

TEST REPORT

Applicant: Iton Technology Corp.
Address: Room 1302, Block A, Building 4, Tianan Cyber Park,
Huangge North Road, Longgang District, 518100
Shenzhen, China
Equipment Type: WiFi+BT+15.4 Combo Module
Model Name: AW65S2-50B1
Brand Name: ITON
FCC ID: 2BF4V-AW65S2-50B1
Test Standard: 47 CFR Part 15 Subpart C
(refer to section 3.1)
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ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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(Technical Director)*Sunny Zou*

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Apr. 15, 2025</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Test Laboratory	4
1.2	Test Location	4
2	PRODUCT INFORMATION	5
2.1	Applicant Information	5
2.2	Manufacturer Information	5
2.3	General Description for Equipment under Test (EUT)	5
2.4	Technical Information	6
3	SUMMARY OF TEST RESULTS	10
3.1	Test Standards	10
3.2	Test Verdict	10
4	GENERAL TEST CONFIGURATIONS	11
4.1	Test Environments	11
4.2	Test Equipment List	11
4.3	Test Software List	11
4.4	Measurement Uncertainty	12
4.5	Description of Test Setup	12
4.6	Measurement Results Explanation Example	15
5	TEST ITEMS	16
5.1	Antenna Requirements	16
5.2	Output Power	17
5.3	Occupied Bandwidth	19
5.4	Conducted Spurious Emission	20
5.5	Band Edge (Authorized-band band-edge)	22

5.6	Conducted Emission	24
5.7	Radiated Spurious Emission	25
5.8	Band Edge (Restricted-band band-edge).....	30
5.9	Power Spectral density (PSD).....	31
ANNEX A	TEST RESULT	32
A.1	Output Power	32
A.2	Occupied Bandwidth	43
A.3	Conducted Spurious Emissions	51
A.4	Band Edge (Authorized-band band-edge).....	65
A.5	Conducted Emissions.....	71
A.6	Radiated Emission	73
A.7	Band Edge (Restricted-band band-edge).....	93
A.8	Power Spectral Density (PSD)	97
ANNEX B	TEST SETUP PHOTOS	102
ANNEX C	EUT EXTERNAL PHOTOS	102
ANNEX D	EUT INTERNAL PHOTOS	102

1 GENERAL INFORMATION

1.1 Test Laboratory

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

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Iton Technology Corp.
Address	Room 1302, Block A, Building 4, Tianan Cyber Park, Huangge North Road, Longgang District, 518100 Shenzhen, China

2.2 Manufacturer Information

Manufacturer	Iton Technology Corp.
Address	Room 1302, Block A, Building 4, Tianan Cyber Park, Huangge North Road, Longgang District, 518100 Shenzhen, China

2.3 General Description for Equipment under Test (EUT)

EUT Name	WiFi+BT+15.4 Combo Module
Model Name Under Test	AW65S2-50B1
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V0.2
Software Version	V2024.11.05
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 ZigBee
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The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n/ax(20 MHz): 2.412 GHz - 2.462 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 1 to 11. 802.11n/ax(40 MHz): 2.422 GHz - 2.452 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 3 to 9.	
Modulation Type	DSSS, OFDM, OFDMA	
Product Type	☒ Mobile ☐ Portable ☐ Fix Location	
Antenna System (eg., MIMO, Smart Antenna)	Cyclic Delay Diversity (CDD) for 802.11b/g Multi Input Multi Output (MIMO) for 802.11n/ax	
Categorization as Correlated or Completely Uncorrelated	Categorization as Correlated for 802.11b/g Categorization as Uncorrelated for 802.11n/ax	
Antenna Type	ANT0 ANT1	Dipole Antenna
Antenna Gain	ANT0 ANT1	2.53 dBi
Total directional gain	For power spectral density (PSD) measurements	Correlated: 5.54 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 2.53dBi Formulas: Directional gain = G_{ANT}
	For power measurements	Correlated: 5.54 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 2.53dBi Formulas: Directional gain = G_{ANT}
	For Conducted Out-of-Band and Spurious Measurements	Correlated: 5.54 dBi Formulas: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi Uncorrelated: 2.53dBi

	ts	Formulas: Directional gain = G_{ANT}
About the Product		Only the WIFI 802.11b, 802.11g, 802.11n (HT20/40) and 802.11ax (HE20/40) was tested in this report.

Mode	Antenna		
	ANT0	ANT1	MIMO
802.11b	√	√	√
802.11g	√	√	√
802.11n20	√	√	√
802.11n40	√	√	√
802.11ax20	√	√	√
802.11ax40	√	√	√
Note: All the configurations were tested, but only the worst case was reported in this report.			

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

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

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

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

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

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Intentional radiators of radio frequency equipment
2	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
3	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
4	KDB Publication 558074 D01v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES

3.2 Test Verdict

No.	Description	FCC PART No.	Test Result	Verdict
1	Antenna Requirement	15.203	N/A	Pass ^{Note 1}
2	Output Power	15.247 (b)	ANNEX A.1	Pass
3	Occupied Bandwidth	15.247 (a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247 (d)	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.247 (d)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247 (d)	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247 (d)	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247 (e)	ANNEX A.8	Pass

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

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

Relative Humidity	46% to 61%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22.8℃ to +26.1℃
Working Voltage of the EUT	NV (Normal Voltage)	3.30 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2024.12.16	2025.12.15
Spectrum Analyzer	KEYSIGHT	N9020A	MY46471071	2024.07.04	2025.07.03
Signaling Unit	ROHDE&SCHWARZ	CMW500	142028	2024.05.08	2025.05.07
Power Sensor	KEYSIGHT	U2063XA	MY58000251	2024.07.04	2025.07.03
Spectrum Analyzer	KEYSIGHT	N9020A	MY50531259	2024.08.01	2025.07.31
Signaling Unit	ROHDE&SCHWARZ	CMW500	171150	2024.05.22	2025.05.21
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
Amplifier	COM-MV	KA LNA18 40G-01	18050001	2024.12.05	2025.12.04
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2024.08.01	2025.07.31
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-01162	2023.08.04	2026.08.03
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2024.01.23	2027.01.22
Amplifier	COM-MV	ZT30-1000M	B2018054558	2024.11.28	2025.11.27
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	130	2024.07.13	2027.07.12
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2024.08.01	2025.07.31
LISN	SCHWARZBECK	NSLK 8127	8127-687	2024.05.09	2025.05.08
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8 m	112	2025.02.14	2028.02.13

4.3 Test Software List

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

4.4 Measurement Uncertainty

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

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

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

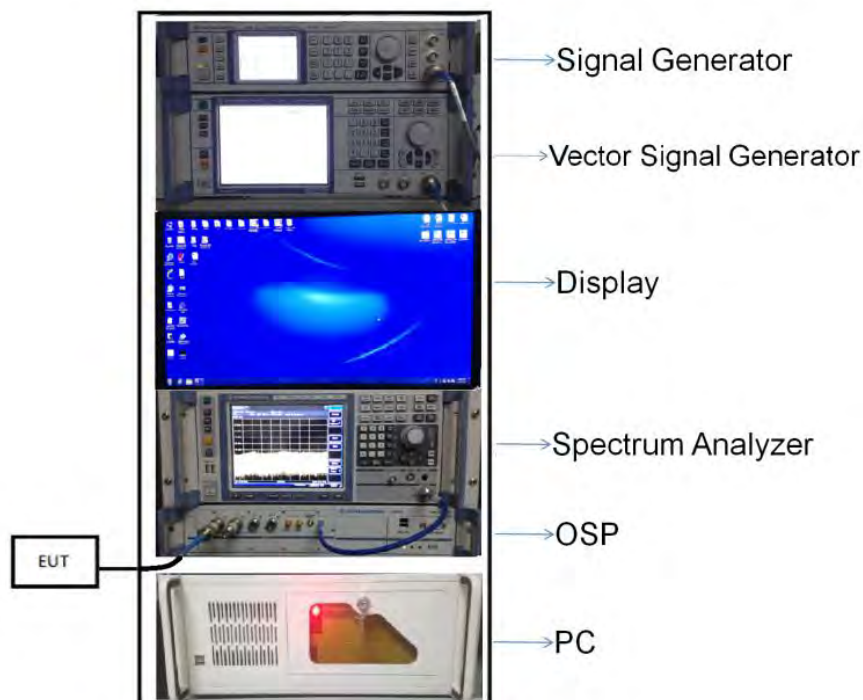
4.5 Description of Test Setup

4.5.1 For Antenna Port Test

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

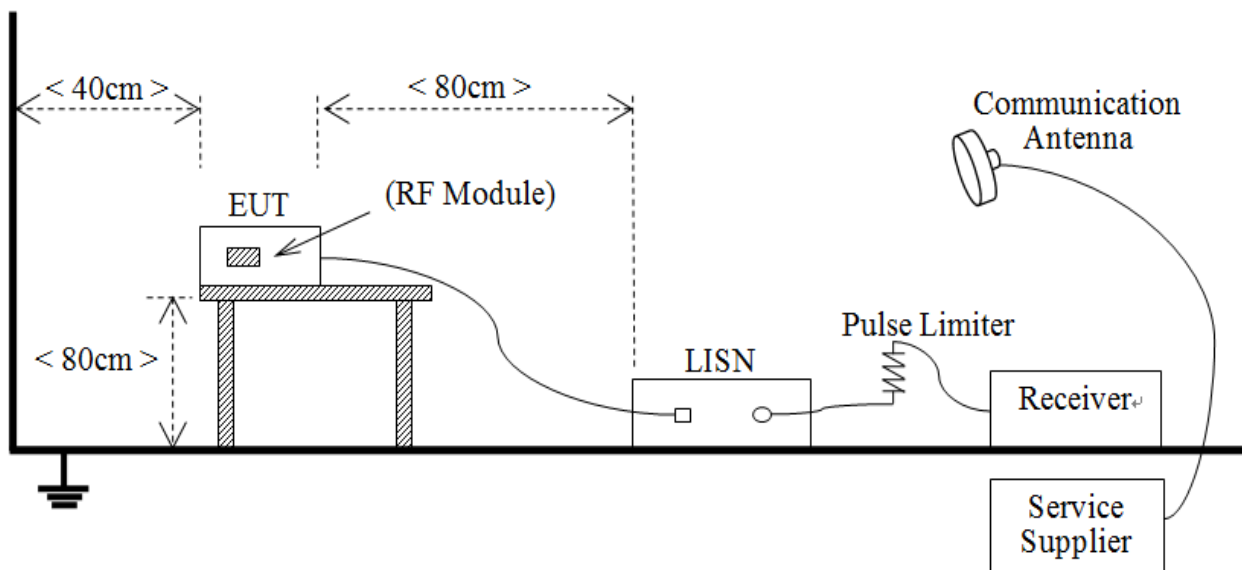
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:

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



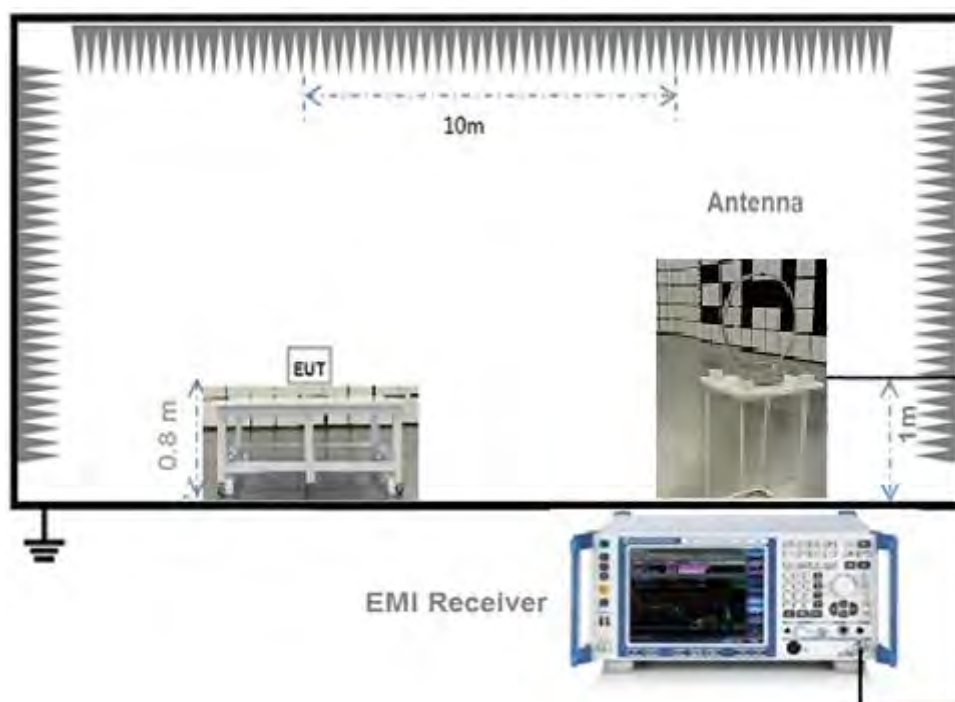
(Diagram 1)

4.5.2 For AC Power Supply Port Test



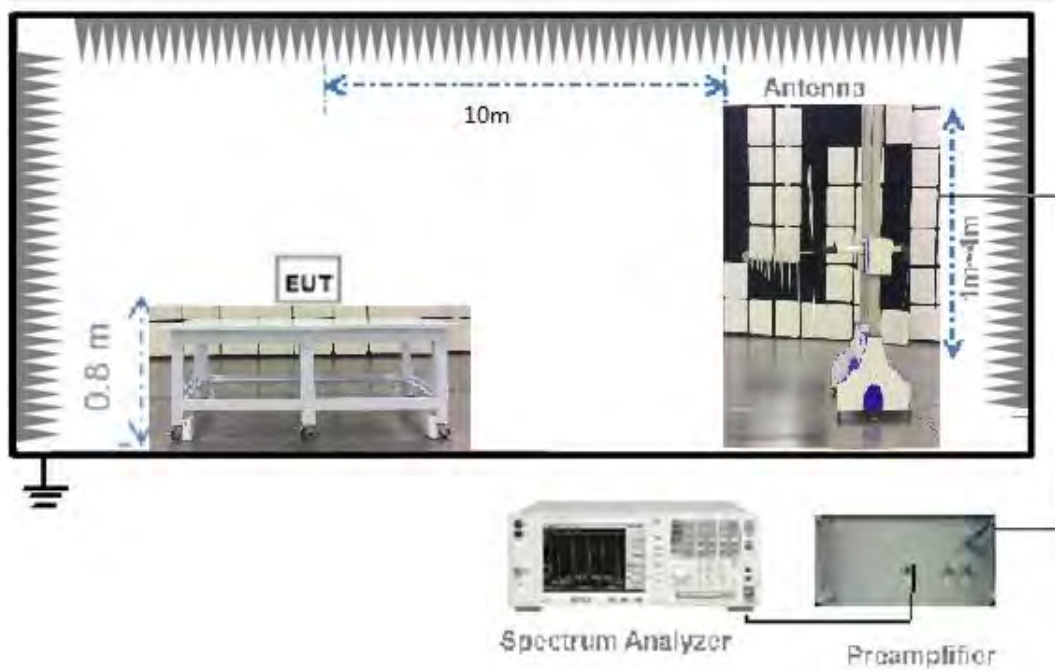
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



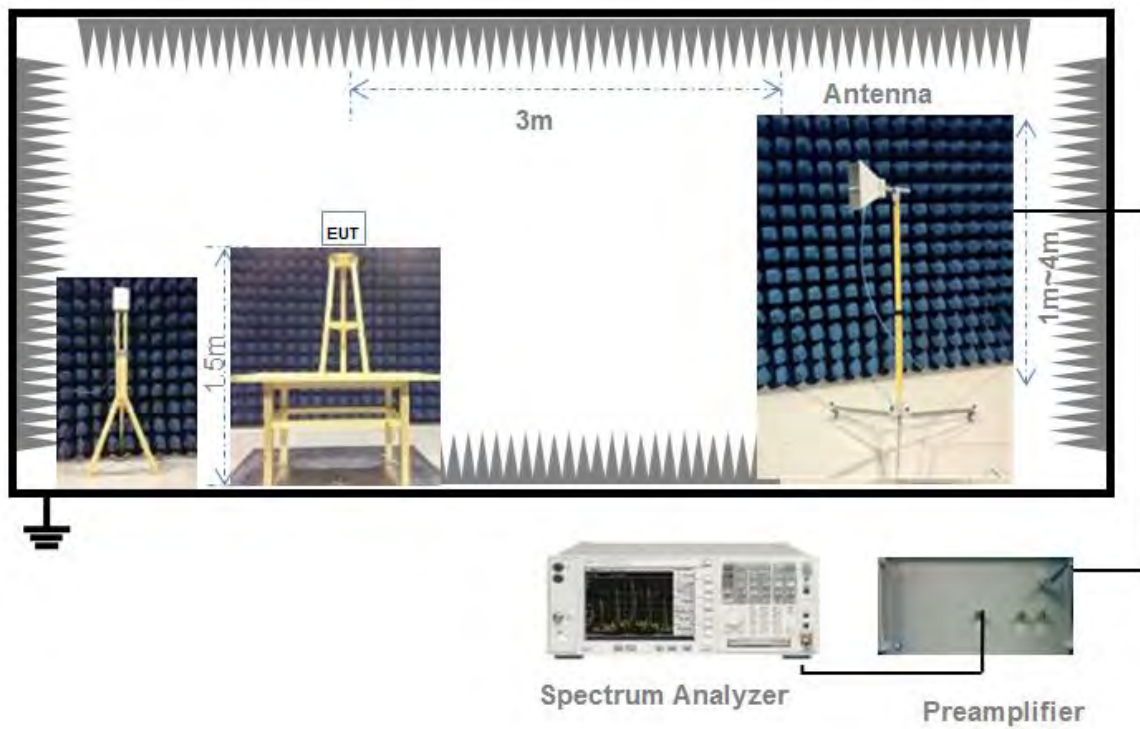
(Diagram 3)

4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.6 Measurement Results Explanation Example

4.6.1 For conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

4.6.2 For radiated band edges and spurious emission test:

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

where:

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

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

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

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203

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

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

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

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

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

5.1.3 Antenna Gain

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

5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b)

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

5.2.2 Test Setup

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

5.2.3 Test Procedure

Maximum peak conducted output power

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

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

Maximum conducted (average) output power (Reporting Only)

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

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

Measurements of duty cycle

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

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

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

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

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

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC §15.247(a)

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

5.3.2 Test Setup

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

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ≥ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

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

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d)

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

5.4.2 Test Setup

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

5.4.3 Test Procedure

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

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

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

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

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

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

Emission level measurement

Use the following spectrum analyzer settings:

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

Set the RBW = 100 kHz.

