

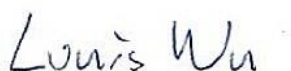


FCC RADIO TEST REPORT

FCC ID : 2A3DW-MZ1000
Equipment : Head-mounted tablet
Brand Name : Moziware
Model Name : MZ1000
Marketing Name : cimo
Applicant : RealWear (Shanghai) Intelligent
Technology Co., Ltd.
2F,Block21, No.55 Chuanhe Road,
Pudong New District, Shanghai, China
Manufacturer : RealWear (Shanghai) Intelligent
Technology Co., Ltd.
2F,Block21, No.55 Chuanhe Road,
Pudong New District, Shanghai, China
Standard : FCC Part 15 Subpart E §15.407

The product was received on Oct. 01, 2021 and testing was started from Oct. 14, 2021 and completed on Nov. 27, 2021. 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 of 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 (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FR193007E	01	Initial issue of report	Nov. 18, 2021
FR193007E	02	Revise test data	Nov. 29, 2021

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	Under limit 5.51 dB at 18000.000 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 16.59 dB at 0.805 MHz
3.6	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sheng Kuo

Report Producer: Celery Wei



1 General Description

1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac.

Product Specification subjective to this standard	
Antenna Type	WLAN: PIFA Antenna Bluetooth: PIFA Antenna

Antenna information		
5725 MHz ~ 5850 MHz	Peak Gain (dBi)	0.98

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

1.2 Modification of EUT

No modifications are made to the EUT during all test items.



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 (R.O.C.) 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.

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 (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY ; 03CH13-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 of 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.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
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 Z 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 in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

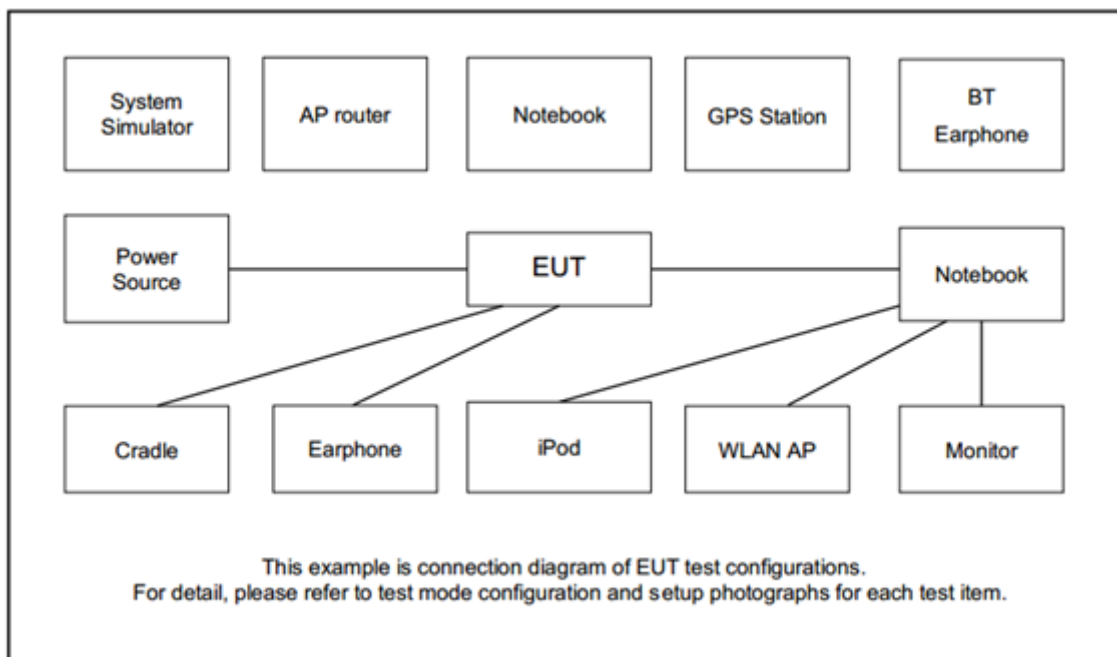
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth Link + USB Cable (Charging from Adapter) + Camera (Front) + Earphone

Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

Remark: For radiation spurious emission, the final modulation and the worst data rate was reference 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.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	Earphone	SONY	MH750	N/A	Unshielded, 1.2m	N/A
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
5.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	Notebook	ACER	A515-54G-51QB	N/A	N/A	Unshielded, 1.8m
7.	Adapter	DVE	DSA-5PFM-05 FUS 050100	FCC DoC	N/A	N/A
8.	Adapter	SONY	AC-0030-TW	N/A	N/A	N/A



2.5 EUT Operation Test Setup

The RF test items, utility "QRCT V4.0.00175.0" was installed in Notebook which was programmed in order to make the EUT 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.

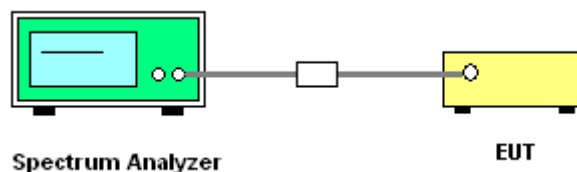
3.1.2 Measuring Instruments

See list of measuring equipment of 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

