



FCC RADIO TEST REPORT

FCC ID : HLZA20001
Equipment : Tablet PC
Brand Name : acer
Model Name : A20001
Marketing Name : EUT110-11A, EUT110A-11A
Applicant : Acer Incorporated
8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi Dist.,
New Taipei City 22181, Taiwan (R.O.C)
Manufacturer : Acer Incorporated
8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi Dist.,
New Taipei City 22181, Taiwan (R.O.C)
Standard : FCC Part 15 Subpart E §15.407

The product was received on Dec. 07, 2021 and testing was started from Dec. 08, 2021 and completed on Feb. 26, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	5
1.3 Testing Location	5
1.4 Applicable Standards.....	5
2 Test Configuration of Equipment Under Test	6
2.1 Carrier Frequency and Channel	6
2.2 Test Mode.....	7
2.3 Connection Diagram of Test System.....	8
2.4 Support Unit used in test configuration and system	8
2.5 EUT Operation Test Setup	9
2.6 Measurement Results Explanation Example.....	9
3 Test Result	10
3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement	10
3.2 Maximum Conducted Output Power Measurement	13
3.3 Power Spectral Density Measurement	14
3.4 Unwanted Emissions Measurement.....	16
3.5 AC Conducted Emission Measurement.....	20
3.6 Automatically Discontinue Transmission	22
3.7 Antenna Requirements.....	23
4 List of Measuring Equipment.....	24
5 Uncertainty of Evaluation	26
Appendix A. Conducted Test Results	
Appendix B. AC Conducted Emission Test Result	
Appendix C. Radiated Spurious Emission	
Appendix D. Radiated Spurious Emission Plots	
Appendix E. Duty Cycle Plots	
Appendix F. Setup Photographs	



History of this test report

Report No.	Version	Description	Issued Date
FR0N2651E	01	Initial issue of report	Mar. 05, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	Under limit 6.39 dB at 93.450 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 5.60 dB at 0.544 MHz
3.6	15.407(c)	Automatically Discontinue Transmission	Pass	-
3.7	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:

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

Comments and Explanations:

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

Reviewed by: Wii Chang

Report Producer: Tina Chuang



1 General Description

1.1 Product Feature of Equipment Under Test

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

Product Specification subjective to this standard		
Antenna Type	WLAN: PIFA Antenna	
	Bluetooth: PIFA Antenna	
	GPS / Glonass: PIFA Antenna	
Antenna information		
5725 MHz ~ 5850 MHz	Peak Gain (dBi)	0.21

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

1.2 Modification of EUT

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

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. TH05-HY, CO05-HY, 03CH07-HY

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

1.4 Applicable Standards

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

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

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.

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, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded 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	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note: The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40

2.2 Test Mode

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

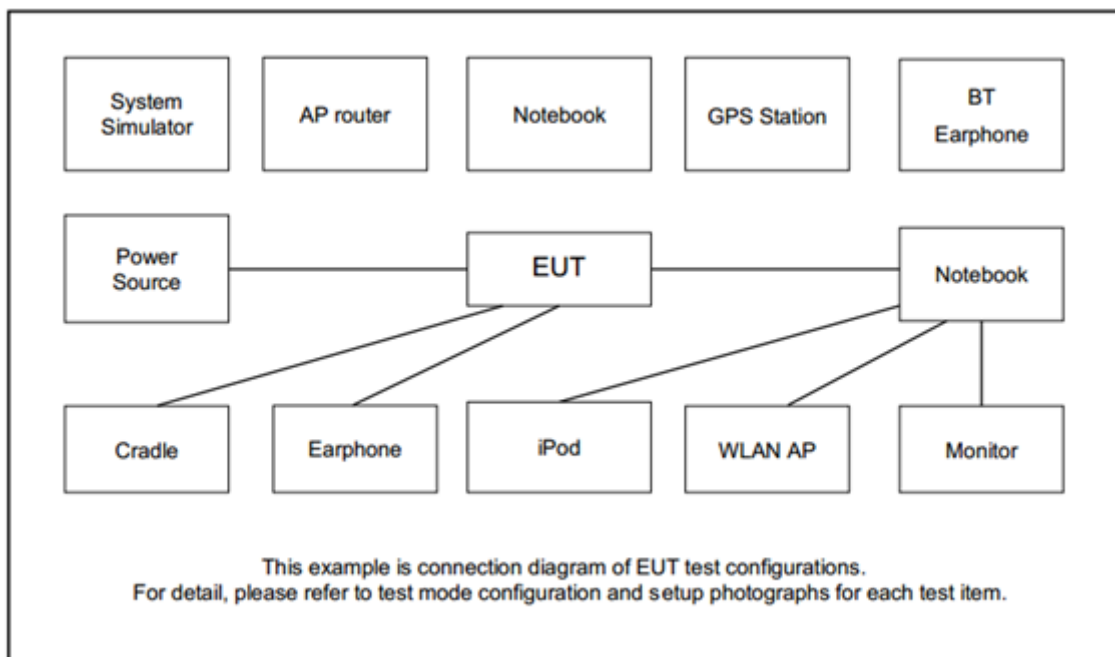
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20 (Covered by HT20)	MCS0
802.11ac VHT40 (Covered by HT40)	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :Bluetooth Link + WLAN (5GHz) Link + H-Pattern + Earphone + SD Card + USB Cable (Charging from AC Adapter)

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	-

Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
4.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, 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 10dB attenuator.

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

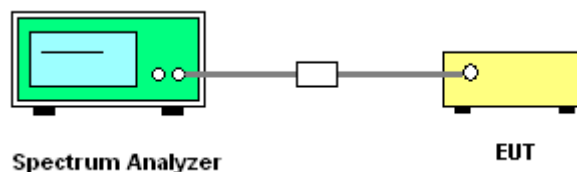
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

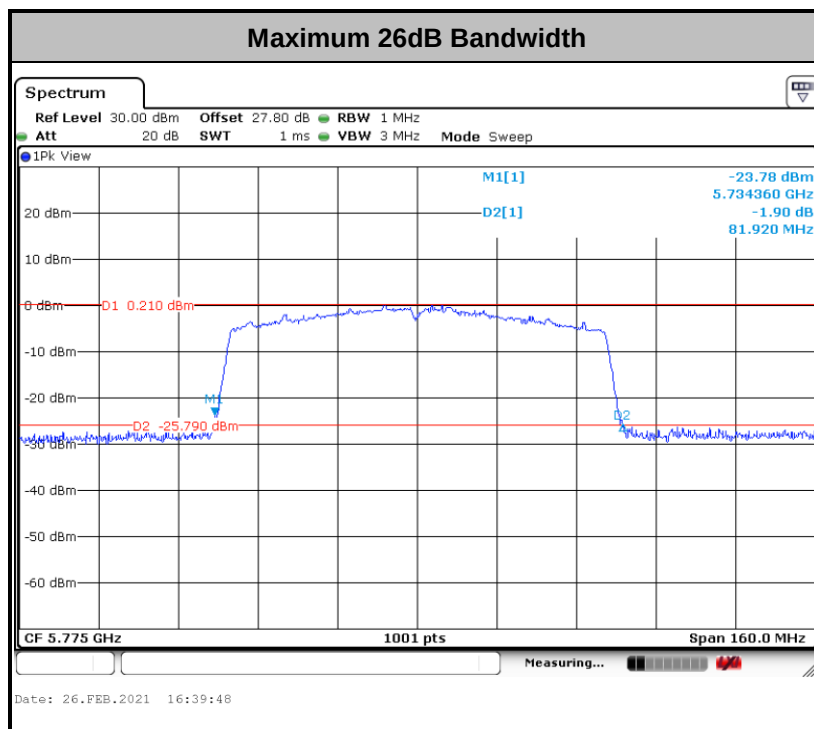
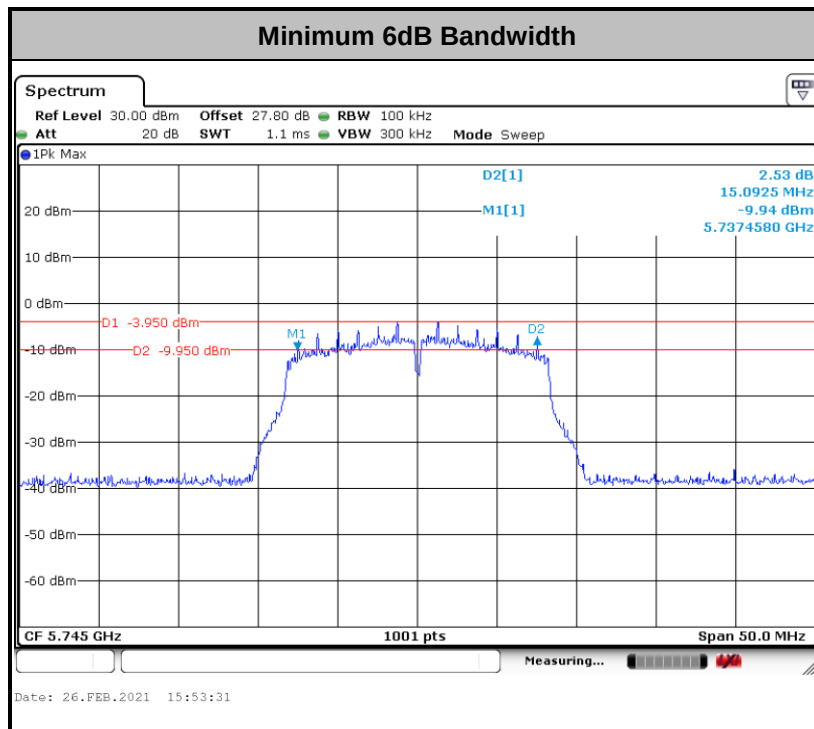
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is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

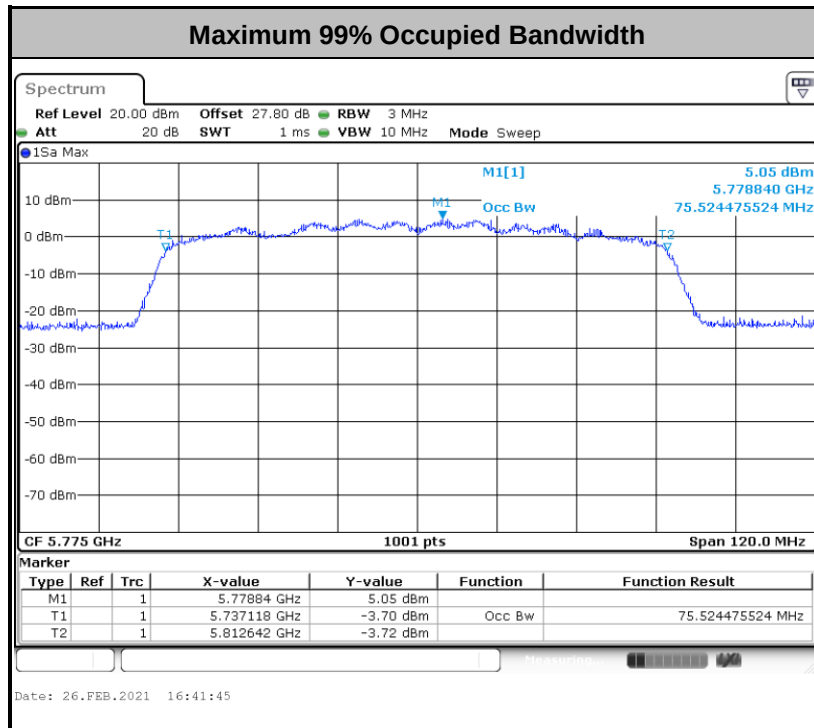
3.1.4 Test Setup



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

Please refer to Appendix A.