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

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

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

5.4.4 Test Result

Please refer to ANNEX A.3.

5.5 Band Edge (Authorized-band band-edge)

5.5.1 Limit

FCC §15.247(d)

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

5.5.2 Test Setup

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

5.5.3 Test Procedure

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

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

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

Set span to 2 MHz

RBW = 100 kHz.

VBW $\geq 3 \times$ RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

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

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

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

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

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

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

5.5.4 Test Result

Please refer to ANNEX A.4.

5.6 Conducted Emission

5.6.1 Limit

FCC §15.207

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

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

5.6.2 Test Setup

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

5.6.3 Test Procedure

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

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

5.6.4 Test Result

Please refer to ANNEX A.5.

5.7 Radiated Spurious Emission

5.7.1 Limit

FCC §15.209&15.247(d)

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:

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

where:

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

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

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

Quasi-Peak measurement procedure

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

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

Peak power measurement procedure

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

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

longer for low duty cycle applications).

Table 1—RBW as a function of frequency

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

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

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

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

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

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

Determining the applicable transmit antenna gain

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

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

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

Radiated spurious emission test

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

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

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

The power of the EUT transmitting frequency should be ignored.

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

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

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

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.7.4 Test Result

Please refer to ANNEX A.6.

5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d)

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

5.8.2 Test Setup

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

5.8.3 Test Procedure

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

The power of the EUT transmitting frequency should be ignored.

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

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

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

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

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

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

5.8.4 Test Result

Please refer to ANNEX A.7.

5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e)

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

5.9.2 Test Setup

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

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

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

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

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

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

5.9.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 Output Power

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle
802.11b	0.4477	0.8625	51.91%
802.11g	0.7069	1.1210	63.06%
802.11n-20 MHz	0.6747	1.0890	61.96%
802.11n-40 MHz	0.5811	0.9951	58.40%
802.11ax-20 MHz	1.1830	1.6010	73.89%
802.11ax-40 MHz	1.1830	1.6010	73.89%

Peak Power Test DataSISO-ANT0

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.98	157.76	30	1000	Pass
Middle	22.53	179.06			Pass
High	23.21	209.41			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.80	380.19	30	1000	Pass
Middle	25.76	376.70			Pass
High	24.85	305.49			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.64	366.44	30	1000	Pass
Middle	24.88	307.61			Pass
High	25.53	357.27			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.24	265.46	30	1000	Pass
Middle	23.74	236.59			Pass
High	24.34	271.64			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.67	293.09	30	1000	Pass
Middle	23.72	235.50			Pass
High	24.11	257.63			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.59	228.56	30	1000	Pass
Middle	24.12	258.23			Pass
High	23.88	244.34			Pass

SISO-ANT1

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.71	148.25	30	1000	Pass
Middle	22.44	175.39			Pass
High	23.16	207.01			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.37	344.35	30	1000	Pass
Middle	25.52	356.45			Pass
High	24.71	295.80			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.55	358.92	30	1000	Pass
Middle	24.59	287.74			Pass
High	25.35	342.77			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.19	262.42	30	1000	Pass
Middle	23.43	220.29			Pass
High	24.17	261.22			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.29	268.53	30	1000	Pass
Middle	23.33	215.28			Pass
High	24.00	251.19			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.52	224.91	30	1000	Pass
Middle	23.89	244.91			Pass
High	23.45	221.31			Pass

MIMO-ANT0**802.11b Mode:**

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.87	77.09	30	1000	Pass
Middle	19.34	85.90			Pass
High	20.09	102.09			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.66	184.50	30	1000	Pass
Middle	22.37	172.58			Pass
High	21.75	149.62			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.46	176.20	30	1000	Pass
Middle	21.62	145.21			Pass
High	22.03	159.59			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.13	129.72	30	1000	Pass
Middle	20.52	112.72			Pass
High	21.23	132.74			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.46	139.96	30	1000	Pass
Middle	20.56	113.76			Pass
High	20.63	115.61			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	20.48	111.69	30	1000	Pass
Middle	20.76	119.12			Pass
High	20.40	109.65			Pass

MIMO-ANT1**802.11b Mode:**

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.42	69.50	30	1000	Pass
Middle	18.96	78.70			Pass
High	19.91	97.95			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.28	169.04	30	1000	Pass
Middle	22.30	169.82			Pass
High	21.48	140.60			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.15	164.06	30	1000	Pass
Middle	21.52	141.91			Pass
High	22.06	160.69			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	20.82	120.78	30	1000	Pass
Middle	19.96	99.08			Pass
High	20.86	121.90			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.17	130.92	30	1000	Pass
Middle	20.01	100.23			Pass
High	20.73	118.30			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	20.10	102.33	30	1000	Pass
Middle	20.48	111.69			Pass
High	20.12	102.80			Pass

MIMO**802.11b Mode:**

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.66	146.59	30	1000	Pass
Middle	22.16	164.61			Pass
High	23.01	200.04			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.48	353.55	30	1000	Pass
Middle	25.35	342.41			Pass
High	24.63	290.23			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.32	340.26	30	1000	Pass
Middle	24.58	287.12			Pass
High	25.06	320.28			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.99	250.50	30	1000	Pass
Middle	23.26	211.80			Pass
High	24.06	254.64			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.33	270.88	30	1000	Pass
Middle	23.30	213.99			Pass
High	23.69	233.92			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.30	214.02	30	1000	Pass
Middle	23.63	230.81			Pass
High	23.27	212.45			Pass

Average Power Test DataSISO-ANT0

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.28	84.72	30	1000	Pass
Middle	19.83	96.16			Pass
High	19.81	95.72			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.40	87.10	30	1000	Pass
Middle	19.46	88.31			Pass
High	19.25	84.14			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.24	83.95	30	1000	Pass
Middle	19.28	84.72			Pass
High	19.13	81.85			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.34	68.23	30	1000	Pass
Middle	18.04	63.68			Pass
High	18.34	68.23			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.57	71.94	30	1000	Pass
Middle	18.22	66.37			Pass
High	18.11	64.71			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.99	62.95	30	1000	Pass
Middle	18.12	64.86			Pass
High	18.08	64.27			Pass

SISO-ANT1

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.05	80.35	30	1000	Pass
Middle	19.64	92.04			Pass
High	19.61	91.41			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.22	83.56	30	1000	Pass
Middle	19.32	85.51			Pass
High	18.82	76.21			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.09	81.10	30	1000	Pass
Middle	19.21	83.37			Pass
High	18.88	77.27			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.01	63.24	30	1000	Pass
Middle	17.92	61.94			Pass
High	18.08	64.27			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.52	71.12	30	1000	Pass
Middle	17.76	59.70			Pass
High	17.92	61.94			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.87	61.24	30	1000	Pass
Middle	17.73	59.29			Pass
High	17.65	58.21			Pass

MIMO-ANT0**802.11b Mode:**

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.88	38.73	30	1000	Pass
Middle	16.55	45.19			Pass
High	16.50	44.67			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.31	42.76	30	1000	Pass
Middle	16.40	43.65			Pass
High	15.97	39.54			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.15	41.21	30	1000	Pass
Middle	16.09	40.64			Pass
High	15.75	37.58			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.86	30.62	30	1000	Pass
Middle	14.77	29.99			Pass
High	15.17	32.89			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.13	32.58	30	1000	Pass
Middle	14.76	29.92			Pass
High	14.64	29.11			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.71	29.58	30	1000	Pass
Middle	15.06	32.06			Pass
High	14.79	30.13			Pass

MIMO-ANT1**802.11b Mode:**

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.56	35.97	30	1000	Pass
Middle	16.25	42.17			Pass
High	16.33	42.95			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.12	40.93	30	1000	Pass
Middle	16.02	39.99			Pass
High	15.77	37.76			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.82	38.19	30	1000	Pass
Middle	15.88	38.73			Pass
High	15.48	35.32			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.83	30.41	30	1000	Pass
Middle	14.56	28.58			Pass
High	14.81	30.27			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.36	34.36	30	1000	Pass
Middle	14.40	27.54			Pass
High	14.80	30.20			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.49	28.12	30	1000	Pass
Middle	14.62	28.97			Pass
High	14.34	27.16			Pass

MIMO**802.11b Mode:**

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.73	74.70	30	1000	Pass
Middle	19.41	87.36			Pass
High	19.43	87.62			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.23	83.68	30	1000	Pass
Middle	19.22	83.65			Pass
High	18.88	77.29			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.00	79.40	30	1000	Pass
Middle	19.00	79.40			Pass
High	18.63	72.90			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.86	61.03	30	1000	Pass
Middle	17.68	58.57			Pass
High	18.00	63.15			Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.26	66.94	30	1000	Pass
Middle	17.59	57.46			Pass
High	17.73	59.31			Pass

802.11ax-40 MHz(SU) Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.61	57.70	30	1000	Pass
Middle	17.86	61.04			Pass
High	17.58	57.29			Pass

A.2 Occupied Bandwidth

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

Test Data

SISO-ANT0

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	7.700000	11.722000	≥500
Middle	7.200000	11.902000	≥500
High	8.200000	11.981000	≥500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200000	17.820000	≥500
Middle	15.200000	17.900000	≥500
High	15.200000	17.842000	≥500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200000	18.874000	≥500
Middle	15.200000	19.001000	≥500
High	15.200000	18.868000	≥500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	34.000000	36.531000	≥500
Middle	35.200000	36.528000	≥500
High	35.200000	36.628000	≥500

802.11ax-20 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.200000	19.266000	≥500
Middle	15.200000	19.304000	≥500
High	15.200000	19.281000	≥500

802.11ax-40 MHz(SU) Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	34.000000	37.759000	≥ 500
Middle	34.000000	37.791000	≥ 500
High	34.000000	37.790000	≥ 500

Test Plots

SISO-ANT0

6 dB Bandwidth

802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



802.11b HIGH CHANNEL



802.11g LOW CHANNEL



802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL



802.11n-20 MHz LOW CHANNEL



802.11n-20 MHz MIDDLE CHANNEL



802.11n-20 MHz HIGH CHANNEL



802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



802.11ax-20 MHz(SU) LOW CHANNEL



802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL



802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



99% Bandwidth

802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



802.11b HIGH CHANNEL



802.11g LOW CHANNEL



802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL



802.11n-20 MHz LOW CHANNEL



802.11n-20 MHz MIDDLE CHANNEL



802.11n-20 MHz HIGH CHANNEL



802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



802.11ax-20 MHz(SU) LOW CHANNEL



802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL



802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



A.3 Conducted Spurious Emissions

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

Test Data

SISO-ANT0

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-38.90	13.02	-6.98	Pass
Middle	-37.16	14.04	-5.96	Pass
High	-36.50	14.49	-5.51	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.41	12.04	-7.96	Pass
Middle	-37.22	12.60	-7.40	Pass
High	-38.48	12.42	-7.58	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.07	12.41	-7.59	Pass
Middle	-36.47	12.60	-7.40	Pass
High	-37.51	12.49	-7.51	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.19	8.76	-11.24	Pass
Middle	-37.07	9.25	-10.75	Pass
High	-37.21	8.87	-11.13	Pass

802.11ax-20 MHz(SU) Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-37.43	10.54	-9.46	Pass
Middle	-37.40	9.94	-10.06	Pass
High	-37.45	10.49	-9.51	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	-36.76	7.31	-12.69	Pass
Middle	-37.02	7.48	-12.52	Pass
High	-36.69	7.48	-12.52	Pass

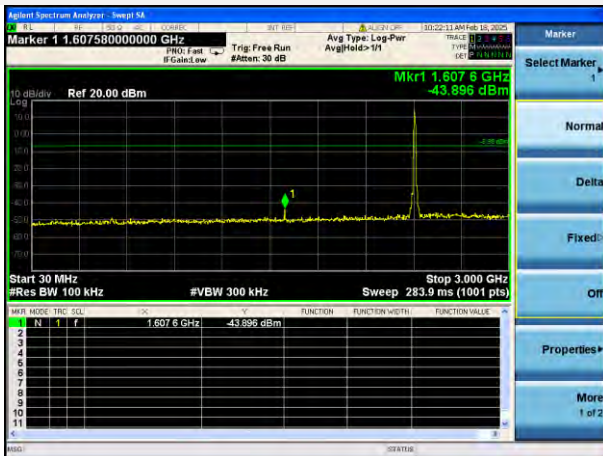
Test Plots

SISO-ANT0

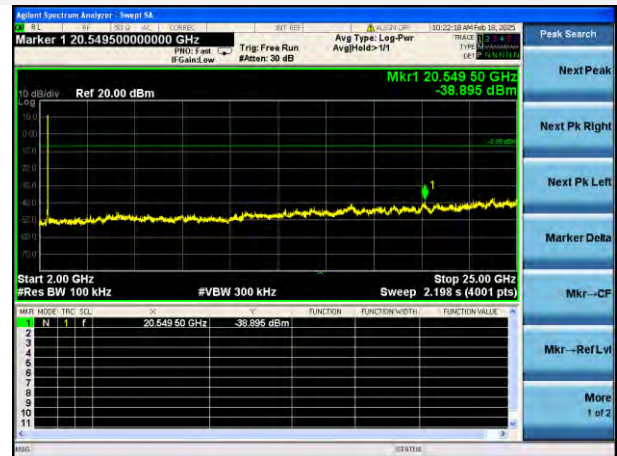
802.11b LOW CHANNEL CARRIER LEVEL



802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



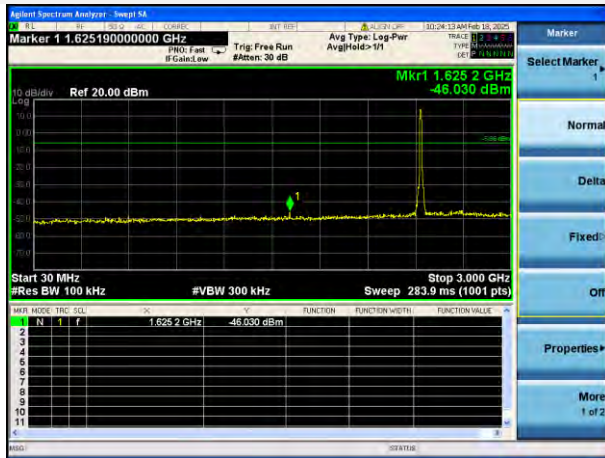
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



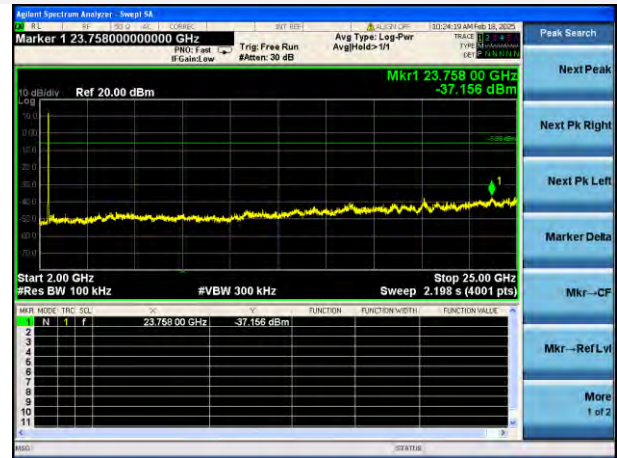
802.11b MIDDLE CHANNEL CARRIER LEVEL



802.11b MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



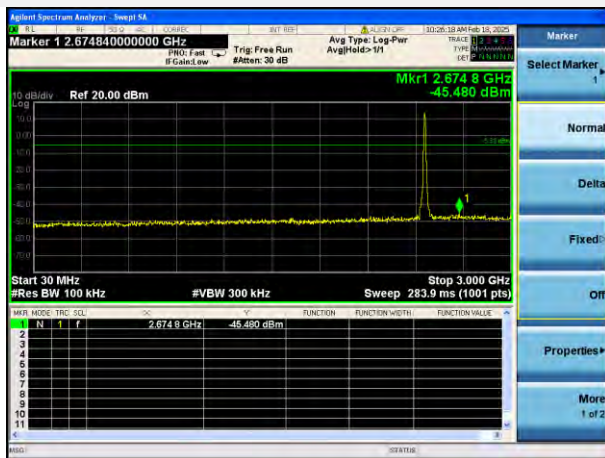
802.11b MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



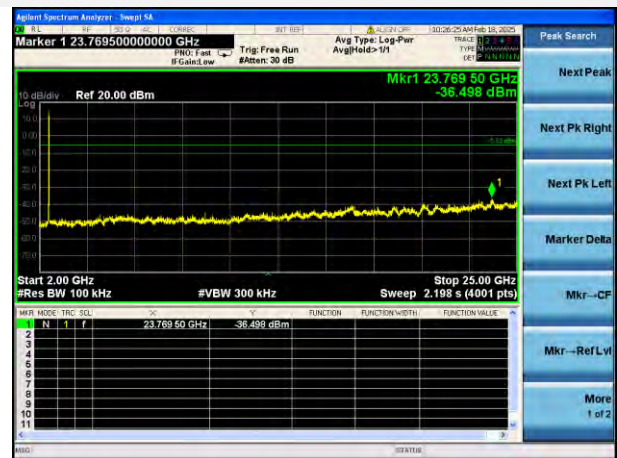
802.11b HIGH CHANNEL CARRIER LEVEL



802.11b HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11b HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



