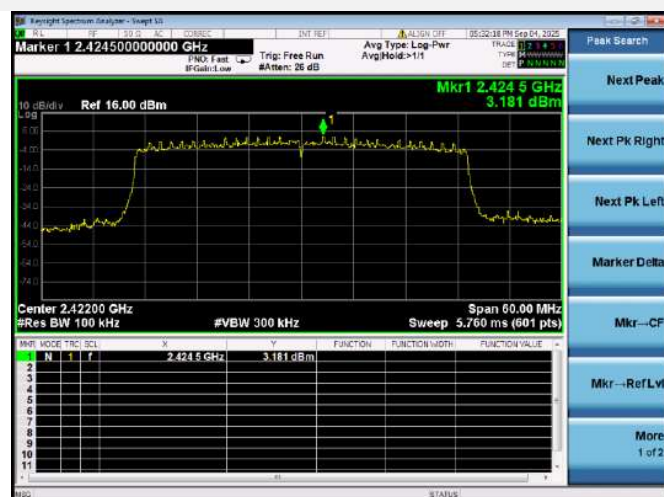
802.11ax-20 MHz(SU) HIGH CHANNEL, CARRIER LEVEL



802.11ax-20 MHz(SU) HIGH CHANNEL, BAND EDGE



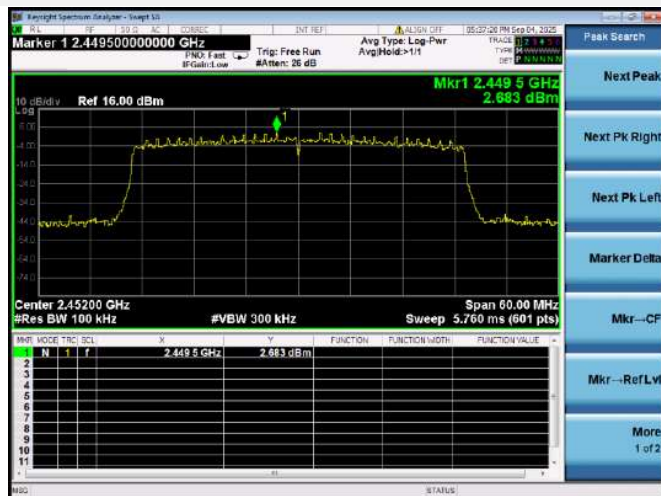
802.11ax-40 MHz(SU) LOW CHANNEL, CARRIER LEVEL



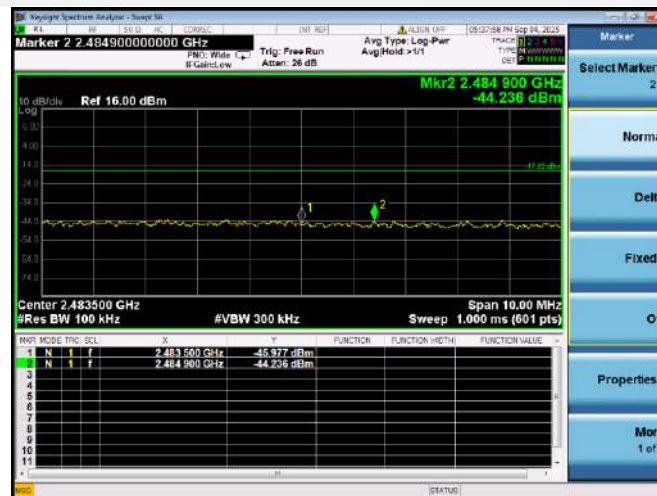
802.11ax-40 MHz(SU) LOW CHANNEL, BAND EDGE



802.11ax-40 MHz(SU) HIGH CHANNEL, CARRIER LEVEL



802.11ax-40 MHz(SU) HIGH CHANNEL, BAND EDGE



A.5 Conducted Emissions

Note¹: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

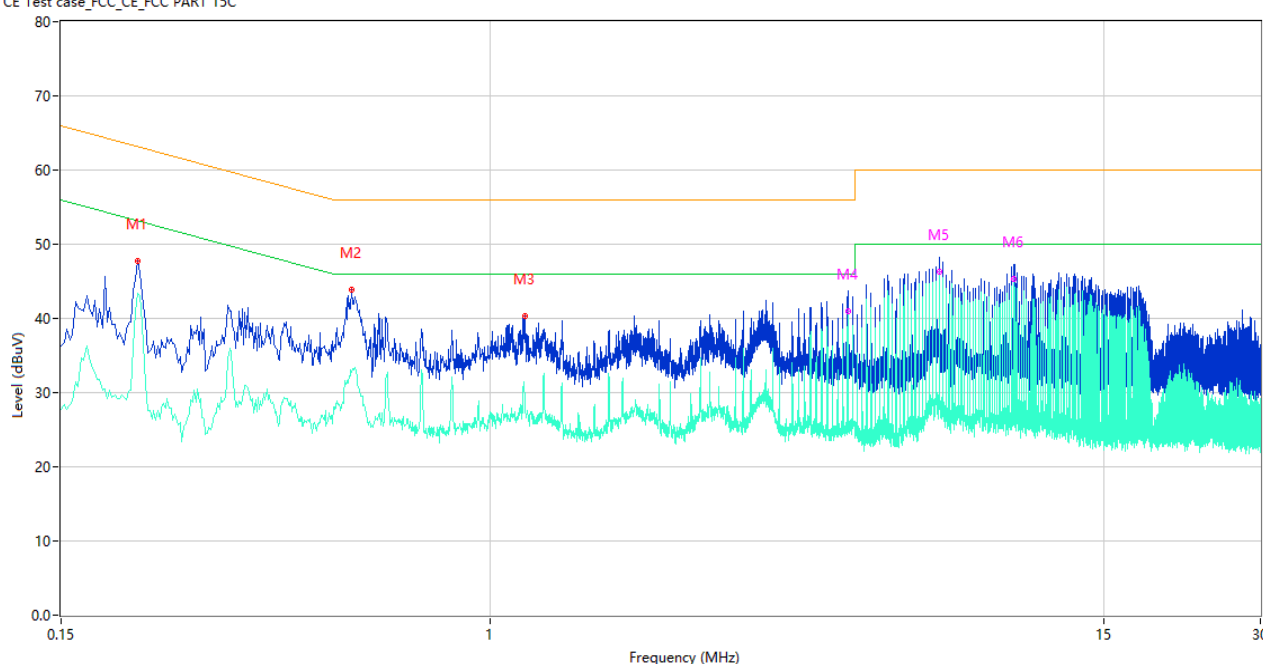
Note²: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Note³: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

Test Data and Plots

PHASE L

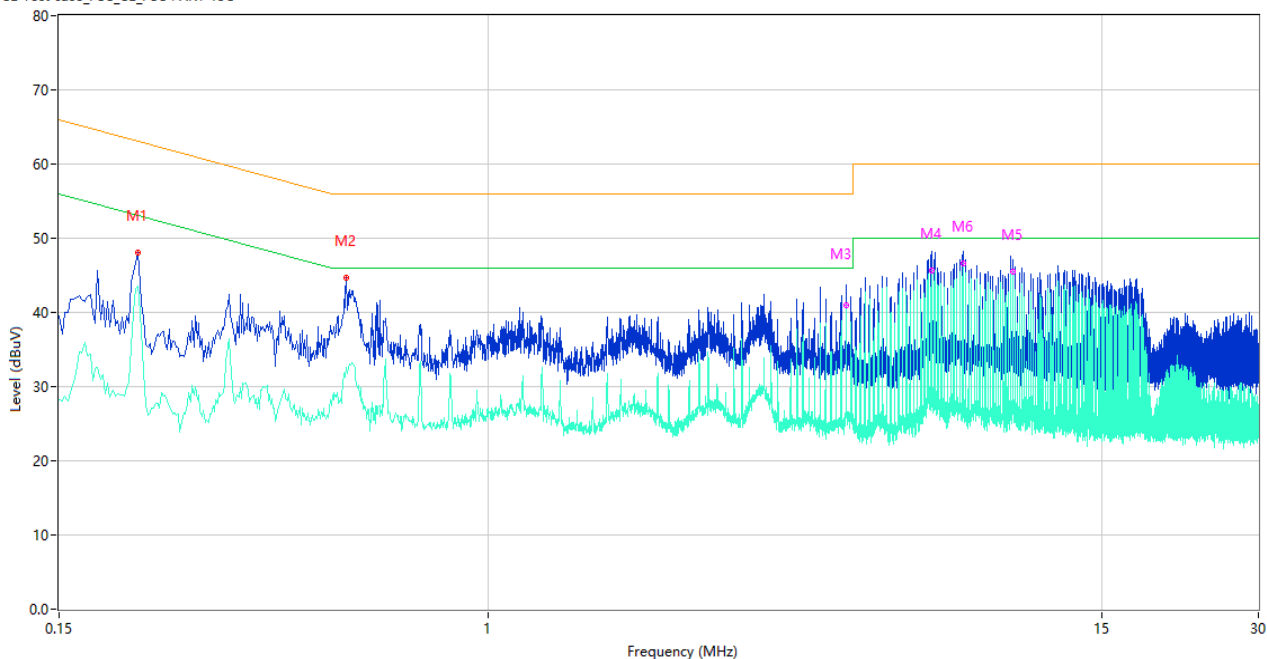
CE Test case_FCC_CE_FCC PART 15C



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.210	47.67	9.84	63.21	15.54	Peak	L	Pass
1**	0.210	43.41	9.84	53.21	9.80	AV	L	Pass
2	0.542	43.86	10.08	56.00	12.14	Peak	L	Pass
2**	0.542	32.79	10.08	46.00	13.21	AV	L	Pass
3	1.164	40.33	10.31	56.00	15.67	Peak	L	Pass
3**	1.164	27.88	10.31	46.00	18.12	AV	L	Pass
4	4.848	43.71	10.31	56.00	12.29	Peak	L	Pass
4**	4.848	40.94	10.31	46.00	5.06	AV	L	Pass
5	7.270	48.30	10.31	60.00	11.70	Peak	L	Pass
5**	7.270	46.31	10.31	50.00	3.69	AV	L	Pass
6	10.114	47.14	10.38	60.00	12.86	Peak	L	Pass
6**	10.114	45.29	10.38	50.00	4.71	AV	L	Pass

PHASE N

CE Test case_FCC_CE_FCC PART 15C



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.212	48.13	9.84	63.13	15.00	Peak	N	Pass
1**	0.212	43.51	9.84	53.13	9.62	AV	N	Pass
2	0.534	44.72	10.07	56.00	11.28	Peak	N	Pass
2**	0.534	32.62	10.07	46.00	13.38	AV	N	Pass
3	4.858	43.71	10.30	56.00	12.29	Peak	N	Pass
3**	4.858	40.97	10.30	46.00	5.03	AV	N	Pass
4	7.074	47.76	10.43	60.00	12.24	Peak	N	Pass
4**	7.074	45.58	10.43	50.00	4.42	AV	N	Pass
5	10.136	47.07	10.21	60.00	12.93	Peak	N	Pass
5**	10.136	45.49	10.21	50.00	4.51	AV	N	Pass
6	8.128	48.22	10.27	60.00	11.78	Peak	N	Pass
6**	8.128	46.60	10.27	50.00	3.40	AV	N	Pass

A.6 Radiated Emission

Note ¹: The symbol of “--” in the table which means not application.

