



FCC RADIO TEST REPORT

FCC ID : TX2-RTL8735BDM
Equipment : 11n RTL8735BDM combo module
Brand Name : REALTEK
Model Name : RTL8735BDM
Applicant : Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu
Science Park, Hsinchu 300, Taiwan
Manufacturer : Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu
Science Park, Hsinchu 300, Taiwan
Standard : FCC Part 15 Subpart E §15.407

The product was received on Oct. 20, 2023 and testing was performed from Nov. 01, 2023 to Nov. 21, 2023. 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.

Louis Wu

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	Issue Date
FR371824D	01	Initial issue of report	Jan. 10, 2024



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	3.57 dB under the limit at 11650.00 MHz
3.5	15.207	AC Conducted Emission	Pass	19.06 dB under the limit at 3.60 MHz
3.6	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

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

Reviewed by: Alan Liu

Report Producer: Rachel Hsieh



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
General Specs	
Bluetooth-LE, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n.	

1.2 Antenna Information

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth					
1	1	1	1	LYNwave	ALA110-222050-300011	PIFA	IPEX MHF4	Note 1
2	1	1	1	RTANT	K212-10068-A	PIFA	IPEX MHF4	

Note 1

Ant.	Port			WLAN 2.4GHz	WLAN 5GHz	Bluetooth
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth			
1	1	1	1	3.50	5.00	3.50
2	1	1	1	2.77	0.84	2.77

Note 2: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

Note 3: There are two antenna models provided by different manufacturers. All tests were conducted using the high-gain antenna.

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

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, CO07-HY, 03CH20-HY

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

FCC designation No.: TW3786



1.5 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.
- ♦ 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 only the worst case emissions were reported in this report.
- 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	161	5805
	153	5765	165	5825
	157	5785	-	-

2.2 Test Mode

The final test modes include the worst data rates for each modulation shown in the table below.

Single Mode

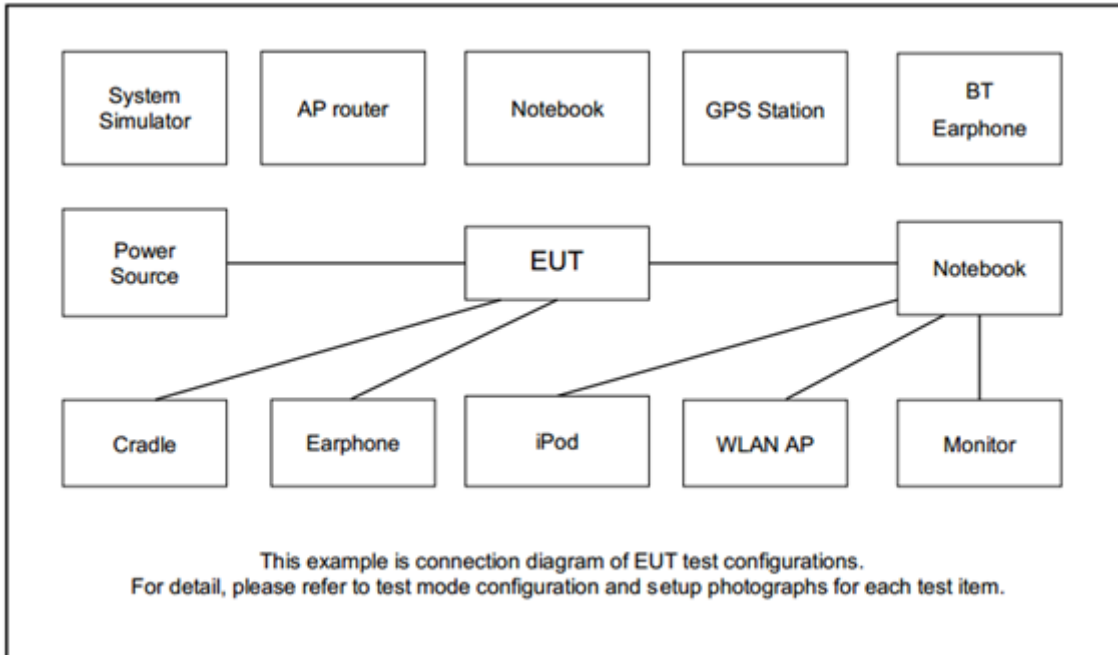
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth-LE Link + USB Cable (Charging from Notebook)

Ch. #	Band IV : 5725-5850 MHz	
	802.11a	802.11n HT20
L Low	149	149
M Middle	157	157
H High	165	165

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.	WLAN AP	ASUS	RT-AC52	MSQ-RTAC4A00	N/A	Unshielded, 1.8m
2.	Notebook	DELL	Latitude 5310	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
5.	Mobile Phone	Asus	Zenfone5	MSQX00QSA	N/A	N/A
6.	USB Cable (USB2.0 AM to Micro B flat cable)	PowerSync	USB2-KFMIB 180	N/A	Shielded, 1.8 m	N/A
7.	Fixture	REALTEK	AmebaPRO2 adapter	N/A	N/A	N/A



2.5 EUT Operation Test Setup

The RF test items, utility “AmebaPro2_mptool_1V9.6” 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.

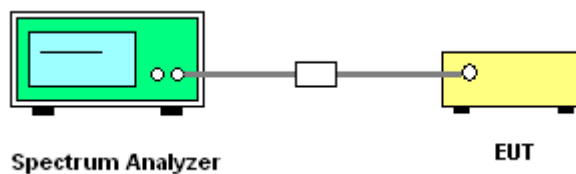
3.1.2 Measuring Instruments

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

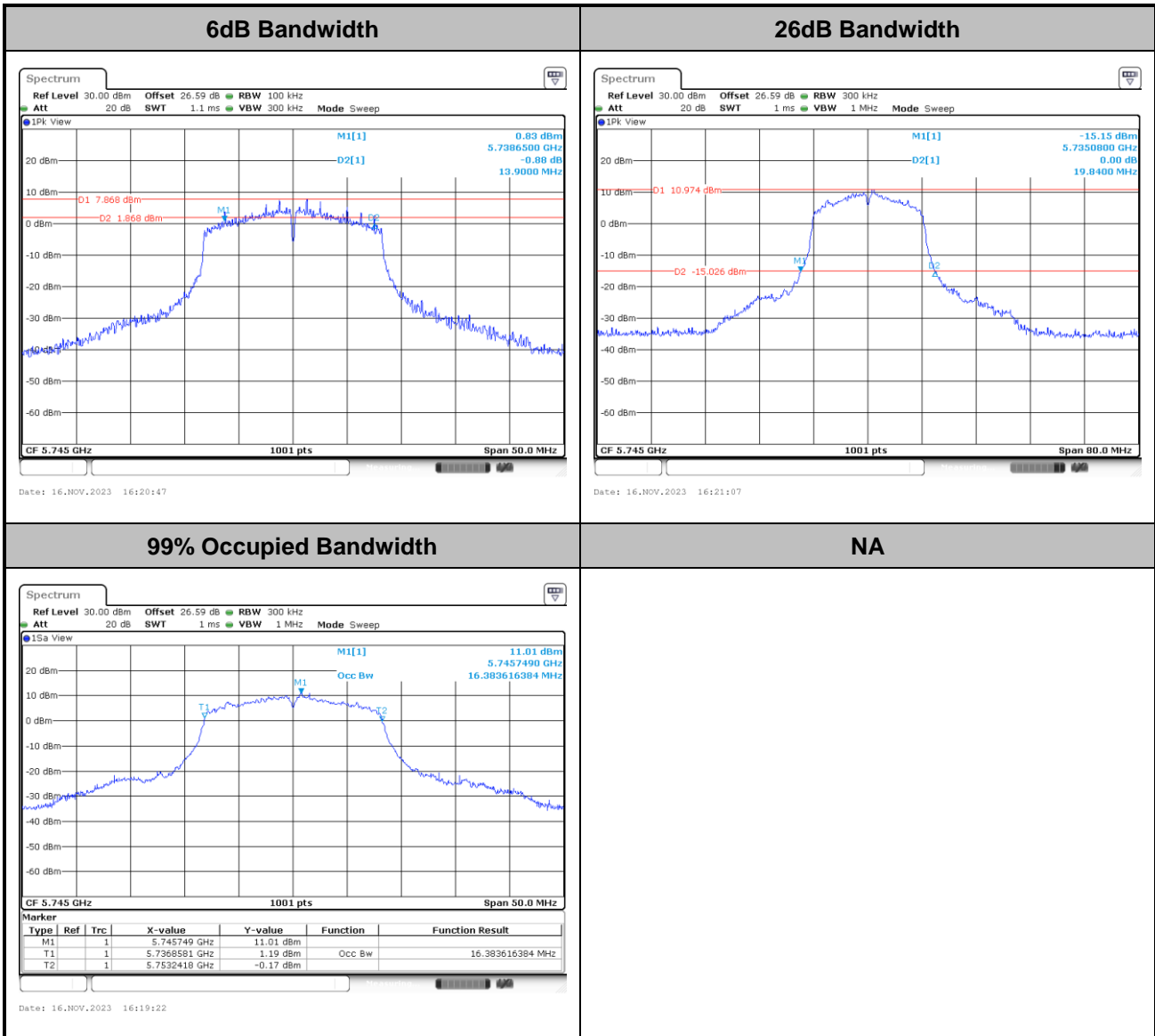


3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.