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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

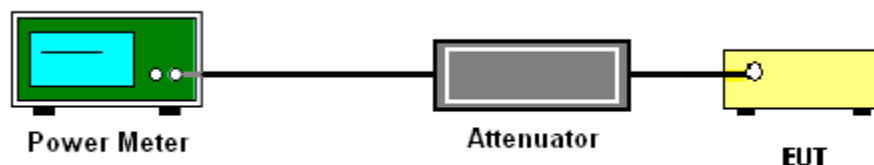
3.2.3 Test Procedures

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

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

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

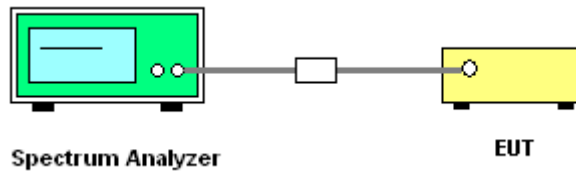
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section F) Maximum power spectral density.

Method SA-3

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

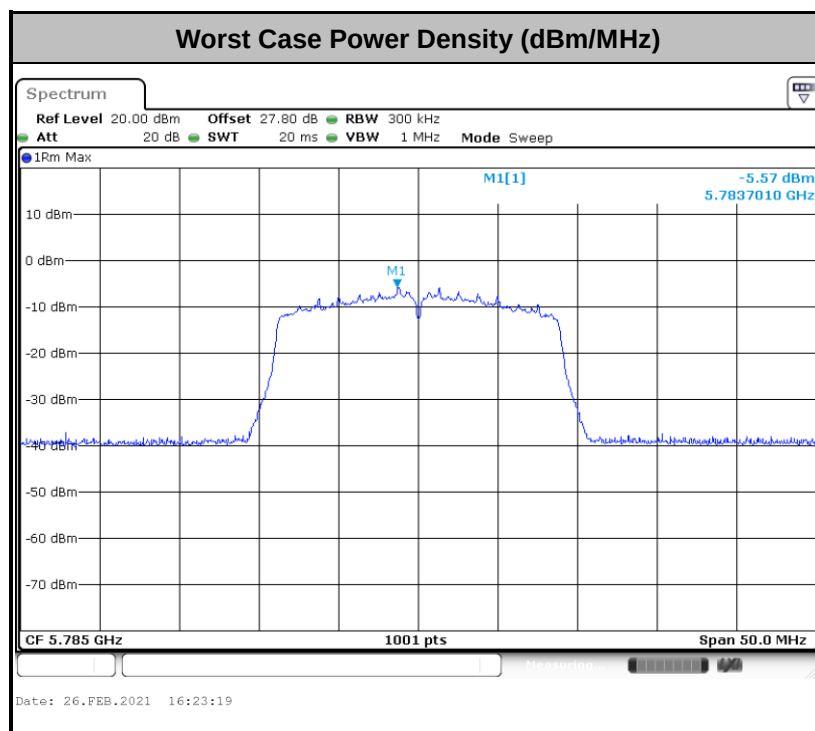
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time $\leq$ (number of points in sweep) $\times$ T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Detector = power averaging (rms).
 - Trace mode = max hold.
 - Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

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

<Limit of Unwanted Emissions>

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

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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

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

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

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

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

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

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

3.4.1 Measuring Instruments

See list of measuring equipment of this test report.

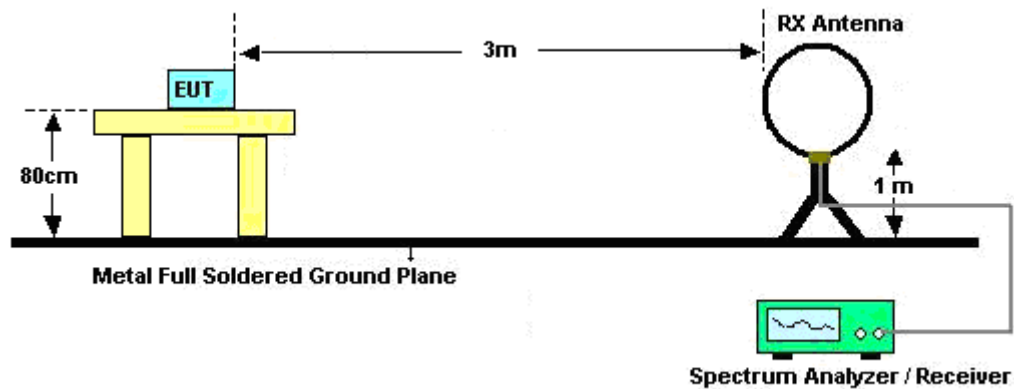
3.4.2 Test Procedures

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 1000MHz
 - 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 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.

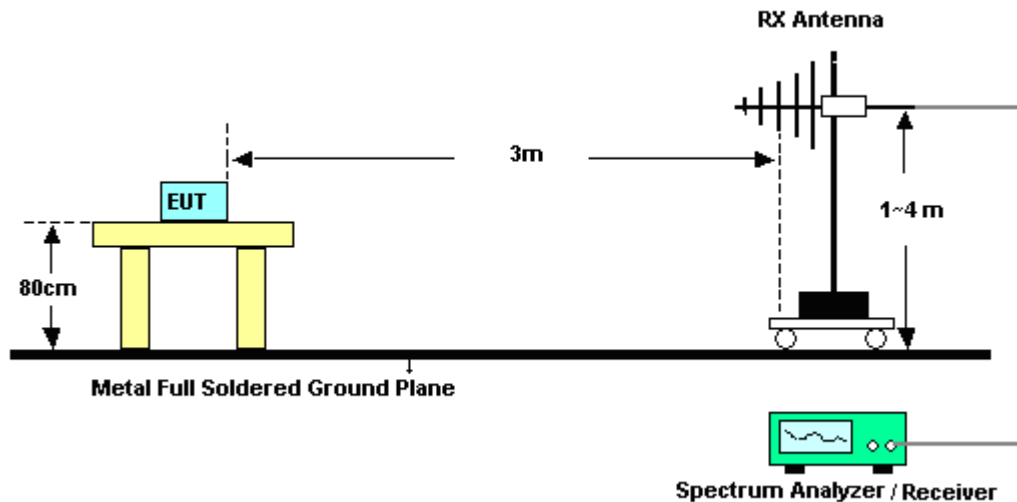
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.3 Test Setup

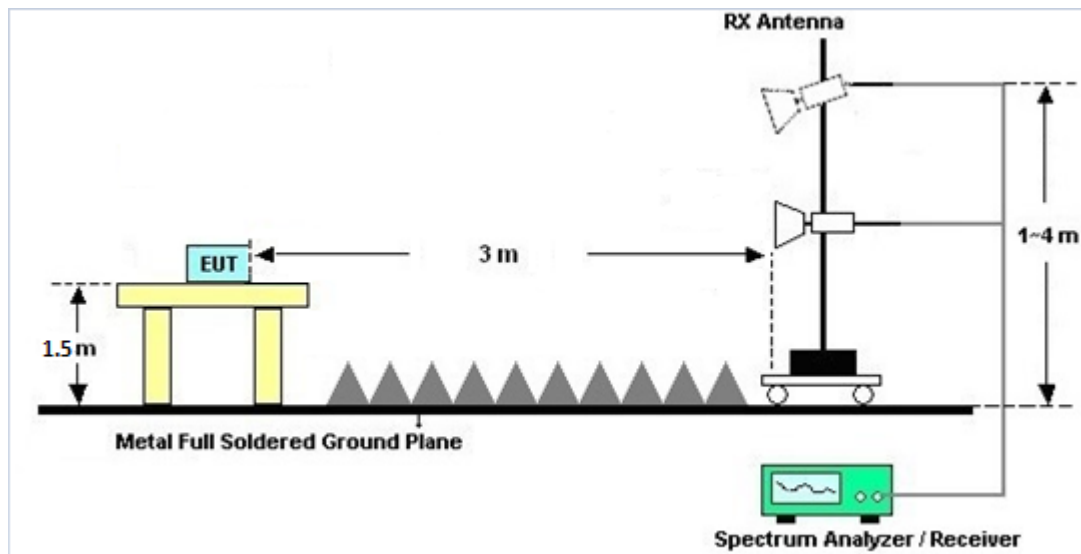
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated test above 1GHz



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

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

There is a comparison data 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.

3.4.5 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.6 Duty Cycle

Please refer to Appendix E.

3.4.7 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.

