FCC RF Inspection Report

Product Name	2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card
Model No	MT7922A22M
FCC ID	HLZMT7922A22M

Applicant	Acer Incorporated
Address	9F, 88, Sec. 1, Xintai 5th Rd. New Taipei City 221 Taiwan

Date of Receipt	Jan. 25, 2022
Issued Date	Mar. 21, 2022
Report No.	2210770R-RFNAOTHV03-8
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

Issued Date: Mar. 21, 2022
Report No.: 2210770R-RFNAOTHV03-8

Product Name	2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card
Applicant	Acer Incorporated
Address	9F, 88, Sec. 1, Xintai 5th Rd. New Taipei City 221 Taiwan
Manufacturer	Acer Incorporated
Model No.	MT7922A22M
FCC ID.	HLZMT7922A22M
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	DC 3.3V (Power By Test Platform)
Trade Name	acer
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E ANSI C63.4: 2014, ANSI C63.10: 2013 KDB Publication 789033, KDB Publication 987594
Test Result	Complied

Documented By : April Chen

(Senior Project Specialist / April Chen)

Tested By : Ivan Chuang

(Senior Engineer / Ivan Chuang)

Approved By : Jack Hsu

(Senior Engineer / Jack Hsu)

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Revision History

Report No.	Version	Description	Issued Date
2210770R-RFNAOTHV03-8	V1.0	Initial issue of report.	Mar. 21, 2022

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card
Trade Name	acer
FCC ID.	HLZMT7922A22M
Model No.	MT7922A22M
Frequency Range	802.11a/n/ac/ax-20MHz: 5180-5320MHz, 5500-5720 MHz, 5745-5825MHz, 5955~7115MHz 802.11n/ac/ax-40MHz: 5190-5310MHz, 5510-5710 MHz, 5755-5795MHz, 5965~7085MHz 802.11ac/ax-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz, 5985~7025MHz 802.11ac/ax-160MHz: 5250MHz, 5570MHz, 6025~6985MHz
Number of Channels	802.11a/n/ac/ax-20MHz: 84 802.11n/ac/ax-40MHz: 41 802.11ac/ax-80MHz: 20 802.11ac/ax-160MHz: 9
Data Rate	802.11a: 6-54Mbps 802.11n: up to 300Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2402Mbps
Type of Modulation	802.11a/n/ac/ax: OFDM, OFDMA, BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Antenna type	PIFA Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna type	Peak Gain
1	WNC	81EABS15.G35 (Main)	PIFA Antenna	2.90dBi for 5.15~5.25GHz 2.86dBi for 5.25~5.35GHz 3.22dBi for 5.47~5.725GHz 3.10dBi for 5.725~5.850GHz 4.03dBi for 5.925~7.125GHz
		81EABS15.G36 (Aux)	PIFA Antenna	0.44dBi for 5.15~5.25GHz -0.23dBi for 5.25~5.35GHz 0.18dBi for 5.47~5.725GHz 1.86dBi for 5.725~5.850GHz 2.55dBi for 5.925~7.125GHz

Note: The antenna of EUT is conforming to FCC 15.203.

802.11a/n/ac/ax-20MHz Center Working Frequency of Each Channel - Wi-Fi 5GHz:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 036:	5180 MHz	Channel 040:	5200 MHz	Channel 044:	5220 MHz	Channel 048:	5240 MHz
Channel 052:	5260 MHz	Channel 056:	5280 MHz	Channel 060:	5300 MHz	Channel 064:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 144:	5720 MHz
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11a/n/ac/ax-20MHz Center Working Frequency of Each Channel - Wi-Fi 6E:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 001:	5955 MHz	Channel 005:	5975 MHz	Channel 009:	5995 MHz	Channel 013:	6015 MHz
Channel 017:	6035 MHz	Channel 021:	6055 MHz	Channel 025:	6075 MHz	Channel 029:	6095 MHz
Channel 033:	6115 MHz	Channel 037:	6135 MHz	Channel 041:	6155 MHz	Channel 045:	6175 MHz
Channel 049:	6195 MHz	Channel 053:	6215 MHz	Channel 057:	6235 MHz	Channel 061:	6255 MHz
Channel 065:	6275 MHz	Channel 069:	6295 MHz	Channel 073:	6315 MHz	Channel 077:	6335 MHz
Channel 081:	6355 MHz	Channel 085:	6375 MHz	Channel 089:	6395 MHz	Channel 093:	6415 MHz
Channel 097:	6435 MHz	Channel 101:	6455 MHz	Channel 105:	6475 MHz	Channel 109:	6495 MHz
Channel 113:	6515 MHz	Channel 117:	6535 MHz	Channel 121:	6555 MHz	Channel 125:	6575 MHz
Channel 129:	6595 MHz	Channel 133:	6615 MHz	Channel 137:	6635 MHz	Channel 141:	6655 MHz
Channel 145:	6675 MHz	Channel 149:	6695 MHz	Channel 153:	6715 MHz	Channel 157:	6735 MHz
Channel 161:	6755 MHz	Channel 165:	6775 MHz	Channel 169:	6795 MHz	Channel 173:	6815 MHz
Channel 177:	6835 MHz	Channel 181:	6855 MHz	Channel 185:	6875 MHz	Channel 189:	6895 MHz
Channel 193:	6915 MHz	Channel 197:	6935 MHz	Channel 201:	6955 MHz	Channel 205:	6975 MHz
Channel 209:	6995 MHz	Channel 213:	7015 MHz	Channel 217:	7035 MHz	Channel 221:	7055 MHz
Channel 225:	7075 MHz	Channel 229:	7095 MHz	Channel 233:	7115 MHz		

802.11n/ac/ax-40MHz Center Working Frequency of Each Channel - Wi-Fi 5GHz:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 038:	5190 MHz	Channel 046:	5230 MHz	Channel 054:	5270 MHz	Channel 062:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 142:	5710 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz

802.11n/ac/ax-40MHz Center Working Frequency of Each Channel - Wi-Fi 6E:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 003:	5965 MHz	Channel 011:	6005 MHz	Channel 019:	6045 MHz	Channel 027:	6085 MHz
Channel 035:	6125 MHz	Channel 043:	6165 MHz	Channel 051:	6205 MHz	Channel 059:	6245 MHz
Channel 067:	6285 MHz	Channel 075:	6325 MHz	Channel 083:	6365 MHz	Channel 091:	6405 MHz
Channel 099:	6445 MHz	Channel 107:	6485 MHz	Channel 115:	6525 MHz	Channel 123:	6565 MHz
Channel 131:	6605 MHz	Channel 139:	6645 MHz	Channel 147:	6685 MHz	Channel 155:	6725 MHz
Channel 163:	6765 MHz	Channel 171:	6805 MHz	Channel 179:	6845 MHz	Channel 187:	6885 MHz
Channel 195:	6925 MHz	Channel 203:	6965 MHz	Channel 211:	7005 MHz	Channel 219:	7045 MHz
Channel 227:	7085 MHz						

802.11ac/ax-80MHz Center Working Frequency of Each Channel - Wi-Fi 5GHz:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 042:	5210 MHz	Channel 058:	5290 MHz	Channel 106:	5530 MHz	Channel 122:	5610 MHz
Channel 138:	5690 MHz	Channel 155:	5775 MHz				

802.11ac/ax-80MHz Center Working Frequency of Each Channel - Wi-Fi 6E:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 007:	5985 MHz	Channel 023:	6065 MHz	Channel 039:	6145 MHz	Channel 055:	6225 MHz
Channel 071:	6305 MHz	Channel 087:	6385 MHz	Channel 103:	6465 MHz	Channel 119:	6545 MHz
Channel 135:	6625 MHz	Channel 151:	6705 MHz	Channel 167:	6785 MHz	Channel 183:	6865 MHz
Channel 199:	6945 MHz	Channel 215:	7025 MHz				

802.11ac/ax-160MHz Center Working Frequency of Each Channel - Wi-Fi 5GHz:

Channel	Frequency	Channel	Frequency
Channel 050:	5250 MHz	Channel 114:	5570 MHz

02.11ac/ax-160MHz Center Working Frequency of Each Channel - Wi-Fi 6E:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 015:	6025 MHz	Channel 047:	6185 MHz	Channel 079:	6345 MHz	Channel 111:	6505 MHz
Channel 143:	6665 MHz	Channel 175:	6825 MHz	Channel 207:	6985 MHz		

Note:

1. This device is a 2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card with a built-in WLAN (802.11a/b/g/n/ac/ax) with Bluetooth (5.0 and V3.0+HS, V2.1+EDR) transceiver, this report for 5GHz and 6GHz WLAN.
2. Regarding the operation frequency, the customer-provided frequency and worst-case is selected to perform the test.
3. Lowest data rate is tested in each mode. The only worst case is shown in the report.
4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance of transmitter with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
5. This is a permissive change for FCC ID: HLZMT7922A22M, originally granted on 02/13/2022. According to the major change, DEKRA tests Radiated Emission and Radiated Band Edge worst-case, and other testing data refer to original module report and SAR report (report no.: RFBARR-WTW-P21030485-5 for WLAN 5GHz, RFBARR-WTW-P21030485-6 for WLAN 6E and 2210770R-SAUSSARV01-A). Additional the host: Notebook Computer (Model number: N21H1) is contain this module's FCC ID.

