TEST REPORT

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Equipment Type:	Mobile Phone
Model Name:	23124RA7EO
Brand Name:	Redmi
FCC ID:	2AFZZA7EO
Test Standard:	47 CFR Part 15 Subpart C (refer to section 3.1)
Sample Arrival Date:	Oct. 16, 2023
Test Date:	Dec. 09, 2023 - Dec. 14, 2023
Date of Issue:	Dec. 20, 2023

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Yu Yingyuan **Checked by:** Ye Hongji **Approved by:** Liao Jianming (Technical Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Dec. 20, 2023	Initial Issue

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1 GENERAL INFORMATION

1.1 Test Laboratory

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

1.2 Test Location

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

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.2 Manufacturer Information

Manufacturer	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.3 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	23124RA7EO
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	135100N7
Software Version	MIUI14
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
EUT ID	S09, S14
IMEI Number	S09: IMEI1: 861678060050540
	S14: IMEI1: 861678060046266

2.4 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 3G Network WCDMA/HSDPA/HSUPA/DC-HSDPA Band 1/5/8 4G Network FDD LTE Band 1/3/5/7/8/20/28 TDD LTE Band 38/40/41 LTE CA Uplink (UL): CA_7C, CA_38C, CA_40C Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, Galileo, BDS, SBAS, FM receiver, NFC

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n(20 MHz): 2.412 GHz - 2.462 GHz f_c = 2412 MHz + (N-1)*5 MHz, where - f_c = “Operating Frequency” in MHz, - N = “Channel Number” with the range from 1 to 11.
Modulation Type	DSSS, OFDM
Product Type	☐ Mobile ☒ Portable ☐ Fix Location
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PIFA Antenna
Antenna Gain	-0.5 dBi
About the Product	Only the WIFI 802.11b, 802.11g, 802.11n (HT20), was tested in this report.

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

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	1/6/6.5 Mbps	1/6/11
Occupied Bandwidth	11b/11g/11n20	1/6/6.5 Mbps	1/6/11
Conducted Spurious Emission	11b/11g/11n20	1/6/6.5 Mbps	1/6/11
Conducted Emission	11b/11g/11n20	1/6/6.5 Mbps	1/6/11
Radiated Spurious Emission	11b/11g/11n20	1/6/6.5 Mbps	1/6/11
Band Edge	11b/11g/11n20	1/6/6.5 Mbps	1/6/11
Power spectral density (PSD)	11b/11g/11n20	1/6/6.5 Mbps	1/6/11

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	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
3	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	42% to 62%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+21.3℃ to +26.3℃
Working Voltage of the EUT	NV (Normal Voltage)	3.89 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY50330200	2023.05.16	2024.05.15
Power Sensor	KEYSIGHT	U2063XA	MY58000251	2023.07.12	2024.07.11
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2022.12.28	2023.12.27
Spectrum Analyzer	KEYSIGHT	N9020A	MY52510065	2023.09.05	2024.09.04
Signaling Unit	ROHDE&SCHWARZ	CMW500	171150	2023.06.19	2024.06.18
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01631	2022.02.03	2025.02.02
Test Antenna-Horn	A-INFO	LB-180400KF	J211060273	2021.07.02	2024.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	144	2022.02.19	2024.09.03
Amplifier	COM-MV	ZT30-1000M	18110850	2023.09.05	2024.09.04
Amplifier	COM-MV	LSCX_LNA 1-12G-01	180602	2023.09.05	2024.09.04
Amplifier	COM-MV	XKu_LNA7-18G-01	180601	2023.09.05	2024.09.04
Amplifier	COM-MV	KA LNA18 40G-01	18050001	2023.12.06	2024.12.05
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2023.09.05	2024.09.04
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	00883	2022.04.01	2025.03.31
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2021.04.16	2024.04.15
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	130	2021.08.15	2024.08.14
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2023.09.05	2024.09.04
LISN	SCHWARZBECK	NSLK 8127	8127-687	2023.05.16	2024.05.15
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m* 2.8m	112	2022.02.19	2025.02.18

4.3 Test Software List

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

4.4 Measurement Uncertainty

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

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

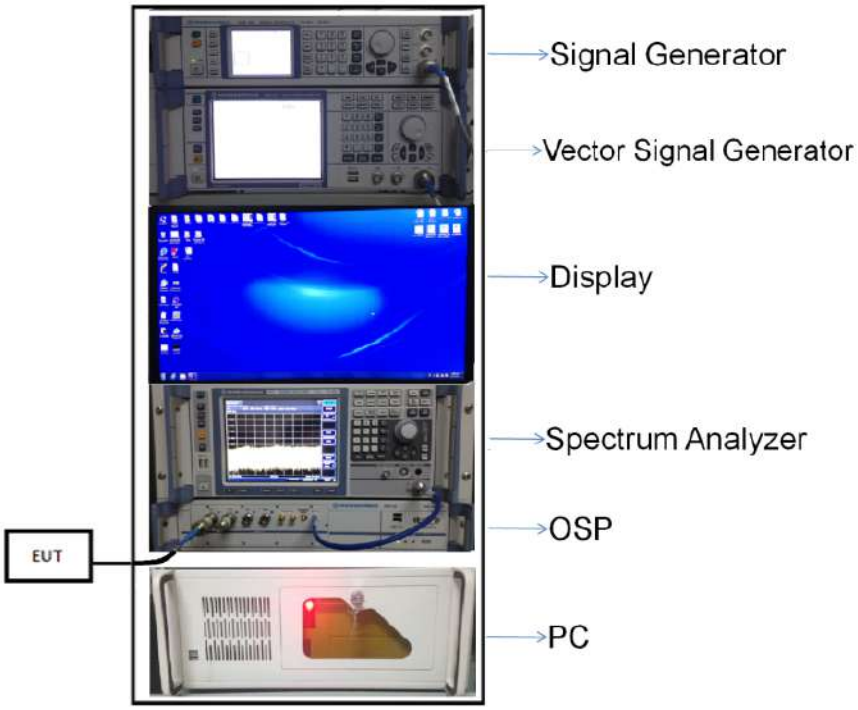
Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8°C
Humidity	4%

4.5 Description of Test Setup

4.5.1 For Antenna Port Test

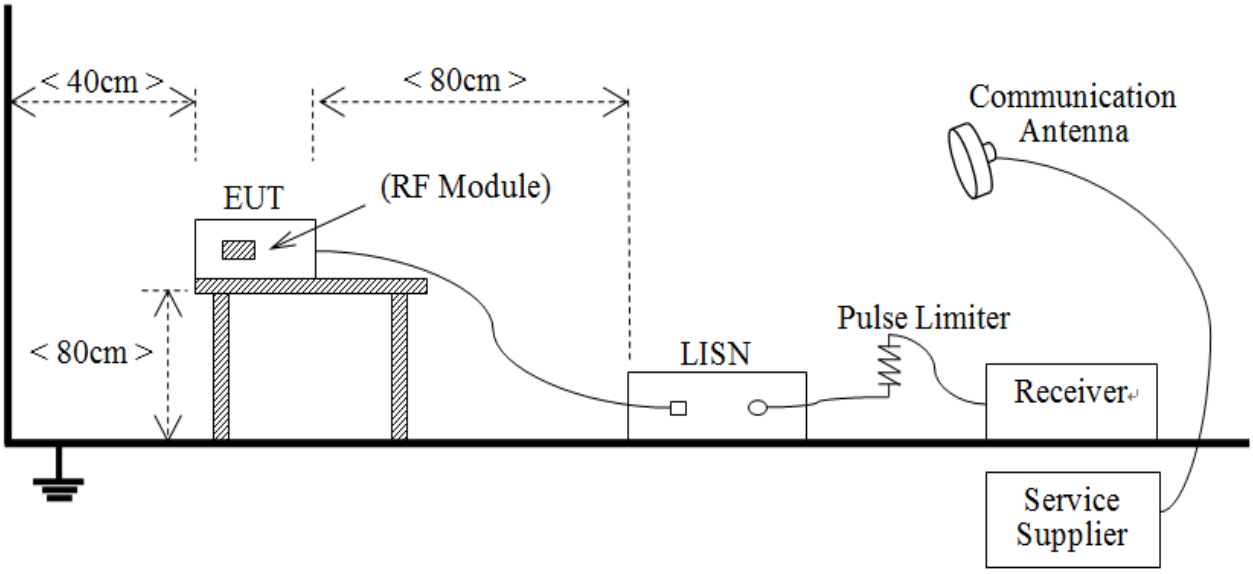
Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:
Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



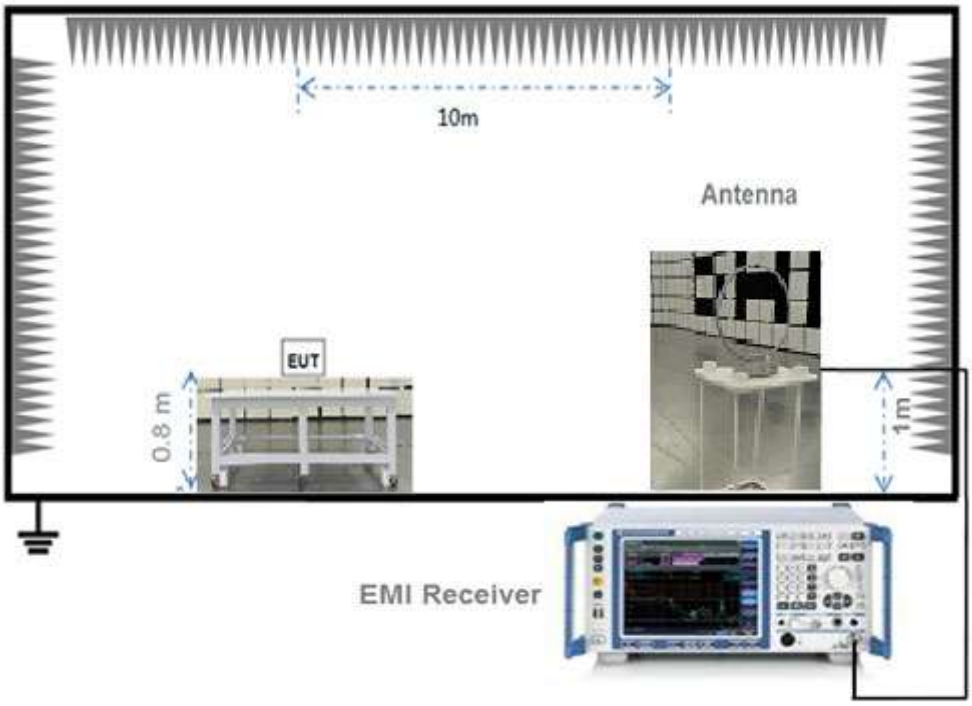
(Diagram 1)

4.5.2 For AC Power Supply Port Test



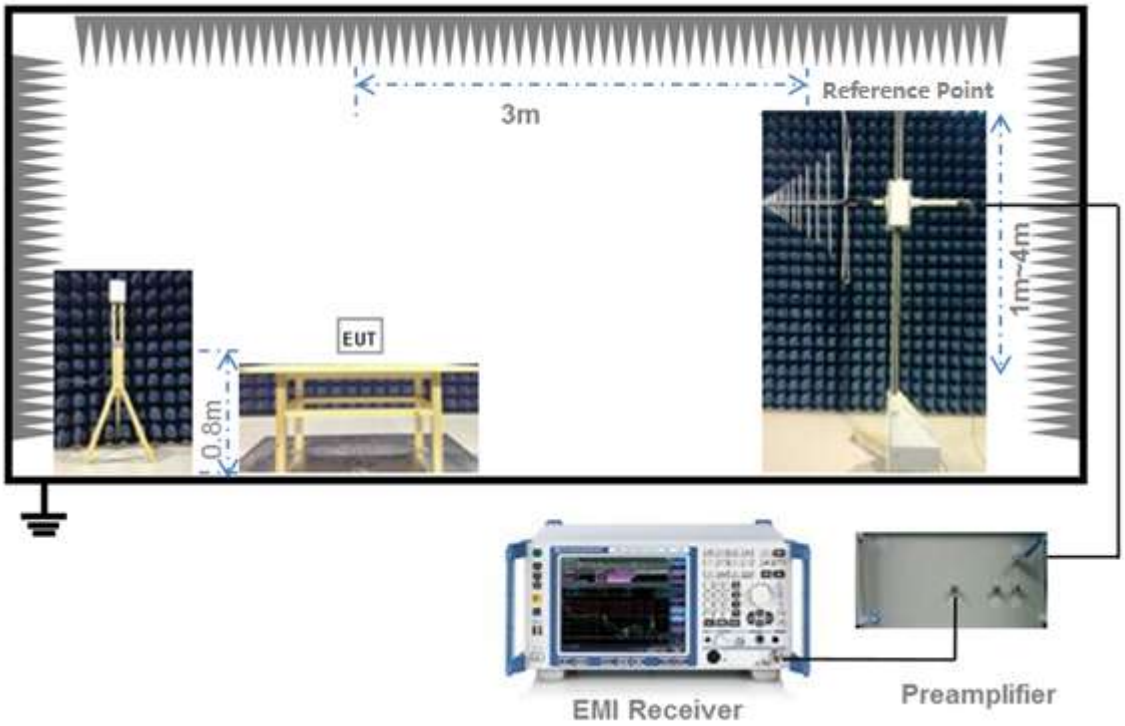
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



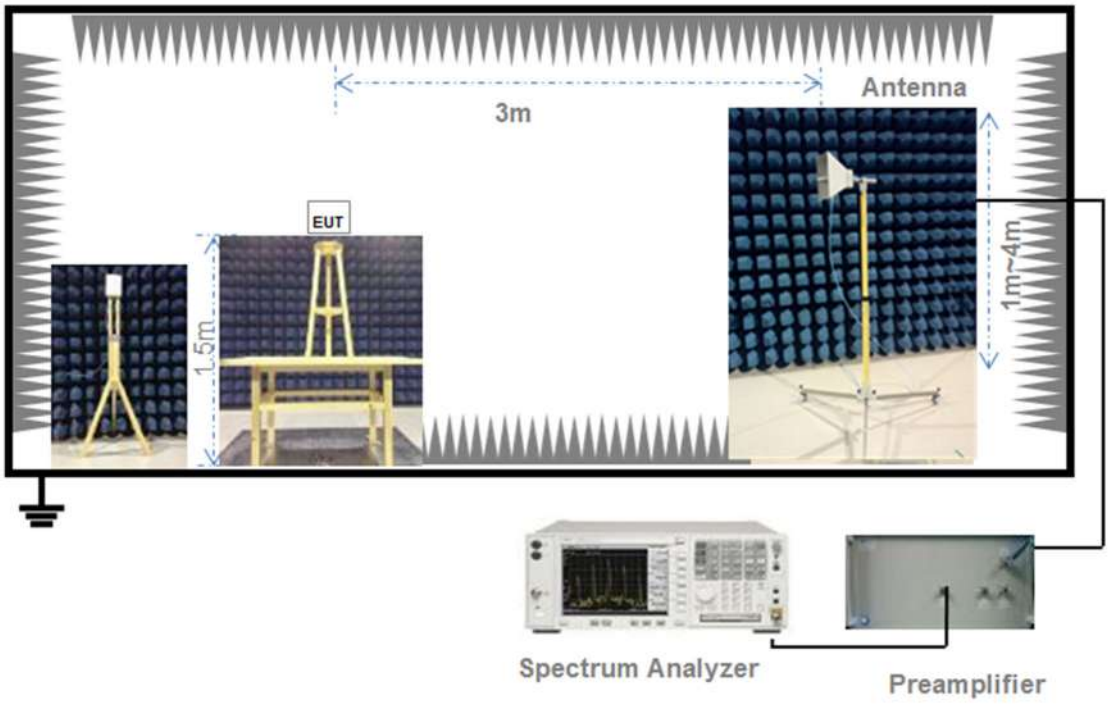
(Diagram 3)

4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.6 Measurement Results Explanation Example

4.6.1 For conducted test items:

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

4.6.2 For radiated band edges and spurious emission test:

$$E = EIRP - 20\log D + 104.8$$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

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.

Maximum conducted (average) output power (Reporting Only)

a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be perfor med

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 si gnal as

described in Section 6.0.

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

d) Adjust the measurement in dBm by adding 10log (1/x), where x is the duty cycle to the measurement r esult.

Measurements of duty cycle

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

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

Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.

Set VBW ≥ RBW. Set detector = peak or average.

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

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC §15.247(a)

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

5.3.2 Test Setup

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

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ⩾ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

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

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d)

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

5.4.2 Test Setup

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

5.4.3 Test Procedure

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

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

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

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

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

<u>Reference level measurement</u>

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ⩾ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW ⩾ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

Emission level measurement

Use the following spectrum analyzer settings:

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

Set the RBW = 100 kHz.

Set the VBW ⩾ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

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

5.4.4 Test Result

Please refer to ANNEX A.3.

5.5 Band Edge (Authorized-band band-edge)

5.5.1 Limit

FCC §15.247(d)

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

5.5.2 Test Setup

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

5.5.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle ⩾ 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 ⩾ 3 x RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

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

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

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

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

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

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

5.5.4 Test Result

Please refer to ANNEX A.4.

5.6 Conducted Emission

5.6.1 Limit

FCC §15.207

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

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

5.6.2 Test Setup

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

5.6.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.
Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.6.4 Test Result

Please refer to ANNEX A.5.

5.7 Radiated Spurious Emission

5.7.1 Limit

FCC §15.209&15.247(d)

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

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

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

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

5.7.2 Test Setup

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

5.7.3 Test Procedure

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

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

General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$E = EIRP – 20\log D + 104.8$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

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

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

Peak power measurement procedure

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

a) RBW = as specified in Table 1.

b) VBW ≥ 3 x RBW.

c) Detector = Peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be

longer for low duty cycle applications).

Table 1—RBW as a function of frequency

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

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

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

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

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW ≥ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is 20 log(1/x), where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

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

Determining the applicable transmit antenna gain

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

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

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

Radiated spurious emission test

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

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

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

The power of the EUT transmitting frequency should be ignored.

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

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.7.4 Test Result

Please refer to ANNEX A.6.

5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d)

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

5.8.2 Test Setup

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

5.8.3 Test Procedure

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

The power of the EUT transmitting frequency should be ignored.

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

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

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

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

5.8.4 Test Result

Please refer to ANNEX A.7.

5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e)

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

5.9.2 Test Setup

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

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz ⩽ RBW ⩽ 100 kHz.