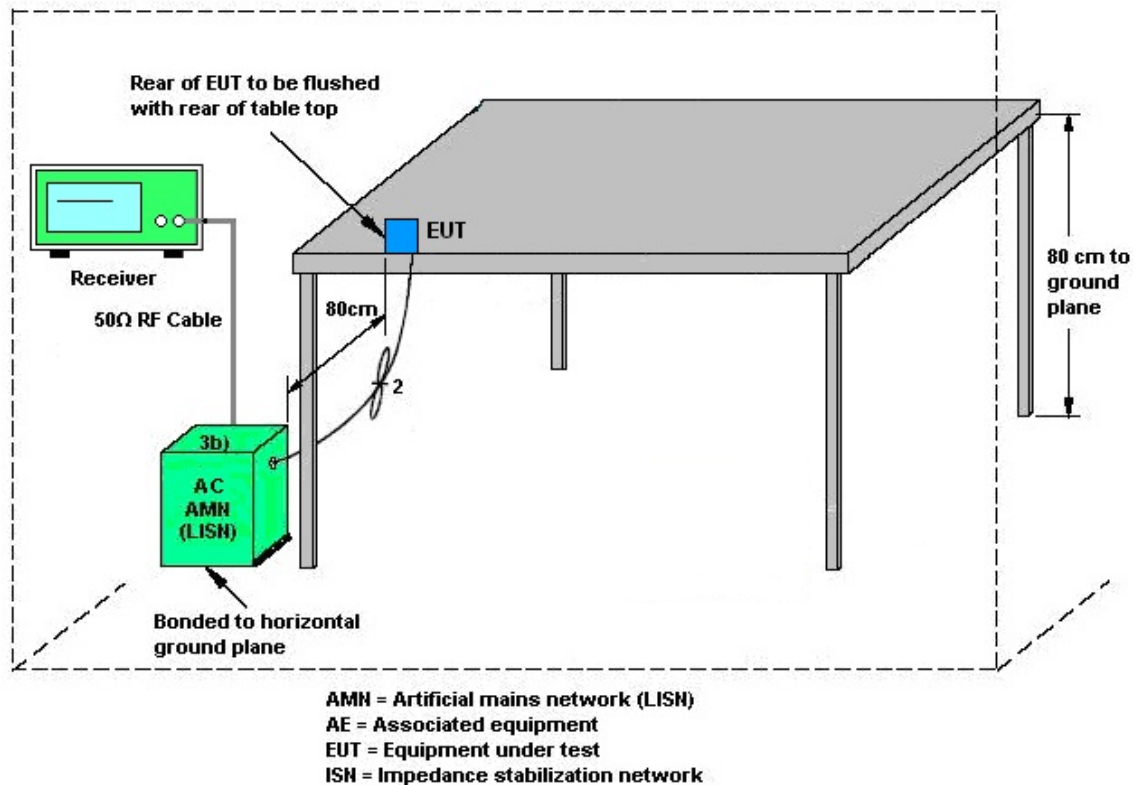
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 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	100488	9 kHz~30 MHz	Jul. 14, 2020	Dec. 25, 2020~ Dec. 28, 2020	Jul. 13, 2021	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 29, 2020	Dec. 13, 2020~ Dec. 28, 2020	Apr. 28, 2021	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 01, 2020	Dec. 13, 2020~ Dec. 28, 2020	Nov. 30, 2021	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Dec. 02, 2020	Dec. 13, 2020~ Dec. 28, 2020	Dec. 01, 2021	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 21, 2020	Dec. 13, 2020~ Dec. 28, 2020	May 20, 2021	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jun. 09, 2020	Dec. 13, 2020~ Dec. 28, 2020	Jun. 08, 2021	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 19, 2020	Dec. 13, 2020~ Dec. 28, 2020	May 18, 2021	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 23, 2020	Dec. 13, 2020~ Dec. 28, 2020	Apr. 22, 2021	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 31, 2020	Dec. 13, 2020~ Dec. 28, 2020	Oct. 30, 2021	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 15, 2020	Dec. 13, 2020~ Dec. 28, 2020	Jun. 14, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2,80 1606/2	18GHz~40GHz	Feb. 25, 2020	Dec. 13, 2020~ Dec. 28, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4, MY28655/4	9kHz~30MHz	Feb. 25, 2020	Dec. 13, 2020~ Dec. 28, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 25, 2020	Dec. 13, 2020~ Dec. 28, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 25, 2020	Dec. 13, 2020~ Dec. 28, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801606/2	9KHz ~ 40GHz	N/A	Dec. 13, 2020~ Dec. 28, 2020	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Dec. 13, 2020~ Dec. 28, 2020	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Dec. 13, 2020~ Dec. 28, 2020	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	N/A	Dec. 13, 2020~ Dec. 28, 2020	N/A	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Dec. 13, 2020~ Dec. 28, 2020	N/A	Radiation (03CH07-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Dec. 08, 2020~ Feb. 26, 2021	Mar. 01, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SN O09	10MHz~6GHz	Jan. 22, 2020	Dec. 08, 2020~ Jan. 05, 2021	Jan. 21, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SN O09	10MHz~6GHz	Jan. 06, 2021	Jan. 06, 2021~ Feb. 26, 2021	Jan. 05, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz ~ 40GHz	Jul. 22, 2020	Dec. 08, 2020~ Feb. 26, 2021	Jul. 21, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2020	Dec. 08, 2020~ Feb. 26, 2021	Mar. 16, 2021	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 14, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 11, 2020	Dec. 14, 2020	Sep. 10, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Dec. 14, 2020	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Dec. 14, 2020	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Dec. 14, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Dec. 14, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Dec. 14, 2020	Jan. 01, 2021	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3
---	-----

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7
---	-----

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.3
---	-----

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0
---	-----

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Eason Huang / Rebecca Li	Temperature:	21~25	°C
Test Date:	2020/12/08~2021/2/26	Relative Humidity:	51~54	%

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	16.98	-	21.35	-	15.09	-	0.5	Pass
11a	6Mbps	1	157	5785	16.98	-	21.30	-	15.14	-	0.5	Pass
11a	6Mbps	1	165	5825	16.98	-	21.60	-	15.09	-	0.5	Pass
HT20	MCS0	1	149	5745	17.73	-	21.60	-	15.09	-	0.5	Pass
HT20	MCS0	1	157	5785	17.73	-	21.55	-	15.14	-	0.5	Pass
HT20	MCS0	1	165	5825	17.73	-	21.45	-	15.14	-	0.5	Pass
HT40	MCS0	1	151	5755	36.66	-	42.12	-	34.99	-	0.5	Pass
HT40	MCS0	1	159	5795	36.76	-	42.03	-	35.01	-	0.5	Pass
VHT80	MCS0	1	155	5775	75.52	-	81.92	-	75.16	-	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	7.00	-		30.00	-	0.21	-	Pass
11a	6Mbps	1	157	5785	7.00	-		30.00	-	0.21	-	Pass
11a	6Mbps	1	165	5825	6.90	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	149	5745	6.90	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	157	5785	6.90	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	165	5825	6.80	-		30.00	-	0.21	-	Pass
HT40	MCS0	1	151	5755	6.90	-		30.00	-	0.21	-	Pass
HT40	MCS0	1	159	5795	6.90	-		30.00	-	0.21	-	Pass
VHT20	MCS0	1	149	5745	6.80	-		30.00	-	0.21	-	Pass
VHT20	MCS0	1	157	5785	6.80	-		30.00	-	0.21	-	Pass
VHT20	MCS0	1	165	5825	6.70	-		30.00	-	0.21	-	Pass
VHT40	MCS0	1	151	5755	6.80	-		30.00	-	0.21	-	Pass
VHT40	MCS0	1	159	5795	6.80	-		30.00	-	0.21	-	Pass
VHT80	MCS0	1	155	5775	6.80	-		30.00	-	0.21	-	Pass

TEST RESULTS DATA
Power Spectral Density

Band IV single antenna														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	2.22	-	-3.97	-		30.00	-	0.21	-	Pass
11a	6Mbps	1	157	5785	2.22	-	-3.78	-		30.00	-	0.21	-	Pass
11a	6Mbps	1	165	5825	2.22	-	-3.90	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	149	5745	2.22	-	-3.59	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	157	5785	2.22	-	-3.35	-		30.00	-	0.21	-	Pass
HT20	MCS0	1	165	5825	2.22	-	-3.78	-		30.00	-	0.21	-	Pass
HT40	MCS0	1	151	5755	2.22	-	-6.10	-		30.00	-	0.21	-	Pass
HT40	MCS0	1	159	5795	2.22	-	-6.54	-		30.00	-	0.21	-	Pass
VHT80	MCS0	1	155	5775	2.22	-	-9.58	-		30.00	-	0.21	-	Pass



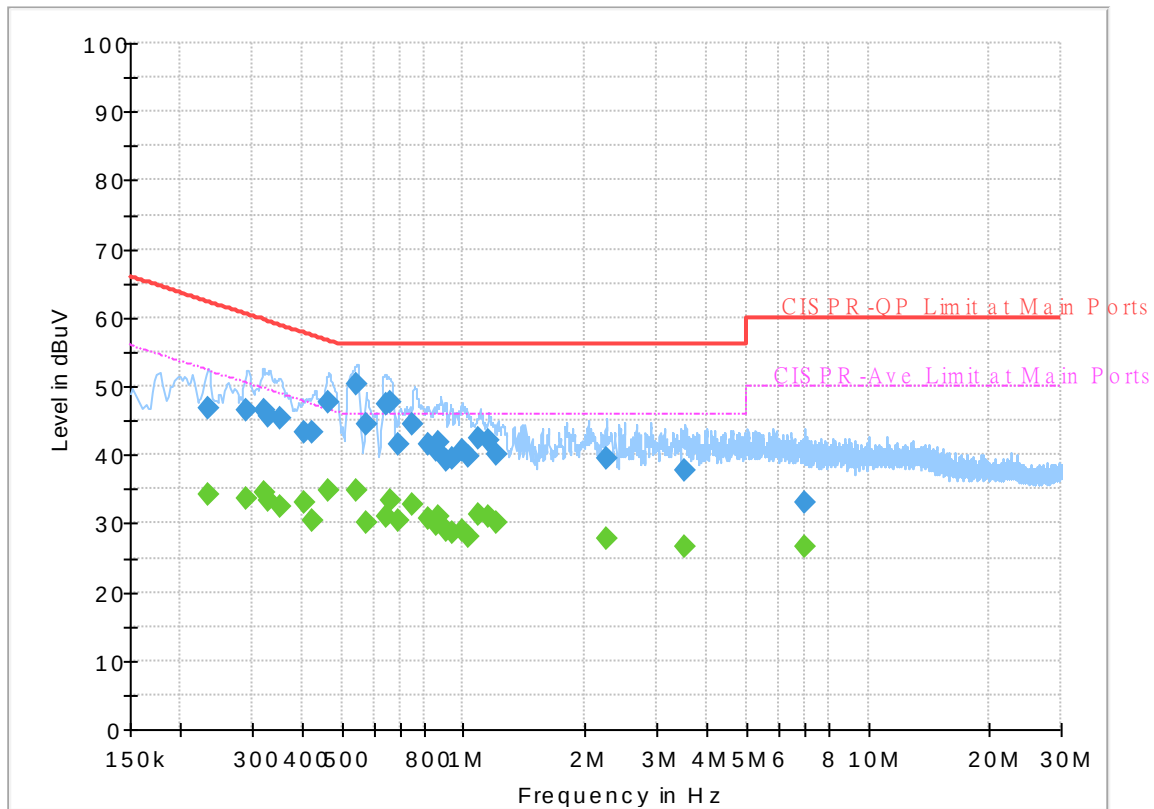
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	Temperature :	24~26℃
		Relative Humidity :	40~50%