Test Mode	Mode 1 MIMO: Transmit (802.11ac-20BW) Mode 2 MIMO: Transmit (802.11ax-20BW) Mode 3 MIMO: Transmit (802.11ax-40BW) Mode 4 MIMO: Transmit (802.11ax-80BW) Mode 5 MIMO: Transmit (802.11ax-160BW)

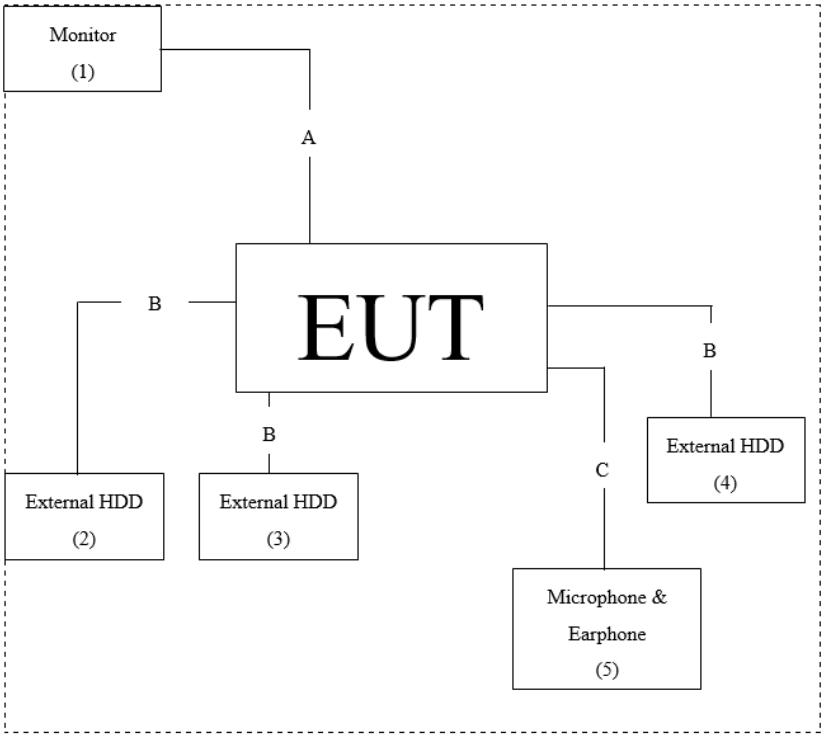
1.2. Tested System Datails

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	Lenovo	A21215FS0	V5DMD987	Non-Shielded, 1.8m
2	External HDD	Transcend	TS1TSJ25MC	F30467-0003	N/A
3	External HDD	Transcend	TS1TSJ25H3B	F21786-0019	N/A
4	External HDD	Transcend	TS1TSJ25H3B	F21786-0005	N/A
5	Microphone & Earphone	Verbatim	C09024VB	N/A	N/A

Signal Cable Type		Signal cable Description
A	HDMI Cable	Shielded, 1.8m
B	USB Cable	Shielded, 0.5m, three PCS.
C	Microphone & Earphone Cable	Non-shielded, 1.2m

1.3. Configuration of tested System



1.4. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “QA Tool” on the Notebook Computer.
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.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Radiated Emission	Temperature (°C)	10~40 °C	22.0 °C
	Humidity (%RH)	10~90 %	64.0 %
Conductive	Temperature (°C)	10~40 °C	23.2 °C
	Humidity (%RH)	10~90 %	58.0 %

USA : FCC Registration Number: TW0033

Canada : IC Registration Number: 26930

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan
Performed Location : No. 26, Huaya 1st Rd., Guishan Dist.,Taoyuan City 333411, Taiwan, R.O.C.
Phone number : +886-3-275-7255
Fax number : +866-3-327-8031
Email address : info.tw@dekra.com
Website : http://www.dekra.com.tw

1.6. List of Test Equipment

For Radiated measurements /966-1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Horn Antenna	ETS-Lindgren	3117	00201259	2021/11/09	2022/11/08
X	Horn Antenna	Com-Power	AH-1840	101101	2021/11/30	2022/11/29
X	Pre-Amplifier	EMCI	EMC05820SE	980362	2021/08/24	2022/08/23
X	Pre-Amplifier	EMCI	EMC184045SE	980369	2021/04/27	2022/04/26
X	Spectrum Analyzer	R&S	FSV3044	101115	2022/01/10	2023/01/09
X	Coaxial Cable	SUHNER	SUCOFLEX 106	25450/6	2021/03/05	2022/03/04
X	Coaxial Cable	SGH	HA800	GD20110222-8	2021/03/05	2022/03/04
X	Coaxial Cable	SGH	SGH18	2021003-8	2021/03/05	2022/03/04
X	Coaxial Cable	EMCI	EMC106	151113	2021/03/05	2022/03/04
X	Power Meter	Anritsu	ML2496A	1739004	2021/04/27	2022/04/26
X	Power Sensor	Anritsu	MA2411B	1726078	2021/04/27	2022/04/26

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : e3v9

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

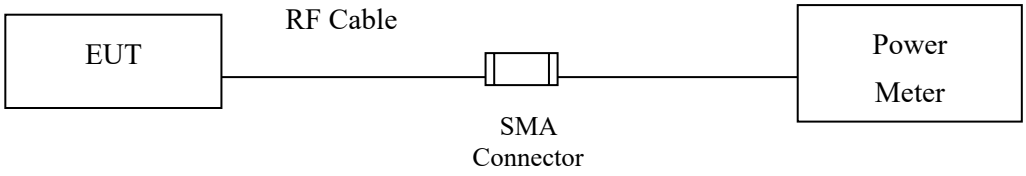
Test item	**Uncertainty**	
Maximun conducted output power	Power Meter ±0.91 dB	Spectrum Analyzer ±2.53 dB
Radiated Emission	Under 1GHz ±4.06 dB	Above 1GHz ±3.73 dB
Band Edge	Under 1GHz ±4.06 dB	Above 1GHz ±3.73 dB
Duty Cycle	±2.31msec	

2. Maximun conducted output power

2.1. Test Setup

Conduction Power Measurement

Conduction Power Measurement



2.2. Limits

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. 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 is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power 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, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 99% emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power 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, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII 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. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

2.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth.

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D03 section D) procedure is used for measurements.

2.4. Test Result of Maximum conducted output power

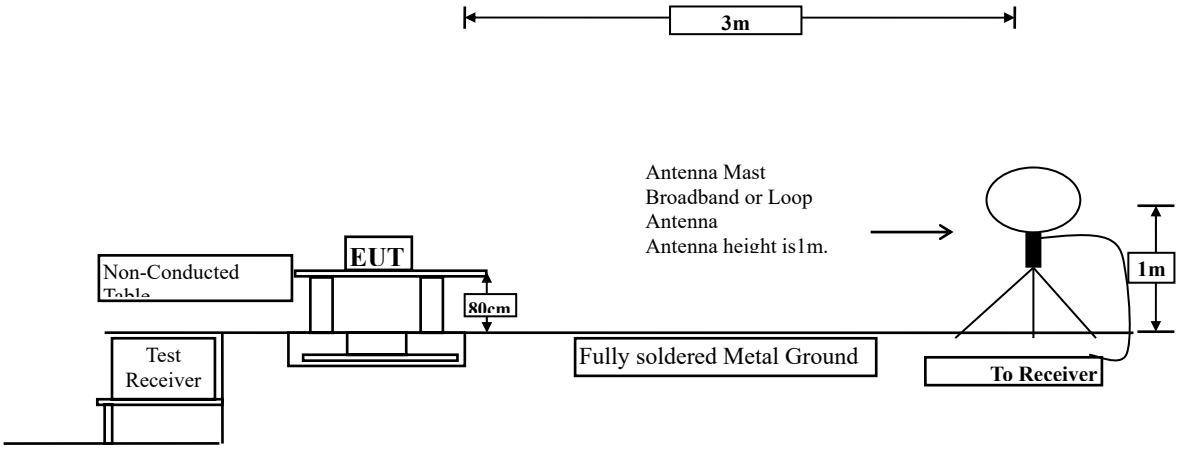
Note:

