

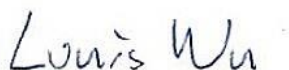


FCC RADIO TEST REPORT

FCC ID : 2AFZZ211G
Equipment : Mobile Phone
Brand Name : POCO
Model Name : 22011211G
Applicant : Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle
Road, Haidian District, Beijing, China, 100085
Manufacturer : Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle
Road, Haidian District, Beijing, China, 100085
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jan. 06, 2022 and testing was performed from Jan. 13, 2022 to Feb. 08, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



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History of this test report

Report No.	Version	Description	Issue Date
FR210628F	01	Initial issue of report	Feb. 16, 2022
FR210628F	02	Revise Antenna Requirements	Feb. 23, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	6.96 dB under the limit at 5648.800 MHz
3.5	15.207	AC Conducted Emission	Pass	8.18 dB under the limit at 0.159 MHz
3.6	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to this report "Uncertainty of Evaluation".

Comments and Explanations:

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Danny Lee

Report Producer: Vivian Hsu

1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE/5G NR, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, NFC and GNSS.

Product Feature		
Sample 1	EUT with RAM (Micron)	
Sample 2	EUT with RAM (Samsung)	
Antenna Type	WWAN: PIFA Antenna WLAN 2.4GHz <Ant. 16>: PIFA Antenna <Ant. 18>: PIFA Antenna WLAN 5GHz <Ant. 17>: PIFA Antenna <Ant. 18>: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass / BDS / Galileo / SBAS / QZSS / NavIC: PIFA Antenna NFC: Coil Antenna	
Antenna information		
5725 MHz ~ 5850 MHz	Peak Gain (dBi)	<Ant. 17>: -1.14 <Ant. 18>: -1.10

Remark: The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH16-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW3786

1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane as worst plane.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note:

1. The above Frequency and Channel with "*" are 802.11n HT40 and 802.11ac VHT40 and 802.11ax HE40.
2. The above Frequency and Channel with "[#]" are 802.11ac VHT80 and 802.11ax HE80.

2.2 Test Mode

The 802.11ax mode is investigated among different tones, full resource units (RU), partial resource units. The partial RU has no higher power than full RU's, thus the full RU is chosen as main test configuration.

The MIMO mode is chosen as worst case configuration for all test cases due to higher power than SISO mode.

The 802.11n/ac mode has no higher power and PSD than 802.11ax mode, thus the 802.11ax mode is chosen as main test configuration, and the 802.11n/ac mode is verified the power.

The 242-tone RU is covered by 20MHz channel, 484-tone RU is covered by 40MHz channel.

The final test modes consider the modulation and the worst data rates as shown in the table below.

MIMO Mode

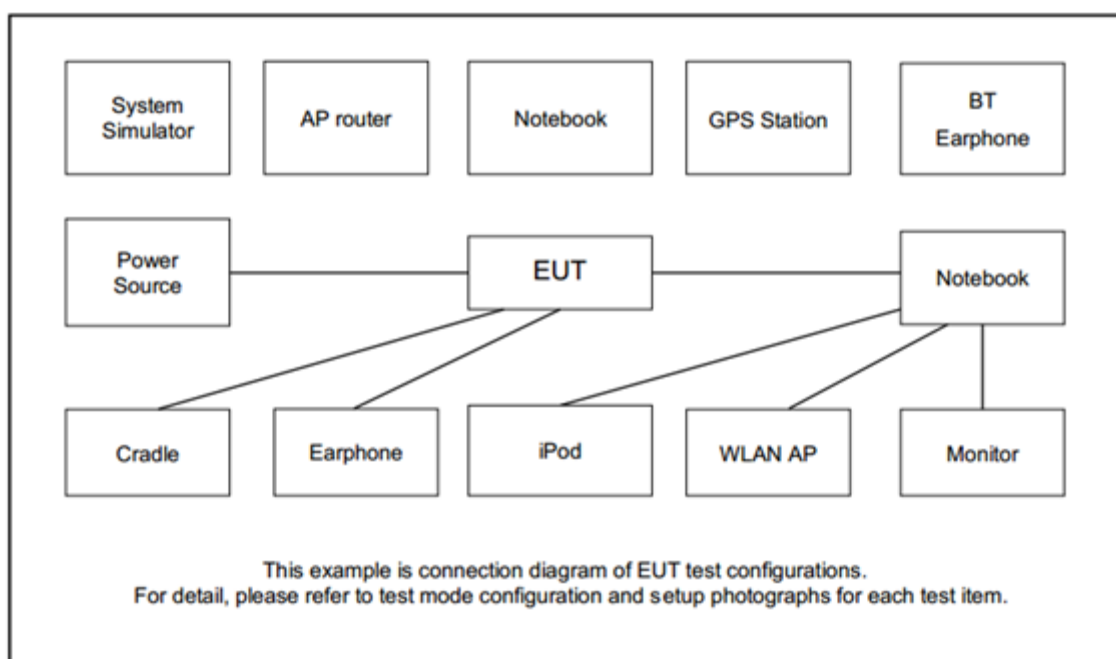
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by HE20)	MCS0, $N_{SS}=2$
802.11n HT40 (Covered by HE40)	MCS0, $N_{SS}=2$
802.11ac VHT20 (Covered by HE20)	MCS0, $N_{SS}=2$
802.11ac VHT40 (Covered by HE40)	MCS0, $N_{SS}=2$
802.11ac VHT80 (Covered by HE80)	MCS0, $N_{SS}=2$
802.11ax HE20	MCS0, $N_{SS}=2$
802.11ax HE40	MCS0, $N_{SS}=2$
802.11ax HE80	MCS0, $N_{SS}=2$

Test Cases	
AC Conducted Emission	Mode 1 : LTE Band 26 Rx + Bluetooth Link + WLAN (5GHz) Link + GNSS Rx + Battery + USB Cable 1 (Data Link with Notebook) + SIM 2 for Sample 1
Remark: 1. For Radiated Test Cases, the tests were performed with Adapter 2, USB Cable 1 and Sample 1 2. Data Link with Notebook means data application transferred mode between EUT and Notebook.	

Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11ax HE20	802.11ax HE40	802.11ax HE80
L	Low	149	-	151	-
M	Middle	157	-	-	155
H	High	165	165	159	-

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony Ericsson	MW600	PY700A2029	N/A	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
5.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0m	N/A
6.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8m



2.5 EUT Operation Test Setup

The RF test items, make the EUT (SW: 2021-12-21-200901) get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

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

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85 GHz
2. Set RBW = 100 kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup

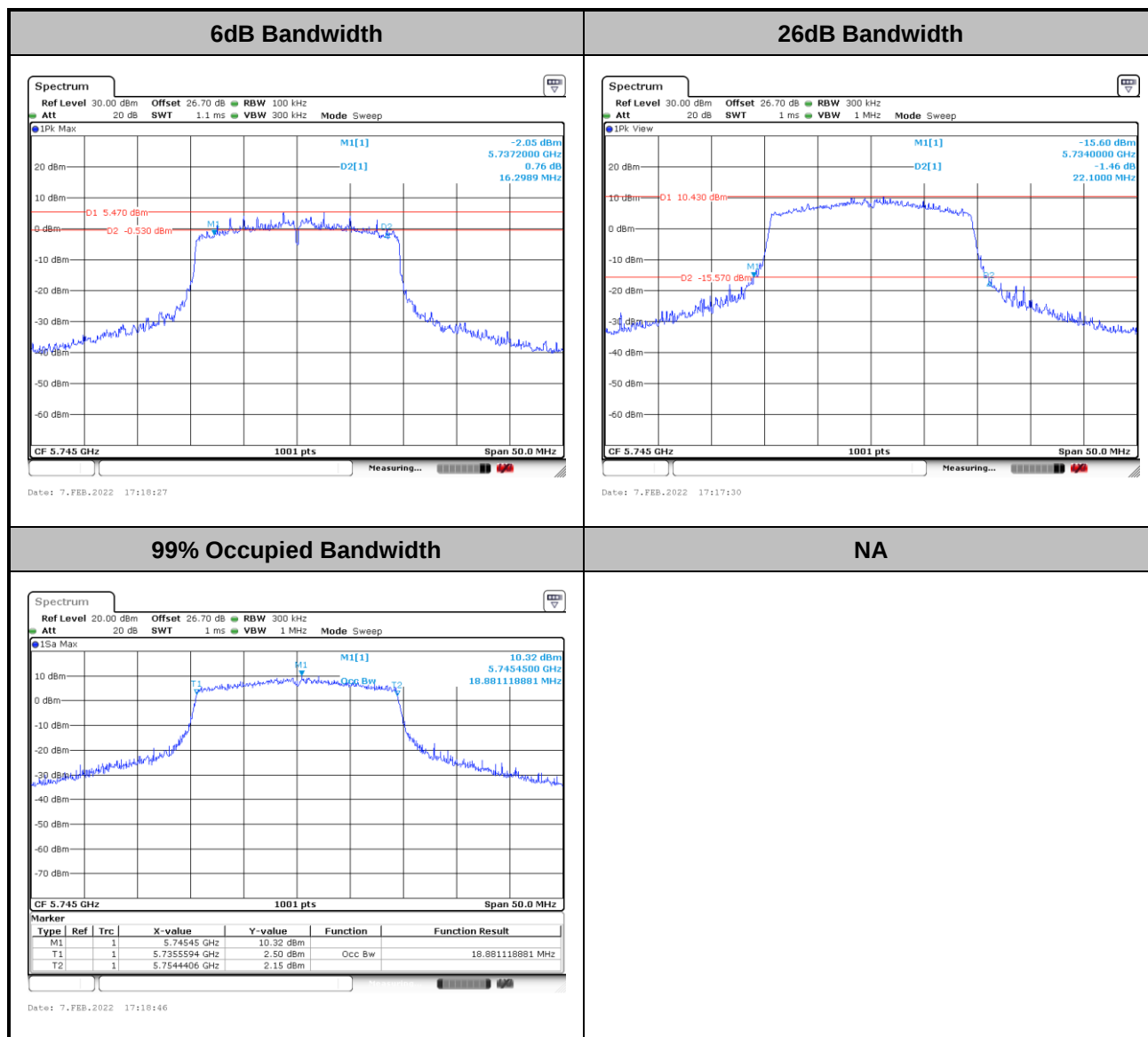


3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.