EUT Information

Report NO : 0N2651
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



Final Result

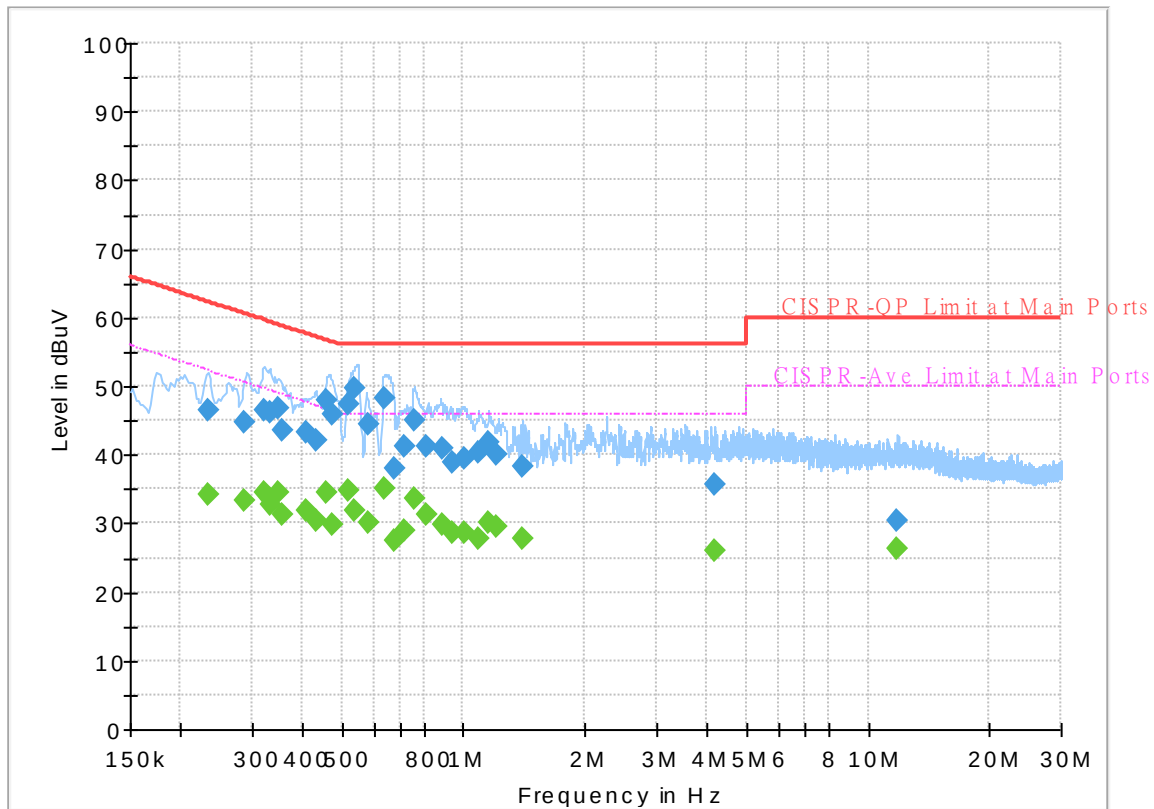
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.233250	---	34.31	52.33	18.02	L1	OFF	19.5
0.233250	46.65	---	62.33	15.68	L1	OFF	19.5
0.289770	---	33.59	50.53	16.94	L1	OFF	19.5
0.289770	46.38	---	60.53	14.15	L1	OFF	19.5
0.321270	---	34.58	49.67	15.09	L1	OFF	19.5
0.321270	46.42	---	59.67	13.25	L1	OFF	19.5
0.327750	---	33.39	49.51	16.12	L1	OFF	19.5
0.327750	45.52	---	59.51	13.99	L1	OFF	19.5
0.351960	---	32.57	48.92	16.35	L1	OFF	19.5
0.351960	45.20	---	58.92	13.72	L1	OFF	19.5
0.404250	---	32.90	47.77	14.87	L1	OFF	19.5
0.404250	43.34	---	57.77	14.43	L1	OFF	19.5
0.424500	---	30.52	47.36	16.84	L1	OFF	19.5
0.424500	43.42	---	57.36	13.94	L1	OFF	19.5
0.462660	---	34.66	46.65	11.99	L1	OFF	19.5
0.462660	47.64	---	56.65	9.01	L1	OFF	19.5
0.543750	---	34.90	46.00	11.10	L1	OFF	19.6
0.543750	50.40	---	56.00	5.60	L1	OFF	19.6
0.578220	---	30.09	46.00	15.91	L1	OFF	19.6
0.578220	44.53	---	56.00	11.47	L1	OFF	19.6
0.644370	---	31.00	46.00	15.00	L1	OFF	19.6

0.644370	47.32	---	56.00	8.68	L1	OFF	19.6
0.663000	---	33.21	46.00	12.79	L1	OFF	19.6
0.663000	47.80	---	56.00	8.20	L1	OFF	19.6
0.694140	---	30.30	46.00	15.70	L1	OFF	19.6
0.694140	41.42	---	56.00	14.58	L1	OFF	19.6
0.750750	---	32.79	46.00	13.21	L1	OFF	19.6
0.750750	44.42	---	56.00	11.58	L1	OFF	19.6
0.818250	---	30.62	46.00	15.38	L1	OFF	19.6
0.818250	41.45	---	56.00	14.55	L1	OFF	19.6
0.856770	---	29.68	46.00	16.32	L1	OFF	19.6
0.856770	40.51	---	56.00	15.49	L1	OFF	19.6
0.870810	---	31.07	46.00	14.93	L1	OFF	19.6
0.870810	41.86	---	56.00	14.14	L1	OFF	19.6
0.905730	---	28.89	46.00	17.11	L1	OFF	19.6
0.905730	39.31	---	56.00	16.69	L1	OFF	19.6
0.935250	---	28.71	46.00	17.29	L1	OFF	19.6
0.935250	39.37	---	56.00	16.63	L1	OFF	19.6
0.989430	---	28.99	46.00	17.01	L1	OFF	19.6
0.989430	40.64	---	56.00	15.36	L1	OFF	19.6
1.026780	---	27.96	46.00	18.04	L1	OFF	19.6
1.026780	39.71	---	56.00	16.29	L1	OFF	19.6
1.094730	---	31.36	46.00	14.64	L1	OFF	19.6
1.094730	42.36	---	56.00	13.64	L1	OFF	19.6
1.153230	---	31.06	46.00	14.94	L1	OFF	19.6
1.153230	42.11	---	56.00	13.89	L1	OFF	19.6
1.212900	---	30.15	46.00	15.85	L1	OFF	19.6
1.212900	40.19	---	56.00	15.81	L1	OFF	19.6
2.256000	---	27.85	46.00	18.15	L1	OFF	19.7
2.256000	39.40	---	56.00	16.60	L1	OFF	19.7
3.534000	---	26.55	46.00	19.45	L1	OFF	19.7
3.534000	37.60	---	56.00	18.40	L1	OFF	19.7
6.951750	---	26.68	50.00	23.32	L1	OFF	19.9
6.951750	33.17	---	60.00	26.83	L1	OFF	19.9

EUT Information

Report NO : 0N2651
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)
0.234060	---	34.21	52.30	18.09	N	OFF	19.6
0.234060	46.38	---	62.30	15.92	N	OFF	19.6
0.287250	---	33.40	50.60	17.20	N	OFF	19.6
0.287250	44.78	---	60.60	15.82	N	OFF	19.6
0.321720	---	34.46	49.66	15.20	N	OFF	19.6
0.321720	46.47	---	59.66	13.19	N	OFF	19.6
0.331800	---	32.84	49.41	16.57	N	OFF	19.6
0.331800	46.15	---	59.41	13.26	N	OFF	19.6
0.347190	---	34.60	49.03	14.43	N	OFF	19.6
0.347190	46.76	---	59.03	12.27	N	OFF	19.6
0.357000	---	31.22	48.80	17.58	N	OFF	19.6
0.357000	43.55	---	58.80	15.25	N	OFF	19.6
0.408840	---	31.76	47.67	15.91	N	OFF	19.6
0.408840	43.13	---	57.67	14.54	N	OFF	19.6
0.435120	---	30.52	47.15	16.63	N	OFF	19.6
0.435120	42.03	---	57.15	15.12	N	OFF	19.6
0.460770	---	34.56	46.68	12.12	N	OFF	19.6
0.460770	47.90	---	56.68	8.78	N	OFF	19.6
0.476250	---	29.77	46.40	16.63	N	OFF	19.6
0.476250	45.83	---	56.40	10.57	N	OFF	19.6
0.519000	---	34.85	46.00	11.15	N	OFF	19.6

0.519000	47.40	---	56.00	8.60	N	OFF	19.6
0.539250	---	31.77	46.00	14.23	N	OFF	19.6
0.539250	49.59	---	56.00	6.41	N	OFF	19.6
0.579480	---	30.24	46.00	15.76	N	OFF	19.6
0.579480	44.36	---	56.00	11.64	N	OFF	19.6
0.638430	---	35.04	46.00	10.96	N	OFF	19.6
0.638430	48.14	---	56.00	7.86	N	OFF	19.6
0.673440	---	27.36	46.00	18.64	N	OFF	19.6
0.673440	37.89	---	56.00	18.11	N	OFF	19.6
0.717630	---	28.89	46.00	17.11	N	OFF	19.6
0.717630	41.28	---	56.00	14.72	N	OFF	19.6
0.756420	---	33.67	46.00	12.33	N	OFF	19.6
0.756420	45.03	---	56.00	10.97	N	OFF	19.6
0.811500	---	31.22	46.00	14.78	N	OFF	19.6
0.811500	41.11	---	56.00	14.89	N	OFF	19.6
0.883500	---	29.86	46.00	16.14	N	OFF	19.6
0.883500	40.94	---	56.00	15.06	N	OFF	19.6
0.935520	---	28.64	46.00	17.36	N	OFF	19.6
0.935520	39.01	---	56.00	16.99	N	OFF	19.6
1.000950	---	28.60	46.00	17.40	N	OFF	19.6
1.000950	39.58	---	56.00	16.42	N	OFF	19.6
1.088250	---	27.67	46.00	18.33	N	OFF	19.6
1.088250	40.45	---	56.00	15.55	N	OFF	19.6
1.152150	---	30.17	46.00	15.83	N	OFF	19.6
1.152150	41.88	---	56.00	14.12	N	OFF	19.6
1.212000	---	29.42	46.00	16.58	N	OFF	19.6
1.212000	40.02	---	56.00	15.98	N	OFF	19.6
1.392270	---	27.66	46.00	18.34	N	OFF	19.6
1.392270	38.32	---	56.00	17.68	N	OFF	19.6
4.175250	---	26.01	46.00	19.99	N	OFF	19.7
4.175250	35.75	---	56.00	20.25	N	OFF	19.7
11.852520	---	26.26	50.00	23.74	N	OFF	20.1
11.852520	30.50	---	60.00	29.50	N	OFF	20.1



Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh, Ken Wu	Temperature :	21 ~ 23°C
		Relative Humidity :	49 ~ 53%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5635.8	49.39	-18.81	68.2	37.84	34.6	12.1	35.15	100	58	P	H
		5695.4	50.15	-51.66	101.81	38.41	34.7	12.2	35.16	100	58	P	H
		5719.2	64.17	-46.41	110.58	52.39	34.7	12.24	35.16	100	58	P	H
		5723.8	66.68	-52.78	119.46	54.9	34.7	12.24	35.16	100	58	P	H
	*	5745	108.18	-	-	96.37	34.7	12.28	35.17	100	58	P	H
	*	5745	100.88	-	-	89.07	34.7	12.28	35.17	100	58	A	H
													H
													H
		5610.2	47.55	-20.65	68.2	35.83	34.8	12.06	35.14	105	54	P	V
		5698.6	48.15	-56.02	104.17	36.41	34.7	12.2	35.16	105	54	P	V
		5717.2	53.05	-56.97	110.02	41.28	34.7	12.23	35.16	105	54	P	V
		5724.8	61.27	-60.47	121.74	49.48	34.7	12.25	35.16	105	54	P	V
	*	5745	100.47	-	-	88.66	34.7	12.28	35.17	105	54	P	V
	*	5745	92.26	-	-	80.45	34.7	12.28	35.17	105	54	A	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5628.4	49.23	-18.97	68.2	37.59	34.7	12.09	35.15	101	57	P	H
		5698.6	51.52	-52.65	104.17	39.78	34.7	12.2	35.16	101	57	P	H
		5717.4	49.21	-60.86	110.07	37.44	34.7	12.23	35.16	101	57	P	H
		5720.4	49.67	-62.04	111.71	37.89	34.7	12.24	35.16	101	57	P	H
	*	5785	108.24	-	-	96.29	34.77	12.35	35.17	101	57	P	H
	*	5785	100.83	-	-	88.88	34.77	12.35	35.17	101	57	A	H
		5850.8	52.37	-68.01	120.38	40.25	34.9	12.4	35.18	101	57	P	H
		5858.6	52.39	-57.4	109.79	40.28	34.9	12.4	35.19	101	57	P	H
		5917.4	52.19	-21.61	73.8	40.03	34.93	12.43	35.2	101	57	P	H
		5934.6	51.2	-17	68.2	38.99	34.97	12.44	35.2	101	57	P	H
													H
													H
		5644	48.76	-19.44	68.2	37.2	34.6	12.11	35.15	107	56	P	V
		5667	47.93	-32.89	80.82	36.33	34.6	12.15	35.15	107	56	P	V
		5710.6	47.71	-60.46	108.17	35.95	34.7	12.22	35.16	107	56	P	V
		5720.2	47.57	-63.69	111.26	35.79	34.7	12.24	35.16	107	56	P	V
	*	5785	99.75	-	-	87.8	34.77	12.35	35.17	107	56	P	V
	*	5785	92.39	-	-	80.44	34.77	12.35	35.17	107	56	A	V
		5851.2	48.08	-71.38	119.46	35.96	34.9	12.4	35.18	107	56	P	V
		5856.4	49.37	-61.04	110.41	37.25	34.9	12.4	35.18	107	56	P	V
		5875.8	50.23	-54.38	104.61	38.11	34.9	12.41	35.19	107	56	P	V
		5927.8	48.93	-19.27	68.2	36.73	34.97	12.43	35.2	107	56	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	106.87	-	-	94.8	34.87	12.38	35.18	100	57	P	H
	*	5825	99.12	-	-	87.05	34.87	12.38	35.18	100	57	A	H
		5850	65.16	-57.04	122.2	53.04	34.9	12.4	35.18	100	57	P	H
		5861.4	60.12	-48.89	109.01	48.01	34.9	12.4	35.19	100	57	P	H
		5876.2	50.94	-53.37	104.31	38.82	34.9	12.41	35.19	100	57	P	H
		5938.4	50.91	-17.29	68.2	38.7	34.97	12.44	35.2	100	57	P	H
													H
													H
	*	5825	99.69	-	-	87.62	34.87	12.38	35.18	120	6	P	V
	*	5825	92.13	-	-	80.06	34.87	12.38	35.18	120	6	A	V
		5852.6	54.95	-61.32	116.27	42.83	34.9	12.4	35.18	120	6	P	V
		5855.2	52.6	-58.14	110.74	40.48	34.9	12.4	35.18	120	6	P	V
		5882.6	49.75	-49.81	99.56	37.63	34.9	12.41	35.19	120	6	P	V
		5931.4	50.36	-17.84	68.2	38.15	34.97	12.44	35.2	120	6	P	V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	44.5	-29.5	74	45.32	38.18	18.52	57.52	100	0	P	H
		17235	51.45	-16.75	68.2	43.35	41.43	22.98	56.31	100	0	P	H
													H
													H
		11490	44.43	-29.57	74	45.25	38.18	18.52	57.52	100	0	P	V
		17235	50.42	-17.78	68.2	42.32	41.43	22.98	56.31	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	44.06	-29.94	74	44.48	38.33	18.59	57.34	100	0	P	H
		17355	50.08	-18.12	68.2	41.83	41.55	23.05	56.35	100	0	P	H
													H
													H
		11570	44.73	-29.27	74	45.15	38.33	18.59	57.34	100	0	P	V
		17355	51.5	-16.7	68.2	43.25	41.55	23.05	56.35	100	0	P	V
													V
													V
802.11a CH 165 5825MHz		11650	44.66	-29.34	74	44.66	38.48	18.67	57.15	100	0	P	H
		17475	49.18	-19.02	68.2	40.78	41.67	23.11	56.38	100	0	P	H
													H
													H
		11650	45.17	-28.83	74	45.17	38.48	18.67	57.15	100	0	P	V
		17475	48.94	-19.26	68.2	40.54	41.67	23.11	56.38	100	0	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 (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		5612.4	50.74	-17.46	68.2	39.02	34.8	12.06	35.14	100	58	P	H
		5694.8	49.2	-52.17	101.37	37.46	34.7	12.2	35.16	100	58	P	H
		5719	67.23	-43.29	110.52	55.45	34.7	12.24	35.16	100	58	P	H
		5724.2	67.82	-52.56	120.38	56.04	34.7	12.24	35.16	100	58	P	H
	*	5745	106.58	-	-	94.77	34.7	12.28	35.17	100	58	P	H
	*	5745	99.21	-	-	87.4	34.7	12.28	35.17	100	58	A	H
													H
													H
		5624.8	48.54	-19.66	68.2	36.9	34.7	12.08	35.14	101	5	P	V
		5664	48.37	-30.22	78.59	36.87	34.5	12.15	35.15	101	5	P	V
		5717.4	54.8	-55.27	110.07	43.03	34.7	12.23	35.16	101	5	P	V
		5722.6	56.83	-59.9	116.73	45.05	34.7	12.24	35.16	101	5	P	V
	*	5745	99.64	-	-	87.83	34.7	12.28	35.17	101	5	P	V
	*	5745	91.86	-	-	80.05	34.7	12.28	35.17	101	5	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		5642.8	48.17	-20.03	68.2	36.61	34.6	12.11	35.15	100	58	P	H
		5692	50.08	-49.22	99.3	38.35	34.7	12.19	35.16	100	58	P	H
		5714.2	48.94	-60.24	109.18	37.17	34.7	12.23	35.16	100	58	P	H
		5720	48.4	-62.4	110.8	36.62	34.7	12.24	35.16	100	58	P	H
	*	5785	106.44	-	-	94.49	34.77	12.35	35.17	100	58	P	H
	*	5785	98.64	-	-	86.69	34.77	12.35	35.17	100	58	A	H
		5854.6	50.15	-61.56	111.71	38.03	34.9	12.4	35.18	100	58	P	H
		5864.6	51.14	-56.97	108.11	39.03	34.9	12.4	35.19	100	58	P	H
		5914	50.9	-25.41	76.31	38.74	34.93	12.43	35.2	100	58	P	H
		5930.8	50.33	-17.87	68.2	38.12	34.97	12.44	35.2	100	58	P	H
													H
													H
		5611.6	48.68	-19.52	68.2	36.96	34.8	12.06	35.14	111	5	P	V
		5689.4	49.2	-48.18	97.38	37.47	34.7	12.19	35.16	111	5	P	V
		5719.2	47.51	-63.07	110.58	35.73	34.7	12.24	35.16	111	5	P	V
		5721	46.26	-66.82	113.08	34.48	34.7	12.24	35.16	111	5	P	V
	*	5785	100	-	-	88.05	34.77	12.35	35.17	111	5	P	V
	*	5785	91.96	-	-	80.01	34.77	12.35	35.17	111	5	A	V
		5852.6	48.42	-67.85	116.27	36.3	34.9	12.4	35.18	111	5	P	V
		5857.6	48.43	-61.64	110.07	36.31	34.9	12.4	35.18	111	5	P	V
		5904	49.41	-34.29	83.7	37.28	34.9	12.42	35.19	111	5	P	V
		5933.8	49.98	-18.22	68.2	37.77	34.97	12.44	35.2	111	5	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	107.09	-	-	95.02	34.87	12.38	35.18	100	57	P	H
	*	5825	99.32	-	-	87.25	34.87	12.38	35.18	100	57	A	H
		5850.2	70.97	-50.77	121.74	58.85	34.9	12.4	35.18	100	57	P	H
		5855.2	62.98	-47.76	110.74	50.86	34.9	12.4	35.18	100	57	P	H
		5914.6	51.74	-24.13	75.87	39.58	34.93	12.43	35.2	100	57	P	H
