



MEASUREMENT REPORT

FCC ID : 2A8JK-TAITN-2BAND
APPLICANT : ACSL Ltd
Application Type : Certification
Product : Smart Controller
Model No. : TAITEN (AC-SCRC7-01-A)
Brand Name : ACSL
FCC Classification : (DTS) Digital Transmission System
FCC Rule Part(s) : Part 15.247
Test Procedure(s) : ANSI C63.10-2013
Received Date : May 8, 2025
Test Date : June 4, 2025~July 12, 2025
Tested By : Fran Chen
(Fran Chen)
Reviewed By : Paddy Chen
(Paddy Chen)
Approved By : Chenz Ker
(Chenz Ker)



The test results only relate to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2505TW0106-U4	1.0	Original Report	2025-09-22	

CONTENTS

Description	Page
1. INTRODUCTION	6
1.1. Scope.....	6
1.2. MRT Test Location	6
2. PRODUCT INFORMATION	7
2.1. Equipment Description	7
2.2. Working Frequencies for this Report	8
2.3. Test Mode	10
2.4. Test Software	10
2.5. Test Configuration	11
2.6. Test System Details	12
2.7. EMI Suppression Device(s)/Modifications	12
2.8. Labeling Requirements	12
3. DESCRIPTION of TEST	13
3.1. Evaluation Procedure	13
3.2. AC Line Conducted Emissions	13
3.3. Radiated Emissions	14
4. ANTENNA REQUIREMENTS	15
5. TEST EQUIPMENT CALIBRATION DATE	16
6. MEASUREMENT UNCERTAINTY	17
7. TEST RESULT	18
7.1. Summary.....	18
7.2. 6dB Bandwidth Measurement	19
7.2.1. Test Limit	19
7.2.2. Test Procedure used	19
7.2.3. Test Setting	19
7.2.4. Test Setup	19
7.2.5. Test Result	20
7.3. Output Power Measurement.....	23
7.3.1. Test Limit	23
7.3.2. Test Procedure Used	23
7.3.3. Test Setting	23
7.3.4. Test Setup	23
7.3.5. Test Result of Output Power	24
7.4. Power Spectral Density Measurement	25
7.4.1. Test Limit	25
7.4.2. Test Procedure Used	25
7.4.3. Test Setting	25
7.4.4. Test Setup	25
7.4.5. Test Result	26
7.5. Out-of-Band Spurious Emissions Emissions Measurement	30
7.5.1. Test Limit	30

7.5.2.	Test Procedure Used	30
7.5.3.	Test Settling	30
7.5.4.	Test Setup	31
7.5.5.	Test Result	32
7.6.	Radiated Spurious Emission Measurement.....	36
7.6.1.	Test Limit.....	36
7.6.2.	Test Procedure Used.....	36
7.6.3.	Test Setting	37
7.6.4.	Test Setup	39
7.6.5.	Test Result	41
7.7.	Radiated Restricted Band Edge Measurement.....	65
7.7.1.	Test Limit.....	65
7.7.2.	Test Procedure Used.....	65
7.7.3.	Test Setting	65
7.7.4.	Test Setup	67
7.7.5.	Test Result	68
7.8.	AC Conducted Emissions Measurement	92
7.8.1.	Test Limit.....	92
7.8.2.	Test Setup	92
7.8.3.	Test Result	93
8.	CONCLUSION	95
	Appendix A : Test Photograph	96
	Appendix B : External Photograph.....	96
	Appendix C : Internal Photograph	96

General Information

Applicant	ACSL Ltd
Applicant Address	Hulic Kasai Rinkai Building 1F, 3-6-4 Rinkaicho, Edogawa-ku, Tokyo 134-0086, Japan
Manufacturer	ACSL Ltd
Manufacturer Address	Hulic Kasai Rinkai Building 1F, 3-6-4 Rinkaicho, Edogawa-ku, Tokyo 134-0086, Japan
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
Test Device Serial No.	#1-1 ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.

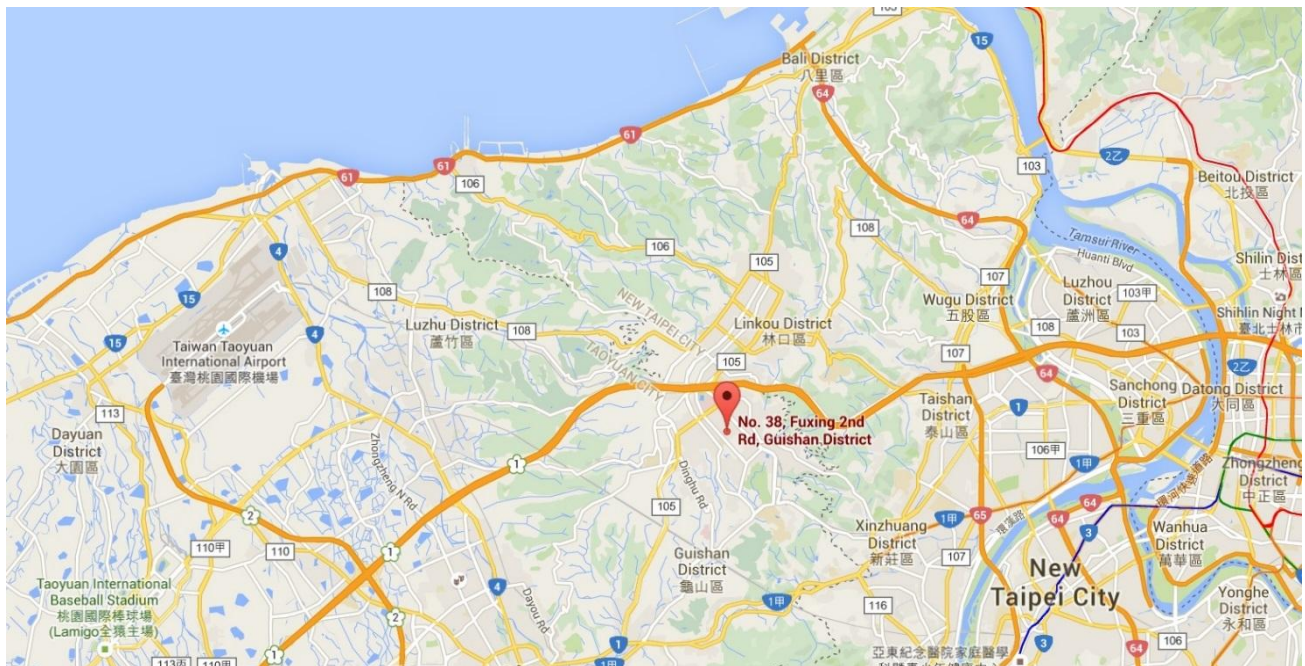
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Smart Controller
Model No.	TAITEN (AC-SCRC7-01-A)
Brand Name	ACSL
Wi-Fi Specification	802.11b/g/n (1TX/1RX)
Frequency Range	<u>2.4GHz:</u> For 802.11b/g/n-HT20: 2412 ~ 2462 MHz
Type of Modulation:	802.11b: DSSS 802.11g/n: OFDM
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 72.2Mbps
Accessory	
Power Adapter	Brand Name: I.T.E Power Supply Model: G651CU Input: AC 100-240V~50-60Hz, 1.5A Max Output USB-C: 5V=3A, 9V=3A, 12V=3A, 15V=3A, 20V=3.25A PPS: 3.3V-11V=3A, 3.3V-21V=3A

2.2. Working Frequencies for this Report

802.11b/g/n-20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

Duty Cycle

Test Mode	Duty Cycle
802.11b	98.81%
802.11g	98.29%
802.11n-HT20	98.06%



2.3. Test Mode

Test Mode	Mode 1: Transmit by 802.11b (1Mbps)
	Mode 2: Transmit by 802.11g (6Mbps)
	Mode 3: Transmit by 802.11n-20 (MCS0)

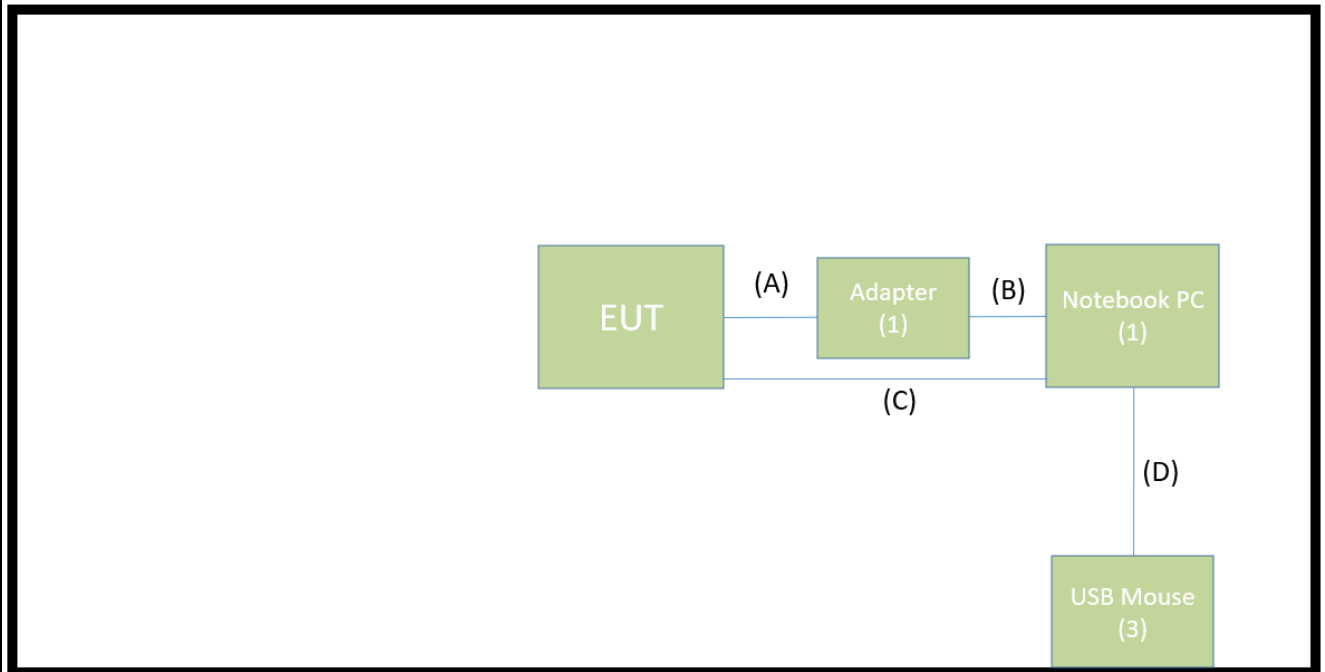
2.4. Test Software

The test utility software used during testing was “QRCT”.

2.5. Test Configuration

This device was tested per the guidance of ANSI C63.10-2013. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

Connection Diagram



Signal Cable Type		Signal Cable Description
A	USB Type A to C Cable	Shielded, 1.0m
B	USB Cable	Shielded, 0.1m
C	Signal Cable	Non-shielded, 1.1 m
D	USB Mouse Cable	Shielded, 1.8m

2.6. Test System Details

The types for all equipment, and descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	USB Adapter	PowerSync	CUBCKCR0001T	N/A	N/A
2	Notebook PC	Lenovo	21DH00A3TW	N/A	Non-shield, 0.8m
3	USB Mouse	Logitech	M90	N/A	N/A

2.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.8. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION of TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 558074 D01v05 were used in the measurement of the device.

Deviation from measurement procedure.....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 9'x4'x3' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50 Ω /50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment which determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

Line conducted emissions test results are shown in Section 7.8.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable. For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, which produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

Radiated emissions test results are shown in Section 7.6 & 7.7 .

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the **Smart Controller**, is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

Antenna Type	Frequency Band (MHz)	T _x Paths	Max Antenna Gain (dBi)
BT/BLE & Wi-Fi Antenna			
FPCB	2402 ~ 2480	1	2.38
	2412 ~ 2462	1	2.38
	5150 ~ 5250	1	2.38
	5250 ~ 5350	1	2.44
	5470 ~ 5725	1	2.55
	5725 ~ 5850	1	2.52

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2026/4/14
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2026/3/4
Cable	Rosnol	N1C50-RG400- B1C50-500CM	MRTTWE00013	1 year	2026/6/13

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2026/4/16
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00086	1 year	2025/11/5
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2026/2/11
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2026/2/11
Breitband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2026/3/27
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2026/3/20
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2026/3/4
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2026/5/20
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2026/6/13
Cable	Rosnol	K1K50-UP0264- K1K50-4M	MRTTWE00012	1 year	2026/6/13
Temperature/Humidity Meter	TFA	35.1083	MRTTWA00032	1 year	2026/6/5

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2025/9/24
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2025/8/12
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2026/3/11

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test 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 $k = 2$.

Conducted Emission- Power Line
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.15MHz~30MHz: $\pm 2.53\text{dB}$
Radiated Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz~30MHz: $\pm 3.92\text{dB}$ 30MHz~1GHz: $\pm 4.25\text{dB}$ 1GHz~18GHz: $\pm 4.40\text{dB}$ 18GHz~40GHz: $\pm 4.45\text{dB}$
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 3.3\%$
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.82^\circ\text{C}/ \pm 3\%$
DC Voltage
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.3\%$

7. TEST RESULT

7.1. Summary

Product Name: Smart Controller

FCC Classification: (DTS) Digital Transmission System

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	$\leq 30.00\text{dBm}$		Pass	Section 7.3
15.247(e)	Power Spectral Density	$\leq 8.00\text{dBm}/3\text{kHz}$		Pass	Section 7.4
15.247(d)	Out-of-Band Emissions	Conducted $\geq 20\text{dBc}$		Pass	Section 7.5
15.205 15.209	Spurious Emission	< FCC 15.209 limits	Radiated	Pass	Section 7.6
15.205 15.209	Band Edge Measurement	$\leq 74\text{dBuV/m(Peak)}$ $\leq 54\text{dBuV/m(Average)}$		Pass	Section 7.7
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 7.8

Notes:

- 1) Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- 2) For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst case emissions.
- 3) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 4) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

7.2. 6dB Bandwidth Measurement

7.2.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

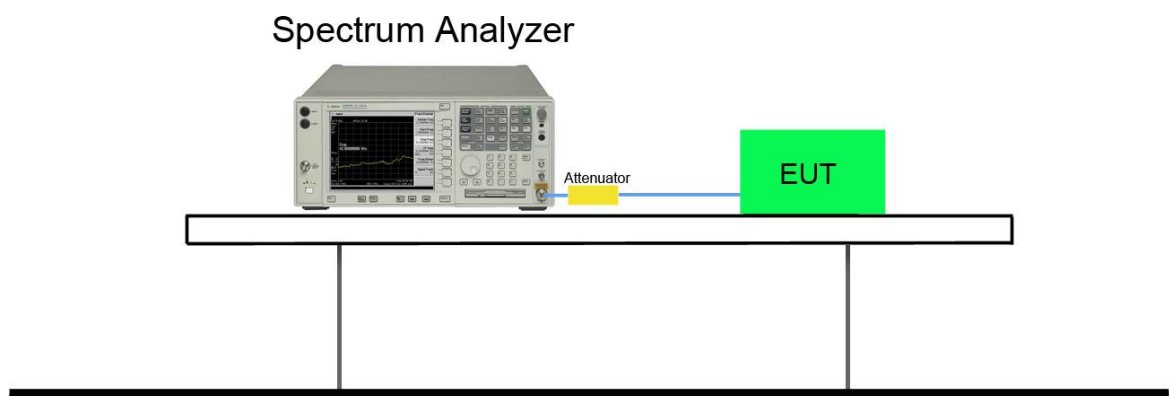
7.2.2. Test Procedure used

ANSI C63.10 - 2013 - Section 6.9.3, 11.8 / RSS-Gen 6.7

7.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize

7.2.4. Test Setup



7.2.5. Test Result

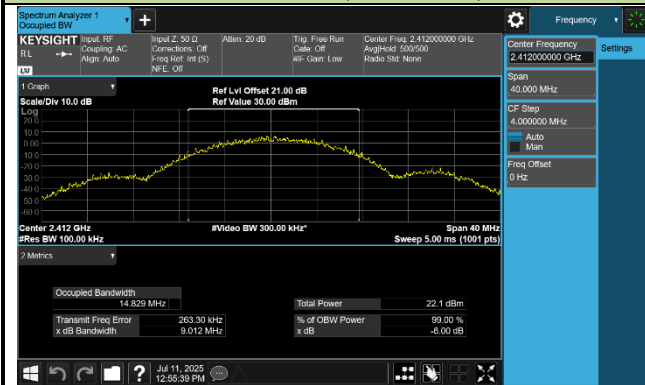
Product	Smart Controller	Temperature	21°C
Test Engineer	Fran	Relative Humidity	56%
Test Site	SR6	Test Date	2025/7/11

6dB Bandwidth

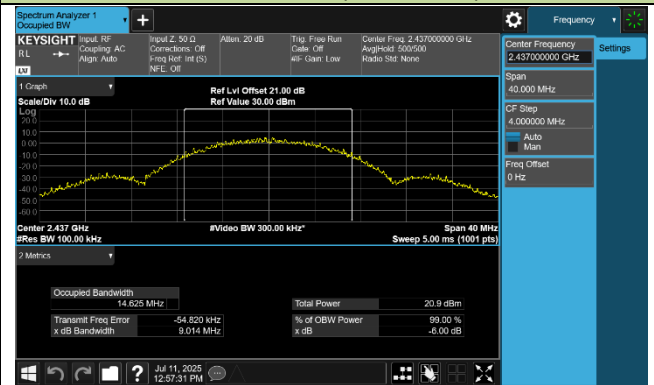
Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0						
802.11b	1Mbps	01	2412	9.012	≥ 0.5	Pass
802.11b	1Mbps	06	2437	9.014	≥ 0.5	Pass
802.11b	1Mbps	11	2462	9.013	≥ 0.5	Pass
802.11g	6Mbps	01	2412	15.72	≥ 0.5	Pass
802.11g	6Mbps	06	2437	16.02	≥ 0.5	Pass
802.11g	6Mbps	11	2462	15.67	≥ 0.5	Pass
802.11n-HT20	MCS0	01	2412	16.07	≥ 0.5	Pass
802.11n-HT20	MCS0	06	2437	17.59	≥ 0.5	Pass
802.11n-HT20	MCS0	11	2462	16.82	≥ 0.5	Pass

802.11b 6dB Bandwidth

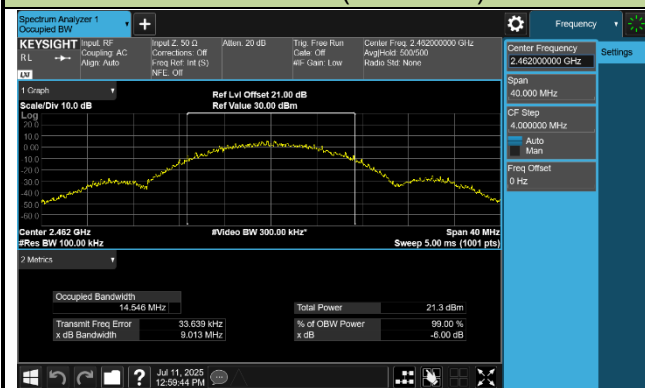
Channel 01 (2412MHz)



Channel 06 (2437MHz)

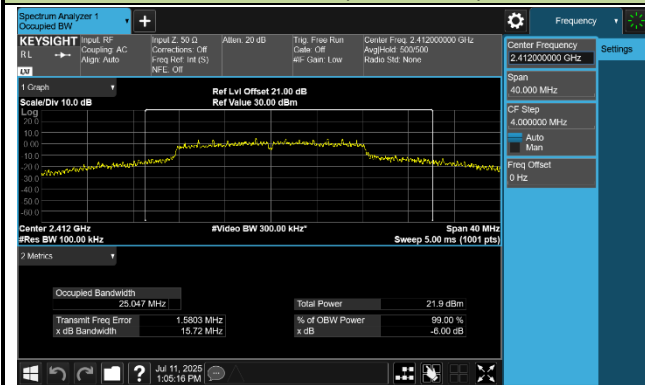


Channel 11 (2462MHz)

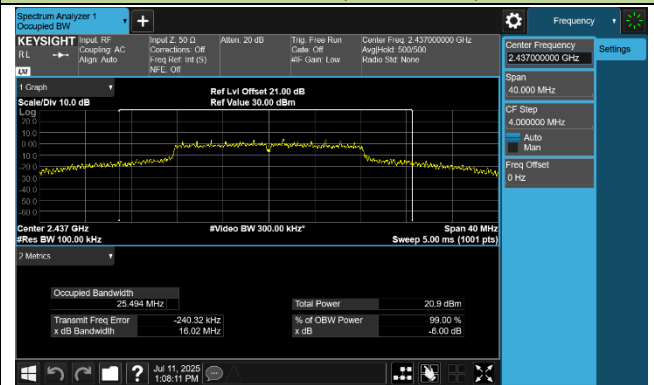


802.11g 6dB Bandwidth

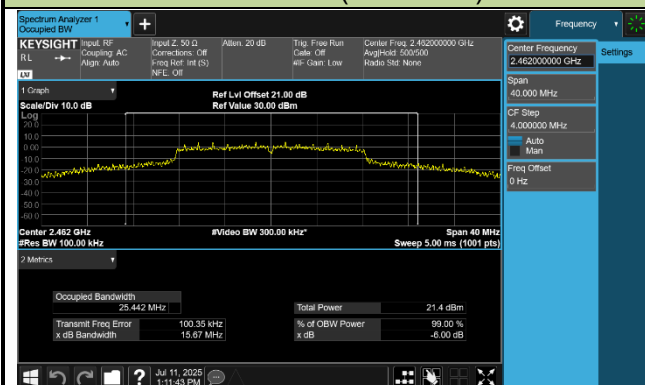
Channel 01 (2412MHz)



Channel 06 (2437MHz)

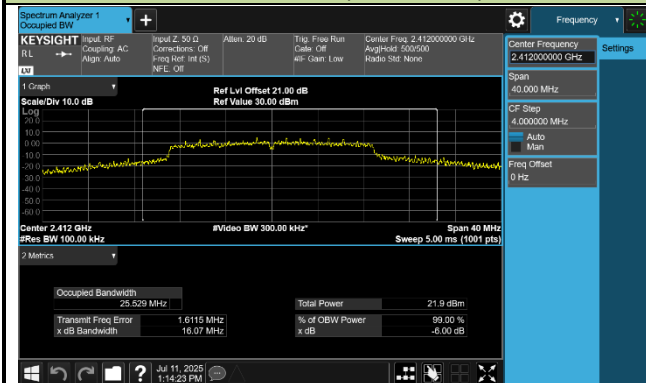


Channel 11 (2462MHz)

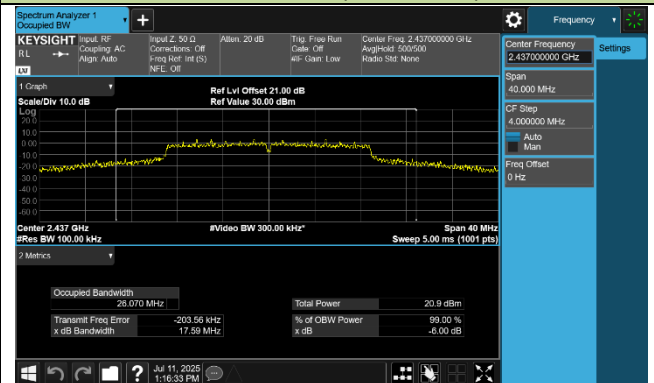


802.11n-HT20 6dB Bandwidth

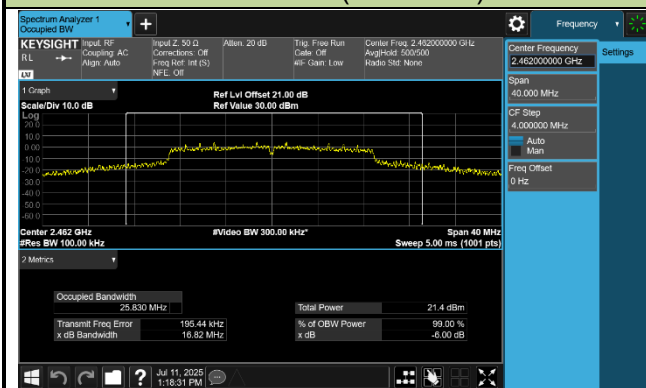
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



7.3. Output Power Measurement

7.3.1. Test Limit

The maximum out power shall be less 1 Watt (30dBm).