Set the VBW ⩾ 3 RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

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

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

5.9.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 Output Power

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle
802.11b	8.356	8.539	97.86%
802.11g	1.388	1.424	97.47%
802.11n-20 MHz	1.298	1.336	97.16%

Peak Power Test Data

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	18.07	64.12	30	1000	Pass
CH2	18.36	68.55			Pass
CH3	19.44	87.90			Pass
CH4	19.42	87.50			Pass
CH5	19.76	94.62			Pass
CH6	19.12	81.66			Pass
CH7	20.05	101.16			Pass
CH8	20.76	119.12			Pass
CH9	20.32	107.65			Pass
CH10	20.50	112.20			Pass
CH11	20.46	111.17			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	20.34	108.14	30	1000	Pass
CH6	21.47	140.28			Pass
CH11	20.68	116.95			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	18.98	79.07	30	1000	Pass
CH6	20.24	105.68			Pass
CH11	18.97	78.89			Pass

Average Power Test Data

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	14.94	31.19	30	1000	Pass
CH2	15.26	33.57			Pass
CH3	16.33	42.95			Pass
CH4	16.36	43.25			Pass
CH5	16.72	46.99			Pass
CH6	16.08	40.55			Pass
CH7	17.02	50.35			Pass
CH8	17.64	58.08			Pass
CH9	17.23	52.84			Pass
CH10	17.42	55.21			Pass
CH11	17.82	60.53			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	15.37	34.43	30	1000	Pass
CH6	16.32	42.85			Pass
CH11	15.53	35.73			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
CH1	13.89	24.49	30	1000	Pass
CH6	14.79	30.13			Pass
CH11	13.93	24.72			Pass

A.2 Occupied Bandwidth

Test Data

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
CH1	8.600000	13.829000	⩾500
CH2	8.650000	13.737000	⩾500
CH3	8.650000	13.740000	⩾500
CH4	8.650000	13.711000	⩾500
CH5	9.100000	13.717000	⩾500
CH6	8.650000	13.808000	⩾500
CH7	9.100000	13.819000	⩾500
CH8	8.600000	13.875000	⩾500
CH9	8.600000	13.848000	⩾500
CH10	8.200000	13.805000	⩾500
CH11	9.100000	13.843000	⩾500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
CH1	15.800000	17.430000	⩾500
CH6	15.500000	17.225000	⩾500
CH11	15.600000	17.102000	⩾500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
CH1	16.400000	18.392000	⩾500
CH6	15.800000	18.287000	⩾500
CH11	15.750000	18.208000	⩾500

Test Plots

6 dB Bandwidth

802.11b CHANNEL 1

802.11b CHANNEL 2

802.11b CHANNEL 3

802.11b CHANNEL 4

802.11b CHANNEL 5

802.11b CHANNEL 6

802.11b CHANNEL 7

802.11b CHANNEL 8

802.11b CHANNEL 9

802.11b CHANNEL 10

802.11b CHANNEL 11

802.11g CHANNEL 1

802.11g CHANNEL 6

802.11g CHANNEL 11

802.11n-20 MHz CHANNEL 1

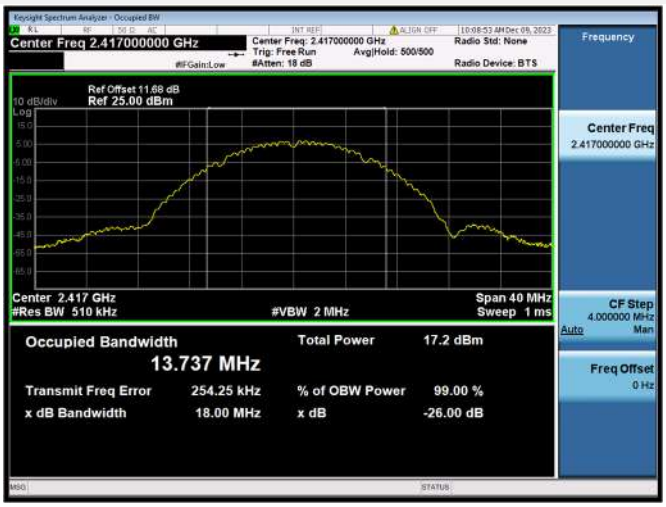
802.11n-20 MHz CHANNEL 6

802.11n-20 MHz CHANNEL 11

99% Bandwidth

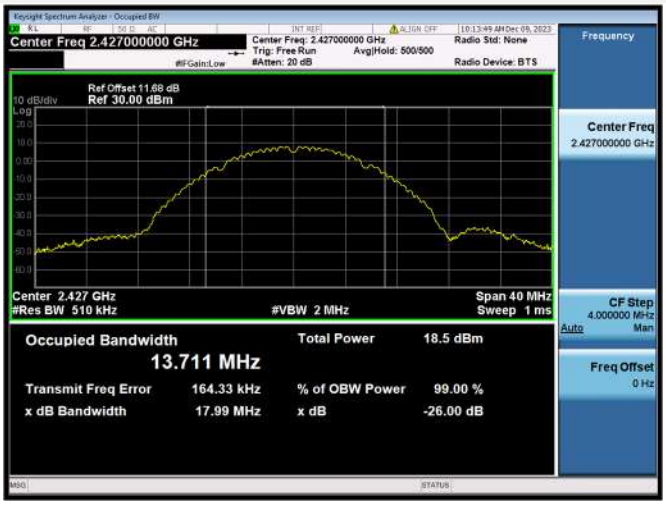
802.11b CHANNEL 1

802.11b CHANNEL 2

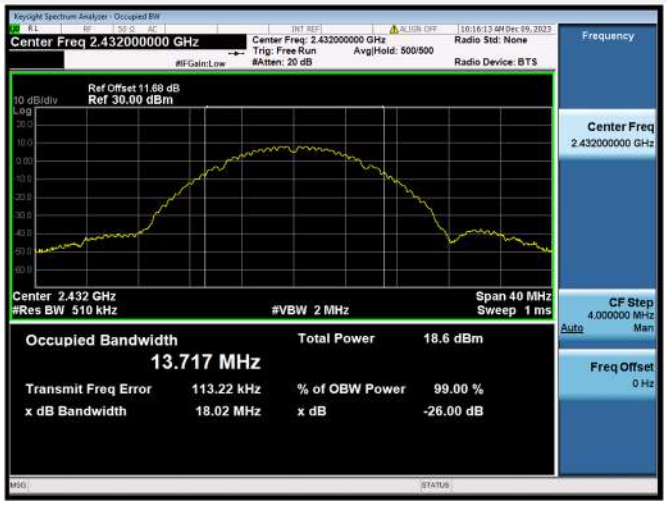


802.11b CHANNEL 3

802.11b CHANNEL 4



802.11b CHANNEL 5



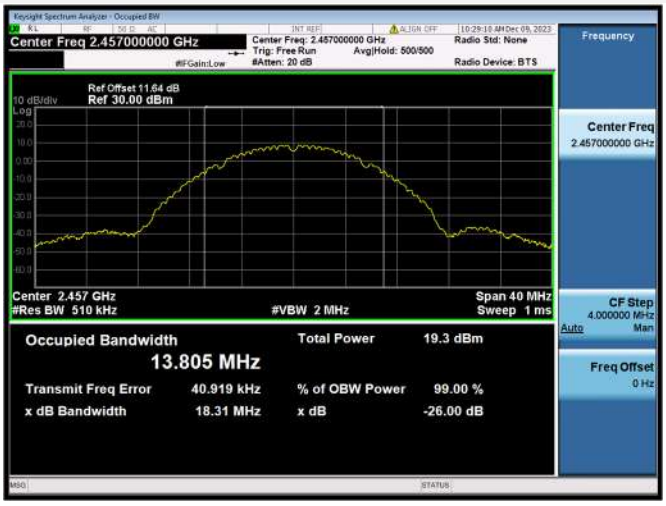
802.11b CHANNEL 6

802.11b CHANNEL 7

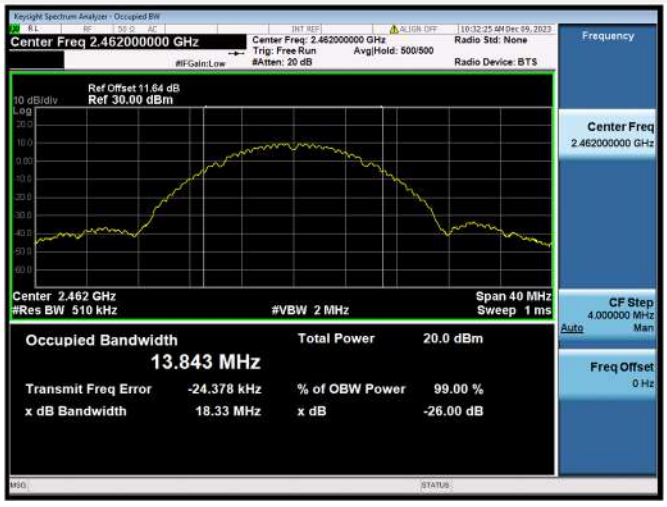
802.11b CHANNEL 8

802.11b CHANNEL 9

802.11b CHANNEL 10



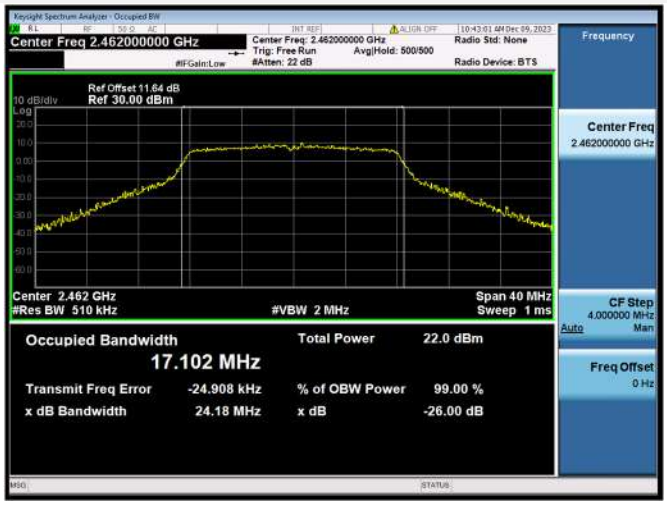
802.11b CHANNEL 11



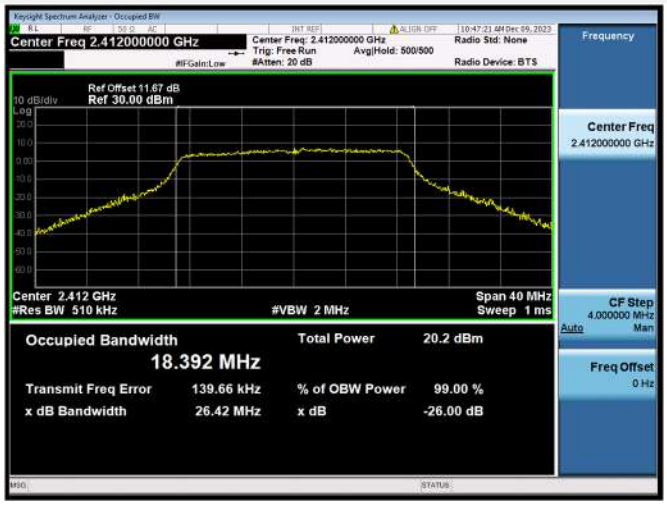
802.11g CHANNEL 1

802.11g CHANNEL 6

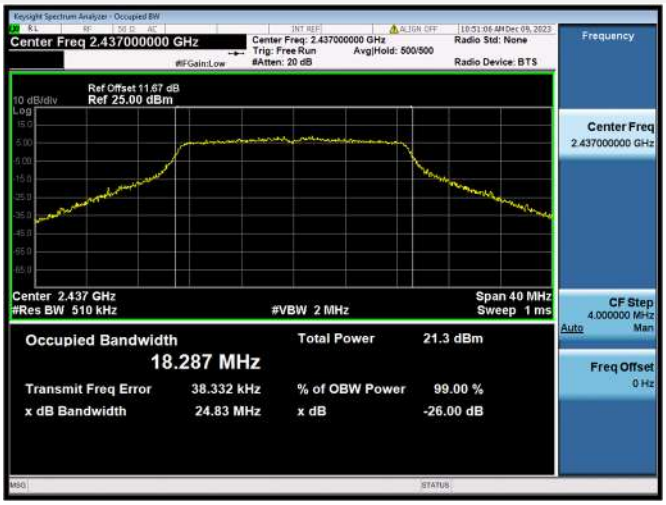
802.11g CHANNEL 11



802.11n-20 MHz CHANNEL 1



802.11n-20 MHz CHANNEL 6



802.11n-20 MHz CHANNEL 11

A.3 Conducted Spurious Emissions

Test Data

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-35.73	6.12	-13.88	Pass
CH2	-35.67	6.66	-13.34	Pass
CH3	-35.82	7.63	-12.37	Pass
CH4	-36.71	7.73	-12.27	Pass
CH5	-35.85	7.91	-12.09	Pass
CH6	-36.64	7.45	-12.55	Pass
CH7	-34.98	7.89	-12.11	Pass
CH8	-36.75	8.67	-11.33	Pass
CH9	-36.39	8.48	-11.52	Pass
CH10	-36.66	8.66	-11.34	Pass
CH11	-36.41	9.26	-10.74	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-36.62	5.64	-14.36	Pass
CH6	-34.90	6.18	-13.82	Pass
CH11	-36.74	5.92	-14.08	Pass

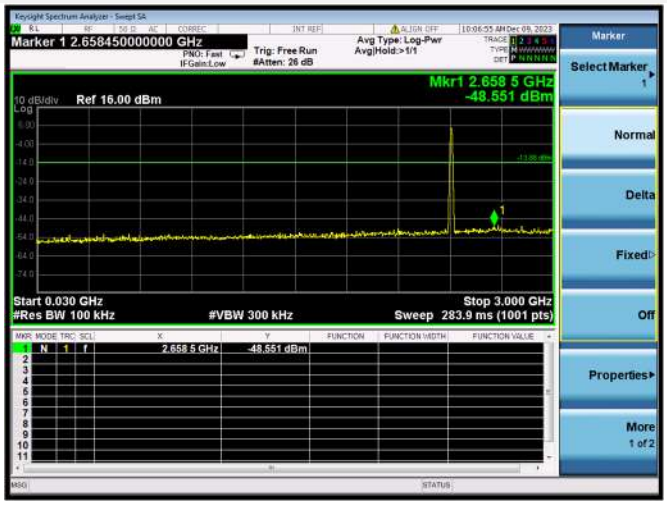
802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-35.97	4.18	-15.82	Pass
CH6	-36.87	5.21	-14.79	Pass
CH11	-35.66	4.50	-15.50	Pass

Test Plots

802.11b CHANNEL 1 CARRIER LEVEL

802.11b CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz

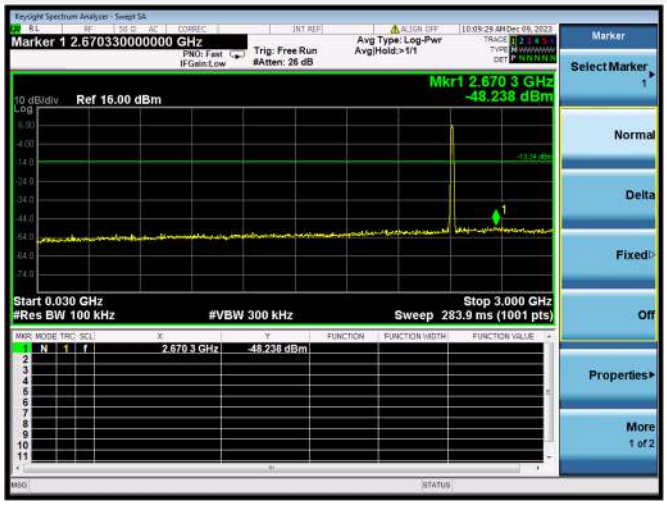


802.11b CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz

802.11b CHANNEL 2 CARRIER LEVEL

802.11b CHANNEL 2, SPURIOUS

30 MHz ~ 3 GHz



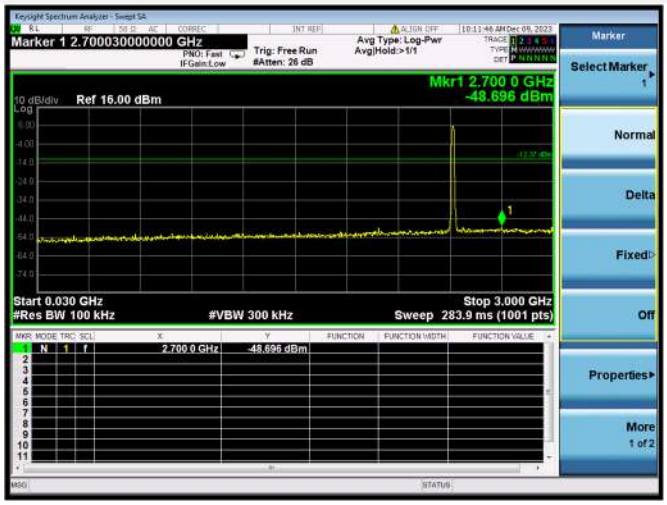
802.11b CHANNEL 2, SPURIOUS

2 GHz ~ 25 GHz

802.11b CHANNEL 3 CARRIER LEVEL

802.11b CHANNEL 3, SPURIOUS

30 MHz ~ 3 GHz

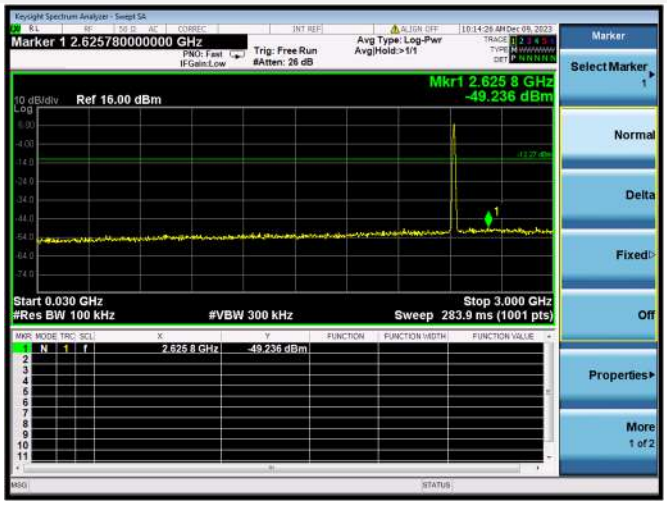


802.11b CHANNEL 3, SPURIOUS

2 GHz ~ 25 GHz

802.11b CHANNEL 4 CARRIER LEVEL

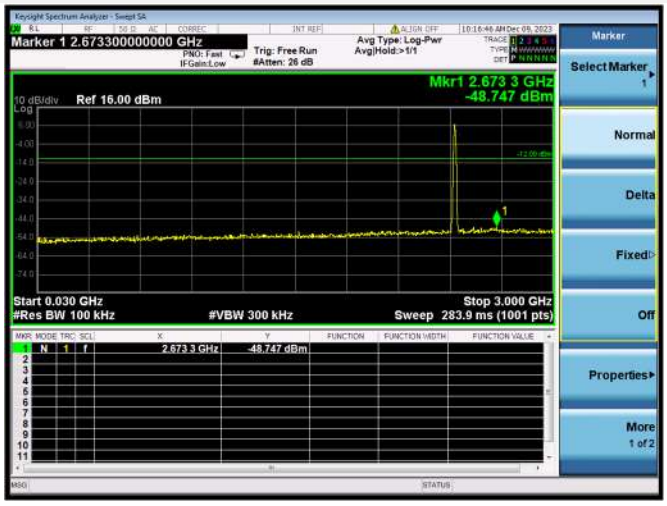
802.11b CHANNEL 4, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 4, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 5 CARRIER LEVEL

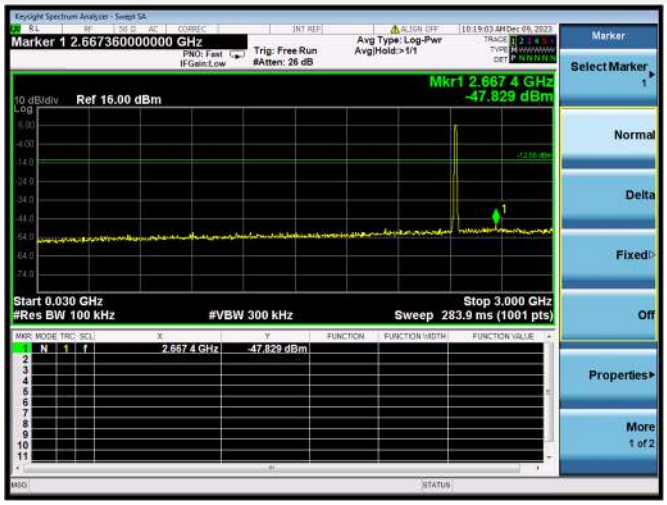
802.11b CHANNEL 5, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 5, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 6 CARRIER LEVEL

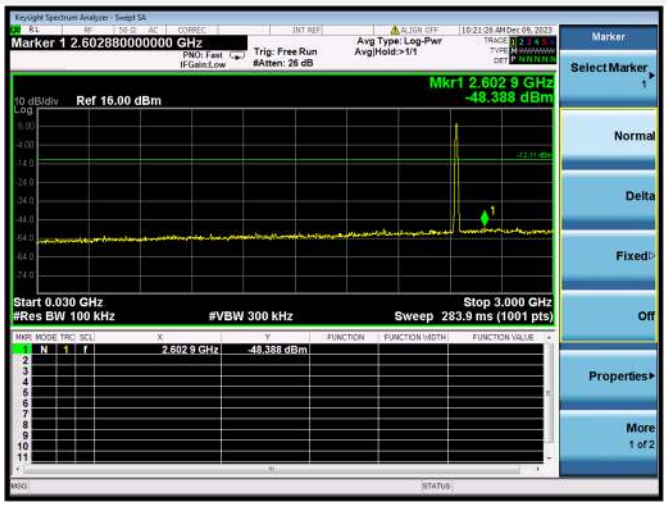
802.11b CHANNEL 6, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 6, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 7 CARRIER LEVEL