Maximum conducted output power refer to the original module report and SAR report (report no.: RFBARR-WTW-P21030485-5 for WLAN 5GHz, RFBARR-WTW-P21030485-6 for WLAN 6E and 2210770R-SAUSSARV01-A)

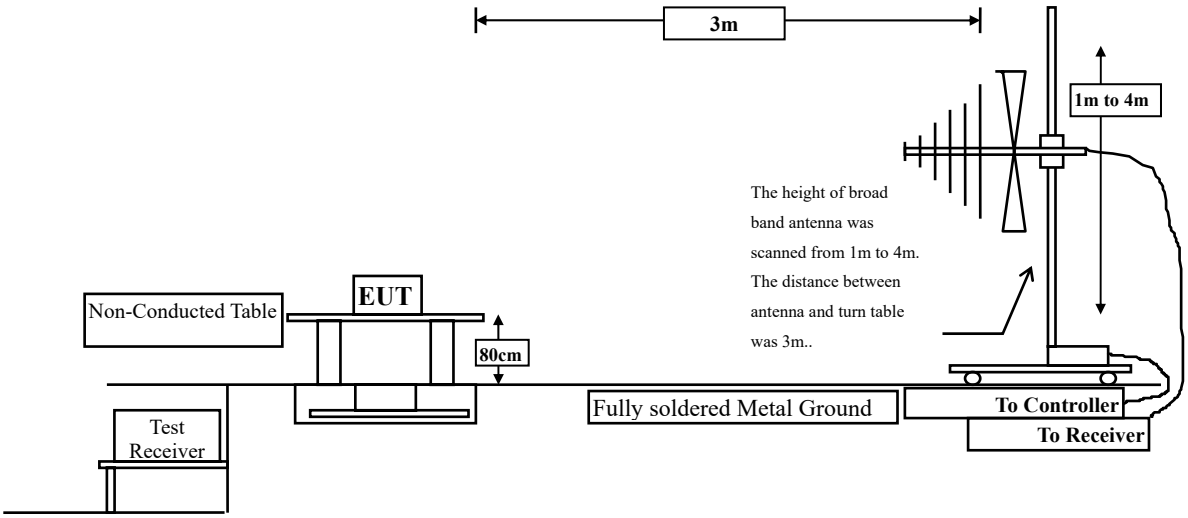
3. Radiated Emission

3.1. Test Setup

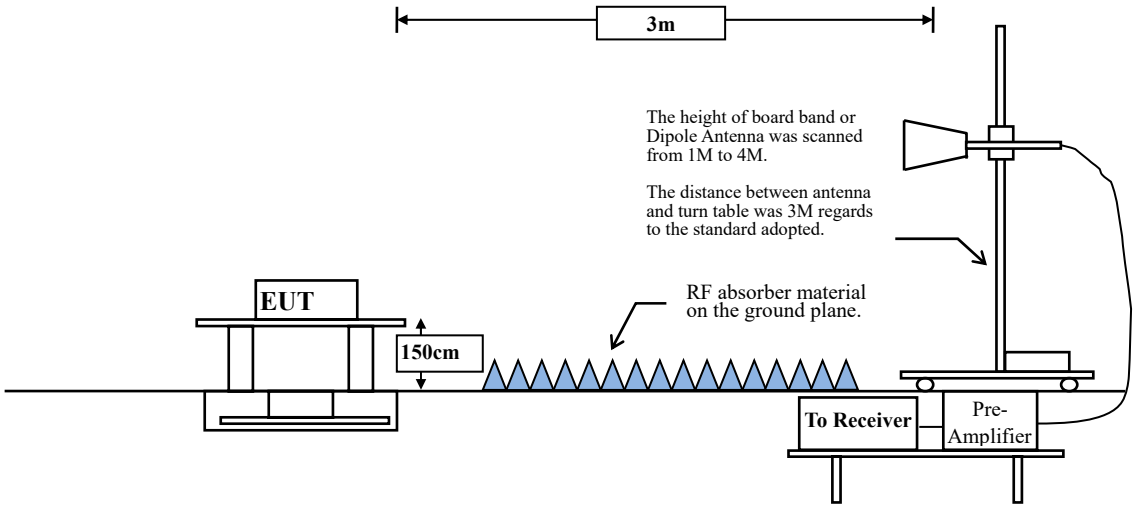
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

3.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.
RBW = 1MHz.
VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.
RBW = 1MHz.
VBW = 10Hz, when duty cycle ≥ 98 %
VBW ≥ 1/T, when duty cycle < 98 %
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

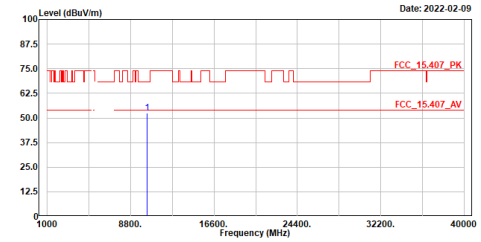
MIMO

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 ac20	78.25	1.2950	772	1000
802.11 ax20	74.07	1.0000	1000	2000
802.11 ax40	59.32	0.5250	1905	2000
802.11 ax80	46.25	0.2960	3378	5000
802.11 ax160	30.65	0.1600	6250	10000

Note: Duty Cycle Refer to Section 5

3.4. Test Result of Radiated Emission

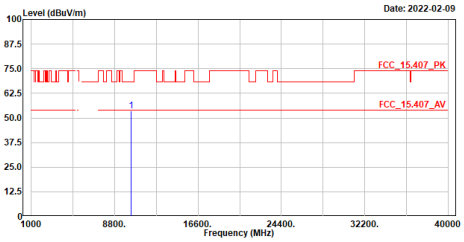
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10360.000	52.32	68.22	-15.90	49.28	3.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

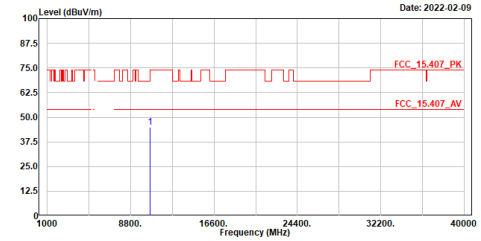
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10360.000	53.43	68.22	-14.79	50.39	3.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

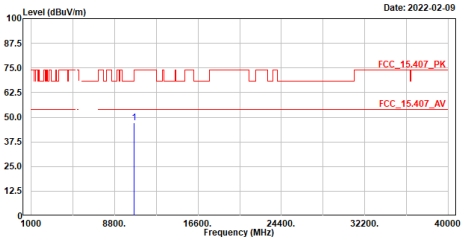
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10640.000	45.03	74.00	-28.97	41.86	3.17	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

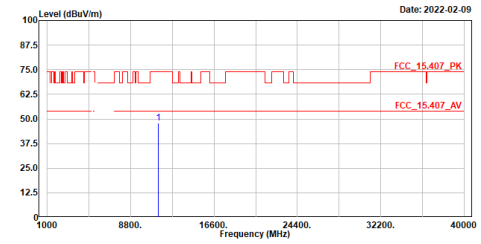
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10640.000	47.08	74.00	-26.92	43.91	3.17	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

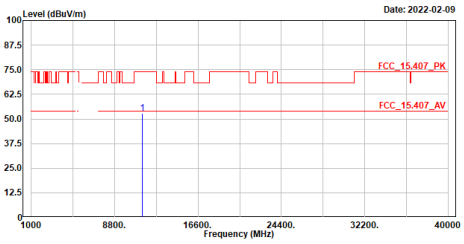
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ac20_5700MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	11400.000	48.05	74.00	-25.95	44.44	3.61	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

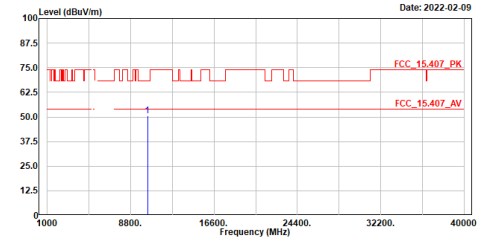
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ac20_5700MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	11400.000	52.83	74.00	-21.17	49.22	3.61	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