7.3.2. Test Procedure Used

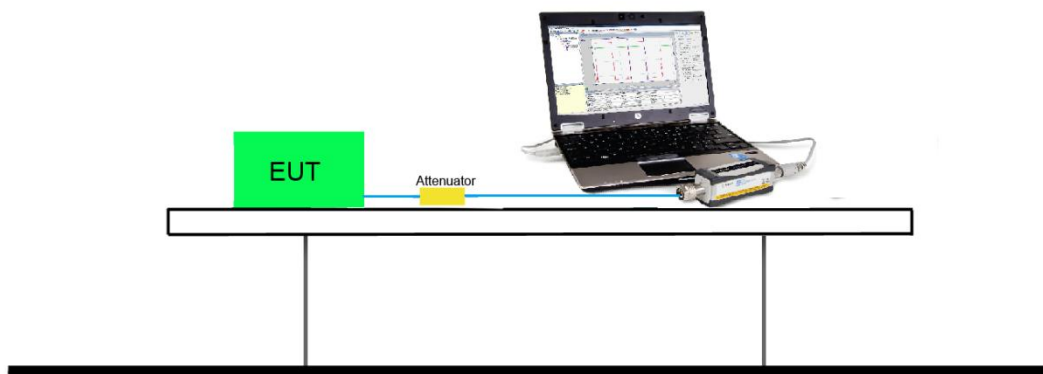
ANSI C63.10 - 2013 - Section 11.9.2.3.2

7.3.3. Test Setting

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.3.4. Test Setup



7.3.5. Test Result of Output Power

Product	Smart Controller	Temperature	21°C
Test Engineer	Fran	Relative Humidity	56%
Test Site	SR6	Test Date	2025/7/11

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm) [Report only]	Peak Power (dBm)	Limit (dBm)	Result
CDD Mode							
802.11b	1Mbps	01	2412	14.80	16.56	≤ 30.00	Pass
802.11b	1Mbps	06	2437	13.65	15.55	≤ 30.00	Pass
802.11b	1Mbps	11	2462	14.02	15.88	≤ 30.00	Pass
802.11g	6Mbps	01	2412	15.20	17.51	≤ 30.00	Pass
802.11g	6Mbps	06	2437	14.25	16.86	≤ 30.00	Pass
802.11g	6Mbps	11	2462	14.93	17.23	≤ 30.00	Pass
802.11n-HT20	MCS0	01	2412	15.16	17.68	≤ 30.00	Pass
802.11n-HT20	MCS0	06	2437	14.22	16.93	≤ 30.00	Pass
802.11n-HT20	MCS0	11	2462	14.65	17.18	≤ 30.00	Pass

Note: Output power = Reading value on power meter + cable loss °

7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

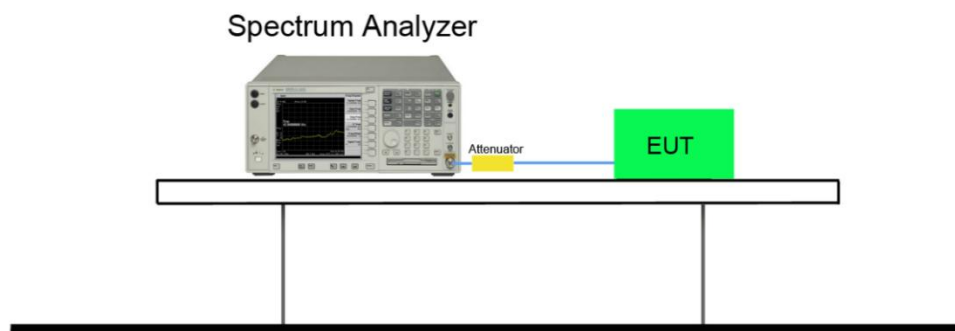
7.4.2. Test Procedure Used

ANSI C63.10 - 2013 - Section 11.10.5

7.4.3. Test Setting

1. Measure the duty cycle (x) of the transmitter output signal.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. RBW = 10 kHz.
5. VBW = 30 kHz.
6. Detector = RMS.
7. Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span/RBW}$.
8. Sweep time = auto couple.
9. Don't use sweep triggering. Allow sweep to "free run".
10. Employ trace averaging (RMS) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

7.4.4. Test Setup



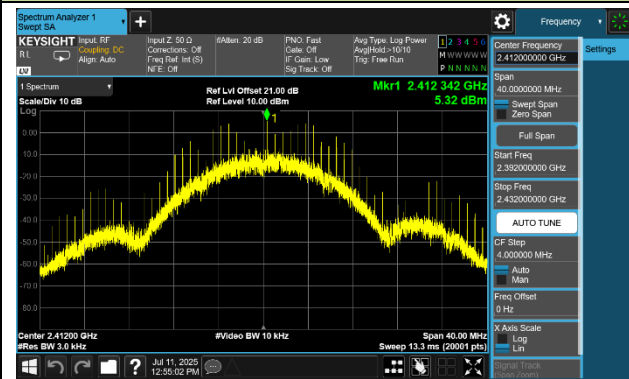
7.4.5. Test Result

Product	Smart Controller	Temperature	21°C
Test Engineer	Fran	Relative Humidity	56%
Test Site	SR6	Test Date	2025/7/11

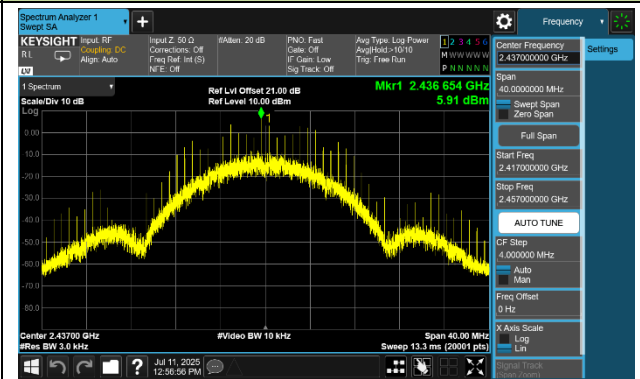
Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ 10kHz)	Limit (dBm/ 3kHz)	Result
CDD Mode						
802.11b	1Mbps	01	2412	5.32	≤ 8.00	Pass
802.11b	1Mbps	06	2437	5.91	≤ 8.00	Pass
802.11b	1Mbps	11	2462	6.17	≤ 8.00	Pass
802.11g	6Mbps	01	2412	-9.04	≤ 8.00	Pass
802.11g	6Mbps	06	2437	-9.54	≤ 8.00	Pass
802.11g	6Mbps	11	2462	-8.83	≤ 8.00	Pass
802.11n-HT20	MCS0	01	2412	-8.91	≤ 8.00	Pass
802.11n-HT20	MCS0	06	2437	-10.22	≤ 8.00	Pass
802.11n-HT20	MCS0	11	2462	-9.60	≤ 8.00	Pass

802.11b AVGPSPD - Ant 0

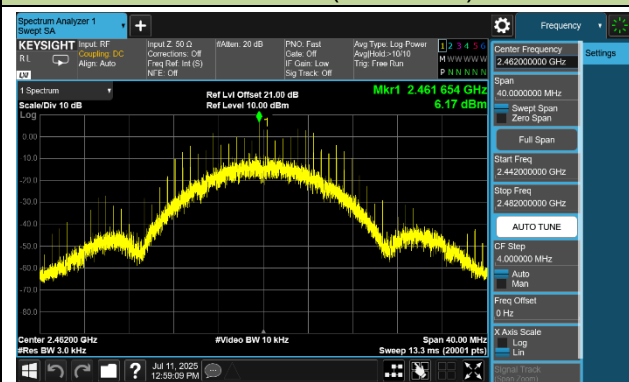
Channel 01 (2412MHz)



Channel 06 (2437MHz)

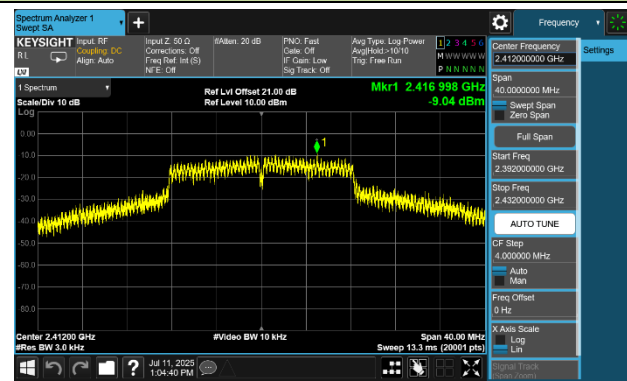


Channel 11 (2462MHz)

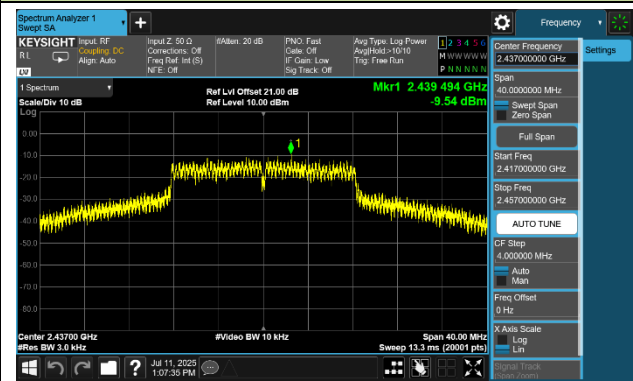


802.11g AVGPSPD - Ant 0

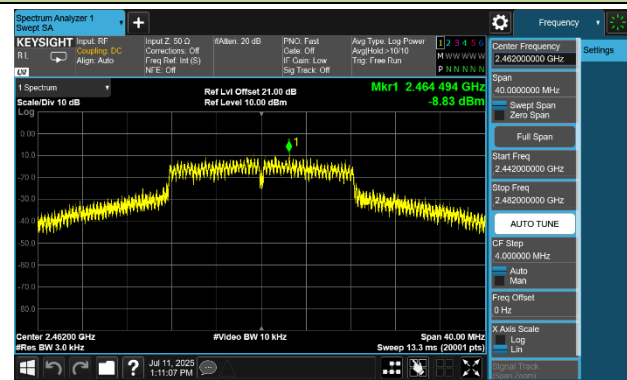
Channel 01 (2412MHz)



Channel 06 (2437MHz)

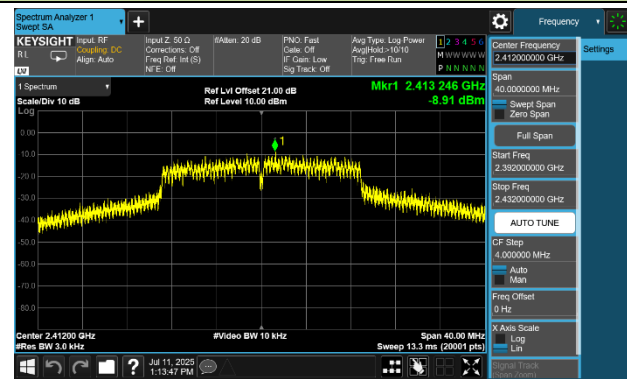


Channel 11 (2462MHz)

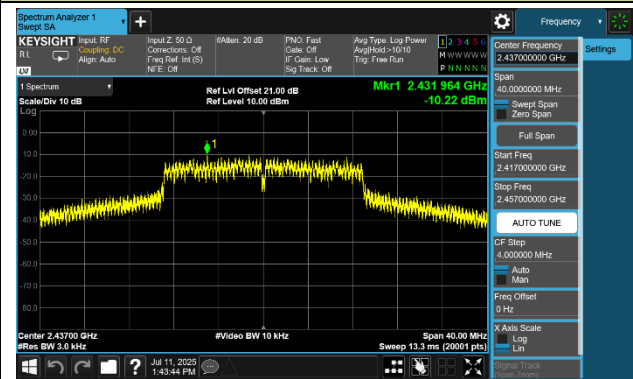


802.11n-HT20 AVGPDS - Ant 0

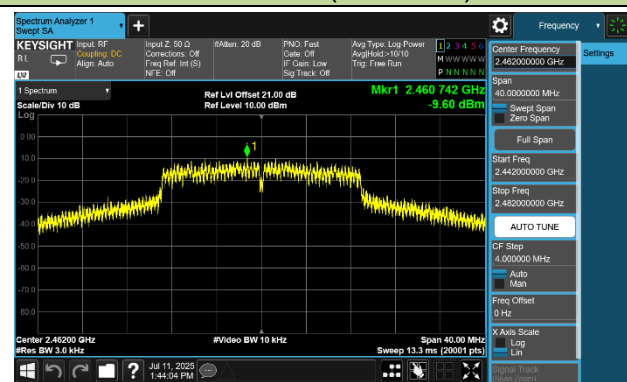
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



7.5. Out-of-Band Spurious Emissions Emissions Measurement

7.5.1. Test Limit

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 RF conducted measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

7.5.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.11

7.5.3. Test Settling

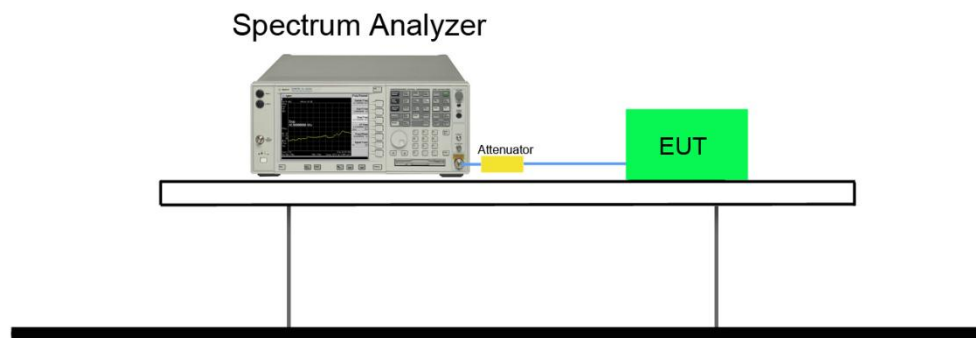
Reference level measurement

1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW $\geq 3 \times$ RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100kHz
3. VBW = 300kHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

7.5.4. Test Setup



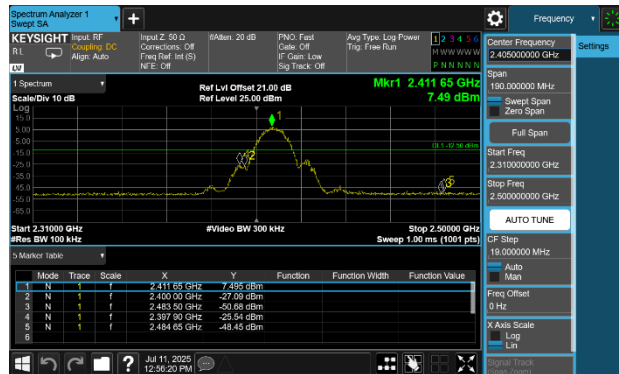
7.5.5. Test Result

Product	Smart Controller	Temperature	21°C
Test Engineer	Fran	Relative Humidity	56%
Test Site	SR6	Test Date	2025/7/11

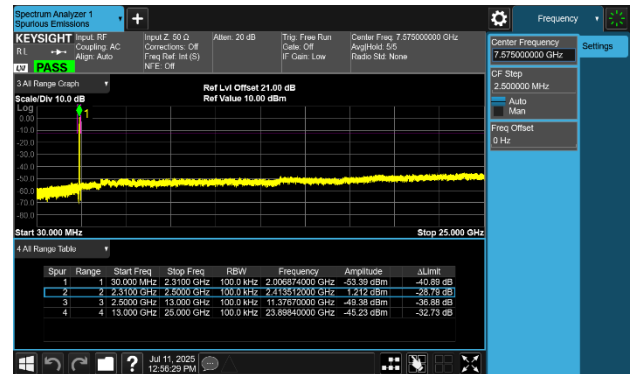
Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit (dBc)	Result
802.11b	1Mbps	01	2412	20	Pass
802.11b	1Mbps	06	2437	20	Pass
802.11b	1Mbps	11	2462	20	Pass
802.11g	6Mbps	01	2412	20	Pass
802.11g	6Mbps	06	2437	20	Pass
802.11g	6Mbps	11	2462	20	Pass
802.11n-HT20	MCS0	01	2412	20	Pass
802.11n-HT20	MCS0	06	2437	20	Pass
802.11n-HT20	MCS0	11	2462	20	Pass

Ant 0

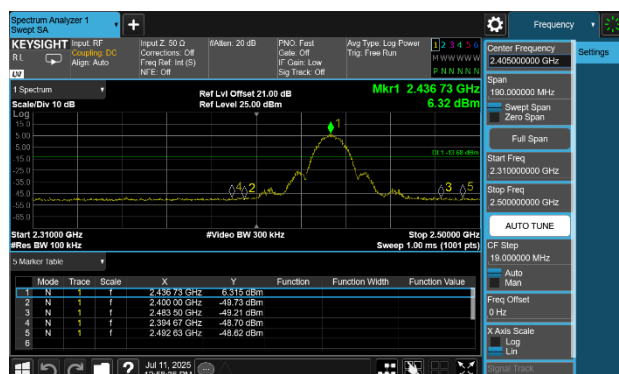
802.11 b CH01 (2412MHz)



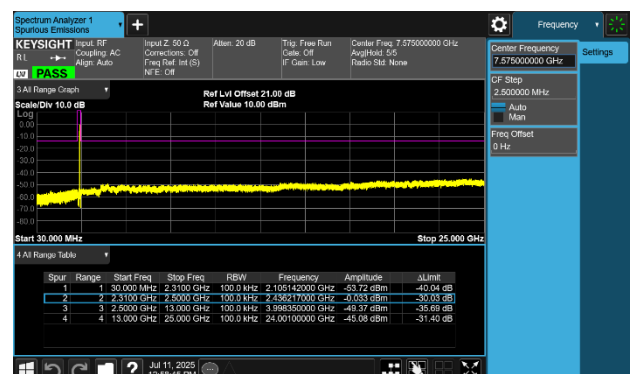
802.11 b CH01 (2412MHz)



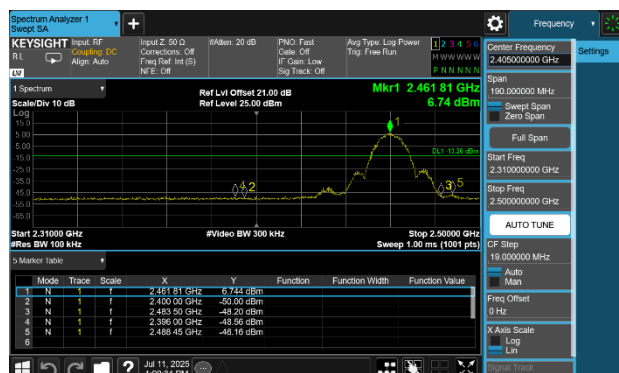
802.11 b CH06 (2437MHz)



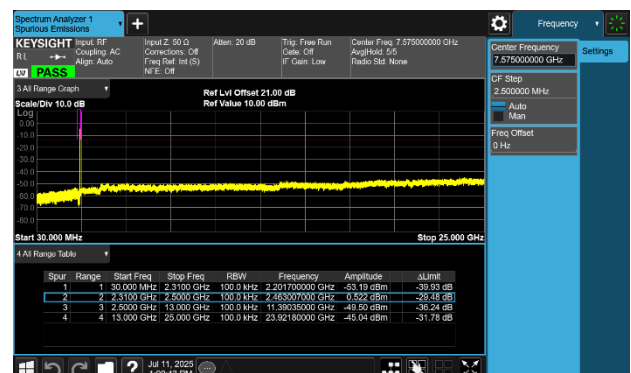
802.11 b CH06 (2437MHz)



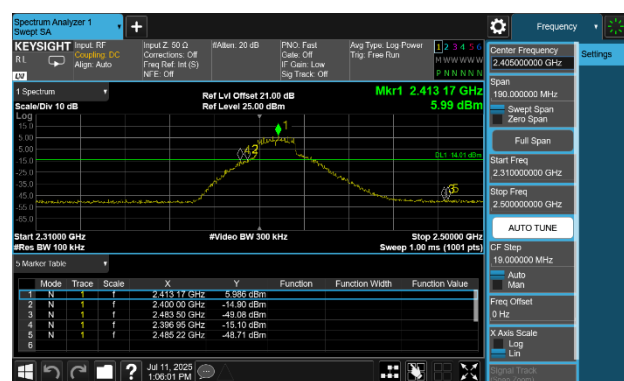
802.11 b CH11 (2462MHz)



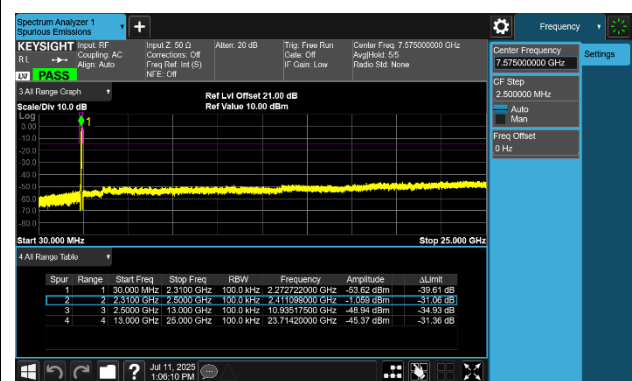
802.11 b CH11 (2462MHz)



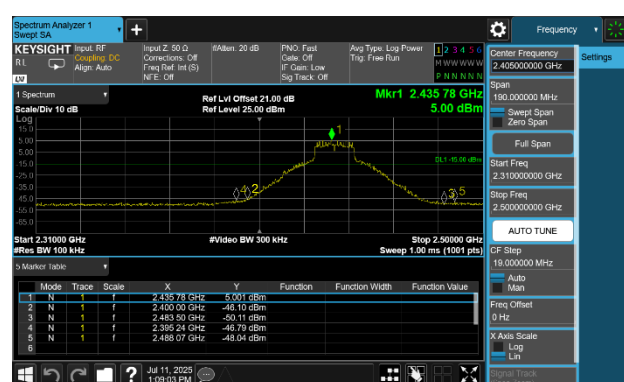
802.11 g CH01 (2412MHz)



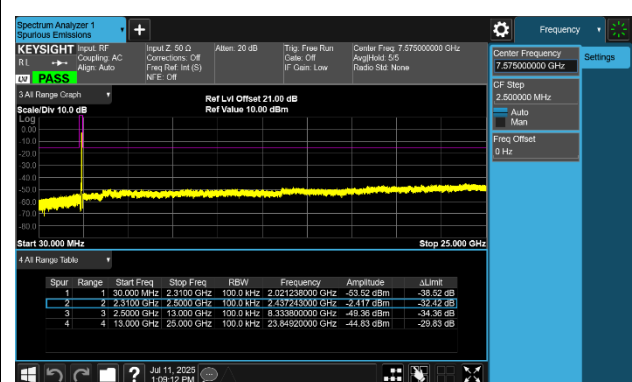
802.11 g CH01 (2412MHz)



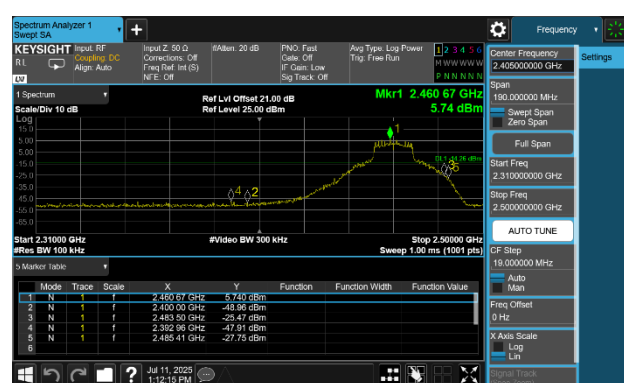
802.11 g CH06 (2437MHz)



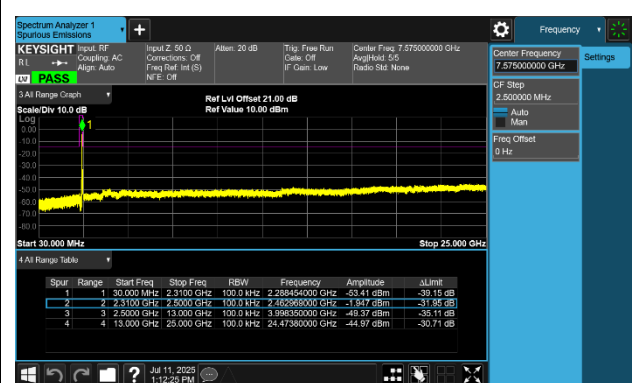
802.11 g CH06 (2437MHz)



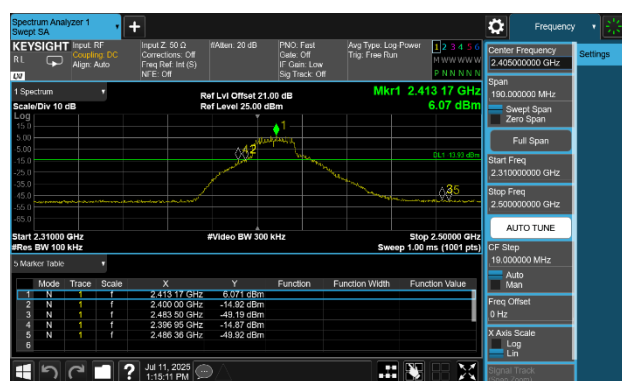
802.11 g CH11 (2462MHz)



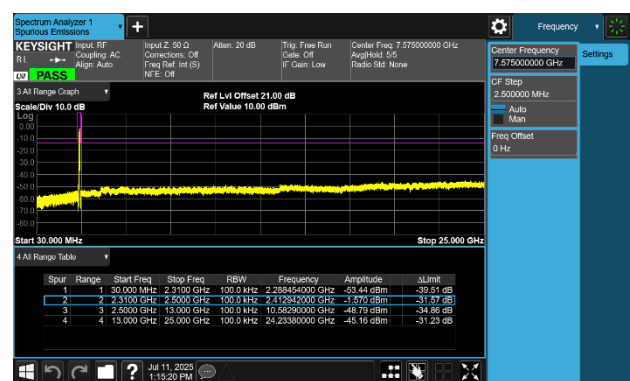
802.11 g CH11 (2462MHz)