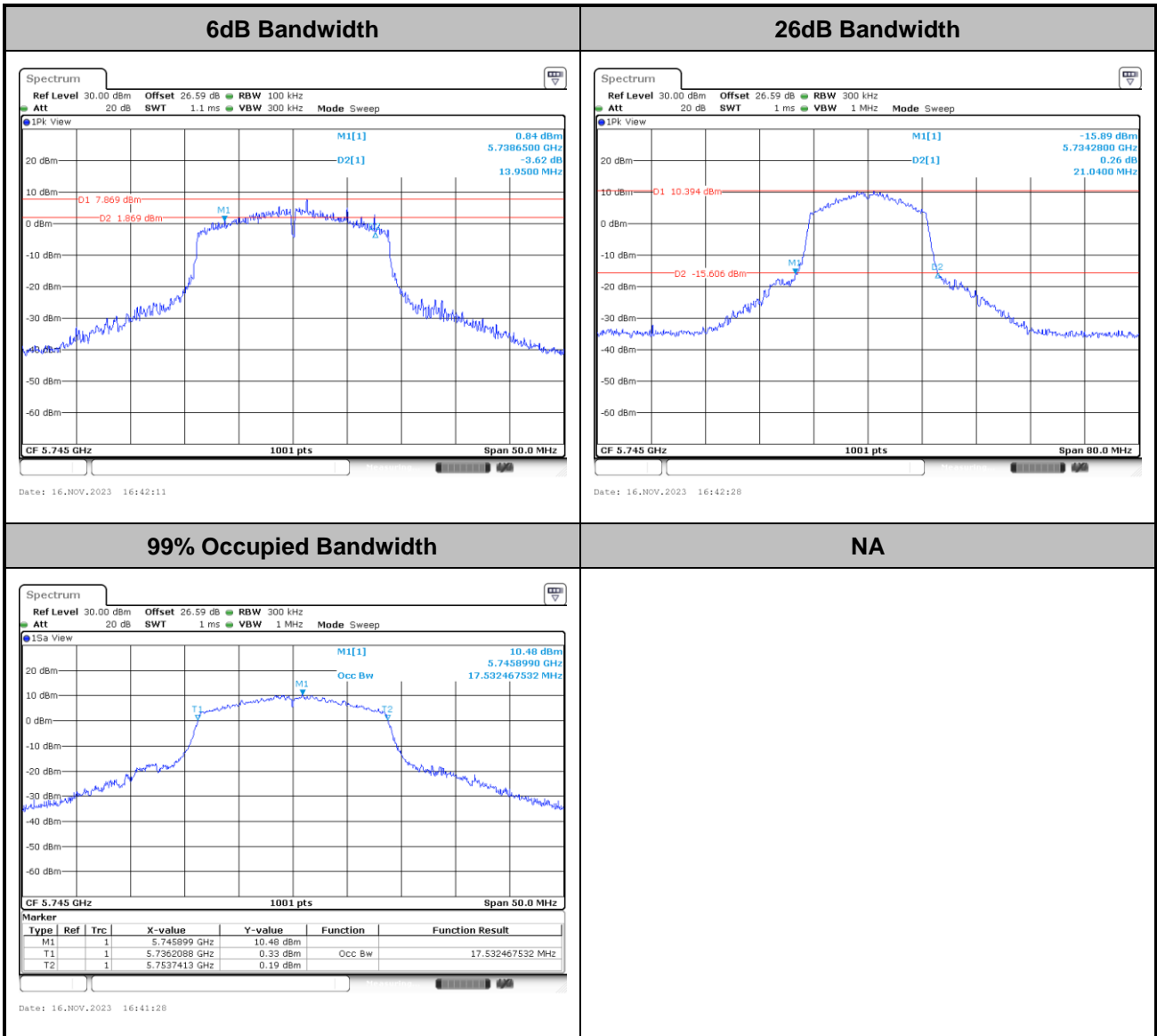
<802.11a>



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



<802.11n HT20>



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.

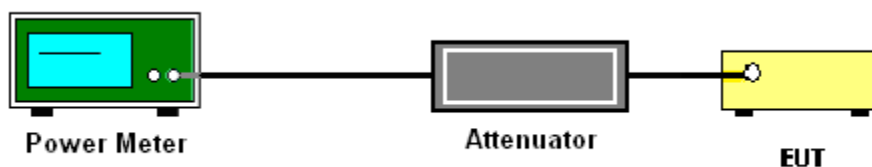
3.2.3 Test Procedures

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.

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

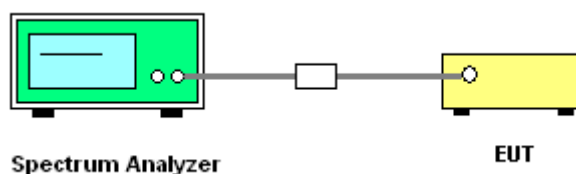
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300kHz.
 - Set VBW \geq 1 MHz.
 - Add $10 \log(500 \text{ kHz}/\text{RBW})$ to the measured result, whereas RBW ($<500 \text{ kHz}$) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
 - Number of points in sweep $\geq 2 \text{ Span} / \text{RBW}$.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6 \text{ dB}$ if the duty cycle is 25 percent.
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.

3.3.4 Test Setup

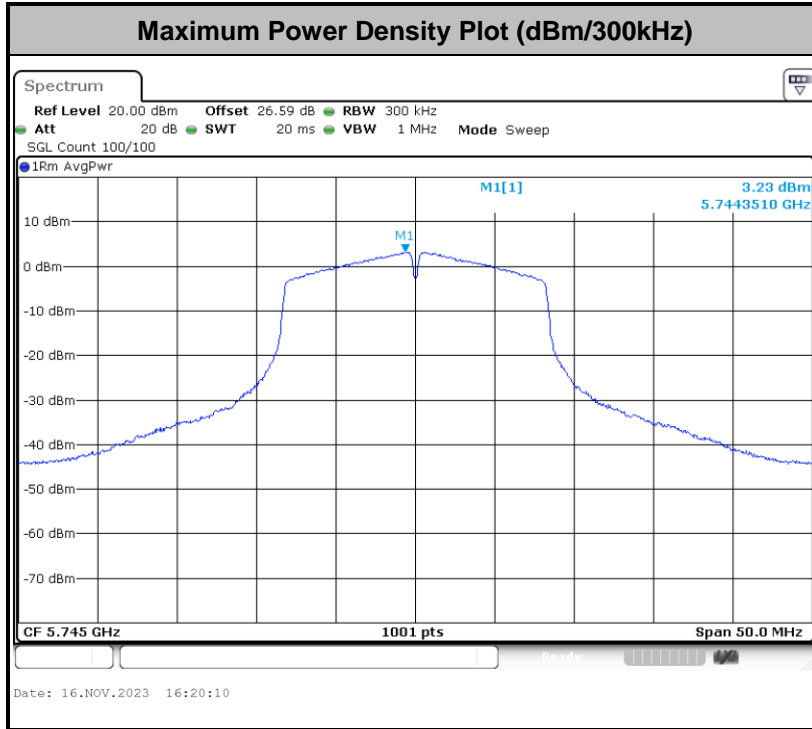




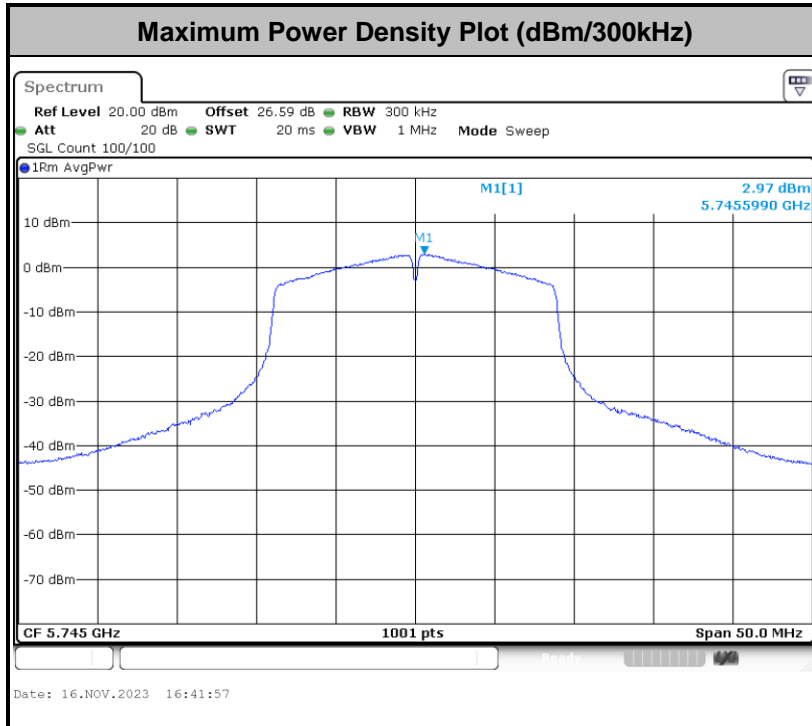
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11a>



<802.11n HT20>





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.

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

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.

