

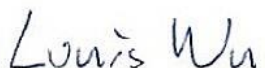


FCC RADIO TEST REPORT

FCC ID : HD5-CT30PL0N
Equipment : Mobile computer
Brand Name : Honeywell
Model Name : CT30PL0N
Applicant : Honeywell International Inc.
9680 Old Bailes Road, Fort Mill, SC 29707 USA
Manufacturer : Honeywell International Inc.
9680 Old Bailes Road, Fort Mill, SC 29707 USA
Standard : FCC Part 15 Subpart E §15.407

The product was received on Nov. 11, 2021 and testing was performed from Nov. 15, 2021 to Dec. 19, 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR1N0506F	01	Initial issue of report	Jan. 04, 2022
FR1N0506F	02	1. Add description in test mode 2. Revise antenna information 3. Revise test procedures for radiated spurious emission 4. Revise list of measuring equipment	Jan. 10, 2022



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	10.85 dB under the limit at 11490.000 MHz
3.5	15.207	AC Conducted Emission	Pass	13.85 dB under the limit at 0.177 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 product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Wei Chen

Report Producer: Ruby Zou

1 General Description

1.1 Product Feature of Equipment Under Test

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

Product Feature	
Sample 1	with Scanner (S0703)
Sample 2	Non Scanner
HW Version	EVT1.5
SW Version	311.C0.00.0630-N-DEBUG
Antenna Type	WLAN5GHz <Ant. 1>: PIFA Antenna WLAN2.4GHz <Ant. 2>: PIFA Antenna Bluetooth: PIFA Antenna NFC: Loop Antenna

Antenna information		
5725 MHz ~ 5850 MHz	Peak Gain (dBi)	3.4

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

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (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

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (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 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.

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 for Sample 1 and Y Plane for Sample 2 as worst plane.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

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

Note:

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

2.2 Test Mode

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

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

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

Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN Link + AC Adapter for Sample 1

<Sample 1>

Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

<Sample 2>

Ch. #		Band IV : 5725-5850 MHz	
		802.11a	802.11ac VHT80
L	Low	149	-
M	Middle	-	155
H	High	-	-

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.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 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.	Notebook	Acer	N18Q13	PD9AX201NG	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility "QRCT 4.0.00193.0" 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

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

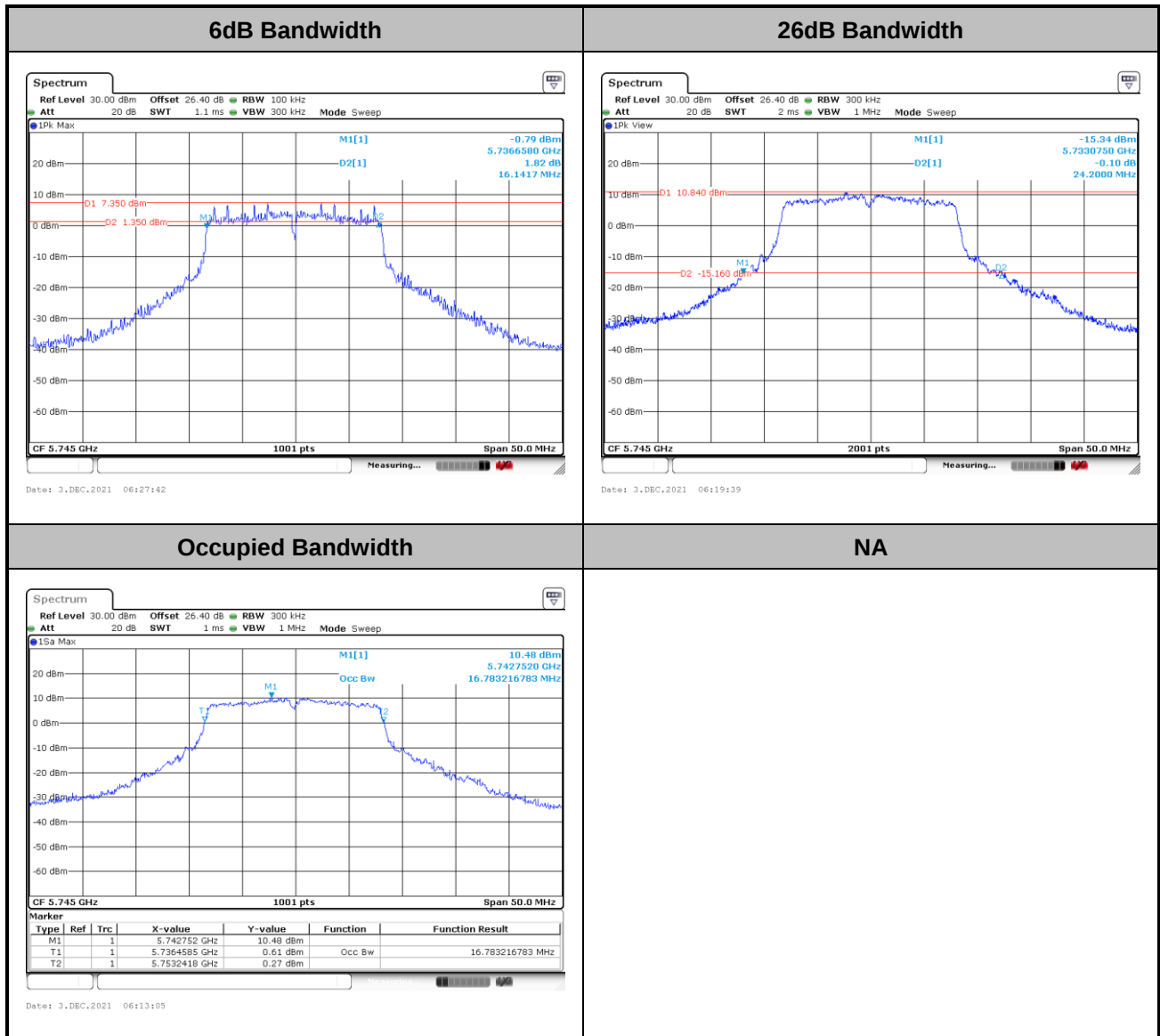


3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.