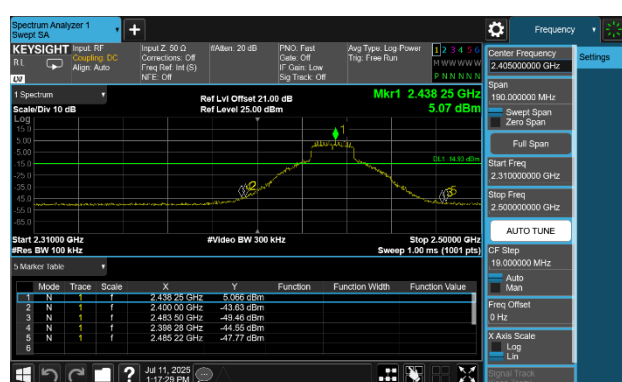
802.11 n20 CH01 (2412MHz)



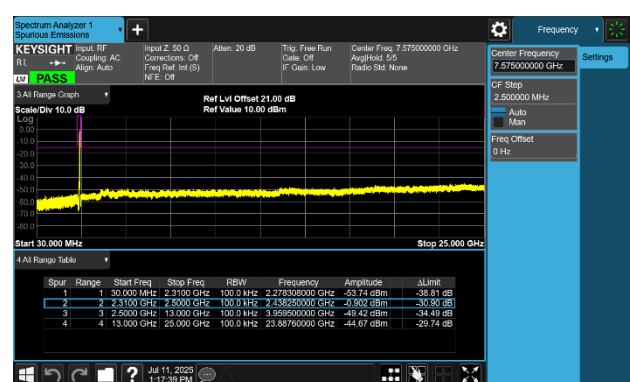
802.11 n20 CH01 (2412MHz)



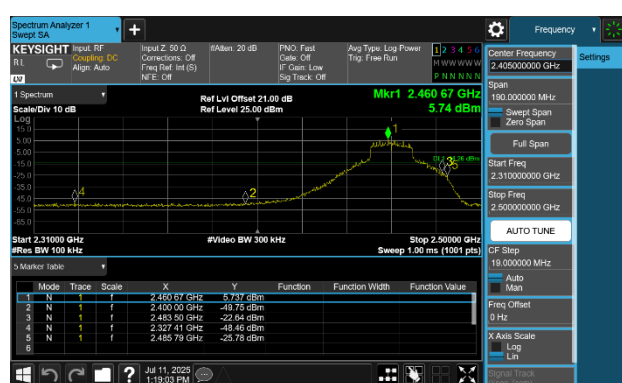
802.11 n20 CH06 (2437MHz)



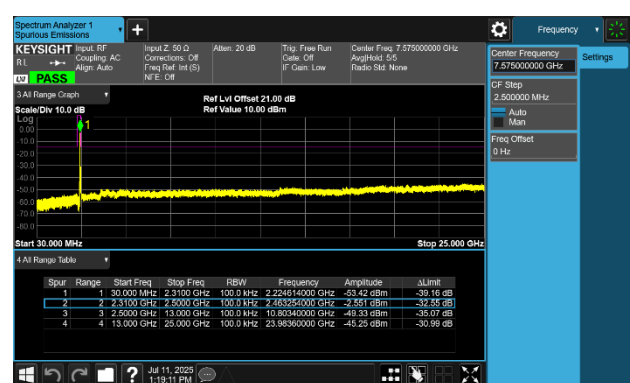
802.11 n20 CH06 (2437MHz)



802.11 n20 CH11 (2462MHz)



802.11 n20 CH11 (2462MHz)



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10 - 2013 - Section 11.11 & 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

7.6.3. Test Setting

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

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1GHz

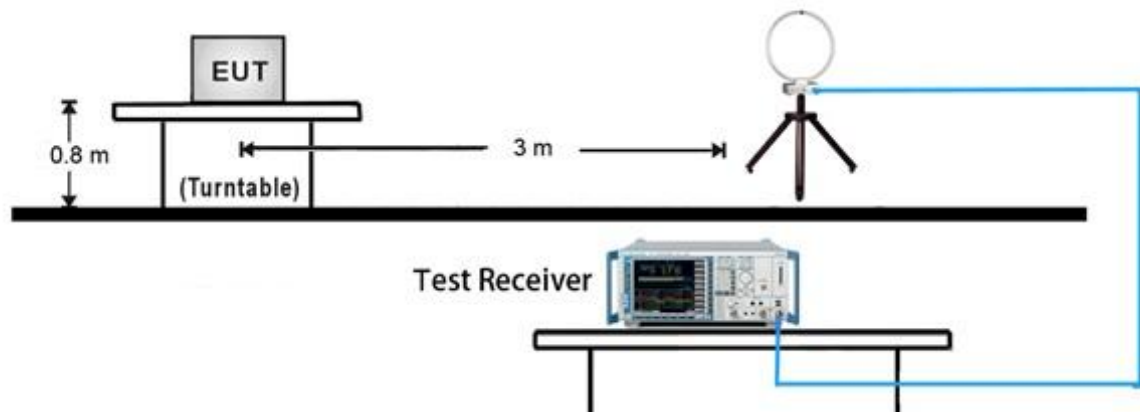
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

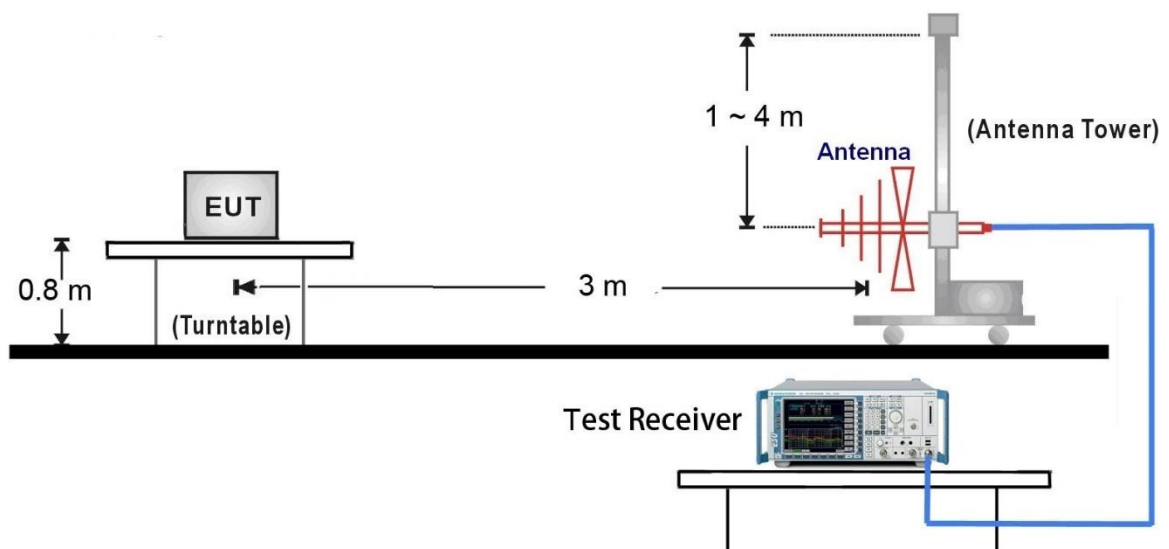
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

7.6.4. Test Setup

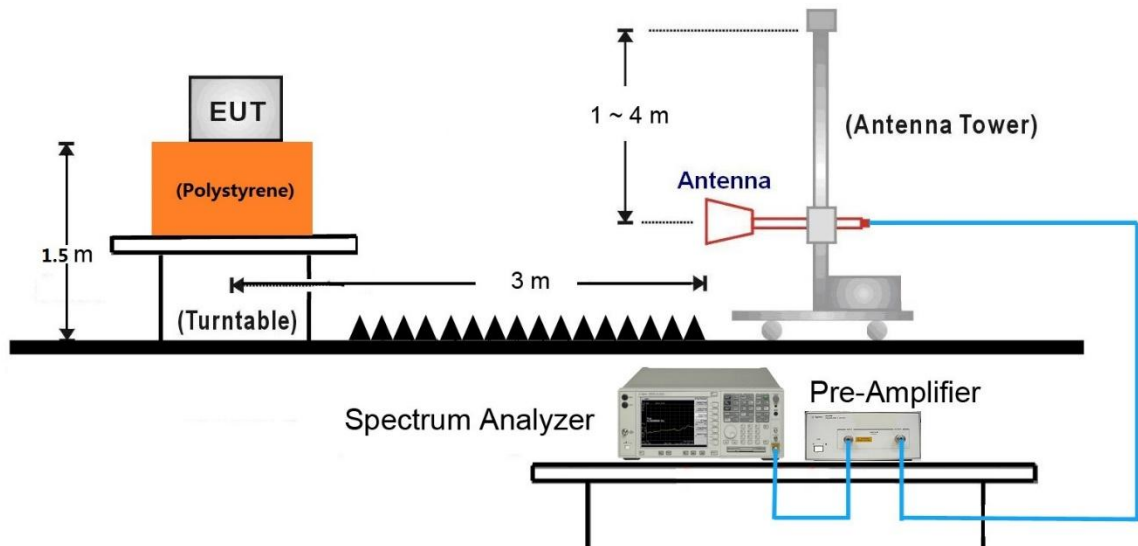
9kHz ~ 30MHz Test Setup:



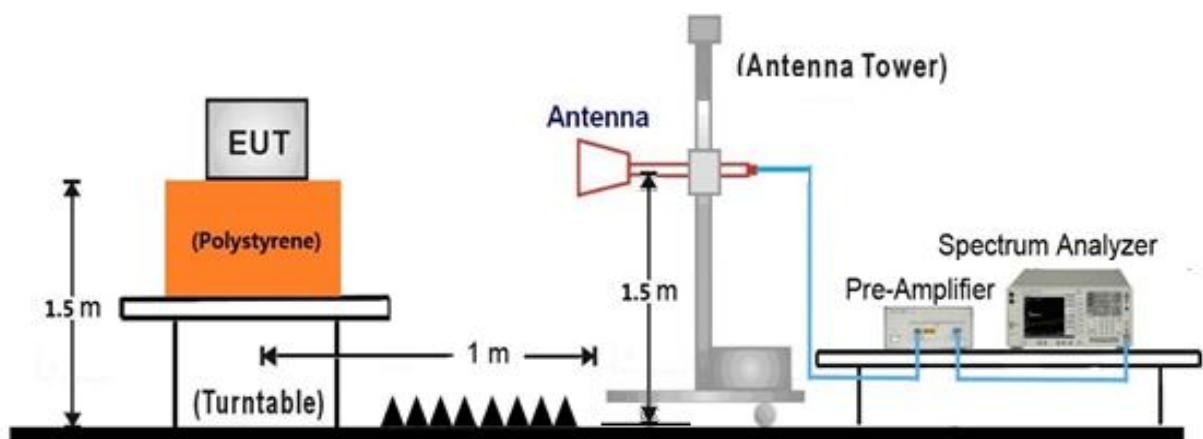
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:

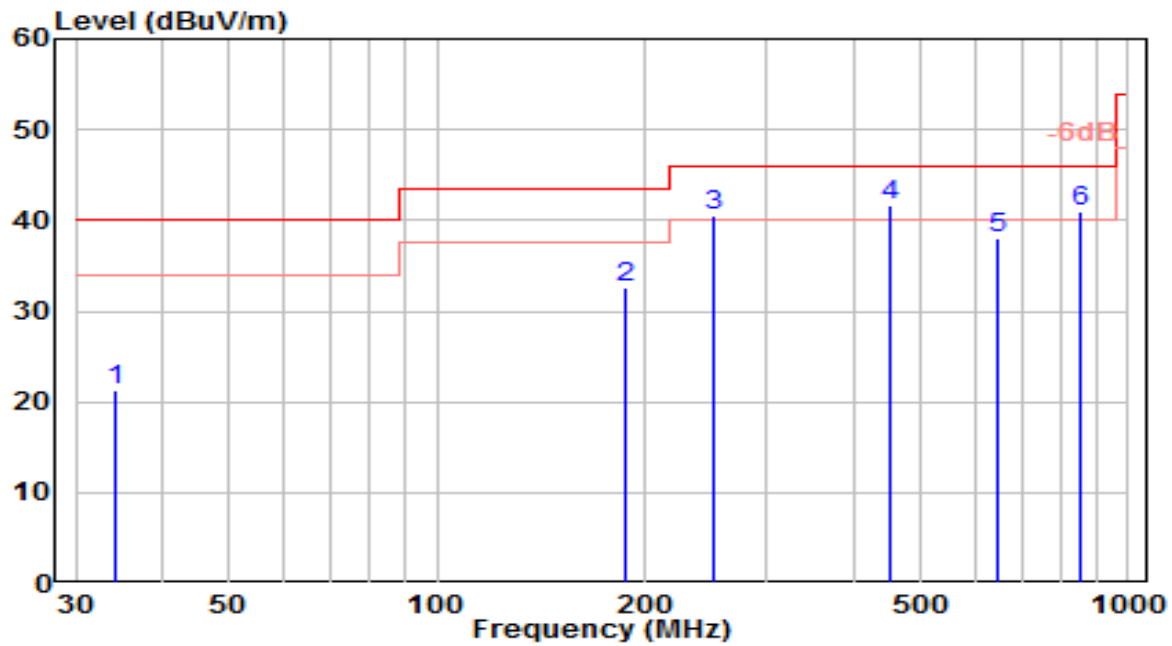


18GHz ~ 25GHz Test Setup:



7.6.5. Test Result

EUT	Smart Controller	Date of Test	2025-06-04
Factor	VULB 9162	Temp. / Humidity	23°C /59%
Polarity	Horizontal	Site / Test Engineer	AC1 / Tim
Test Mode	802.11n-20MHz_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

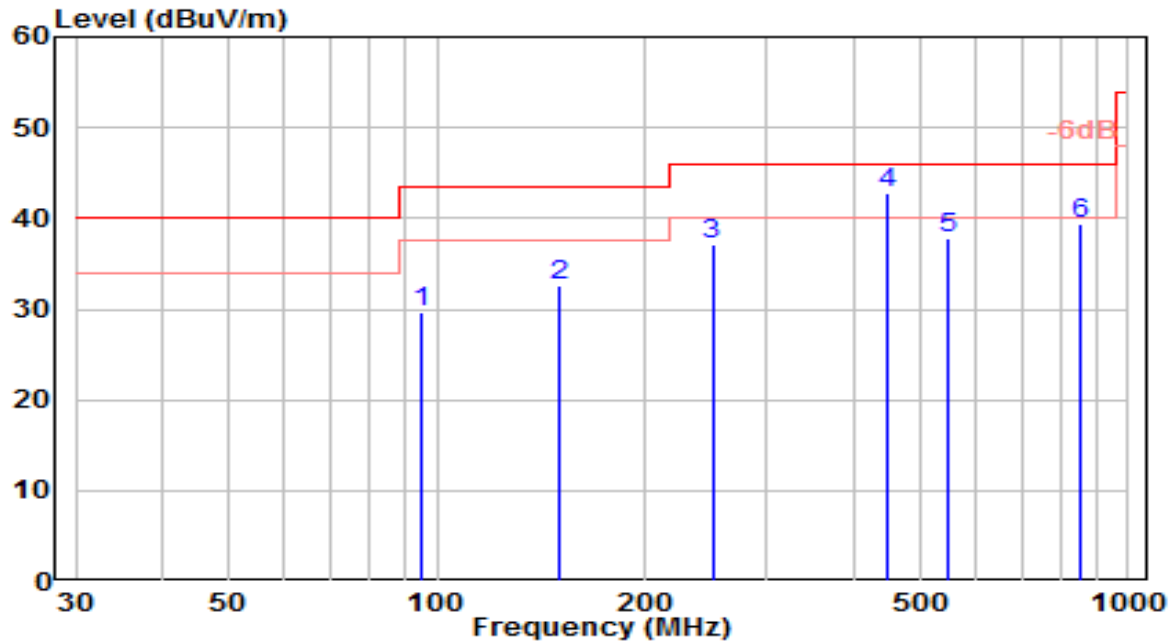


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	34.339	3.23	18.16	21.39	-18.61	40.00	150	20	QP
2	187.314	14.76	17.77	32.52	-10.98	43.50	150	5	QP
3	251.558	20.11	20.45	40.56	-5.44	46.00	100	55	QP
4	* 451.907	17.37	24.35	41.72	-4.28	46.00	100	360	QP
5	645.766	11.35	26.77	38.12	-7.88	46.00	100	30	QP
6	855.503	9.76	31.32	41.07	-4.93	46.00	100	215	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-06-04
Factor	VULB 9162	Temp. / Humidity	23°C /59%
Polarity	Vertical	Site / Test Engineer	AC1 / Tim
Test Mode	802.11n-20MHz_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

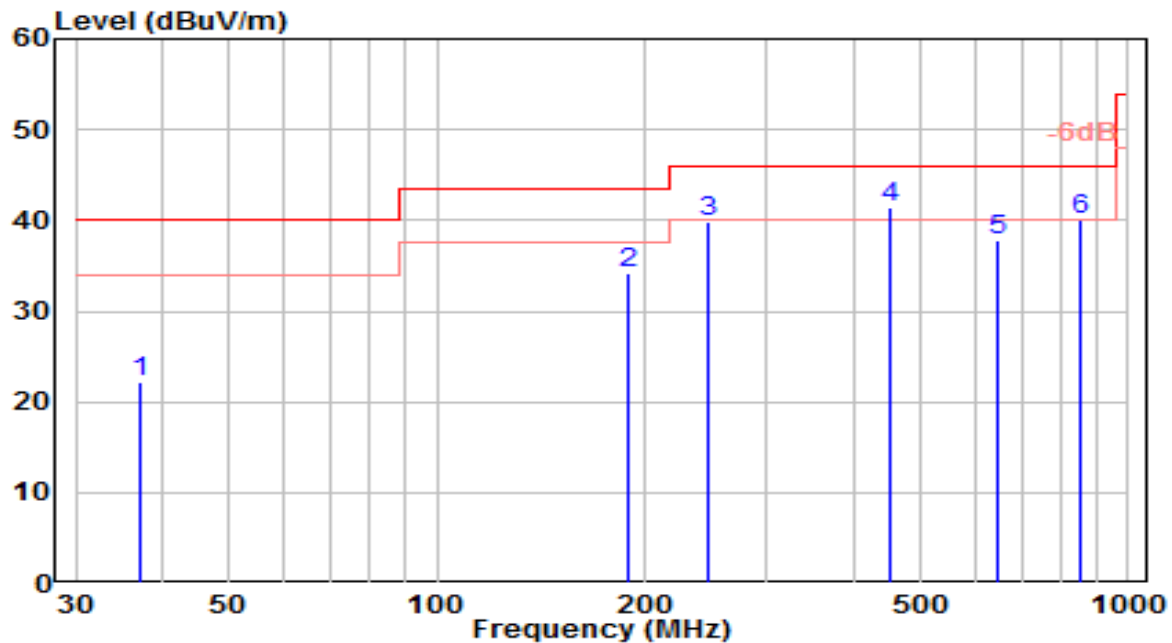


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	95.180	11.66	18.05	29.71	-13.79	43.50	100	85	QP
2	150.662	17.06	15.62	32.68	-10.82	43.50	100	180	QP
3	250.194	16.73	20.43	37.16	-8.84	46.00	100	200	QP
4	* 449.920	18.48	24.30	42.78	-3.22	46.00	150	160	QP
5	548.156	11.85	26.07	37.92	-8.08	46.00	100	40	QP
6	853.678	8.15	31.30	39.45	-6.55	46.00	100	45	QP

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-06-04
Factor	VULB 9162	Temp. / Humidity	23°C /59%
Polarity	Horizontal	Site / Test Engineer	AC1 / Tim
Test Mode	802.11n-20MHz_RX_CH 6_ANT 0	Test Voltage	By Notebook PC

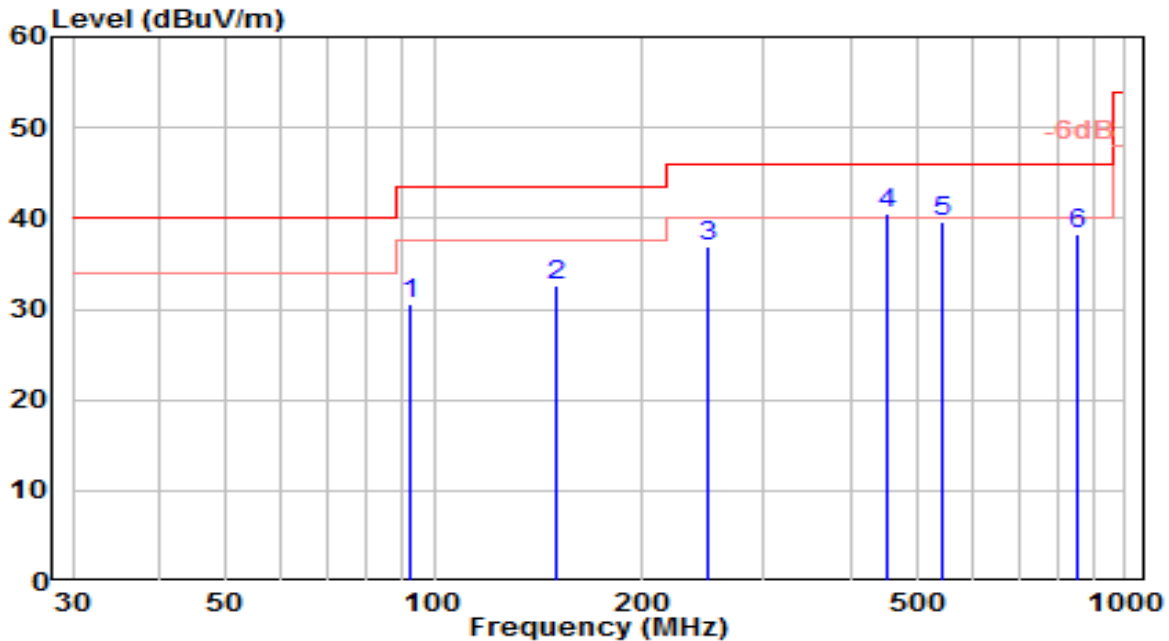


No	Frequency (MHz)	Reading (dBUV)	C.F (dB/m)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	37.278	3.10	19.10	22.20	-17.80	40.00	150	20	QP
2	188.807	16.28	17.97	34.25	-9.25	43.50	150	5	QP
3	246.851	19.70	20.26	39.96	-6.04	46.00	100	55	QP
4	* 453.407	17.03	24.38	41.41	-4.59	46.00	100	360	QP
5	644.575	10.94	26.79	37.73	-8.27	46.00	100	30	QP
6	853.934	8.72	31.31	40.03	-5.97	46.00	100	215	QP

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBUV/m) = Reading(dBUV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-06-04
Factor	VULB 9162	Temp. / Humidity	23°C /59%
Polarity	Vertical	Site / Test Engineer	AC1 / Tim
Test Mode	802.11n-20MHz_RX_CH 6_ANT 0	Test Voltage	By Notebook PC

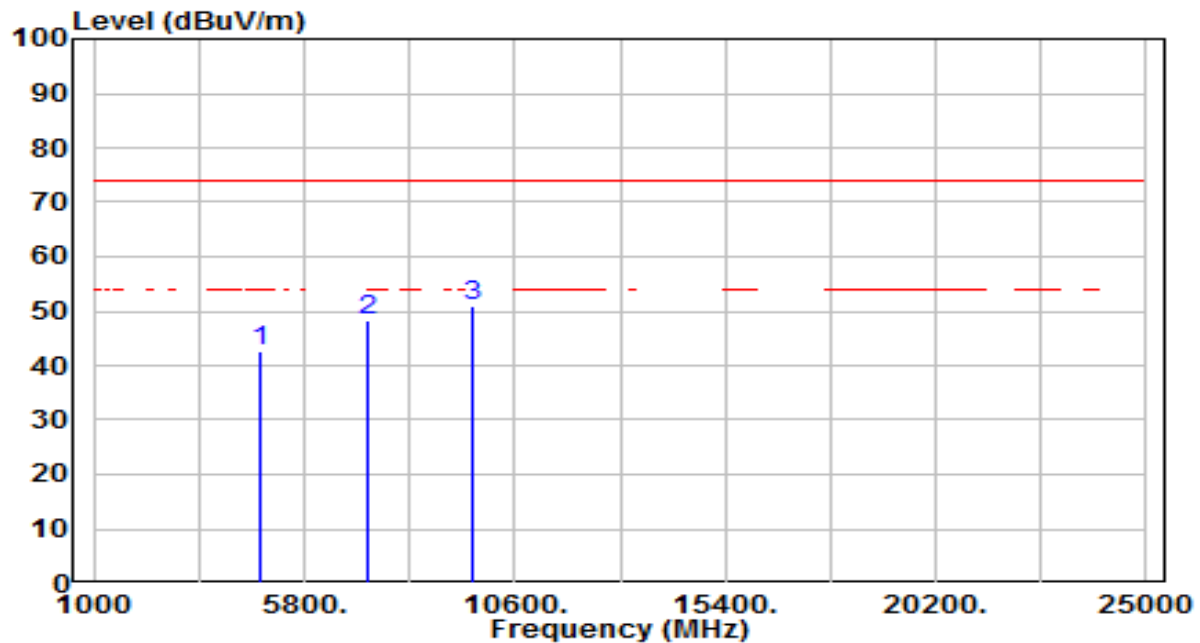


No	Frequency (MHz)	Reading (dBUV)	C.F (dB/m)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	92.198	13.02	17.53	30.56	-12.94	43.50	100	85	QP
2	150.696	16.96	15.62	32.58	-10.92	43.50	100	180	QP
3	249.977	16.58	20.43	37.01	-8.99	46.00	100	200	QP
4	* 453.420	16.07	24.38	40.45	-5.55	46.00	150	160	QP
5	544.964	13.55	26.03	39.59	-6.41	46.00	100	40	QP
6	853.731	6.92	31.30	38.22	-7.78	46.00	100	45	QP

