

FCC Test Report

Report No: WD-RF-R-230316-D0

Product Name : Doorbell
Model Name : DR40
FCC ID : 2AZ3JDR40
Applicant : Rhombus Systems, Inc.
Received Date : Sep. 01, 2023
Tested Date : Sep. 11, 2023 ~ Oct. 16, 2023
Applicable Standard : 47 CFR FCC Part 15, Subpart E (Section 15.407)
789033 D02 General U-NII Test Procedures New Rules v02r01
ANSI C63.10 : 2013



Wendell Industrial Co., Ltd
Wendell EMC & RF Laboratory

Caution:

This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment.

Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

This report must not be used to claim product endorsement by TAF or any agency of the government.

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Test Report

Issued Date: October 16, 2023

Project No.: 22Q090502

Product Name	Doorbell
Trade Name	rhombus
Brand Trademark	 rhombus
Model Name	DR40
FCC ID	2AZ3JDR40
Applicant	Rhombus Systems, Inc.
Manufacturer	Dynacolor Inc.
EUT Rated Voltage	DC 12V ~ 28V 、 POE 42.5V ~ 57V
EUT Test Voltage	AC 120V / 60Hz
EUT Supports Radios Application	WLAN 802.11a/b/g 、 WLAN 802.11n (HT20/HT40) WLAN 802.11ac (VHT20/VHT40/VHT80) Bluetooth BR/EDR/LE 、 NFC 13.56 MHz
Applicable Standard	47 CFR FCC Part 15, Subpart E (Section 15.407) 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10 : 2013
Output Power	5.18 ~ 5.24 GHz: 7.24 dBm 5.745 ~ 5.825 GHz: 9.31 dBm
Test Result	Complied

Documented :



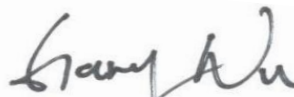
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(Section Manager / Jack Chang)

Approved :



(Project Manager / Gary Wu)

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Attachment 2: EUT Detailed Photographs		

Document Revision History

Report No.	Issue date	Description
WD-RF-R-230316-D0	October 16, 2023	Initial report

Summary of Test Result

Ref. Std. Clause	Test Items	Result
15.407(a)	26dB Bandwidth	Pass
15.407(e)	6dB Bandwidth	Pass
--	99% Occupied Bandwidth	Pass
15.407(a)	Maximum Conducted Output Power	Pass
15.407(a)	Power Spectral Density	Pass
15.407(b) 15.209	Unwanted Emissions	Pass
15.407(g)	Frequency Stability	Pass
15.207	AC Conducted Emission	Pass
15.203 15.407(a)	Antenna Requirement	Pass

1 Generation Information

1.1 Applicant

Rhombus Systems, Inc.
1920 20th St, Sacramento, CA 95811

1.2 Manufacturer

Dynacolor Inc.
NO. 116 JOU TZ STREET, NEIHU, TAIPEI 114, TAIWAN

1.3 Description of Equipment under Test

Product Name	Doorbell
Model No.	DR40
FCC ID	2AZ3JDR40
Frequency Range	802.11a/n/ac-20MHz: 5180-5240MHz, 5745-5825MHz 802.11n/ac-40MHz: 5190-5230MHz, 5755-5795MHz 802.11ac-80MHz: 5210MHz, 5775MHz
Number of Channels	802.11a/n/ac-20MHz: 9 ; 802.11n/ac-40MHz: 4 ; 802.11ac-80MHz: 2
Data Rate	802.11a : 6M - 54 Mbps 802.11n : up to 150 Mbps 802.11ac : up to 433.3 Mbps
Type of Modulation	802.11a/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna Information	Refer to the table “Antenna List”
EUT Supports Radios Application	WLAN 802.11a/b/g WLAN 802.11n (HT20/HT40) WLAN 802.11ac (VHT20/VHT40/VHT80) Bluetooth BR/EDR/LE NFC 13.56 MHz
EUT Rated Voltage	DC 12V ~ 28V 、POE 42.5V ~ 57V
EUT Test Voltage	AC 120V / 60Hz

Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	INPAQ	RFMTA211200NNLB001	Metal Antenna	3.78 dBi for 5.15~5.25 GHz 3.78 dBi for 5.725~5.85 GHz

Remark: The antenna of EUT is conforming to FCC 15.203

Channel List

802.11a/n/ac HT20/VHT20		802.11n/ac HT40/VHT40		802.11ac VHT80	
Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	155	5775
44	5220	151	5755	--	--
48	5240	159	5795	--	--
149	5745	--	--	--	--
153	5765	--	--	--	--
157	5785	--	--	--	--
161	5805	--	--	--	--
165	5825	--	--	--	--

Test Frequencies in each operating band

Frequency range over which the device operates in each operating band (Note 1)	Number of test frequencies required	Location of test frequencies inside the operating frequency range (Note 1,2)
≤ 1 MHz	1	near center
> 1 MHz and ≤ 10 MHz	2	1 near high end, 1 near low end
> 10 MHz	3	1 near high end, 1 near center, and 1 near low end

Note 1: The frequency range over which the device operates in a given operating band is the difference between the highest and lowest frequencies on which the device can be tuned within that given operating band. The frequency range can be smaller than or equal to the operating band, but cannot be greater than the operating band.

Note 2: In the third column of table 1, “near” means as close as possible to or at the center / low end / high end of the frequency range over which the device operates.

Firmware / Software Version

1	Product Name	Doorbell
2	Model No.	DR40
3	Test SW Version	Putty_Ver.0.63
4	RF power setting in TEST SW	☐ RF power setting was not able to alter during testing. ☒ RF power setting was able to alter during testing. (See the following table)

Parameters of test software setting

Type of Modulation	Channel	Frequency (MHz)	Set Value
802.11a	36	5180	15
	44	5200	15
	48	5240	15
	149	5745	15
	157	5785	15
	165	5825	15
802.11ac VHT20	36	5180	14
	44	5200	14
	48	5240	14
	149	5745	14
	157	5785	14
	165	5825	14
802.11ac VHT40	38	5190	13
	46	5230	13
	151	5755	13
	159	5795	13
802.11ac VHT80	42	5210	11
	155	5775	12

1.4 Test Mode Applicability And Tested Channel Detail

1. The EUT has been pre-tested under the following test modes, and test mode A was the worst case for final test. The EUT has the following different power supply. After laboratory evaluation, the worst mode must be found by pre-test results of radiation 30M-1GHz.

EUT Configure Mode	RE < 1G	RE ≥ 1G	ACM	ACP	Description
A	☒	☐	☐	☐	PoE Mode
B	☒	☐	☐	☐	DC Mode

2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
3. The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is recorded in the report:

EUT Configure Mode	RE < 1G	RE ≥ 1G	ACM	ACP	Description
--	☒	☒	☒	☒	Transmit WIFI

Note : RE<1G: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

ACM: Antenna Port Conducted Measurement

ACP: AC Power Line Conducted Emission

Following channel(s) was (were) selected for the final test as listed below:

Radiated Spurious Emission Measurement(Below 1GHz):

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11a	36 ~ 165	48, 165	OFDM	6

Radiated Spurious Emission Measurement(Above 1GHz):

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36, 44, 48	OFDM	6
802.11ac VHT20		36 ~ 48	36, 44, 48	OFDM	6.5
802.11ac VHT40		38 ~ 46	38, 46	OFDM	13.5
802.11ac VHT80		42	42	OFDM	29.3
802.11a	5745 ~ 5825	149 ~ 165	149, 157, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 157, 165	OFDM	6.5
802.11ac VHT40		151 ~ 159	151, 159	OFDM	13.5
802.11ac VHT80		155	155	OFDM	29.3

Radiated Band Edge Emission Measurement(Above 1GHz):

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36, 48	OFDM	6
802.11ac VHT20		36 ~ 48	36, 48	OFDM	6.5
802.11ac VHT40		38 ~ 46	38, 46	OFDM	13.5
802.11ac VHT80		42	42	OFDM	29.3
802.11a	5745 ~ 5825	149 ~ 165	149, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 165	OFDM	6.5
802.11ac VHT40		151 ~ 159	151, 159	OFDM	13.5
802.11ac VHT80		155	155	OFDM	29.3

Output Power, Power Spectral Density,

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36, 44, 48	OFDM	6
802.11ac VHT20		36 ~ 48	36, 44, 48	OFDM	6.5
802.11ac VHT40		38 ~ 46	38, 46	OFDM	13.5
802.11ac VHT80		42	42	OFDM	29.3
802.11a	5745 ~ 5825	149 ~ 165	149, 157, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 157, 165	OFDM	6.5
802.11ac VHT40		151 ~ 159	151, 159	OFDM	13.5
802.11ac VHT80		155	155	OFDM	29.3

6dB Bandwidth:

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5745 ~ 5825	149 ~ 165	149, 157, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 157, 165	OFDM	6.5
802.11ac VHT40		151 ~ 159	151, 159	OFDM	13.5
802.11ac VHT80		155	155	OFDM	29.3

26dB Bandwidth, 99% Occupied Bandwidth:

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36, 44, 48	OFDM	6
802.11ac VHT20		36 ~ 48	36, 44, 48	OFDM	6.5
802.11ac VHT40		38 ~ 46	38, 46	OFDM	13.5
802.11ac VHT80		42	42	OFDM	29.3

Frequency Stability:

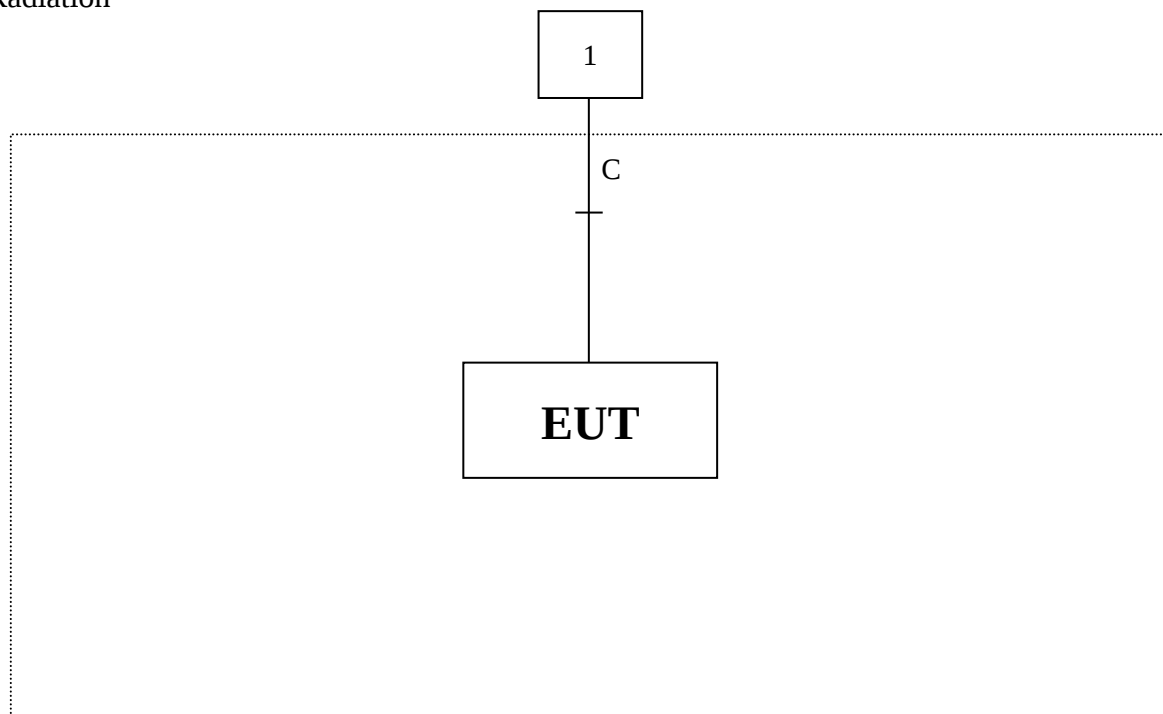
Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	44	OFDM	6
802.11a	5745 ~ 5825	149 ~ 165	157	OFDM	6

AC Conducted Emission:

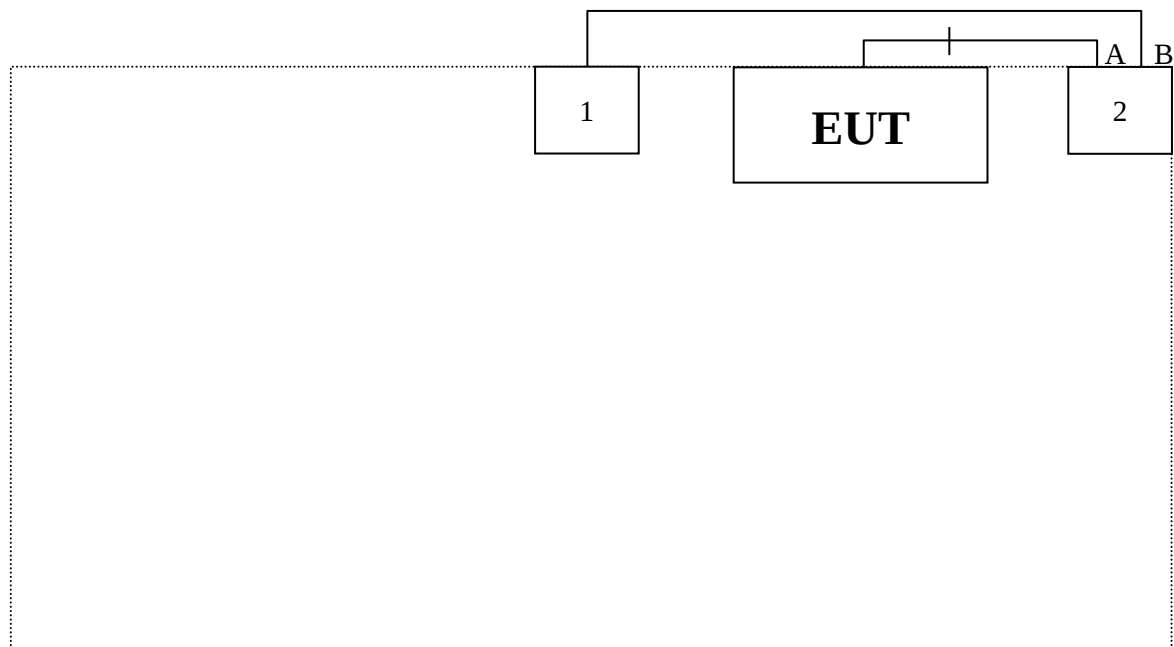
EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11a	36 ~ 165	44	OFDM	6

1.5 Configuration of Tested System

Radiation



AC Conduction



Test Table

1.6 EUT Exercise Software

1. Setup the EUT as shown in Section 1.5
2. Execute software “Putty_Ver.0.63”.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous transmit.
5. Verify that the EUT works properly.

1.7 Tested System Details

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

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	acer	N16Q1	NXVF4TA023742254147600	N/A
2	POE	CERIO	POE-S48V2	N/A	N/A

No.	Signal Cable Type	Signal cable Description
A	LAN Cable	Non-shielded, Non-Core, 1.5m
B	LAN Cable	Non-shielded, Non-Core, 1.6m

1.8 Test Facility

Items	Required (IEC 60068-1)
Temperature (°C)	15-35
Humidity (% RH)	25-75
Barometric pressure (mbar)	860-1060

Description: Accredited by TAF
Accredited Number: 2965

Issued by: Wendell Industrial Co., Ltd

Company Address: 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Lab: Wendell EMC & RF Laboratory

Lab Address: 5F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Location: No. 119, Wugong 3rd Rd., Wugu Dist.,
New Taipei City 248, Taiwan (R.O.C.)

Designation Number: TW0025

Test Firm Registration Number: 665221

1.9 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence (level based on a coverage factor K=2)

Measurement Project	Condition	Expended Uncertainty
AC Conducted Emission	0.150 ~ 30 MHz	± 2.64 dB
Radiated Emission	0.009 ~ 30 MHz	± 3.7 dB
	30 ~ 1000 MHz	± 3.9 dB
	1000 ~ 18000 MHz	± 4.5 dB
	18000 ~ 40000 MHz	± 4.3 dB
RF Power, Conducted	Conducted Measuring	± 0.75 dB
Occupied Bandwidth	Conducted Measuring	± 2.4 %
Power Density	Conducted Measuring	± 1.2 dB
Duty Cycle	Conducted Measuring	± 0.9 %
Frequency Stability	Conducted Measuring	± 0.062 ppm
DC Power Supply	--	± 2.0 %
Temperature	--	± 0.55 °C
Humidity	--	± 3.1 %

Note: Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

1.10 List of Test Equipment

For Conducted measurements / W08-Conducted Measurement

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓ Spectrum analyzer	Keysight	N9010A	SG50420005	2023/08/08	2024/08/07
✓ Wideband Peak Power Meter	Anritsu	ML2495A	1733007	2023/09/07	2024/09/06
✓ Pulse Power Sensor + Precision Adaptor	Anritsu	MA2411B	1726022	2023/09/07	2024/09/06
Temperature Chamber	TAICHY	MHK-225LK	1061121	2023/04/24	2024/04/23
Wireless Connectivity Tester	R&S	CMW270	101307	2023/05/29	2024/05/28
✓ Attenuator	MVE	MVE2211-10	CT-9-056	2022/08/10	2024/08/09
Attenuator	MVE	MVE2211-20	CT-9-057	2022/08/10	2024/08/09
Attenuator	MVE	MVE2211-30	CT-9-058	2022/08/10	2024/08/09
Power Divider	MVE	MVE8546	170826003	2022/08/10	2024/08/09
Power Splitter	MVE	MVE8547	170302047	2022/08/11	2024/08/10
DC Power Supply	GW INSTEK	GPC-3060D	GER817636	2023/08/11	2024/08/10

Remark:

1. The equipments are calibrated every one year.
2. The Attenuator/ Divider/ Splitter are calibrated every two year.
3. The test instruments marked with “✓” are used to measure the final test results.

For AC Conduction measurements / W08-CE

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Test Receiver	R&S	ESR3	102309	2023/06/19	2024/06/18
✓	2-Line V-Network LISN	R&S	ENV216	101185	2023/06/16	2024/06/15
✓	LISN	SCHWARZBECK	NSLK 8127RC	05028	2023/06/16	2024/06/15
✓	Transient Limiter	EM Electronics Corporation	EM-7600	857	2023/06/17	2024/06/16
✓	50ohm Cable	EMCI	EMCCFD300-BM-BM- 5000	170612	2023/06/17	2024/06/16
✓	50 ohm terminal impedance	HUBER+SUHNER	50 ohm terminal impedance	CT-1-109-1	2023/06/16	2024/06/15

Remark:

1. All equipments are calibrated every one year.
2. The test instruments marked with “✓” are used to measure the final test results.
3. Test Software version: FARAD EZ-EMC Ver.EMC-CON 3A1

For Radiated measurements / W08-996-2

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Receiver	Keysight	N9038A	MY51210173	2023/08/18	2024/08/17
✓	Spectrum Analyzer	Keysight	N9010A	MY52220228	2023/08/18	2024/08/17
✓	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	00033	2023/05/08	2024/05/07
✓	TRILOG super broad Antenna	Schwarzbeck	VULB 9168	VULB 9168-700 & 20E03	2023/07/31	2024/07/30
✓	Horn Antenna	Schwarzbeck	BBHA 9120D	01767	2023/08/17	2024/08/16
✓	Horn Antenna	Schwarzbeck	BBHA 9170	703	2023/08/21	2024/08/20
✓	Pre-Amplifier	EM	EMC330	060774	2023/08/22	2024/08/21
✓	Pre-Amplifier	EMEC	EM01G18G	060648	2023/08/22	2024/08/21
✓	Pre-Amplifier	JPT	JPA0118-55-303K	1910001800055003	2023/08/22	2024/08/21
✓	Pre-Amplifier	EMCI	EMC184045SE	980515	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060103	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060102	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060101	2023/08/22	2024/08/21
✓	RF Cable	HUBER+SUHNER	SF102	MY2752/2	2023/08/22	2024/08/21
✓	RF Cable	MVE	280280.LL266.1200	B60028C	2023/08/22	2024/08/21
✓	RF Cable	EMCI	EMC102-KM-KM-600	190646	2023/08/22	2024/08/21
✓	RF Cable	MVE	140140.LL404.700	B90014C	2023/08/22	2024/08/21
✓	RF Cable	MVE	140140.LL404.300	B90006C	2023/08/22	2024/08/21
	RF Filter	EMEC	BRF-2400-2500	002	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5150-5350	104	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5470-5725	092	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5725-5875	091	2022/08/17	2024/08/16
	RF Filter	EMEC	HPF-2800	002	2022/08/17	2024/08/16
✓	RF Filter	EMEC	HPF-5850	059	2022/08/17	2024/08/16
	SMA Notch Filter	MVE	MFN-902.928.S1	190604001	2022/08/17	2024/08/16

Remark:

1. The equipments are calibrated every one year.
2. The Filter calibrated every two year.
3. The test instruments marked with “✓” are used to measure the final test results.
4. Test Software version: FARAD EZ-EMC Ver.WD-03A1-1

2 Test Result

2.1 Antenna Requirement

2.1.1 Applicable Standard

For the band 5.15-5.25 GHz

- (1) For an outdoor access point operating:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

- (2) For an indoor access point operating:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

- (3) For fixed point-to-point access points operating:

For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

- (4) For client devices:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

2.1.2 Antenna Connected Construction

Non-standard antenna connector is used.

2.1.3 Test Result

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	INPAQ	RFMTA211200NNLB001	Metal Antenna	3.78 dBi for 5.15~5.25GHz 3.78 dBi for 5.725~5.85GHz

Description of the operating transmit modes :

- * 802.11a : Only one Antenna mode, this port is Ant-1
- * 802.11ac_VHT20 : Only one Antenna mode, this port is Ant-1
- * 802.11ac_VHT40 : Only one Antenna mode, this port is Ant-1
- * 802.11ac_VHT80 : Only one Antenna mode, this port is Ant-1

Directional gain calculation :

- * B1_802.11a : Gain = 3.78 dBi $\leq$ 6dBi
- * B1_802.11ac_VHT20 : Gain = 3.78 dBi $\leq$ 6dBi
- * B1_802.11ac_VHT40 : Gain = 3.78 dBi $\leq$ 6dBi
- * B1_802.11ac_VHT80 : Gain = 3.78 dBi $\leq$ 6dBi
- * B3_802.11a : Gain = 3.78 dBi $\leq$ 6dBi
- * B3_802.11ac_VHT20 : Gain = 3.78 dBi $\leq$ 6dBi
- * B3_802.11ac_VHT40 : Gain = 3.78 dBi $\leq$ 6dBi
- * B3_802.11ac_VHT80 : Gain = 3.78 dBi $\leq$ 6dBi

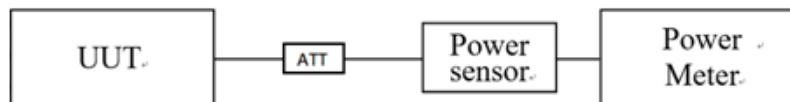
2.2 Output Power Measurement and Transmit Power Control

2.2.1 Limit

1. For frequency Band 5150~5250MHz:
 - (1) Outdoor access point : 1W (30 dBm)
 - (2) Indoor access point : 1W (30 dBm)
 - (3) Fixed point-to-point access point : 1W (30 dBm)
 - (4) Client device : 250mW (24 dBm)
 - (5) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For frequency Band 5250~5350MHz and 5470~5725MHz:
 - (1) 250mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth (MHz), whichever is lesser.
 - (2) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For frequency Band 5725~5850MHz:
 - (1) The maximum conducted output power over the frequency band of operation shall not exceed 1 W(30 dBm).
 - (2) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

2.2.2 Test Setup



2.2.3 Test Procedure

1. Enable the EUT transmit continuously.
2. Let EUT be connected to the power meter, and record the max. reading.
3. Measurement using a gated RF average power meter, since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

2.2.4 Test Result

Mode	Frequency (MHz)	Average power (dBm)			Limit (dBm)	Result
		Chain A	Chain B	Total		
802.11a	5180	7.09	--	--	≤ 24	Pass
	5200	7.15	--	--	≤ 24	Pass
	5240	7.24	--	--	≤ 24	Pass
	5745	9.10	--	--	≤ 30	Pass
	5785	9.26	--	--	≤ 30	Pass
	5825	9.31	--	--	≤ 30	Pass
802.11ac VHT20	5180	5.64	--	--	≤ 24	Pass
	5200	5.84	--	--	≤ 24	Pass
	5240	5.71	--	--	≤ 24	Pass
	5745	7.65	--	--	≤ 30	Pass
	5785	7.84	--	--	≤ 30	Pass
	5825	7.99	--	--	≤ 30	Pass
802.11ac VHT40	5190	5.62	--	--	≤ 24	Pass
	5230	5.35	--	--	≤ 24	Pass
	5755	7.25	--	--	≤ 30	Pass
	5795	7.63	--	--	≤ 30	Pass
802.11ac VHT80	5210	3.31	--	--	≤ 24	Pass
	5775	6.21	--	--	≤ 30	Pass

Remark:

1. Average Power = Reading value on power meter + cable loss
2. $10 \log(X/\text{mW}) = \text{dBm}$, $X=1 \text{ watt}$ (Limit)
1 watt = 30 dBm
3. Section E) method 1) of power measurement of KDB 662911 is used for calculating total power.

2.2.5 Transmit Power Control

EUT doesn't support TPC function.

2.3 26dB Bandwidth, 6dB Bandwidth and 99% Occupied Bandwidth Measurement

2.3.1 Limit

Within 5725~5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2 Test Setup



2.3.3 Test Procedure

1. The following procedure shall be used for measuring 6dB bandwidth:
 - (1) Enable the EUT transmit continuously.
 - (2) Set RBW = 100 kHz, VBW $\geq$ 3 RBW, Sweep = auto couple.
 - (3) Detector = Peak, Trace mode = max hold.
 - (4) 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.
2. The following procedure shall be used for measuring 26 dB bandwidth:
 - (1) Set RBW = approximately 1% of the emission bandwidth.
 - (2) Set the VBW > RBW, Detector = Peak, Trace mode = max hold
 - (3) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
3. The following procedure shall be used for measuring 99% power bandwidth:
 - (1) Set center frequency to the nominal EUT channel center frequency.
 - (2) Set span = 1.5 times to 5.0 times the OBW.
 - (3) Set RBW = 1% to 5% of the OBW.
 - (4) Set the VBW $\geq$ 3 RBW.
 - (5) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
 - (6) Use the 99% power bandwidth function of the instrument.