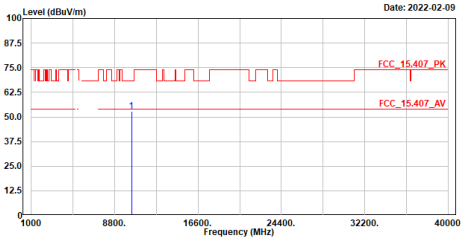
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10380.000	50.53	68.22	-17.69	47.47	3.06	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

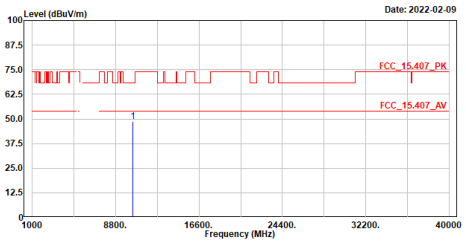
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ax40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10380.000	52.83	68.22	-15.39	49.77	3.06	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

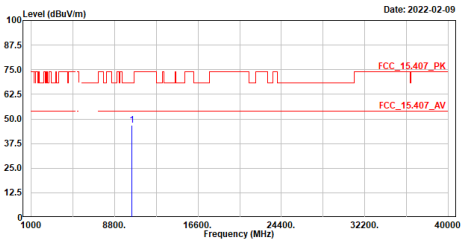
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10420.000	48.57	68.22	-19.65	45.53	3.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

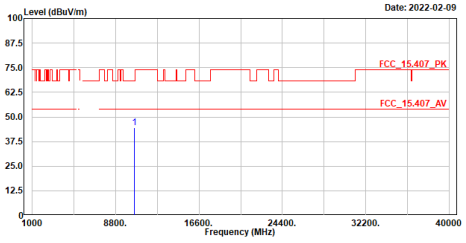
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10420.000	46.88	68.22	-21.34	43.84	3.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

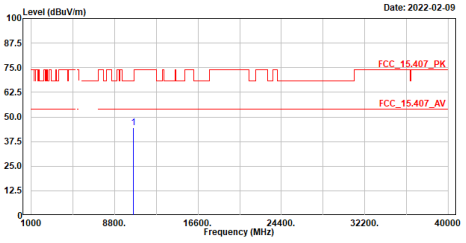
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10580.000	44.53	68.22	-23.69	41.35	3.18	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

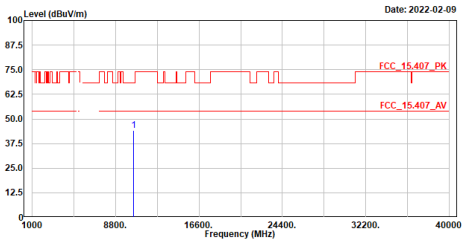
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10580.000	44.48	68.22	-23.74	41.30	3.18	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

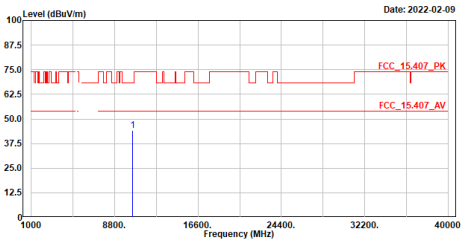
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax160_5250MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10500.000	44.01	68.22	-24.21	41.01	3.00	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

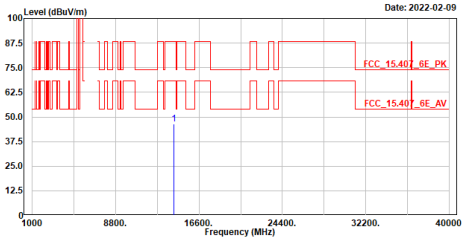
Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ax160_5250MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	10500.000	44.00	68.22	-24.22	41.00	3.00	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

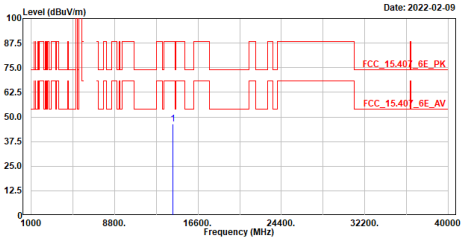
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax20_7115MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	14230.000	46.47	88.22	-41.75	40.84	5.63	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :966-1
Condition :3m ,VERTICAL
Mode :TX_ax20_7115MHz
TEST BY :Caster

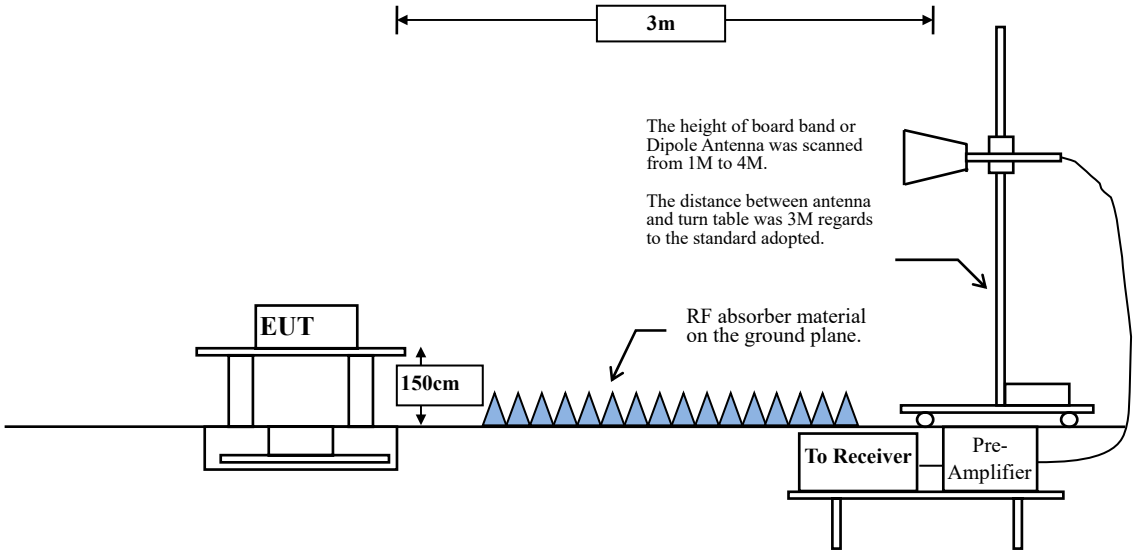


No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	14230.000	46.56	88.22	-41.66	40.93	5.63	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

4. Band Edge

4.1. Test Setup



4.2. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBμV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBμV) = 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.

4.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.
RBW = 1MHz.
VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.
RBW = 1MHz.
VBW = 10Hz, when duty cycle ≥ 98 %
VBW ≥ 1/T, when duty cycle < 98 %
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

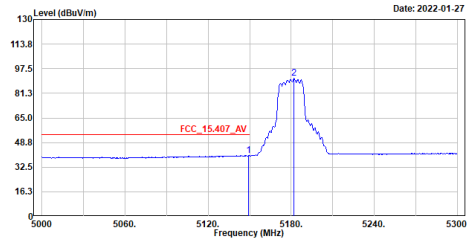
MIMO

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 ac20	78.25	1.2950	772	1000
802.11 ax20	74.07	1.0000	1000	2000
802.11 ax40	59.32	0.5250	1905	2000
802.11 ax80	46.25	0.2960	3378	5000
802.11 ax160	30.65	0.1600	6250	10000

Note: Duty Cycle Refer to Section 5

4.4. Test Result of Band Edge

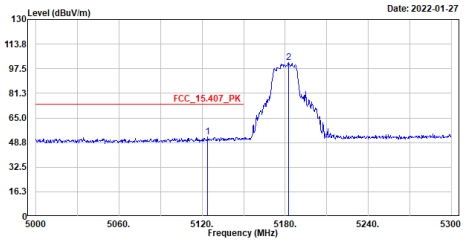
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5149.400	40.18	54.00	-13.82	24.06	16.12	Average
2	5182.100	91.07	------	------	74.72	16.35	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

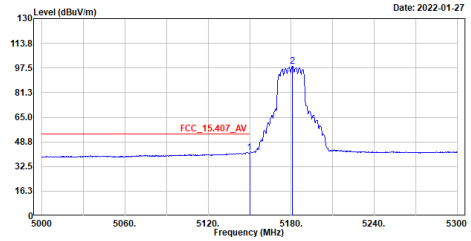
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5124.200	52.72	74.00	-21.28	36.63	16.09	Peak
2	5182.700	101.31	------	------	84.95	16.36	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