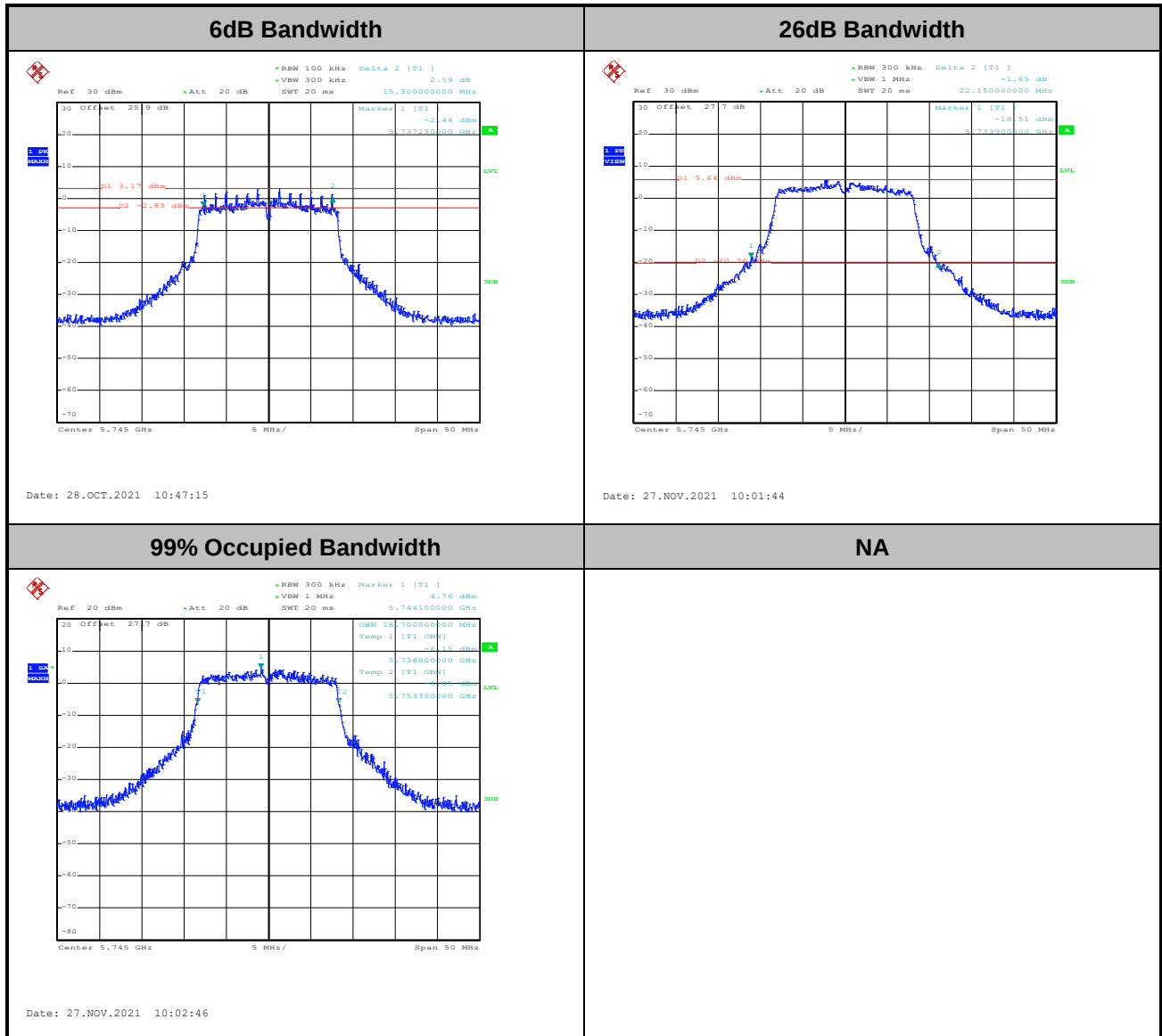


3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

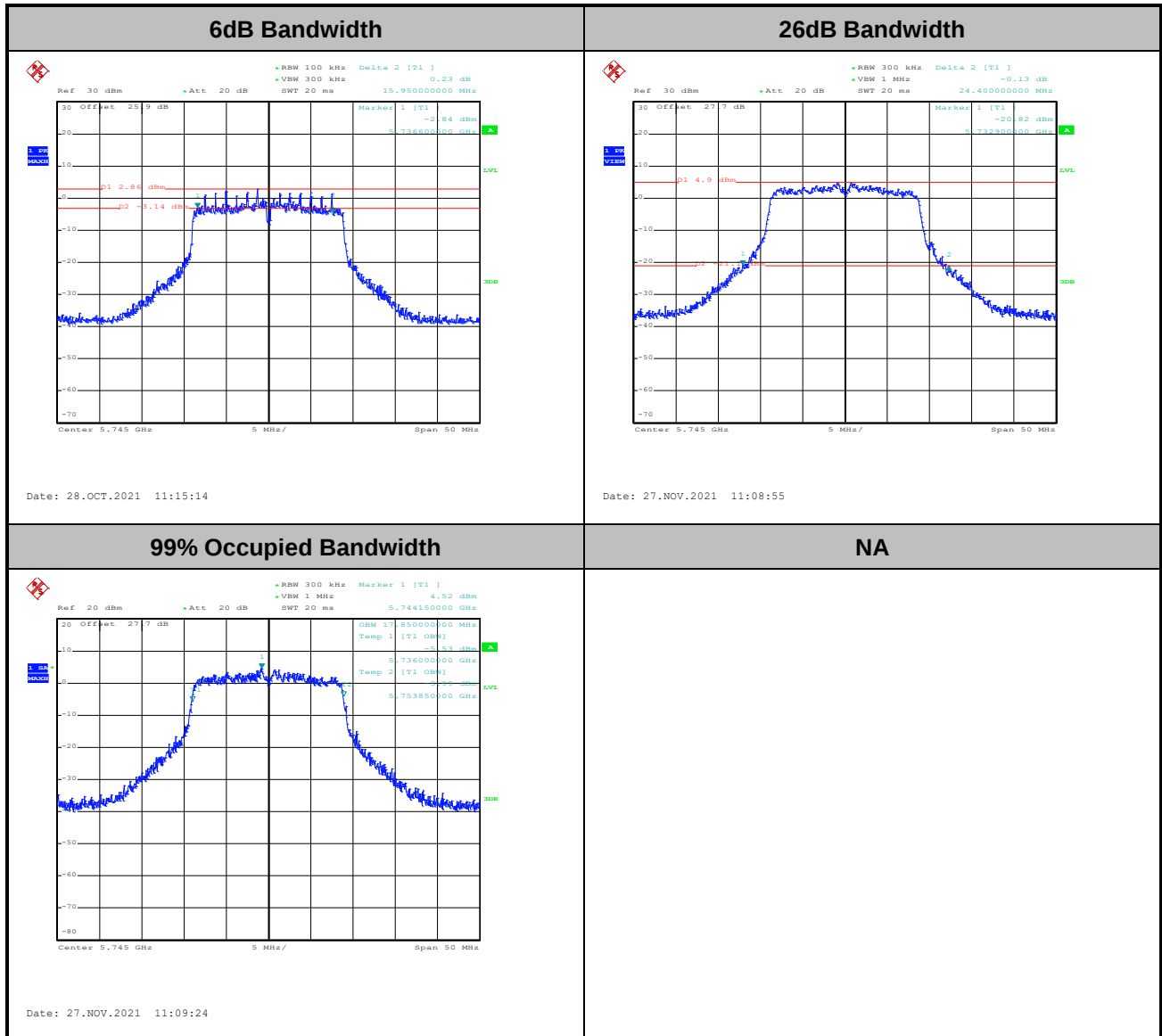


<802.11a>



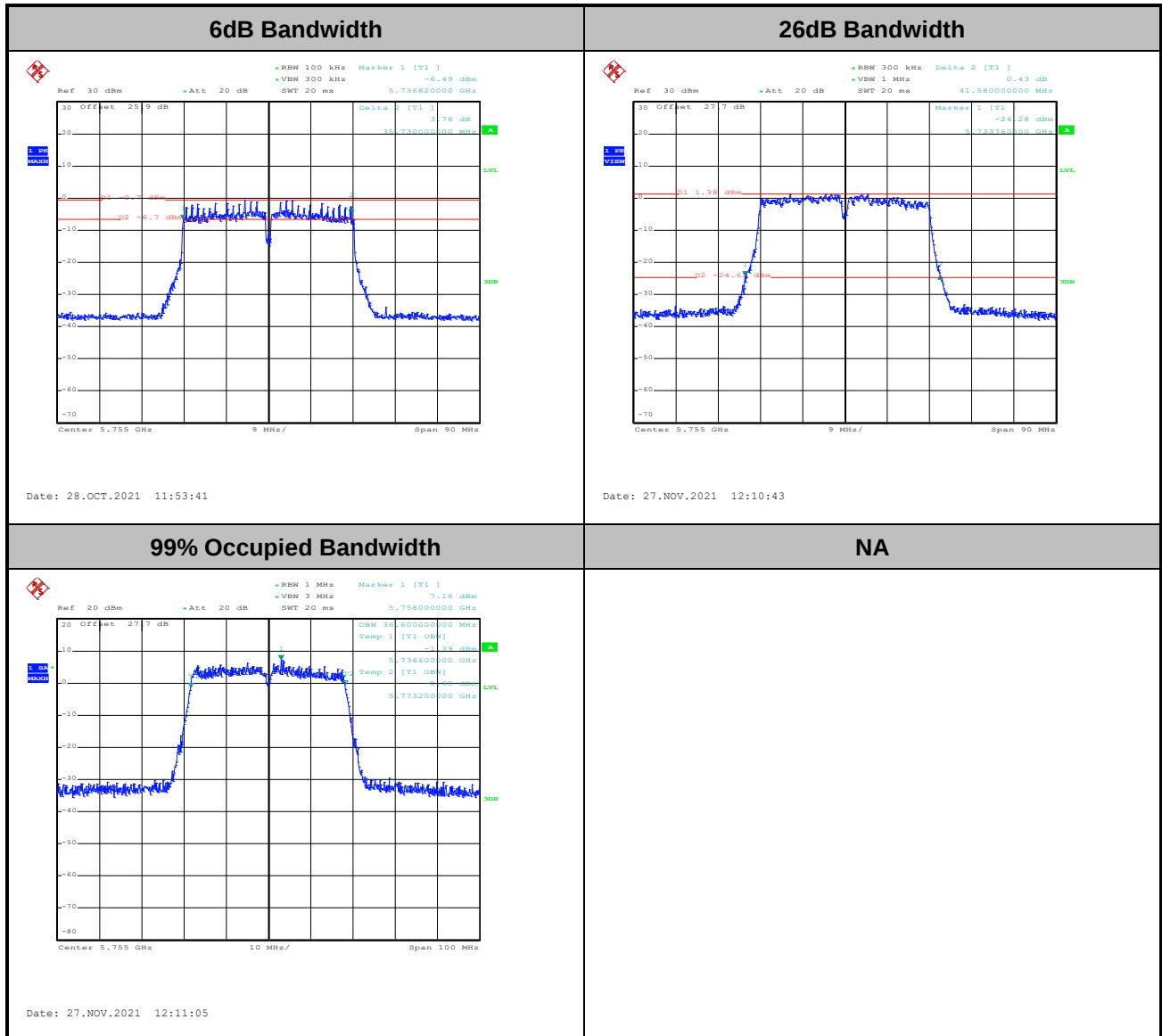


<802.11ac VHT20>

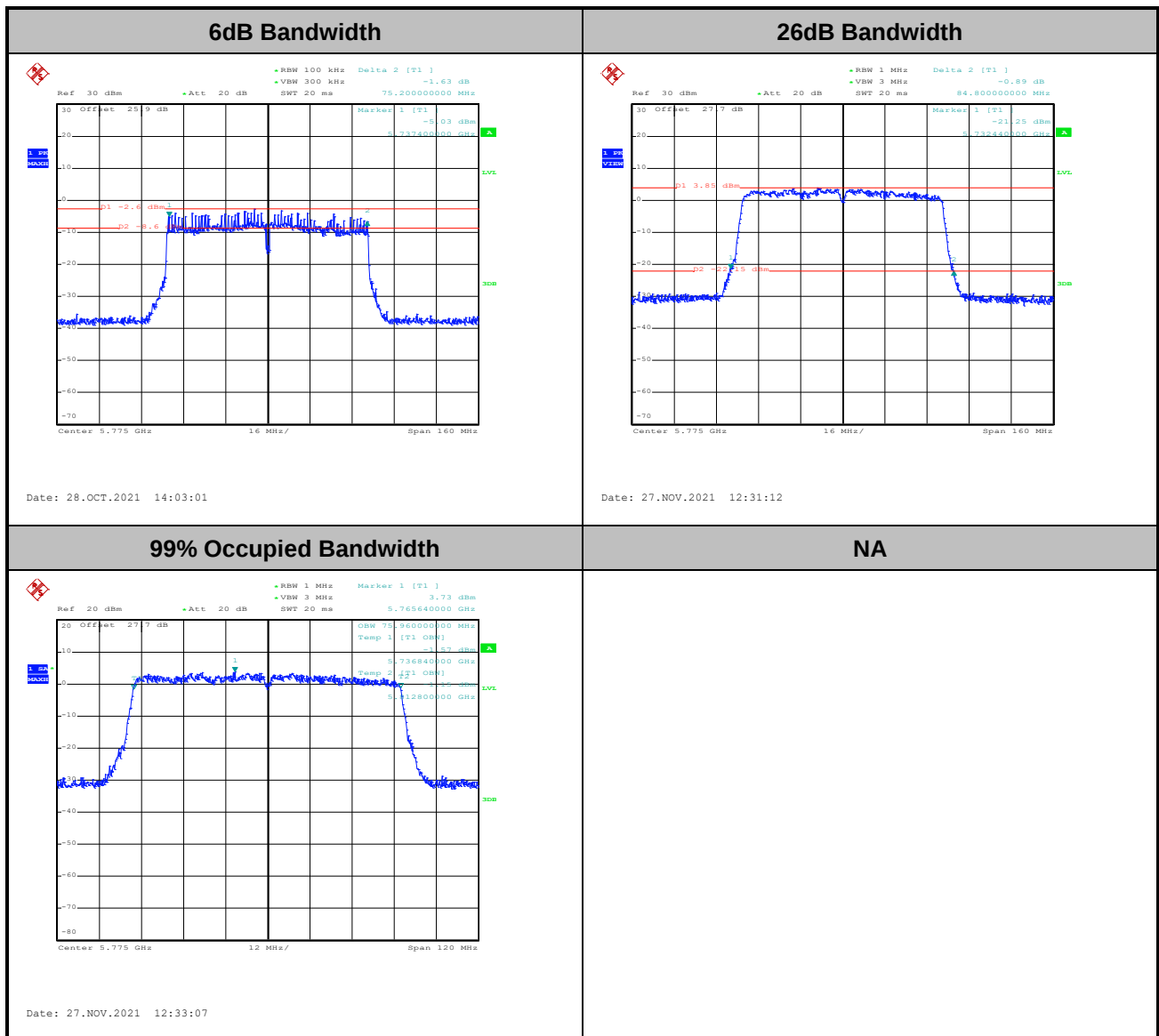




<802.11ac VHT40>



<802.11ac VHT80>



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

See list of measuring equipment of this test report.

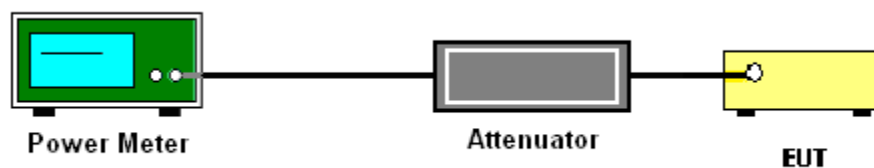
3.2.3 Test Procedures

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.

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

See list of measuring equipment of this test report.

3.3.3 Test Procedures

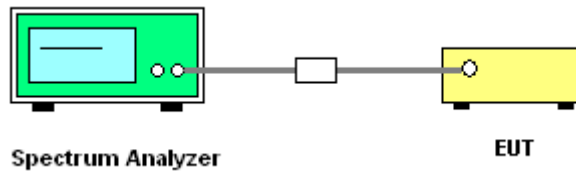
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section F) Maximum power spectral density.

Method SA-3

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

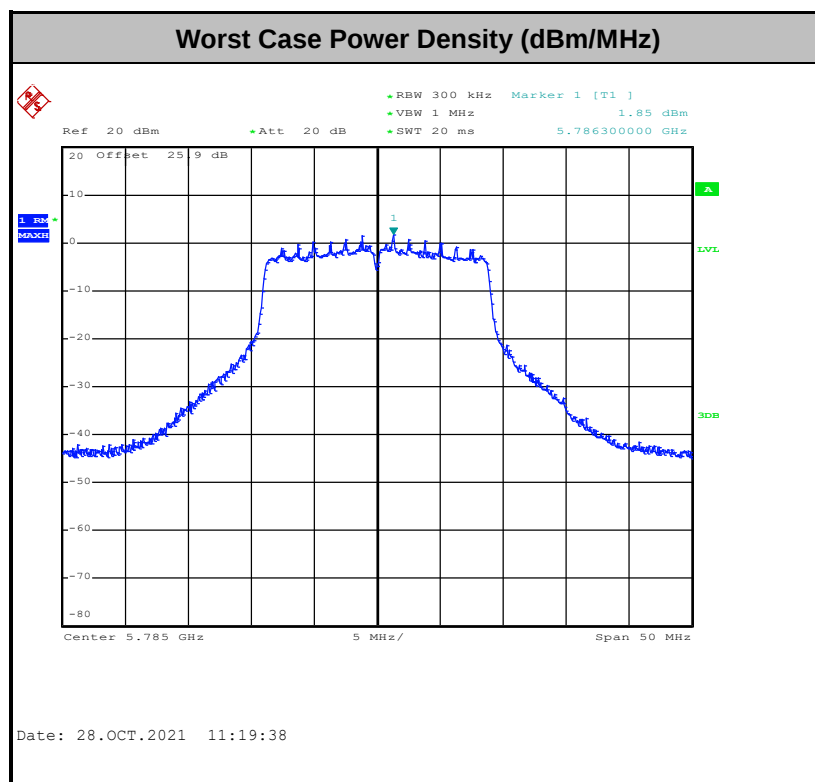
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Add $10 \log (500 \text{ kHz/RBW})$ to the measured result, whereas RBW ($<500 \text{ kHz}$) is the reduced resolution bandwidth 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 was 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.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



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 fallen 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

See list of measuring equipment of this test report.

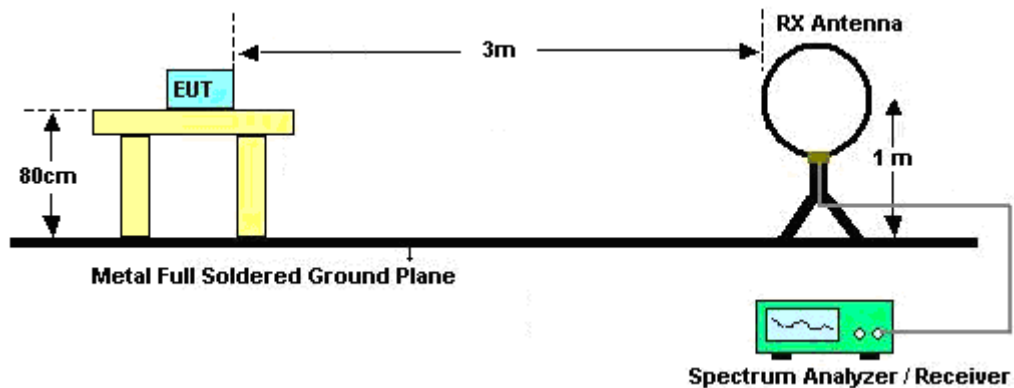
3.4.3 Test Procedures

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 was 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 was set 3 meters from the interference receiving antenna which was 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 was 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.

