TEST REPORT

Applicant:	E&S International Enterprises, Inc.
Address:	7801 Hayvenhurst Avenue, Van Nuys, California 91406, United States
Equipment Type:	Desktop Computer
Model Name:	GWDC5H27Q58-BK (refer to section 2.3)
Brand Name:	Gateway, RCA
FCC ID:	2AYPE-GWDC5H27
Test Standard:	47 CFR Part 15 Subpart C (refer to section 3.1)
Sample Arrival Date:	May 19, 2025
Test Date:	May 31, 2025 - Jun. 05, 2025
Date of Issue:	Jun. 27, 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
Rev. 01	Jun. 27, 2025	Initial Issue

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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.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	E&S International Enterprises, Inc.
Address	7801 Hayvenhurst Avenue, Van Nuys, California 91406, United States

2.2 Manufacturer Information

Manufacturer	E&S International Enterprises, Inc.
Address	7801 Hayvenhurst Avenue, Van Nuys, California 91406, United States

2.3 General Description for Equipment under Test (EUT)

EUT Name	Desktop Computer
Model Name Under Test	GWDC5H27Q58-BK
Series Model Name	GWDC7H27Q58-BK, RWDC5H27Q58-BK, RWDC7H27Q58-BK, Shiheng D60Y
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name. (this information provided by the applicant)
Hardware Version	N/A
Software Version	N/A
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 and 802.11ax

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 MHz + (N-1)*5 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 MHz + (N-1)*5 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	Main Antenna	PIFA Antenna
	Aux. Antenna	
Antenna Gain	Main Antenna	0.2 dBi
	Aux. Antenna	0.23 dBi
Total directional gain	For power spectral density (PSD) measurements	Correlated: 3.23 dBi Formulas: Directional gain = *GANT* + 10 log(*NANT*) dBi Uncorrelated: 0.22 dBi Formulas: Directional gain = *GANT*
	For power measurements	Correlated: 3.23 dBi Formulas: Directional gain = *GANT* + 10 log(*NANT*) dBi Uncorrelated: 0.22 dBi Formulas: Directional gain = *GANT*
	For Conducted Out-of-Band and Spurious Measurements	Correlated: 3.23 dBi Formulas: Directional gain = *GANT* + 10 log(*NANT*) dBi Uncorrelated: 0.22 dBi Formulas: Directional gain = *GANT*

About the Product	Only the WIFI 802.11b, 802.11g, 802.11n (HT20/40) and 802.11ax (HE20/40) was tested in this report.

Mode	Antenna		
	Main Antenna	Aux. Antenna	MIMO
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	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
3	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
4	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.	Test Result	Verdict
1	Antenna Requirement	15.203	N/A	Pass[Note 1]
2	Output Power	15.247 (b)	ANNEX A.1	Pass
3	Occupied Bandwidth	15.247 (a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247 (d)	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.247 (d)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247 (d)	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247 (d)	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247 (e)	ANNEX A.8	Pass
Note [1]: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.				

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

Relative Humidity	52% to 63%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+21.4℃ to +24.6℃
Working Voltage of the EUT	NV (Normal Voltage)	230V

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	MY56060183	2024.08.01	2025.07.31
Power Sensor	KEYSIGHT	U2063XA	MY58000247	2024.07.04	2025.07.03
Spectrum Analyzer	KEYSIGHT	N9020A	MY52510065	2024.08.01	2025.07.31
Signaling Unit	ROHDE&SCHWARZ	CMW500	171150	2024.05.22	2025.05.21
				2025.04.28	2026.04.27
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01631	2022.02.23	2025.02.22
				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	2022.02.19	2025.09.03
Amplifier	COM-MV	LSCX_LNA1-12G-01	180602	2024.08.01	2025.07.31
Amplifier	COM-MV	XKu_LNA7-18G-01	180601	2024.08.01	2025.07.31
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2024.08.01	2025.07.31
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	2024.08.01	2025.07.31
LISN	SCHWARZBECK	NSLK 8127	8127-687	2024.05.09	2025.05.08
				2025.04.29	2026.04.28
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	2022.02.19	2025.02.18
				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.

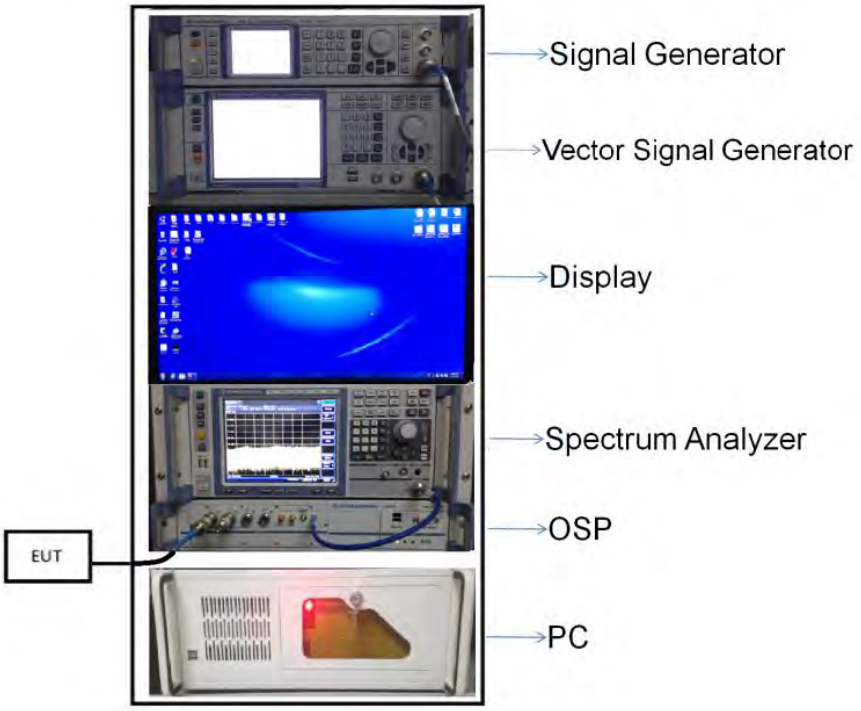
Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8℃
Humidity	4%

4.5 Description of Test Setup

4.5.1 For Antenna Port Test

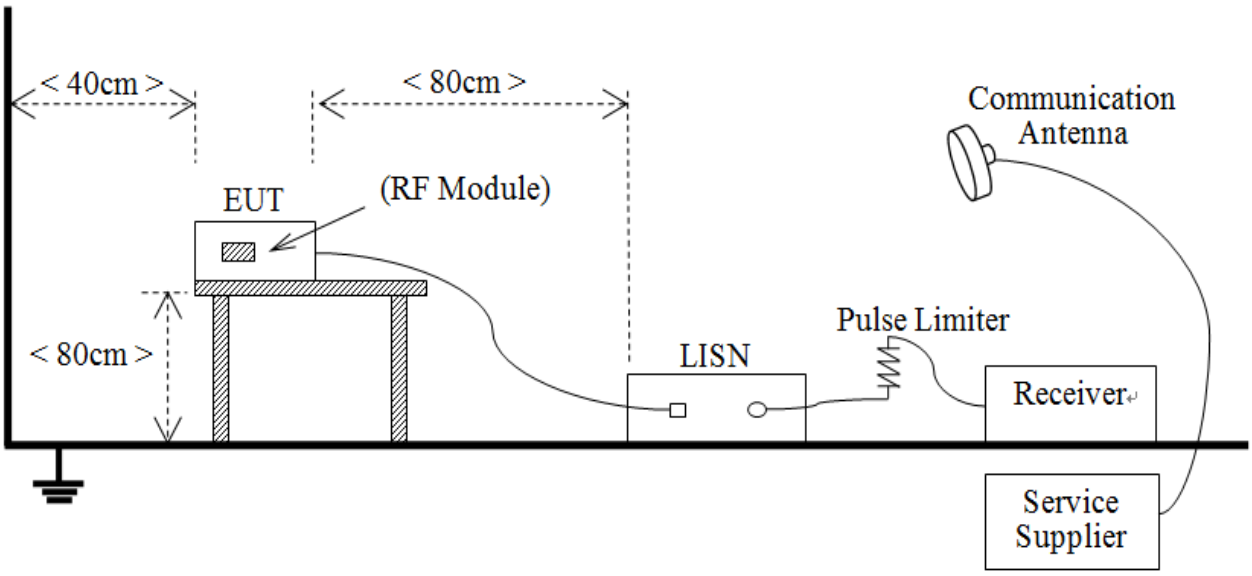
Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

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



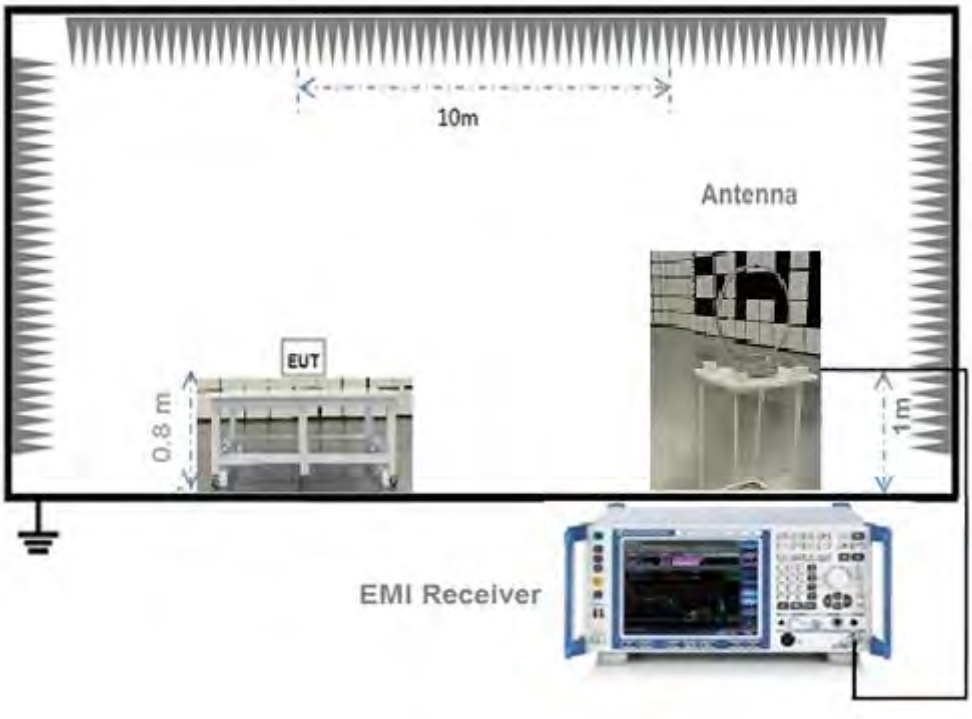
(Diagram 1)

4.5.2 For AC Power Supply Port Test



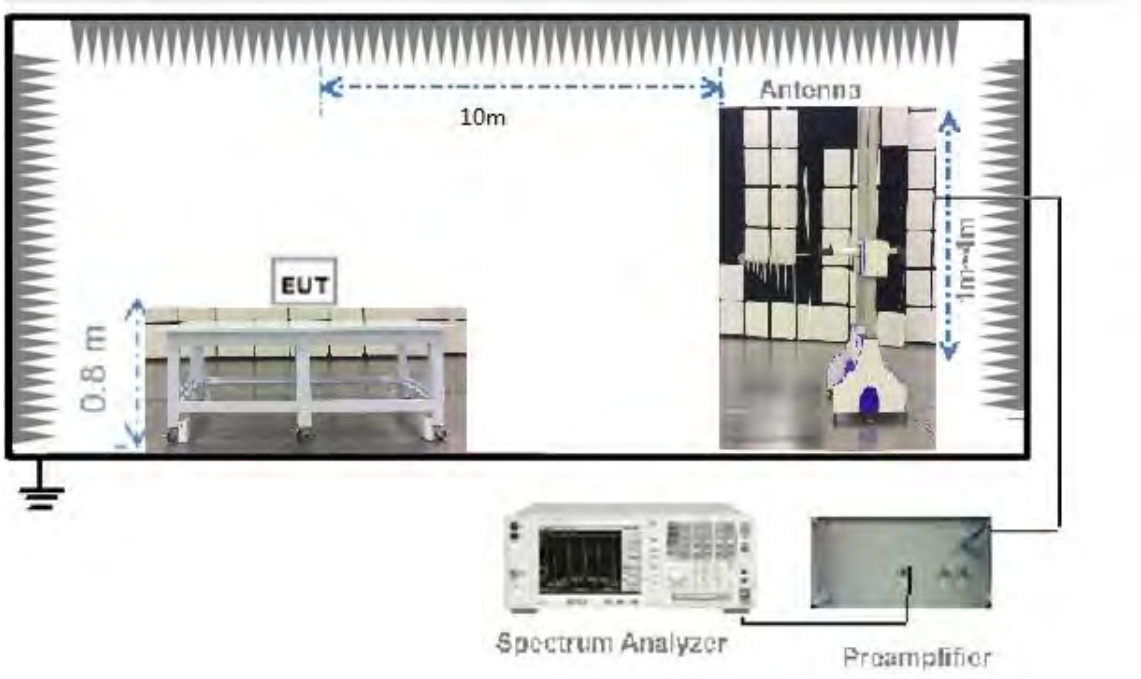
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



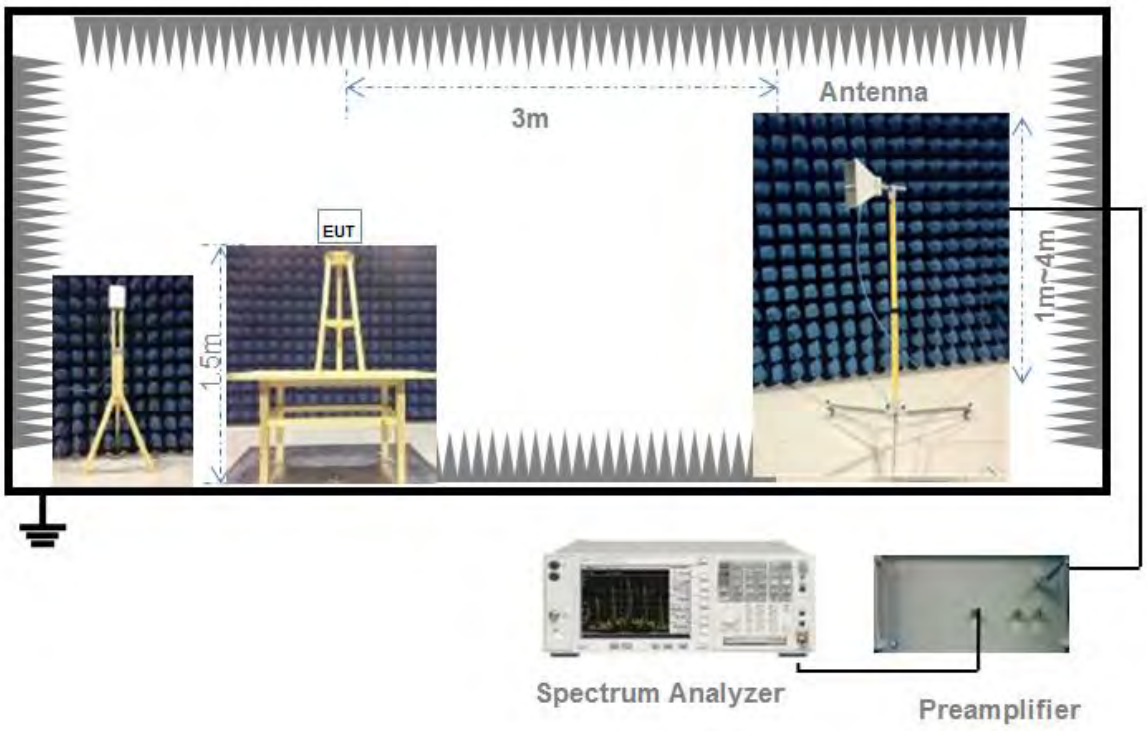
(Diagram 3)

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 = EIRP – 20log D + 104.8

where:

E = electric field strength in dBμV/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

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)

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.

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 10log (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 ≥ OBW if possible; otherwise, set RBW to the largest available value.

Set VBW ≥ 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 ≤ 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)

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)

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 ≥ 3 x 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 ⩾ 3 x 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)

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 $\geqslant$ 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 $\geqslant$ 3 x 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 (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

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 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	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)

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 (μV/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:

$E = EIRP – 20\log D + 104.8$

where:

E = electric field strength in dBμV/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 ≥ 3 x 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 ≥ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (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 ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ 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)

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 ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ 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)

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 kHz $\leqslant$ RBW $\leqslant$ 100 kHz.

Set the VBW $\geqslant$ 3 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

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle	Duty Factor
802.11b	8.345	8.390	99.46%	0.02
802.11g	2.086	2.134	97.75%	0.10
802.11n-20 MHz	3.974	4.023	98.78%	0.05
802.11n-40 MHz	3.963	4.018	98.63%	0.06
802.11ax-20 MHz	3.978	4.030	98.71%	0.06
802.11ax-40 MHz	3.978	4.030	98.71%	0.06

Peak Power Test Data

Main Antenna

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.16	164.44	30	1000	Pass
Middle	21.98	157.76			Pass
High	22.08	161.44			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.03	504.66	30	1000	Pass
Middle	27.01	502.34			Pass
High	26.56	452.90			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.87	486.41	30	1000	Pass
Middle	26.83	481.95			Pass
High	26.35	431.52			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.89	388.15	30	1000	Pass
Middle	27.14	517.61			Pass
High	24.74	297.85			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	28.03	635.33	30	1000	Pass
Middle	27.93	620.87			Pass
High	27.03	504.66			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.41	550.81	30	1000	Pass
Middle	28.36	685.49			Pass
High	26.34	430.53			Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.21	166.34	30	1000	Pass
Middle	22.20	165.96			Pass
High	21.96	157.04			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.98	498.88	30	1000	Pass
Middle	26.94	494.31			Pass
High	26.77	475.34			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.88	487.53	30	1000	Pass
Middle	26.83	481.95			Pass
High	26.66	463.45			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.19	523.60	30	1000	Pass
Middle	27.21	526.02			Pass
High	26.81	479.73			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.98	628.06	30	1000	Pass
Middle	27.96	625.17			Pass
High	27.73	592.93			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	28.30	676.08	30	1000	Pass
Middle	28.25	668.34			Pass
High	27.88	613.76			Pass

MIMO

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.20	165.96	30	1000	Pass
Middle	22.10	162.18			Pass
High	22.00	158.49			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.00	501.19	30	1000	Pass
Middle	27.00	501.19			Pass
High	26.70	467.74			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.90	489.78	30	1000	Pass
Middle	26.80	478.63			Pass
High	26.50	446.68			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.60	457.09	30	1000	Pass
Middle	27.20	524.81			Pass
High	25.90	389.05			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	28.00	630.96	30	1000	Pass
Middle	28.00	630.96			Pass
High	27.40	549.54			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.90	616.60	30	1000	Pass
Middle	28.30	676.08			Pass
High	27.20	524.81			Pass

Average Power Test Data

Main Antenna

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.62	72.78	30	1000	Pass
Middle	18.76	75.16			Pass
High	18.60	72.44			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.58	72.11	30	1000	Pass
Middle	18.58	72.11			Pass
High	18.12	64.86			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.44	69.82	30	1000	Pass
Middle	18.40	69.18			Pass
High	17.95	62.37			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.29	53.58	30	1000	Pass
Middle	18.58	72.11			Pass
High	16.22	41.88			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.34	68.23	30	1000	Pass
Middle	18.26	66.99			Pass
High	17.36	54.45			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.49	56.10	30	1000	Pass
Middle	18.46	70.15			Pass
High	16.42	43.85			Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.70	74.13	30	1000	Pass
Middle	18.66	73.45			Pass
High	18.47	70.31			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.55	71.61	30	1000	Pass
Middle	18.50	70.79			Pass
High	18.33	68.08			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.37	68.71	30	1000	Pass
Middle	18.42	69.50			Pass
High	18.18	65.77			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.62	72.78	30	1000	Pass
Middle	18.64	73.11			Pass
High	18.26	66.99			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.25	66.83	30	1000	Pass
Middle	18.25	66.83			Pass
High	18.07	64.12			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.31	67.76	30	1000	Pass
Middle	18.36	68.55			Pass
High	17.92	61.94			Pass