- (7) If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

2.3.4 Test Result

2.2.4.1 6dB Bandwidth

802.11a

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5745	16.33	--	> 500	Pass
5785	16.32	--	> 500	Pass
5825	16.36	--	> 500	Pass

802.11ac VHT20

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5745	17.07	--	> 500	Pass
5785	17.56	--	> 500	Pass
5825	17.56	--	> 500	Pass

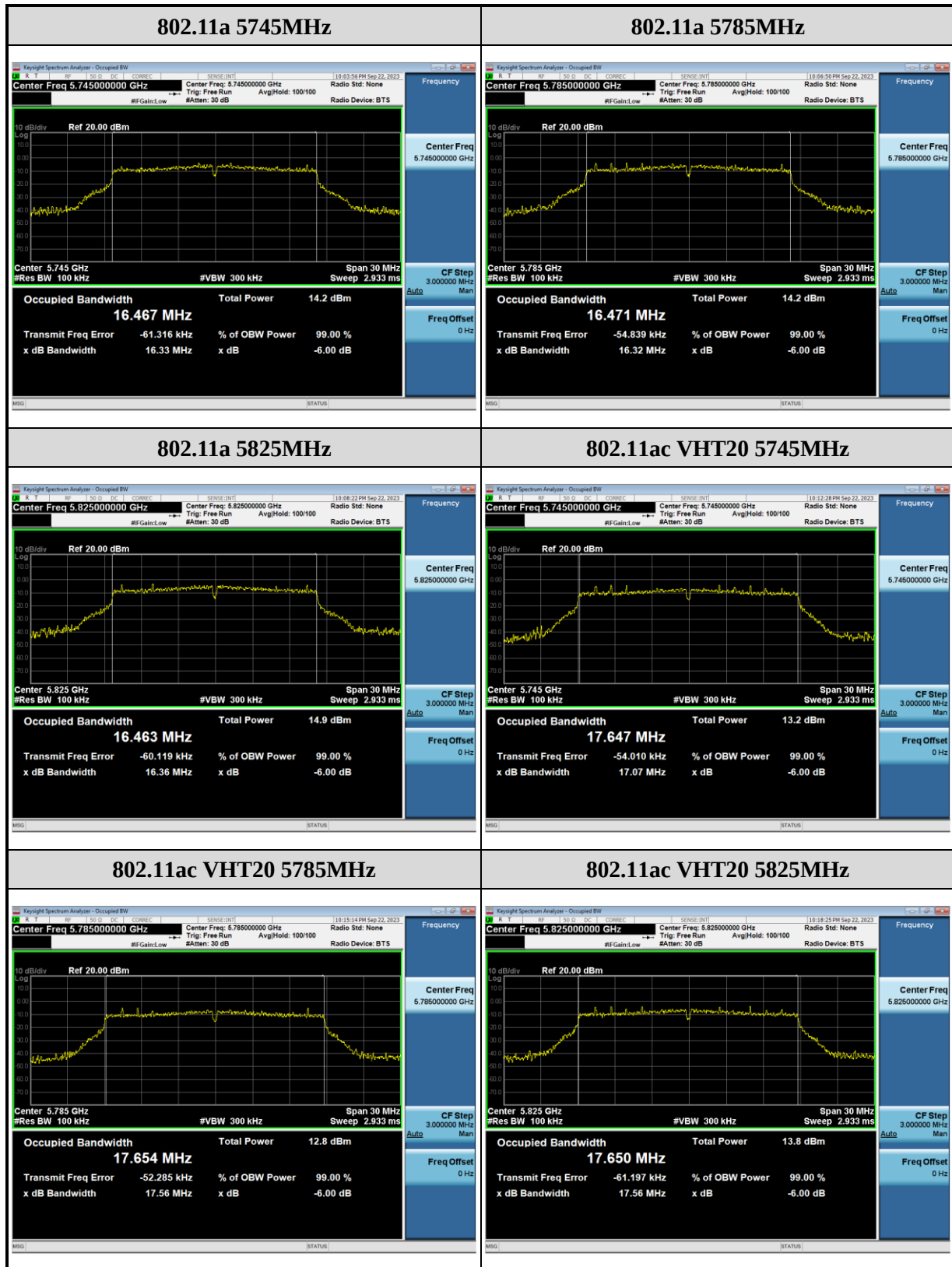
802.11ac VHT40

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5755	35.81	--	> 500	Pass
5795	35.46	--	> 500	Pass

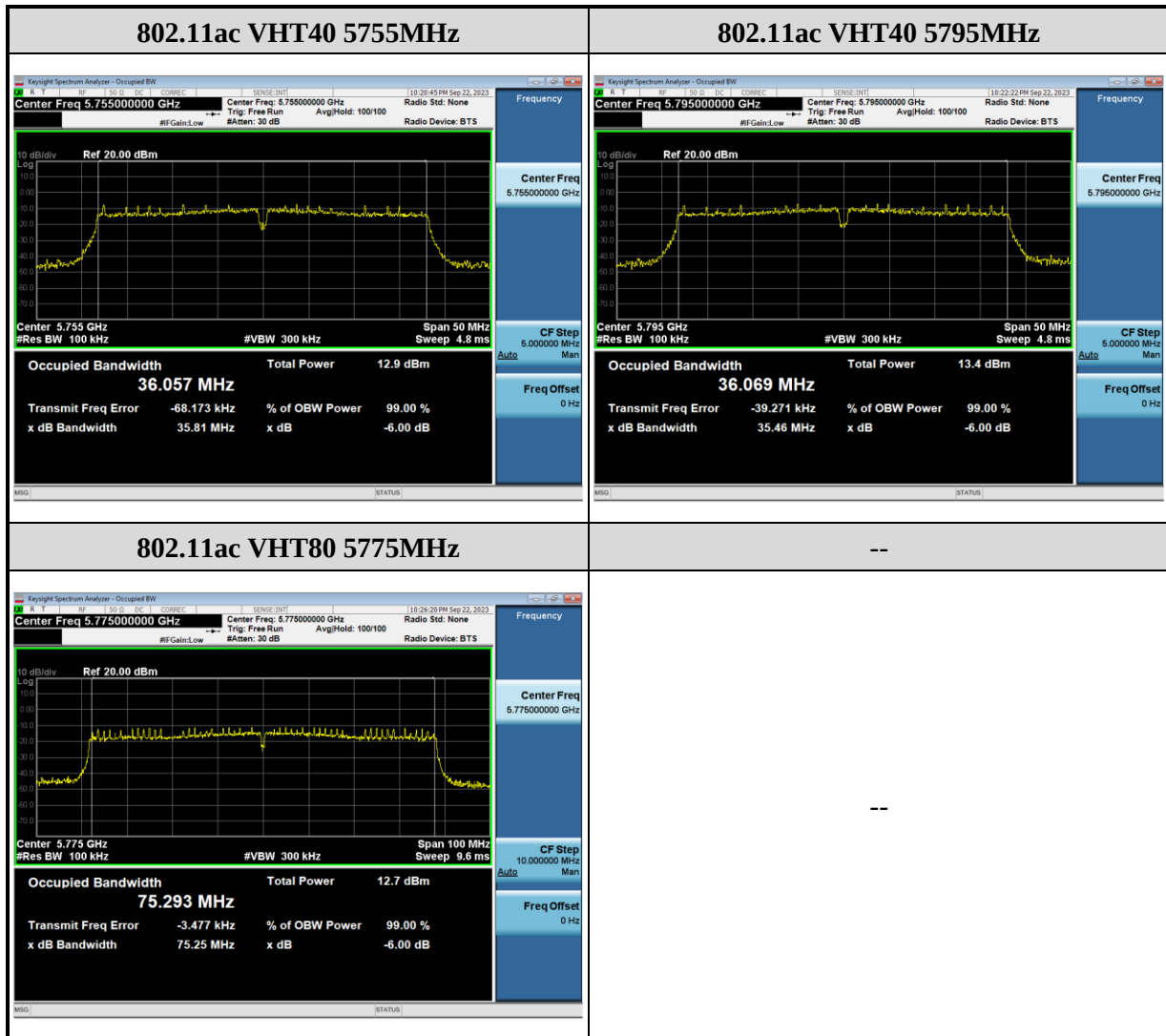
802.11ac VHT80

Frequency (MHz)	6dB BW (MHz)		limit (kHz)	Result
	Chain A	Chain B		
5775	75.25	--	> 500	Pass

6dB spectrum plot of Chain A value:



6dB spectrum plot of Chain A value:



2.2.4.1 26dB & 99% Bandwidth

802.11a

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5180	21.320	--	17.066	--	--	--
5200	21.480	--	17.045	--	--	--
5240	21.240	--	16.898	--	--	--

802.11ac VHT20

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5180	21.670	--	18.002	--	--	--
5200	21.960	--	18.027	--	--	--
5240	21.800	--	17.969	--	--	--

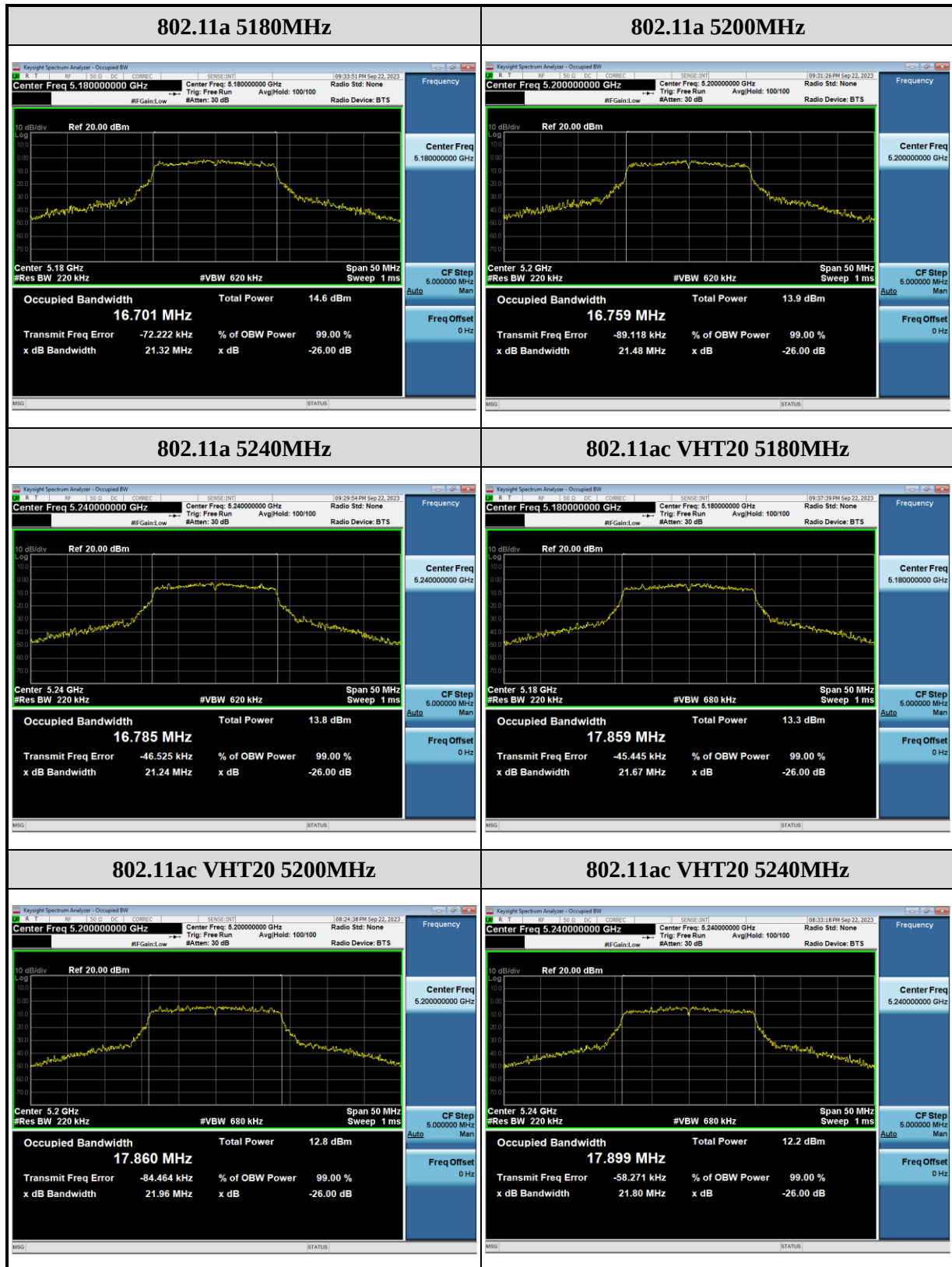
802.11ac VHT40

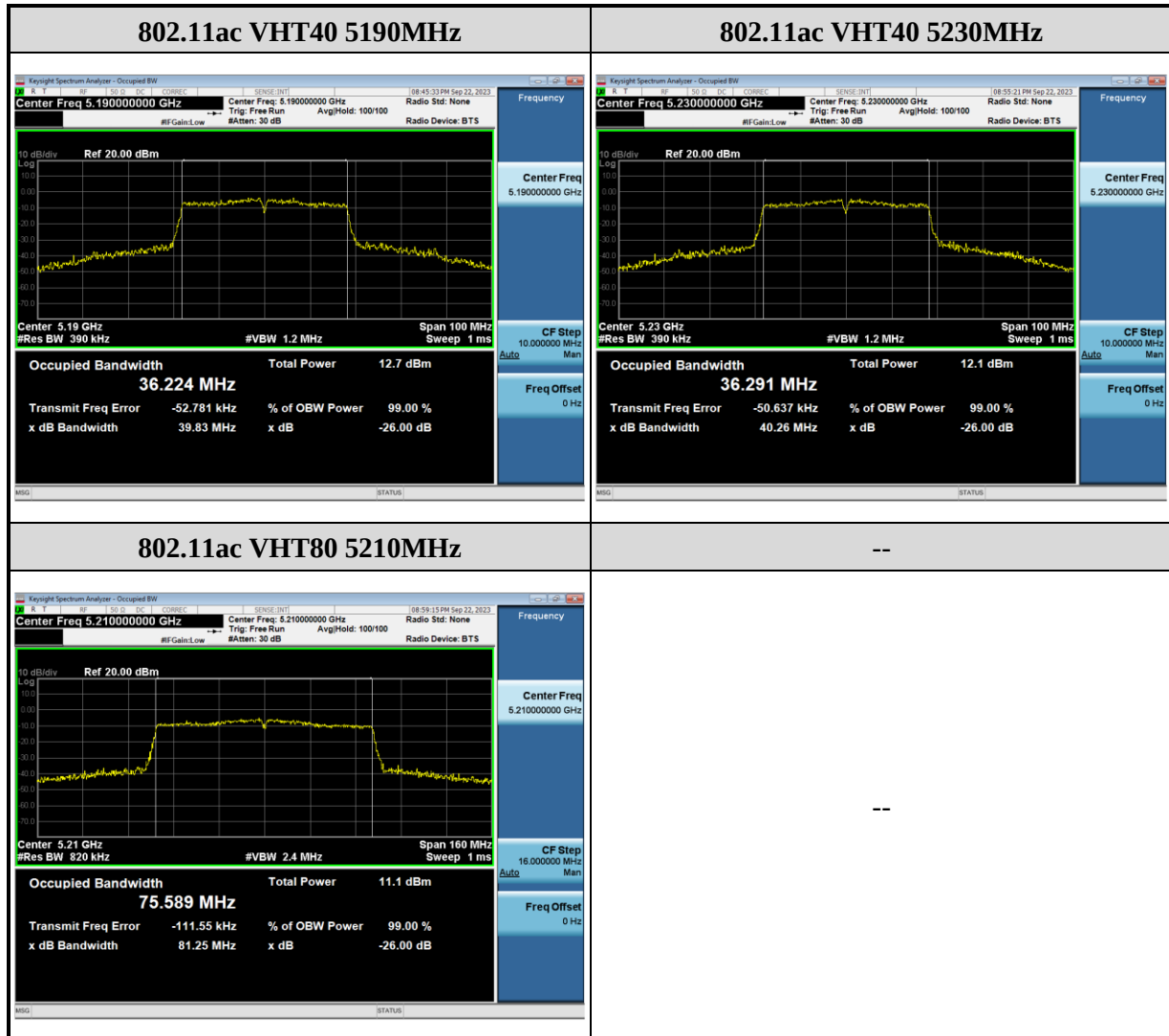
Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5190	39.830	--	36.293	--	--	--
5230	40.260	--	36.323	--	--	--

802.11ac VHT80

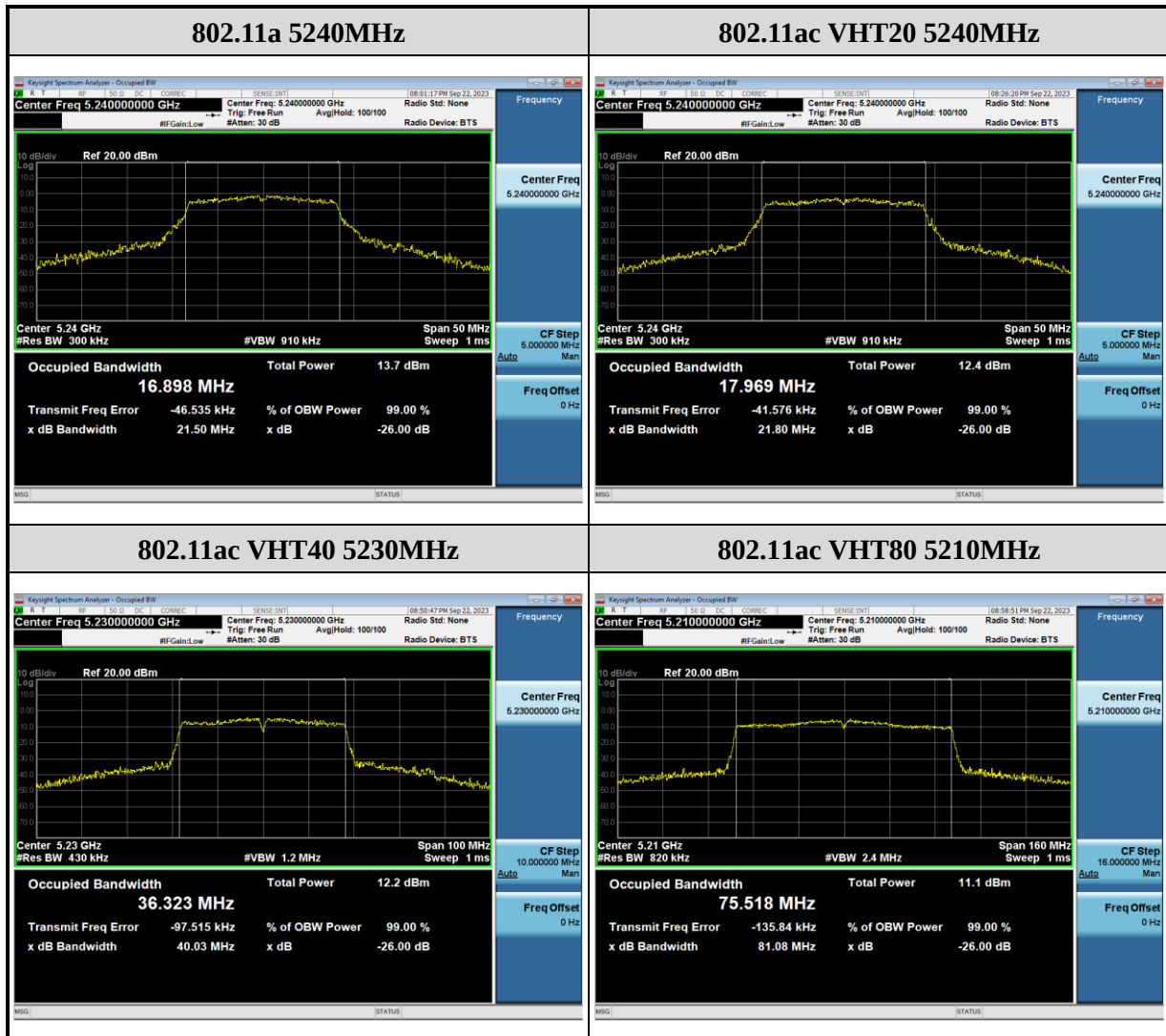
Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5210	81.250	--	75.518	--	--	--

26dB Occupied Bandwidth spectrum plot of Chain A value:





99% Occupied Bandwidth spectrum plot of Chain A value :



2.4 Power Spectral Density Measurement

2.4.1 Limit

1. For frequency Band 5150~5250MHz:
 - (1) Outdoor access point : 17 dBm / MHz
 - (2) Indoor access point : 17 dBm / MHz
 - (3) Fixed point-to-point access point : 17 dBm / MHz
 - (4) Client device : 11 dBm / MHz
2. For frequency Band 5250~5350MHz:
11 dBm / MHz
3. For frequency Band 5470~5725MHz:
11 dBm / MHz
4. For frequency Band 5725~5850MHz:
30 dBm / 500kHz
5. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2.4.2 Test Setup



2.4.3 Test Procedure

1. For frequency band 5150~5250, 5250~5350, 5470~5725MHz

Method SA-2

- (1) Measure the duty cycle D of the transmitter output signal.
- (2) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal
- (3) Spectrum analyzer set:
 - a) RBW = 1 MHz
 - b) VBW = 3 MHz
 - c) Sweep time = auto
 - d) Detector = RMS
 - e) Number of points in sweep $\geq [2 \text{ span} / \text{RBW}]$.
(This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
 - f) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.

2. For frequency band 5725~5850 MHz

Method SA-2

- (1) Measure the duty cycle D of the transmitter output signal.
- (2) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal
- (3) Spectrum analyzer set:
 - a) RBW = 100 kHz
 - b) VBW = 300 kHz
 - c) Sweep time = auto
 - d) Detector = RMS
 - e) Number of points in sweep $\geq [2 \text{ span} / \text{RBW}]$.
(This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
 - f) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.

2.4.4 Test Result

For 5150 MHz ~ 5250 MHz

802.11a

Frequency (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5180	-1.69	--	--	< 11	Pass
5200	-2.12	--	--	< 11	Pass
5240	-2.48	--	--	< 11	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT20

Frequency (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5180	-3.60	--	--	< 11	Pass
5200	-4.12	--	--	< 11	Pass
5240	-4.15	--	--	< 11	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT40

Frequency (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5190	-6.89	--	--	< 11	Pass
5230	-7.29	--	--	< 11	Pass

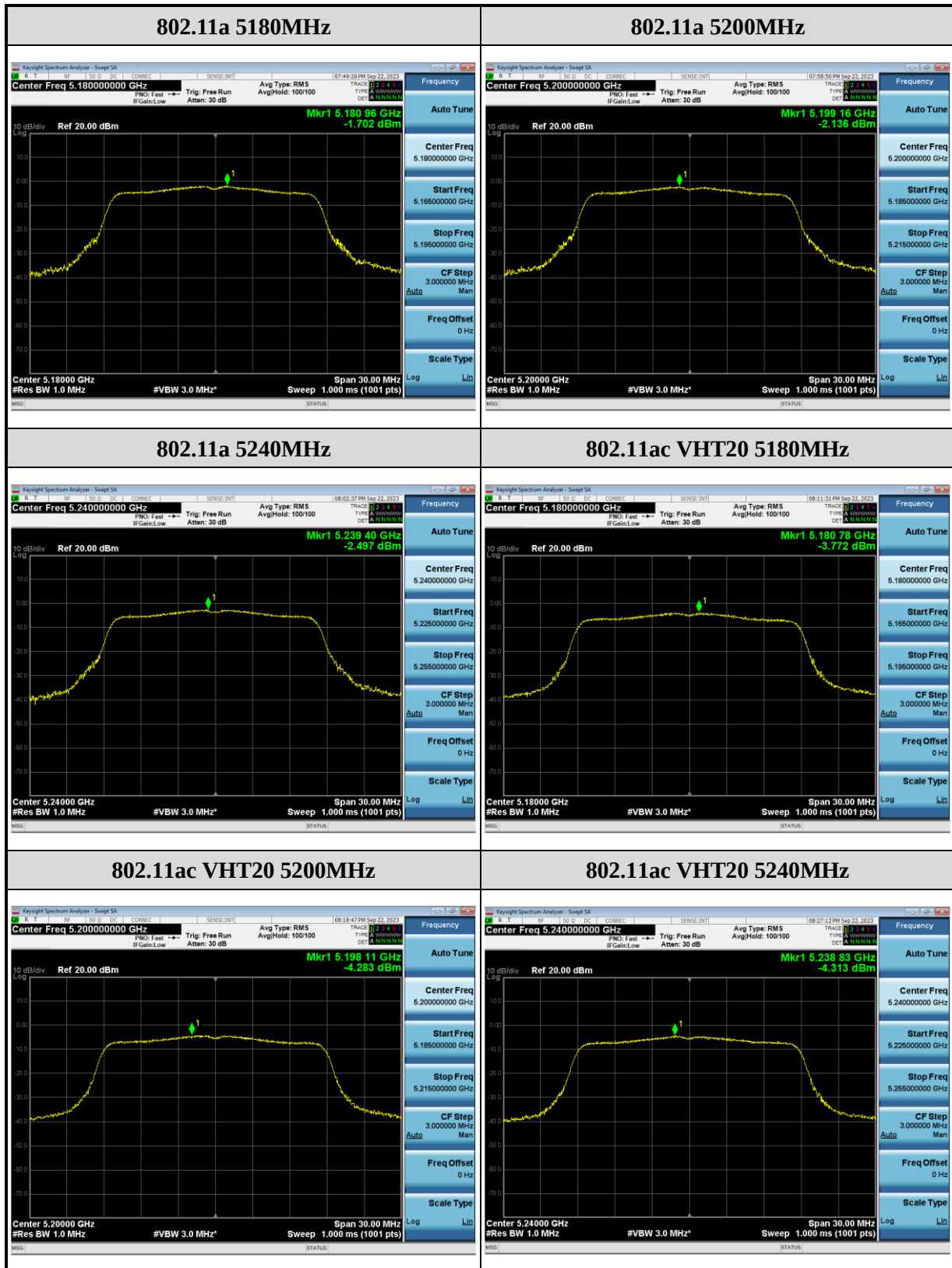
Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT80

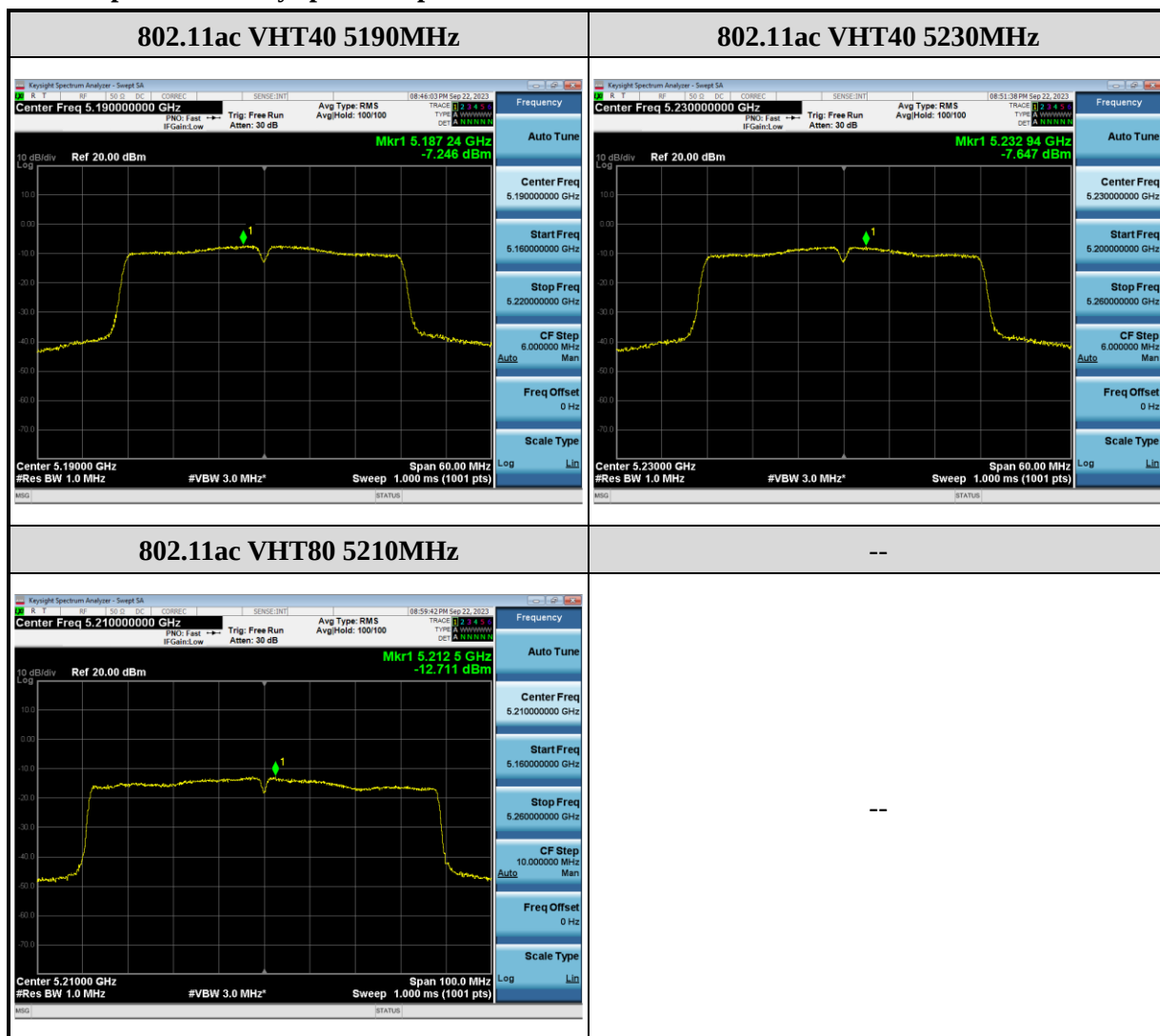
Frequency (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5210	-11.95	--	--	< 11	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

Power Spectral Density spectrum plot of Chain A value:



Power Spectral Density spectrum plot of Chain A value:



For 5725 MHz ~ 5850 MHz

802.11a

Frequency (MHz)	PSD (dBm/500kHz)		Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
	Chain A	Chain B			
5745	-4.35	--	--	< 30	Pass
5785	-4.32	--	--	< 30	Pass
5825	-3.45	--	--	< 30	Pass

Remark:

1. Measured value = Reading value on a spectrum analyzer + cable loss + duty factor
2. $\text{PSD(dBm/500kHz)} = \text{Measured value} + 10\log(500\text{kHz}/100\text{kHz})$

802.11ac VHT20

Frequency (MHz)	PSD (dBm/500kHz)		Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
	Chain A	Chain B			
5745	-6.00	--	--	< 30	Pass
5785	-5.89	--	--	< 30	Pass
5825	-5.12	--	--	< 30	Pass

Remark:

1. Measured value = Reading value on a spectrum analyzer + cable loss + duty factor
2. $\text{PSD(dBm/500kHz)} = \text{Measured value} + 10\log(500\text{kHz}/100\text{kHz})$

802.11ac VHT40

Frequency (MHz)	PSD (dBm/500kHz)		Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
	Chain A	Chain B			
5755	-8.88	--	--	< 30	Pass
5795	-9.15	--	--	< 30	Pass

Remark:

1. Measured value = Reading value on a spectrum analyzer + cable loss + duty factor
2. $\text{PSD(dBm/500kHz)} = \text{Measured value} + 10\log(500\text{kHz}/100\text{kHz})$