<802.11a>

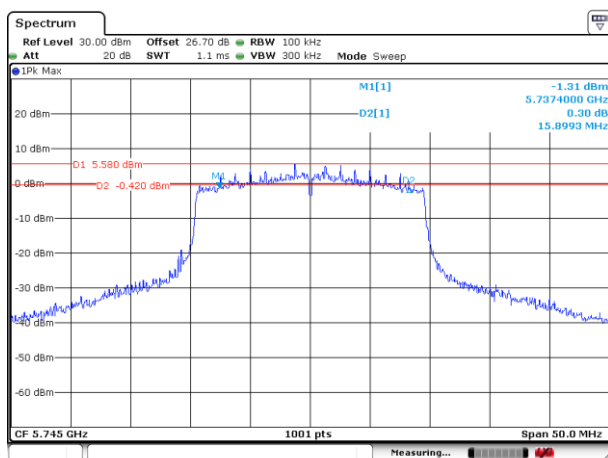


Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

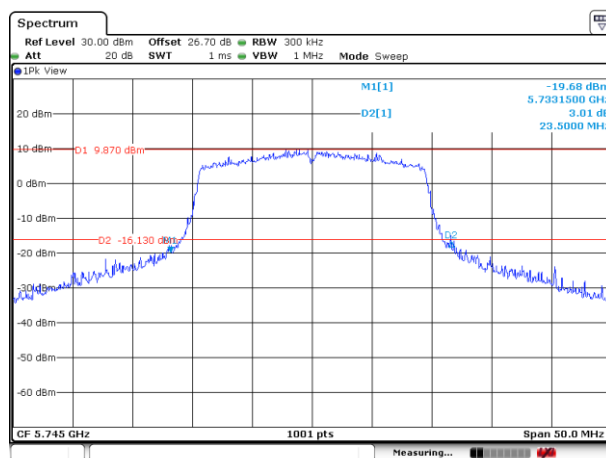


<802.11ax HE20>

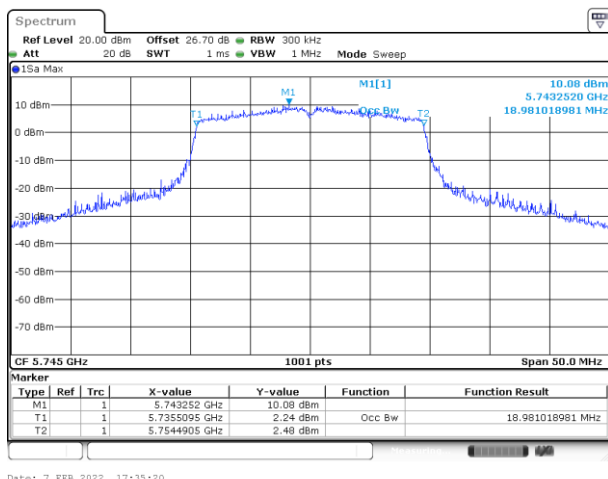
6dB Bandwidth



26dB Bandwidth



99% Occupied Bandwidth

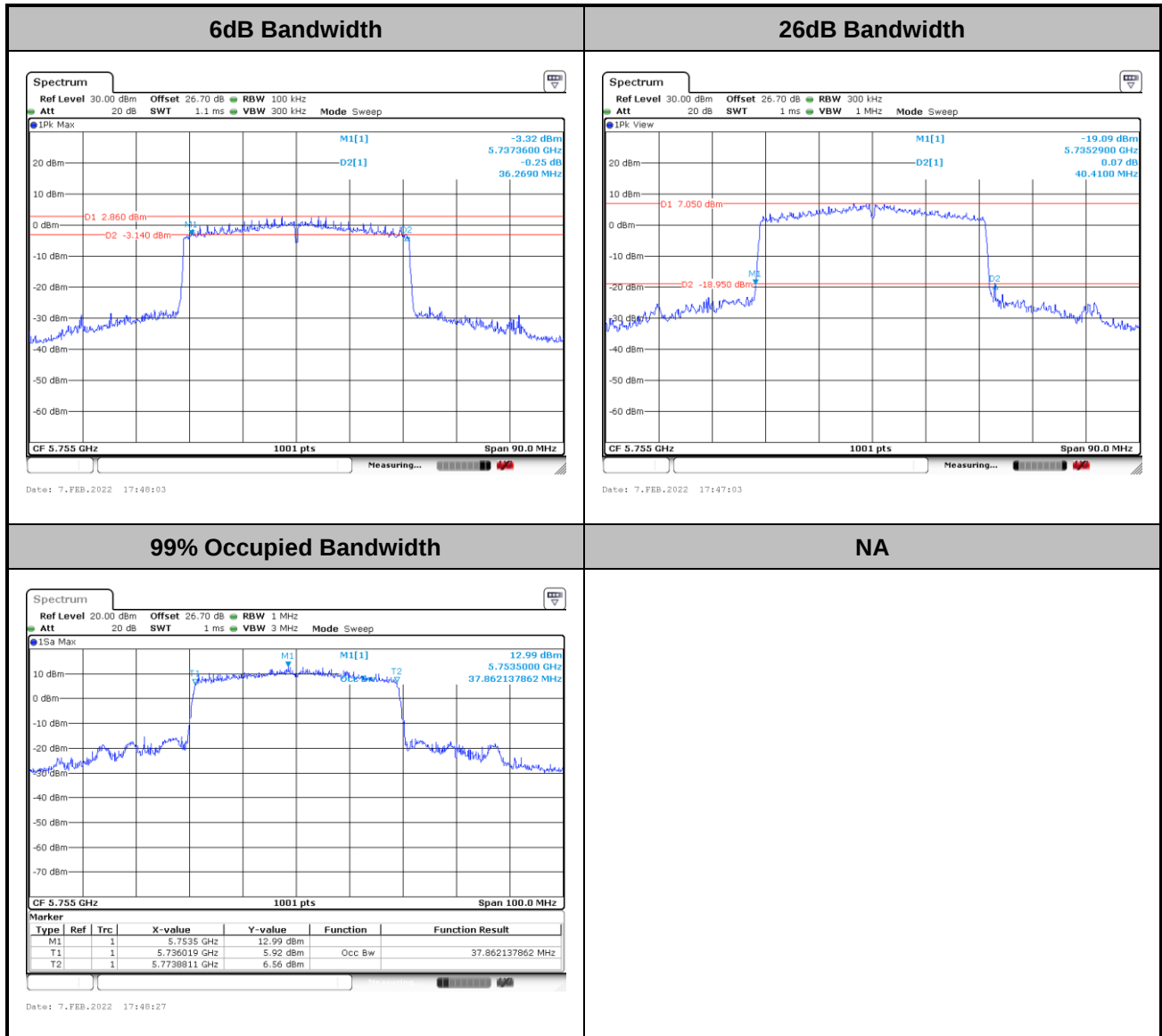


NA

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



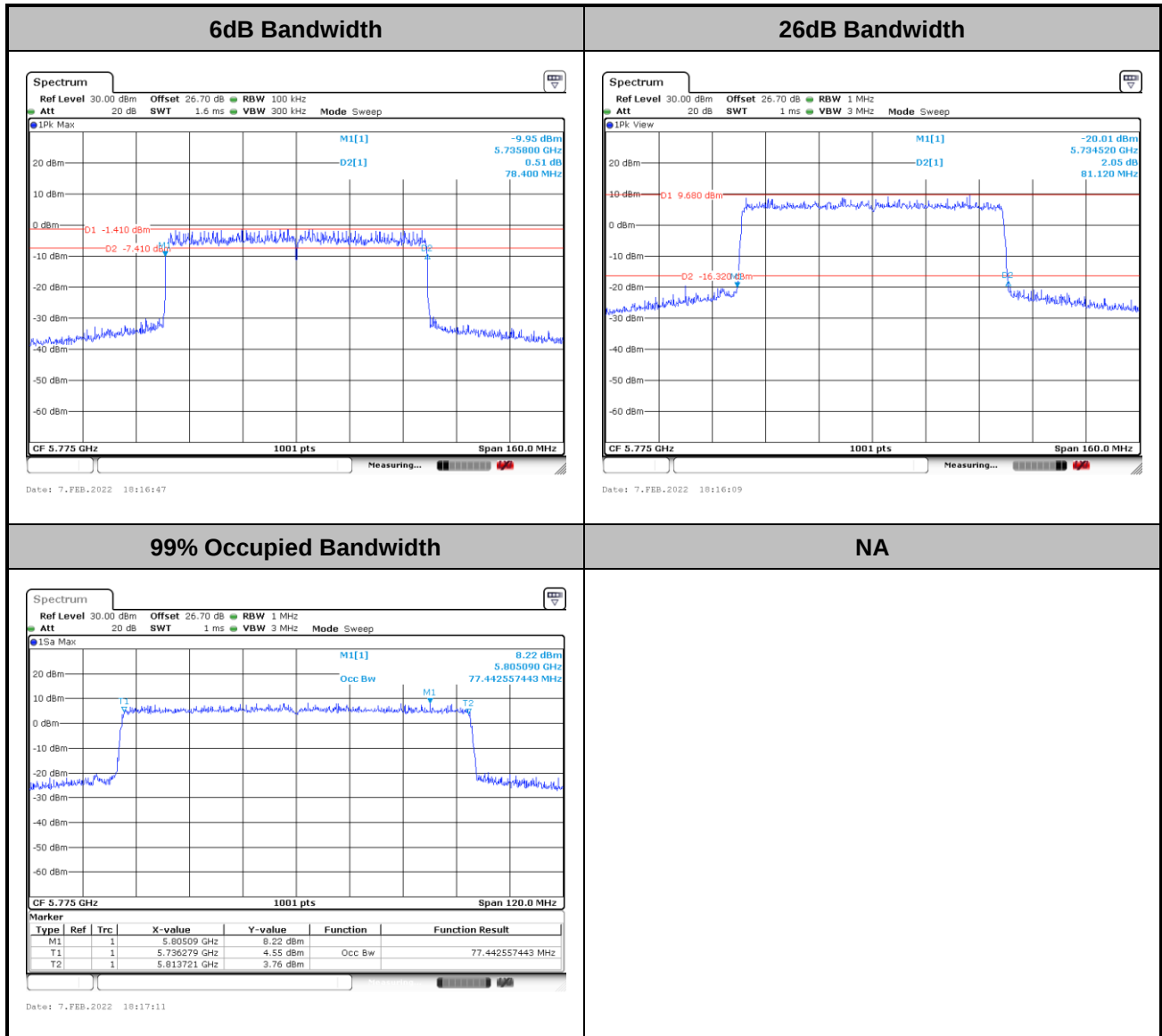
<802.11ax HE40>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



<802.11ax HE80>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

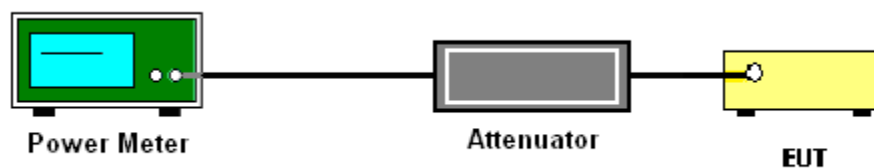
3.2.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-3

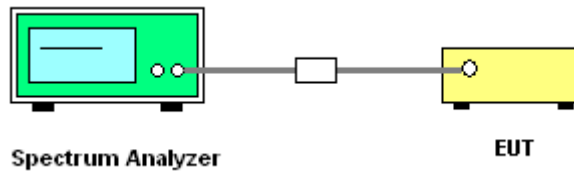
(power averaging (rms) detection with max hold):

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Add $10 \log(500 \text{ kHz/RBW})$ to the measured result, whereas RBW ($< 500 \text{ kHz}$) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
 - Sweep time $\leq$ (number of points in sweep) $\times T$, when duty cycle is less than 98 percent where T is 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.
Detector = power averaging (rms).
 - Trace mode = max hold.
 - Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
1. The RF output of EUT is connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ dB.

