TEST REPORT

Applicant:	REOLINK TECHNOLOGY PTE. LTD.
Address:	31 KAKI BUKIT ROAD 3, #06-02, TECHLINK, SINGAPORE 417818
Equipment Type:	WiFi module
Model Name:	WXT0LR1201
Brand Name:	Reolink
FCC ID:	2BN5S-2503B
ISED Number:	33667-2503B
Test Standard:	47 CFR Part 15 Subpart C RSS-Gen Issue 5 RSS-247 Issue 3 (refer to section 3.1)
Sample Arrival Date:	Dec. 09, 2024
Test Date:	Dec. 17, 2024 - Dec. 25, 2024
Date of Issue:	Mar. 13, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Li Ganming **Checked by:** Ye Hongji **Approved by:** Sunny Zou (Technical Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Mar. 13, 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. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	REOLINK TECHNOLOGY PTE. LTD.
Address	31 KAKI BUKIT ROAD 3, #06-02, TECHLINK, SINGAPORE 417818

2.2 Manufacturer Information

Manufacturer	REOLINK TECHNOLOGY PTE. LTD.
Address	31 KAKI BUKIT ROAD 3, #06-02, TECHLINK, SINGAPORE 417818

2.3 General Description for Equipment under Test (EUT)

EUT Name	WiFi module
Model Name Under Test	WXT0LR1201
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	2408210030000
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 Type	DSSS, OFDM, OFDMA
Product Type	☒ Mobile ☐ Portable ☐ Fix Location
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	Dipole Antenna
Antenna Gain	3.01 dBi
About the Product	Only the WIFI 802.11b, 802.11g, 802.11n (HT20/40) and 802.11ax (HE20/40) was tested in this report.

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

Modulation technology	Modulation Type	Transfer Rate (Mbps)(Single RF path)
DSSS (802.11b)	DBPSK	1
	DQPSK	2
	CCK	5.5/11
OFDM (802.11g)	BPSK	6/9
	QPSK	12/18
	16QAM	24/36
	64QAM	48/54
OFDM (802.11n-20 MHz)	BPSK	6.5/7.2
	QPSK	13/19.5/14.4/21.7
	16QAM	26/39/28.9/43.3
	64QAM	52/58.5/65/57.8/65/72.2
OFDM (802.11n-40 MHz)	BPSK	13.5/15
	QPSK	27/40.5/30/45
	16QAM	54/81/60/90
	64QAM	108/121.5/135/120/150
OFDMA (802.11ax-20 MHz)	BPSK	4
	QPSK	16/24/17/26
	16QAM	33/49/34/52
	64QAM	65/73/81/69/77/86
	256QAM	98/108/103/115
	1024QAM	122/135/129/143
OFDMA (802.11ax-40 MHz)	BPSK	8/9
	QPSK	33/49/34/52
	16QAM	65/98/69/103
	64QAM	130/146/163/138/155/172
	256QAM	195/217/207/229
	1024QAM	244/271/258/287

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

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

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

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Intentional radiators of radio frequency equipment
2	RSS-Gen Issue 5	General Requirements for Compliance of Radio Apparatus
3	RSS-247 Issue 3	Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
4	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
5	KDB Publication 558074 D01v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES

3.2 Test Verdict

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

Note [1]: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note [2]: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

Relative Humidity	21% to 69%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+20.8℃ to +25.1℃
Working Voltage of the EUT	NV (Normal Voltage)	3.3V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY46471071	2024.07.04	2025.07.03
Spectrum Analyzer	KEYSIGHT	N9020A	MY50531259	2024.08.01	2025.07.31
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	02460	2024.05.16	2027.05.15
Test Antenna-Horn	A-INFO	LB-180400KF	J211060273	2024.06.15	2027.06.14
Anechoic Chamber	RAINFORD	9m*6m*6m	140	2024.07.28	2027.07.27
Amplifier	COM-MV	LSCX_LNA1-12G-01	7210214	2024.08.01	2025.07.31
Amplifier	COM-MV	XKu_LNA7-18G-01	7210209	2024.08.01	2025.07.31
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2024.08.01	2025.07.31
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2024.07.06	2027.07.05
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2024.01.23	2025.01.22
Amplifier	COM-MV	ZT30-1000M	B2017119082	2024.11.28	2025.11.27
Anechoic Chamber	RAINFORD	9m*6m*6m	101	2023.03.04	2026.03.03
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
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
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	2022.02.19	2025.02.18

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.

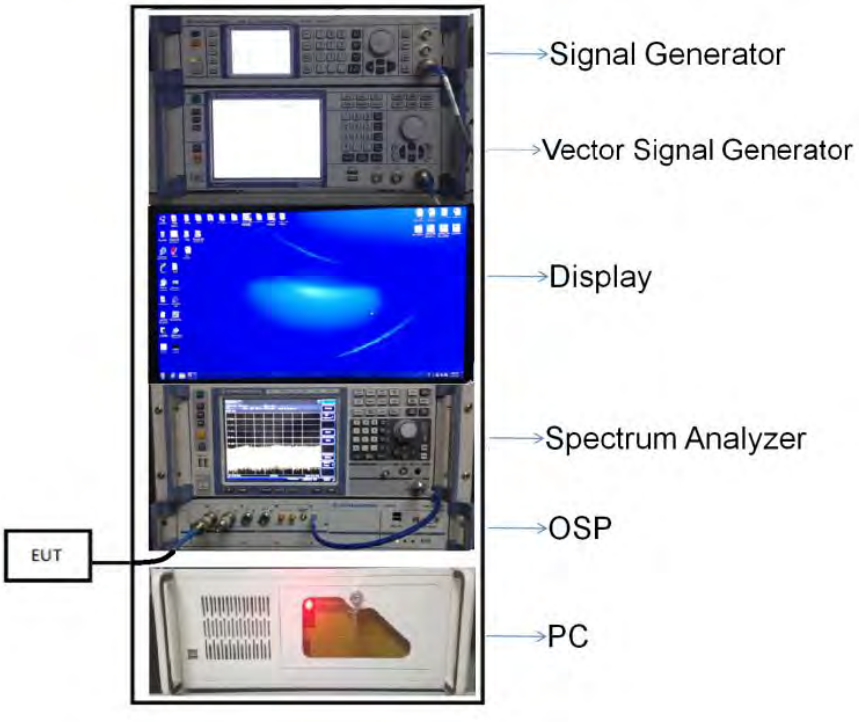
Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8℃
Humidity	4%

4.5 Description of Test Setup

4.5.1 For Antenna Port Test

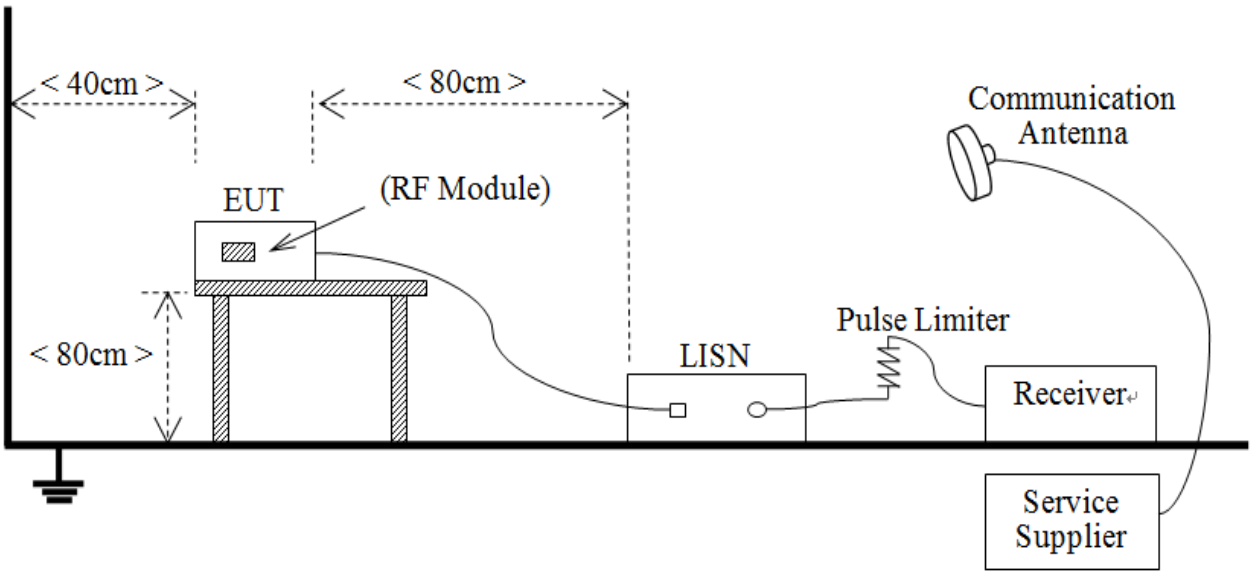
Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

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



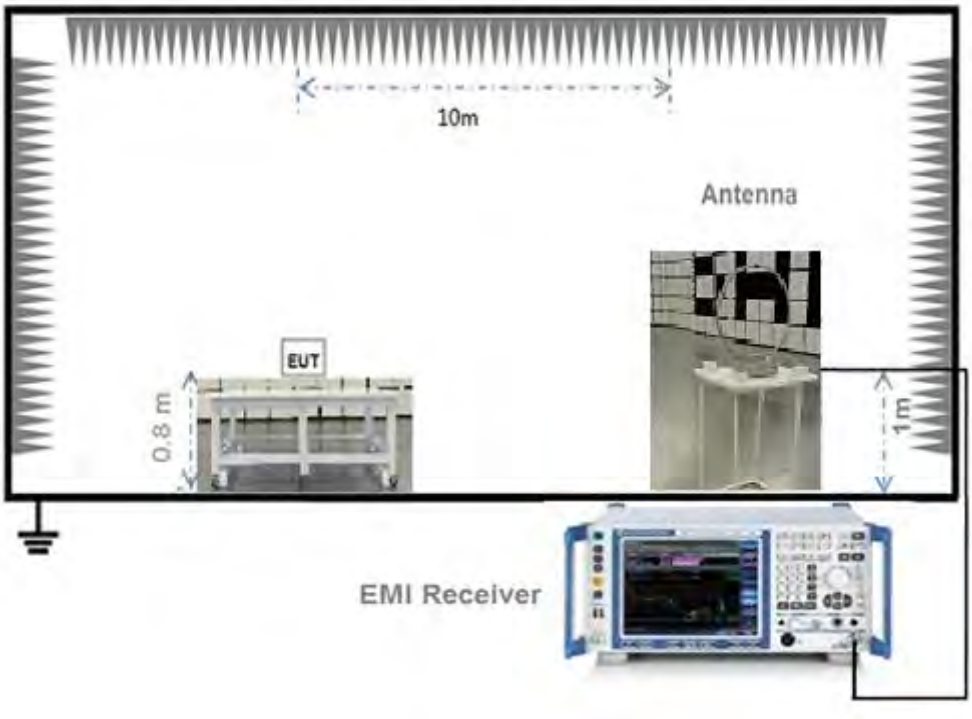
(Diagram 1)

4.5.2 For AC Power Supply Port Test



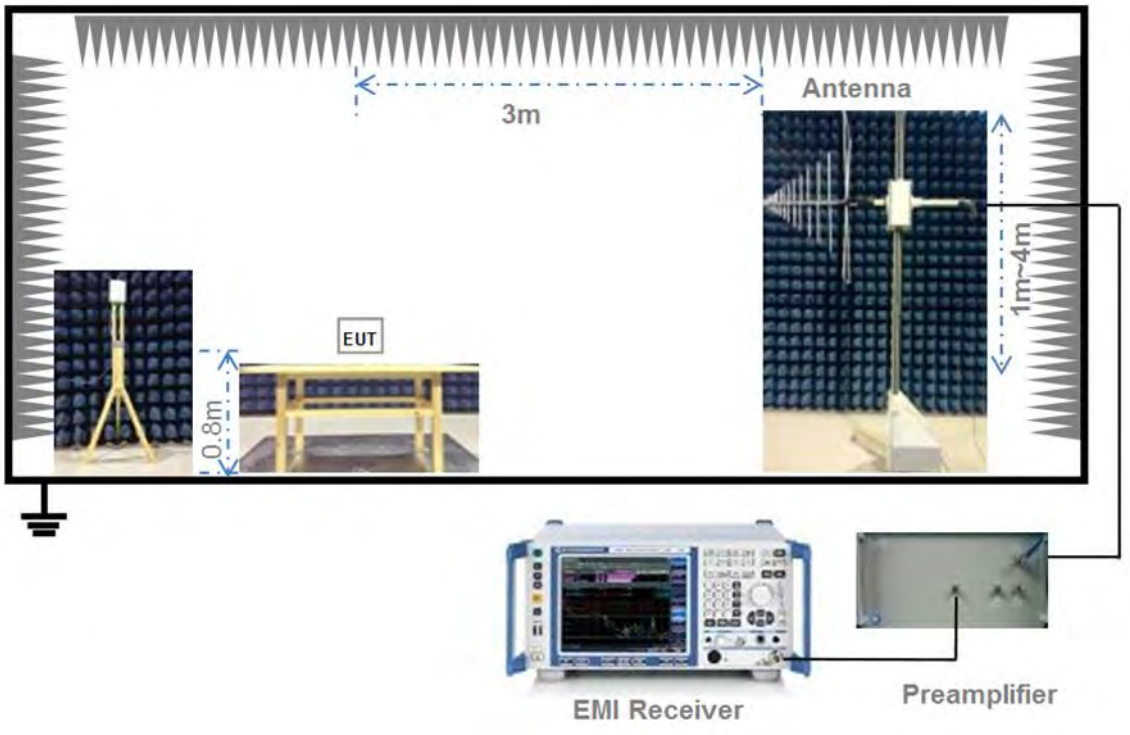
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



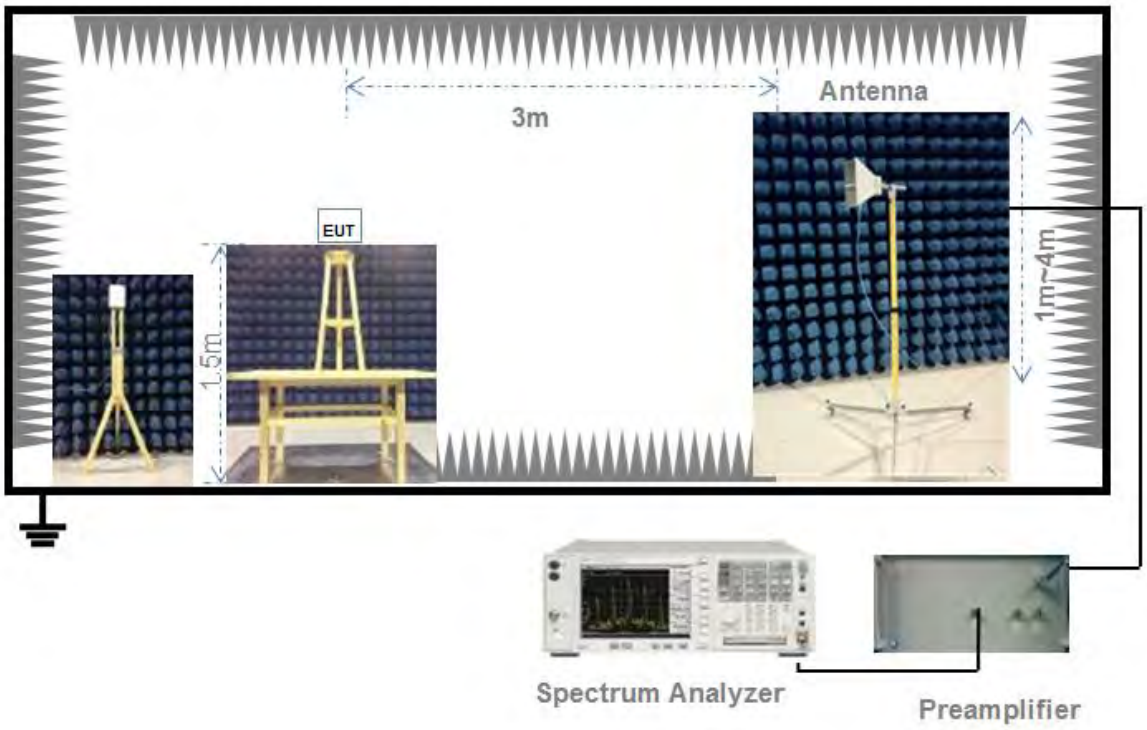
(Diagram 3)

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; RSS-247, 5.4 (f)

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

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

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

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

5.1.3 Antenna Gain

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

5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b); RSS-247, 5.4 (d)

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

5.2.2 Test Setup

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

5.2.3 Test Procedure

Maximum peak conducted output power

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

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

EIRP= Maximum peak conducted output power +Antenna Gain.