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBUV/m) = Reading(dBUV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

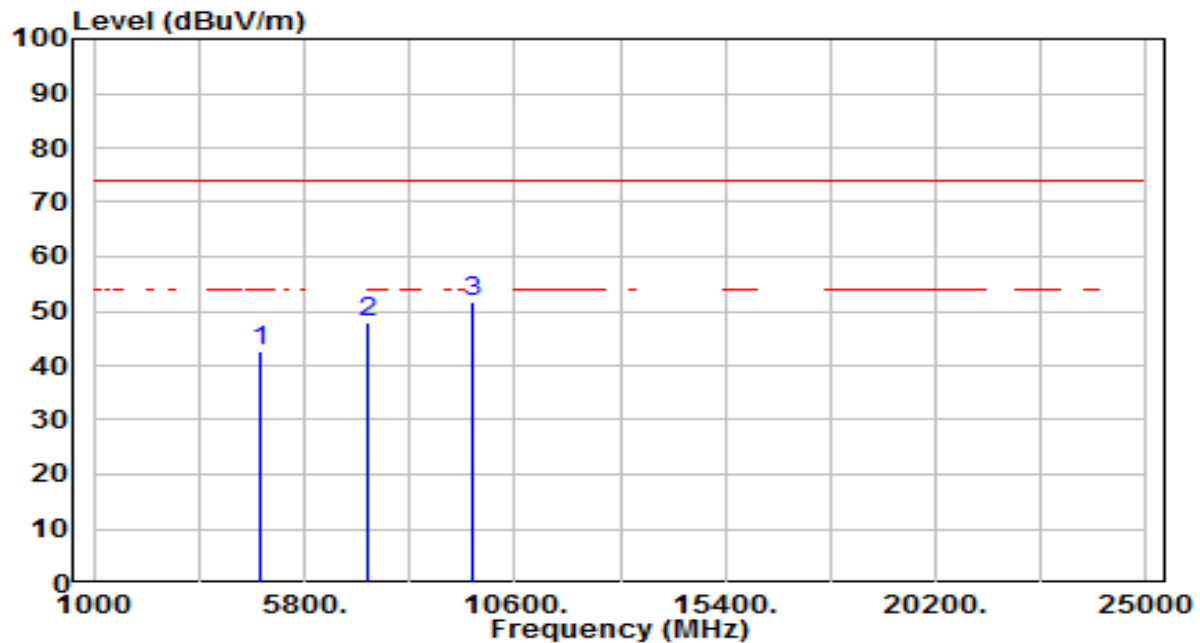


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	38.39	4.34	42.73	-31.27	74.00	200	253	Peak
2	7236.000	35.41	12.73	48.14	-25.86	74.00	200	305	Peak
3	* 9648.000	34.11	16.74	50.85	-23.15	74.00	200	107	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

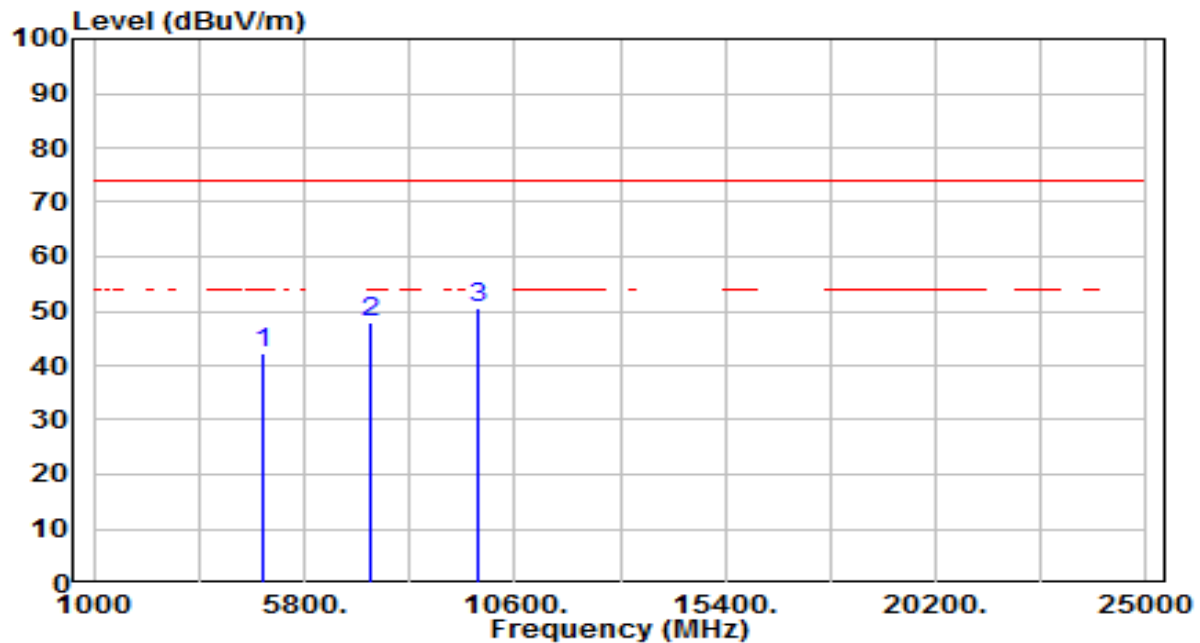


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	38.24	4.34	42.58	-31.42	74.00	200	322	Peak
2	7236.000	35.04	12.73	47.77	-26.23	74.00	200	42	Peak
3	* 9648.000	34.94	16.74	51.67	-22.33	74.00	200	359	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

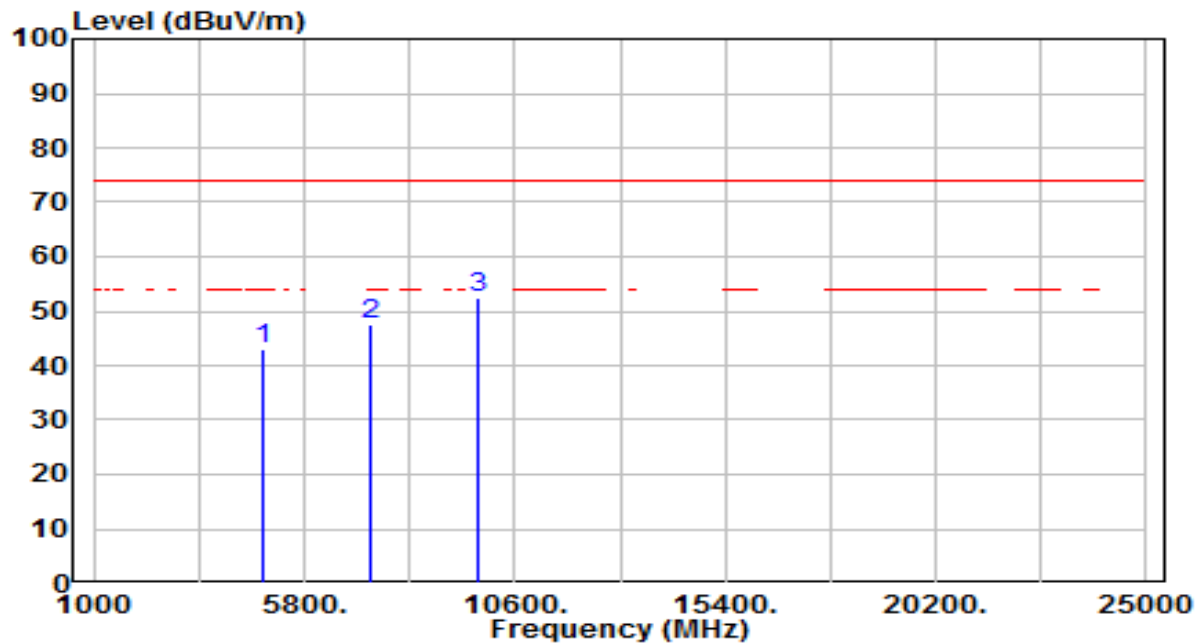


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	37.93	4.46	42.40	-31.60	74.00	200	53	Peak
2	7311.000	34.85	13.13	47.98	-26.02	74.00	200	122	Peak
3	* 9748.000	33.83	16.92	50.75	-23.25	74.00	200	219	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

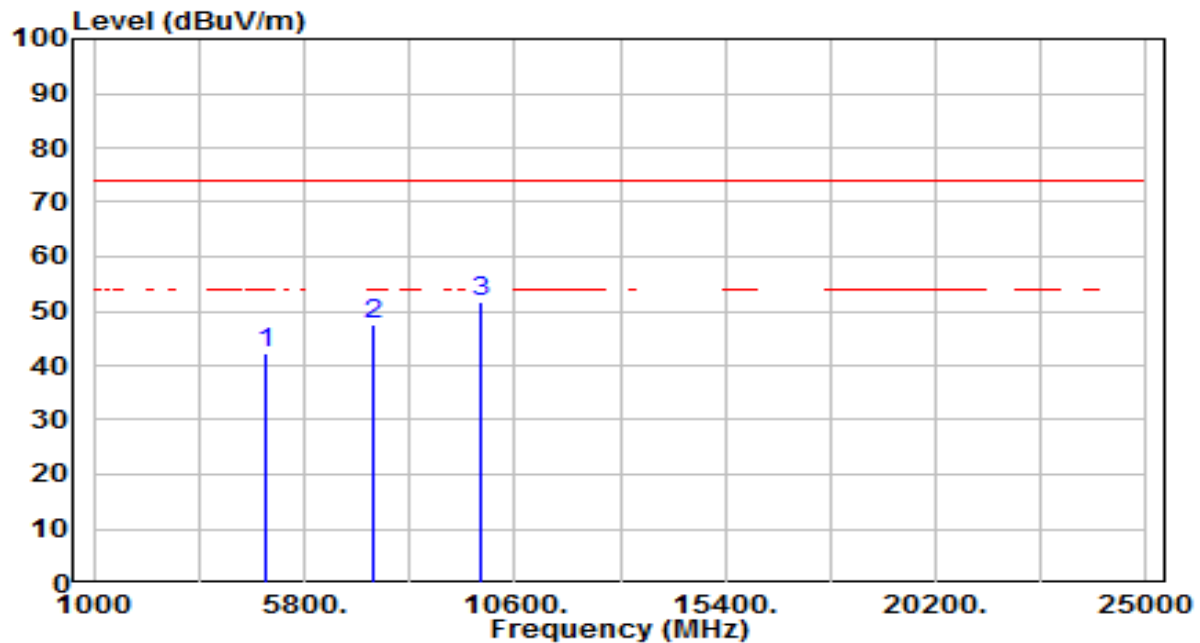


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	38.70	4.46	43.16	-30.84	74.00	200	12	Peak
2	7311.000	34.28	13.13	47.41	-26.59	74.00	200	279	Peak
3	* 9748.000	35.68	16.92	52.59	-21.41	74.00	200	294	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

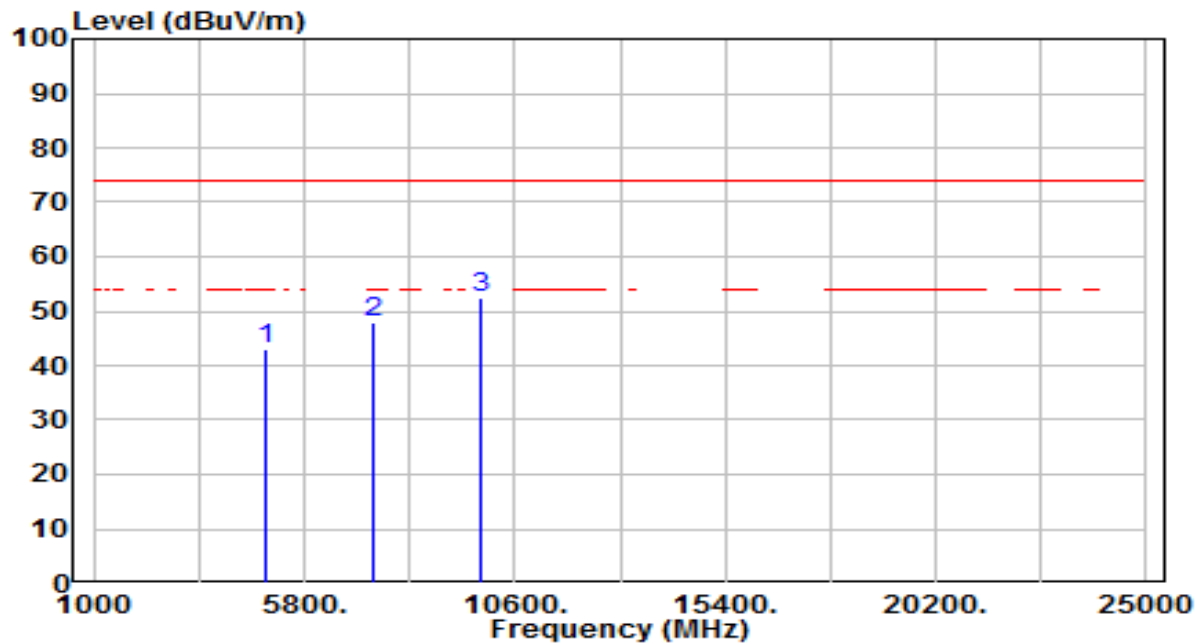


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	37.72	4.61	42.34	-31.66	74.00	200	256	Peak
2	7386.000	34.10	13.49	47.59	-26.41	74.00	200	306	Peak
3	* 9848.000	34.65	17.14	51.79	-22.21	74.00	200	0	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

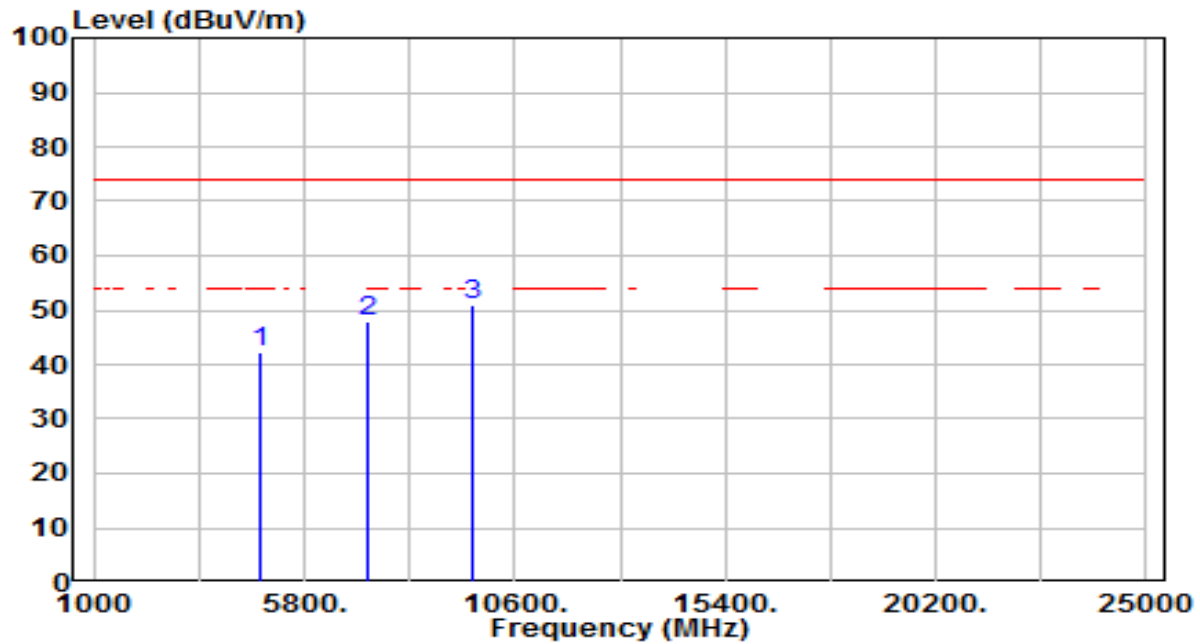


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	38.53	4.61	43.14	-30.86	74.00	200	108	Peak
2	7386.000	34.60	13.49	48.09	-25.91	74.00	200	344	Peak
3	* 9848.000	35.24	17.14	52.37	-21.63	74.00	200	340	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

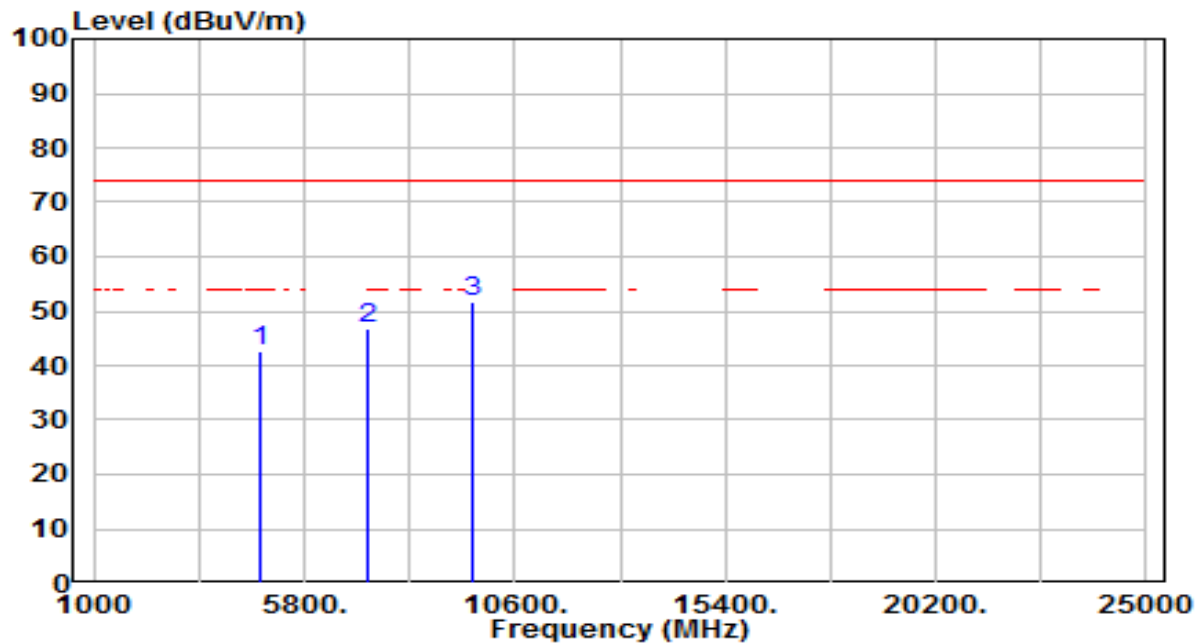


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	38.03	4.34	42.38	-31.62	74.00	200	263	Peak
2	7236.000	35.06	12.73	47.79	-26.21	74.00	200	31	Peak
3	* 9648.000	34.29	16.74	51.03	-22.97	74.00	200	85	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

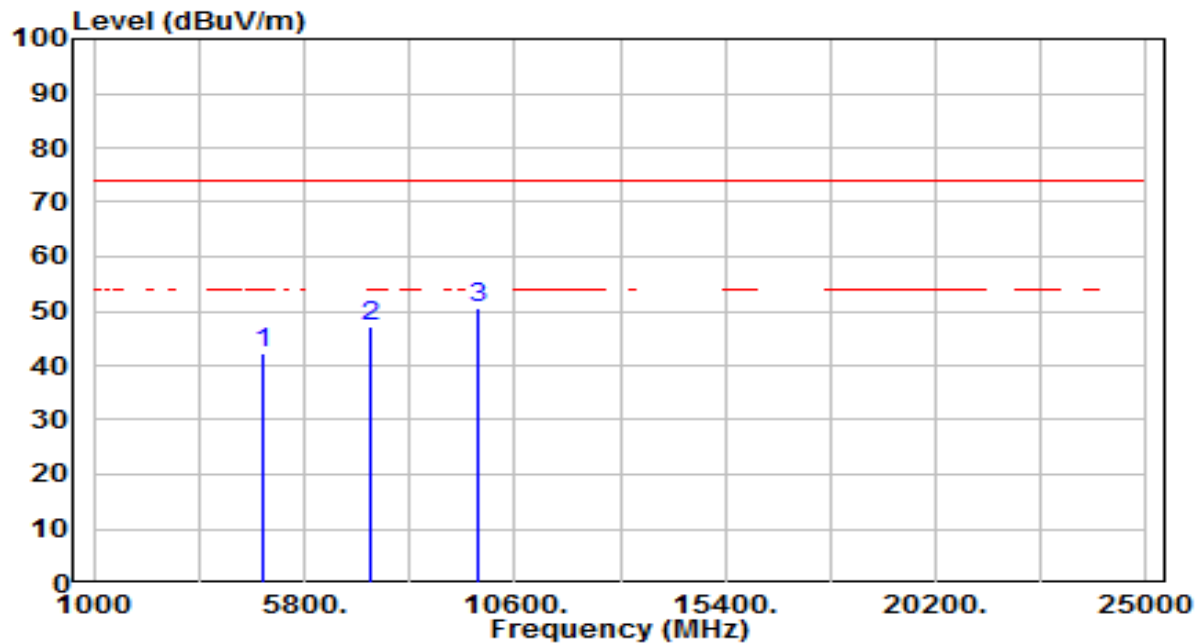


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	38.23	4.34	42.57	-31.43	74.00	200	73	Peak
2	7236.000	34.13	12.73	46.86	-27.14	74.00	200	230	Peak
3	* 9648.000	34.95	16.74	51.69	-22.31	74.00	200	94	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

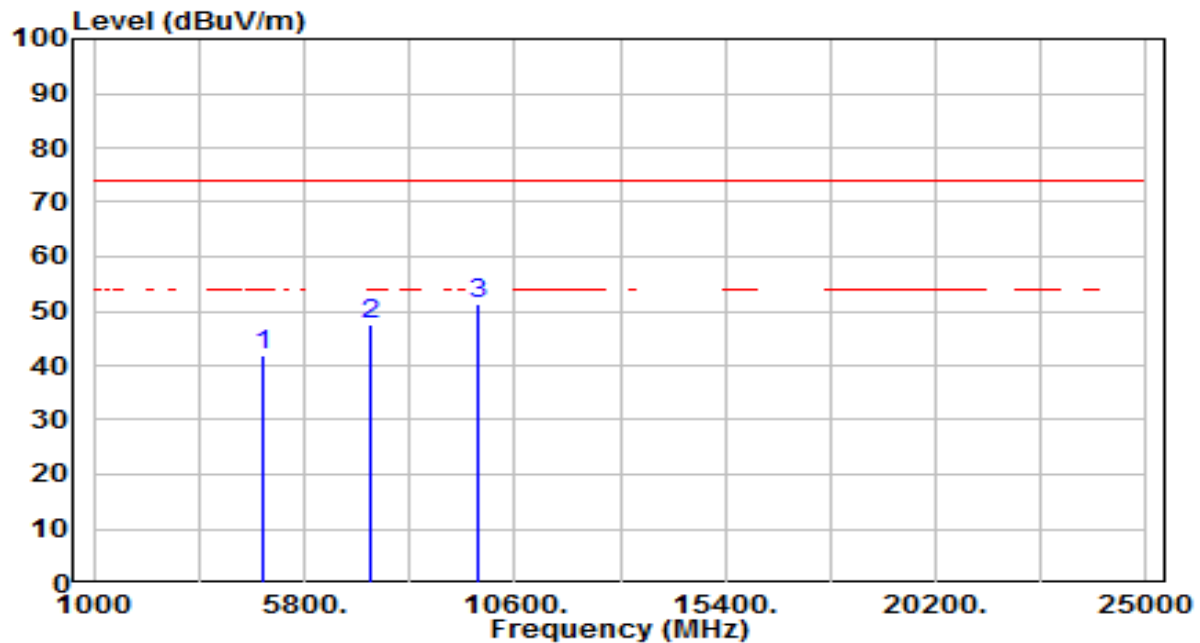


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	37.61	4.46	42.08	-31.92	74.00	200	214	Peak
2	7311.000	34.02	13.13	47.14	-26.86	74.00	200	139	Peak
3	* 9748.000	33.54	16.92	50.45	-23.55	74.00	200	107	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

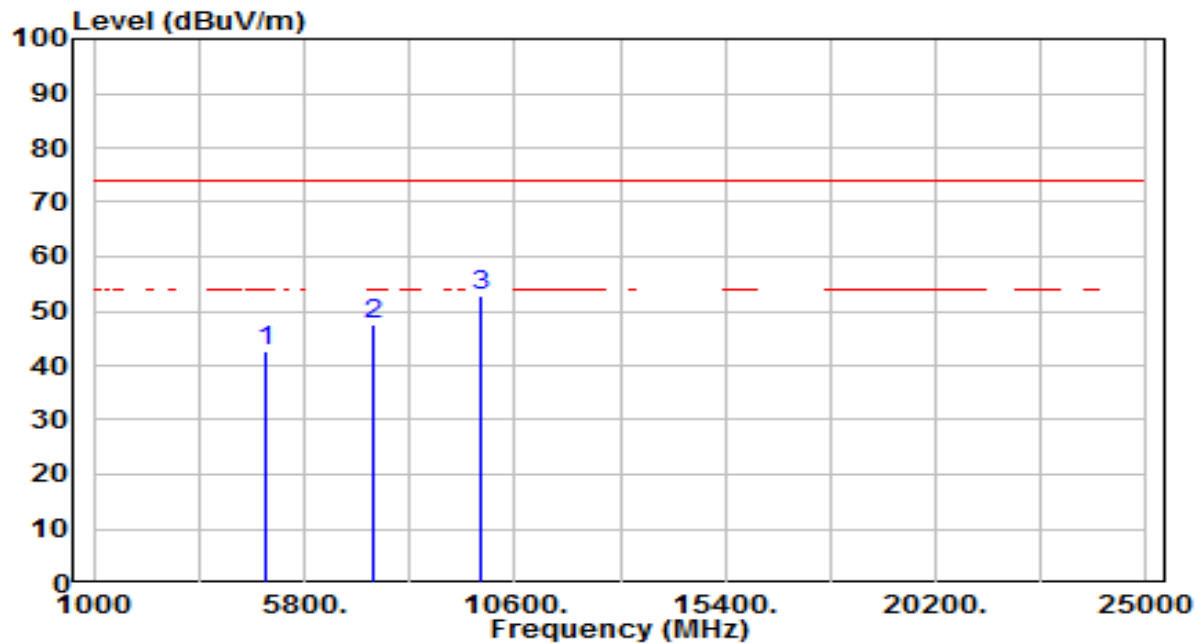


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	37.38	4.46	41.85	-32.15	74.00	200	121	Peak
2	7311.000	34.31	13.13	47.44	-26.56	74.00	200	210	Peak
3	* 9748.000	34.30	16.92	51.22	-22.78	74.00	200	343	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