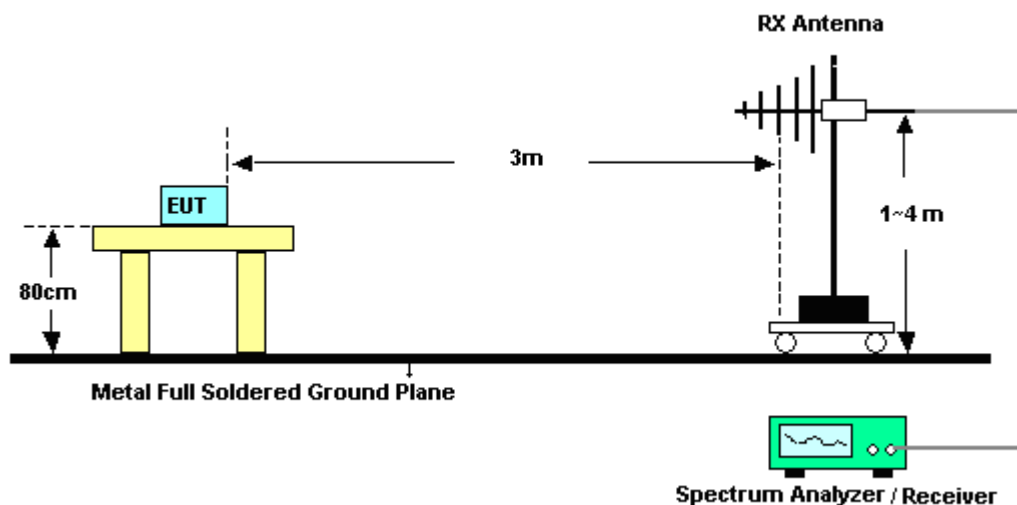
6. Radiated testing below 1GHz was performed by adjusting the antenna tower from 1m to 4m and by rotating the turn table from 0degree to 360 degree to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6dB margin against QP limit line,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

3.4.4 Test Setup

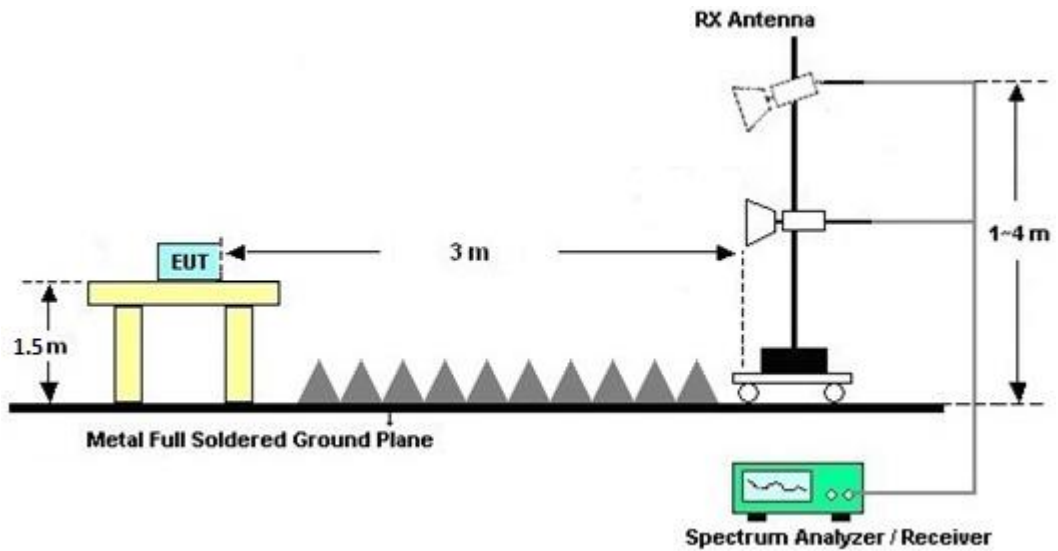
For radiated emissions below 30MHz



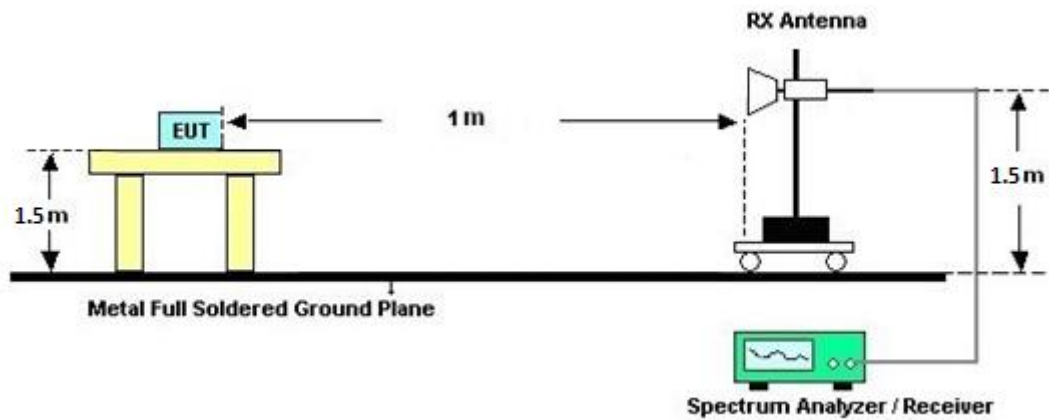
For radiated emissions from 30MHz to 1GHz



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 started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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 (dBμV)	
	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.

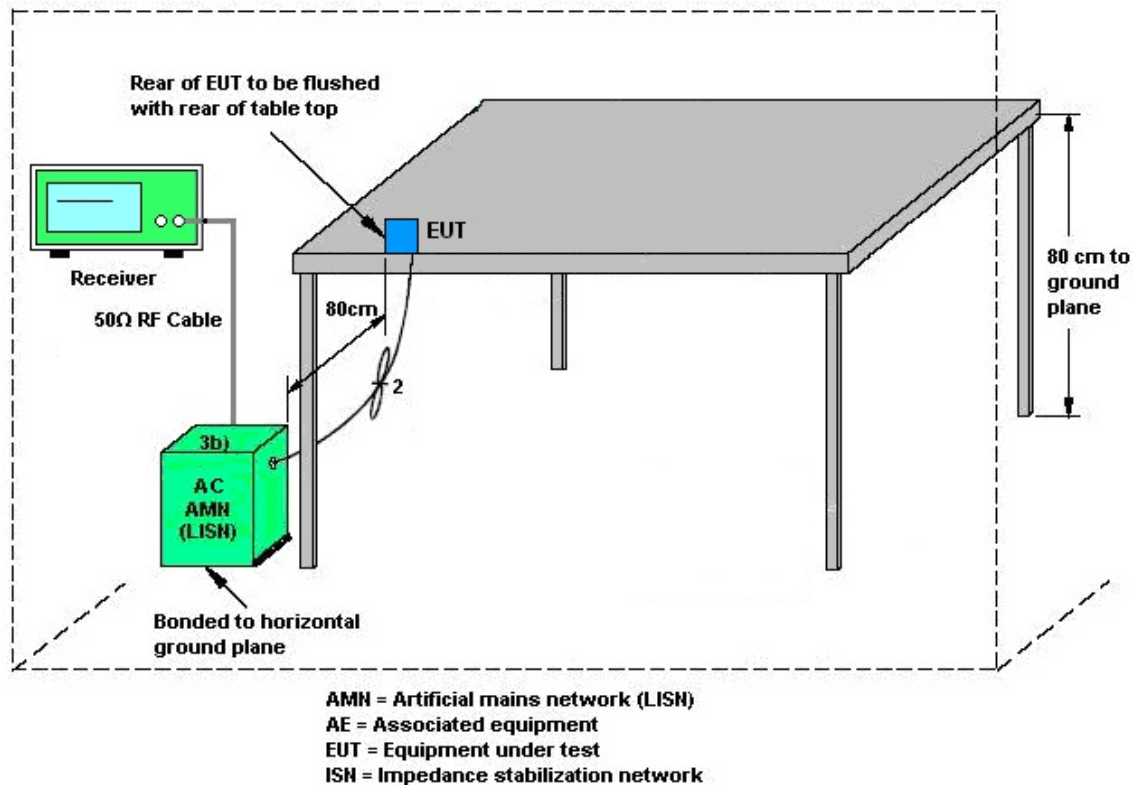
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was 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 sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
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

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



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	100315	9 kHz~30 MHz	Jan. 04, 2021	Oct. 24, 2021~ Oct. 28, 2021	Jan. 03, 2022	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Jul. 13, 2021	Oct. 24, 2021~ Oct. 28, 2021	Jul. 12, 2022	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz~ 40GHz	Dec. 11, 2020	Oct. 24, 2021~ Oct. 28, 2021	Dec. 10, 2021	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 16, 2020	Oct. 24, 2021~ Oct. 28, 2021	Dec. 15, 2021	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 18, 2021	Oct. 24, 2021~ Oct. 28, 2021	May 17, 2022	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Oct. 27, 2020	Oct. 24, 2021~ Oct. 25, 2021	Oct. 26, 2021	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Oct. 26, 2021	Oct. 26, 2021~ Oct. 28, 2021	Oct. 25, 2022	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 11, 2020	Oct. 24, 2021~ Oct. 28, 2021	Dec. 10, 2021	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 18, 2021	Oct. 24, 2021~ Oct. 28, 2021	Mar. 17, 2022	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Oct. 24, 2021~ Oct. 28, 2021	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 24, 2021~ Oct. 28, 2021	N/A	Radiation (03CH13-HY)
Software	Audix	E3 6.2009-8-24	RK-000992	N/A	N/A	Oct. 24, 2021~ Oct. 28, 2021	N/A	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Feb. 10, 2021	Oct. 24, 2021~ Oct. 28, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30M-18G	Feb. 10, 2021	Oct. 24, 2021~ Oct. 28, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 22, 2021	Oct. 24, 2021~ Oct. 28, 2021	Feb. 21, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz~40GHz	Mar. 11, 2021	Oct. 24, 2021~ Oct. 28, 2021	Mar. 10, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30M-18G	Feb. 10, 2021	Oct. 24, 2021~ Oct. 28, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Oct. 24, 2021~ Oct. 28, 2021	Mar. 10, 2022	Radiation (03CH13-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN12	1.53GHz Low Pass Filter	Sep. 14, 2021	Oct. 24, 2021~ Oct. 28, 2021	Sep. 13, 2022	Radiation (03CH13-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000-40ST	SN5	6.75GHz High Pass Filter	Mar. 11, 2021	Oct. 24, 2021~ Oct. 28, 2021	Mar. 10, 2022	Radiation (03CH13-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 01, 2021	Oct. 14, 2021~ Nov. 27, 2021	Feb. 28, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12	10MHz~6GHz	Dec. 16, 2020	Oct. 14, 2021~ Nov. 27, 2021	Dec. 15, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jan. 21, 2021	Oct. 14, 2021~ Nov. 27, 2021	Jan. 20, 2022	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2021	Oct. 14, 2021~ Nov. 27, 2021	Mar. 16, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Oct. 27, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Oct. 27, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Oct. 27, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 01, 2020	Oct. 27, 2021	Nov. 30, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Oct. 27, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Oct. 27, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	Oct. 27, 2021	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Oct. 27, 2021	Dec. 30, 2021	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% ($U = 2Uc(y)$)	6.0 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% ($U = 2Uc(y)$)	5.9 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Jacob Yu	Temperature:	22.3~24.1	°C
Test Date:	2021/10/14-2021/11/27	Relative Humidity:	51.2~55.5	%