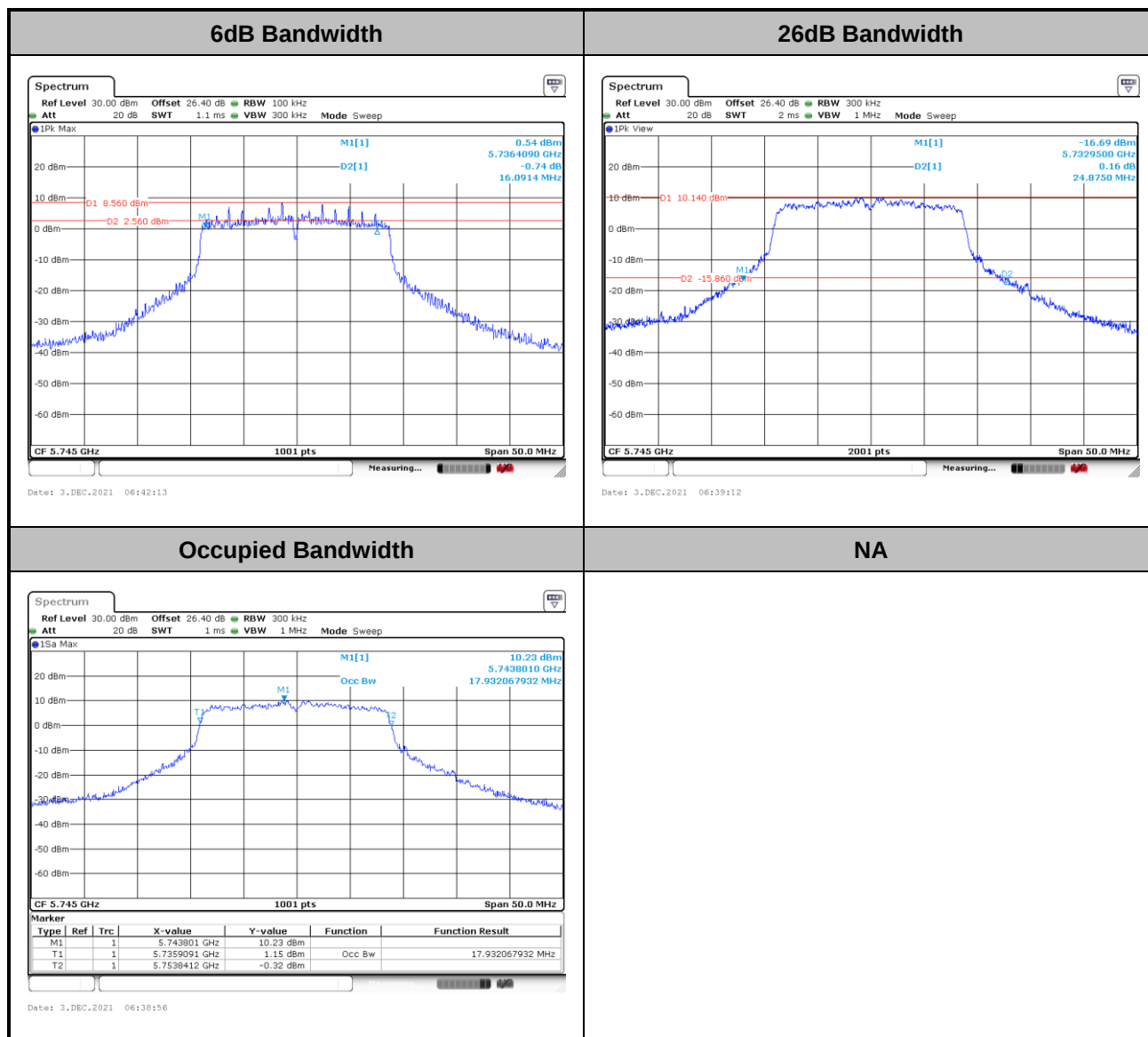
<802.11a>



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



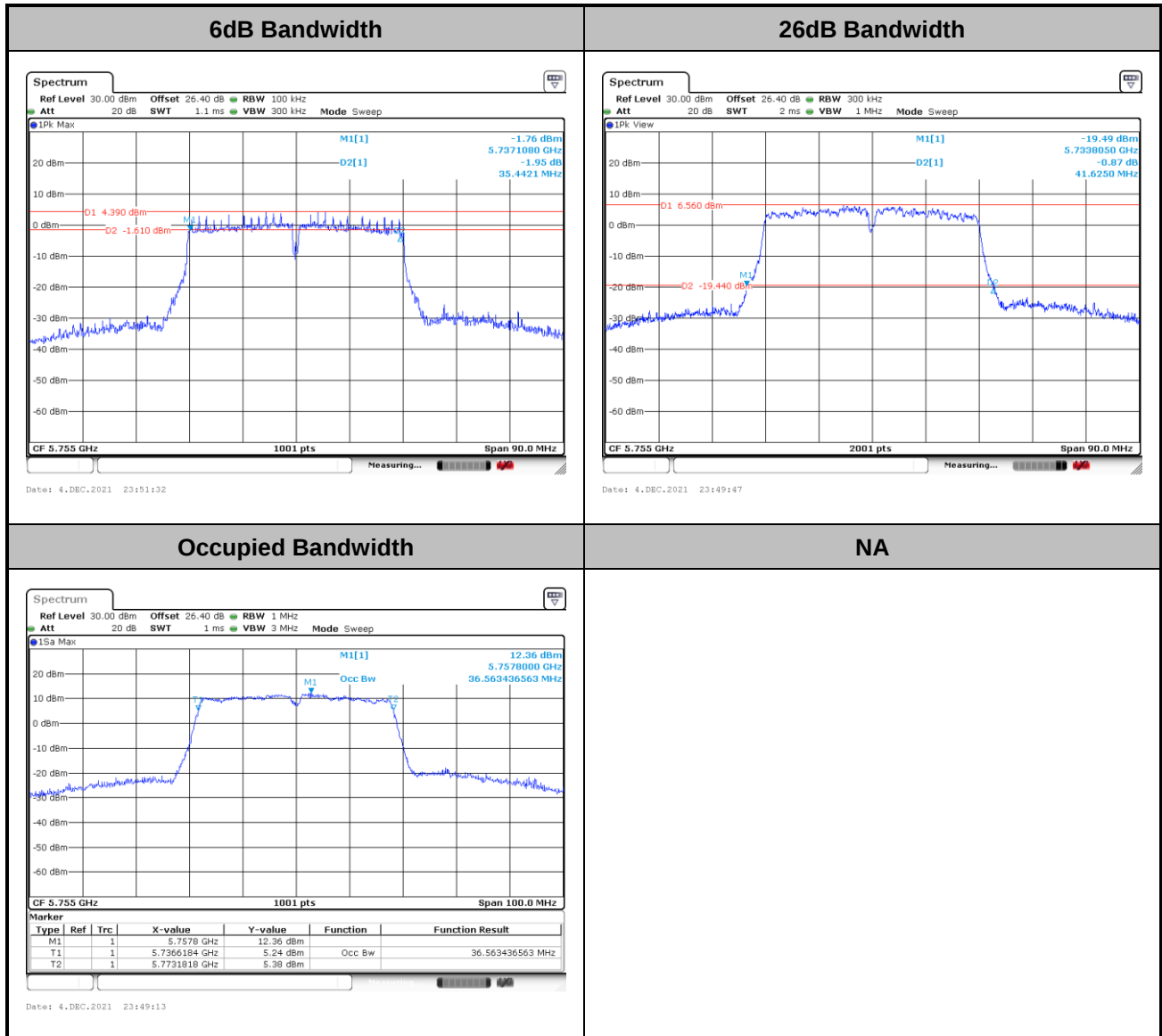
<802.11n HT20>



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



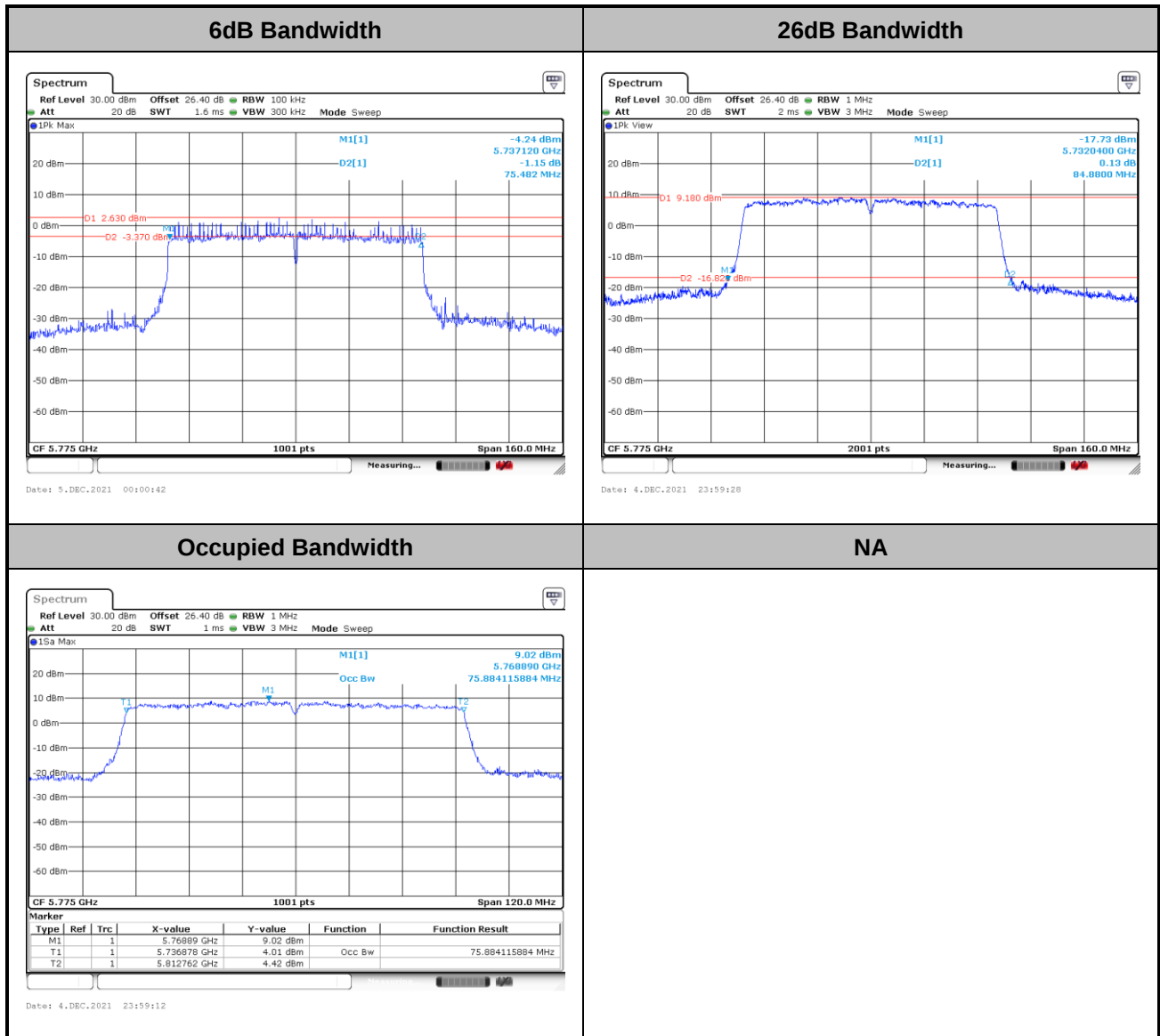
<802.11n HT40>



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



<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

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

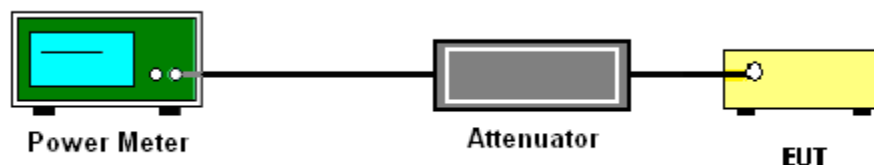
3.2.3 Test Procedures

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

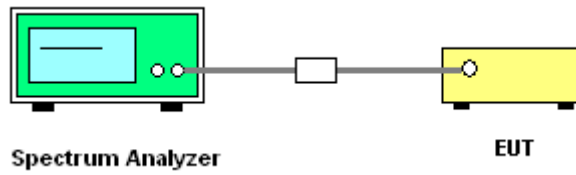
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-3

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

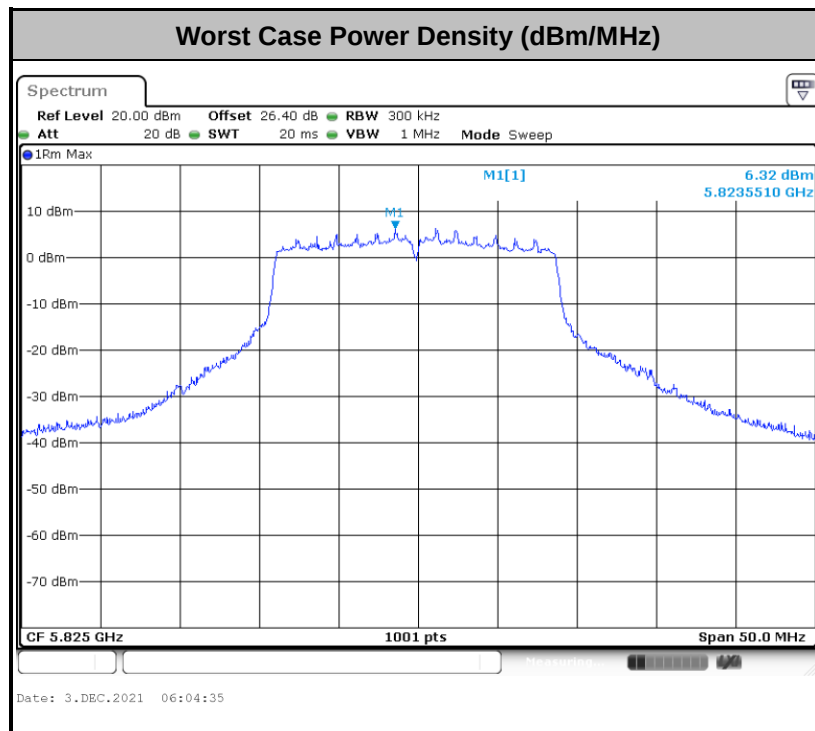
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Add $10 \log (500 \text{ kHz/RBW})$ to the measured result, whereas RBW ($<500 \text{ kHz}$) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
 - Sweep time $\leq$ (number of points in sweep) $\times$ T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Detector = power averaging (rms).
 - Trace mode = max hold.
 - Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
1. The RF output of EUT is connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 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 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.