With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

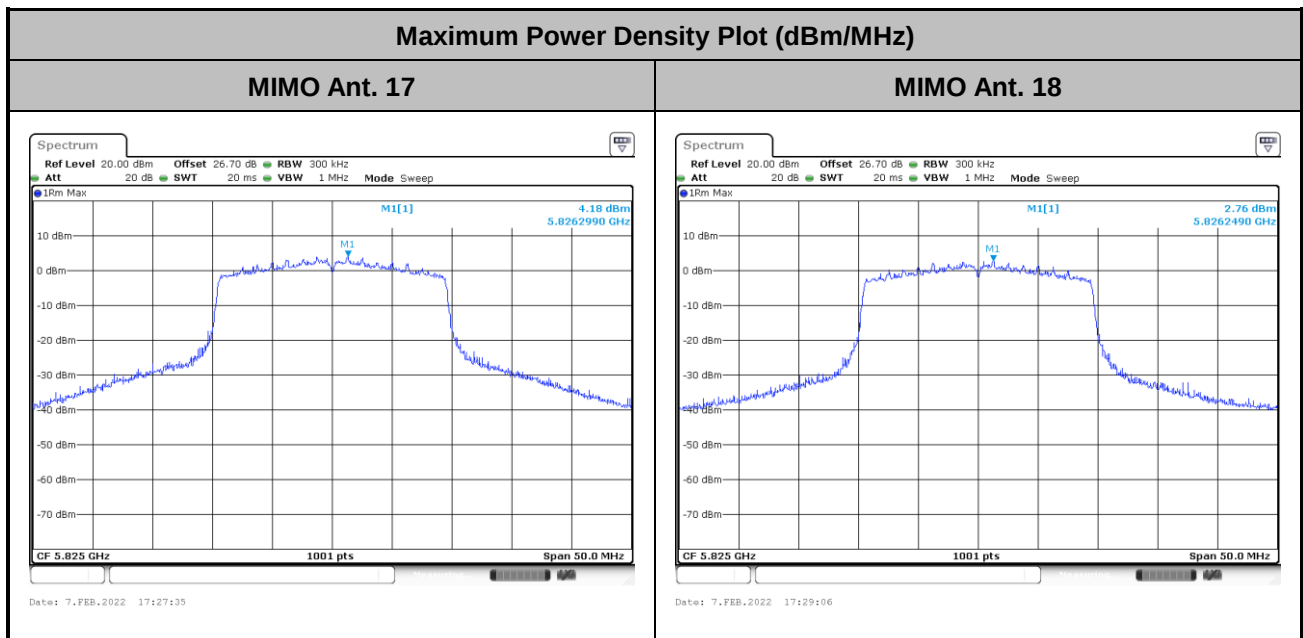
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11a>

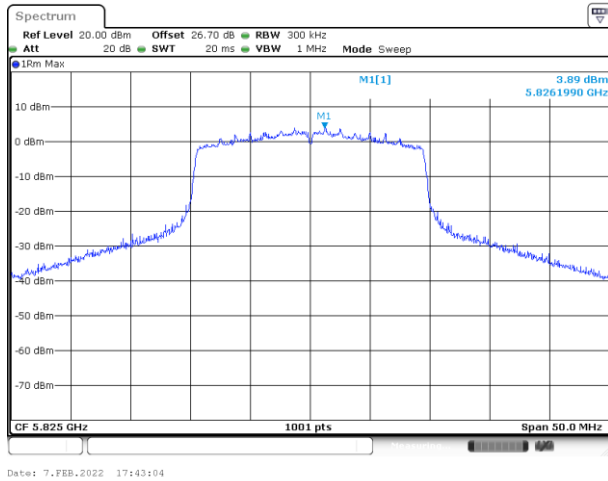




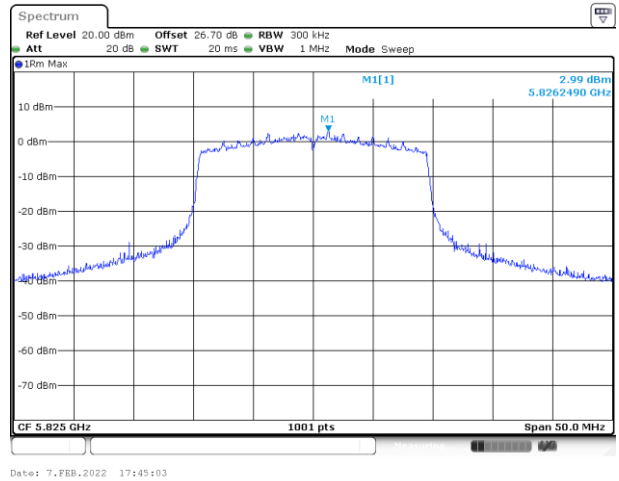
<802.11ax>

Maximum Power Density Plot (dBm/MHz)

MIMO Ant. 17



MIMO Ant. 18



3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) 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.

- (2) Unwanted spurious emissions falls in restricted bands shall comply with the general field strength limits as below table,

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

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

- (3) KDB789033 D02 v02r01 G)2)c)

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

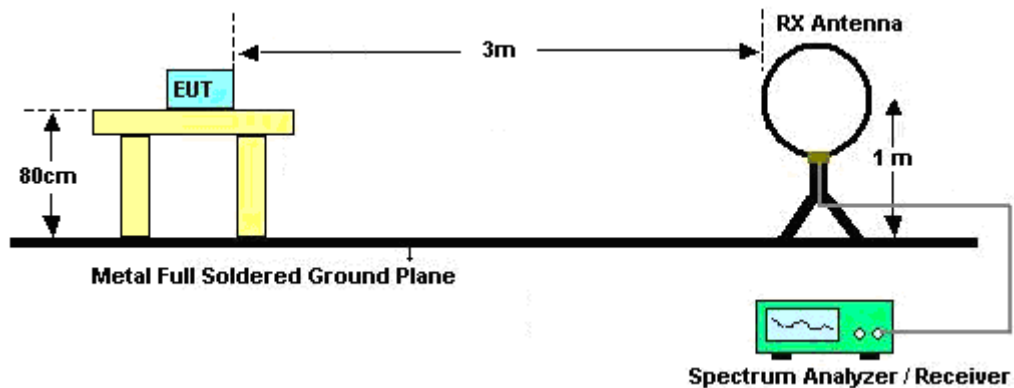
3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
(1) Procedure for Unwanted Emissions Measurements Below 1000 MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
(3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is 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.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.

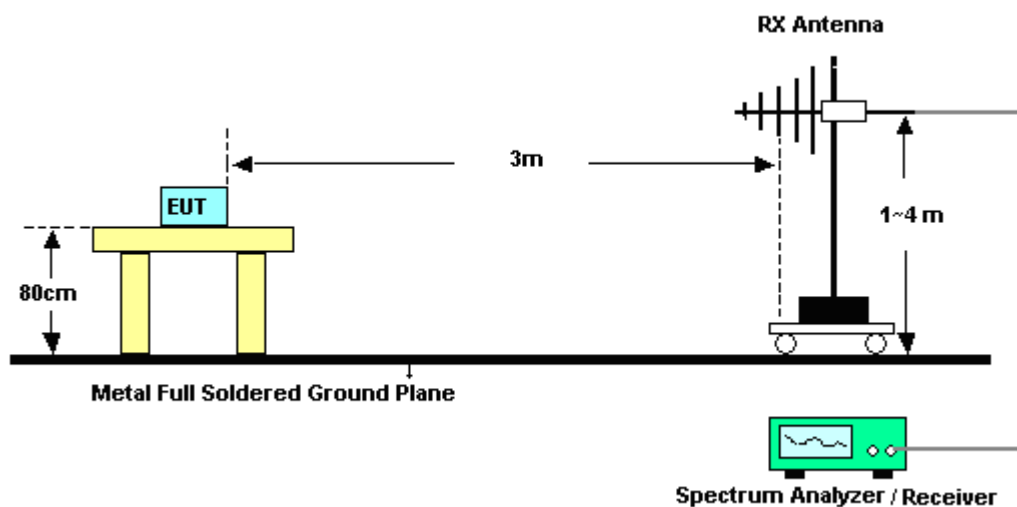
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“.

3.4.4 Test Setup

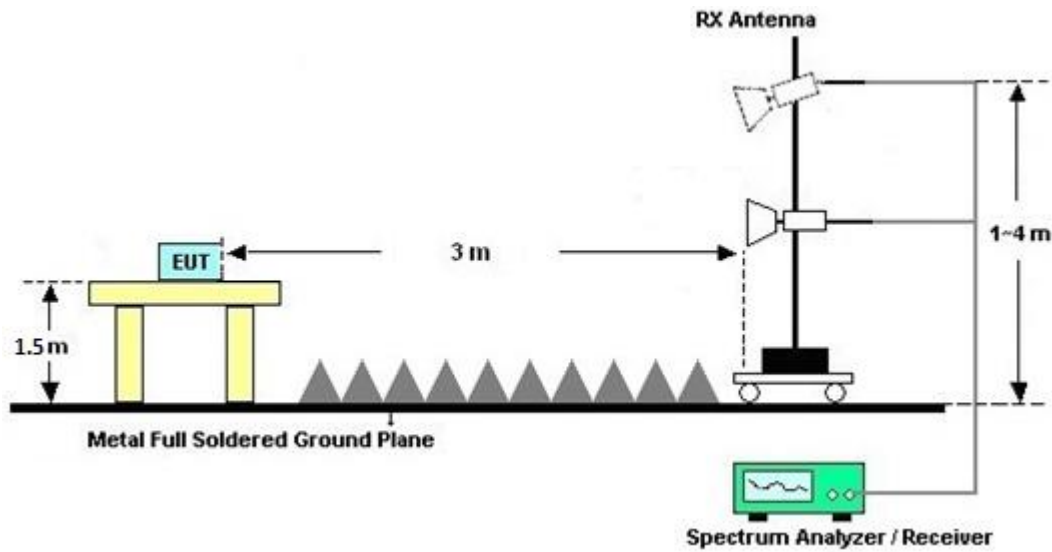
For radiated emissions below 30MHz



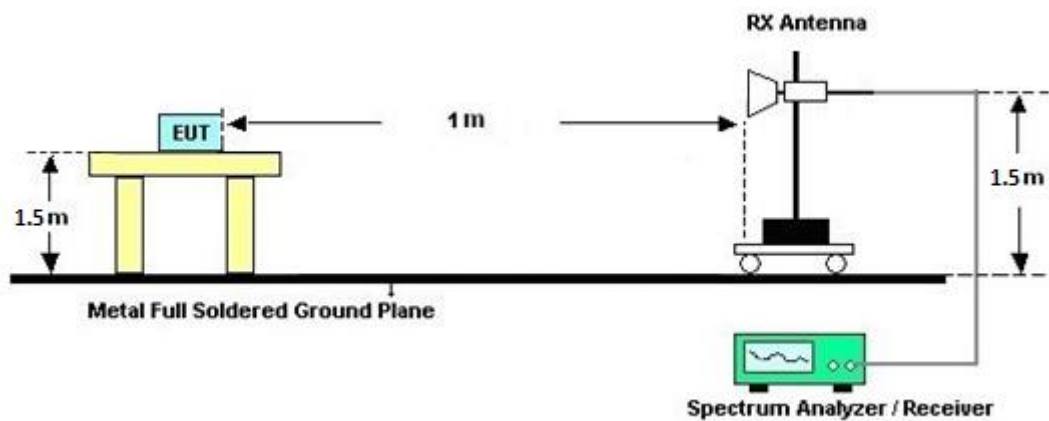
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.4.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