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

Band IV single antenna												
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 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	149	5745	16.70	-	22.15	-	15.30	-	0.5	Pass
11a	6Mbps	1	157	5785	16.70	-	23.40	-	15.50	-	0.5	Pass
11a	6Mbps	1	165	5825	16.65	-	23.15	-	15.30	-	0.5	Pass
VHT20	MCS0	1	149	5745	17.85	-	24.40	-	15.95	-	0.5	Pass
VHT20	MCS0	1	157	5785	17.90	-	24.30	-	15.90	-	0.5	Pass
VHT20	MCS0	1	165	5825	17.90	-	23.65	-	15.90	-	0.5	Pass
VHT40	MCS0	1	151	5755	36.60	-	41.58	-	35.73	-	0.5	Pass
VHT40	MCS0	1	159	5795	36.50	-	41.22	-	35.10	-	0.5	Pass
VHT80	MCS0	1	155	5775	75.96	-	84.80	-	75.20	-	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV single antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	12.90	-		30.00	-	0.98	-	Pass
11a	6Mbps	1	157	5785	12.90	-		30.00	-	0.98	-	Pass
11a	6Mbps	1	165	5825	12.80	-		30.00	-	0.98	-	Pass
HT20	MCS0	1	149	5745	12.60	-		30.00	-	0.98	-	Pass
HT20	MCS0	1	157	5785	12.90	-		30.00	-	0.98	-	Pass
HT20	MCS0	1	165	5825	12.50	-		30.00	-	0.98	-	Pass
HT40	MCS0	1	151	5755	12.60	-		30.00	-	0.98	-	Pass
HT40	MCS0	1	159	5795	12.90	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	149	5745	12.70	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	157	5785	13.00	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	165	5825	12.60	-		30.00	-	0.98	-	Pass
VHT40	MCS0	1	151	5755	12.70	-		30.00	-	0.98	-	Pass
VHT40	MCS0	1	159	5795	13.00	-		30.00	-	0.98	-	Pass
VHT80	MCS0	1	155	5775	12.80	-		30.00	-	0.98	-	Pass

TEST RESULTS DATA
Power Spectral Density

Band IV single antenna														
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 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	2.22	-	3.09	-		30.00	-	0.98	-	Pass
11a	6Mbps	1	157	5785	2.22	-	3.31	-		30.00	-	0.98	-	Pass
11a	6Mbps	1	165	5825	2.22	-	3.54	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	149	5745	2.22	-	3.68	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	157	5785	2.22	-	4.07	-		30.00	-	0.98	-	Pass
VHT20	MCS0	1	165	5825	2.22	-	3.56	-		30.00	-	0.98	-	Pass
VHT40	MCS0	1	151	5755	2.22	-	-0.63	-		30.00	-	0.98	-	Pass
VHT40	MCS0	1	159	5795	2.22	-	0.13	-		30.00	-	0.98	-	Pass
VHT80	MCS0	1	155	5775	2.22	-	-2.51	-		30.00	-	0.98	-	Pass



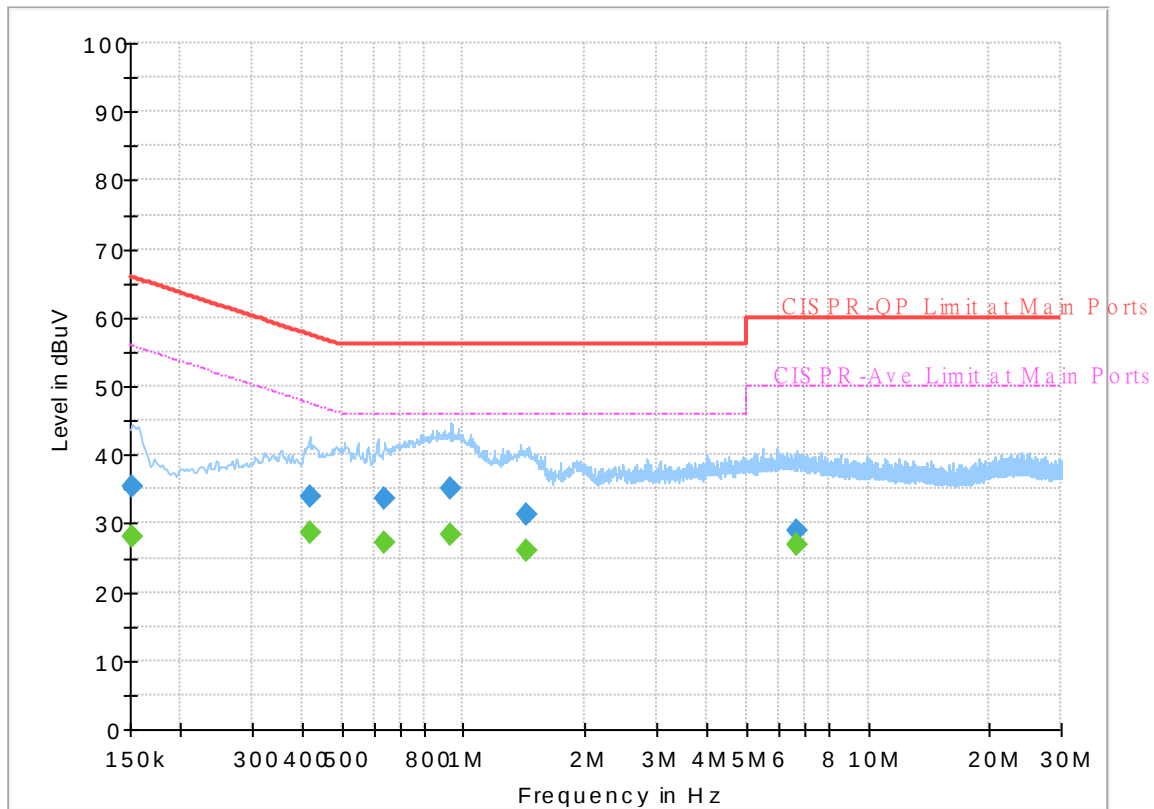
Appendix B. AC Conducted Emission Test Results

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

EUT Information

Report NO : 193007
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



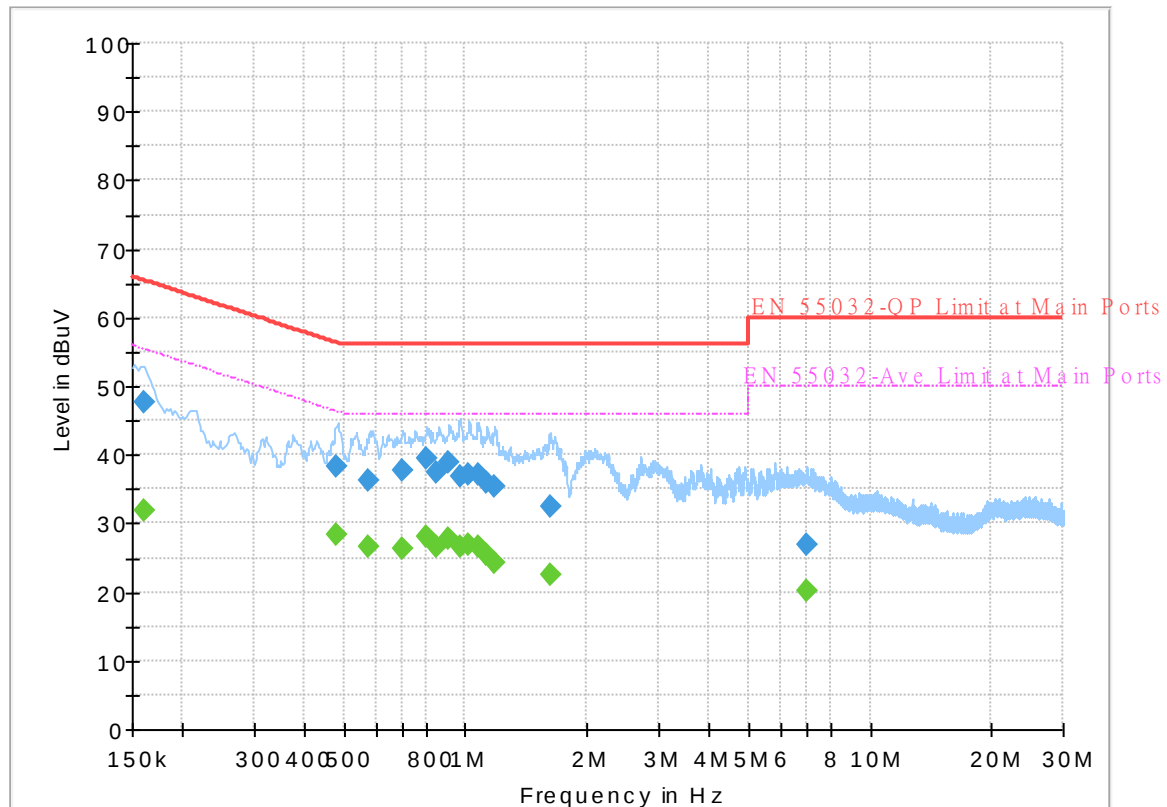
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	28.20	55.88	27.68	L1	OFF	19.7
0.152250	35.39	---	65.88	30.49	L1	OFF	19.7
0.417750	---	28.68	47.49	18.81	L1	OFF	19.7
0.417750	33.84	---	57.49	23.65	L1	OFF	19.7
0.638250	---	27.27	46.00	18.73	L1	OFF	19.9
0.638250	33.61	---	56.00	22.39	L1	OFF	19.9
0.933000	---	28.44	46.00	17.56	L1	OFF	20.2
0.933000	35.21	---	56.00	20.79	L1	OFF	20.2
1.437000	---	26.10	46.00	19.90	L1	OFF	20.2
1.437000	31.39	---	56.00	24.61	L1	OFF	20.2
6.648000	---	26.78	50.00	23.22	L1	OFF	20.1
6.648000	28.86	---	60.00	31.14	L1	OFF	20.1

EUT Information

Project No : 193007
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	47.58	---	65.40	17.82	N	OFF	19.7
0.161250	---	31.96	55.40	23.44	N	OFF	19.7
0.480750	38.29	---	56.33	18.04	N	OFF	19.8
0.480750	---	28.34	46.33	17.99	N	OFF	19.8
0.577500	36.30	---	56.00	19.70	N	OFF	19.9
0.577500	---	26.66	46.00	19.34	N	OFF	19.9
0.701250	37.71	---	56.00	18.29	N	OFF	20.0
0.701250	---	26.41	46.00	19.59	N	OFF	20.0
0.804750	39.41	---	56.00	16.59	N	OFF	20.1
0.804750	---	28.08	46.00	17.92	N	OFF	20.1
0.849750	37.44	---	56.00	18.56	N	OFF	20.2
0.849750	---	26.70	46.00	19.30	N	OFF	20.2
0.912750	38.79	---	56.00	17.21	N	OFF	20.2
0.912750	---	27.72	46.00	18.28	N	OFF	20.2
0.975750	36.86	---	56.00	19.14	N	OFF	20.2
0.975750	---	26.48	46.00	19.52	N	OFF	20.2
1.018500	37.22	---	56.00	18.78	N	OFF	20.2
1.018500	---	26.79	46.00	19.21	N	OFF	20.2
1.074750	37.16	---	56.00	18.84	N	OFF	20.2
1.074750	---	26.68	46.00	19.32	N	OFF	20.2
1.126500	35.92	---	56.00	20.08	N	OFF	20.2
1.126500	---	25.32	46.00	20.68	N	OFF	20.2
1.182750	35.29	---	56.00	20.71	N	OFF	20.2
1.182750	---	24.23	46.00	21.77	N	OFF	20.2
1.614750	32.52	---	56.00	23.48	N	OFF	20.2
1.614750	---	22.43	46.00	23.57	N	OFF	20.2
6.985500	---	20.17	50.00	29.83	N	OFF	20.1
6.985500	26.80	---	60.00	33.20	N	OFF	20.1



Appendix C. Radiated Spurious Emission

Test Engineer :	Yuan Lee, Jacky Hong and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preampl Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5601.8	52.79	-15.41	68.2	40.94	32	6.45	26.6	101	204	P	H
		5683	52.75	-39.91	92.66	40.85	32.1	6.43	26.63	101	204	P	H
		5705.2	59.16	-47.5	106.66	47.16	32.22	6.42	26.64	101	204	P	H
		5720.4	58.4	-53.31	111.71	46.36	32.28	6.41	26.65	101	204	P	H
	*	5745	102.53	-	-	90.4	32.38	6.41	26.66	101	204	P	H
	*	5745	94.9	-	-	82.77	32.38	6.41	26.66	101	204	A	H
													H
													H
		5607.2	52.83	-15.37	68.2	40.99	31.99	6.45	26.6	272	192	P	V
		5687.8	53.62	-42.58	96.2	41.71	32.13	6.42	26.64	272	192	P	V
		5713.8	58.26	-50.81	109.07	46.23	32.26	6.42	26.65	272	192	P	V
		5721.2	58.88	-54.66	113.54	46.84	32.28	6.41	26.65	272	192	P	V
	*	5745	101.81	-	-	89.68	32.38	6.41	26.66	272	192	P	V
	*	5745	94.11	-	-	81.98	32.38	6.41	26.66	272	192	A	V
													V
													V