Maximum conducted (average) output power (Reporting Only)

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

1) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.

2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.

3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

b) If the transmitter does not transmit continuously, measure the duty cycle (x) of the transmitter output signal.

c) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

d) Adjust the measurement in dBm by adding 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); RSS-GEN, 6.7; RSS-247, 5.2 (a)

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

5.3.2 Test Setup

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

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) $\geqslant$ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d); RSS-247, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.4.2 Test Setup

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

5.4.3 Test Procedure

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

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

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

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW ≥ 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); RSS-GEN, 8.9, RSS-247, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.5.2 Test Setup

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

5.5.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle $\geqslant$ 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; RSS-GEN, 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 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); RSS-247, 5.5

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

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

Frequency (MHz)	Field Strength (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); RSS-247, 5.5

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

5.8.2 Test Setup

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

5.8.3 Test Procedure

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

The power of the EUT transmitting frequency should be ignored.

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

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 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); RSS-247, 5.2 (b)

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

5.9.2 Test Setup

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

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 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

Peak Power Test Data

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.72	74.47	30	1000	Pass
Middle	18.64	73.11			Pass
High	18.92	77.98			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.27	267.30	30	1000	Pass
Middle	24.12	258.23			Pass
High	23.97	249.46			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.54	225.94	30	1000	Pass
Middle	23.41	219.28			Pass
High	22.45	175.79			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.45	139.64	30	1000	Pass
Middle	21.34	136.14			Pass
High	18.58	72.11			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.12	258.23	30	1000	Pass
Middle	24.07	255.27			Pass
High	22.15	164.06			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.35	136.46	30	1000	Pass
Middle	21.45	139.64			Pass
High	18.83	76.38			Pass

Average Power Test Data

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.71	37.24	30	1000	Pass
Middle	15.56	35.97			Pass
High	15.81	38.11			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.89	38.82	30	1000	Pass
Middle	15.88	38.73			Pass
High	15.63	36.56			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.52	35.65	30	1000	Pass
Middle	15.38	34.51			Pass
High	13.85	24.27			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.62	36.48	30	1000	Pass
Middle	15.69	37.07			Pass
High	12.90	19.50			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.64	36.64	30	1000	Pass
Middle	15.53	35.73			Pass
High	13.60	22.91			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.71	37.24	30	1000	Pass
Middle	15.87	38.64			Pass
High	13.47	22.23			Pass

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

802.11b Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	21.73	148.94	36	4	Pass
Middle	21.65	146.22			Pass
High	21.93	155.96			Pass

802.11g Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	27.28	534.56	36	4	Pass
Middle	27.13	516.42			Pass
High	26.98	498.88			Pass

802.11n-20 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	26.55	451.86	36	4	Pass
Middle	26.42	438.53			Pass
High	25.46	351.56			Pass

802.11n-40 MHz Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	24.46	279.25	36	4	Pass
Middle	24.35	272.27			Pass
High	21.59	144.21			Pass

802.11ax-20 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	27.13	516.42	36	4	Pass
Middle	27.08	510.50			Pass
High	25.16	328.10			Pass

802.11ax-40 MHz(SU) Mode:

Channel	E.I.R.P		Limit		Verdict
	dBm	mW	dBm	W	
Low	24.36	272.90	36	4	Pass
Middle	24.46	279.25			Pass
High	21.84	152.76			Pass

A.2 Occupied Bandwidth

Test Data

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	10.200195	13.981876	≥500
Middle	10.200195	13.978815	≥500
High	10.200195	13.971811	≥500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200195	16.235818	≥500
Middle	15.200195	16.252220	≥500
High	15.200195	16.248258	≥500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	14.000000	17.275074	≥500
Middle	15.200195	17.284815	≥500
High	15.200195	17.261392	≥500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.200195	35.598653	≥500
Middle	35.200195	35.594045	≥500
High	35.700195	35.616640	≥500

802.11ax-20 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200195	18.541694	≥500
Middle	15.200195	18.519329	≥500
High	15.200195	18.515011	≥500

802.11ax-40 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	33.900146	37.200569	≥500
Middle	34.000000	37.143127	≥500
High	35.200195	37.152930	≥500

Test Plots

6 dB Bandwidth

802.11b LOW CHANNEL

802.11b MIDDLE CHANNEL

802.11b HIGH CHANNEL

802.11g LOW CHANNEL

802.11g MIDDLE CHANNEL

802.11g HIGH CHANNEL

802.11n-20 MHz LOW CHANNEL

802.11n-20 MHz MIDDLE CHANNEL

802.11n-20 MHz HIGH CHANNEL

802.11n-40 MHz LOW CHANNEL

802.11n-40 MHz MIDDLE CHANNEL

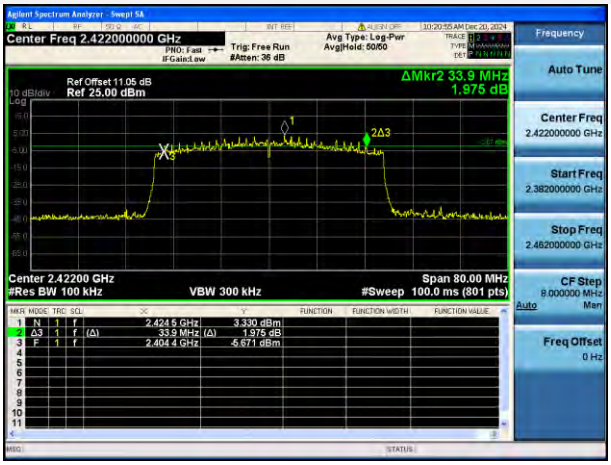
802.11n-40 MHz HIGH CHANNEL

802.11ax-20 MHz(SU) LOW CHANNEL

802.11ax-20 MHz(SU) MIDDLE CHANNEL

802.11ax-20 MHz(SU) HIGH CHANNEL

802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL

802.11ax-40 MHz(SU) HIGH CHANNEL

99% Bandwidth

802.11b LOW CHANNEL

802.11b MIDDLE CHANNEL

802.11b HIGH CHANNEL

802.11g LOW CHANNEL

802.11g MIDDLE CHANNEL

802.11g HIGH CHANNEL

802.11n-20 MHz LOW CHANNEL

802.11n-20 MHz MIDDLE CHANNEL

802.11n-20 MHz HIGH CHANNEL

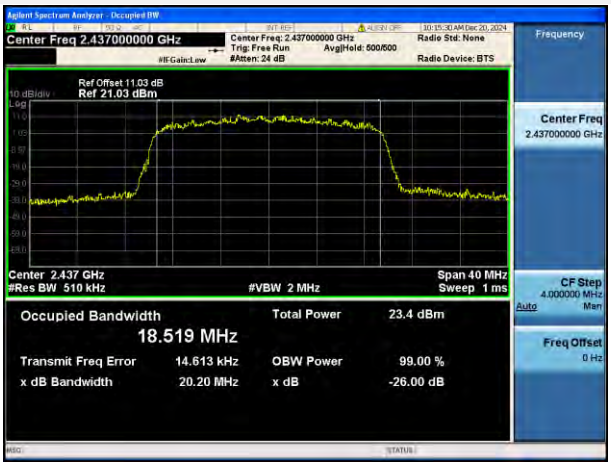
802.11n-40 MHz LOW CHANNEL

802.11n-40 MHz MIDDLE CHANNEL

802.11n-40 MHz HIGH CHANNEL

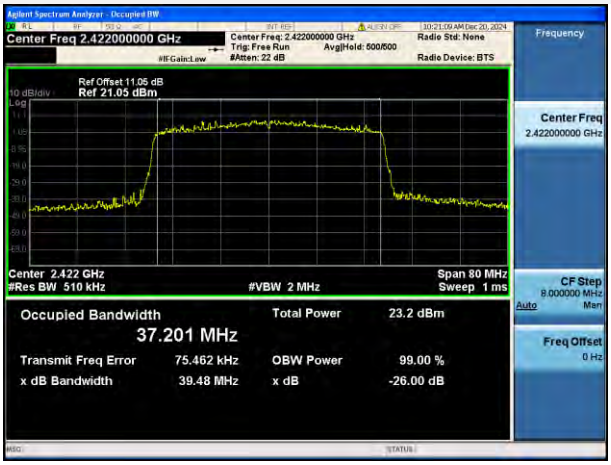
802.11ax-20 MHz(SU) LOW CHANNEL

802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL

802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL

802.11ax-40 MHz(SU) HIGH CHANNEL

A.3 Conducted Spurious Emissions

Test Data

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.15	5.66	-14.34	Pass
Middle	-36.22	5.87	-14.13	Pass
High	-35.89	6.13	-13.87	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.08	6.33	-13.67	Pass
Middle	-36.11	5.63	-14.37	Pass
High	-35.12	4.92	-15.08	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-38.94	5.72	-14.28	Pass
Middle	-35.67	5.52	-14.48	Pass
High	-35.54	4.08	-15.92	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-35.46	3.45	-16.55	Pass
Middle	-37.56	3.91	-16.09	Pass
High	-35.45	0.78	-19.22	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	-34.86	5.15	-14.85	Pass
Middle	-35.57	5.82	-14.18	Pass
High	-35.74	3.37	-16.63	Pass

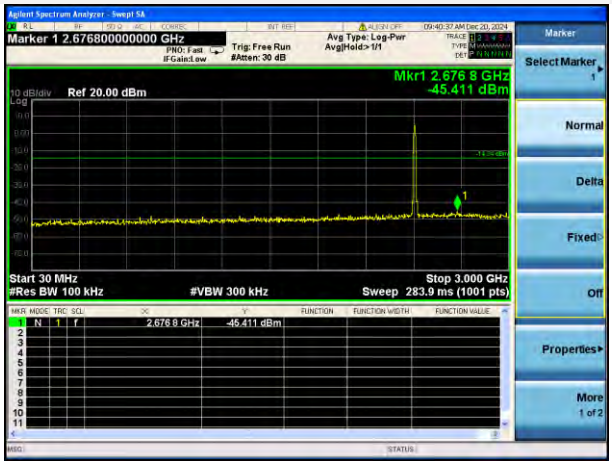
802.11ax-40 MHz(SU) Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.97	3.16	-16.84	Pass
Middle	-35.88	3.84	-16.16	Pass
High	-36.27	0.53	-19.47	Pass

Test Plots

802.11b LOW CHANNEL CARRIER LEVEL

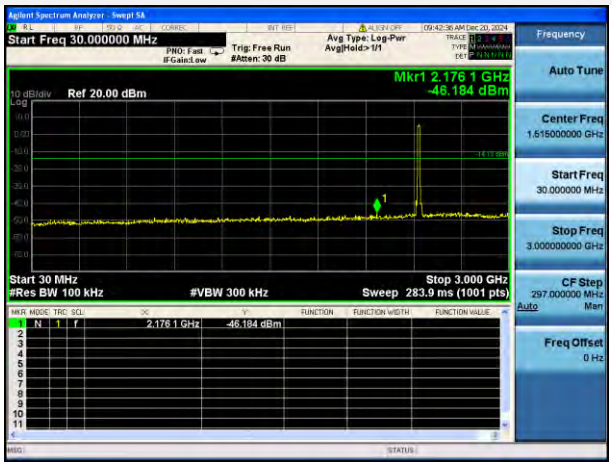
802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



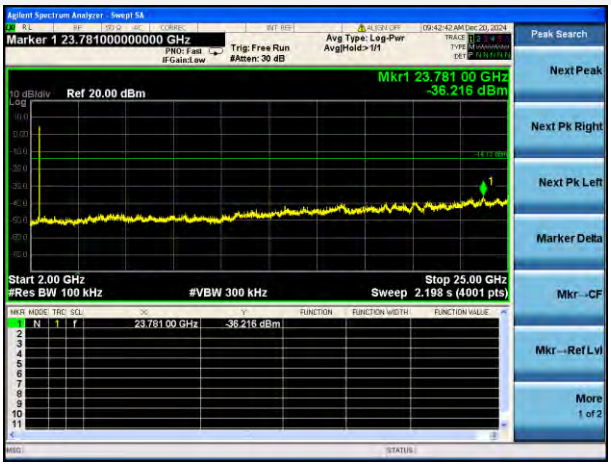
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

802.11b MIDDLE CHANNEL CARRIER LEVEL

802.11b MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

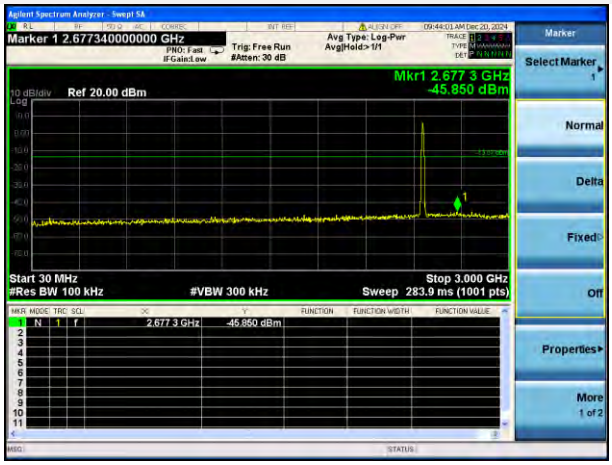


802.11b MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



802.11b HIGH CHANNEL CARRIER LEVEL

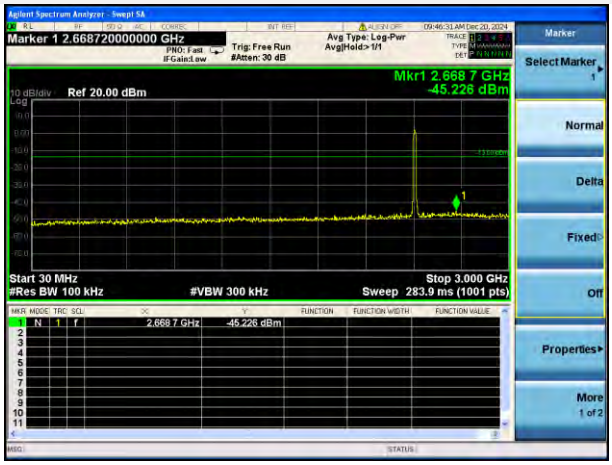
802.11b HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



802.11b HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

802.11g LOW CHANNEL CARRIER LEVEL

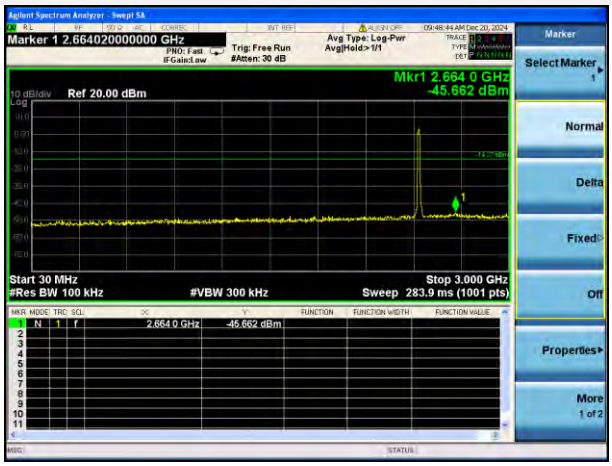
802.11g LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11g LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