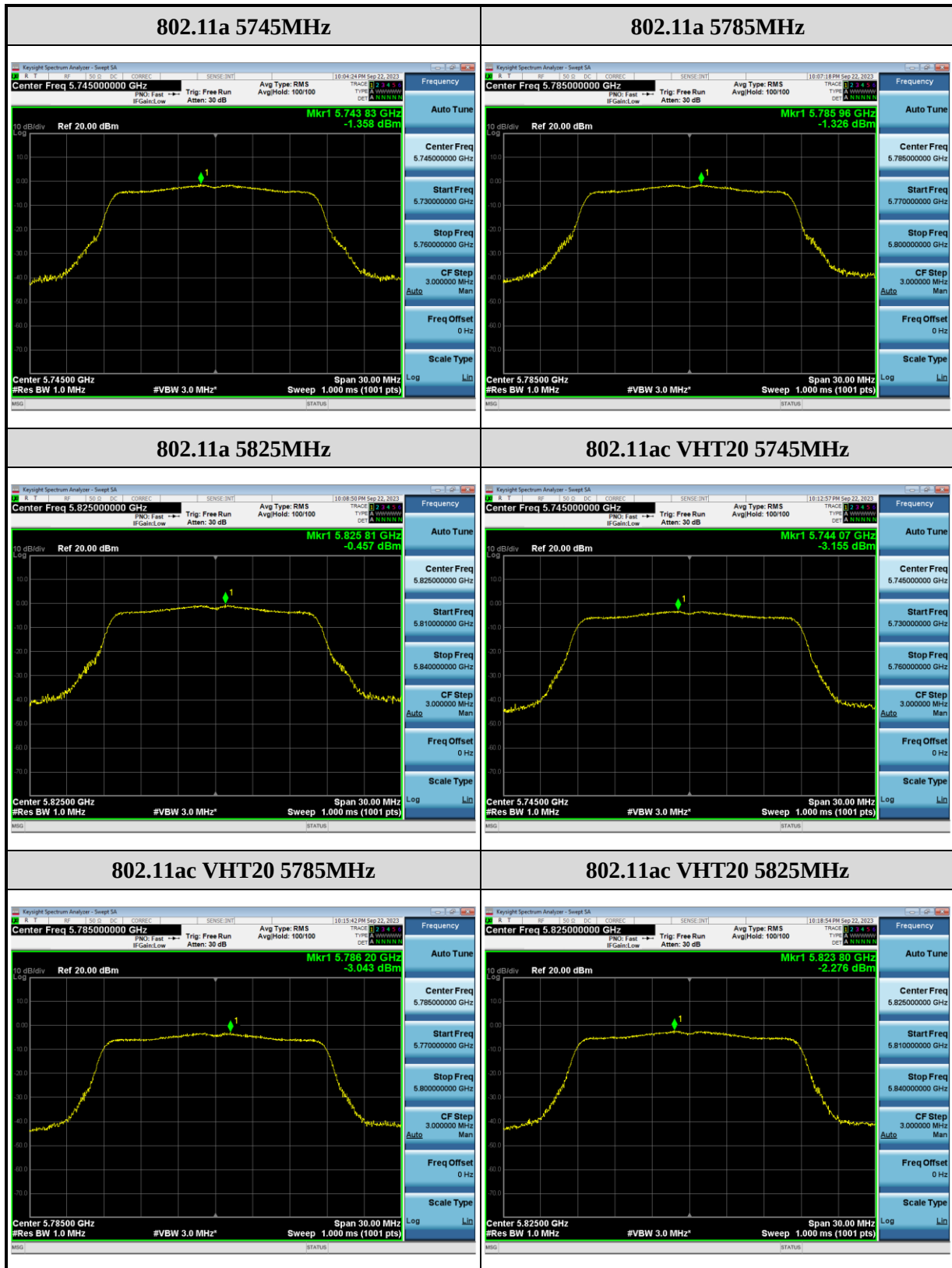
802.11ac VHT80

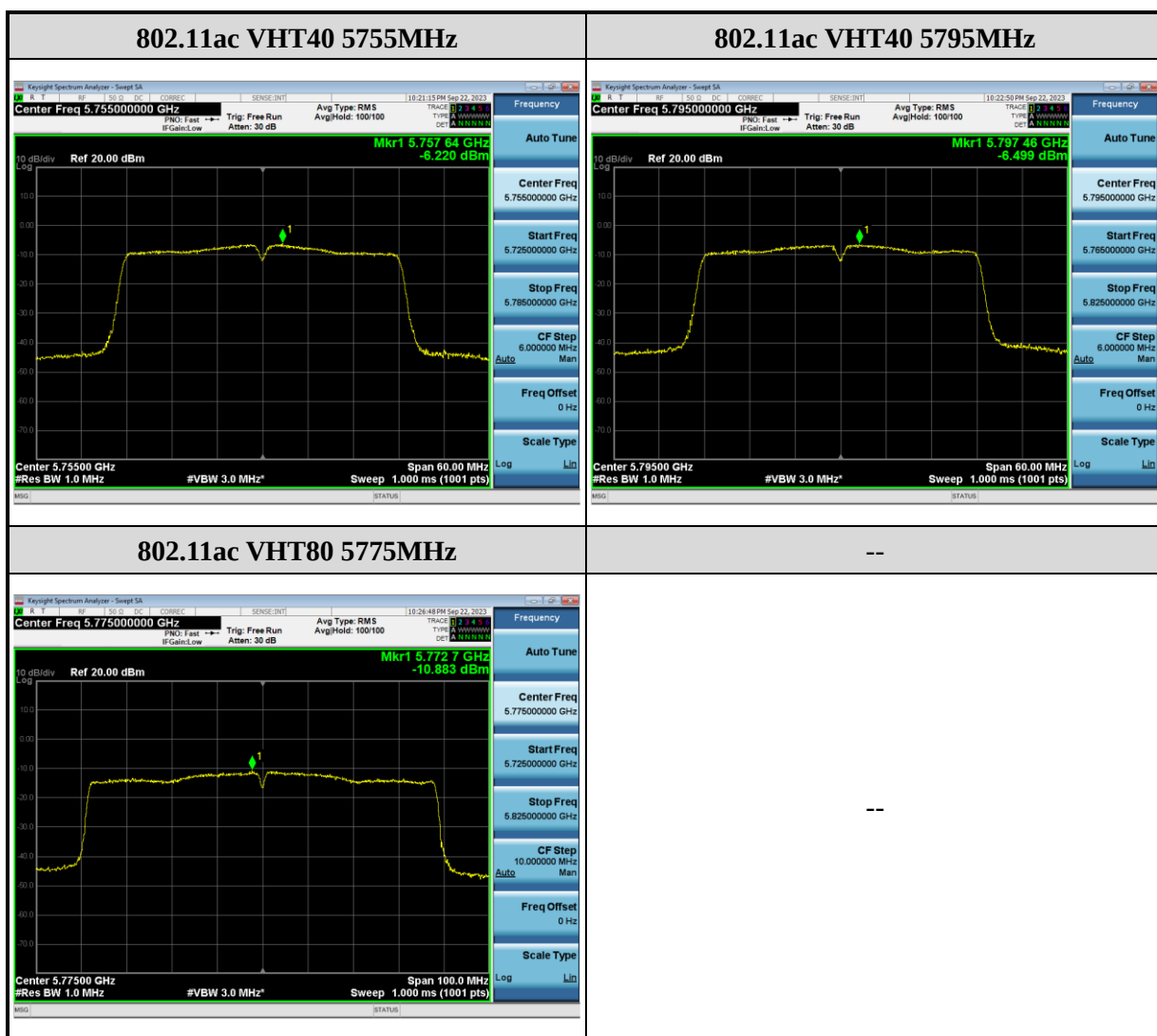
Frequency (MHz)	PSD (dBm/500kHz)		Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
	Chain A	Chain B			
5775	-13.14	--	--	< 30	Pass

Remark:

1. Measured value = Reading value on a spectrum analyzer + cable loss + duty factor
2. $\text{PSD(dBm/500kHz)} = \text{Measured value} + 10\log(500\text{kHz}/100\text{kHz})$

Power Spectral Density spectrum plot of Chain A value:





2.5 Unwanted Emission Measurement

2.5.1 Limit

1. Un- restricted bands unwanted emission limit :

Operating Band (MHz)	Limit of all emissions outside of the operating band
5150 ~ 5250	-27dBm/MHz, EIRP
5250 ~ 5350	-27dBm/MHz, EIRP
5470 ~ 5725	-27dBm/MHz, EIRP
5725 ~ 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.2

2. Restricted bands unwanted emission limit :

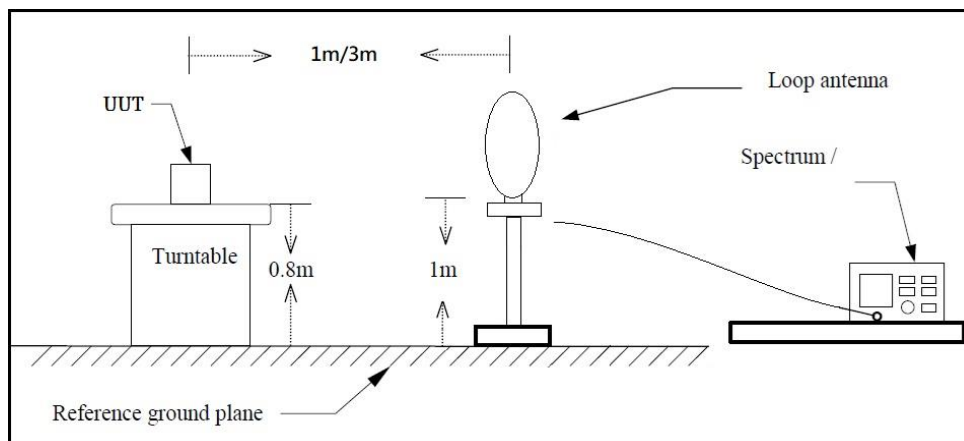
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Remarks:

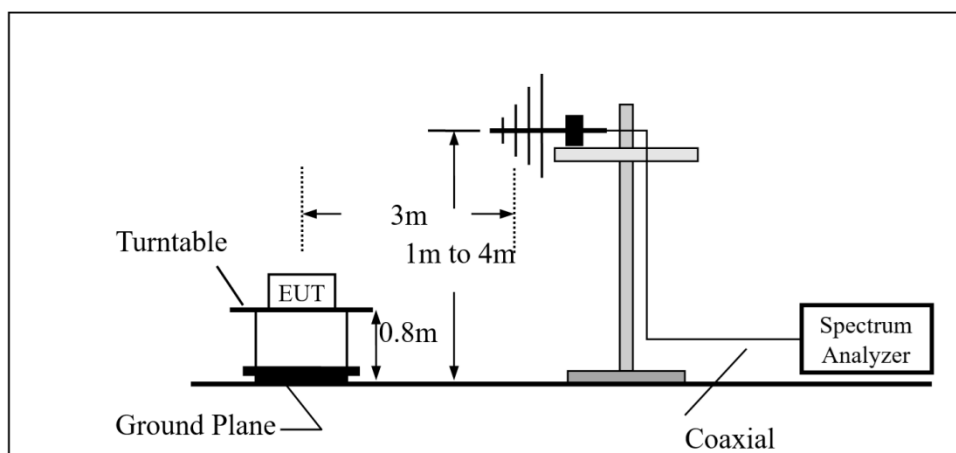
1. RF Voltage (dBuV) = 20 log RF Voltage(uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

2.5.2 Test Setup

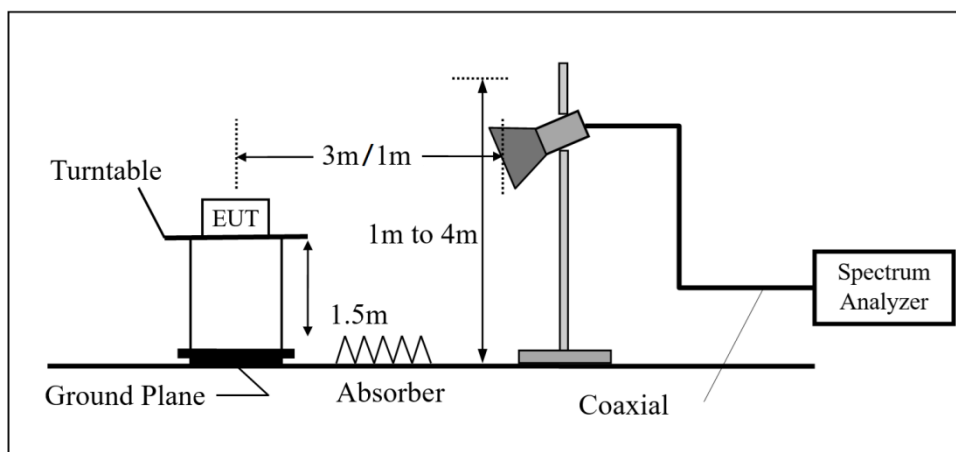
Below 30MHz



30MHz~1GHz



Above 1GHz



2.5.3 Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according test procedure of KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

For Radiated emission below 30MHz

- (1) The EUT was placed on the top of a rotating table 0.8 meters above the ground in a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- (3) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- (4) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- (5) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

For Radiated emission Above 30MHz

- (1) The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for the test. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The EUT was set 3 meters away from the interference-receiving antenna, the height of the antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength.
- (3) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- (4) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- (5) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- (6) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets the average limit, measurement with the average detector is unnecessary.

2.5.4 Duty Cycle

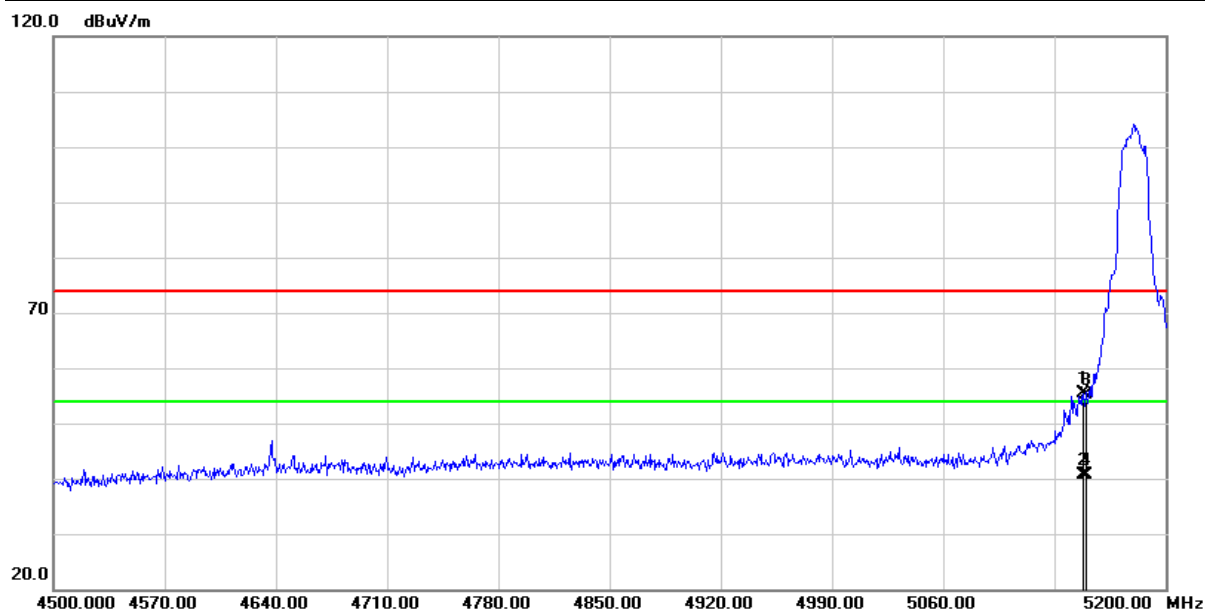
Type of Modulation	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	5180	2.081	2.088	0.997	0.015	0.010
802.11ac VHT20	5180	1.960	2.037	0.962	0.167	0.510
802.11ac VHT40	5190	0.973	1.056	0.921	0.355	1.028
802.11ac VHT80	5210	0.472	0.562	0.840	0.758	2.118

2.5.5 Test Result of Radiated Band Edge Measurement

The following tables for radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X axis) were recorded in this report.

Test Frequency			
RF	802.11a / 802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
Tx	CH36 (5180MHz) CH149 (5745MHz) CH165 (5825MHz)	CH38 (5190MHz) CH151 (5755MHz) CH159 (5795MHz)	CH42 (5210MHz) CH155 (5775MHz)

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

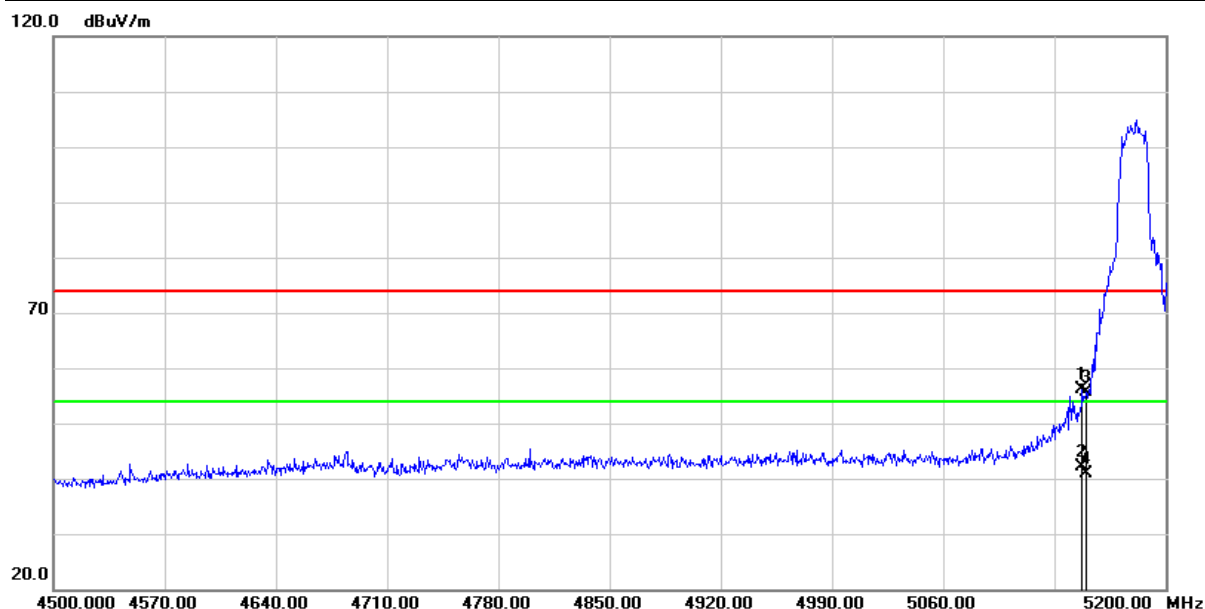


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.200	52.34	3.15	55.49	74.00	-18.51	peak
2	5148.200	37.52	3.15	40.67	54.00	-13.33	AVG
3	5150.000	51.87	3.14	55.01	74.00	-18.99	peak
4	5150.000	37.58	3.14	40.72	54.00	-13.28	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

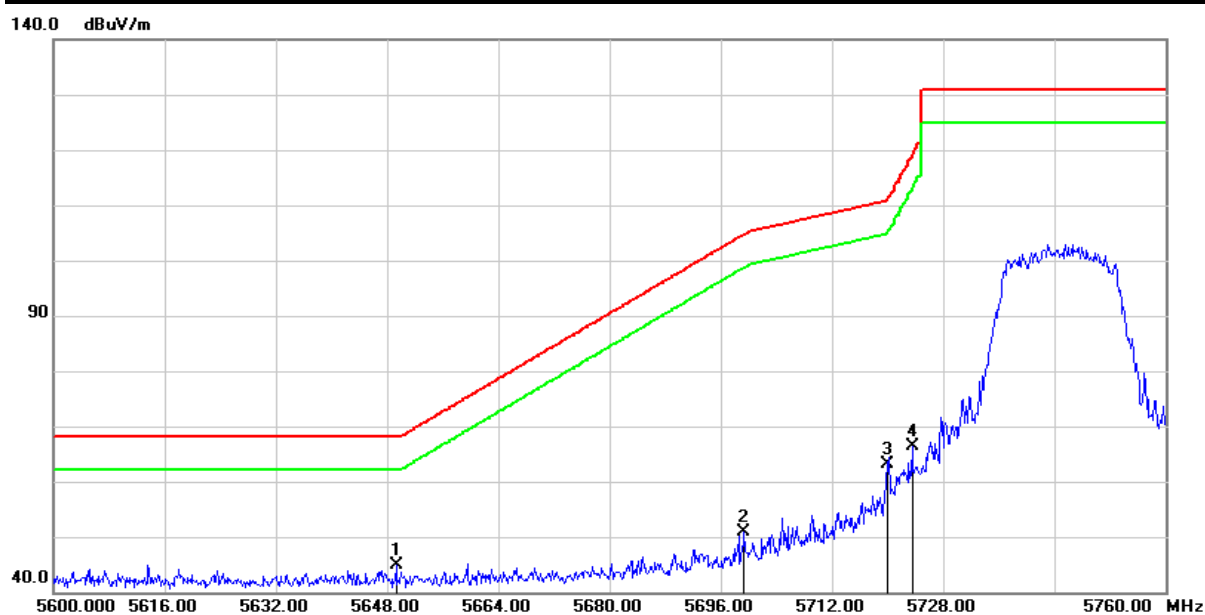


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.500	53.02	3.14	56.16	74.00	-17.84	peak
2	5147.500	38.88	3.14	42.02	54.00	-11.98	AVG
3	5150.000	52.43	3.14	55.57	74.00	-18.43	peak
4	5150.000	37.63	3.14	40.77	54.00	-13.23	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

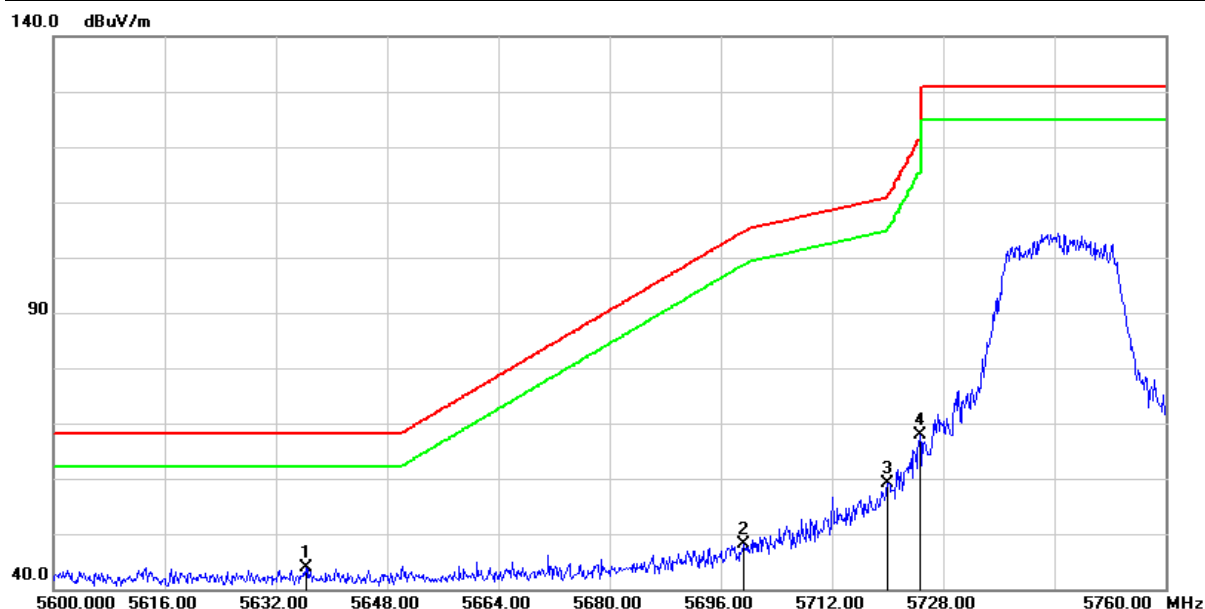


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5649.280	41.80	3.14	44.94	68.20	-23.26	peak
2	5699.360	47.48	3.41	50.89	104.73	-53.84	peak
3	5720.000	59.81	3.43	63.24	110.80	-47.56	peak
4	5723.520	62.95	3.43	66.38	118.83	-52.45	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

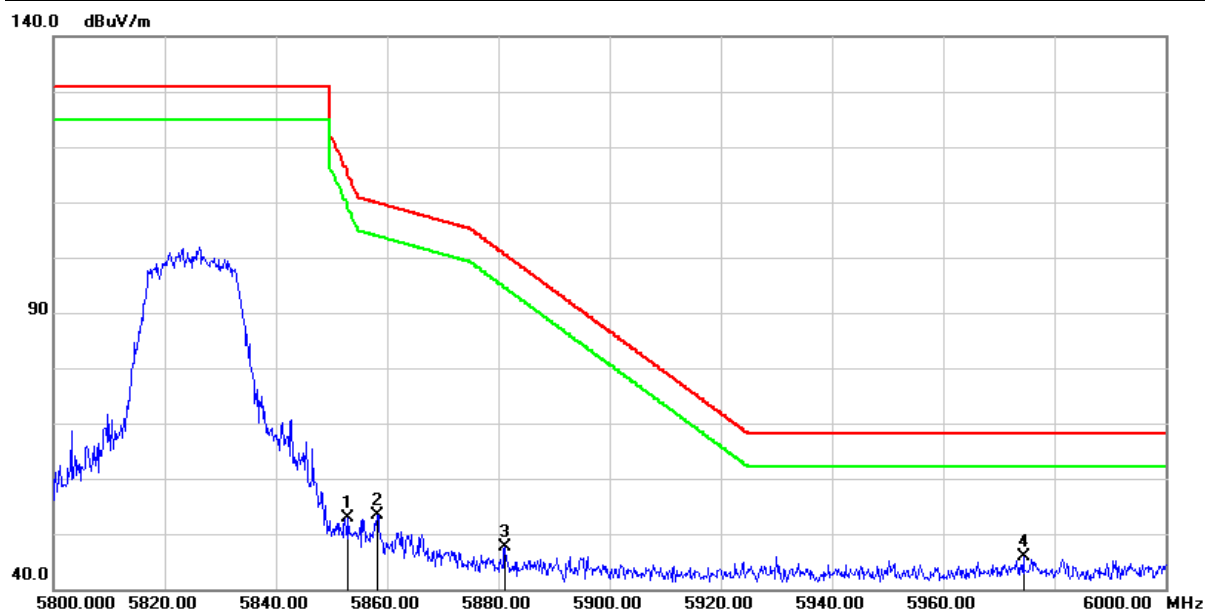


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5636.320	40.68	3.13	43.81	68.20	-24.39	peak
2	5699.200	44.62	3.41	48.03	104.61	-56.58	peak
3	5720.000	55.65	3.43	59.08	110.80	-51.72	peak
4	5724.640	64.33	3.43	67.76	121.38	-53.62	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5853.000	49.16	3.71	52.87	115.36	-62.49	peak
2	5858.200	49.68	3.75	53.43	109.90	-56.47	peak
3	5881.200	43.66	3.91	47.57	100.61	-53.04	peak
4	5974.400	41.59	4.19	45.78	68.20	-22.42	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2023/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

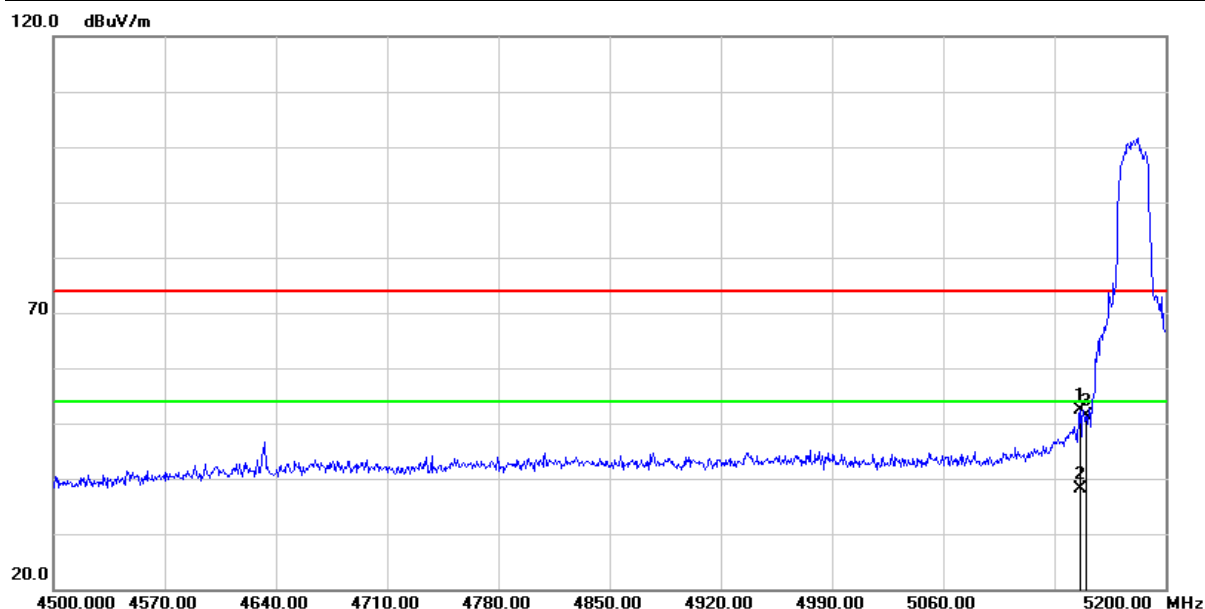


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5852.000	49.08	3.70	52.78	117.64	-64.86	peak
2	5857.000	50.17	3.74	53.91	110.24	-56.33	peak
3	5884.600	44.50	3.94	48.44	98.10	-49.66	peak
4	5975.200	41.32	4.19	45.51	68.20	-22.69	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

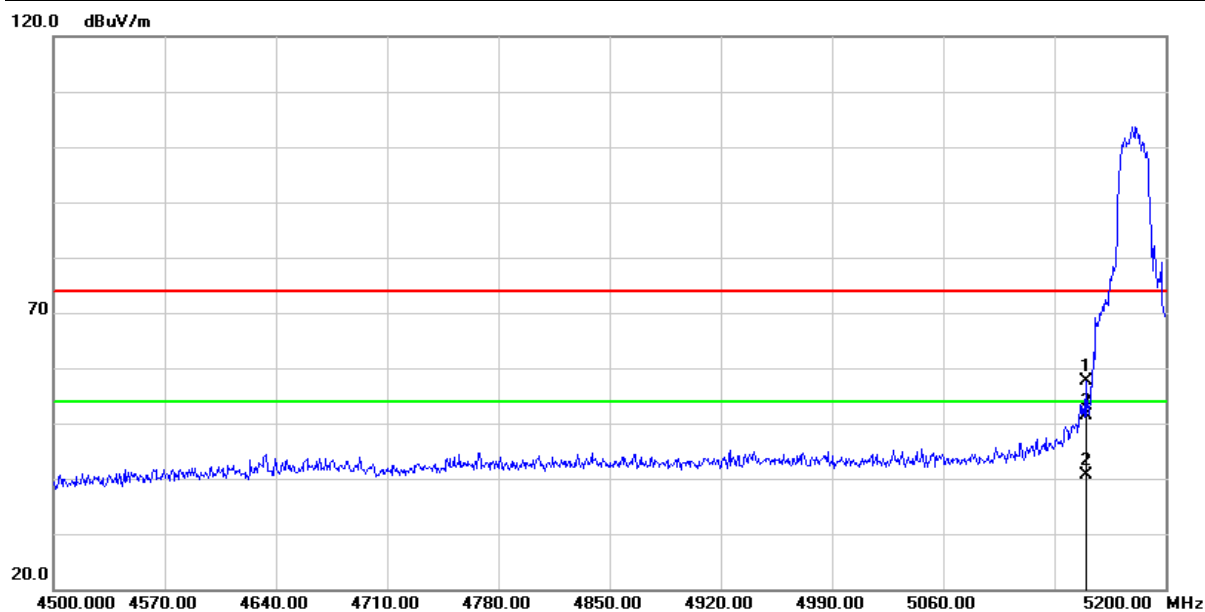


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.100	49.32	3.14	52.46	74.00	-21.54	peak
2	5146.100	35.09	3.14	38.23	54.00	-15.77	AVG
3	5150.000	48.17	3.14	51.31	74.00	-22.69	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

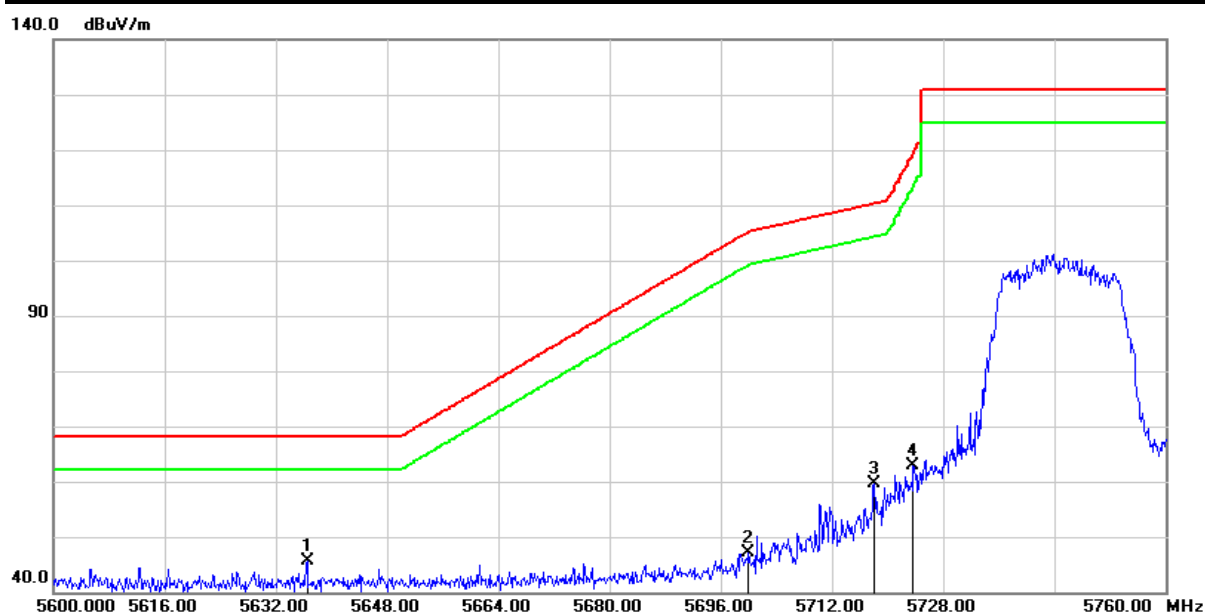


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.600	54.47	3.14	57.61	74.00	-16.39	peak
2	5149.600	37.57	3.14	40.71	54.00	-13.29	AVG
3	5150.000	48.21	3.14	51.35	74.00	-22.65	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