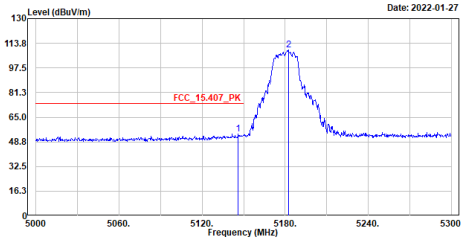
Site :966-1
Condition :3m ,Vertical
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5150.000	41.75	54.00	-12.25	25.63	16.12	Average
2	5180.900	98.49	------	------	82.14	16.35	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

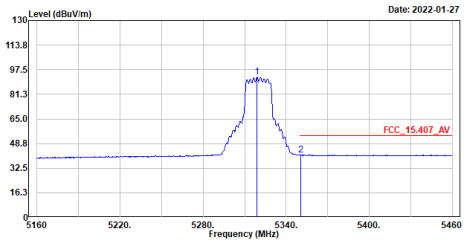
Site :966-1
Condition :3m ,Vertical
Mode :TX_ac20_5180MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5146.100	54.06	74.00	-19.94	37.94	16.12	Peak
2	5182.400	109.17	------	------	92.82	16.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

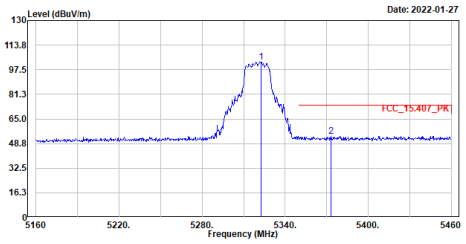
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5319.000	92.60	------	------	75.86	16.74	Average
2	5350.800	41.24	54.00	-12.76	24.59	16.65	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

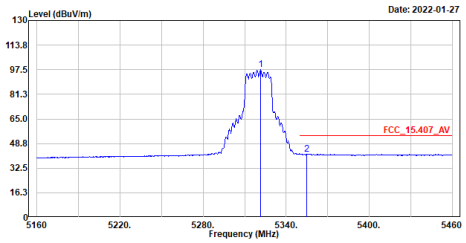
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5322.600	102.74	------	------	86.01	16.73	Peak
2	5373.300	53.71	74.00	-20.29	36.95	16.76	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

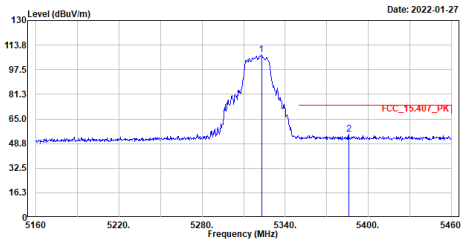
Site :966-1
Condition :3m ,Vertical
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5321.700	97.38	------	------	80.65	16.73	Average
2	5355.000	41.78	54.00	-12.22	25.11	16.67	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

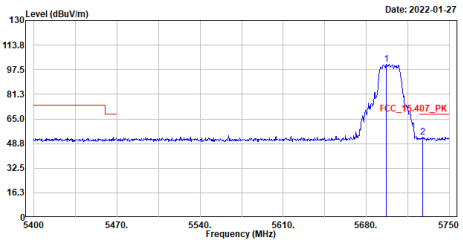
Site :966-1
Condition :3m ,Vertical
Mode :TX_ac20_5320MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5322.900	107.26	------	------	90.53	16.73	Peak
2	5385.900	54.72	74.00	-19.28	37.89	16.83	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

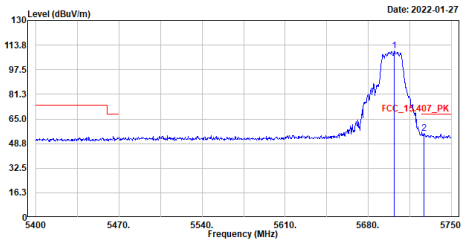
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ac20_5700MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5697.150	101.11	------	------	83.71	17.40	Peak
2	5727.600	53.02	68.22	-15.20	35.64	17.38	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

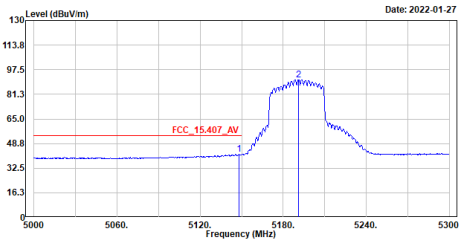
Site :966-1
Condition :3m ,Vertical
Mode :TX_ac20_5700MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5701.700	109.65	------	------	92.24	17.41	Peak
2	5726.900	55.38	68.22	-12.84	37.99	17.39	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

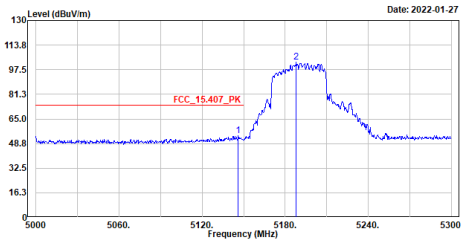
Site :966-1
Condition :3m ,Horizontal
Mode :TX_aX40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5148.200	41.58	54.00	-12.42	25.46	16.12	Average
2	5191.100	90.94	------	------	74.51	16.43	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

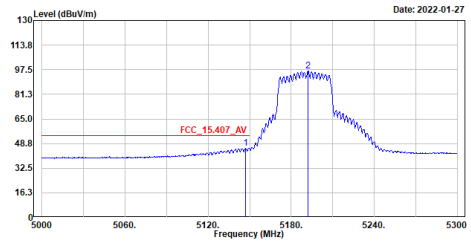
Site :966-1
Condition :3m ,Horizontal
Mode :TX_aX40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5146.100	53.72	74.00	-20.28	37.60	16.12	Peak
2	5188.100	102.37	------	------	85.96	16.41	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

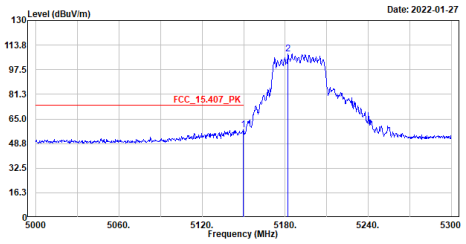
Site :966-1
Condition :3m ,Vertical
Mode :TX_aX40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5147.000	45.85	54.00	-8.15	29.73	16.12	Average
2	5192.300	96.74	------	------	80.31	16.43	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

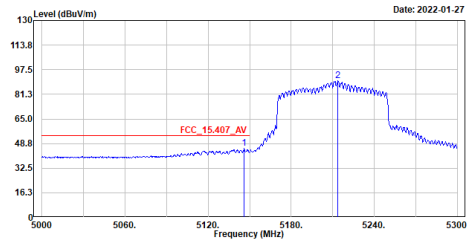
Site :966-1
Condition :3m ,Vertical
Mode :TX_aX40_5190MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5149.700	57.82	74.00	-16.18	41.70	16.12	Peak
2	5182.100	107.84	------	------	91.49	16.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

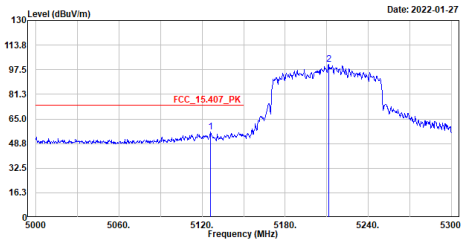
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5146.100	45.50	54.00	-8.50	29.38	16.12	Average
2	5213.900	90.14	------	------	73.60	16.54	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

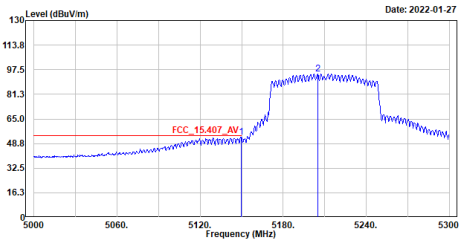
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5126.000	56.45	74.00	-17.55	40.35	16.10	Peak
2	5211.500	100.96	------	------	84.44	16.52	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

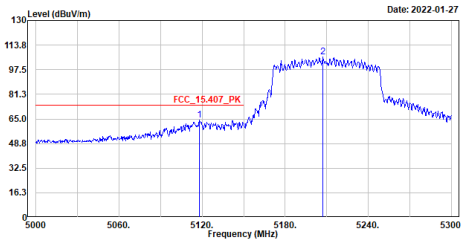
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5149.700	52.82	54.00	-1.18	36.70	16.12	Average
2	5205.200	94.75	------	------	78.24	16.51	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

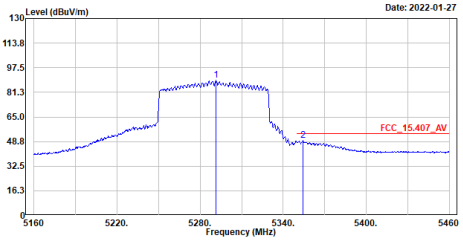
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax80_5210MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5118.200	64.20	74.00	-9.80	48.12	16.08	Peak
2	5207.300	105.96	------	------	89.45	16.51	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