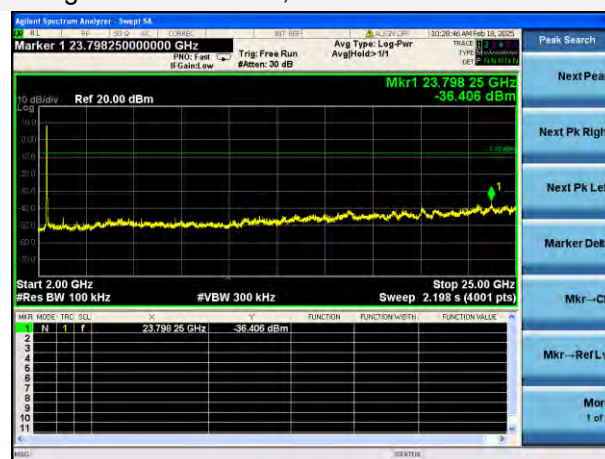
Agilent Spectrum Analyzer - Sweep 5A

Center Freq 2.412000000 GHz

Mkr1 2.413 25 GHz
12.038 dBm

Center 2.41200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30.00 MHz
Sweep 2.880 ms (601 pts)

MARK	MODE	TRC	SCN	PK	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	F		2.413 25 GHz	12.038 dBm	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

[illegible]

Agilent Spectrum Analyzer - Swept SA

Marker 1 2.438250000000 GHz

PRO: Fast IF Calcd Low Trig: Free Run #Mkr: 30 dB

Avg Type: Log-Pwr AvgHold>1/1

12/1/00 20:04:46.26 2005

TRACE 1 1.5 4.000000
TYPE: SSB
RES: 12.5/10.0

Ref 20.00 dBm

Mkr 2.438 25 GHz
12.596 dBm

Center 2.43700 GHz Span 30.00 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.880 ms (601 pts)

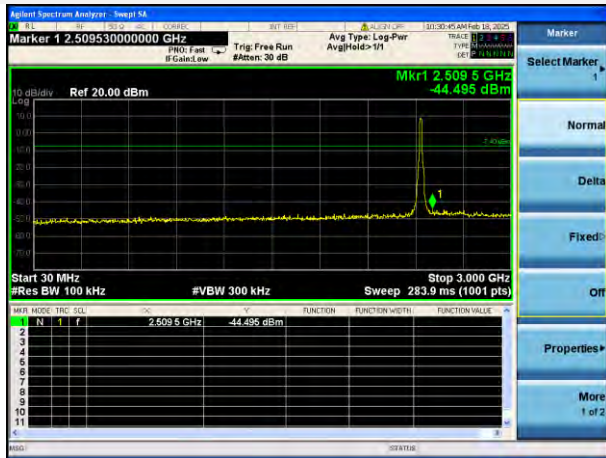
MNR	MODE	TRIG	SCN	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	1	2.438 25 GHz	12.596 dBm			
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Mkr - CF

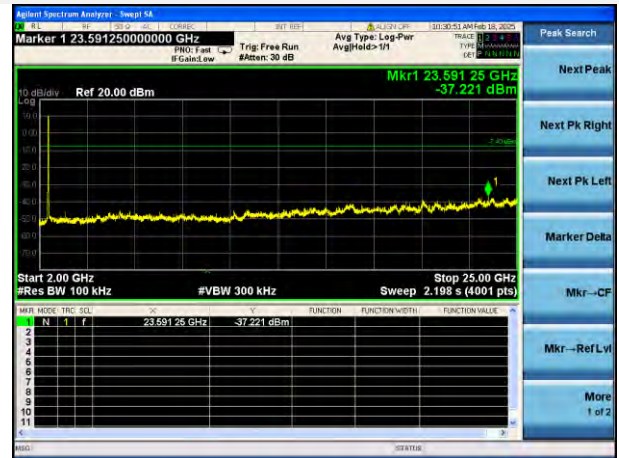
Mkr - Ref Lvl

More 1 of 2

802.11g MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



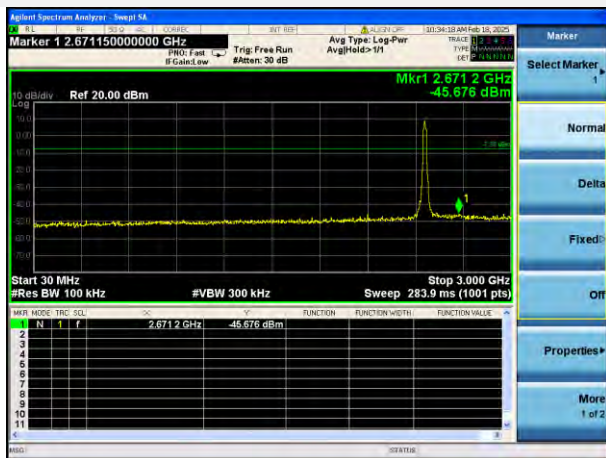
802.11g MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



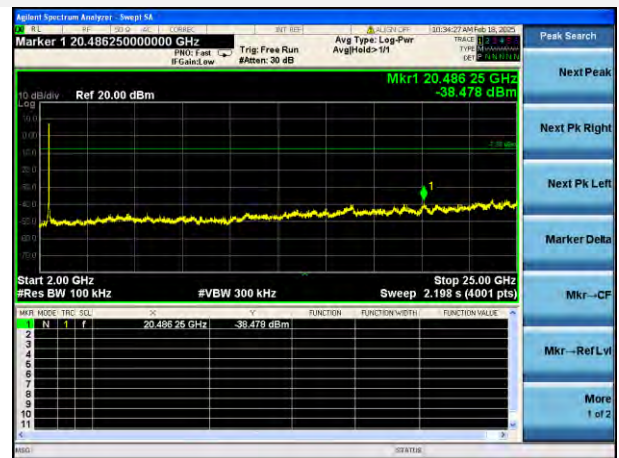
802.11g HIGH CHANNEL CARRIER LEVEL



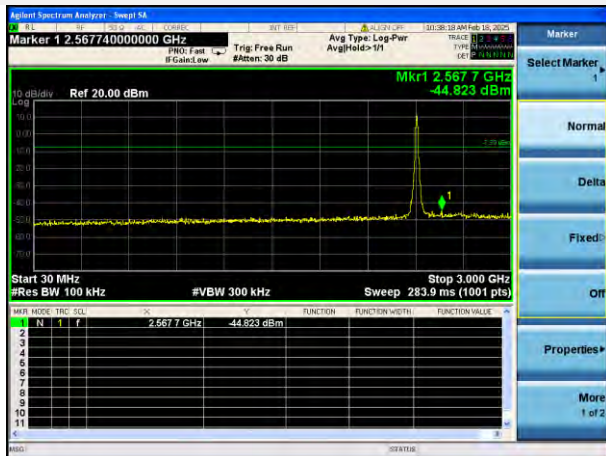
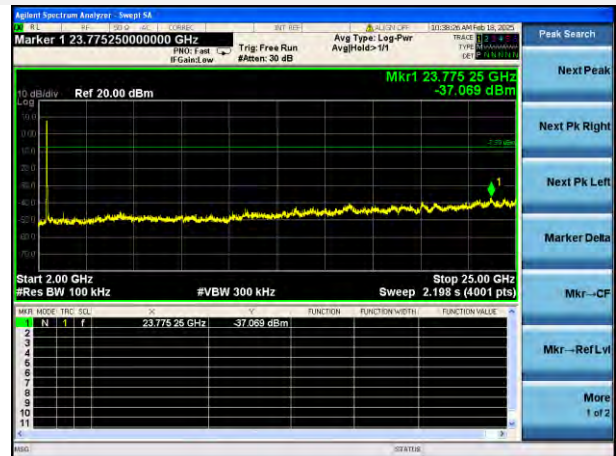
802.11g HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



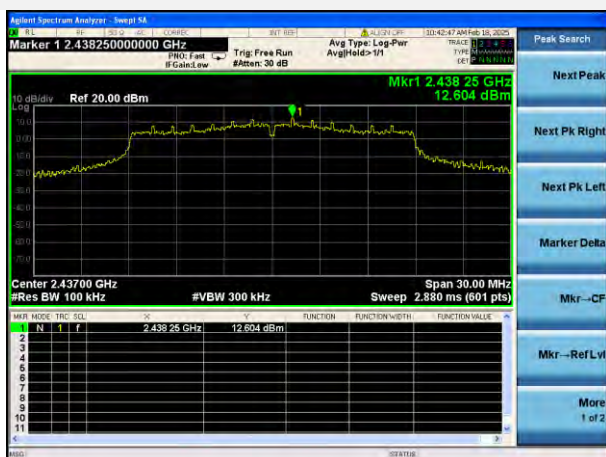
802.11g HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



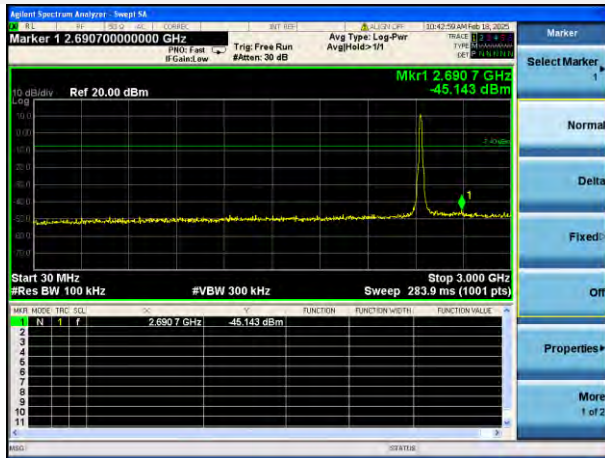
802.11n-20 MHz LOW CHANNEL CARRIER LEVEL

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

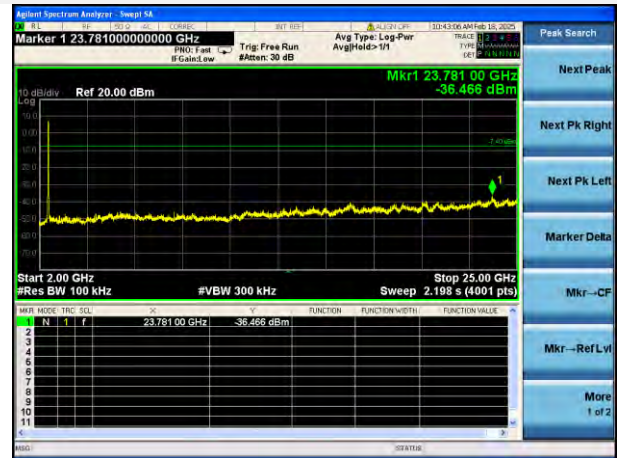
802.11n-20 MHz MIDDLE CHANNEL CARRIER LEVEL



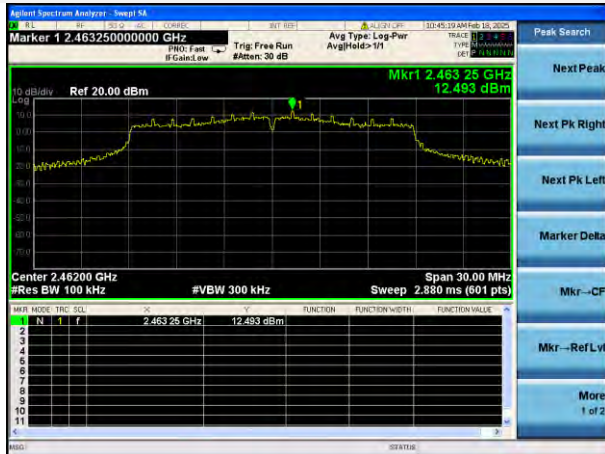
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



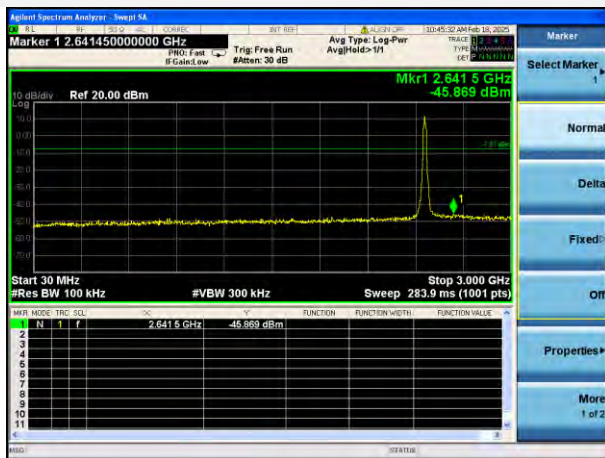
802.11n-20 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



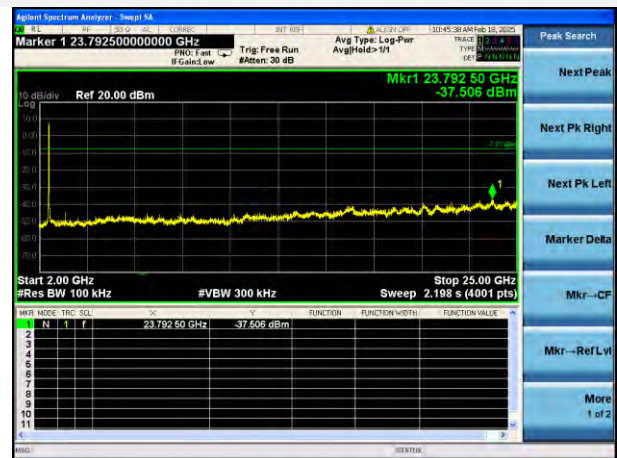
802.11n-20 MHz HIGH CHANNEL CARRIER LEVEL



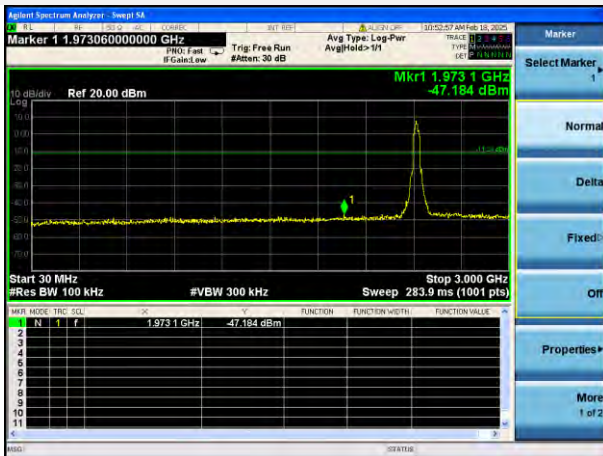
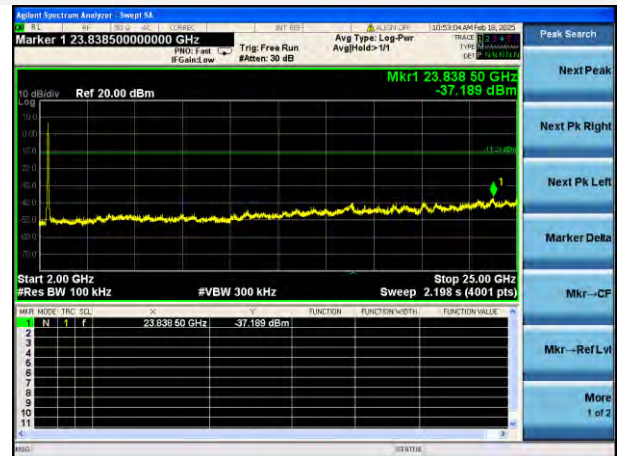
802.11n-20 MHz HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



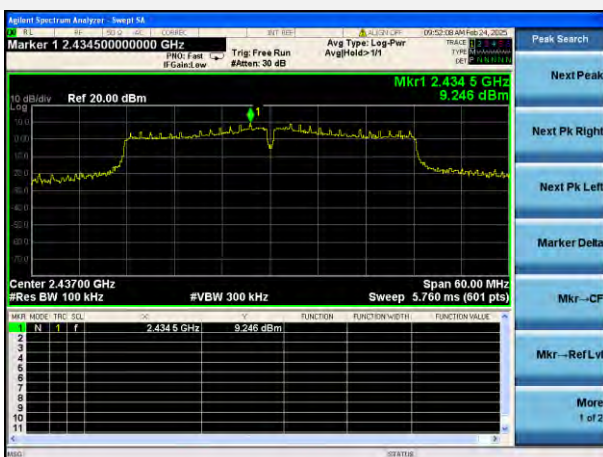
802.11n-20 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



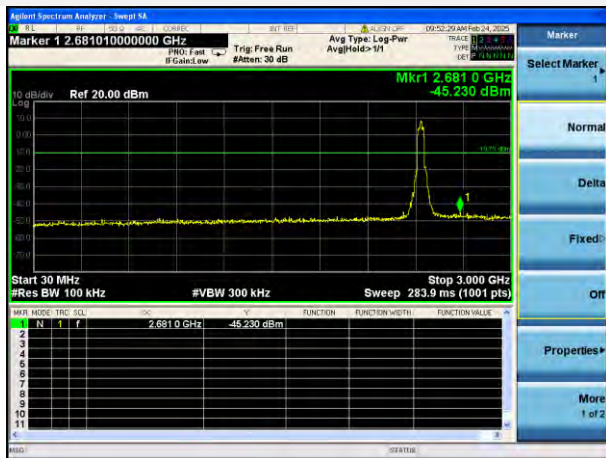
802.11n-40 MHz LOW CHANNEL CARRIER LEVEL