MIMO

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.72	74.47	30	1000	Pass
Middle	18.72	74.47			Pass
High	18.52	71.12			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.60	72.44	30	1000	Pass
Middle	18.60	72.44			Pass
High	18.20	66.07			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.45	69.98	30	1000	Pass
Middle	18.45	69.98			Pass
High	18.05	63.83			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.06	63.97	30	1000	Pass
Middle	18.66	73.45			Pass
High	17.36	54.45			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.26	66.99	30	1000	Pass
Middle	18.26	66.99			Pass
High	17.76	59.70			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.96	62.52	30	1000	Pass
Middle	18.46	70.15			Pass
High	17.26	53.21			Pass

A.2 Occupied Bandwidth

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

Test Data

Main Antenna

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	9.150000	13.422000	≥500
Middle	9.150000	13.450000	≥500
High	9.150000	13.409000	≥500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.400146	17.159000	≥500
Middle	15.200000	17.189000	≥500
High	15.200000	17.107000	≥500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200000	18.190000	≥500
Middle	15.150000	18.143000	≥500
High	15.150000	18.149000	≥500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.100000	36.088000	≥500
Middle	33.800000	36.124000	≥500
High	35.050000	36.093000	≥500

802.11ax-20 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	17.650000	19.013000	≥500
Middle	17.400000	19.060000	≥500
High	17.450000	19.075000	≥500

802.11ax-40 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.400000	37.441000	≥500
Middle	35.150000	37.481000	≥500
High	32.600000	37.532000	≥500

Test Plots

Main Antenna

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

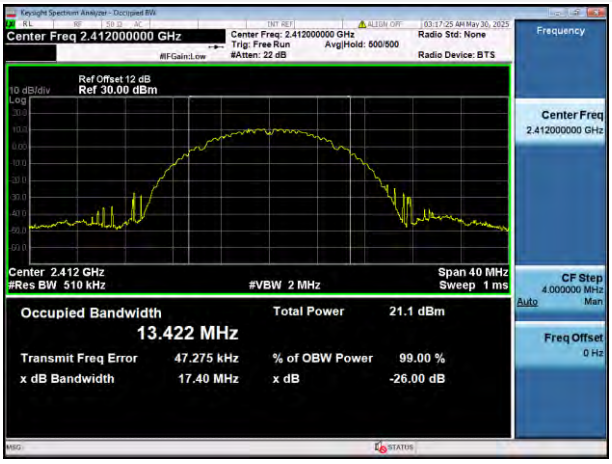
802.11ax-40 MHz(SU) LOW CHANNEL

802.11ax-40 MHz(SU) MIDDLE CHANNEL

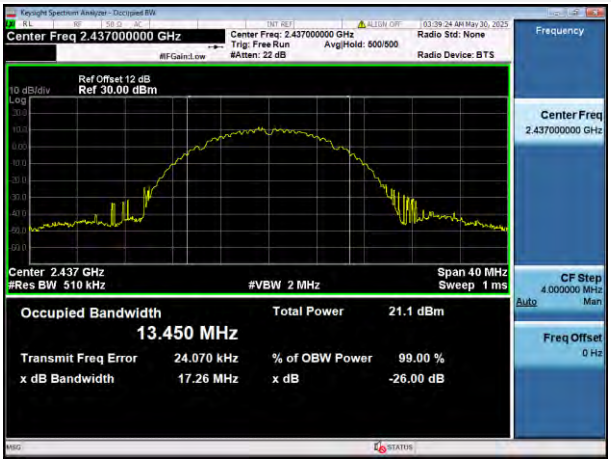
802.11ax-40 MHz(SU) HIGH CHANNEL

99% Bandwidth

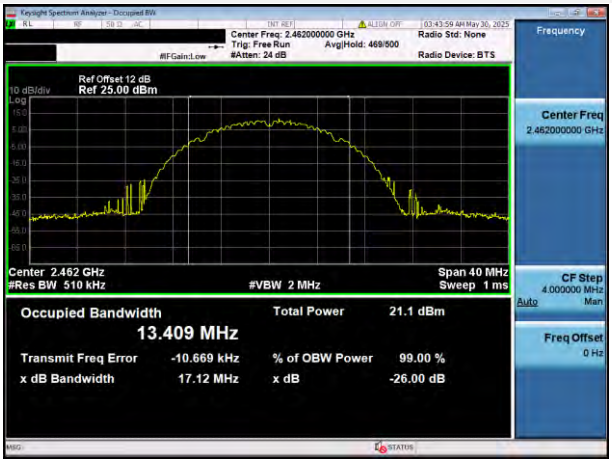
802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



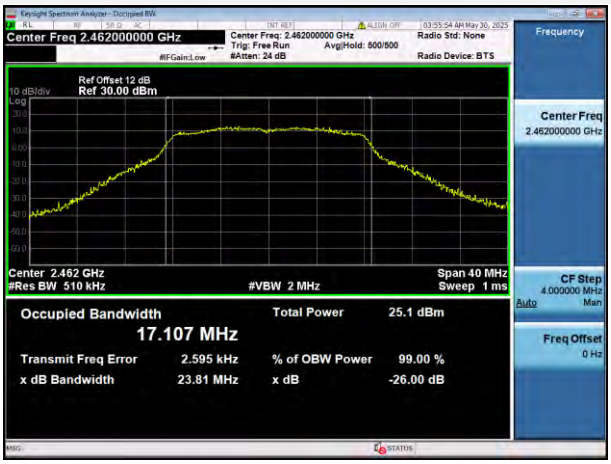
802.11b HIGH CHANNEL



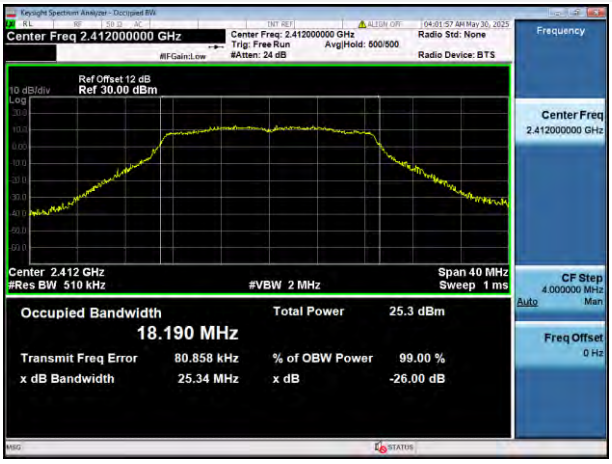
802.11g LOW CHANNEL

802.11g MIDDLE CHANNEL

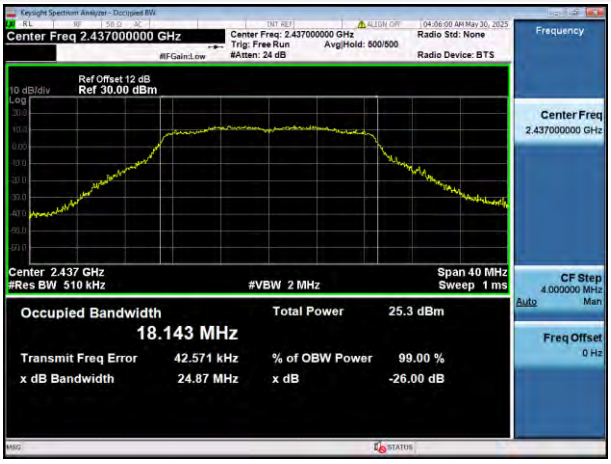
802.11g HIGH CHANNEL



802.11n-20 MHz LOW CHANNEL



802.11n-20 MHz MIDDLE CHANNEL

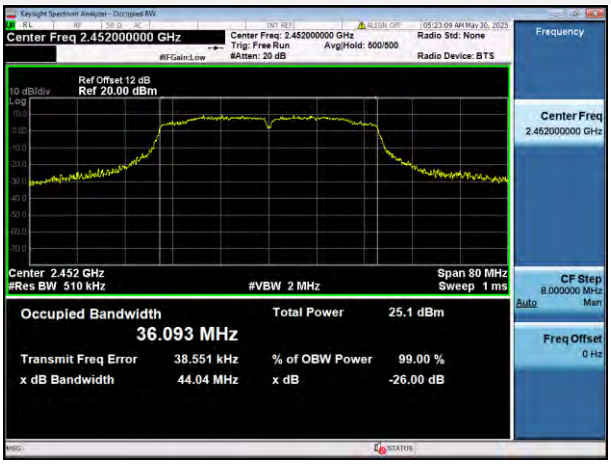


802.11n-20 MHz HIGH CHANNEL

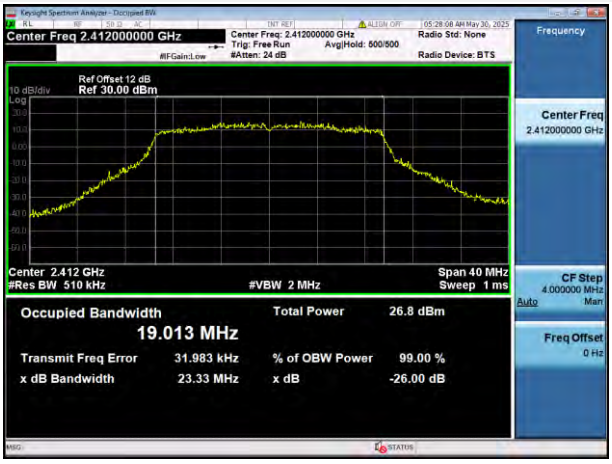
802.11n-40 MHz LOW CHANNEL

802.11n-40 MHz MIDDLE CHANNEL

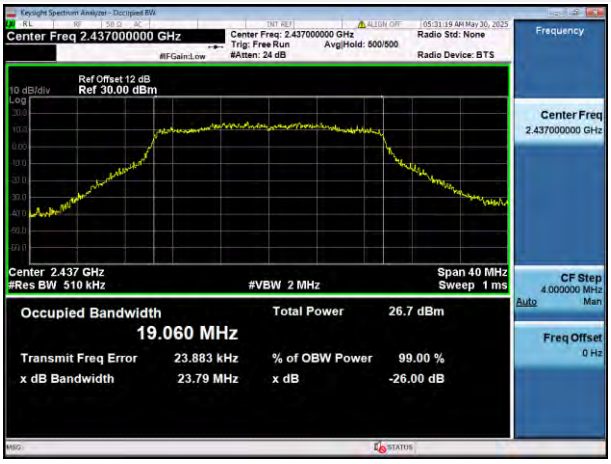
802.11n-40 MHz HIGH CHANNEL



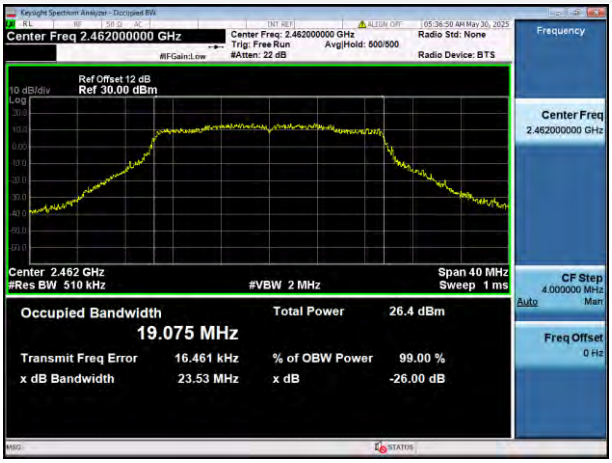
802.11ax-20 MHz(SU) LOW CHANNEL



802.11ax-20 MHz(SU) MIDDLE CHANNEL



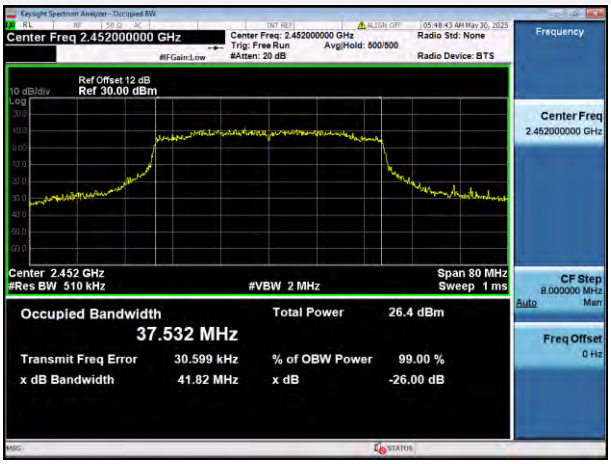
802.11ax-20 MHz(SU) HIGH CHANNEL



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

Test Data

Main Antenna

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.78	10.48	-9.52	Pass
Middle	-36.72	10.42	-9.58	Pass
High	-37.02	10.33	-9.67	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.25	9.01	-10.99	Pass
Middle	-36.80	9.04	-10.96	Pass
High	-36.65	8.23	-11.77	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.42	8.95	-11.05	Pass
Middle	-36.69	8.45	-11.55	Pass
High	-37.15	8.51	-11.49	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.31	5.81	-14.19	Pass
Middle	-36.34	5.41	-14.59	Pass
High	-38.83	5.04	-14.96	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	-38.85	8.69	-11.31	Pass
Middle	-36.86	8.65	-11.35	Pass
High	-36.75	8.18	-11.82	Pass

802.11ax-40 MHz(SU) Mode:

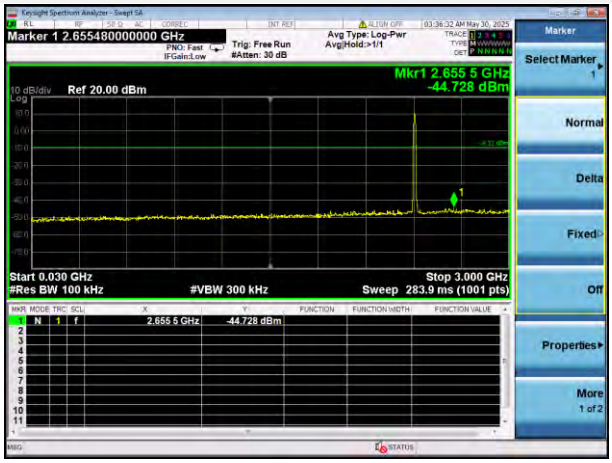
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-35.86	5.43	-14.57	Pass
Middle	-39.15	5.33	-14.67	Pass
High	-36.54	4.58	-15.42	Pass

Test Plots

Main Antenna

802.11b LOW CHANNEL CARRIER LEVEL

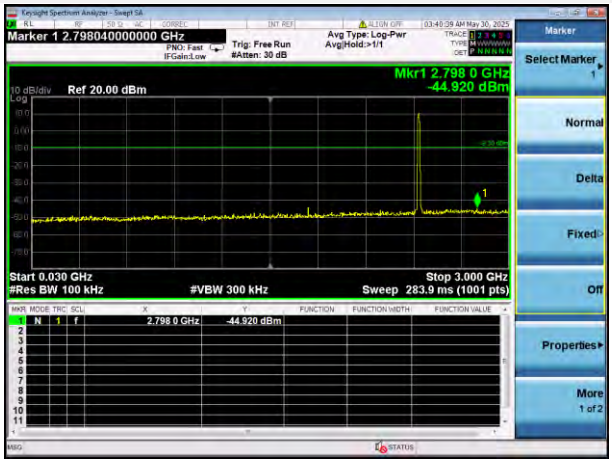
802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



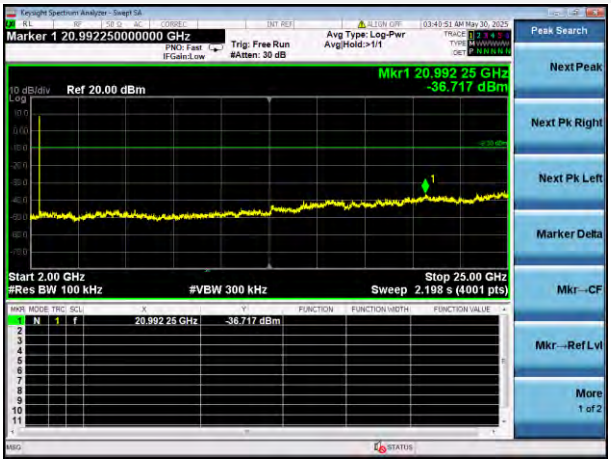
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