WIFI Ant. 1	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		5631.8	51.6	-16.6	68.2	39.83	31.94	6.44	26.61	100	204	P	H
		5664.2	52.96	-25.78	78.74	41.17	31.99	6.43	26.63	100	204	P	H
		5714.6	51.92	-57.37	109.29	39.89	32.26	6.42	26.65	100	204	P	H
		5723.4	51.48	-67.07	118.55	39.43	32.29	6.41	26.65	100	204	P	H
	*	5785	102.39	-	-	90.27	32.4	6.39	26.67	100	204	P	H
	*	5785	94.74	-	-	82.62	32.4	6.39	26.67	100	204	A	H
		5850.6	51.29	-69.54	120.83	39.06	32.5	6.43	26.7	100	204	P	H
		5861	52.9	-56.22	109.12	40.62	32.54	6.44	26.7	100	204	P	H
		5899.4	52.35	-34.75	87.1	39.9	32.7	6.47	26.72	100	204	P	H
		5945.6	52.25	-15.95	68.2	39.69	32.79	6.51	26.74	100	204	P	H
													H
													H
		5615.2	52.57	-15.63	68.2	40.76	31.97	6.45	26.61	298	191	P	V
		5681.2	52.84	-38.49	91.33	40.95	32.09	6.43	26.63	298	191	P	V
		5717	52.73	-57.23	109.96	40.7	32.27	6.41	26.65	298	191	P	V
		5723.2	52.39	-65.71	118.1	40.34	32.29	6.41	26.65	298	191	P	V
	*	5785	101.3	-	-	89.18	32.4	6.39	26.67	298	191	P	V
	*	5785	93.6	-	-	81.48	32.4	6.39	26.67	298	191	A	V
		5852	50.99	-66.65	117.64	38.75	32.51	6.43	26.7	298	191	P	V
		5863.4	51.51	-56.94	108.45	39.23	32.55	6.44	26.71	298	191	P	V
		5905.2	52.78	-30.03	82.81	40.31	32.71	6.48	26.72	298	191	P	V
		5936.4	51.64	-16.56	68.2	39.09	32.77	6.51	26.73	298	191	P	V
													V
													V



WIFI Ant. 1	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	102.32	-	-	90.15	32.45	6.41	26.69	100	201	P	H
	*	5825	94.72	-	-	82.55	32.45	6.41	26.69	100	201	A	H
		5850.8	51.7	-68.68	120.38	39.47	32.5	6.43	26.7	100	201	P	H
		5859.2	57.67	-51.95	109.62	45.39	32.54	6.44	26.7	100	201	P	H
		5896.4	52.53	-36.8	89.33	40.09	32.69	6.47	26.72	100	201	P	H
		5928.6	52.63	-15.57	68.2	40.1	32.76	6.5	26.73	100	201	P	H
													H
													H
	*	5825	101.29	-	-	89.12	32.45	6.41	26.69	309	191	P	V
	*	5825	93.61	-	-	81.44	32.45	6.41	26.69	309	191	A	V
		5851.4	52.09	-66.92	119.01	39.85	32.51	6.43	26.7	309	191	P	V
		5873.8	56.4	-49.14	105.54	44.06	32.6	6.45	26.71	309	191	P	V
		5915	53.69	-21.88	75.57	41.2	32.73	6.49	26.73	309	191	P	V
		5933.2	52.92	-15.28	68.2	40.38	32.77	6.5	26.73	309	191	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. 1	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		10927	48.97	-25.03	74	53.56	40.85	10.43	55.87	-	-	P	H
		10927	36.83	-17.17	54	41.42	40.85	10.43	55.87	-	-	A	H
		11490	47.33	-26.67	74	52.26	40.17	10.68	55.78	-	-	P	H
		14491	49.75	-24.25	74	52.25	41.86	11.72	56.08	-	-	P	H
		14491	38.69	-15.31	54	41.19	41.86	11.72	56.08	-	-	A	H
		17235	47.52	-20.68	68.2	50.54	40.57	12.61	56.2	-	-	P	H
		17978	56.35	-17.65	74	51.97	47.91	13.19	56.72	-	-	P	H
		17978	46.22	-7.78	54	41.84	47.91	13.19	56.72	-	-	A	H
													H
													H
													H
													H
		10773	49.15	-24.85	74	54.22	40.65	10.36	56.08	-	-	P	V
		10773	37.03	-16.97	54	42.1	40.65	10.36	56.08	-	-	A	V
		11490	47.44	-26.56	74	52.37	40.17	10.68	55.78	-	-	P	V
		14480	49.18	-24.82	74	51.75	41.82	11.71	56.1	-	-	P	V
		14480	38.24	-15.76	54	40.81	41.82	11.71	56.1	-	-	A	V
		17235	48.16	-20.04	68.2	51.18	40.57	12.61	56.2	-	-	P	V
		17978	55.12	-18.88	74	50.74	47.91	13.19	56.72	-	-	P	V
		17978	45.06	-8.94	54	40.68	47.91	13.19	56.72	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1	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		10938	48.68	-25.32	74	53.28	40.82	10.44	55.86	-	-	P	H
		10938	36.6	-17.4	54	41.2	40.82	10.44	55.86	-	-	A	H
		11570	46.7	-27.3	74	51.69	40.06	10.72	55.77	-	-	P	H
		14491	49.5	-24.5	74	52	41.86	11.72	56.08	-	-	P	H
		14491	39.38	-14.62	54	41.88	41.86	11.72	56.08	-	-	A	H
		17355	49.1	-19.1	68.2	51.78	41.03	12.71	56.42	-	-	P	H
		18000	55.58	-18.42	74	50.6	48.5	13.2	56.72	-	-	P	H
		18000	45.49	-8.51	54	40.51	48.5	13.2	56.72	-	-	A	H
													H
													H
													H
													H
		11070	48.85	-25.15	74	53.77	40.35	10.5	55.77	-	-	P	V
		11070	36.7	-17.3	54	41.62	40.35	10.5	55.77	-	-	A	V
		11570	47	-27	74	51.99	40.06	10.72	55.77	-	-	P	V
		14491	49.99	-24.01	74	52.49	41.86	11.72	56.08	-	-	P	V
		14491	39.02	-14.98	54	41.52	41.86	11.72	56.08	-	-	A	V
		17355	49.47	-18.73	68.2	52.15	41.03	12.71	56.42	-	-	P	V
		18000	55.94	-18.06	74	50.96	48.5	13.2	56.72	-	-	P	V
		18000	45.84	-8.16	54	40.86	48.5	13.2	56.72	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1	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		11037	49.46	-24.54	74	54.23	40.51	10.49	55.77	-	-	P	H
		11037	37.36	-16.64	54	42.13	40.51	10.49	55.77	-	-	A	H
		11650	47.03	-26.97	74	52.29	39.75	10.75	55.76	-	-	P	H
		14491	49.74	-24.26	74	52.24	41.86	11.72	56.08	-	-	P	H
		14491	38.64	-15.36	54	41.14	41.86	11.72	56.08	-	-	A	H
		17475	49.91	-18.29	68.2	52.23	41.52	12.8	56.64	-	-	P	H
		17978	55.88	-18.12	74	51.5	47.91	13.19	56.72	-	-	P	H
		17978	45.76	-8.24	54	41.38	47.91	13.19	56.72	-	-	A	H
													H
													H
													H
													H
		10905	48.96	-25.04	74	53.55	40.89	10.42	55.9	-	-	P	V
		10905	36.82	-17.18	54	41.41	40.89	10.42	55.9	-	-	A	V
		11650	46.69	-27.31	74	51.95	39.75	10.75	55.76	-	-	P	V
		14491	49.44	-24.56	74	51.94	41.86	11.72	56.08	-	-	P	V
		14491	38.62	-15.38	54	41.12	41.86	11.72	56.08	-	-	A	V
		17475	48.48	-19.72	68.2	50.8	41.52	12.8	56.64	-	-	P	V
		17989	55.81	-18.19	74	51.14	48.2	13.19	56.72	-	-	P	V
		17989	45.76	-8.24	54	41.09	48.2	13.19	56.72	-	-	A	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.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

**Band 4 5725~5850MHz****WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI Ant. 1	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)
802.11ac VHT20 CH 149 5745MHz		5611.4	52.15	-16.05	68.2	40.32	31.98	6.45	26.6	100	201	P	H
		5651.2	52.9	-16.19	69.09	41.18	31.91	6.43	26.62	100	201	P	H
		5717.2	52.31	-57.71	110.02	40.28	32.27	6.41	26.65	100	201	P	H
		5725	55.07	-67.13	122.2	43.01	32.3	6.41	26.65	100	201	P	H
	*	5745	102.21	-	-	90.08	32.38	6.41	26.66	100	201	P	H
	*	5745	94.28	-	-	82.15	32.38	6.41	26.66	100	201	A	H
													H
													H
		5625.6	51.84	-16.36	68.2	40.06	31.95	6.44	26.61	271	190	P	V
		5687	52.04	-43.57	95.61	40.13	32.12	6.42	26.63	271	190	P	V
		5705	53.2	-53.4	106.6	41.2	32.22	6.42	26.64	271	190	P	V
		5724	52.24	-67.68	119.92	40.18	32.3	6.41	26.65	271	190	P	V
	*	5745	101.36	-	-	89.23	32.38	6.41	26.66	271	190	P	V
	*	5745	93.3	-	-	81.17	32.38	6.41	26.66	271	190	A	V
													V
													V



WIFI Ant. 1	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)
802.11ac VHT20 CH 157 5785MHz		5601.4	52.42	-15.78	68.2	40.57	32	6.45	26.6	100	204	P	H
		5682.6	51.59	-40.77	92.36	39.69	32.1	6.43	26.63	100	204	P	H
		5708.4	52.5	-55.05	107.55	40.49	32.23	6.42	26.64	100	204	P	H
		5724.6	52.3	-68.99	121.29	40.24	32.3	6.41	26.65	100	204	P	H
	*	5785	102.29	-	-	90.17	32.4	6.39	26.67	100	204	P	H
	*	5785	94.43	-	-	82.31	32.4	6.39	26.67	100	204	A	H
		5853	52.08	-63.28	115.36	39.83	32.51	6.44	26.7	100	204	P	H
		5857.2	53.59	-56.59	110.18	41.32	32.53	6.44	26.7	100	204	P	H
		5921.6	52.06	-18.65	70.71	39.56	32.74	6.49	26.73	100	204	P	H
		5930	52.28	-15.92	68.2	39.75	32.76	6.5	26.73	100	204	P	H
													H
													H
		5613.2	52.07	-16.13	68.2	40.26	31.97	6.45	26.61	298	191	P	V
		5689.4	52.65	-44.73	97.38	40.73	32.14	6.42	26.64	298	191	P	V
		5701.2	51.64	-53.9	105.54	39.66	32.2	6.42	26.64	298	191	P	V
		5720.8	51.48	-61.14	112.62	39.44	32.28	6.41	26.65	298	191	P	V
	*	5785	101.25	-	-	89.13	32.4	6.39	26.67	298	191	P	V
	*	5785	93.33	-	-	81.21	32.4	6.39	26.67	298	191	A	V
		5850.8	51.71	-68.67	120.38	39.48	32.5	6.43	26.7	298	191	P	V
		5868.4	52.57	-54.48	107.05	40.26	32.57	6.45	26.71	298	191	P	V
		5920.2	52.69	-19.05	71.74	40.19	32.74	6.49	26.73	298	191	P	V
		5949	52.57	-15.63	68.2	39.99	32.8	6.52	26.74	298	191	P	V
													V
													V