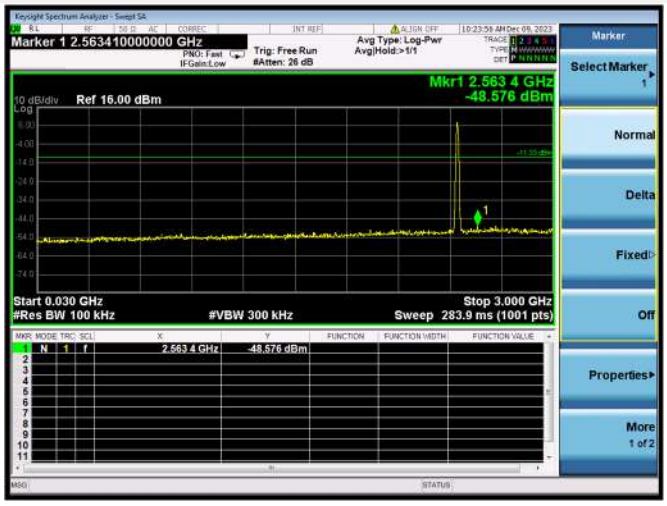
802.11b CHANNEL 7, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 7, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 8 CARRIER LEVEL

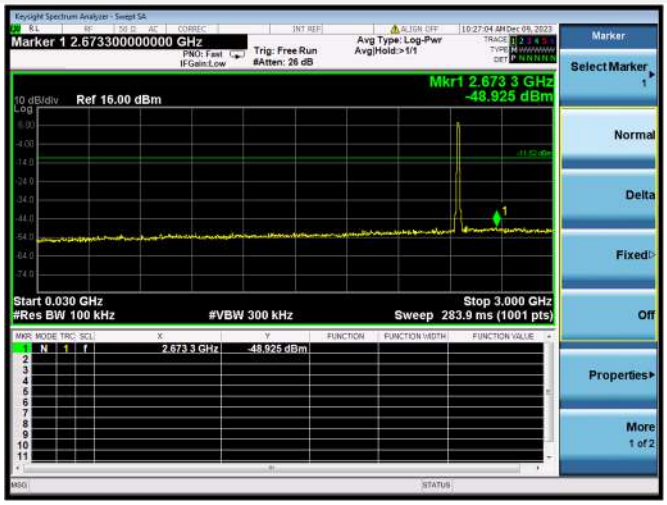
802.11b CHANNEL 8, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 8, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 9 CARRIER LEVEL

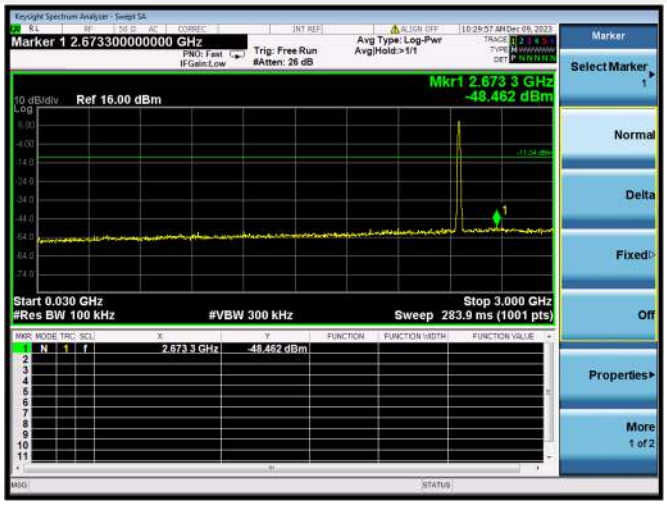
802.11b CHANNEL 9, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 9, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 10 CARRIER LEVEL

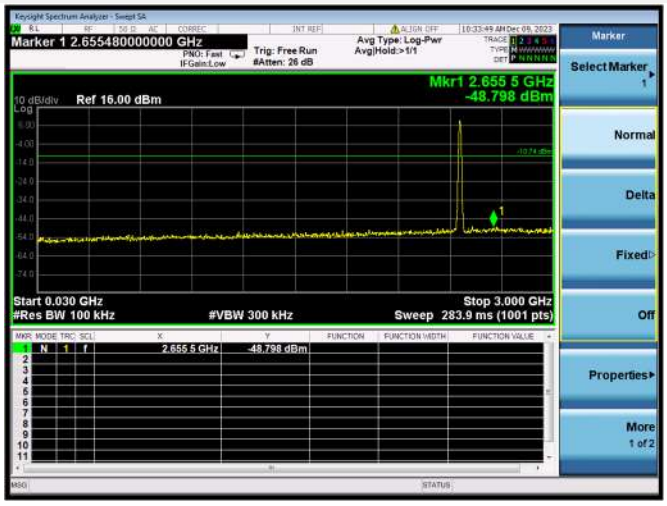
802.11b CHANNEL 10, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 10, SPURIOUS
2 GHz ~ 25 GHz

802.11b CHANNEL 11 CARRIER LEVEL

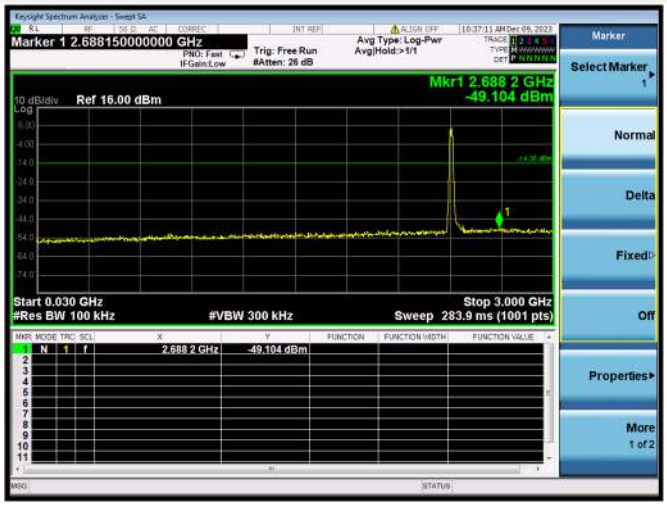
802.11b CHANNEL 11, SPURIOUS
30 MHz ~ 3 GHz



802.11b CHANNEL 11, SPURIOUS
2 GHz ~ 25 GHz

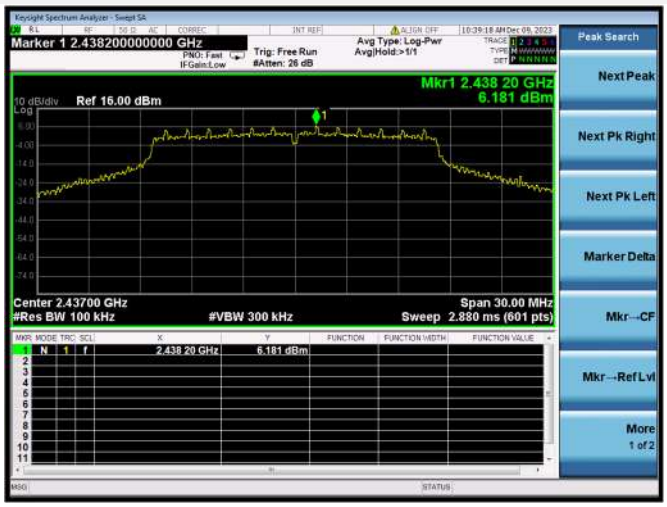
802.11g CHANNEL 1 CARRIER LEVEL

802.11g CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz

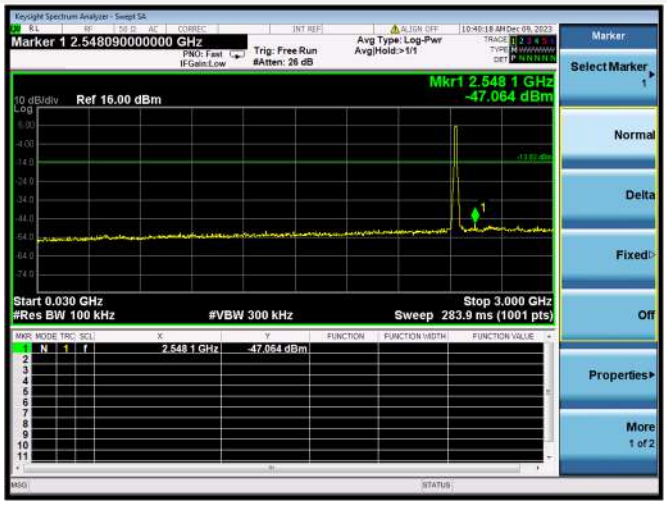


802.11g CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz

802.11g CHANNEL 6 CARRIER LEVEL



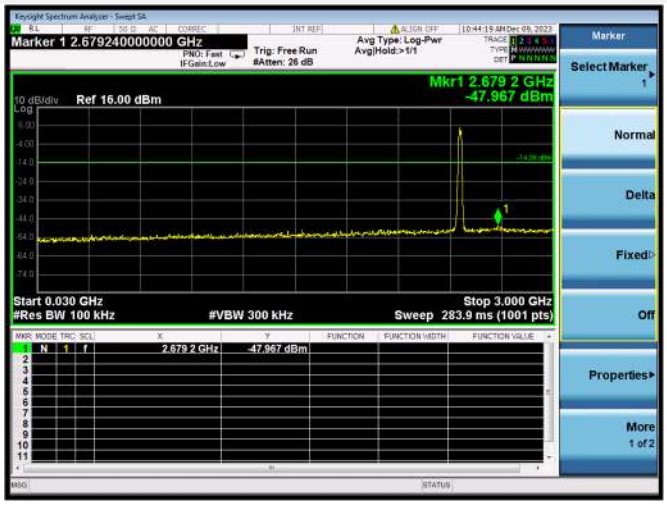
802.11g CHANNEL 6, SPURIOUS
30 MHz ~ 3 GHz



802.11g CHANNEL 6, SPURIOUS
2 GHz ~ 25 GHz

802.11g CHANNEL 11 CARRIER LEVEL

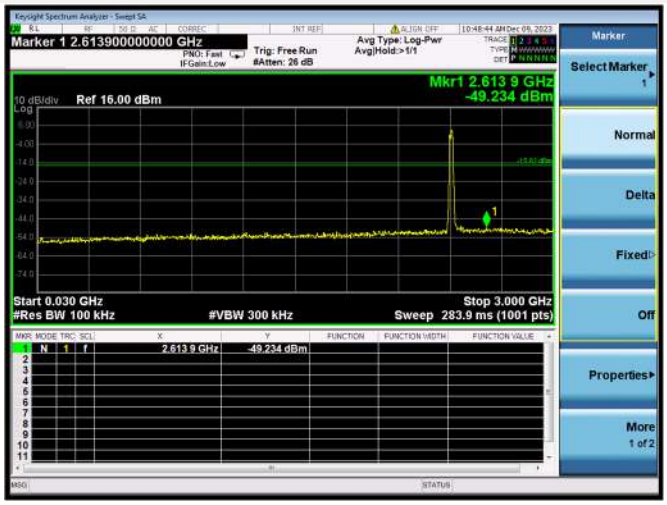
802.11g CHANNEL 11, SPURIOUS
30 MHz ~ 3 GHz



802.11g CHANNEL 11, SPURIOUS
2 GHz ~ 25 GHz

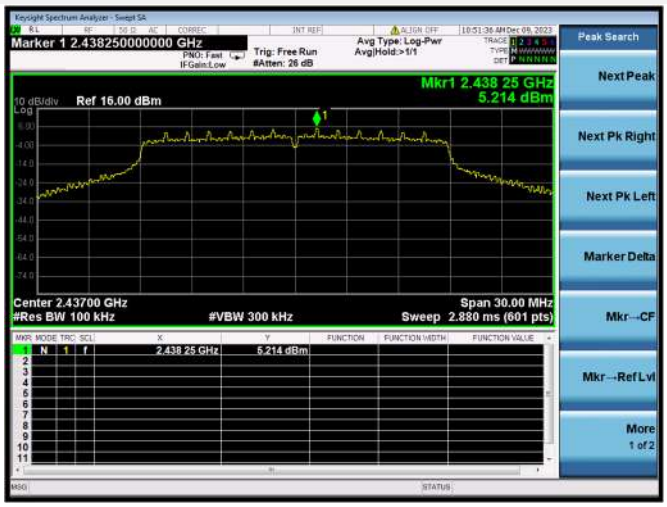
802.11n-20 MHz CHANNEL 1 CARRIER LEVEL

802.11n-20 MHz CHANNEL 1, SPURIOUS
30 MHz ~ 3 GHz

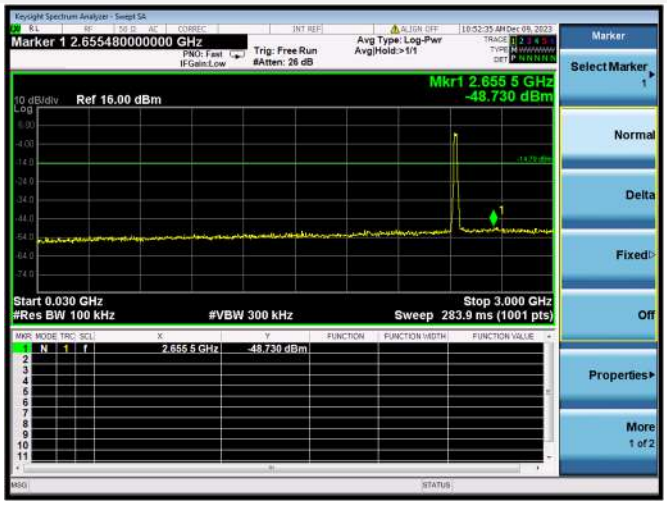


802.11n-20 MHz CHANNEL 1, SPURIOUS
2 GHz ~ 25 GHz

802.11n-20 MHz CHANNEL 6 CARRIER LEVEL

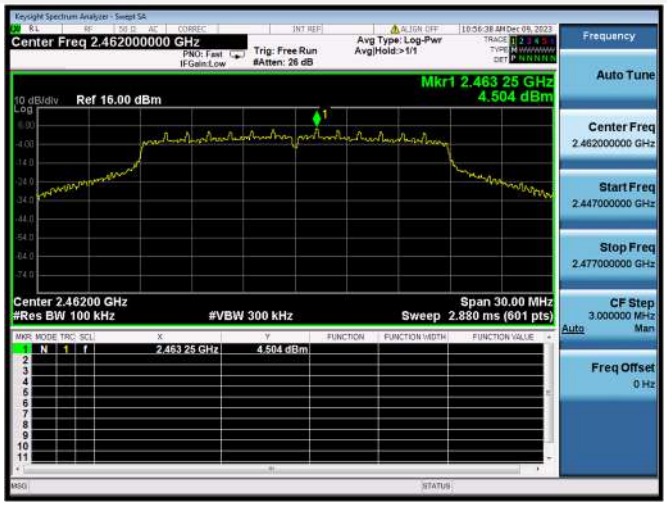


802.11n-20 MHz CHANNEL 6, SPURIOUS
30 MHz ~ 3 GHz

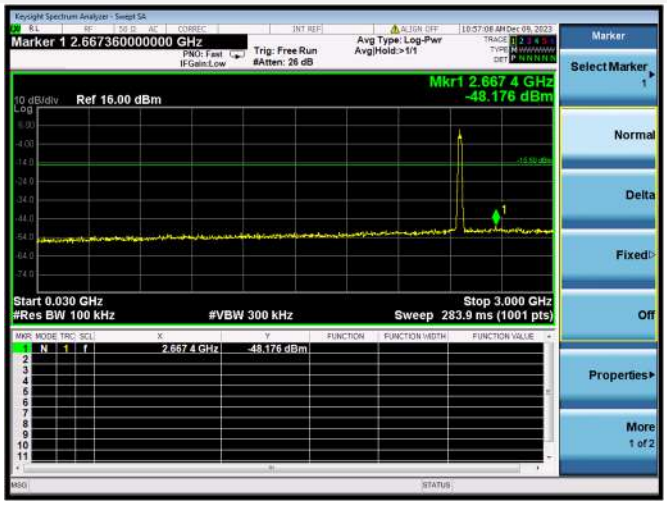


802.11n-20 MHz CHANNEL 6, SPURIOUS
2 GHz ~ 25 GHz

802.11n-20 MHz CHANNEL 11 CARRIER LEVEL



802.11n-20 MHz CHANNEL 11, SPURIOUS
30 MHz ~ 3 GHz



802.11n-20 MHz CHANNEL 11, 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.

Test Data

802.11b Mode：

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-38.46	6.12	-13.88	Pass
CH2	-44.86	6.66	-13.34	Pass
CH3	-45.91	7.63	-12.37	Pass
CH4	-46.21	7.73	-12.27	Pass
CH5	-46.59	7.91	-12.09	Pass
CH7	-45.45	7.89	-12.11	Pass
CH8	-45.89	8.67	-11.33	Pass
CH9	-46.31	8.48	-11.52	Pass
CH10	-46.03	8.66	-11.34	Pass
CH11	-45.20	9.26	-10.74	Pass

802.11g Mode：

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-22.79	5.64	-14.36	Pass
CH11	-43.94	5.92	-14.08	Pass

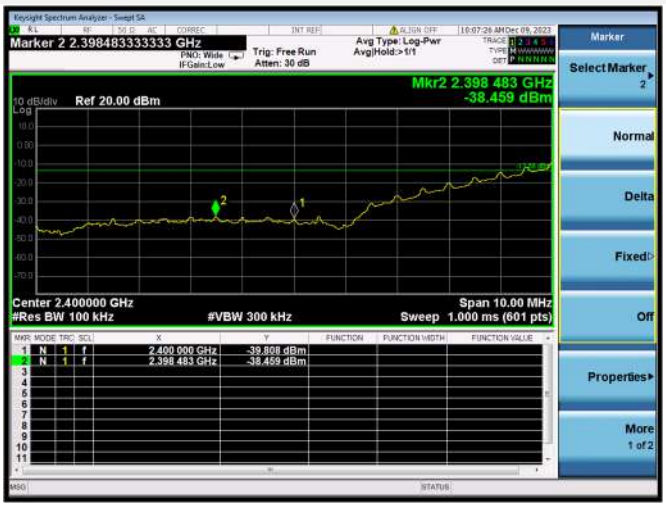
802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
CH1	-23.93	4.18	-15.82	Pass
CH11	-44.17	4.50	-15.50	Pass