802.11g MIDDLE CHANNEL CARRIER LEVEL

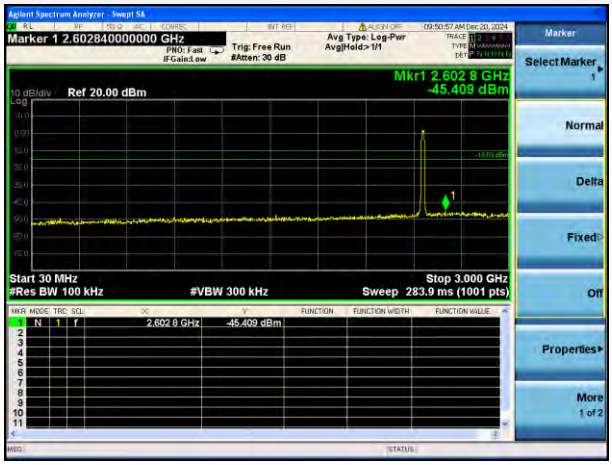
802.11g MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



802.11g MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

802.11g HIGH CHANNEL CARRIER LEVEL

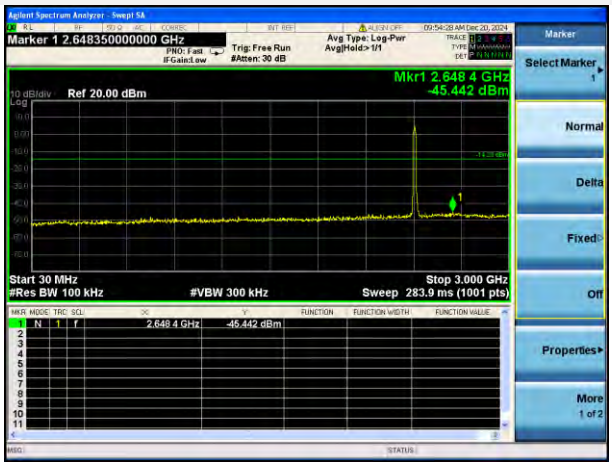
802.11g HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



802.11g HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

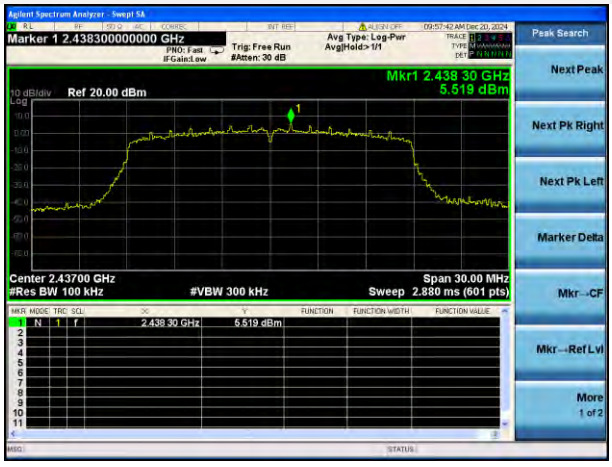
802.11n-20 MHz LOW CHANNEL CARRIER LEVEL

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

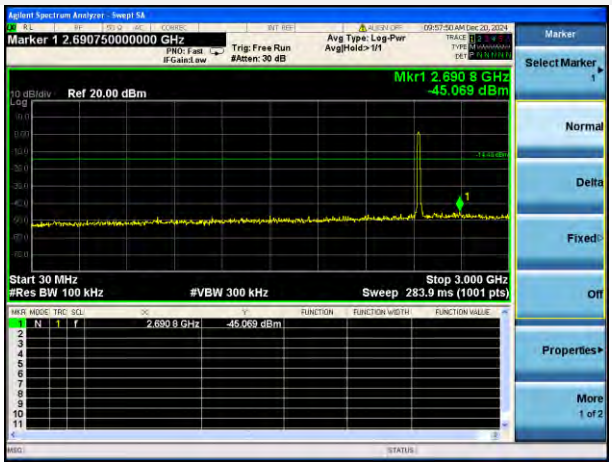


802.11n-20 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

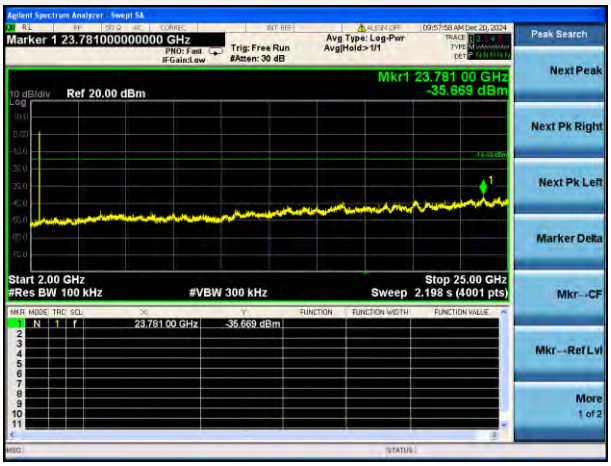
802.11n-20 MHz MIDDLE CHANNEL CARRIER LEVEL



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

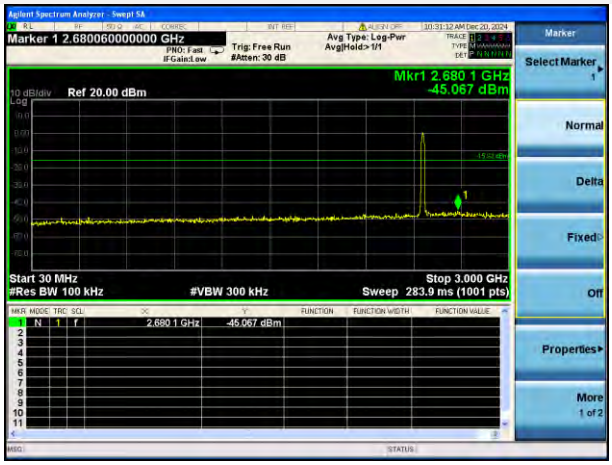


802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



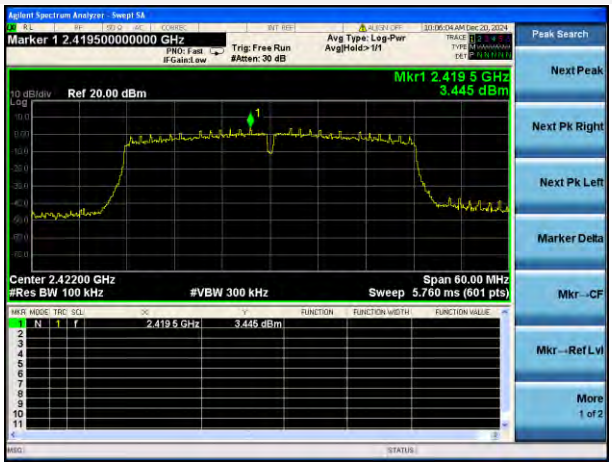
802.11n-20 MHz HIGH CHANNEL CARRIER LEVEL

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

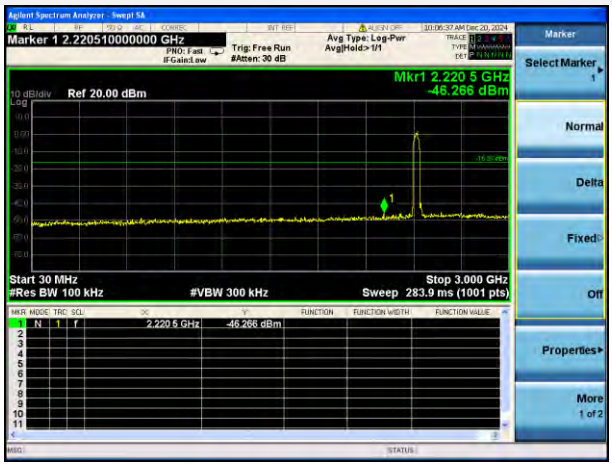


802.11n-20 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

802.11n-40 MHz LOW CHANNEL CARRIER LEVEL

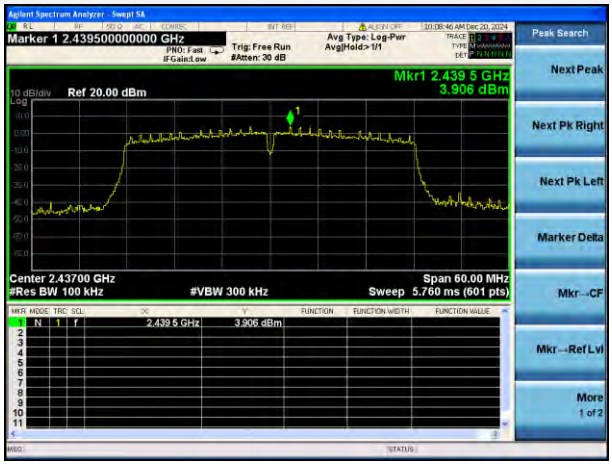


802.11n-40 MHz LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

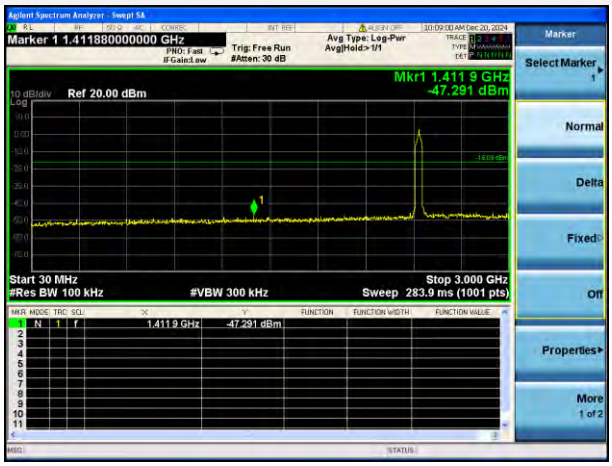


802.11n-40 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

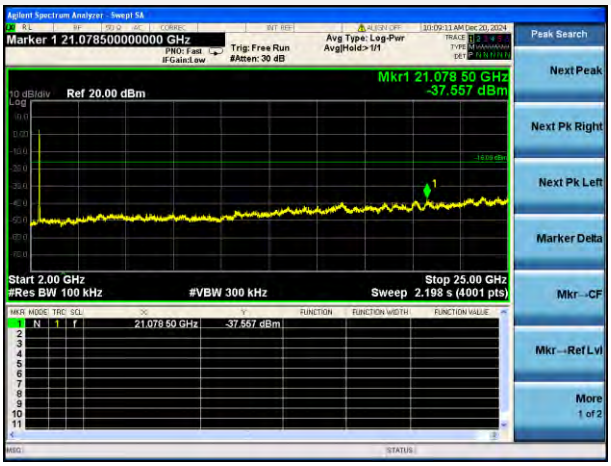
802.11n-40 MHz MIDDLE CHANNEL CARRIER LEVEL



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

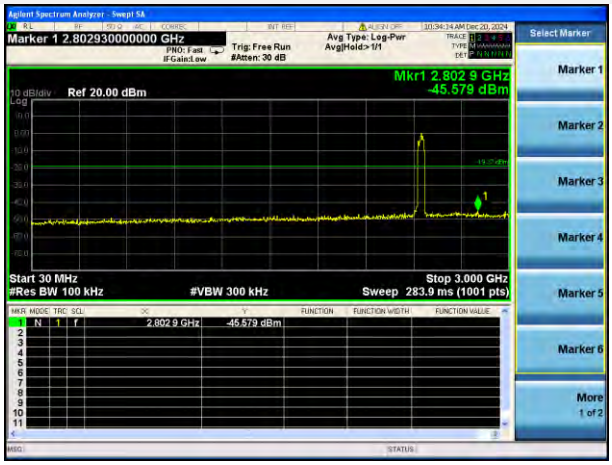


802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



802.11n-40 MHz HIGH CHANNEL CARRIER LEVEL

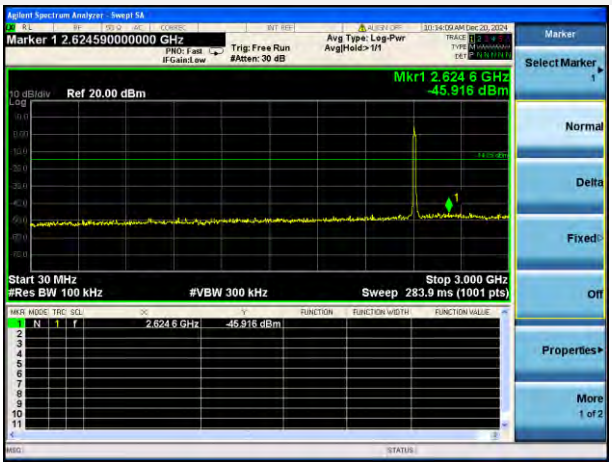
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



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

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

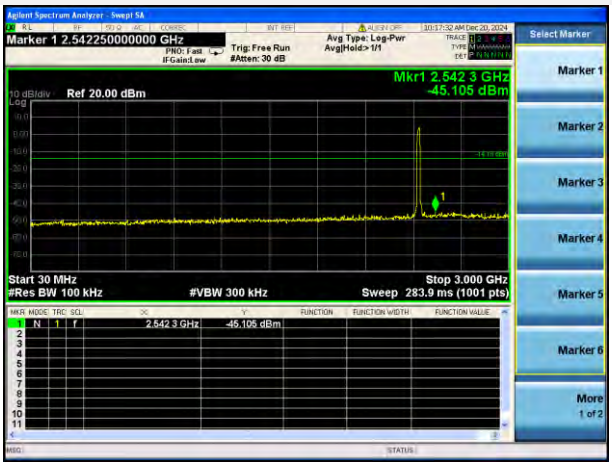
802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



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

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

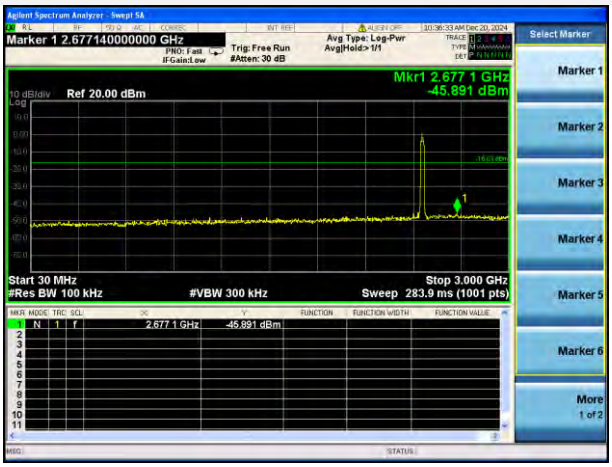
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



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

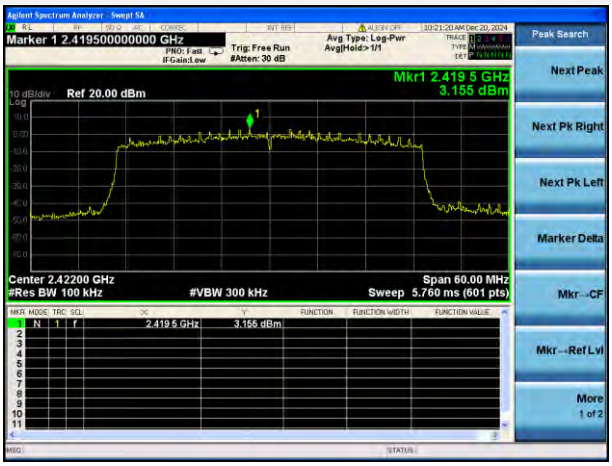
802.11ax-20 MHz(SU) HIGH CHANNEL CARRIER LEVEL