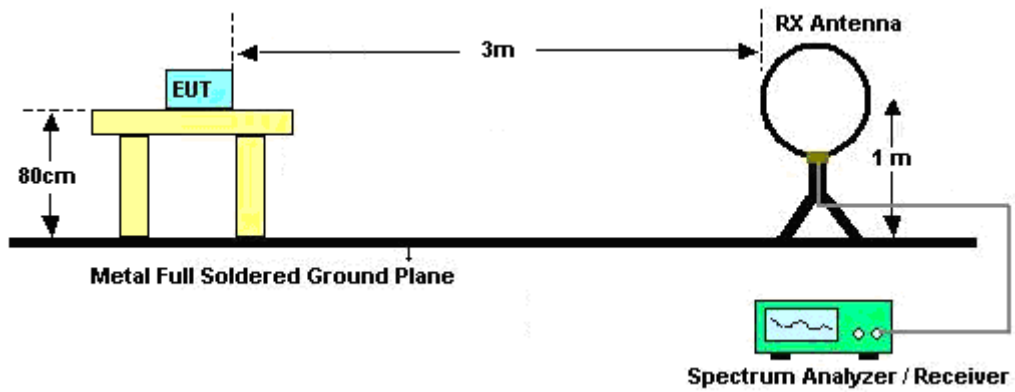
3.4.3 Test Procedures

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.

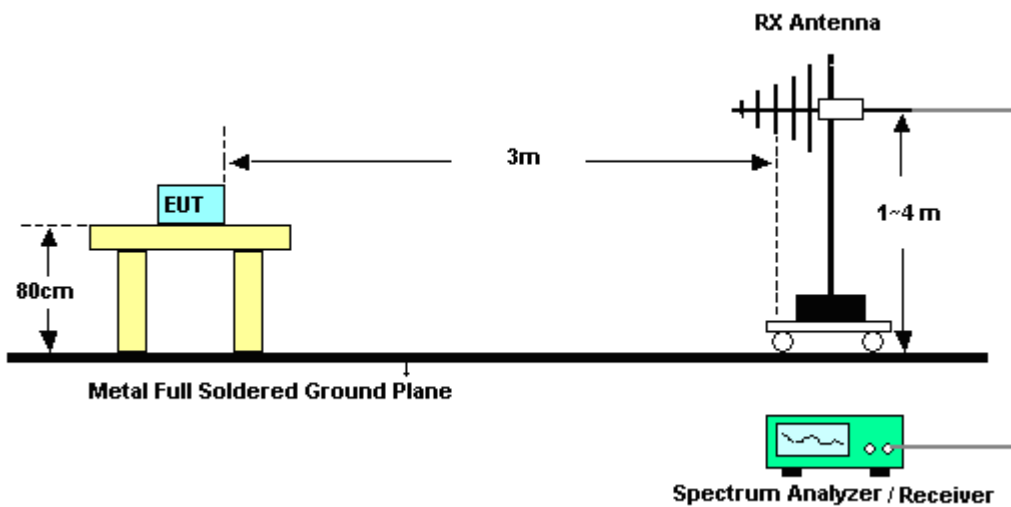
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit 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

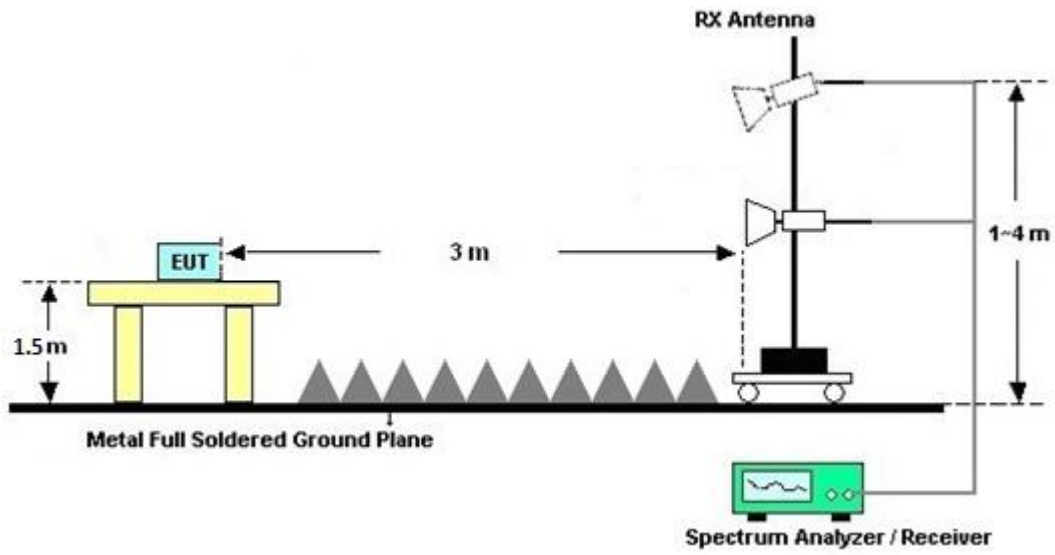
For radiated emissions below 30MHz



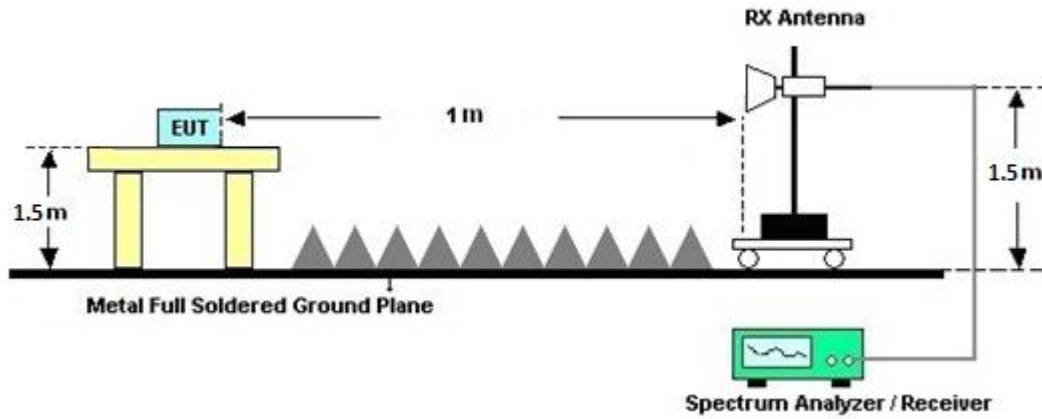
For radiated emissions from 30MHz to 1GHz



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 (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

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

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9010B	MY60240520	N/A	Dec. 22, 2022	Nov. 03, 2023~ Nov. 21, 2023	Dec. 21, 2023	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Nov. 03, 2023~ Nov. 21, 2023	Sep. 11, 2024	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 07, 2022	Nov. 03, 2023~ Nov. 21, 2023	Dec. 06, 2023	Radiation (03CH20-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Nov. 03, 2023~ Nov. 21, 2023	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 03, 2023~ Nov. 21, 2023	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 03, 2023~ Nov. 21, 2023	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 22, 2022	Nov. 03, 2023~ Nov. 21, 2023	Dec. 21, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 20, 2023	Nov. 03, 2023~ Nov. 21, 2023	Oct. 19, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1212	1GHz-18GHz	Mar. 23, 2023	Nov. 03, 2023~ Nov. 21, 2023	Mar. 22, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	02360	1GHz-18GHz	Oct. 30, 2023	Nov. 03, 2023~ Nov. 21, 2023	Oct. 29, 2024	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	1223	18GHz-40GHz	Jul. 10, 2023	Nov. 03, 2023~ Nov. 21, 2023	Jul. 09, 2024	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 02, 2023	Nov. 03, 2023~ Nov. 21, 2023	Jan. 01, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45S E	980792	N/A	Nov. 14, 2022	Nov. 03, 2023~ Nov. 12, 2023	Nov. 13, 2023	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45S E	980792	N/A	Nov. 13, 2023	Nov. 13, 2023~ Nov. 21, 2023	Nov. 12, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 18, 2023	Nov. 03, 2023~ Nov. 21, 2023	Jan. 17, 2024	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 28, 2023	Nov. 03, 2023~ Nov. 21, 2023	Mar. 27, 2024	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Nov. 03, 2023~ Nov. 21, 2023	N/A	Radiation (03CH20-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Nov. 17, 2023	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Nov. 17, 2023	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	9561-FN00373	9kHz-200MHz	Oct. 20, 2023	Nov. 17, 2023	Oct. 19, 2024	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 15, 2023	Nov. 17, 2023	Mar. 14, 2024	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 05, 2023	Nov. 17, 2023	Mar. 04, 2024	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 13, 2023	Nov. 17, 2023	Mar. 12, 2024	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 20, 2023	Nov. 17, 2023	Sep. 19, 2024	Conduction (CO07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	Mar. 14, 2023	Nov. 01, 2023~Nov. 17, 2023	Mar. 13, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO12 (NO:113)	10MHz~6GHz	Dec. 13, 2022	Nov. 01, 2023~Nov. 17, 2023	Dec. 12, 2023	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101565	10Hz ~ 40GHz	Dec. 26, 2022	Nov. 01, 2023~Nov. 17, 2023	Dec. 25, 2023	Conducted (TH05-HY)