Test Plots

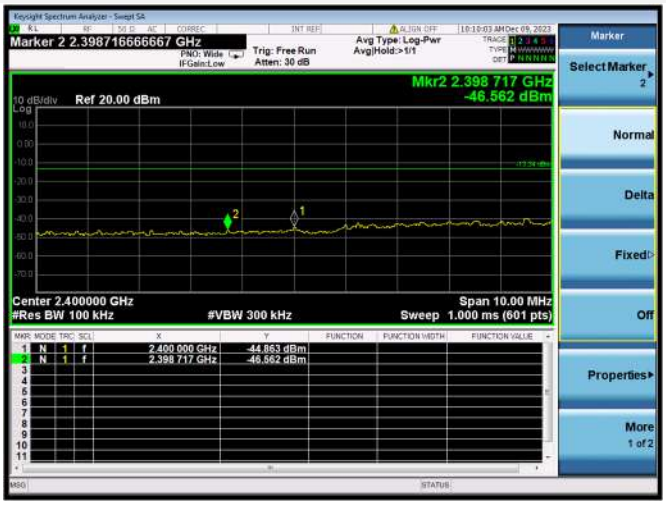
802.11b CHANNEL 1, CARRIER LEVEL

802.11b CHANNEL 1, BAND EDGE



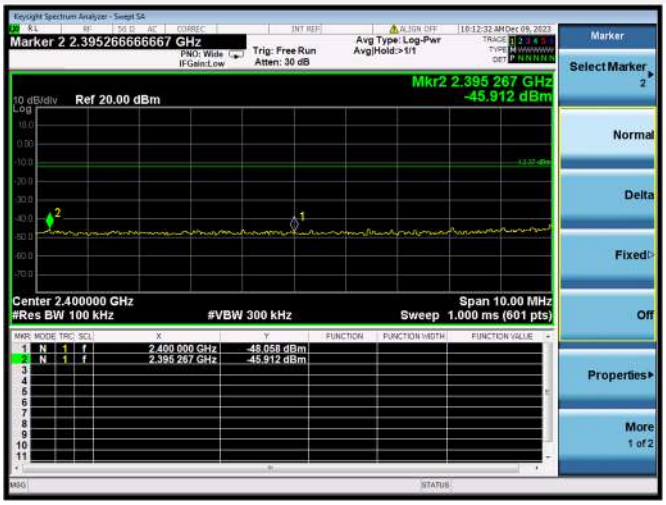
802.11b CHANNEL 2, CARRIER LEVEL

802.11b CHANNEL 2, BAND EDGE



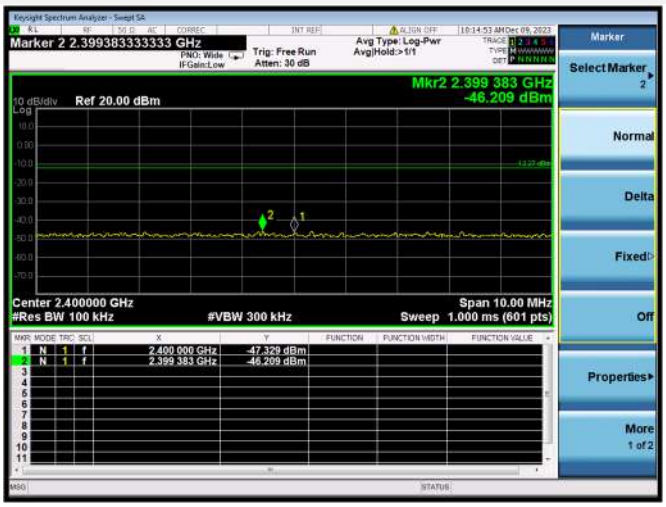
802.11b CHANNEL 3, CARRIER LEVEL

802.11b CHANNEL 3, BAND EDGE



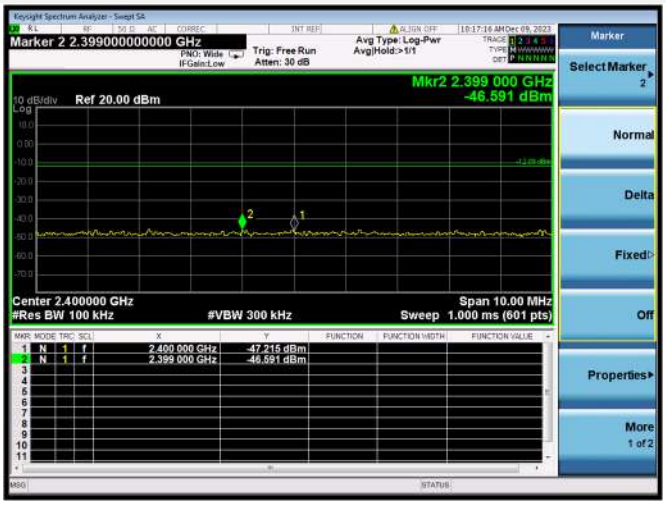
802.11b CHANNEL 4, CARRIER LEVEL

802.11b CHANNEL 4, BAND EDGE



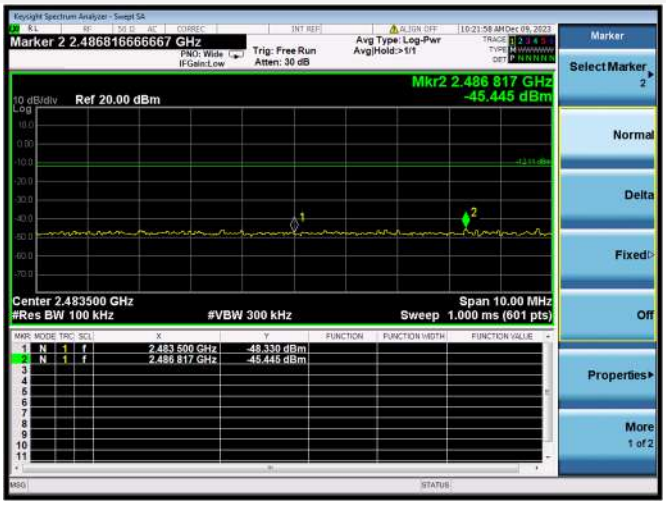
802.11b CHANNEL 5, CARRIER LEVEL

802.11b CHANNEL 5, BAND EDGE



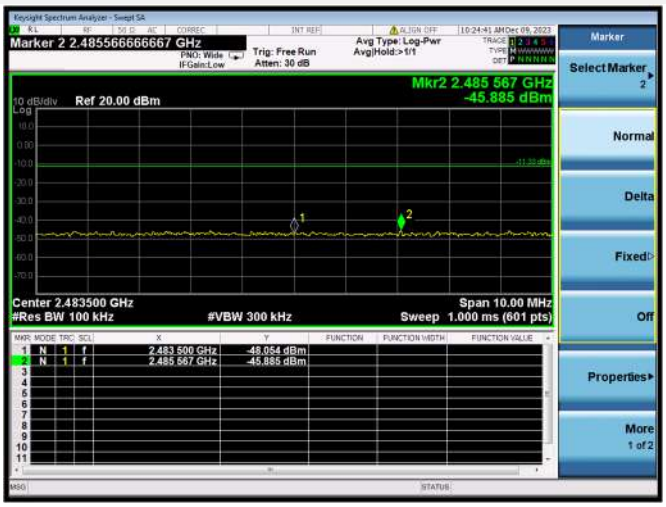
802.11b CHANNEL 7, CARRIER LEVEL

802.11b CHANNEL 7, BAND EDGE



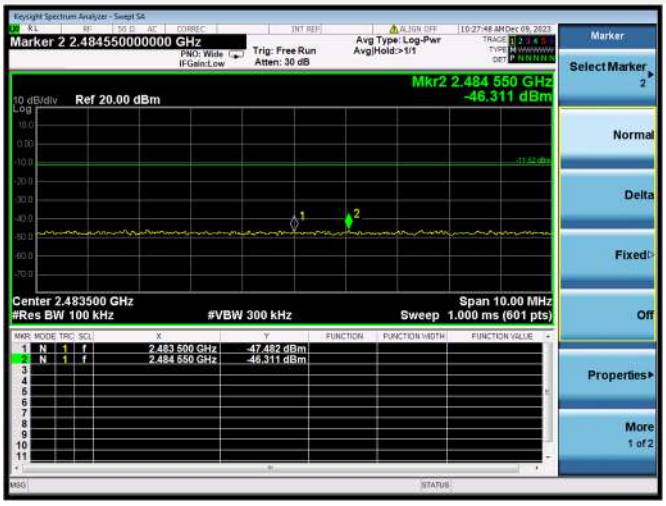
802.11b CHANNEL 8, CARRIER LEVEL

802.11b CHANNEL 8, BAND EDGE



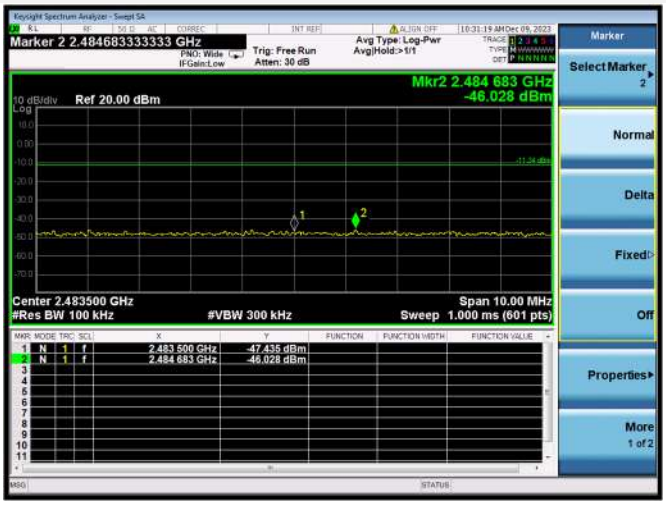
802.11b CHANNEL 9, CARRIER LEVEL

802.11b CHANNEL 9, BAND EDGE



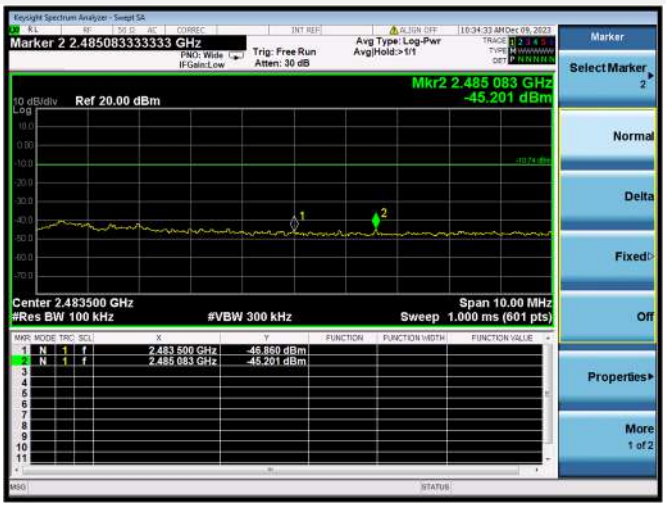
802.11b CHANNEL 10, CARRIER LEVEL

802.11b CHANNEL 10, BAND EDGE



802.11b CHANNEL 11, CARRIER LEVEL

802.11b CHANNEL 11, BAND EDGE

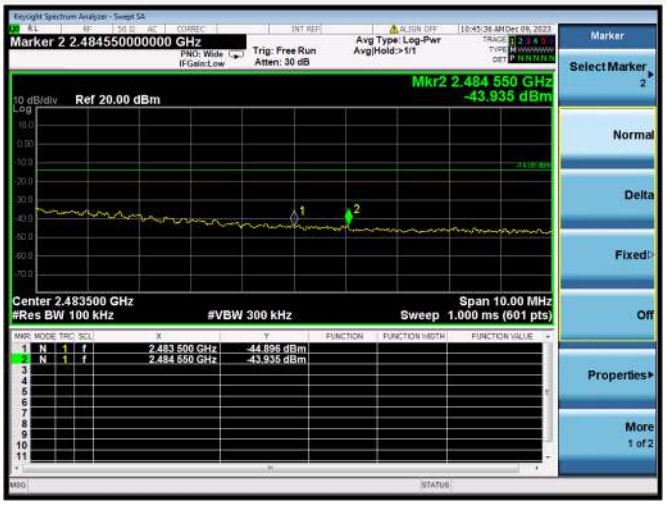


802.11g CHANNEL 1, CARRIER LEVEL

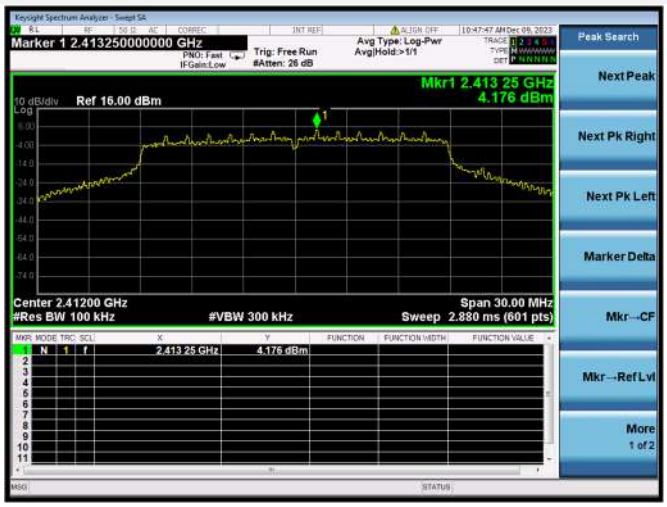
802.11g CHANNEL 1, BAND EDGE

802.11g CHANNEL 11, CARRIER LEVEL

802.11g CHANNEL 11, BAND EDGE

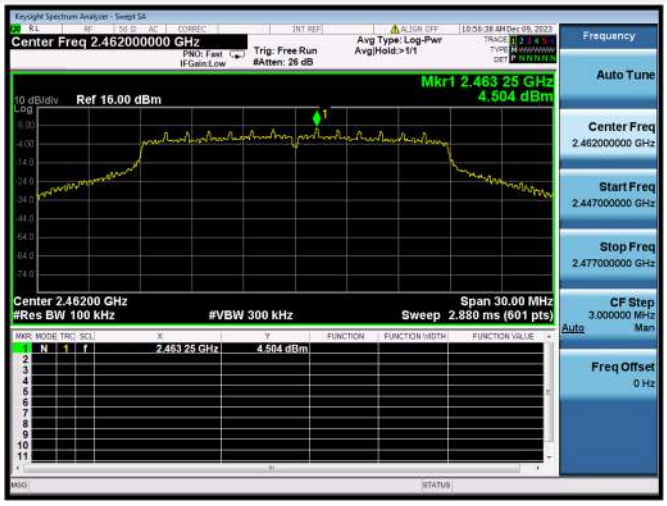


802.11n-20 MHz CHANNEL 1, CARRIER LEVEL

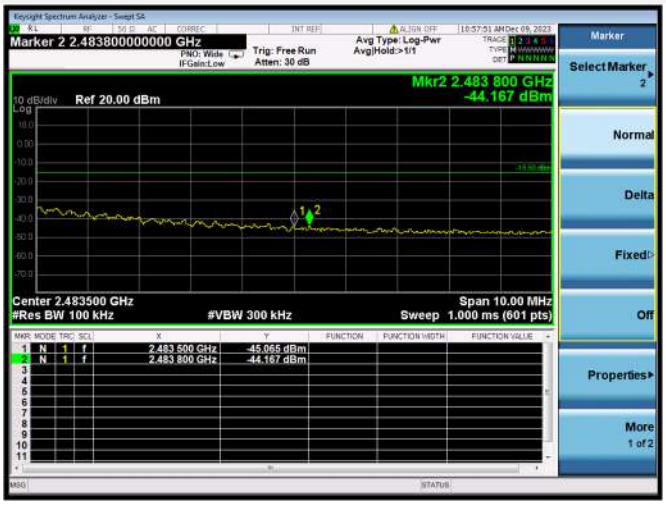


802.11n-20 MHz CHANNEL 1, BAND EDGE

802.11n-20 MHz CHANNEL 11, CARRIER LEVEL



802.11n-20 MHz CHANNEL 11, BAND EDGE



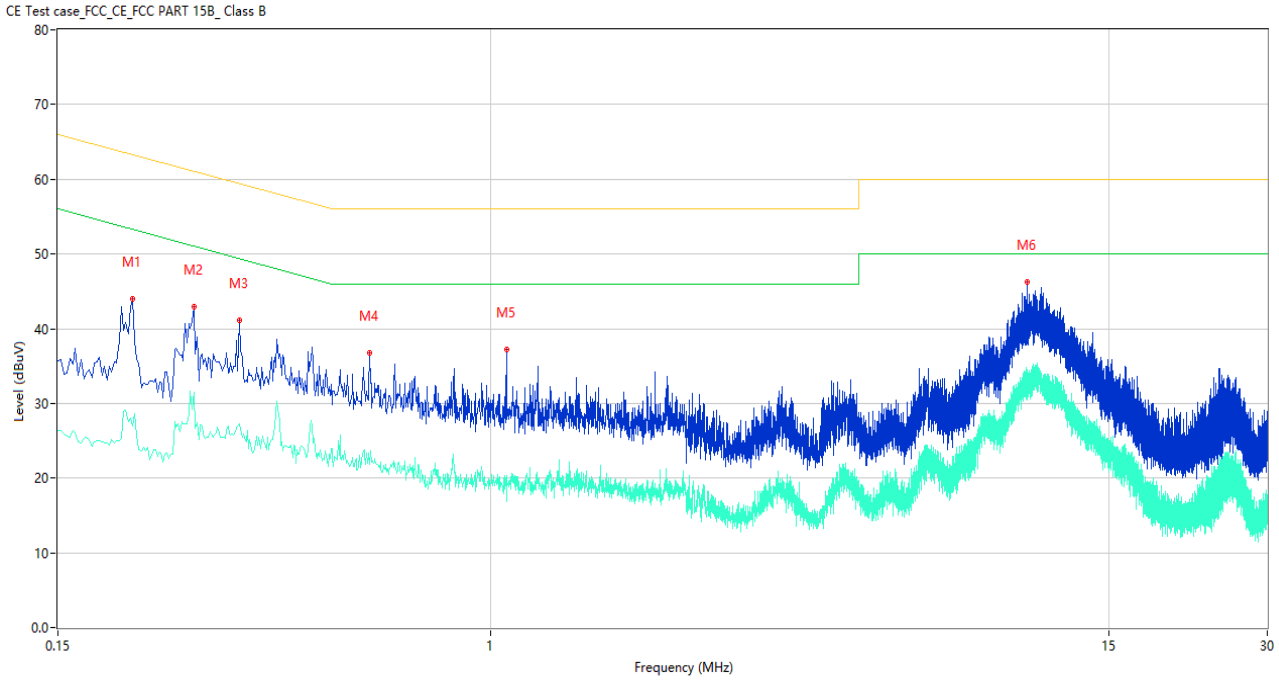
A.5 Conducted Emissions

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

Note [2]: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

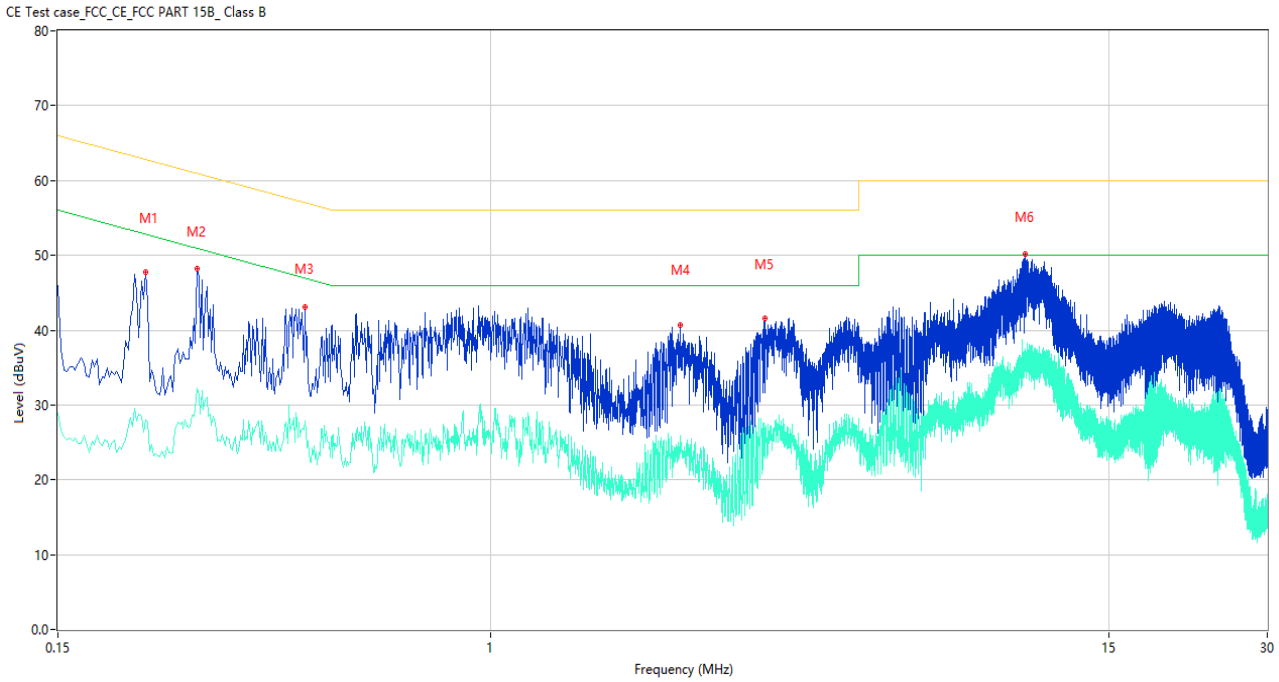
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.208	44.04	9.42	63.28	19.24	Peak	L	Pass
1**	0.208	26.98	9.42	53.28	26.30	AV	L	Pass
2	0.272	42.96	9.43	61.06	18.10	Peak	L	Pass
2**	0.272	31.49	9.43	51.06	19.57	AV	L	Pass
3	0.332	41.08	9.37	59.40	18.32	Peak	L	Pass
3**	0.332	27.34	9.37	49.40	22.06	AV	L	Pass
4	0.588	36.80	9.96	56.00	19.20	Peak	L	Pass
4**	0.588	21.77	9.96	46.00	24.23	AV	L	Pass
5	1.070	37.23	9.56	56.00	18.77	Peak	L	Pass
5**	1.070	20.41	9.56	46.00	25.59	AV	L	Pass
6	10.496	46.27	8.74	60.00	13.73	Peak	L	Pass
6**	10.496	33.58	8.74	50.00	16.42	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.220	47.70	9.42	62.82	15.12	Peak	N	Pass
1**	0.220	28.08	9.42	52.82	24.74	AV	N	Pass
2	0.276	48.16	9.43	60.94	12.78	Peak	N	Pass
2**	0.276	32.19	9.43	50.94	18.75	AV	N	Pass
3	0.442	43.10	9.94	57.02	13.92	Peak	N	Pass
3**	0.442	27.93	9.94	47.02	19.09	AV	N	Pass
4	2.288	40.71	9.75	56.00	15.29	Peak	N	Pass
4**	2.288	23.86	9.75	46.00	22.14	AV	N	Pass
5	3.322	41.51	9.58	56.00	14.49	Peak	N	Pass
5**	3.322	25.53	9.58	46.00	20.47	AV	N	Pass
6	10.408	50.14	8.82	60.00	9.86	Peak	N	Pass
6**	10.408	37.26	8.82	50.00	12.74	AV	N	Pass