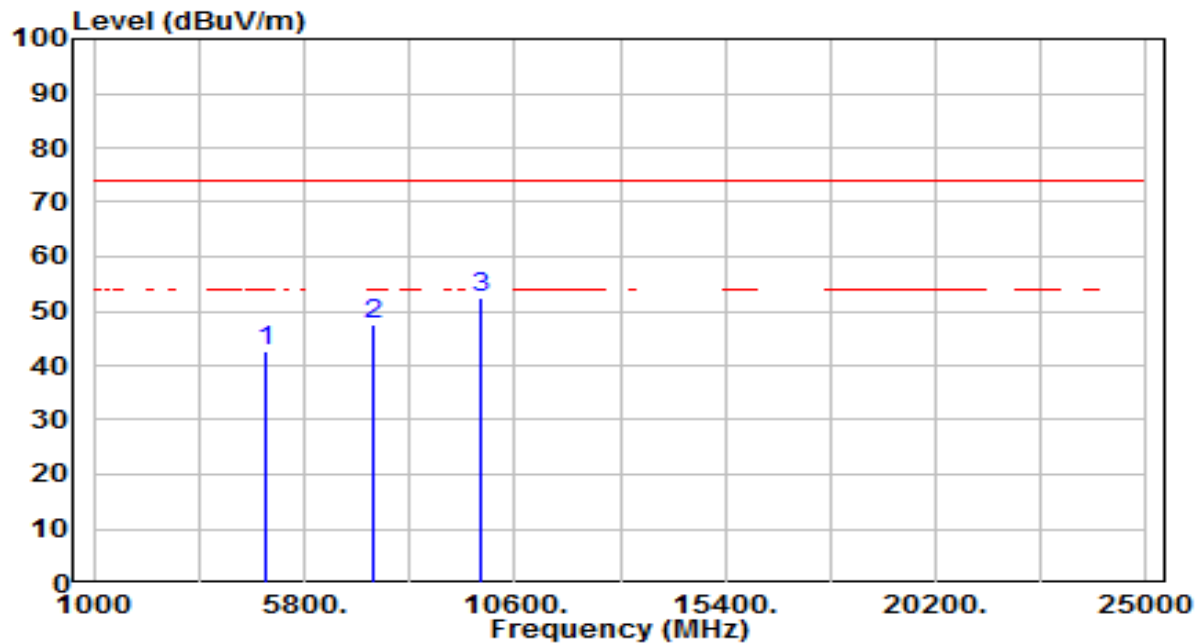


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	38.14	4.61	42.76	-31.24	74.00	200	302	Peak
2	7386.000	34.20	13.49	47.69	-26.31	74.00	200	274	Peak
3	* 9848.000	35.73	17.14	52.87	-21.13	74.00	200	316	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

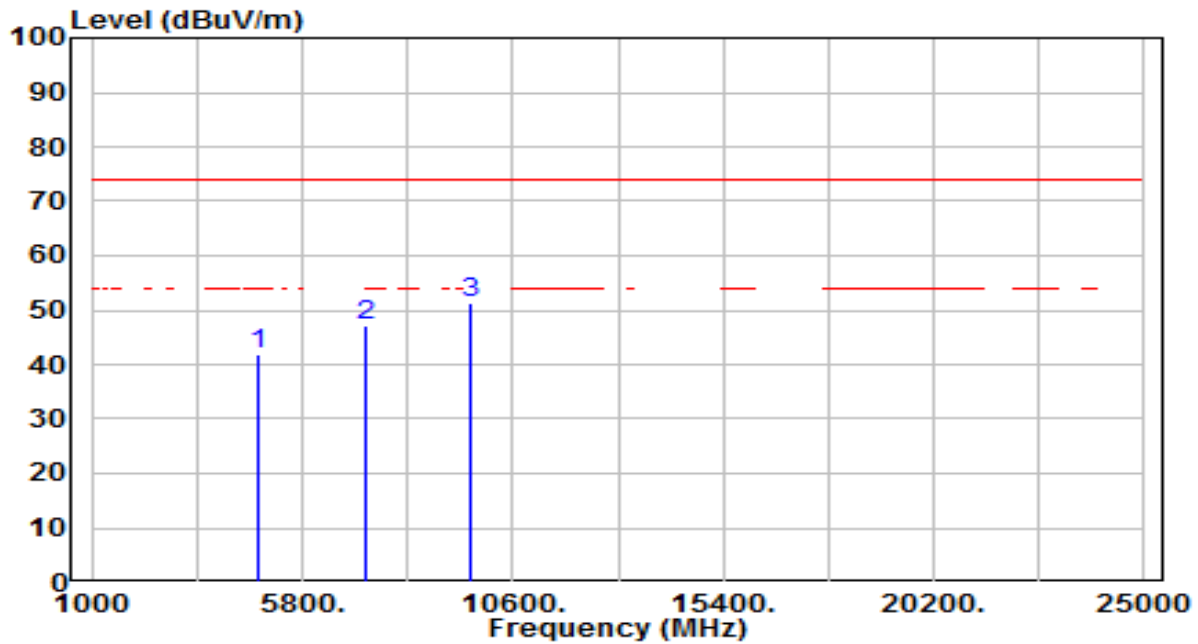


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	37.95	4.61	42.56	-31.44	74.00	200	336	Peak
2	7386.000	33.98	13.49	47.47	-26.53	74.00	200	218	Peak
3	* 9848.000	35.31	17.14	52.45	-21.55	74.00	200	351	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

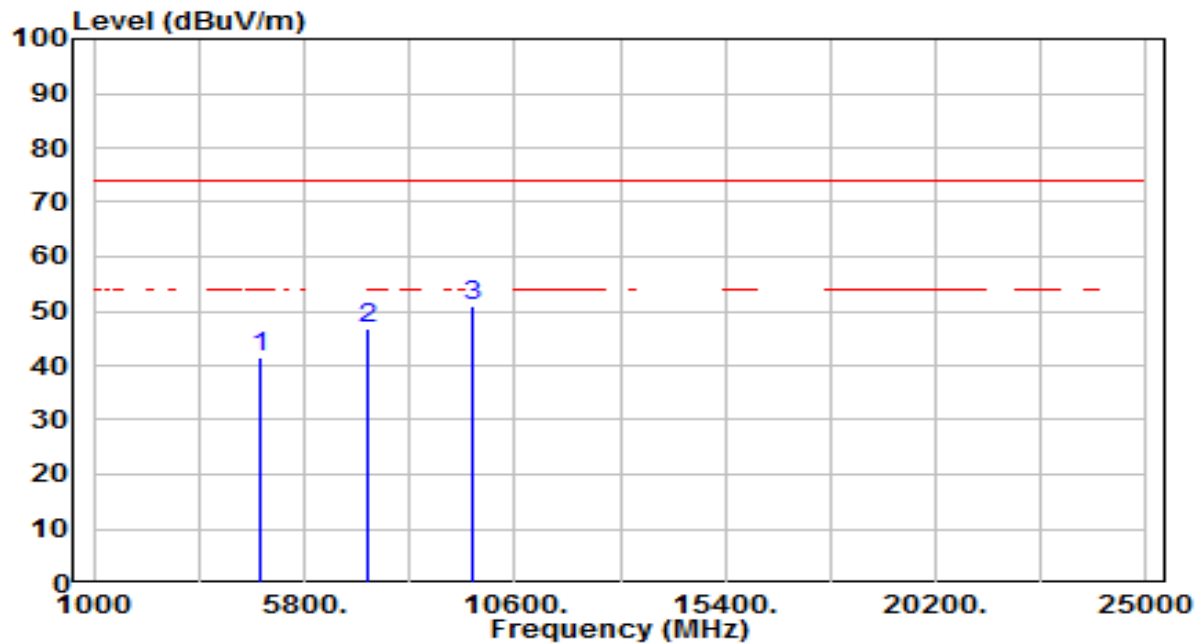


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	37.69	4.34	42.03	-31.97	74.00	200	75	Peak
2	7236.000	34.59	12.73	47.32	-26.68	74.00	200	228	Peak
3	* 9648.000	34.64	16.74	51.38	-22.62	74.00	200	346	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

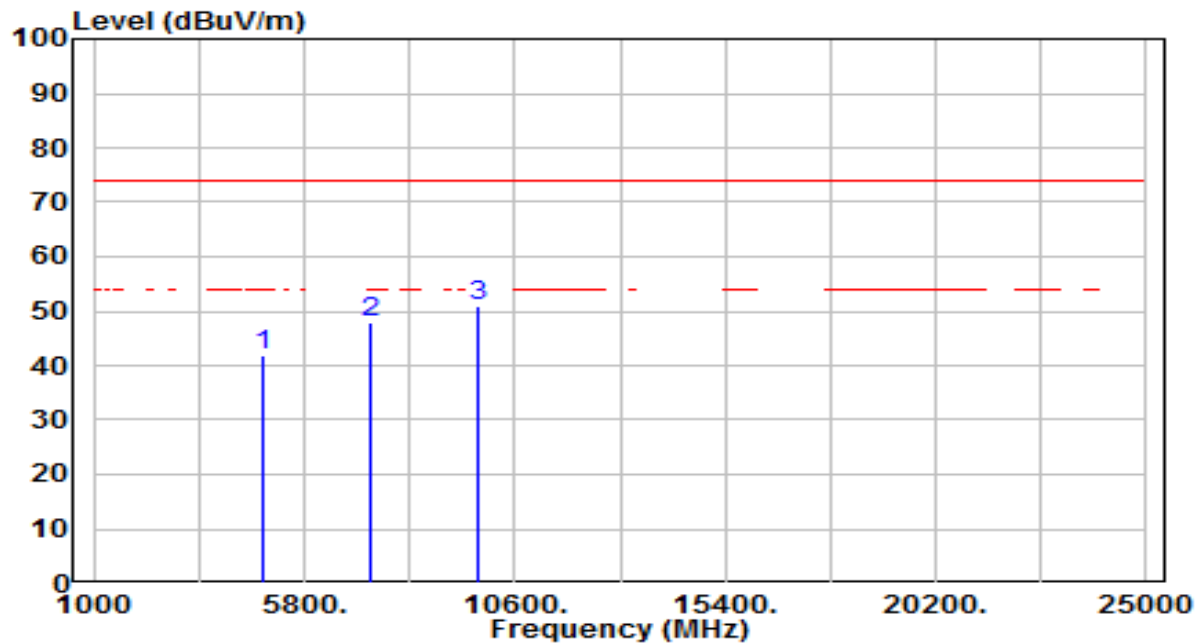


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4824.000	37.22	4.34	41.56	-32.44	74.00	200	175	Peak
2	7236.000	34.16	12.73	46.89	-27.11	74.00	200	115	Peak
3	* 9648.000	34.20	16.74	50.94	-23.06	74.00	200	143	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

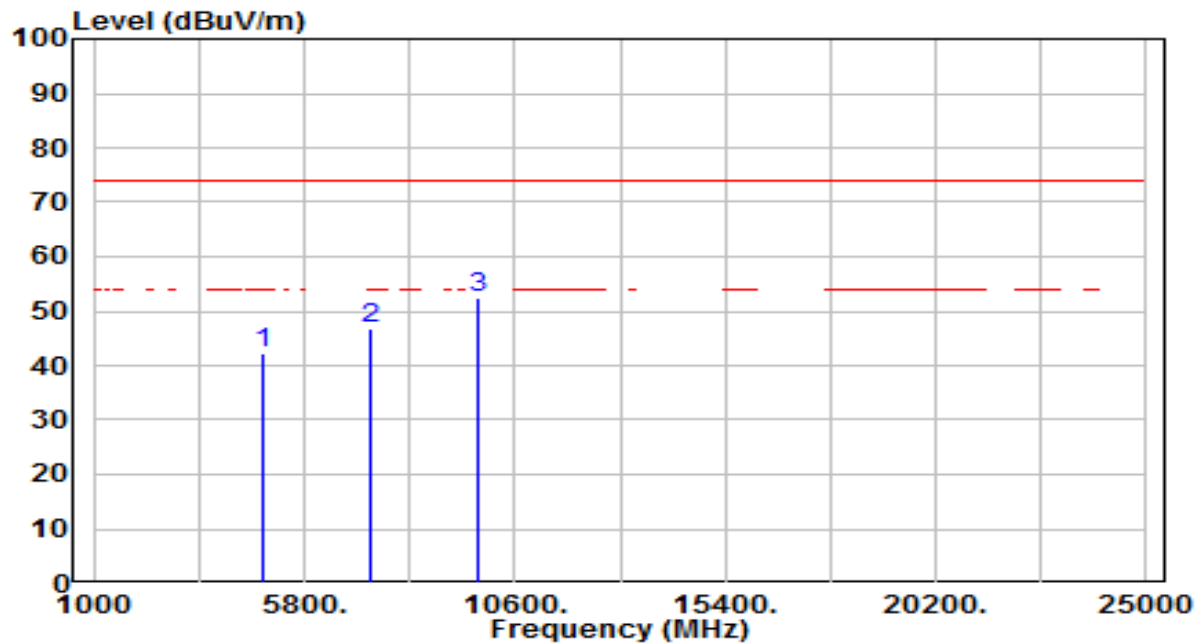


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	37.42	4.46	41.88	-32.12	74.00	200	288	Peak
2	7311.000	34.89	13.13	48.02	-25.98	74.00	200	128	Peak
3	* 9748.000	34.11	16.92	51.03	-22.97	74.00	200	138	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 6_ANT 0	Test Voltage	By Notebook PC

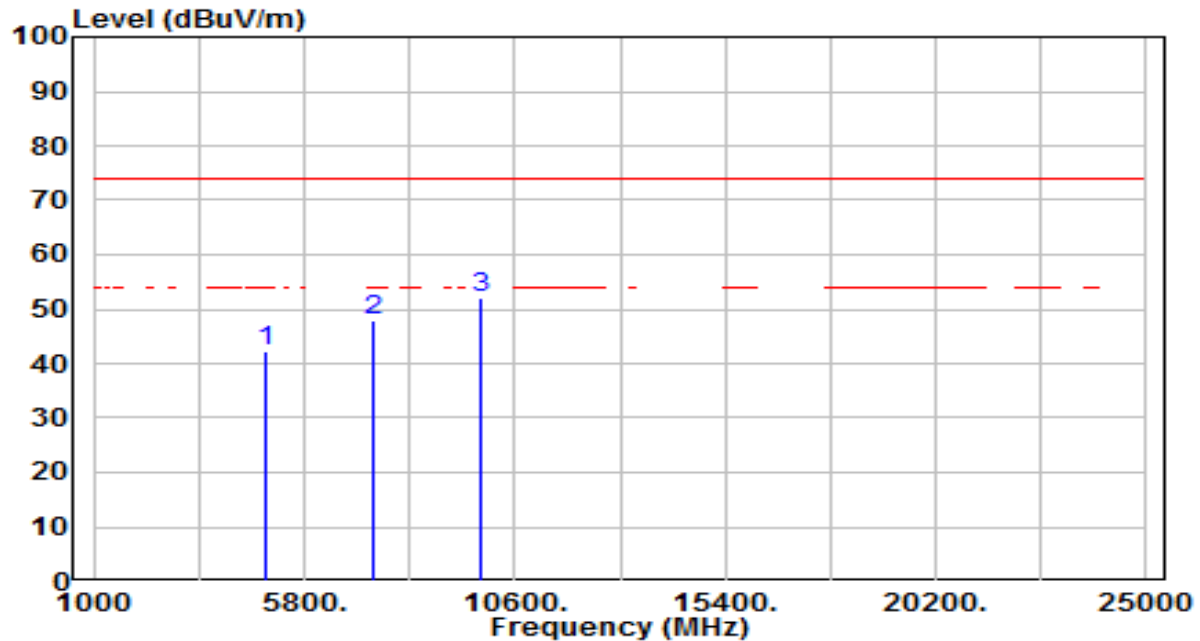


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4874.000	37.84	4.46	42.30	-31.70	74.00	200	360	Peak
2	7311.000	33.71	13.13	46.84	-27.16	74.00	200	128	Peak
3	* 9748.000	35.37	16.92	52.29	-21.71	74.00	200	17	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

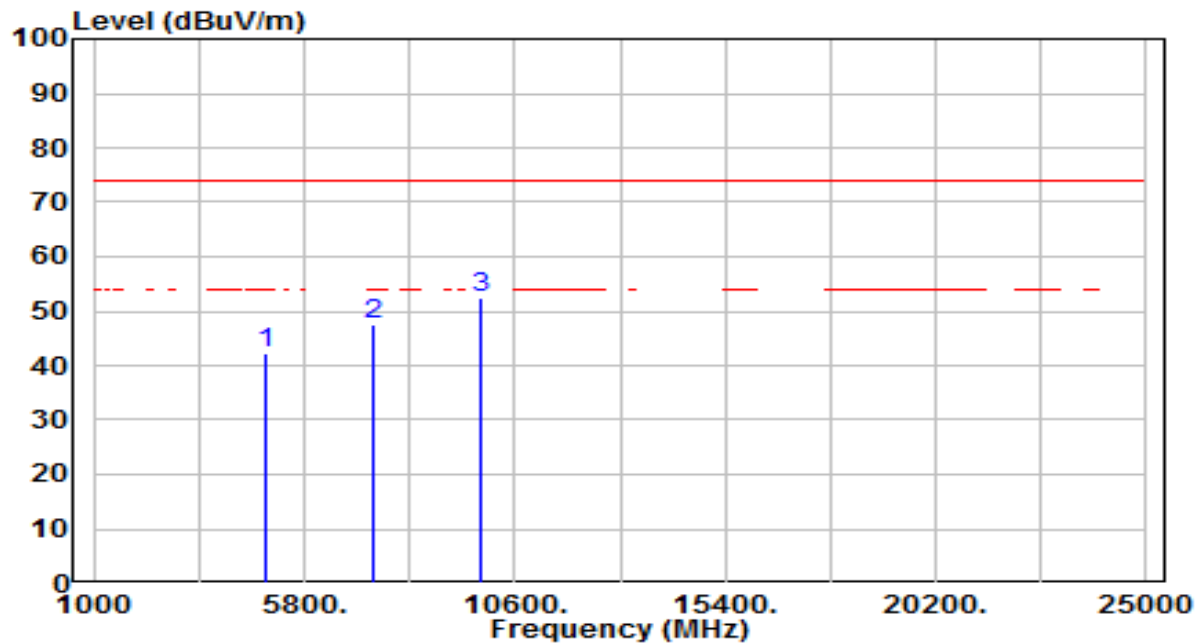


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	37.64	4.61	42.25	-31.75	74.00	200	71	Peak
2	7386.000	34.41	13.49	47.90	-26.10	74.00	200	89	Peak
3	* 9848.000	34.83	17.14	51.97	-22.03	74.00	200	167	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	24°C /65%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

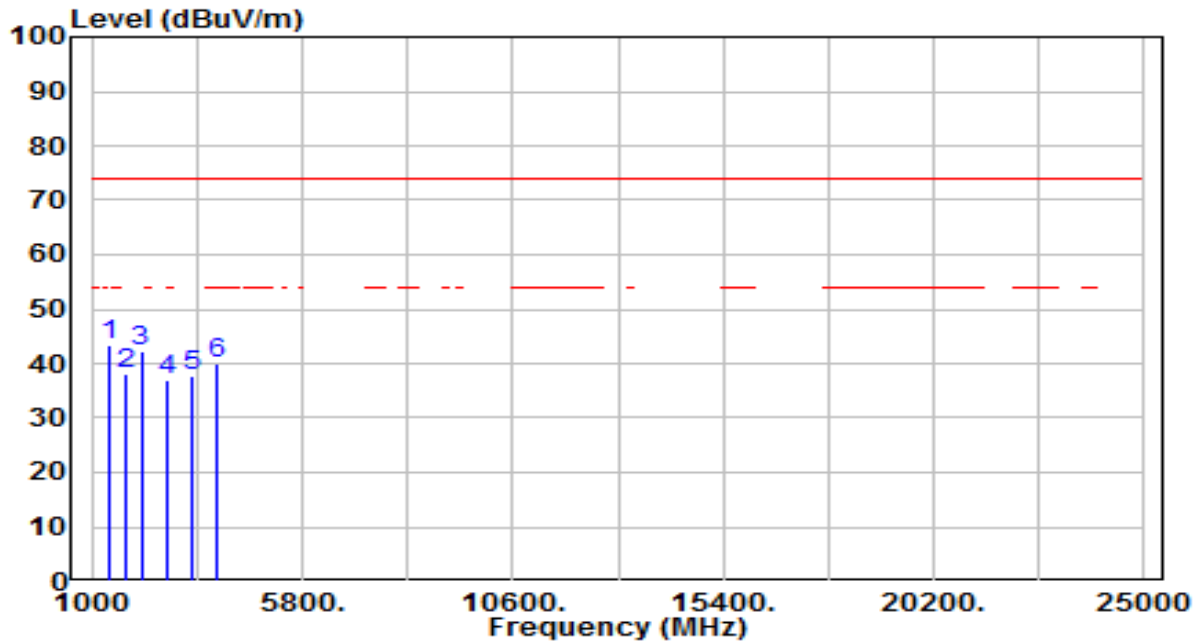


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4924.000	37.59	4.61	42.21	-31.79	74.00	200	22	Peak
2	7386.000	34.21	13.49	47.70	-26.30	74.00	200	147	Peak
3	* 9848.000	35.46	17.14	52.60	-21.40	74.00	200	360	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	23°C /60%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_RX_CH 6_ANT 0	Test Voltage	By Notebook PC

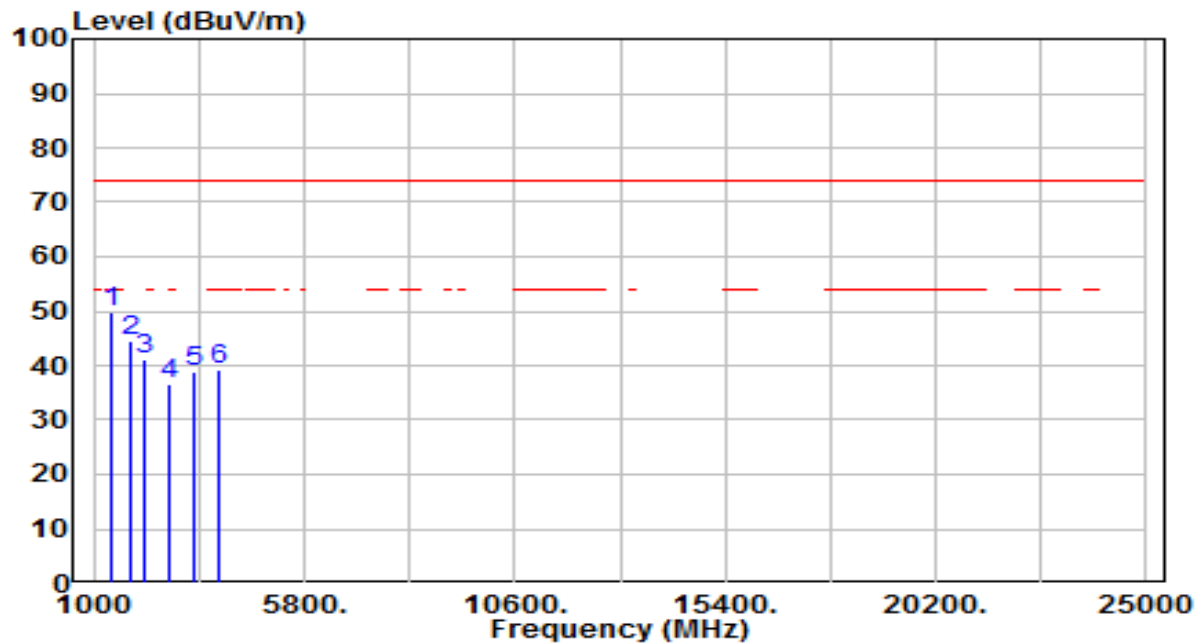


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	1395.250	47.56	-4.28	43.28	-30.72	74.00	200	241	Peak
2		1791.563	41.52	-3.33	38.19	-35.81	74.00	200	216	Peak
3		2125.719	44.56	-2.48	42.08	-31.92	74.00	200	186	Peak
4		2694.156	38.25	-1.32	36.93	-37.07	74.00	200	205	Peak
5		3271.625	38.37	-0.62	37.75	-36.25	74.00	200	201	Peak
6		3849.094	38.87	1.15	40.02	-33.98	74.00	200	92	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D & BBHA 9170	Temp. / Humidity	23°C /60%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_RX_CH 6_ANT 0	Test Voltage	By Notebook PC