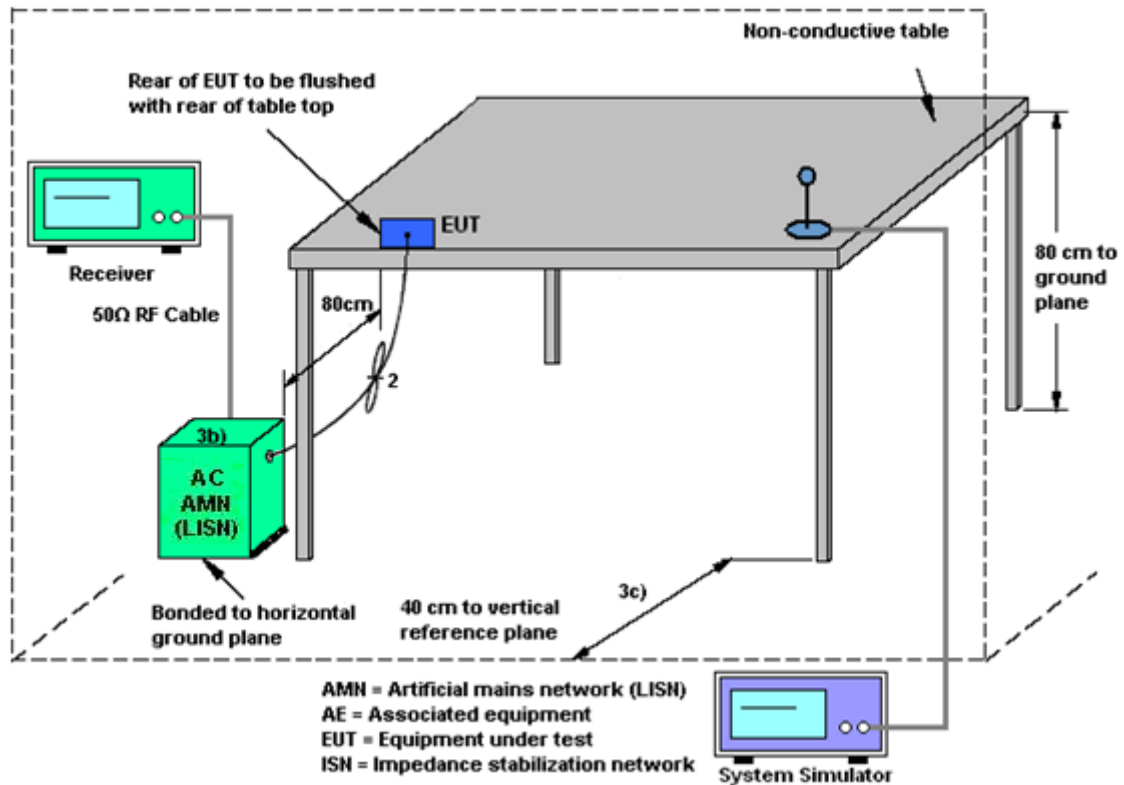
3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.5.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For power and PSD, the directional gain calculation is following F)2)e)iii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 17 (dBi)	Ant. 18 (dBi)				
Band IV	-1.14	-1.10	-1.10	-1.10	0.00	0.00

$Power\ Limit\ Reduction = DG(Power) - 6dBi, (min = 0)$

$PSD\ Limit\ Reduction = DG(PSD) - 6dBi, (min = 0)$



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Jan. 19, 2022~ Jan. 25, 2022	Sep. 06, 2022	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N-06	47020 & 06	30MHz to 1GHz	Oct. 09, 2021	Jan. 19, 2022~ Jan. 25, 2022	Oct. 08, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1G~18GHz	Aug. 04, 2021	Jan. 19, 2022~ Jan. 25, 2022	Aug. 03, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1522	1G~18GHz	Oct. 12, 2021	Jan. 19, 2022~ Jan. 25, 2022	Oct. 11, 2022	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz ~40GHz	Nov. 30, 2021	Jan. 19, 2022~ Jan. 25, 2022	Nov. 29, 2022	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Jul. 05, 2021	Jan. 19, 2022~ Jan. 25, 2022	Jul. 04, 2022	Radiation (03CH16-HY)
Amplifier	EMCI	EMC051845SE	980729	1-18GHz	Jul. 09, 2021	Jan. 19, 2022~ Jan. 25, 2022	Jul. 08, 2022	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Jan. 19, 2022~ Jan. 25, 2022	Jun. 21, 2022	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2021	Jan. 19, 2022~ Jan. 25, 2022	Dec. 08, 2022	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A	MY59053012	3Hz~26.5GHz	Nov. 18, 2021	Jan. 19, 2022~ Jan. 25, 2022	Nov. 17, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4PE	NA	Aug. 28, 2021	Jan. 19, 2022~ Jan. 25, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4PE	NA	Aug. 28, 2021	Jan. 19, 2022~ Jan. 25, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-57 57	NA	Aug. 28, 2021	Jan. 19, 2022~ Jan. 25, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Jan. 19, 2022~ Jan. 25, 2022	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Jan. 19, 2022~ Jan. 25, 2022	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Jan. 19, 2022~ Jan. 25, 2022	N/A	Radiation (03CH16-HY)
Filter	Wainwright	WHKX8-5872.5 -6750-18000-4 0ST	SN5	6.75GHz High Pass Filter	Mar. 11, 2021	Jan. 19, 2022~ Jan. 25, 2022	Mar. 10, 2022	Radiation (03CH16-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN12	1.53GHz Low Pass Filter	Sep. 14, 2021	Jan. 19, 2022~ Jan. 25, 2022	Sep. 13, 2022	Radiation (03CH16-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Jan. 13, 2022~ Feb. 08, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Jan. 13, 2022~ Feb. 08, 2022	Aug. 29, 2022	Conducted (TH05-HY)
Switch Control Mainframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Jan. 13, 2022~ Feb. 08, 2022	Aug. 11, 2022	Conducted (TH05-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 27, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Jan. 27, 2022	Nov. 30, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Jan. 27, 2022	Dec. 02, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2021	Jan. 27, 2022	Nov. 15, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Jan. 27, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	Jan. 27, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Jan. 27, 2022	Dec. 29, 2022	Conduction (CO05-HY)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Benny Ku	Temperature:	21~25	°C
Test Date:	2022/1/13~2022/2/8	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

Band IV MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 17	Ant 18	Ant 17	Ant 18	Ant 17	Ant 18		
11a	6Mbps	2	149	5745	18.88	18.88	22.10	21.25	16.30	16.45	0.5	Pass
11a	6Mbps	2	157	5785	18.93	18.88	22.25	22.15	15.55	15.95	0.5	Pass
11a	6Mbps	2	165	5825	18.93	18.88	21.80	21.40	15.70	16.50	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 17	Ant 18	SUM	Ant 17	Ant 18	Ant 17	Ant 18	
11a	6Mbps	2	149	5745	17.20	16.80	20.01	30.00		-1.10		Pass
11a	6Mbps	2	157	5785	17.40	17.10	20.26	30.00		-1.10		Pass
11a	6Mbps	2	165	5825	17.60	16.60	20.14	30.00		-1.10		Pass
HT20	MCS0	2	149	5745	17.00	16.60	19.81	30.00		-1.10		Pass
HT20	MCS0	2	157	5785	17.20	16.90	20.06	30.00		-1.10		Pass
HT20	MCS0	2	165	5825	17.40	16.40	19.94	30.00		-1.10		Pass
HT40	MCS0	2	151	5755	16.70	16.40	19.56	30.00		-1.10		Pass
HT40	MCS0	2	159	5795	16.80	16.40	19.61	30.00		-1.10		Pass
VHT20	MCS0	2	149	5745	17.00	16.60	19.81	30.00		-1.10		Pass
VHT20	MCS0	2	157	5785	17.20	16.90	20.06	30.00		-1.10		Pass
VHT20	MCS0	2	165	5825	17.40	16.40	19.94	30.00		-1.10		Pass
VHT40	MCS0	2	151	5755	16.70	16.40	19.56	30.00		-1.10		Pass
VHT40	MCS0	2	159	5795	16.80	16.40	19.61	30.00		-1.10		Pass
VHT80	MCS0	2	155	5775	16.60	16.20	19.41	30.00		-1.10		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV MIMO														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 17	Ant 18	Ant 17	Ant 18	SUM	Ant 17	Ant 18	Ant 17	Ant 18	
11a	6Mbps	2	149	5745	2.22		5.72	5.43	8.73	30.00		-1.10		Pass
11a	6Mbps	2	157	5785	2.22		5.90	5.28	8.91	30.00		-1.10		Pass
11a	6Mbps	2	165	5825	2.22		6.40	4.98	9.41	30.00		-1.10		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

Band IV MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
						Ant 17	Ant 18	Ant 17	Ant 18	Ant 17	Ant 18		
HE20	MCS0	2	149	5745	Full	18.98	18.93	23.50	22.35	15.90	15.20	0.5	Pass
HE20	MCS0	2	157	5785	Full	18.93	18.93	21.95	22.30	15.60	16.65	0.5	Pass
HE20	MCS0	2	165	5825	Full	18.93	18.88	21.80	21.20	16.85	16.45	0.5	Pass
HE40	MCS0	2	151	5755	Full	37.86	37.86	40.41	39.51	36.27	35.28	0.5	Pass
HE40	MCS0	2	159	5795	Full	37.76	37.76	39.78	39.69	36.54	35.91	0.5	Pass
HE80	MCS0	2	155	5775	Full	77.44	77.44	81.12	80.80	78.40	78.24	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 17	Ant 18	SUM	Ant 17	Ant 18	Ant 17	Ant 18	
HE20	MCS0	2	149	5745	Full	17.10	16.70	19.91	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	26/0	8.70	8.20	11.47	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	52/37	11.90	11.40	14.67	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	106/53	14.20	13.80	17.01	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	Full	17.30	17.00	20.16	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	26/4	9.20	8.50	11.87	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	52/38	11.80	11.20	14.52	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	106/53	14.30	13.90	17.11	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	Full	17.50	16.50	20.04	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	26/8	9.00	8.20	11.63	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	52/40	12.20	10.70	14.52	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	106/54	14.80	13.50	17.21	30.00		-1.10		Pass
HE40	MCS0	2	151	5755	Full	16.80	16.50	19.66	30.00		-1.10		Pass
HE40	MCS0	2	159	5795	Full	16.90	16.50	19.71	30.00		-1.10		Pass
HE80	MCS0	2	155	5775	Full	16.70	16.30	19.51	30.00		-1.10		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV MIMO															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	RU Config	10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
						Ant 17	Ant 18	Ant 17	Ant 18	SUM	Ant 17	Ant 18	Ant 17	Ant 18	
HE20	MCS0	2	149	5745	Full	2.22		5.66	5.40	8.67	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	26/0	2.22		5.21	5.32	8.33	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	52/37	2.22		5.50	5.33	8.51	30.00		-1.10		Pass
HE20	MCS0	2	149	5745	106/53	2.22		5.53	5.14	8.54	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	Full	2.22		5.75	5.33	8.76	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	26/4	2.22		5.52	4.95	8.53	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	52/38	2.22		5.39	5.21	8.40	30.00		-1.10		Pass
HE20	MCS0	2	157	5785	106/53	2.22		5.51	5.18	8.52	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	Full	2.22		6.11	5.21	9.12	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	26/8	2.22		5.72	4.75	8.73	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	52/40	2.22		5.95	4.30	8.96	30.00		-1.10		Pass
HE20	MCS0	2	165	5825	106/54	2.22		5.70	4.99	8.71	30.00		-1.10		Pass
HE40	MCS0	2	151	5755	Full	2.22		2.43	2.63	5.64	30.00		-1.10		Pass
HE40	MCS0	2	159	5795	Full	2.22		2.42	2.08	5.43	30.00		-1.10		Pass
HE80	MCS0	2	155	5775	Full	2.22		-0.89	-1.39	2.12	30.00		-1.10		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)