A.6 Radiated Emission

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

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

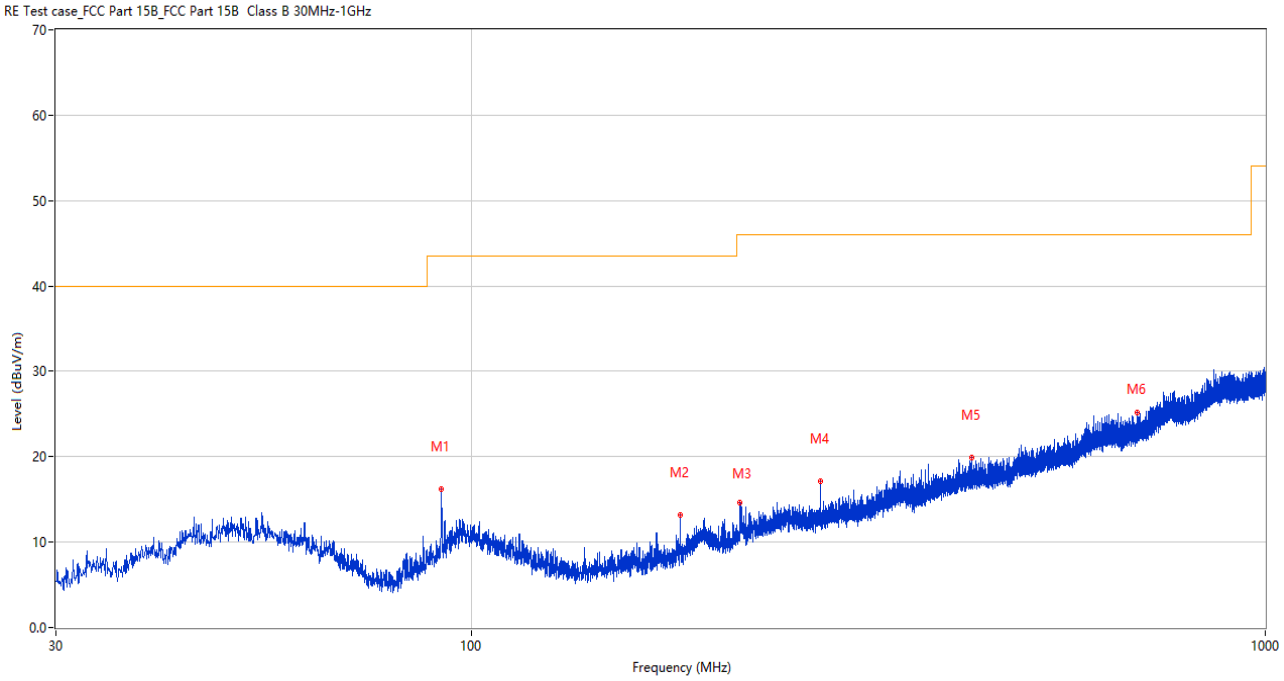
Note [3]: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

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

Note [5]: Both model of the charger were tested in this report. The C-P35 (Huntkey) is the main test model, and the C-P35 (Acbel) only retest the below 1GHz in this report.

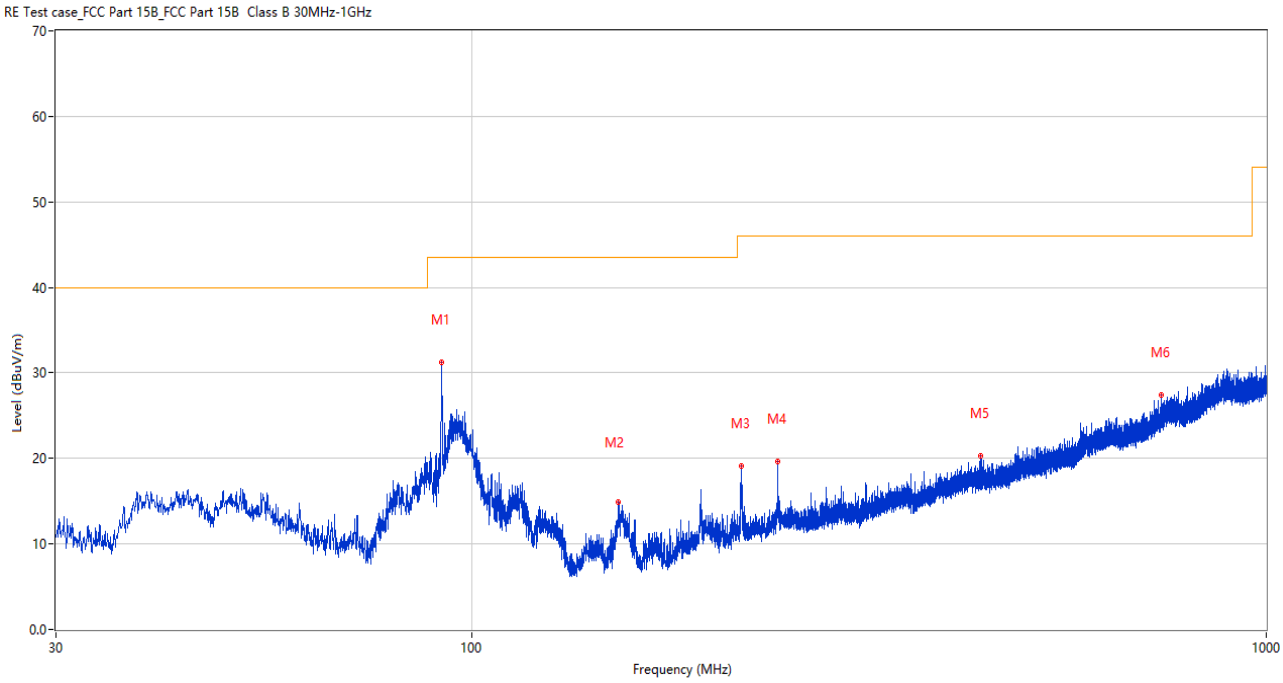
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	91.741	16.26	-28.30	43.5	27.24	Peak	190.00	200	Horizontal	Pass
2	183.454	13.19	-28.01	43.5	30.31	Peak	225.00	200	Horizontal	Pass
3	218.083	14.57	-26.10	46.0	31.43	Peak	277.00	100	Horizontal	Pass
4	275.168	17.15	-24.31	46.0	28.85	Peak	48.00	100	Horizontal	Pass
5	427.458	19.85	-20.00	46.0	26.15	Peak	297.00	100	Horizontal	Pass
6	689.551	25.21	-14.09	46.0	20.79	Peak	307.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	91.692	31.23	-28.31	43.5	12.27	Peak	56.00	100	Vertical	Pass
2	153.141	14.93	-29.46	43.5	28.57	Peak	0.00	100	Vertical	Pass
3	218.616	19.14	-26.04	46.0	26.86	Peak	4.00	100	Vertical	Pass
4	242.866	19.60	-24.64	46.0	26.40	Peak	313.00	100	Vertical	Pass
5	437.546	20.26	-19.89	46.0	25.74	Peak	328.00	100	Vertical	Pass
6	737.276	27.48	-12.67	46.0	18.52	Peak	133.00	200	Vertical	Pass

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

Note 2: The spurious from 18GHz to 25GHz is noise only, do not show on the report.

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1500.100	40.75	-19.47	74.0	33.25	Peak	320.00	200	Horizontal	Pass
1**	1500.100	30.93	-19.47	54.0	23.07	AV	320.00	200	Horizontal	Pass
2	2410.800	102.35	-14.70	74.0	-28.35	Peak	146.00	100	Horizontal	N/A
2**	2410.800	99.43	-14.70	54.0	-45.43	AV	146.00	100	Horizontal	N/A
3	2969.700	48.49	-11.90	74.0	25.51	Peak	270.00	200	Horizontal	Pass
3**	2969.700	38.95	-11.90	54.0	15.05	AV	270.00	200	Horizontal	Pass
4	4824.250	52.01	-5.61	74.0	21.99	Peak	176.00	150	Horizontal	Pass
4**	4824.250	49.67	-5.61	54.0	4.33	AV	176.00	150	Horizontal	Pass
5	7856.250	53.95	-0.17	74.0	20.05	Peak	143.00	300	Horizontal	Pass
5**	7856.250	44.20	-0.17	54.0	9.80	AV	143.00	300	Horizontal	Pass
6	17789.999	48.04	6.22	74.0	25.96	Peak	318.00	100	Horizontal	Pass
6**	17789.999	40.90	6.22	54.0	13.10	AV	318.00	100	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1466.900	42.03	-19.81	74.0	31.97	Peak	300.00	300	Vertical	Pass
1**	1466.900	30.33	-19.81	54.0	23.67	AV	300.00	300	Vertical	Pass
2	2413.300	87.14	-14.62	74.0	-13.14	Peak	340.00	100	Vertical	N/A
2**	2413.300	84.22	-14.62	54.0	-30.22	AV	340.00	100	Vertical	N/A
3	2726.500	49.02	-11.62	74.0	24.98	Peak	142.00	150	Vertical	Pass
3**	2726.500	39.72	-11.62	54.0	14.28	AV	142.00	150	Vertical	Pass
4	4824.000	48.30	-5.61	74.0	25.70	Peak	299.00	150	Vertical	Pass
4**	4824.000	42.59	-5.61	54.0	11.41	AV	299.00	150	Vertical	Pass
5	7868.000	53.62	0.36	74.0	20.38	Peak	0.00	300	Vertical	Pass
5**	7868.000	44.70	0.36	54.0	9.30	AV	0.00	300	Vertical	Pass
6	17797.501	48.09	6.45	74.0	25.91	Peak	247.00	400	Vertical	Pass
6**	17797.501	41.73	6.45	54.0	12.27	AV	247.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 2

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1268.700	40.44	-19.73	74.0	33.56	Peak	89.00	200	Horizontal	Pass
1**	1268.700	30.70	-19.73	54.0	23.30	AV	89.00	200	Horizontal	Pass
2	2417.000	102.03	-14.57	74.0	-28.03	Peak	145.00	200	Horizontal	N/A
2**	2417.000	98.52	-14.57	54.0	-44.52	AV	145.00	200	Horizontal	N/A
3	2735.300	49.11	-11.86	74.0	24.89	Peak	103.00	150	Horizontal	Pass
3**	2735.300	39.50	-11.86	54.0	14.50	AV	103.00	150	Horizontal	Pass
4	4834.250	51.40	-5.86	74.0	22.60	Peak	160.00	150	Horizontal	Pass
4**	4834.250	47.72	-5.86	54.0	6.28	AV	160.00	150	Horizontal	Pass
5	7877.750	54.63	0.50	74.0	19.37	Peak	160.00	200	Horizontal	Pass
5**	7877.750	44.63	0.50	54.0	9.37	AV	160.00	200	Horizontal	Pass
6	17572.499	48.65	6.21	74.0	25.35	Peak	45.00	400	Horizontal	Pass
6**	17572.499	40.47	6.21	54.0	13.53	AV	45.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 2

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1595.900	40.60	-19.92	74.0	33.40	Peak	8.00	100	Vertical	Pass
1**	1595.900	30.68	-19.92	54.0	23.32	AV	8.00	100	Vertical	Pass
2	2418.200	87.35	-14.52	74.0	-13.35	Peak	334.00	150	Vertical	N/A
2**	2418.200	84.52	-14.52	54.0	-30.52	AV	334.00	150	Vertical	N/A
3	2732.000	48.44	-11.61	74.0	25.56	Peak	236.00	100	Vertical	Pass
3**	2732.000	39.71	-11.61	54.0	14.29	AV	236.00	100	Vertical	Pass
4	4991.750	49.26	-4.13	74.0	24.74	Peak	255.00	200	Vertical	Pass
4**	4991.750	40.41	-4.13	54.0	13.59	AV	255.00	200	Vertical	Pass
5	7879.000	53.46	0.41	74.0	20.54	Peak	62.00	100	Vertical	Pass
5**	7879.000	45.48	0.41	54.0	8.52	AV	62.00	100	Vertical	Pass
6	17785.000	48.28	6.07	74.0	25.72	Peak	138.00	200	Vertical	Pass
6**	17785.000	40.59	6.07	54.0	13.41	AV	138.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 3

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1496.300	40.27	-19.50	74.0	33.73	Peak	247.00	200	Horizontal	Pass
1**	1496.300	31.30	-19.50	54.0	22.70	AV	247.00	200	Horizontal	Pass
2	2423.300	102.26	-14.52	74.0	-28.26	Peak	143.00	100	Horizontal	N/A
2**	2423.300	99.42	-14.52	54.0	-45.42	AV	143.00	100	Horizontal	N/A
3	2913.300	48.76	-11.85	74.0	25.24	Peak	33.00	200	Horizontal	Pass
3**	2913.300	39.67	-11.85	54.0	14.33	AV	33.00	200	Horizontal	Pass
4	4844.250	51.59	-6.18	74.0	22.41	Peak	157.00	150	Horizontal	Pass
4**	4844.250	49.36	-6.18	54.0	4.64	AV	157.00	150	Horizontal	Pass
5	7867.750	53.46	0.35	74.0	20.54	Peak	83.00	200	Horizontal	Pass
5**	7867.750	44.82	0.35	54.0	9.18	AV	83.00	200	Horizontal	Pass
6	17612.501	47.80	5.34	74.0	26.20	Peak	337.00	400	Horizontal	Pass
6**	17612.501	39.97	5.34	54.0	14.03	AV	337.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 3

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1195.600	40.99	-20.26	74.0	33.01	Peak	330.00	100	Vertical	Pass
1**	1195.600	31.19	-20.26	54.0	22.81	AV	330.00	100	Vertical	Pass
2	2422.000	88.41	-14.56	74.0	-14.41	Peak	340.00	150	Vertical	N/A
2**	2422.000	83.54	-14.56	54.0	-29.54	AV	340.00	150	Vertical	N/A
3	2732.000	48.90	-11.61	74.0	25.10	Peak	330.00	200	Vertical	Pass
3**	2732.000	40.04	-11.61	54.0	13.96	AV	330.00	200	Vertical	Pass
4	4969.000	48.91	-3.99	74.0	25.09	Peak	355.00	100	Vertical	Pass
4**	4969.000	40.50	-3.99	54.0	13.50	AV	355.00	100	Vertical	Pass
5	7868.750	53.95	0.37	74.0	20.05	Peak	174.00	300	Vertical	Pass
5**	7868.750	44.94	0.37	54.0	9.06	AV	174.00	300	Vertical	Pass
6	17572.499	48.11	6.21	74.0	25.89	Peak	281.00	200	Vertical	Pass
6**	17572.499	39.43	6.21	54.0	14.57	AV	281.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 4

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1255.300	41.03	-19.90	74.0	32.97	Peak	281.00	300	Horizontal	Pass
1**	1255.300	30.48	-19.90	54.0	23.52	AV	281.00	300	Horizontal	Pass
2	2428.100	102.73	-14.44	74.0	-28.73	Peak	149.00	150	Horizontal	N/A
2**	2428.100	99.96	-14.44	54.0	-45.96	AV	149.00	150	Horizontal	N/A
3	2733.000	49.06	-11.65	74.0	24.94	Peak	214.00	150	Horizontal	Pass
3**	2733.000	39.58	-11.65	54.0	14.42	AV	214.00	150	Horizontal	Pass
4	4854.250	51.47	-6.06	74.0	22.53	Peak	157.00	150	Horizontal	Pass
4**	4854.250	49.37	-6.06	54.0	4.63	AV	157.00	150	Horizontal	Pass
5	7868.750	53.41	0.37	74.0	20.59	Peak	132.00	100	Horizontal	Pass
5**	7868.750	44.99	0.37	54.0	9.01	AV	132.00	100	Horizontal	Pass
6	17515.000	49.06	5.83	74.0	24.94	Peak	354.00	400	Horizontal	Pass
6**	17515.000	40.56	5.83	54.0	13.44	AV	354.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 4

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1596.000	40.96	-19.93	74.0	33.04	Peak	232.00	100	Vertical	Pass
1**	1596.000	32.90	-19.93	54.0	21.10	AV	232.00	100	Vertical	Pass
2	2428.100	88.74	-14.44	74.0	-14.74	Peak	337.00	150	Vertical	N/A
2**	2428.100	85.86	-14.44	54.0	-31.86	AV	337.00	150	Vertical	N/A
3	2731.700	48.46	-11.60	74.0	25.54	Peak	303.00	100	Vertical	Pass
3**	2731.700	39.58	-11.60	54.0	14.42	AV	303.00	100	Vertical	Pass
4	4955.500	49.50	-3.61	74.0	24.50	Peak	24.00	300	Vertical	Pass
4**	4955.500	40.68	-3.61	54.0	13.32	AV	24.00	300	Vertical	Pass
5	7864.500	53.44	0.19	74.0	20.56	Peak	95.00	100	Vertical	Pass
5**	7864.500	45.32	0.19	54.0	8.68	AV	95.00	100	Vertical	Pass
6	17802.500	47.78	6.46	74.0	26.22	Peak	163.00	400	Vertical	Pass
6**	17802.500	40.72	6.46	54.0	13.28	AV	163.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 5

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1496.400	40.30	-19.51	74.0	33.70	Peak	230.00	300	Horizontal	Pass
1**	1496.400	31.19	-19.51	54.0	22.81	AV	230.00	300	Horizontal	Pass
2	2433.100	102.74	-14.32	74.0	-28.74	Peak	145.00	200	Horizontal	N/A
2**	2433.100	99.92	-14.32	54.0	-45.92	AV	145.00	200	Horizontal	N/A
3	2870.200	48.41	-12.41	74.0	25.59	Peak	360.00	200	Horizontal	Pass
3**	2870.200	39.20	-12.41	54.0	14.80	AV	360.00	200	Horizontal	Pass
4	4864.250	51.70	-5.87	74.0	22.30	Peak	176.00	150	Horizontal	Pass
4**	4864.250	49.21	-5.87	54.0	4.79	AV	176.00	150	Horizontal	Pass
5	7814.250	53.62	0.29	74.0	20.38	Peak	77.00	300	Horizontal	Pass
5**	7814.250	43.93	0.29	54.0	10.07	AV	77.00	300	Horizontal	Pass
6	17805.001	49.08	6.39	74.0	24.92	Peak	139.00	100	Horizontal	Pass
6**	17805.001	40.82	6.39	54.0	13.18	AV	139.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 5