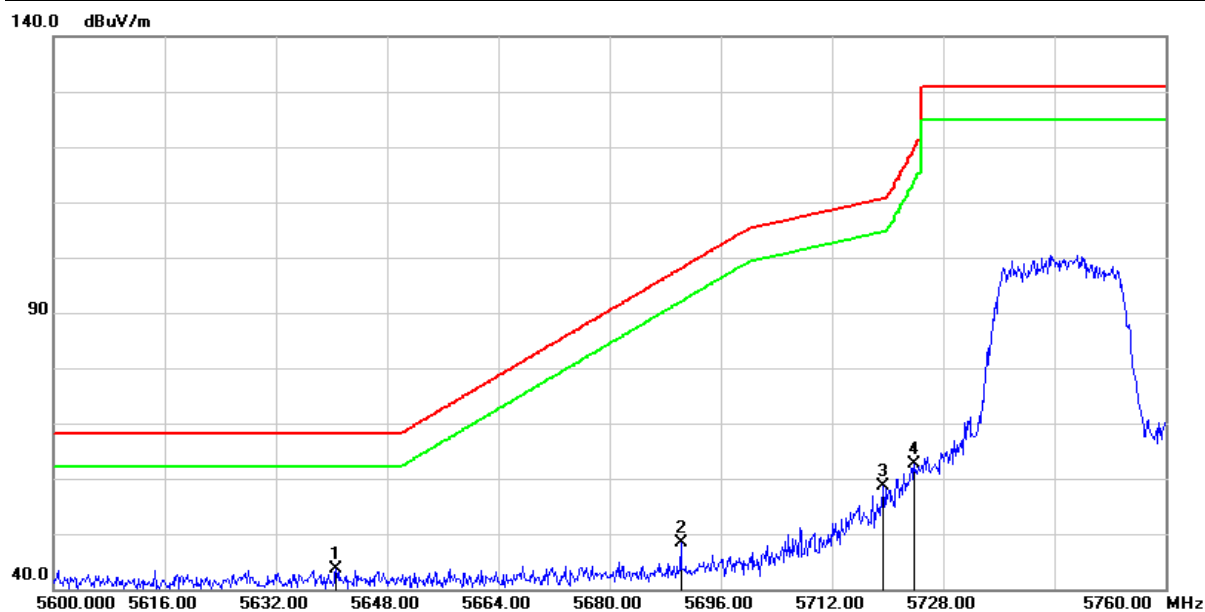


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5636.480	42.55	3.13	45.68	68.20	-22.52	peak
2	5700.000	43.61	3.41	47.02	105.20	-58.18	peak
3	5718.080	56.08	3.43	59.51	110.26	-50.75	peak
4	5723.680	59.54	3.43	62.97	119.19	-56.22	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

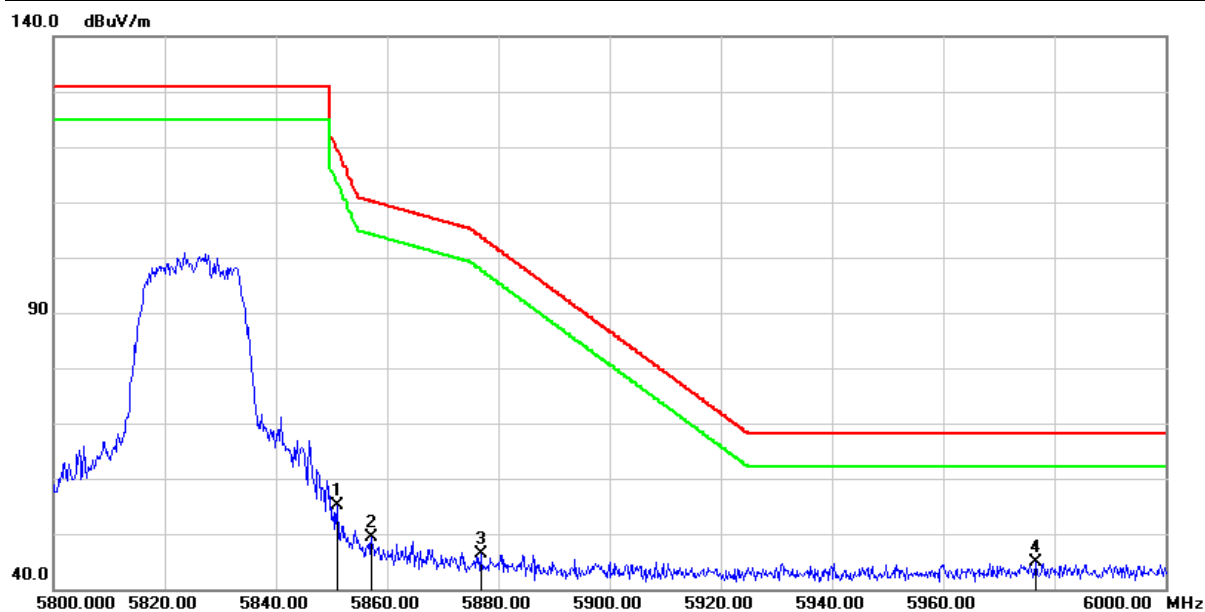


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5640.640	40.52	3.13	43.65	68.20	-24.55	peak
2	5690.240	45.10	3.36	48.46	97.98	-49.52	peak
3	5719.360	55.13	3.43	58.56	110.62	-52.06	peak
4	5723.840	59.22	3.43	62.65	119.56	-56.91	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5851.000	51.52	3.70	55.22	119.92	-64.70	peak
2	5857.200	45.58	3.74	49.32	110.18	-60.86	peak
3	5876.800	42.51	3.88	46.39	103.87	-57.48	peak
4	5976.600	40.81	4.19	45.00	68.20	-23.20	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2023/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

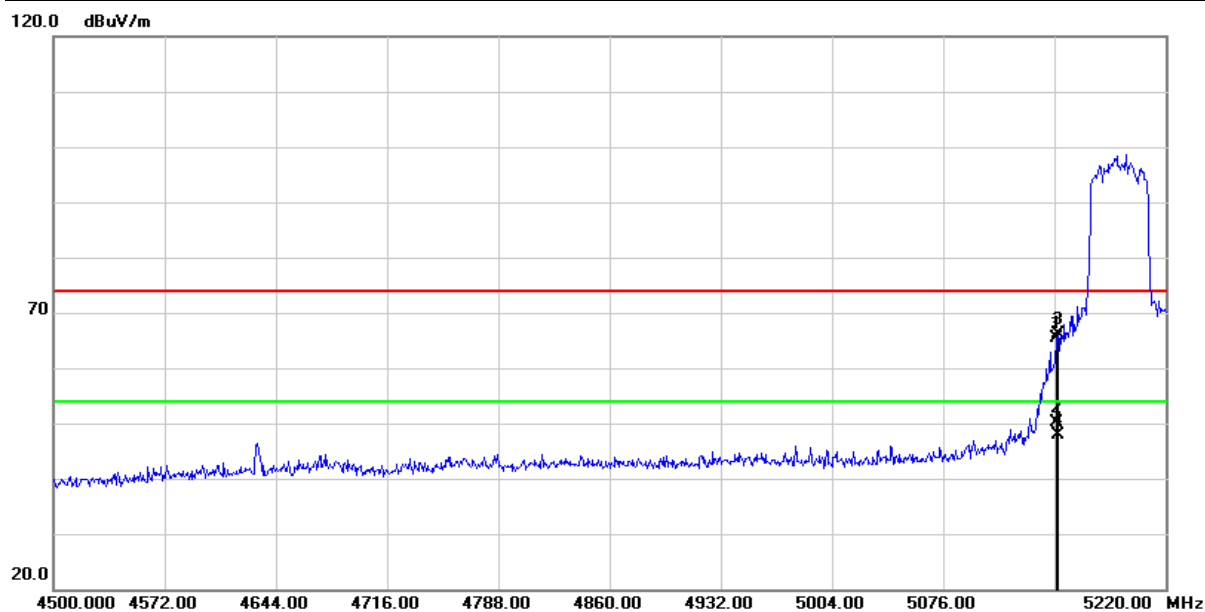


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	52.20	3.69	55.89	122.20	-66.31	peak
2	5857.800	49.32	3.75	53.07	110.02	-56.95	peak
3	5899.400	42.62	4.05	46.67	87.14	-40.47	peak
4	5956.200	41.87	4.12	45.99	68.20	-22.21	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH38(5190MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

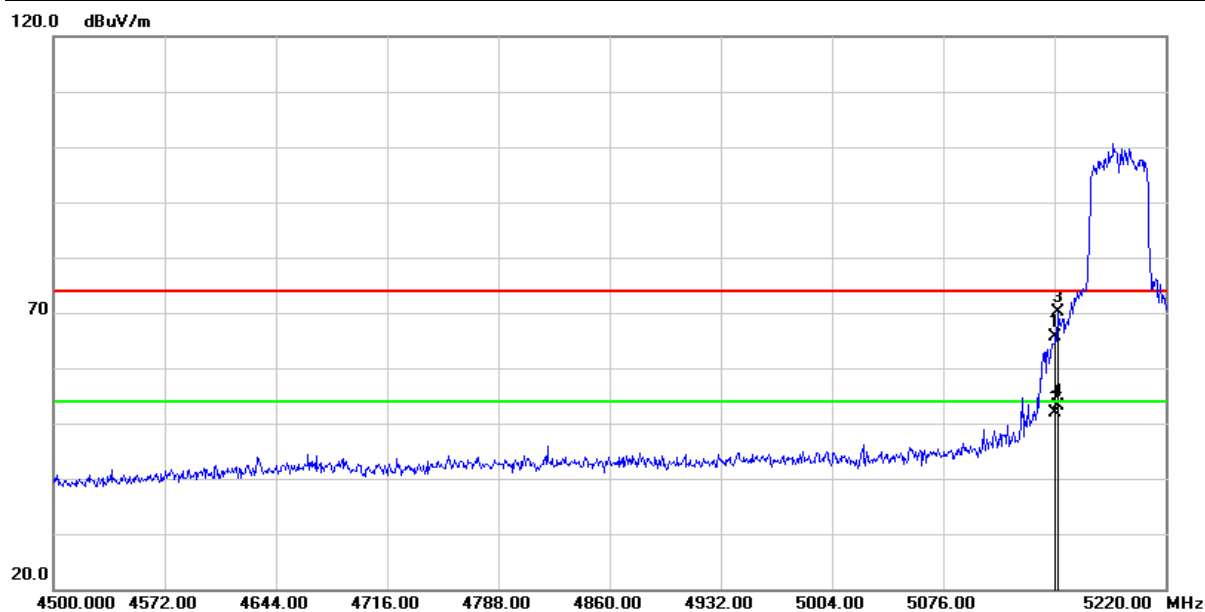


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.440	62.16	3.14	65.30	74.00	-8.70	peak
2	5149.440	47.11	3.14	50.25	54.00	-3.75	AVG
3	5150.000	62.97	3.14	66.11	74.00	-7.89	peak
4	5150.000	44.65	3.14	47.79	54.00	-6.21	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH38(5190MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

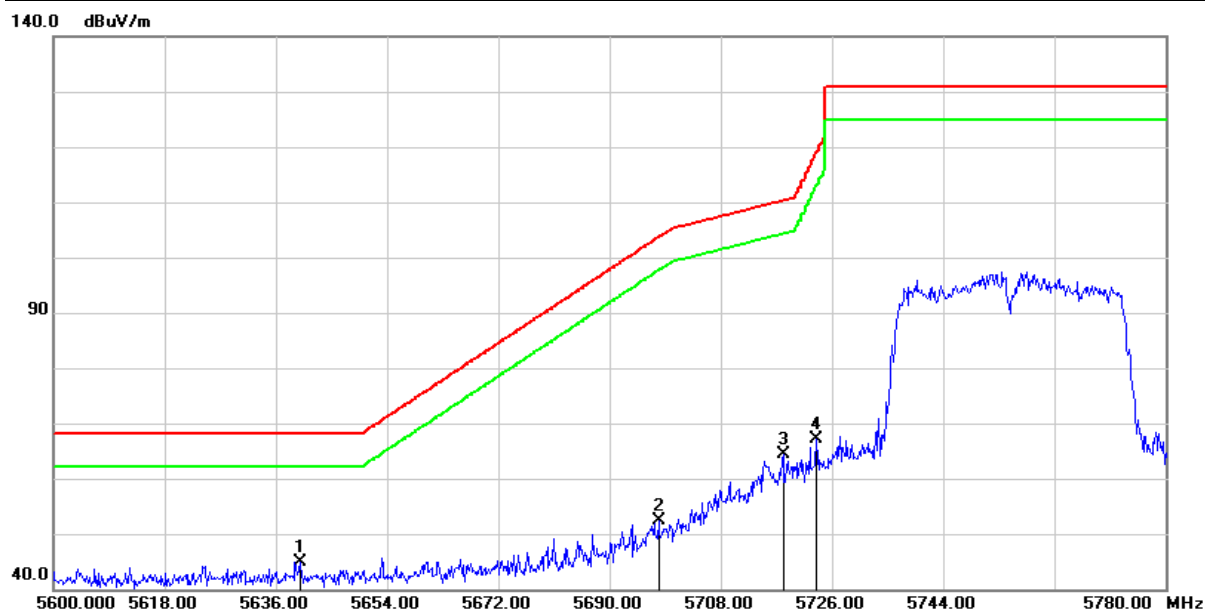


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.720	62.49	3.15	65.64	74.00	-8.36	peak
2	5148.720	48.73	3.15	51.88	54.00	-2.12	AVG
3	5150.000	66.95	3.14	70.09	74.00	-3.91	peak
4	5150.000	49.89	3.14	53.03	54.00	-0.97	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH151(5755MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

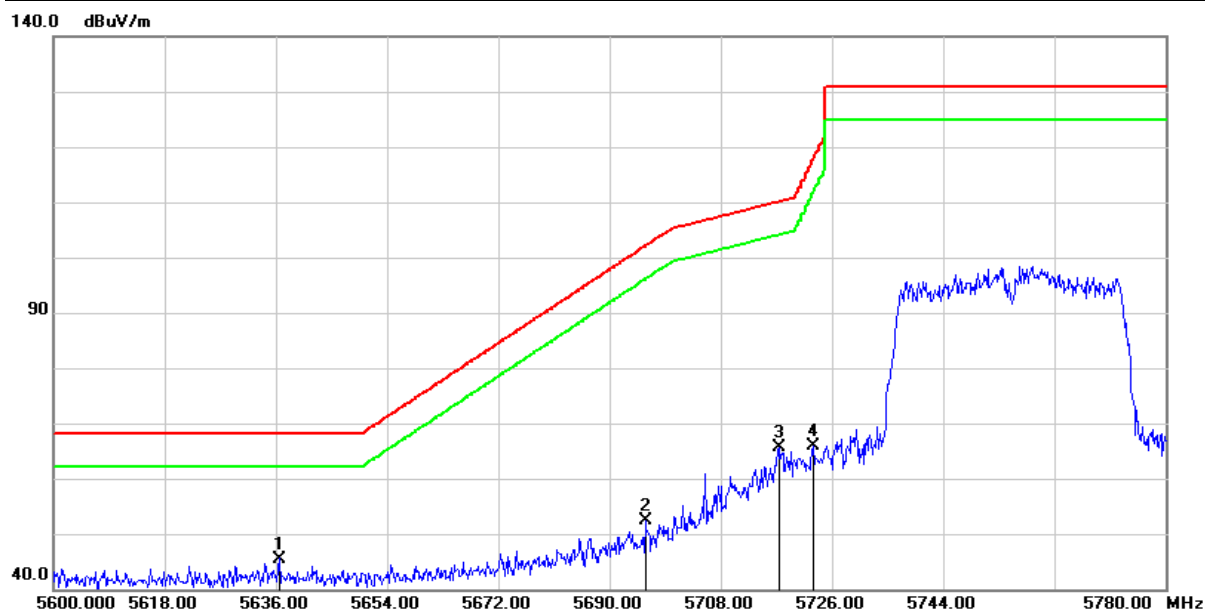


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5639.960	41.75	3.13	44.88	68.20	-23.32	peak
2	5697.920	49.00	3.39	52.39	103.66	-51.27	peak
3	5718.080	60.84	3.43	64.27	110.26	-45.99	peak
4	5723.480	63.72	3.43	67.15	118.73	-51.58	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH151(5755MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

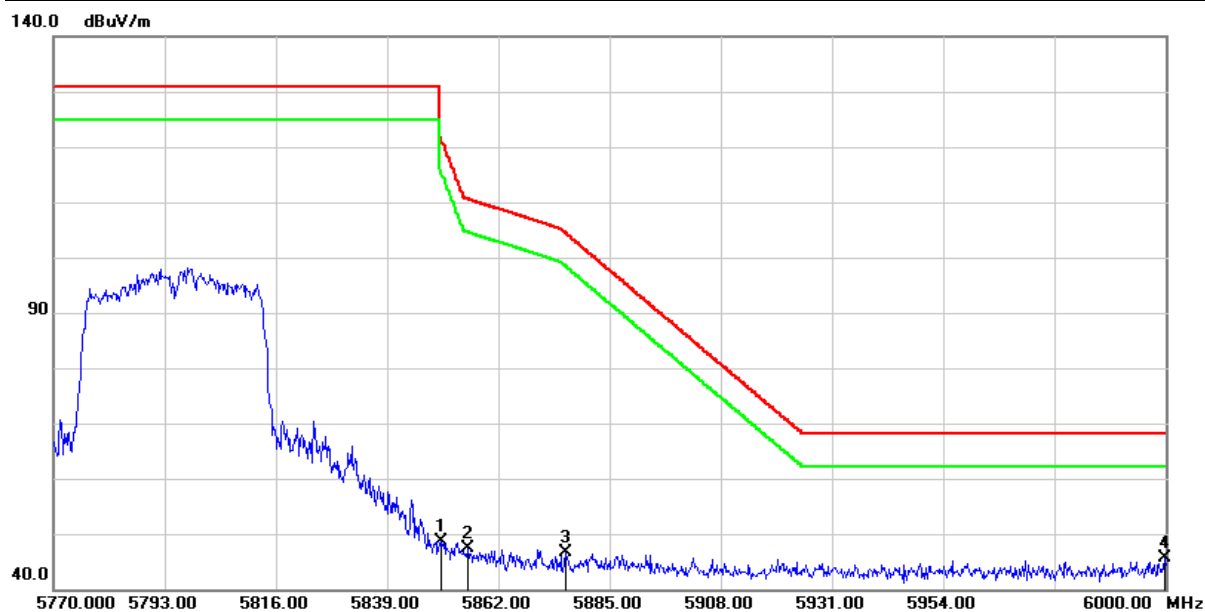


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5636.540	42.37	3.13	45.50	68.20	-22.70	peak
2	5695.760	48.95	3.38	52.33	102.06	-49.73	peak
3	5717.540	62.18	3.42	65.60	110.11	-44.51	peak
4	5722.940	62.34	3.43	65.77	117.50	-51.73	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH159(5795MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

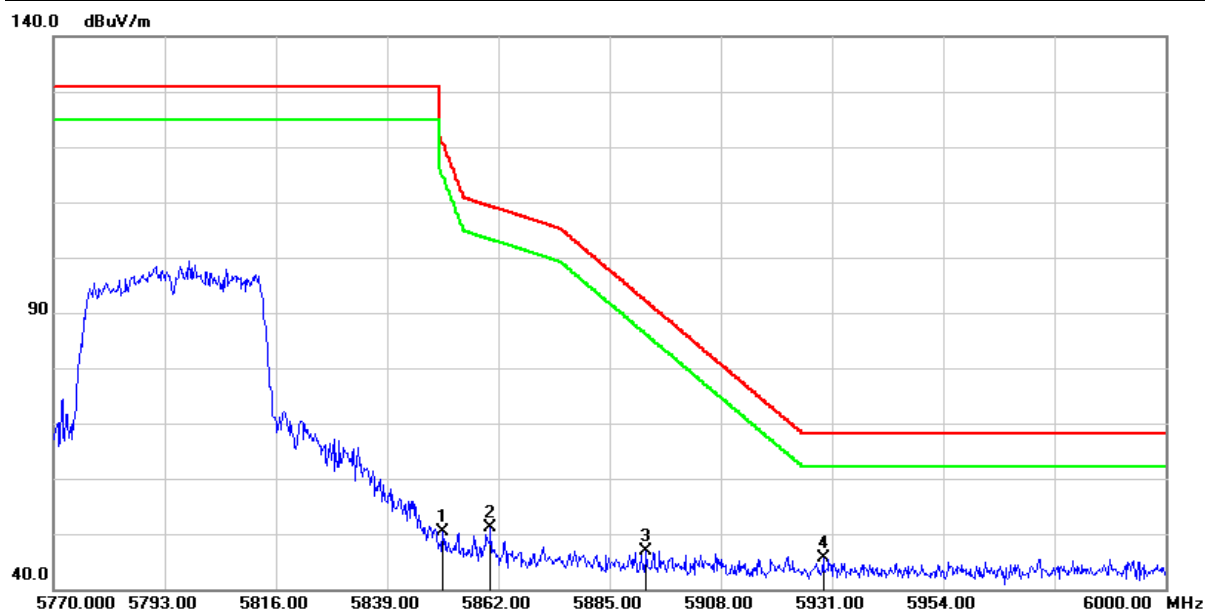


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.040	44.85	3.69	48.54	122.11	-73.57	peak
2	5855.790	43.74	3.72	47.46	110.58	-63.12	peak
3	5876.030	42.75	3.88	46.63	104.44	-57.81	peak
4	5999.770	41.26	4.27	45.53	68.20	-22.67	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH159(5795MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

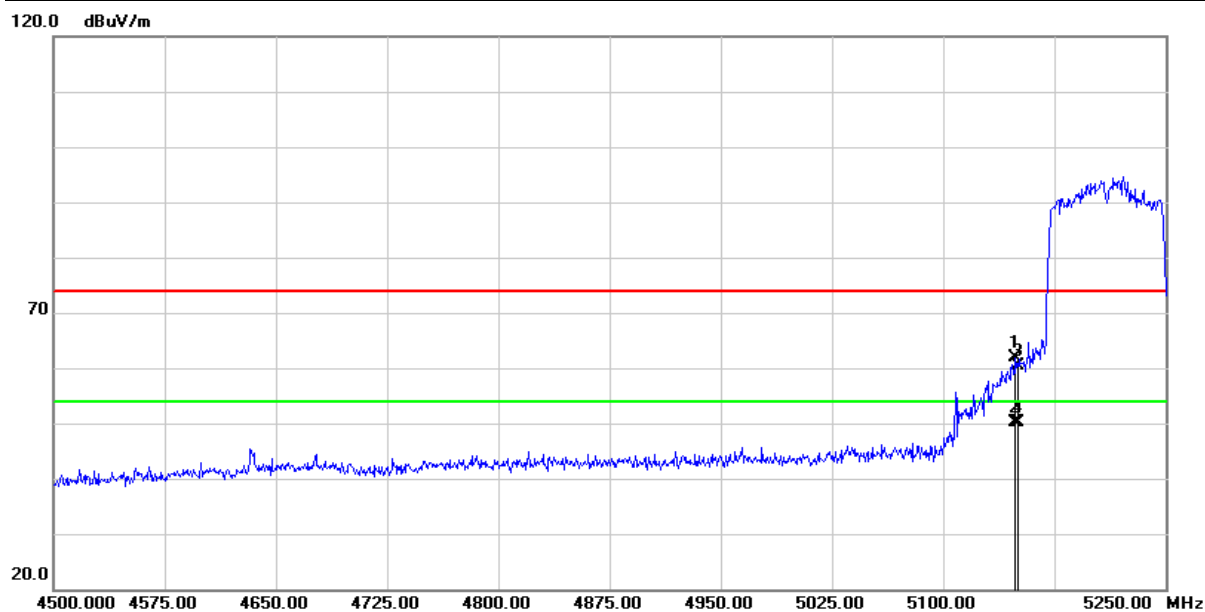


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.500	46.74	3.69	50.43	121.06	-70.63	peak
2	5860.390	47.29	3.76	51.05	109.29	-58.24	peak
3	5892.590	42.86	3.99	46.85	92.18	-45.33	peak
4	5929.160	41.57	4.08	45.65	68.20	-22.55	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2023/09/20
Test Channel :	CH42 (5210MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

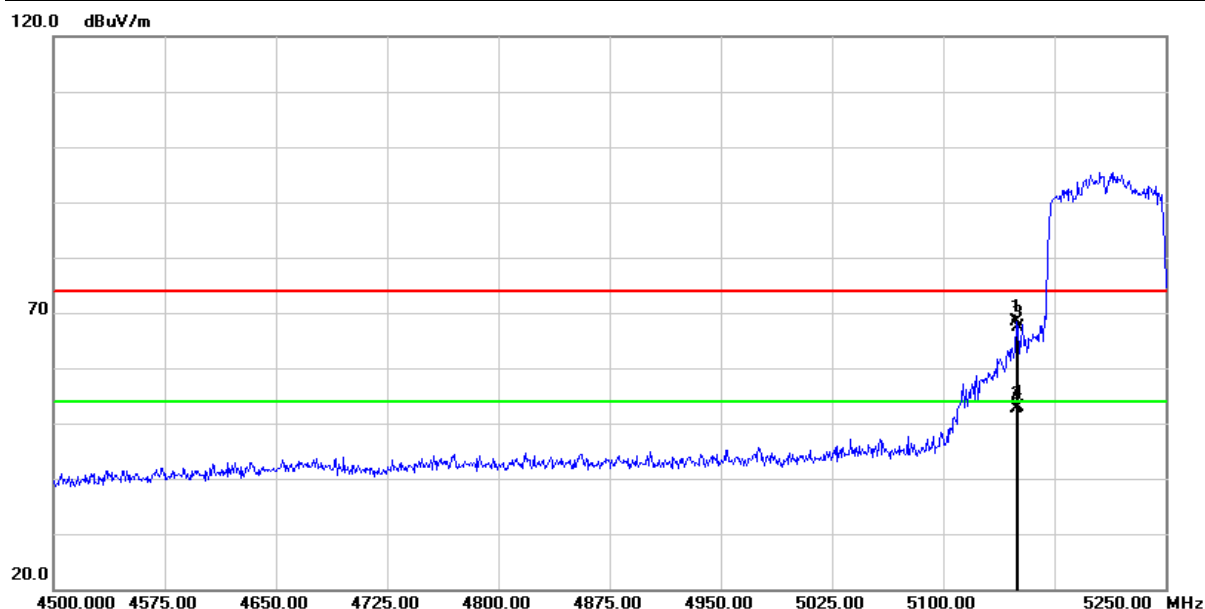


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.750	58.65	3.15	61.80	74.00	-12.20	peak
2	5148.750	46.94	3.15	50.09	54.00	-3.91	AVG
3	5150.000	57.20	3.14	60.34	74.00	-13.66	peak
4	5150.000	46.96	3.14	50.10	54.00	-3.90	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2023/09/20
Test Channel :	CH42 (5210MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

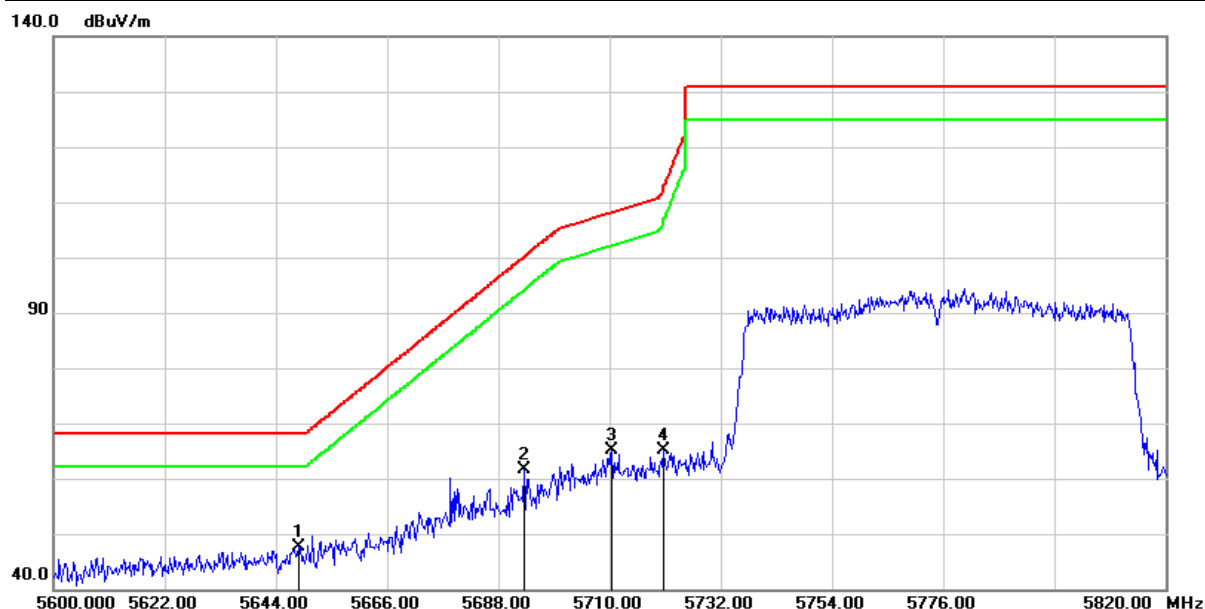


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.500	65.21	3.14	68.35	74.00	-5.65	peak
2	5149.500	49.41	3.14	52.55	54.00	-1.45	AVG
3	5150.000	64.17	3.14	67.31	74.00	-6.69	peak
4	5150.000	49.80	3.14	52.94	54.00	-1.06	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2023/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