WIFI Ant. 1	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)
802.11ac VHT20 CH 165 5825MHz	*	5825	103.42	-	-	91.25	32.45	6.41	26.69	100	201	P	H
	*	5825	95.88	-	-	83.71	32.45	6.41	26.69	100	201	A	H
		5851.4	52.94	-66.07	119.01	40.7	32.51	6.43	26.7	100	201	P	H
		5857.6	53.1	-56.97	110.07	40.83	32.53	6.44	26.7	100	201	P	H
		5889.8	52.81	-41.41	94.22	40.4	32.66	6.47	26.72	100	201	P	H
		5928.4	53.29	-14.91	68.2	40.76	32.76	6.5	26.73	100	201	P	H
													H
													H
	*	5825	101.65	-	-	89.48	32.45	6.41	26.69	100	334	P	V
	*	5825	93.68	-	-	81.51	32.45	6.41	26.69	100	334	A	V
		5854.2	51.65	-60.97	112.62	39.39	32.52	6.44	26.7	100	334	P	V
		5873.8	53.03	-52.51	105.54	40.69	32.6	6.45	26.71	100	334	P	V
		5888.2	53.08	-42.32	95.4	40.69	32.65	6.46	26.72	100	334	P	V
		5933	51.93	-16.27	68.2	39.39	32.77	6.5	26.73	100	334	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 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	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)
802.11ac VHT20 CH 149 5745MHz		10740	49.15	-24.85	74	54.36	40.58	10.34	56.13	-	-	P	H
		10740	37.9	-16.1	54	43.11	40.58	10.34	56.13	-	-	A	H
		11490	46.89	-27.11	74	51.82	40.17	10.68	55.78	-	-	P	H
		14491	49.68	-24.32	74	52.18	41.86	11.72	56.08	-	-	P	H
		14491	41.05	-12.95	54	43.55	41.86	11.72	56.08	-	-	A	H
		17235	48.66	-19.54	68.2	51.68	40.57	12.61	56.2	-	-	P	H
		17989	55.13	-18.87	74	50.46	48.2	13.19	56.72	-	-	P	H
		17989	47.78	-6.22	54	43.11	48.2	13.19	56.72	-	-	A	H
													H
													H
													H
													H
		10916	49.07	-24.93	74	53.66	40.87	10.43	55.89	-	-	P	V
		10916	38.76	-15.24	54	43.35	40.87	10.43	55.89	-	-	A	V
		11490	47.23	-26.77	74	52.16	40.17	10.68	55.78	-	-	P	V
		14480	49.6	-24.4	74	52.17	41.82	11.71	56.1	-	-	P	V
		14480	40.72	-13.28	54	43.29	41.82	11.71	56.1	-	-	A	V
		17235	48	-20.2	68.2	51.02	40.57	12.61	56.2	-	-	P	V
		17978	55.42	-18.58	74	51.04	47.91	13.19	56.72	-	-	P	V
		17978	48.16	-5.84	54	43.78	47.91	13.19	56.72	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1	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)
802.11ac VHT20 CH 157 5785MHz		10927	49.24	-24.76	74	53.83	40.85	10.43	55.87	-	-	P	H
		10927	38.71	-15.29	54	43.3	40.85	10.43	55.87	-	-	A	H
		11570	46.89	-27.11	74	51.88	40.06	10.72	55.77	-	-	P	H
		14480	49.43	-24.57	74	52	41.82	11.71	56.1	-	-	P	H
		14480	40.61	-13.39	54	43.18	41.82	11.71	56.1	-	-	A	H
		17355	49.29	-18.91	68.2	51.97	41.03	12.71	56.42	-	-	P	H
		18000	55.69	-18.31	74	50.71	48.5	13.2	56.72	-	-	P	H
		18000	48.49	-5.51	54	43.51	48.5	13.2	56.72	-	-	A	H
													H
													H
													H
													H
		11026	49.39	-24.61	74	54.11	40.57	10.48	55.77	-	-	P	V
		11026	38.77	-15.23	54	43.49	40.57	10.48	55.77	-	-	A	V
		11570	46.48	-27.52	74	51.47	40.06	10.72	55.77	-	-	P	V
		14480	49.76	-24.24	74	52.33	41.82	11.71	56.1	-	-	P	V
		14480	40.87	-13.13	54	43.44	41.82	11.71	56.1	-	-	A	V
		17355	48.22	-19.98	68.2	50.9	41.03	12.71	56.42	-	-	P	V
		17978	55.84	-18.16	74	51.46	47.91	13.19	56.72	-	-	P	V
		17978	47.68	-6.32	54	43.3	47.91	13.19	56.72	-	-	A	V
													V
													V
													V
													V

[illegible]



Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI Ant. 1	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)
802.11ac VHT40 CH 151 5755MHz		5615	53.4	-14.8	68.2	41.59	31.97	6.45	26.61	100	201	P	H
		5681.8	52.75	-39.02	91.77	40.86	32.09	6.43	26.63	100	201	P	H
		5711.6	53.34	-55.11	108.45	41.31	32.25	6.42	26.64	100	201	P	H
		5723.4	53.96	-64.59	118.55	41.91	32.29	6.41	26.65	100	201	P	H
	*	5755	100.69	-	-	88.55	32.4	6.4	26.66	100	201	P	H
	*	5755	92.02	-	-	79.88	32.4	6.4	26.66	100	201	A	H
		5850.2	51.75	-69.99	121.74	39.52	32.5	6.43	26.7	100	201	P	H
		5868.4	52.13	-54.92	107.05	39.82	32.57	6.45	26.71	100	201	P	H
		5883	53.92	-45.34	99.26	41.54	32.63	6.46	26.71	100	201	P	H
		5948.2	52.46	-15.74	68.2	39.88	32.8	6.52	26.74	100	201	P	H
													H
													H
		5648.2	51.73	-16.47	68.2	40.01	31.9	6.44	26.62	100	340	P	V
		5651.6	51.9	-17.49	69.39	40.18	31.91	6.43	26.62	100	340	P	V
		5718.2	52.78	-57.52	110.3	40.75	32.27	6.41	26.65	100	340	P	V
		5724.6	52.91	-68.38	121.29	40.85	32.3	6.41	26.65	100	340	P	V
	*	5755	98.09	-	-	85.95	32.4	6.4	26.66	100	340	P	V
	*	5755	89.6	-	-	77.46	32.4	6.4	26.66	100	340	A	V
		5852.8	51.62	-64.2	115.82	39.38	32.51	6.43	26.7	100	340	P	V
		5871.2	52.68	-53.58	106.26	40.36	32.58	6.45	26.71	100	340	P	V
		5897.4	52.54	-36.05	88.59	40.1	32.69	6.47	26.72	100	340	P	V
		5936.4	52.25	-15.95	68.2	39.7	32.77	6.51	26.73	100	340	P	V
													V
													V



WIFI Ant. 1	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)
802.11ac VHT40 CH 159 5795MHz		5647.4	52.33	-15.87	68.2	40.6	31.91	6.44	26.62	100	201	P	H
		5697	52.19	-50.8	102.99	40.23	32.18	6.42	26.64	100	201	P	H
		5704.6	53.09	-53.4	106.49	41.09	32.22	6.42	26.64	100	201	P	H
		5720.2	51.79	-59.47	111.26	39.75	32.28	6.41	26.65	100	201	P	H
	*	5795	100.65	-	-	88.54	32.4	6.39	26.68	100	201	P	H
	*	5795	92.29	-	-	80.18	32.4	6.39	26.68	100	201	A	H
		5855	54.12	-56.68	110.8	41.86	32.52	6.44	26.7	100	201	P	H
		5873.6	52.74	-52.85	105.59	40.41	32.59	6.45	26.71	100	201	P	H
		5884.6	52.73	-45.34	98.07	40.34	32.64	6.46	26.71	100	201	P	H
		5949.2	51.78	-16.42	68.2	39.2	32.8	6.52	26.74	100	201	P	H
													H
													H
		5602.6	51.46	-16.74	68.2	39.62	31.99	6.45	26.6	100	332	P	V
		5694.6	53.18	-48.04	101.22	41.23	32.17	6.42	26.64	100	332	P	V
		5718.6	52.26	-58.15	110.41	40.23	32.27	6.41	26.65	100	332	P	V
		5723	51.09	-66.55	117.64	39.04	32.29	6.41	26.65	100	332	P	V
	*	5795	97.48	-	-	85.37	32.4	6.39	26.68	100	332	P	V
	*	5795	89.04	-	-	76.93	32.4	6.39	26.68	100	332	A	V
		5853	52.11	-63.25	115.36	39.86	32.51	6.44	26.7	100	332	P	V
		5860.2	51.92	-57.42	109.34	39.64	32.54	6.44	26.7	100	332	P	V
		5910.2	52.08	-27.04	79.12	39.6	32.72	6.48	26.72	100	332	P	V
		5939.2	51.64	-16.56	68.2	39.09	32.78	6.51	26.74	100	332	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 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1	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)
802.11ac VHT40 CH 151 5755MHz		10949	49.26	-24.74	74	53.85	40.8	10.45	55.84	-	-	P	H
		10949	38.6	-15.4	54	43.19	40.8	10.45	55.84	-	-	A	H
		11510	47.44	-26.56	74	52.35	40.18	10.69	55.78	-	-	P	H
		14480	50.32	-23.68	74	52.89	41.82	11.71	56.1	-	-	P	H
		14480	40.81	-13.19	54	43.38	41.82	11.71	56.1	-	-	A	H
		17265	48.04	-20.16	68.2	51.03	40.63	12.64	56.26	-	-	P	H
		17989	56.26	-17.74	74	51.59	48.2	13.19	56.72	-	-	P	H
		17989	47.85	-6.15	54	43.18	48.2	13.19	56.72	-	-	A	H
													H
													H
													H
													H
		10949	49.47	-24.53	74	54.06	40.8	10.45	55.84	-	-	P	V
		10949	38.8	-15.2	54	43.39	40.8	10.45	55.84	-	-	A	V
		11510	46.96	-27.04	74	51.87	40.18	10.69	55.78	-	-	P	V
		14491	50.54	-23.46	74	53.04	41.86	11.72	56.08	-	-	P	V
		14491	40.76	-13.24	54	43.26	41.86	11.72	56.08	-	-	A	V
		17265	47.55	-20.65	68.2	50.54	40.63	12.64	56.26	-	-	P	V
		17967	55.79	-18.21	74	51.73	47.61	13.17	56.72	-	-	P	V
		17967	47.16	-6.84	54	43.1	47.61	13.17	56.72	-	-	A	V
													V
													V
													V
													V

[illegible]



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	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)
802.11ac VHT80 CH 155 5775MHz		5611.8	53.12	-15.08	68.2	41.29	31.98	6.45	26.6	100	203	P	H
		5698.6	55.46	-48.71	104.17	43.49	32.19	6.42	26.64	100	203	P	H
		5717.4	56.65	-53.42	110.07	44.62	32.27	6.41	26.65	100	203	P	H
		5724.6	57.05	-64.24	121.29	44.99	32.3	6.41	26.65	100	203	P	H
	*	5775	97.12	-	-	84.99	32.4	6.4	26.67	100	203	P	H
	*	5775	88.82	-	-	76.69	32.4	6.4	26.67	100	203	A	H
		5850.2	53.93	-67.81	121.74	41.7	32.5	6.43	26.7	100	203	P	H
		5869	52.94	-53.94	106.88	40.62	32.58	6.45	26.71	100	203	P	H
		5884.4	53.69	-44.53	98.22	41.3	32.64	6.46	26.71	100	203	P	H
		5932.2	52.05	-16.15	68.2	39.52	32.76	6.5	26.73	100	203	P	H
													H
													H
		5612.6	52.24	-15.96	68.2	40.43	31.97	6.45	26.61	113	340	P	V
		5694.8	52.69	-48.68	101.37	40.74	32.17	6.42	26.64	113	340	P	V
		5718	55.7	-54.54	110.24	43.67	32.27	6.41	26.65	113	340	P	V
		5723.8	52.51	-66.95	119.46	40.45	32.3	6.41	26.65	113	340	P	V
	*	5775	94.52	-	-	82.39	32.4	6.4	26.67	113	340	P	V
	*	5775	86.33	-	-	74.2	32.4	6.4	26.67	113	340	A	V
		5852.6	53.16	-63.11	116.27	40.92	32.51	6.43	26.7	113	340	P	V
		5863	52.32	-56.24	108.56	40.04	32.55	6.44	26.71	113	340	P	V
		5906.4	51.97	-29.96	81.93	39.5	32.71	6.48	26.72	113	340	P	V
		5947.2	53.53	-14.67	68.2	40.96	32.79	6.52	26.74	113	340	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 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1	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)
802.11ac VHT80 CH 155 5775MHz		10938	48.87	-25.13	74	53.47	40.82	10.44	55.86	-	-	P	H
		10938	38.66	-15.34	54	43.26	40.82	10.44	55.86	-	-	A	H
		11550	46.86	-27.14	74	51.82	40.1	10.71	55.77	-	-	P	H
		14491	49.68	-24.32	74	52.18	41.86	11.72	56.08	-	-	P	H
		14491	40.9	-13.1	54	43.4	41.86	11.72	56.08	-	-	A	H
		17325	48.37	-19.83	68.2	51.2	40.85	12.69	56.37	-	-	P	H
		17978	56.46	-17.54	74	52.08	47.91	13.19	56.72	-	-	P	H
		17978	47.68	-6.32	54	43.3	47.91	13.19	56.72	-	-	A	H
													H
													H
													H
													H
		10960	49.49	-24.51	74	54.09	40.78	10.45	55.83	-	-	P	V
		10960	38.74	-15.26	54	43.34	40.78	10.45	55.83	-	-	A	V
		11550	47.43	-26.57	74	52.39	40.1	10.71	55.77	-	-	P	V
		14480	50.29	-23.71	74	52.86	41.82	11.71	56.1	-	-	P	V
		14480	40.69	-13.31	54	43.26	41.82	11.71	56.1	-	-	A	V
		17325	48.96	-19.24	68.2	51.79	40.85	12.69	56.37	-	-	P	V
		17967	56.31	-17.69	74	52.25	47.61	13.17	56.72	-	-	P	V
		17967	47.41	-6.59	54	43.35	47.61	13.17	56.72	-	-	A	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.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