5 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.44 dB
-------------------------------------------------------------------------	---------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.4 dB
-------------------------------------------------------------------------	--------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5 dB
-------------------------------------------------------------------------	--------

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.6 dB
-------------------------------------------------------------------------	--------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4 dB
-------------------------------------------------------------------------	--------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Willy Chang and Mina Liu	Temperature:	21~25	°C
Test Date:	2023/11/1~2023/11/17	Relative Humidity:	51~54	%

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

U-NII-3 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 1	Ant 1		
11a	6Mbps	1	149	5745	16.38	19.84	13.90	0.5	Pass
11a	6Mbps	1	157	5785	16.33	19.84	13.95	0.5	Pass
11a	6Mbps	1	165	5825	16.33	19.84	13.65	0.5	Pass
HT20	MCS0	1	149	5745	17.53	21.04	13.95	0.5	Pass
HT20	MCS0	1	157	5785	17.43	20.96	15.10	0.5	Pass
HT20	MCS0	1	165	5825	17.43	20.80	12.60	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 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 1	Ant 1	
11a	6Mbps	1	149	5745	18.50	30.00	5.00	Pass
11a	6Mbps	1	157	5785	15.70	30.00	5.00	Pass
11a	6Mbps	1	165	5825	15.60	30.00	5.00	Pass
HT20	MCS0	1	149	5745	18.40	30.00	5.00	Pass
HT20	MCS0	1	157	5785	16.30	30.00	5.00	Pass
HT20	MCS0	1	165	5825	15.40	30.00	5.00	Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-3 single antenna										
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)	10log (500kHz /RBW) Factor (dB)	Average Power Density (dBm/500kHz)	Average PSD Limit (dBm/500kHz)	DG (dBi)	Pass /Fail
					Ant 1	Ant 1	Ant 1	Ant 1	Ant 1	
11a	6Mbps	1	149	5745	0.12	2.22	5.45	30.00	5.00	Pass
11a	6Mbps	1	157	5785	0.12	2.22	2.61	30.00	5.00	Pass
11a	6Mbps	1	165	5825	0.12	2.22	2.59	30.00	5.00	Pass
HT20	MCS0	1	149	5745	0.09	2.22	5.19	30.00	5.00	Pass
HT20	MCS0	1	157	5785	0.09	2.22	2.66	30.00	5.00	Pass
HT20	MCS0	1	165	5825	0.09	2.22	2.27	30.00	5.00	Pass



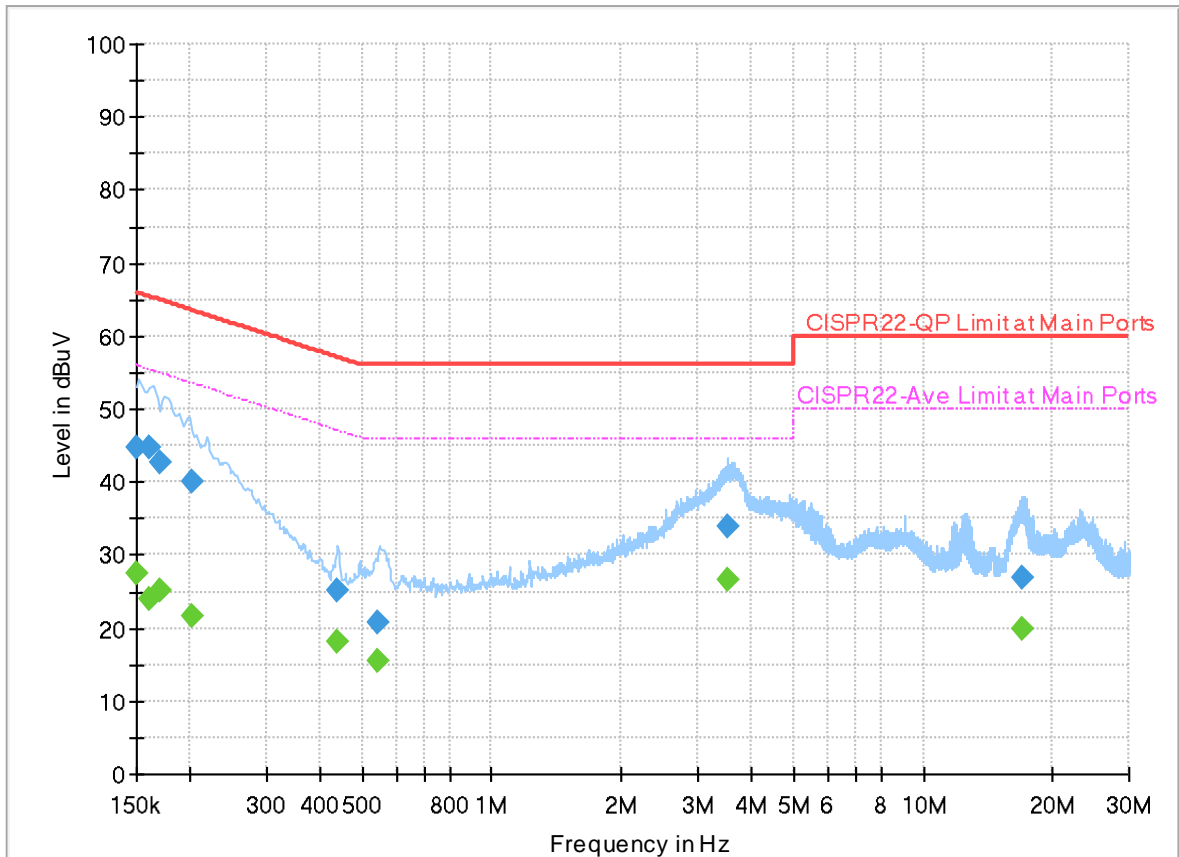
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Louis Chung	Temperature :	22.2~26.3°C
		Relative Humidity :	57.7~62.4%

EUT Information

Report NO : 371824
 Test Mode : Mode 1
 Test Voltage : Power From System
 Phase : Line

Full Spectrum



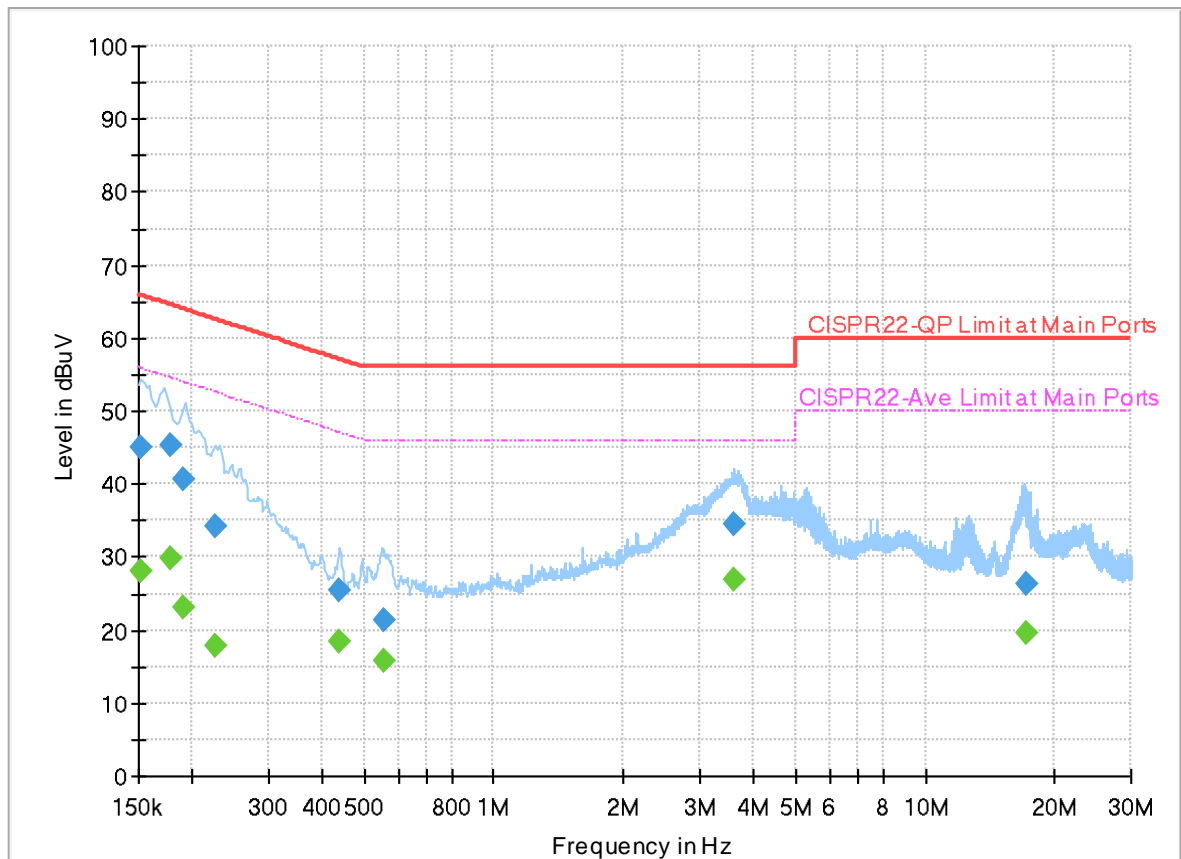
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	---	27.47	56.00	28.53	L1	OFF	19.9
0.150000	44.71	---	66.00	21.29	L1	OFF	19.9
0.161520	---	24.02	55.39	31.37	L1	OFF	19.9
0.161520	44.59	---	65.39	20.80	L1	OFF	19.9
0.170250	---	25.18	54.95	29.77	L1	OFF	19.9
0.170250	42.63	---	64.95	22.32	L1	OFF	19.9
0.200940	---	21.53	53.57	32.04	L1	OFF	19.9
0.200940	40.06	---	63.57	23.51	L1	OFF	19.9
0.438270	---	18.00	47.09	29.09	L1	OFF	19.9
0.438270	25.27	---	57.09	31.82	L1	OFF	19.9
0.546000	---	15.54	46.00	30.46	L1	OFF	19.9
0.546000	20.85	---	56.00	35.15	L1	OFF	19.9
3.531750	---	26.58	46.00	19.42	L1	OFF	20.0
3.531750	34.03	---	56.00	21.97	L1	OFF	20.0
16.890000	---	19.77	50.00	30.23	L1	OFF	20.1
16.890000	26.92	---	60.00	33.08	L1	OFF	20.1