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

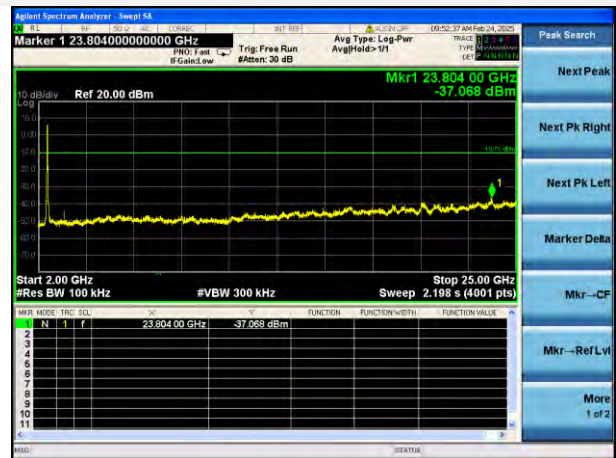
802.11n-40 MHz MIDDLE CHANNEL CARRIER LEVEL



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



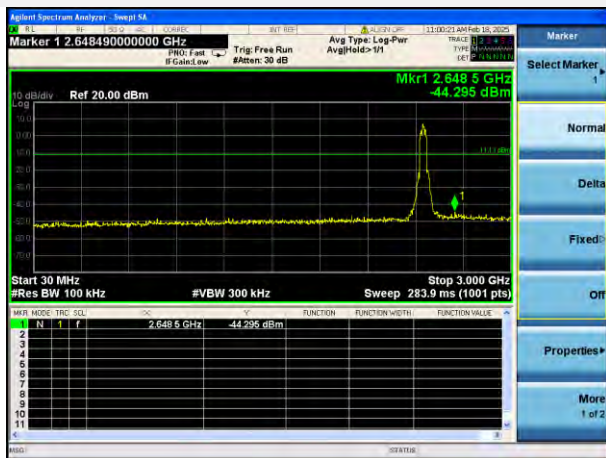
802.11n-40 MHz MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



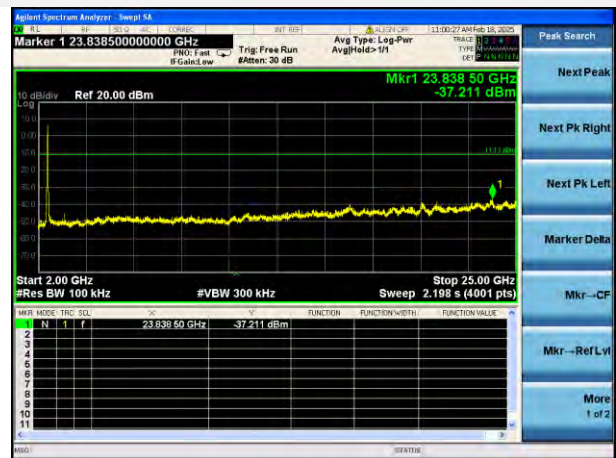
802.11n-40 MHz HIGH CHANNEL CARRIER LEVEL



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



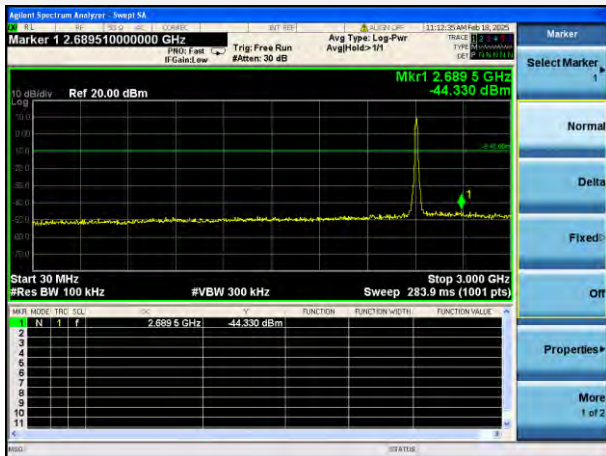
802.11n-40 MHz HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



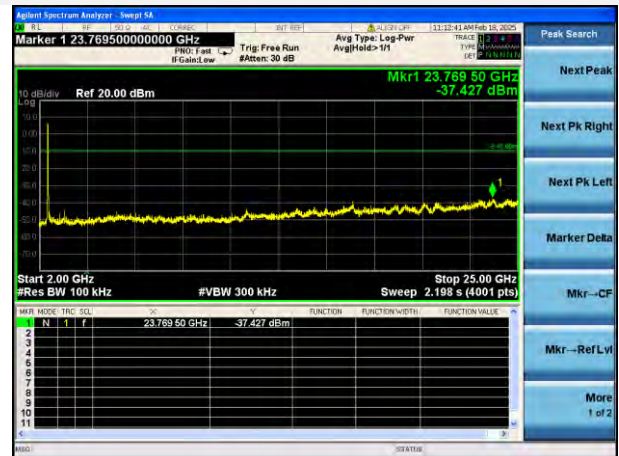
802.11ax-20 MHz(SU) LOW CHANNEL CARRIER LEVEL



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



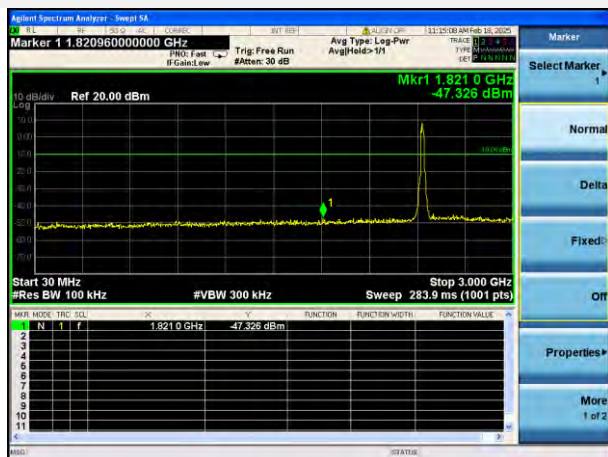
802.11ax-20 MHz(SU) LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



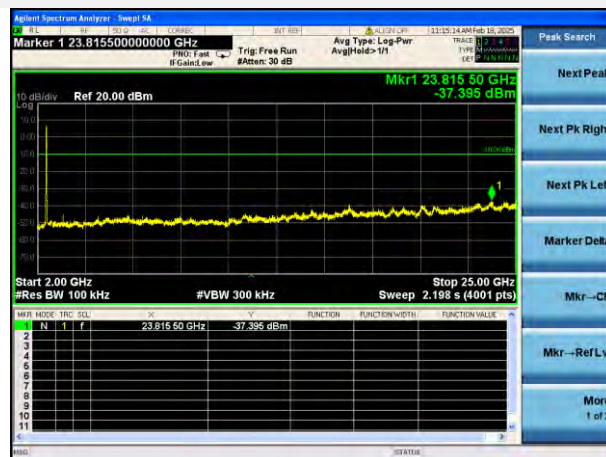
802.11ax-20 MHz(SU) MIDDLE CHANNEL CARRIER LEVEL



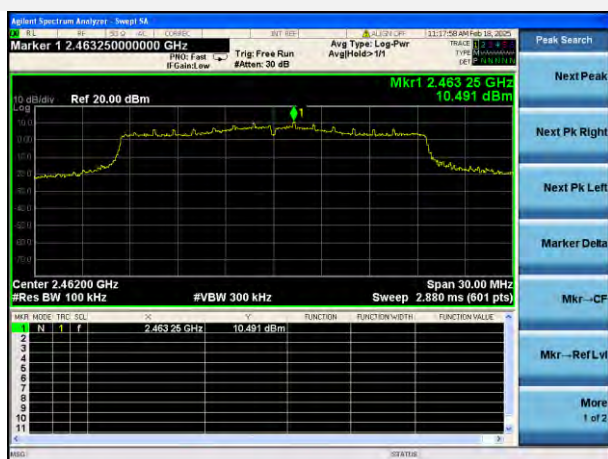
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



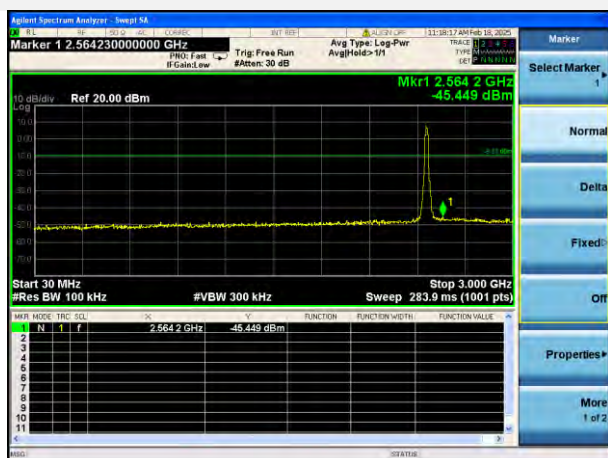
802.11ax-20 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



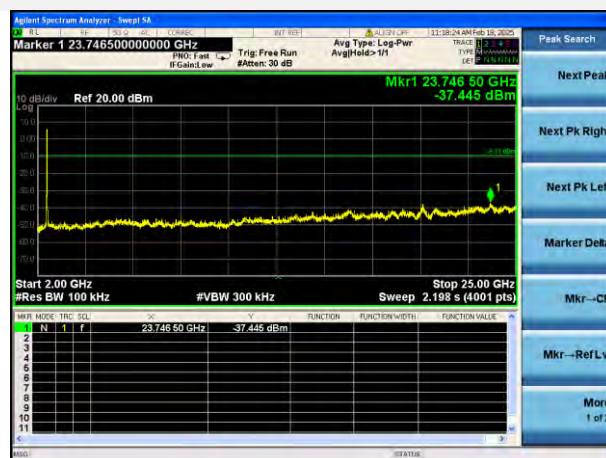
802.11ax-20 MHz(SU) HIGH CHANNEL CARRIER LEVEL



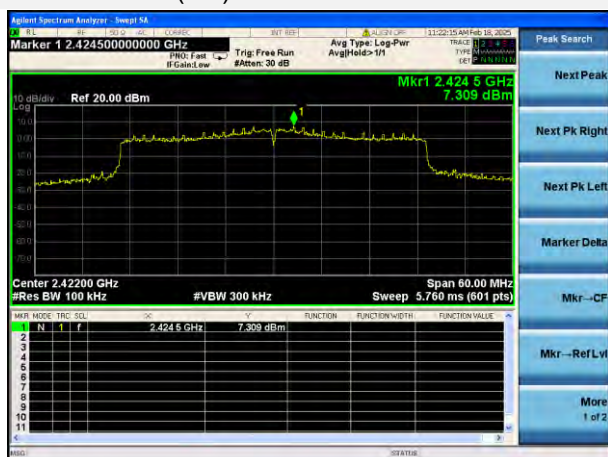
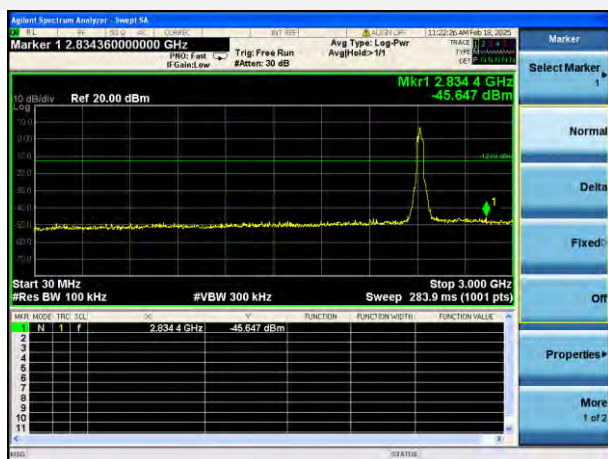
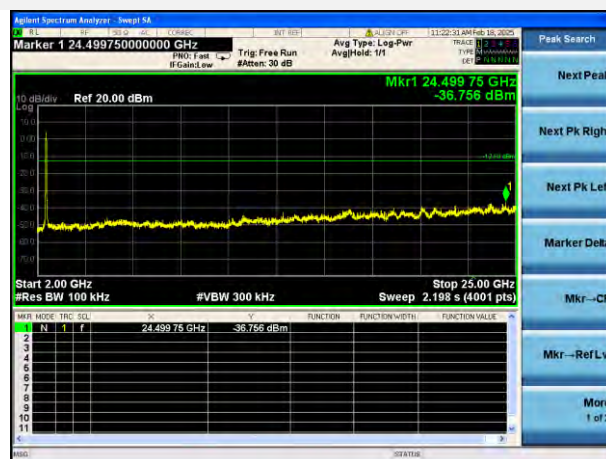
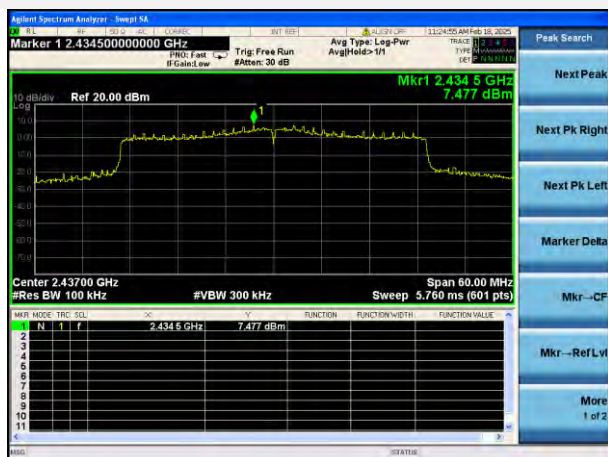
802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



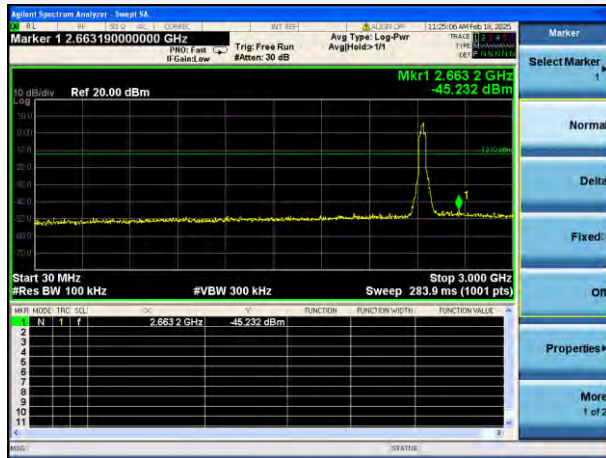
802.11ax-20 MHz(SU) HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



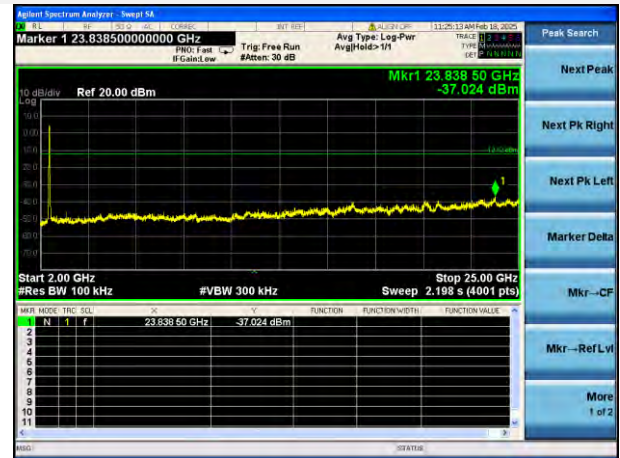
802.11ax-40 MHz(SU) LOW CHANNEL CARRIER LEVEL

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

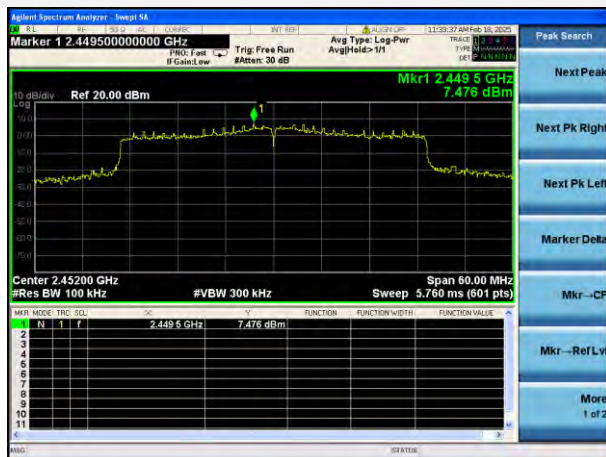
802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



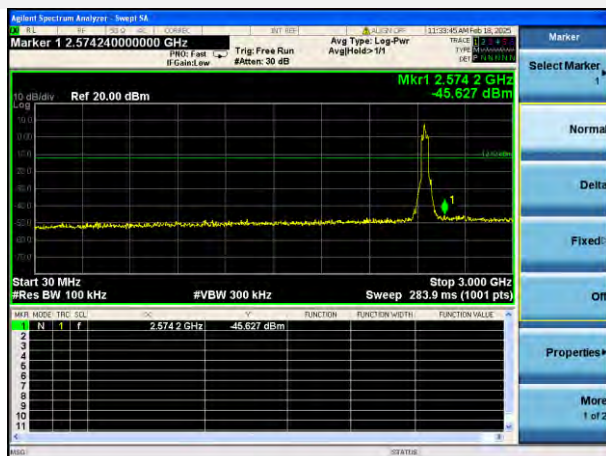
802.11ax-40 MHz(SU) MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



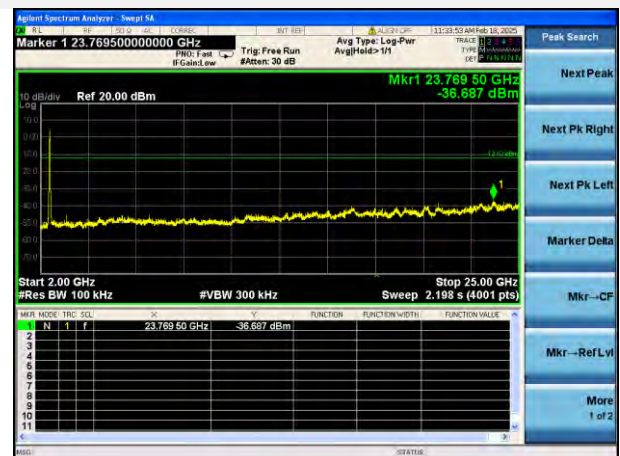
802.11ax-40 MHz(SU) HIGH CHANNEL CARRIER LEVEL