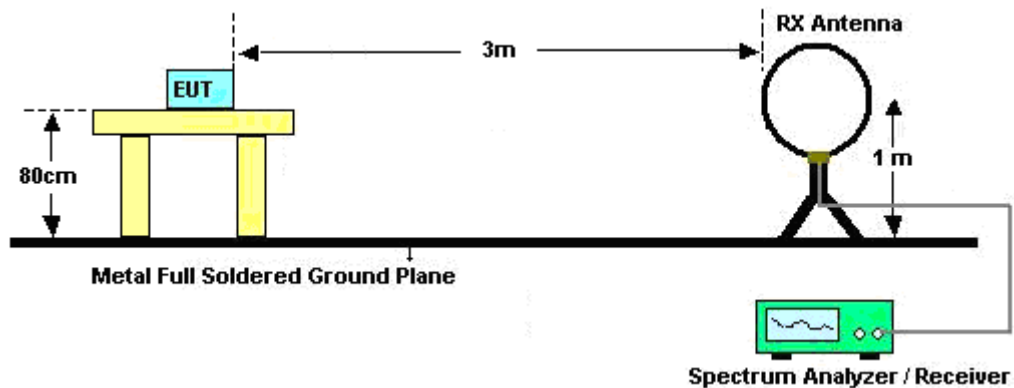
3.4.3 Test Procedures

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.

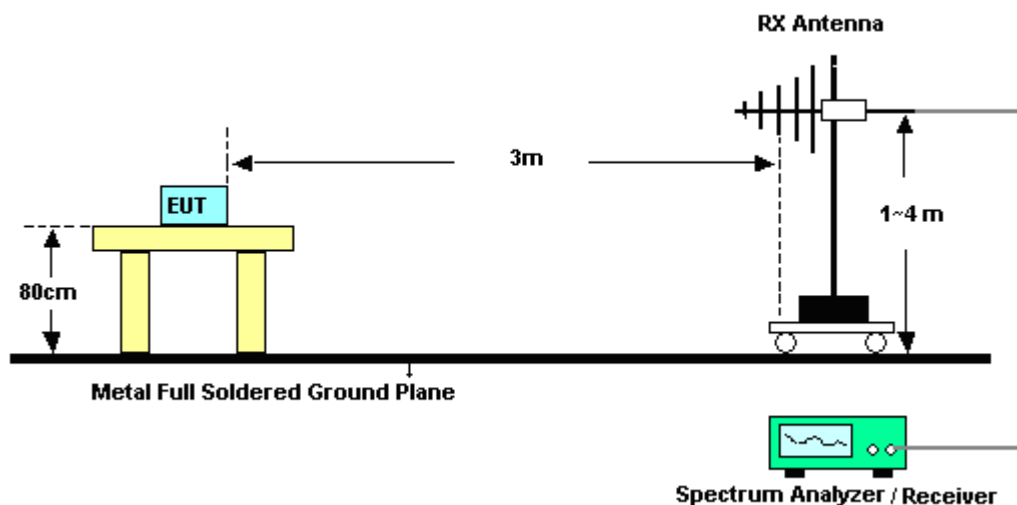
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit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

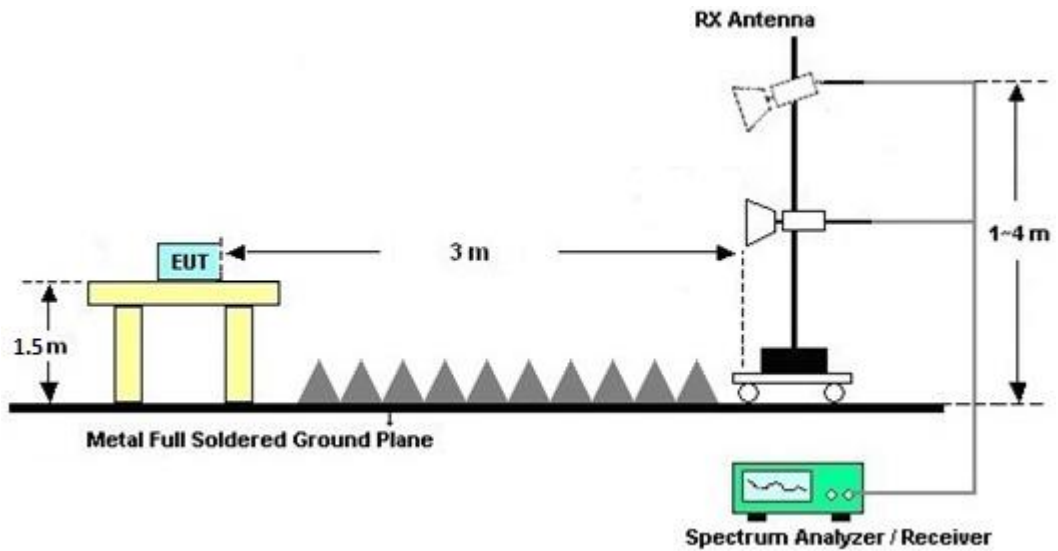
For radiated emissions below 30MHz



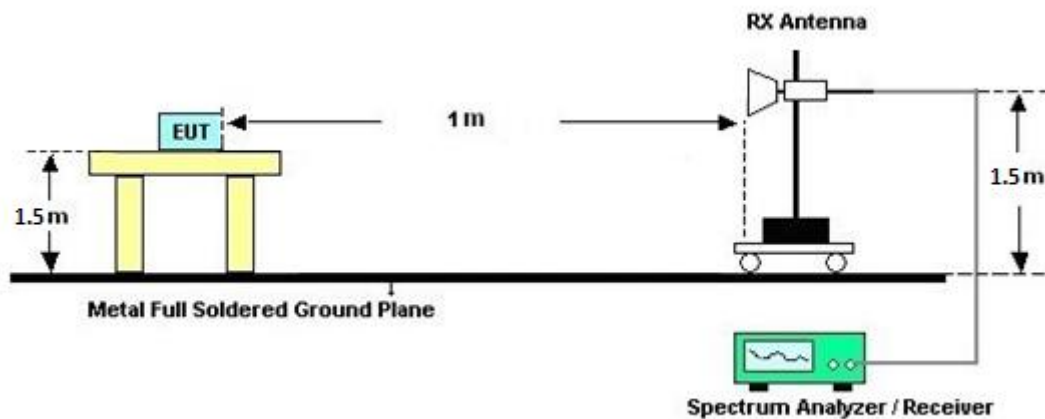
For radiated emissions from 30MHz to 1GHz



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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

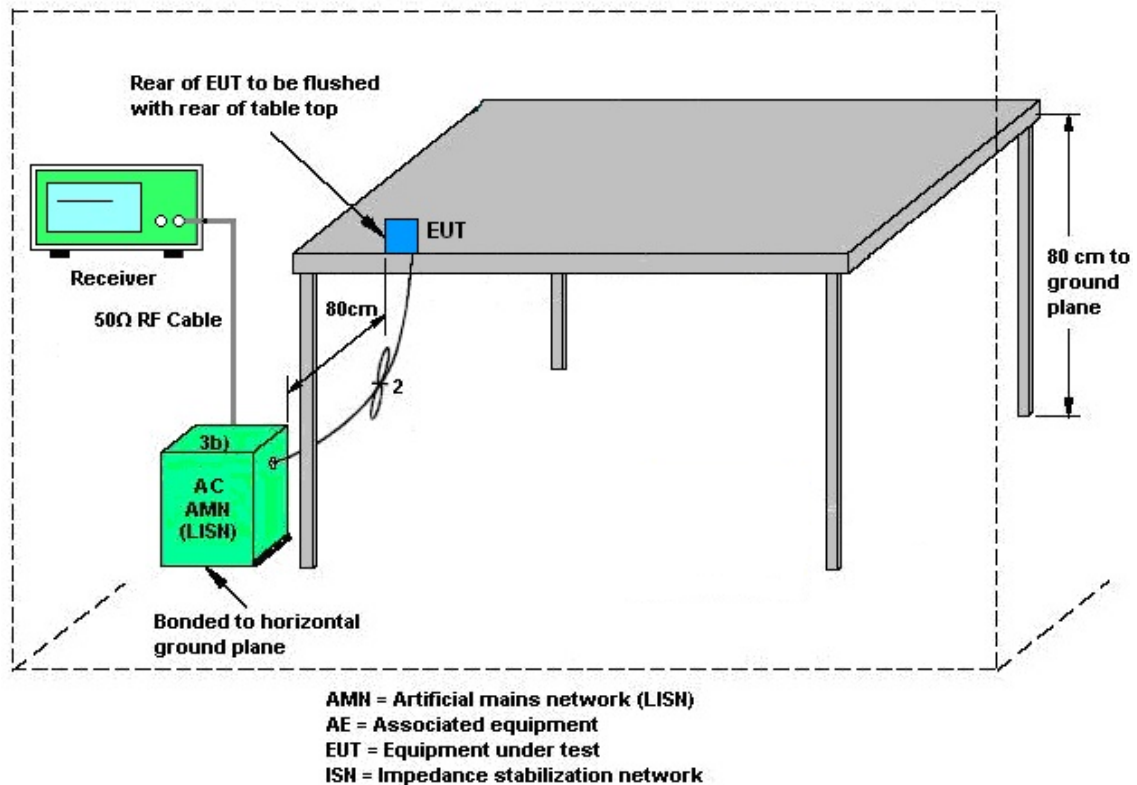
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Antenna Requirements