Note ²: For the test data above 1 GHz, According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

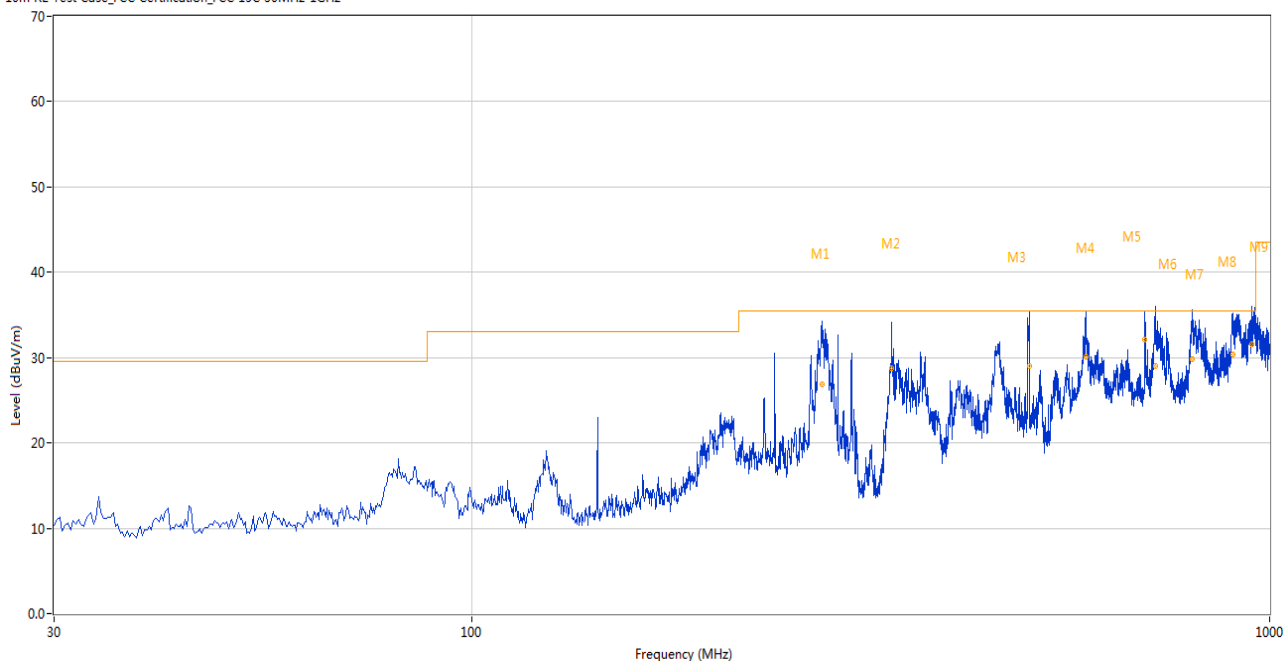
Note ³: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note ⁴: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

Test Data and Plots

30 MHz to 1 GHz, ANT H

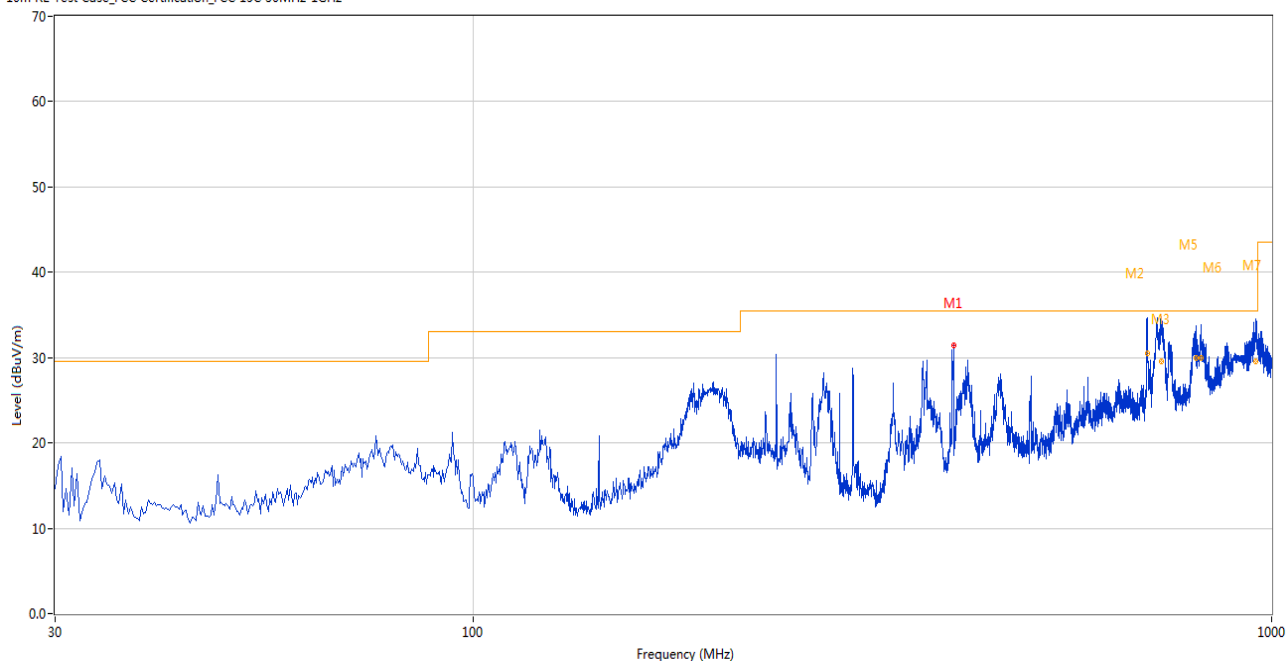
10m RE Test Case_FCC Certification_FCC 15C 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	274.864	34.32	-26.35	35.5	1.18	Peak	15.00	200	Horizontal	N/A
1*	274.864	26.87	-26.35	35.5	8.63	QP	15.00	200	Horizontal	Pass
2	335.959	34.19	-24.41	35.5	1.31	Peak	302.00	200	Horizontal	N/A
2*	335.959	28.81	-24.41	35.5	6.69	QP	302.00	200	Horizontal	Pass
3	499.848	35.27	-20.32	35.5	0.23	Peak	145.00	200	Horizontal	N/A
3*	499.848	29.01	-20.32	35.5	6.49	QP	145.00	200	Horizontal	Pass
4	588.338	35.42	-17.29	35.5	0.08	Peak	172.00	200	Horizontal	N/A
4*	588.338	30.04	-17.29	35.5	5.46	QP	172.00	200	Horizontal	Pass
5	696.951	36.49	-15.28	35.5	-0.99	Peak	150.00	100	Horizontal	N/A
5*	696.951	32.05	-15.28	35.5	3.45	QP	150.00	100	Horizontal	Pass
6	718.528	36.00	-14.26	35.5	-0.50	Peak	47.00	100	Horizontal	N/A
6*	718.528	28.96	-14.26	35.5	6.54	QP	47.00	100	Horizontal	Pass
7	799.745	35.65	-12.48	35.5	-0.15	Peak	101.00	100	Horizontal	N/A
7*	799.745	29.85	-12.48	35.5	5.65	QP	101.00	100	Horizontal	Pass
8	899.145	36.21	-10.98	35.5	-0.71	Peak	7.00	100	Horizontal	N/A
8*	899.145	30.35	-10.98	35.5	5.15	QP	7.00	100	Horizontal	Pass
9	949.330	36.02	-9.61	35.5	-0.52	Peak	145.00	100	Horizontal	N/A
9*	949.330	31.61	-9.61	35.5	3.89	QP	145.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V

10m RE Test Case_FCC Certification_FCC 15C 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	399.720	31.40	-22.91	35.5	4.10	Peak	52.00	100	Vertical	Pass
2	699.618	35.49	-14.78	35.5	0.01	Peak	145.00	200	Vertical	N/A
2*	699.618	30.55	-14.78	35.5	4.95	QP	145.00	200	Vertical	Pass
3	726.771	33.83	-13.99	35.5	1.67	Peak	129.00	200	Vertical	N/A
3*	726.771	29.55	-13.99	35.5	5.95	QP	129.00	200	Vertical	Pass
4	749.560	29.13	-13.56	35.5	6.37	Peak	118.00	200	Vertical	N/A
5	805.321	33.66	-12.37	35.5	1.84	Peak	194.00	200	Vertical	Pass
5*	805.321	29.96	-12.37	35.5	5.54	QP	194.00	200	Vertical	N/A
6	815.504	33.80	-12.34	35.5	1.70	Peak	188.00	200	Vertical	Pass
6*	815.504	29.99	-12.34	35.5	5.51	QP	188.00	200	Vertical	N/A
7	955.149	34.54	-9.66	35.5	0.96	Peak	85.00	200	Vertical	Pass
7*	955.149	29.56	-9.66	35.5	5.94	QP	85.00	200	Vertical	N/A

Note ¹: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note ²: The spurious above 18G is noise only, do not show on the report.

Note ³: All the configurations were pre tested, only the worst configuration has been reported in this report.

Note ⁴: All antenna were pre tested, but only the worst case has been reported in this report.