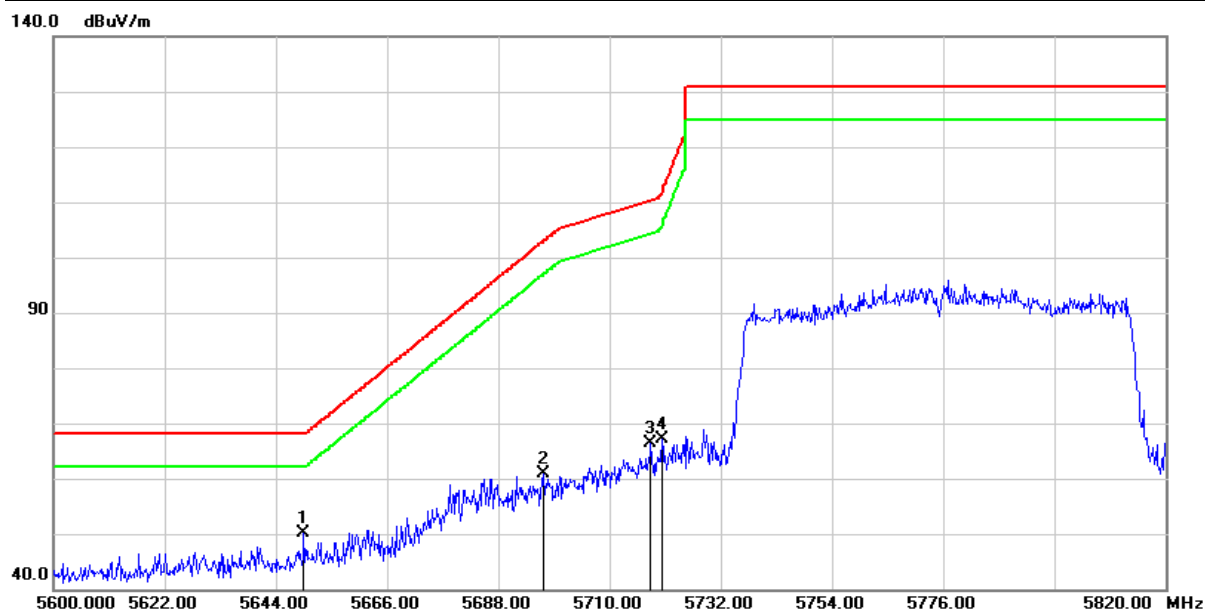


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5648.620	44.48	3.14	47.62	68.20	-20.58	peak
2	5693.060	58.14	3.37	61.51	100.06	-38.55	peak
3	5710.440	61.63	3.42	65.05	108.12	-43.07	peak
4	5720.560	61.77	3.43	65.20	112.08	-46.88	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2023/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

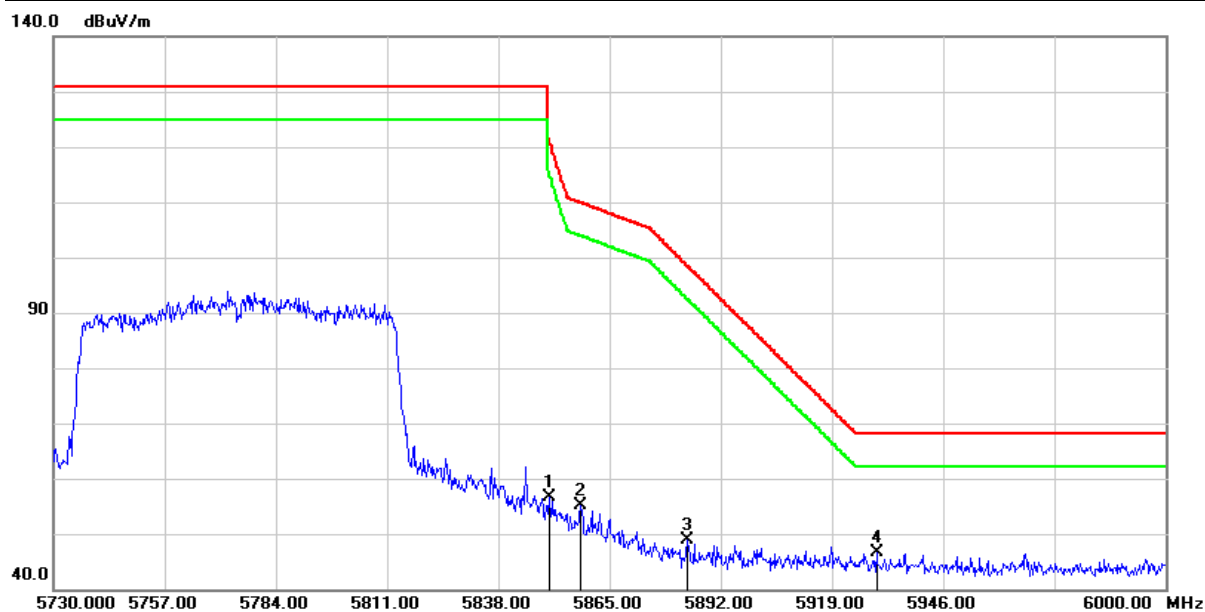


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5649.500	46.88	3.14	50.02	68.20	-18.18	peak
2	5696.800	57.55	3.39	60.94	102.83	-41.89	peak
3	5718.140	62.87	3.43	66.30	110.28	-43.98	peak
4	5720.340	63.64	3.43	67.07	111.58	-44.51	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2023/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

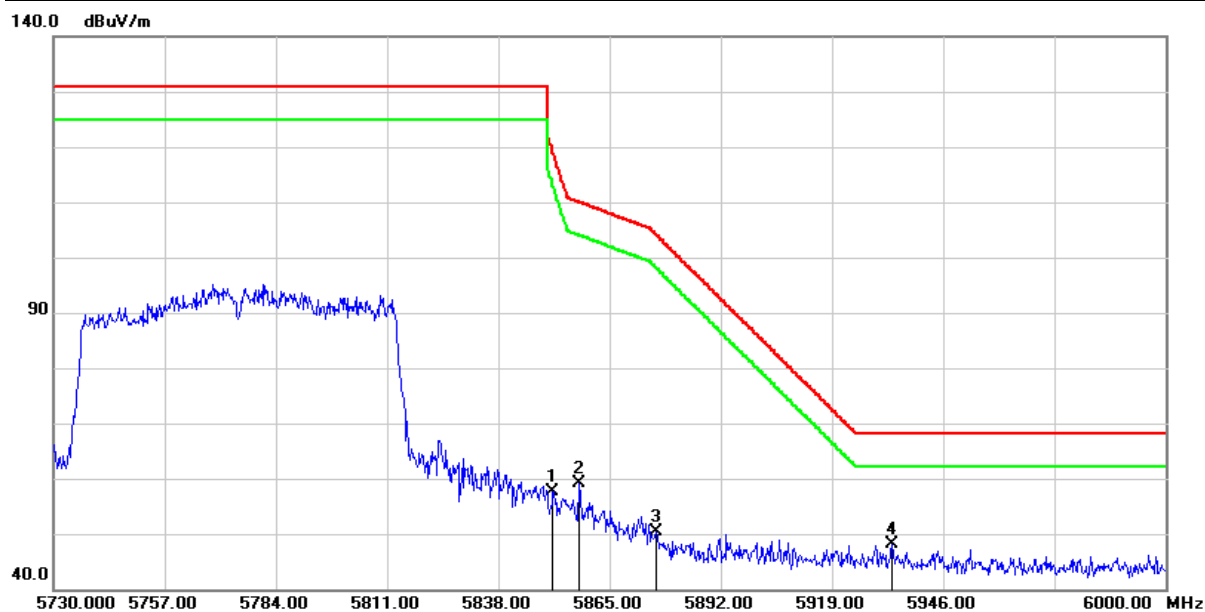


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.420	52.96	3.69	56.65	121.24	-64.59	peak
2	5857.980	51.41	3.75	55.16	109.97	-54.81	peak
3	5883.900	45.03	3.92	48.95	98.61	-49.66	peak
4	5929.800	42.50	4.08	46.58	68.20	-21.62	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2023/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5851.230	53.86	3.70	57.56	119.40	-61.84	peak
2	5857.440	55.31	3.74	59.05	110.12	-51.07	peak
3	5876.340	46.38	3.88	50.26	104.21	-53.95	peak
4	5933.580	43.95	4.09	48.04	68.20	-20.16	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

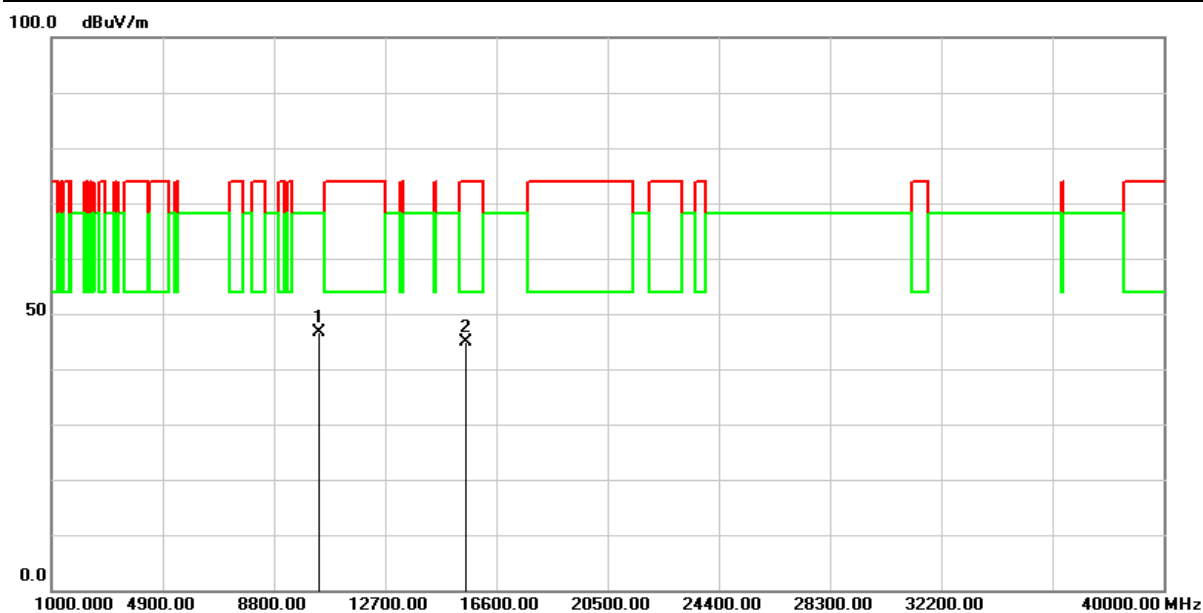
2.5.6 Test Result of Radiated Spurious Emission Measurement

- (1) The radiation measurement frequency is 9kHz ~ 30MHz. The interference value of this frequency range is less than the limit value of 20 dB. It is considered that the background noise value is not recorded.
- (2) The following table shows the radiation measurement frequency from 30MHz to 40GHz, pre-scanning in the X, Y and Z axes. The worst case (X-axis) is documented in this report.

Test Frequency			
RF	802.11a / 802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
Tx	CH36 (5180MHz) CH44 (5200MHz) CH48 (5240MHz) CH149 (5745MHz) CH157 (5785MHz) CH165 (5825MHz)	CH38 (5190MHz) CH46 (5230MHz) CH151 (5755MHz) CH159 (5795MHz)	CH42 (5210MHz) CH155 (5775MHz)

Above 1GHz Data

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

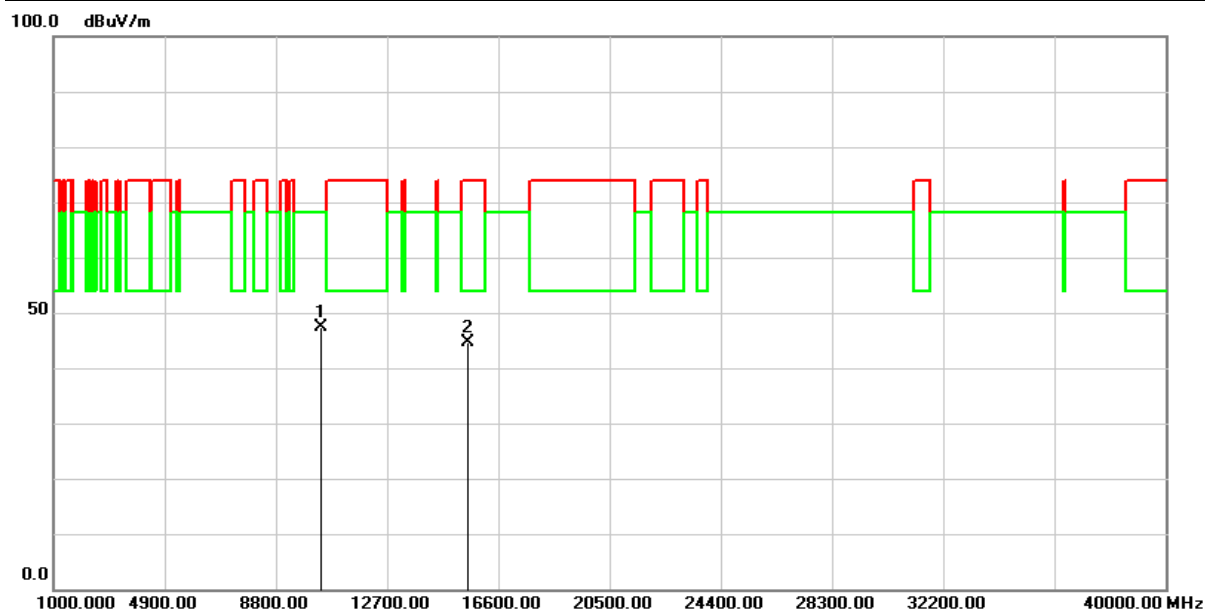


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	56.58	-10.05	46.53	68.20	-21.67	peak
2	15540.000	52.60	-7.80	44.80	74.00	-29.20	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

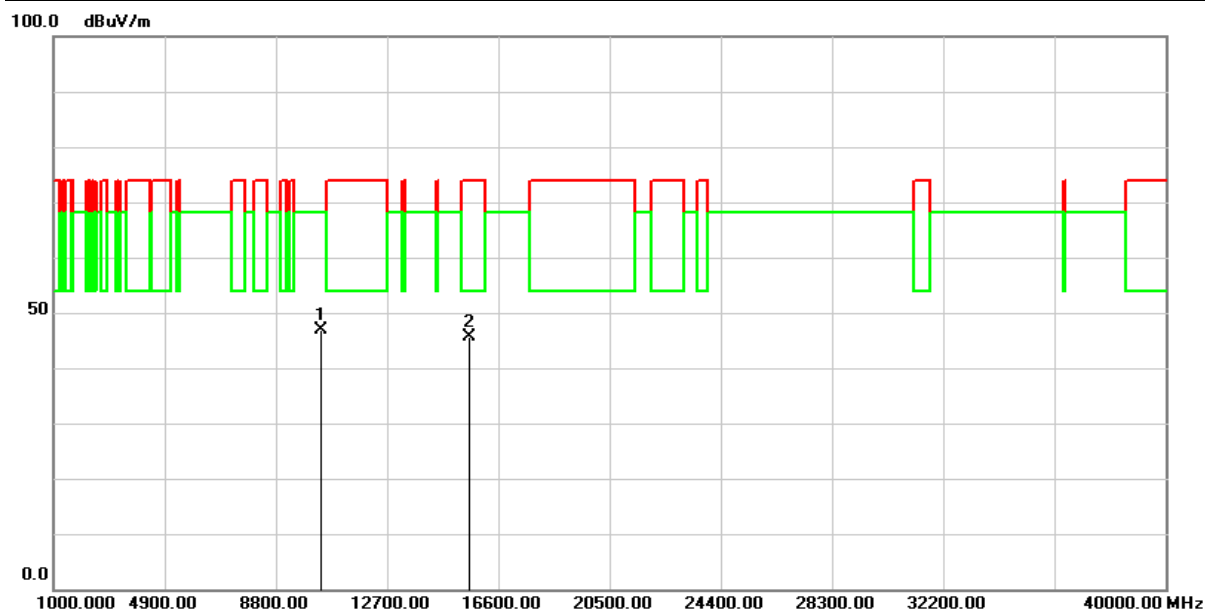


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	57.41	-10.05	47.36	68.20	-20.84	peak
2	15540.000	52.50	-7.80	44.70	74.00	-29.30	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH44(5200MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

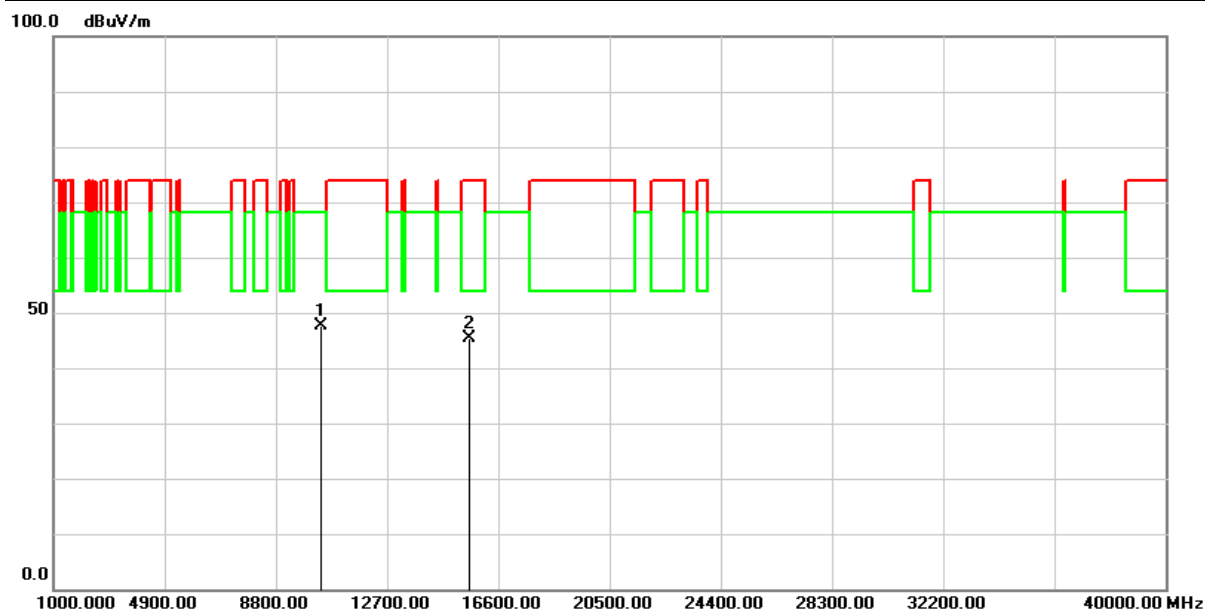


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	56.82	-9.95	46.87	68.20	-21.33	peak
2	15600.000	53.32	-7.79	45.53	74.00	-28.47	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH44(5200MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

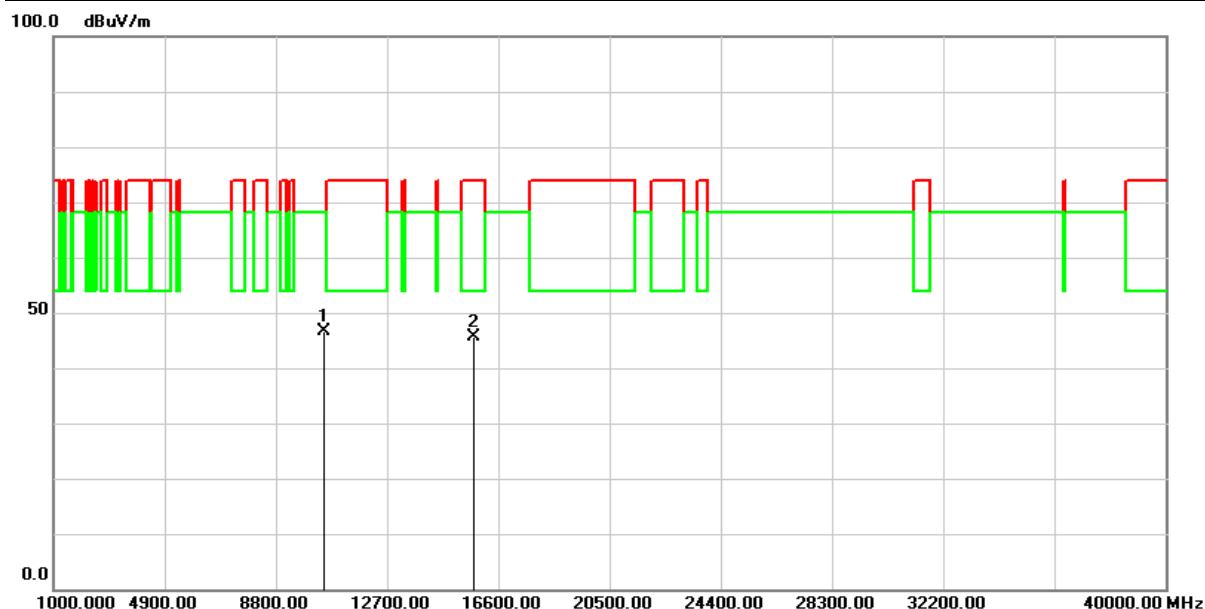


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	57.60	-9.95	47.65	68.20	-20.55	peak
2	15600.000	53.16	-7.79	45.37	74.00	-28.63	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

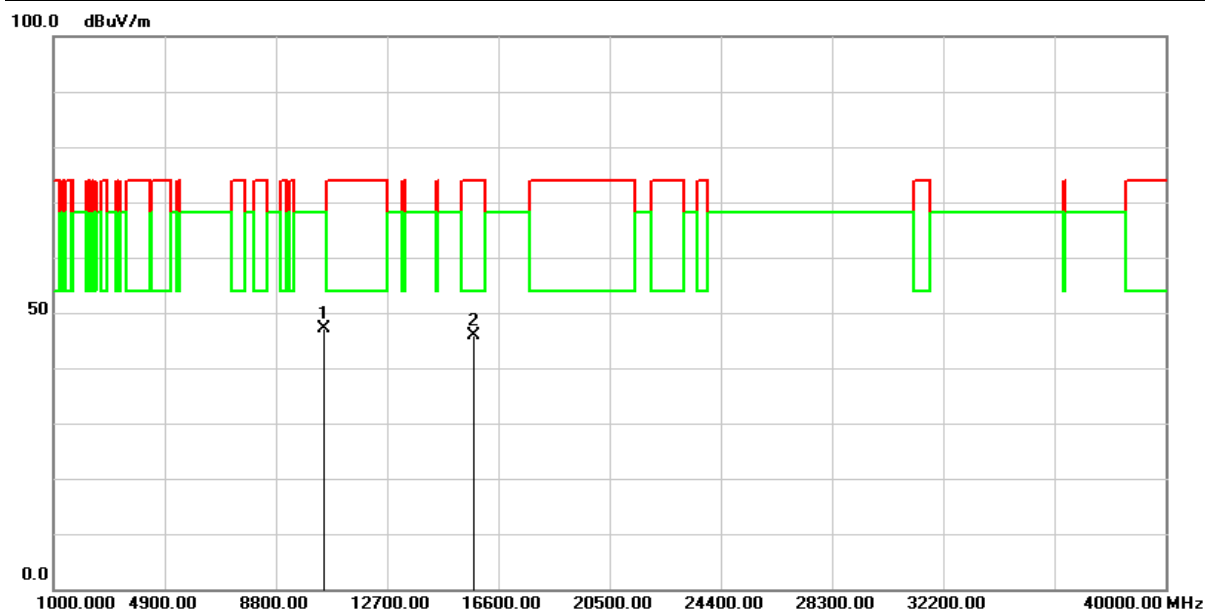


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	56.72	-9.97	46.75	68.20	-21.45	peak
2	15720.000	53.21	-7.62	45.59	74.00	-28.41	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

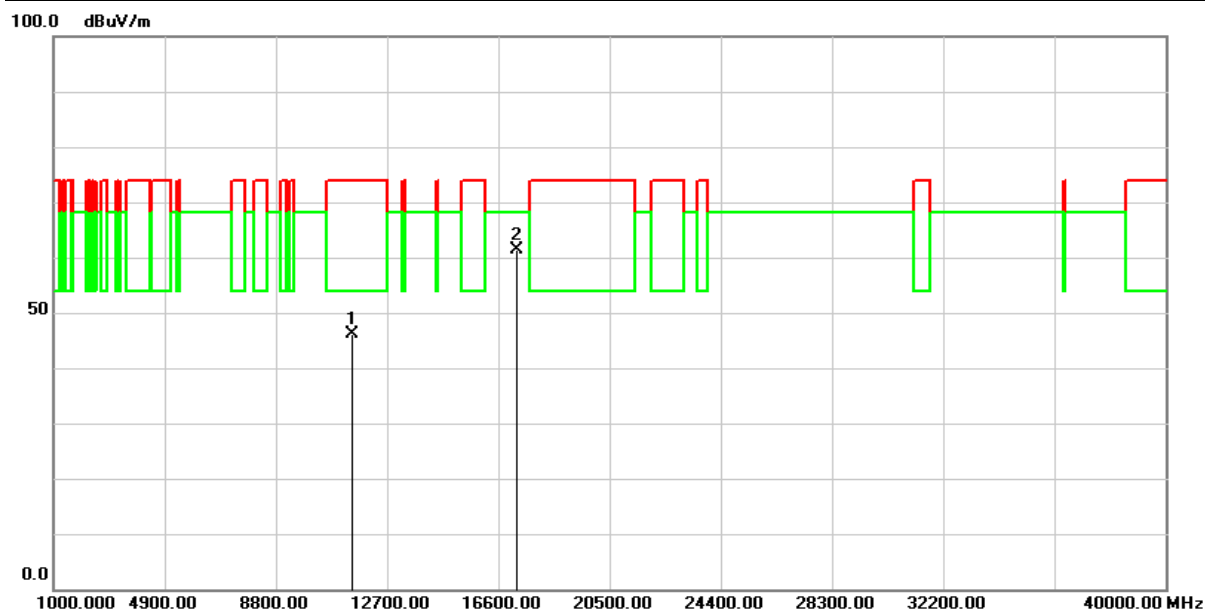


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	57.19	-9.97	47.22	68.20	-20.98	peak
2	15720.000	53.38	-7.62	45.76	74.00	-28.24	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

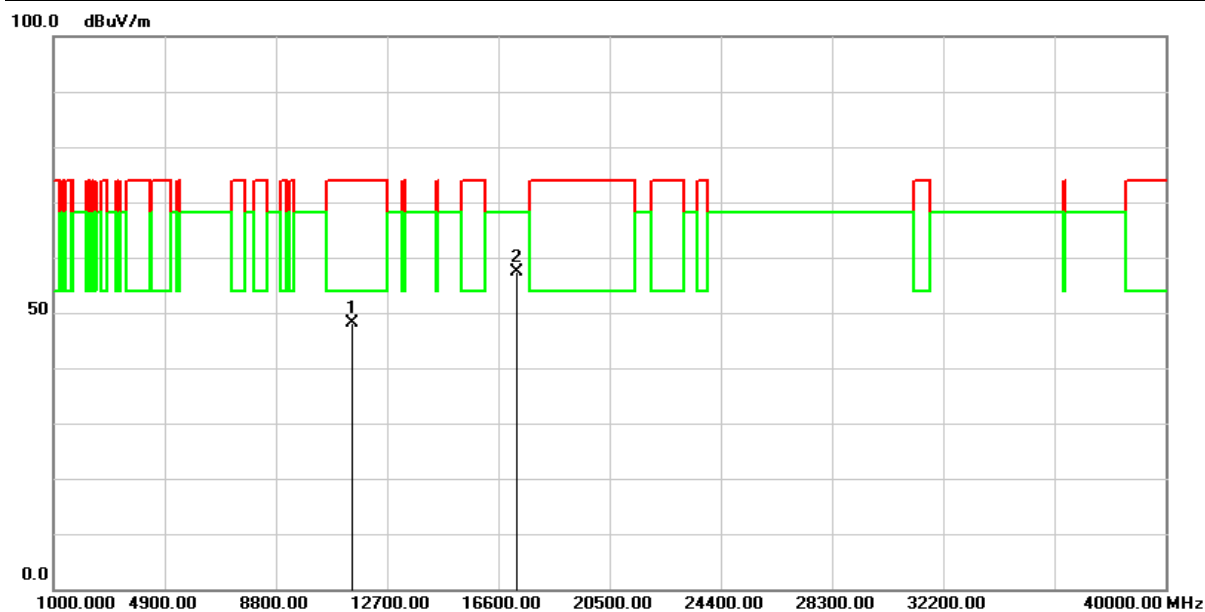


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	55.48	-9.45	46.03	74.00	-27.97	peak
2	17235.000	63.74	-2.24	61.50	68.20	-6.70	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

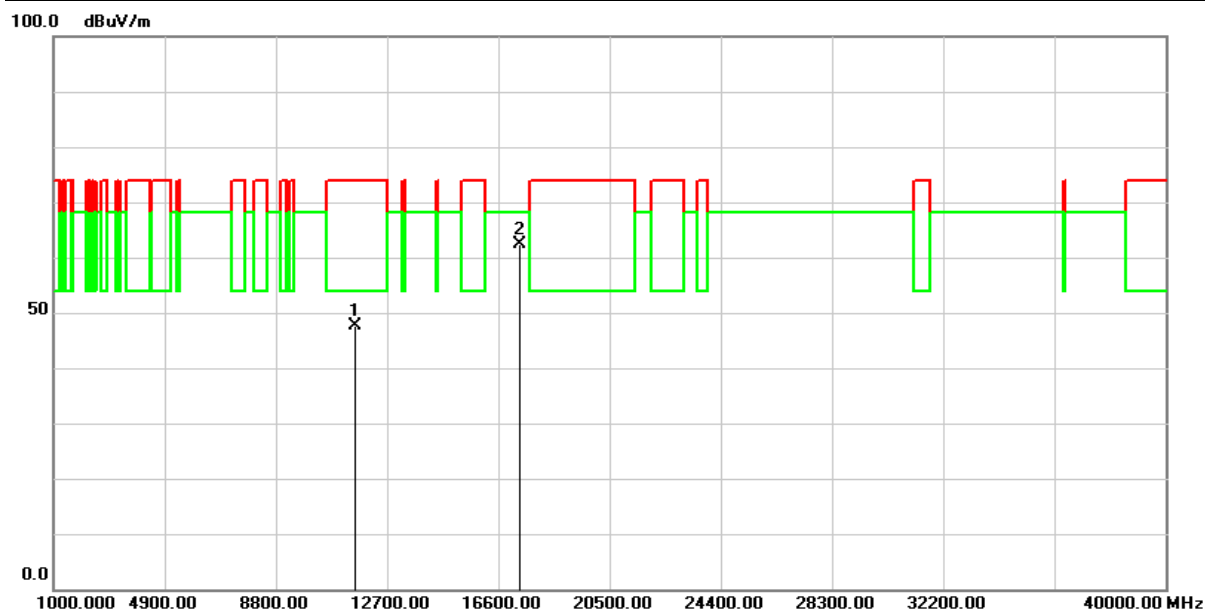


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	57.55	-9.45	48.10	74.00	-25.90	peak
2	17235.000	59.74	-2.24	57.50	68.20	-10.70	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH157(5785MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