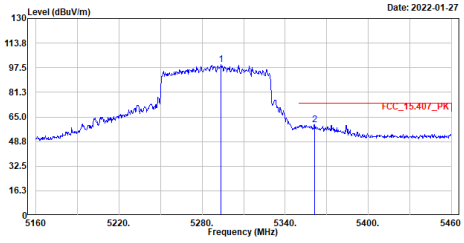
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5291.700	89.04	------	------	72.27	16.77	Average
2	5354.400	49.52	54.00	-4.48	32.85	16.67	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

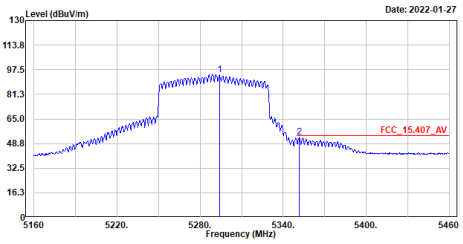
Site :966-1
Condition :3m ,Horizontal
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5293.800	99.37	------	------	82.58	16.79	Peak
2	5361.300	59.85	74.00	-14.15	43.13	16.72	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

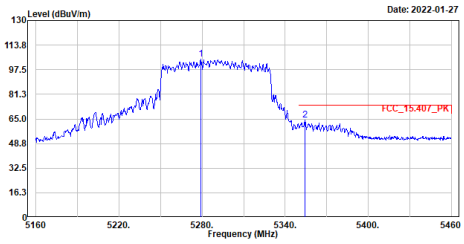
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5294.100	94.19	------	------	77.40	16.79	Average
2	5351.700	52.99	54.00	-1.01	36.33	16.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

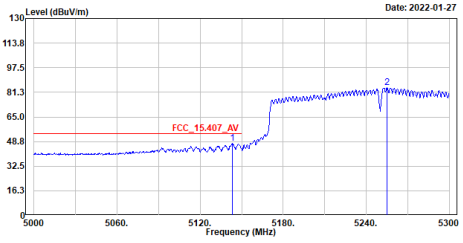
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax80_5290MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5279.100	104.50	------	------	87.76	16.74	Peak
2	5354.100	64.02	74.00	-9.98	47.35	16.67	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

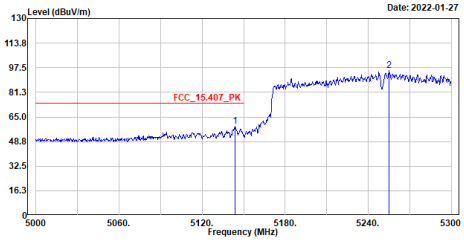
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax160_5250MHz_Band1
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5143.100	47.57	54.00	-6.43	31.45	16.12	Average
2	5255.000	84.29	------	------	67.62	16.67	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

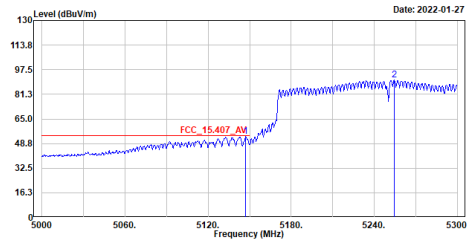
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax160_5250MHz_Band1
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5143.700	58.80	74.00	-15.20	42.68	16.12	Peak
2	5255.000	95.85	------	------	79.18	16.67	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

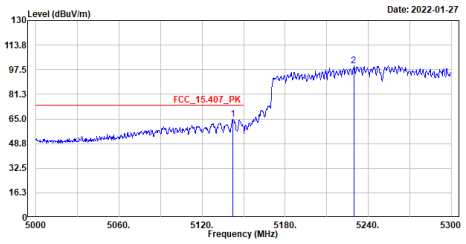
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax160_5250MHz_Band1
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5147.300	53.37	54.00	-0.63	37.25	16.12	Average
2	5254.400	90.74	------	------	74.07	16.67	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

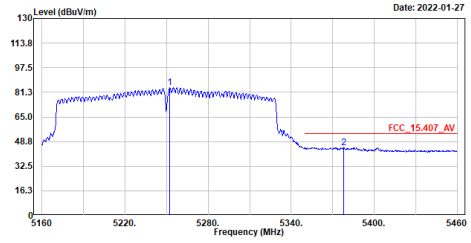
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax160_5250MHz_Band1
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5142.200	64.76	74.00	-9.24	48.64	16.12	Peak
2	5229.500	100.26	------	------	83.66	16.60	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

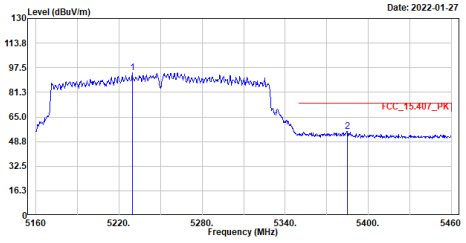
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax160_5250MHz_Band2
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5252.400	84.54	------	------	67.88	16.66	Average
2	5378.100	44.80	54.00	-9.20	28.00	16.80	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

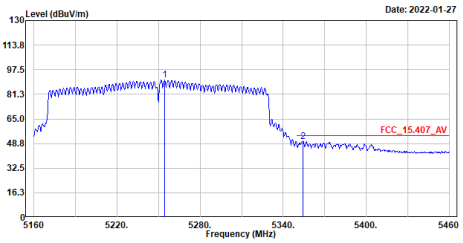
Site :966-1
Condition :3m ,HORIZONTAL
Mode :TX_ax160_5250MHz_Band2
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5229.600	94.26	------	------	77.66	16.60	Peak
2	5385.000	55.48	74.00	-18.52	38.65	16.83	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

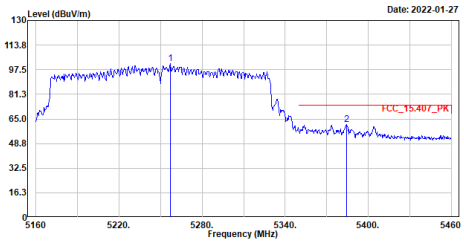
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax160_5250MHz_Band2
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5254.500	90.80	------	------	74.13	16.67	Average
2	5354.400	50.18	54.00	-3.82	33.51	16.67	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

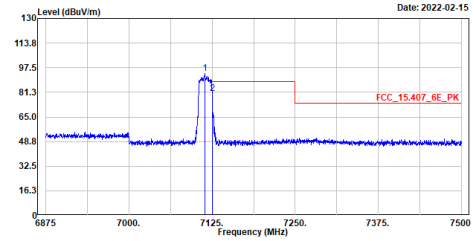
Site :966-1
Condition :3m ,Vertical
Mode :TX_ax160_5250MHz_Band2
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	5256.900	101.67	------	------	85.00	16.67	Peak
2	5384.400	61.11	74.00	-12.89	44.28	16.83	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

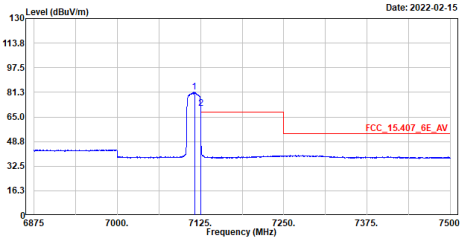
Site :966-3
Condition :3m ,Horizontal
Mode :Tx_ax20_7115MHz_RU_Full
Test BY :Ashton Chiu



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	7114.063	93.63	------	------	72.19	21.44	Peak
2	7125.000	80.31	88.22	-7.91	58.89	21.42	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

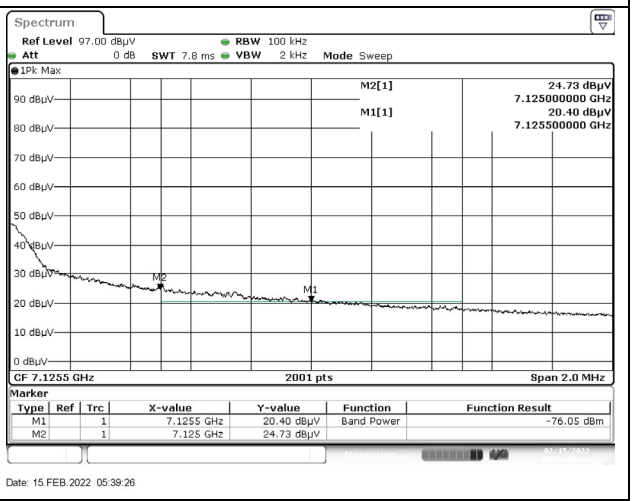
Site :966-3
Condition :3m ,Horizontal
Mode :Tx_ax20_7115MHz_RU_Full
Test BY :Ashton Chiu



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	7115.938	81.40	------	------	59.96	21.44	Average
2	7125.000	70.53	68.22	2.31	49.11	21.42	Average

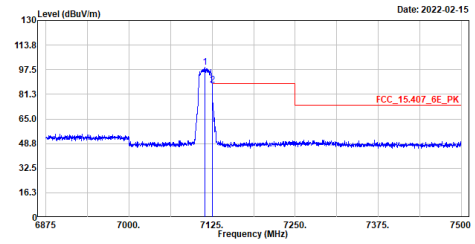
Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

N/A



Note: Refer to ANSI C63.10-2013 chapter 11.13.3 Integration method.