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1154.300	40.39	-20.37	74.0	33.61	Peak	0.00	400	Vertical	Pass
1**	1154.300	29.94	-20.37	54.0	24.06	AV	0.00	400	Vertical	Pass
2	2433.300	89.80	-14.32	74.0	-15.80	Peak	181.00	200	Vertical	N/A
2**	2433.300	86.98	-14.32	54.0	-32.98	AV	181.00	200	Vertical	N/A
3	2975.900	48.49	-11.96	74.0	25.51	Peak	351.00	100	Vertical	Pass
3**	2975.900	38.90	-11.96	54.0	15.10	AV	351.00	100	Vertical	Pass
4	4801.500	48.92	-4.77	74.0	25.08	Peak	27.00	200	Vertical	Pass
4**	4801.500	40.05	-4.77	54.0	13.95	AV	27.00	200	Vertical	Pass
5	7864.250	54.35	0.19	74.0	19.65	Peak	360.00	400	Vertical	Pass
5**	7864.250	45.02	0.19	54.0	8.98	AV	360.00	400	Vertical	Pass
6	17562.499	48.39	6.34	74.0	25.61	Peak	216.00	400	Vertical	Pass
6**	17562.499	40.77	6.34	54.0	13.23	AV	216.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1491.600	40.02	-19.45	74.0	33.98	Peak	0.00	300	Horizontal	Pass
1**	1491.600	31.02	-19.45	54.0	22.98	AV	0.00	300	Horizontal	Pass
2	2438.300	103.49	-13.99	74.0	-29.49	Peak	152.00	150	Horizontal	N/A
2**	2438.300	100.62	-13.99	54.0	-46.62	AV	152.00	150	Horizontal	N/A
3	2796.800	49.37	-12.71	74.0	24.63	Peak	0.00	100	Horizontal	Pass
3**	2796.800	38.99	-12.71	54.0	15.01	AV	0.00	100	Horizontal	Pass
4	4874.250	50.63	-6.10	74.0	23.37	Peak	8.00	150	Horizontal	Pass
4**	4874.250	48.03	-6.10	54.0	5.97	AV	8.00	150	Horizontal	Pass
5	7492.250	54.09	-0.40	74.0	19.91	Peak	279.00	300	Horizontal	Pass
5**	7492.250	45.51	-0.40	54.0	8.49	AV	279.00	300	Horizontal	Pass
6	17797.501	48.35	6.45	74.0	25.65	Peak	0.00	100	Horizontal	Pass
6**	17797.501	41.51	6.45	54.0	12.49	AV	0.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1495.100	40.47	-19.46	74.0	33.53	Peak	243.00	400	Vertical	Pass
1**	1495.100	31.27	-19.46	54.0	22.73	AV	243.00	400	Vertical	Pass
2	2438.200	90.56	-14.00	74.0	-16.56	Peak	178.00	100	Vertical	N/A
2**	2438.200	87.62	-14.00	54.0	-33.62	AV	178.00	100	Vertical	N/A
3	2898.800	48.40	-12.35	74.0	25.60	Peak	258.00	200	Vertical	Pass
3**	2898.800	39.01	-12.35	54.0	14.99	AV	258.00	200	Vertical	Pass
4	4974.000	50.06	-4.09	74.0	23.94	Peak	70.00	300	Vertical	Pass
4**	4974.000	40.25	-4.09	54.0	13.75	AV	70.00	300	Vertical	Pass
5	7862.500	54.17	0.18	74.0	19.83	Peak	112.00	300	Vertical	Pass
5**	7862.500	44.91	0.18	54.0	9.09	AV	112.00	300	Vertical	Pass
6	17817.500	48.83	6.05	74.0	25.17	Peak	196.00	300	Vertical	Pass
6**	17817.500	40.83	6.05	54.0	13.17	AV	196.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 7

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1519.500	40.69	-19.64	74.0	33.31	Peak	228.00	100	Horizontal	Pass
1**	1519.500	30.42	-19.64	54.0	23.58	AV	228.00	100	Horizontal	Pass
2	2442.000	104.05	-13.66	74.0	-30.05	Peak	183.00	200	Horizontal	N/A
2**	2442.000	100.33	-13.66	54.0	-46.33	AV	183.00	200	Horizontal	N/A
3	2915.700	49.18	-11.74	74.0	24.82	Peak	252.00	100	Horizontal	Pass
3**	2915.700	39.81	-11.74	54.0	14.19	AV	252.00	100	Horizontal	Pass
4	4884.250	50.44	-6.19	74.0	23.56	Peak	162.00	150	Horizontal	Pass
4**	4884.250	47.90	-6.19	54.0	6.10	AV	162.00	150	Horizontal	Pass
5	7803.000	53.76	-0.10	74.0	20.24	Peak	53.00	100	Horizontal	Pass
5**	7803.000	45.19	-0.10	54.0	8.81	AV	53.00	100	Horizontal	Pass
6	17585.000	48.73	6.05	74.0	25.27	Peak	360.00	400	Horizontal	Pass
6**	17585.000	39.85	6.05	54.0	14.15	AV	360.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 7

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1492.800	40.54	-19.43	74.0	33.46	Peak	263.00	300	Vertical	Pass
1**	1492.800	31.23	-19.43	54.0	22.77	AV	263.00	300	Vertical	Pass
2	2440.800	90.83	-13.78	74.0	-16.83	Peak	183.00	100	Vertical	N/A
2**	2440.800	87.95	-13.78	54.0	-33.95	AV	183.00	100	Vertical	N/A
3	2767.300	49.11	-12.77	74.0	24.89	Peak	28.00	200	Vertical	Pass
3**	2767.300	39.34	-12.77	54.0	14.66	AV	28.00	200	Vertical	Pass
4	5006.250	49.68	-4.39	74.0	24.32	Peak	113.00	150	Vertical	Pass
4**	5006.250	39.81	-4.39	54.0	14.19	AV	113.00	150	Vertical	Pass
5	7860.500	53.64	0.04	74.0	20.36	Peak	312.00	200	Vertical	Pass
5**	7860.500	44.37	0.04	54.0	9.63	AV	312.00	200	Vertical	Pass
6	17799.999	48.43	6.52	74.0	25.57	Peak	227.00	200	Vertical	Pass
6**	17799.999	41.48	6.52	54.0	12.52	AV	227.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 8

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1468.100	40.13	-19.78	74.0	33.87	Peak	0.00	200	Horizontal	Pass
1**	1468.100	30.63	-19.78	54.0	23.37	AV	0.00	200	Horizontal	Pass
2	2448.300	104.67	-13.23	74.0	-30.67	Peak	150.00	100	Horizontal	N/A
2**	2448.300	101.76	-13.23	54.0	-47.76	AV	150.00	100	Horizontal	N/A
3	2734.500	48.30	-11.80	74.0	25.70	Peak	322.00	150	Horizontal	Pass
3**	2734.500	40.30	-11.80	54.0	13.70	AV	322.00	150	Horizontal	Pass
4	4894.250	50.07	-6.32	74.0	23.93	Peak	36.00	150	Horizontal	Pass
4**	4894.250	47.60	-6.32	54.0	6.40	AV	36.00	150	Horizontal	Pass
5	7901.000	53.34	0.26	74.0	20.66	Peak	44.00	400	Horizontal	Pass
5**	7901.000	44.48	0.26	54.0	9.52	AV	44.00	400	Horizontal	Pass
6	17799.999	48.63	6.52	74.0	25.37	Peak	298.00	300	Horizontal	Pass
6**	17799.999	42.18	6.52	54.0	11.82	AV	298.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 8

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1199.800	42.11	-20.19	74.0	31.89	Peak	315.00	200	Vertical	Pass
1**	1199.800	29.45	-20.19	54.0	24.55	AV	315.00	200	Vertical	Pass
2	2448.300	93.46	-13.23	74.0	-19.46	Peak	359.00	100	Vertical	N/A
2**	2448.300	90.56	-13.23	54.0	-36.56	AV	359.00	100	Vertical	N/A
3	2926.700	48.95	-12.17	74.0	25.05	Peak	80.00	100	Vertical	Pass
3**	2926.700	38.73	-12.17	54.0	15.27	AV	80.00	100	Vertical	Pass
4	4994.000	49.11	-4.21	74.0	24.89	Peak	121.00	300	Vertical	Pass
4**	4994.000	39.75	-4.21	54.0	14.25	AV	121.00	300	Vertical	Pass
5	7868.000	53.74	0.36	74.0	20.26	Peak	39.00	200	Vertical	Pass
5**	7868.000	45.63	0.36	54.0	8.37	AV	39.00	200	Vertical	Pass
6	17542.500	49.56	6.36	74.0	24.44	Peak	346.00	400	Vertical	Pass
6**	17542.500	40.19	6.36	54.0	13.81	AV	346.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 9

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1483.300	41.39	-19.60	74.0	32.61	Peak	236.00	100	Horizontal	Pass
1**	1483.300	30.91	-19.60	54.0	23.09	AV	236.00	100	Horizontal	Pass
2	2450.700	104.56	-13.19	74.0	-30.56	Peak	145.00	150	Horizontal	N/A
2**	2450.700	101.65	-13.19	54.0	-47.65	AV	145.00	150	Horizontal	N/A
3	2985.100	49.11	-12.38	74.0	24.89	Peak	110.00	200	Horizontal	Pass
3**	2985.100	39.42	-12.38	54.0	14.58	AV	110.00	200	Horizontal	Pass
4	4904.000	49.12	-6.11	74.0	24.88	Peak	171.00	150	Horizontal	Pass
4**	4904.000	46.42	-6.11	54.0	7.58	AV	171.00	150	Horizontal	Pass
5	7505.000	53.33	-1.02	74.0	20.67	Peak	103.00	100	Horizontal	Pass
5**	7505.000	45.24	-1.02	54.0	8.76	AV	103.00	100	Horizontal	Pass
6	17812.500	48.46	6.19	74.0	25.54	Peak	360.00	300	Horizontal	Pass
6**	17812.500	41.37	6.19	54.0	12.63	AV	360.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 9

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1493.100	40.47	-19.43	74.0	33.53	Peak	247.00	200	Vertical	Pass
1**	1493.100	31.05	-19.43	54.0	22.95	AV	247.00	200	Vertical	Pass
2	2450.800	92.73	-13.20	74.0	-18.73	Peak	360.00	100	Vertical	N/A
2**	2450.800	89.79	-13.20	54.0	-35.79	AV	360.00	100	Vertical	N/A
3	2733.500	48.42	-11.70	74.0	25.58	Peak	353.00	100	Vertical	Pass
3**	2733.500	39.20	-11.70	54.0	14.80	AV	353.00	100	Vertical	Pass
4	4949.000	48.86	-3.53	74.0	25.14	Peak	314.00	200	Vertical	Pass
4**	4949.000	40.39	-3.53	54.0	13.61	AV	314.00	200	Vertical	Pass
5	7915.250	53.90	-0.65	74.0	20.10	Peak	256.00	200	Vertical	Pass
5**	7915.250	43.28	-0.65	54.0	10.72	AV	256.00	200	Vertical	Pass
6	17814.999	49.31	6.12	74.0	24.69	Peak	75.00	100	Vertical	Pass
6**	17814.999	40.47	6.12	54.0	13.53	AV	75.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 10

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1499.400	42.51	-19.50	74.0	31.49	Peak	217.00	300	Horizontal	Pass
1**	1499.400	31.58	-19.50	54.0	22.42	AV	217.00	300	Horizontal	Pass
2	2455.800	103.83	-13.42	74.0	-29.83	Peak	152.00	200	Horizontal	N/A
2**	2455.800	100.89	-13.42	54.0	-46.89	AV	152.00	200	Horizontal	N/A
3	2891.800	48.48	-12.20	74.0	25.52	Peak	222.00	200	Horizontal	Pass
3**	2891.800	39.82	-12.20	54.0	14.18	AV	222.00	200	Horizontal	Pass
4	4914.250	49.60	-5.42	74.0	24.40	Peak	149.00	150	Horizontal	Pass
4**	4914.250	47.26	-5.42	54.0	6.74	AV	149.00	150	Horizontal	Pass
5	7876.500	54.05	0.50	74.0	19.95	Peak	140.00	400	Horizontal	Pass
5**	7876.500	44.57	0.50	54.0	9.43	AV	140.00	400	Horizontal	Pass
6	17785.000	48.91	6.07	74.0	25.09	Peak	129.00	200	Horizontal	Pass
6**	17785.000	40.38	6.07	54.0	13.62	AV	129.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 10

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1598.500	40.60	-20.04	74.0	33.40	Peak	307.00	400	Vertical	Pass
1**	1598.500	30.14	-20.04	54.0	23.86	AV	307.00	400	Vertical	Pass
2	2455.700	91.53	-13.41	74.0	-17.53	Peak	358.00	100	Vertical	N/A
2**	2455.700	88.60	-13.41	54.0	-34.60	AV	358.00	100	Vertical	N/A
3	2916.400	48.86	-11.75	74.0	25.14	Peak	282.00	200	Vertical	Pass
3**	2916.400	39.47	-11.75	54.0	14.53	AV	282.00	200	Vertical	Pass
4	4995.500	48.95	-4.18	74.0	25.05	Peak	316.00	400	Vertical	Pass
4**	4995.500	40.08	-4.18	54.0	13.92	AV	316.00	400	Vertical	Pass
5	7866.000	53.59	0.29	74.0	20.41	Peak	110.00	400	Vertical	Pass
5**	7866.000	44.85	0.29	54.0	9.15	AV	110.00	400	Vertical	Pass
6	17797.501	48.62	6.45	74.0	25.38	Peak	360.00	400	Vertical	Pass
6**	17797.501	41.61	6.45	54.0	12.39	AV	360.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Channel 11

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1459.100	40.76	-19.71	74.0	33.24	Peak	224.00	200	Horizontal	Pass
1**	1459.100	30.18	-19.71	54.0	23.82	AV	224.00	200	Horizontal	Pass
2	2460.600	103.39	-13.59	74.0	-29.39	Peak	149.00	100	Horizontal	N/A
2**	2460.600	100.42	-13.59	54.0	-46.42	AV	149.00	100	Horizontal	N/A
3	2736.300	49.01	-11.92	74.0	24.99	Peak	70.00	100	Horizontal	Pass
3**	2736.300	40.60	-11.92	54.0	13.40	AV	70.00	100	Horizontal	Pass
4	4924.250	52.30	-4.84	74.0	21.70	Peak	161.00	150	Horizontal	Pass
4**	4924.250	50.46	-4.84	54.0	3.54	AV	161.00	150	Horizontal	Pass
5	7495.750	54.60	-0.47	74.0	19.40	Peak	121.00	100	Horizontal	Pass
5**	7495.750	44.16	-0.47	54.0	9.84	AV	121.00	100	Horizontal	Pass
6	17802.500	48.10	6.46	74.0	25.90	Peak	161.00	100	Horizontal	Pass
6**	17802.500	40.95	6.46	54.0	13.05	AV	161.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Channel 11

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1595.000	40.79	-19.96	74.0	33.21	Peak	202.00	100	Vertical	Pass
1**	1595.000	31.49	-19.96	54.0	22.51	AV	202.00	100	Vertical	Pass
2	2460.800	91.82	-13.60	74.0	-17.82	Peak	360.00	150	Vertical	N/A
2**	2460.800	88.90	-13.60	54.0	-34.90	AV	360.00	150	Vertical	N/A
3	2907.500	48.56	-12.02	74.0	25.44	Peak	262.00	100	Vertical	Pass
3**	2907.500	39.45	-12.02	54.0	14.55	AV	262.00	100	Vertical	Pass
4	4974.250	49.13	-4.09	74.0	24.87	Peak	187.00	100	Vertical	Pass
4**	4974.250	40.11	-4.09	54.0	13.89	AV	187.00	100	Vertical	Pass
5	7505.000	53.61	-1.02	74.0	20.39	Peak	298.00	300	Vertical	Pass
5**	7505.000	43.94	-1.02	54.0	10.06	AV	298.00	300	Vertical	Pass
6	17797.501	48.35	6.45	74.0	25.65	Peak	327.00	100	Vertical	Pass
6**	17797.501	41.24	6.45	54.0	12.76	AV	327.00	100	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1496.500	40.75	-19.51	74.0	33.25	Peak	241.00	100	Horizontal	Pass
1**	1496.500	31.38	-19.51	54.0	22.62	AV	241.00	100	Horizontal	Pass
2	2413.100	105.16	-14.62	74.0	-31.16	Peak	143.00	200	Horizontal	N/A
2**	2413.100	97.18	-14.62	54.0	-43.18	AV	143.00	200	Horizontal	N/A
3	2731.000	48.55	-11.57	74.0	25.45	Peak	83.00	150	Horizontal	Pass
3**	2731.000	40.20	-11.57	54.0	13.80	AV	83.00	150	Horizontal	Pass
4	4826.500	48.93	-5.67	74.0	25.07	Peak	175.00	150	Horizontal	Pass
4**	4826.500	43.68	-5.67	54.0	10.32	AV	175.00	150	Horizontal	Pass
5	7863.500	53.77	0.19	74.0	20.23	Peak	273.00	400	Horizontal	Pass
5**	7863.500	45.13	0.19	54.0	8.87	AV	273.00	400	Horizontal	Pass
6	17592.500	48.61	5.95	74.0	25.39	Peak	315.00	400	Horizontal	Pass
6**	17592.500	39.94	5.95	54.0	14.06	AV	315.00	400	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1343.500	40.10	-19.80	74.0	33.90	Peak	201.00	300	Vertical	Pass
1**	1343.500	31.50	-19.80	54.0	22.50	AV	201.00	300	Vertical	Pass
2	2411.000	89.91	-14.69	74.0	-15.91	Peak	6.00	150	Vertical	N/A
2**	2411.000	82.34	-14.69	54.0	-28.34	AV	6.00	150	Vertical	N/A
3	2963.400	48.48	-12.11	74.0	25.52	Peak	22.00	150	Vertical	Pass
3**	2963.400	39.01	-12.11	54.0	14.99	AV	22.00	150	Vertical	Pass
4	4965.500	49.41	-4.01	74.0	24.59	Peak	95.00	100	Vertical	Pass
4**	4965.500	39.33	-4.01	54.0	14.67	AV	95.00	100	Vertical	Pass
5	7875.750	53.64	0.48	74.0	20.36	Peak	21.00	100	Vertical	Pass
5**	7875.750	44.05	0.48	54.0	9.95	AV	21.00	100	Vertical	Pass
6	17795.000	48.51	6.37	74.0	25.49	Peak	318.00	100	Vertical	Pass
6**	17795.000	41.50	6.37	54.0	12.50	AV	318.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1502.300	41.94	-19.53	74.0	32.06	Peak	235.00	200	Horizontal	Pass
1**	1502.300	31.84	-19.53	54.0	22.16	AV	235.00	200	Horizontal	Pass
2	2435.500	105.64	-14.29	74.0	-31.64	Peak	182.00	100	Horizontal	N/A
2**	2435.500	97.59	-14.29	54.0	-43.59	AV	182.00	100	Horizontal	N/A
3	2773.900	48.57	-12.96	74.0	25.43	Peak	41.00	100	Horizontal	Pass
3**	2773.900	38.26	-12.96	54.0	15.74	AV	41.00	100	Horizontal	Pass
4	4868.500	47.71	-5.91	74.0	26.29	Peak	159.00	150	Horizontal	Pass
4**	4868.500	42.75	-5.91	54.0	11.25	AV	159.00	150	Horizontal	Pass
5	7860.000	54.86	0.01	74.0	19.14	Peak	199.00	400	Horizontal	Pass
5**	7860.000	44.75	0.01	54.0	9.25	AV	199.00	400	Horizontal	Pass
6	17799.999	48.67	6.52	74.0	25.33	Peak	58.00	400	Horizontal	Pass
6**	17799.999	41.82	6.52	54.0	12.18	AV	58.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1296.500	40.42	-19.66	74.0	33.58	Peak	329.00	400	Vertical	Pass
1**	1296.500	30.27	-19.66	54.0	23.73	AV	329.00	400	Vertical	Pass
2	2436.000	91.44	-14.23	74.0	-17.44	Peak	179.00	150	Vertical	N/A
2**	2436.000	84.17	-14.23	54.0	-30.17	AV	179.00	150	Vertical	N/A
3	2730.800	48.72	-11.57	74.0	25.28	Peak	175.00	100	Vertical	Pass
3**	2730.800	39.78	-11.57	54.0	14.22	AV	175.00	100	Vertical	Pass
4	4961.750	49.41	-3.93	74.0	24.59	Peak	5.00	400	Vertical	Pass
4**	4961.750	41.11	-3.93	54.0	12.89	AV	5.00	400	Vertical	Pass
5	7862.500	54.37	0.18	74.0	19.63	Peak	340.00	200	Vertical	Pass
5**	7862.500	45.62	0.18	54.0	8.38	AV	340.00	200	Vertical	Pass
6	17787.501	48.68	6.15	74.0	25.32	Peak	5.00	300	Vertical	Pass
6**	17787.501	40.29	6.15	54.0	13.71	AV	5.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Channel 11

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1468.600	41.02	-19.77	74.0	32.98	Peak	214.00	100	Horizontal	Pass
1**	1468.600	30.48	-19.77	54.0	23.52	AV	214.00	100	Horizontal	Pass
2	2459.200	103.74	-13.52	74.0	-29.74	Peak	154.00	200	Horizontal	N/A
2**	2459.200	96.09	-13.52	54.0	-42.09	AV	154.00	200	Horizontal	N/A
3	2736.900	48.89	-11.95	74.0	25.11	Peak	174.00	150	Horizontal	Pass
3**	2736.900	39.20	-11.95	54.0	14.80	AV	174.00	150	Horizontal	Pass
4	4993.250	49.13	-4.19	74.0	24.87	Peak	173.00	300	Horizontal	Pass
4**	4993.250	40.15	-4.19	54.0	13.85	AV	173.00	300	Horizontal	Pass
5	7504.750	54.16	-1.02	74.0	19.84	Peak	355.00	100	Horizontal	Pass
5**	7504.750	44.87	-1.02	54.0	9.13	AV	355.00	100	Horizontal	Pass
6	17817.500	48.04	6.05	74.0	25.96	Peak	131.00	400	Horizontal	Pass
6**	17817.500	41.19	6.05	54.0	12.81	AV	131.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Channel 11