ANT 1

1 GHz to 18 GHz, ANT H 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.407	43.39	74.0	30.61	Peak	93.00	200	Horizontal	Pass
1**	1333.407	38.16	54.0	15.84	AV	93.00	200	Horizontal	Pass
2	2996.100	48.10	74.0	25.90	Peak	48.00	100	Horizontal	Pass
2**	2996.100	38.86	54.0	15.14	AV	48.00	100	Horizontal	Pass
3	4932.078	54.41	74.0	19.59	Peak	156.00	200	Horizontal	Pass
3**	4932.078	43.96	54.0	10.04	AV	156.00	200	Horizontal	Pass
4	6804.584	52.35	74.0	21.65	Peak	324.00	100	Horizontal	Pass
4**	6804.584	45.17	54.0	8.83	AV	324.00	100	Horizontal	Pass
5	13412.468	53.76	74.0	20.24	Peak	79.00	100	Horizontal	Pass
5**	13412.468	43.84	54.0	10.16	AV	79.00	100	Horizontal	Pass
6	17427.799	55.65	74.0	18.35	Peak	168.00	200	Horizontal	Pass
6**	17427.799	46.24	54.0	7.76	AV	168.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1336.721	43.82	74.0	30.18	Peak	105.00	400	Vertical	Pass
1**	1336.721	37.62	54.0	16.38	AV	105.00	400	Vertical	Pass
2	2982.390	49.26	74.0	24.74	Peak	120.00	400	Vertical	Pass
2**	2982.390	42.98	54.0	11.02	AV	120.00	400	Vertical	Pass
3	4855.301	50.09	74.0	23.91	Peak	285.00	200	Vertical	Pass
3**	4855.301	42.12	54.0	11.88	AV	285.00	200	Vertical	Pass
4	6608.448	54.05	74.0	19.95	Peak	329.00	200	Vertical	Pass
4**	6608.448	46.81	54.0	7.19	AV	329.00	200	Vertical	Pass
5	13432.625	55.40	74.0	18.60	Peak	24.00	200	Vertical	Pass
5**	13432.625	45.94	54.0	8.06	AV	24.00	200	Vertical	Pass
6	17416.957	59.99	74.0	14.01	Peak	199.00	200	Vertical	Pass
6**	17416.957	46.49	54.0	7.51	AV	199.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.548	42.93	74.0	31.07	Peak	64.00	300	Horizontal	Pass
1**	1331.548	36.31	54.0	17.69	AV	64.00	300	Horizontal	Pass
2	2993.454	50.26	74.0	23.74	Peak	29.00	400	Horizontal	Pass
2**	2993.454	41.17	54.0	12.83	AV	29.00	400	Horizontal	Pass
3	4931.746	51.91	74.0	22.09	Peak	304.00	200	Horizontal	Pass
3**	4931.746	41.30	54.0	12.70	AV	304.00	200	Horizontal	Pass
4	6807.863	52.02	74.0	21.98	Peak	177.00	100	Horizontal	Pass
4**	6807.863	46.86	54.0	7.14	AV	177.00	100	Horizontal	Pass
5	13407.629	57.67	74.0	16.33	Peak	332.00	100	Horizontal	Pass
5**	13407.629	46.65	54.0	7.35	AV	332.00	100	Horizontal	Pass
6	17427.314	53.31	74.0	20.69	Peak	305.00	200	Horizontal	Pass
6**	17427.314	46.04	54.0	7.96	AV	305.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.328	44.65	74.0	29.35	Peak	226.00	100	Vertical	Pass
1**	1331.328	36.75	54.0	17.25	AV	226.00	100	Vertical	Pass
2	2982.660	48.18	74.0	25.82	Peak	89.00	200	Vertical	Pass
2**	2982.660	42.76	54.0	11.24	AV	89.00	200	Vertical	Pass
3	4857.800	47.27	74.0	26.73	Peak	132.00	200	Vertical	Pass
3**	4857.800	43.51	54.0	10.49	AV	132.00	200	Vertical	Pass
4	6610.726	56.67	74.0	17.33	Peak	316.00	300	Vertical	Pass
4**	6610.726	44.51	54.0	9.49	AV	316.00	300	Vertical	Pass
5	13431.463	56.09	74.0	17.91	Peak	120.00	100	Vertical	Pass
5**	13431.463	48.72	54.0	5.28	AV	120.00	100	Vertical	Pass
6	17420.693	56.38	74.0	17.62	Peak	342.00	300	Vertical	Pass
6**	17420.693	47.97	54.0	6.03	AV	342.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.530	45.94	74.0	28.06	Peak	218.00	100	Horizontal	Pass
1**	1331.530	37.73	54.0	16.27	AV	218.00	100	Horizontal	Pass
2	3000.250	48.87	74.0	25.13	Peak	274.00	300	Horizontal	Pass
2**	3000.250	42.67	54.0	11.33	AV	274.00	300	Horizontal	Pass
3	4932.105	50.45	74.0	23.55	Peak	346.00	200	Horizontal	Pass
3**	4932.105	42.28	54.0	11.72	AV	346.00	200	Horizontal	Pass
4	6808.307	52.99	74.0	21.01	Peak	68.00	200	Horizontal	Pass
4**	6808.307	45.01	54.0	8.99	AV	68.00	200	Horizontal	Pass
5	13413.474	55.22	74.0	18.78	Peak	71.00	400	Horizontal	Pass
5**	13413.474	46.63	54.0	7.37	AV	71.00	400	Horizontal	Pass
6	17424.366	55.87	74.0	18.13	Peak	259.00	100	Horizontal	Pass
6**	17424.366	50.45	54.0	3.55	AV	259.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.614	45.51	74.0	28.49	Peak	318.00	100	Vertical	Pass
1**	1333.614	35.36	54.0	18.64	AV	318.00	100	Vertical	Pass
2	2981.238	47.51	74.0	26.49	Peak	290.00	400	Vertical	Pass
2**	2981.238	43.96	54.0	10.04	AV	290.00	400	Vertical	Pass
3	4856.733	46.79	74.0	27.21	Peak	89.00	200	Vertical	Pass
3**	4856.733	43.29	54.0	10.71	AV	89.00	200	Vertical	Pass
4	6604.455	51.68	74.0	22.32	Peak	65.00	100	Vertical	Pass
4**	6604.455	42.82	54.0	11.18	AV	65.00	100	Vertical	Pass
5	13432.309	57.31	74.0	16.69	Peak	105.00	200	Vertical	Pass
5**	13432.309	43.50	54.0	10.50	AV	105.00	200	Vertical	Pass
6	17420.360	58.73	74.0	15.27	Peak	273.00	100	Vertical	Pass
6**	17420.360	48.46	54.0	5.54	AV	273.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.946	46.15	74.0	27.85	Peak	300.00	200	Horizontal	Pass
1**	1332.946	38.39	54.0	15.61	AV	300.00	200	Horizontal	Pass
2	2998.439	52.32	74.0	21.68	Peak	294.00	200	Horizontal	Pass
2**	2998.439	41.61	54.0	12.39	AV	294.00	200	Horizontal	Pass
3	4933.394	50.08	74.0	23.92	Peak	230.00	200	Horizontal	Pass
3**	4933.394	44.48	54.0	9.52	AV	230.00	200	Horizontal	Pass
4	6807.148	51.61	74.0	22.39	Peak	257.00	200	Horizontal	Pass
4**	6807.148	44.84	54.0	9.16	AV	257.00	200	Horizontal	Pass
5	13410.409	54.95	74.0	19.05	Peak	296.00	300	Horizontal	Pass
5**	13410.409	44.63	54.0	9.37	AV	296.00	300	Horizontal	Pass
6	17428.086	57.36	74.0	16.64	Peak	294.00	100	Horizontal	Pass
6**	17428.086	49.93	54.0	4.07	AV	294.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.343	43.52	74.0	30.48	Peak	308.00	300	Vertical	Pass
1**	1332.343	35.16	54.0	18.84	AV	308.00	300	Vertical	Pass
2	2981.890	51.26	74.0	22.74	Peak	301.00	200	Vertical	Pass
2**	2981.890	40.62	54.0	13.38	AV	301.00	200	Vertical	Pass
3	4851.992	51.86	74.0	22.14	Peak	160.00	200	Vertical	Pass
3**	4851.992	42.93	54.0	11.07	AV	160.00	200	Vertical	Pass
4	6610.261	53.40	74.0	20.60	Peak	146.00	400	Vertical	Pass
4**	6610.261	42.79	54.0	11.21	AV	146.00	400	Vertical	Pass
5	13436.862	57.37	74.0	16.63	Peak	37.00	200	Vertical	Pass
5**	13436.862	49.29	54.0	4.71	AV	37.00	200	Vertical	Pass
6	17418.354	58.27	74.0	15.73	Peak	329.00	400	Vertical	Pass
6**	17418.354	48.64	54.0	5.36	AV	329.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.873	46.98	74.0	27.02	Peak	5.00	200	Horizontal	Pass
1**	1332.873	39.78	54.0	14.22	AV	5.00	200	Horizontal	Pass
2	2992.710	52.01	74.0	21.99	Peak	6.00	300	Horizontal	Pass
2**	2992.710	39.10	54.0	14.90	AV	6.00	300	Horizontal	Pass
3	4935.697	49.92	74.0	24.08	Peak	115.00	200	Horizontal	Pass
3**	4935.697	38.91	54.0	15.09	AV	115.00	200	Horizontal	Pass
4	6803.540	51.60	74.0	22.40	Peak	312.00	400	Horizontal	Pass
4**	6803.540	43.25	54.0	10.75	AV	312.00	400	Horizontal	Pass
5	13412.119	58.35	74.0	15.65	Peak	159.00	200	Horizontal	Pass
5**	13412.119	45.08	54.0	8.92	AV	159.00	200	Horizontal	Pass
6	17425.571	58.26	74.0	15.74	Peak	260.00	300	Horizontal	Pass
6**	17425.571	48.40	54.0	5.60	AV	260.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1334.377	47.49	74.0	26.51	Peak	180.00	200	Vertical	Pass
1**	1334.377	38.42	54.0	15.58	AV	180.00	200	Vertical	Pass
2	2981.832	47.74	74.0	26.26	Peak	285.00	300	Vertical	Pass
2**	2981.832	44.68	54.0	9.32	AV	285.00	300	Vertical	Pass
3	4856.979	50.01	74.0	23.99	Peak	190.00	200	Vertical	Pass
3**	4856.979	39.83	54.0	14.17	AV	190.00	200	Vertical	Pass
4	6606.527	57.22	74.0	16.78	Peak	193.00	300	Vertical	Pass
4**	6606.527	45.31	54.0	8.69	AV	193.00	300	Vertical	Pass
5	13436.130	55.91	74.0	18.09	Peak	48.00	200	Vertical	Pass
5**	13436.130	45.27	54.0	8.73	AV	48.00	200	Vertical	Pass
6	17415.829	56.07	74.0	17.93	Peak	303.00	100	Vertical	Pass
6**	17415.829	49.48	54.0	4.52	AV	303.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.835	42.50	74.0	31.50	Peak	151.00	100	Horizontal	Pass
1**	1329.835	37.06	54.0	16.94	AV	151.00	100	Horizontal	Pass
2	2993.972	49.35	74.0	24.65	Peak	153.00	400	Horizontal	Pass
2**	2993.972	44.17	54.0	9.83	AV	153.00	400	Horizontal	Pass
3	4931.469	52.03	74.0	21.97	Peak	14.00	200	Horizontal	Pass
3**	4931.469	42.82	54.0	11.18	AV	14.00	200	Horizontal	Pass
4	6804.768	51.74	74.0	22.26	Peak	276.00	200	Horizontal	Pass
4**	6804.768	45.72	54.0	8.28	AV	276.00	200	Horizontal	Pass
5	13411.592	55.33	74.0	18.67	Peak	24.00	400	Horizontal	Pass
5**	13411.592	47.92	54.0	6.08	AV	24.00	400	Horizontal	Pass
6	17424.235	57.99	74.0	16.01	Peak	276.00	300	Horizontal	Pass
6**	17424.235	45.34	54.0	8.66	AV	276.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.973	46.89	74.0	27.11	Peak	238.00	100	Vertical	Pass
1**	1328.973	37.32	54.0	16.68	AV	238.00	100	Vertical	Pass
2	2984.394	51.96	74.0	22.04	Peak	191.00	200	Vertical	Pass
2**	2984.394	44.50	54.0	9.50	AV	191.00	200	Vertical	Pass
3	4855.622	47.32	74.0	26.68	Peak	106.00	200	Vertical	Pass
3**	4855.622	40.30	54.0	13.70	AV	106.00	200	Vertical	Pass
4	6606.701	56.77	74.0	17.23	Peak	152.00	300	Vertical	Pass
4**	6606.701	45.73	54.0	8.27	AV	152.00	300	Vertical	Pass
5	13433.756	54.27	74.0	19.73	Peak	105.00	200	Vertical	Pass
5**	13433.756	46.93	54.0	7.07	AV	105.00	200	Vertical	Pass
6	17415.966	55.85	74.0	18.15	Peak	276.00	400	Vertical	Pass
6**	17415.966	49.70	54.0	4.30	AV	276.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.214	46.95	74.0	27.05	Peak	30.00	200	Horizontal	Pass