802.11b MIDDLE CHANNEL CARRIER LEVEL

802.11b MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

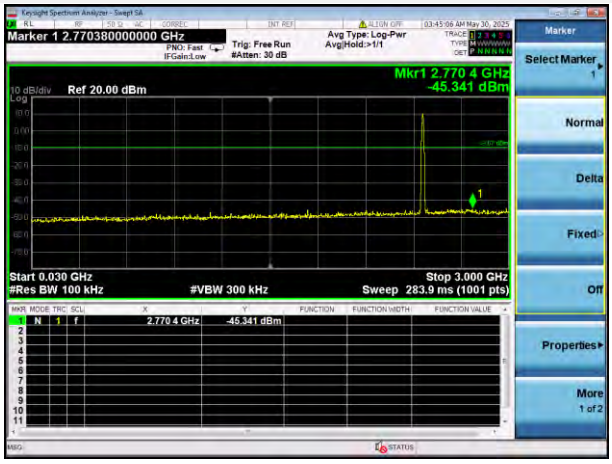


802.11b MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

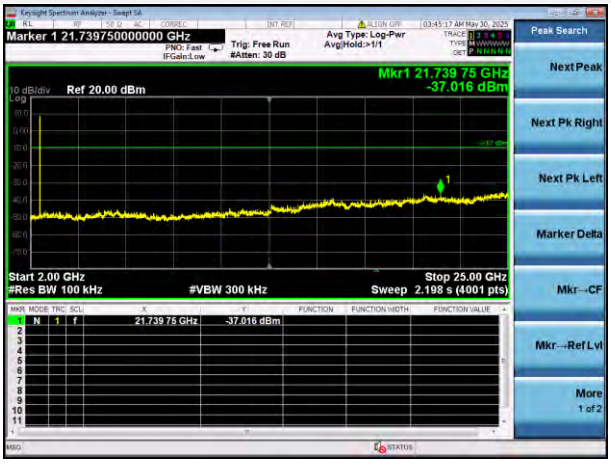


802.11b HIGH CHANNEL CARRIER LEVEL

802.11b HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

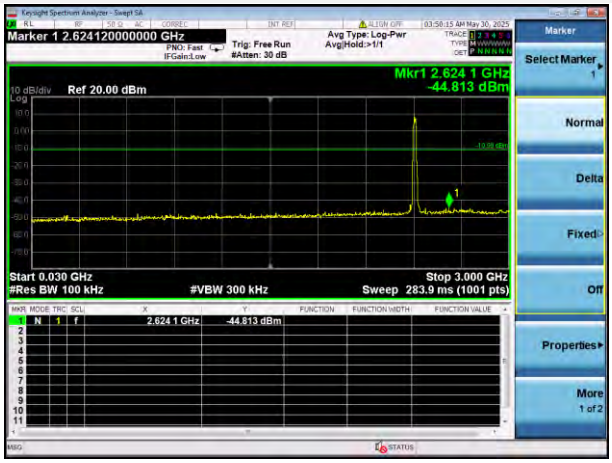


802.11b HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

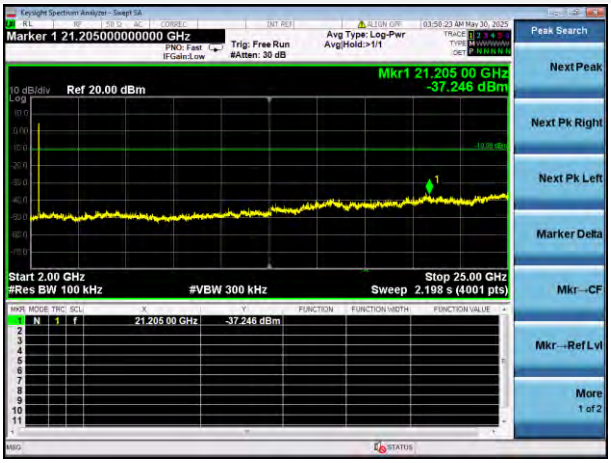


802.11g LOW CHANNEL CARRIER LEVEL

802.11g LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

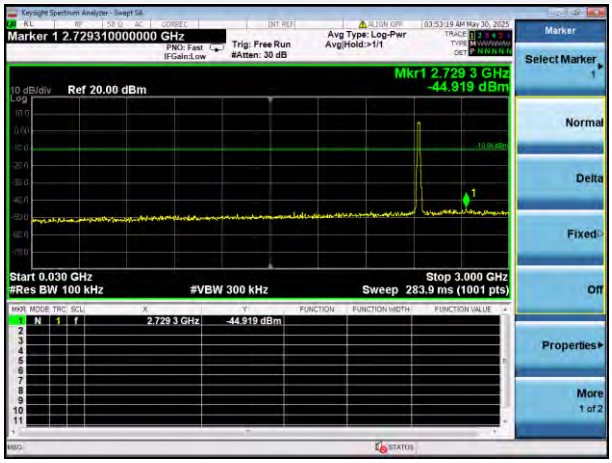


802.11g LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

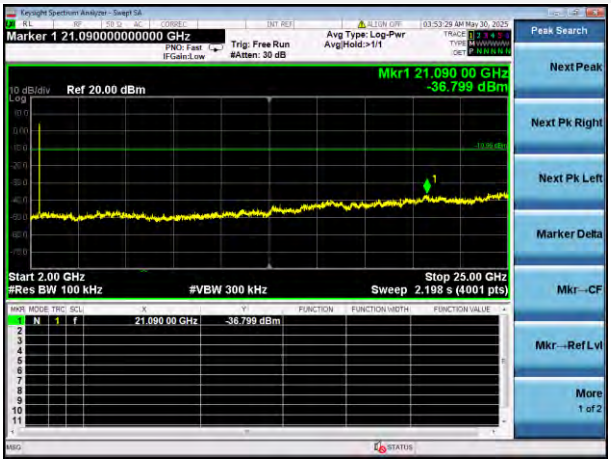


802.11g MIDDLE CHANNEL CARRIER LEVEL

802.11g MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

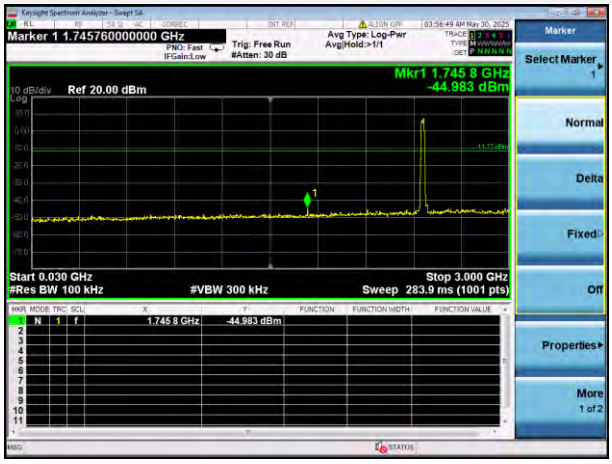


802.11g MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

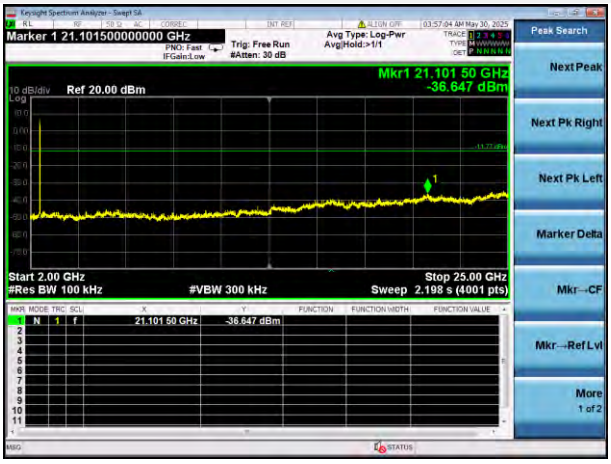


802.11g HIGH CHANNEL CARRIER LEVEL

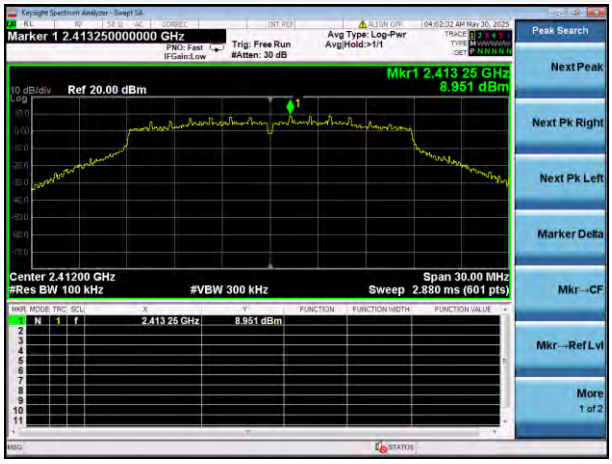
802.11g HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



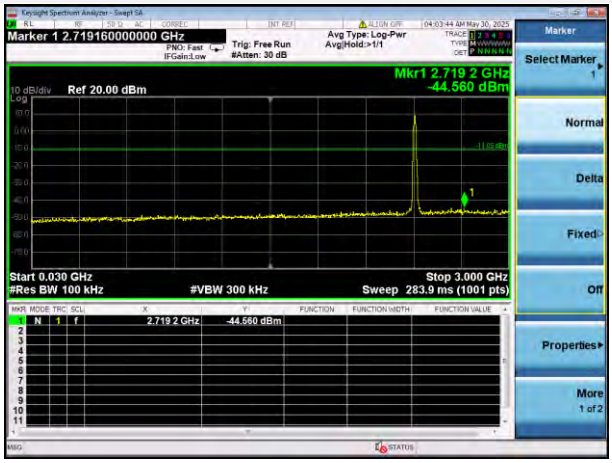
802.11g HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



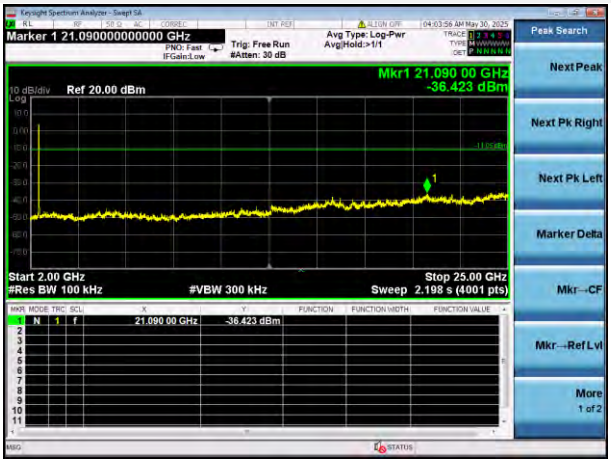
802.11n-20 MHz LOW CHANNEL CARRIER LEVEL



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

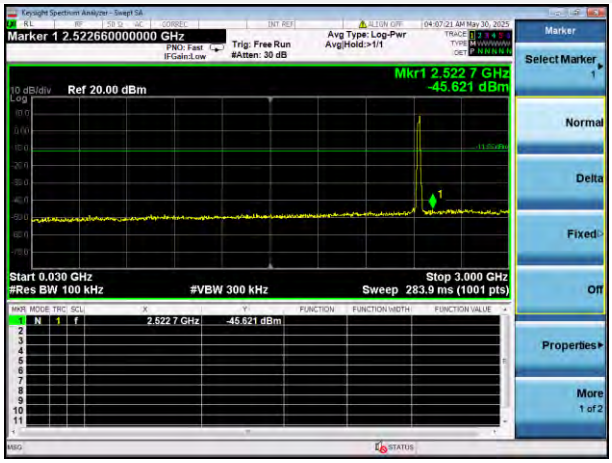


802.11n-20 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

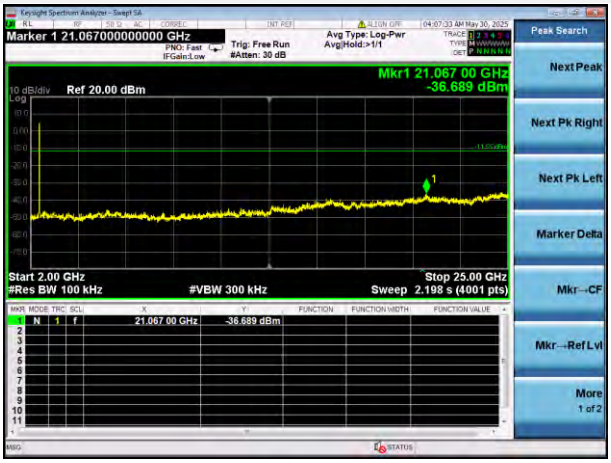


802.11n-20 MHz MIDDLE CHANNEL CARRIER LEVEL

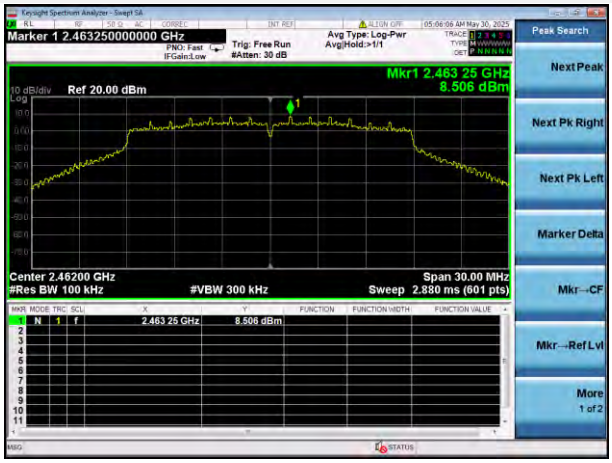
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



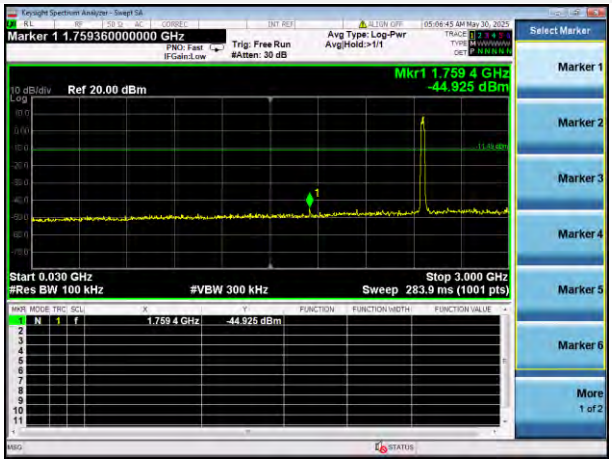
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



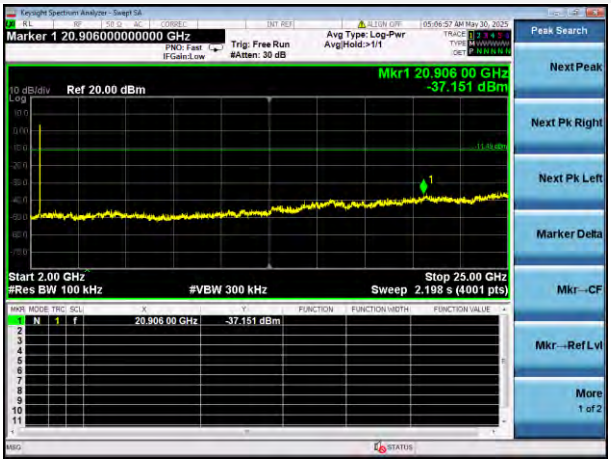
802.11n-20 MHz HIGH CHANNEL CARRIER LEVEL



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

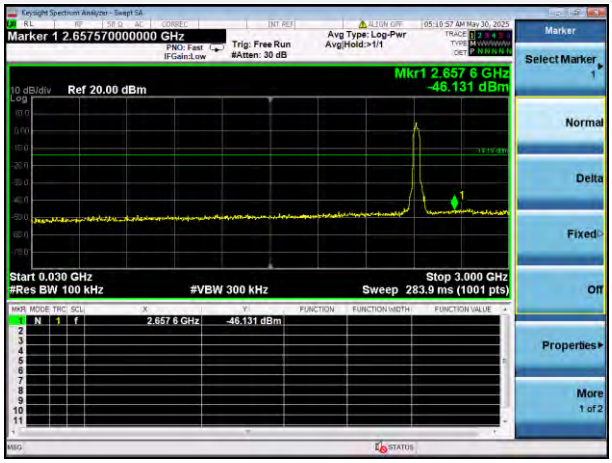


802.11n-20 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



802.11n-40 MHz LOW CHANNEL CARRIER LEVEL

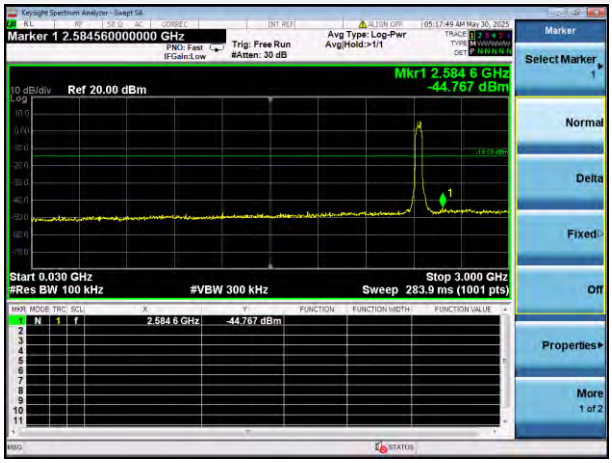
802.11n-40 MHz LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



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

802.11n-40 MHz MIDDLE CHANNEL CARRIER LEVEL

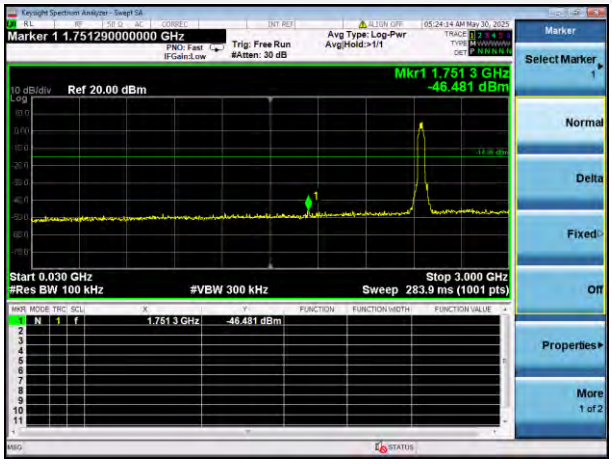
802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



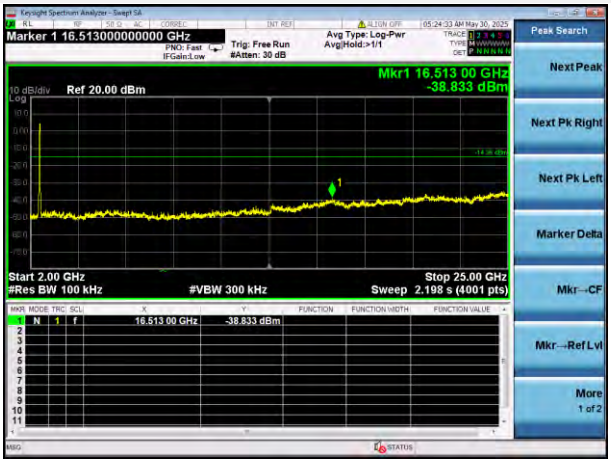
802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

802.11n-40 MHz HIGH CHANNEL CARRIER LEVEL

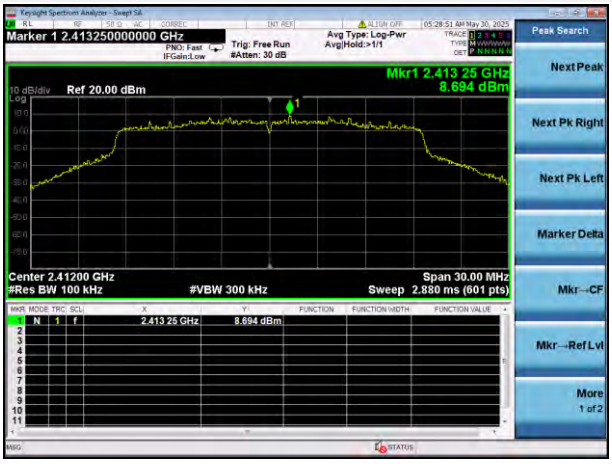
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



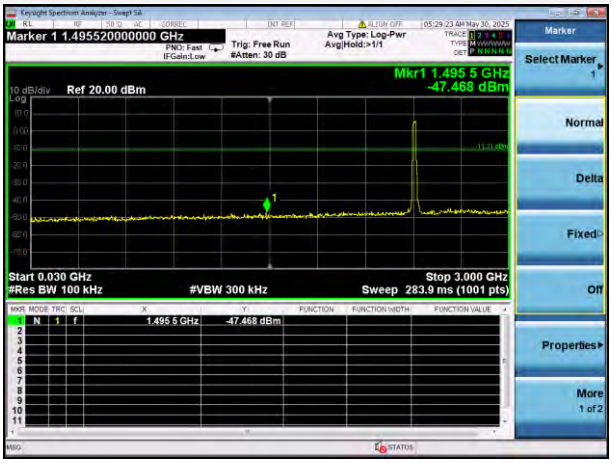
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



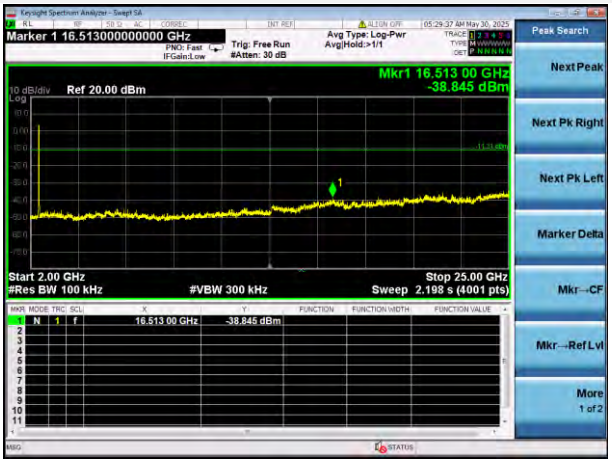
802.11ax-20 MHz(SU) LOW CHANNEL CARRIER LEVEL



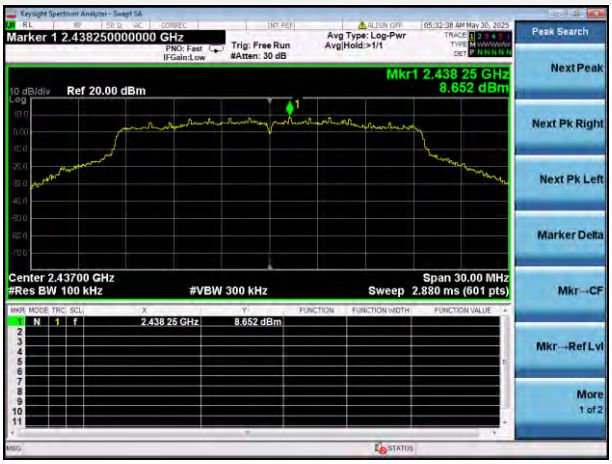
802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



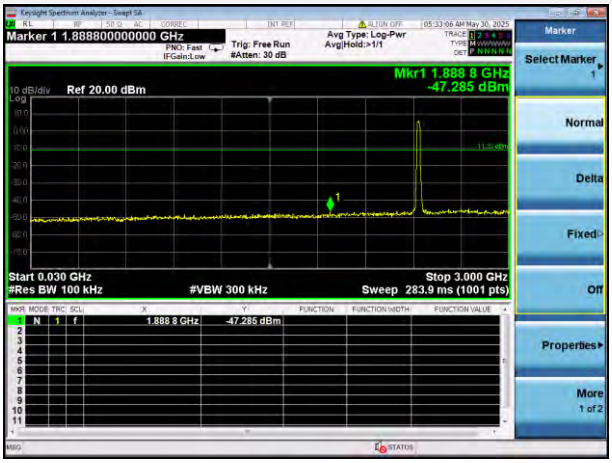
802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



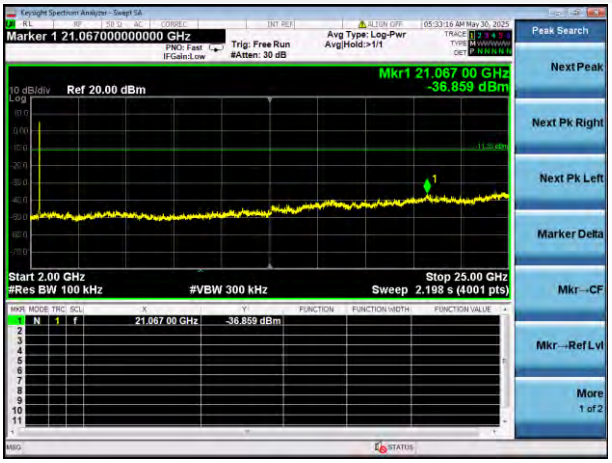
802.11ax-20 MHz(SU) MIDDLE CHANNEL CARRIER LEVEL