EUT Information

Report NO : 371824
 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)
0.151553	---	28.12	55.91	27.79	N	OFF	19.9
0.151553	44.98	---	65.91	20.93	N	OFF	19.9
0.177000	---	29.89	54.63	24.74	N	OFF	19.9
0.177000	45.31	---	64.63	19.32	N	OFF	19.9
0.189870	---	22.98	54.04	31.06	N	OFF	19.9
0.189870	40.60	---	64.04	23.44	N	OFF	19.9
0.227040	---	17.95	52.56	34.61	N	OFF	19.9
0.227040	34.30	---	62.56	28.26	N	OFF	19.9
0.439800	---	18.35	47.07	28.72	N	OFF	19.9
0.439800	25.55	---	57.07	31.52	N	OFF	19.9
0.556440	---	15.91	46.00	30.09	N	OFF	19.9
0.556440	21.31	---	56.00	34.69	N	OFF	19.9
3.603750	---	26.94	46.00	19.06	N	OFF	20.0
3.603750	34.62	---	56.00	21.38	N	OFF	20.0
17.068110	---	19.48	50.00	30.52	N	OFF	20.2
17.068110	26.22	---	60.00	33.78	N	OFF	20.2



Appendix C. Radiated Spurious Emission

Test Engineer :	John Chuang, David Dai and Howard Huang	Temperature :	18.5~22.4°C
		Relative Humidity :	66.7~69.1%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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		5639.825	51.48	-16.72	68.2	42.71	33.08	13.41	37.72	197	184	P	H	
		5698.55	58.23	-45.9	104.13	49.09	33.39	13.49	37.74	197	184	P	H	
		5719.025	74.66	-35.87	110.53	65.34	33.55	13.52	37.75	197	184	P	H	
		5724.65	85.13	-36.27	121.4	75.76	33.6	13.52	37.75	197	184	P	H	
	*	5745	116.83	-	-	107.28	33.76	13.55	37.76	197	184	P	H	
	*	5745	110.73	-	-	101.18	33.76	13.55	37.76	197	184	A	H	
														H
														H
			5632.175	48.51	-19.69	68.2	39.77	33.06	13.4	37.72	106	104	P	V
			5697.425	55.25	-48.05	103.3	46.12	33.38	13.49	37.74	106	104	P	V
			5718.8	69.45	-41.01	110.46	60.13	33.55	13.52	37.75	106	104	P	V
			5723.525	76.19	-42.65	118.84	66.83	33.59	13.52	37.75	106	104	P	V
	*		5745	111.74	-	-	102.19	33.76	13.55	37.76	106	104	P	V
	*		5745	105.67	-	-	96.12	33.76	13.55	37.76	106	104	A	V
														V
													V	



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)
		5617	48.5	-19.7	68.2	39.82	33.03	13.37	37.72	195	175	P	H
		5662.5	49.6	-27.88	77.48	40.72	33.17	13.44	37.73	195	175	P	H
		5704.5	51.29	-55.17	106.46	42.1	33.44	13.5	37.75	195	175	P	H
		5721.5	48.59	-65.63	114.22	39.25	33.57	13.52	37.75	195	175	P	H
	*	5785	113.47	-	-	103.62	34.01	13.61	37.77	195	175	P	H
	*	5785	106.08	-	-	96.23	34.01	13.61	37.77	195	175	A	H
		5850.5	49.03	-72.03	121.06	38.92	34.2	13.7	37.79	195	175	P	H
		5863.75	50.82	-57.53	108.35	40.65	34.26	13.71	37.8	195	175	P	H
		5886	50.02	-47.01	97.03	39.74	34.34	13.74	37.8	195	175	P	H
		5942.5	49.49	-18.71	68.2	39.18	34.31	13.82	37.82	195	175	P	H
													H
													H
802.11a													
CH 157													
5785MHz		5643.25	48.58	-19.62	68.2	39.81	33.09	13.41	37.73	100	121	P	V
		5691.75	48.37	-50.75	99.12	39.28	33.35	13.48	37.74	100	121	P	V
		5720	48.66	-62.14	110.8	39.33	33.56	13.52	37.75	100	121	P	V
		5720	48.66	-62.14	110.8	39.33	33.56	13.52	37.75	100	121	P	V
	*	5785	109.71	-	-	99.86	34.01	13.61	37.77	100	121	P	V
	*	5785	102.37	-	-	92.52	34.01	13.61	37.77	100	121	A	V
		5851.5	48.41	-70.37	118.78	38.29	34.21	13.7	37.79	100	121	P	V
		5864.25	49.6	-58.61	108.21	39.43	34.26	13.71	37.8	100	121	P	V
		5893.75	49.92	-41.37	91.29	39.6	34.38	13.75	37.81	100	121	P	V
		5936	49.58	-18.62	68.2	39.26	34.33	13.81	37.82	100	121	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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	112.83	-	-	102.8	34.15	13.66	37.78	213	175	P	H	
	*	5825	105.59	-	-	95.56	34.15	13.66	37.78	213	175	A	H	
		5850.4	58.9	-62.39	121.29	48.79	34.2	13.7	37.79	213	175	P	H	
		5855.2	52.85	-57.89	110.74	42.72	34.22	13.7	37.79	213	175	P	H	
		5922.8	50.32	-19.5	69.82	40	34.35	13.79	37.82	213	175	P	H	
		5947.8	49.25	-18.95	68.2	38.95	34.3	13.82	37.82	213	175	P	H	
														H
														H
	*	5825	108.68	-	-	98.65	34.15	13.66	37.78	100	120	P	V	
	*	5825	101.51	-	-	91.48	34.15	13.66	37.78	100	120	A	V	
		5850.2	56.29	-65.45	121.74	46.18	34.2	13.7	37.79	100	120	P	V	
		5865	49.99	-58.01	108	39.82	34.26	13.71	37.8	100	120	P	V	
		5892	49.05	-43.53	92.58	38.74	34.37	13.75	37.81	100	120	P	V	
		5943.4	49.51	-18.69	68.2	39.2	34.31	13.82	37.82	100	120	P	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)	Margin (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	61.85	-12.15	74	45.43	39	20.06	42.64	100	217	P	H	
		11490	50.36	-3.64	54	33.94	39	20.06	42.64	100	217	A	H	
		17235	55.94	-12.26	68.2	37.97	38	24.74	44.77	100	334	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11490	56.88	-17.12	74	40.46	39	20.06	42.64	300	160	P	V
			11490	46.57	-7.43	54	30.15	39	20.06	42.64	300	160	A	V
			17235	55.03	-13.17	68.2	37.06	38	24.74	44.77	250	121	P	V
														V
														V
														V
														V
														V
													V	
													V	



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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	60.7	-13.3	74	44.41	38.86	20.14	42.71	150	210	P	H	
		11570	50.31	-3.69	54	34.02	38.86	20.14	42.71	150	210	A	H	
		17355	52.9	-15.3	68.2	34.77	38.22	24.79	44.88	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11570	57.11	-16.89	74	40.82	38.86	20.14	42.71	300	177	P	V
			11570	46.01	-7.99	54	29.72	38.86	20.14	42.71	300	177	A	V
			17355	52.2	-16	68.2	34.07	38.22	24.79	44.88	-	-	P	V
														V
														V
														V
														V
														V
														V
													V	