		5935.2	51.33	-16.87	68.2	39.12	34.97	12.44	35.2	100	57	P	H
													H
													H
	*	5825	100.74	-	-	88.67	34.87	12.38	35.18	120	6	P	V
	*	5825	91.87	-	-	79.8	34.87	12.38	35.18	120	6	A	V
		5851.6	58.14	-60.41	118.55	46.02	34.9	12.4	35.18	120	6	P	V
		5864	56.12	-52.16	108.28	44.01	34.9	12.4	35.19	120	6	P	V
		5878.2	50.2	-52.62	102.82	38.08	34.9	12.41	35.19	120	6	P	V
		5934.2	49.6	-18.6	68.2	37.39	34.97	12.44	35.2	120	6	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	44.24	-29.76	74	45.06	38.18	18.52	57.52	100	0	P	H
		17235	49.27	-18.93	68.2	41.17	41.43	22.98	56.31	100	0	P	H
													H
													H
		11490	44.81	-29.19	74	45.63	38.18	18.52	57.52	100	0	P	V
		17235	50.19	-18.01	68.2	42.09	41.43	22.98	56.31	100	0	P	V
													V
													V
802.11n HT20 CH 157 5785MHz		11570	44.29	-29.71	74	44.71	38.33	18.59	57.34	100	0	P	H
		17355	50.49	-17.71	68.2	42.24	41.55	23.05	56.35	100	0	P	H
													H
													H
		11570	45.54	-28.46	74	45.96	38.33	18.59	57.34	100	0	P	V
		17355	49.5	-18.7	68.2	41.25	41.55	23.05	56.35	100	0	P	V
													V
													V
802.11n HT20 CH 165 5825MHz		11650	45.15	-28.85	74	45.15	38.48	18.67	57.15	100	0	P	H
		17475	49.46	-18.74	68.2	41.06	41.67	23.11	56.38	100	0	P	H
													H
													H
		11650	44.69	-29.31	74	44.69	38.48	18.67	57.15	100	0	P	V
		17475	48.98	-19.22	68.2	40.58	41.67	23.11	56.38	100	0	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 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		5645	50.1	-18.1	68.2	38.54	34.6	12.11	35.15	100	58	P	H
		5697	62.59	-40.4	102.99	50.85	34.7	12.2	35.16	100	58	P	H
		5712.4	65	-43.67	108.67	53.23	34.7	12.23	35.16	100	58	P	H
		5724.6	73.31	-47.98	121.29	61.52	34.7	12.25	35.16	100	58	P	H
	*	5755	103.26	-	-	91.4	34.73	12.3	35.17	100	58	P	H
	*	5755	95.76	-	-	83.9	34.73	12.3	35.17	100	58	A	H
		5854.6	52.01	-59.7	111.71	39.89	34.9	12.4	35.18	100	58	P	H
		5857.2	51.54	-58.64	110.18	39.42	34.9	12.4	35.18	100	58	P	H
		5889.6	51.21	-43.15	94.36	39.09	34.9	12.41	35.19	100	58	P	H
		5931.4	52.66	-15.54	68.2	40.45	34.97	12.44	35.2	100	58	P	H
													H
													H
		5648	47.86	-20.34	68.2	36.29	34.6	12.12	35.15	163	5	P	V
		5695.6	53.83	-48.13	101.96	42.09	34.7	12.2	35.16	163	5	P	V
		5713	59.76	-49.08	108.84	47.99	34.7	12.23	35.16	163	5	P	V
		5724	63.84	-56.08	119.92	52.06	34.7	12.24	35.16	163	5	P	V
	*	5755	96.32	-	-	84.46	34.73	12.3	35.17	163	5	P	V
	*	5755	89.26	-	-	77.4	34.73	12.3	35.17	163	5	A	V
		5852	48.5	-69.14	117.64	36.38	34.9	12.4	35.18	163	5	P	V
		5860.2	49.93	-59.41	109.34	37.82	34.9	12.4	35.19	163	5	P	V
		5908.4	50.17	-30.28	80.45	38.01	34.93	12.42	35.19	163	5	P	V
		5926.4	49.8	-18.4	68.2	37.6	34.97	12.43	35.2	163	5	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		5631.8	48.46	-19.74	68.2	36.82	34.7	12.09	35.15	100	61	P	H
		5686.8	50.37	-45.09	95.46	38.65	34.7	12.18	35.16	100	61	P	H
		5720	55.67	-55.13	110.8	43.89	34.7	12.24	35.16	100	61	P	H
		5720.4	56.42	-55.29	111.71	44.64	34.7	12.24	35.16	100	61	P	H
	*	5795	104.32	-	-	92.33	34.8	12.36	35.17	100	61	P	H
	*	5795	96.14	-	-	84.15	34.8	12.36	35.17	100	61	A	H
		5854	59.92	-53.16	113.08	47.8	34.9	12.4	35.18	100	61	P	H
		5866.8	62.96	-44.53	107.49	50.85	34.9	12.4	35.19	100	61	P	H
		5885.4	60.21	-37.27	97.48	48.09	34.9	12.41	35.19	100	61	P	H
		5949.2	52.81	-15.39	68.2	40.57	35	12.44	35.2	100	61	P	H
													H
													H
		5622.4	47.64	-20.56	68.2	36	34.7	12.08	35.14	123	5	P	V
		5681.8	48.47	-43.3	91.77	36.86	34.6	12.17	35.16	123	5	P	V
		5714.4	48.18	-61.05	109.23	36.41	34.7	12.23	35.16	123	5	P	V
		5724.4	49.09	-71.74	120.83	37.3	34.7	12.25	35.16	123	5	P	V
	*	5795	97.34	-	-	85.35	34.8	12.36	35.17	123	5	P	V
	*	5795	89.69	-	-	77.7	34.8	12.36	35.17	123	5	A	V
		5852.2	57.67	-59.51	117.18	45.55	34.9	12.4	35.18	123	5	P	V
		5864.6	56.05	-52.06	108.11	43.94	34.9	12.4	35.19	123	5	P	V
		5883.2	52.06	-47.05	99.11	39.94	34.9	12.41	35.19	123	5	P	V
		5931.2	49.09	-19.11	68.2	36.88	34.97	12.44	35.2	123	5	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 HT40 (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 HT40 CH 151 5755MHz		11510	45.47	-28.53	74	46.2	38.2	18.55	57.48	100	0	P	H
		17265	47.66	-20.54	68.2	39.52	41.47	22.99	56.32	100	0	P	H
													H
													H
		11510	44.06	-29.94	74	44.79	38.2	18.55	57.48	100	0	P	V
		17265	47.51	-20.69	68.2	39.37	41.47	22.99	56.32	100	0	P	V
													V
													V
802.11n HT40 CH 159 5795MHz		11590	43.82	-30.18	74	44.13	38.37	18.61	57.29	100	0	P	H
		17385	50.44	-17.76	68.2	42.16	41.58	23.06	56.36	100	0	P	H
													H
													H
		11590	43.76	-30.24	74	44.07	38.37	18.61	57.29	100	0	P	V
		17385	48.25	-19.95	68.2	39.97	41.58	23.06	56.36	100	0	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		5648.8	51.04	-17.16	68.2	39.47	34.6	12.12	35.15	100	62	P	H
		5691.6	60.45	-38.56	99.01	48.72	34.7	12.19	35.16	100	62	P	H
		5720	67.46	-43.34	110.8	55.68	34.7	12.24	35.16	100	62	P	H
		5720.8	70.04	-42.58	112.62	58.26	34.7	12.24	35.16	100	62	P	H
	*	5775	100.78	-	-	88.85	34.77	12.33	35.17	100	62	P	H
	*	5775	93.73	-	-	81.8	34.77	12.33	35.17	100	62	A	H
		5851.6	69.17	-49.38	118.55	57.05	34.9	12.4	35.18	100	62	P	H
		5856.8	67.11	-43.19	110.3	54.99	34.9	12.4	35.18	100	62	P	H
		5876.6	63.05	-40.96	104.01	50.93	34.9	12.41	35.19	100	62	P	H
		5927.2	54.23	-13.97	68.2	42.03	34.97	12.43	35.2	100	62	P	H
													H
													H
		5649.4	49.5	-18.7	68.2	37.93	34.6	12.12	35.15	126	6	P	V
		5699.4	57.83	-46.93	104.76	46.09	34.7	12.2	35.16	126	6	P	V
		5719.2	61.13	-49.45	110.58	49.35	34.7	12.24	35.16	126	6	P	V
		5720.8	63.15	-49.47	112.62	51.37	34.7	12.24	35.16	126	6	P	V
	*	5775	94.45	-	-	82.52	34.77	12.33	35.17	126	6	P	V
	*	5775	87.53	-	-	75.6	34.77	12.33	35.17	126	6	A	V
		5851.8	59.21	-58.89	118.1	47.09	34.9	12.4	35.18	126	6	P	V
		5858	58.45	-51.51	109.96	46.34	34.9	12.4	35.19	126	6	P	V
		5878.4	54.54	-48.13	102.67	42.42	34.9	12.41	35.19	126	6	P	V
		5927.4	50.82	-17.38	68.2	38.62	34.97	12.43	35.2	126	6	P	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		11550	43.69	-30.31	74	44.19	38.3	18.58	57.38	100	0	P	H
		17325	49.18	-19.02	68.2	40.97	41.52	23.03	56.34	100	0	P	H
													H
													H
		11550	45.29	-28.71	74	45.79	38.3	18.58	57.38	100	0	P	V
		17325	48.77	-19.43	68.2	40.56	41.52	23.03	56.34	100	0	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 802.11ac VHT80 (LF)