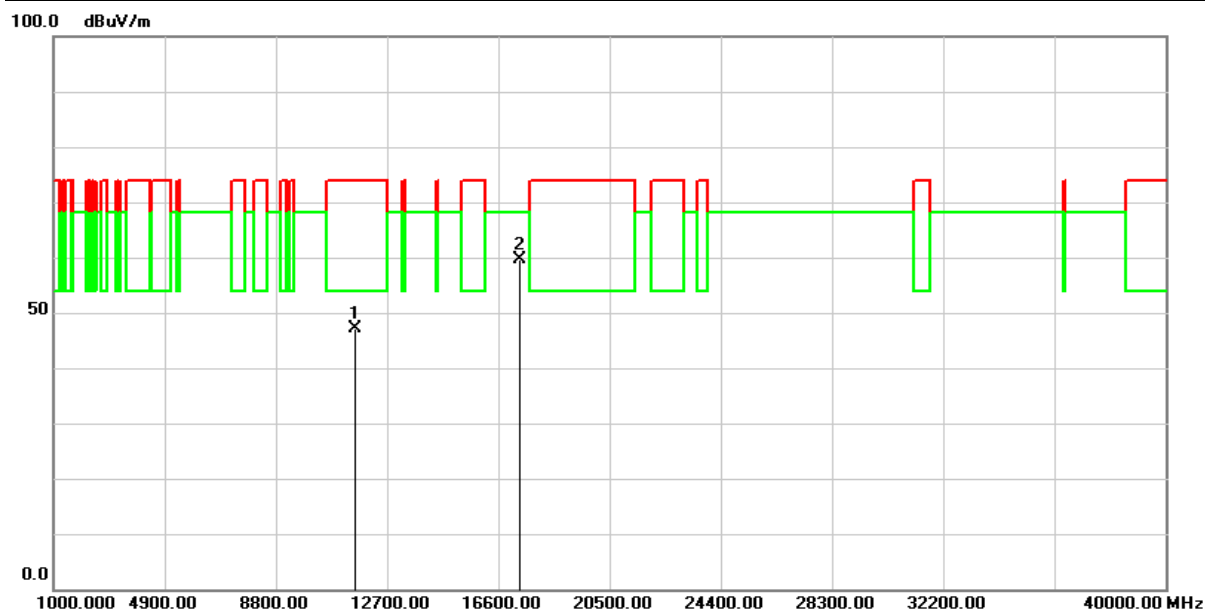


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	57.00	-9.40	47.60	74.00	-26.40	peak
2	17355.000	63.96	-1.65	62.31	68.20	-5.89	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH157(5785MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

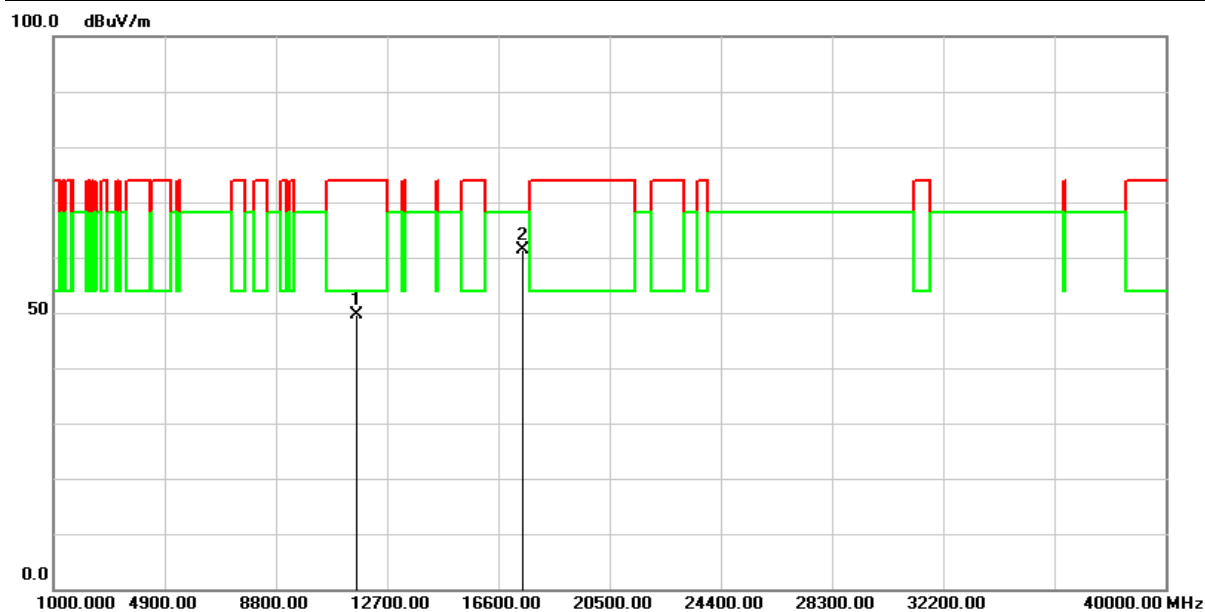


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	56.61	-9.40	47.21	74.00	-26.79	peak
2	17355.000	61.27	-1.65	59.62	68.20	-8.58	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

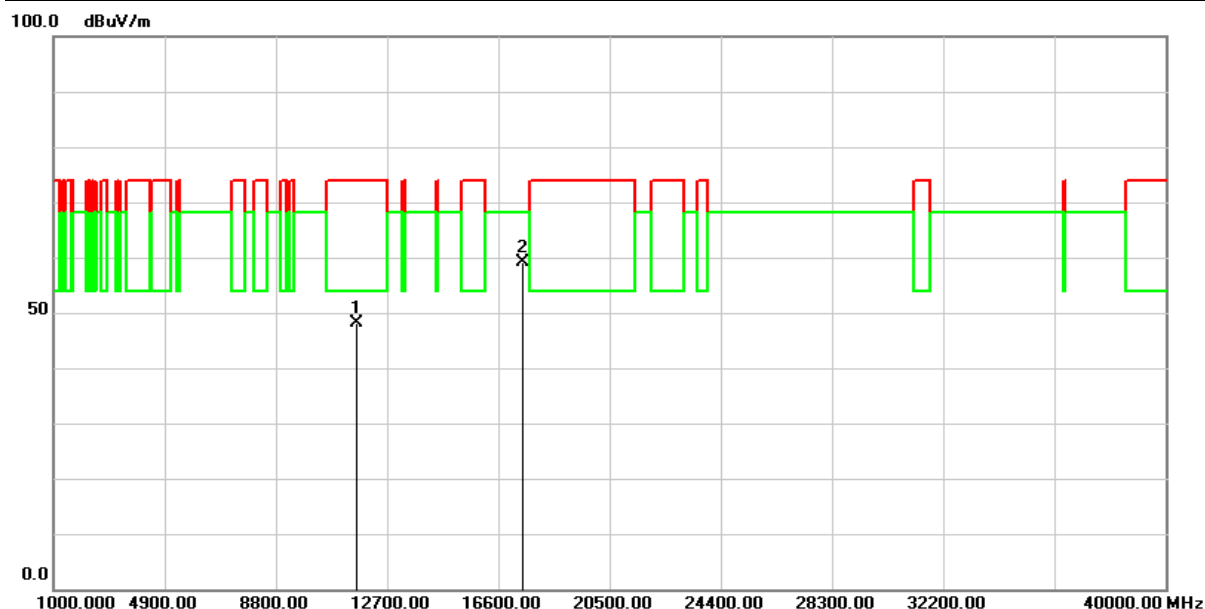


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	59.35	-9.82	49.53	74.00	-24.47	peak
2	17475.000	62.22	-0.85	61.37	68.20	-6.83	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

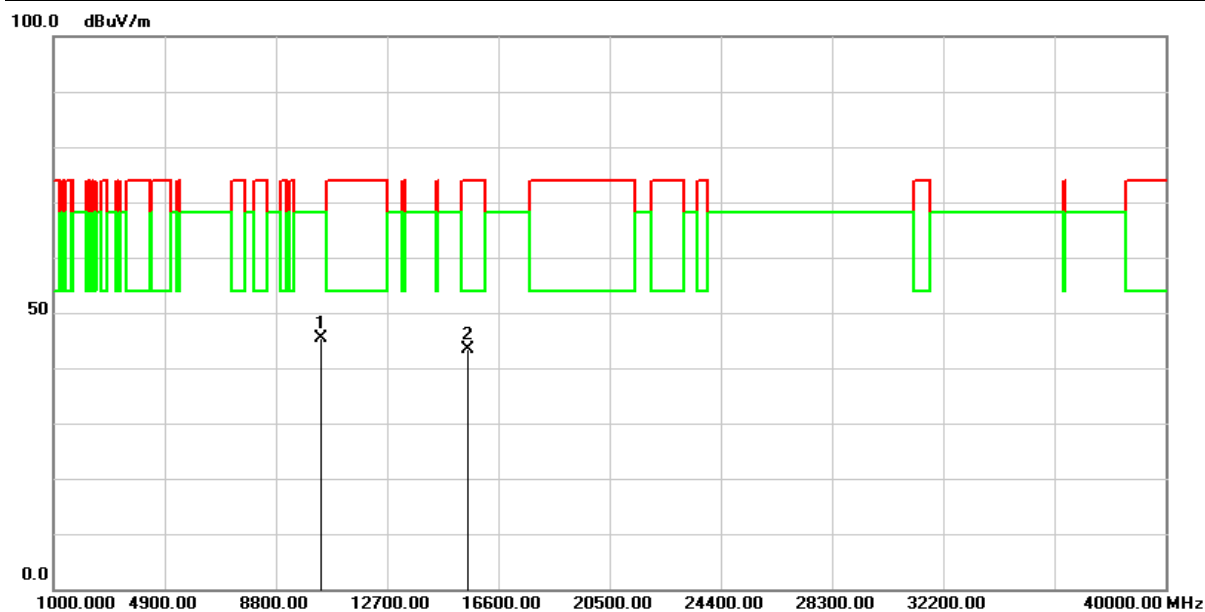


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	57.85	-9.82	48.03	74.00	-25.97	peak
2	17475.000	59.97	-0.85	59.12	68.20	-9.08	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

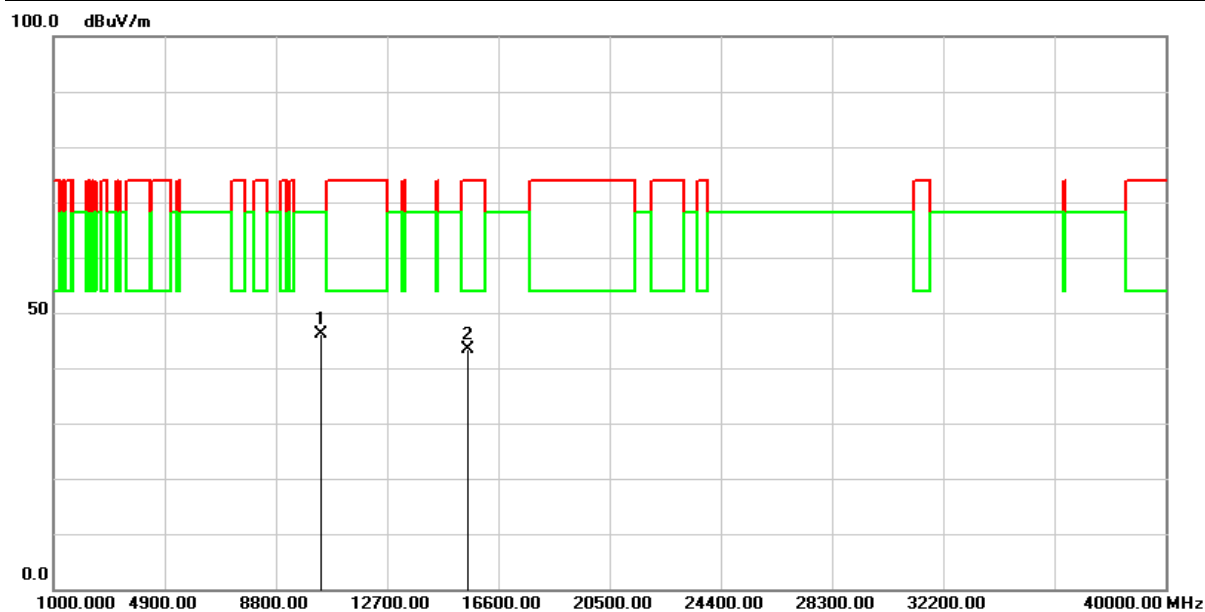


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	55.51	-10.05	45.46	68.20	-22.74	peak
2	15540.000	51.26	-7.80	43.46	74.00	-30.54	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH36(5180MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

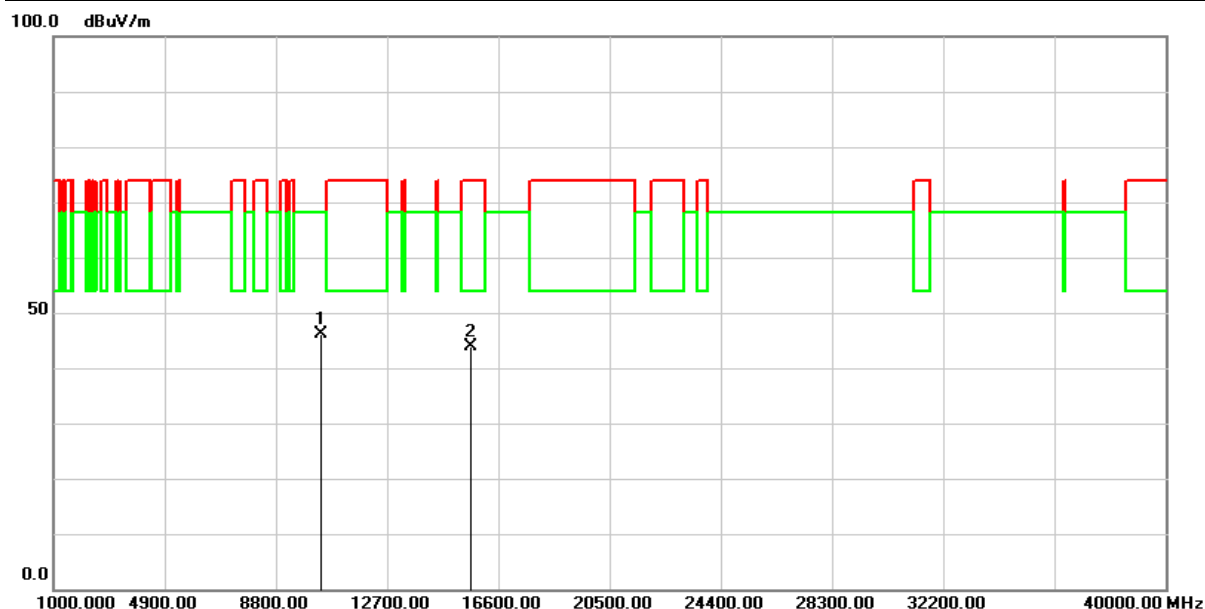


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	56.22	-10.05	46.17	68.20	-22.03	peak
2	15540.000	51.26	-7.80	43.46	74.00	-30.54	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH44(5200MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

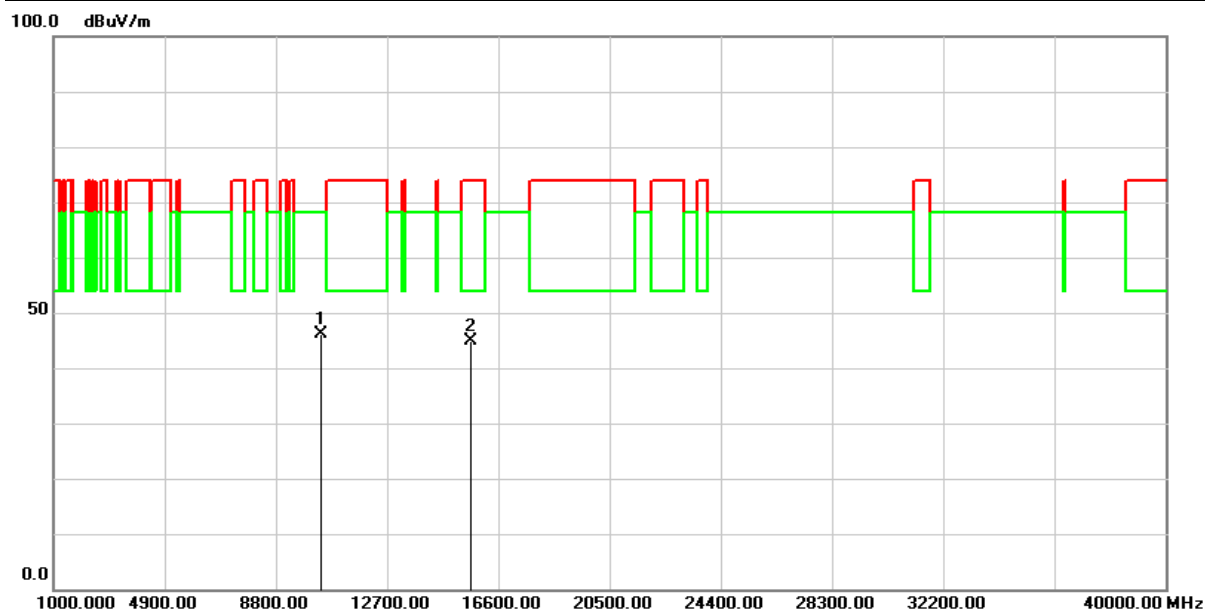


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	55.99	-9.95	46.04	68.20	-22.16	peak
2	15600.000	51.65	-7.79	43.86	74.00	-30.14	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH44(5200MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

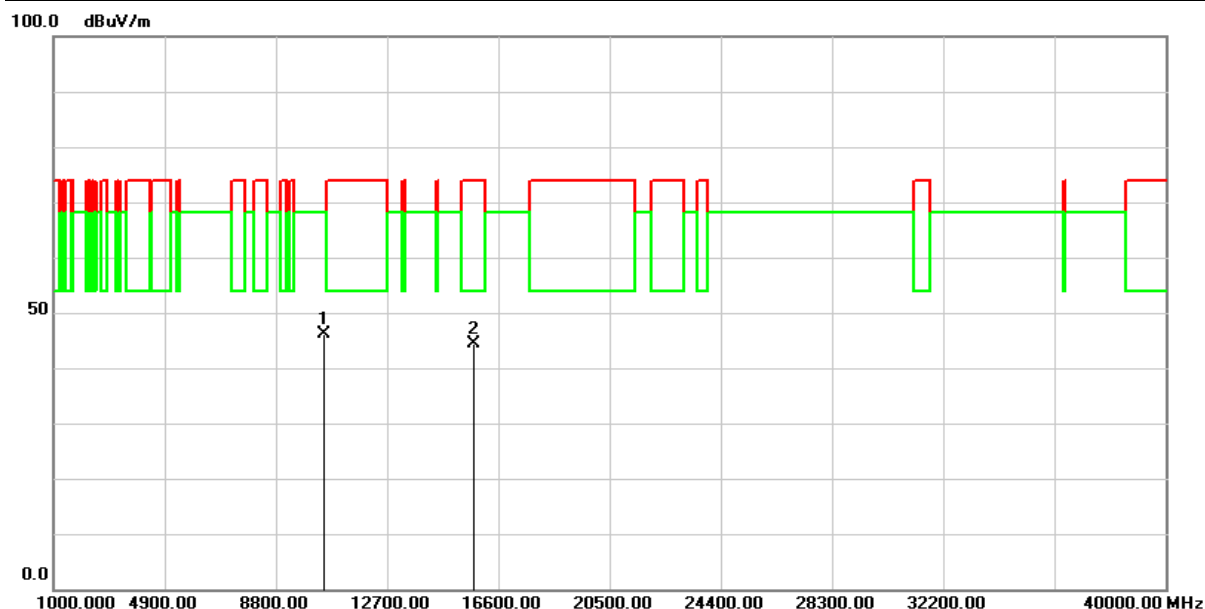


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	56.13	-9.95	46.18	68.20	-22.02	peak
2	15600.000	52.66	-7.79	44.87	74.00	-29.13	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

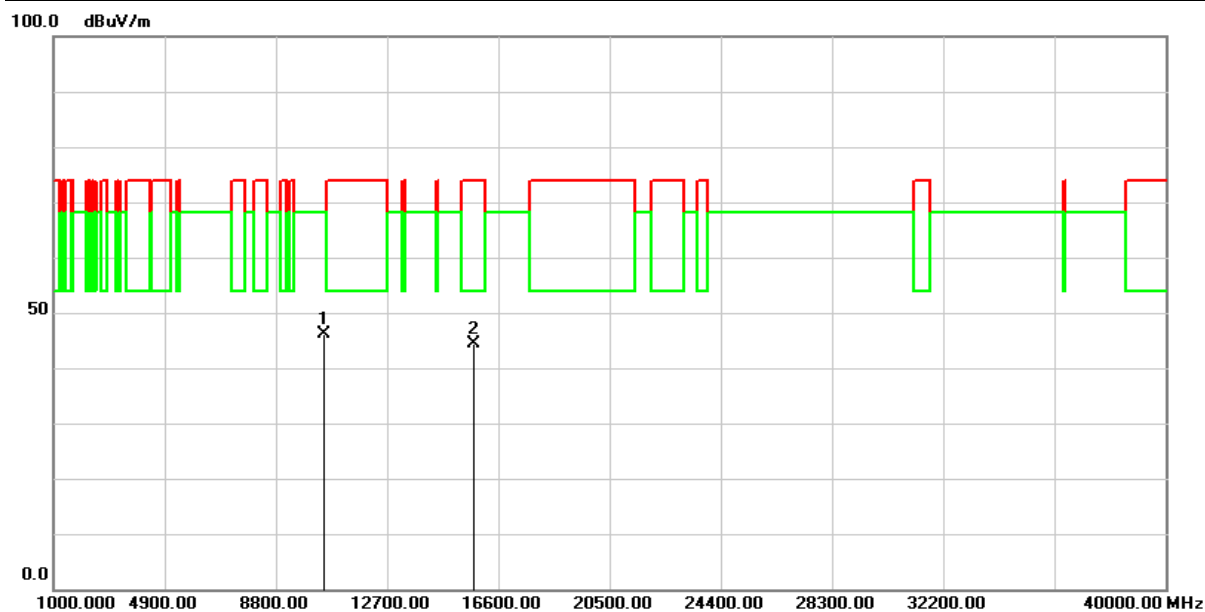


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	56.15	-9.97	46.18	68.20	-22.02	peak
2	15720.000	52.11	-7.62	44.49	74.00	-29.51	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

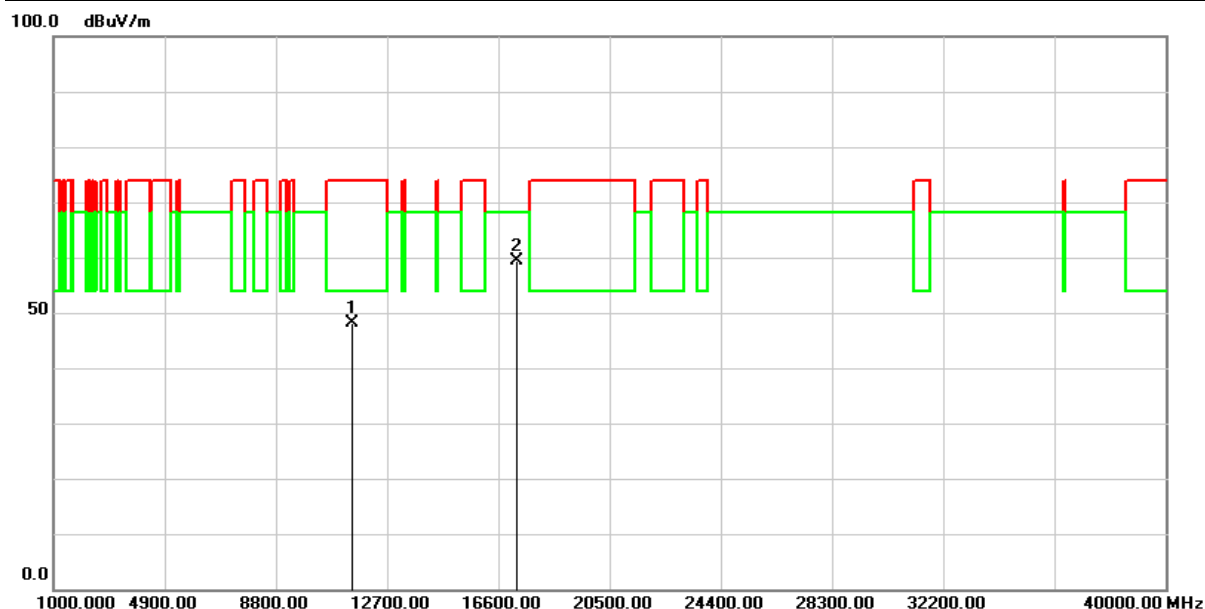


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	56.18	-9.97	46.21	68.20	-21.99	peak
2	15720.000	51.99	-7.62	44.37	74.00	-29.63	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

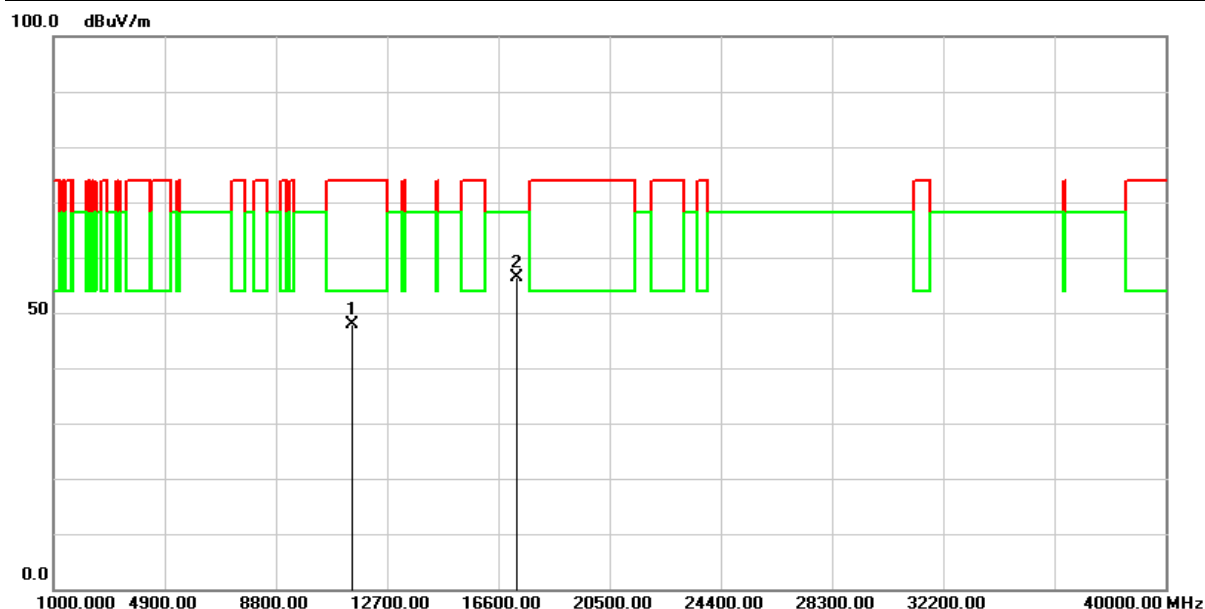


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	57.66	-9.45	48.21	74.00	-25.79	peak
2	17235.000	61.73	-2.24	59.49	68.20	-8.71	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH149(5745MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

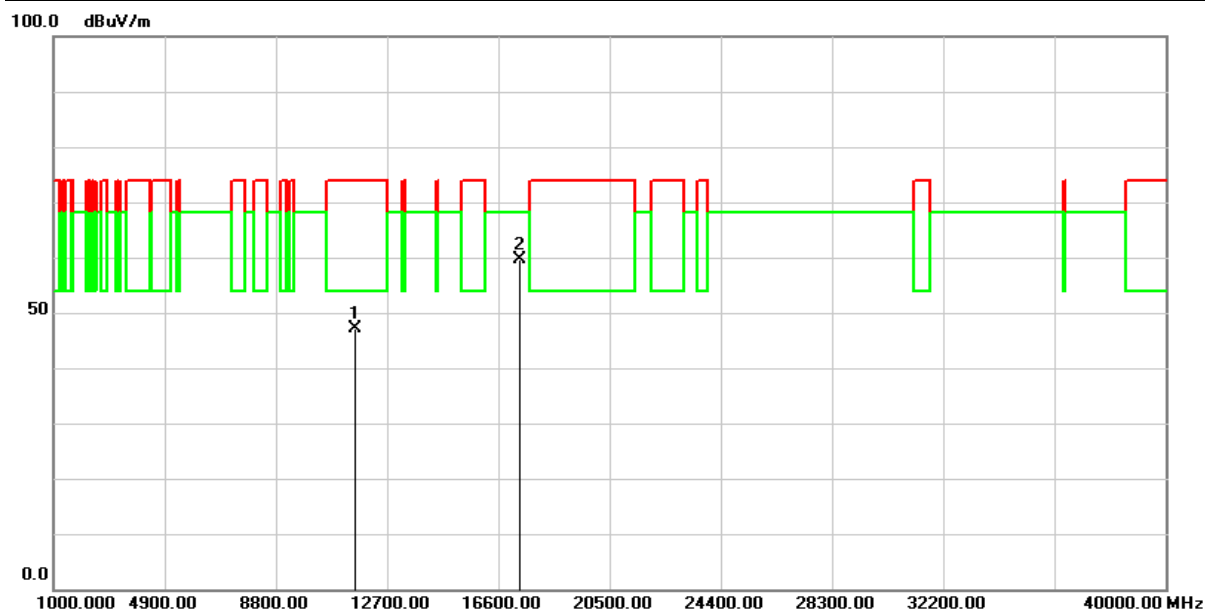


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	57.30	-9.45	47.85	74.00	-26.15	peak
2	17235.000	58.58	-2.24	56.34	68.20	-11.86	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH157(5785MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