No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	1388.875	54.12	-4.31	49.81	-24.19	74.00	200	246	Peak
2		1823.969	47.95	-3.27	44.67	-29.33	74.00	200	253	Peak
3		2164.500	43.46	-2.34	41.12	-32.88	74.00	200	213	Peak
4		2695.750	38.05	-1.33	36.72	-37.28	74.00	200	33	Peak
5		3314.656	39.20	-0.45	38.75	-35.25	74.00	200	242	Peak
6		3876.719	38.15	1.22	39.37	-34.63	74.00	200	267	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

ANSI C63.10-2013 Section 6.3 & 6.6 & 11.13

7.7.3. Test Setting

Peak Field Strength Measurements

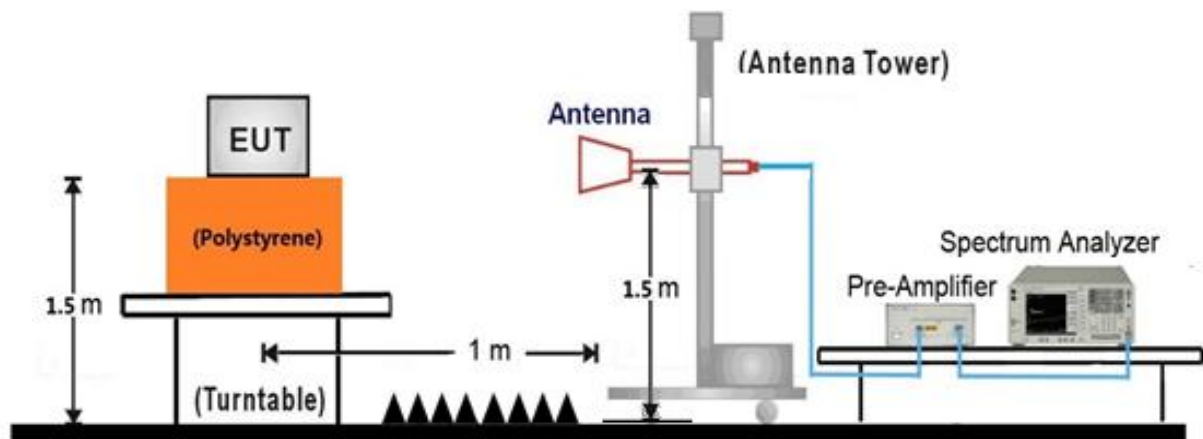
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3 * RBW
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

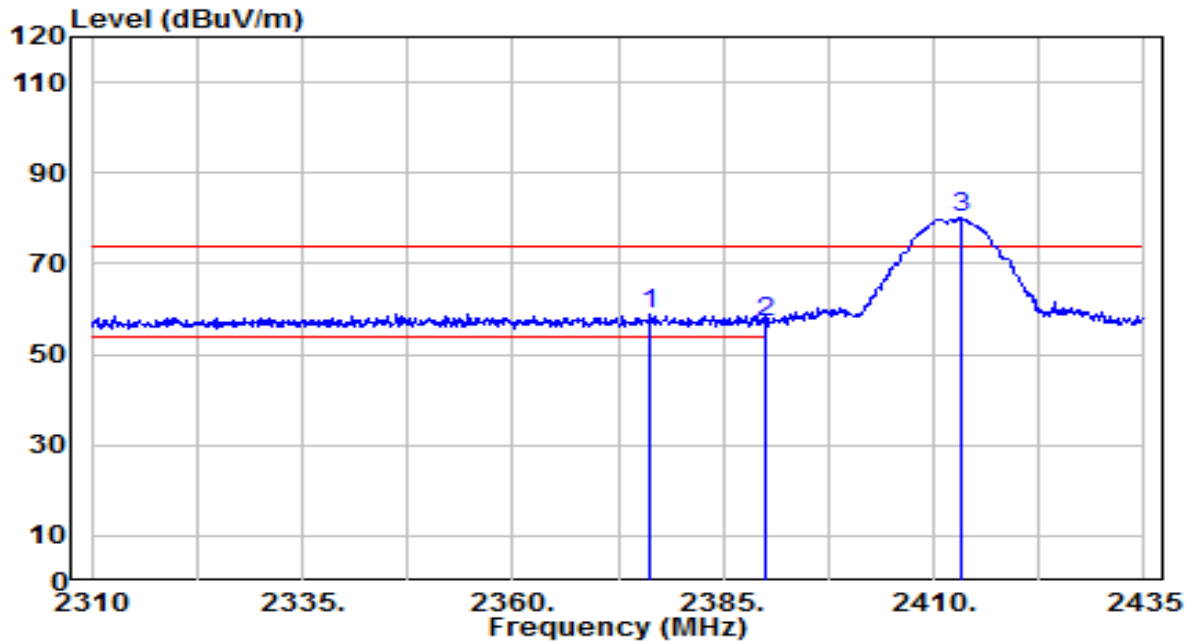
7.7.4. Test Setup

1GHz ~ 18GHz Test Setup:



7.7.5. Test Result

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

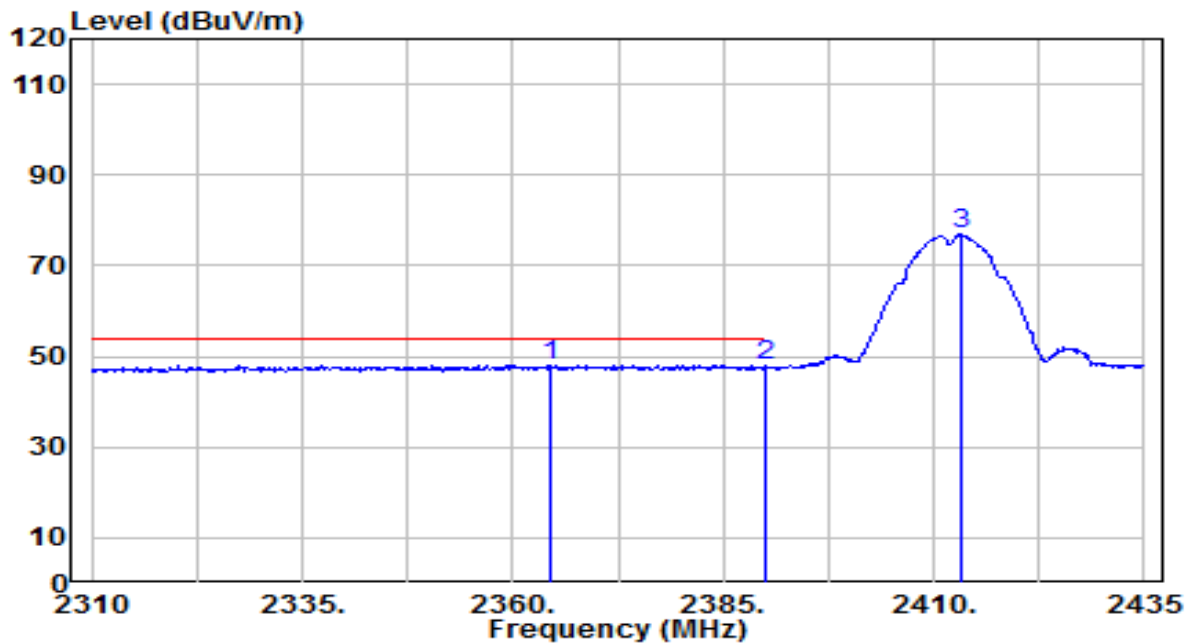


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	2376.250	26.28	32.67	58.95	-15.05	74.00	110	180	Peak
2		2390.000	24.28	32.73	57.01	-16.99	74.00	110	180	Peak
3		2413.250	47.18	32.82	80.00	N/A	N/A	110	180	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

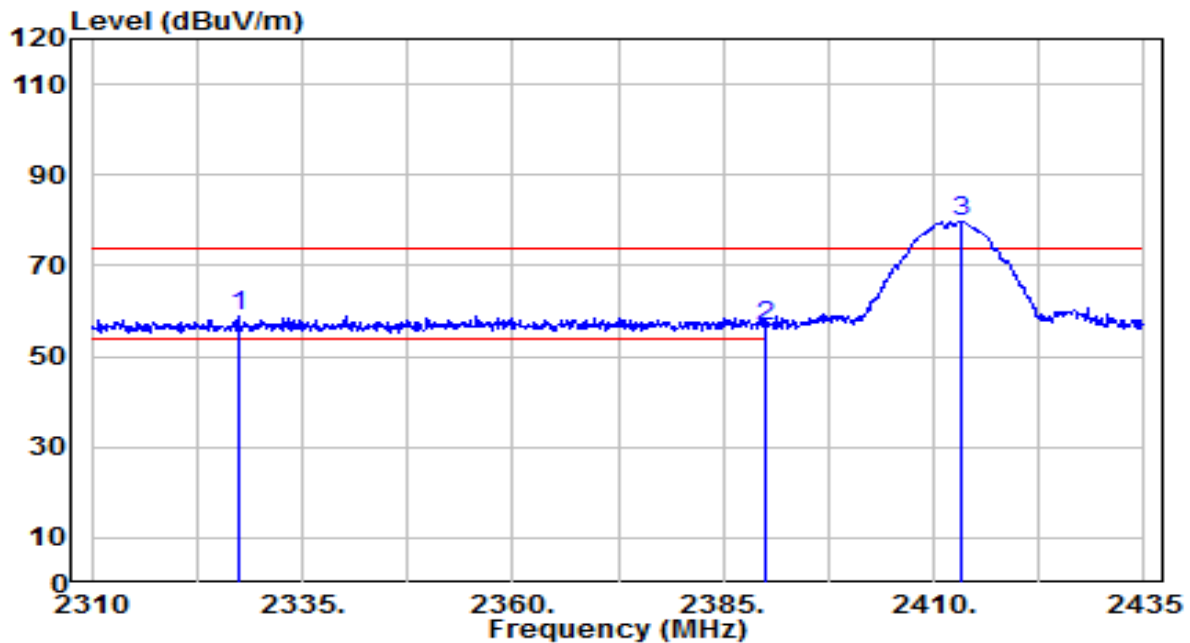


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	* 2364.625	15.57	32.63	48.20	-5.80	54.00	110	180	Average
2	2390.000	15.09	32.73	47.82	-6.18	54.00	110	180	Average
3	2413.125	43.97	32.82	76.79	N/A	N/A	110	180	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

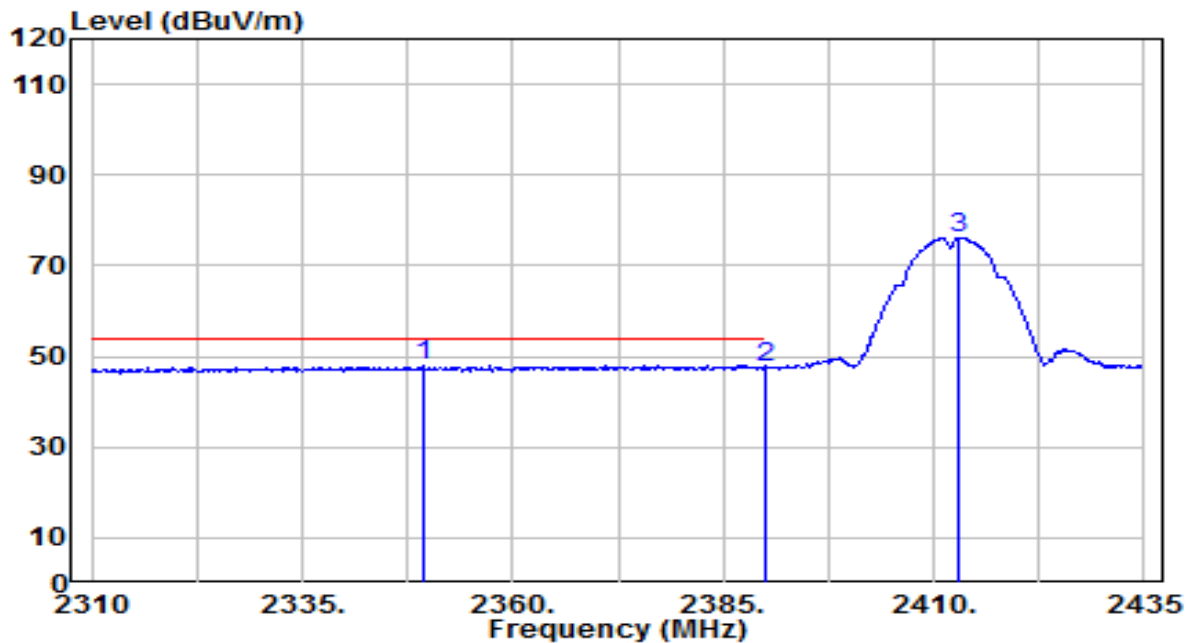


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	2327.375	26.56	32.48	59.04	-14.96	74.00	155	175	Peak
2		2390.000	23.89	32.73	56.61	-17.39	74.00	155	175	Peak
3		2413.125	46.90	32.82	79.72	N/A	N/A	155	175	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

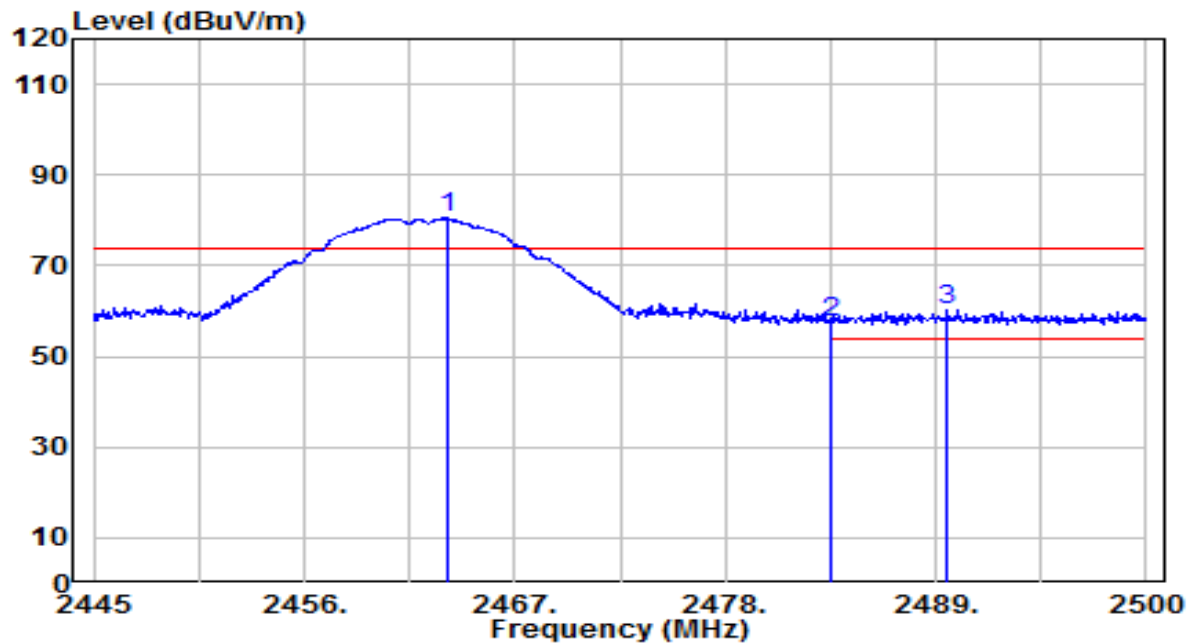


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	* 2349.500	15.40	32.57	47.97	-6.03	54.00	155	175	Average
2	2390.000	14.76	32.73	47.49	-6.51	54.00	155	175	Average
3	2413.000	43.43	32.82	76.24	N/A	N/A	155	175	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

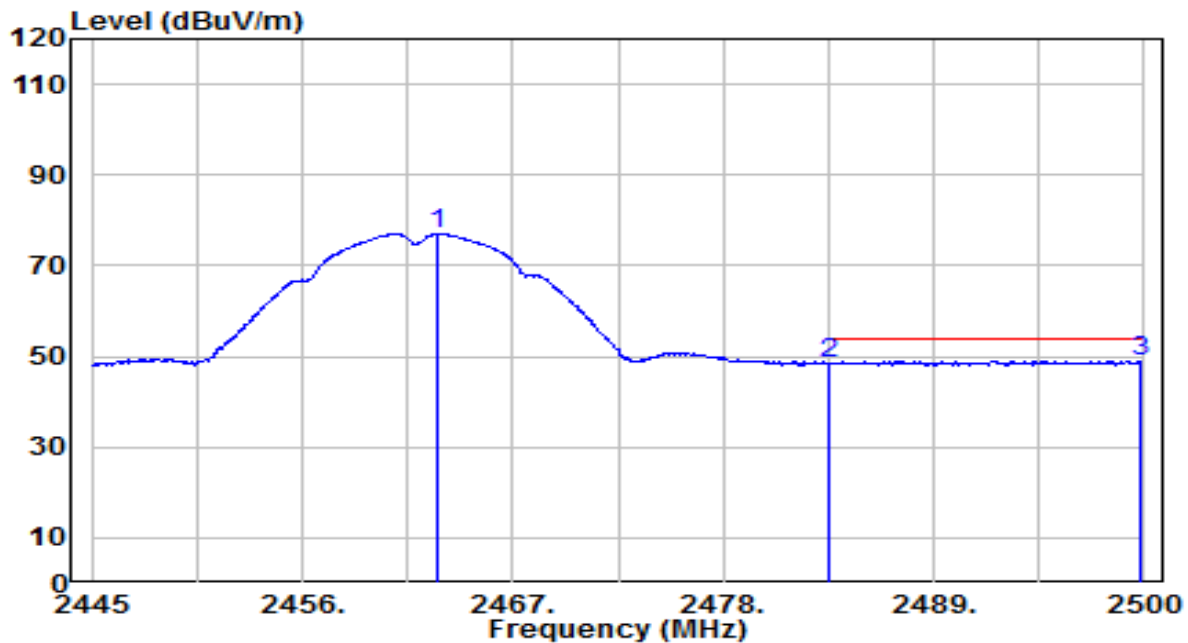


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2463.480	47.42	33.02	80.44	N/A	N/A	100	170	Peak
2	2483.500	24.28	33.09	57.37	-16.63	74.00	100	170	Peak
3	* 2489.605	27.28	33.12	60.40	-13.60	74.00	100	170	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

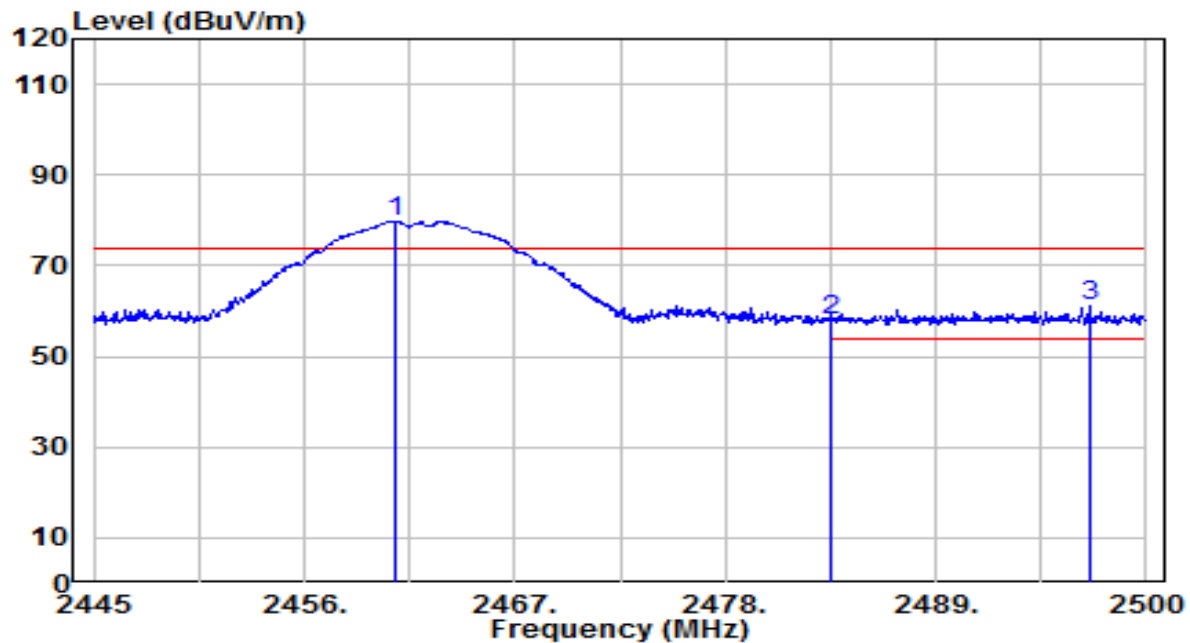


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2463.095	44.03	33.01	77.04	N/A	N/A	100	170	Average
2	2483.500	15.41	33.09	48.50	-5.50	54.00	100	170	Average
3	* 2499.780	15.82	33.16	48.98	-5.02	54.00	100	170	Average

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

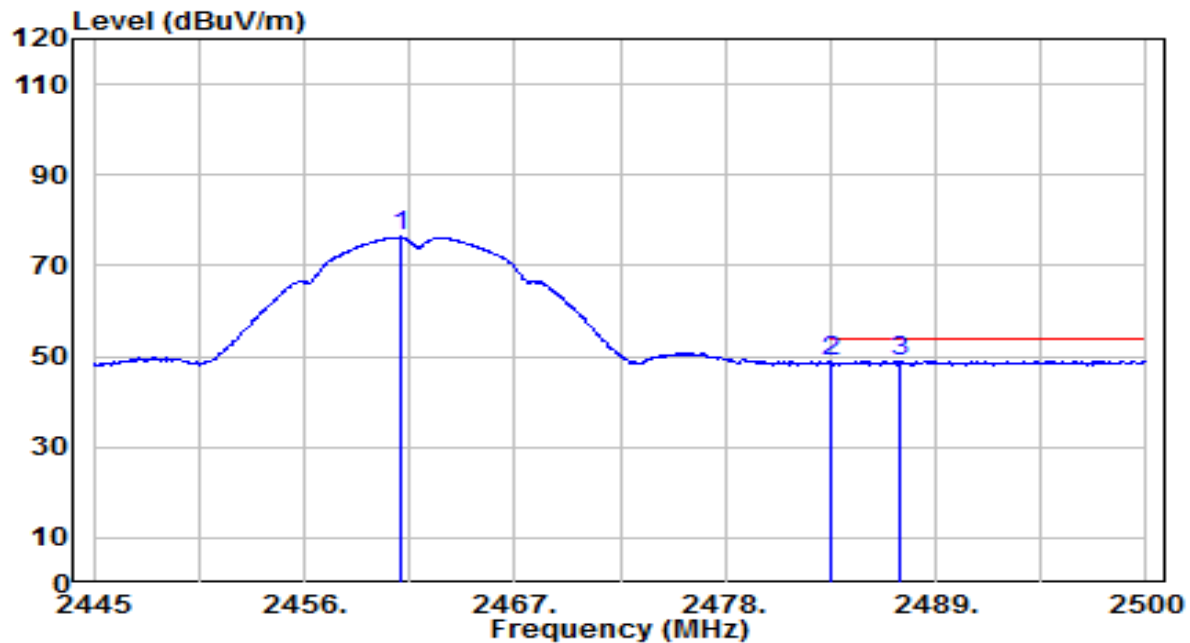


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2460.730	46.73	33.01	79.74	N/A	N/A	155	185	Peak
2	2483.500	24.77	33.09	57.86	-16.14	74.00	155	185	Peak
3	* 2497.030	27.94	33.15	61.09	-12.91	74.00	155	185	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11b_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

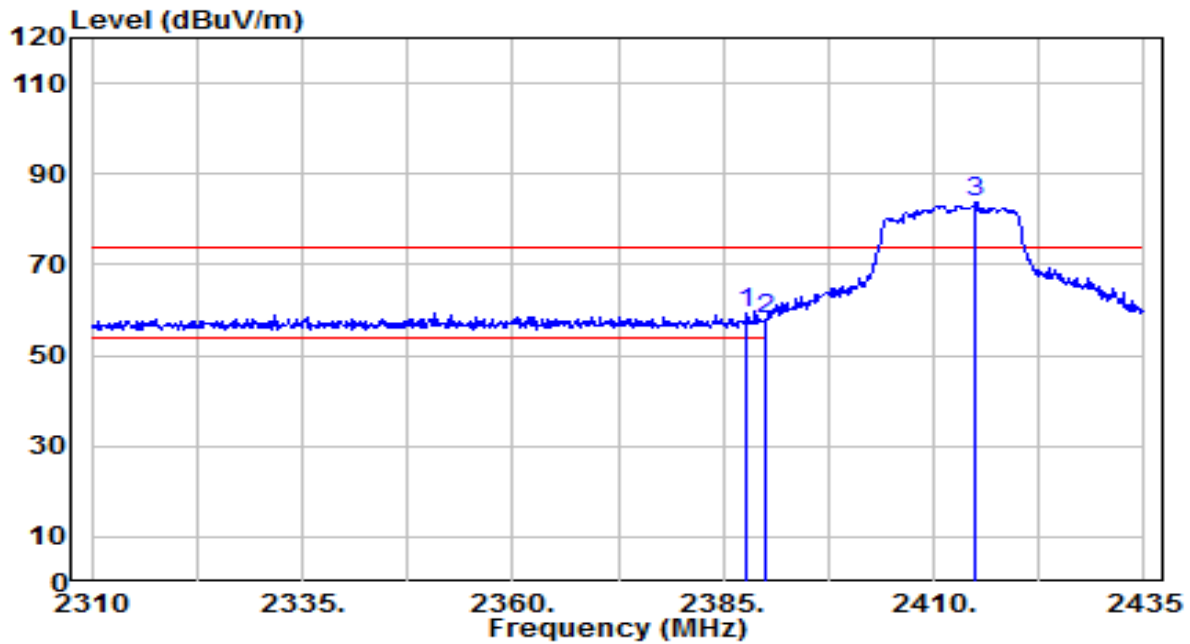


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2461.005	43.34	33.01	76.34	N/A	N/A	155	185	Average
2	2483.500	15.68	33.09	48.78	-5.22	54.00	155	185	Average
3	* 2487.075	15.99	33.11	49.09	-4.91	54.00	155	185	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