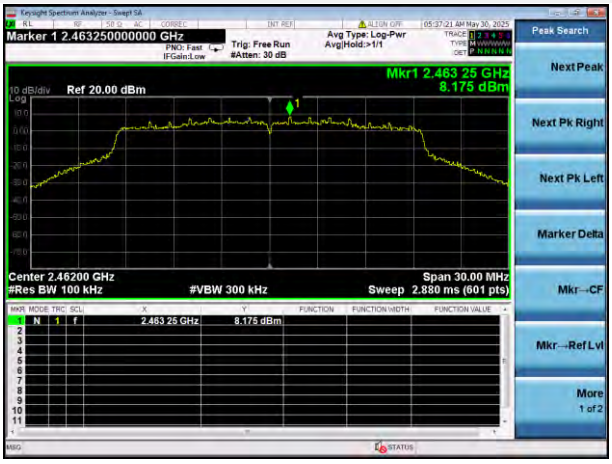
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



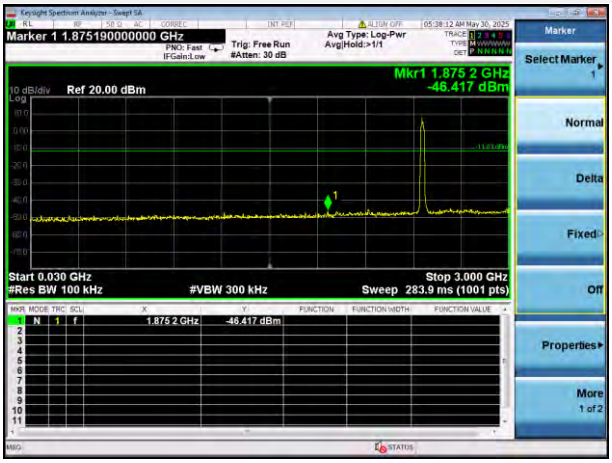
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



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

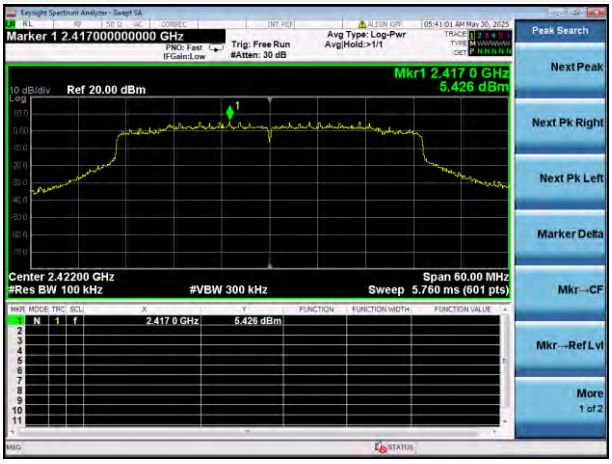


802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

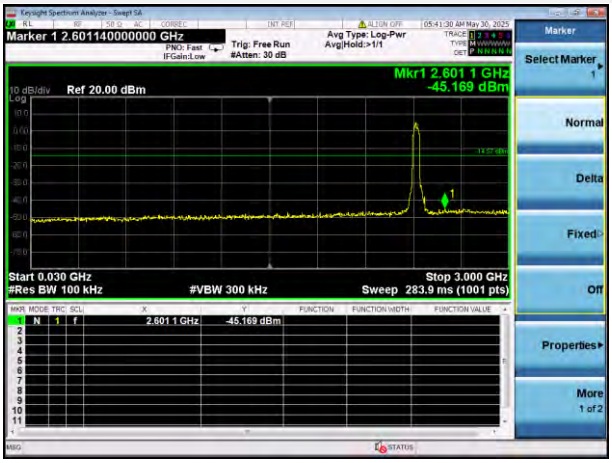


802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

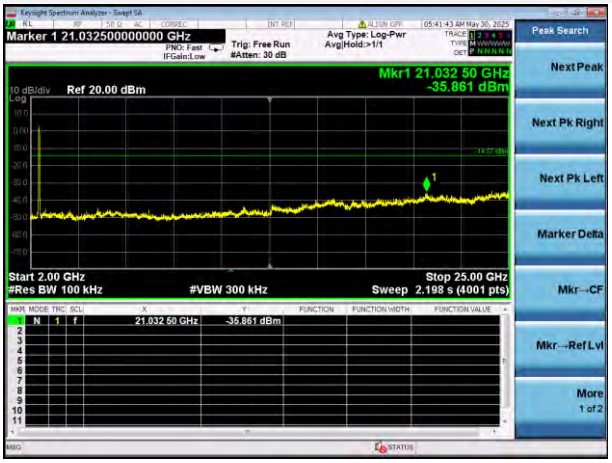
802.11ax-40 MHz(SU) LOW CHANNEL CARRIER LEVEL



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

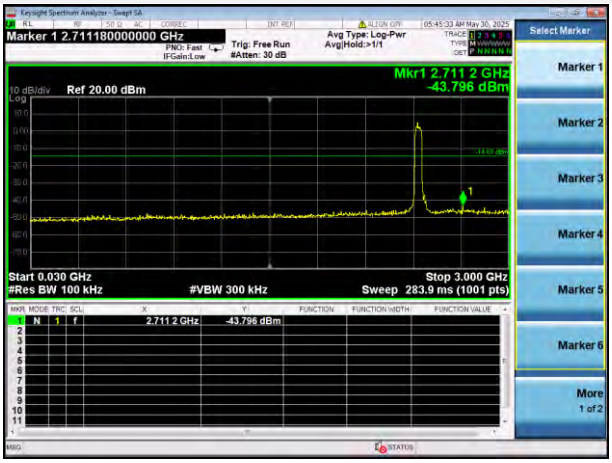


802.11ax-40 MHz(SU) LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

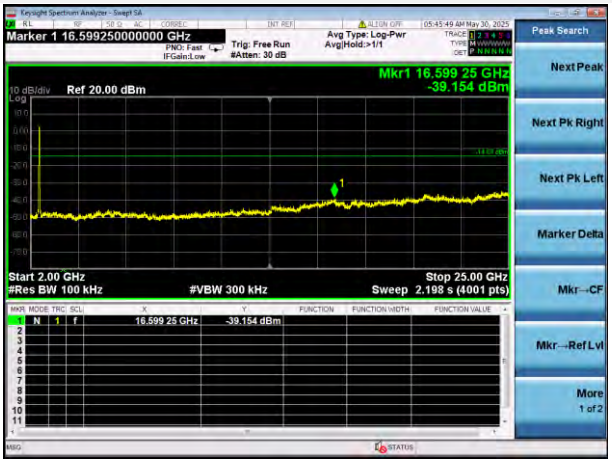


802.11ax-40 MHz(SU) MIDDLE CHANNEL CARRIER LEVEL

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

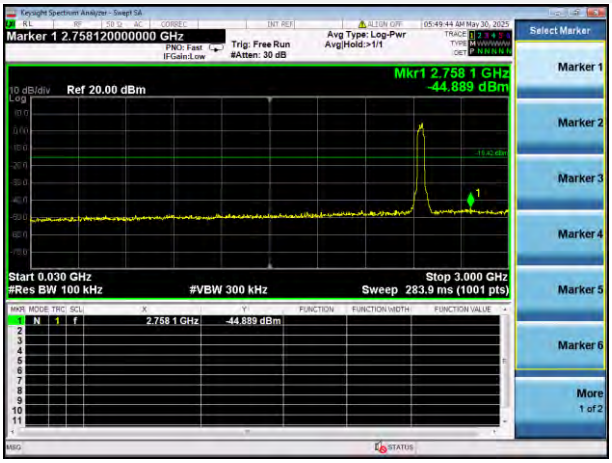


802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



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)

Note [1]: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.

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

Test Data

Main Antenna

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-42.09	10.48	-9.52	Pass
High Channel	-45.84	10.33	-9.67	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-22.52	9.01	-10.99	Pass
High Channel	-42.72	8.23	-11.77	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-20.02	8.95	-11.05	Pass
High Channel	-39.48	8.51	-11.49	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-20.11	5.81	-14.19	Pass
High Channel	-28.95	5.04	-14.96	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	-21.18	8.69	-11.31	Pass
High Channel	-40.33	8.18	-11.82	Pass

802.11ax-40 MHz(SU) Mode:

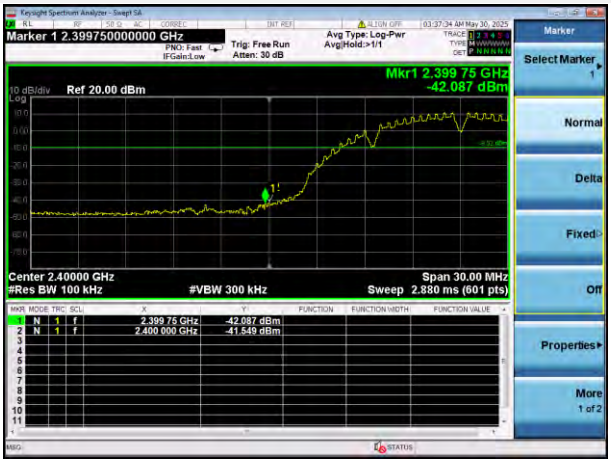
Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-22.16	5.43	-14.57	Pass
High Channel	-32.37	4.58	-15.42	Pass

Test Plots

Main Antenna

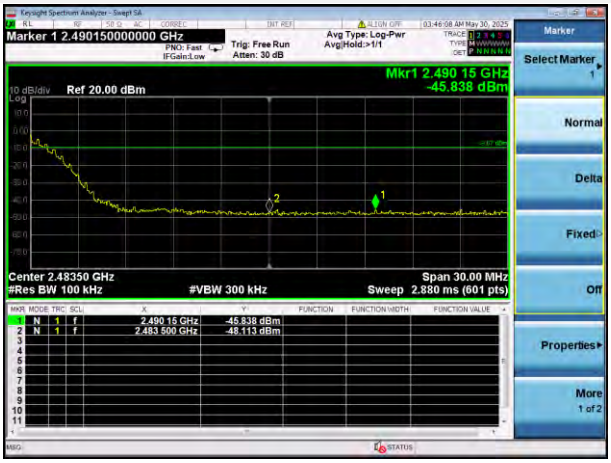
802.11b LOW CHANNEL, CARRIER LEVEL

802.11b LOW CHANNEL, BAND EDGE



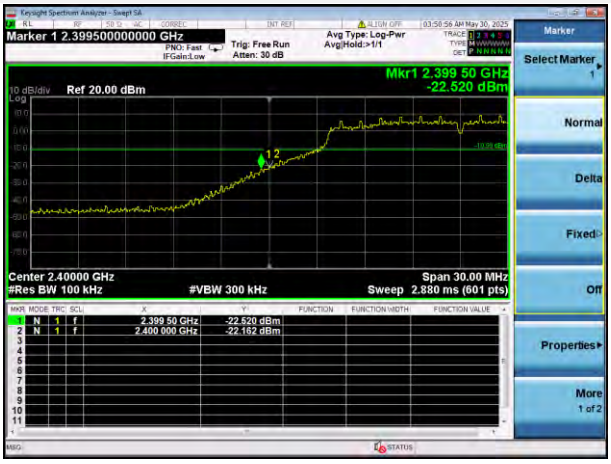
802.11b HIGH CHANNEL, CARRIER LEVEL

802.11b HIGH CHANNEL, BAND EDGE



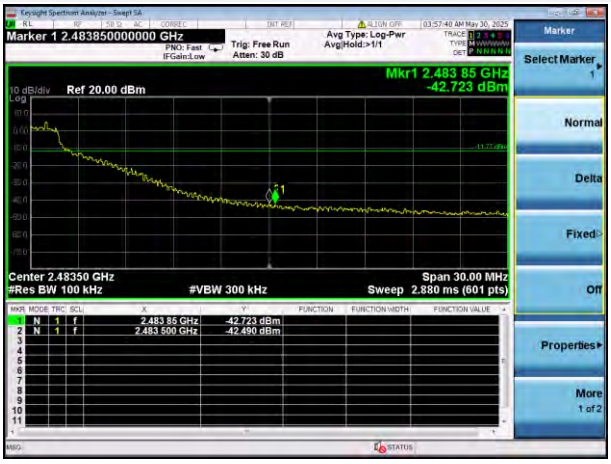
802.11g LOW CHANNEL, CARRIER LEVEL

802.11g LOW CHANNEL, BAND EDGE

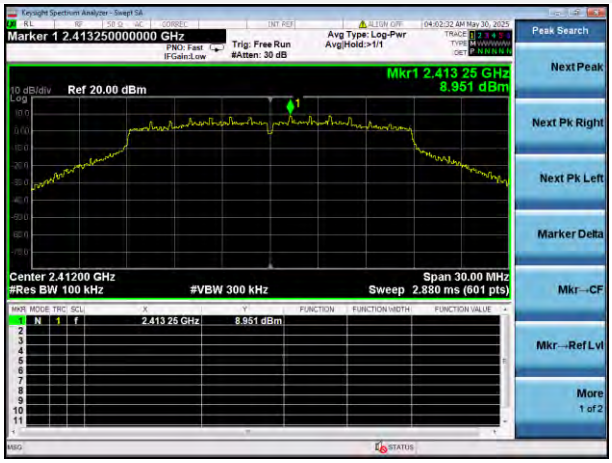


802.11g HIGH CHANNEL, CARRIER LEVEL

802.11g HIGH CHANNEL, BAND EDGE



802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL



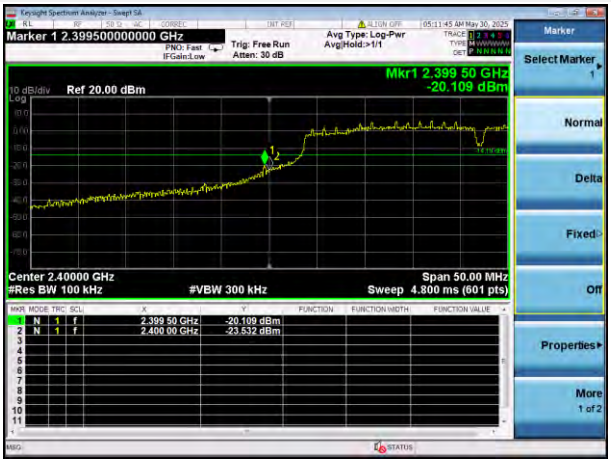
802.11n-20 MHz LOW CHANNEL, BAND EDGE

802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL

802.11n-20 MHz HIGH CHANNEL, BAND EDGE

802.11n-40 MHz LOW CHANNEL, CARRIER LEVEL

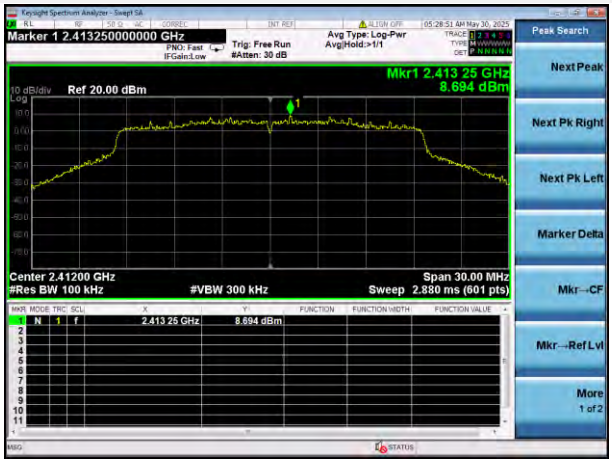
802.11n-40 MHz LOW CHANNEL, BAND EDGE



802.11n-40 MHz HIGH CHANNEL, CARRIER LEVEL

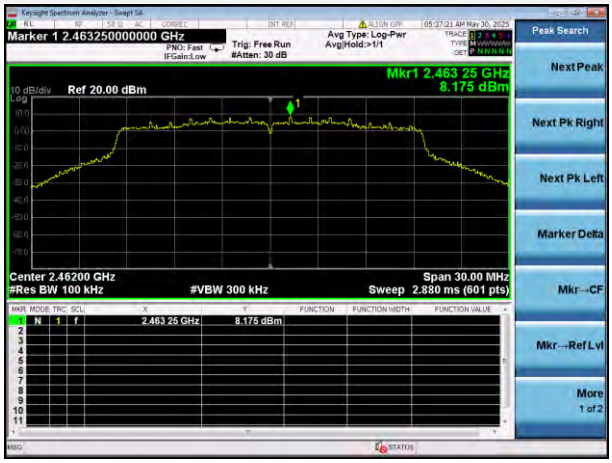
802.11n-40 MHz HIGH CHANNEL, BAND EDGE

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

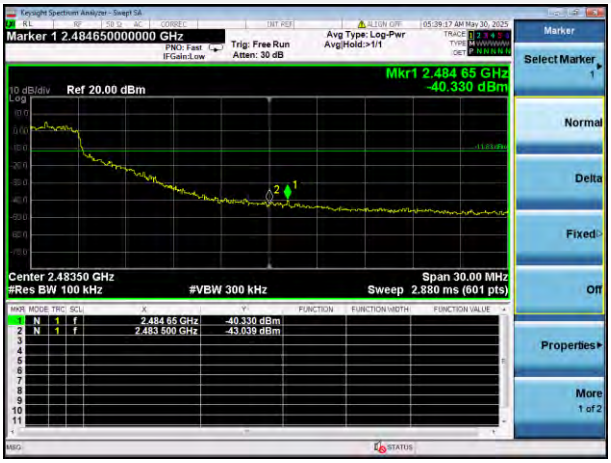


802.11ax-20 MHz(SU) LOW CHANNEL, BAND EDGE

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

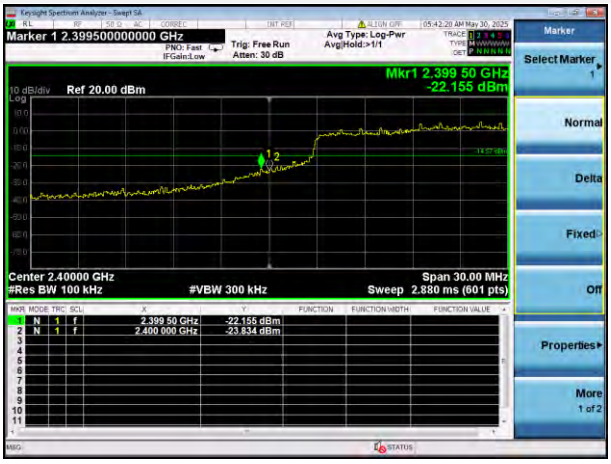


802.11ax-20 MHz(SU) HIGH CHANNEL, BAND EDGE



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

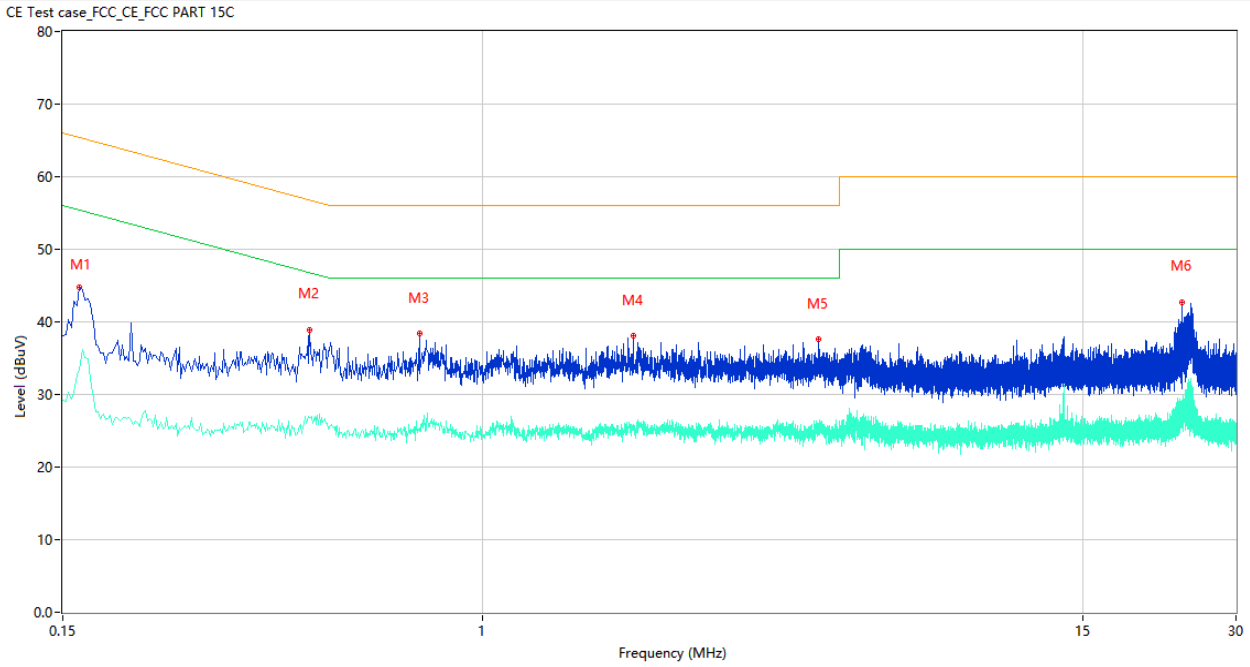
Note [1]: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note [2]: 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.