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



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



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

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

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

Test Data

SISO-ANT0

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-32.12	13.02	-6.98	Pass
High Channel	-40.41	14.49	-5.51	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-17.32	12.04	-7.96	Pass
High Channel	-28.59	12.42	-7.58	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-15.51	12.41	-7.59	Pass
High Channel	-25.28	12.49	-7.51	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-20.93	8.76	-11.24	Pass
High Channel	-20.64	8.87	-11.13	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	-20.18	10.54	-9.46	Pass
High Channel	-25.47	10.49	-9.51	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	-20.02	7.31	-12.69	Pass
High Channel	-22.51	7.48	-12.52	Pass

Test Plots

SISO-ANT0

802.11b LOW CHANNEL, CARRIER LEVEL



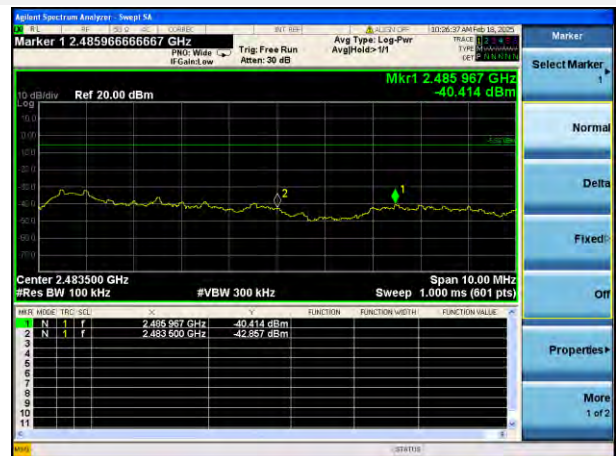
802.11b LOW CHANNEL, BAND EDGE



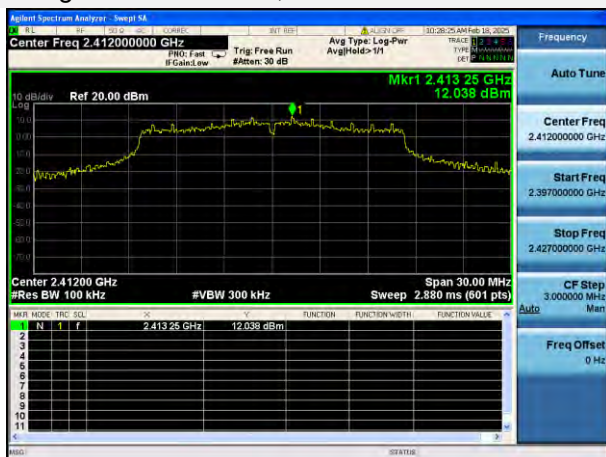
802.11b HIGH CHANNEL, CARRIER LEVEL



802.11b HIGH CHANNEL, BAND EDGE



802.11g LOW CHANNEL, CARRIER LEVEL



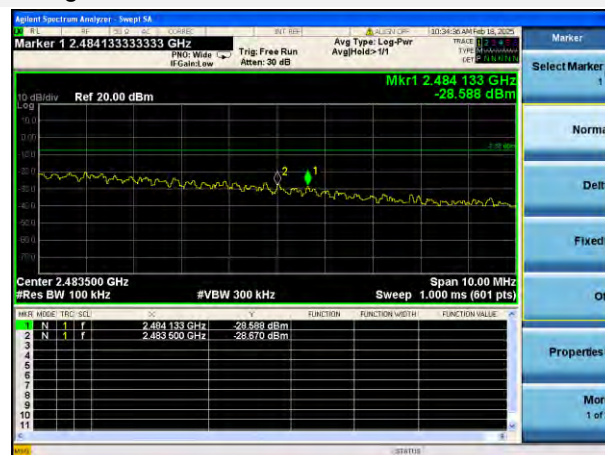
802.11g LOW CHANNEL, BAND EDGE



802.11g HIGH CHANNEL, CARRIER LEVEL



802.11g HIGH CHANNEL, BAND EDGE



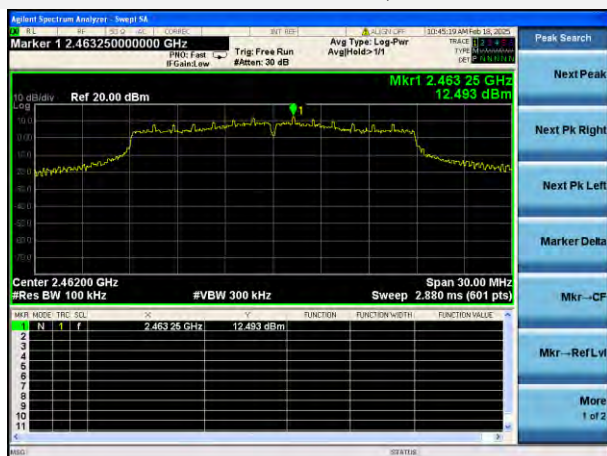
802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL



802.11n-20 MHz LOW CHANNEL, BAND EDGE



802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL



802.11n-20 MHz HIGH CHANNEL, BAND EDGE



802.11n-40 MHz LOW CHANNEL, CARRIER LEVEL



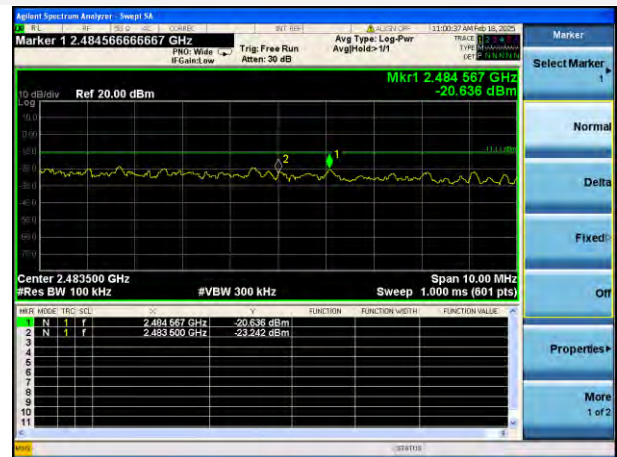
802.11n-40 MHz LOW CHANNEL, BAND EDGE



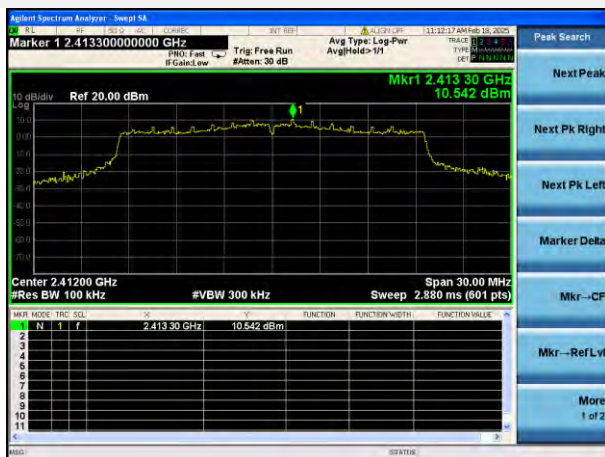
802.11n-40 MHz HIGH CHANNEL, CARRIER LEVEL



802.11n-40 MHz HIGH CHANNEL, BAND EDGE



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



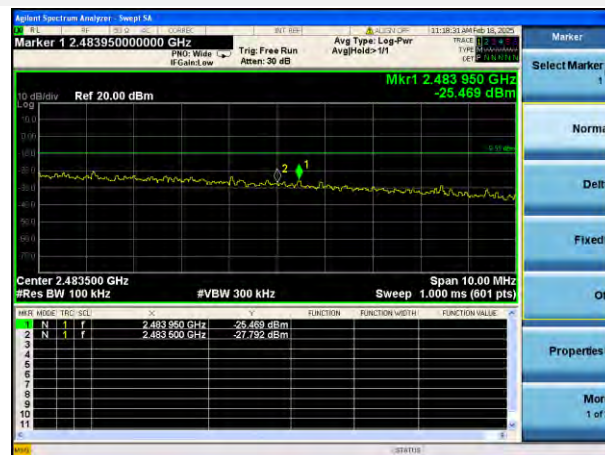
802.11ax-20 MHz(SU) LOW CHANNEL, BAND EDGE



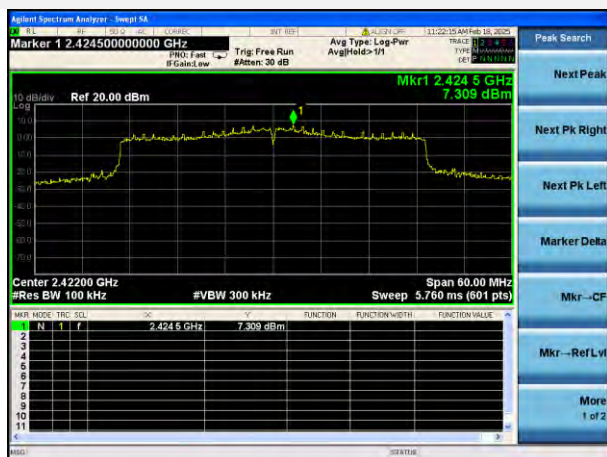
802.11ax-20 MHz(SU) HIGH CHANNEL, CARRIER LEVEL



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



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



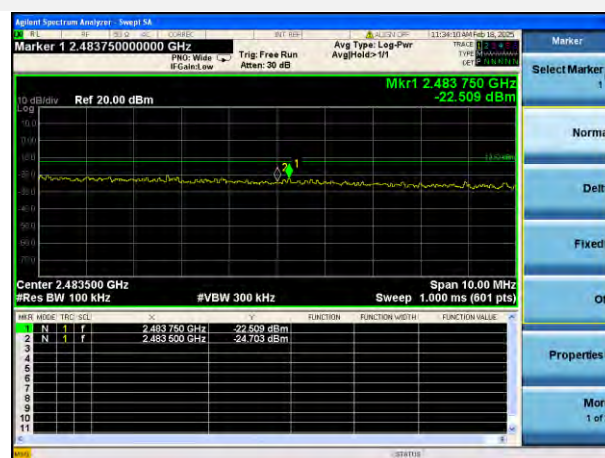
802.11ax-40 MHz(SU) LOW CHANNEL, BAND EDGE



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



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



A.5 Conducted Emissions

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

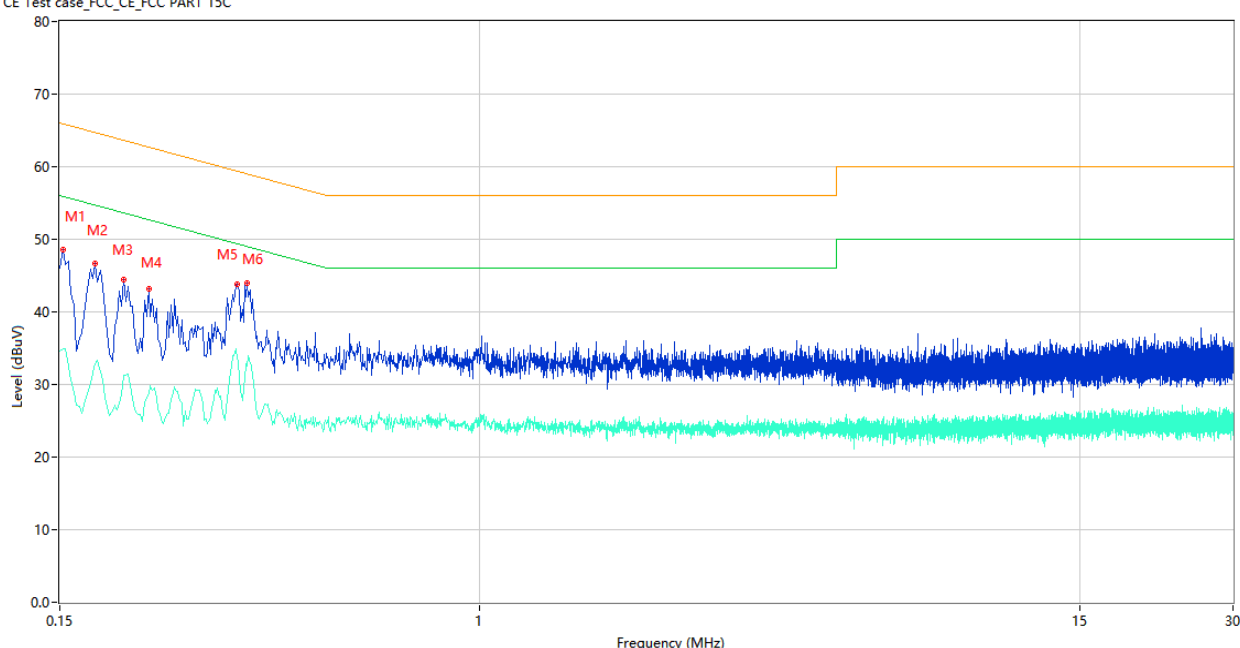
Note²: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration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

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

Test Data and Plots

PHASE L

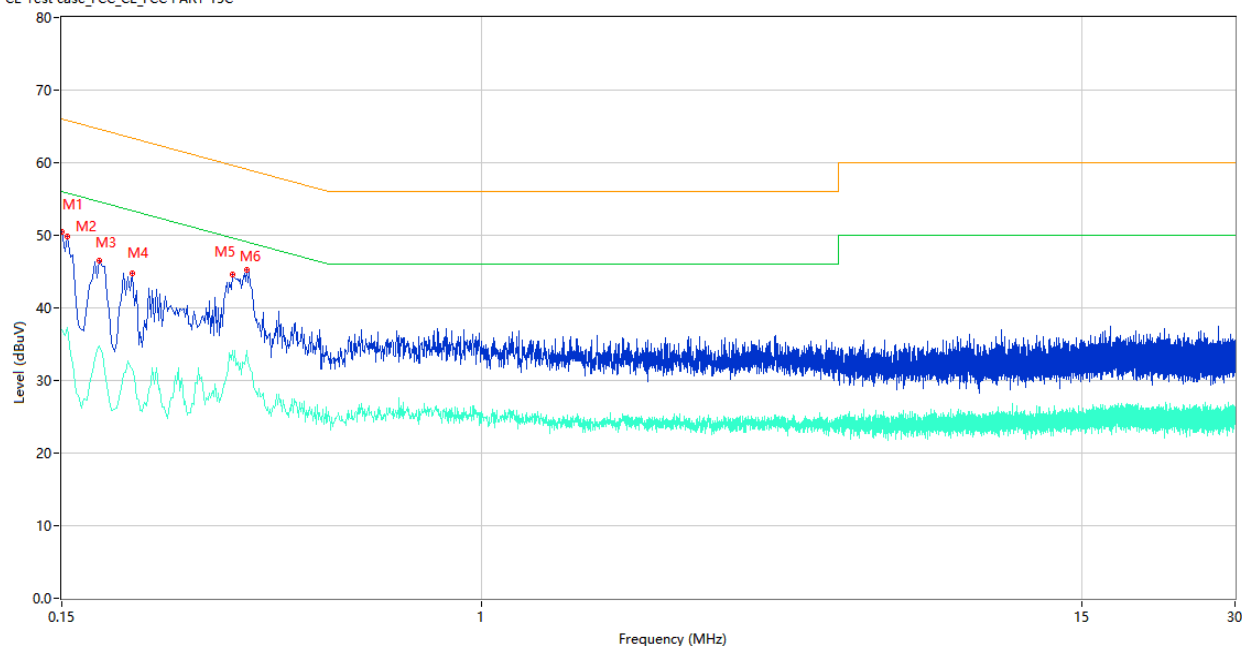
CE Test case_FCC_CE_FCC PART 15C



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	48.62	9.78	65.89	17.27	Peak	L	Pass
1**	0.152	34.97	9.78	55.89	20.92	AV	L	Pass
2	0.176	46.65	9.78	64.67	18.02	Peak	L	Pass
2**	0.176	32.86	9.78	54.67	21.81	AV	L	Pass
3	0.200	44.41	9.77	63.61	19.20	Peak	L	Pass
3**	0.200	31.21	9.77	53.61	22.40	AV	L	Pass
4	0.224	43.17	9.77	62.67	19.50	Peak	L	Pass
4**	0.224	28.77	9.77	52.67	23.90	AV	L	Pass
5	0.334	43.85	10.44	59.35	15.50	Peak	L	Pass
5**	0.334	33.57	10.44	49.35	15.78	AV	L	Pass
6	0.350	43.98	10.76	58.96	14.98	Peak	L	Pass
6**	0.350	32.51	10.76	48.96	16.45	AV	L	Pass

PHASE N

CE Test case_FCC_CE_FCC PART 15C



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	50.41	9.78	66.00	15.59	Peak	N	Pass
1**	0.150	37.06	9.78	56.00	18.94	AV	N	Pass
2	0.154	49.84	9.78	65.78	15.94	Peak	N	Pass
2**	0.154	37.34	9.78	55.78	18.44	AV	N	Pass
3	0.178	46.43	9.78	64.58	18.15	Peak	N	Pass
3**	0.178	34.72	9.78	54.58	19.86	AV	N	Pass
4	0.206	44.77	9.77	63.37	18.60	Peak	N	Pass
4**	0.206	31.59	9.77	53.37	21.78	AV	N	Pass
5	0.324	44.56	10.24	59.60	15.04	Peak	N	Pass
5**	0.324	34.20	10.24	49.60	15.40	AV	N	Pass
6	0.346	45.28	10.68	59.06	13.78	Peak	N	Pass
6**	0.346	34.11	10.68	49.06	14.95	AV	N	Pass

A.6 Radiated Emission

Note¹: The symbol of “--” in the table which means not application.

Note²: 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.