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)
5GHz 802.11ac VHT80 LF		30	30.4	-9.6	40	35.16	24.32	0.93	30.01	-	-	P	H
		44.58	28.5	-11.5	40	40.54	16.83	1.12	29.99	-	-	P	H
		93.45	37.11	-6.39	43.5	50.38	15.08	1.62	29.97	100	0	P	H
		310.5	31.53	-14.47	46	39.17	19.28	2.98	29.9	-	-	P	H
		427.4	30.55	-15.45	46	34.2	22.74	3.49	29.88	-	-	P	H
		954.5	33	-13	46	25.92	30.48	5.27	28.67	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	32.86	-7.14	40	37.62	24.32	0.93	30.01	100	0	P	V
		49.71	29.12	-10.88	40	43.13	14.78	1.2	29.99	-	-	P	V
		91.83	31.28	-12.22	43.5	44.67	14.98	1.6	29.97	-	-	P	V
		771.1	30.24	-15.76	46	27.26	27.76	4.73	29.51	-	-	P	V
		871.9	32.35	-13.65	46	27.57	28.87	5.03	29.12	-	-	P	V
		957.3	32.97	-13.03	46	25.88	30.47	5.28	28.66	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



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	Peak or Average
H/V	Horizontal or Vertical



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

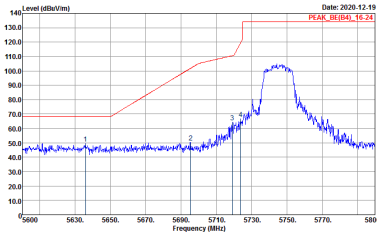
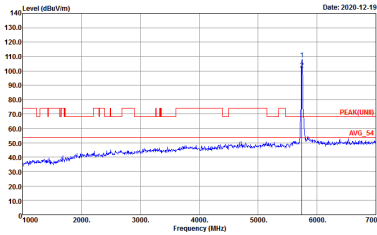
Test Engineer :	Jesse Wang, Stan Hsieh, Ken Wu	Temperature :	21 ~ 23°C
		Relative Humidity :	49 ~ 53%

Note symbol

-L	Low channel location
-R	High channel location



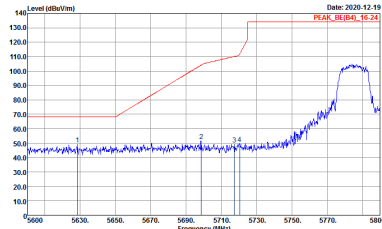
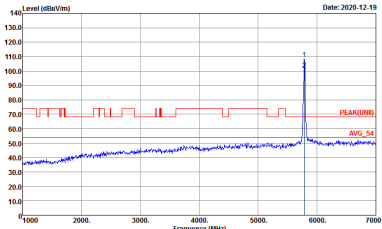
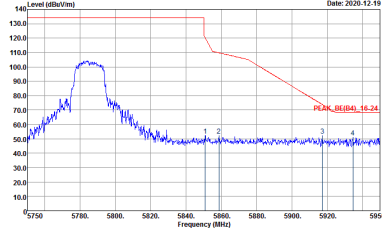
Band 4 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-4H Condition : PEAK_BE(B4)_16-24 3m HF_ANT_0007562 HORIZONTAL Detector : Peak Project : ON2651 Mode : 37	 Site : 03CH07-4H Condition : PEAK(FUN1) 3m HF_ANT_0007562 HORIZONTAL Detector : Peak Project : ON2651 Mode : 37

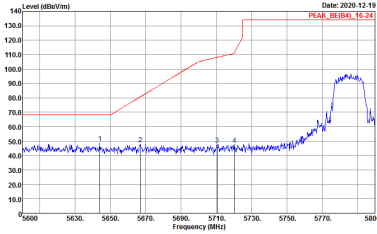
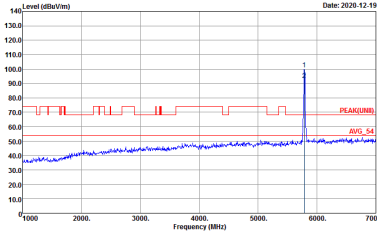
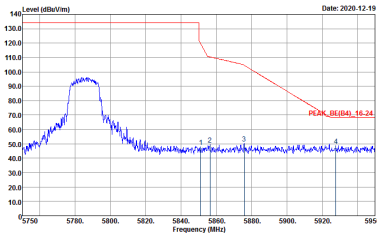


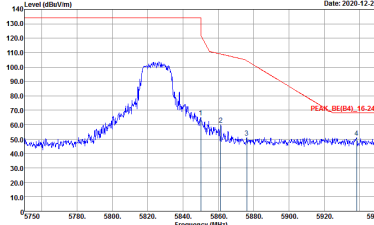
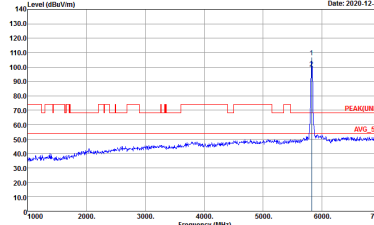
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BEST@_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 37	Site : 03CH07-HY Condition : PEAK_BEST@_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 37



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19 PEAK_BE(B4)_16-24	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19 PEAK_BE(B4)_16-24
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19 PEAK_BE(B4)_16-24	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19	 Site : 03CH07-HY Condition : PEAK_UNI1 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-19	Left blank

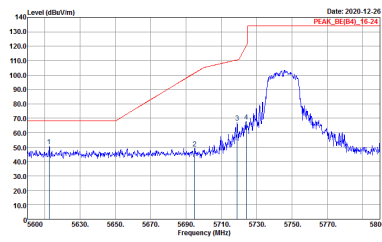
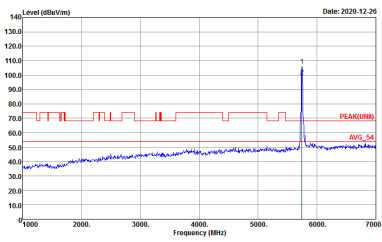
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : ON2651 Mode : 39	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : ON2651 Mode : 39



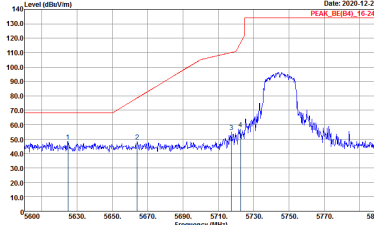
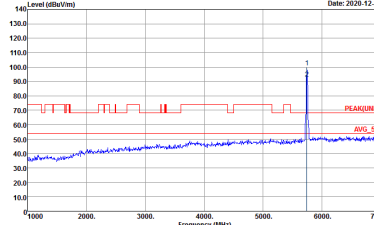
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 39	Site : 03CH07-HY Condition : PEAK(FUN1) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 39



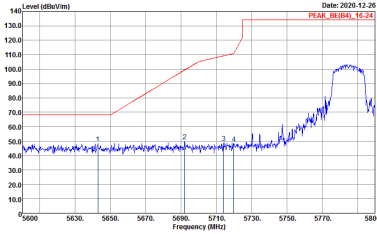
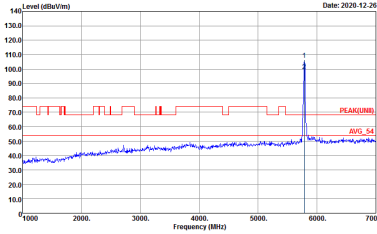
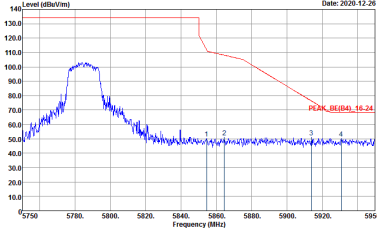
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_802.11n_3m_HF_ANT_00070962 HORIZONTAL Detector : Peak Project : FR0N2651 Mode : 40	 Site : 03CH07-HY Condition : PEAK_802.11n_3m_HF_ANT_00070962 HORIZONTAL Detector : Peak Project : FR0N2651 Mode : 40

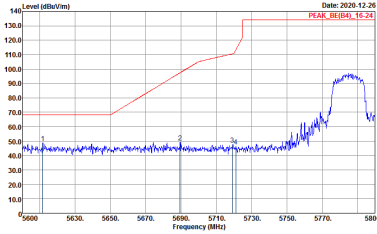
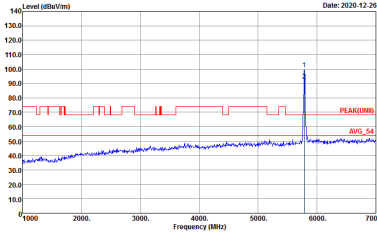
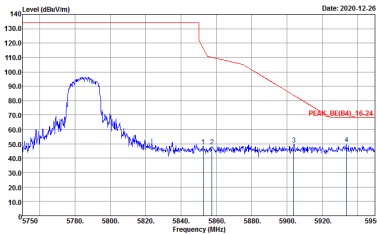


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BEST_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 40	 Site : 03CH07-HY Condition : PEAK_BEST_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 40

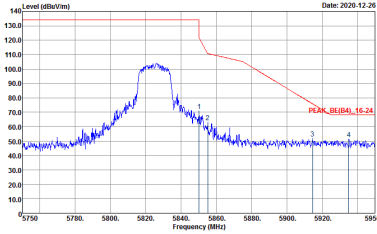
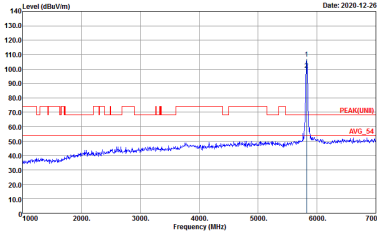


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : ON2651 :41	 Site : 03CH07-HY Condition : PEAK_FU(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : ON2651 :41
	 Site : 03CH07-HY Condition : PEAK_BE(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : ON2651 :41	Left blank

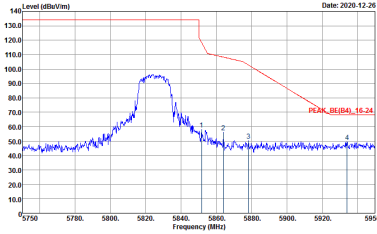
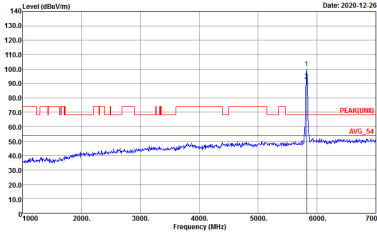


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26	 Site : 03CH07-HY Condition : PEAK_UNI(I) 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : ON2651 Date: 2020-12-26	 Site : 03CH07-HY Condition : PEAK(BE)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : ON2651 Date: 2020-12-26



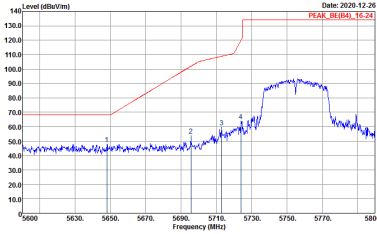
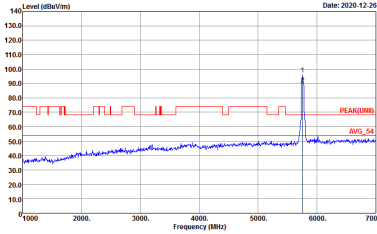
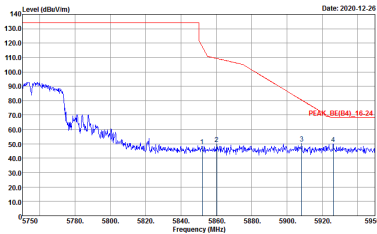
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 42	 Site : 03CH07-HY Condition : PEAK(FUN1) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 42