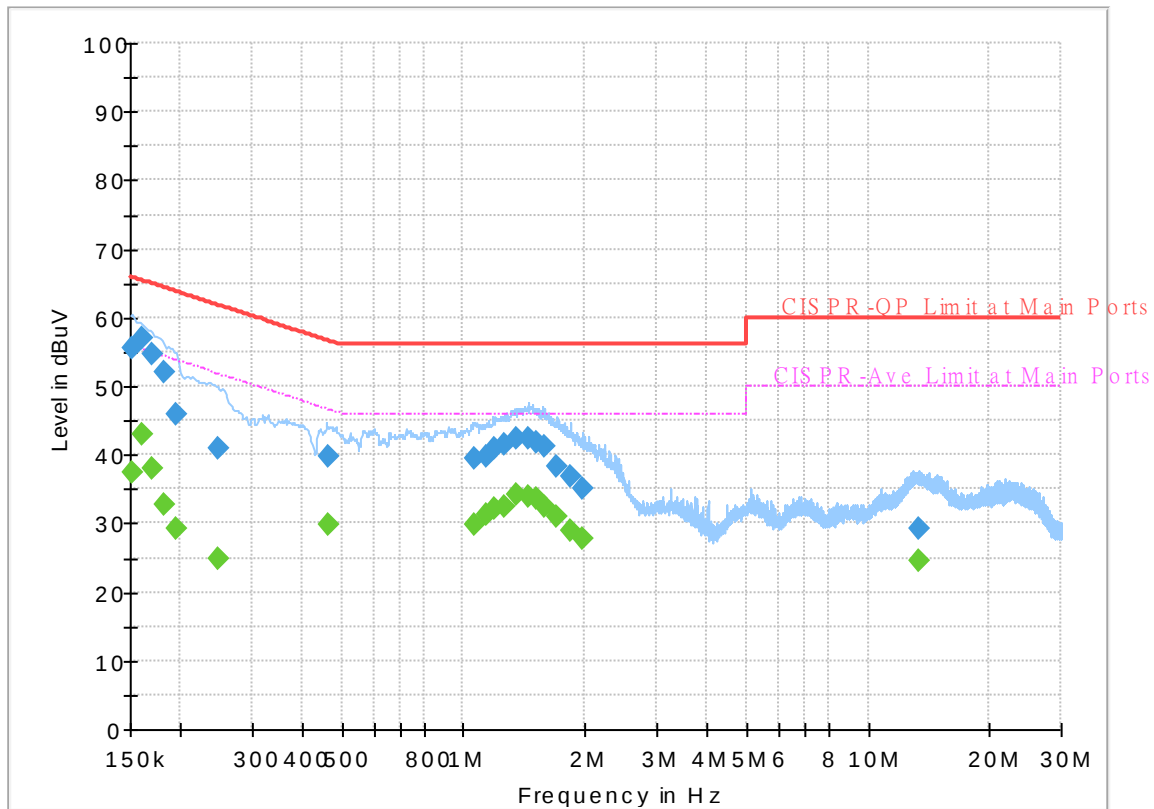
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO : 210628
Test Mode : Mode 1
Test Voltage : Power From System
Phase : Line

Full Spectrum



Final_Result

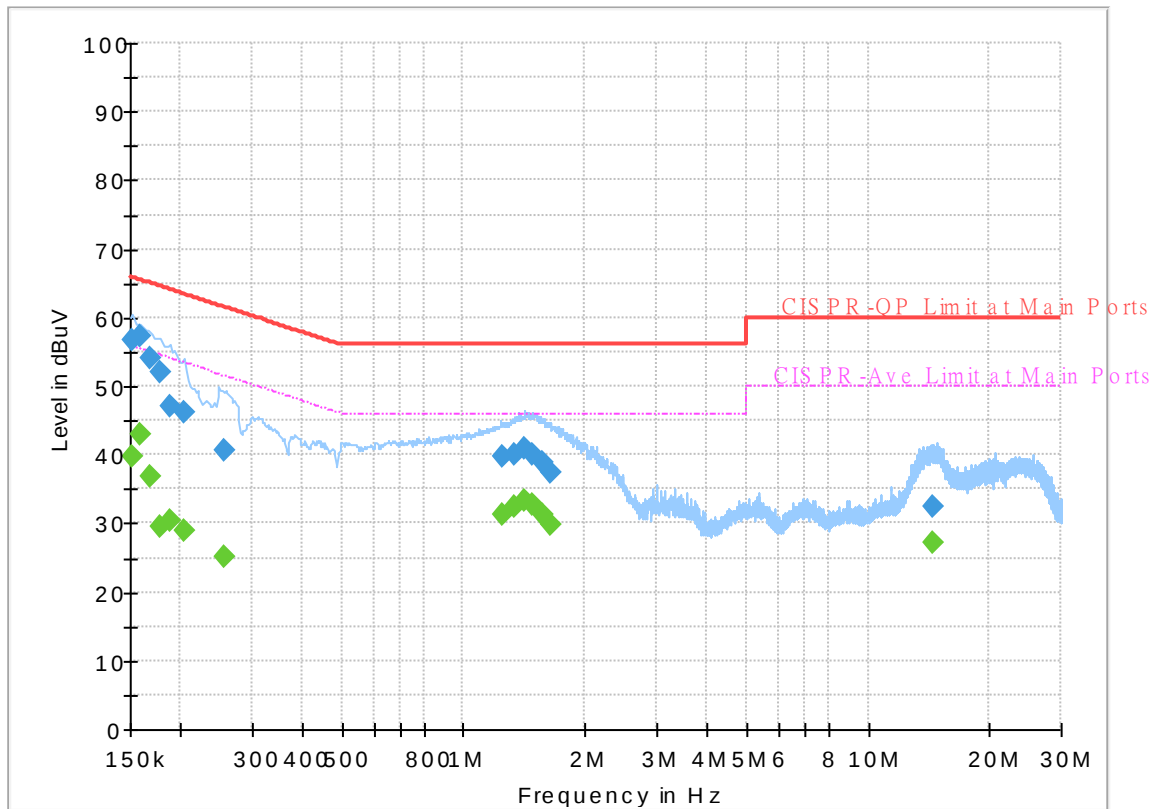
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	37.31	55.88	18.57	L1	OFF	19.6
0.152250	55.54	---	65.88	10.34	L1	OFF	19.6
0.161250	---	42.90	55.40	12.50	L1	OFF	19.6
0.161250	57.10	---	65.40	8.30	L1	OFF	19.6
0.170250	---	38.07	54.95	16.88	L1	OFF	19.6
0.170250	54.80	---	64.95	10.15	L1	OFF	19.6
0.181500	---	32.62	54.42	21.80	L1	OFF	19.6
0.181500	52.17	---	64.42	12.25	L1	OFF	19.6
0.195000	---	29.27	53.82	24.55	L1	OFF	19.6
0.195000	45.89	---	63.82	17.93	L1	OFF	19.6
0.246750	---	25.00	51.87	26.87	L1	OFF	19.6
0.246750	41.07	---	61.87	20.80	L1	OFF	19.6
0.462750	---	29.71	46.64	16.93	L1	OFF	19.6
0.462750	39.82	---	56.64	16.82	L1	OFF	19.6
1.059000	---	29.80	46.00	16.20	L1	OFF	19.6
1.059000	39.41	---	56.00	16.59	L1	OFF	19.6
1.142250	---	31.19	46.00	14.81	L1	OFF	19.6
1.142250	39.81	---	56.00	16.19	L1	OFF	19.6
1.198500	---	32.16	46.00	13.84	L1	OFF	19.6
1.198500	40.93	---	56.00	15.07	L1	OFF	19.6
1.259250	---	32.52	46.00	13.48	L1	OFF	19.6

1.259250	41.63	---	56.00	14.37	L1	OFF	19.6
1.351500	---	34.35	46.00	11.65	L1	OFF	19.6
1.351500	42.50	---	56.00	13.50	L1	OFF	19.6
1.443750	---	34.05	46.00	11.95	L1	OFF	19.6
1.443750	42.43	---	56.00	13.57	L1	OFF	19.6
1.515750	---	33.58	46.00	12.42	L1	OFF	19.6
1.515750	41.79	---	56.00	14.21	L1	OFF	19.6
1.590000	---	32.42	46.00	13.58	L1	OFF	19.6
1.590000	41.33	---	56.00	14.67	L1	OFF	19.6
1.707000	---	30.97	46.00	15.03	L1	OFF	19.6
1.707000	38.27	---	56.00	17.73	L1	OFF	19.6
1.837500	---	29.06	46.00	16.94	L1	OFF	19.6
1.837500	36.93	---	56.00	19.07	L1	OFF	19.6
1.968000	---	27.86	46.00	18.14	L1	OFF	19.6
1.968000	35.21	---	56.00	20.79	L1	OFF	19.6
13.375500	---	24.50	50.00	25.50	L1	OFF	19.8
13.375500	29.36	---	60.00	30.64	L1	OFF	19.8

EUT Information

Report NO : 210628
 Test Mode : Mode 1
 Test Voltage : Power From System
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	39.85	55.88	16.03	N	OFF	19.6
0.152250	56.82	---	65.88	9.06	N	OFF	19.6
0.159000	---	43.03	55.52	12.49	N	OFF	19.6
0.159000	57.34	---	65.52	8.18	N	OFF	19.6
0.168000	---	36.75	55.06	18.31	N	OFF	19.6
0.168000	54.05	---	65.06	11.01	N	OFF	19.6
0.177000	---	29.63	54.63	25.00	N	OFF	19.6
0.177000	52.04	---	64.63	12.59	N	OFF	19.6
0.188250	---	30.42	54.11	23.69	N	OFF	19.6
0.188250	47.06	---	64.11	17.05	N	OFF	19.6
0.204000	---	28.92	53.45	24.53	N	OFF	19.6
0.204000	46.17	---	63.45	17.28	N	OFF	19.6
0.255750	---	25.19	51.57	26.38	N	OFF	19.6
0.255750	40.50	---	61.57	21.07	N	OFF	19.6
1.248000	---	31.38	46.00	14.62	N	OFF	19.6
1.248000	39.69	---	56.00	16.31	N	OFF	19.6
1.335750	---	32.38	46.00	13.62	N	OFF	19.6
1.335750	40.11	---	56.00	15.89	N	OFF	19.6
1.416750	---	33.25	46.00	12.75	N	OFF	19.6
1.416750	40.98	---	56.00	15.02	N	OFF	19.6
1.484250	---	32.62	46.00	13.38	N	OFF	19.6

1.484250	40.15	---	56.00	15.85	N	OFF	19.6
1.576500	---	31.25	46.00	14.75	N	OFF	19.6
1.576500	38.95	---	56.00	17.05	N	OFF	19.6
1.644000	---	29.79	46.00	16.21	N	OFF	19.6
1.644000	37.43	---	56.00	18.57	N	OFF	19.6
14.444250	---	27.08	50.00	22.92	N	OFF	19.9
14.444250	32.41	---	60.00	27.59	N	OFF	19.9



Appendix C. Radiated Spurious Emission

Test Engineer :	Andy Yang, Karl Hou and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
17+18		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5617	54.85	-13.35	68.2	38.32	33.23	12.89	29.59	100	115	P	H
		5699.6	60.11	-44.8	104.91	43.49	33.3	12.93	29.61	100	115	P	H
		5714.6	64.7	-44.59	109.29	47.98	33.39	12.94	29.61	100	115	P	H
		5724	71.96	-47.96	119.92	55.18	33.44	12.95	29.61	100	115	P	H
	*	5745	115	-	-	98.08	33.57	12.96	29.61	100	115	P	H
	*	5745	106.7	-	-	89.78	33.57	12.96	29.61	100	115	A	H
													H
													H
		5609	55.43	-12.77	68.2	38.92	33.22	12.88	29.59	400	58	P	V
		5692.4	56.5	-43.1	99.6	39.87	33.3	12.93	29.6	400	58	P	V
		5718.6	60.5	-49.91	110.41	43.75	33.41	12.95	29.61	400	58	P	V
		5724.4	66.17	-54.66	120.83	49.38	33.45	12.95	29.61	400	58	P	V
	*	5745	112.12	-	-	95.2	33.57	12.96	29.61	400	58	P	V
	*	5745	104.42	-	-	87.5	33.57	12.96	29.61	400	58	A	V
													V
													V



WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5611.2	55.12	-13.08	68.2	38.6	33.22	12.89	29.59	100	115	P	H
		5695	55.74	-45.77	101.51	39.12	33.3	12.93	29.61	100	115	P	H
		5711.8	55.88	-52.63	108.51	39.18	33.37	12.94	29.61	100	115	P	H
		5722	58.14	-57.22	115.36	41.37	33.43	12.95	29.61	100	115	P	H
	*	5785	116.5	-	-	99.47	33.67	12.98	29.62	100	115	P	H
	*	5785	107.87	-	-	90.84	33.67	12.98	29.62	100	115	A	H
		5852	57.5	-60.14	117.64	40.31	34	12.82	29.63	100	115	P	H
		5863	56.18	-52.38	108.56	39.03	34	12.79	29.64	100	115	P	H
		5891.4	56.13	-36.9	93.03	39.08	34	12.69	29.64	100	115	P	H
		5925.6	54.88	-13.32	68.2	37.9	34.05	12.58	29.65	100	115	P	H
													H
													H
		5645	54.32	-13.88	68.2	37.73	33.29	12.9	29.6	375	59	P	V
		5674.8	54.83	-31.76	86.59	38.21	33.3	12.92	29.6	375	59	P	V
		5720	55.46	-55.34	110.8	38.7	33.42	12.95	29.61	375	59	P	V
		5720	55.46	-55.34	110.8	38.7	33.42	12.95	29.61	375	59	P	V
	*	5785	113.08	-	-	96.05	33.67	12.98	29.62	375	59	P	V
	*	5785	105.78	-	-	88.75	33.67	12.98	29.62	375	59	A	V
		5854	55.14	-57.94	113.08	37.96	34	12.81	29.63	375	59	P	V
		5856.6	56.07	-54.28	110.35	38.89	34	12.81	29.63	375	59	P	V
		5888.2	55.91	-39.49	95.4	38.85	34	12.7	29.64	375	59	P	V
		5942.2	55.18	-13.02	68.2	38.22	34.08	12.53	29.65	375	59	P	V
													V
													V



WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	115.97	-	-	98.84	33.85	12.91	29.63	100	115	P	H
	*	5825	107.32	-	-	90.19	33.85	12.91	29.63	100	115	A	H
		5852	63.67	-53.97	117.64	46.48	34	12.82	29.63	100	115	P	H
		5859.8	62.72	-46.73	109.45	45.55	34	12.8	29.63	100	115	P	H
		5878	60.1	-42.87	102.97	43	34	12.74	29.64	100	115	P	H
		5936.4	55.06	-13.14	68.2	38.09	34.07	12.55	29.65	100	115	P	H
													H
													H
	*	5825	112.08	-	-	94.95	33.85	12.91	29.63	388	58	P	V
	*	5825	105.25	-	-	88.12	33.85	12.91	29.63	388	58	A	V
		5851	60.06	-59.86	119.92	42.87	34	12.82	29.63	388	58	P	V
		5860.4	59.71	-49.58	109.29	42.55	34	12.79	29.63	388	58	P	V
		5876.4	55.54	-48.62	104.16	38.44	34	12.74	29.64	388	58	P	V
		5936	56.16	-12.04	68.2	39.19	34.07	12.55	29.65	388	58	P	V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	47.3	-26.7	74	44.24	38.84	19.23	55.01	-	-	P	H
		14471	48.32	-25.68	74	40.51	40.4	21.73	54.32	-	-	P	H
		14471	42.35	-11.65	54	34.54	40.4	21.73	54.32	-	-	A	H
		17235	47.44	-20.76	68.2	40.21	37.81	25.11	55.69	-	-	P	H
		17978	53.55	-20.45	74	41.85	42.82	25.47	56.59	-	-	P	H
		17978	42.72	-11.28	54	31.02	42.82	25.47	56.59	-	-	A	H
													H
													H
													H
													H
													H
													H
		11490	47.69	-26.31	74	44.63	38.84	19.23	55.01	-	-	P	V
		14491	49.51	-24.49	74	41.69	40.4	21.75	54.33	-	-	P	V
		14491	42.45	-11.55	54	34.63	40.4	21.75	54.33	-	-	A	V
		17235	47.47	-20.73	68.2	40.24	37.81	25.11	55.69	-	-	P	V
		17978	53.22	-20.78	74	41.52	42.82	25.47	56.59	-	-	P	V
		17978	42.74	-11.26	54	31.04	42.82	25.47	56.59	-	-	A	V
													V
													V
													V
													V
													V
													V



WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		11570	51.89	-22.11	74	48.8	38.8	19.27	54.98	100	357	P	H
		11570	45.51	-8.49	54	42.42	38.8	19.27	54.98	100	357	A	H
		14471	48.31	-25.69	74	40.5	40.4	21.73	54.32	-	-	P	H
		14471	42.06	-11.94	54	34.25	40.4	21.73	54.32	-	-	A	H
		17355	47.74	-20.46	68.2	40.36	38.17	25.16	55.95	-	-	P	H
		17978	53.23	-20.77	74	41.53	42.82	25.47	56.59	-	-	P	H
		17978	42.72	-11.28	54	31.02	42.82	25.47	56.59	-	-	A	H
													H
													H
													H
													H
													H
		11570	47.34	-26.66	74	44.25	38.8	19.27	54.98	-	-	P	V
		14480	48.78	-25.22	74	40.96	40.4	21.74	54.32	-	-	P	V
		14480	42.39	-11.61	54	34.57	40.4	21.74	54.32	-	-	A	V
		17355	47.41	-20.79	68.2	40.03	38.17	25.16	55.95	-	-	P	V
		17967	53.13	-20.87	74	41.51	42.74	25.46	56.58	-	-	P	V
		17967	42.66	-11.34	54	31.04	42.74	25.46	56.58	-	-	A	V
													V
													V
													V
													V
													V
													V

[illegible]



Band 4 5725~5850MHz

WIFI 802.11ax HE20_Partial 106 (Band Edge @ 3m)

WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 106/54 CH 165 5825MHz	*	5825	118.44	-	-	101.31	33.85	12.91	29.63	100	115	P	H
	*	5825	107.45	-	-	90.32	33.85	12.91	29.63	100	115	A	H
		5851.2	65.17	-54.29	119.46	47.98	34	12.82	29.63	100	115	P	H
		5856.2	63.59	-46.87	110.46	46.41	34	12.81	29.63	100	115	P	H
		5888.2	57.52	-37.88	95.4	40.46	34	12.7	29.64	100	115	P	H
		5937	56.7	-11.5	68.2	39.74	34.07	12.54	29.65	100	115	P	H
													H
													H
	*	5825	116.89	-	-	99.76	33.85	12.91	29.63	349	66	P	V
	*	5825	105.79	-	-	88.66	33.85	12.91	29.63	349	66	A	V
		5850.4	62.76	-58.53	121.29	45.56	34	12.83	29.63	349	66	P	V
		5856.2	62.87	-47.59	110.46	45.69	34	12.81	29.63	349	66	P	V
		5887.6	57.38	-38.47	95.85	40.31	34	12.71	29.64	349	66	P	V
		5929.2	57.13	-11.07	68.2	40.15	34.06	12.57	29.65	349	66	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ax HE40_Full (Band Edge @ 3m)

WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 151 5755MHz		5642	55.4	-12.8	68.2	38.82	33.28	12.9	29.6	100	115	P	H
		5699	60.44	-44.02	104.46	43.82	33.3	12.93	29.61	100	115	P	H
		5718.6	77.32	-33.09	110.41	60.57	33.41	12.95	29.61	100	115	P	H
		5724.8	77.99	-43.75	121.74	61.2	33.45	12.95	29.61	100	115	P	H
	*	5755	114.33	-	-	97.37	33.61	12.97	29.62	100	115	P	H
	*	5755	103.78	-	-	86.82	33.61	12.97	29.62	100	115	A	H
		5852.4	56.32	-60.41	116.73	39.13	34	12.82	29.63	100	115	P	H
		5861.6	56.88	-52.07	108.95	39.73	34	12.79	29.64	100	115	P	H
		5906.2	56.07	-26.01	82.08	39.06	34.01	12.64	29.64	100	115	P	H
		5937.2	55.09	-13.11	68.2	38.13	34.07	12.54	29.65	100	115	P	H
													H
													H
		5635.6	54.87	-13.33	68.2	38.29	33.27	12.9	29.59	377	60	P	V
		5699.2	57.2	-47.41	104.61	40.58	33.3	12.93	29.61	377	60	P	V
		5718.4	73.38	-36.97	110.35	56.63	33.41	12.95	29.61	377	60	P	V
		5723.6	75.43	-43.58	119.01	58.65	33.44	12.95	29.61	377	60	P	V
	*	5755	110.86	-	-	93.9	33.61	12.97	29.62	377	60	P	V
	*	5755	101.39	-	-	84.43	33.61	12.97	29.62	377	60	A	V
		5854.8	54.61	-56.65	111.26	37.43	34	12.81	29.63	377	60	P	V
		5866	55.16	-52.56	107.72	38.02	34	12.78	29.64	377	60	P	V
		5910.8	55.72	-22.96	78.68	38.71	34.02	12.63	29.64	377	60	P	V
		5935.6	54.85	-13.35	68.2	37.88	34.07	12.55	29.65	377	60	P	V
													V
													V



WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 159 5795MHz		5616.2	55.44	-12.76	68.2	38.91	33.23	12.89	29.59	102	114	P	H
		5679	55.04	-34.66	89.7	38.42	33.3	12.92	29.6	102	114	P	H
		5717.8	56.57	-53.61	110.18	39.83	33.41	12.94	29.61	102	114	P	H
		5723.8	58.5	-60.96	119.46	41.72	33.44	12.95	29.61	102	114	P	H
	*	5795	113.84	-	-	96.78	33.69	12.99	29.62	102	114	P	H
	*	5795	103.33	-	-	86.27	33.69	12.99	29.62	102	114	A	H
		5851.4	59.65	-59.36	119.01	42.46	34	12.82	29.63	102	114	P	H
		5856	59.4	-51.12	110.52	42.22	34	12.81	29.63	102	114	P	H
		5887.8	59	-36.7	95.7	41.94	34	12.7	29.64	102	114	P	H
		5937.8	55.66	-12.54	68.2	38.69	34.08	12.54	29.65	102	114	P	H
													H
													H
		5648	55.02	-13.18	68.2	38.41	33.3	12.91	29.6	373	60	P	V
		5678	54.66	-34.3	88.96	38.04	33.3	12.92	29.6	373	60	P	V
		5719.2	55.68	-54.9	110.58	38.92	33.42	12.95	29.61	373	60	P	V
		5723.8	55.14	-64.32	119.46	38.36	33.44	12.95	29.61	373	60	P	V
	*	5795	111.09	-	-	94.03	33.69	12.99	29.62	373	60	P	V
	*	5795	101.18	-	-	84.12	33.69	12.99	29.62	373	60	A	V
		5851.2	56.49	-62.97	119.46	39.3	34	12.82	29.63	373	60	P	V
		5864	56.81	-51.47	108.28	39.67	34	12.78	29.64	373	60	P	V
		5899.8	54.93	-31.88	86.81	37.9	34	12.67	29.64	373	60	P	V
		5929.4	54.93	-13.27	68.2	37.95	34.06	12.57	29.65	373	60	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 4 5725~5850MHz****WIFI 802.11ax HE40_Full (Harmonic @ 3m)**

WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 151 5755MHz		11490	47.3	-26.7	74	44.24	38.84	19.23	55.01	-	-	P	H
		14471	48.32	-25.68	74	40.51	40.4	21.73	54.32	-	-	P	H
		14471	42.35	-11.65	54	34.54	40.4	21.73	54.32	-	-	A	H
		17235	47.44	-20.76	68.2	40.21	37.81	25.11	55.69	-	-	P	H
		17978	53.55	-20.45	74	41.85	42.82	25.47	56.59	-	-	P	H
		17978	42.72	-11.28	54	31.02	42.82	25.47	56.59	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
		11490	47.69	-26.31	74	44.63	38.84	19.23	55.01	-	-	P	V
		14491	49.51	-24.49	74	41.69	40.4	21.75	54.33	-	-	P	V
		14491	42.45	-11.55	54	34.63	40.4	21.75	54.33	-	-	A	V
		17235	47.47	-20.73	68.2	40.24	37.81	25.11	55.69	-	-	P	V
		17978	53.22	-20.78	74	41.52	42.82	25.47	56.59	-	-	P	V
		17978	42.74	-11.26	54	31.04	42.82	25.47	56.59	-	-	A	V
													V
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													V
													V
													V

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 17+18		(MHz)	(dBμV/m)	Limit (dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)
802.11ax HE40 Full CH 159 5795MHz		11490	47.3	-26.7	74	44.24	38.84	19.23	55.01	-	-	P	H
		14471	48.32	-25.68	74	40.51	40.4	21.73	54.32	-	-	P	H
		14471	42.35	-11.65	54	34.54	40.4	21.73	54.32	-	-	A	H
		17235	47.44	-20.76	68.2	40.21	37.81	25.11	55.69	-	-	P	H
		17978	53.55	-20.45	74	41.85	42.82	25.47	56.59	-	-	P	H
		17978	42.72	-11.28	54	31.02	42.82	25.47	56.59	-	-	A	H
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Band 4 5725~5850MHz

WIFI 802.11ax HE80_Full (Band Edge @ 3m)

WIFI Ant. 17+18	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 155 5775MHz		5648.8	61.24	-6.96	68.2	44.63	33.3	12.91	29.6	100	115	P	H
		5684.2	70.82	-22.72	93.54	54.19	33.3	12.93	29.6	100	115	P	H
		5717.8	72.53	-37.65	110.18	55.79	33.41	12.94	29.61	100	115	P	H
		5723.2	74.12	-43.98	118.1	57.34	33.44	12.95	29.61	100	115	P	H
	*	5775	110.39	-	-	93.38	33.65	12.98	29.62	100	115	P	H
	*	5775	101.2	-	-	84.19	33.65	12.98	29.62	100	115	A	H
		5851.8	67.36	-50.74	118.1	50.17	34	12.82	29.63	100	115	P	H
		5855.4	68.28	-42.41	110.69	51.1	34	12.81	29.63	100	115	P	H
		5878	64.21	-38.76	102.97	47.11	34	12.74	29.64	100	115	P	H
		5926.6	55.4	-12.8	68.2	38.42	34.05	12.58	29.65	100	115	P	H
													H
													H
		5630.8	58.18	-10.02	68.2	41.61	33.26	12.9	29.59	376	62	P	V
		5695.4	63.39	-38.42	101.81	46.77	33.3	12.93	29.61	376	62	P	V
		5717.8	66.83	-43.35	110.18	50.09	33.41	12.94	29.61	376	62	P	V
		5720.4	67.18	-44.53	111.71	50.42	33.42	12.95	29.61	376	62	P	V
	*	5775	107.07	-	-	90.06	33.65	12.98	29.62	376	62	P	V
	*	5775	98.01	-	-	81	33.65	12.98	29.62	376	62	A	V
		5850	63.64	-58.56	122.2	46.44	34	12.83	29.63	376	62	P	V
		5869.8	63.08	-43.57	106.65	45.96	34	12.76	29.64	376	62	P	V
		5883	58.1	-41.16	99.26	41.02	34	12.72	29.64	376	62	P	V
		5932.4	55.43	-12.77	68.2	38.46	34.06	12.56	29.65	376	62	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ax HE80_Full (Harmonic @ 3m)

[illegible]

Emission above 18GHz

5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
17+18		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE80 Full SHF		23872	38.85	-35.15	74	56.73	38.8	-2.9	53.78	-	-	P	H
		31432	42.74	-31.26	74	60.44	40.68	-1.99	56.39	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
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													H
													H
													H
													H
		23880	38.3	-35.7	74	56.16	38.8	-2.89	53.77	-	-	P	V
		31516	42.31	-31.69	74	60.2	40.6	-1.97	56.52	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												

Emission below 1GHz

5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
17+18		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE80 Full LF		102.75	15.88	-27.62	43.5	30.12	16.29	1.77	32.3	-	-	P	H
		138.64	21.3	-22.2	43.5	33.78	17.56	2.23	32.27	-	-	P	H
		165.8	24	-19.5	43.5	37.8	16.06	2.38	32.24	-	-	P	H
		191.02	29.1	-14.4	43.5	44.03	14.84	2.47	32.24	-	-	P	H
		312.27	22.46	-23.54	46	32.16	19.45	3.13	32.28	-	-	P	H
		789.51	31.81	-14.19	46	31.18	28.03	4.87	32.27	-	-	P	H
													H
													H
													H
													H
													H
													H
		62.98	20.12	-19.88	40	38.97	12.02	1.41	32.28	-	-	P	V
		131.85	18.41	-25.09	43.5	30.9	17.65	2.13	32.27	-	-	P	V
		184.23	27.41	-16.09	43.5	42.35	14.88	2.41	32.23	-	-	P	V
		436.43	25.87	-20.13	46	31.57	23.09	3.63	32.42	-	-	P	V
		620.73	28.16	-17.84	46	30.37	25.98	4.36	32.55	-	-	P	V
		789.51	32.67	-13.33	46	32.04	28.03	4.87	32.27	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
17+18		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 = 55.45 (dBμV/m)
2. Over Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 74(dBμV/m)
 = -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

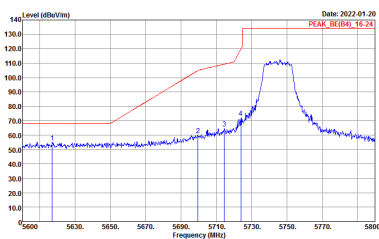
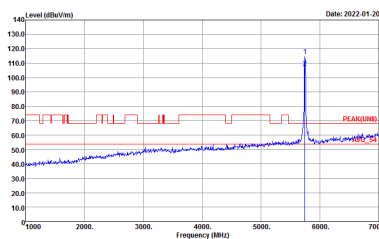


Appendix D. Radiated Spurious Emission Plots

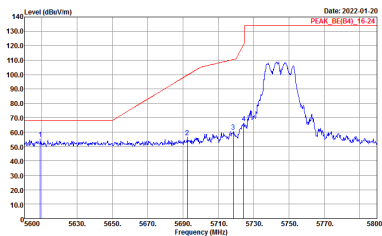
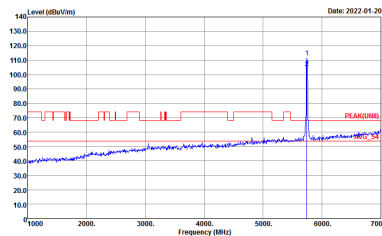
Test Engineer :	Andy Yang, Karl Hou and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

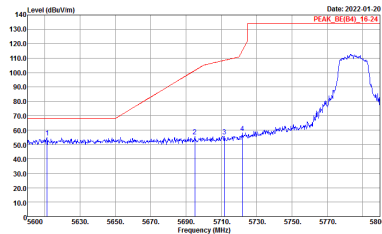
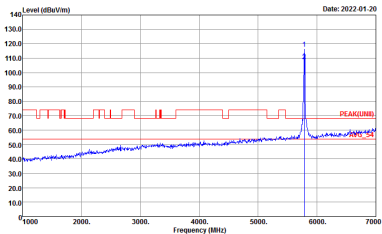
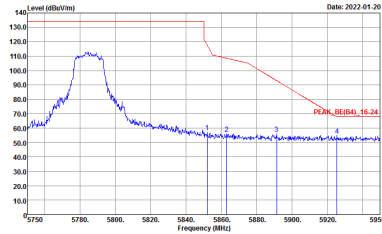
Band 4 - 5725~5850MHz

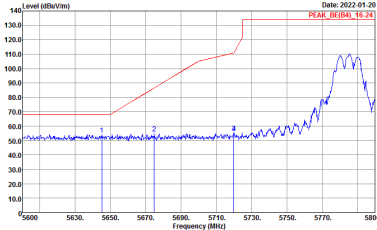
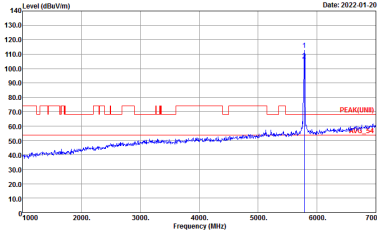
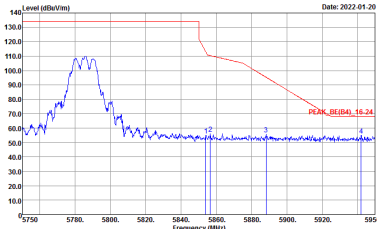
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(84)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(FUND) 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

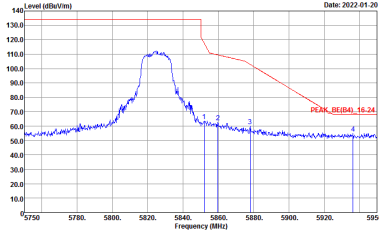
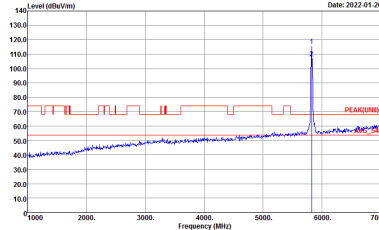


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_8E(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(LINE) 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto

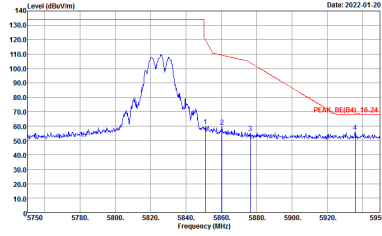
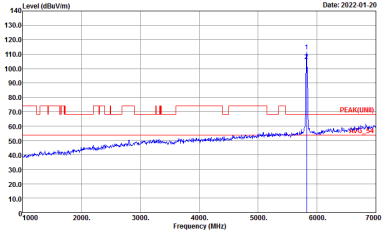
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

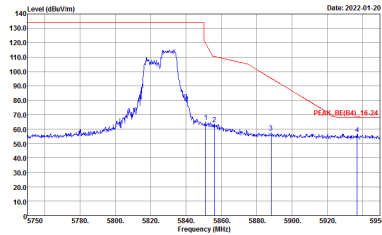
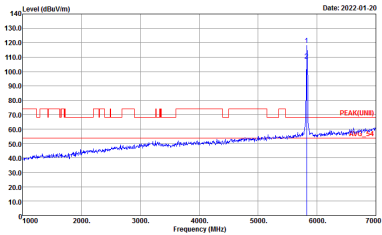


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_85(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_85(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto

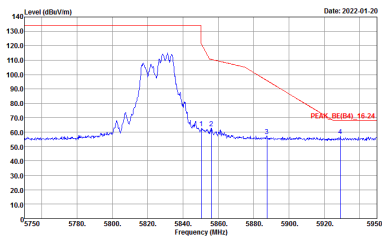
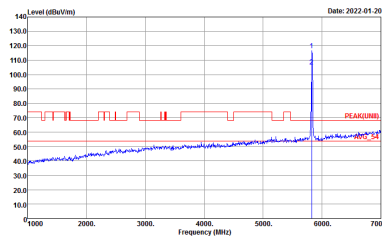