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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		11650	60.53	-13.47	74	44.5	38.6	20.21	42.78	150	200	P	H	
		11650	50.43	-3.57	54	34.4	38.6	20.21	42.78	150	200	A	H	
		17475	52.6	-15.6	68.2	34.25	38.5	24.84	44.99	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11650	56.3	-17.7	74	40.27	38.6	20.21	42.78	100	146	P	V
			11650	45.36	-8.64	54	29.33	38.6	20.21	42.78	100	146	A	V
			17475	52.3	-15.9	68.2	33.95	38.5	24.84	44.99	-	-	P	V
														V
														V
														V
														V
														V
														V
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)	
802.11n HT20 CH 149 5745MHz		5611.25	51.25	-16.95	68.2	42.58	33.02	13.37	37.72	197	184	P	H	
		5699.225	58.11	-46.52	104.63	48.96	33.4	13.49	37.74	197	184	P	H	
		5719.475	77.36	-33.29	110.65	68.03	33.56	13.52	37.75	197	184	P	H	
		5724.65	82.53	-38.87	121.4	73.16	33.6	13.52	37.75	197	184	P	H	
	*	5745	116.97	-	-	107.42	33.76	13.55	37.76	197	184	P	H	
	*	5745	110.57	-	-	101.02	33.76	13.55	37.76	197	184	A	H	
														H
														H
			5649.95	49.72	-18.48	68.2	40.93	33.1	13.42	37.73	107	118	P	V
			5699.675	53.44	-51.52	104.96	44.29	33.4	13.49	37.74	107	118	P	V
			5717.675	68.68	-41.47	110.15	59.38	33.54	13.51	37.75	107	118	P	V
			5724.65	78.8	-42.6	121.4	69.43	33.6	13.52	37.75	107	118	P	V
	*		5745	112.03	-	-	102.48	33.76	13.55	37.76	107	118	P	V
	*		5745	105.8	-	-	96.25	33.76	13.55	37.76	107	118	A	V
														V
													V	



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)
		5648	48.98	-19.22	68.2	40.19	33.1	13.42	37.73	184	174	P	H
		5697.75	48.98	-54.56	103.54	39.84	33.39	13.49	37.74	184	174	P	H
		5709	49.63	-58.09	107.72	40.41	33.47	13.5	37.75	184	174	P	H
		5721.5	49.29	-64.93	114.22	39.95	33.57	13.52	37.75	184	174	P	H
	*	5785	113.89	-	-	104.04	34.01	13.61	37.77	184	174	P	H
	*	5785	106	-	-	96.15	34.01	13.61	37.77	184	174	A	H
		5852.75	49.39	-66.54	115.93	39.27	34.21	13.7	37.79	184	174	P	H
		5863.25	49.83	-58.66	108.49	39.67	34.25	13.71	37.8	184	174	P	H
		5914.25	49.85	-26.28	76.13	39.51	34.37	13.78	37.81	184	174	P	H
		5944.5	50.64	-17.56	68.2	40.33	34.31	13.82	37.82	184	174	P	H
802.11n													H
HT20													H
CH 157		5634.5	48.14	-20.06	68.2	39.39	33.07	13.4	37.72	100	121	P	V
5785MHz		5670	48.82	-34.22	83.04	39.88	33.22	13.45	37.73	100	121	P	V
		5700.75	48.37	-57.04	105.41	39.21	33.41	13.49	37.74	100	121	P	V
		5724.25	47.78	-72.71	120.49	38.42	33.59	13.52	37.75	100	121	P	V
	*	5785	109.63	-	-	99.78	34.01	13.61	37.77	100	121	P	V
	*	5785	102.31	-	-	92.46	34.01	13.61	37.77	100	121	A	V
		5851.75	47.82	-70.39	118.21	37.7	34.21	13.7	37.79	100	121	P	V
		5874.5	49	-56.34	105.34	38.77	34.3	13.73	37.8	100	121	P	V
		5900.5	49.15	-37.14	86.29	38.8	34.4	13.76	37.81	100	121	P	V
		5950	49.21	-18.99	68.2	38.9	34.3	13.83	37.82	100	121	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)	
802.11n HT20 CH 165 5825MHz	*	5825	111.05	-	-	101.02	34.15	13.66	37.78	193	186	P	H	
	*	5825	105.2	-	-	95.17	34.15	13.66	37.78	193	186	A	H	
		5850	56.64	-65.56	122.2	46.54	34.2	13.69	37.79	193	186	P	H	
		5860.8	52.18	-56.99	109.17	42.03	34.24	13.71	37.8	193	186	P	H	
		5879.2	50.78	-51.3	102.08	40.53	34.32	13.73	37.8	193	186	P	H	
		5927.8	49.35	-18.85	68.2	39.03	34.34	13.8	37.82	193	186	P	H	
														H
														H
	*	5825	107.5	-	-	97.47	34.15	13.66	37.78	100	121	P	V	
	*	5825	101.26	-	-	91.23	34.15	13.66	37.78	100	121	A	V	
		5851	53.32	-66.6	119.92	43.21	34.2	13.7	37.79	100	121	P	V	
		5861.8	51.91	-56.98	108.89	41.75	34.25	13.71	37.8	100	121	P	V	
		5899.6	49.62	-37.34	86.96	39.27	34.4	13.76	37.81	100	121	P	V	
		5942.6	49.05	-19.15	68.2	38.74	34.31	13.82	37.82	100	121	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 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)
802.11n HT20 CH 149 5745MHz		11490	59.4	-14.6	74	42.98	39	20.06	42.64	150	210	P	H
		11490	50.08	-3.92	54	33.66	39	20.06	42.64	150	210	A	H
		17235	61.78	-6.42	68.2	43.81	38	24.74	44.77	100	333	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
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													H
			11490	55.86	-18.14	74	39.44	39	20.06	42.64	300	175	P
		11490	46.8	-7.2	54	30.38	39	20.06	42.64	300	175	A	V
		17235	62.78	-5.42	68.2	44.81	38	24.74	44.77	250	121	P	V
													V
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WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)
802.11n HT20		11570	59.91	-14.09	74	43.62	38.86	20.14	42.71	100	218	P	H
		11570	50.35	-3.65	54	34.06	38.86	20.14	42.71	100	218	A	H
		17355	52.26	-15.94	68.2	34.13	38.22	24.79	44.88	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
CH 157 5785MHz		11570	56.36	-17.64	74	40.07	38.86	20.14	42.71	300	163	P	V
		11570	46.13	-7.87	54	29.84	38.86	20.14	42.71	300	163	A	V
		17355	52.54	-15.66	68.2	34.41	38.22	24.79	44.88	-	-	P	V
													V
													V
													V
													V
													V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)	
802.11n HT20 CH 165 5825MHz		11650	60.73	-13.27	74	44.7	38.6	20.21	42.78	100	206	P	H	
		11650	50.18	-3.82	54	34.15	38.6	20.21	42.78	100	206	A	H	
		17475	52.28	-15.92	68.2	33.93	38.5	24.84	44.99	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11650	55.48	-18.52	74	39.45	38.6	20.21	42.78	300	174	P	V
			11650	45.04	-8.96	54	29.01	38.6	20.21	42.78	300	174	A	V
			17475	52.39	-15.81	68.2	34.04	38.5	24.84	44.99	-	-	P	V
														V
														V
														V
														V
														V
													V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



Emission above 18GHz

WIFI 802.11a (SHF @ 1m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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 SHF		39412	55.74	-18.26	74	36.46	45.38	26.57	52.67	-	-	P	H
		39412	46.89	-7.11	54	27.61	45.38	26.57	52.67	-	-	A	H
													H
													H
													H
													H
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													H
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			39524	57.55	-16.45	74	38.39	45.14	26.58	52.56	-	-	P
		39524	47.37	-6.63	54	28.21	45.14	26.58	52.56	-	-	A	V
													V
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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.												



Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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 LF		30.85	26.72	-13.28	40	36.64	24.54	1.3	35.76	-	-	P	H	
		68.59	34.32	-5.68	40	55.86	12.56	1.61	35.71	300	18	Q	H	
		146.96	30.51	-12.99	43.5	46.1	17.7	2.31	35.6	-	-	P	H	
		262.4	22.35	-23.65	46	34.46	20.25	3.01	35.37	-	-	P	H	
		724	36.84	-9.16	46	38.33	27.56	4.95	34	-	-	P	H	
		948.8	35.7	-10.3	46	32.39	30.74	5.7	33.13	-	-	P	H	
														H
														H
														H
														H
														H
														H
			41.73	31.04	-8.96	40	46.76	18.73	1.3	35.75	-	-	P	V
			68.59	33.14	-6.86	40	54.68	12.56	1.61	35.71	-	-	P	V
			146.96	29.16	-14.34	43.5	44.75	17.7	2.31	35.6	-	-	P	V
			314.4	25.9	-20.1	46	38.38	19.47	3.29	35.24	-	-	P	V
			474.4	30.79	-15.21	46	38.25	23.37	4.02	34.85	-	-	P	V
			897.6	36.87	-9.13	46	35.74	28.92	5.51	33.3	-	-	P	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 and emission level has at least 6dB margin against limit or emission is 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 Margin line.
P/A	Peak or Average
H/V	Horizontal or Vertical



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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		5650	55.45	-12.75	68.2	54.51	32.22	4.58	35.86	103	308	P	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. Margin (dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 5650MHz:

- 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. Margin(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 68.2(dBμV/m)
= -12.75 (dB)

Peak measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission Plots

Test Engineer :	John Chuang, David Dai and Howard Huang	Temperature :	18.5~22.4°C
		Relative Humidity :	66.7~69.1%