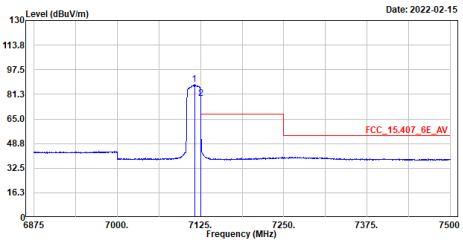
Site :966-3
Condition :3m ,Vertical
Mode :Tx_ax20_7115MHz_RU_Full
Test BY :Ashton Chiu



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	7114.063	98.96	------	------	77.52	21.44	Peak
2	7125.000	87.16	88.22	-1.06	65.74	21.42	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

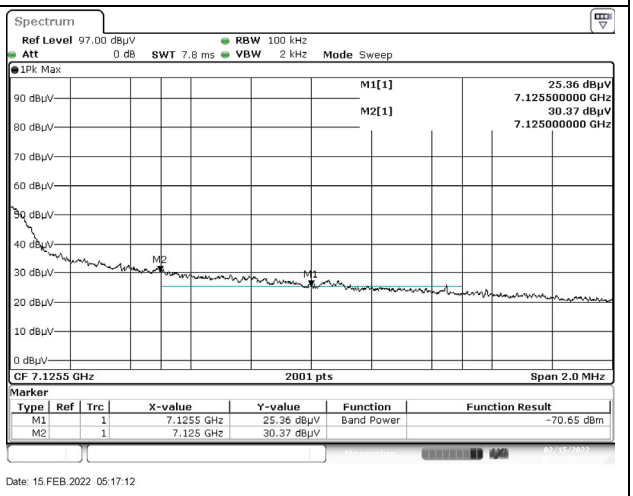
Site :966-3
Condition :3m ,Vertical
Mode :Tx_ax20_7115MHz_RU_Full
Test BY :Ashton Chiu



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	7115.938	87.89	------	------	66.45	21.44	Average
2	7125.000	78.50	68.22	10.28	57.08	21.42	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

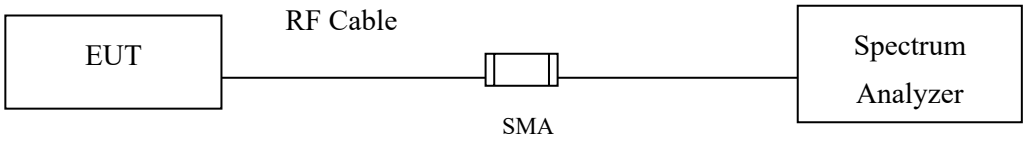
N/A



Note: Refer to ANSI C63.10-2013 chapter 11.13.3 Integration method.

5. Duty Cycle

5.1. Test Setup



5.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

5.3. Test Result of Duty Cycle

Product : 2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card

Test Item : Duty Cycle

Duty Cycle Formula:

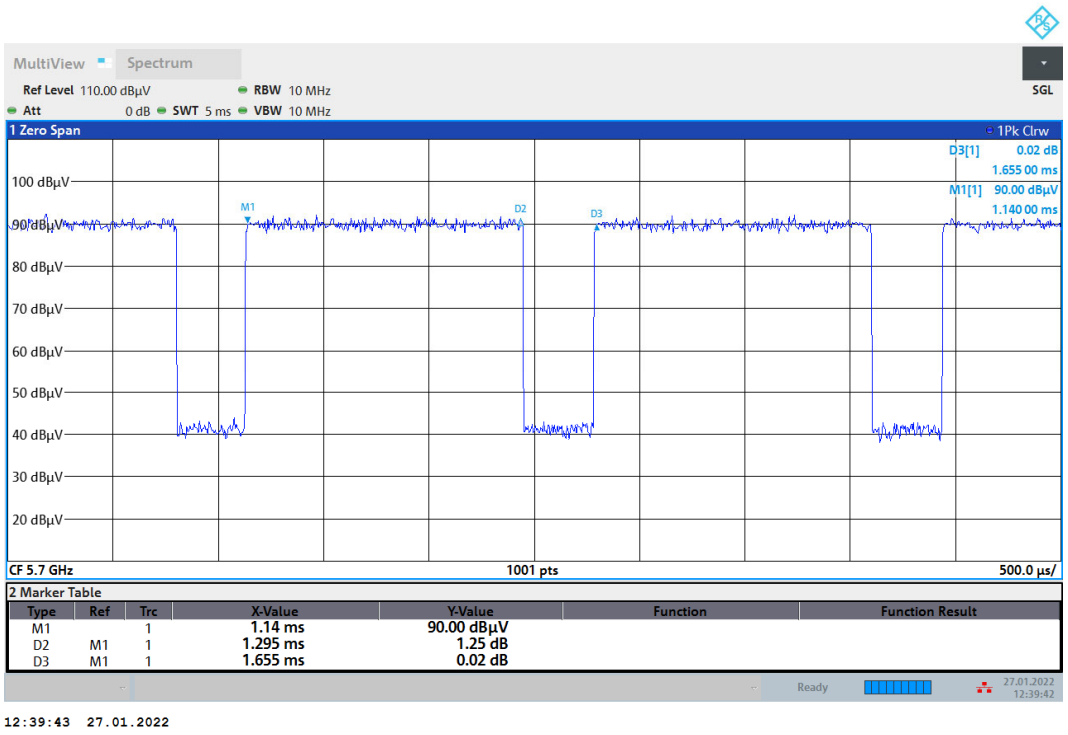
Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

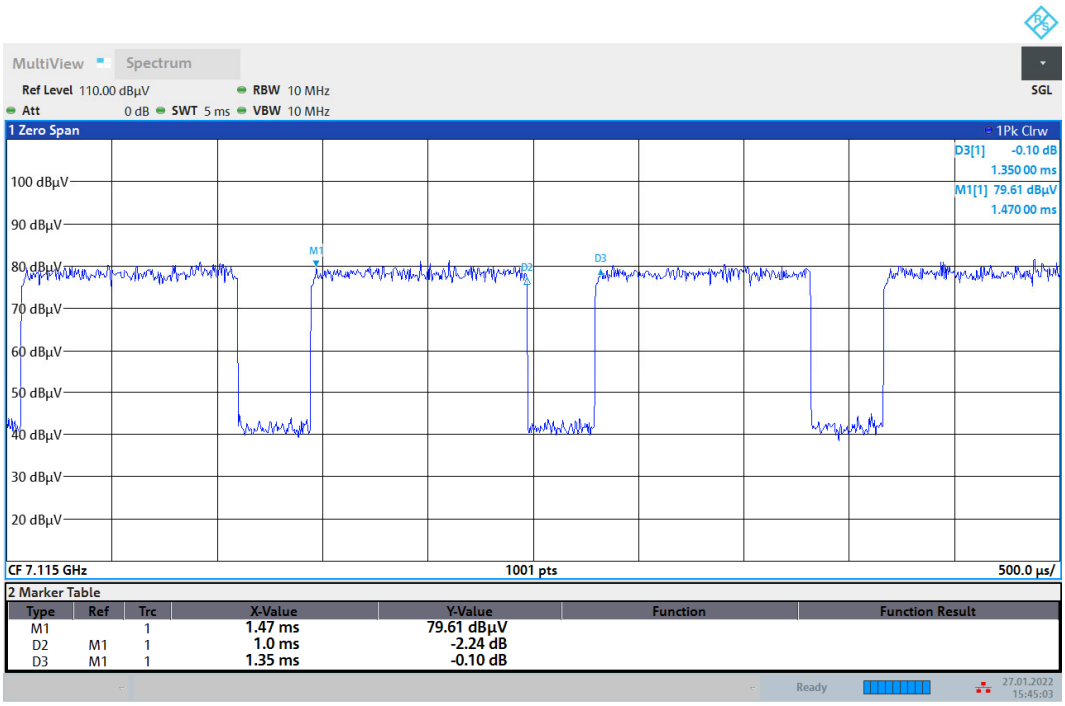
Results:

5GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 ac20	1.2950	1.6550	78.25	1.07
802.11 ax20	1.0000	1.3500	74.07	1.30
802.11 ax40	0.5250	0.8850	59.32	2.27
802.11 ax80	0.2960	0.6400	46.25	3.35
802.11 ax160	0.1600	0.5220	30.65	5.14

802.11ac20 (MIMO)

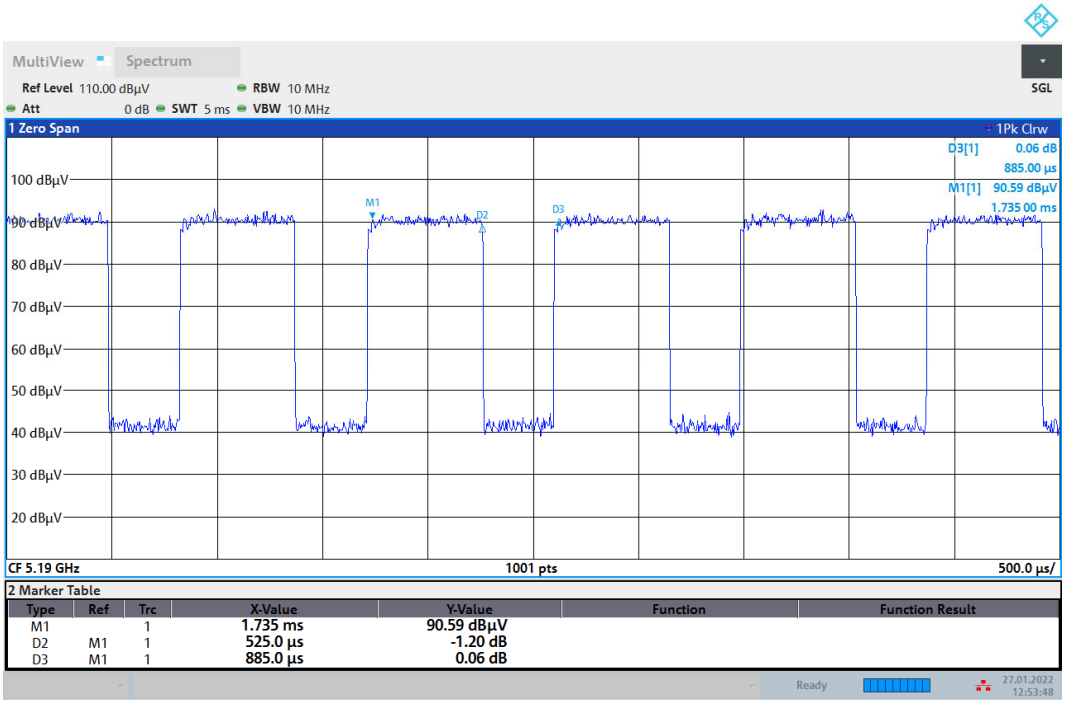


802.11ax20 (MIMO)



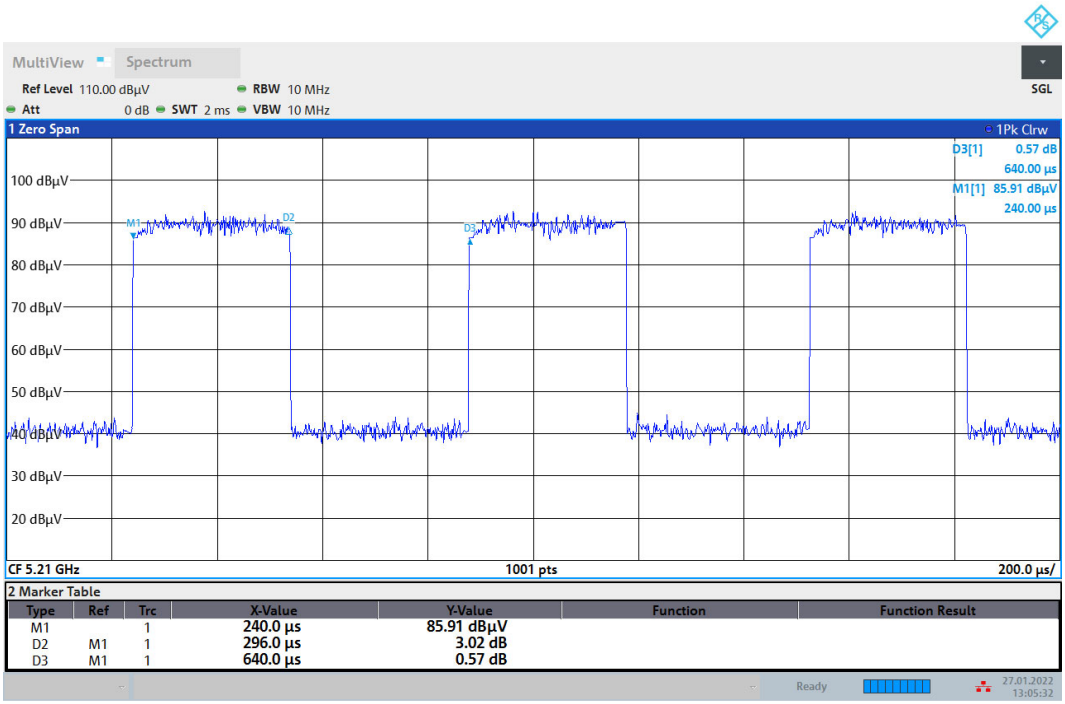
15:45:04 27.01.2022

802.11ax40 (MIMO)



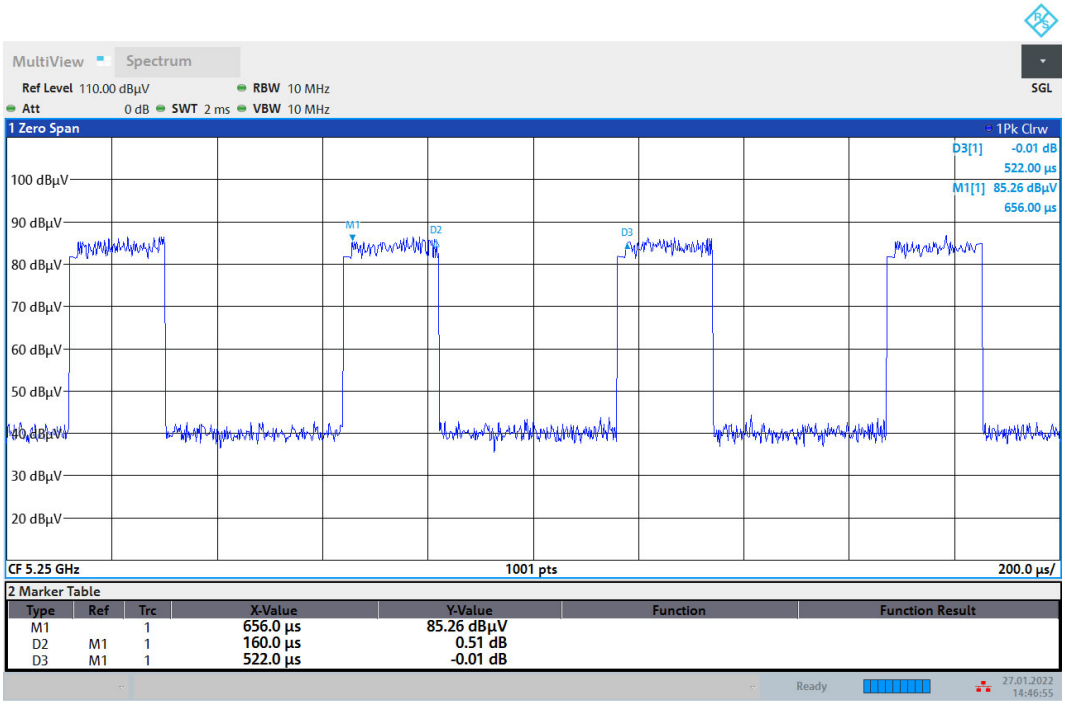
12:53:49 27.01.2022

802.11ax80 (MIMO)



13:05:32 27.01.2022

802.11ax160 (MIMO)



14:46:55 27.01.2022

6. EMI Reduction Method During Compliance Testing

No modification was made during testing.