3.6.1 Standard Applicable

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

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

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	Nov. 23 2021~ Dec. 19, 2021	Jan. 03, 2022	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Jul. 13, 2021	Nov. 23 2021~ Dec. 19, 2021	Jul. 12, 2022	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz~ 40GHz	May 21, 2021	Nov. 23 2021~ Dec. 19, 2021	May 20, 2022	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 16, 2020	Nov. 23, 2021~ Dec. 14, 2021	Dec. 15, 2021	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 15, 2021	Dec. 15, 2021~ Dec. 19, 2021	Dec. 14, 2022	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 18, 2021	Nov. 23, 2021~ Dec. 19, 2021	May 17, 2022	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Oct. 26, 2021	Nov. 23, 2021~ Dec. 19, 2021	Oct. 25, 2022	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz ~ 40GHz	Jun. 22, 2021	Nov. 23, 2021~ Dec. 19, 2021	Jun. 21, 2022	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 18, 2021	Nov. 23, 2021~ Dec. 19, 2021	Mar. 17, 2022	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Nov. 23, 2021~ Dec. 19, 2021	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Nov. 23, 2021~ Dec. 19, 2021	N/A	Radiation (03CH13-HY)
Software	Audix	E3 6.2009-8-24	RK-000992	N/A	N/A	Nov. 23, 2021~ Dec. 19, 2021	N/A	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Feb. 10, 2021	Nov. 23, 2021~ Dec. 19, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30M-18G	Feb. 10, 2021	Nov. 23, 2021~ Dec. 19, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 22, 2021	Nov. 23, 2021~ Dec. 19, 2021	Feb. 21, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz~40GHz	Mar. 11, 2021	Nov. 23, 2021~ Dec. 19, 2021	Mar. 10, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30M-18G	Feb. 10, 2021	Nov. 23, 2021~ Dec. 19, 2021	Feb. 09, 2022	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Nov. 23, 2021~ Dec. 19, 2021	Mar. 10, 2022	Radiation (03CH13-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN12	1.53GHz Low Pass Filter	Sep. 14, 2021	Nov. 23, 2021~ Dec. 19, 2021	Sep. 13, 2022	Radiation (03CH13-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN5	6.75GHz High Pass Filter	Mar. 11, 2021	Nov. 23, 2021~ Dec. 19, 2021	Mar. 10, 2022	Radiation (03CH13-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECEP	DTM-303A	TP201996	N/A	Nov. 16. 2021	Nov. 24, 2021~ Dec. 05, 2021	Nov. 15. 2022	Conducted (TH05-HY)
Power Meter	DARE	RPR3006W	13I00030SNO 31(NO:182)	10MHz~6GHz	Dec. 30, 2020	Nov. 24, 2021~ Dec. 05, 2021	Dec. 29, 2021	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Nov. 24, 2021~ Dec. 05, 2021	Aug. 29, 2022	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW191204(B OX8)	N/A	Jan. 07, 2021	Nov. 24, 2021~ Dec. 05, 2021	Jan. 06, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 15, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Nov. 15, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Nov. 15, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 01, 2020	Nov. 15, 2021	Nov. 30, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Nov. 15, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	Nov. 15, 2021	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Nov. 15, 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:	Shiming Liu	Temperature:	22.2~24.1	°C
Test Date:	2021/11/24~2021/12/5	Relative Humidity:	48.2~52.2	%

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	16.78	-	24.20	-	16.14	-	0.5	Pass
11a	6Mbps	1	157	5785	16.78	-	23.70	-	16.14	-	0.5	Pass
11a	6Mbps	1	165	5825	16.68	-	24.28	-	15.39	-	0.5	Pass
HT20	MCS0	1	149	5745	17.93	-	24.88	-	16.09	-	0.5	Pass
HT20	MCS0	1	157	5785	17.93	-	24.98	-	15.79	-	0.5	Pass
HT20	MCS0	1	165	5825	17.93	-	24.90	-	16.04	-	0.5	Pass
HT40	MCS0	1	151	5755	36.56	-	41.63	-	35.44	-	0.5	Pass
HT40	MCS0	1	159	5795	36.56	-	41.09	-	35.26	-	0.5	Pass
VHT80	MCS0	1	155	5775	75.88	-	84.88	-	75.48	-	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	18.40	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	157	5785	18.40	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	165	5825	18.20	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	149	5745	18.20	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	157	5785	18.20	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	165	5825	18.40	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	151	5755	18.20	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	159	5795	18.30	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	149	5745	18.10	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	157	5785	18.10	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	165	5825	18.30	-		30.00	-	3.40	-	Pass
VHT40	MCS0	1	151	5755	18.10	-		30.00	-	3.40	-	Pass
VHT40	MCS0	1	159	5795	18.20	-		30.00	-	3.40	-	Pass
VHT80	MCS0	1	155	5775	18.30	-		30.00	-	3.40	-	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	-	8.43	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	157	5785	2.22	-	8.33	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	165	5825	2.22	-	8.24	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	149	5745	2.22	-	8.45	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	157	5785	2.22	-	8.42	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	165	5825	2.22	-	8.54	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	151	5755	2.22	-	4.51	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	159	5795	2.22	-	4.61	-		30.00	-	3.40	-	Pass
VHT80	MCS0	1	155	5775	2.22	-	3.14	-		30.00	-	3.40	-	Pass



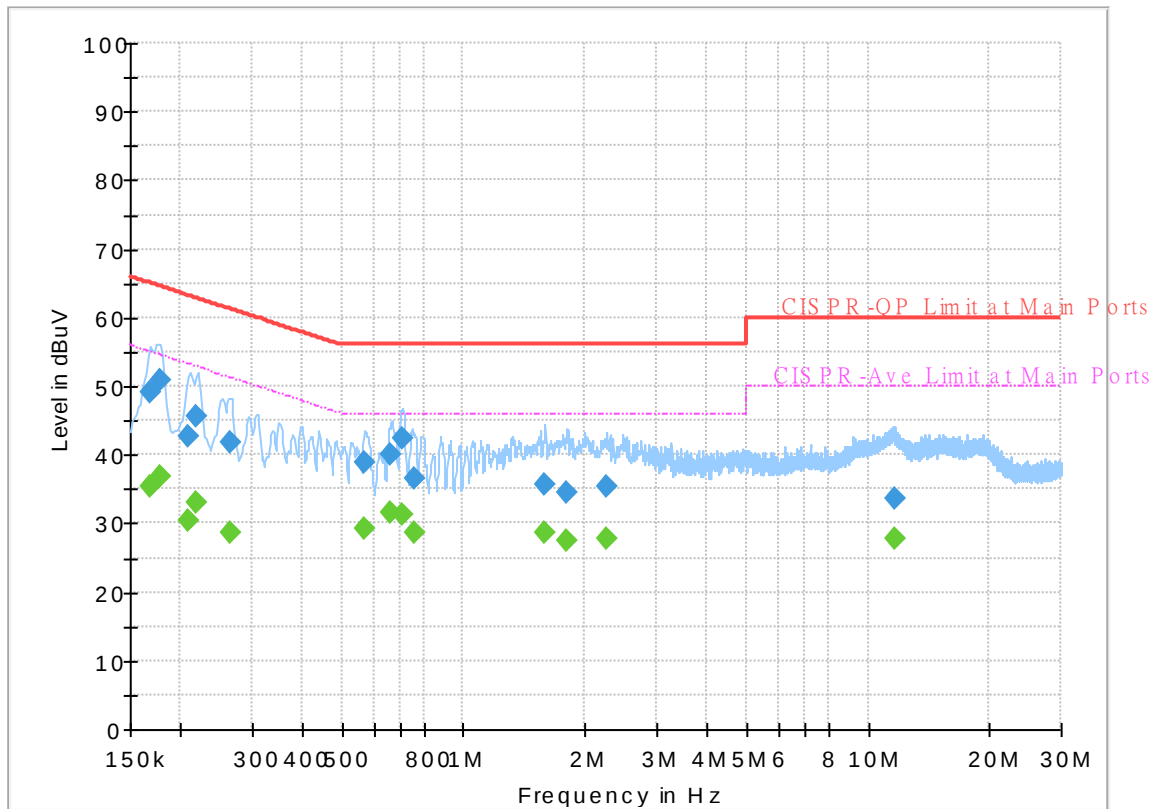
Appendix B. AC Conducted Emission Test Results