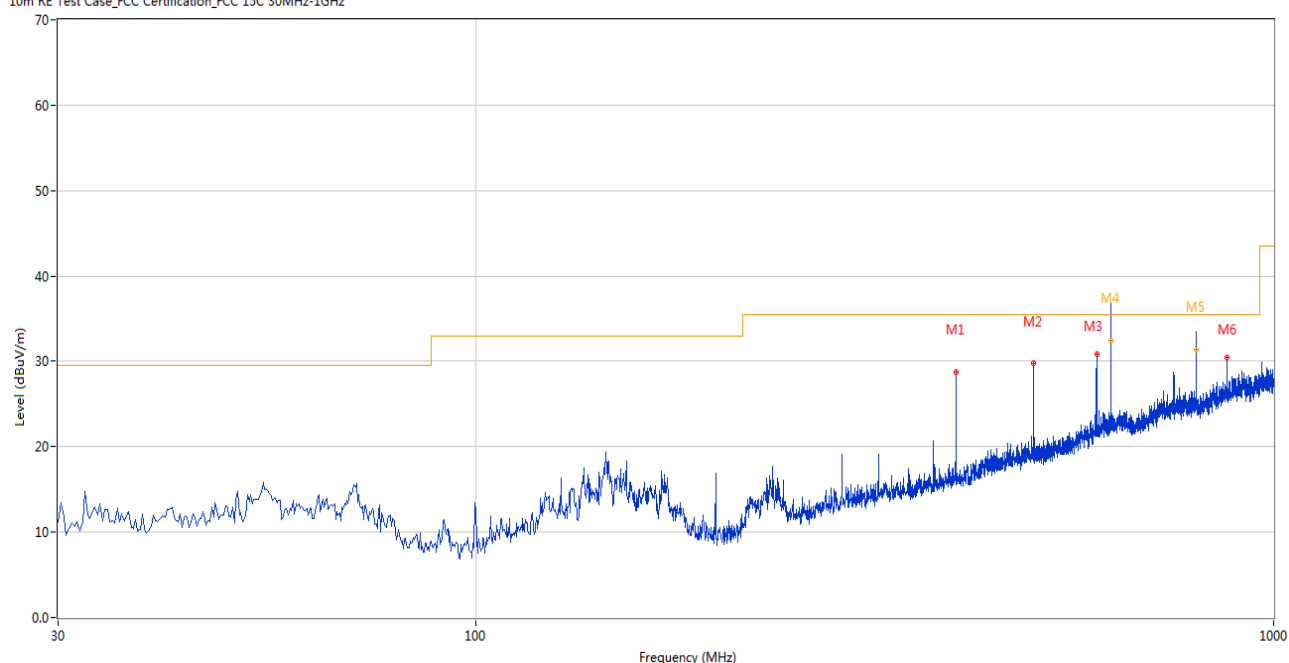
Note³: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note⁴: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

Test Data and Plots

30 MHz to 1 GHz, ANT H

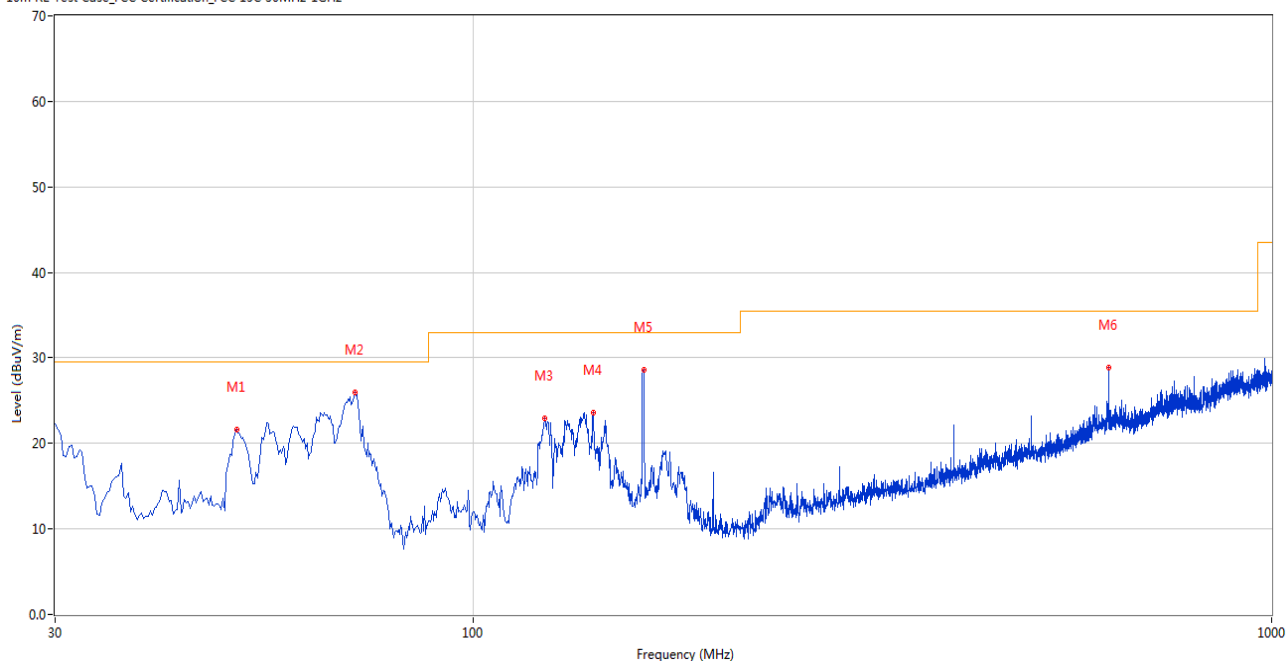
10m RE Test Case_FCC Certification_FCC 15C 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	399.963	28.76	-22.39	35.5	6.74	Peak	297.00	100	Horizontal	Pass
2	499.848	29.73	-19.33	35.5	5.77	Peak	302.00	200	Horizontal	Pass
3	599.975	30.78	-16.60	35.5	4.72	Peak	226.00	100	Horizontal	Pass
4	624.996	36.13	-15.73	35.5	-0.63	Peak	248.00	149	Horizontal	N/A
4*	624.996	32.42	-15.73	35.5	3.08	QP	248.00	149	Horizontal	Pass
5	800.004	32.92	-13.03	35.5	2.58	Peak	156.00	104	Horizontal	N/A
5*	800.004	31.41	-13.03	35.5	4.09	QP	156.00	104	Horizontal	Pass
6	874.901	30.44	-11.18	35.5	5.06	Peak	243.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.607	21.63	-25.98	29.5	7.87	Peak	358.00	200	Vertical	Pass
2	71.215	25.96	-28.44	29.5	3.54	Peak	307.00	200	Vertical	Pass
3	123.097	22.91	-27.88	33.0	10.09	Peak	253.00	100	Vertical	Pass
4	141.522	23.59	-26.04	33.0	9.41	Peak	302.00	100	Vertical	Pass
5	163.584	28.63	-25.71	33.0	4.37	Peak	7.00	200	Vertical	Pass
6	624.946	28.92	-15.73	35.5	6.58	Peak	253.00	200	Vertical	Pass

Note¹: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note²: The spurious above 18G is noise only, do not show on the report.