Note [3]: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

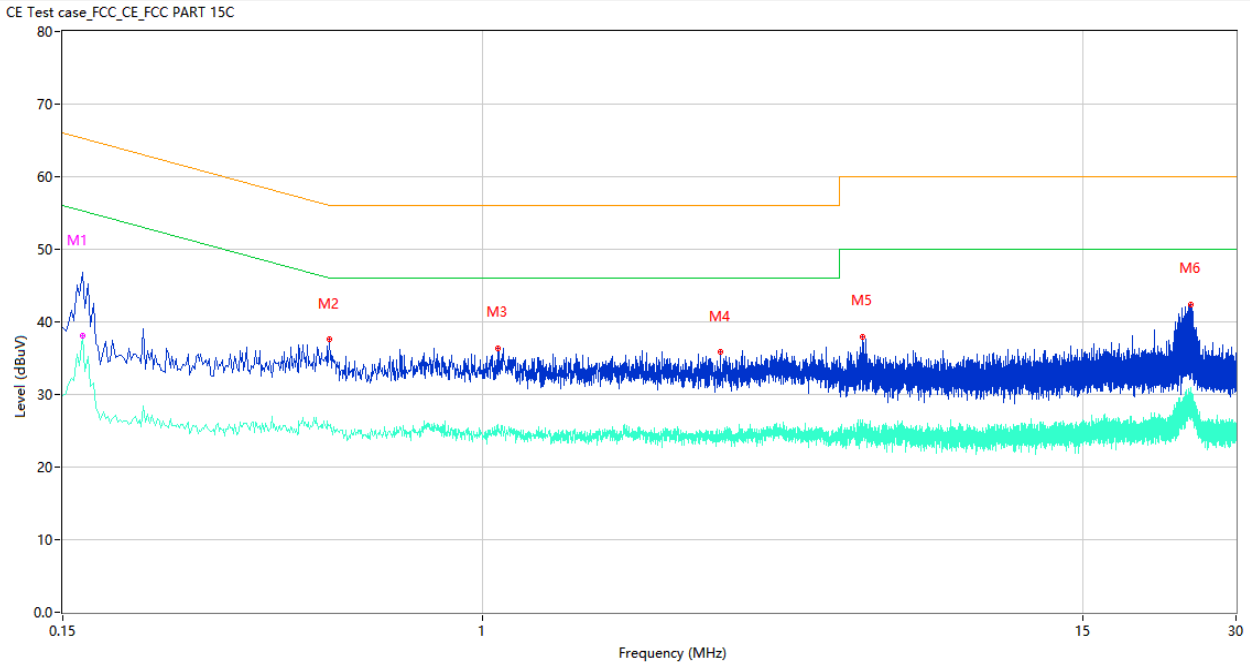
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.162	44.79	9.85	65.36	20.57	Peak	L	Pass
1**	0.162	33.46	9.85	55.36	21.90	AV	L	Pass
2	0.458	38.90	10.08	56.73	17.83	Peak	L	Pass
2**	0.458	26.80	10.08	46.73	19.93	AV	L	Pass
3	0.750	38.49	10.24	56.00	17.51	Peak	L	Pass
3**	0.750	24.91	10.24	46.00	21.09	AV	L	Pass
4	1.970	38.06	10.24	56.00	17.94	Peak	L	Pass
4**	1.970	25.62	10.24	46.00	20.38	AV	L	Pass
5	4.562	37.60	10.52	56.00	18.40	Peak	L	Pass
5**	4.562	24.90	10.52	46.00	21.10	AV	L	Pass
6	23.552	42.77	10.90	60.00	17.23	Peak	L	Pass
6**	23.552	28.55	10.90	50.00	21.45	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.164	46.85	9.85	65.26	18.41	Peak	N	Pass
1**	0.164	38.06	9.85	55.26	17.20	AV	N	Pass
2	0.500	37.60	10.04	56.00	18.40	Peak	N	Pass
2**	0.500	25.71	10.04	46.00	20.29	AV	N	Pass
3	1.068	36.40	10.16	56.00	19.60	Peak	N	Pass
3**	1.068	25.86	10.16	46.00	20.14	AV	N	Pass
4	2.928	35.81	10.16	56.00	20.19	Peak	N	Pass
4**	2.928	24.36	10.16	46.00	21.64	AV	N	Pass
5	5.542	38.01	10.57	60.00	21.99	Peak	N	Pass
5**	5.542	26.43	10.57	50.00	23.57	AV	N	Pass
6	24.522	42.40	10.95	60.00	17.60	Peak	N	Pass
6**	24.522	29.47	10.95	50.00	20.53	AV	N	Pass

A.6 Radiated Emission

Note [1]: The symbol of "--" in the table which means not application.

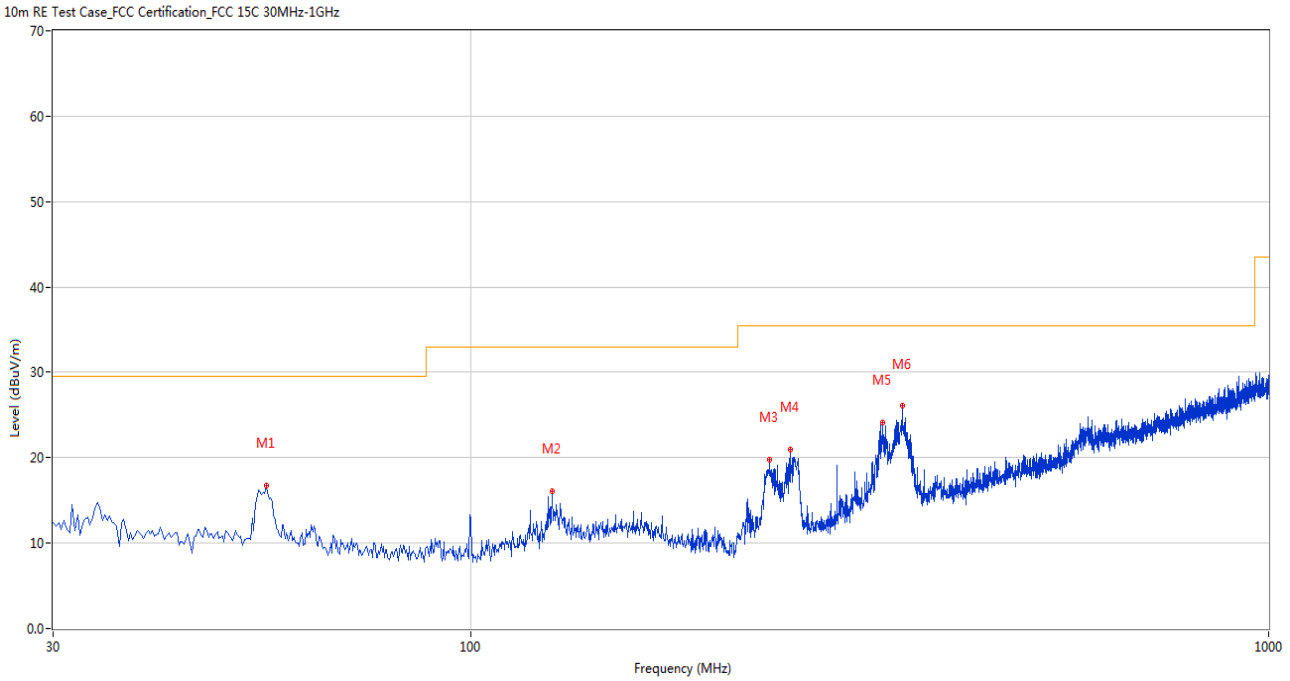
Note [2]: For the test data above 1 GHz，According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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.

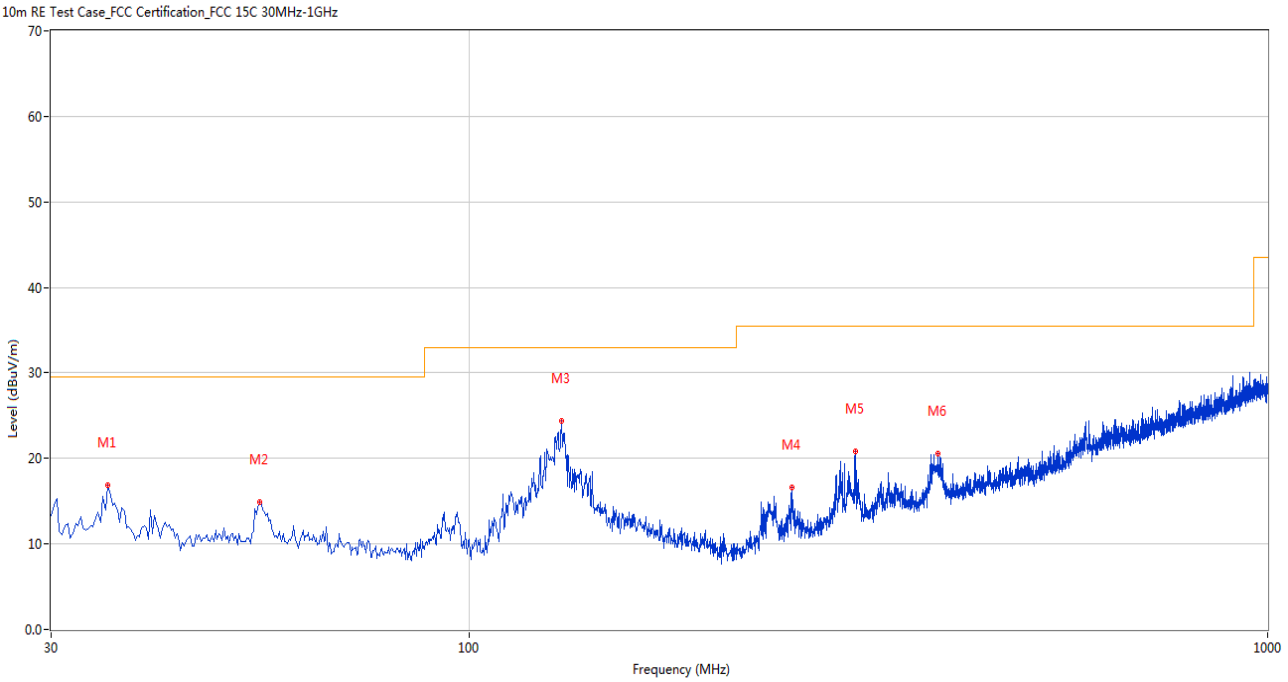
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	55.456	16.72	-27.14	29.5	12.78	Peak	0.00	200	Horizontal	Pass
2	126.491	16.14	-27.61	33.0	16.86	Peak	259.00	100	Horizontal	Pass
3	237.043	19.76	-28.43	35.5	15.74	Peak	314.00	200	Horizontal	Pass
4	251.347	20.96	-27.28	35.5	14.54	Peak	330.00	200	Horizontal	Pass
5	327.958	24.19	-24.66	35.5	11.31	Peak	168.00	200	Horizontal	Pass
6	347.353	26.04	-24.33	35.5	9.46	Peak	80.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	35.334	16.93	-27.01	29.5	12.57	Peak	353.00	100	Vertical	Pass
2	54.729	14.90	-27.13	29.5	14.60	Peak	107.00	100	Vertical	Pass
3	130.612	24.39	-27.47	33.0	8.61	Peak	0.00	200	Vertical	Pass
4	253.529	16.60	-27.35	35.5	18.90	Peak	156.00	100	Vertical	Pass
5	304.441	20.87	-25.38	35.5	14.63	Peak	134.00	100	Vertical	Pass
6	387.113	20.54	-23.06	35.5	14.96	Peak	0.00	200	Vertical	Pass