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

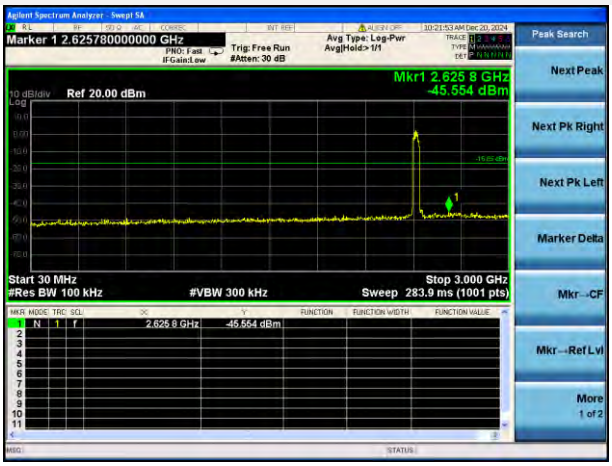


802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

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

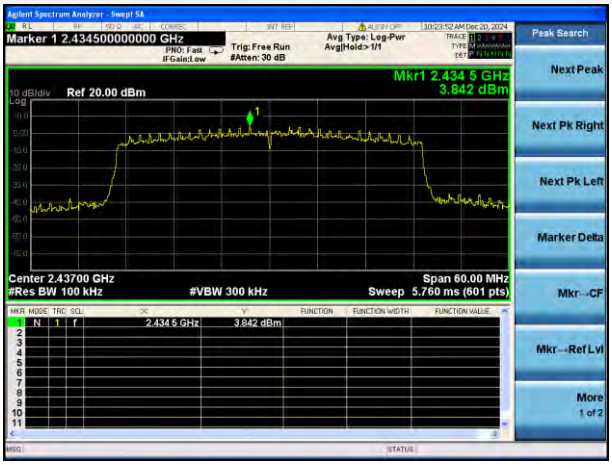


802.11ax-40 MHz(SU) LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

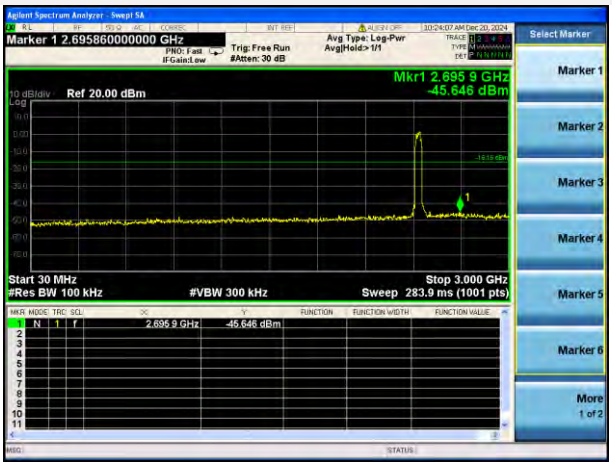


802.11ax-40 MHz(SU) LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

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

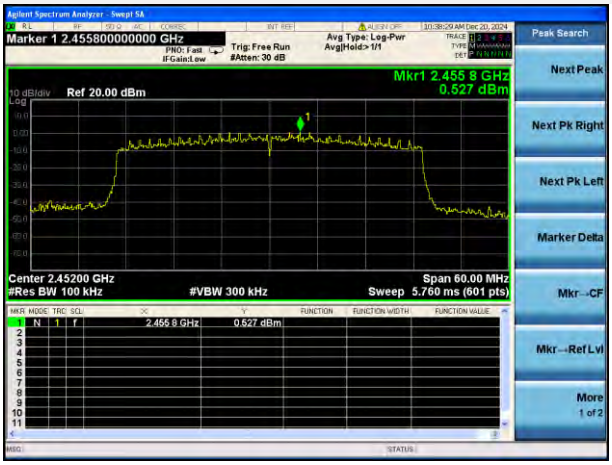


802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

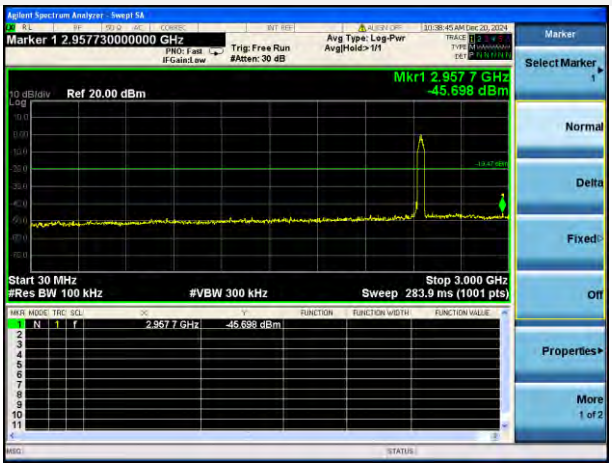


802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

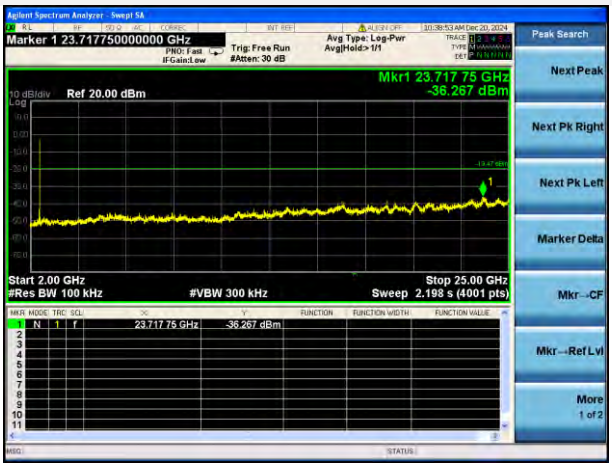
802.11ax-40 MHz(SU) HIGH CHANNEL CARRIER LEVEL



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

Test Data

802.11b Mode：

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-36.89	5.66	-14.34	Pass
High Channel	-45.47	6.13	-13.87	Pass

802.11g Mode：

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-42.25	6.33	-23.67	Pass
High Channel	-45.84	4.92	-25.08	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-41.61	5.72	-24.28	Pass
High Channel	-46.50	4.08	-25.92	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-43.99	3.45	-26.55	Pass
High Channel	-45.51	0.78	-29.22	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	-41.39	5.15	-24.85	Pass
High Channel	-45.86	3.37	-26.63	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	-42.70	3.16	-26.84	Pass
High Channel	-45.77	0.53	-29.47	Pass

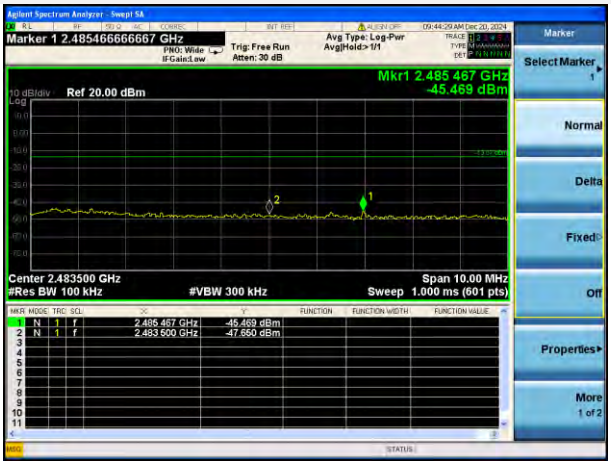
Test Plots

802.11b LOW CHANNEL, CARRIER LEVEL

802.11b LOW CHANNEL, BAND EDGE

802.11b HIGH CHANNEL, CARRIER LEVEL

802.11b HIGH CHANNEL, BAND EDGE

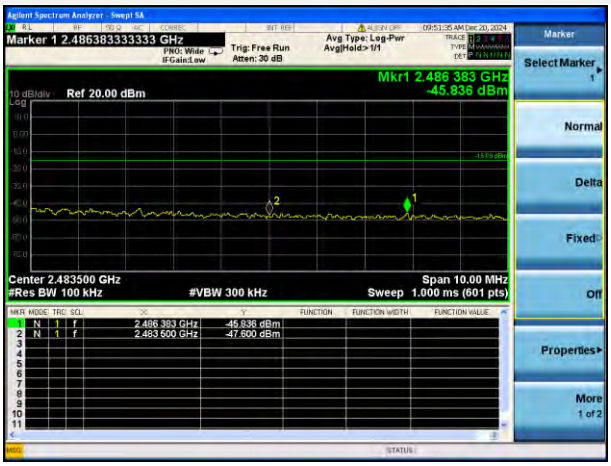


802.11g LOW CHANNEL, CARRIER LEVEL

802.11g LOW CHANNEL, BAND EDGE

802.11g HIGH CHANNEL, CARRIER LEVEL

802.11g HIGH CHANNEL, BAND EDGE

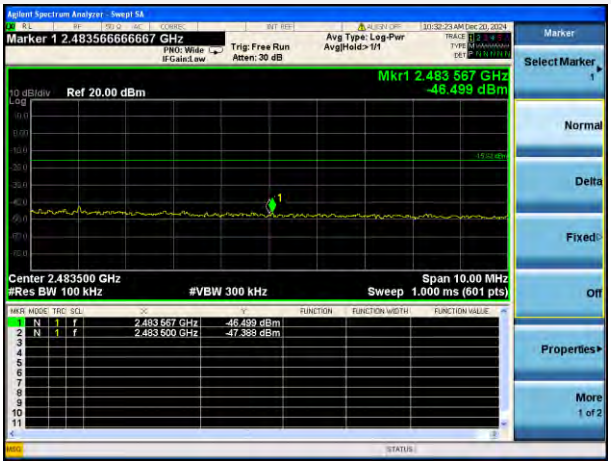


802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL

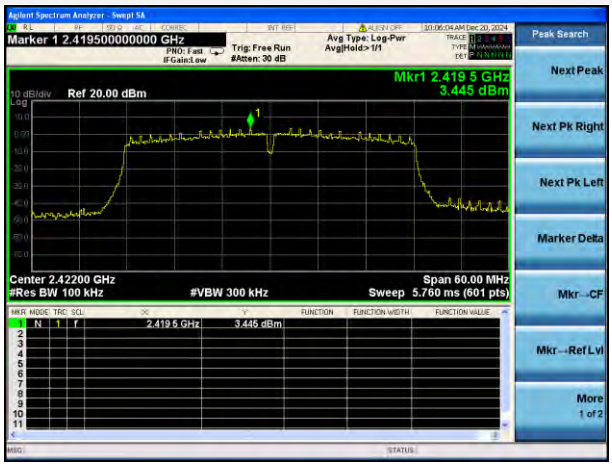
802.11n-20 MHz LOW CHANNEL, BAND EDGE

802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL

802.11n-20 MHz HIGH CHANNEL, BAND EDGE



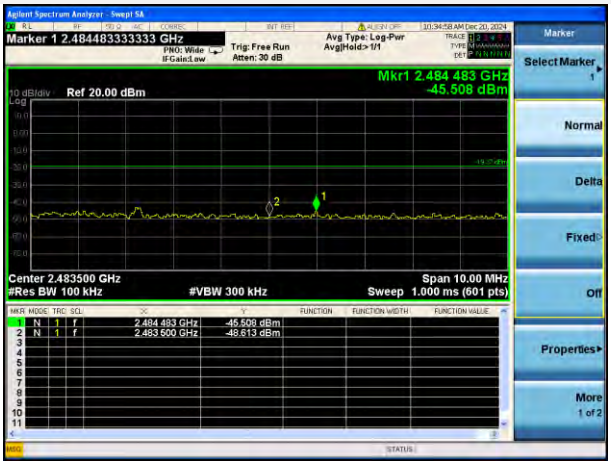
802.11n-40 MHz LOW CHANNEL, CARRIER LEVEL



802.11n-40 MHz LOW CHANNEL, BAND EDGE

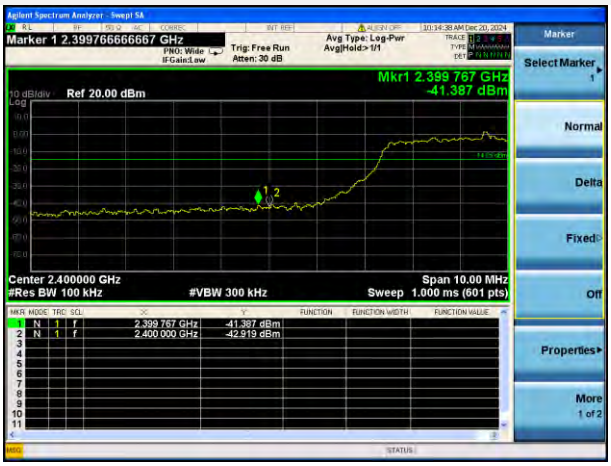
802.11n-40 MHz HIGH CHANNEL, CARRIER LEVEL

802.11n-40 MHz HIGH CHANNEL, BAND EDGE



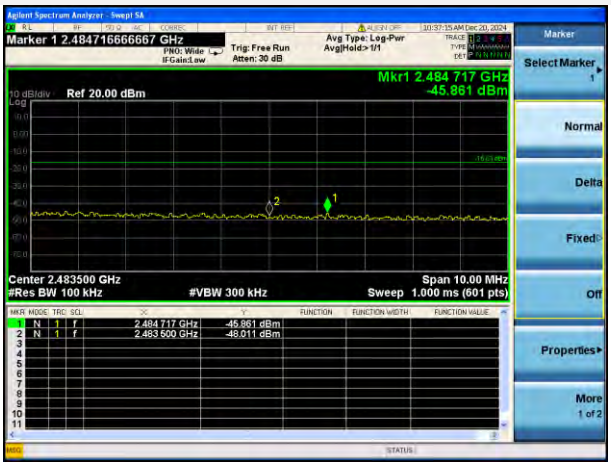
802.11ax-20 MHz(SU) LOW CHANNEL, CARRIER LEVEL