1**	1332.214	34.51	54.0	19.49	AV	30.00	200	Horizontal	Pass
2	2995.687	48.87	74.0	25.13	Peak	257.00	300	Horizontal	Pass
2**	2995.687	43.17	54.0	10.83	AV	257.00	300	Horizontal	Pass
3	4930.530	52.12	74.0	21.88	Peak	46.00	200	Horizontal	Pass
3**	4930.530	42.54	54.0	11.46	AV	46.00	200	Horizontal	Pass
4	6805.698	55.80	74.0	18.20	Peak	255.00	200	Horizontal	Pass
4**	6805.698	45.70	54.0	8.30	AV	255.00	200	Horizontal	Pass
5	13411.899	56.78	74.0	17.22	Peak	320.00	300	Horizontal	Pass
5**	13411.899	45.30	54.0	8.70	AV	320.00	300	Horizontal	Pass
6	17428.896	54.67	74.0	19.33	Peak	253.00	400	Horizontal	Pass
6**	17428.896	49.03	54.0	4.97	AV	253.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.368	44.30	74.0	29.70	Peak	117.00	400	Vertical	Pass
1**	1329.368	35.14	54.0	18.86	AV	117.00	400	Vertical	Pass
2	2980.249	47.91	74.0	26.09	Peak	357.00	200	Vertical	Pass
2**	2980.249	40.91	54.0	13.09	AV	357.00	200	Vertical	Pass
3	4851.603	51.45	74.0	22.55	Peak	27.00	200	Vertical	Pass
3**	4851.603	40.12	54.0	13.88	AV	27.00	200	Vertical	Pass
4	6606.328	56.62	74.0	17.38	Peak	288.00	300	Vertical	Pass
4**	6606.328	44.47	54.0	9.53	AV	288.00	300	Vertical	Pass
5	13438.633	57.79	74.0	16.21	Peak	235.00	200	Vertical	Pass
5**	13438.633	45.81	54.0	8.19	AV	235.00	200	Vertical	Pass
6	17416.455	58.86	74.0	15.14	Peak	335.00	300	Vertical	Pass
6**	17416.455	46.89	54.0	7.11	AV	335.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.081	42.85	74.0	31.15	Peak	26.00	400	Horizontal	Pass
1**	1327.081	36.77	54.0	17.23	AV	26.00	400	Horizontal	Pass
2	2994.504	52.48	74.0	21.52	Peak	63.00	100	Horizontal	Pass
2**	2994.504	39.90	54.0	14.10	AV	63.00	100	Horizontal	Pass
3	4933.255	50.43	74.0	23.57	Peak	178.00	200	Horizontal	Pass
3**	4933.255	43.52	54.0	10.48	AV	178.00	200	Horizontal	Pass
4	6810.907	53.85	74.0	20.15	Peak	340.00	100	Horizontal	Pass
4**	6810.907	47.60	54.0	6.40	AV	340.00	100	Horizontal	Pass
5	13413.717	57.84	74.0	16.16	Peak	345.00	100	Horizontal	Pass
5**	13413.717	44.88	54.0	9.12	AV	345.00	100	Horizontal	Pass
6	17425.743	55.08	74.0	18.92	Peak	192.00	200	Horizontal	Pass
6**	17425.743	45.95	54.0	8.05	AV	192.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.861	44.91	74.0	29.09	Peak	169.00	400	Vertical	Pass
1**	1329.861	35.38	54.0	18.62	AV	169.00	400	Vertical	Pass
2	2979.683	52.95	74.0	21.05	Peak	330.00	400	Vertical	Pass
2**	2979.683	44.62	54.0	9.38	AV	330.00	400	Vertical	Pass
3	4852.631	48.44	74.0	25.56	Peak	50.00	200	Vertical	Pass
3**	4852.631	38.00	54.0	16.00	AV	50.00	200	Vertical	Pass
4	6605.160	51.54	74.0	22.46	Peak	102.00	400	Vertical	Pass
4**	6605.160	47.40	54.0	6.60	AV	102.00	400	Vertical	Pass
5	13435.035	54.59	74.0	19.41	Peak	292.00	100	Vertical	Pass
5**	13435.035	45.36	54.0	8.64	AV	292.00	100	Vertical	Pass
6	17417.937	58.25	74.0	15.75	Peak	128.00	400	Vertical	Pass
6**	17417.937	46.84	54.0	7.16	AV	128.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.299	42.22	74.0	31.78	Peak	59.00	300	Horizontal	Pass
1**	1332.299	33.98	54.0	20.02	AV	59.00	300	Horizontal	Pass
2	2993.870	49.48	74.0	24.52	Peak	58.00	300	Horizontal	Pass
2**	2993.870	41.38	54.0	12.62	AV	58.00	300	Horizontal	Pass
3	4930.719	50.89	74.0	23.11	Peak	25.00	200	Horizontal	Pass
3**	4930.719	43.82	54.0	10.18	AV	25.00	200	Horizontal	Pass
4	6805.738	53.31	74.0	20.69	Peak	357.00	400	Horizontal	Pass
4**	6805.738	45.78	54.0	8.22	AV	357.00	400	Horizontal	Pass
5	13413.711	53.50	74.0	20.50	Peak	45.00	400	Horizontal	Pass
5**	13413.711	45.79	54.0	8.21	AV	45.00	400	Horizontal	Pass
6	17424.760	54.17	74.0	19.83	Peak	146.00	200	Horizontal	Pass
6**	17424.760	50.37	54.0	3.63	AV	146.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1334.110	46.12	74.0	27.88	Peak	209.00	400	Vertical	Pass
1**	1334.110	37.90	54.0	16.10	AV	209.00	400	Vertical	Pass
2	2985.019	52.34	74.0	21.66	Peak	150.00	400	Vertical	Pass
2**	2985.019	41.44	54.0	12.56	AV	150.00	400	Vertical	Pass
3	4857.540	47.34	74.0	26.66	Peak	325.00	200	Vertical	Pass
3**	4857.540	42.33	54.0	11.67	AV	325.00	200	Vertical	Pass
4	6605.004	56.79	74.0	17.21	Peak	78.00	400	Vertical	Pass
4**	6605.004	47.26	54.0	6.74	AV	78.00	400	Vertical	Pass
5	13433.732	53.62	74.0	20.38	Peak	222.00	200	Vertical	Pass
5**	13433.732	44.45	54.0	9.55	AV	222.00	200	Vertical	Pass
6	17414.246	55.40	74.0	18.60	Peak	58.00	200	Vertical	Pass
6**	17414.246	50.17	54.0	3.83	AV	58.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.212	41.69	74.0	32.31	Peak	353.00	300	Horizontal	Pass
1**	1328.212	37.47	54.0	16.53	AV	353.00	300	Horizontal	Pass
2	2993.091	50.49	74.0	23.51	Peak	317.00	200	Horizontal	Pass
2**	2993.091	39.90	54.0	14.10	AV	317.00	200	Horizontal	Pass
3	4935.051	49.27	74.0	24.73	Peak	178.00	200	Horizontal	Pass
3**	4935.051	42.43	54.0	11.57	AV	178.00	200	Horizontal	Pass
4	6807.677	57.45	74.0	16.55	Peak	253.00	100	Horizontal	Pass
4**	6807.677	45.73	54.0	8.27	AV	253.00	100	Horizontal	Pass
5	13413.930	56.72	74.0	17.28	Peak	355.00	100	Horizontal	Pass
5**	13413.930	44.28	54.0	9.72	AV	355.00	100	Horizontal	Pass
6	17429.906	57.01	74.0	16.99	Peak	58.00	100	Horizontal	Pass
6**	17429.906	48.73	54.0	5.27	AV	58.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.949	46.51	74.0	27.49	Peak	199.00	300	Vertical	Pass
1**	1331.949	35.04	54.0	18.96	AV	199.00	300	Vertical	Pass
2	2979.726	51.73	74.0	22.27	Peak	247.00	100	Vertical	Pass
2**	2979.726	41.91	54.0	12.09	AV	247.00	100	Vertical	Pass
3	4854.222	46.63	74.0	27.37	Peak	174.00	200	Vertical	Pass
3**	4854.222	42.21	54.0	11.79	AV	174.00	200	Vertical	Pass
4	6605.425	55.77	74.0	18.23	Peak	293.00	200	Vertical	Pass
4**	6605.425	43.98	54.0	10.02	AV	293.00	200	Vertical	Pass
5	13434.290	55.97	74.0	18.03	Peak	130.00	300	Vertical	Pass
5**	13434.290	48.60	54.0	5.40	AV	130.00	300	Vertical	Pass
6	17413.155	55.65	74.0	18.35	Peak	172.00	300	Vertical	Pass
6**	17413.155	45.13	54.0	8.87	AV	172.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.656	45.21	74.0	28.79	Peak	34.00	100	Horizontal	Pass
1**	1330.656	37.34	54.0	16.66	AV	34.00	100	Horizontal	Pass
2	2996.278	47.68	74.0	26.32	Peak	255.00	100	Horizontal	Pass
2**	2996.278	39.02	54.0	14.98	AV	255.00	100	Horizontal	Pass
3	4931.405	52.02	74.0	21.98	Peak	88.00	200	Horizontal	Pass
3**	4931.405	44.20	54.0	9.80	AV	88.00	200	Horizontal	Pass
4	6803.436	53.57	74.0	20.43	Peak	151.00	100	Horizontal	Pass
4**	6803.436	46.58	54.0	7.42	AV	151.00	100	Horizontal	Pass
5	13408.832	55.22	74.0	18.78	Peak	101.00	200	Horizontal	Pass
5**	13408.832	45.58	54.0	8.42	AV	101.00	200	Horizontal	Pass
6	17428.956	58.98	74.0	15.02	Peak	6.00	400	Horizontal	Pass
6**	17428.956	47.51	54.0	6.49	AV	6.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.995	42.88	74.0	31.12	Peak	28.00	200	Vertical	Pass
1**	1330.995	39.31	54.0	14.69	AV	28.00	200	Vertical	Pass
2	2983.603	53.43	74.0	20.57	Peak	300.00	100	Vertical	Pass
2**	2983.603	42.12	54.0	11.88	AV	300.00	100	Vertical	Pass
3	4854.855	50.57	74.0	23.43	Peak	6.00	200	Vertical	Pass
3**	4854.855	43.10	54.0	10.90	AV	6.00	200	Vertical	Pass
4	6603.257	52.31	74.0	21.69	Peak	217.00	200	Vertical	Pass
4**	6603.257	45.11	54.0	8.89	AV	217.00	200	Vertical	Pass
5	13436.411	55.71	74.0	18.29	Peak	202.00	100	Vertical	Pass
5**	13436.411	43.75	54.0	10.25	AV	202.00	100	Vertical	Pass
6	17418.310	55.26	74.0	18.74	Peak	346.00	300	Vertical	Pass
6**	17418.310	47.61	54.0	6.39	AV	346.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.054	42.71	74.0	31.29	Peak	242.00	400	Horizontal	Pass
1**	1331.054	36.59	54.0	17.41	AV	242.00	400	Horizontal	Pass
2	2995.184	52.90	74.0	21.10	Peak	115.00	300	Horizontal	Pass
2**	2995.184	43.72	54.0	10.28	AV	115.00	300	Horizontal	Pass
3	4935.152	53.53	74.0	20.47	Peak	98.00	200	Horizontal	Pass
3**	4935.152	42.01	54.0	11.99	AV	98.00	200	Horizontal	Pass
4	6810.236	55.62	74.0	18.38	Peak	99.00	100	Horizontal	Pass
4**	6810.236	47.44	54.0	6.56	AV	99.00	100	Horizontal	Pass
5	13412.071	53.67	74.0	20.33	Peak	20.00	400	Horizontal	Pass
5**	13412.071	46.60	54.0	7.40	AV	20.00	400	Horizontal	Pass
6	17427.519	55.75	74.0	18.25	Peak	166.00	200	Horizontal	Pass
6**	17427.519	50.33	54.0	3.67	AV	166.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.074	42.62	74.0	31.38	Peak	183.00	200	Vertical	Pass
1**	1329.074	39.42	54.0	14.58	AV	183.00	200	Vertical	Pass
2	2979.645	51.62	74.0	22.38	Peak	259.00	100	Vertical	Pass
2**	2979.645	42.89	54.0	11.11	AV	259.00	100	Vertical	Pass
3	4853.767	51.49	74.0	22.51	Peak	72.00	200	Vertical	Pass
3**	4853.767	42.07	54.0	11.93	AV	72.00	200	Vertical	Pass
4	6610.699	54.52	74.0	19.48	Peak	337.00	300	Vertical	Pass
4**	6610.699	42.09	54.0	11.91	AV	337.00	300	Vertical	Pass
5	13432.294	52.54	74.0	21.46	Peak	71.00	400	Vertical	Pass
5**	13432.294	46.48	54.0	7.52	AV	71.00	400	Vertical	Pass
6	17420.164	55.39	74.0	18.61	Peak	82.00	200	Vertical	Pass
6**	17420.164	48.82	54.0	5.18	AV	82.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax20(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.236	45.52	74.0	28.48	Peak	357.00	100	Horizontal	Pass
1**	1330.236	39.45	54.0	14.55	AV	357.00	100	Horizontal	Pass