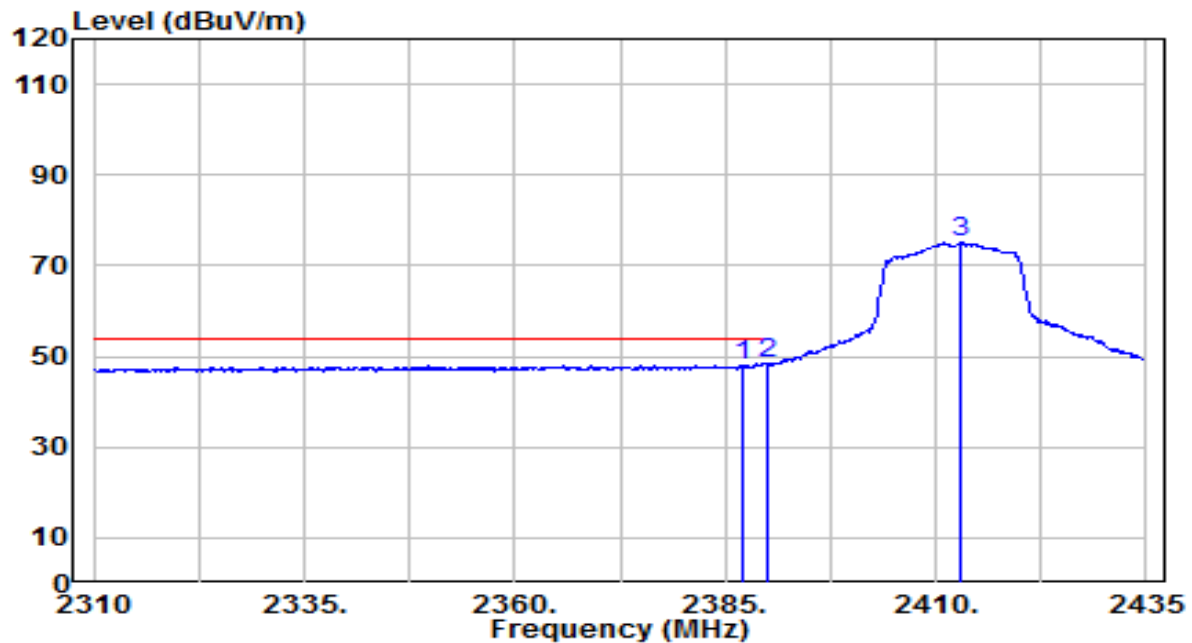


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	2387.875	26.76	32.72	59.48	-14.52	74.00	110	180	Peak
2		2390.000	25.31	32.73	58.04	-15.96	74.00	110	180	Peak
3		2415.000	50.82	32.83	83.65	N/A	N/A	110	180	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

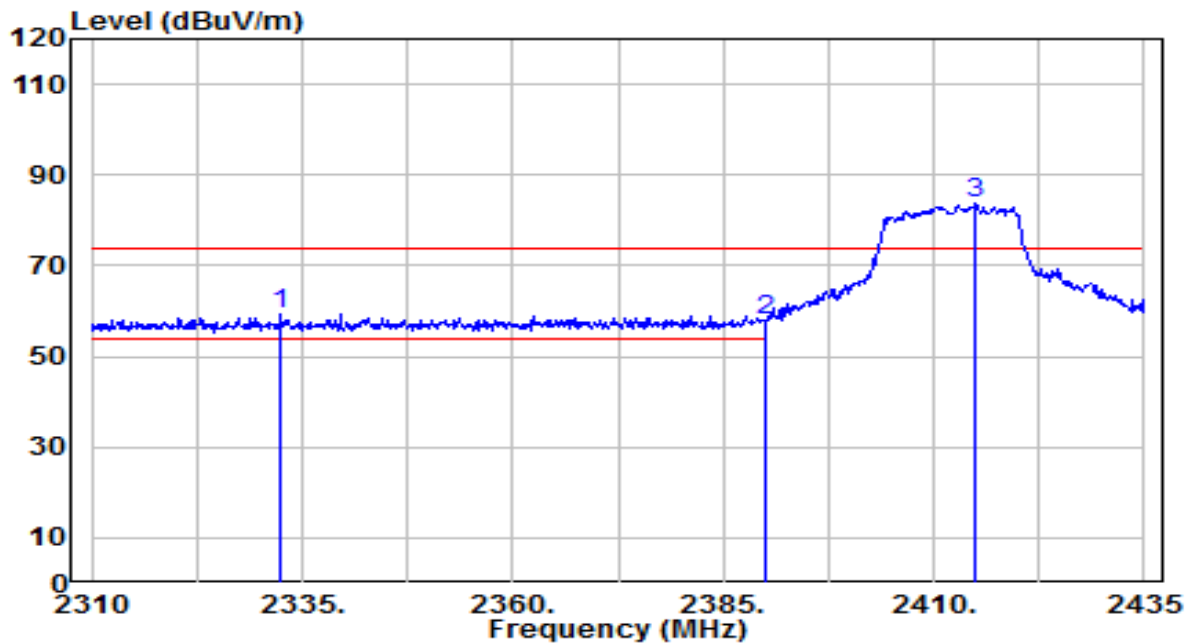


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2387.125	15.22	32.72	47.93	-6.07	54.00	110	180	Average
2	* 2390.000	15.88	32.73	48.60	-5.40	54.00	110	180	Average
3	2413.000	42.44	32.82	75.26	N/A	N/A	110	180	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

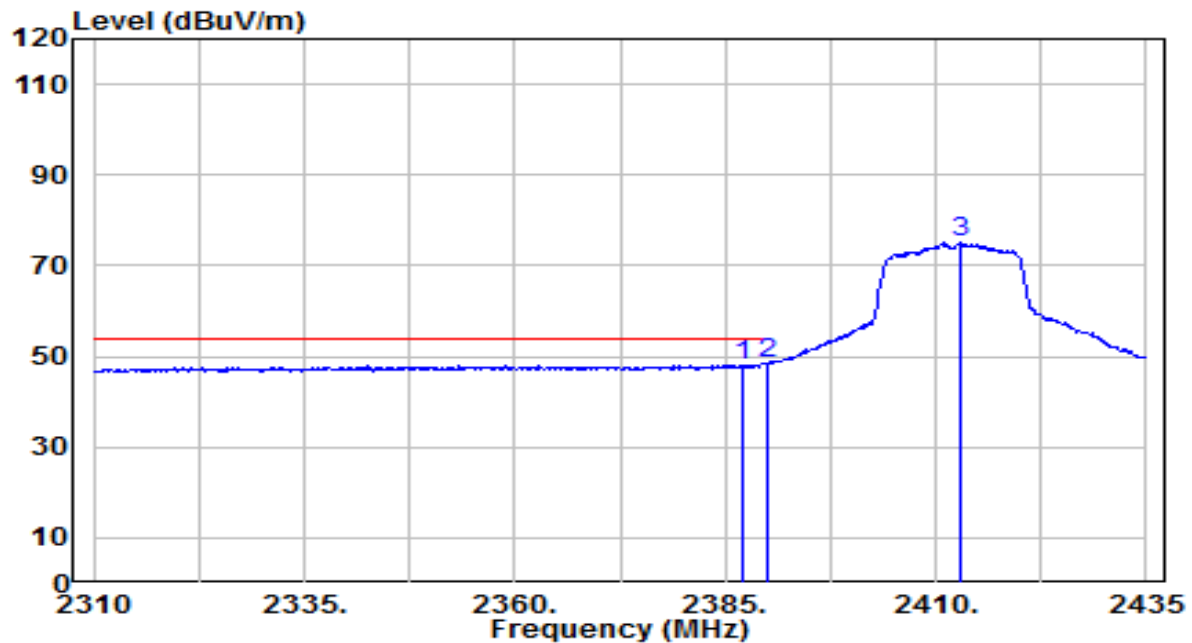


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	2332.375	26.90	32.50	59.40	-14.60	74.00	155	175	Peak
2		2390.000	25.04	32.73	57.76	-16.24	74.00	155	175	Peak
3		2415.000	50.74	32.83	83.57	N/A	N/A	155	175	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

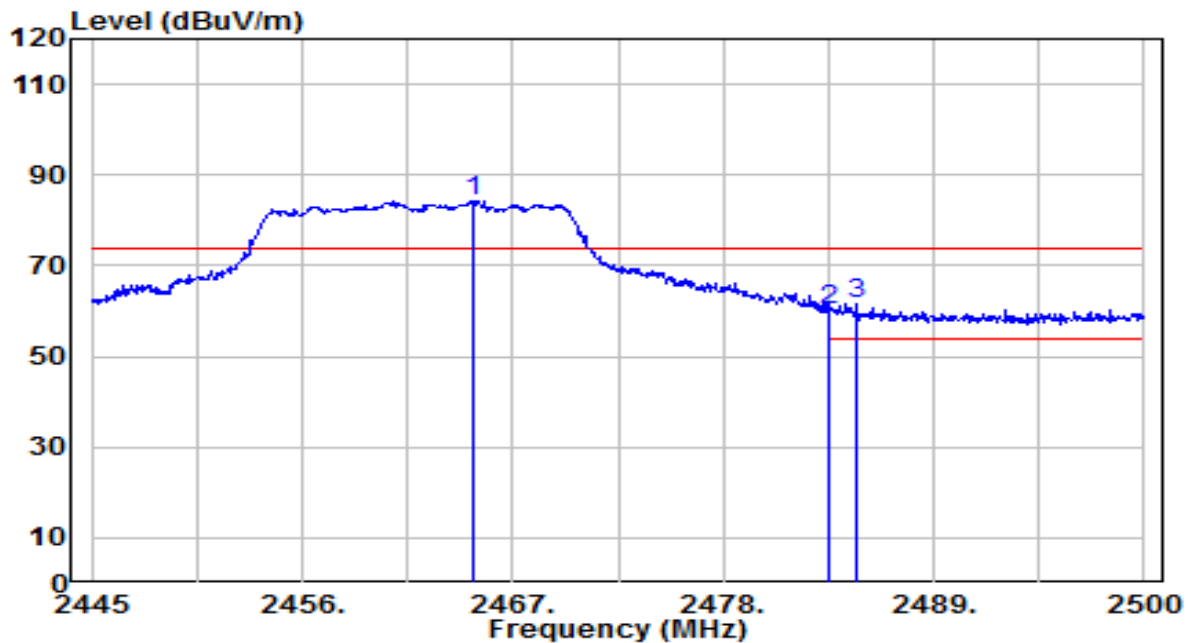


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2387.125	15.51	32.72	48.23	-5.77	54.00	155	175	Average
2	* 2390.000	15.59	32.73	48.32	-5.68	54.00	155	175	Average
3	2412.875	42.29	32.82	75.10	N/A	N/A	155	175	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

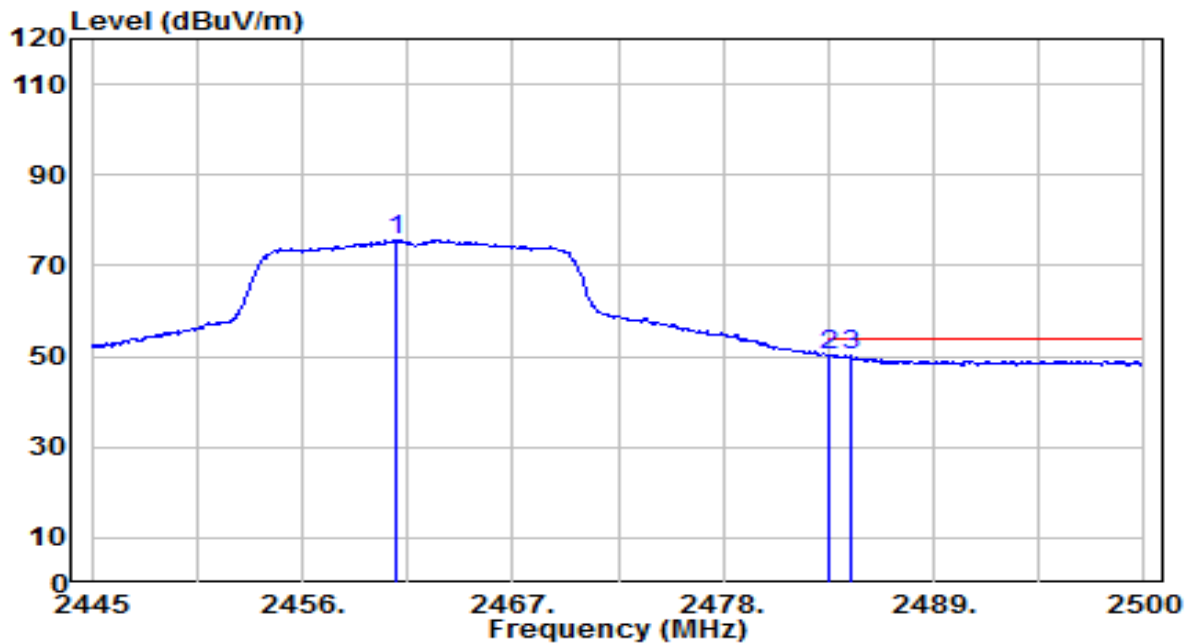


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2464.965	51.17	33.02	84.20	N/A	N/A	100	170	Peak
2	2483.500	27.10	33.09	60.19	-13.81	74.00	100	170	Peak
3	* 2484.985	28.35	33.10	61.45	-12.55	74.00	100	170	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

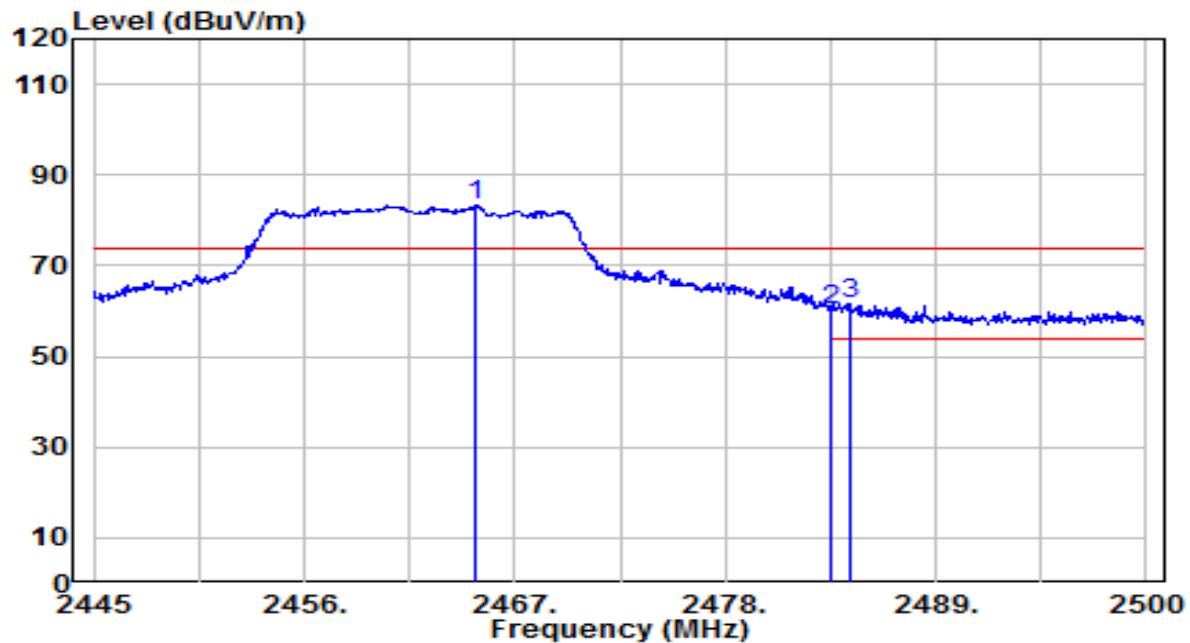


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2460.950	42.71	33.01	75.72	N/A	N/A	100	170	Average
2	* 2483.500	16.95	33.09	50.05	-3.95	54.00	100	170	Average
3	2484.655	16.94	33.10	50.04	-3.96	54.00	100	170	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

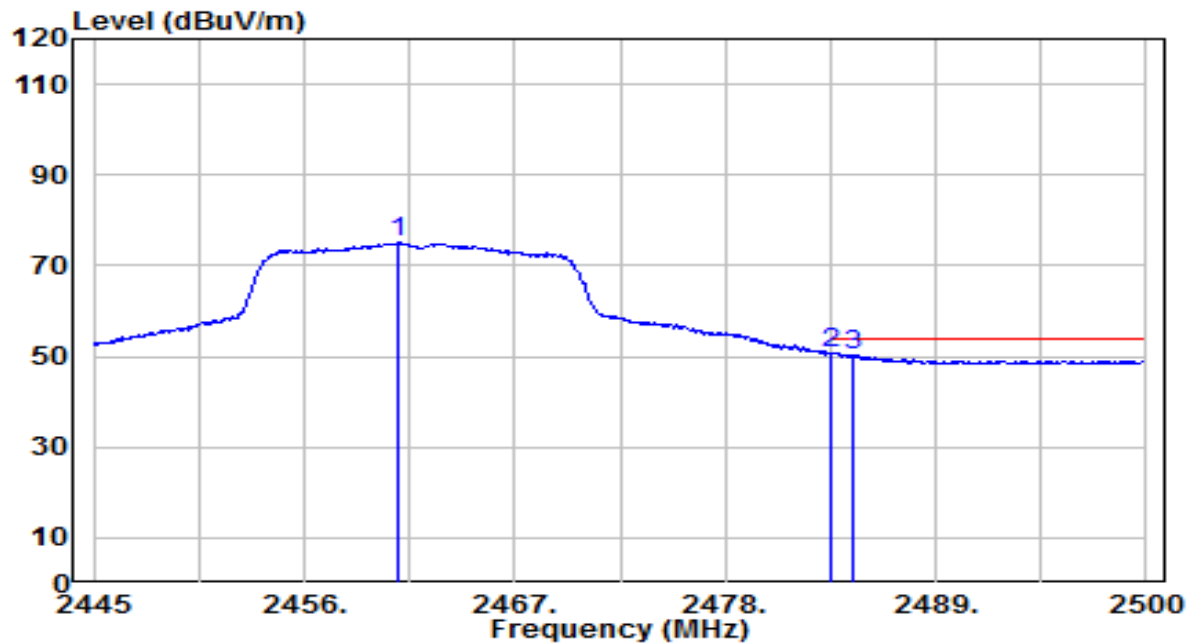


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2464.965	50.26	33.02	83.28	N/A	N/A	155	185	Peak
2	2483.500	27.27	33.09	60.37	-13.63	74.00	155	185	Peak
3	* 2484.545	28.32	33.10	61.41	-12.59	74.00	155	185	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11g_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

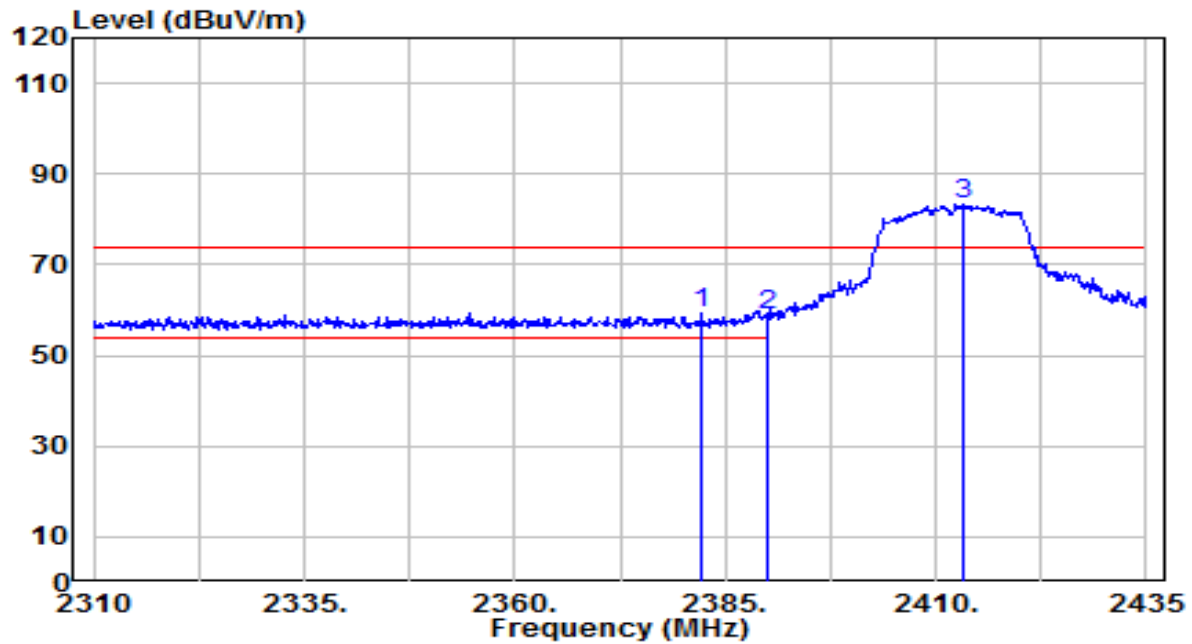


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2460.950	42.04	33.01	75.05	N/A	N/A	155	185	Average
2	* 2483.500	17.57	33.09	50.66	-3.34	54.00	155	185	Average
3	2484.655	17.30	33.10	50.39	-3.61	54.00	155	185	Average

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

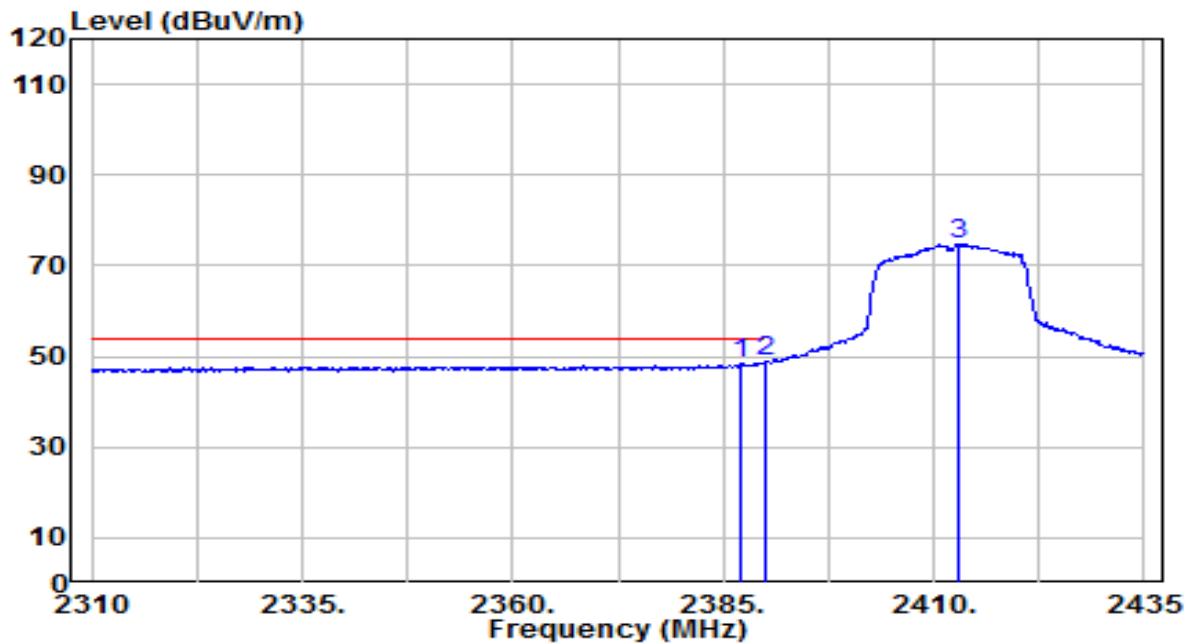


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	26.49	32.70	59.19	-14.81	74.00	110	180	Peak
2		26.02	32.73	58.74	-15.26	74.00	110	180	Peak
3		50.69	32.82	83.51	N/A	N/A	110	180	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