Band 4 - 5725~5850MHz

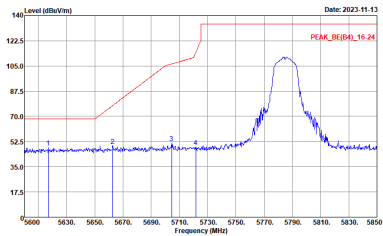
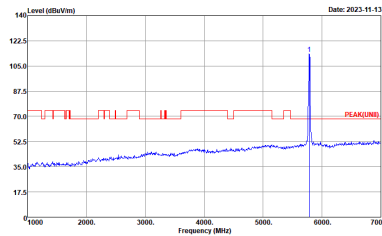
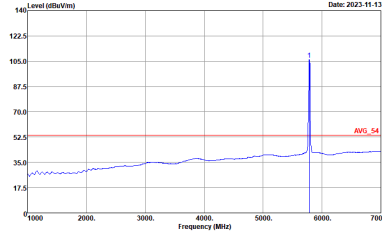
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_36[94]_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000kHz VSW:3000.000kHz SWF:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK[LINE] 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000kHz VSW:3000.000kHz SWF:Auto</p>
Avg.	Left blank	<p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000kHz VSW:0.270kHz SWF:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak		
Avg.	Left blank	

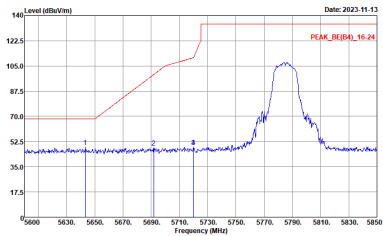
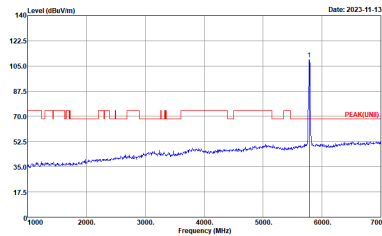
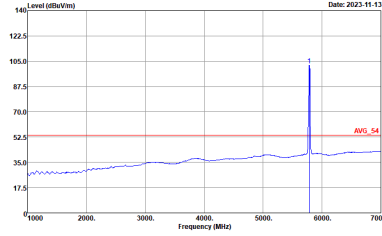


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_BE[94]_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK[LINE3] 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 09CH20-HY Condition : PEAK_94_16-24 3m 91200_1212_230923 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	 <p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>

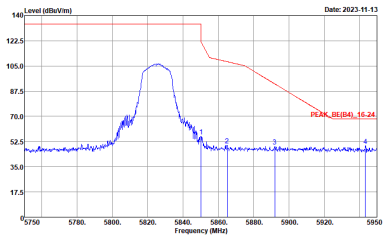
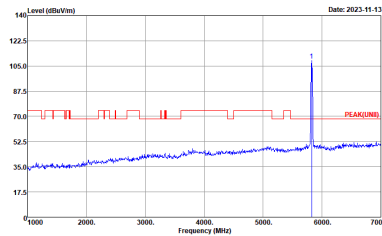
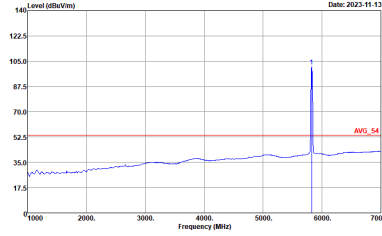


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	<p>Site : 09CH20-HY Condition : PEAK_BC(B4)_16-24 3m 91200_1212_230923 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_8E[94]_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	<p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_BU(B4)_16-24 3m 91200_1212_230323 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	 <p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 VERTICAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>



Band 4 5725~5850MHz

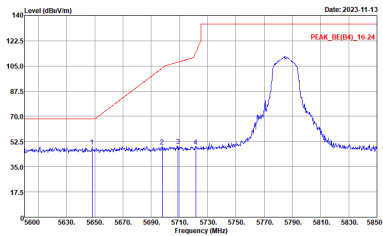
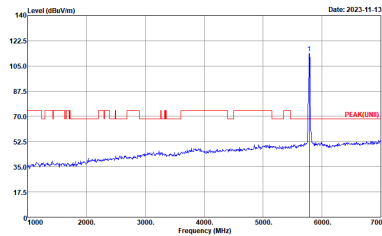
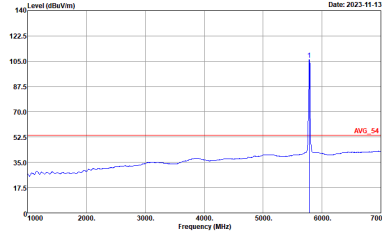
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE(84)_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK(UNI) 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	<p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_1212_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	Left blank	<p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 VERTICAL : RBW:1000.000kHz VBW:0.270kHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_BE[94]_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK[LINE] 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	
		 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>

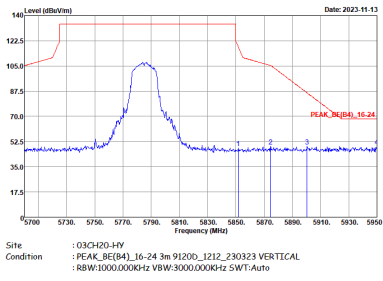


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 09CH20-HY Condition : PEAK_94_16-24 3m 91200_1212_230923 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank

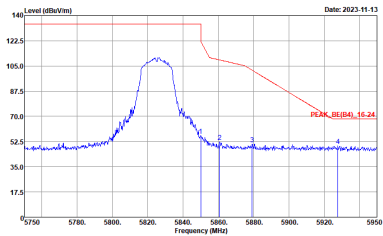
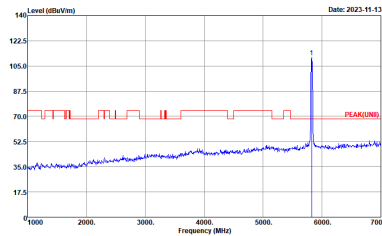
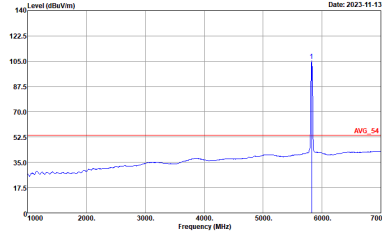


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE(16-24) 3m 91200_1212_230323 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	Left blank	<p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 VERTICAL RBW:1000.000kHz VBW:0.270kHz SWT:Auto</p>

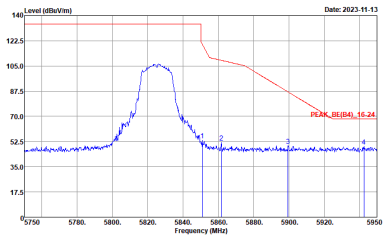
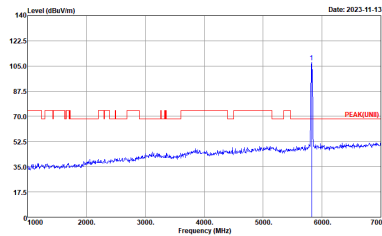
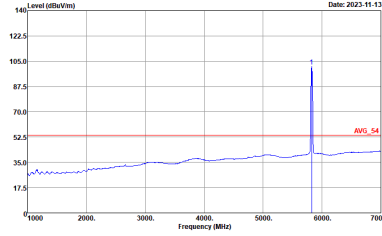


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 09CH20-HY Condition : PEAK_06(94)_16-24 3m 91200_1212_230923 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_8E[94]_16-24 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_B4(B4)_16-24 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK(LINE) 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	Left blank	 <p>Site : 03CH20-HY Condition : AVG_54 3m 91200_1212_230323 VERTICAL RBW:1000.000KHz VBW:0.270KHz SWT:Auto</p>

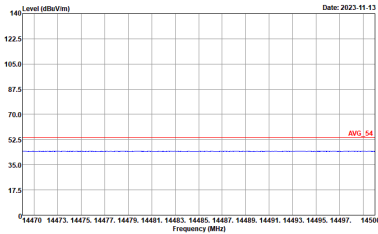
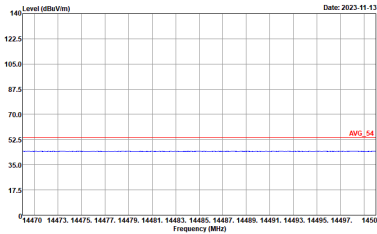
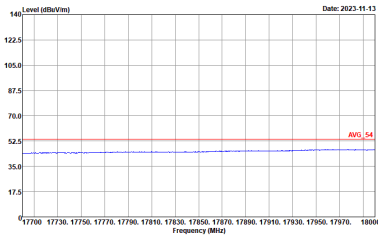
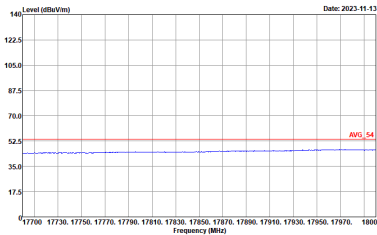


Band 4 - 5725~5850MHz

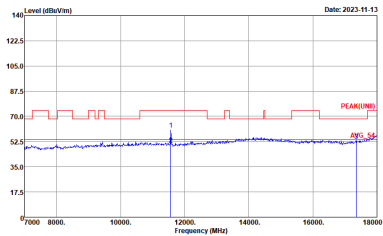
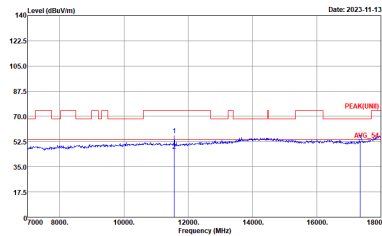
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK(UNII) 3m 91200_1212_230323 HORIZONTAL :</p>	<p>Site : 03CH20-HY Condition : PEAK(UNII) 3m 91200_1212_230323 VERTICAL :</p>