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

Main Antenna

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	1331.568	42.69	74.0	31.31	Peak	248.00	200	Horizontal	Pass
1**	1331.568	39.63	54.0	14.37	AV	248.00	200	Horizontal	Pass
2	2996.704	49.87	74.0	24.13	Peak	134.00	200	Horizontal	Pass
2**	2996.704	42.76	54.0	11.24	AV	134.00	200	Horizontal	Pass
3	4938.007	52.54	74.0	21.46	Peak	129.00	200	Horizontal	Pass
3**	4938.007	39.81	54.0	14.19	AV	129.00	200	Horizontal	Pass
4	6807.756	55.61	74.0	18.39	Peak	82.00	300	Horizontal	Pass
4**	6807.756	46.53	54.0	7.47	AV	82.00	300	Horizontal	Pass
5	13407.844	53.37	74.0	20.63	Peak	216.00	100	Horizontal	Pass
5**	13407.844	46.77	54.0	7.23	AV	216.00	100	Horizontal	Pass
6	17426.156	58.97	74.0	15.03	Peak	90.00	200	Horizontal	Pass
6**	17426.156	49.63	54.0	4.37	AV	90.00	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	1336.393	46.40	74.0	27.60	Peak	34.00	100	Vertical	Pass
1**	1336.393	38.14	54.0	15.86	AV	34.00	100	Vertical	Pass
2	2982.675	53.31	74.0	20.69	Peak	274.00	400	Vertical	Pass
2**	2982.675	44.50	54.0	9.50	AV	274.00	400	Vertical	Pass
3	4854.026	46.48	74.0	27.52	Peak	184.00	200	Vertical	Pass
3**	4854.026	42.24	54.0	11.76	AV	184.00	200	Vertical	Pass
4	6606.672	55.23	74.0	18.77	Peak	128.00	100	Vertical	Pass
4**	6606.672	43.69	54.0	10.31	AV	128.00	100	Vertical	Pass
5	13433.474	55.96	74.0	18.04	Peak	130.00	100	Vertical	Pass
5**	13433.474	49.32	54.0	4.68	AV	130.00	100	Vertical	Pass
6	17418.901	54.64	74.0	19.36	Peak	120.00	200	Vertical	Pass
6**	17418.901	48.45	54.0	5.55	AV	120.00	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	1329.983	42.95	74.0	31.05	Peak	325.00	200	Horizontal	Pass
1**	1329.983	38.86	54.0	15.14	AV	325.00	200	Horizontal	Pass
2	2993.456	53.17	74.0	20.83	Peak	42.00	400	Horizontal	Pass
2**	2993.456	38.51	54.0	15.49	AV	42.00	400	Horizontal	Pass
3	4932.943	50.72	74.0	23.28	Peak	185.00	200	Horizontal	Pass
3**	4932.943	39.66	54.0	14.34	AV	185.00	200	Horizontal	Pass
4	6810.413	55.93	74.0	18.07	Peak	355.00	100	Horizontal	Pass
4**	6810.413	44.85	54.0	9.15	AV	355.00	100	Horizontal	Pass
5	13415.092	57.25	74.0	16.75	Peak	200.00	200	Horizontal	Pass
5**	13415.092	48.06	54.0	5.94	AV	200.00	200	Horizontal	Pass
6	17427.547	56.37	74.0	17.63	Peak	329.00	400	Horizontal	Pass
6**	17427.547	46.01	54.0	7.99	AV	329.00	400	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	1334.158	42.77	74.0	31.23	Peak	245.00	300	Vertical	Pass
1**	1334.158	40.43	54.0	13.57	AV	245.00	300	Vertical	Pass
2	2983.705	50.43	74.0	23.57	Peak	150.00	400	Vertical	Pass
2**	2983.705	42.08	54.0	11.92	AV	150.00	400	Vertical	Pass
3	4856.868	50.08	74.0	23.92	Peak	137.00	200	Vertical	Pass
3**	4856.868	41.79	54.0	12.21	AV	137.00	200	Vertical	Pass
4	6609.937	52.18	74.0	21.82	Peak	309.00	100	Vertical	Pass
4**	6609.937	47.24	54.0	6.76	AV	309.00	100	Vertical	Pass
5	13432.970	53.51	74.0	20.49	Peak	325.00	200	Vertical	Pass
5**	13432.970	48.48	54.0	5.52	AV	325.00	200	Vertical	Pass
6	17415.788	57.28	74.0	16.72	Peak	34.00	200	Vertical	Pass
6**	17415.788	49.45	54.0	4.55	AV	34.00	200	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	1328.698	45.39	74.0	28.61	Peak	71.00	300	Horizontal	Pass
1**	1328.698	34.71	54.0	19.29	AV	71.00	300	Horizontal	Pass
2	2995.504	50.35	74.0	23.65	Peak	170.00	200	Horizontal	Pass
2**	2995.504	39.47	54.0	14.53	AV	170.00	200	Horizontal	Pass
3	4932.201	50.10	74.0	23.90	Peak	334.00	200	Horizontal	Pass
3**	4932.201	42.01	54.0	11.99	AV	334.00	200	Horizontal	Pass
4	6805.785	53.11	74.0	20.89	Peak	234.00	200	Horizontal	Pass
4**	6805.785	46.76	54.0	7.24	AV	234.00	200	Horizontal	Pass
5	13410.930	53.06	74.0	20.94	Peak	231.00	100	Horizontal	Pass
5**	13410.930	47.21	54.0	6.79	AV	231.00	100	Horizontal	Pass
6	17428.928	56.96	74.0	17.04	Peak	94.00	200	Horizontal	Pass
6**	17428.928	47.50	54.0	6.50	AV	94.00	200	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	1329.282	46.28	74.0	27.72	Peak	352.00	400	Vertical	Pass
1**	1329.282	36.66	54.0	17.34	AV	352.00	400	Vertical	Pass
2	2984.236	47.58	74.0	26.42	Peak	182.00	400	Vertical	Pass
2**	2984.236	40.97	54.0	13.03	AV	182.00	400	Vertical	Pass
3	4858.123	47.62	74.0	26.38	Peak	298.00	200	Vertical	Pass
3**	4858.123	40.91	54.0	13.09	AV	298.00	200	Vertical	Pass
4	6608.568	56.39	74.0	17.61	Peak	160.00	300	Vertical	Pass
4**	6608.568	43.65	54.0	10.35	AV	160.00	300	Vertical	Pass
5	13432.767	54.29	74.0	19.71	Peak	345.00	400	Vertical	Pass
5**	13432.767	44.70	54.0	9.30	AV	345.00	400	Vertical	Pass
6	17416.065	57.28	74.0	16.72	Peak	232.00	100	Vertical	Pass
6**	17416.065	44.77	54.0	9.23	AV	232.00	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	1328.591	41.62	74.0	32.38	Peak	60.00	300	Horizontal	Pass
1**	1328.591	37.52	54.0	16.48	AV	60.00	300	Horizontal	Pass
2	2997.899	50.90	74.0	23.10	Peak	104.00	300	Horizontal	Pass
2**	2997.899	42.11	54.0	11.89	AV	104.00	300	Horizontal	Pass
3	4936.189	53.29	74.0	20.71	Peak	159.00	200	Horizontal	Pass
3**	4936.189	40.63	54.0	13.37	AV	159.00	200	Horizontal	Pass
4	6806.977	54.52	74.0	19.48	Peak	300.00	400	Horizontal	Pass
4**	6806.977	42.20	54.0	11.80	AV	300.00	400	Horizontal	Pass
5	13409.266	57.66	74.0	16.34	Peak	309.00	400	Horizontal	Pass
5**	13409.266	47.19	54.0	6.81	AV	309.00	400	Horizontal	Pass
6	17424.394	56.31	74.0	17.69	Peak	323.00	200	Horizontal	Pass
6**	17424.394	45.38	54.0	8.62	AV	323.00	200	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	1329.968	44.40	74.0	29.60	Peak	327.00	100	Vertical	Pass
1**	1329.968	38.39	54.0	15.61	AV	327.00	100	Vertical	Pass
2	2981.620	53.05	74.0	20.95	Peak	98.00	200	Vertical	Pass
2**	2981.620	41.44	54.0	12.56	AV	98.00	200	Vertical	Pass
3	4852.418	48.53	74.0	25.47	Peak	308.00	200	Vertical	Pass
3**	4852.418	42.03	54.0	11.97	AV	308.00	200	Vertical	Pass
4	6607.320	55.98	74.0	18.02	Peak	317.00	400	Vertical	Pass
4**	6607.320	47.96	54.0	6.04	AV	317.00	400	Vertical	Pass
5	13430.969	57.41	74.0	16.59	Peak	195.00	300	Vertical	Pass
5**	13430.969	44.81	54.0	9.19	AV	195.00	300	Vertical	Pass
6	17414.370	58.63	74.0	15.37	Peak	94.00	300	Vertical	Pass
6**	17414.370	49.21	54.0	4.79	AV	94.00	300	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	1326.856	44.75	74.0	29.25	Peak	217.00	400	Horizontal	Pass
1**	1326.856	37.38	54.0	16.62	AV	217.00	400	Horizontal	Pass
2	2999.659	47.37	74.0	26.63	Peak	150.00	200	Horizontal	Pass
2**	2999.659	42.75	54.0	11.25	AV	150.00	200	Horizontal	Pass
3	4931.563	54.03	74.0	19.97	Peak	57.00	200	Horizontal	Pass
3**	4931.563	41.99	54.0	12.01	AV	57.00	200	Horizontal	Pass
4	6810.653	57.39	74.0	16.61	Peak	79.00	200	Horizontal	Pass
4**	6810.653	47.43	54.0	6.57	AV	79.00	200	Horizontal	Pass
5	13413.135	56.21	74.0	17.79	Peak	128.00	100	Horizontal	Pass
5**	13413.135	48.00	54.0	6.00	AV	128.00	100	Horizontal	Pass
6	17427.307	55.22	74.0	18.78	Peak	59.00	300	Horizontal	Pass
6**	17427.307	45.15	54.0	8.85	AV	59.00	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	1336.577	45.93	74.0	28.07	Peak	195.00	300	Vertical	Pass
1**	1336.577	37.45	54.0	16.55	AV	195.00	300	Vertical	Pass
2	2984.079	53.03	74.0	20.97	Peak	318.00	100	Vertical	Pass
2**	2984.079	44.03	54.0	9.97	AV	318.00	100	Vertical	Pass
3	4856.663	47.37	74.0	26.63	Peak	232.00	200	Vertical	Pass
3**	4856.663	38.47	54.0	15.53	AV	232.00	200	Vertical	Pass
4	6603.448	57.24	74.0	16.76	Peak	289.00	200	Vertical	Pass
4**	6603.448	45.98	54.0	8.02	AV	289.00	200	Vertical	Pass
5	13438.313	55.40	74.0	18.60	Peak	101.00	200	Vertical	Pass
5**	13438.313	43.77	54.0	10.23	AV	101.00	200	Vertical	Pass
6	17413.089	58.99	74.0	15.01	Peak	152.00	200	Vertical	Pass
6**	17413.089	44.46	54.0	9.54	AV	152.00	200	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	1326.492	44.45	74.0	29.55	Peak	158.00	300	Horizontal	Pass
1**	1326.492	38.90	54.0	15.10	AV	158.00	300	Horizontal	Pass
2	2993.010	48.66	74.0	25.34	Peak	73.00	100	Horizontal	Pass
2**	2993.010	42.99	54.0	11.01	AV	73.00	100	Horizontal	Pass
3	4935.056	49.55	74.0	24.45	Peak	154.00	200	Horizontal	Pass
3**	4935.056	42.01	54.0	11.99	AV	154.00	200	Horizontal	Pass
4	6810.376	52.21	74.0	21.79	Peak	96.00	400	Horizontal	Pass
4**	6810.376	42.88	54.0	11.12	AV	96.00	400	Horizontal	Pass
5	13412.769	55.14	74.0	18.86	Peak	45.00	400	Horizontal	Pass
5**	13412.769	46.92	54.0	7.08	AV	45.00	400	Horizontal	Pass
6	17427.588	58.65	74.0	15.35	Peak	270.00	100	Horizontal	Pass
6**	17427.588	47.56	54.0	6.44	AV	270.00	100	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	1334.112	42.59	74.0	31.41	Peak	142.00	100	Vertical	Pass
1**	1334.112	35.77	54.0	18.23	AV	142.00	100	Vertical	Pass
2	2985.069	51.09	74.0	22.91	Peak	240.00	300	Vertical	Pass
2**	2985.069	41.33	54.0	12.67	AV	240.00	300	Vertical	Pass
3	4853.915	47.09	74.0	26.91	Peak	16.00	200	Vertical	Pass
3**	4853.915	38.39	54.0	15.61	AV	16.00	200	Vertical	Pass
4	6608.738	56.69	74.0	17.31	Peak	148.00	300	Vertical	Pass
4**	6608.738	47.17	54.0	6.83	AV	148.00	300	Vertical	Pass
5	13438.723	54.81	74.0	19.19	Peak	64.00	100	Vertical	Pass
5**	13438.723	47.39	54.0	6.61	AV	64.00	100	Vertical	Pass
6	17415.682	54.84	74.0	19.16	Peak	318.00	200	Vertical	Pass
6**	17415.682	46.98	54.0	7.02	AV	318.00	200	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	1332.875	44.59	74.0	29.41	Peak	160.00	200	Horizontal	Pass
1**	1332.875	36.95	54.0	17.05	AV	160.00	200	Horizontal	Pass
2	2996.519	49.11	74.0	24.89	Peak	298.00	100	Horizontal	Pass
2**	2996.519	43.60	54.0	10.40	AV	298.00	100	Horizontal	Pass
3	4930.590	54.27	74.0	19.73	Peak	198.00	200	Horizontal	Pass
3**	4930.590	44.36	54.0	9.64	AV	198.00	200	Horizontal	Pass
4	6804.328	55.24	74.0	18.76	Peak	241.00	200	Horizontal	Pass
4**	6804.328	43.59	54.0	10.41	AV	241.00	200	Horizontal	Pass
5	13412.449	57.07	74.0	16.93	Peak	217.00	300	Horizontal	Pass
5**	13412.449	44.68	54.0	9.32	AV	217.00	300	Horizontal	Pass
6	17422.233	55.04	74.0	18.96	Peak	82.00	300	Horizontal	Pass
6**	17422.233	47.37	54.0	6.63	AV	82.00	300	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	1329.551	46.95	74.0	27.05	Peak	57.00	400	Vertical	Pass
1**	1329.551	37.97	54.0	16.03	AV	57.00	400	Vertical	Pass
2	2983.980	53.04	74.0	20.96	Peak	286.00	300	Vertical	Pass
2**	2983.980	40.63	54.0	13.37	AV	286.00	300	Vertical	Pass
3	4850.782	50.97	74.0	23.03	Peak	249.00	200	Vertical	Pass
3**	4850.782	40.62	54.0	13.38	AV	249.00	200	Vertical	Pass
4	6603.536	56.92	74.0	17.08	Peak	360.00	100	Vertical	Pass
4**	6603.536	42.36	54.0	11.64	AV	360.00	100	Vertical	Pass
5	13436.765	55.62	74.0	18.38	Peak	281.00	400	Vertical	Pass
5**	13436.765	47.25	54.0	6.75	AV	281.00	400	Vertical	Pass
6	17419.827	58.85	74.0	15.15	Peak	143.00	200	Vertical	Pass
6**	17419.827	48.86	54.0	5.14	AV	143.00	200	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	1327.420	44.42	74.0	29.58	Peak	189.00	100	Horizontal	Pass
1**	1327.420	34.99	54.0	19.01	AV	189.00	100	Horizontal	Pass
2	2997.674	48.54	74.0	25.46	Peak	143.00	100	Horizontal	Pass
2**	2997.674	38.84	54.0	15.16	AV	143.00	100	Horizontal	Pass
3	4937.171	50.50	74.0	23.50	Peak	136.00	200	Horizontal	Pass
3**	4937.171	41.07	54.0	12.93	AV	136.00	200	Horizontal	Pass
4	6806.929	56.70	74.0	17.30	Peak	85.00	300	Horizontal	Pass
4**	6806.929	44.26	54.0	9.74	AV	85.00	300	Horizontal	Pass
5	13408.172	54.06	74.0	19.94	Peak	55.00	100	Horizontal	Pass
5**	13408.172	46.34	54.0	7.66	AV	55.00	100	Horizontal	Pass
6	17426.834	54.64	74.0	19.36	Peak	74.00	100	Horizontal	Pass
6**	17426.834	47.37	54.0	6.63	AV	74.00	100	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	1333.534	44.82	74.0	29.18	Peak	136.00	300	Vertical	Pass
1**	1333.534	34.69	54.0	19.31	AV	136.00	300	Vertical	Pass
2	2981.994	51.99	74.0	22.01	Peak	14.00	100	Vertical	Pass
2**	2981.994	40.88	54.0	13.12	AV	14.00	100	Vertical	Pass
3	4854.557	52.08	74.0	21.92	Peak	319.00	200	Vertical	Pass
3**	4854.557	38.75	54.0	15.25	AV	319.00	200	Vertical	Pass
4	6605.354	53.92	74.0	20.08	Peak	58.00	300	Vertical	Pass
4**	6605.354	45.60	54.0	8.40	AV	58.00	300	Vertical	Pass
5	13434.280	55.47	74.0	18.53	Peak	22.00	400	Vertical	Pass
5**	13434.280	47.13	54.0	6.87	AV	22.00	400	Vertical	Pass
6	17419.941	54.76	74.0	19.24	Peak	50.00	300	Vertical	Pass
6**	17419.941	47.97	54.0	6.03	AV	50.00	300	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	1325.765	46.77	74.0	27.23	Peak	342.00	300	Horizontal	Pass
1**	1325.765	39.50	54.0	14.50	AV	342.00	300	Horizontal	Pass
2	2996.234	52.99	74.0	21.01	Peak	71.00	100	Horizontal	Pass
2**	2996.234	39.94	54.0	14.06	AV	71.00	100	Horizontal	Pass
3	4937.351	51.41	74.0	22.59	Peak	288.00	200	Horizontal	Pass
3**	4937.351	41.67	54.0	12.33	AV	288.00	200	Horizontal	Pass
4	6803.815	55.03	74.0	18.97	Peak	140.00	300	Horizontal	Pass
4**	6803.815	42.58	54.0	11.42	AV	140.00	300	Horizontal	Pass
5	13412.049	52.67	74.0	21.33	Peak	60.00	300	Horizontal	Pass
5**	13412.049	48.98	54.0	5.02	AV	60.00	300	Horizontal	Pass
6	17428.832	58.75	74.0	15.25	Peak	267.00	300	Horizontal	Pass
6**	17428.832	48.66	54.0	5.34	AV	267.00	300	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	1332.053	43.17	74.0	30.83	Peak	168.00	400	Vertical	Pass
1**	1332.053	37.34	54.0	16.66	AV	168.00	400	Vertical	Pass
2	2979.084	51.14	74.0	22.86	Peak	246.00	300	Vertical	Pass
2**	2979.084	43.21	54.0	10.79	AV	246.00	300	Vertical	Pass
3	4855.860	50.86	74.0	23.14	Peak	48.00	200	Vertical	Pass
3**	4855.860	38.66	54.0	15.34	AV	48.00	200	Vertical	Pass
4	6607.924	52.59	74.0	21.41	Peak	101.00	400	Vertical	Pass
4**	6607.924	44.08	54.0	9.92	AV	101.00	400	Vertical	Pass
5	13435.171	58.31	74.0	15.69	Peak	86.00	100	Vertical	Pass
5**	13435.171	49.25	54.0	4.75	AV	86.00	100	Vertical	Pass
6	17417.131	56.16	74.0	17.84	Peak	245.00	300	Vertical	Pass
6**	17417.131	46.20	54.0	7.80	AV	245.00	300	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	1333.125	42.91	74.0	31.09	Peak	138.00	400	Horizontal	Pass
1**	1333.125	38.59	54.0	15.41	AV	138.00	400	Horizontal	Pass
2	2998.175	52.22	74.0	21.78	Peak	78.00	200	Horizontal	Pass
2**	2998.175	39.43	54.0	14.57	AV	78.00	200	Horizontal	Pass
3	4931.228	50.18	74.0	23.82	Peak	330.00	200	Horizontal	Pass
3**	4931.228	42.97	54.0	11.03	AV	330.00	200	Horizontal	Pass
4	6806.278	54.74	74.0	19.26	Peak	354.00	400	Horizontal	Pass
4**	6806.278	46.70	54.0	7.30	AV	354.00	400	Horizontal	Pass
5	13408.175	54.74	74.0	19.26	Peak	272.00	100	Horizontal	Pass
5**	13408.175	44.05	54.0	9.95	AV	272.00	100	Horizontal	Pass
6	17424.881	58.63	74.0	15.37	Peak	352.00	400	Horizontal	Pass
6**	17424.881	45.63	54.0	8.37	AV	352.00	400	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	1332.018	42.24	74.0	31.76	Peak	64.00	200	Vertical	Pass
1**	1332.018	37.65	54.0	16.35	AV	64.00	200	Vertical	Pass
2	2979.489	52.67	74.0	21.33	Peak	2.00	200	Vertical	Pass
2**	2979.489	44.29	54.0	9.71	AV	2.00	200	Vertical	Pass
3	4854.565	49.02	74.0	24.98	Peak	164.00	200	Vertical	Pass
3**	4854.565	42.80	54.0	11.20	AV	164.00	200	Vertical	Pass
4	6607.913	51.88	74.0	22.12	Peak	127.00	200	Vertical	Pass
4**	6607.913	46.22	54.0	7.78	AV	127.00	200	Vertical	Pass
5	13432.420	54.29	74.0	19.71	Peak	317.00	400	Vertical	Pass
5**	13432.420	43.53	54.0	10.47	AV	317.00	400	Vertical	Pass
6	17416.707	59.22	74.0	14.78	Peak	30.00	200	Vertical	Pass
6**	17416.707	47.35	54.0	6.65	AV	30.00	200	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	1329.833	42.58	74.0	31.42	Peak	9.00	300	Horizontal	Pass
1**	1329.833	37.59	54.0	16.41	AV	9.00	300	Horizontal	Pass
2	2995.282	50.29	74.0	23.71	Peak	227.00	400	Horizontal	Pass
2**	2995.282	41.34	54.0	12.66	AV	227.00	400	Horizontal	Pass
3	4933.293	51.94	74.0	22.06	Peak	160.00	200	Horizontal	Pass
3**	4933.293	39.29	54.0	14.71	AV	160.00	200	Horizontal	Pass
4	6808.154	53.91	74.0	20.09	Peak	167.00	200	Horizontal	Pass
4**	6808.154	42.49	54.0	11.51	AV	167.00	200	Horizontal	Pass
5	13412.840	57.31	74.0	16.69	Peak	353.00	300	Horizontal	Pass
5**	13412.840	47.01	54.0	6.99	AV	353.00	300	Horizontal	Pass
6	17426.792	55.76	74.0	18.24	Peak	187.00	400	Horizontal	Pass
6**	17426.792	44.73	54.0	9.27	AV	187.00	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	1329.471	43.20	74.0	30.80	Peak	255.00	200	Vertical	Pass
1**	1329.471	39.64	54.0	14.36	AV	255.00	200	Vertical	Pass
2	2980.103	49.02	74.0	24.98	Peak	53.00	100	Vertical	Pass
2**	2980.103	39.84	54.0	14.16	AV	53.00	100	Vertical	Pass
3	4853.351	51.77	74.0	22.23	Peak	1.00	200	Vertical	Pass
3**	4853.351	39.38	54.0	14.62	AV	1.00	200	Vertical	Pass
4	6609.115	56.37	74.0	17.63	Peak	308.00	200	Vertical	Pass
4**	6609.115	43.52	54.0	10.48	AV	308.00	200	Vertical	Pass
5	13438.383	52.92	74.0	21.08	Peak	324.00	300	Vertical	Pass
5**	13438.383	44.12	54.0	9.88	AV	324.00	300	Vertical	Pass
6	17418.669	54.51	74.0	19.49	Peak	347.00	200	Vertical	Pass
6**	17418.669	48.55	54.0	5.45	AV	347.00	200	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	1330.066	45.04	74.0	28.96	Peak	83.00	100	Horizontal	Pass
1**	1330.066	38.11	54.0	15.89	AV	83.00	100	Horizontal	Pass
2	2994.077	49.28	74.0	24.72	Peak	91.00	100	Horizontal	Pass
2**	2994.077	42.65	54.0	11.35	AV	91.00	100	Horizontal	Pass
3	4931.224	50.20	74.0	23.80	Peak	352.00	200	Horizontal	Pass
3**	4931.224	39.48	54.0	14.52	AV	352.00	200	Horizontal	Pass
4	6805.347	57.44	74.0	16.56	Peak	340.00	100	Horizontal	Pass
4**	6805.347	47.44	54.0	6.56	AV	340.00	100	Horizontal	Pass
5	13413.482	53.14	74.0	20.86	Peak	307.00	300	Horizontal	Pass
5**	13413.482	45.38	54.0	8.62	AV	307.00	300	Horizontal	Pass
6	17428.756	58.45	74.0	15.55	Peak	6.00	100	Horizontal	Pass
6**	17428.756	44.92	54.0	9.08	AV	6.00	100	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	1329.271	43.66	74.0	30.34	Peak	80.00	300	Vertical	Pass
1**	1329.271	36.14	54.0	17.86	AV	80.00	300	Vertical	Pass
2	2985.876	48.21	74.0	25.79	Peak	176.00	100	Vertical	Pass
2**	2985.876	42.72	54.0	11.28	AV	176.00	100	Vertical	Pass
3	4854.625	50.98	74.0	23.02	Peak	135.00	200	Vertical	Pass
3**	4854.625	40.42	54.0	13.58	AV	135.00	200	Vertical	Pass
4	6608.559	55.94	74.0	18.06	Peak	187.00	100	Vertical	Pass
4**	6608.559	46.70	54.0	7.30	AV	187.00	100	Vertical	Pass
5	13437.091	58.04	74.0	15.96	Peak	191.00	400	Vertical	Pass
5**	13437.091	43.88	54.0	10.12	AV	191.00	400	Vertical	Pass
6	17420.185	54.37	74.0	19.63	Peak	133.00	400	Vertical	Pass
6**	17420.185	49.27	54.0	4.73	AV	133.00	400	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	1327.910	44.14	74.0	29.86	Peak	232.00	200	Horizontal	Pass
1**	1327.910	37.96	54.0	16.04	AV	232.00	200	Horizontal	Pass
2	2999.426	48.43	74.0	25.57	Peak	43.00	100	Horizontal	Pass
2**	2999.426	43.19	54.0	10.81	AV	43.00	100	Horizontal	Pass
3	4936.137	53.69	74.0	20.31	Peak	104.00	200	Horizontal	Pass
3**	4936.137	41.47	54.0	12.53	AV	104.00	200	Horizontal	Pass
4	6805.319	53.81	74.0	20.19	Peak	110.00	100	Horizontal	Pass
4**	6805.319	47.73	54.0	6.27	AV	110.00	100	Horizontal	Pass
5	13413.767	55.11	74.0	18.89	Peak	302.00	300	Horizontal	Pass
5**	13413.767	44.56	54.0	9.44	AV	302.00	300	Horizontal	Pass
6	17426.520	53.47	74.0	20.53	Peak	221.00	400	Horizontal	Pass
6**	17426.520	46.45	54.0	7.55	AV	221.00	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	1334.198	45.34	74.0	28.66	Peak	59.00	400	Vertical	Pass
1**	1334.198	36.62	54.0	17.38	AV	59.00	400	Vertical	Pass
2	2983.795	48.92	74.0	25.08	Peak	323.00	100	Vertical	Pass
2**	2983.795	44.33	54.0	9.67	AV	323.00	100	Vertical	Pass
3	4855.571	50.04	74.0	23.96	Peak	233.00	200	Vertical	Pass
3**	4855.571	38.14	54.0	15.86	AV	233.00	200	Vertical	Pass
4	6609.413	51.46	74.0	22.54	Peak	178.00	100	Vertical	Pass
4**	6609.413	47.18	54.0	6.82	AV	178.00	100	Vertical	Pass
5	13433.130	56.48	74.0	17.52	Peak	44.00	200	Vertical	Pass
5**	13433.130	43.59	54.0	10.41	AV	44.00	200	Vertical	Pass
6	17420.826	54.92	74.0	19.08	Peak	334.00	100	Vertical	Pass
6**	17420.826	49.66	54.0	4.34	AV	334.00	100	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	1333.502	43.54	74.0	30.46	Peak	144.00	200	Horizontal	Pass
1**	1333.502	39.24	54.0	14.76	AV	144.00	200	Horizontal	Pass
2	2999.939	47.45	74.0	26.55	Peak	263.00	400	Horizontal	Pass
2**	2999.939	40.04	54.0	13.96	AV	263.00	400	Horizontal	Pass
3	4937.013	50.26	74.0	23.74	Peak	284.00	200	Horizontal	Pass
3**	4937.013	41.51	54.0	12.49	AV	284.00	200	Horizontal	Pass
4	6803.697	51.59	74.0	22.41	Peak	48.00	400	Horizontal	Pass
4**	6803.697	45.80	54.0	8.20	AV	48.00	400	Horizontal	Pass
5	13411.101	55.58	74.0	18.42	Peak	192.00	400	Horizontal	Pass
5**	13411.101	48.01	54.0	5.99	AV	192.00	400	Horizontal	Pass
6	17427.851	53.68	74.0	20.32	Peak	188.00	300	Horizontal	Pass
6**	17427.851	46.48	54.0	7.52	AV	188.00	300	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	1333.084	47.10	74.0	26.90	Peak	74.00	400	Vertical	Pass
1**	1333.084	40.35	54.0	13.65	AV	74.00	400	Vertical	Pass
2	2978.908	52.23	74.0	21.77	Peak	156.00	100	Vertical	Pass
2**	2978.908	43.92	54.0	10.08	AV	156.00	100	Vertical	Pass
3	4853.933	51.29	74.0	22.71	Peak	254.00	200	Vertical	Pass
3**	4853.933	40.33	54.0	13.67	AV	254.00	200	Vertical	Pass
4	6610.672	53.95	74.0	20.05	Peak	73.00	200	Vertical	Pass
4**	6610.672	45.25	54.0	8.75	AV	73.00	200	Vertical	Pass
5	13431.722	55.38	74.0	18.62	Peak	345.00	400	Vertical	Pass
5**	13431.722	44.44	54.0	9.56	AV	345.00	400	Vertical	Pass
6	17420.550	54.77	74.0	19.23	Peak	11.00	200	Vertical	Pass
6**	17420.550	49.35	54.0	4.65	AV	11.00	200	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	1326.968	43.52	74.0	30.48	Peak	318.00	400	Horizontal	Pass
1**	1326.968	36.83	54.0	17.17	AV	318.00	400	Horizontal	Pass
2	2999.078	52.44	74.0	21.56	Peak	318.00	100	Horizontal	Pass
2**	2999.078	39.81	54.0	14.19	AV	318.00	100	Horizontal	Pass
3	4933.160	49.22	74.0	24.78	Peak	126.00	200	Horizontal	Pass
3**	4933.160	40.51	54.0	13.49	AV	126.00	200	Horizontal	Pass
4	6803.713	52.94	74.0	21.06	Peak	143.00	400	Horizontal	Pass
4**	6803.713	46.87	54.0	7.13	AV	143.00	400	Horizontal	Pass
5	13410.575	57.37	74.0	16.63	Peak	68.00	400	Horizontal	Pass
5**	13410.575	44.62	54.0	9.38	AV	68.00	400	Horizontal	Pass
6	17423.218	55.39	74.0	18.61	Peak	179.00	300	Horizontal	Pass
6**	17423.218	45.11	54.0	8.89	AV	179.00	300	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	1336.731	44.20	74.0	29.80	Peak	351.00	200	Vertical	Pass
1**	1336.731	40.55	54.0	13.45	AV	351.00	200	Vertical	Pass
2	2979.488	50.71	74.0	23.29	Peak	158.00	100	Vertical	Pass
2**	2979.488	41.00	54.0	13.00	AV	158.00	100	Vertical	Pass
3	4852.542	49.83	74.0	24.17	Peak	185.00	200	Vertical	Pass
3**	4852.542	39.90	54.0	14.10	AV	185.00	200	Vertical	Pass
4	6608.276	51.59	74.0	22.41	Peak	317.00	400	Vertical	Pass
4**	6608.276	45.49	54.0	8.51	AV	317.00	400	Vertical	Pass
5	13434.288	52.65	74.0	21.35	Peak	81.00	200	Vertical	Pass
5**	13434.288	47.65	54.0	6.35	AV	81.00	200	Vertical	Pass
6	17414.461	56.57	74.0	17.43	Peak	26.00	100	Vertical	Pass
6**	17414.461	49.60	54.0	4.40	AV	26.00	100	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	1331.549	47.35	74.0	26.65	Peak	120.00	300	Horizontal	Pass
1**	1331.549	35.35	54.0	18.65	AV	120.00	300	Horizontal	Pass
2	2998.880	51.34	74.0	22.66	Peak	213.00	100	Horizontal	Pass
2**	2998.880	42.61	54.0	11.39	AV	213.00	100	Horizontal	Pass
3	4932.472	52.21	74.0	21.79	Peak	302.00	200	Horizontal	Pass
3**	4932.472	43.92	54.0	10.08	AV	302.00	200	Horizontal	Pass
4	6808.511	53.92	74.0	20.08	Peak	87.00	400	Horizontal	Pass
4**	6808.511	44.16	54.0	9.84	AV	87.00	400	Horizontal	Pass
5	13413.119	57.03	74.0	16.97	Peak	288.00	200	Horizontal	Pass
5**	13413.119	48.01	54.0	5.99	AV	288.00	200	Horizontal	Pass
6	17428.186	54.99	74.0	19.01	Peak	258.00	200	Horizontal	Pass
6**	17428.186	48.63	54.0	5.37	AV	258.00	200	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	1334.507	47.16	74.0	26.84	Peak	143.00	200	Vertical	Pass
1**	1334.507	36.83	54.0	17.17	AV	143.00	200	Vertical	Pass
2	2985.766	53.33	74.0	20.67	Peak	25.00	300	Vertical	Pass
2**	2985.766	40.05	54.0	13.95	AV	25.00	300	Vertical	Pass
3	4852.494	52.42	74.0	21.58	Peak	300.00	200	Vertical	Pass
3**	4852.494	42.07	54.0	11.93	AV	300.00	200	Vertical	Pass
4	6607.050	51.71	74.0	22.29	Peak	95.00	100	Vertical	Pass
4**	6607.050	47.57	54.0	6.43	AV	95.00	100	Vertical	Pass
5	13435.102	57.45	74.0	16.55	Peak	340.00	200	Vertical	Pass
5**	13435.102	48.73	54.0	5.27	AV	340.00	200	Vertical	Pass
6	17415.072	58.34	74.0	15.66	Peak	202.00	300	Vertical	Pass
6**	17415.072	44.89	54.0	9.11	AV	202.00	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	1327.006	44.47	74.0	29.53	Peak	236.00	300	Horizontal	Pass
1**	1327.006	36.85	54.0	17.15	AV	236.00	300	Horizontal	Pass
2	2999.257	50.57	74.0	23.43	Peak	39.00	300	Horizontal	Pass
2**	2999.257	39.06	54.0	14.94	AV	39.00	300	Horizontal	Pass
3	4934.273	52.95	74.0	21.05	Peak	67.00	200	Horizontal	Pass
3**	4934.273	43.78	54.0	10.22	AV	67.00	200	Horizontal	Pass
4	6807.866	55.71	74.0	18.29	Peak	224.00	400	Horizontal	Pass
4**	6807.866	45.98	54.0	8.02	AV	224.00	400	Horizontal	Pass
5	13411.701	53.72	74.0	20.28	Peak	142.00	300	Horizontal	Pass
5**	13411.701	49.04	54.0	4.96	AV	142.00	300	Horizontal	Pass
6	17428.444	53.53	74.0	20.47	Peak	261.00	400	Horizontal	Pass
6**	17428.444	49.60	54.0	4.40	AV	261.00	400	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	1333.273	46.45	74.0	27.55	Peak	84.00	400	Vertical	Pass
1**	1333.273	40.29	54.0	13.71	AV	84.00	400	Vertical	Pass
2	2984.025	49.60	74.0	24.40	Peak	92.00	300	Vertical	Pass
2**	2984.025	40.97	54.0	13.03	AV	92.00	300	Vertical	Pass
3	4857.663	47.99	74.0	26.01	Peak	36.00	200	Vertical	Pass
3**	4857.663	38.99	54.0	15.01	AV	36.00	200	Vertical	Pass
4	6606.014	52.72	74.0	21.28	Peak	70.00	400	Vertical	Pass
4**	6606.014	47.77	54.0	6.23	AV	70.00	400	Vertical	Pass
5	13438.309	55.57	74.0	18.43	Peak	246.00	100	Vertical	Pass
5**	13438.309	45.47	54.0	8.53	AV	246.00	100	Vertical	Pass
6	17419.482	55.03	74.0	18.97	Peak	80.00	100	Vertical	Pass
6**	17419.482	47.73	54.0	6.27	AV	80.00	100	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	1327.428	43.00	74.0	31.00	Peak	217.00	300	Horizontal	Pass
1**	1327.428	35.42	54.0	18.58	AV	217.00	300	Horizontal	Pass
2	2997.340	51.02	74.0	22.98	Peak	14.00	100	Horizontal	Pass
2**	2997.340	42.20	54.0	11.80	AV	14.00	100	Horizontal	Pass
3	4931.640	54.70	74.0	19.30	Peak	234.00	200	Horizontal	Pass
3**	4931.640	42.30	54.0	11.70	AV	234.00	200	Horizontal	Pass
4	6807.575	55.76	74.0	18.24	Peak	117.00	100	Horizontal	Pass
4**	6807.575	43.44	54.0	10.56	AV	117.00	100	Horizontal	Pass
5	13407.621	57.99	74.0	16.01	Peak	49.00	100	Horizontal	Pass
5**	13407.621	45.52	54.0	8.48	AV	49.00	100	Horizontal	Pass
6	17427.583	53.54	74.0	20.46	Peak	332.00	200	Horizontal	Pass
6**	17427.583	45.63	54.0	8.37	AV	332.00	200	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	1335.549	42.21	74.0	31.79	Peak	99.00	300	Vertical	Pass
1**	1335.549	35.66	54.0	18.34	AV	99.00	300	Vertical	Pass
2	2983.682	49.47	74.0	24.53	Peak	240.00	400	Vertical	Pass
2**	2983.682	42.82	54.0	11.18	AV	240.00	400	Vertical	Pass
3	4854.388	48.58	74.0	25.42	Peak	142.00	200	Vertical	Pass
3**	4854.388	39.59	54.0	14.41	AV	142.00	200	Vertical	Pass
4	6603.373	54.49	74.0	19.51	Peak	27.00	200	Vertical	Pass
4**	6603.373	47.55	54.0	6.45	AV	27.00	200	Vertical	Pass
5	13436.047	58.18	74.0	15.82	Peak	182.00	400	Vertical	Pass
5**	13436.047	47.69	54.0	6.31	AV	182.00	400	Vertical	Pass
6	17418.061	54.63	74.0	19.37	Peak	270.00	100	Vertical	Pass
6**	17418.061	48.83	54.0	5.17	AV	270.00	100	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 antenna were pre tested, but only the worst case has been reported in this report.