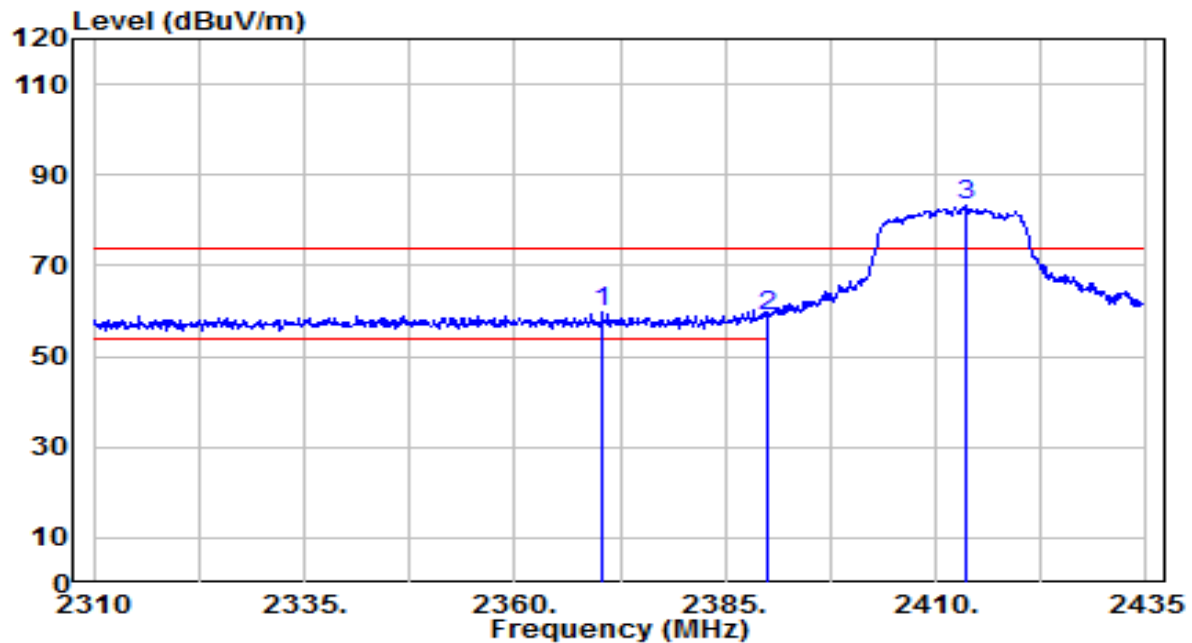


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2387.125	15.67	32.72	48.39	-5.61	54.00	110	180	Average
2	* 2390.000	16.25	32.73	48.97	-5.03	54.00	110	180	Average
3	2412.875	42.00	32.82	74.82	N/A	N/A	110	180	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

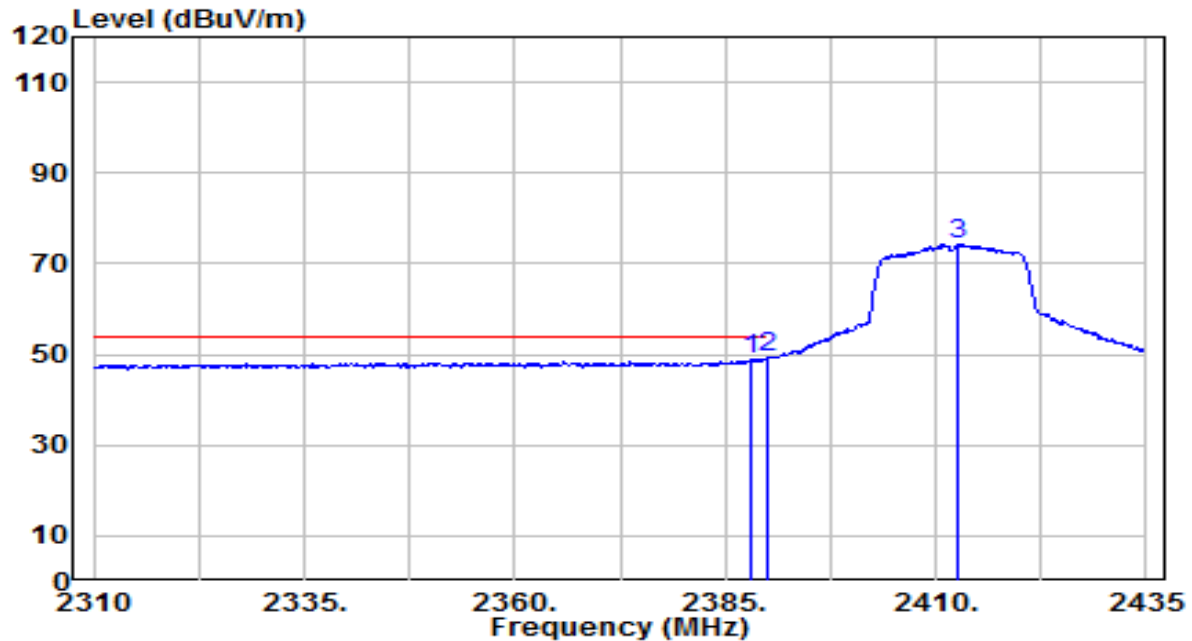


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	* 2370.375	26.93	32.65	59.58	-14.42	74.00	155	175	Peak
2	2390.000	26.22	32.73	58.95	-15.05	74.00	155	175	Peak
3	2413.500	50.38	32.82	83.20	N/A	N/A	155	175	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 1_ANT 0	Test Voltage	By Notebook PC

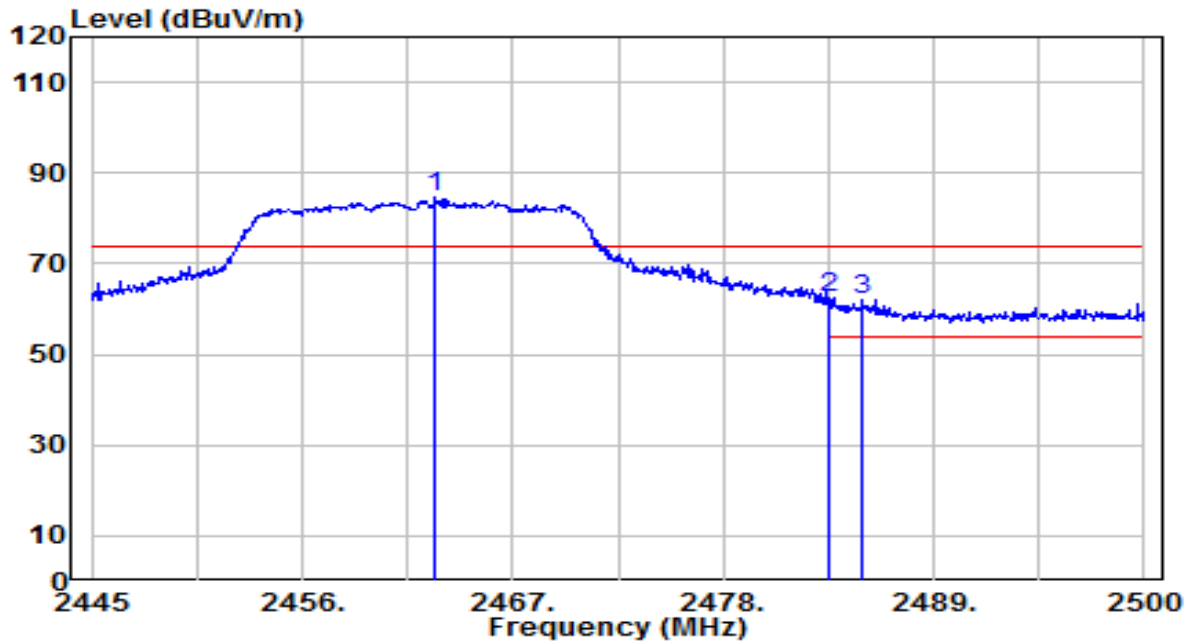


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2388.000	15.98	32.72	48.69	-5.31	54.00	155	175	Average
2	* 2390.000	16.72	32.73	49.45	-4.55	54.00	155	175	Average
3	2412.750	41.40	32.82	74.22	N/A	N/A	155	175	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

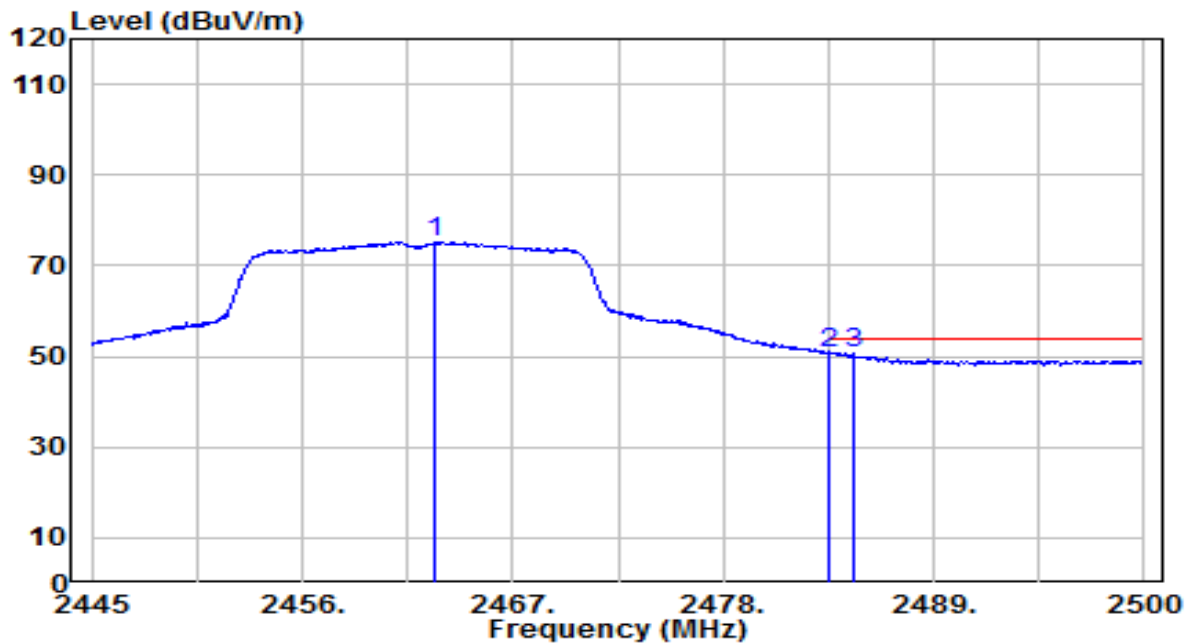


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2462.930	51.45	33.01	84.46	N/A	N/A	100	170	Peak
2	* 2483.500	29.22	33.09	62.32	-11.68	74.00	100	170	Peak
3	2485.315	28.98	33.10	62.08	-11.92	74.00	100	170	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C / 69%
Polarity	Horizontal	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

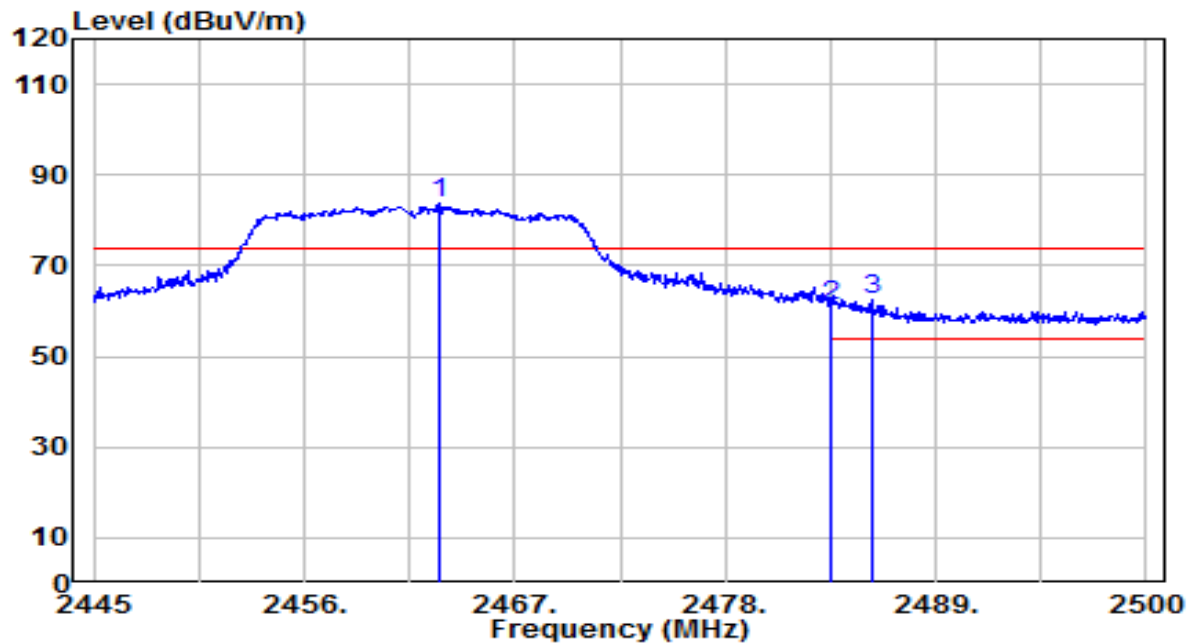


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2462.985	42.22	33.01	75.24	N/A	N/A	100	170	Average
2	* 2483.500	17.57	33.09	50.66	-3.34	54.00	100	170	Average
3	2484.765	17.45	33.10	50.55	-3.45	54.00	100	170	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC

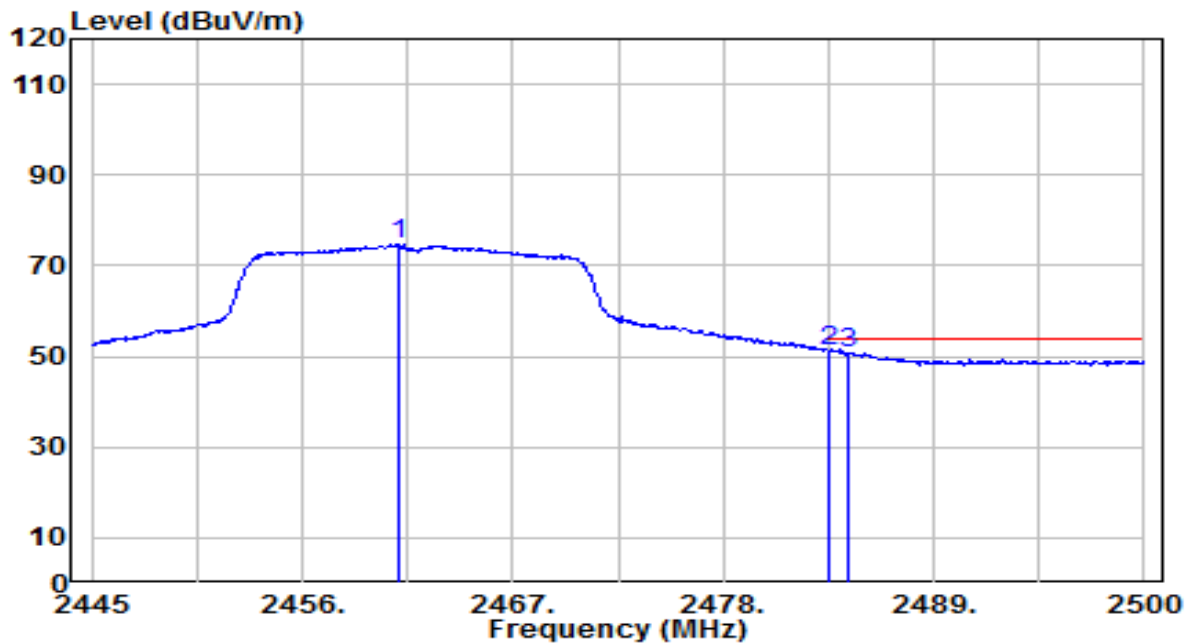


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2463.040	50.88	33.01	83.89	N/A	N/A	155	185	Peak
2	2483.500	28.08	33.09	61.17	-12.83	74.00	155	185	Peak
3	* 2485.700	29.49	33.10	62.59	-11.41	74.00	155	185	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Smart Controller	Date of Test	2025-07-12
Factor	BBHA 9120D	Temp. / Humidity	25°C /69%
Polarity	Vertical	Site / Test Engineer	AC1 / Todd
Test Mode	802.11n-20MHz_TX_CH 11_ANT 0	Test Voltage	By Notebook PC



No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2461.005	41.68	33.01	74.68	N/A	N/A	155	185	Average
2	* 2483.500	18.26	33.09	51.35	-2.65	54.00	155	185	Average
3	2484.545	17.70	33.10	50.80	-3.20	54.00	155	185	Average

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

7.8. AC Conducted Emissions Measurement

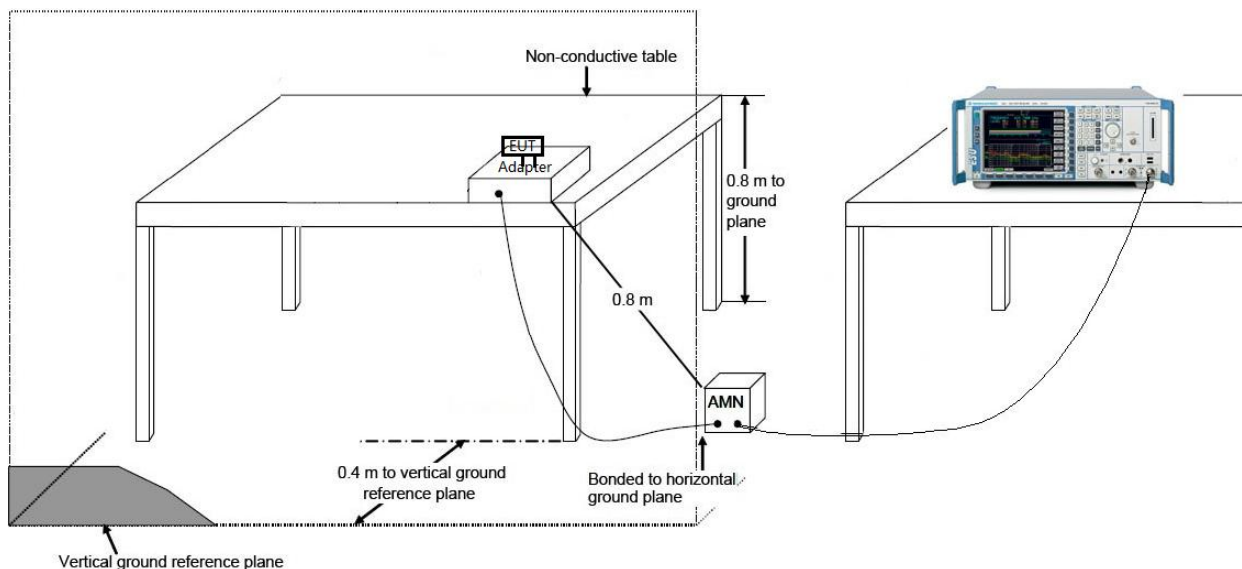
7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 / RSS-Gen Limits		
Frequency (MHz)	QP (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

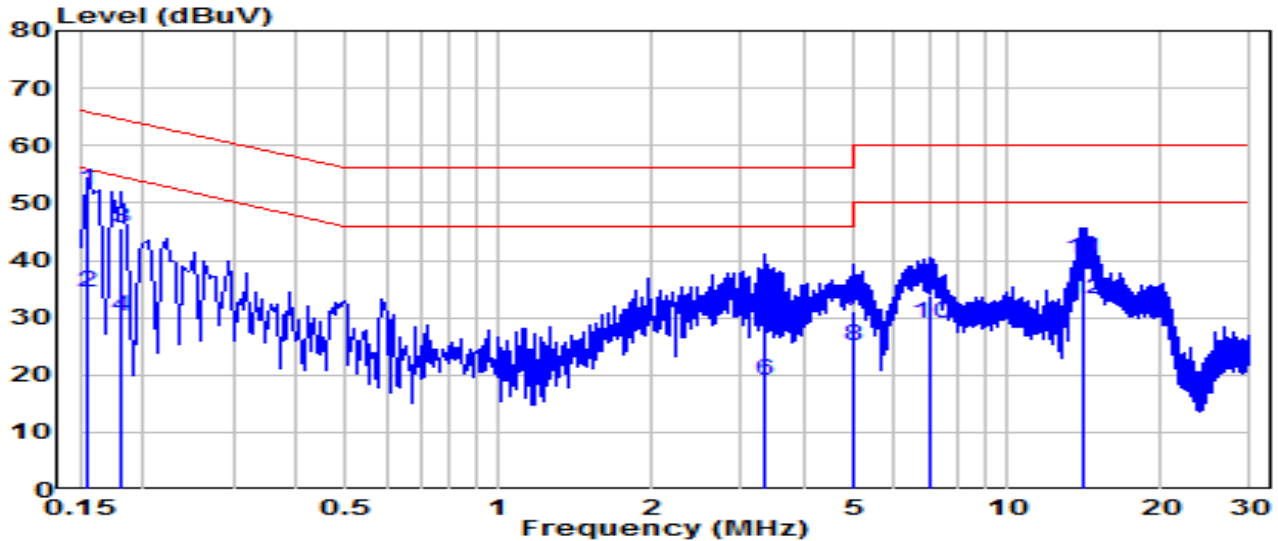
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3. Test Result

EUT	Smart Controller	Date of Test	2025-05-23
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	26°C /58%
Polarity	Line1	Site / Test Engineer	SR2 / Ryan
Test Mode	802.11n-20MHz_TX_CH6_Ant 0	Test Voltage	AC 120V/60Hz

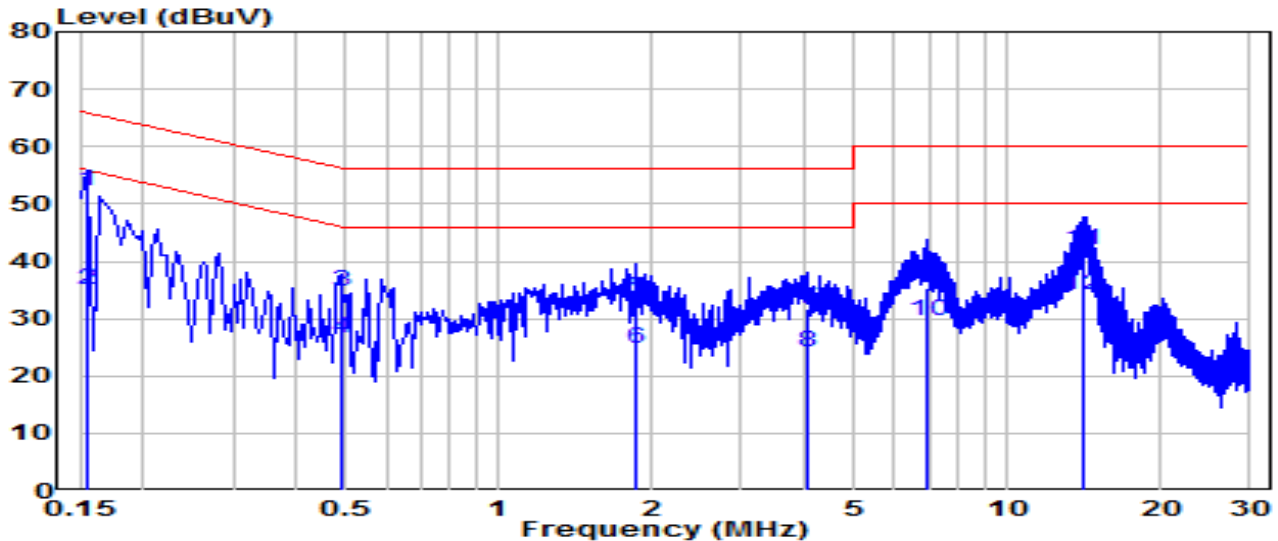


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	*	0.154	42.51	9.63	52.14	-13.61	65.75	QP
2	*	0.154	24.89	9.63	34.52	-21.23	55.75	Average
3		0.181	35.85	9.63	45.48	-18.94	64.42	QP
4		0.181	20.63	9.63	30.26	-24.16	54.42	Average
5		3.318	21.83	9.72	31.55	-24.45	56.00	QP
6		3.318	9.28	9.72	19.00	-27.00	46.00	Average
7		5.014	21.47	9.75	31.21	-28.79	60.00	QP
8		5.014	15.29	9.75	25.04	-24.96	50.00	Average
9		7.021	24.07	9.80	33.86	-26.14	60.00	QP
10		7.021	19.08	9.80	28.87	-21.13	50.00	Average
11		14.058	30.35	9.89	40.25	-19.75	60.00	QP
12		14.058	23.40	9.89	33.29	-16.71	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Smart Controller	Date of Test	2025-05-23
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	26°C /58%
Polarity	Neutral	Site / Test Engineer	SR2 / Ryan
Test Mode	802.11n-20MHz_TX_CH6_Ant 0	Test Voltage	AC 120V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	*	0.154	42.62	9.63	52.25	-13.50	65.75	QP
2	*	0.154	25.48	9.63	35.11	-20.65	55.75	Average
3		0.487	24.94	9.64	34.58	-21.63	56.21	QP
4		0.487	17.01	9.64	26.65	-19.56	46.21	Average
5		1.860	23.79	9.70	33.49	-22.51	56.00	QP
6		1.860	14.99	9.70	24.69	-21.31	46.00	Average
7		4.047	22.10	9.73	31.83	-24.17	56.00	QP
8		4.047	14.35	9.73	24.08	-21.92	46.00	Average
9		6.926	25.49	9.79	35.28	-24.72	60.00	QP
10		6.926	19.77	9.79	29.57	-20.43	50.00	Average
11		14.013	31.97	9.91	41.88	-18.12	60.00	QP
12		14.013	24.28	9.91	34.19	-15.81	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **Smart Controller**, is in compliance with Part 15C of the FCC Rules.

Appendix A : Test Photograph

Refer to “2505TW0106-UT” file.

Appendix B : External Photograph

Refer to “2505TW0106-UE” file.

Appendix C : Internal Photograph

Refer to “2505TW0106-UI” file.

————— The End —————