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

EUT Information

Report NO : 1N0506
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



Final_Result

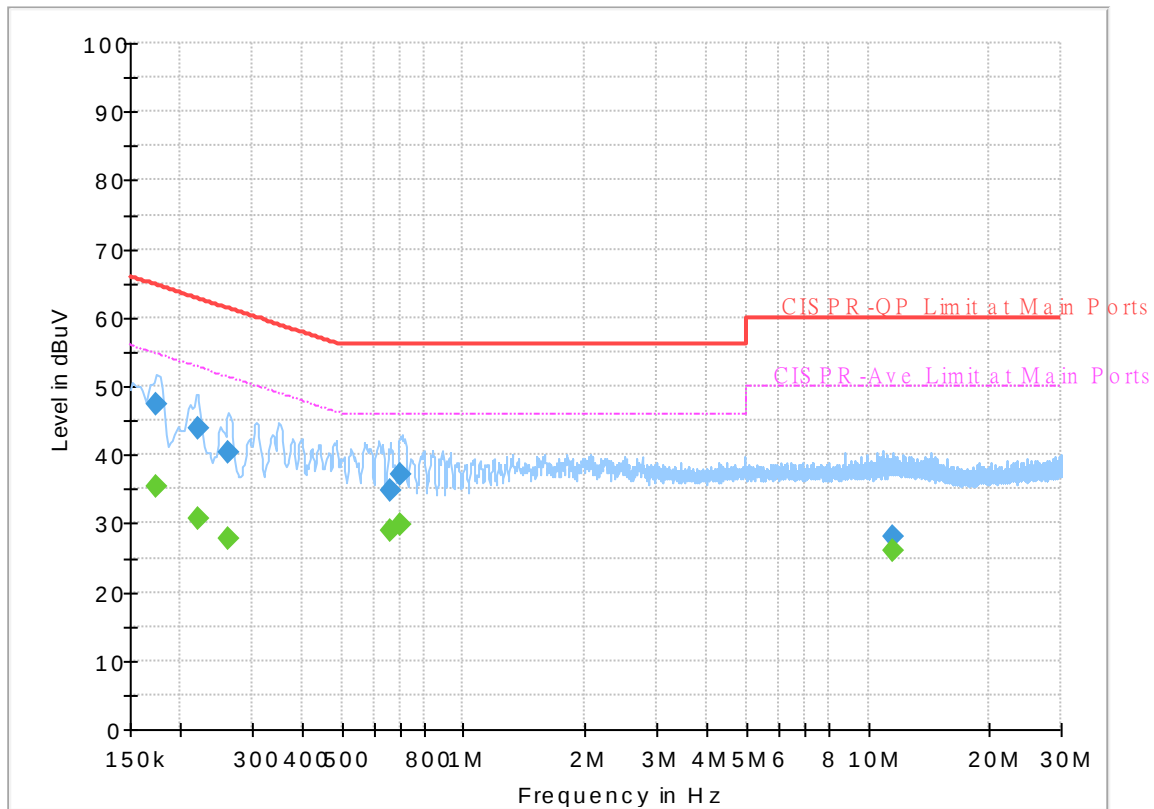
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.168000	---	35.28	55.06	19.78	L1	OFF	19.7
0.168000	49.02	---	65.06	16.04	L1	OFF	19.7
0.177000	---	36.93	54.63	17.70	L1	OFF	19.7
0.177000	50.78	---	64.63	13.85	L1	OFF	19.7
0.208500	---	30.27	53.27	23.00	L1	OFF	19.7
0.208500	42.83	---	63.27	20.44	L1	OFF	19.7
0.217500	---	33.05	52.91	19.86	L1	OFF	19.7
0.217500	45.52	---	62.91	17.39	L1	OFF	19.7
0.264750	---	28.79	51.28	22.49	L1	OFF	19.7
0.264750	41.93	---	61.28	19.35	L1	OFF	19.7
0.568500	---	29.19	46.00	16.81	L1	OFF	19.9
0.568500	38.77	---	56.00	17.23	L1	OFF	19.9
0.658500	---	31.66	46.00	14.34	L1	OFF	20.0
0.658500	39.94	---	56.00	16.06	L1	OFF	20.0
0.708000	---	31.31	46.00	14.69	L1	OFF	20.0
0.708000	42.40	---	56.00	13.60	L1	OFF	20.0
0.759750	---	28.63	46.00	17.37	L1	OFF	20.0
0.759750	36.47	---	56.00	19.53	L1	OFF	20.0
1.592250	---	28.68	46.00	17.32	L1	OFF	20.2
1.592250	35.57	---	56.00	20.43	L1	OFF	20.2
1.794750	---	27.38	46.00	18.62	L1	OFF	20.2

1.794750	34.45	---	56.00	21.55	L1	OFF	20.2
2.253750	---	27.91	46.00	18.09	L1	OFF	20.1
2.253750	35.38	---	56.00	20.62	L1	OFF	20.1
11.638500	---	27.68	50.00	22.32	L1	OFF	20.2
11.638500	33.54	---	60.00	26.46	L1	OFF	20.2

EUT Information

Report NO : 1N0506
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)
0.174750	---	35.27	54.73	19.46	N	OFF	19.7
0.174750	47.48	---	64.73	17.25	N	OFF	19.7
0.219750	---	30.75	52.83	22.08	N	OFF	19.7
0.219750	43.84	---	62.83	18.99	N	OFF	19.7
0.262500	---	27.84	51.35	23.51	N	OFF	19.7
0.262500	40.34	---	61.35	21.01	N	OFF	19.7
0.660750	---	28.97	46.00	17.03	N	OFF	20.0
0.660750	34.94	---	56.00	21.06	N	OFF	20.0
0.699000	---	29.70	46.00	16.30	N	OFF	20.0
0.699000	37.18	---	56.00	18.82	N	OFF	20.0
11.492250	---	25.94	50.00	24.06	N	OFF	20.2
11.492250	27.95	---	60.00	32.05	N	OFF	20.2



Appendix C. Radiated Spurious Emission

Test Engineer :	Yuan Lee, Jacky Hong, Wilson Wu and Peter Liao	Temperature :	20~25°C
		Relative Humidity :	40~60%

<Sample 1>

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		11490	54.44	-19.56	74	59.37	40.17	10.68	55.78	159	8	P	H
		11490	43.15	-10.85	54	48.08	40.17	10.68	55.78	159	8	A	H
		17235	48.77	-19.43	68.2	51.79	40.57	12.61	56.2	201	149	P	H
													H
													H
													H
													H
													H
													H
		11490	51.13	-22.87	74	56.06	40.17	10.68	55.78	304	64	P	V
		11490	40.52	-13.48	54	45.45	40.17	10.68	55.78	304	64	A	V
		17235	49.16	-19.04	68.2	52.18	40.57	12.61	56.2	248	201	P	V
													V
													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		11570	53.97	-20.03	74	58.96	40.06	10.72	55.77	151	8	P	H
		11570	42.38	-11.62	54	47.37	40.06	10.72	55.77	151	8	A	H
		17355	49.55	-18.65	68.2	52.23	41.03	12.71	56.42	202	147	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11570	51.68	-22.32	74	56.67	40.06	10.72	55.77	303	64	P	V
		11570	40.3	-13.7	54	45.29	40.06	10.72	55.77	303	64	A	V
		17355	49.72	-18.48	68.2	52.4	41.03	12.71	56.42	246	198	P	V
													V
													V
													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		11650	52.53	-21.47	74	57.79	39.75	10.75	55.76	158	20	P	H
		11650	41.32	-12.68	54	46.58	39.75	10.75	55.76	158	20	A	H
		17475	50.49	-17.71	68.2	52.81	41.52	12.8	56.64	205	152	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11650	50.01	-23.99	74	55.27	39.75	10.75	55.76	279	64	P	V
		11650	39.79	-14.21	54	45.05	39.75	10.75	55.76	279	64	A	V
		17475	49.94	-18.26	68.2	52.26	41.52	12.8	56.64	248	201	P	V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

**Band 4 5725~5850MHz****WIFI 802.11n HT20 (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)
802.11n HT20 CH 149 5745MHz		5633	53.79	-14.41	68.2	41.49	31.93	6.98	26.61	194	343	P	H
		5699.4	56.01	-48.75	104.76	43.44	32.2	7.01	26.64	194	343	P	H
		5719.6	65.3	-45.39	110.69	52.65	32.28	7.02	26.65	194	343	P	H
		5724	73.23	-46.69	119.92	60.56	32.3	7.02	26.65	194	343	P	H
	*	5745	111.75	-	-	99	32.38	7.03	26.66	194	343	P	H
	*	5745	104.06	-	-	91.31	32.38	7.03	26.66	194	343	A	H
													H
													H
		5605.8	52.46	-15.74	68.2	40.1	31.99	6.97	26.6	316	249	P	V
		5691.8	53.79	-45.36	99.15	41.27	32.15	7.01	26.64	316	249	P	V
		5719	58.88	-51.64	110.52	46.23	32.28	7.02	26.65	316	249	P	V
		5723.6	65.85	-53.16	119.01	53.19	32.29	7.02	26.65	316	249	P	V
	*	5745	106.57	-	-	93.82	32.38	7.03	26.66	316	249	P	V
	*	5745	98.65	-	-	85.9	32.38	7.03	26.66	316	249	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)
802.11n HT20 CH 157 5785MHz		5613.6	52.88	-15.32	68.2	40.54	31.97	6.98	26.61	194	342	P	H
		5692	54.1	-45.2	99.3	41.58	32.15	7.01	26.64	194	342	P	H
		5715.2	54.89	-54.57	109.46	42.26	32.26	7.02	26.65	194	342	P	H
		5723.8	54.64	-64.82	119.46	41.97	32.3	7.02	26.65	194	342	P	H
	*	5785	111.43	-	-	98.66	32.4	7.04	26.67	194	342	P	H
	*	5785	103.57	-	-	90.8	32.4	7.04	26.67	194	342	A	H
		5852.8	53.09	-62.73	115.82	40.23	32.51	7.05	26.7	194	342	P	H
		5859.2	53.45	-56.17	109.62	40.56	32.54	7.05	26.7	194	342	P	H
		5895.2	53.5	-36.71	90.21	40.49	32.68	7.05	26.72	194	342	P	H
		5925.8	53	-15.2	68.2	39.92	32.75	7.06	26.73	194	342	P	H
													H
													H
		5619.2	52.68	-15.52	68.2	40.35	31.96	6.98	26.61	288	243	P	V
		5674.4	52.66	-33.64	86.3	40.24	32.05	7	26.63	288	243	P	V
		5717.2	52.96	-57.06	110.02	40.32	32.27	7.02	26.65	288	243	P	V
		5724.8	52.57	-69.17	121.74	39.9	32.3	7.02	26.65	288	243	P	V
	*	5785	106.46	-	-	93.69	32.4	7.04	26.67	288	243	P	V
	*	5785	98.12	-	-	85.35	32.4	7.04	26.67	288	243	A	V
		5851.8	53.11	-64.99	118.1	40.25	32.51	7.05	26.7	288	243	P	V
		5871.4	53.07	-53.14	106.21	40.14	32.59	7.05	26.71	288	243	P	V
		5898.6	52.82	-34.88	87.7	39.8	32.69	7.05	26.72	288	243	P	V
		5939.2	52.46	-15.74	68.2	39.36	32.78	7.06	26.74	288	243	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)
802.11n HT20 CH 165 5825MHz	*	5825	110.7	-	-	97.89	32.45	7.05	26.69	195	344	P	H
	*	5825	102.63	-	-	89.82	32.45	7.05	26.69	195	344	A	H
		5850.6	58.81	-62.02	120.83	45.96	32.5	7.05	26.7	195	344	P	H
		5855.6	55.62	-55.01	110.63	42.75	32.52	7.05	26.7	195	344	P	H
		5888.2	54.35	-41.05	95.4	41.37	32.65	7.05	26.72	195	344	P	H
		5936.8	53.4	-14.8	68.2	40.3	32.77	7.06	26.73	195	344	P	H
													H
													H
	*	5825	104.84	-	-	92.03	32.45	7.05	26.69	287	227	P	V
	*	5825	96.7	-	-	83.89	32.45	7.05	26.69	287	227	A	V
		5850	54.75	-67.45	122.2	41.9	32.5	7.05	26.7	287	227	P	V
		5863.8	53.07	-55.26	108.33	40.17	32.56	7.05	26.71	287	227	P	V
		5877.6	53.46	-49.81	103.27	40.51	32.61	7.05	26.71	287	227	P	V
		5936.4	53.13	-15.07	68.2	40.03	32.77	7.06	26.73	287	227	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)	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)
802.11n HT20 CH 149 5745MHz		11490	55.34	-18.66	74	60.27	40.17	10.68	55.78	165	7	P	H
		11490	42.41	-11.59	54	47.34	40.17	10.68	55.78	165	7	A	H
		17235	47.94	-20.26	68.2	50.96	40.57	12.61	56.2	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11490	52.89	-21.11	74	57.82	40.17	10.68	55.78	276	61	P	V
		11490	41.38	-12.62	54	46.31	40.17	10.68	55.78	276	61	A	V
		17235	47.98	-20.22	68.2	51	40.57	12.61	56.2	-	-	P	V
													V
													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)
802.11n HT20 CH 157 5785MHz		11570	55.1	-18.9	74	60.09	40.06	10.72	55.77	146	7	P	H
		11570	43.14	-10.86	54	48.13	40.06	10.72	55.77	146	7	A	H
		17355	49.53	-18.67	68.2	52.21	41.03	12.71	56.42	211	155	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11570	52.74	-21.26	74	57.73	40.06	10.72	55.77	174	62	P	V
		11570	41.53	-12.47	54	46.52	40.06	10.72	55.77	174	62	A	V
		17355	49.37	-18.83	68.2	52.05	41.03	12.71	56.42	251	211	P	V
													V
													V
													V
													V
													V
													V
													V