5GHz WIFI 802.11ac VHT80 (SHF @ 1m)

[illegible]



Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF @ 3m)

WIFI Ant. 1	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)
5GHz 802.11ac VHT80 LF		38.73	24.43	-15.57	40	35.79	20.11	0.78	32.25	-	-	P	H
		91.11	24.81	-18.69	43.5	41.28	14.75	1.02	32.24	-	-	P	H
		227.88	24.85	-21.15	46	39.68	15.91	1.42	32.16	-	-	P	H
		293.84	28.75	-17.25	46	39.83	19.2	1.61	31.89	-	-	P	H
		717.73	32.25	-13.75	46	35.48	26.34	2.38	31.95	-	-	P	H
		949.56	32.49	-13.51	46	30.4	30.28	2.6	30.79	-	-	P	H
													H
													H
													H
													H
													H
													H
		43.58	31.25	-8.75	40	45.26	17.46	0.8	32.27	-	-	P	V
		91.11	25.92	-17.58	43.5	42.39	14.75	1.02	32.24	-	-	P	V
		325.85	27.49	-18.51	46	38.02	19.57	1.68	31.78	-	-	P	V
		753.62	32.16	-13.84	46	33.72	27.68	2.43	31.67	-	-	P	V
		896.21	34.56	-11.44	46	34.41	28.63	2.58	31.06	-	-	P	V
		952.47	32.58	-13.42	46	30.33	30.43	2.6	30.78	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against 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.	
1		(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 :	Yuan Lee, Jacky Hong and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

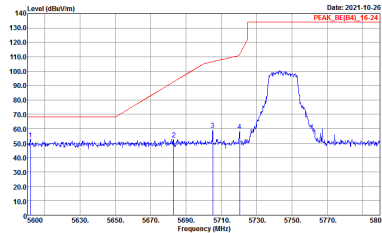
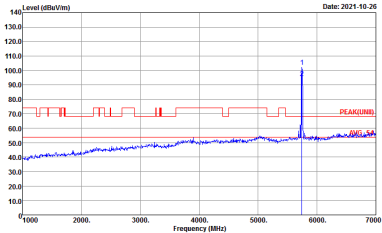
Note symbol

-L	Low channel location
-R	High channel location

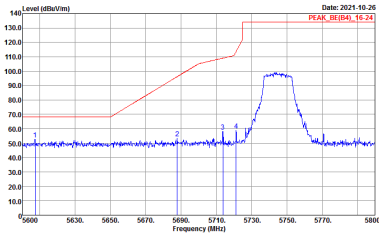
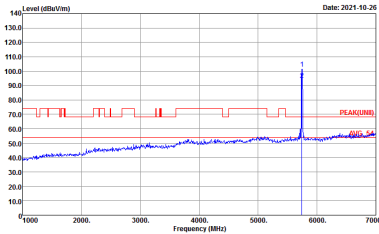


Band 4 - 5725~5850MHz

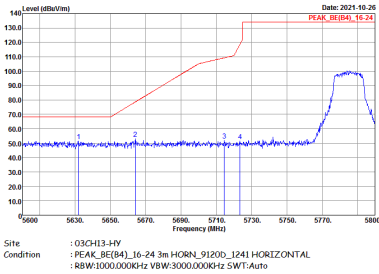
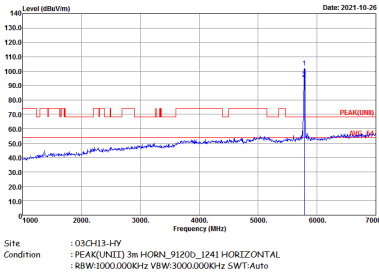
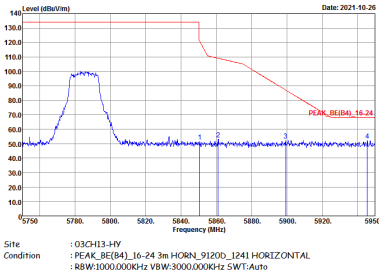
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(FUND) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE[94]_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK[LINE] 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

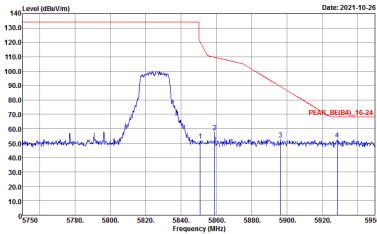
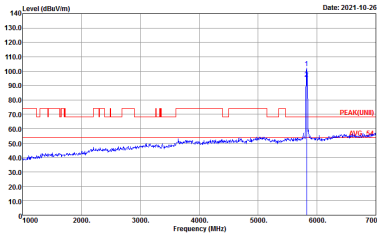


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(LNB) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



WIFI	Band 4 5725-5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



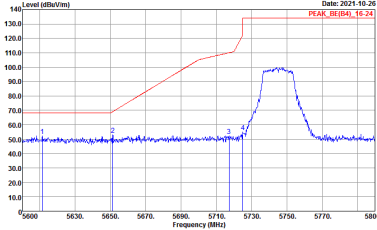
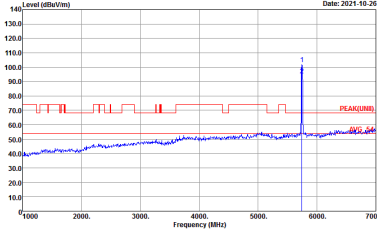
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : : PEAK_802.11a_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : : PEAK_802.11a_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



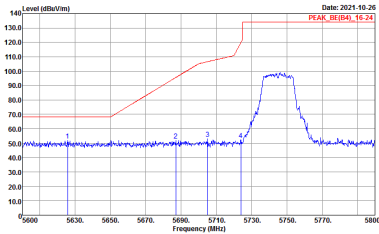
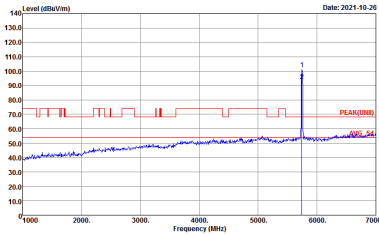
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	Level (dBuV/m) Date: 2021-10-26 PEAK_B4_16-24 Site : 03CH13-HY Condition : PEAK_B4_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-10-26 PEAK_FUND Site : 03CH13-HY Condition : PEAK_FUND 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



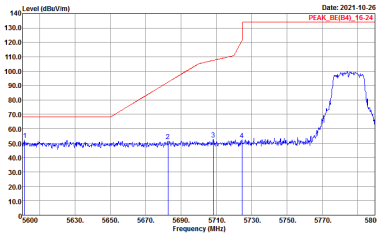
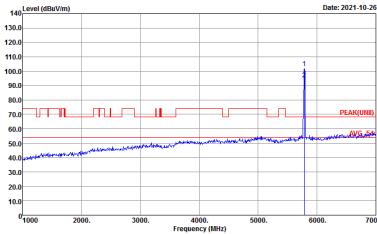
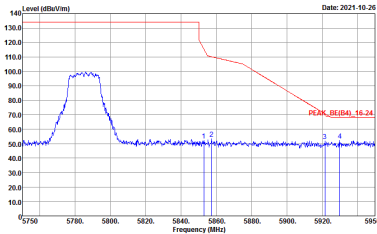
Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(UNB) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

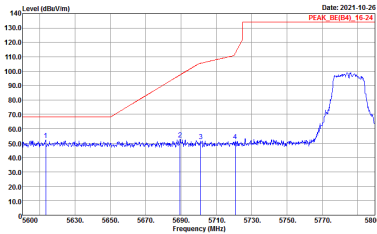
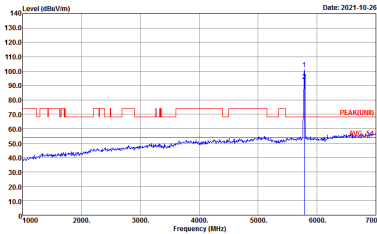
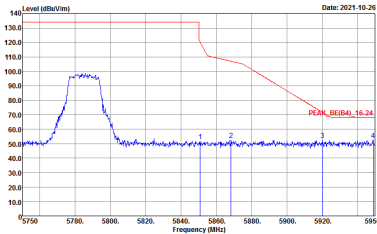


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak Avg.	 Site : 03CH13-HY Condition : : PEAK_BE[94]_16-24 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : : PEAK[LINE1] 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

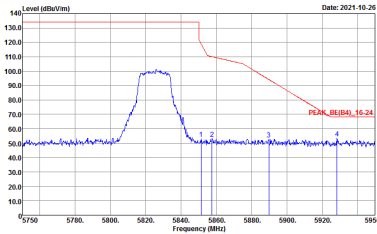
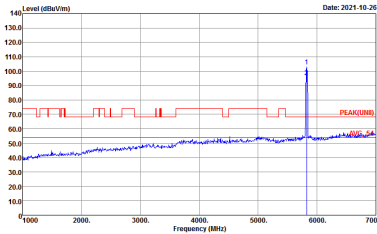


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

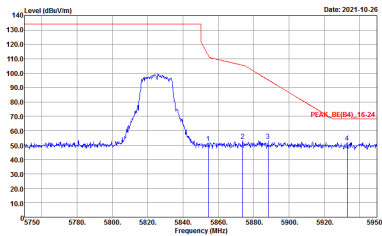
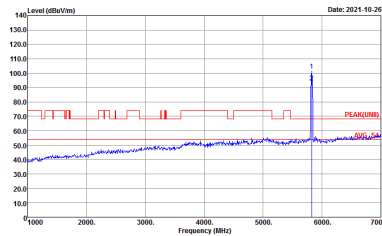


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



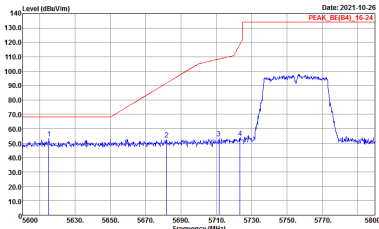
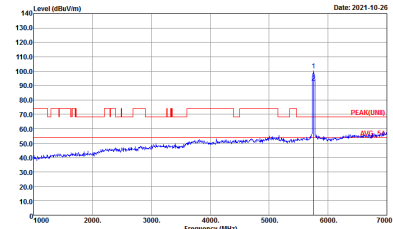
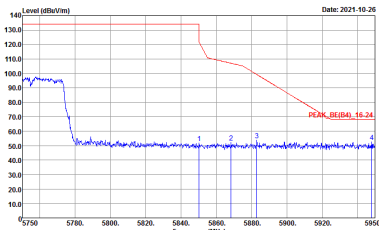
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_B4_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_FUND 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