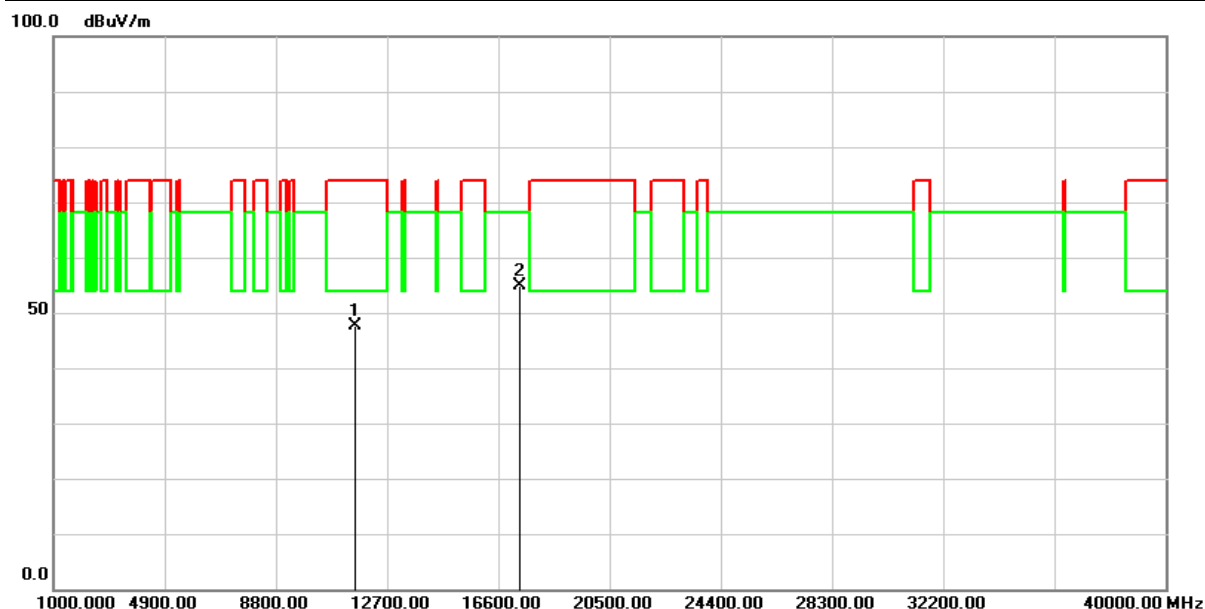


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	56.57	-9.40	47.17	74.00	-26.83	peak
2	17355.000	61.38	-1.65	59.73	68.20	-8.47	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH157(5785MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

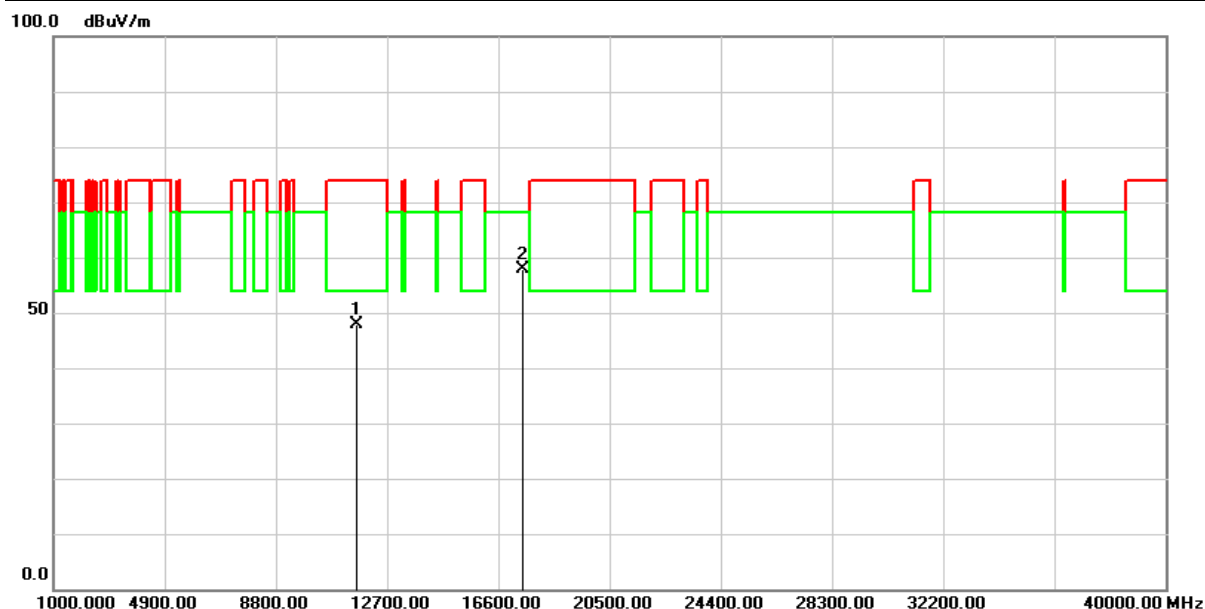


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	57.10	-9.40	47.70	74.00	-26.30	peak
2	17355.000	56.46	-1.65	54.81	68.20	-13.39	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

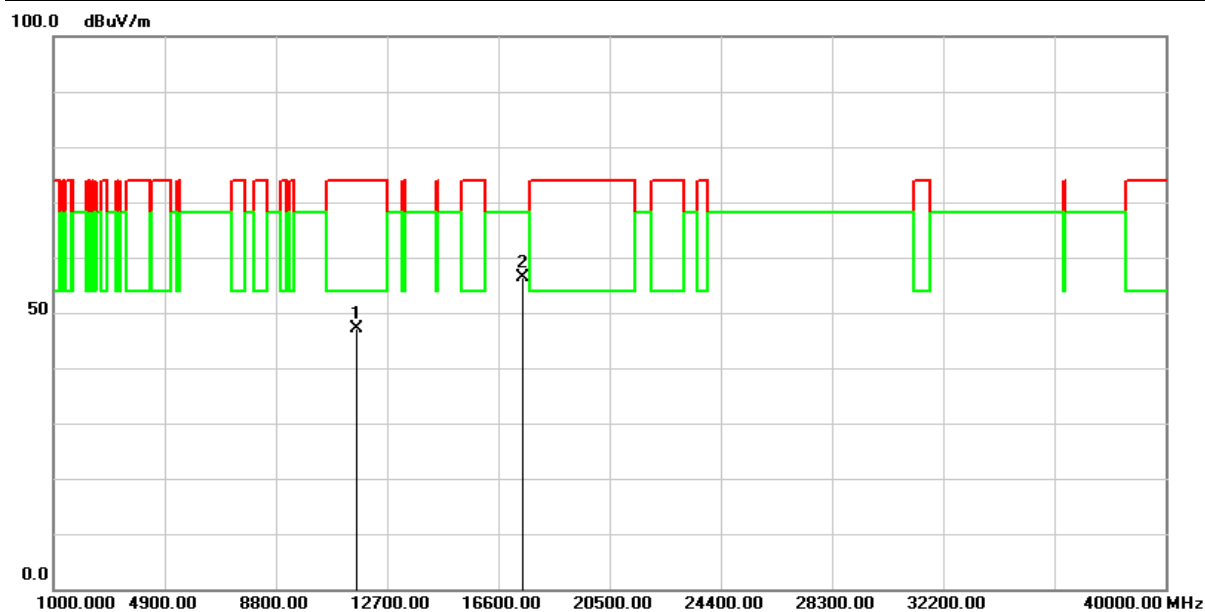


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	57.64	-9.82	47.82	74.00	-26.18	peak
2	17475.000	58.85	-0.85	58.00	68.20	-10.20	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT20)	Test Date :	2022/09/20
Test Channel :	CH165(5825MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

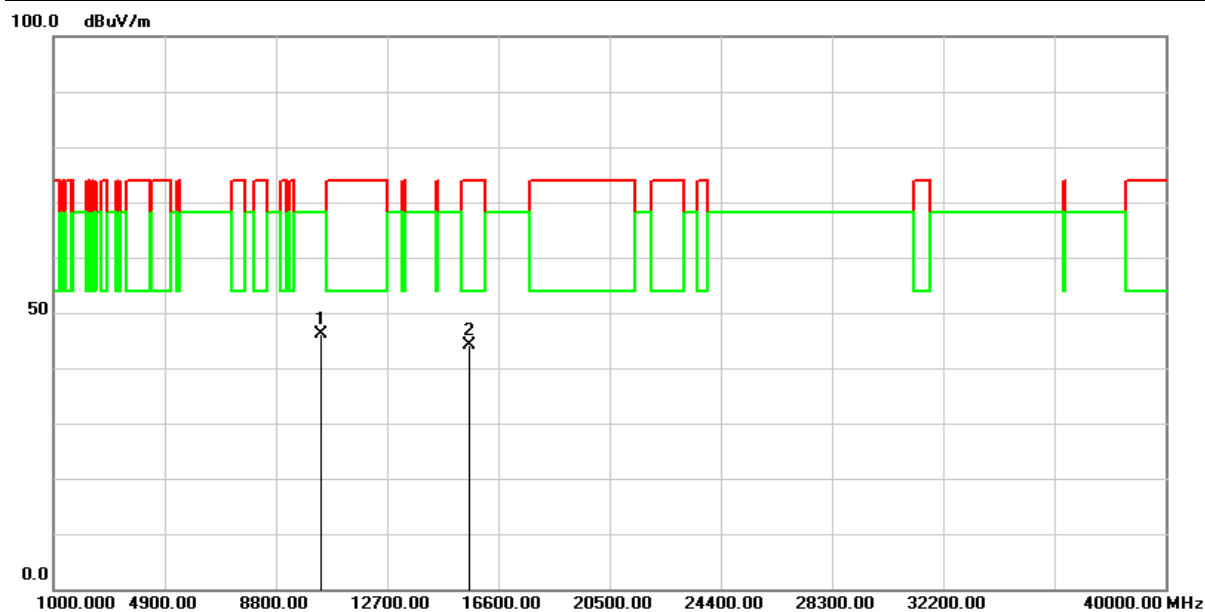


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	57.06	-9.82	47.24	74.00	-26.76	peak
2	17475.000	57.12	-0.85	56.27	68.20	-11.93	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH38(5190MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

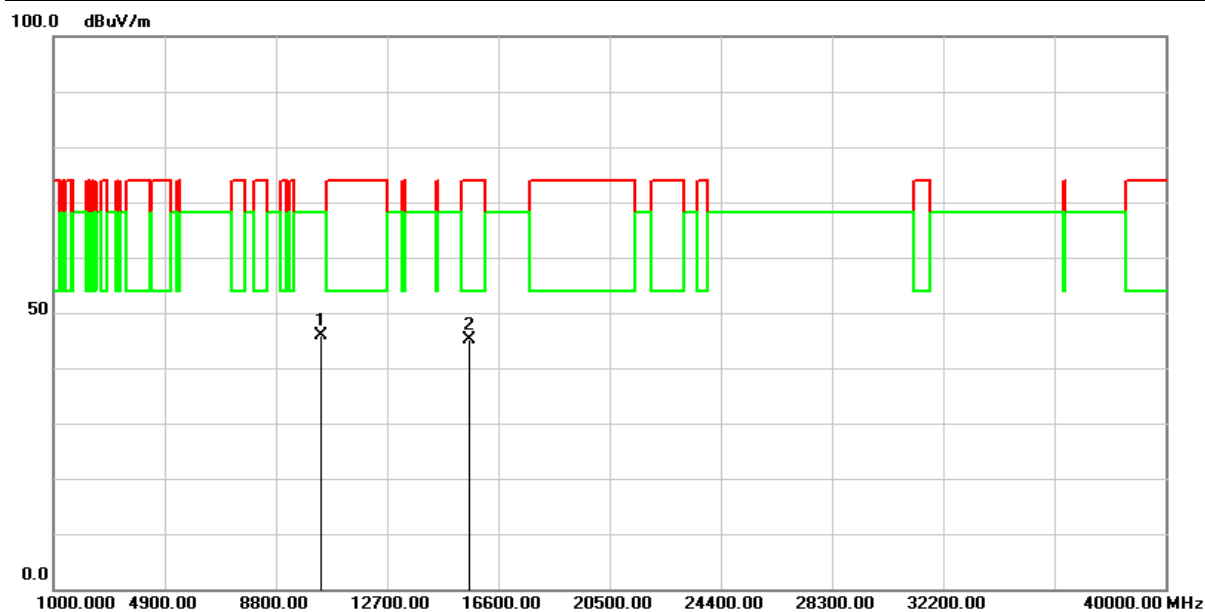


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	56.05	-10.00	46.05	68.20	-22.15	peak
2	15570.000	51.82	-7.79	44.03	74.00	-29.97	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH38(5190MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

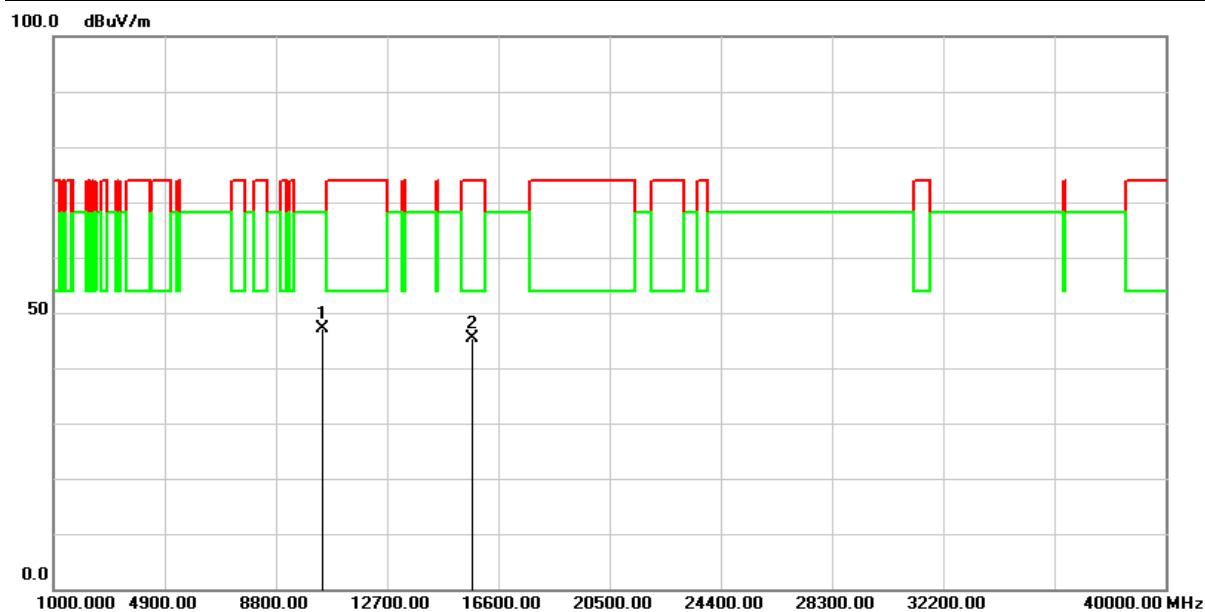


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	55.99	-10.00	45.99	68.20	-22.21	peak
2	15570.000	52.95	-7.79	45.16	74.00	-28.84	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH46(5230MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

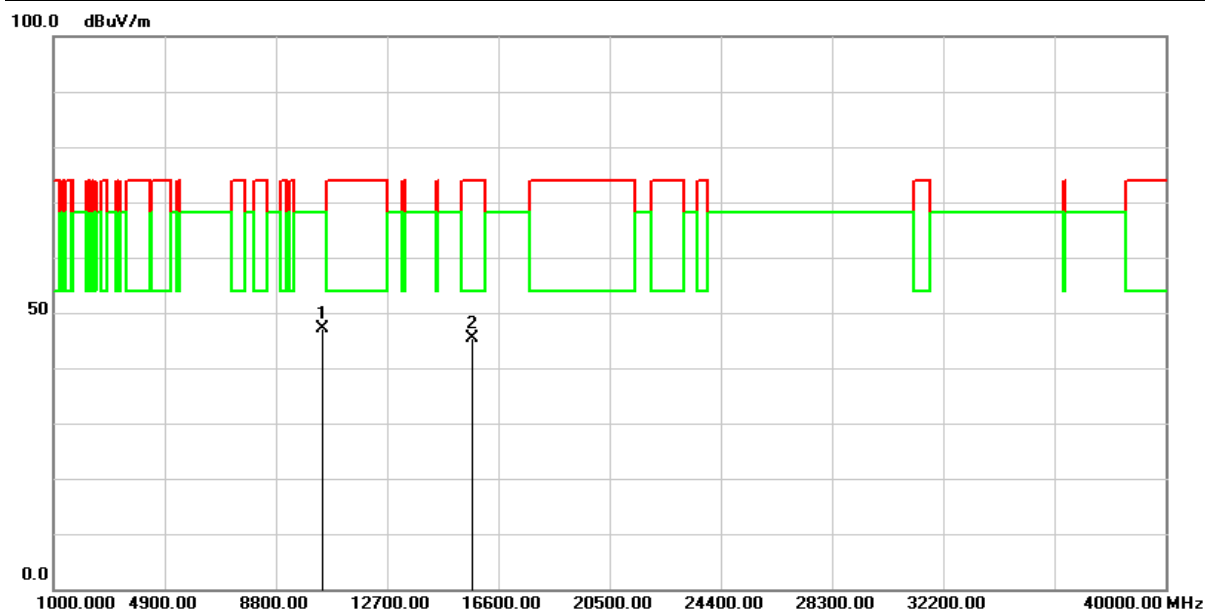


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	57.04	-9.94	47.10	68.20	-21.10	peak
2	15690.000	53.11	-7.81	45.30	74.00	-28.70	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH46(5230MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

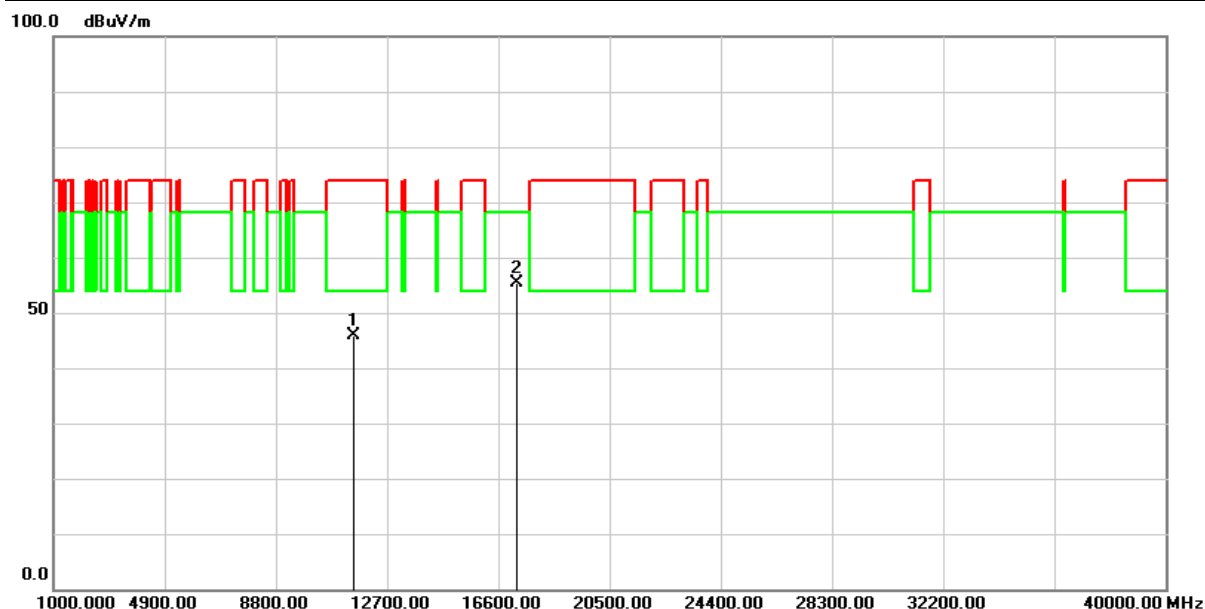


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	57.08	-9.94	47.14	68.20	-21.06	peak
2	15690.000	53.25	-7.81	45.44	74.00	-28.56	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH151(5755MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

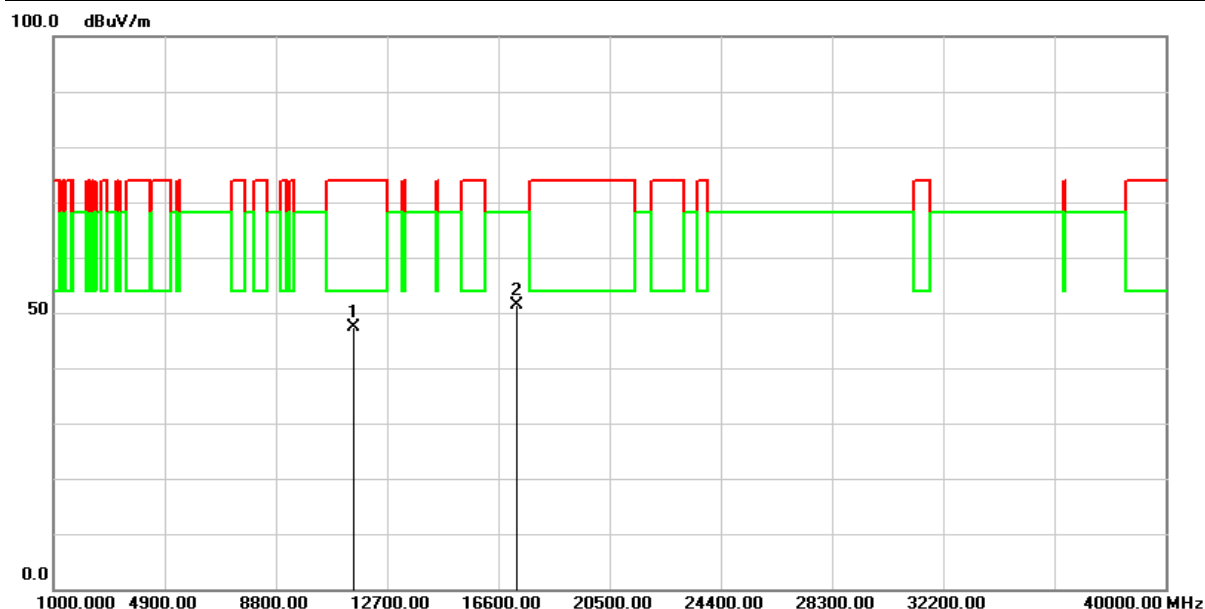


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	55.23	-9.40	45.83	74.00	-28.17	peak
2	17265.000	57.46	-2.19	55.27	68.20	-12.93	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH151(5755MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

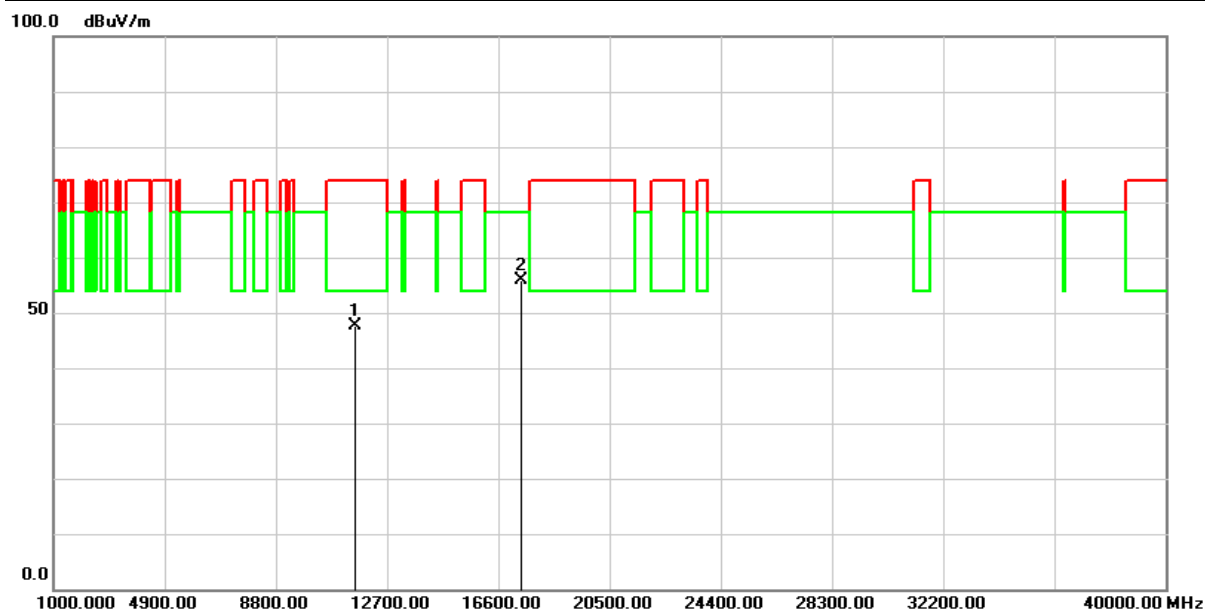


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	56.89	-9.40	47.49	74.00	-26.51	peak
2	17265.000	53.68	-2.19	51.49	68.20	-16.71	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH159(5795MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

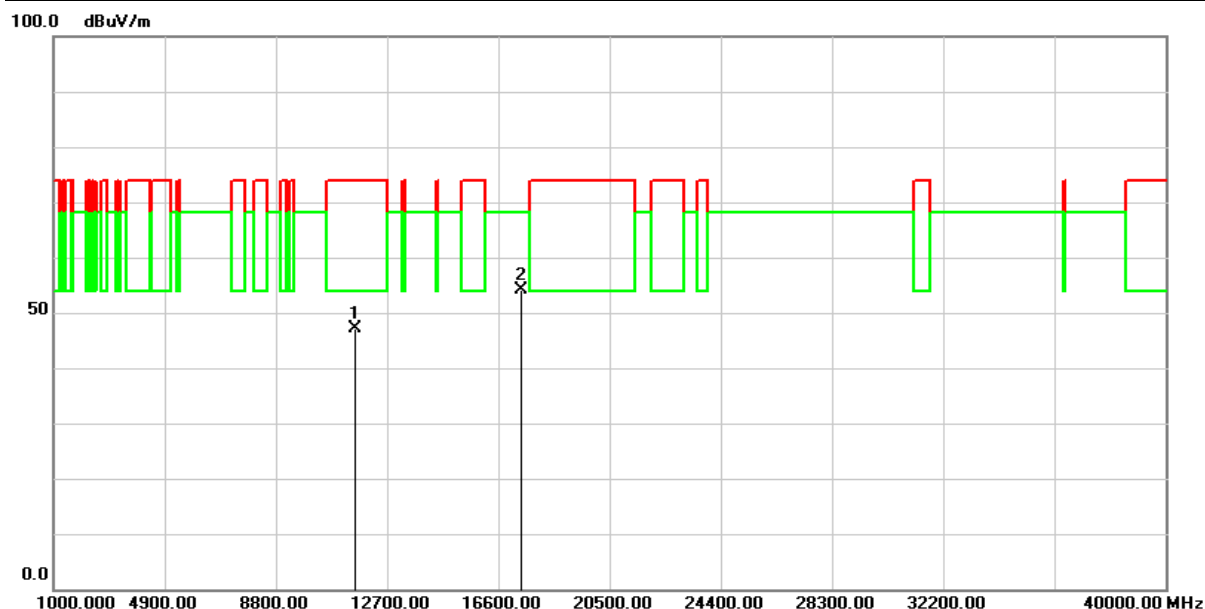


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	57.06	-9.48	47.58	74.00	-26.42	peak
2	17385.000	57.29	-1.42	55.87	68.20	-12.33	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT40)	Test Date :	2022/09/20
Test Channel :	CH159(5795MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

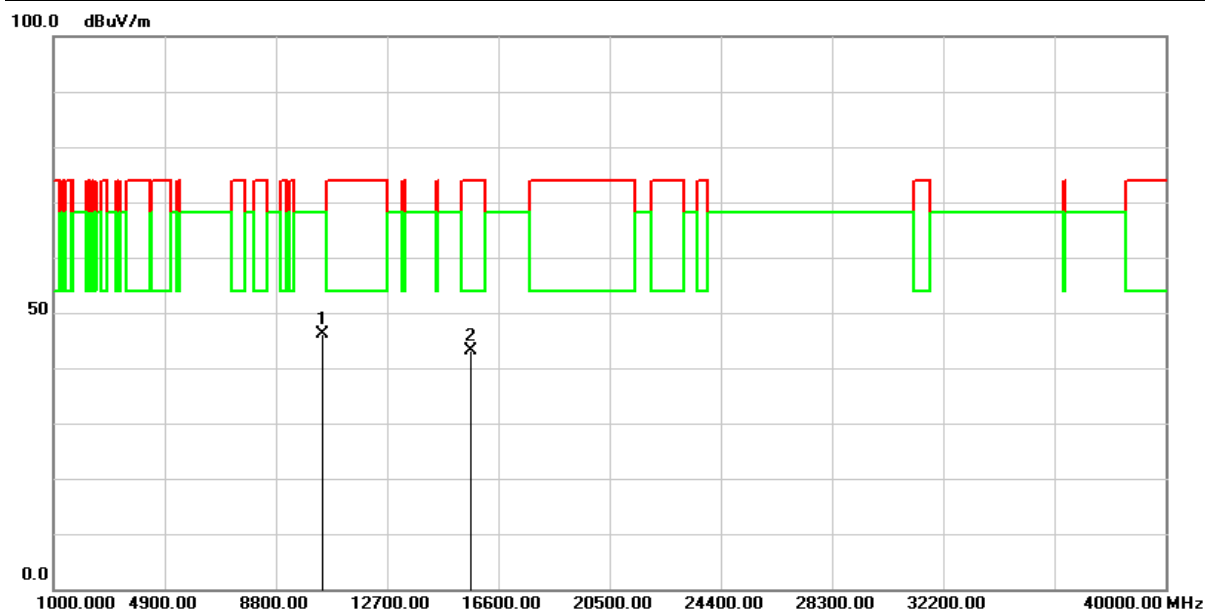


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	56.53	-9.48	47.05	74.00	-26.95	peak
2	17385.000	55.47	-1.42	54.05	68.20	-14.15	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2022/09/20
Test Channel :	CH42 (5210MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

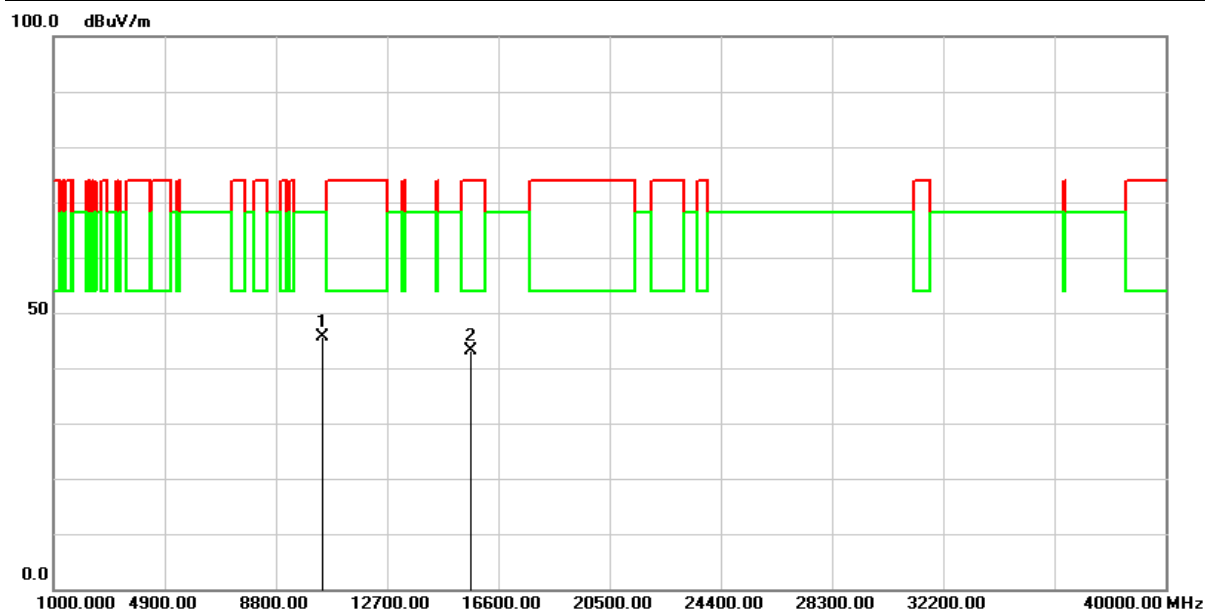


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	55.99	-9.94	46.05	68.20	-22.15	peak
2	15630.000	51.22	-7.98	43.24	74.00	-30.76	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2022/09/20
Test Channel :	CH42 (5210MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