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

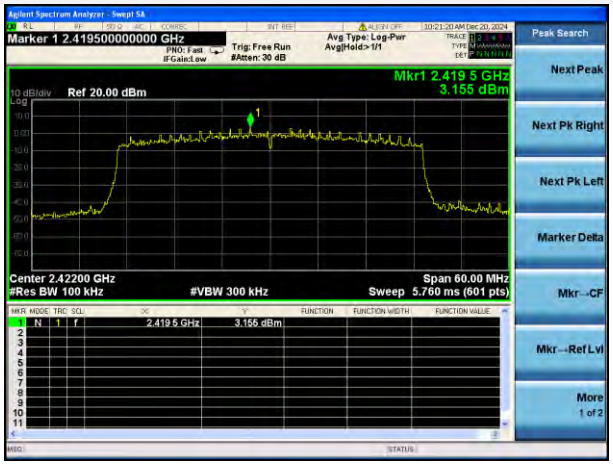


802.11ax-20 MHz(SU) HIGH CHANNEL, CARRIER LEVEL

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

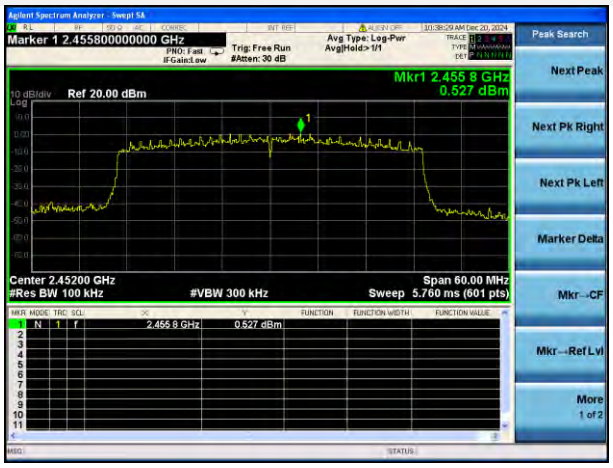


802.11ax-40 MHz(SU) LOW CHANNEL, CARRIER LEVEL

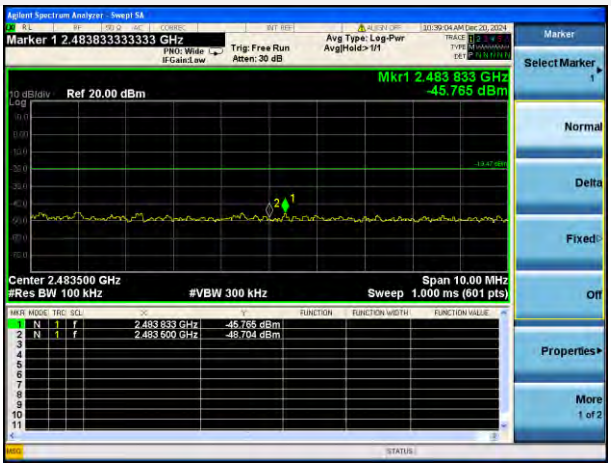


802.11ax-40 MHz(SU) LOW CHANNEL, BAND EDGE

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



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



A.5 Conducted Emissions

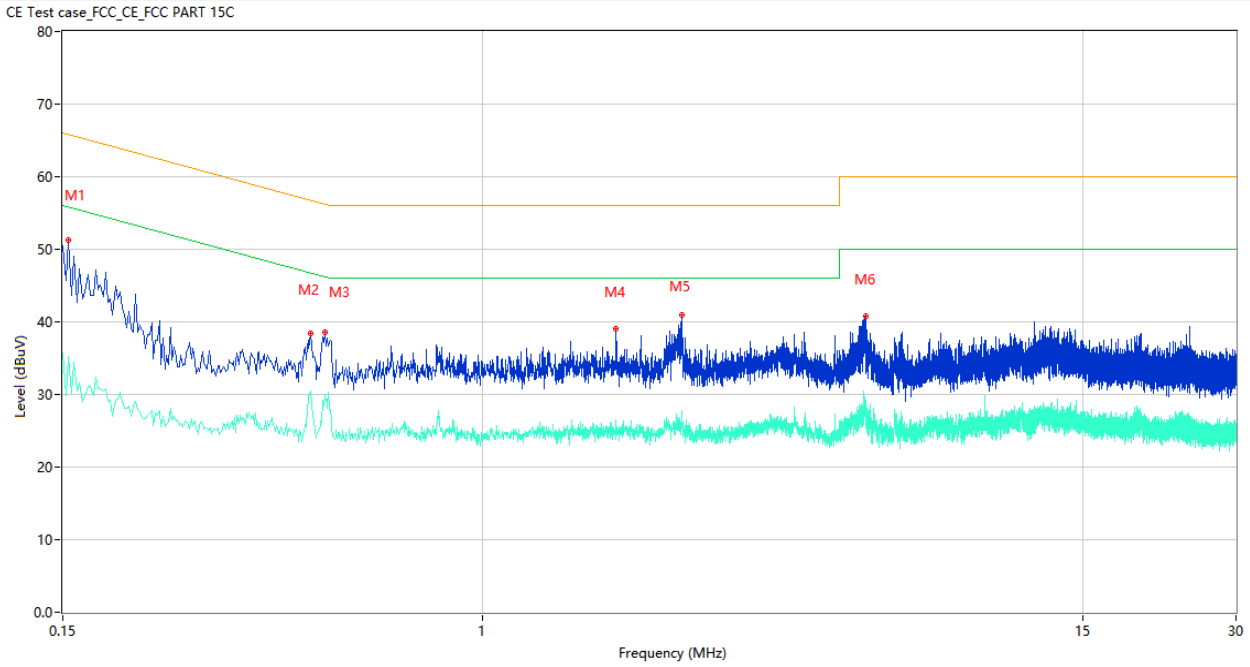
Note [1]: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

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)

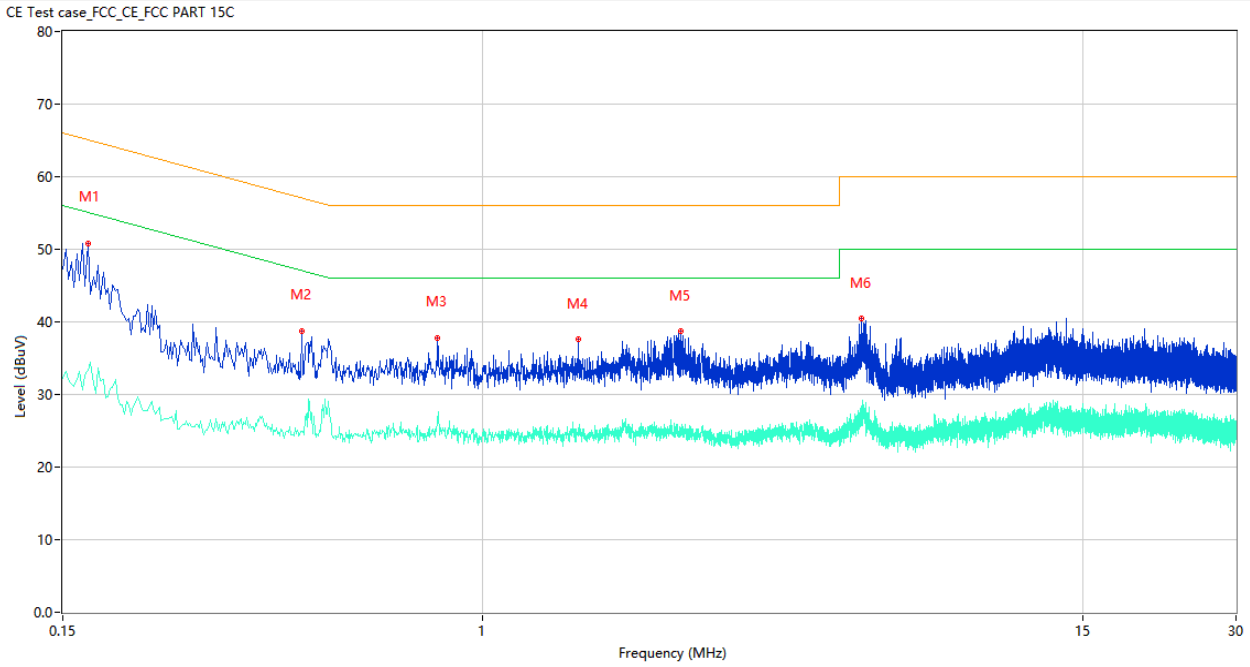
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.154	51.32	9.78	65.78	14.46	Peak	L	Pass
1**	0.154	35.22	9.78	55.78	20.56	AV	L	Pass
2	0.460	38.42	10.02	56.69	18.27	Peak	L	Pass
2**	0.460	30.48	10.02	46.69	16.21	AV	L	Pass
3	0.490	38.55	9.99	56.17	17.62	Peak	L	Pass
3**	0.490	29.92	9.99	46.17	16.25	AV	L	Pass
4	1.826	39.06	10.13	56.00	16.94	Peak	L	Pass
4**	1.826	26.45	10.13	46.00	19.55	AV	L	Pass
5	2.458	40.93	10.18	56.00	15.07	Peak	L	Pass
5**	2.458	27.48	10.18	46.00	18.52	AV	L	Pass
6	5.646	40.83	10.40	60.00	19.17	Peak	L	Pass
6**	5.646	27.49	10.40	50.00	22.51	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.168	50.85	9.78	65.06	14.21	Peak	N	Pass
1**	0.168	33.27	9.78	55.06	21.79	AV	N	Pass
2	0.442	38.80	10.11	57.02	18.22	Peak	N	Pass
2**	0.442	24.98	10.11	47.02	22.04	AV	N	Pass
3	0.816	37.81	10.56	56.00	18.19	Peak	N	Pass
3**	0.816	26.41	10.56	46.00	19.59	AV	N	Pass
4	1.536	37.56	10.18	56.00	18.44	Peak	N	Pass
4**	1.536	25.27	10.18	46.00	20.73	AV	N	Pass
5	2.440	38.72	10.20	56.00	17.28	Peak	N	Pass
5**	2.440	25.27	10.20	46.00	20.73	AV	N	Pass
6	5.518	40.44	10.44	60.00	19.56	Peak	N	Pass
6**	5.518	26.92	10.44	50.00	23.08	AV	N	Pass

A.6 Radiated Emission

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

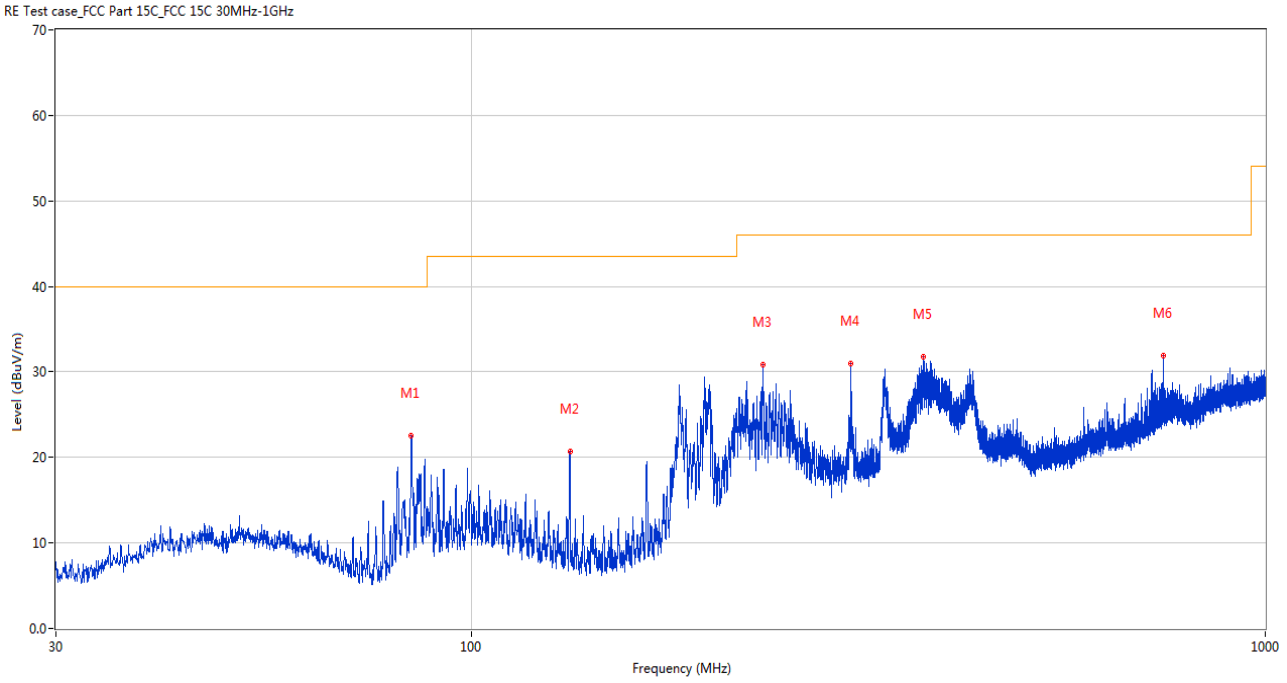
Note [2]: For the test data above 1 GHz，According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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.

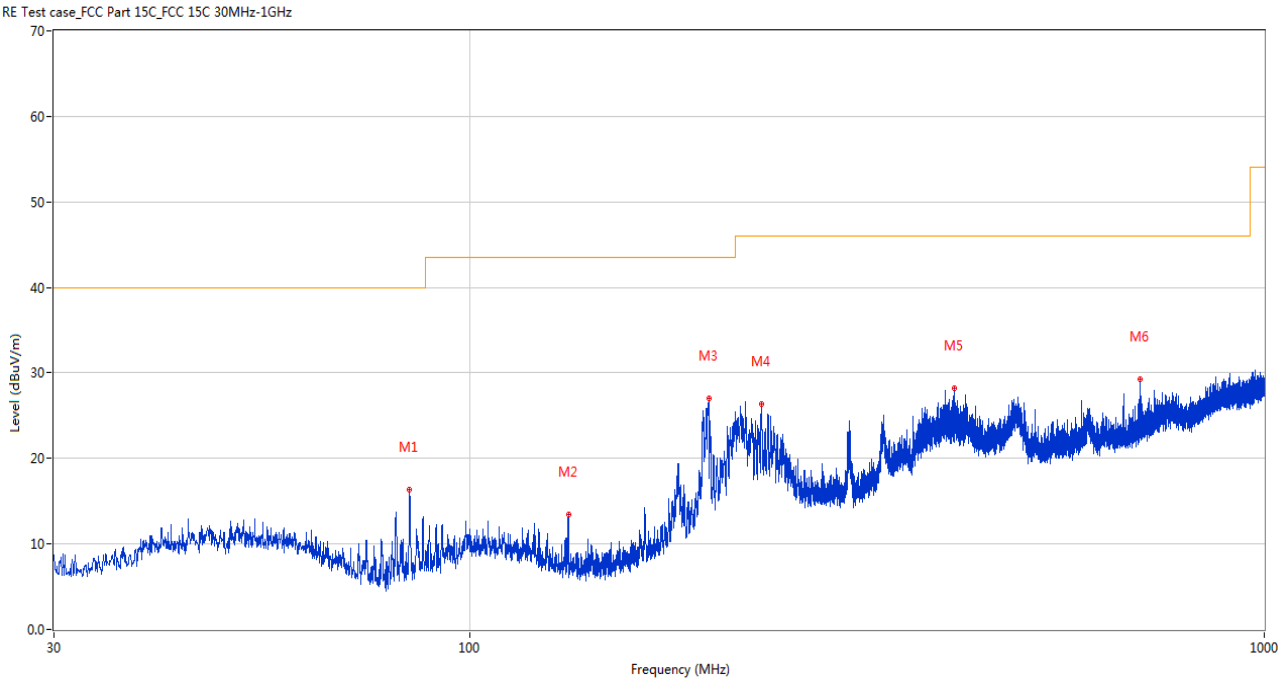
Test Data and Plots

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	84.077	22.56	-30.58	40.0	17.44	Peak	173.10	200	Horizontal	Pass
2	133.305	20.72	-29.49	43.5	22.78	Peak	188.50	200	Horizontal	Pass
3	233.264	30.84	-24.86	46.0	15.16	Peak	334.20	100	Horizontal	Pass
4	300.824	30.94	-23.14	46.0	15.06	Peak	130.10	100	Horizontal	Pass
5	370.810	31.75	-21.52	46.0	14.25	Peak	359.20	100	Horizontal	Pass
6	743.629	31.89	-11.90	46.0	14.11	Peak	119.80	100	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	84.077	16.30	-30.58	40.0	23.70	Peak	117.60	100	Vertical	Pass
2	133.257	13.41	-29.48	43.5	30.09	Peak	295.50	200	Vertical	Pass
3	199.944	27.05	-25.65	43.5	16.45	Peak	111.20	100	Vertical	Pass
4	232.924	26.41	-24.90	46.0	19.59	Peak	138.10	100	Vertical	Pass
5	407.766	28.18	-20.04	46.0	17.82	Peak	75.20	100	Vertical	Pass
6	697.505	29.28	-13.87	46.0	16.72	Peak	129.10	100	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.