[illegible]



Band 4 5725~5850MHz

WIFI 802.11n HT40 (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)
802.11n HT40 CH 151 5755MHz		5647.4	53.94	-14.26	68.2	41.66	31.91	6.99	26.62	202	342	P	H
		5693	59.28	-40.76	100.04	46.75	32.16	7.01	26.64	202	342	P	H
		5718	74.55	-35.69	110.24	61.91	32.27	7.02	26.65	202	342	P	H
		5723.4	75.07	-43.48	118.55	62.41	32.29	7.02	26.65	202	342	P	H
		5755	109.34	-	-	96.57	32.4	7.03	26.66	202	342	P	H
		5755	101.61	-	-	88.84	32.4	7.03	26.66	202	342	A	H
		5852.4	53.71	-63.02	116.73	40.85	32.51	7.05	26.7	202	342	P	H
		5858.2	54.23	-55.67	109.9	41.35	32.53	7.05	26.7	202	342	P	H
		5878.2	54.65	-48.17	102.82	41.7	32.61	7.05	26.71	202	342	P	H
		5949.2	53.37	-14.83	68.2	40.25	32.8	7.06	26.74	202	342	P	H
													H
													H
		5647.8	52.9	-15.3	68.2	40.63	31.9	6.99	26.62	323	228	P	V
		5676.8	54.4	-33.67	88.07	41.97	32.06	7	26.63	323	228	P	V
		5718	68.47	-41.77	110.24	55.83	32.27	7.02	26.65	323	228	P	V
		5724.2	70.37	-50.01	120.38	57.7	32.3	7.02	26.65	323	228	P	V
		5755	103.79	-	-	91.02	32.4	7.03	26.66	323	228	P	V
		5755	95.99	-	-	83.22	32.4	7.03	26.66	323	228	A	V
		5852.4	53.24	-63.49	116.73	40.38	32.51	7.05	26.7	323	228	P	V
		5871.6	53.03	-53.12	106.15	40.1	32.59	7.05	26.71	323	228	P	V
		5906.6	53.61	-28.17	81.78	40.56	32.71	7.06	26.72	323	228	P	V
		5925.6	52.84	-15.36	68.2	39.76	32.75	7.06	26.73	323	228	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)
802.11n HT40 CH 159 5795MHz		5611.2	53.22	-14.98	68.2	40.87	31.98	6.97	26.6	203	343	P	H
		5675.4	54.74	-32.3	87.04	42.32	32.05	7	26.63	203	343	P	H
		5719	56	-54.52	110.52	43.35	32.28	7.02	26.65	203	343	P	H
		5722.2	56.78	-59.04	115.82	44.12	32.29	7.02	26.65	203	343	P	H
		5795	109.15	-	-	96.38	32.4	7.05	26.68	203	343	P	H
		5795	101.32	-	-	88.55	32.4	7.05	26.68	203	343	A	H
		5851	55.91	-64.01	119.92	43.06	32.5	7.05	26.7	203	343	P	H
		5857.4	57.81	-52.32	110.13	44.93	32.53	7.05	26.7	203	343	P	H
		5883.2	55.2	-43.91	99.11	42.23	32.63	7.05	26.71	203	343	P	H
		5930.6	54.26	-13.94	68.2	41.17	32.76	7.06	26.73	203	343	P	H
													H
													H
		5635.2	54.14	-14.06	68.2	41.84	31.93	6.98	26.61	261	239	P	V
		5688.6	54.24	-42.55	96.79	41.74	32.13	7.01	26.64	261	239	P	V
		5710	54.37	-53.63	108	41.76	32.24	7.01	26.64	261	239	P	V
		5724.8	54.86	-66.88	121.74	42.19	32.3	7.02	26.65	261	239	P	V
		5795	103.69	-	-	90.92	32.4	7.05	26.68	261	239	P	V
		5795	95.91	-	-	83.14	32.4	7.05	26.68	261	239	A	V
		5854.6	53.07	-58.64	111.71	40.2	32.52	7.05	26.7	261	239	P	V
		5859.6	53.32	-56.19	109.51	40.43	32.54	7.05	26.7	261	239	P	V
		5881.8	53.68	-46.47	100.15	40.71	32.63	7.05	26.71	261	239	P	V
		5929.8	53.38	-14.82	68.2	40.29	32.76	7.06	26.73	261	239	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 (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		5642.2	55.54	-12.66	68.2	43.25	31.92	6.99	26.62	201	318	P	H
		5695.2	73.81	-27.85	101.66	61.27	32.17	7.01	26.64	201	318	P	H
		5719.8	76.72	-34.02	110.74	64.07	32.28	7.02	26.65	201	318	P	H
		5720.2	78.74	-32.52	111.26	66.09	32.28	7.02	26.65	201	318	P	H
	*	5775	106.53	-	-	93.76	32.4	7.04	26.67	201	318	P	H
	*	5775	98.78	-	-	86.01	32.4	7.04	26.67	201	318	A	H
		5851	71.36	-48.56	119.92	58.51	32.5	7.05	26.7	201	318	P	H
		5856.6	69.43	-40.92	110.35	56.55	32.53	7.05	26.7	201	318	P	H
		5876	62.38	-42.08	104.46	49.44	32.6	7.05	26.71	201	318	P	H
		5949.8	53.61	-14.59	68.2	40.49	32.8	7.06	26.74	201	318	P	H
													H
													H
		5636.6	54.78	-13.42	68.2	42.48	31.93	6.98	26.61	272	242	P	V
		5695.8	68.03	-34.07	102.1	55.49	32.17	7.01	26.64	272	242	P	V
		5718.8	70.53	-39.93	110.46	57.88	32.28	7.02	26.65	272	242	P	V
		5720.2	72.72	-38.54	111.26	60.07	32.28	7.02	26.65	272	242	P	V
	*	5775	100.84	-	-	88.07	32.4	7.04	26.67	272	242	P	V
	*	5775	92.7	-	-	79.93	32.4	7.04	26.67	272	242	A	V
		5853.8	64.08	-49.46	113.54	51.21	32.52	7.05	26.7	272	242	P	V
		5866.8	62.35	-45.14	107.49	49.44	32.57	7.05	26.71	272	242	P	V
		5875.2	58.05	-47	105.05	45.11	32.6	7.05	26.71	272	242	P	V
		5931.4	53.29	-14.91	68.2	40.2	32.76	7.06	26.73	272	242	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

[illegible]



<Sample 2>

Band 4 - 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp 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		11490	50.69	-23.31	74	55.62	40.17	10.68	55.78	120	2	P	H
		11490	40.1	-13.9	54	45.03	40.17	10.68	55.78	120	2	A	H
		17235	50.51	-17.69	68.2	53.53	40.57	12.61	56.2	227	56	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11490	52.8	-21.2	74	57.73	40.17	10.68	55.78	156	353	P	V
		11490	41.89	-12.11	54	46.82	40.17	10.68	55.78	156	353	A	V
		17235	50.13	-18.07	68.2	53.15	40.57	12.61	56.2	164	53	P	V
													V
													V
													V
													V
													V
													V
													V