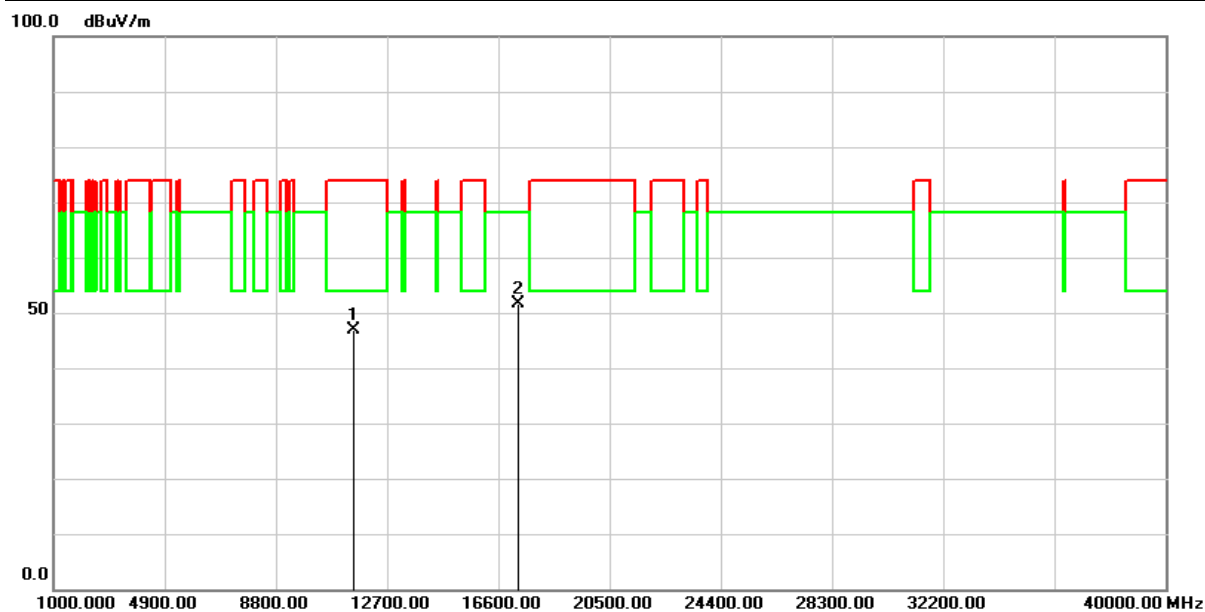


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	55.59	-9.94	45.65	68.20	-22.55	peak
2	15630.000	51.14	-7.98	43.16	74.00	-30.84	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2022/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

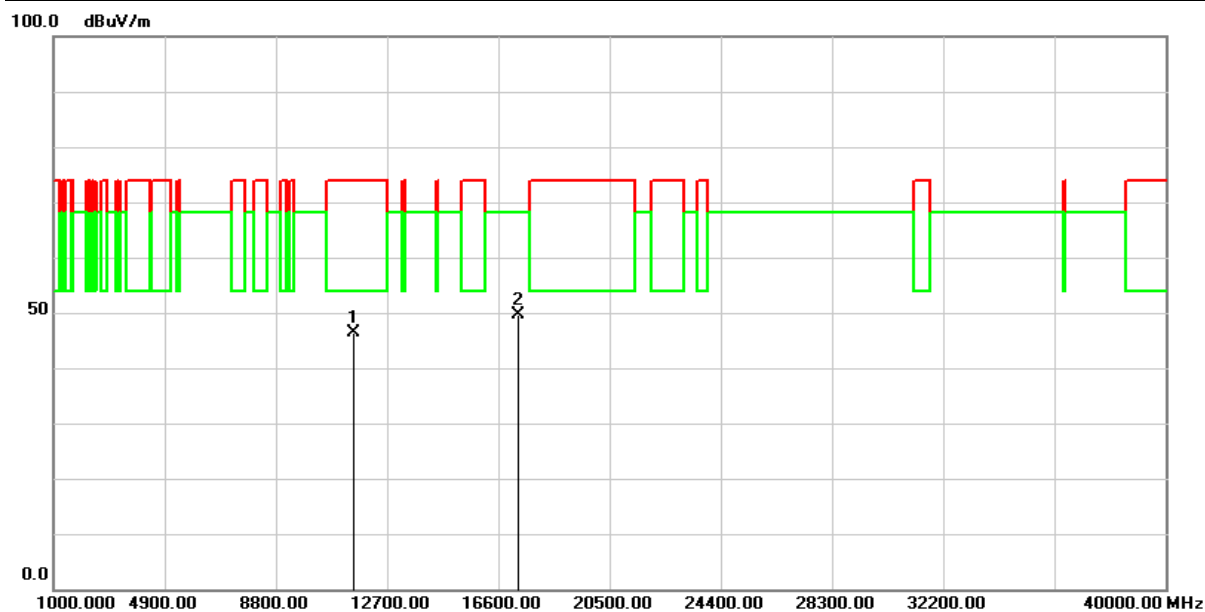


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	56.09	-9.32	46.77	74.00	-27.23	peak
2	17325.000	53.60	-1.95	51.65	68.20	-16.55	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11ac VHT80)	Test Date :	2022/09/20
Test Channel :	CH155 (5775MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %



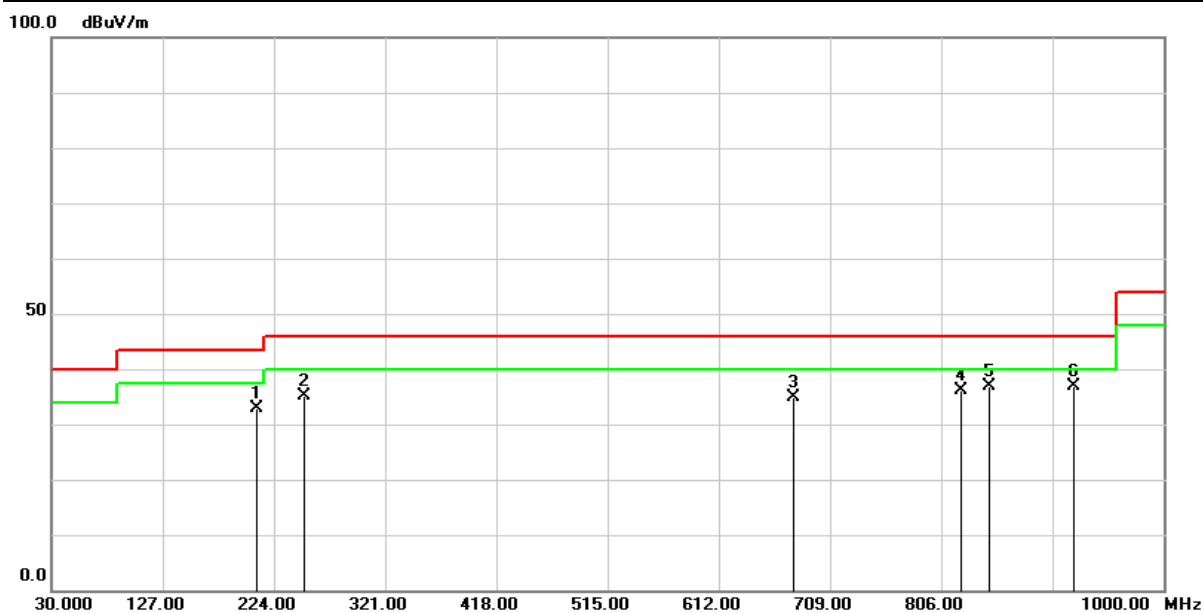
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	55.80	-9.32	46.48	74.00	-27.52	peak
2	17325.000	51.53	-1.95	49.58	68.20	-18.62	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Below 1GHz Data

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

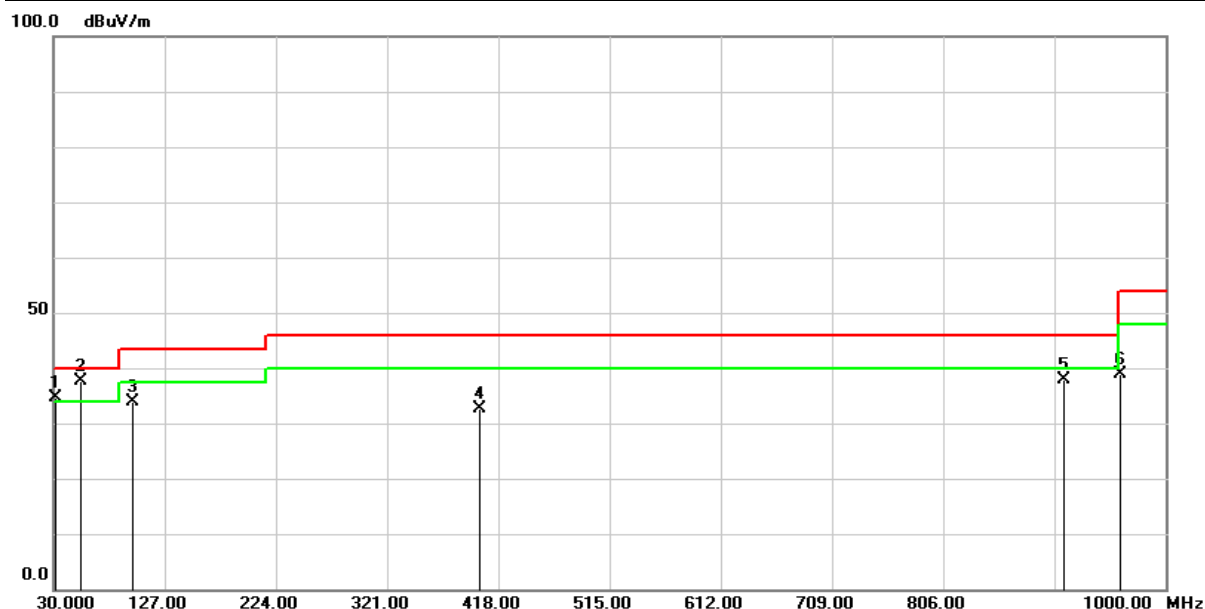


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	208.4800	47.27	-14.30	32.97	43.50	-10.53	QP
2	250.1900	47.24	-12.11	35.13	46.00	-10.87	QP
3	676.9900	35.74	-0.92	34.82	46.00	-11.18	QP
4	823.4600	33.99	2.06	36.05	46.00	-9.95	QP
5	847.7100	34.45	2.53	36.98	46.00	-9.02	QP
6	921.4300	33.01	3.86	36.87	46.00	-9.13	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH48(5240MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %

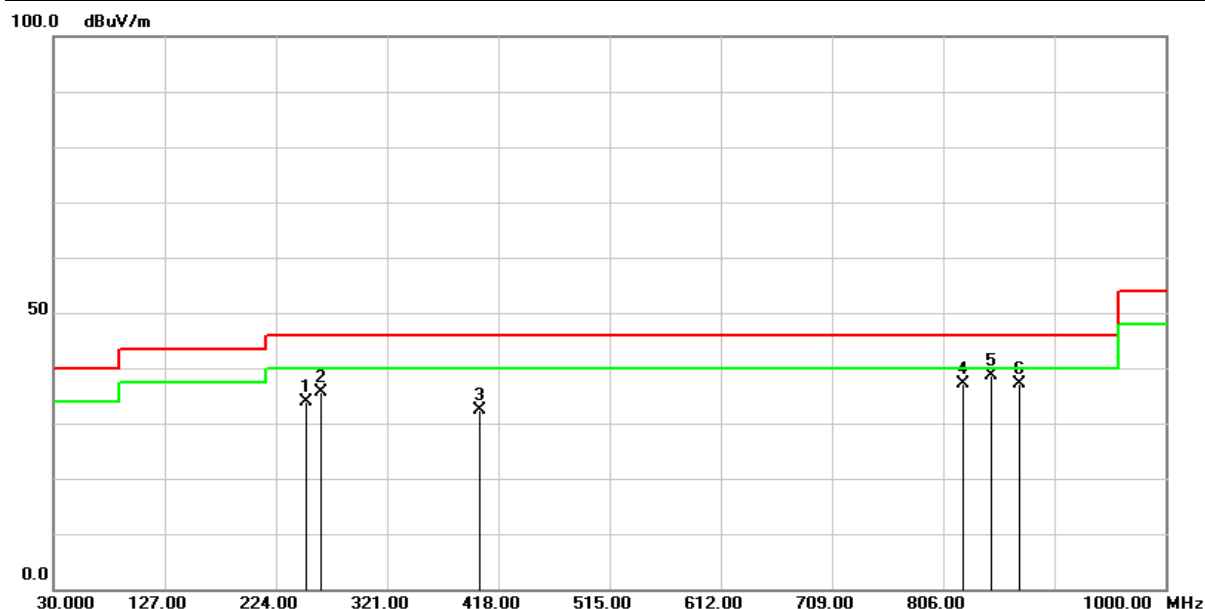


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.4202	47.67	-13.04	34.63	40.00	-5.37	QP
2	53.5170	47.98	-10.46	37.52	40.00	-2.48	QP
3	98.8700	49.81	-15.90	33.91	43.50	-9.59	QP
4	401.5100	39.86	-7.17	32.69	46.00	-13.31	QP
5	911.7300	34.42	3.57	37.99	46.00	-8.01	QP
6	960.2300	34.34	4.58	38.92	53.90	-14.98	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH165 (5825MHz)	Temperature :	23.6 °C
Polarization :	Horizontal	Relative Humidity :	42.8 %

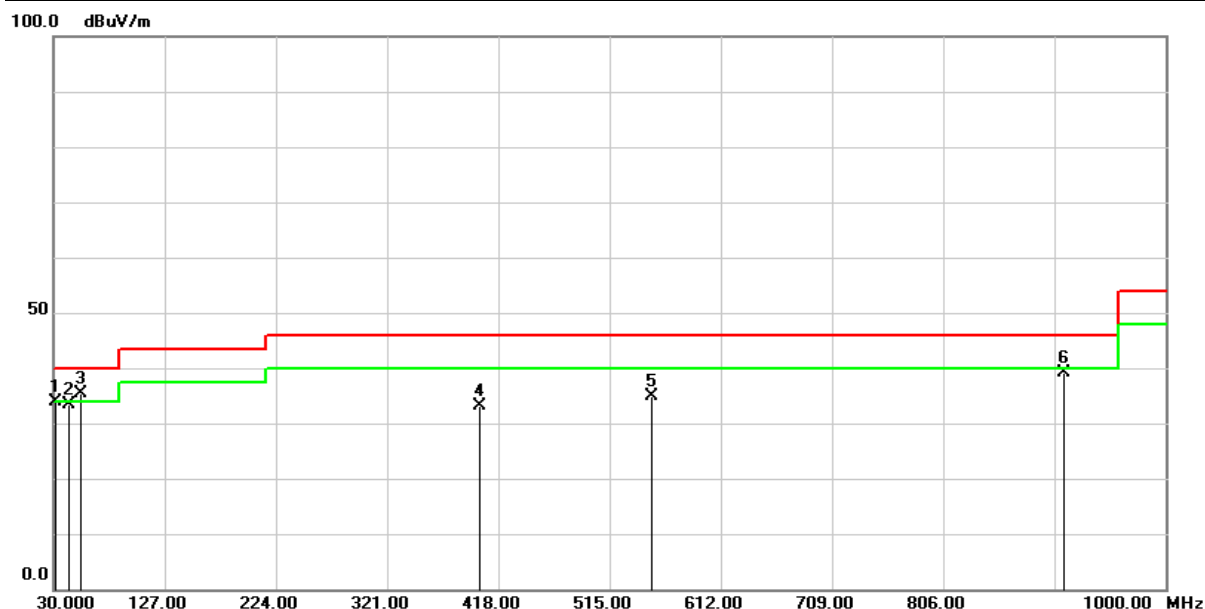


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.1900	45.91	-12.11	33.80	46.00	-12.20	QP
2	263.7700	47.19	-11.49	35.70	46.00	-10.30	QP
3	401.5100	39.59	-7.17	32.42	46.00	-13.58	QP
4	823.4600	34.95	2.06	37.01	46.00	-8.99	QP
5	847.7100	36.10	2.53	38.63	46.00	-7.37	QP
6	872.9300	34.62	2.62	37.24	46.00	-8.76	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit(802.11a)	Test Date :	2022/09/20
Test Channel :	CH165 (5825MHz)	Temperature :	23.6 °C
Polarization :	Vertical	Relative Humidity :	42.8 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.4110	47.04	-13.04	34.00	40.00	-6.00	QP
2	43.7990	44.89	-11.59	33.30	40.00	-6.70	QP
3	53.5630	45.74	-10.46	35.28	40.00	-4.72	QP
4	401.5100	40.18	-7.17	33.01	46.00	-12.99	QP
5	551.8600	38.42	-3.65	34.77	46.00	-11.23	QP
6	911.7300	35.50	3.57	39.07	46.00	-6.93	QP

Remark :

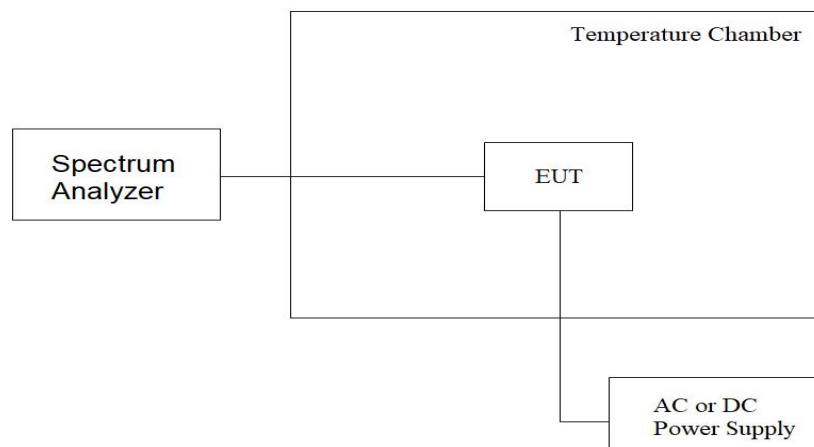
1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

2.6 Frequency Stability

2.6.1 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

2.6.2 Test Setup



2.6.3 Test Procedure

1. The test shall be performed under 85% ~115% of the nominal voltage.
2. Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

2.6.4 Test Result

Band I selected frequency: 5200MHz

Temperature (°C)	Voltage (V)	Tolerance (ppm)				Limit (ppm)	Result
		Start	2 min	5 min	10 min		
20	42.5	-9.228	-8.494	-8.301	-0.811	20	Pass
	48	-13.629	12.722	-8.050	3.031	20	Pass
	57	-1.737	-18.668	9.035	-10.541	20	Pass

Temperature (°C)	Voltage (V)	Tolerance (ppm)				Limit (ppm)	Result
		Start	2 min	5 min	10 min		
-40	48	5.811	16.429	-14.479	-14.826	20	Pass
-20		15.019	13.977	11.641	17.452	20	Pass
-10		-8.803	14.479	-15.154	-12.394	20	Pass
0		8.861	7.606	-8.629	-15.830	20	Pass
10		-11.178	14.170	-2.915	-12.124	20	Pass
20		-6.873	-15.830	11.448	14.653	20	Pass
30		4.865	7.645	10.869	8.919	20	Pass
40		0.097	-4.575	11.274	-2.606	20	Pass
55		7.510	4.266	-2.297	-1.467	20	Pass

2.7 Antenna Requirement

2.7.1 Applicable Standard

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.

An intentional radiator shall be designed to ensure that no antenna other than as furnished by the responsible party shall be used with the device. If transmitting antennas of directional gain greater than 6dBi are using the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi, for compliance to FCC 47CFR 15.407 (a) requirements.

2.7.2 Antenna Connected Construction

Non-standard antenna connector is used.

2.7.3 Antenna Gain

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	INPAQ	RFMTA211200NNLB001	Metal Antenna	3.78 dBi for 5.15~5.25GHz 3.78 dBi for 5.725~5.85GHz

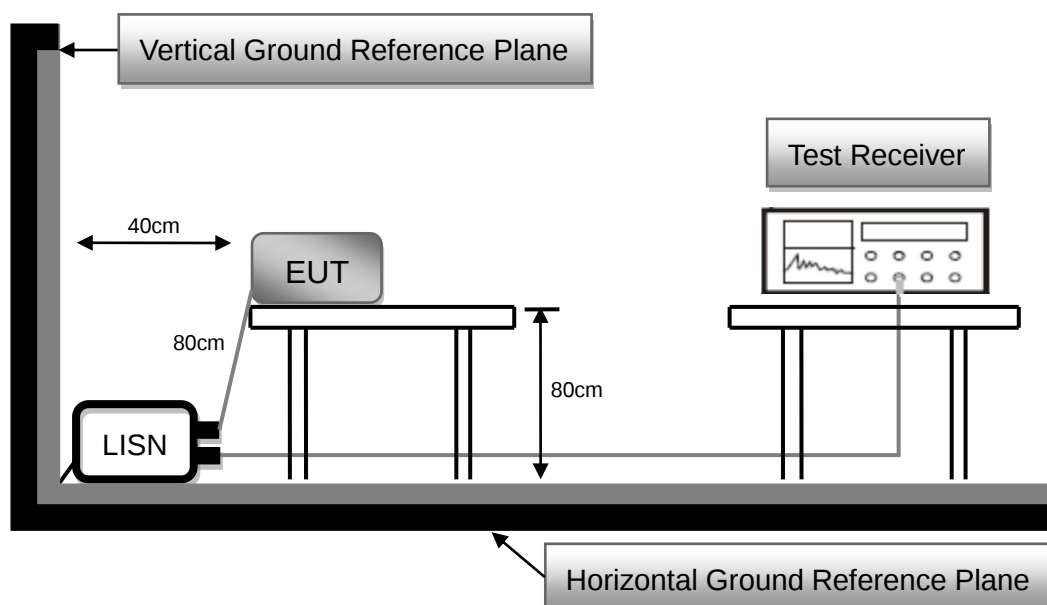
2.8 AC Conducted Emissions Measurement

2.8.1 Limit

Frequency (MHz)	FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

*Decreases with the logarithm of the frequency

2.8.2 Test Setup

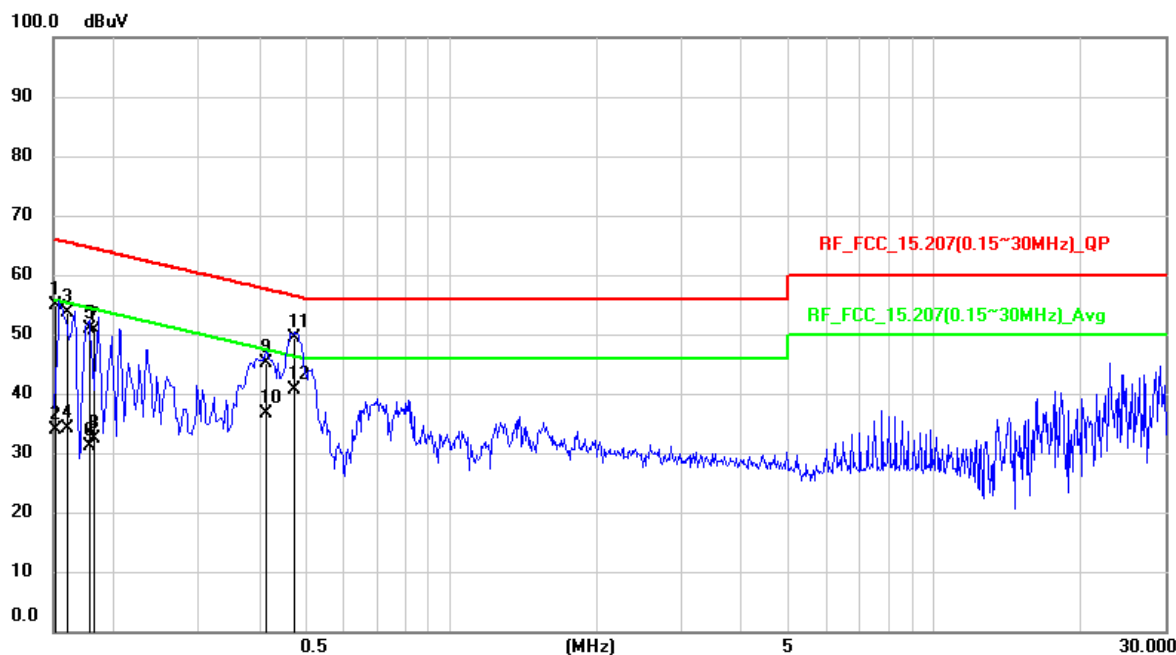


2.8.3 Test Procedure

1. The EUT was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The LISN at least be 80 cm from nearest chassis of EUT.
2. The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All other support equipments powered from additional LISN(s).
3. Interrelating cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.
4. All I/O cables that are not connected to a peripheral shall be bundle in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
5. The EMI test receiver connected to LISN powering the EUT. The actual test configuration, please refer to EUT test photos.
6. The receiver scanned from 150kHz to 30MHz for emissions in each of test modes. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz. A scan was taken on both power lines, Line and Neutral, recording at least six highest emissions.
7. The EUT and cable configuration of the above highest emission levels were recorded. The Test Data of the worst case was recorded.

2.8.4 Test Result

Test Voltage :	120Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Transmit (802.11a 6Mbps)	6dB Bandwidth :	9 kHz
Test Date :	2023/09/11	Phase :	L
Temperature :	25.2°C	Humidity :	43 %

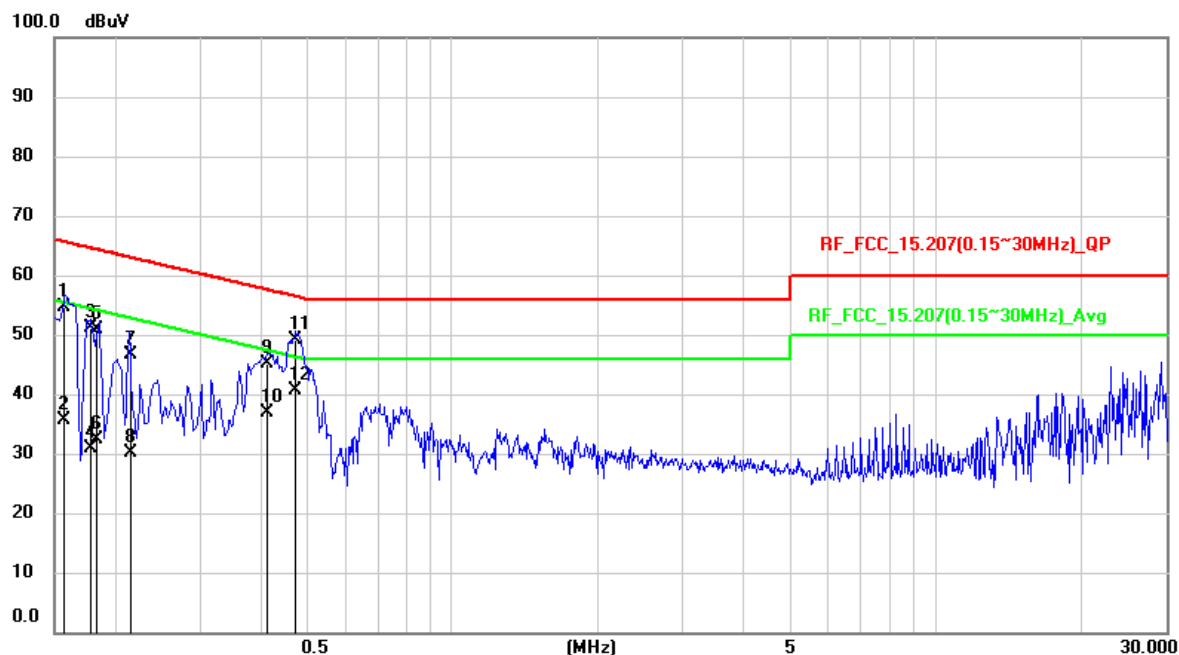


No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.151	44.96	9.84	54.8	65.94	-11.14	QP
2	0.151	24.04	9.84	33.88	55.94	-22.06	AVG
3	0.1614	43.84	9.84	53.68	65.39	-11.71	QP
4	0.1614	24.22	9.84	34.06	55.39	-21.33	AVG
5	0.1777	41.17	9.82	50.99	64.59	-13.6	QP
6	0.1777	21.24	9.82	31.06	54.59	-23.53	AVG
7	0.1822	40.84	9.82	50.66	64.38	-13.72	QP
8	0.1822	22.46	9.82	32.28	54.38	-22.1	AVG
9	0.4121	35.29	9.84	45.13	57.61	-12.48	QP
10	0.4121	26.87	9.84	36.71	47.61	-10.9	AVG
11	0.4756	39.54	9.84	49.38	56.42	-7.04	QP
12	0.4756	30.88	9.84	40.72	46.42	-5.7	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value – Limit Value

Test Voltage :	120Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Transmit (802.11a 6Mbps)	6dB Bandwidth :	9 kHz
Test Date :	2023/09/11	Phase :	N
Temperature :	25.2°C	Humidity :	43 %



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1579	44.84	9.84	54.68	65.57	-10.89	QP
2	0.1579	25.88	9.84	35.72	55.57	-19.85	AVG
3	0.1771	41.25	9.83	51.08	64.62	-13.54	QP
4	0.1771	20.96	9.83	30.79	54.62	-23.83	AVG
5	0.183	40.98	9.83	50.81	64.35	-13.54	QP
6	0.183	22.44	9.83	32.27	54.35	-22.08	AVG
7	0.2154	36.9	9.83	46.73	62.99	-16.26	QP
8	0.2154	20.3	9.83	30.13	52.99	-22.86	AVG
9	0.4113	35.19	9.84	45.03	57.62	-12.59	QP
10	0.4113	26.96	9.84	36.8	47.62	-10.82	AVG
11	0.4767	39.41	9.84	49.25	56.4	-7.15	QP
12	0.4767	30.75	9.84	40.59	46.4	-5.81	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value – Limit Value

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