2	2996.198	48.99	74.0	25.01	Peak	25.00	100	Horizontal	Pass
2**	2996.198	44.22	54.0	9.78	AV	25.00	100	Horizontal	Pass
3	4938.210	49.06	74.0	24.94	Peak	41.00	200	Horizontal	Pass
3**	4938.210	39.95	54.0	14.05	AV	41.00	200	Horizontal	Pass
4	6806.582	53.38	74.0	20.62	Peak	291.00	400	Horizontal	Pass
4**	6806.582	42.49	54.0	11.51	AV	291.00	400	Horizontal	Pass
5	13409.237	54.96	74.0	19.04	Peak	177.00	300	Horizontal	Pass
5**	13409.237	48.93	54.0	5.07	AV	177.00	300	Horizontal	Pass
6	17429.992	56.48	74.0	17.52	Peak	33.00	400	Horizontal	Pass
6**	17429.992	49.16	54.0	4.84	AV	33.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V802.11ax20(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.486	44.57	74.0	29.43	Peak	80.00	300	Vertical	Pass
1**	1330.486	34.78	54.0	19.22	AV	80.00	300	Vertical	Pass
2	2982.842	50.45	74.0	23.55	Peak	266.00	300	Vertical	Pass
2**	2982.842	43.23	54.0	10.77	AV	266.00	300	Vertical	Pass
3	4853.860	52.02	74.0	21.98	Peak	7.00	200	Vertical	Pass
3**	4853.860	39.95	54.0	14.05	AV	7.00	200	Vertical	Pass
4	6606.350	54.21	74.0	19.79	Peak	57.00	100	Vertical	Pass
4**	6606.350	45.12	54.0	8.88	AV	57.00	100	Vertical	Pass
5	13438.812	53.01	74.0	20.99	Peak	147.00	300	Vertical	Pass
5**	13438.812	47.11	54.0	6.89	AV	147.00	300	Vertical	Pass
6	17420.366	58.35	74.0	15.65	Peak	312.00	400	Vertical	Pass
6**	17420.366	47.93	54.0	6.07	AV	312.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax20(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.326	41.70	74.0	32.30	Peak	324.00	200	Horizontal	Pass
1**	1329.326	38.31	54.0	15.69	AV	324.00	200	Horizontal	Pass
2	2993.417	51.64	74.0	22.36	Peak	251.00	300	Horizontal	Pass
2**	2993.417	43.05	54.0	10.95	AV	251.00	300	Horizontal	Pass
3	4937.779	50.05	74.0	23.95	Peak	263.00	200	Horizontal	Pass
3**	4937.779	44.23	54.0	9.77	AV	263.00	200	Horizontal	Pass
4	6809.072	55.14	74.0	18.86	Peak	94.00	100	Horizontal	Pass
4**	6809.072	47.07	54.0	6.93	AV	94.00	100	Horizontal	Pass
5	13409.109	58.11	74.0	15.89	Peak	305.00	400	Horizontal	Pass
5**	13409.109	45.71	54.0	8.29	AV	305.00	400	Horizontal	Pass
6	17427.126	55.70	74.0	18.30	Peak	352.00	100	Horizontal	Pass
6**	17427.126	45.26	54.0	8.74	AV	352.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax20(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1334.666	42.67	74.0	31.33	Peak	118.00	300	Vertical	Pass
1**	1334.666	37.47	54.0	16.53	AV	118.00	300	Vertical	Pass
2	2985.802	52.44	74.0	21.56	Peak	252.00	200	Vertical	Pass
2**	2985.802	44.28	54.0	9.72	AV	252.00	200	Vertical	Pass
3	4857.000	46.48	74.0	27.52	Peak	81.00	200	Vertical	Pass
3**	4857.000	39.01	54.0	14.99	AV	81.00	200	Vertical	Pass
4	6605.923	54.28	74.0	19.72	Peak	177.00	400	Vertical	Pass
4**	6605.923	47.69	54.0	6.31	AV	177.00	400	Vertical	Pass
5	13435.706	55.00	74.0	19.00	Peak	346.00	300	Vertical	Pass
5**	13435.706	46.68	54.0	7.32	AV	346.00	300	Vertical	Pass
6	17413.781	55.85	74.0	18.15	Peak	261.00	300	Vertical	Pass
6**	17413.781	47.64	54.0	6.36	AV	261.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H802.11ax20(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.506	45.43	74.0	28.57	Peak	335.00	100	Horizontal	Pass
1**	1332.506	36.46	54.0	17.54	AV	335.00	100	Horizontal	Pass
2	2992.961	51.94	74.0	22.06	Peak	334.00	200	Horizontal	Pass
2**	2992.961	44.06	54.0	9.94	AV	334.00	200	Horizontal	Pass
3	4935.712	49.30	74.0	24.70	Peak	231.00	200	Horizontal	Pass
3**	4935.712	43.22	54.0	10.78	AV	231.00	200	Horizontal	Pass
4	6808.168	51.66	74.0	22.34	Peak	188.00	400	Horizontal	Pass
4**	6808.168	44.92	54.0	9.08	AV	188.00	400	Horizontal	Pass
5	13414.206	55.46	74.0	18.54	Peak	283.00	400	Horizontal	Pass
5**	13414.206	45.56	54.0	8.44	AV	283.00	400	Horizontal	Pass
6	17428.424	54.54	74.0	19.46	Peak	254.00	100	Horizontal	Pass
6**	17428.424	46.28	54.0	7.72	AV	254.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax20(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.431	45.76	74.0	28.24	Peak	176.00	400	Vertical	Pass
1**	1331.431	40.52	54.0	13.48	AV	176.00	400	Vertical	Pass
2	2978.207	48.13	74.0	25.87	Peak	335.00	200	Vertical	Pass
2**	2978.207	39.31	54.0	14.69	AV	335.00	200	Vertical	Pass
3	4856.534	51.54	74.0	22.46	Peak	223.00	200	Vertical	Pass
3**	4856.534	40.70	54.0	13.30	AV	223.00	200	Vertical	Pass
4	6603.710	56.25	74.0	17.75	Peak	88.00	300	Vertical	Pass
4**	6603.710	45.70	54.0	8.30	AV	88.00	300	Vertical	Pass
5	13431.291	54.89	74.0	19.11	Peak	322.00	200	Vertical	Pass
5**	13431.291	48.48	54.0	5.52	AV	322.00	200	Vertical	Pass
6	17418.790	60.10	74.0	13.90	Peak	103.00	300	Vertical	Pass
6**	17418.790	49.73	54.0	4.27	AV	103.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.302	44.93	74.0	29.07	Peak	307.00	100	Horizontal	Pass
1**	1327.302	39.74	54.0	14.26	AV	307.00	100	Horizontal	Pass
2	2997.899	48.88	74.0	25.12	Peak	69.00	100	Horizontal	Pass
2**	2997.899	43.48	54.0	10.52	AV	69.00	100	Horizontal	Pass
3	4931.777	51.15	74.0	22.85	Peak	103.00	200	Horizontal	Pass
3**	4931.777	39.99	54.0	14.01	AV	103.00	200	Horizontal	Pass
4	6804.244	55.18	74.0	18.82	Peak	187.00	300	Horizontal	Pass
4**	6804.244	45.54	54.0	8.46	AV	187.00	300	Horizontal	Pass
5	13408.554	54.63	74.0	19.37	Peak	103.00	300	Horizontal	Pass
5**	13408.554	47.19	54.0	6.81	AV	103.00	300	Horizontal	Pass
6	17424.214	57.58	74.0	16.42	Peak	90.00	300	Horizontal	Pass
6**	17424.214	49.48	54.0	4.52	AV	90.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1335.500	42.62	74.0	31.38	Peak	6.00	100	Vertical	Pass
1**	1335.500	39.10	54.0	14.90	AV	6.00	100	Vertical	Pass
2	2978.605	48.92	74.0	25.08	Peak	321.00	100	Vertical	Pass
2**	2978.605	44.05	54.0	9.95	AV	321.00	100	Vertical	Pass
3	4851.030	47.50	74.0	26.50	Peak	279.00	200	Vertical	Pass
3**	4851.030	40.88	54.0	13.12	AV	279.00	200	Vertical	Pass
4	6610.982	53.94	74.0	20.06	Peak	54.00	200	Vertical	Pass
4**	6610.982	42.80	54.0	11.20	AV	54.00	200	Vertical	Pass
5	13434.078	56.19	74.0	17.81	Peak	23.00	400	Vertical	Pass
5**	13434.078	47.23	54.0	6.77	AV	23.00	400	Vertical	Pass
6	17418.087	59.78	74.0	14.22	Peak	187.00	300	Vertical	Pass
6**	17418.087	48.67	54.0	5.33	AV	187.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1325.913	44.78	74.0	29.22	Peak	86.00	200	Horizontal	Pass
1**	1325.913	37.19	54.0	16.81	AV	86.00	200	Horizontal	Pass
2	2999.758	51.77	74.0	22.23	Peak	207.00	300	Horizontal	Pass
2**	2999.758	43.57	54.0	10.43	AV	207.00	300	Horizontal	Pass
3	4937.254	51.22	74.0	22.78	Peak	75.00	200	Horizontal	Pass
3**	4937.254	41.56	54.0	12.44	AV	75.00	200	Horizontal	Pass
4	6803.967	53.23	74.0	20.77	Peak	319.00	400	Horizontal	Pass
4**	6803.967	41.81	54.0	12.19	AV	319.00	400	Horizontal	Pass
5	13411.538	56.17	74.0	17.83	Peak	73.00	300	Horizontal	Pass
5**	13411.538	44.25	54.0	9.75	AV	73.00	300	Horizontal	Pass
6	17430.023	57.21	74.0	16.79	Peak	207.00	200	Horizontal	Pass
6**	17430.023	50.07	54.0	3.93	AV	207.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1336.281	44.65	74.0	29.35	Peak	336.00	100	Vertical	Pass
1**	1336.281	37.47	54.0	16.53	AV	336.00	100	Vertical	Pass
2	2981.111	49.09	74.0	24.91	Peak	346.00	200	Vertical	Pass
2**	2981.111	44.05	54.0	9.95	AV	346.00	200	Vertical	Pass
3	4854.590	48.47	74.0	25.53	Peak	276.00	200	Vertical	Pass
3**	4854.590	39.30	54.0	14.70	AV	276.00	200	Vertical	Pass
4	6606.074	54.37	74.0	19.63	Peak	154.00	400	Vertical	Pass
4**	6606.074	47.08	54.0	6.92	AV	154.00	400	Vertical	Pass
5	13435.804	52.86	74.0	21.14	Peak	290.00	200	Vertical	Pass
5**	13435.804	45.79	54.0	8.21	AV	290.00	200	Vertical	Pass
6	17419.561	54.91	74.0	19.09	Peak	98.00	200	Vertical	Pass
6**	17419.561	50.05	54.0	3.95	AV	98.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.490	46.24	74.0	27.76	Peak	84.00	400	Horizontal	Pass
1**	1327.490	38.78	54.0	15.22	AV	84.00	400	Horizontal	Pass
2	2994.389	51.48	74.0	22.52	Peak	62.00	100	Horizontal	Pass
2**	2994.389	42.34	54.0	11.66	AV	62.00	100	Horizontal	Pass
3	4936.431	49.03	74.0	24.97	Peak	287.00	200	Horizontal	Pass
3**	4936.431	43.16	54.0	10.84	AV	287.00	200	Horizontal	Pass
4	6808.258	55.83	74.0	18.17	Peak	8.00	100	Horizontal	Pass
4**	6808.258	43.89	54.0	10.11	AV	8.00	100	Horizontal	Pass
5	13407.994	54.11	74.0	19.89	Peak	114.00	400	Horizontal	Pass
5**	13407.994	43.55	54.0	10.45	AV	114.00	400	Horizontal	Pass
6	17427.068	58.25	74.0	15.75	Peak	141.00	400	Horizontal	Pass
6**	17427.068	49.46	54.0	4.54	AV	141.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1334.666	44.38	74.0	29.62	Peak	99.00	100	Vertical	Pass
1**	1334.666	39.46	54.0	14.54	AV	99.00	100	Vertical	Pass
2	2985.180	53.19	74.0	20.81	Peak	136.00	100	Vertical	Pass
2**	2985.180	42.41	54.0	11.59	AV	136.00	100	Vertical	Pass
3	4854.853	47.21	74.0	26.79	Peak	82.00	200	Vertical	Pass
3**	4854.853	38.17	54.0	15.83	AV	82.00	200	Vertical	Pass
4	6605.890	51.91	74.0	22.09	Peak	58.00	100	Vertical	Pass
4**	6605.890	44.38	54.0	9.62	AV	58.00	100	Vertical	Pass
5	13437.198	58.24	74.0	15.76	Peak	258.00	300	Vertical	Pass
5**	13437.198	45.10	54.0	8.90	AV	258.00	300	Vertical	Pass
6	17416.097	59.53	74.0	14.47	Peak	305.00	400	Vertical	Pass
6**	17416.097	46.54	54.0	7.46	AV	305.00	400	Vertical	Pass