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_85[04]_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_85[04]_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto

Band 4 5725~5850MHz
WIFI 802.11ax HE20 Partial 106 (Band Edge @ 3m)

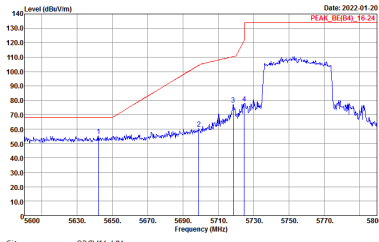
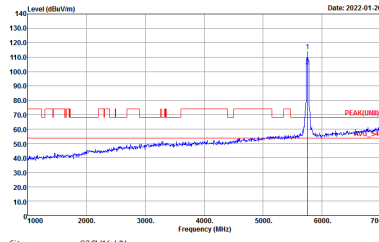
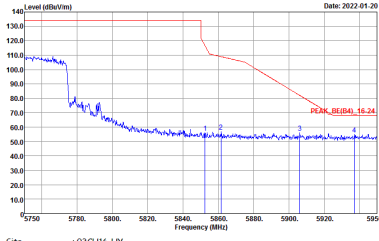
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ANT	802.11ax HE20 Partial 106/54 CH165 5825MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(84)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

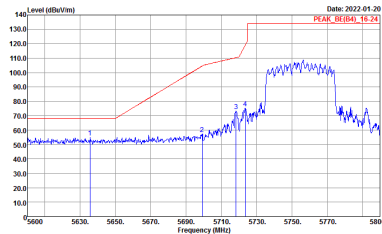
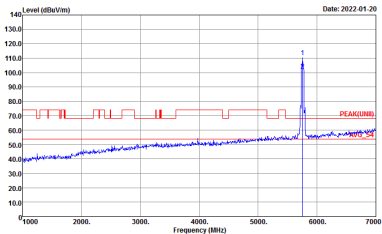
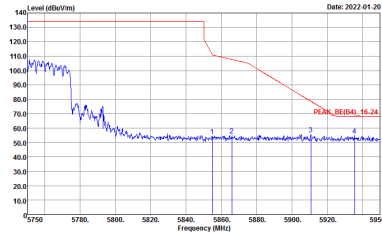


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Partial 106/54 CH165 5825MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_8E[04]_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK[04] 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto



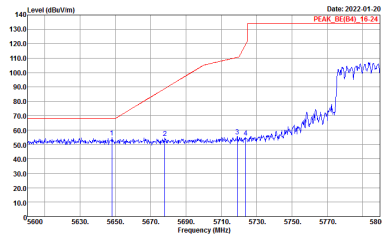
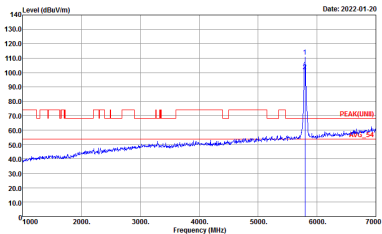
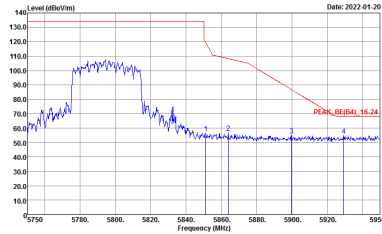
Band 4 5725~5850MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_UNI(B) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	Left blank

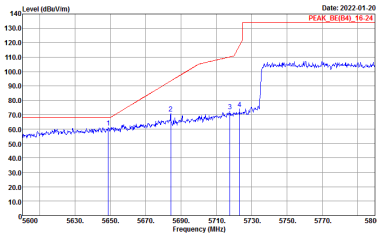
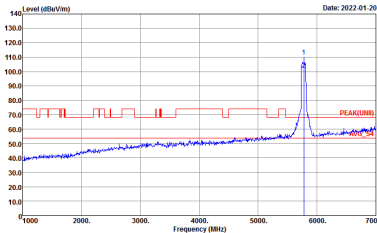
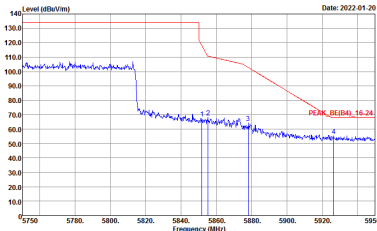


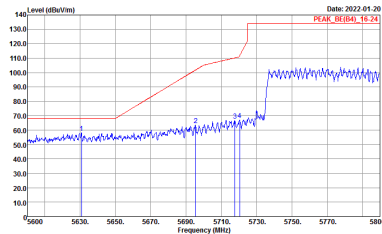
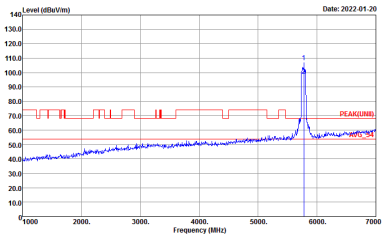
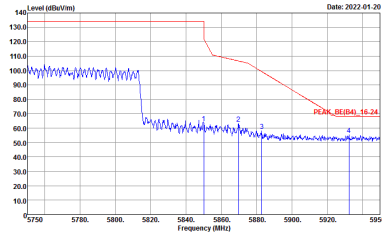
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full HT40 CH159 5795MHz	
17+18	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(LINE) 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



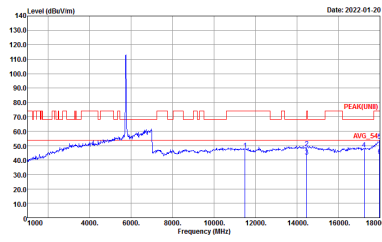
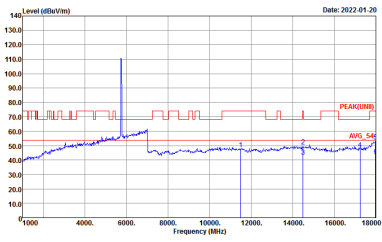
Band 4 5725~5850MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
17+18	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

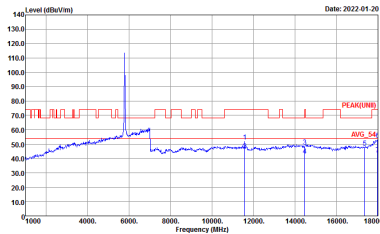
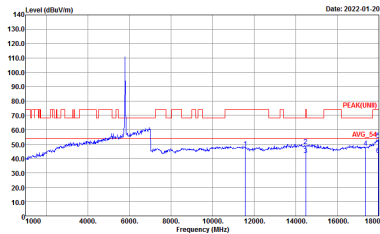
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
17+18	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



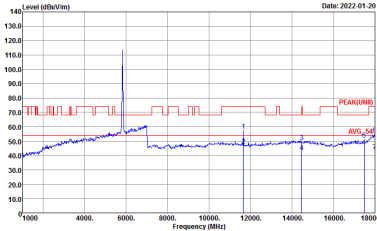
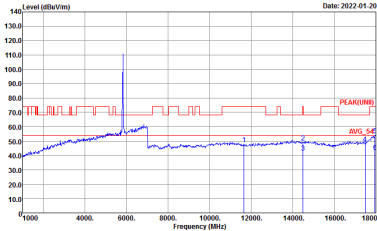
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



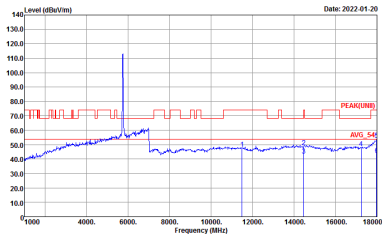
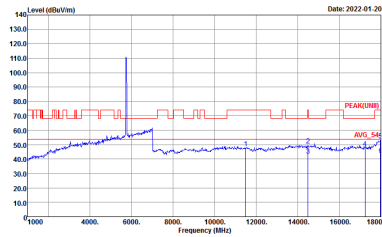
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



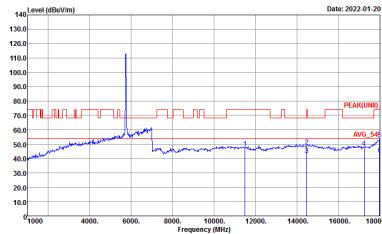
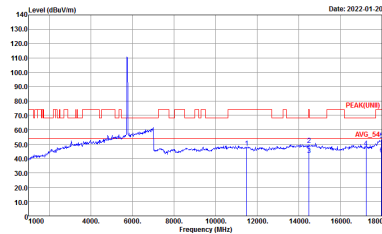
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



Band 4 5725~5850MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)

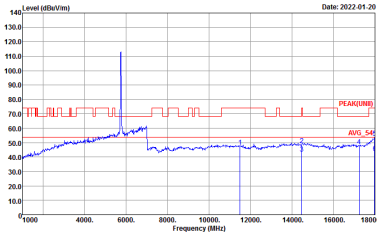
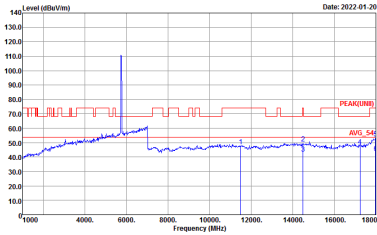
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL

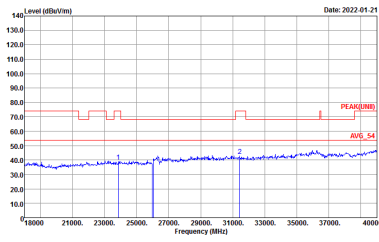
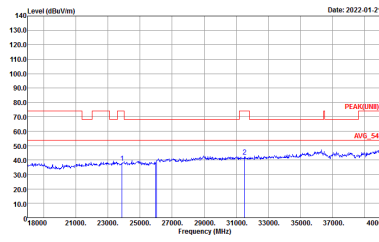


Band 4 5725~5850MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

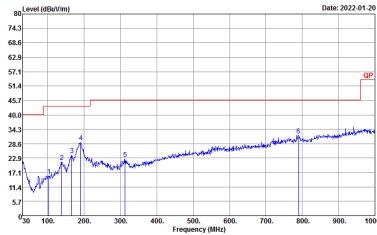
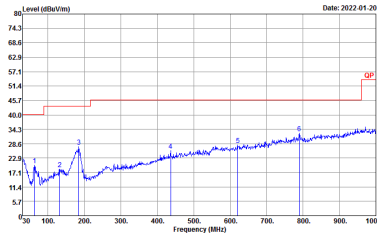
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



Emission above 18GHz
5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full SHF	
17+18	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK(UNIT) 1m SHF ANT_9170_00993 HORIZONTAL	 Site : 03CH15-HY Condition : PEAK(UNIT) 1m SHF ANT_9170_00993 VERTICAL

Emission below 1GHz
5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full LF	
17+18	Horizontal	Vertical
QP / Peak	 Site : 03CH16-HY Condition : QP 3m B1LOG_47020_211009 HORIZONTAL	 Site : 03CH16-HY Condition : QP 3m B1LOG_47020_211009 VERTICAL



Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
17+18	802.11a	97.21	1395	0.72	1kHz
17+18	5GHz 802.11ax HE20 106 RU	98.37	-	-	10Hz
17+18	5GHz 802.11ax HE40 Full RU	92.27	537	1.86	3kHz
17+18	5GHz 802.11ax HE80 Full RU	87.43	292	3.42	10kHz

MIMO <Ant. 17+18>