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1375.400	40.46	-19.62	74.0	33.54	Peak	322.00	100	Vertical	Pass
1**	1375.400	30.87	-19.62	54.0	23.13	AV	322.00	100	Vertical	Pass
2	2460.200	92.22	-13.57	74.0	-18.22	Peak	360.00	100	Vertical	N/A
2**	2460.200	84.89	-13.57	54.0	-30.89	AV	360.00	100	Vertical	N/A
3	2979.000	48.38	-12.14	74.0	25.62	Peak	249.00	100	Vertical	Pass
3**	2979.000	39.28	-12.14	54.0	14.72	AV	249.00	100	Vertical	Pass
4	4991.000	49.19	-4.13	74.0	24.81	Peak	256.00	100	Vertical	Pass
4**	4991.000	40.00	-4.13	54.0	14.00	AV	256.00	100	Vertical	Pass
5	7503.250	53.44	-0.96	74.0	20.56	Peak	248.00	200	Vertical	Pass
5**	7503.250	44.75	-0.96	54.0	9.25	AV	248.00	200	Vertical	Pass
6	17805.001	48.93	6.39	74.0	25.07	Peak	267.00	300	Vertical	Pass
6**	17805.001	40.64	6.39	54.0	13.36	AV	267.00	300	Vertical	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1398.400	40.27	-19.57	74.0	33.73	Peak	325.00	100	Horizontal	Pass
1**	1398.400	30.67	-19.57	54.0	23.33	AV	325.00	100	Horizontal	Pass
2	2413.600	103.84	-14.60	74.0	-29.84	Peak	143.00	100	Horizontal	N/A
2**	2413.600	95.62	-14.60	54.0	-41.62	AV	143.00	100	Horizontal	N/A
3	2913.900	48.64	-11.82	74.0	25.36	Peak	244.00	100	Horizontal	Pass
3**	2913.900	39.72	-11.82	54.0	14.28	AV	244.00	100	Horizontal	Pass
4	4820.250	47.82	-5.46	74.0	26.18	Peak	199.00	150	Horizontal	Pass
4**	4820.250	42.71	-5.46	54.0	11.29	AV	199.00	150	Horizontal	Pass
5	7881.250	53.80	0.28	74.0	20.20	Peak	29.00	150	Horizontal	Pass
5**	7881.250	44.42	0.28	54.0	9.58	AV	29.00	150	Horizontal	Pass
6	17797.501	48.37	6.45	74.0	25.63	Peak	347.00	200	Horizontal	Pass
6**	17797.501	41.24	6.45	54.0	12.76	AV	347.00	200	Horizontal	Pass

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

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1500.900	41.39	-19.49	74.0	32.61	Peak	312.00	400	Vertical	Pass
1**	1500.900	31.31	-19.49	54.0	22.69	AV	312.00	400	Vertical	Pass
2	2413.600	88.48	-14.60	74.0	-14.48	Peak	11.00	150	Vertical	N/A
2**	2413.600	80.19	-14.60	54.0	-26.19	AV	11.00	150	Vertical	N/A
3	2977.800	48.67	-12.07	74.0	25.33	Peak	352.00	150	Vertical	Pass
3**	2977.800	38.99	-12.07	54.0	15.01	AV	352.00	150	Vertical	Pass
4	4959.000	48.88	-3.81	74.0	25.12	Peak	85.00	300	Vertical	Pass
4**	4959.000	40.76	-3.81	54.0	13.24	AV	85.00	300	Vertical	Pass
5	7878.000	53.59	0.48	74.0	20.41	Peak	85.00	100	Vertical	Pass
5**	7878.000	44.33	0.48	54.0	9.67	AV	85.00	100	Vertical	Pass
6	17817.500	48.48	6.05	74.0	25.52	Peak	42.00	100	Vertical	Pass
6**	17817.500	40.39	6.05	54.0	13.61	AV	42.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1502.200	40.65	-19.53	74.0	33.35	Peak	0.00	300	Horizontal	Pass
1**	1502.200	31.12	-19.53	54.0	22.88	AV	0.00	300	Horizontal	Pass
2	2438.800	104.43	-13.96	74.0	-30.43	Peak	159.00	150	Horizontal	N/A
2**	2438.800	96.49	-13.96	54.0	-42.49	AV	159.00	150	Horizontal	N/A
3	2823.100	48.34	-12.73	74.0	25.66	Peak	197.00	100	Horizontal	Pass
3**	2823.100	38.62	-12.73	54.0	15.38	AV	197.00	100	Horizontal	Pass
4	4973.000	48.82	-4.06	74.0	25.18	Peak	110.00	400	Horizontal	Pass
4**	4973.000	40.68	-4.06	54.0	13.32	AV	110.00	400	Horizontal	Pass
5	7498.250	53.24	-0.65	74.0	20.76	Peak	192.00	300	Horizontal	Pass
5**	7498.250	45.54	-0.65	54.0	8.46	AV	192.00	300	Horizontal	Pass
6	17802.500	48.57	6.46	74.0	25.43	Peak	322.00	200	Horizontal	Pass
6**	17802.500	41.38	6.46	54.0	12.62	AV	322.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Channel 6

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1599.000	40.77	-20.05	74.0	33.23	Peak	225.00	300	Vertical	Pass
1**	1599.000	30.68	-20.05	54.0	23.32	AV	225.00	300	Vertical	Pass
2	2445.200	88.97	-13.35	74.0	-14.97	Peak	0.00	100	Vertical	N/A
2**	2445.200	81.88	-13.35	54.0	-27.88	AV	0.00	100	Vertical	N/A
3	2846.800	48.32	-12.24	74.0	25.68	Peak	187.00	150	Vertical	Pass
3**	2846.800	38.73	-12.24	54.0	15.27	AV	187.00	150	Vertical	Pass
4	4833.500	48.88	-5.86	74.0	25.12	Peak	174.00	400	Vertical	Pass
4**	4833.500	39.89	-5.86	54.0	14.11	AV	174.00	400	Vertical	Pass
5	7496.750	53.29	-0.55	74.0	20.71	Peak	62.00	400	Vertical	Pass
5**	7496.750	44.61	-0.55	54.0	9.39	AV	62.00	400	Vertical	Pass
6	17547.500	48.84	6.45	74.0	25.16	Peak	254.00	100	Vertical	Pass
6**	17547.500	40.46	6.45	54.0	13.54	AV	254.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Channel 11

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1493.500	41.18	-19.42	74.0	32.82	Peak	231.00	400	Horizontal	Pass
1**	1493.500	30.73	-19.42	54.0	23.27	AV	231.00	400	Horizontal	Pass
2	2458.800	102.83	-13.50	74.0	-28.83	Peak	152.00	150	Horizontal	N/A
2**	2458.800	94.57	-13.50	54.0	-40.57	AV	152.00	150	Horizontal	N/A
3	2758.000	48.76	-12.94	74.0	25.24	Peak	100.00	150	Horizontal	Pass
3**	2758.000	39.22	-12.94	54.0	14.78	AV	100.00	150	Horizontal	Pass
4	4942.750	48.94	-3.89	74.0	25.06	Peak	216.00	200	Horizontal	Pass
4**	4942.750	39.93	-3.89	54.0	14.07	AV	216.00	200	Horizontal	Pass
5	7792.000	53.56	-0.58	74.0	20.44	Peak	192.00	300	Horizontal	Pass
5**	7792.000	43.70	-0.58	54.0	10.30	AV	192.00	300	Horizontal	Pass
6	17820.000	49.08	5.98	74.0	24.92	Peak	17.00	200	Horizontal	Pass
6**	17820.000	40.43	5.98	54.0	13.57	AV	17.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Channel 11

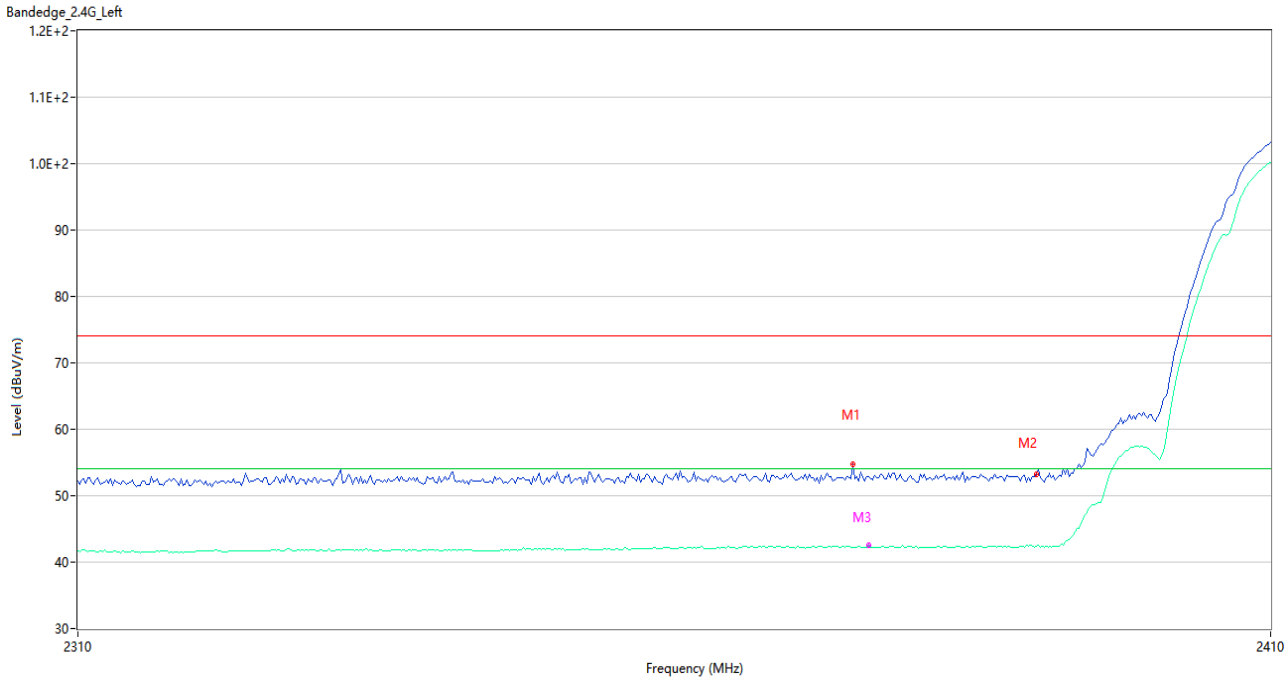
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1501.600	40.26	-19.51	74.0	33.74	Peak	60.00	300	Vertical	Pass
1**	1501.600	32.05	-19.51	54.0	21.95	AV	60.00	300	Vertical	Pass
2	2458.200	89.67	-13.49	74.0	-15.67	Peak	360.00	150	Vertical	N/A
2**	2458.200	82.16	-13.49	54.0	-28.16	AV	360.00	150	Vertical	N/A
3	2886.500	48.63	-12.18	74.0	25.37	Peak	238.00	200	Vertical	Pass
3**	2886.500	38.59	-12.18	54.0	15.41	AV	238.00	200	Vertical	Pass
4	4955.000	49.45	-3.61	74.0	24.55	Peak	331.00	300	Vertical	Pass
4**	4955.000	39.94	-3.61	54.0	14.06	AV	331.00	300	Vertical	Pass
5	7867.250	53.89	0.35	74.0	20.11	Peak	192.00	100	Vertical	Pass
5**	7867.250	44.71	0.35	54.0	9.29	AV	192.00	100	Vertical	Pass
6	17789.999	48.86	6.22	74.0	25.14	Peak	328.00	200	Vertical	Pass
6**	17789.999	40.88	6.22	54.0	13.12	AV	328.00	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.

Test Data and Plots

802.11b CHANNEL 1

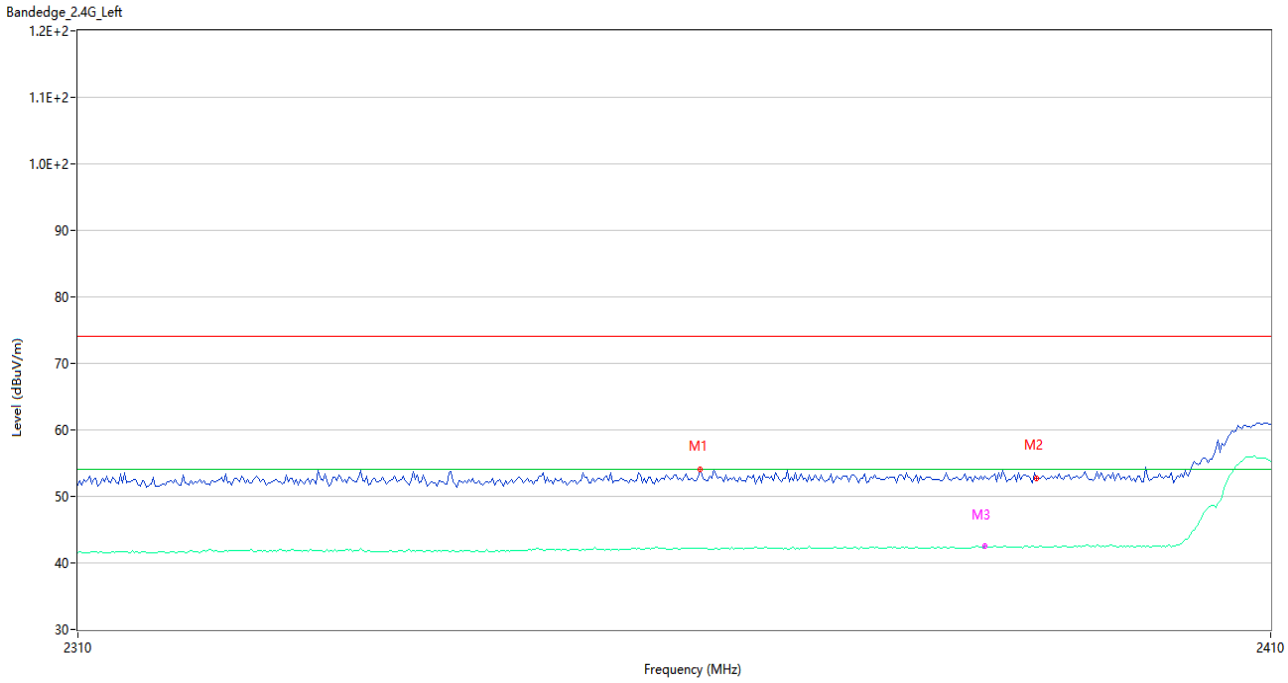


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2374.500	54.66	-2.35	74.0	19.34	Peak	60.00	200	Horizontal	Pass
1**	2374.500	42.27	-2.35	54.0	11.73	AV	60.00	200	Horizontal	Pass
2	2390.000	53.29	-2.35	74.0	20.71	Peak	228.00	100	Horizontal	Pass
2**	2390.000	42.29	-2.35	54.0	11.71	AV	228.00	100	Horizontal	Pass
3	2375.833	52.87	-2.33	74.0	21.13	Peak	80.00	150	Horizontal	Pass
3**	2375.833	42.51	-2.33	54.0	11.49	AV	80.00	150	Horizontal	Pass

802.11b CHANNEL 2

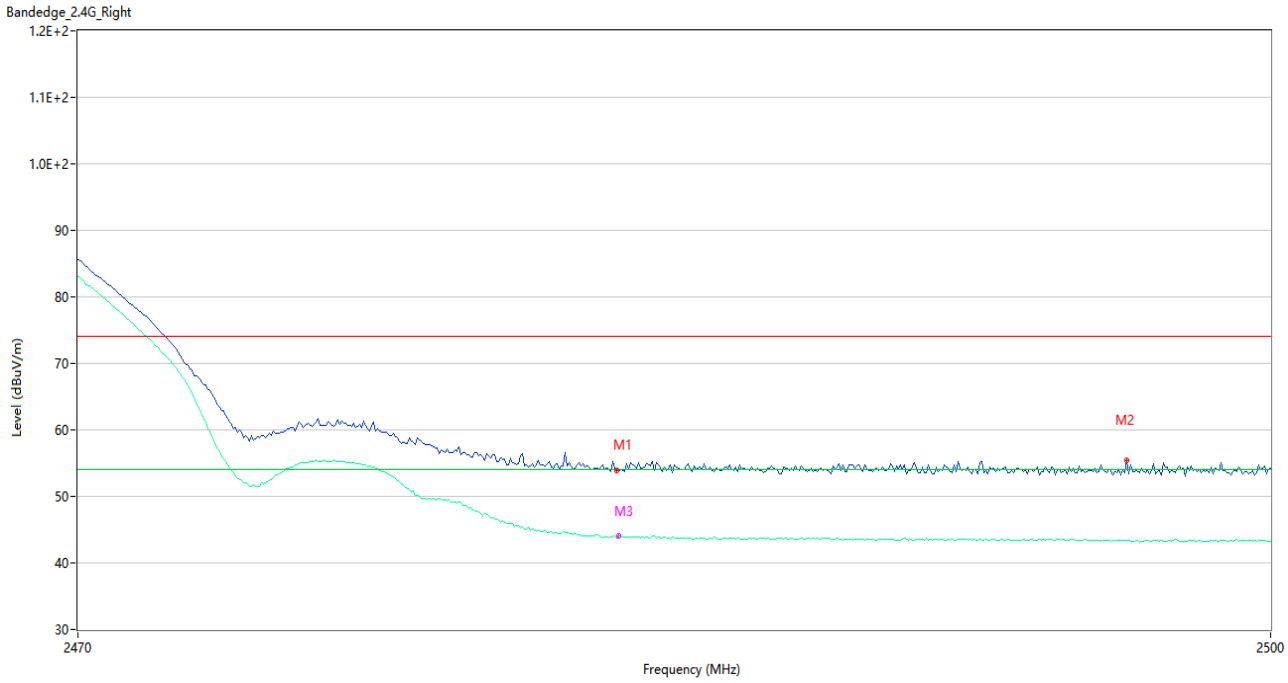
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2381.000	54.30	-2.31	74.0	19.70	Peak	94.00	100	Horizontal	Pass
1**	2381.000	42.22	-2.31	54.0	11.78	AV	94.00	100	Horizontal	Pass
2	2390.000	53.28	-2.35	74.0	20.72	Peak	54.00	150	Horizontal	Pass
2**	2390.000	42.43	-2.35	54.0	11.57	AV	54.00	150	Horizontal	Pass
3	2387.000	52.67	-2.23	74.0	21.33	Peak	38.00	150	Horizontal	Pass
3**	2387.000	42.52	-2.23	54.0	11.48	AV	38.00	150	Horizontal	Pass

802.11b CHANNEL 3



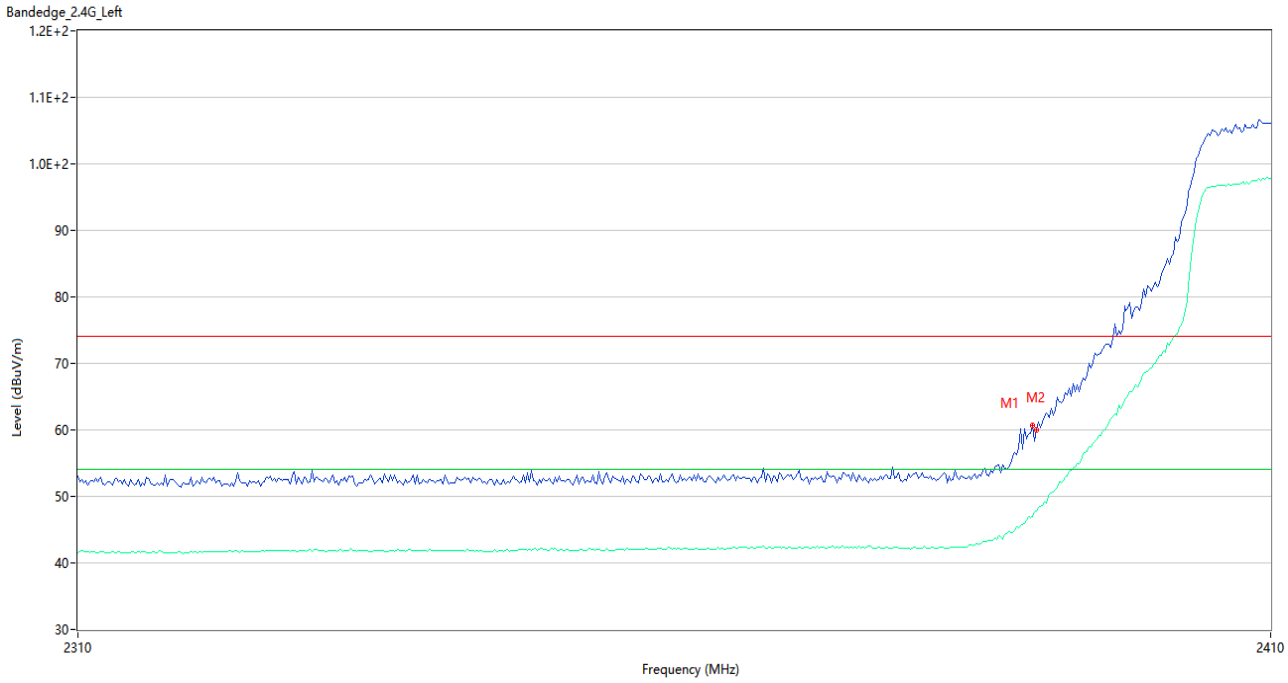
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2361.667	54.03	-2.34	74.0	19.97	Peak	180.00	200	Horizontal	Pass
1**	2361.667	42.20	-2.34	54.0	11.80	AV	180.00	200	Horizontal	Pass
2	2390.000	52.74	-2.35	74.0	21.26	Peak	120.00	100	Horizontal	Pass
2**	2390.000	42.32	-2.35	54.0	11.68	AV	120.00	100	Horizontal	Pass
3	2385.667	53.02	-2.21	74.0	20.98	Peak	342.00	150	Horizontal	Pass
3**	2385.667	42.50	-2.21	54.0	11.50	AV	342.00	150	Horizontal	Pass