A.7 Band Edge (Restricted-band band-edge)

Note ¹: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Note ²: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.

Note ³: According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note ⁴: All the configurations were pre tested, only the worst configuration has been reported in this report.

Note ⁵: All antenna were pre tested, but only the worst case has been reported in this report.

Note ⁶: Both horizontal and vertical directions were pre tested, only the worst configuration has been reported in this report.

Test Data

ANT 1

802.11b LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2318.833	55.80	74.0	18.20	Peak	349.00	200	Horizontal	Pass
1**	2318.833	43.54	54.0	10.46	AV	349.00	200	Horizontal	Pass
2	2389.833	53.54	74.0	20.46	Peak	323.00	100	Horizontal	Pass
2**	2389.833	43.49	54.0	10.51	AV	323.00	100	Horizontal	Pass

802.11b HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	54.17	74.0	19.83	Peak	217.00	200	Horizontal	Pass
1**	2483.500	43.57	54.0	10.43	AV	217.00	200	Horizontal	Pass
2	2490.300	56.01	74.0	17.99	Peak	232.00	100	Horizontal	Pass
2**	2490.300	43.29	54.0	10.71	AV	232.00	100	Horizontal	Pass

802.11g LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.833	62.04	74.0	11.96	Peak	100.00	150	Horizontal	Pass
1**	2388.833	46.91	54.0	7.09	AV	100.00	150	Horizontal	Pass
2	2389.833	62.28	74.0	11.72	Peak	94.00	100	Horizontal	Pass
2**	2389.833	47.62	54.0	6.38	AV	94.00	100	Horizontal	Pass

802.11g HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	58.26	74.0	15.74	Peak	95.00	150	Horizontal	Pass
1**	2483.500	46.33	54.0	7.67	AV	95.00	150	Horizontal	Pass
2	2483.950	56.90	74.0	17.10	Peak	98.00	200	Horizontal	Pass
2**	2483.950	45.83	54.0	8.17	AV	98.00	200	Horizontal	Pass

802.11n20 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.167	64.27	74.0	9.73	Peak	108.00	100	Horizontal	Pass
1**	2388.167	48.32	54.0	5.68	AV	108.00	100	Horizontal	Pass
2	2389.833	62.66	74.0	11.34	Peak	95.00	200	Horizontal	Pass
2**	2389.833	49.73	54.0	4.27	AV	95.00	200	Horizontal	Pass

802.11n20 HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.550	60.43	74.0	13.57	Peak	220.00	150	Horizontal	Pass
1**	2483.550	47.77	54.0	6.23	AV	220.00	150	Horizontal	Pass
2	2483.950	59.27	74.0	14.73	Peak	111.00	150	Horizontal	Pass
2**	2483.950	46.94	54.0	7.06	AV	111.00	150	Horizontal	Pass

802.11n40 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.333	61.89	74.0	12.11	Peak	101.00	150	Horizontal	Pass
1**	2388.333	49.77	54.0	4.23	AV	101.00	150	Horizontal	Pass
2	2389.500	60.55	74.0	13.45	Peak	94.00	150	Horizontal	Pass
2**	2389.500	50.48	54.0	3.52	AV	94.00	150	Horizontal	Pass
3	2389.833	61.31	74.0	12.69	Peak	106.00	150	Horizontal	Pass
3**	2389.833	50.28	54.0	3.72	AV	106.00	150	Horizontal	Pass

802.11n40 HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	59.11	74.0	14.89	Peak	112.00	100	Horizontal	Pass
1**	2483.500	49.55	54.0	4.45	AV	112.00	100	Horizontal	Pass
2	2488.600	62.78	74.0	11.22	Peak	112.00	100	Horizontal	Pass
2**	2488.600	49.02	54.0	4.98	AV	112.00	100	Horizontal	Pass
3	2490.600	60.58	74.0	13.42	Peak	115.00	150	Horizontal	Pass
3**	2490.600	50.17	54.0	3.83	AV	115.00	150	Horizontal	Pass

802.11ax20(SU) LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.833	67.17	74.0	6.83	Peak	99.00	100	Horizontal	Pass
1**	2388.833	49.37	54.0	4.63	AV	99.00	100	Horizontal	Pass
2	2389.833	63.89	74.0	10.11	Peak	102.00	150	Horizontal	Pass
2**	2389.833	50.02	54.0	3.98	AV	102.00	150	Horizontal	Pass

802.11ax20(SU) HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	63.77	74.0	10.23	Peak	112.00	200	Horizontal	Pass
1**	2483.500	48.88	54.0	5.12	AV	112.00	200	Horizontal	Pass
2	2484.450	62.22	74.0	11.78	Peak	108.00	150	Horizontal	Pass
2**	2484.450	47.43	54.0	6.57	AV	108.00	150	Horizontal	Pass

802.11ax40(SU) LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.167	62.42	74.0	11.58	Peak	91.00	150	Horizontal	Pass
1**	2388.167	50.07	54.0	3.93	AV	91.00	150	Horizontal	Pass
2	2389.833	60.62	74.0	13.38	Peak	91.00	200	Horizontal	Pass
2**	2389.833	50.07	54.0	3.93	AV	91.00	200	Horizontal	Pass

802.11ax40(SU) HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	61.74	74.0	12.26	Peak	101.00	150	Horizontal	Pass
1**	2483.500	50.34	54.0	3.66	AV	101.00	150	Horizontal	Pass
2	2484.700	63.72	74.0	10.28	Peak	118.00	150	Horizontal	Pass
2**	2484.700	47.85	54.0	6.15	AV	118.00	150	Horizontal	Pass

A.8 Power Spectral Density (PSD)

Note: All the configurations were pre tested, only the worst configuration has been reported in this report.

Test Data

ANT 0

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.594	8
Middle	-8.098	8
High	-8.187	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.685	8
Middle	-10.708	8
High	-10.884	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-8.566	8
Middle	-9.272	8
High	-8.414	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-11.152	8
Middle	-11.211	8
High	-10.912	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-9.591	8
Middle	-9.497	8
High	-9.502	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-12.175	8
Middle	-11.696	8
High	-11.657	8

ANT 1**802.11b Mode:**

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.921	8
Middle	-8.675	8
High	-7.401	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-11.328	8
Middle	-10.663	8
High	-10.625	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-8.421	8
Middle	-8.371	8
High	-9.697	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-11.249	8
Middle	-10.829	8
High	-11.578	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.085	8
Middle	-9.777	8
High	-9.392	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-12.051	8
Middle	-11.567	8
High	-11.969	8