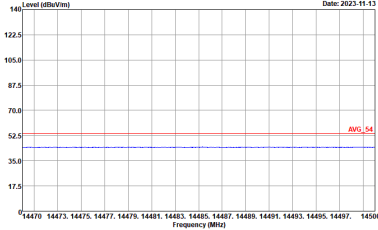
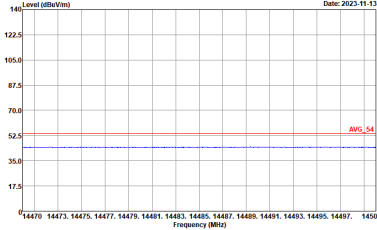
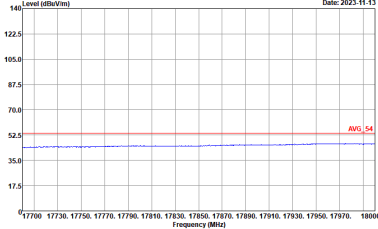
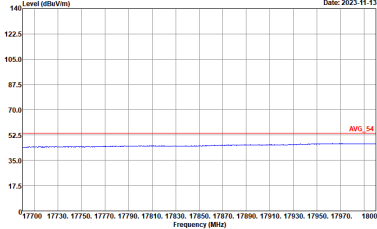


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 VERTICAL</p>

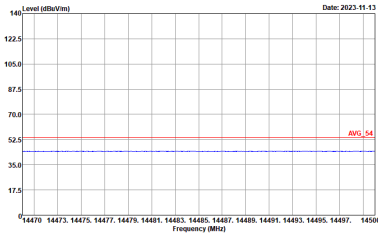
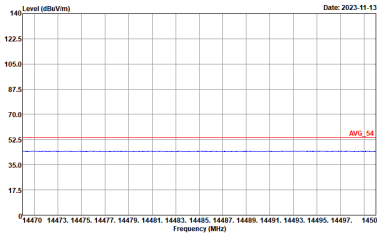
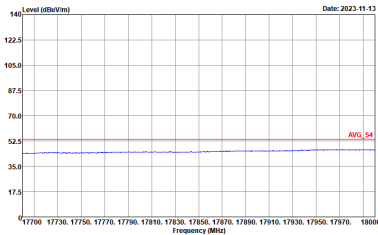
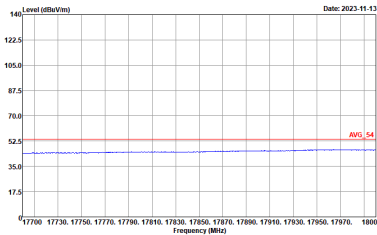


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 HORIZONTAL</p>	<p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>

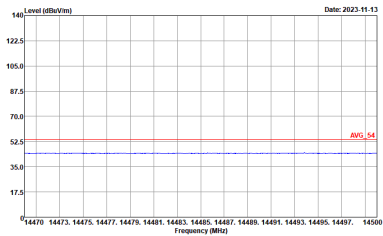
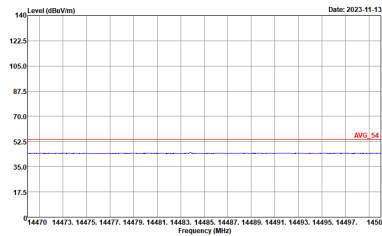
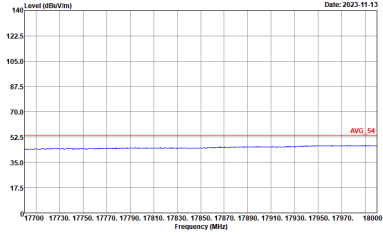
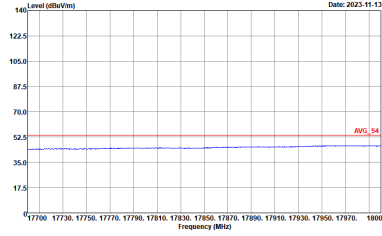


Band 4 5725~5850MHz

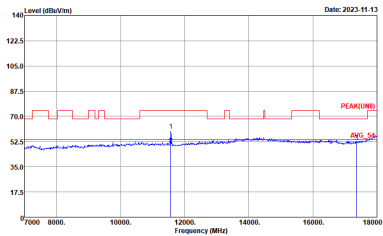
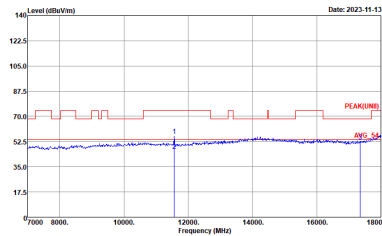
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK(UNII) 3m 91200_1212_230323 HORIZONTAL :</p>	<p>Site : 03CH20-HY Condition : PEAK(UNII) 3m 91200_1212_230323 VERTICAL :</p>

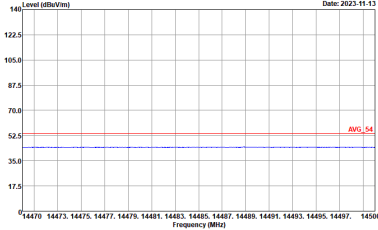
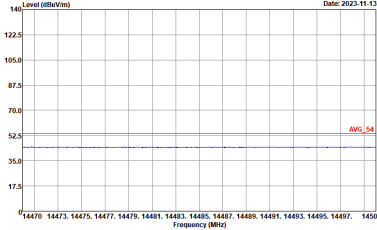
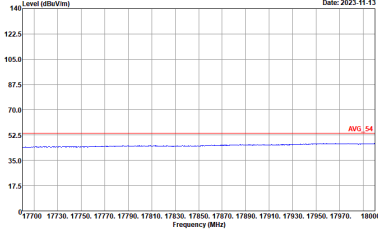
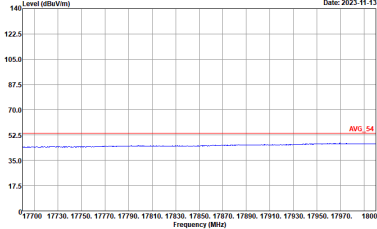


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 VERTICAL</p>

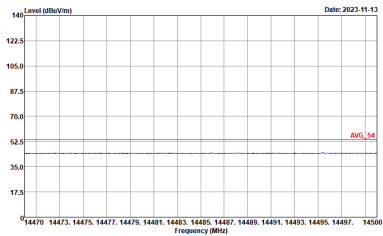
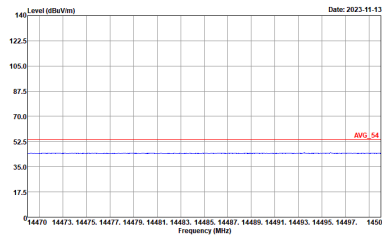
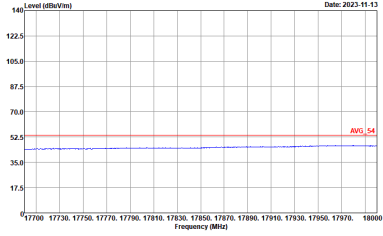
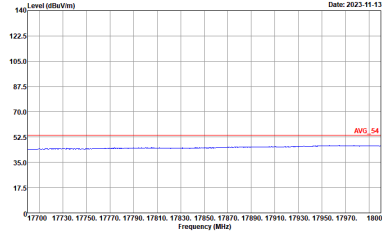


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 HORIZONTAL</p>	<p>Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_1212_230323 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : AV6_54 3m 91200_1212_230323 VERTICAL</p>



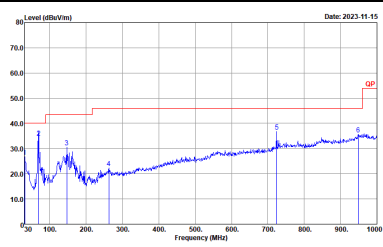
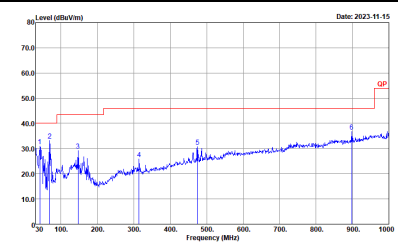
Emission above 18GHz

5GHz WIFI 802.11a (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11a SHF	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK(UNII) 1m SHF_1223_230710 HORIZONTAL :</p>	<p>Site : 03CH20-HY Condition : PEAK(UNII) 1m SHF_1223_230710 VERTICAL :</p>



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

WIFI	5GHz WIFI	
ANT	802.11a LF	
1	Horizontal	Vertical
QP / Peak	 <p>Site : 03CH20-HY Condition : QP 3m_LF_55606_231020_200 HORIZONTAL</p>	 <p>Site : 03CH20-HY Condition : QP 3m_LF_55606_231020_200 VERTICAL</p>



Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	97.18	4140	0.24	270Hz
5GHz 802.11n HT20	97.99	3848	0.26	270Hz