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	1330.619	44.10	74.0	29.90	Peak	38.00	400	Horizontal	Pass
1**	1330.619	36.19	54.0	17.81	AV	38.00	400	Horizontal	Pass
2	2999.988	51.60	74.0	22.40	Peak	94.00	100	Horizontal	Pass
2**	2999.988	42.12	54.0	11.88	AV	94.00	100	Horizontal	Pass
3	4932.399	54.44	74.0	19.56	Peak	42.00	200	Horizontal	Pass
3**	4932.399	43.91	54.0	10.09	AV	42.00	200	Horizontal	Pass
4	6803.169	54.49	74.0	19.51	Peak	213.00	400	Horizontal	Pass
4**	6803.169	47.04	54.0	6.96	AV	213.00	400	Horizontal	Pass
5	13411.977	53.61	74.0	20.39	Peak	330.00	100	Horizontal	Pass
5**	13411.977	48.81	54.0	5.19	AV	330.00	100	Horizontal	Pass
6	17427.766	55.38	74.0	18.62	Peak	170.00	400	Horizontal	Pass
6**	17427.766	47.52	54.0	6.48	AV	170.00	400	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	1329.706	46.20	74.0	27.80	Peak	236.00	400	Vertical	Pass
1**	1329.706	40.19	54.0	13.81	AV	236.00	400	Vertical	Pass
2	2979.594	47.72	74.0	26.28	Peak	206.00	100	Vertical	Pass
2**	2979.594	40.00	54.0	14.00	AV	206.00	100	Vertical	Pass
3	4854.058	49.87	74.0	24.13	Peak	173.00	200	Vertical	Pass
3**	4854.058	41.81	54.0	12.19	AV	173.00	200	Vertical	Pass
4	6605.552	56.30	74.0	17.70	Peak	202.00	200	Vertical	Pass
4**	6605.552	45.34	54.0	8.66	AV	202.00	200	Vertical	Pass
5	13435.827	54.69	74.0	19.31	Peak	221.00	100	Vertical	Pass
5**	13435.827	44.07	54.0	9.93	AV	221.00	100	Vertical	Pass
6	17416.155	59.82	74.0	14.18	Peak	353.00	200	Vertical	Pass
6**	17416.155	49.16	54.0	4.84	AV	353.00	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	1329.787	46.45	74.0	27.55	Peak	95.00	300	Horizontal	Pass
1**	1329.787	35.30	54.0	18.70	AV	95.00	300	Horizontal	Pass
2	2995.963	50.39	74.0	23.61	Peak	25.00	100	Horizontal	Pass
2**	2995.963	38.66	54.0	15.34	AV	25.00	100	Horizontal	Pass
3	4937.560	49.21	74.0	24.79	Peak	106.00	200	Horizontal	Pass
3**	4937.560	44.48	54.0	9.52	AV	106.00	200	Horizontal	Pass
4	6808.566	52.26	74.0	21.74	Peak	28.00	100	Horizontal	Pass
4**	6808.566	45.21	54.0	8.79	AV	28.00	100	Horizontal	Pass
5	13408.653	53.25	74.0	20.75	Peak	255.00	200	Horizontal	Pass
5**	13408.653	43.56	54.0	10.44	AV	255.00	200	Horizontal	Pass
6	17429.264	54.64	74.0	19.36	Peak	81.00	100	Horizontal	Pass
6**	17429.264	44.81	54.0	9.19	AV	81.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.366	44.04	74.0	29.96	Peak	19.00	200	Vertical	Pass
1**	1331.366	35.72	54.0	18.28	AV	19.00	200	Vertical	Pass
2	2982.056	47.43	74.0	26.57	Peak	334.00	400	Vertical	Pass
2**	2982.056	41.69	54.0	12.31	AV	334.00	400	Vertical	Pass
3	4858.232	46.51	74.0	27.49	Peak	47.00	200	Vertical	Pass
3**	4858.232	41.13	54.0	12.87	AV	47.00	200	Vertical	Pass
4	6606.736	57.19	74.0	16.81	Peak	289.00	100	Vertical	Pass
4**	6606.736	44.02	54.0	9.98	AV	289.00	100	Vertical	Pass
5	13437.227	53.16	74.0	20.84	Peak	158.00	400	Vertical	Pass
5**	13437.227	46.63	54.0	7.37	AV	158.00	400	Vertical	Pass
6	17416.461	58.97	74.0	15.03	Peak	179.00	400	Vertical	Pass
6**	17416.461	45.59	54.0	8.41	AV	179.00	400	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	1326.477	45.89	74.0	28.11	Peak	218.00	400	Horizontal	Pass
1**	1326.477	34.75	54.0	19.25	AV	218.00	400	Horizontal	Pass
2	2995.289	47.96	74.0	26.04	Peak	155.00	300	Horizontal	Pass
2**	2995.289	42.66	54.0	11.34	AV	155.00	300	Horizontal	Pass
3	4936.610	54.53	74.0	19.47	Peak	136.00	200	Horizontal	Pass
3**	4936.610	43.57	54.0	10.43	AV	136.00	200	Horizontal	Pass
4	6807.929	56.48	74.0	17.52	Peak	0.00	300	Horizontal	Pass
4**	6807.929	47.45	54.0	6.55	AV	0.00	300	Horizontal	Pass
5	13412.460	52.67	74.0	21.33	Peak	117.00	400	Horizontal	Pass
5**	13412.460	43.82	54.0	10.18	AV	117.00	400	Horizontal	Pass
6	17423.967	56.17	74.0	17.83	Peak	318.00	200	Horizontal	Pass
6**	17423.967	48.29	54.0	5.71	AV	318.00	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	1335.078	47.59	74.0	26.41	Peak	213.00	300	Vertical	Pass
1**	1335.078	39.52	54.0	14.48	AV	213.00	300	Vertical	Pass
2	2983.000	48.30	74.0	25.70	Peak	127.00	200	Vertical	Pass
2**	2983.000	42.06	54.0	11.94	AV	127.00	200	Vertical	Pass
3	4858.213	50.64	74.0	23.36	Peak	288.00	200	Vertical	Pass
3**	4858.213	39.73	54.0	14.27	AV	288.00	200	Vertical	Pass
4	6610.979	51.75	74.0	22.25	Peak	259.00	400	Vertical	Pass
4**	6610.979	42.07	54.0	11.93	AV	259.00	400	Vertical	Pass
5	13432.908	52.99	74.0	21.01	Peak	249.00	300	Vertical	Pass
5**	13432.908	46.62	54.0	7.38	AV	249.00	300	Vertical	Pass
6	17413.955	55.33	74.0	18.67	Peak	284.00	100	Vertical	Pass
6**	17413.955	47.57	54.0	6.43	AV	284.00	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	1327.047	43.87	74.0	30.13	Peak	11.00	400	Horizontal	Pass
1**	1327.047	38.32	54.0	15.68	AV	11.00	400	Horizontal	Pass
2	2995.048	50.83	74.0	23.17	Peak	109.00	100	Horizontal	Pass
2**	2995.048	40.56	54.0	13.44	AV	109.00	100	Horizontal	Pass
3	4930.552	53.28	74.0	20.72	Peak	234.00	200	Horizontal	Pass
3**	4930.552	40.49	54.0	13.51	AV	234.00	200	Horizontal	Pass
4	6806.592	52.75	74.0	21.25	Peak	89.00	400	Horizontal	Pass
4**	6806.592	43.84	54.0	10.16	AV	89.00	400	Horizontal	Pass
5	13409.880	57.03	74.0	16.97	Peak	237.00	300	Horizontal	Pass
5**	13409.880	46.53	54.0	7.47	AV	237.00	300	Horizontal	Pass
6	17428.222	54.95	74.0	19.05	Peak	240.00	100	Horizontal	Pass
6**	17428.222	45.66	54.0	8.34	AV	240.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.814	44.43	74.0	29.57	Peak	191.00	300	Vertical	Pass
1**	1329.814	35.22	54.0	18.78	AV	191.00	300	Vertical	Pass
2	2978.408	52.55	74.0	21.45	Peak	332.00	100	Vertical	Pass
2**	2978.408	39.72	54.0	14.28	AV	332.00	100	Vertical	Pass
3	4854.284	51.22	74.0	22.78	Peak	348.00	200	Vertical	Pass
3**	4854.284	37.90	54.0	16.10	AV	348.00	200	Vertical	Pass
4	6604.393	56.13	74.0	17.87	Peak	55.00	200	Vertical	Pass
4**	6604.393	46.80	54.0	7.20	AV	55.00	200	Vertical	Pass
5	13430.901	55.18	74.0	18.82	Peak	0.00	400	Vertical	Pass
5**	13430.901	44.02	54.0	9.98	AV	0.00	400	Vertical	Pass
6	17416.257	55.40	74.0	18.60	Peak	210.00	300	Vertical	Pass
6**	17416.257	50.04	54.0	3.96	AV	210.00	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	1331.524	42.75	74.0	31.25	Peak	103.00	400	Horizontal	Pass
1**	1331.524	35.95	54.0	18.05	AV	103.00	400	Horizontal	Pass
2	2993.329	49.11	74.0	24.89	Peak	19.00	300	Horizontal	Pass
2**	2993.329	44.18	54.0	9.82	AV	19.00	300	Horizontal	Pass
3	4935.685	50.74	74.0	23.26	Peak	195.00	200	Horizontal	Pass
3**	4935.685	39.35	54.0	14.65	AV	195.00	200	Horizontal	Pass
4	6806.585	57.33	74.0	16.67	Peak	328.00	400	Horizontal	Pass
4**	6806.585	42.92	54.0	11.08	AV	328.00	400	Horizontal	Pass
5	13410.306	58.06	74.0	15.94	Peak	280.00	300	Horizontal	Pass
5**	13410.306	46.15	54.0	7.85	AV	280.00	300	Horizontal	Pass
6	17423.981	53.59	74.0	20.41	Peak	298.00	400	Horizontal	Pass
6**	17423.981	48.63	54.0	5.37	AV	298.00	400	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	1335.239	43.20	74.0	30.80	Peak	136.00	400	Vertical	Pass
1**	1335.239	39.44	54.0	14.56	AV	136.00	400	Vertical	Pass
2	2984.786	48.89	74.0	25.11	Peak	269.00	200	Vertical	Pass
2**	2984.786	43.06	54.0	10.94	AV	269.00	200	Vertical	Pass
3	4854.341	47.18	74.0	26.82	Peak	281.00	200	Vertical	Pass
3**	4854.341	43.49	54.0	10.51	AV	281.00	200	Vertical	Pass
4	6609.954	54.56	74.0	19.44	Peak	50.00	200	Vertical	Pass
4**	6609.954	44.34	54.0	9.66	AV	50.00	200	Vertical	Pass
5	13432.421	54.12	74.0	19.88	Peak	200.00	100	Vertical	Pass
5**	13432.421	47.00	54.0	7.00	AV	200.00	100	Vertical	Pass
6	17414.608	59.08	74.0	14.92	Peak	312.00	200	Vertical	Pass
6**	17414.608	50.03	54.0	3.97	AV	312.00	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	1329.829	47.34	74.0	26.66	Peak	26.00	100	Horizontal	Pass
1**	1329.829	39.38	54.0	14.62	AV	26.00	100	Horizontal	Pass
2	2995.006	47.44	74.0	26.56	Peak	118.00	400	Horizontal	Pass
2**	2995.006	42.48	54.0	11.52	AV	118.00	400	Horizontal	Pass
3	4937.130	54.65	74.0	19.35	Peak	85.00	200	Horizontal	Pass
3**	4937.130	41.34	54.0	12.66	AV	85.00	200	Horizontal	Pass
4	6809.862	53.88	74.0	20.12	Peak	98.00	300	Horizontal	Pass
4**	6809.862	45.36	54.0	8.64	AV	98.00	300	Horizontal	Pass
5	13410.555	58.11	74.0	15.89	Peak	100.00	300	Horizontal	Pass
5**	13410.555	47.95	54.0	6.05	AV	100.00	300	Horizontal	Pass
6	17424.891	58.48	74.0	15.52	Peak	3.00	200	Horizontal	Pass
6**	17424.891	44.86	54.0	9.14	AV	3.00	200	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	1329.032	47.16	74.0	26.84	Peak	317.00	300	Vertical	Pass
1**	1329.032	39.99	54.0	14.01	AV	317.00	300	Vertical	Pass
2	2981.728	53.34	74.0	20.66	Peak	227.00	400	Vertical	Pass
2**	2981.728	43.69	54.0	10.31	AV	227.00	400	Vertical	Pass
3	4855.626	46.78	74.0	27.22	Peak	309.00	200	Vertical	Pass
3**	4855.626	42.28	54.0	11.72	AV	309.00	200	Vertical	Pass
4	6603.499	57.08	74.0	16.92	Peak	98.00	400	Vertical	Pass
4**	6603.499	47.10	54.0	6.90	AV	98.00	400	Vertical	Pass
5	13435.216	54.30	74.0	19.70	Peak	144.00	300	Vertical	Pass
5**	13435.216	46.33	54.0	7.67	AV	144.00	300	Vertical	Pass
6	17418.455	57.02	74.0	16.98	Peak	26.00	200	Vertical	Pass
6**	17418.455	48.39	54.0	5.61	AV	26.00	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	1329.388	47.49	74.0	26.51	Peak	280.00	300	Horizontal	Pass
1**	1329.388	39.46	54.0	14.54	AV	280.00	300	Horizontal	Pass
2	2996.408	53.18	74.0	20.82	Peak	102.00	300	Horizontal	Pass
2**	2996.408	43.97	54.0	10.03	AV	102.00	300	Horizontal	Pass
3	4931.659	51.76	74.0	22.24	Peak	225.00	200	Horizontal	Pass
3**	4931.659	41.52	54.0	12.48	AV	225.00	200	Horizontal	Pass
4	6803.335	52.23	74.0	21.77	Peak	87.00	300	Horizontal	Pass
4**	6803.335	43.65	54.0	10.35	AV	87.00	300	Horizontal	Pass
5	13413.829	56.37	74.0	17.63	Peak	167.00	200	Horizontal	Pass
5**	13413.829	47.71	54.0	6.29	AV	167.00	200	Horizontal	Pass
6	17429.836	57.87	74.0	16.13	Peak	216.00	400	Horizontal	Pass
6**	17429.836	46.43	54.0	7.57	AV	216.00	400	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1336.760	42.26	74.0	31.74	Peak	26.00	100	Vertical	Pass
1**	1336.760	39.66	54.0	14.34	AV	26.00	100	Vertical	Pass
2	2978.784	48.94	74.0	25.06	Peak	141.00	400	Vertical	Pass
2**	2978.784	42.66	54.0	11.34	AV	141.00	400	Vertical	Pass
3	4850.515	51.56	74.0	22.44	Peak	164.00	200	Vertical	Pass
3**	4850.515	38.92	54.0	15.08	AV	164.00	200	Vertical	Pass
4	6609.366	52.20	74.0	21.80	Peak	268.00	400	Vertical	Pass
4**	6609.366	46.45	54.0	7.55	AV	268.00	400	Vertical	Pass
5	13436.057	53.65	74.0	20.35	Peak	289.00	300	Vertical	Pass
5**	13436.057	43.50	54.0	10.50	AV	289.00	300	Vertical	Pass
6	17414.414	57.83	74.0	16.17	Peak	224.00	400	Vertical	Pass
6**	17414.414	46.38	54.0	7.62	AV	224.00	400	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	1331.644	42.88	74.0	31.12	Peak	70.00	300	Horizontal	Pass
1**	1331.644	38.78	54.0	15.22	AV	70.00	300	Horizontal	Pass
2	2998.112	47.53	74.0	26.47	Peak	191.00	300	Horizontal	Pass
2**	2998.112	39.70	54.0	14.30	AV	191.00	300	Horizontal	Pass
3	4937.415	51.40	74.0	22.60	Peak	48.00	200	Horizontal	Pass
3**	4937.415	38.90	54.0	15.10	AV	48.00	200	Horizontal	Pass
4	6805.256	56.59	74.0	17.41	Peak	357.00	400	Horizontal	Pass
4**	6805.256	44.41	54.0	9.59	AV	357.00	400	Horizontal	Pass
5	13411.680	57.26	74.0	16.74	Peak	259.00	100	Horizontal	Pass
5**	13411.680	46.86	54.0	7.14	AV	259.00	100	Horizontal	Pass
6	17426.291	53.85	74.0	20.15	Peak	259.00	400	Horizontal	Pass
6**	17426.291	47.30	54.0	6.70	AV	259.00	400	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	1333.199	43.95	74.0	30.05	Peak	39.00	300	Vertical	Pass
1**	1333.199	35.19	54.0	18.81	AV	39.00	300	Vertical	Pass
2	2981.311	49.63	74.0	24.37	Peak	199.00	300	Vertical	Pass
2**	2981.311	44.67	54.0	9.33	AV	199.00	300	Vertical	Pass
3	4851.392	50.63	74.0	23.37	Peak	354.00	200	Vertical	Pass
3**	4851.392	39.62	54.0	14.38	AV	354.00	200	Vertical	Pass
4	6603.246	55.76	74.0	18.24	Peak	344.00	400	Vertical	Pass
4**	6603.246	47.36	54.0	6.64	AV	344.00	400	Vertical	Pass
5	13433.408	53.18	74.0	20.82	Peak	191.00	300	Vertical	Pass
5**	13433.408	48.96	54.0	5.04	AV	191.00	300	Vertical	Pass
6	17415.694	56.20	74.0	17.80	Peak	337.00	200	Vertical	Pass
6**	17415.694	49.58	54.0	4.42	AV	337.00	200	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	1327.080	42.92	74.0	31.08	Peak	88.00	200	Horizontal	Pass
1**	1327.080	37.83	54.0	16.17	AV	88.00	200	Horizontal	Pass
2	2994.601	50.74	74.0	23.26	Peak	347.00	200	Horizontal	Pass
2**	2994.601	39.29	54.0	14.71	AV	347.00	200	Horizontal	Pass
3	4935.569	49.45	74.0	24.55	Peak	357.00	200	Horizontal	Pass
3**	4935.569	39.24	54.0	14.76	AV	357.00	200	Horizontal	Pass
4	6807.877	54.41	74.0	19.59	Peak	337.00	200	Horizontal	Pass
4**	6807.877	45.86	54.0	8.14	AV	337.00	200	Horizontal	Pass
5	13414.813	56.34	74.0	17.66	Peak	138.00	200	Horizontal	Pass
5**	13414.813	44.53	54.0	9.47	AV	138.00	200	Horizontal	Pass
6	17425.469	58.49	74.0	15.51	Peak	125.00	200	Horizontal	Pass
6**	17425.469	49.61	54.0	4.39	AV	125.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.224	44.24	74.0	29.76	Peak	346.00	300	Vertical	Pass
1**	1331.224	38.69	54.0	15.31	AV	346.00	300	Vertical	Pass
2	2981.146	48.78	74.0	25.22	Peak	157.00	100	Vertical	Pass
2**	2981.146	41.27	54.0	12.73	AV	157.00	100	Vertical	Pass
3	4852.936	49.08	74.0	24.92	Peak	80.00	200	Vertical	Pass
3**	4852.936	38.45	54.0	15.55	AV	80.00	200	Vertical	Pass
4	6610.403	53.60	74.0	20.40	Peak	195.00	100	Vertical	Pass
4**	6610.403	45.64	54.0	8.36	AV	195.00	100	Vertical	Pass
5	13438.014	55.13	74.0	18.87	Peak	139.00	200	Vertical	Pass
5**	13438.014	43.92	54.0	10.08	AV	139.00	200	Vertical	Pass
6	17418.304	57.85	74.0	16.15	Peak	191.00	300	Vertical	Pass