Test Plots

ANT 0

802.11b LOW CHANNEL



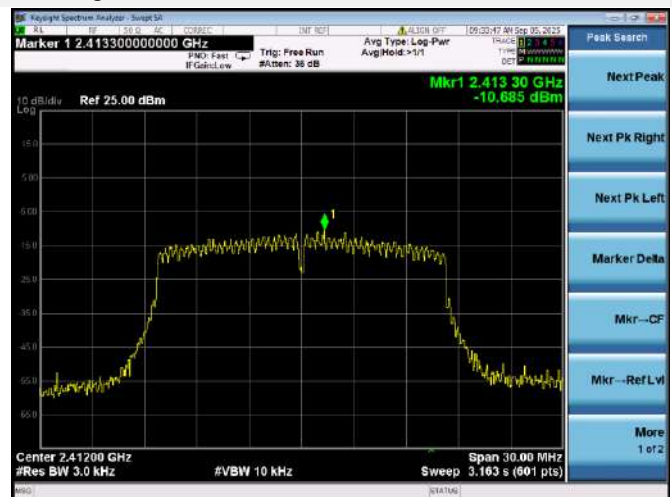
802.11b MIDDLE CHANNEL



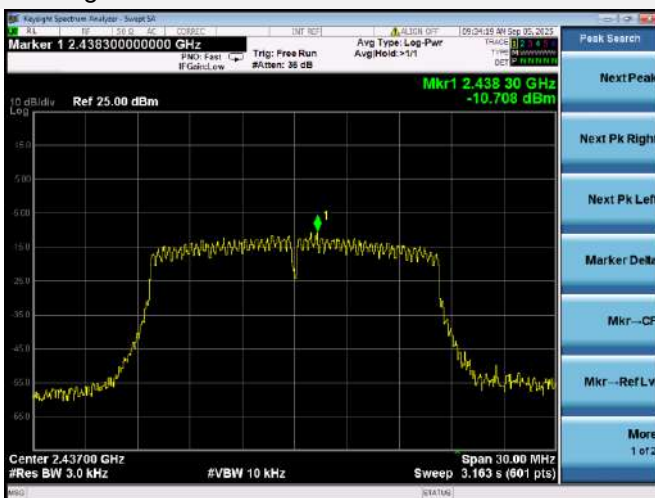
802.11b HIGH CHANNEL



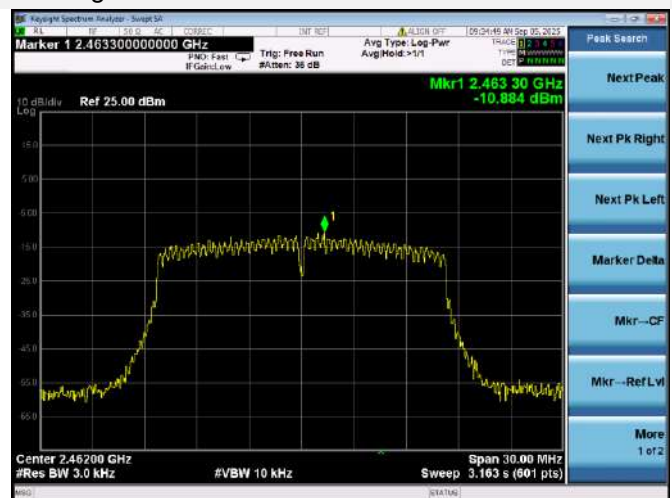
802.11g LOW CHANNEL



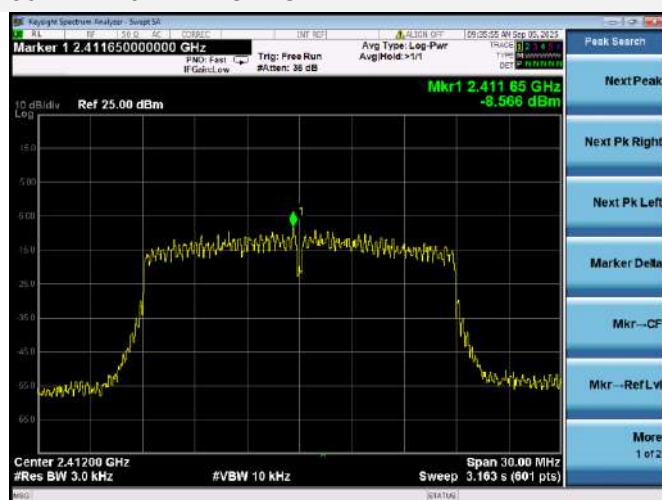
802.11g MIDDLE CHANNEL



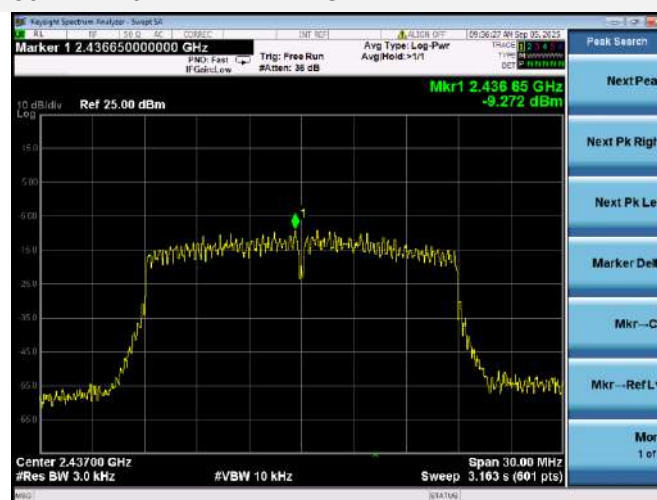
802.11g HIGH CHANNEL



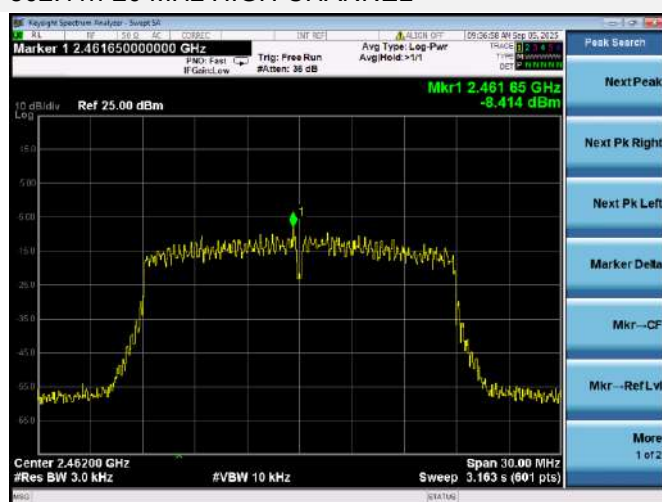
802.11n-20 MHz LOW CHANNEL



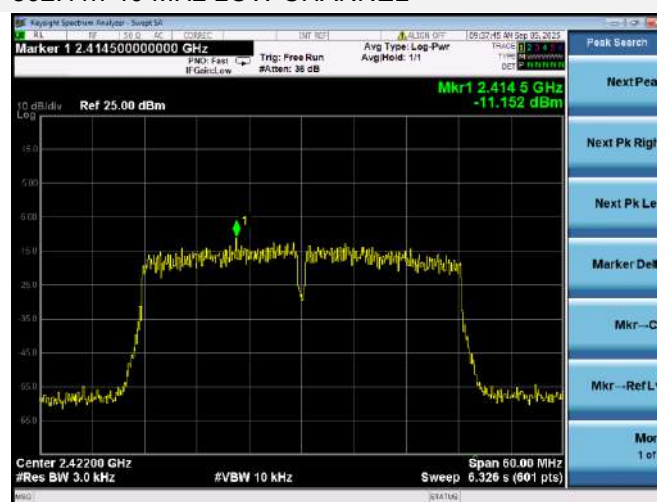
802.11n-20 MHz MIDDLE CHANNEL



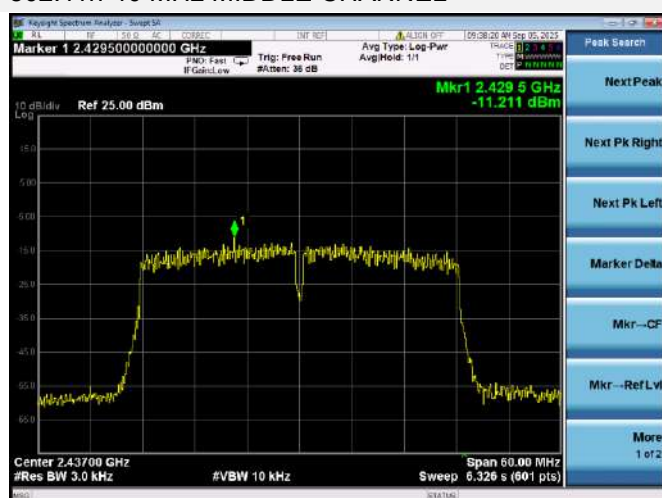
802.11n-20 MHz HIGH CHANNEL



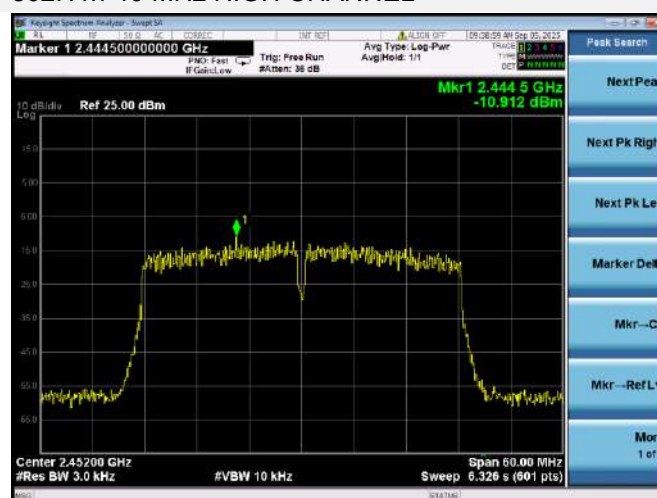
802.11n-40 MHz LOW CHANNEL



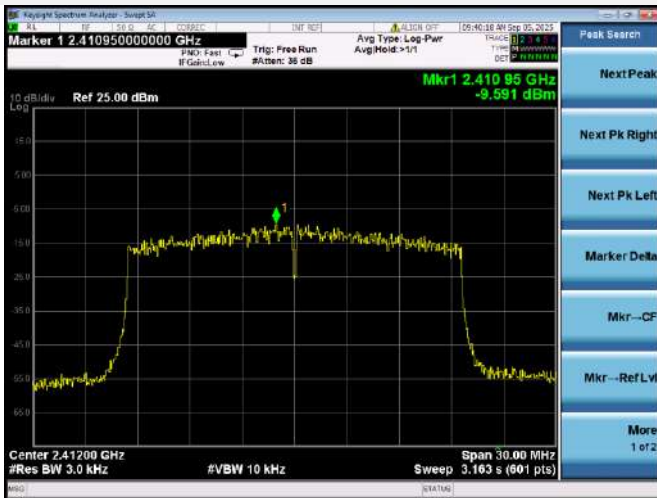
802.11n-40 MHz MIDDLE CHANNEL



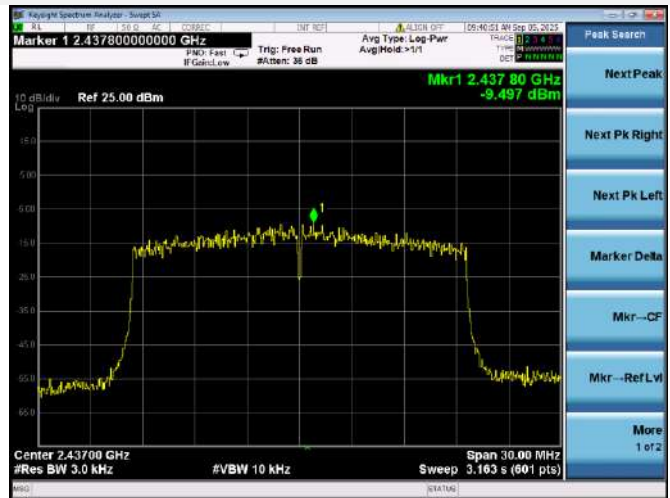
802.11n-40 MHz HIGH CHANNEL



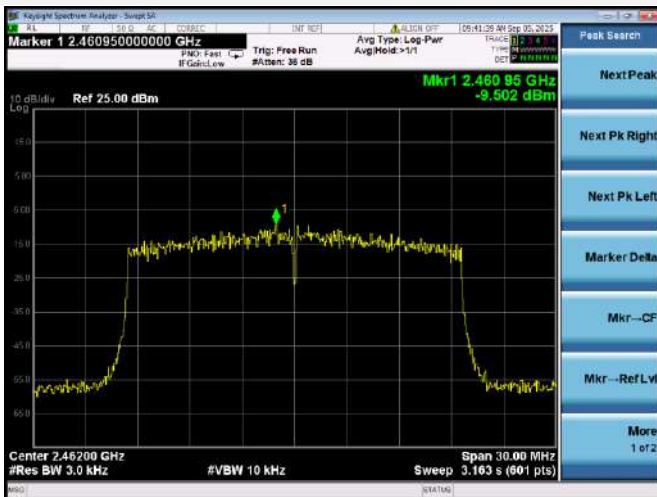
802.11ax-20 MHz(SU) LOW CHANNEL



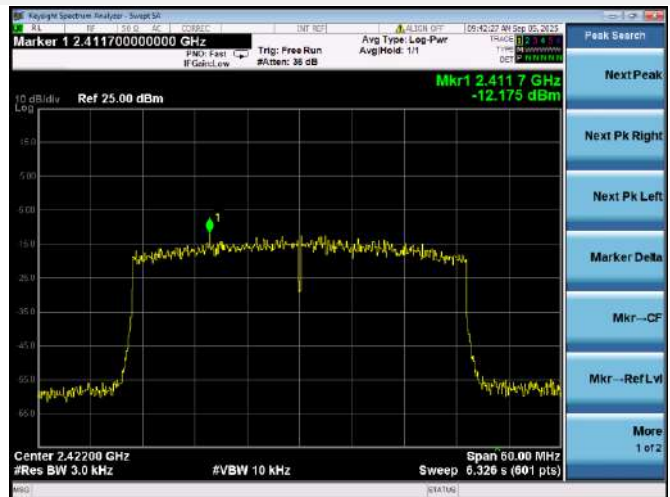
802.11ax-20 MHz(SU) MIDDLE CHANNEL



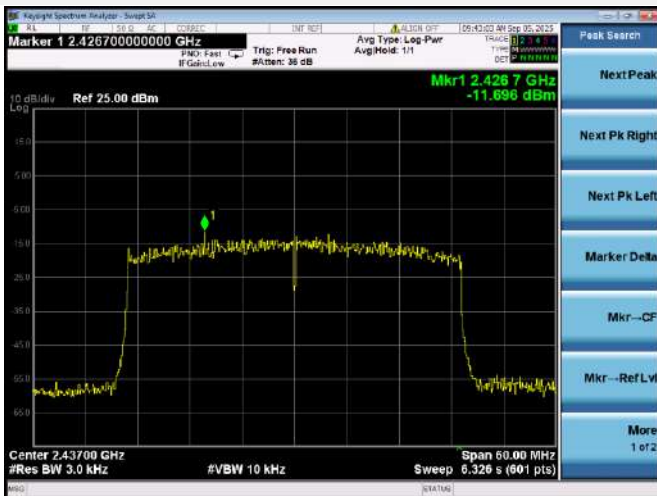
802.11ax-20 MHz(SU) HIGH CHANNEL



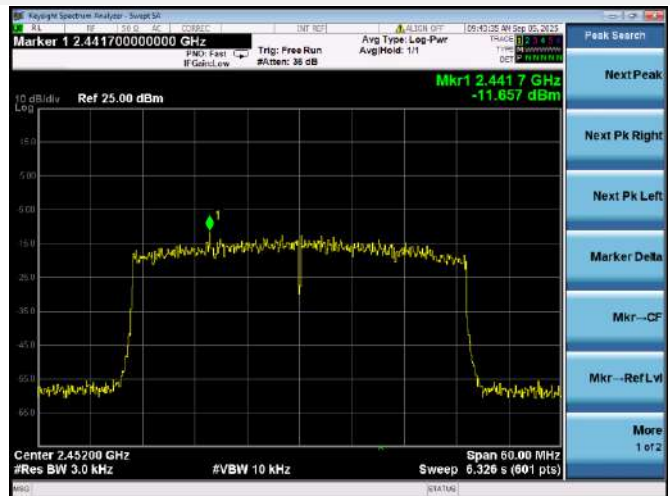
802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