802.11b CHANNEL 11



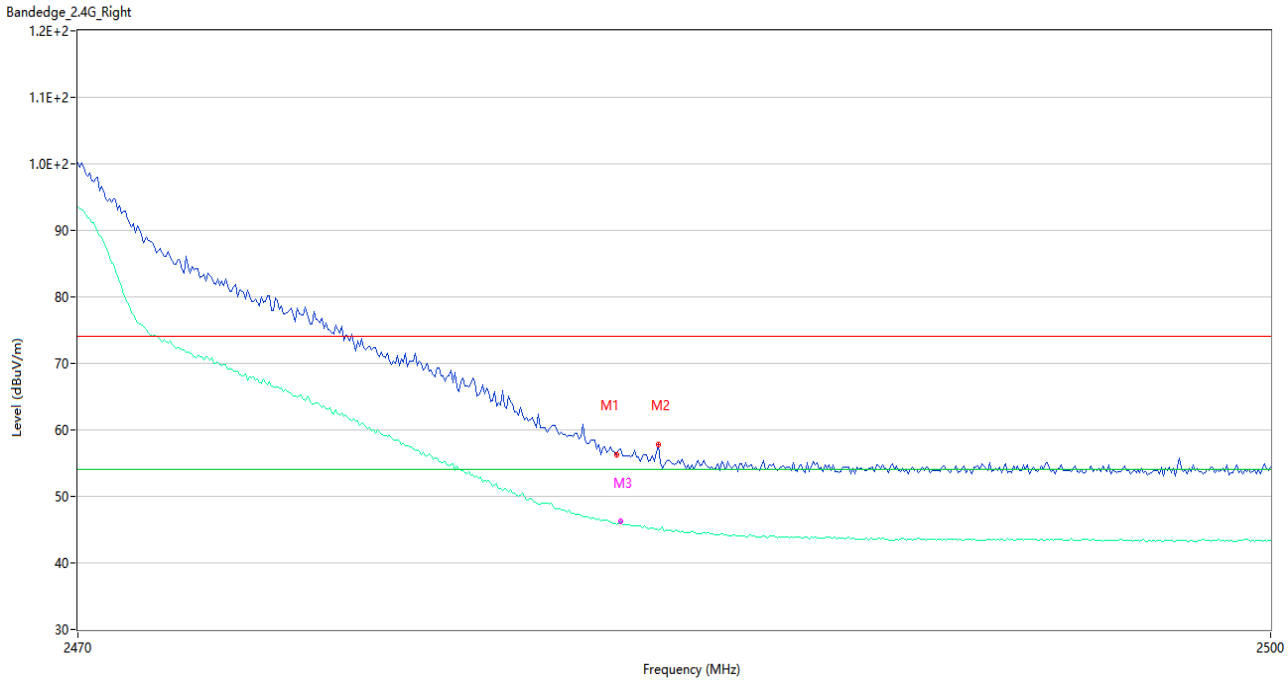
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	53.85	-0.86	74.0	20.15	Peak	269.00	150	Horizontal	Pass
1**	2483.500	43.81	-0.86	54.0	10.19	AV	269.00	150	Horizontal	Pass
2	2496.350	55.40	-0.99	74.0	18.60	Peak	223.00	200	Horizontal	Pass
2**	2496.350	43.32	-0.99	54.0	10.68	AV	223.00	200	Horizontal	Pass
3	2483.550	53.79	-0.86	74.0	20.21	Peak	341.00	150	Horizontal	Pass
3**	2483.550	44.02	-0.86	54.0	9.98	AV	341.00	150	Horizontal	Pass

802.11g CHANNEL 1



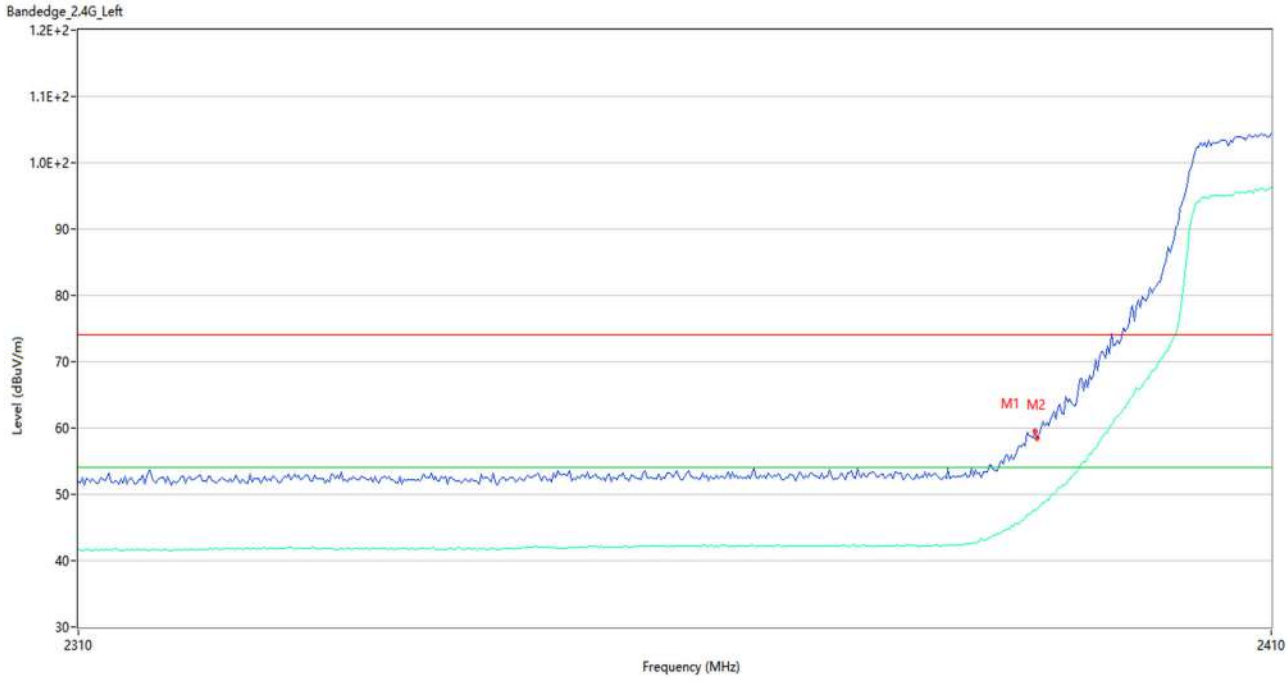
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.667	60.64	-2.34	74.0	13.36	Peak	188.00	100	Horizontal	Pass
1**	2389.667	46.99	-2.34	54.0	7.01	AV	188.00	100	Horizontal	Pass
2	2390.000	59.92	-2.35	74.0	14.08	Peak	170.00	100	Horizontal	Pass
2**	2390.000	47.84	-2.35	54.0	6.16	AV	170.00	100	Horizontal	Pass

802.11g CHANNEL 11



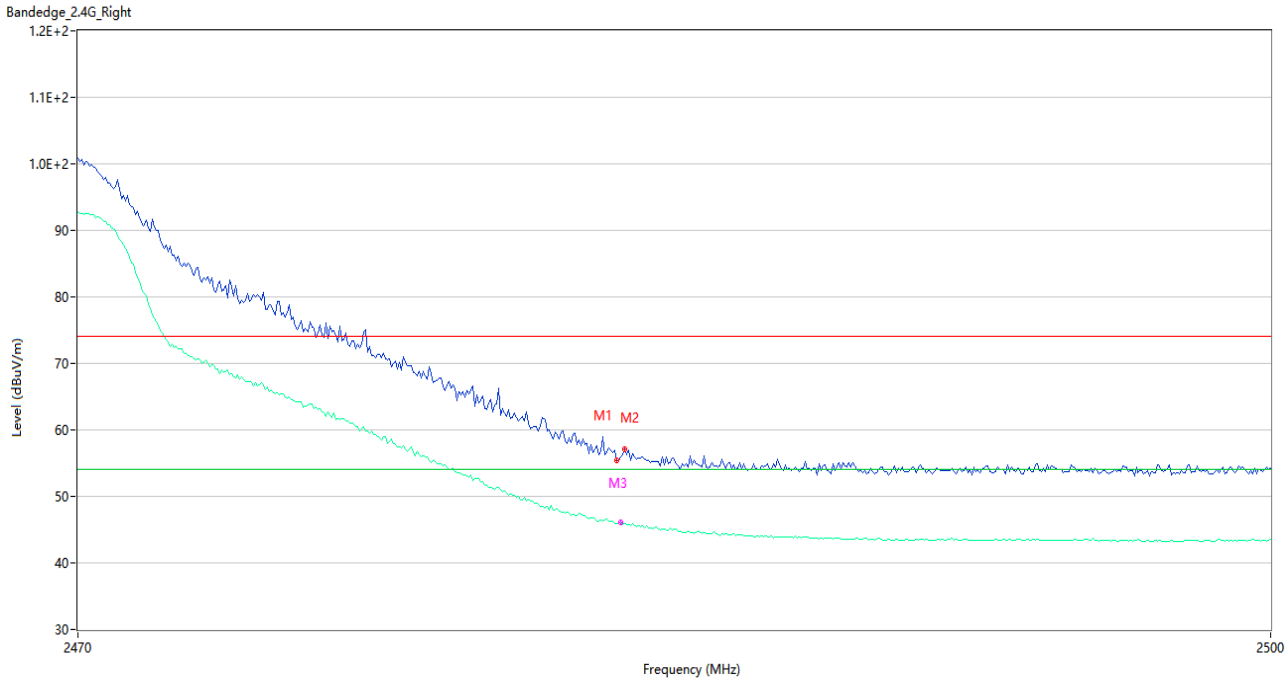
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	56.26	-0.86	74.0	17.74	Peak	284.00	200	Horizontal	Pass
1**	2483.500	45.83	-0.86	54.0	8.17	AV	284.00	200	Horizontal	Pass
2	2484.550	57.86	-0.84	74.0	16.14	Peak	287.00	100	Horizontal	Pass
2**	2484.550	44.94	-0.84	54.0	9.06	AV	287.00	100	Horizontal	Pass
3	2483.600	57.16	-0.86	74.0	16.84	Peak	298.00	150	Horizontal	Pass
3**	2483.600	46.22	-0.86	54.0	7.78	AV	298.00	150	Horizontal	Pass

802.11n20 CHANNEL 1



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.833	59.49	-2.34	74.0	14.51	Peak	147.00	150	Horizontal	Pass
1**	2389.833	47.51	-2.34	54.0	6.49	AV	147.00	150	Horizontal	Pass
2	2390.000	58.50	-2.35	74.0	15.50	Peak	144.00	200	Horizontal	Pass
2**	2390.000	47.79	-2.35	54.0	6.21	AV	144.00	200	Horizontal	Pass

802.11n20 CHANNEL 11



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	55.39	-0.86	74.0	18.61	Peak	165.00	150	Horizontal	Pass
1**	2483.500	45.94	-0.86	54.0	8.06	AV	165.00	150	Horizontal	Pass
2	2483.700	57.07	-0.85	74.0	16.93	Peak	163.00	200	Horizontal	Pass
2**	2483.700	45.98	-0.85	54.0	8.02	AV	163.00	200	Horizontal	Pass
3	2483.600	55.86	-0.86	74.0	18.14	Peak	178.00	150	Horizontal	Pass
3**	2483.600	46.08	-0.86	54.0	7.92	AV	178.00	150	Horizontal	Pass

A.8 Power Spectral Density (PSD)

Test Data

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
CH1	-9.20	8
CH2	-9.04	8
CH3	-8.63	8
CH4	-7.63	8
CH5	-7.91	8
CH6	-8.53	8
CH7	-6.85	8
CH8	-6.66	8
CH9	-6.98	8
CH10	-7.77	8
CH11	-5.99	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
CH1	-11.07	8
CH6	-8.98	8
CH11	-10.91	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
CH1	-12.40	8
CH6	-11.72	8
CH11	-12.08	8

Test Plots

802.11b CHANNEL 1

802.11b CHANNEL 2

802.11b CHANNEL 3

802.11b CHANNEL 4

802.11b CHANNEL 5

802.11b CHANNEL 6

802.11b CHANNEL 7

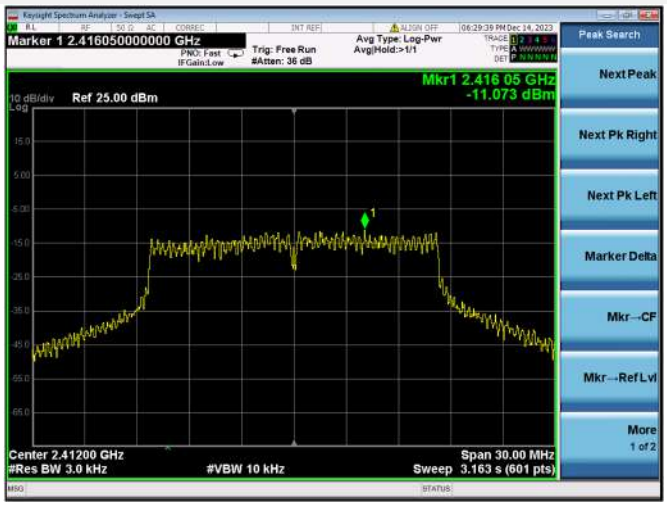
802.11b CHANNEL 8

802.11b CHANNEL 9

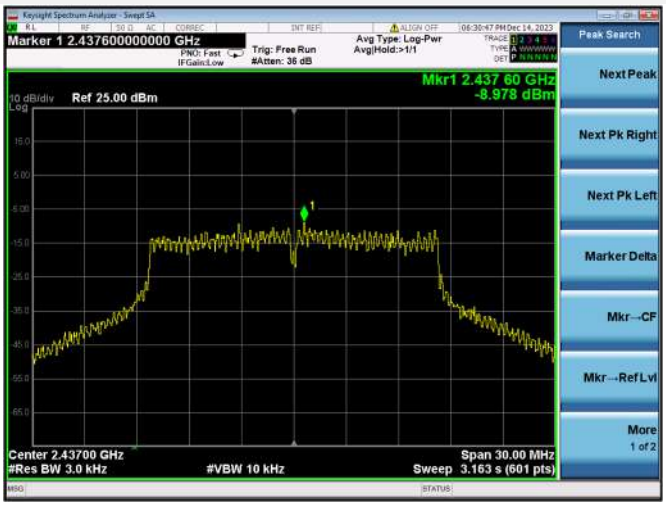
802.11b CHANNEL 10

802.11b CHANNEL 11

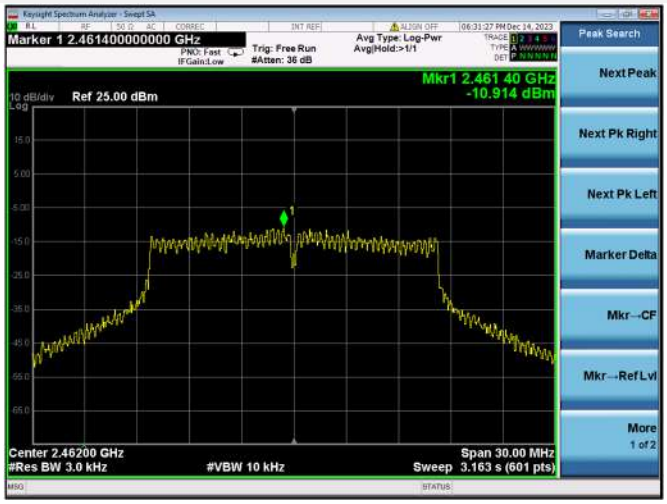
802.11g CHANNEL 1



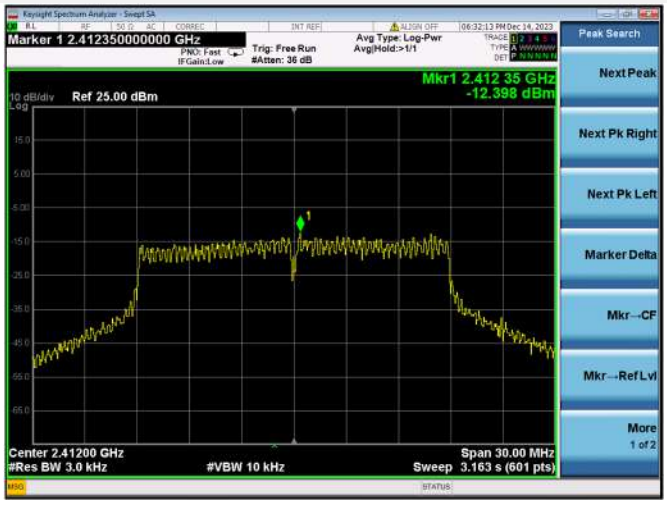
802.11g CHANNEL 6



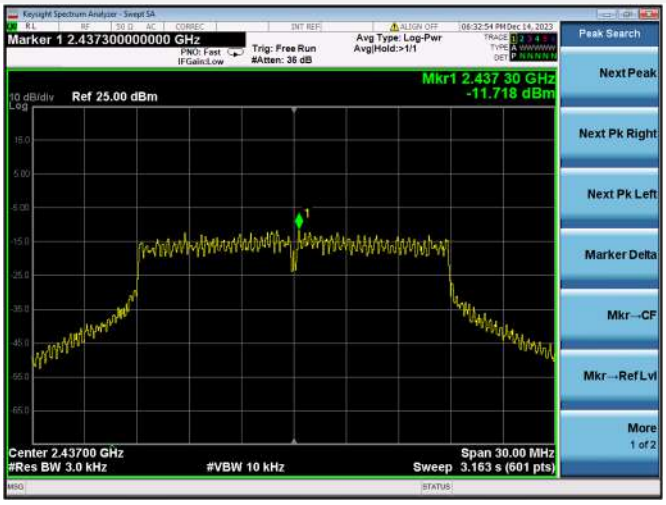
802.11g CHANNEL 11



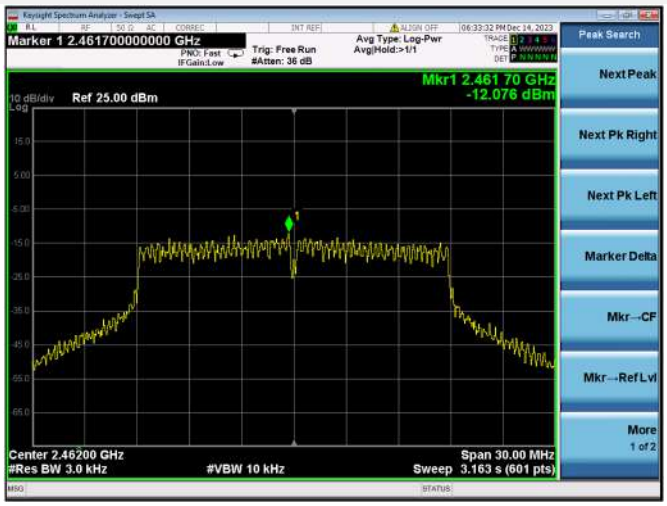
802.11n-20 MHz CHANNEL 1



802.11n-20 MHz CHANNEL 6



802.11n-20 MHz CHANNEL 11



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ23A0971-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ23A0971-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ23A0971-AI.PDF”.

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--END OF REPORT--