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

SISO-ANT0

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	1329.540	42.92	74.0	31.08	Peak	266.00	300	Horizontal	Pass
1**	1329.540	33.83	54.0	20.17	AV	266.00	300	Horizontal	Pass
2	2993.642	49.90	74.0	24.10	Peak	283.00	300	Horizontal	Pass
2**	2993.642	42.54	54.0	11.46	AV	283.00	300	Horizontal	Pass
3	4933.833	49.22	74.0	24.78	Peak	87.00	200	Horizontal	Pass
3**	4933.833	43.03	54.0	10.97	AV	87.00	200	Horizontal	Pass
4	6810.503	56.86	74.0	17.14	Peak	299.00	400	Horizontal	Pass
4**	6810.503	41.85	54.0	12.15	AV	299.00	400	Horizontal	Pass
5	13409.201	56.13	74.0	17.87	Peak	142.00	300	Horizontal	Pass
5**	13409.201	44.02	54.0	9.98	AV	142.00	300	Horizontal	Pass
6	17428.518	57.12	74.0	16.88	Peak	324.00	400	Horizontal	Pass
6**	17428.518	46.20	54.0	7.80	AV	324.00	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	1336.730	44.88	74.0	29.12	Peak	98.00	100	Vertical	Pass
1**	1336.730	37.36	54.0	16.64	AV	98.00	100	Vertical	Pass
2	2983.839	48.47	74.0	25.53	Peak	309.00	300	Vertical	Pass
2**	2983.839	43.08	54.0	10.92	AV	309.00	300	Vertical	Pass
3	4852.117	49.62	74.0	24.38	Peak	308.00	200	Vertical	Pass
3**	4852.117	42.17	54.0	11.83	AV	308.00	200	Vertical	Pass
4	6610.606	52.50	74.0	21.50	Peak	60.00	100	Vertical	Pass
4**	6610.606	46.65	54.0	7.35	AV	60.00	100	Vertical	Pass
5	13432.371	53.52	74.0	20.48	Peak	128.00	200	Vertical	Pass
5**	13432.371	46.09	54.0	7.91	AV	128.00	200	Vertical	Pass
6	17417.910	57.80	74.0	16.20	Peak	345.00	400	Vertical	Pass
6**	17417.910	44.74	54.0	9.26	AV	345.00	400	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	1330.525	45.48	74.0	28.52	Peak	270.00	300	Horizontal	Pass
1**	1330.525	35.48	54.0	18.52	AV	270.00	300	Horizontal	Pass
2	3000.008	52.36	74.0	21.64	Peak	191.00	100	Horizontal	Pass
2**	3000.008	40.72	54.0	13.28	AV	191.00	100	Horizontal	Pass
3	4934.010	52.24	74.0	21.76	Peak	310.00	200	Horizontal	Pass
3**	4934.010	44.11	54.0	9.89	AV	310.00	200	Horizontal	Pass
4	6804.723	54.19	74.0	19.81	Peak	67.00	100	Horizontal	Pass
4**	6804.723	47.60	54.0	6.40	AV	67.00	100	Horizontal	Pass
5	13414.457	53.21	74.0	20.79	Peak	201.00	100	Horizontal	Pass
5**	13414.457	45.05	54.0	8.95	AV	201.00	100	Horizontal	Pass
6	17425.535	53.47	74.0	20.53	Peak	238.00	200	Horizontal	Pass
6**	17425.535	49.86	54.0	4.14	AV	238.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1336.420	46.11	74.0	27.89	Peak	177.00	200	Vertical	Pass
1**	1336.420	36.82	54.0	17.18	AV	177.00	200	Vertical	Pass
2	2981.288	48.08	74.0	25.92	Peak	62.00	200	Vertical	Pass
2**	2981.288	44.19	54.0	9.81	AV	62.00	200	Vertical	Pass
3	4854.581	51.20	74.0	22.80	Peak	132.00	200	Vertical	Pass
3**	4854.581	40.39	54.0	13.61	AV	132.00	200	Vertical	Pass
4	6603.564	56.13	74.0	17.87	Peak	318.00	300	Vertical	Pass
4**	6603.564	43.05	54.0	10.95	AV	318.00	300	Vertical	Pass
5	13436.424	54.31	74.0	19.69	Peak	233.00	400	Vertical	Pass
5**	13436.424	49.39	54.0	4.61	AV	233.00	400	Vertical	Pass
6	17416.278	56.78	74.0	17.22	Peak	333.00	400	Vertical	Pass
6**	17416.278	47.46	54.0	6.54	AV	333.00	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	1329.451	44.47	74.0	29.53	Peak	269.00	400	Horizontal	Pass
1**	1329.451	39.09	54.0	14.91	AV	269.00	400	Horizontal	Pass
2	2998.670	51.39	74.0	22.61	Peak	157.00	300	Horizontal	Pass
2**	2998.670	43.87	54.0	10.13	AV	157.00	300	Horizontal	Pass
3	4937.547	49.39	74.0	24.61	Peak	165.00	200	Horizontal	Pass
3**	4937.547	41.81	54.0	12.19	AV	165.00	200	Horizontal	Pass
4	6804.840	54.81	74.0	19.19	Peak	189.00	100	Horizontal	Pass
4**	6804.840	42.24	54.0	11.76	AV	189.00	100	Horizontal	Pass
5	13408.650	57.66	74.0	16.34	Peak	258.00	200	Horizontal	Pass
5**	13408.650	47.53	54.0	6.47	AV	258.00	200	Horizontal	Pass
6	17425.795	58.44	74.0	15.56	Peak	23.00	400	Horizontal	Pass
6**	17425.795	49.77	54.0	4.23	AV	23.00	400	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	1330.963	45.94	74.0	28.06	Peak	255.00	200	Vertical	Pass
1**	1330.963	35.59	54.0	18.41	AV	255.00	200	Vertical	Pass
2	2983.652	48.13	74.0	25.87	Peak	86.00	300	Vertical	Pass
2**	2983.652	39.59	54.0	14.41	AV	86.00	300	Vertical	Pass
3	4852.364	47.94	74.0	26.06	Peak	282.00	200	Vertical	Pass
3**	4852.364	42.07	54.0	11.93	AV	282.00	200	Vertical	Pass
4	6610.648	54.58	74.0	19.42	Peak	198.00	200	Vertical	Pass
4**	6610.648	44.74	54.0	9.26	AV	198.00	200	Vertical	Pass
5	13431.830	56.14	74.0	17.86	Peak	36.00	400	Vertical	Pass
5**	13431.830	45.29	54.0	8.71	AV	36.00	400	Vertical	Pass
6	17418.623	57.42	74.0	16.58	Peak	347.00	200	Vertical	Pass
6**	17418.623	46.89	54.0	7.11	AV	347.00	200	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	1327.082	43.02	74.0	30.98	Peak	45.00	300	Horizontal	Pass
1**	1327.082	37.46	54.0	16.54	AV	45.00	300	Horizontal	Pass
2	2994.880	47.74	74.0	26.26	Peak	302.00	400	Horizontal	Pass
2**	2994.880	43.77	54.0	10.23	AV	302.00	400	Horizontal	Pass
3	4934.465	51.53	74.0	22.47	Peak	212.00	200	Horizontal	Pass
3**	4934.465	39.87	54.0	14.13	AV	212.00	200	Horizontal	Pass
4	6803.122	56.49	74.0	17.51	Peak	133.00	400	Horizontal	Pass
4**	6803.122	46.20	54.0	7.80	AV	133.00	400	Horizontal	Pass
5	13407.900	58.35	74.0	15.65	Peak	188.00	300	Horizontal	Pass
5**	13407.900	47.41	54.0	6.59	AV	188.00	300	Horizontal	Pass
6	17428.109	53.18	74.0	20.82	Peak	206.00	300	Horizontal	Pass
6**	17428.109	50.21	54.0	3.79	AV	206.00	300	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	1330.368	44.99	74.0	29.01	Peak	124.00	400	Vertical	Pass
1**	1330.368	35.48	54.0	18.52	AV	124.00	400	Vertical	Pass
2	2983.858	49.44	74.0	24.56	Peak	201.00	200	Vertical	Pass
2**	2983.858	39.64	54.0	14.36	AV	201.00	200	Vertical	Pass
3	4852.217	50.28	74.0	23.72	Peak	206.00	200	Vertical	Pass
3**	4852.217	43.25	54.0	10.75	AV	206.00	200	Vertical	Pass
4	6607.791	53.96	74.0	20.04	Peak	179.00	200	Vertical	Pass
4**	6607.791	42.92	54.0	11.08	AV	179.00	200	Vertical	Pass
5	13436.225	55.90	74.0	18.10	Peak	201.00	100	Vertical	Pass
5**	13436.225	47.91	54.0	6.09	AV	201.00	100	Vertical	Pass
6	17414.687	58.19	74.0	15.81	Peak	280.00	300	Vertical	Pass
6**	17414.687	49.34	54.0	4.66	AV	280.00	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	1332.130	42.43	74.0	31.57	Peak	68.00	100	Horizontal	Pass
1**	1332.130	35.22	54.0	18.78	AV	68.00	100	Horizontal	Pass
2	2998.500	49.96	74.0	24.04	Peak	248.00	100	Horizontal	Pass
2**	2998.500	39.84	54.0	14.16	AV	248.00	100	Horizontal	Pass
3	4936.151	50.35	74.0	23.65	Peak	21.00	200	Horizontal	Pass
3**	4936.151	42.79	54.0	11.21	AV	21.00	200	Horizontal	Pass
4	6807.957	53.01	74.0	20.99	Peak	51.00	200	Horizontal	Pass
4**	6807.957	45.98	54.0	8.02	AV	51.00	200	Horizontal	Pass
5	13413.975	56.50	74.0	17.50	Peak	91.00	200	Horizontal	Pass
5**	13413.975	44.67	54.0	9.33	AV	91.00	200	Horizontal	Pass
6	17424.147	58.49	74.0	15.51	Peak	54.00	100	Horizontal	Pass
6**	17424.147	47.08	54.0	6.92	AV	54.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1336.506	42.56	74.0	31.44	Peak	141.00	300	Vertical	Pass
1**	1336.506	36.47	54.0	17.53	AV	141.00	300	Vertical	Pass
2	2982.568	49.07	74.0	24.93	Peak	64.00	300	Vertical	Pass
2**	2982.568	43.84	54.0	10.16	AV	64.00	300	Vertical	Pass
3	4857.012	51.43	74.0	22.57	Peak	197.00	200	Vertical	Pass
3**	4857.012	40.22	54.0	13.78	AV	197.00	200	Vertical	Pass
4	6606.044	51.27	74.0	22.73	Peak	62.00	100	Vertical	Pass
4**	6606.044	43.76	54.0	10.24	AV	62.00	100	Vertical	Pass
5	13437.001	54.84	74.0	19.16	Peak	32.00	400	Vertical	Pass
5**	13437.001	46.11	54.0	7.89	AV	32.00	400	Vertical	Pass
6	17416.764	55.50	74.0	18.50	Peak	21.00	400	Vertical	Pass
6**	17416.764	48.78	54.0	5.22	AV	21.00	400	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	1328.137	46.18	74.0	27.82	Peak	75.00	200	Horizontal	Pass
1**	1328.137	34.95	54.0	19.05	AV	75.00	200	Horizontal	Pass
2	2998.315	49.94	74.0	24.06	Peak	64.00	200	Horizontal	Pass
2**	2998.315	42.11	54.0	11.89	AV	64.00	200	Horizontal	Pass
3	4933.305	54.63	74.0	19.37	Peak	33.00	200	Horizontal	Pass
3**	4933.305	40.96	54.0	13.04	AV	33.00	200	Horizontal	Pass
4	6805.207	56.24	74.0	17.76	Peak	202.00	400	Horizontal	Pass
4**	6805.207	43.22	54.0	10.78	AV	202.00	400	Horizontal	Pass
5	13407.649	58.49	74.0	15.51	Peak	16.00	300	Horizontal	Pass
5**	13407.649	44.87	54.0	9.13	AV	16.00	300	Horizontal	Pass
6	17424.062	53.28	74.0	20.72	Peak	281.00	400	Horizontal	Pass
6**	17424.062	50.41	54.0	3.59	AV	281.00	400	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	1332.342	45.61	74.0	28.39	Peak	251.00	400	Vertical	Pass
1**	1332.342	40.17	54.0	13.83	AV	251.00	400	Vertical	Pass
2	2983.397	50.43	74.0	23.57	Peak	316.00	400	Vertical	Pass
2**	2983.397	43.31	54.0	10.69	AV	316.00	400	Vertical	Pass
3	4856.460	48.21	74.0	25.79	Peak	72.00	200	Vertical	Pass
3**	4856.460	37.65	54.0	16.35	AV	72.00	200	Vertical	Pass
4	6606.869	55.18	74.0	18.82	Peak	26.00	300	Vertical	Pass
4**	6606.869	45.55	54.0	8.45	AV	26.00	300	Vertical	Pass
5	13438.392	53.37	74.0	20.63	Peak	79.00	200	Vertical	Pass
5**	13438.392	46.47	54.0	7.53	AV	79.00	200	Vertical	Pass
6	17416.874	56.06	74.0	17.94	Peak	258.00	400	Vertical	Pass
6**	17416.874	46.79	54.0	7.21	AV	258.00	400	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.491	41.69	74.0	32.31	Peak	330.00	300	Horizontal	Pass
1**	1331.491	38.51	54.0	15.49	AV	330.00	300	Horizontal	Pass
2	2997.905	49.33	74.0	24.67	Peak	220.00	200	Horizontal	Pass
2**	2997.905	43.20	54.0	10.80	AV	220.00	200	Horizontal	Pass
3	4935.180	53.44	74.0	20.56	Peak	306.00	200	Horizontal	Pass
3**	4935.180	39.50	54.0	14.50	AV	306.00	200	Horizontal	Pass
4	6805.661	56.16	74.0	17.84	Peak	314.00	100	Horizontal	Pass
4**	6805.661	46.39	54.0	7.61	AV	314.00	100	Horizontal	Pass
5	13408.177	54.82	74.0	19.18	Peak	135.00	400	Horizontal	Pass
5**	13408.177	48.83	54.0	5.17	AV	135.00	400	Horizontal	Pass
6	17429.793	54.28	74.0	19.72	Peak	7.00	100	Horizontal	Pass
6**	17429.793	45.58	54.0	8.42	AV	7.00	100	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	1335.013	43.56	74.0	30.44	Peak	110.00	100	Vertical	Pass
1**	1335.013	35.52	54.0	18.48	AV	110.00	100	Vertical	Pass
2	2985.682	53.16	74.0	20.84	Peak	22.00	100	Vertical	Pass
2**	2985.682	44.53	54.0	9.47	AV	22.00	100	Vertical	Pass
3	4851.766	49.98	74.0	24.02	Peak	90.00	200	Vertical	Pass
3**	4851.766	41.38	54.0	12.62	AV	90.00	200	Vertical	Pass
4	6606.839	55.15	74.0	18.85	Peak	352.00	100	Vertical	Pass
4**	6606.839	45.85	54.0	8.15	AV	352.00	100	Vertical	Pass
5	13431.529	53.77	74.0	20.23	Peak	139.00	200	Vertical	Pass
5**	13431.529	46.63	54.0	7.37	AV	139.00	200	Vertical	Pass
6	17418.764	54.84	74.0	19.16	Peak	73.00	100	Vertical	Pass
6**	17418.764	47.01	54.0	6.99	AV	73.00	100	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	1328.589	43.35	74.0	30.65	Peak	92.00	400	Horizontal	Pass
1**	1328.589	36.72	54.0	17.28	AV	92.00	400	Horizontal	Pass
2	2994.450	48.01	74.0	25.99	Peak	219.00	300	Horizontal	Pass
2**	2994.450	44.35	54.0	9.65	AV	219.00	300	Horizontal	Pass
3	4933.047	48.79	74.0	25.21	Peak	99.00	200	Horizontal	Pass
3**	4933.047	39.40	54.0	14.60	AV	99.00	200	Horizontal	Pass
4	6805.635	56.59	74.0	17.41	Peak	103.00	200	Horizontal	Pass
4**	6805.635	45.53	54.0	8.47	AV	103.00	200	Horizontal	Pass
5	13409.468	53.95	74.0	20.05	Peak	299.00	200	Horizontal	Pass
5**	13409.468	43.99	54.0	10.01	AV	299.00	200	Horizontal	Pass
6	17426.704	55.59	74.0	18.41	Peak	191.00	200	Horizontal	Pass
6**	17426.704	46.47	54.0	7.53	AV	191.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.576	46.16	74.0	27.84	Peak	180.00	100	Vertical	Pass
1**	1329.576	37.40	54.0	16.60	AV	180.00	100	Vertical	Pass
2	2985.188	53.36	74.0	20.64	Peak	28.00	300	Vertical	Pass
2**	2985.188	43.60	54.0	10.40	AV	28.00	300	Vertical	Pass
3	4857.153	51.83	74.0	22.17	Peak	116.00	200	Vertical	Pass
3**	4857.153	40.73	54.0	13.27	AV	116.00	200	Vertical	Pass
4	6608.983	53.46	74.0	20.54	Peak	96.00	300	Vertical	Pass
4**	6608.983	43.38	54.0	10.62	AV	96.00	300	Vertical	Pass
5	13435.110	53.97	74.0	20.03	Peak	274.00	300	Vertical	Pass
5**	13435.110	46.91	54.0	7.09	AV	274.00	300	Vertical	Pass
6	17416.043	56.90	74.0	17.10	Peak	81.00	200	Vertical	Pass
6**	17416.043	45.27	54.0	8.73	AV	81.00	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	1331.872	43.85	74.0	30.15	Peak	162.00	100	Horizontal	Pass
1**	1331.872	38.96	54.0	15.04	AV	162.00	100	Horizontal	Pass
2	2995.352	51.70	74.0	22.30	Peak	216.00	400	Horizontal	Pass
2**	2995.352	43.67	54.0	10.33	AV	216.00	400	Horizontal	Pass
3	4931.352	49.41	74.0	24.59	Peak	219.00	200	Horizontal	Pass
3**	4931.352	39.25	54.0	14.75	AV	219.00	200	Horizontal	Pass
4	6804.048	56.49	74.0	17.51	Peak	313.00	300	Horizontal	Pass
4**	6804.048	45.91	54.0	8.09	AV	313.00	300	Horizontal	Pass
5	13409.386	55.72	74.0	18.28	Peak	350.00	100	Horizontal	Pass
5**	13409.386	49.09	54.0	4.91	AV	350.00	100	Horizontal	Pass
6	17427.510	57.17	74.0	16.83	Peak	41.00	300	Horizontal	Pass
6**	17427.510	47.16	54.0	6.84	AV	41.00	300	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.880	46.48	74.0	27.52	Peak	17.00	300	Vertical	Pass
1**	1329.880	39.13	54.0	14.87	AV	17.00	300	Vertical	Pass
2	2982.693	51.28	74.0	22.72	Peak	69.00	400	Vertical	Pass
2**	2982.693	42.77	54.0	11.23	AV	69.00	400	Vertical	Pass
3	4851.653	51.54	74.0	22.46	Peak	336.00	200	Vertical	Pass
3**	4851.653	43.39	54.0	10.61	AV	336.00	200	Vertical	Pass
4	6606.518	52.85	74.0	21.15	Peak	340.00	400	Vertical	Pass
4**	6606.518	43.14	54.0	10.86	AV	340.00	400	Vertical	Pass
5	13432.638	57.89	74.0	16.11	Peak	59.00	200	Vertical	Pass
5**	13432.638	44.03	54.0	9.97	AV	59.00	200	Vertical	Pass
6	17413.879	60.03	74.0	13.97	Peak	130.00	100	Vertical	Pass
6**	17413.879	48.35	54.0	5.65	AV	130.00	100	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	1329.947	42.54	74.0	31.46	Peak	215.00	100	Horizontal	Pass
1**	1329.947	36.03	54.0	17.97	AV	215.00	100	Horizontal	Pass
2	2994.557	48.59	74.0	25.41	Peak	201.00	100	Horizontal	Pass
2**	2994.557	43.90	54.0	10.10	AV	201.00	100	Horizontal	Pass
3	4936.100	50.74	74.0	23.26	Peak	158.00	200	Horizontal	Pass
3**	4936.100	43.63	54.0	10.37	AV	158.00	200	Horizontal	Pass
4	6809.200	55.96	74.0	18.04	Peak	135.00	100	Horizontal	Pass
4**	6809.200	46.36	54.0	7.64	AV	135.00	100	Horizontal	Pass
5	13413.063	53.65	74.0	20.35	Peak	223.00	100	Horizontal	Pass
5**	13413.063	49.27	54.0	4.73	AV	223.00	100	Horizontal	Pass
6	17425.086	54.87	74.0	19.13	Peak	335.00	100	Horizontal	Pass
6**	17425.086	46.30	54.0	7.70	AV	335.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1334.103	43.68	74.0	30.32	Peak	310.00	400	Vertical	Pass
1**	1334.103	38.34	54.0	15.66	AV	310.00	400	Vertical	Pass
2	2985.759	53.02	74.0	20.98	Peak	95.00	400	Vertical	Pass
2**	2985.759	39.98	54.0	14.02	AV	95.00	400	Vertical	Pass
3	4852.220	51.55	74.0	22.45	Peak	46.00	200	Vertical	Pass
3**	4852.220	37.72	54.0	16.28	AV	46.00	200	Vertical	Pass
4	6604.657	52.77	74.0	21.23	Peak	303.00	400	Vertical	Pass
4**	6604.657	43.32	54.0	10.68	AV	303.00	400	Vertical	Pass
5	13438.118	54.68	74.0	19.32	Peak	63.00	300	Vertical	Pass
5**	13438.118	48.65	54.0	5.35	AV	63.00	300	Vertical	Pass
6	17416.386	57.03	74.0	16.97	Peak	170.00	300	Vertical	Pass
6**	17416.386	45.56	54.0	8.44	AV	170.00	300	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.937	45.74	74.0	28.26	Peak	41.00	400	Horizontal	Pass
1**	1330.937	39.60	54.0	14.40	AV	41.00	400	Horizontal	Pass
2	2998.768	48.54	74.0	25.46	Peak	5.00	200	Horizontal	Pass
2**	2998.768	39.15	54.0	14.85	AV	5.00	200	Horizontal	Pass
3	4932.693	49.35	74.0	24.65	Peak	28.00	200	Horizontal	Pass
3**	4932.693	39.80	54.0	14.20	AV	28.00	200	Horizontal	Pass
4	6809.538	56.49	74.0	17.51	Peak	167.00	200	Horizontal	Pass
4**	6809.538	44.66	54.0	9.34	AV	167.00	200	Horizontal	Pass
5	13411.871	57.40	74.0	16.60	Peak	292.00	100	Horizontal	Pass
5**	13411.871	47.43	54.0	6.57	AV	292.00	100	Horizontal	Pass
6	17424.231	55.96	74.0	18.04	Peak	63.00	100	Horizontal	Pass
6**	17424.231	45.12	54.0	8.88	AV	63.00	100	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	1336.797	43.66	74.0	30.34	Peak	354.00	400	Vertical	Pass
1**	1336.797	40.61	54.0	13.39	AV	354.00	400	Vertical	Pass
2	2978.157	48.43	74.0	25.57	Peak	56.00	200	Vertical	Pass
2**	2978.157	42.18	54.0	11.82	AV	56.00	200	Vertical	Pass
3	4852.669	52.04	74.0	21.96	Peak	358.00	200	Vertical	Pass
3**	4852.669	40.86	54.0	13.14	AV	358.00	200	Vertical	Pass
4	6610.335	55.96	74.0	18.04	Peak	213.00	200	Vertical	Pass
4**	6610.335	47.09	54.0	6.91	AV	213.00	200	Vertical	Pass
5	13432.292	56.26	74.0	17.74	Peak	14.00	300	Vertical	Pass
5**	13432.292	48.16	54.0	5.84	AV	14.00	300	Vertical	Pass
6	17420.834	55.22	74.0	18.78	Peak	267.00	100	Vertical	Pass
6**	17420.834	49.41	54.0	4.59	AV	267.00	100	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	1329.366	44.81	74.0	29.19	Peak	68.00	400	Horizontal	Pass
1**	1329.366	39.22	54.0	14.78	AV	68.00	400	Horizontal	Pass
2	2998.211	51.37	74.0	22.63	Peak	79.00	100	Horizontal	Pass
2**	2998.211	38.65	54.0	15.35	AV	79.00	100	Horizontal	Pass
3	4932.271	53.72	74.0	20.28	Peak	292.00	200	Horizontal	Pass
3**	4932.271	39.20	54.0	14.80	AV	292.00	200	Horizontal	Pass
4	6806.685	56.78	74.0	17.22	Peak	147.00	200	Horizontal	Pass
4**	6806.685	47.61	54.0	6.39	AV	147.00	200	Horizontal	Pass
5	13408.892	54.00	74.0	20.00	Peak	289.00	200	Horizontal	Pass
5**	13408.892	45.12	54.0	8.88	AV	289.00	200	Horizontal	Pass
6	17423.783	54.78	74.0	19.22	Peak	245.00	400	Horizontal	Pass
6**	17423.783	47.75	54.0	6.25	AV	245.00	400	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	1334.575	43.63	74.0	30.37	Peak	226.00	200	Vertical	Pass
1**	1334.575	37.53	54.0	16.47	AV	226.00	200	Vertical	Pass
2	2980.134	52.17	74.0	21.83	Peak	112.00	200	Vertical	Pass
2**	2980.134	44.29	54.0	9.71	AV	112.00	200	Vertical	Pass
3	4857.862	51.74	74.0	22.26	Peak	84.00	200	Vertical	Pass
3**	4857.862	42.75	54.0	11.25	AV	84.00	200	Vertical	Pass
4	6609.953	52.67	74.0	21.33	Peak	164.00	300	Vertical	Pass
4**	6609.953	45.39	54.0	8.61	AV	164.00	300	Vertical	Pass
5	13431.918	53.69	74.0	20.31	Peak	348.00	100	Vertical	Pass
5**	13431.918	48.39	54.0	5.61	AV	348.00	100	Vertical	Pass
6	17420.137	58.21	74.0	15.79	Peak	195.00	100	Vertical	Pass
6**	17420.137	47.77	54.0	6.23	AV	195.00	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	1331.753	44.21	74.0	29.79	Peak	281.00	200	Horizontal	Pass
1**	1331.753	36.11	54.0	17.89	AV	281.00	200	Horizontal	Pass
2	2995.767	52.56	74.0	21.44	Peak	315.00	100	Horizontal	Pass
2**	2995.767	39.28	54.0	14.72	AV	315.00	100	Horizontal	Pass
3	4931.778	53.46	74.0	20.54	Peak	90.00	200	Horizontal	Pass
3**	4931.778	41.32	54.0	12.68	AV	90.00	200	Horizontal	Pass
4	6804.567	55.43	74.0	18.57	Peak	314.00	200	Horizontal	Pass
4**	6804.567	44.02	54.0	9.98	AV	314.00	200	Horizontal	Pass
5	13412.538	54.49	74.0	19.51	Peak	18.00	300	Horizontal	Pass
5**	13412.538	45.98	54.0	8.02	AV	18.00	300	Horizontal	Pass
6	17428.873	55.67	74.0	18.33	Peak	33.00	200	Horizontal	Pass
6**	17428.873	47.46	54.0	6.54	AV	33.00	200	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	1332.588	42.51	74.0	31.49	Peak	103.00	100	Vertical	Pass
1**	1332.588	40.36	54.0	13.64	AV	103.00	100	Vertical	Pass
2	2979.378	53.35	74.0	20.65	Peak	267.00	400	Vertical	Pass
2**	2979.378	39.24	54.0	14.76	AV	267.00	400	Vertical	Pass
3	4852.064	50.55	74.0	23.45	Peak	343.00	200	Vertical	Pass
3**	4852.064	38.72	54.0	15.28	AV	343.00	200	Vertical	Pass
4	6603.708	52.52	74.0	21.48	Peak	81.00	100	Vertical	Pass
4**	6603.708	47.95	54.0	6.05	AV	81.00	100	Vertical	Pass
5	13433.554	54.22	74.0	19.78	Peak	112.00	400	Vertical	Pass
5**	13433.554	46.10	54.0	7.90	AV	112.00	400	Vertical	Pass
6	17415.348	55.95	74.0	18.05	Peak	36.00	400	Vertical	Pass
6**	17415.348	44.84	54.0	9.16	AV	36.00	400	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.132	45.98	74.0	28.02	Peak	343.00	100	Horizontal	Pass
1**	1332.132	37.01	54.0	16.99	AV	343.00	100	Horizontal	Pass
2	2999.483	51.00	74.0	23.00	Peak	38.00	300	Horizontal	Pass
2**	2999.483	41.50	54.0	12.50	AV	38.00	300	Horizontal	Pass
3	4936.106	53.21	74.0	20.79	Peak	108.00	200	Horizontal	Pass
3**	4936.106	44.08	54.0	9.92	AV	108.00	200	Horizontal	Pass
4	6805.966	56.70	74.0	17.30	Peak	101.00	300	Horizontal	Pass
4**	6805.966	44.32	54.0	9.68	AV	101.00	300	Horizontal	Pass
5	13410.829	57.67	74.0	16.33	Peak	287.00	100	Horizontal	Pass
5**	13410.829	43.66	54.0	10.34	AV	287.00	100	Horizontal	Pass
6	17426.117	55.89	74.0	18.11	Peak	34.00	100	Horizontal	Pass
6**	17426.117	47.32	54.0	6.68	AV	34.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.588	43.27	74.0	30.73	Peak	188.00	100	Vertical	Pass
1**	1330.588	37.22	54.0	16.78	AV	188.00	100	Vertical	Pass
2	2978.913	48.73	74.0	25.27	Peak	237.00	200	Vertical	Pass
2**	2978.913	41.76	54.0	12.24	AV	237.00	200	Vertical	Pass
3	4854.444	51.42	74.0	22.58	Peak	118.00	200	Vertical	Pass
3**	4854.444	42.42	54.0	11.58	AV	118.00	200	Vertical	Pass
4	6604.343	54.34	74.0	19.66	Peak	57.00	200	Vertical	Pass
4**	6604.343	47.58	54.0	6.42	AV	57.00	200	Vertical	Pass
5	13432.065	56.86	74.0	17.14	Peak	205.00	100	Vertical	Pass
5**	13432.065	43.66	54.0	10.34	AV	205.00	100	Vertical	Pass
6	17415.656	56.39	74.0	17.61	Peak	209.00	400	Vertical	Pass
6**	17415.656	48.52	54.0	5.48	AV	209.00	400	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	1327.507	46.53	74.0	27.47	Peak	69.00	200	Horizontal	Pass
1**	1327.507	35.75	54.0	18.25	AV	69.00	200	Horizontal	Pass
2	2999.217	48.61	74.0	25.39	Peak	186.00	100	Horizontal	Pass
2**	2999.217	42.52	54.0	11.48	AV	186.00	100	Horizontal	Pass
3	4935.563	50.07	74.0	23.93	Peak	138.00	200	Horizontal	Pass
3**	4935.563	44.52	54.0	9.48	AV	138.00	200	Horizontal	Pass
4	6809.100	55.84	74.0	18.16	Peak	38.00	200	Horizontal	Pass
4**	6809.100	42.03	54.0	11.97	AV	38.00	200	Horizontal	Pass
5	13413.925	57.88	74.0	16.12	Peak	258.00	300	Horizontal	Pass
5**	13413.925	46.41	54.0	7.59	AV	258.00	300	Horizontal	Pass
6	17423.810	54.16	74.0	19.84	Peak	313.00	300	Horizontal	Pass
6**	17423.810	48.76	54.0	5.24	AV	313.00	300	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.988	42.42	74.0	31.58	Peak	248.00	200	Vertical	Pass
1**	1332.988	34.92	54.0	19.08	AV	248.00	200	Vertical	Pass
2	2985.670	53.38	74.0	20.62	Peak	4.00	200	Vertical	Pass
2**	2985.670	38.89	54.0	15.11	AV	4.00	200	Vertical	Pass
3	4858.056	50.71	74.0	23.29	Peak	279.00	200	Vertical	Pass
3**	4858.056	42.29	54.0	11.71	AV	279.00	200	Vertical	Pass
4	6605.401	55.33	74.0	18.67	Peak	248.00	300	Vertical	Pass
4**	6605.401	43.34	54.0	10.66	AV	248.00	300	Vertical	Pass
5	13434.964	55.46	74.0	18.54	Peak	289.00	100	Vertical	Pass
5**	13434.964	47.10	54.0	6.90	AV	289.00	100	Vertical	Pass
6	17414.854	59.45	74.0	14.55	Peak	310.00	200	Vertical	Pass
6**	17414.854	49.96	54.0	4.04	AV	310.00	200	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	1328.899	44.04	74.0	29.96	Peak	148.00	400	Horizontal	Pass
1**	1328.899	39.08	54.0	14.92	AV	148.00	400	Horizontal	Pass
2	2994.815	50.79	74.0	23.21	Peak	352.00	100	Horizontal	Pass
2**	2994.815	39.31	54.0	14.69	AV	352.00	100	Horizontal	Pass
3	4936.807	49.15	74.0	24.85	Peak	349.00	200	Horizontal	Pass
3**	4936.807	43.85	54.0	10.15	AV	349.00	200	Horizontal	Pass
4	6807.557	56.08	74.0	17.92	Peak	86.00	200	Horizontal	Pass
4**	6807.557	44.40	54.0	9.60	AV	86.00	200	Horizontal	Pass
5	13413.434	54.37	74.0	19.63	Peak	310.00	200	Horizontal	Pass
5**	13413.434	45.76	54.0	8.24	AV	310.00	200	Horizontal	Pass
6	17426.695	58.82	74.0	15.18	Peak	90.00	200	Horizontal	Pass
6**	17426.695	45.65	54.0	8.35	AV	90.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1335.863	47.08	74.0	26.92	Peak	237.00	100	Vertical	Pass
1**	1335.863	38.67	54.0	15.33	AV	237.00	100	Vertical	Pass
2	2978.821	47.82	74.0	26.18	Peak	208.00	300	Vertical	Pass
2**	2978.821	43.05	54.0	10.95	AV	208.00	300	Vertical	Pass
3	4854.057	47.20	74.0	26.80	Peak	191.00	200	Vertical	Pass
3**	4854.057	40.90	54.0	13.10	AV	191.00	200	Vertical	Pass
4	6608.915	53.95	74.0	20.05	Peak	24.00	100	Vertical	Pass
4**	6608.915	43.05	54.0	10.95	AV	24.00	100	Vertical	Pass
5	13438.850	55.10	74.0	18.90	Peak	270.00	300	Vertical	Pass
5**	13438.850	46.04	54.0	7.96	AV	270.00	300	Vertical	Pass
6	17415.674	54.60	74.0	19.40	Peak	52.00	400	Vertical	Pass
6**	17415.674	49.71	54.0	4.29	AV	52.00	400	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	1330.996	45.34	74.0	28.66	Peak	251.00	200	Horizontal	Pass
1**	1330.996	38.53	54.0	15.47	AV	251.00	200	Horizontal	Pass
2	2997.558	50.29	74.0	23.71	Peak	264.00	100	Horizontal	Pass
2**	2997.558	42.98	54.0	11.02	AV	264.00	100	Horizontal	Pass
3	4937.221	49.21	74.0	24.79	Peak	89.00	200	Horizontal	Pass
3**	4937.221	42.73	54.0	11.27	AV	89.00	200	Horizontal	Pass
4	6806.834	55.41	74.0	18.59	Peak	315.00	200	Horizontal	Pass
4**	6806.834	47.00	54.0	7.00	AV	315.00	200	Horizontal	Pass
5	13409.063	53.00	74.0	21.00	Peak	314.00	200	Horizontal	Pass
5**	13409.063	43.89	54.0	10.11	AV	314.00	200	Horizontal	Pass
6	17423.551	54.07	74.0	19.93	Peak	90.00	200	Horizontal	Pass
6**	17423.551	47.50	54.0	6.50	AV	90.00	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	1333.546	44.32	74.0	29.68	Peak	248.00	400	Vertical	Pass
1**	1333.546	36.54	54.0	17.46	AV	248.00	400	Vertical	Pass
2	2982.054	52.94	74.0	21.06	Peak	254.00	300	Vertical	Pass
2**	2982.054	40.91	54.0	13.09	AV	254.00	300	Vertical	Pass
3	4856.355	46.68	74.0	27.32	Peak	202.00	200	Vertical	Pass
3**	4856.355	38.28	54.0	15.72	AV	202.00	200	Vertical	Pass
4	6607.361	55.82	74.0	18.18	Peak	178.00	200	Vertical	Pass
4**	6607.361	46.87	54.0	7.13	AV	178.00	200	Vertical	Pass
5	13437.248	57.25	74.0	16.75	Peak	250.00	200	Vertical	Pass
5**	13437.248	43.65	54.0	10.35	AV	250.00	200	Vertical	Pass
6	17415.022	55.63	74.0	18.37	Peak	160.00	400	Vertical	Pass
6**	17415.022	45.22	54.0	8.78	AV	160.00	400	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.798	44.04	74.0	29.96	Peak	91.00	300	Horizontal	Pass
1**	1327.798	35.99	54.0	18.01	AV	91.00	300	Horizontal	Pass
2	3000.447	47.37	74.0	26.63	Peak	63.00	200	Horizontal	Pass
2**	3000.447	44.38	54.0	9.62	AV	63.00	200	Horizontal	Pass
3	4937.261	53.96	74.0	20.04	Peak	91.00	200	Horizontal	Pass
3**	4937.261	42.90	54.0	11.10	AV	91.00	200	Horizontal	Pass
4	6805.893	56.65	74.0	17.35	Peak	84.00	400	Horizontal	Pass
4**	6805.893	44.78	54.0	9.22	AV	84.00	400	Horizontal	Pass
5	13412.184	57.79	74.0	16.21	Peak	352.00	200	Horizontal	Pass
5**	13412.184	45.24	54.0	8.76	AV	352.00	200	Horizontal	Pass
6	17428.242	58.87	74.0	15.13	Peak	78.00	300	Horizontal	Pass
6**	17428.242	47.63	54.0	6.37	AV	78.00	300	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	1332.958	43.26	74.0	30.74	Peak	214.00	300	Vertical	Pass
1**	1332.958	37.32	54.0	16.68	AV	214.00	300	Vertical	Pass
2	2982.359	52.36	74.0	21.64	Peak	132.00	200	Vertical	Pass
2**	2982.359	44.59	54.0	9.41	AV	132.00	200	Vertical	Pass
3	4850.721	46.91	74.0	27.09	Peak	270.00	200	Vertical	Pass
3**	4850.721	39.85	54.0	14.15	AV	270.00	200	Vertical	Pass
4	6609.755	57.26	74.0	16.74	Peak	159.00	100	Vertical	Pass
4**	6609.755	45.40	54.0	8.60	AV	159.00	100	Vertical	Pass
5	13435.387	57.77	74.0	16.23	Peak	1.00	400	Vertical	Pass
5**	13435.387	47.85	54.0	6.15	AV	1.00	400	Vertical	Pass
6	17416.553	59.07	74.0	14.93	Peak	36.00	200	Vertical	Pass
6**	17416.553	49.34	54.0	4.66	AV	36.00	200	Vertical	Pass