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		5638.6	54.14	-14.06	68.2	41.85	31.92	6.99	26.62	173	294	P	H
		5668.8	65.03	-17.12	82.15	52.65	32.01	7	26.63	173	294	P	H
		5720	76.84	-33.96	110.8	64.19	32.28	7.02	26.65	173	294	P	H
		5720.2	77.16	-34.1	111.26	64.51	32.28	7.02	26.65	173	294	P	H
	*	5775	104.67	-	-	91.9	32.4	7.04	26.67	173	294	P	H
	*	5775	96.54	-	-	83.77	32.4	7.04	26.67	173	294	A	H
		5850.8	69.12	-51.26	120.38	56.27	32.5	7.05	26.7	173	294	P	H
		5856.6	67.7	-42.65	110.35	54.82	32.53	7.05	26.7	173	294	P	H
		5879	63.47	-38.76	102.23	50.51	32.62	7.05	26.71	173	294	P	H
		5927.6	53.56	-14.64	68.2	40.47	32.76	7.06	26.73	173	294	P	H
													H
													H
		5647.6	54.76	-13.44	68.2	42.49	31.9	6.99	26.62	188	48	P	V
		5664.4	63.66	-15.23	78.89	51.3	31.99	7	26.63	188	48	P	V
		5719.8	76.53	-34.21	110.74	63.88	32.28	7.02	26.65	188	48	P	V
		5720.6	77.09	-35.08	112.17	64.44	32.28	7.02	26.65	188	48	P	V
	*	5775	106.29	-	-	93.52	32.4	7.04	26.67	188	48	P	V
	*	5775	98.24	-	-	85.47	32.4	7.04	26.67	188	48	A	V
		5850.4	70.34	-50.95	121.29	57.49	32.5	7.05	26.7	188	48	P	V
		5856.6	68.97	-41.38	110.35	56.09	32.53	7.05	26.7	188	48	P	V
		5877.2	64.2	-39.37	103.57	51.25	32.61	7.05	26.71	188	48	P	V
		5944.8	53.81	-14.39	68.2	40.7	32.79	7.06	26.74	188	48	P	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamplifier	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)
802.11a LF		30	21.36	-18.64	40	28.42	24.57	0.71	32.34	-	-	P	H
		127.97	19.45	-24.05	43.5	32.97	17.62	1.16	32.3	-	-	P	H
		570.29	27.08	-18.92	46	31.32	25.84	2.17	32.25	-	-	P	H
		782.72	30.03	-15.97	46	31.82	27.81	2.46	32.06	-	-	P	H
		950.53	32.28	-13.72	46	30.46	30.34	2.6	31.12	-	-	P	H
		962.17	32.59	-21.41	54	30.13	30.85	2.62	31.01	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		31.94	22.74	-17.26	40	31.01	23.36	0.73	32.36	-	-	P	V
		127	17.32	-26.18	43.5	30.86	17.61	1.15	32.3	-	-	P	V
		575.14	26.99	-19.01	46	31.31	25.76	2.18	32.26	-	-	P	V
		871.96	30.85	-15.15	46	31.19	28.77	2.56	31.67	-	-	P	V
		951.5	32.16	-13.84	46	30.28	30.39	2.6	31.11	-	-	P	V
		963.14	33.02	-20.98	54	30.54	30.86	2.62	31	-	-	P	V
													V
													V
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													V
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													V
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													V
													V

Remark:

- No other spurious found.
- All results are PASS against limit line.
- 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

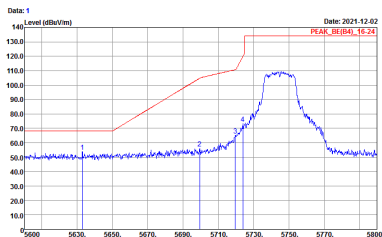
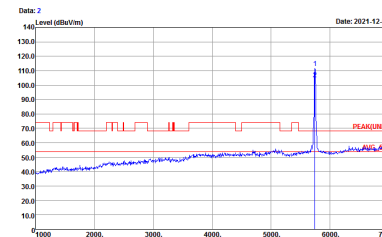
Test Engineer :	Yuan Lee, Jacky Hong, Wilson Wu and Peter Liao	Temperature :	20~25°C
		Relative Humidity :	40~60%

Note symbol

-L	Low channel location
-R	High channel location

<Sample 1>

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	Data: 1 Level (dBm/100) Date: 2021-12-02 PEAK_BE(B4)_16-24  Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Data: 2 Level (dBm/100) Date: 2021-12-02 PEAK(UNII)  Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

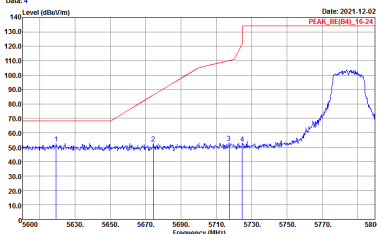
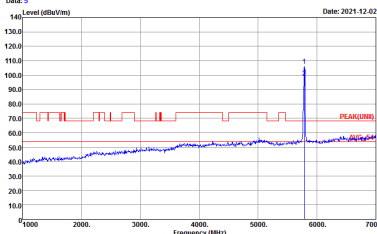
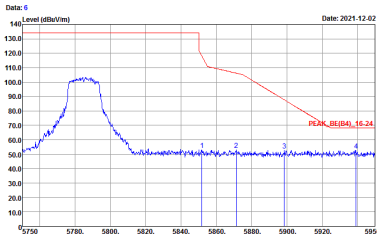


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	Date: 3 Level (dBu/m) Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 4 Level (dBu/m) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	Date: 1 Level (dBuV/m) Date: 2021.12.02 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 2 Level (dBuV/m) Date: 2021.12.02 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Date: 3 Level (dBuV/m) Date: 2021.12.02 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	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	Date: 1 140 Level (dBuV/m) Date: 2021.12.02 PEAK_BE(B4)_16-24  Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 5 140 Level (dBuV/m) Date: 2021.12.02 PEAK(UNIT)  Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	Date: 6 140 Level (dBuV/m) Date: 2021.12.02 PEAK_BE(B4)_16-24  Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



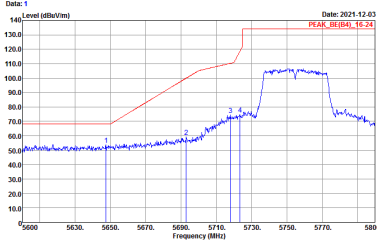
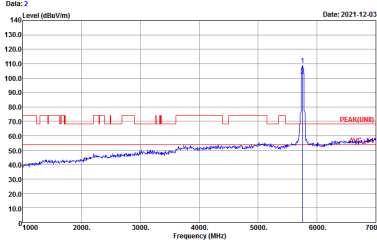
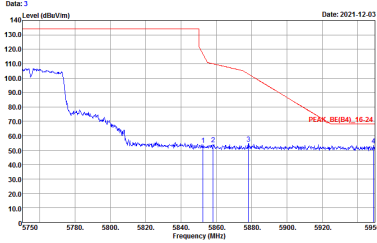
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	Date: 2 Level (dBuV/m) Site : 03CH13-HY Condition : PEAK_BE[84]_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto	Date: 1 Level (dBuV/m) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VSW:3000.000KHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	Date: 1 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 3 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

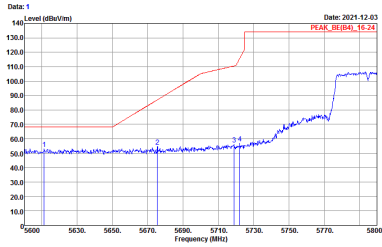
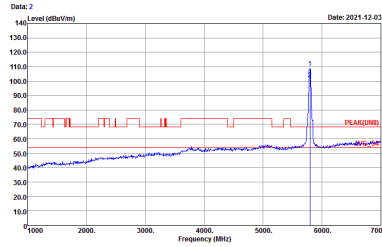
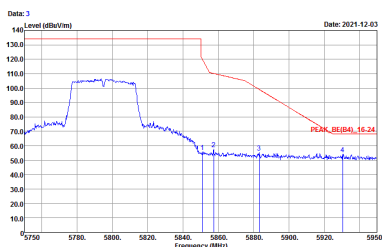


Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
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(UNII) 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	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	Date: 1 140 Level (dBuV/m) Date: 2021.12.03 PEAK_BE(B4)_16-24 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 5 140 Level (dBuV/m) Date: 2021.12.03 PEAK(UNB) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	Date: 6 140 Level (dBuV/m) Date: 2021.12.03 PEAK_BE(B4)_16-24 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

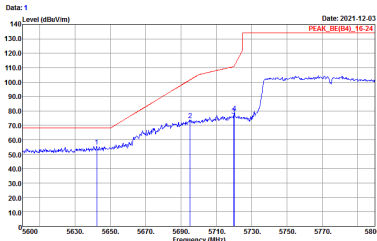
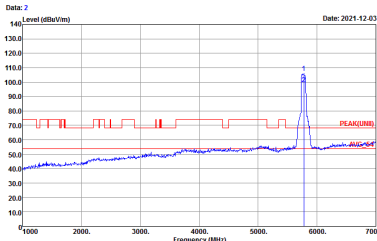
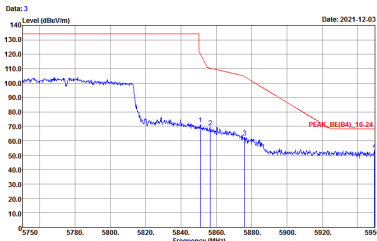
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	Date: 1 140 Level (dBuV/m)  Date: 2021.12.03 PEAK_BE(B4)_16-24 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 2 140 Level (dBuV/m)  Date: 2021.12.03 PEAK(UNIT) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Date: 3 140 Level (dBuV/m)  Date: 2021.12.03 PEAK_BE(B4)_16-24 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	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	Date: 1 140 Level (dBuV/m) Date: 2021.12.03 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 5 140 Level (dBuV/m) Date: 2021.12.03 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	Date: 6 140 Level (dBuV/m) Date: 2021.12.03 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)

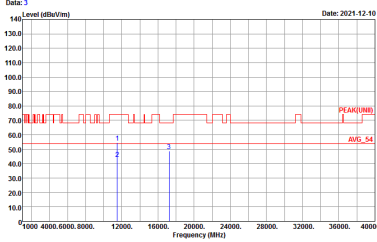
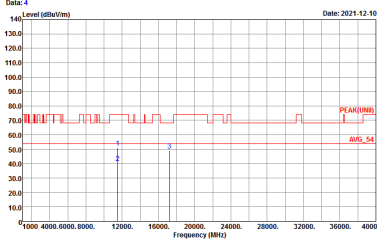
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto 	Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz 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 VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	Date: 1 140 Level (dBuV/m) Date: 2021.12.03 PEAK_BE(B4)_16-24 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 5 140 Level (dBuV/m) Date: 2021.12.03 PEAK(UNIT) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Date: 6 140 Level (dBuV/m) Date: 2021.12.03 PEAK_BE(B4)_16-24 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 Detector : Peak 	Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak 