6**	17418.304	49.35	54.0	4.65	AV	191.00	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	1331.923	44.31	74.0	29.69	Peak	224.00	400	Horizontal	Pass
1**	1331.923	39.78	54.0	14.22	AV	224.00	400	Horizontal	Pass
2	2994.283	48.45	74.0	25.55	Peak	34.00	400	Horizontal	Pass
2**	2994.283	40.81	54.0	13.19	AV	34.00	400	Horizontal	Pass
3	4930.403	51.45	74.0	22.55	Peak	159.00	200	Horizontal	Pass
3**	4930.403	39.77	54.0	14.23	AV	159.00	200	Horizontal	Pass
4	6805.203	54.64	74.0	19.36	Peak	108.00	100	Horizontal	Pass
4**	6805.203	42.79	54.0	11.21	AV	108.00	100	Horizontal	Pass
5	13411.438	54.22	74.0	19.78	Peak	74.00	300	Horizontal	Pass
5**	13411.438	48.98	54.0	5.02	AV	74.00	300	Horizontal	Pass
6	17424.064	55.96	74.0	18.04	Peak	14.00	400	Horizontal	Pass
6**	17424.064	48.16	54.0	5.84	AV	14.00	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	1329.286	47.06	74.0	26.94	Peak	201.00	200	Vertical	Pass
1**	1329.286	38.49	54.0	15.51	AV	201.00	200	Vertical	Pass
2	2979.839	48.55	74.0	25.45	Peak	67.00	400	Vertical	Pass
2**	2979.839	42.48	54.0	11.52	AV	67.00	400	Vertical	Pass
3	4854.042	50.80	74.0	23.20	Peak	214.00	200	Vertical	Pass
3**	4854.042	43.12	54.0	10.88	AV	214.00	200	Vertical	Pass
4	6603.961	53.63	74.0	20.37	Peak	262.00	300	Vertical	Pass
4**	6603.961	46.87	54.0	7.13	AV	262.00	300	Vertical	Pass
5	13437.477	58.21	74.0	15.79	Peak	215.00	400	Vertical	Pass
5**	13437.477	48.41	54.0	5.59	AV	215.00	400	Vertical	Pass
6	17420.402	60.08	74.0	13.92	Peak	215.00	100	Vertical	Pass
6**	17420.402	45.06	54.0	8.94	AV	215.00	100	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	1332.325	44.93	74.0	29.07	Peak	195.00	300	Horizontal	Pass
1**	1332.325	35.72	54.0	18.28	AV	195.00	300	Horizontal	Pass
2	2998.892	51.40	74.0	22.60	Peak	211.00	200	Horizontal	Pass
2**	2998.892	43.12	54.0	10.88	AV	211.00	200	Horizontal	Pass
3	4931.848	53.14	74.0	20.86	Peak	320.00	200	Horizontal	Pass
3**	4931.848	40.35	54.0	13.65	AV	320.00	200	Horizontal	Pass
4	6808.296	54.31	74.0	19.69	Peak	107.00	300	Horizontal	Pass
4**	6808.296	46.71	54.0	7.29	AV	107.00	300	Horizontal	Pass
5	13415.219	54.92	74.0	19.08	Peak	240.00	200	Horizontal	Pass
5**	13415.219	45.50	54.0	8.50	AV	240.00	200	Horizontal	Pass
6	17424.080	58.73	74.0	15.27	Peak	294.00	200	Horizontal	Pass
6**	17424.080	46.51	54.0	7.49	AV	294.00	200	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	1334.014	43.94	74.0	30.06	Peak	356.00	100	Vertical	Pass
1**	1334.014	37.60	54.0	16.40	AV	356.00	100	Vertical	Pass
2	2981.396	51.19	74.0	22.81	Peak	224.00	400	Vertical	Pass
2**	2981.396	42.52	54.0	11.48	AV	224.00	400	Vertical	Pass
3	4852.239	50.04	74.0	23.96	Peak	236.00	200	Vertical	Pass
3**	4852.239	40.08	54.0	13.92	AV	236.00	200	Vertical	Pass
4	6606.911	56.81	74.0	17.19	Peak	273.00	100	Vertical	Pass
4**	6606.911	47.69	54.0	6.31	AV	273.00	100	Vertical	Pass
5	13432.155	52.59	74.0	21.41	Peak	357.00	200	Vertical	Pass
5**	13432.155	49.26	54.0	4.74	AV	357.00	200	Vertical	Pass
6	17419.492	56.08	74.0	17.92	Peak	253.00	300	Vertical	Pass
6**	17419.492	47.46	54.0	6.54	AV	253.00	300	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.144	42.08	74.0	31.92	Peak	12.00	400	Horizontal	Pass
1**	1333.144	38.68	54.0	15.32	AV	12.00	400	Horizontal	Pass
2	2994.501	50.45	74.0	23.55	Peak	10.00	300	Horizontal	Pass
2**	2994.501	38.48	54.0	15.52	AV	10.00	300	Horizontal	Pass
3	4936.019	53.01	74.0	20.99	Peak	287.00	200	Horizontal	Pass
3**	4936.019	43.14	54.0	10.86	AV	287.00	200	Horizontal	Pass
4	6809.241	54.61	74.0	19.39	Peak	236.00	200	Horizontal	Pass
4**	6809.241	45.31	54.0	8.69	AV	236.00	200	Horizontal	Pass
5	13413.565	55.54	74.0	18.46	Peak	244.00	200	Horizontal	Pass
5**	13413.565	45.21	54.0	8.79	AV	244.00	200	Horizontal	Pass
6	17424.516	54.76	74.0	19.24	Peak	69.00	300	Horizontal	Pass
6**	17424.516	46.23	54.0	7.77	AV	69.00	300	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	1331.794	46.36	74.0	27.64	Peak	291.00	300	Vertical	Pass
1**	1331.794	40.37	54.0	13.63	AV	291.00	300	Vertical	Pass
2	2984.870	51.63	74.0	22.37	Peak	331.00	300	Vertical	Pass
2**	2984.870	44.59	54.0	9.41	AV	331.00	300	Vertical	Pass
3	4852.078	51.67	74.0	22.33	Peak	96.00	200	Vertical	Pass
3**	4852.078	42.72	54.0	11.28	AV	96.00	200	Vertical	Pass
4	6608.089	57.14	74.0	16.86	Peak	133.00	100	Vertical	Pass
4**	6608.089	47.81	54.0	6.19	AV	133.00	100	Vertical	Pass
5	13434.649	56.93	74.0	17.07	Peak	110.00	100	Vertical	Pass
5**	13434.649	48.16	54.0	5.84	AV	110.00	100	Vertical	Pass
6	17414.678	56.22	74.0	17.78	Peak	353.00	100	Vertical	Pass
6**	17414.678	44.71	54.0	9.29	AV	353.00	100	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	1329.614	47.45	74.0	26.55	Peak	340.00	100	Horizontal	Pass
1**	1329.614	37.17	54.0	16.83	AV	340.00	100	Horizontal	Pass
2	2996.572	50.70	74.0	23.30	Peak	103.00	100	Horizontal	Pass
2**	2996.572	44.30	54.0	9.70	AV	103.00	100	Horizontal	Pass
3	4935.401	52.38	74.0	21.62	Peak	224.00	200	Horizontal	Pass
3**	4935.401	40.80	54.0	13.20	AV	224.00	200	Horizontal	Pass
4	6807.036	53.40	74.0	20.60	Peak	99.00	200	Horizontal	Pass
4**	6807.036	46.10	54.0	7.90	AV	99.00	200	Horizontal	Pass
5	13407.537	54.69	74.0	19.31	Peak	26.00	400	Horizontal	Pass
5**	13407.537	44.11	54.0	9.89	AV	26.00	400	Horizontal	Pass
6	17428.756	55.25	74.0	18.75	Peak	347.00	300	Horizontal	Pass
6**	17428.756	45.63	54.0	8.37	AV	347.00	300	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	1336.294	48.16	74.0	25.84	Peak	358.00	100	Vertical	Pass
1**	1336.294	39.74	54.0	14.26	AV	358.00	100	Vertical	Pass
2	2984.782	48.11	74.0	25.89	Peak	0.00	100	Vertical	Pass
2**	2984.782	43.39	54.0	10.61	AV	0.00	100	Vertical	Pass
3	4853.442	51.38	74.0	22.62	Peak	324.00	200	Vertical	Pass
3**	4853.442	42.07	54.0	11.93	AV	324.00	200	Vertical	Pass
4	6610.284	57.22	74.0	16.78	Peak	58.00	100	Vertical	Pass
4**	6610.284	45.43	54.0	8.57	AV	58.00	100	Vertical	Pass
5	13431.716	54.51	74.0	19.49	Peak	124.00	400	Vertical	Pass
5**	13431.716	49.04	54.0	4.96	AV	124.00	400	Vertical	Pass
6	17417.479	57.49	74.0	16.51	Peak	303.00	200	Vertical	Pass
6**	17417.479	45.24	54.0	8.76	AV	303.00	200	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	1331.726	42.03	74.0	31.97	Peak	31.00	300	Horizontal	Pass
1**	1331.726	34.80	54.0	19.20	AV	31.00	300	Horizontal	Pass
2	2995.999	52.83	74.0	21.17	Peak	143.00	200	Horizontal	Pass
2**	2995.999	39.76	54.0	14.24	AV	143.00	200	Horizontal	Pass
3	4936.267	51.07	74.0	22.93	Peak	25.00	200	Horizontal	Pass
3**	4936.267	43.07	54.0	10.93	AV	25.00	200	Horizontal	Pass
4	6803.359	54.42	74.0	19.58	Peak	162.00	200	Horizontal	Pass
4**	6803.359	47.43	54.0	6.57	AV	162.00	200	Horizontal	Pass
5	13412.876	52.66	74.0	21.34	Peak	258.00	200	Horizontal	Pass
5**	13412.876	47.87	54.0	6.13	AV	258.00	200	Horizontal	Pass
6	17423.959	55.33	74.0	18.67	Peak	184.00	200	Horizontal	Pass
6**	17423.959	50.30	54.0	3.70	AV	184.00	200	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	1333.776	47.24	74.0	26.76	Peak	148.00	300	Vertical	Pass
1**	1333.776	40.19	54.0	13.81	AV	148.00	300	Vertical	Pass
2	2979.471	52.23	74.0	21.77	Peak	144.00	200	Vertical	Pass
2**	2979.471	43.35	54.0	10.65	AV	144.00	200	Vertical	Pass
3	4855.173	49.84	74.0	24.16	Peak	59.00	200	Vertical	Pass
3**	4855.173	38.52	54.0	15.48	AV	59.00	200	Vertical	Pass
4	6607.684	54.68	74.0	19.32	Peak	188.00	100	Vertical	Pass
4**	6607.684	45.76	54.0	8.24	AV	188.00	100	Vertical	Pass
5	13431.916	52.76	74.0	21.24	Peak	276.00	300	Vertical	Pass
5**	13431.916	48.27	54.0	5.73	AV	276.00	300	Vertical	Pass
6	17416.683	58.89	74.0	15.11	Peak	261.00	300	Vertical	Pass
6**	17416.683	45.27	54.0	8.73	AV	261.00	300	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.199	44.23	74.0	29.77	Peak	356.00	300	Horizontal	Pass
1**	1332.199	34.88	54.0	19.12	AV	356.00	300	Horizontal	Pass
2	2996.145	51.46	74.0	22.54	Peak	271.00	100	Horizontal	Pass
2**	2996.145	41.81	54.0	12.19	AV	271.00	100	Horizontal	Pass
3	4934.761	51.52	74.0	22.48	Peak	210.00	200	Horizontal	Pass
3**	4934.761	44.21	54.0	9.79	AV	210.00	200	Horizontal	Pass
4	6807.274	55.06	74.0	18.94	Peak	248.00	200	Horizontal	Pass
4**	6807.274	42.19	54.0	11.81	AV	248.00	200	Horizontal	Pass
5	13413.472	53.16	74.0	20.84	Peak	300.00	400	Horizontal	Pass
5**	13413.472	44.22	54.0	9.78	AV	300.00	400	Horizontal	Pass
6	17425.670	57.48	74.0	16.52	Peak	334.00	100	Horizontal	Pass
6**	17425.670	44.65	54.0	9.35	AV	334.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.470	48.07	74.0	25.93	Peak	250.00	100	Vertical	Pass
1**	1333.470	38.12	54.0	15.88	AV	250.00	100	Vertical	Pass
2	2978.607	50.17	74.0	23.83	Peak	67.00	300	Vertical	Pass
2**	2978.607	43.46	54.0	10.54	AV	67.00	300	Vertical	Pass
3	4854.715	48.66	74.0	25.34	Peak	307.00	200	Vertical	Pass
3**	4854.715	40.99	54.0	13.01	AV	307.00	200	Vertical	Pass
4	6605.107	52.16	74.0	21.84	Peak	18.00	100	Vertical	Pass
4**	6605.107	42.11	54.0	11.89	AV	18.00	100	Vertical	Pass
5	13432.815	53.46	74.0	20.54	Peak	327.00	400	Vertical	Pass
5**	13432.815	45.77	54.0	8.23	AV	327.00	400	Vertical	Pass
6	17413.456	55.11	74.0	18.89	Peak	69.00	400	Vertical	Pass
6**	17413.456	47.64	54.0	6.36	AV	69.00	400	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	1329.533	46.39	74.0	27.61	Peak	333.00	200	Horizontal	Pass
1**	1329.533	39.34	54.0	14.66	AV	333.00	200	Horizontal	Pass
2	2993.721	50.83	74.0	23.17	Peak	303.00	200	Horizontal	Pass
2**	2993.721	43.87	54.0	10.13	AV	303.00	200	Horizontal	Pass
3	4937.210	49.95	74.0	24.05	Peak	9.00	200	Horizontal	Pass
3**	4937.210	39.28	54.0	14.72	AV	9.00	200	Horizontal	Pass
4	6810.129	52.42	74.0	21.58	Peak	93.00	400	Horizontal	Pass
4**	6810.129	47.25	54.0	6.75	AV	93.00	400	Horizontal	Pass
5	13415.082	55.66	74.0	18.34	Peak	51.00	100	Horizontal	Pass
5**	13415.082	43.62	54.0	10.38	AV	51.00	100	Horizontal	Pass
6	17424.497	53.62	74.0	20.38	Peak	308.00	300	Horizontal	Pass
6**	17424.497	50.46	54.0	3.54	AV	308.00	300	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.594	43.74	74.0	30.26	Peak	238.00	100	Vertical	Pass
1**	1331.594	37.87	54.0	16.13	AV	238.00	100	Vertical	Pass
2	2979.474	48.85	74.0	25.15	Peak	123.00	100	Vertical	Pass
2**	2979.474	41.87	54.0	12.13	AV	123.00	100	Vertical	Pass
3	4856.810	48.98	74.0	25.02	Peak	94.00	200	Vertical	Pass
3**	4856.810	42.82	54.0	11.18	AV	94.00	200	Vertical	Pass
4	6608.392	54.48	74.0	19.52	Peak	219.00	300	Vertical	Pass
4**	6608.392	42.46	54.0	11.54	AV	219.00	300	Vertical	Pass
5	13435.874	55.09	74.0	18.91	Peak	20.00	300	Vertical	Pass
5**	13435.874	44.13	54.0	9.87	AV	20.00	300	Vertical	Pass
6	17415.208	59.75	74.0	14.25	Peak	322.00	300	Vertical	Pass
6**	17415.208	45.12	54.0	8.88	AV	322.00	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	1328.132	46.31	74.0	27.69	Peak	218.00	200	Horizontal	Pass
1**	1328.132	35.00	54.0	19.00	AV	218.00	200	Horizontal	Pass
2	2998.850	51.14	74.0	22.86	Peak	299.00	200	Horizontal	Pass
2**	2998.850	39.30	54.0	14.70	AV	299.00	200	Horizontal	Pass
3	4936.492	51.95	74.0	22.05	Peak	150.00	200	Horizontal	Pass
3**	4936.492	42.31	54.0	11.69	AV	150.00	200	Horizontal	Pass
4	6804.589	53.10	74.0	20.90	Peak	348.00	300	Horizontal	Pass
4**	6804.589	46.59	54.0	7.41	AV	348.00	300	Horizontal	Pass
5	13410.549	54.57	74.0	19.43	Peak	315.00	200	Horizontal	Pass
5**	13410.549	43.65	54.0	10.35	AV	315.00	200	Horizontal	Pass
6	17424.694	58.32	74.0	15.68	Peak	320.00	200	Horizontal	Pass
6**	17424.694	45.19	54.0	8.81	AV	320.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.709	44.97	74.0	29.03	Peak	175.00	400	Vertical	Pass
1**	1332.709	40.09	54.0	13.91	AV	175.00	400	Vertical	Pass
2	2982.194	51.77	74.0	22.23	Peak	83.00	300	Vertical	Pass
2**	2982.194	41.53	54.0	12.47	AV	83.00	300	Vertical	Pass
3	4856.889	51.41	74.0	22.59	Peak	286.00	200	Vertical	Pass
3**	4856.889	40.39	54.0	13.61	AV	286.00	200	Vertical	Pass
4	6606.844	54.09	74.0	19.91	Peak	124.00	300	Vertical	Pass
4**	6606.844	44.45	54.0	9.55	AV	124.00	300	Vertical	Pass
5	13432.090	57.53	74.0	16.47	Peak	360.00	300	Vertical	Pass
5**	13432.090	48.06	54.0	5.94	AV	360.00	300	Vertical	Pass
6	17415.049	57.93	74.0	16.07	Peak	23.00	100	Vertical	Pass
6**	17415.049	47.79	54.0	6.21	AV	23.00	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	1329.463	41.92	74.0	32.08	Peak	293.00	200	Horizontal	Pass
1**	1329.463	37.27	54.0	16.73	AV	293.00	200	Horizontal	Pass
2	2995.437	49.37	74.0	24.63	Peak	101.00	300	Horizontal	Pass
2**	2995.437	39.37	54.0	14.63	AV	101.00	300	Horizontal	Pass
3	4936.852	54.18	74.0	19.82	Peak	329.00	200	Horizontal	Pass
3**	4936.852	40.69	54.0	13.31	AV	329.00	200	Horizontal	Pass
4	6805.770	56.65	74.0	17.35	Peak	276.00	100	Horizontal	Pass
4**	6805.770	42.68	54.0	11.32	AV	276.00	100	Horizontal	Pass
5	13412.187	55.32	74.0	18.68	Peak	126.00	100	Horizontal	Pass
5**	13412.187	44.44	54.0	9.56	AV	126.00	100	Horizontal	Pass
6	17424.572	53.63	74.0	20.37	Peak	16.00	200	Horizontal	Pass
6**	17424.572	46.81	54.0	7.19	AV	16.00	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	1329.881	45.42	74.0	28.58	Peak	190.00	300	Vertical	Pass
1**	1329.881	38.67	54.0	15.33	AV	190.00	300	Vertical	Pass
2	2985.801	52.07	74.0	21.93	Peak	50.00	400	Vertical	Pass
2**	2985.801	44.40	54.0	9.60	AV	50.00	400	Vertical	Pass
3	4853.418	48.41	74.0	25.59	Peak	221.00	200	Vertical	Pass
3**	4853.418	41.00	54.0	13.00	AV	221.00	200	Vertical	Pass
4	6606.119	51.93	74.0	22.07	Peak	350.00	400	Vertical	Pass
4**	6606.119	46.50	54.0	7.50	AV	350.00	400	Vertical	Pass
5	13436.459	52.65	74.0	21.35	Peak	109.00	100	Vertical	Pass
5**	13436.459	47.96	54.0	6.04	AV	109.00	100	Vertical	Pass
6	17416.150	55.01	74.0	18.99	Peak	159.00	100	Vertical	Pass
6**	17416.150	48.67	54.0	5.33	AV	159.00	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.