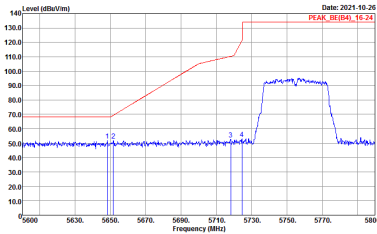
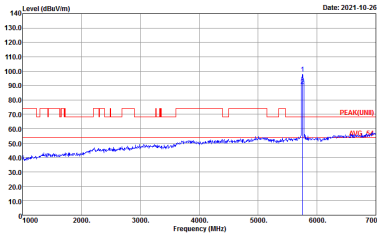
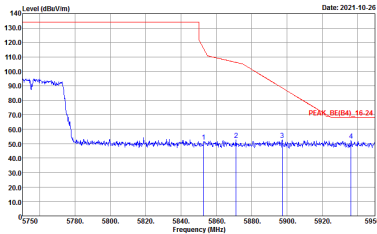
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_B4_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_UWB 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(UNB) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

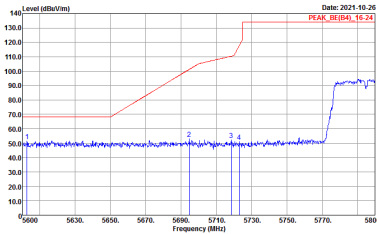
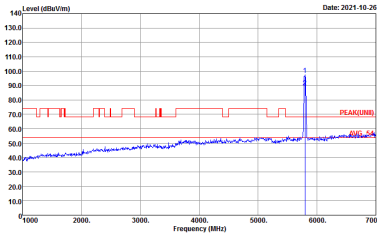
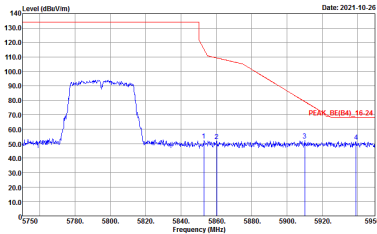


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



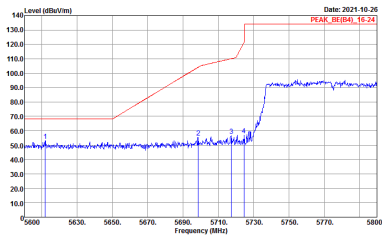
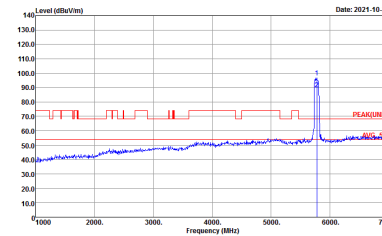
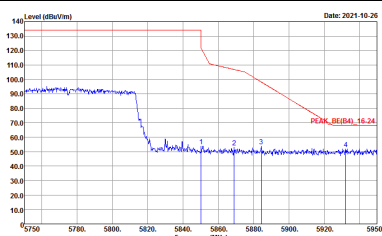
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH13-HY Condition : PEAK(LINE) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

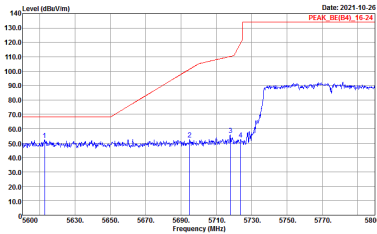
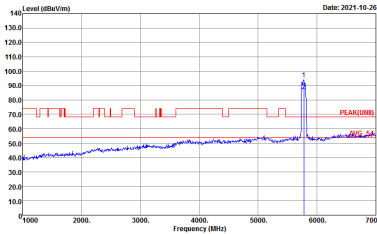
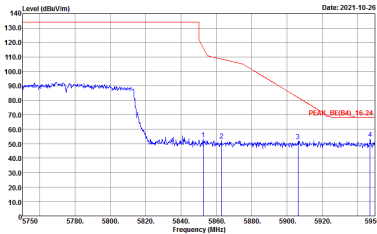


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

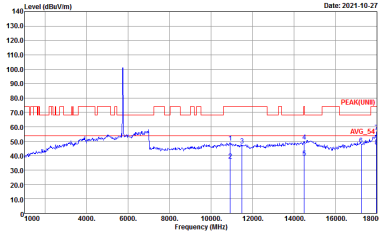
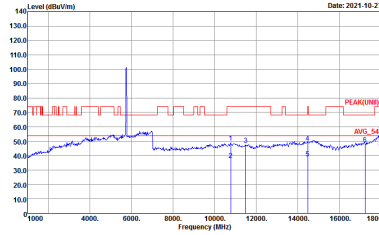
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK(UNB) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

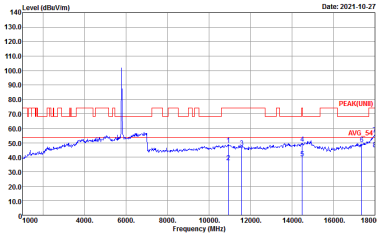
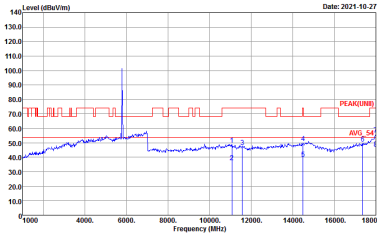


Band 4 - 5725~5850MHz

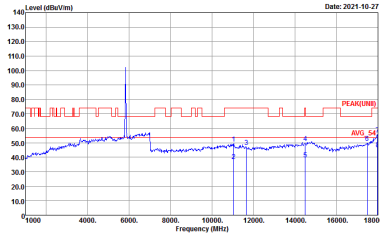
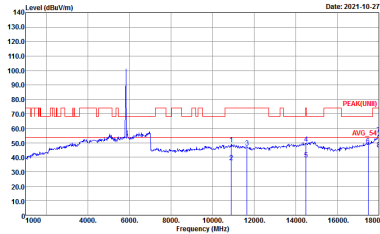
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL



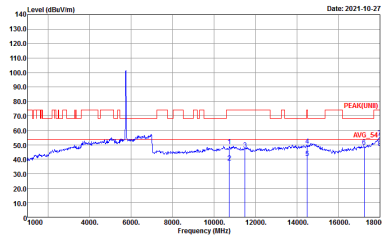
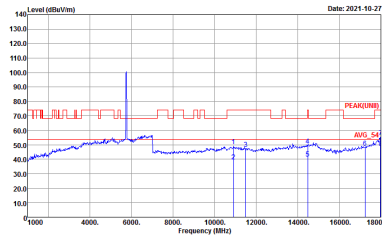
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL



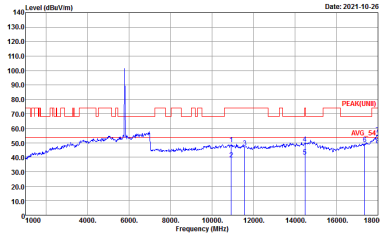
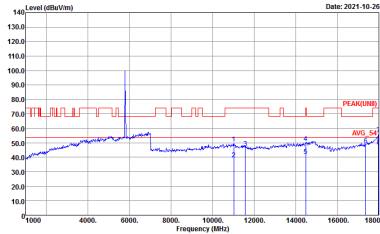
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL



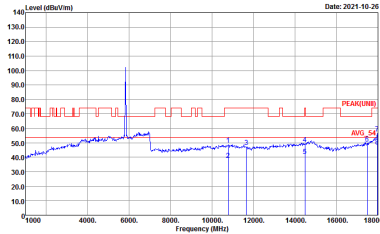
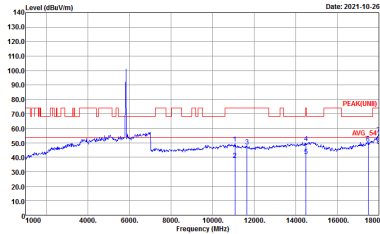
Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-14Y Condition : PEAK(UNIT) 3m HORN_9120D_1241 HORIZONTAL	 Site : 03CH13-14Y Condition : PEAK(UNIT) 3m HORN_9120D_1241 VERTICAL



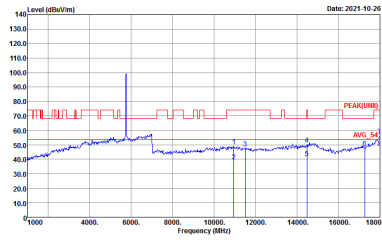
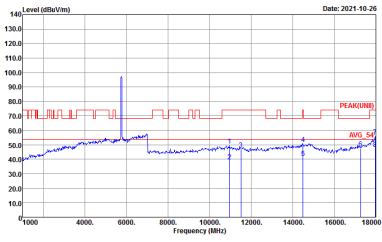
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL



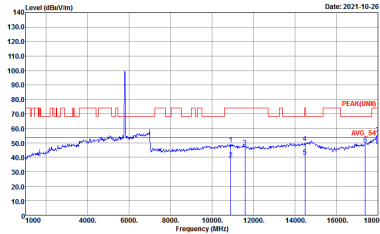
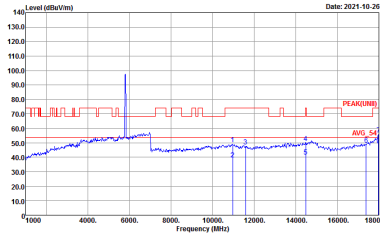
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL



Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

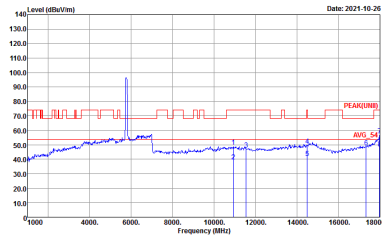
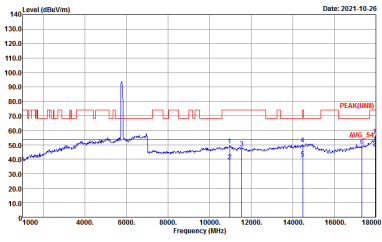
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-14Y Condition : PEAK(UNIT) 3m HORN_9120D_1241 HORIZONTAL	 Site : 03CH15-14Y Condition : PEAK(UNIT) 3m HORN_9120D_1241 VERTICAL



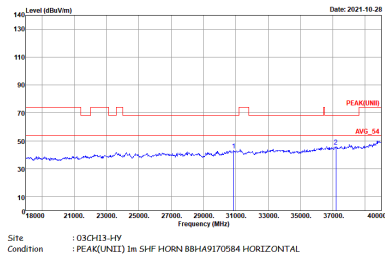
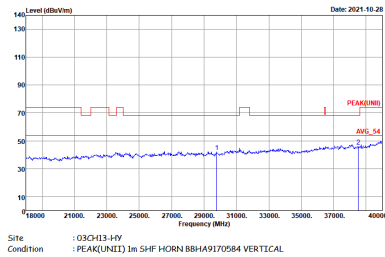
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_9120D_1241 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_9120D_1241 VERTICAL



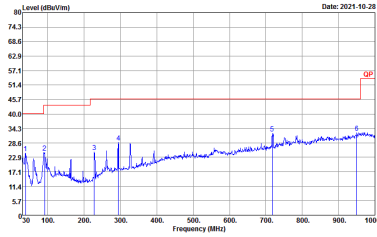
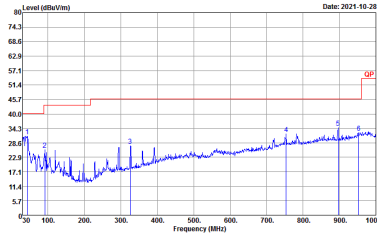
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-14Y Condition : -PEAK(UNIT) 3m HORN_9120D_1241 HORIZONTAL	 Site : 03CH15-14Y Condition : -PEAK(UNIT) 3m HORN_9120D_1241 VERTICAL

Emission above 18GHz
5GHz WIFI 802.11ac VHT80 (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 SHF	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 1m SHF HORN BBHA9170584 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK(UNIT) 1m SHF HORN BBHA9170584 VERTICAL

Emission below 1GHz
5GHz WIFI 802.11ac VHT80 (LF @ 3m)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH13-14V Condition : QP-3m 81LOG_40103 HORIZONTAL	 Site : 03CH13-14V Condition : QP-3m 81LOG_40103 VERTICAL



Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	98.38	-	-	10Hz
5GHz 802.11ac VHT20	98.26	-	-	10Hz
5GHz 802.11ac VHT40	92.93	920	1.09	3kHz
5GHz 802.11ac VHT80	86.89	464	2.16	3kHz