Test Data

Main Antenna

802.11b LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2323.500	57.23	74.0	16.77	Peak	333.00	100	Horizontal	Pass
1**	2323.500	44.08	54.0	9.92	AV	333.00	100	Horizontal	Pass
2	2389.833	54.57	74.0	19.43	Peak	335.00	100	Horizontal	Pass
2**	2389.833	43.74	54.0	10.26	AV	335.00	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	2483.550	54.28	74.0	19.72	Peak	341.00	150	Horizontal	Pass
1**	2483.550	43.99	54.0	10.01	AV	341.00	150	Horizontal	Pass
2	2483.900	55.62	74.0	18.38	Peak	174.00	150	Horizontal	Pass
2**	2483.900	44.10	54.0	9.90	AV	174.00	150	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	2389.667	62.09	74.0	11.91	Peak	194.00	100	Horizontal	Pass
1**	2389.667	47.46	54.0	6.54	AV	194.00	100	Horizontal	Pass
2	2389.833	59.57	74.0	14.43	Peak	194.00	100	Horizontal	Pass
2**	2389.833	47.82	54.0	6.18	AV	194.00	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	2483.550	65.44	74.0	8.56	Peak	219.00	150	Horizontal	Pass
1**	2483.550	50.28	54.0	3.72	AV	219.00	150	Horizontal	Pass
2	2483.900	65.37	74.0	8.63	Peak	210.00	100	Horizontal	Pass
2**	2483.900	50.61	54.0	3.39	AV	210.00	100	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	2388.500	63.64	74.0	10.36	Peak	199.00	200	Horizontal	Pass
1**	2388.500	48.28	54.0	5.72	AV	199.00	200	Horizontal	Pass
2	2389.833	62.95	74.0	11.05	Peak	205.00	150	Horizontal	Pass
2**	2389.833	49.47	54.0	4.53	AV	205.00	150	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	65.29	74.0	8.71	Peak	197.00	200	Horizontal	Pass
1**	2483.550	50.95	54.0	3.05	AV	197.00	200	Horizontal	Pass
2	2484.600	66.26	74.0	7.74	Peak	197.00	100	Horizontal	Pass
2**	2484.600	50.29	54.0	3.71	AV	197.00	100	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	2387.833	63.75	74.0	10.25	Peak	306.00	200	Horizontal	Pass
1**	2387.833	49.36	54.0	4.64	AV	306.00	200	Horizontal	Pass
2	2389.833	61.88	74.0	12.12	Peak	188.00	100	Horizontal	Pass
2**	2389.833	49.14	54.0	4.86	AV	188.00	100	Horizontal	Pass
3	2389.500	61.55	74.0	12.45	Peak	223.00	150	Horizontal	Pass
3**	2389.500	49.82	54.0	4.18	AV	223.00	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	2483.550	61.18	74.0	12.82	Peak	323.00	200	Horizontal	Pass
1**	2483.550	49.95	54.0	4.05	AV	323.00	200	Horizontal	Pass
2	2488.450	65.60	74.0	8.40	Peak	196.00	200	Horizontal	Pass
2**	2488.450	48.54	54.0	5.46	AV	196.00	200	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	2388.667	62.07	74.0	11.93	Peak	182.00	200	Horizontal	Pass
1**	2388.667	48.02	54.0	5.98	AV	182.00	200	Horizontal	Pass
2	2389.833	60.88	74.0	13.12	Peak	209.00	150	Horizontal	Pass
2**	2389.833	48.97	54.0	5.03	AV	209.00	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	2483.550	63.19	74.0	10.81	Peak	198.00	100	Horizontal	Pass
1**	2483.550	49.85	54.0	4.15	AV	198.00	100	Horizontal	Pass
2	2485.050	64.53	74.0	9.47	Peak	191.00	150	Horizontal	Pass
2**	2485.050	48.51	54.0	5.49	AV	191.00	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	2387.000	66.42	74.0	7.58	Peak	207.00	150	Horizontal	Pass
1**	2387.000	50.32	54.0	3.68	AV	207.00	150	Horizontal	Pass
2	2389.833	62.88	74.0	11.12	Peak	209.00	150	Horizontal	Pass
2**	2389.833	50.30	54.0	3.70	AV	209.00	150	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	2483.550	62.39	74.0	11.61	Peak	207.00	150	Horizontal	Pass
1**	2483.550	49.89	54.0	4.11	AV	207.00	150	Horizontal	Pass
2	2484.150	65.75	74.0	8.25	Peak	191.00	100	Horizontal	Pass
2**	2484.150	50.02	54.0	3.98	AV	191.00	100	Horizontal	Pass

A.8 Power Spectral Density (PSD)

Test Data

Main Antenna

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-3.04	8
Middle	-3.87	8
High	-4.25	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-5.87	8
Middle	-5.11	8
High	-6.04	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-6.66	8
Middle	-7.23	8
High	-7.17	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-11.07	8
Middle	-9.67	8
High	-11.83	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-8.24	8
Middle	-7.29	8
High	-8.36	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.60	8
Middle	-11.11	8
High	-13.04	8

Aux. Antenna

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-3.13	8
Middle	-3.21	8
High	-4.94	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-6.00	8
Middle	-6.31	8
High	-5.66	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-6.76	8
Middle	-6.05	8
High	-7.45	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.07	8
Middle	-9.64	8
High	-9.33	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.28	8
Middle	-7.28	8
High	-8.33	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.21	8
Middle	-10.52	8
High	-10.59	8

MIMO

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-3.10	8
Middle	-3.50	8
High	-4.60	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-5.90	8
Middle	-5.70	8
High	-5.80	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-6.70	8
Middle	-6.60	8
High	-7.30	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.50	8
Middle	-9.60	8
High	-10.40	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.70	8
Middle	-7.30	8
High	-8.30	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.40	8
Middle	-10.80	8
High	-11.60	8