Test Data

802.11b LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2385.300	57.92	74.0	16.08	Peak	81.00	100	Vertical	Pass
1**	2385.300	46.42	54.0	7.58	AV	81.00	100	Vertical	Pass
2	2389.950	56.79	74.0	17.21	Peak	73.00	200	Vertical	Pass
2**	2389.950	46.63	54.0	7.37	AV	73.00	200	Vertical	Pass

802.11b HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.545	56.44	74.0	17.56	Peak	150.00	200	Vertical	Pass
1**	2483.545	46.52	54.0	7.48	AV	150.00	200	Vertical	Pass
2	2488.675	57.90	74.0	16.10	Peak	127.00	150	Vertical	Pass
2**	2488.675	46.69	54.0	7.31	AV	127.00	150	Vertical	Pass

802.11g LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.800	58.85	74.0	15.15	Peak	82.00	150	Vertical	Pass
1**	2389.800	48.45	54.0	5.55	AV	82.00	150	Vertical	Pass
2	2389.950	57.55	74.0	16.45	Peak	104.00	200	Vertical	Pass
2**	2389.950	48.91	54.0	5.09	AV	104.00	200	Vertical	Pass

802.11g HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.515	59.97	74.0	14.03	Peak	253.00	200	Vertical	Pass
1**	2483.515	50.53	54.0	3.47	AV	253.00	200	Vertical	Pass
2	2485.600	60.49	74.0	13.51	Peak	125.00	150	Vertical	Pass
2**	2485.600	49.49	54.0	4.51	AV	125.00	150	Vertical	Pass

802.11n20 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2384.700	55.15	74.0	18.85	Peak	360.00	150	Horizontal	Pass
1**	2384.700	43.68	54.0	10.32	AV	360.00	150	Horizontal	Pass
2	2389.950	53.55	74.0	20.45	Peak	96.00	150	Horizontal	Pass
2**	2389.950	44.21	54.0	9.79	AV	96.00	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	2483.500	62.61	74.0	11.39	Peak	280.00	200	Vertical	Pass
1**	2483.500	50.00	54.0	4.00	AV	280.00	200	Vertical	Pass
2	2483.755	62.58	74.0	11.42	Peak	242.00	200	Vertical	Pass
2**	2483.755	49.64	54.0	4.36	AV	242.00	200	Vertical	Pass

802.11n40 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.350	62.18	74.0	11.82	Peak	128.00	100	Vertical	Pass
1**	2389.350	50.59	54.0	3.41	AV	128.00	100	Vertical	Pass
2	2389.950	60.73	74.0	13.27	Peak	50.00	150	Vertical	Pass
2**	2389.950	49.76	54.0	4.24	AV	50.00	150	Vertical	Pass

802.11n40 HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.530	63.78	74.0	10.22	Peak	105.00	200	Vertical	Pass
1**	2483.530	50.43	54.0	3.57	AV	105.00	200	Vertical	Pass
2	2485.465	64.52	74.0	9.48	Peak	105.00	200	Vertical	Pass
2**	2485.465	49.46	54.0	4.54	AV	105.00	200	Vertical	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	2389.700	61.10	74.0	12.90	Peak	125.00	100	Vertical	Pass
1**	2389.700	50.23	54.0	3.77	AV	125.00	100	Vertical	Pass
2	2389.950	60.26	74.0	13.74	Peak	103.00	100	Vertical	Pass
2**	2389.950	49.41	54.0	4.59	AV	103.00	100	Vertical	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	2483.560	63.25	74.0	10.75	Peak	0.00	100	Vertical	Pass
1**	2483.560	50.82	54.0	3.18	AV	0.00	100	Vertical	Pass
2	2483.740	64.64	74.0	9.36	Peak	0.00	200	Vertical	Pass
2**	2483.740	50.64	54.0	3.36	AV	0.00	200	Vertical	Pass

802.11ax40(SU) LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2388.950	62.12	74.0	11.88	Peak	103.00	150	Vertical	Pass
1**	2388.950	49.35	54.0	4.65	AV	103.00	150	Vertical	Pass
2	2389.950	59.18	74.0	14.82	Peak	100.00	100	Vertical	Pass
2**	2389.950	50.97	54.0	3.03	AV	100.00	100	Vertical	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	2483.515	61.39	74.0	12.61	Peak	108.00	150	Vertical	Pass
1**	2483.515	49.37	54.0	4.63	AV	108.00	150	Vertical	Pass
2	2487.340	64.18	74.0	9.82	Peak	104.00	100	Vertical	Pass
2**	2487.340	50.34	54.0	3.66	AV	104.00	100	Vertical	Pass

A.8 Power Spectral Density (PSD)

Test Data

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-8.74	8
Middle	-8.44	8
High	-7.74	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-9.85	8
Middle	-9.60	8
High	-11.45	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.55	8
Middle	-10.58	8
High	-11.71	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-13.20	8
Middle	-12.94	8
High	-15.06	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-9.88	8
Middle	-9.88	8
High	-11.96	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-12.81	8
Middle	-12.72	8
High	-13.67	8

Test Plots

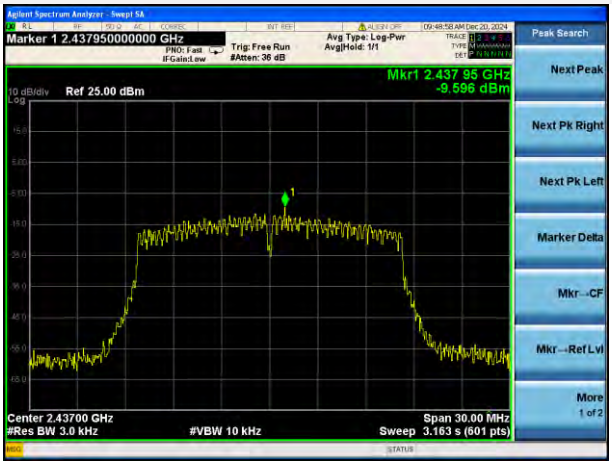
802.11b LOW CHANNEL

802.11b MIDDLE CHANNEL

802.11b HIGH CHANNEL

802.11g LOW CHANNEL

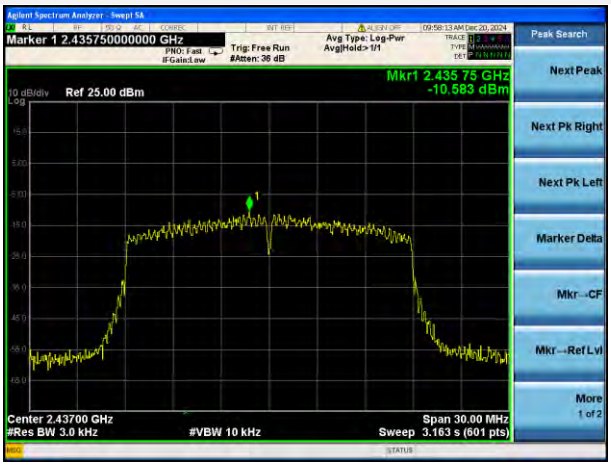
802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL

802.11n-20 MHz LOW CHANNEL

802.11n-20 MHz MIDDLE CHANNEL



802.11n-20 MHz HIGH CHANNEL

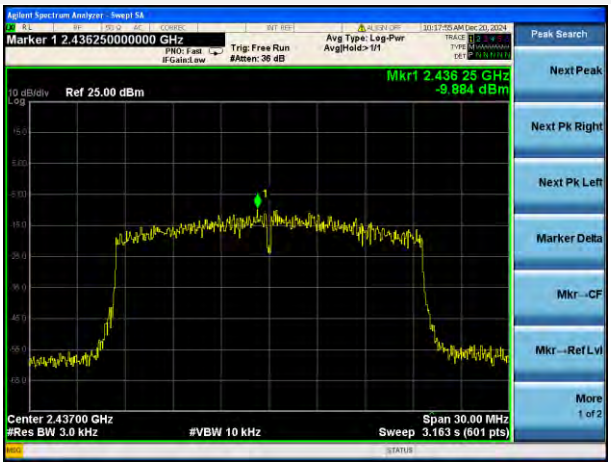
802.11n-40 MHz LOW CHANNEL

802.11n-40 MHz MIDDLE CHANNEL

802.11n-40 MHz HIGH CHANNEL

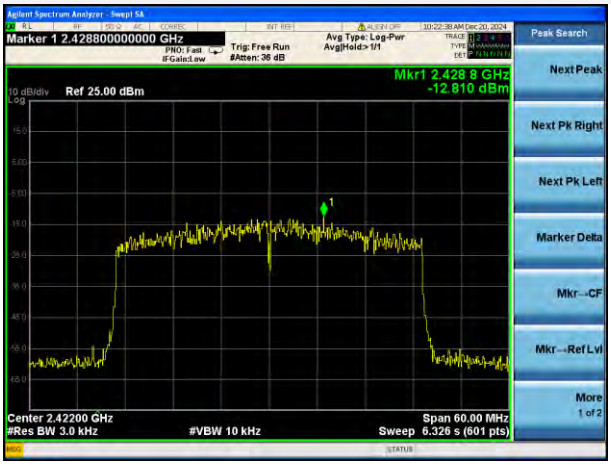
802.11ax-20 MHz(SU) LOW CHANNEL

802.11ax-20 MHz(SU) MIDDLE CHANNEL

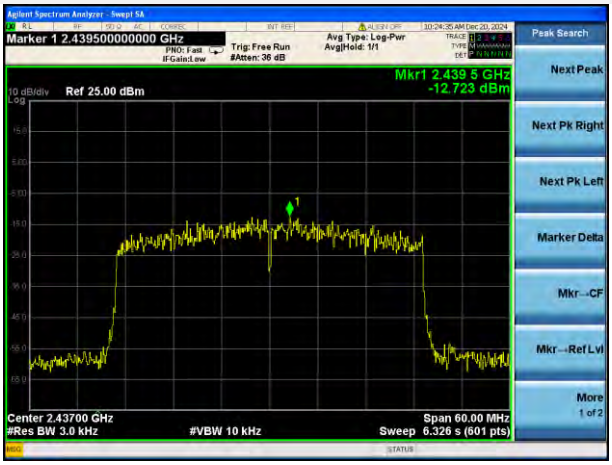


802.11ax-20 MHz(SU) HIGH CHANNEL

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-SZ24C0723-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ24C0723-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ24C0723-AI.PDF”.

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