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

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

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

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

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

Test Data

SISO-ANT0

802.11b LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2383.552	60.24	74.0	13.76	Peak	238.00	200	Horizontal	Pass
1**	2383.552	46.97	54.0	7.03	AV	238.00	200	Horizontal	Pass
2	2390.000	54.96	74.0	19.04	Peak	90.00	200	Horizontal	Pass
2**	2390.000	46.95	54.0	7.05	AV	90.00	200	Horizontal	Pass

802.11b HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	54.4	74.0	19.60	Peak	298.00	200	Horizontal	Pass
1**	2483.500	47.63	54.0	6.37	AV	298.00	200	Horizontal	Pass
2	2486.568	58.33	74.0	15.67	Peak	49.00	200	Horizontal	Pass
2**	2486.568	47.08	54.0	6.92	AV	49.00	200	Horizontal	Pass

802.11g LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2384.414	58.42	74.0	15.58	Peak	38.00	100	Horizontal	Pass
1**	2384.414	49.8	54.0	4.20	AV	38.00	100	Horizontal	Pass
2	2390.000	55.14	74.0	18.86	Peak	287.00	100	Horizontal	Pass
2**	2390.000	43.86	54.0	10.14	AV	287.00	100	Horizontal	Pass

802.11g HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	55.4	74.0	18.60	Peak	66.00	200	Horizontal	Pass
1**	2483.500	44.5	54.0	9.50	AV	66.00	200	Horizontal	Pass
2	2487.851	58.48	74.0	15.52	Peak	335.00	100	Horizontal	Pass
2**	2487.851	45.66	54.0	8.34	AV	335.00	100	Horizontal	Pass

802.11n20 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2383.744	58.79	74.0	15.21	Peak	38.00	100	Horizontal	Pass
1**	2383.744	48.74	54.0	5.26	AV	38.00	100	Horizontal	Pass
2	2390.000	55.75	74.0	18.25	Peak	355.00	100	Horizontal	Pass
2**	2390.000	43.6	54.0	10.40	AV	355.00	100	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	54.2	74.0	19.80	Peak	339.00	100	Horizontal	Pass
1**	2483.500	46.87	54.0	7.13	AV	339.00	100	Horizontal	Pass
2	2487.483	57.1	74.0	16.90	Peak	240.00	200	Horizontal	Pass
2**	2487.483	47.53	54.0	6.47	AV	240.00	200	Horizontal	Pass

802.11n40 LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2385.892	57.29	74.0	16.71	Peak	296.00	100	Horizontal	Pass
1**	2385.892	47.21	54.0	6.79	AV	296.00	100	Horizontal	Pass
2	2390.000	56.23	74.0	17.77	Peak	324.00	100	Horizontal	Pass
2**	2390.000	45.77	54.0	8.23	AV	324.00	100	Horizontal	Pass

802.11n40 HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	56.95	74.0	17.05	Peak	108.00	200	Horizontal	Pass
1**	2483.500	44.32	54.0	9.68	AV	108.00	200	Horizontal	Pass
2	2486.432	59.55	74.0	14.45	Peak	168.00	300	Horizontal	Pass
2**	2486.432	44.92	54.0	9.08	AV	168.00	300	Horizontal	Pass

802.11ax20(SU) LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2385.097	58.18	74.0	15.82	Peak	223.00	100	Horizontal	Pass
1**	2385.097	47.8	54.0	6.20	AV	223.00	100	Horizontal	Pass
2	2390.000	53.35	74.0	20.65	Peak	102.00	200	Horizontal	Pass
2**	2390.000	45.05	54.0	8.95	AV	102.00	200	Horizontal	Pass

802.11ax20(SU) HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	54.85	74.0	19.15	Peak	37.00	100	Horizontal	Pass
1**	2483.500	47.62	54.0	6.38	AV	37.00	100	Horizontal	Pass
2	2487.462	56.83	74.0	17.17	Peak	227.00	200	Horizontal	Pass
2**	2487.462	44.3	54.0	9.70	AV	227.00	200	Horizontal	Pass

802.11ax40(SU) LOW CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2384.024	58.59	74.0	15.41	Peak	196.00	200	Horizontal	Pass
1**	2384.024	47.67	54.0	6.33	AV	196.00	200	Horizontal	Pass
2	2390.000	55.56	74.0	18.44	Peak	259.00	300	Horizontal	Pass
2**	2390.000	45.69	54.0	8.31	AV	259.00	300	Horizontal	Pass

802.11ax40(SU) HIGH CHANNEL

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	55.94	74.0	18.06	Peak	123.00	100	Horizontal	Pass
1**	2483.500	44.14	54.0	9.86	AV	123.00	100	Horizontal	Pass
2	2486.614	58.52	74.0	15.48	Peak	0.00	100	Horizontal	Pass
2**	2486.614	44.89	54.0	9.11	AV	0.00	100	Horizontal	Pass

A.8 Power Spectral Density (PSD)

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

Test Data

SISO-ANT0

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-1.57	8
Middle	-2.03	8
High	-0.91	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-0.40	8
Middle	-1.79	8
High	-2.89	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-3.07	8
Middle	-4.44	8
High	-3.30	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-6.75	8
Middle	-7.26	8
High	-7.60	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-3.16	8
Middle	-5.89	8
High	-5.73	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.83	8
Middle	-7.47	8
High	-7.03	8

Test Plots

SISO-ANT0

802.11b LOW CHANNEL



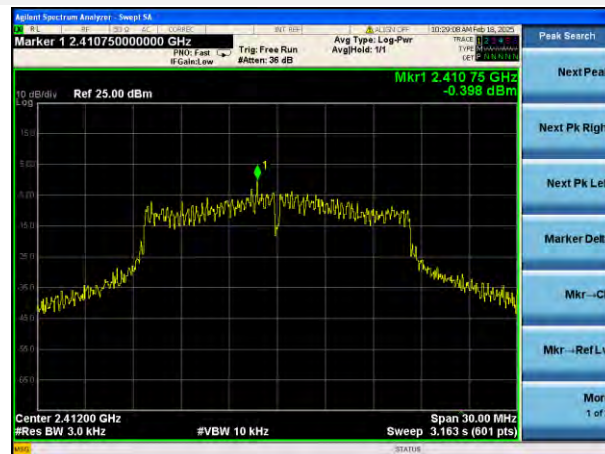
802.11b MIDDLE CHANNEL



802.11b HIGH CHANNEL



802.11g LOW CHANNEL



802.11g MIDDLE CHANNEL



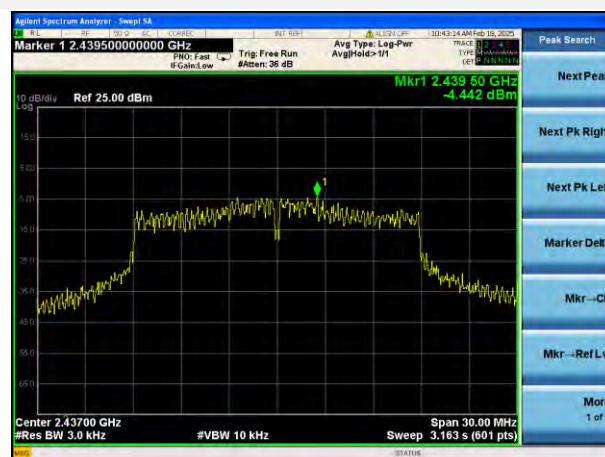
802.11g HIGH CHANNEL



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-SZ2510912-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2510912-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2510912-AI.PDF”.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
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