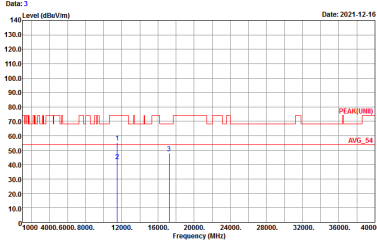
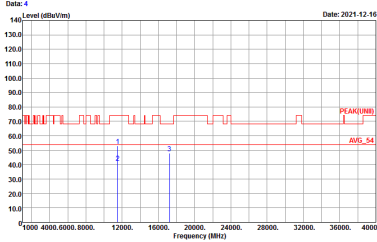
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	Date: 3 Level (dBuV/m) Date: 2021.12.10 Site : 03CH13-HY Condition : PEAK(UWB) 3m HORN_91200_1241 HORIZONTAL Detector : Peak	Date: 4 Level (dBuV/m) Date: 2021.12.10 Site : 03CH13-HY Condition : PEAK(UWB) 3m HORN_91200_1241 VERTICAL Detector : Peak



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	Date: 3 Level (dBuV/m) Date: 2021.12.10 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak	Date: 4 Level (dBuV/m) Date: 2021.12.10 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak



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.	Site : 03CH13-4V Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL Detector : Peak 	Site : 03CH13-4V Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak 

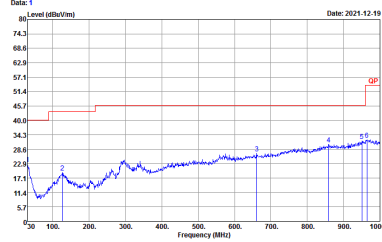
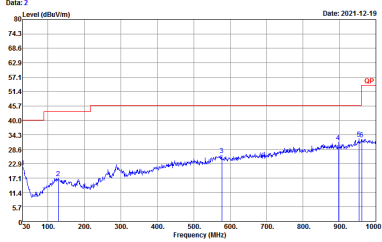


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	Date: 3 Level (dBuV/m) Date: 2021.12.16 Site : 03CH13-HY Condition : PEAK(UWB) 3m HORN_91200_1241 HORIZONTAL Detector : Peak	Date: 4 Level (dBuV/m) Date: 2021.12.16 Site : 03CH13-HY Condition : PEAK(UWB) 3m HORN_91200_1241 VERTICAL Detector : Peak



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	Date: 3 Level (dBuV/m) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak	Date: 4 Level (dBuV/m) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak

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

WIFI	5GHz WIFI	
ANT	802.11a LF	
1	Horizontal	Vertical
QP / Peak	Data: 1 Level (dBuV/m) Date: 2021-12-19  Site : 03CH13-HY Condition : QP 3m 81LOG_40103 HORIZONTAL Detector : Peak	Data: 2 Level (dBuV/m) Date: 2021-12-19  Site : 03CH13-HY Condition : QP 3m 81LOG_40103 VERTICAL Detector : Peak



<Sample 2>

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

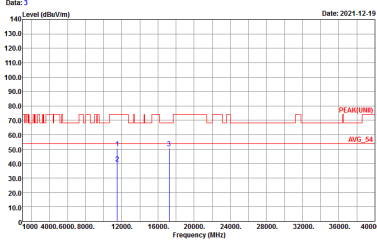
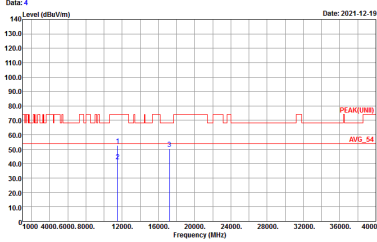
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	Data: 1 Site Condition : 03CH13-HY : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Data: 2 Site Condition : 03CH13-HY : PEAK_UNI(B) 3m HORN_91200_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Data: 3 Site Condition : 03CH13-HY : 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 VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	Date: 1 140 Level (dBuV/m) Date: 2021-12-18 PEAK_BE(B4)_16-24 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Date: 5 140 Level (dBuV/m) Date: 2021-12-18 PEAK(UNIT) Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Date: 6 140 Level (dBuV/m) Date: 2021-12-18 PEAK_BE(B4)_16-24 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(UNII) 3m HORN_91200_1241 HORIZONTAL Detector : Peak 	Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak 



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

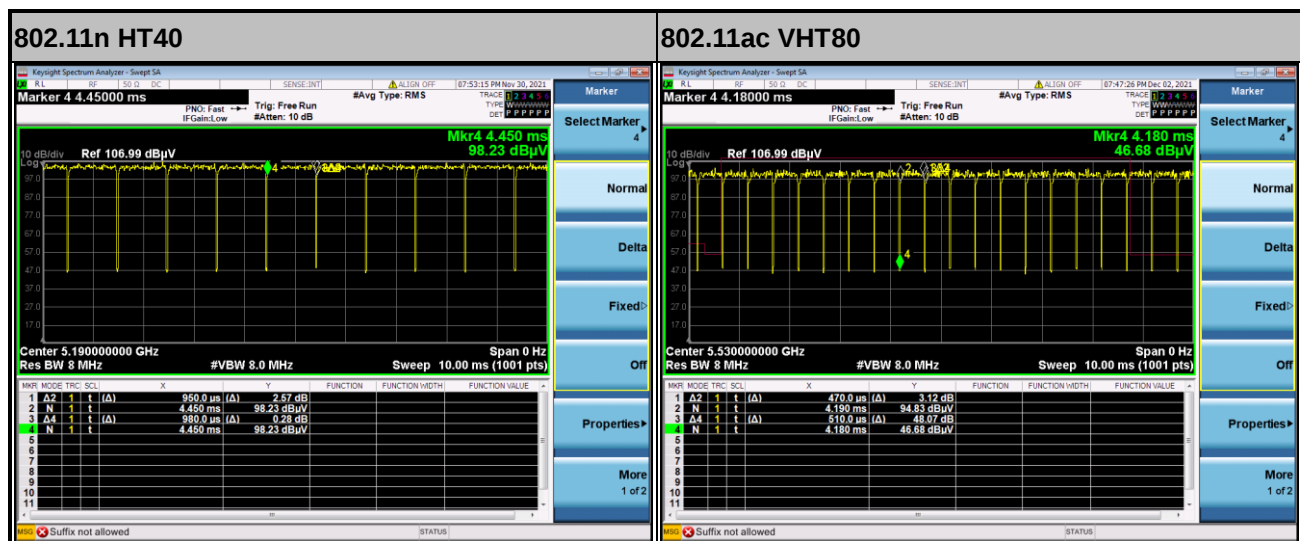
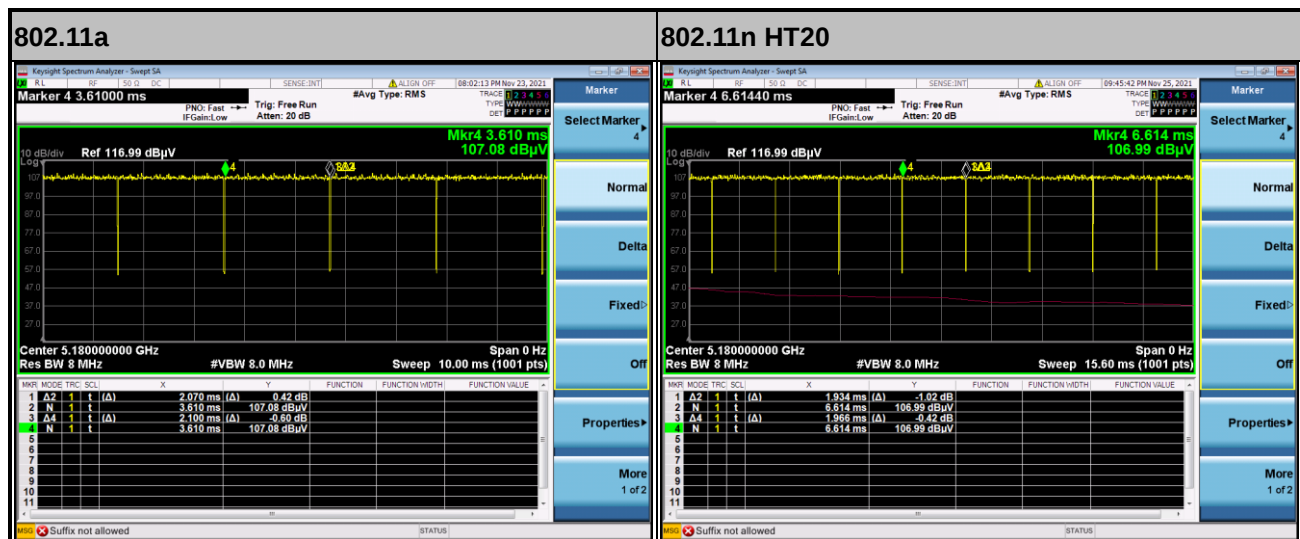
WIFI	5GHz WIFI	
ANT	802.11a LF	
1	Horizontal	Vertical
QP / Peak	Data: 1 Level (dBuV/m) Date: 2021-12-19 Site : 03CH13-HY Condition : QP 3m B1LOG_40103 HORIZONTAL Detector : Peak	Data: 2 Level (dBuV/m) Date: 2021-12-19 Site : 03CH13-HY Condition : QP 3m B1LOG_40103 VERTICAL Detector : Peak



Appendix E. Duty Cycle Plots

<Sample 1>

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	98.57	-	-	10Hz
5GHz 802.11n HT20	98.37	-	-	10Hz
5GHz 802.11n HT40	96.94	950	1.05	3kHz
5GHz 802.11ac VHT80	92.16	470	2.13	3kHz



<Sample 2>

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	98.24	-	-	10Hz
5GHz 802.11ac VHT80	92.74	463.6	2.16	3kHz