ANT 1

802.11b LOW CHANNEL



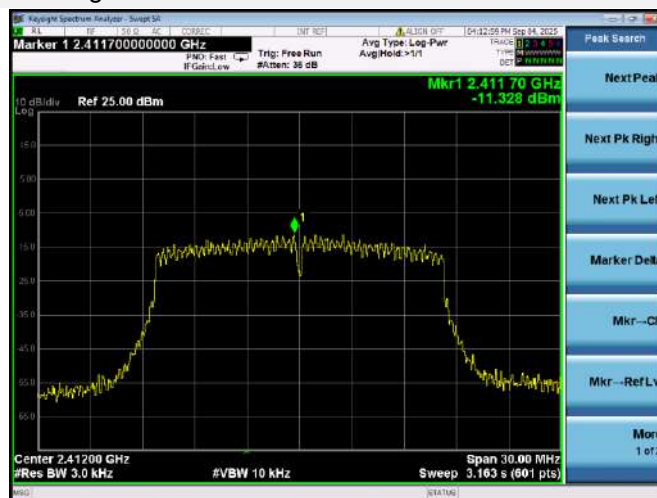
802.11b MIDDLE CHANNEL



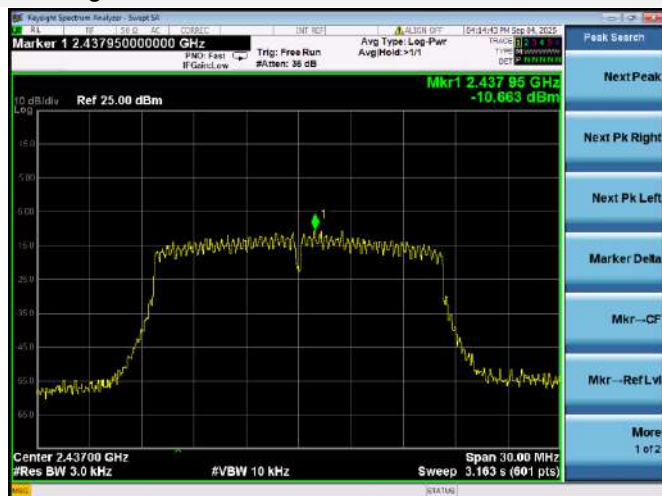
802.11b HIGH CHANNEL



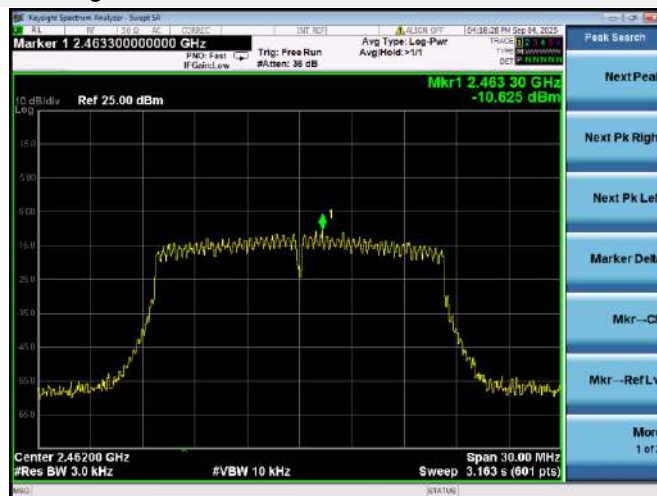
802.11g LOW CHANNEL



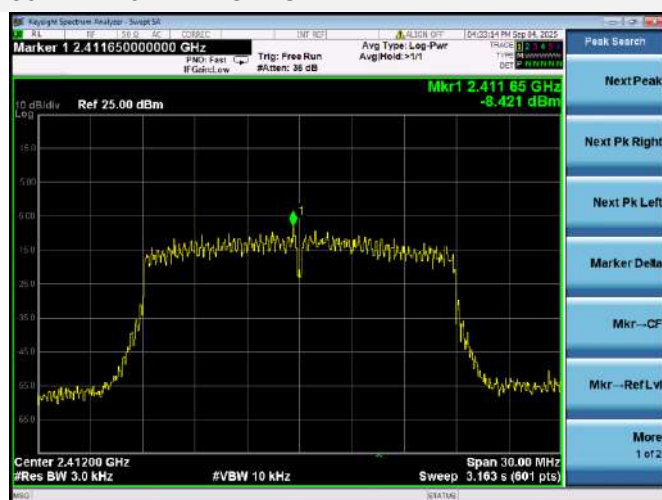
802.11g MIDDLE CHANNEL



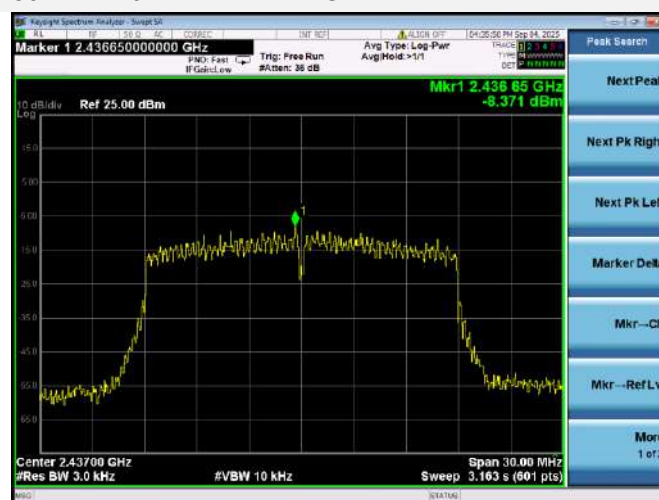
802.11g HIGH CHANNEL



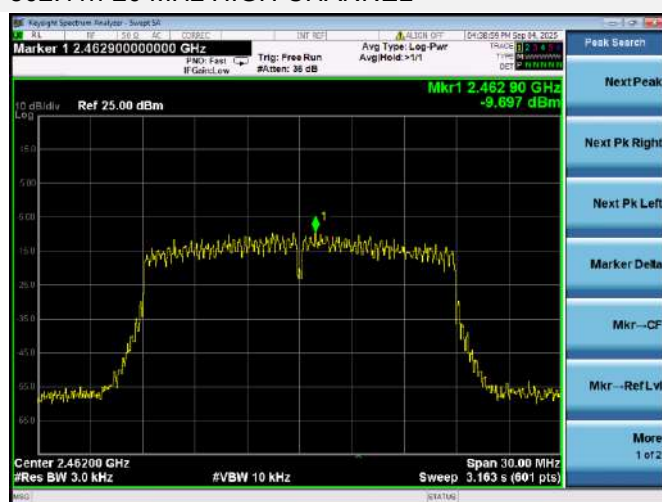
802.11n-20 MHz LOW CHANNEL



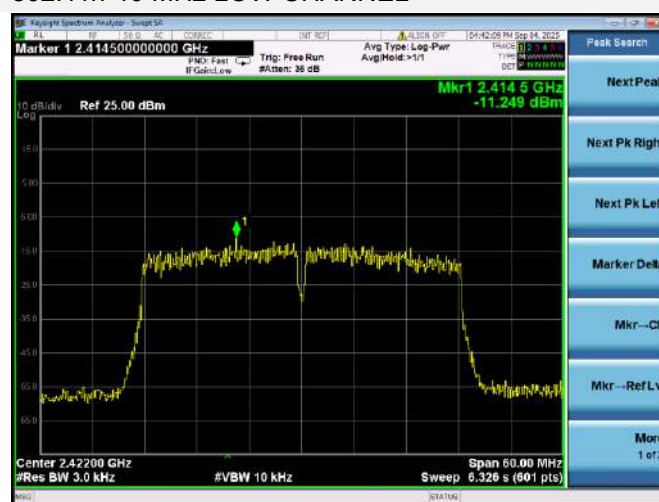
802.11n-20 MHz MIDDLE CHANNEL



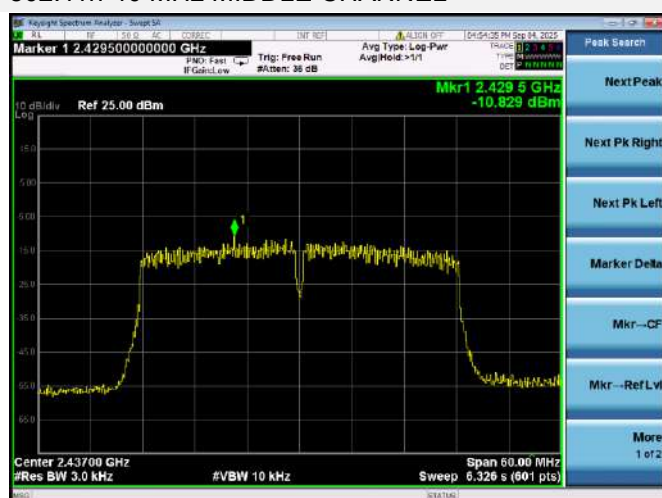
802.11n-20 MHz HIGH CHANNEL



802.11n-40 MHz LOW CHANNEL



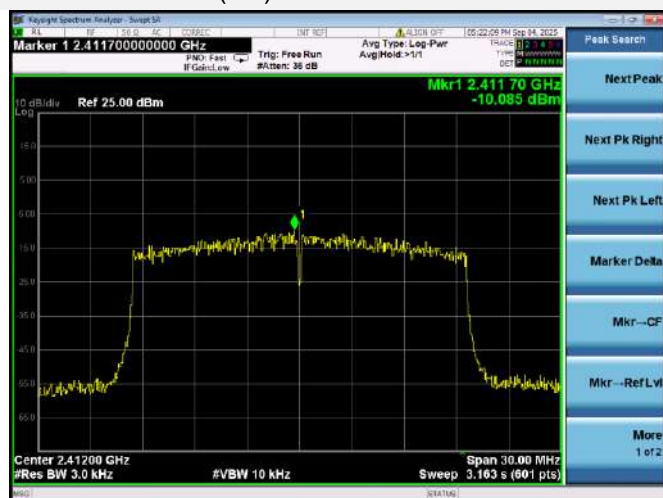
802.11n-40 MHz MIDDLE CHANNEL



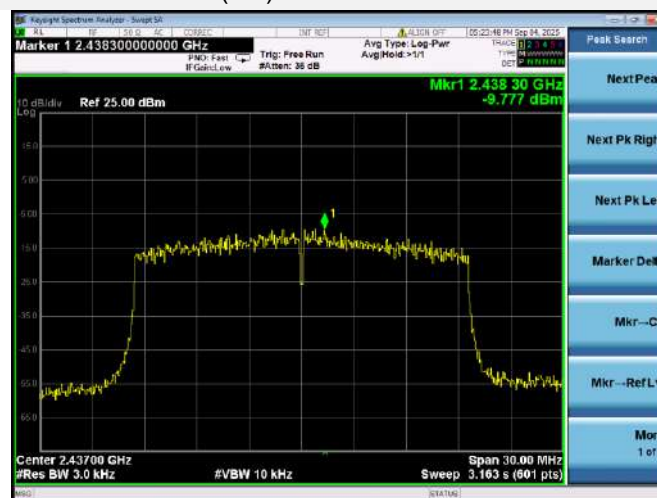
802.11n-40 MHz HIGH CHANNEL



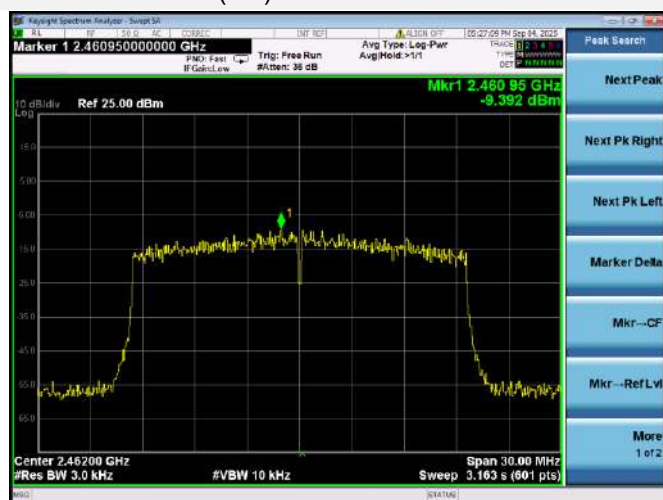
802.11ax-20 MHz(SU) LOW CHANNEL



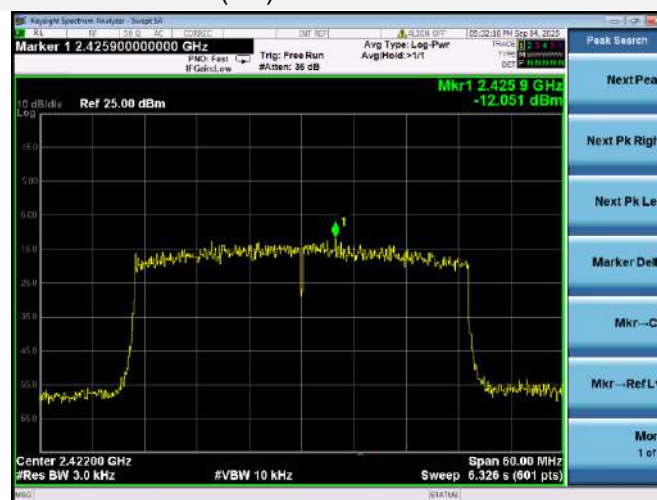
802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL



802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2581099-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2581099-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2581099-AI.PDF”.

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--END OF REPORT--