Test Plots

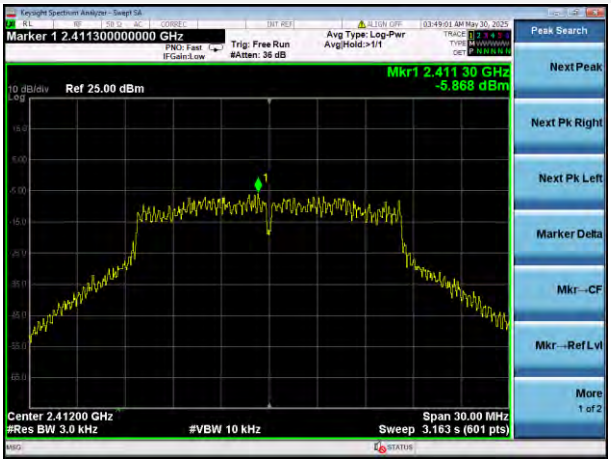
Main Antenna

802.11b LOW CHANNEL

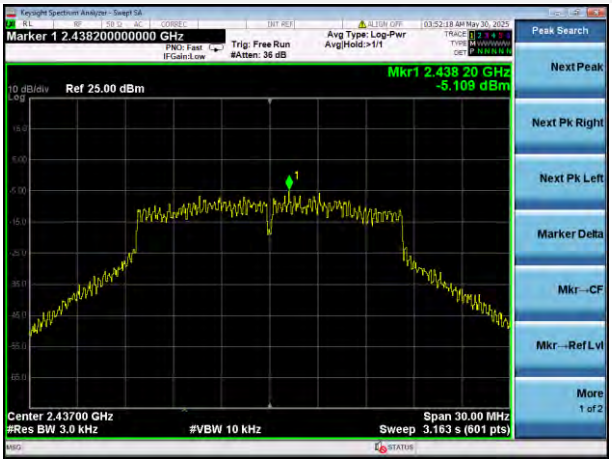
802.11b MIDDLE CHANNEL

802.11b HIGH CHANNEL

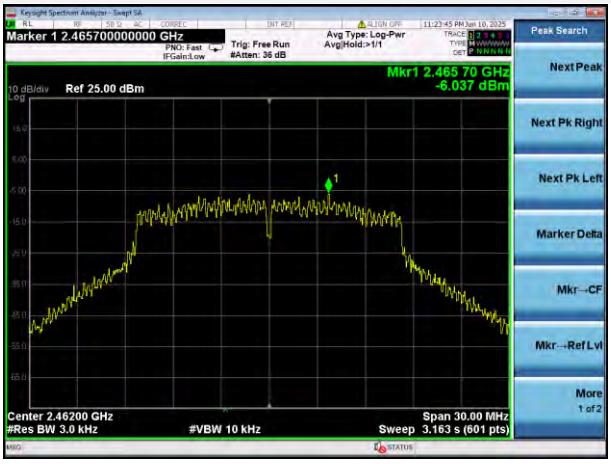
802.11g LOW CHANNEL



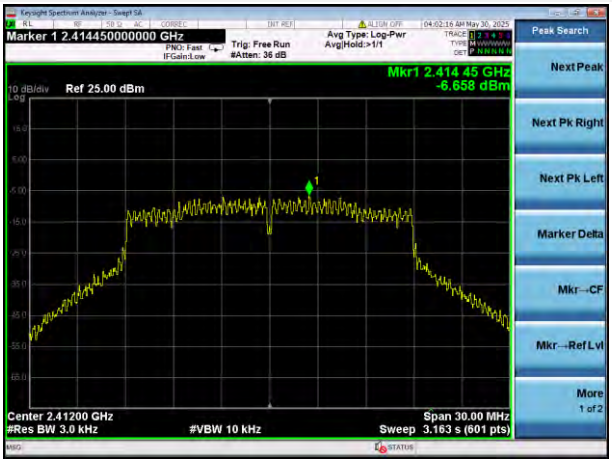
802.11g MIDDLE CHANNEL



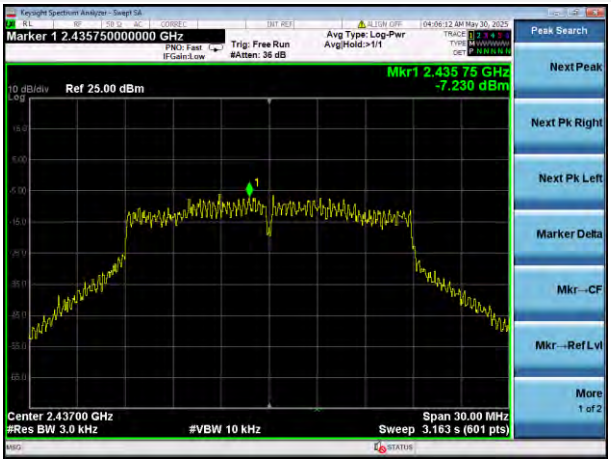
802.11g HIGH CHANNEL



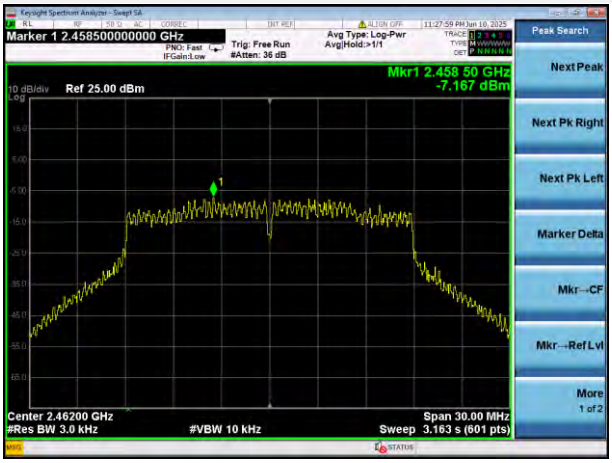
802.11n-20 MHz LOW CHANNEL



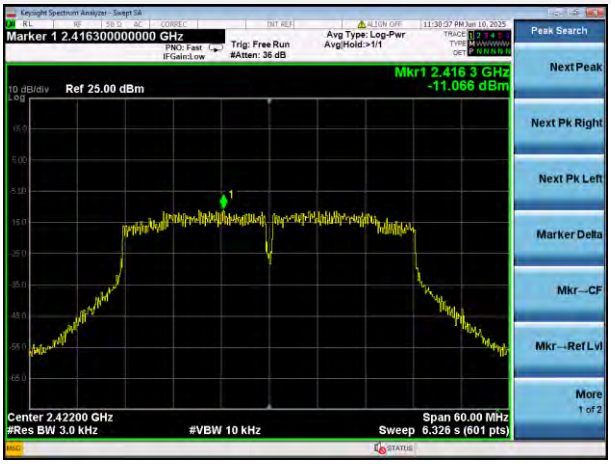
802.11n-20 MHz MIDDLE CHANNEL



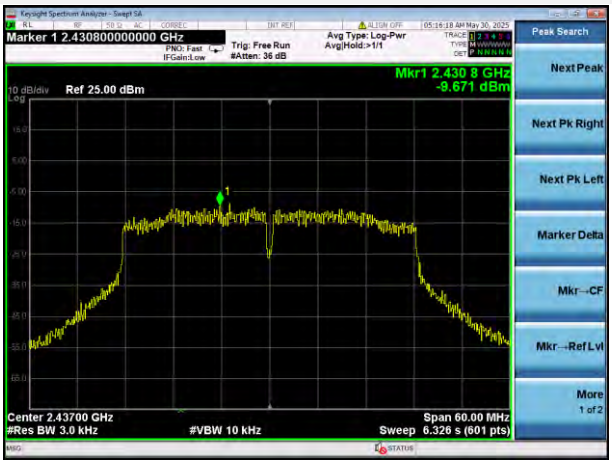
802.11n-20 MHz HIGH CHANNEL



802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL

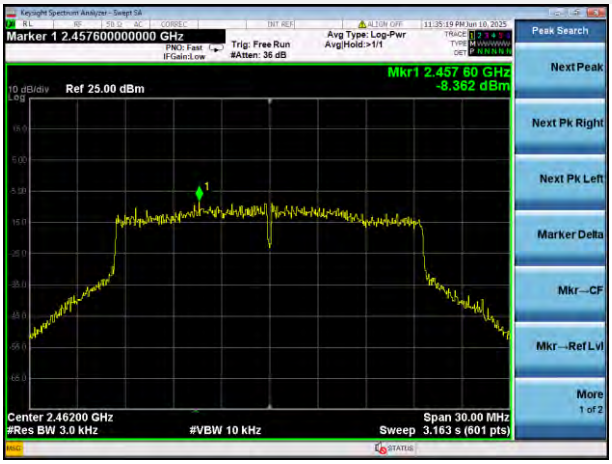


802.11n-40 MHz HIGH CHANNEL

802.11ax-20 MHz(SU) LOW CHANNEL

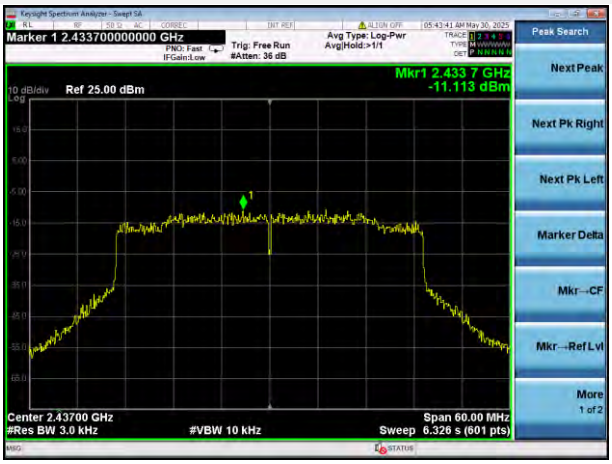
802.11ax-20 MHz(SU) MIDDLE CHANNEL

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

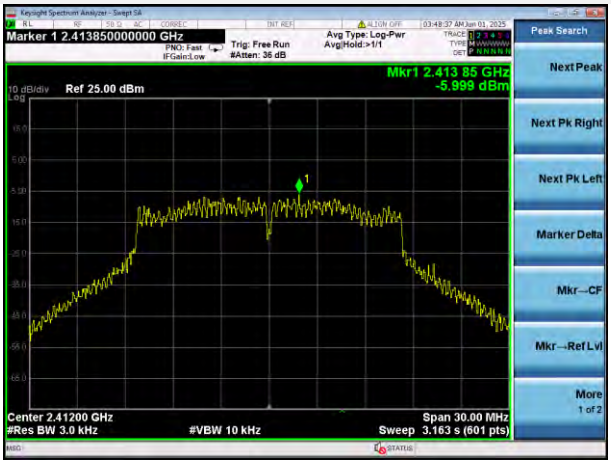
Aux. Antenna

802.11b LOW CHANNEL

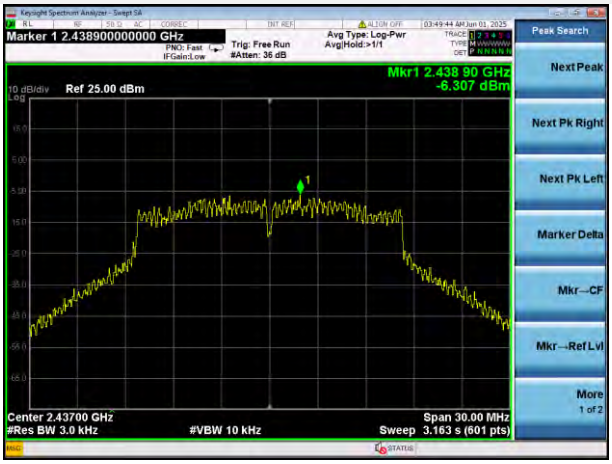
802.11b MIDDLE CHANNEL

802.11b HIGH CHANNEL

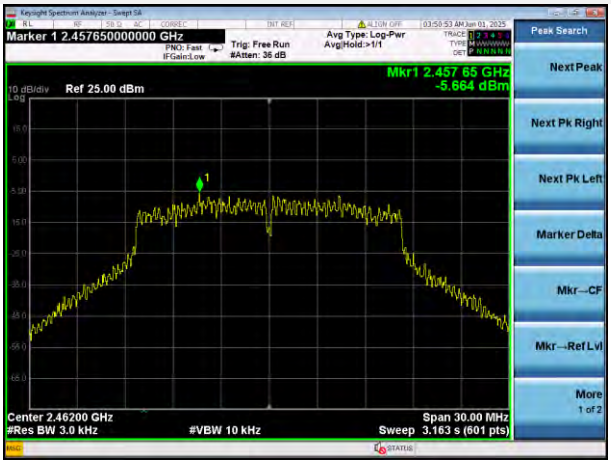
802.11g LOW CHANNEL



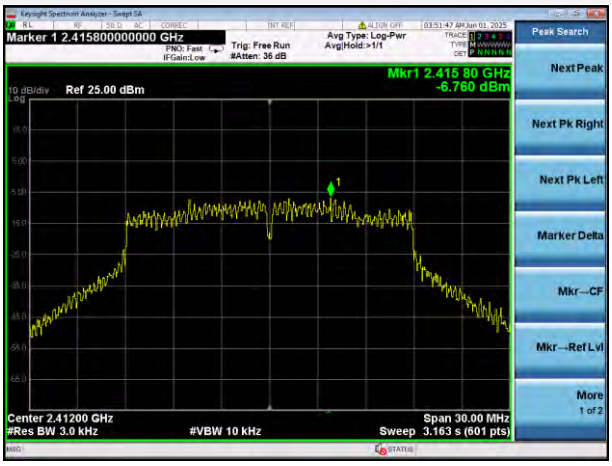
802.11g MIDDLE CHANNEL



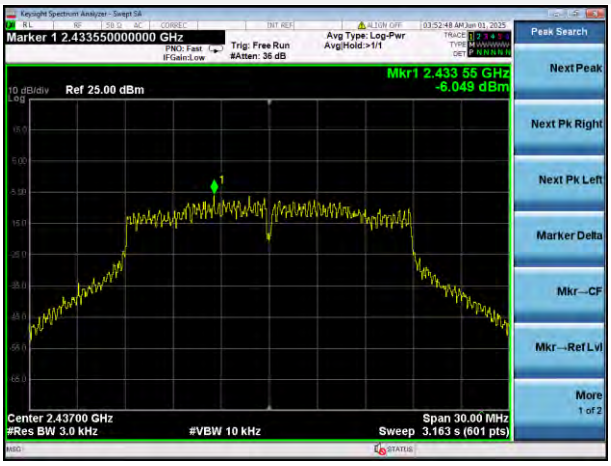
802.11g HIGH CHANNEL



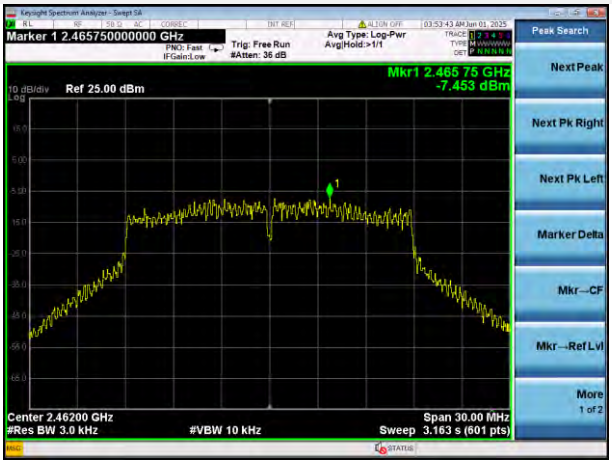
802.11n-20 MHz LOW CHANNEL



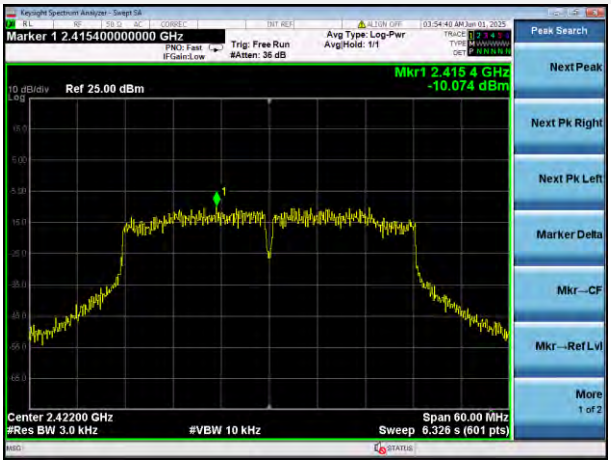
802.11n-20 MHz MIDDLE CHANNEL



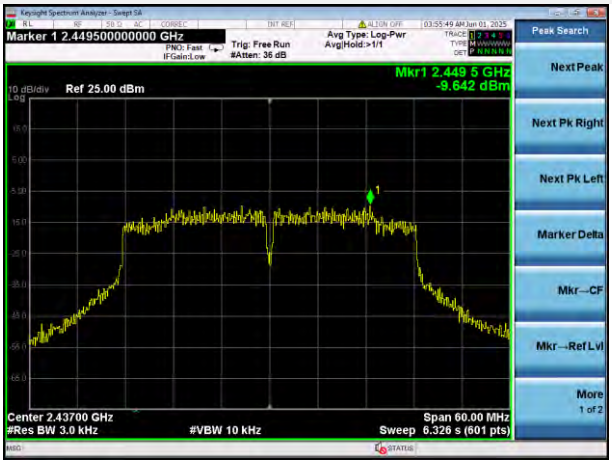
802.11n-20 MHz HIGH CHANNEL



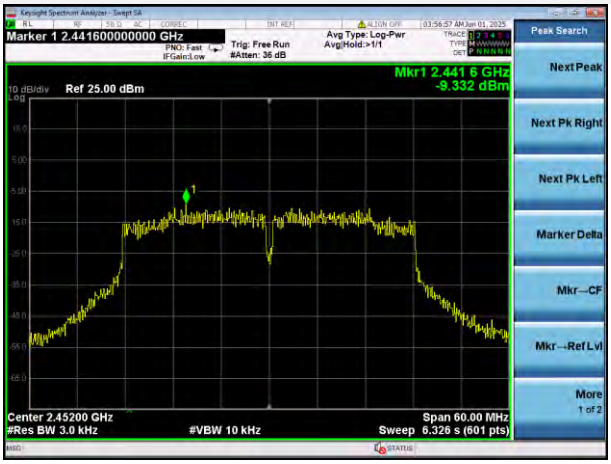
802.11n-40 MHz LOW CHANNEL



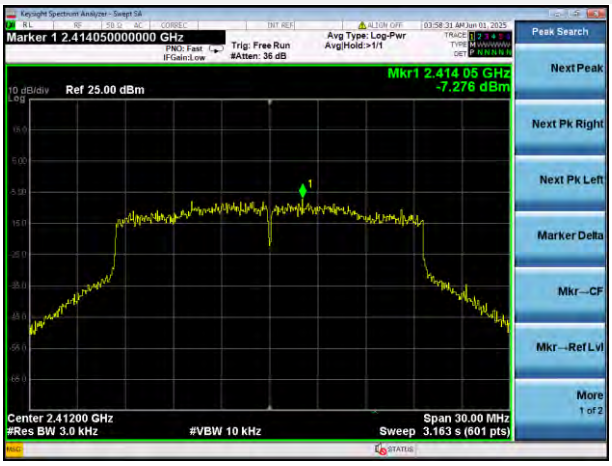
802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL

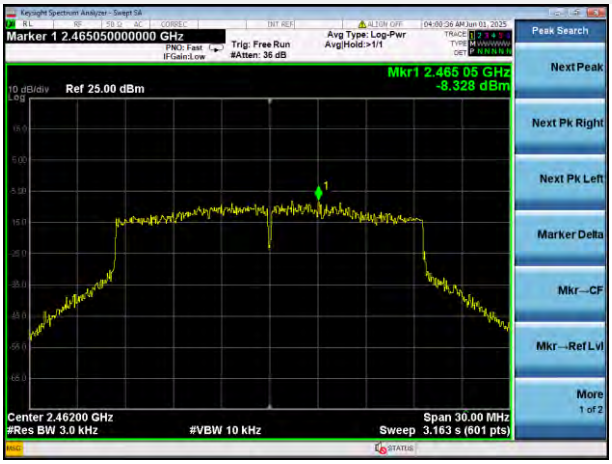


802.11ax-20 MHz(SU) LOW CHANNEL

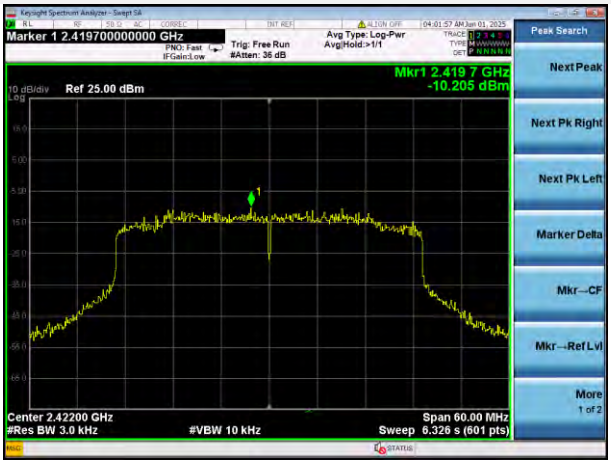


802.11ax-20 MHz(SU) MIDDLE CHANNEL

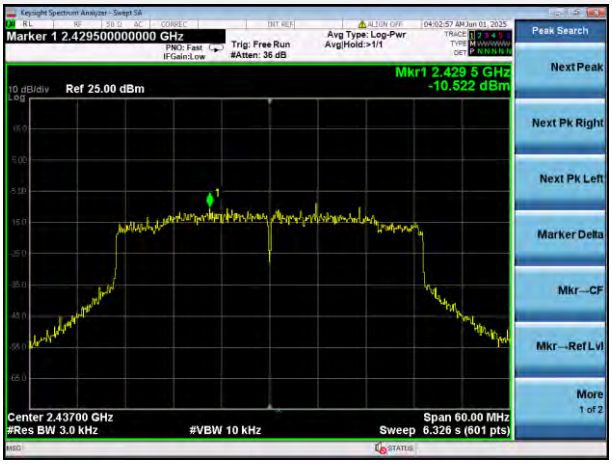
802.11ax-20 MHz(SU) HIGH CHANNEL



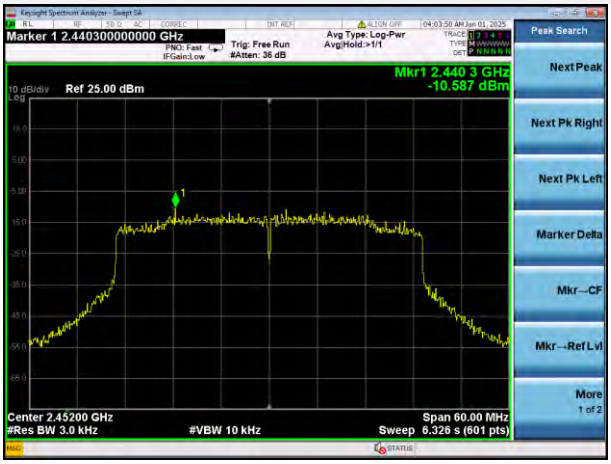
802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2550701-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2550701-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2550701-AI.PDF”.

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