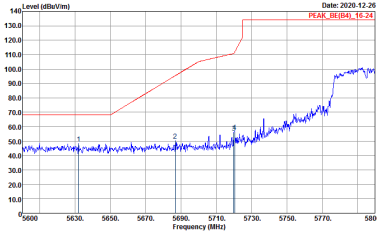
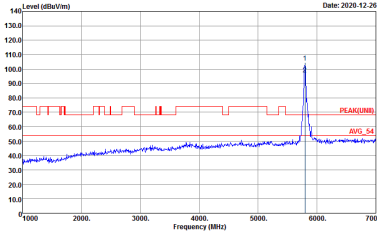
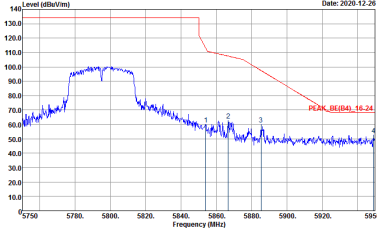
Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_0007962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 43	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_0007962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 43
Peak	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_0007962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 43	Left blank

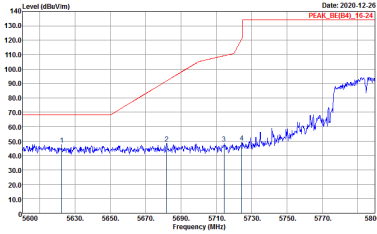
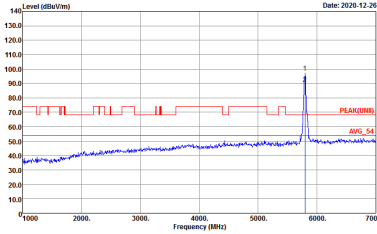
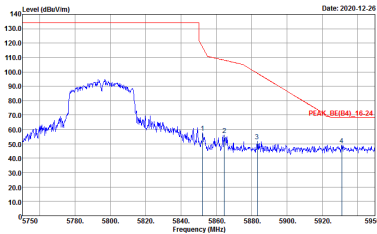


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 43	 Site : 03CH07-HY Condition : PEAK(FUN1) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 43
	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : ON2651 Mode : 43	Left blank



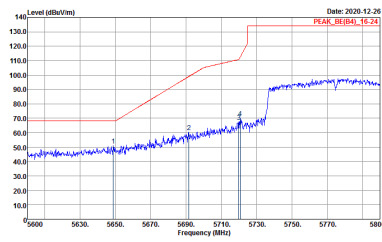
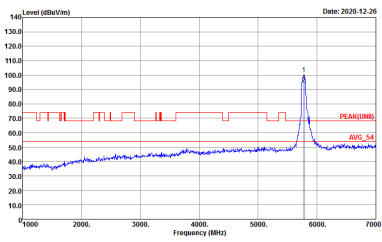
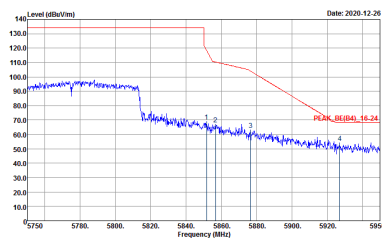
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 : 44	 Site : 03CH07-HY Condition : PEAK_FU(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 : 44
Peak	 Site : 03CH07-HY Condition : PEAK_BE(04)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 : 44	Left blank



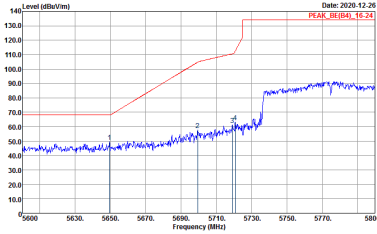
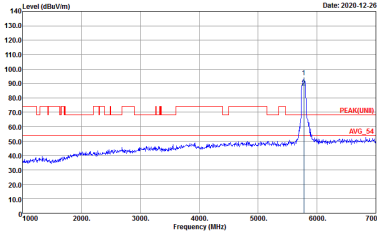
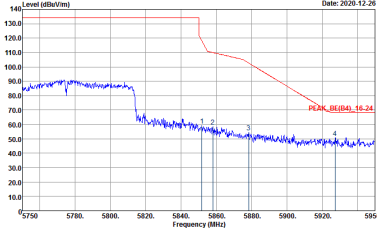
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26	 Site : 03CH07-HY Condition : PEAK_UNI1 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26
	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26	Left blank



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

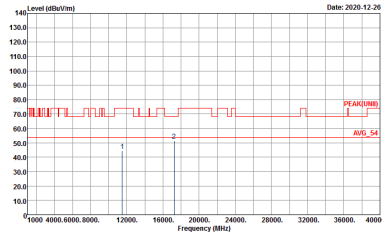
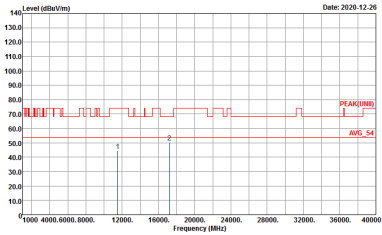
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00070962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 45	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00070962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 45
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00070962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : ON2651 Mode : 45	Left blank



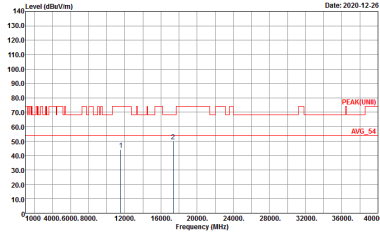
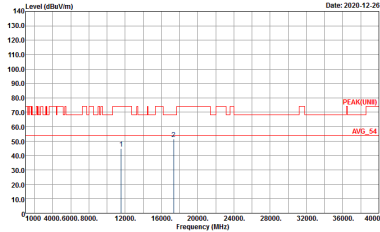
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26 PEAK_BE(B4)_15-24	 Site : 03CH07-HY Condition : PEAK_UNI1 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26 PEAK_UNI1
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Project : Peak Mode : 0N2651 Date: 2020-12-26 PEAK_BE(B4)_15-24	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 : 03CH07-401 Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N2051 Mode : 37	 Site : 03CH07-401 Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N2051 Mode : 37



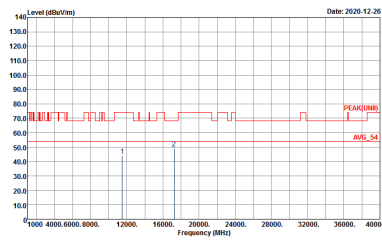
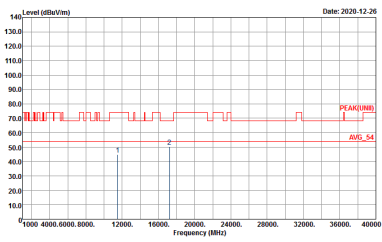
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N13531 Mode : 38	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N13531 Mode : 38



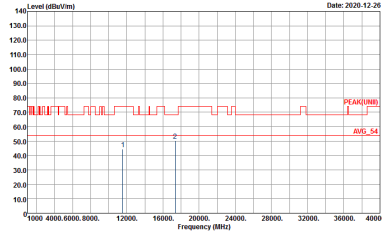
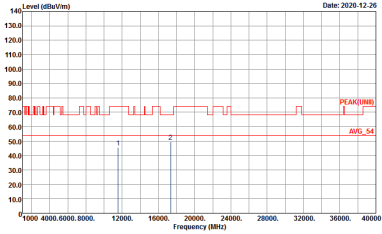
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N13531 Mode : 39	Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N13531 Mode : 39



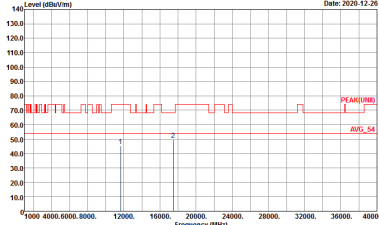
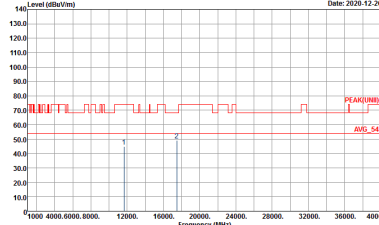
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N2651 Mode : 40	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N2651 Mode : 40



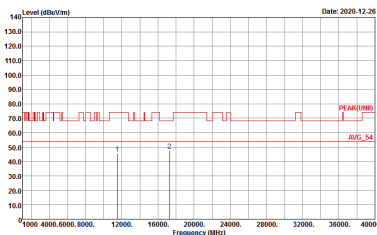
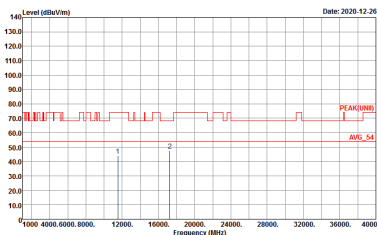
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N13531 Mode : 41	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N13531 Mode : 41



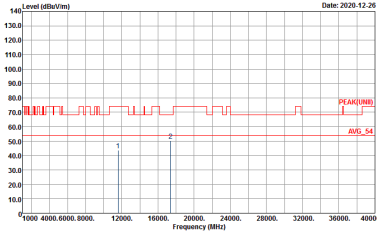
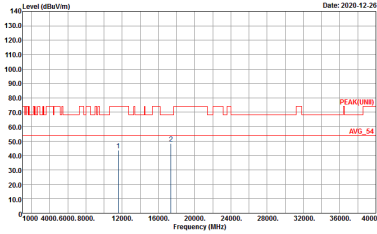
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N13531 Mode : 42	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N13531 Mode : 42



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

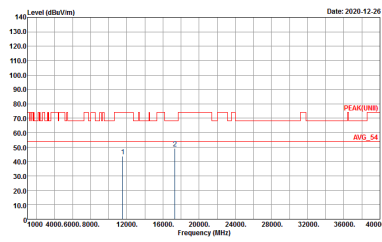
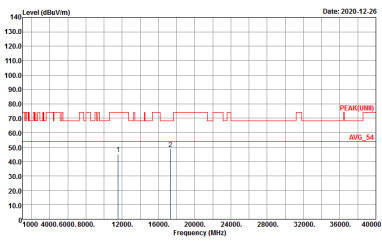
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N2651 Mode : 44	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N2651 Mode : 44



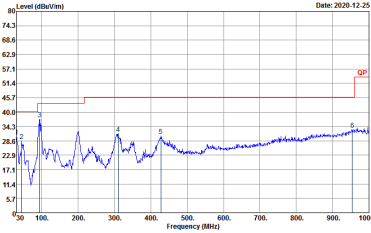
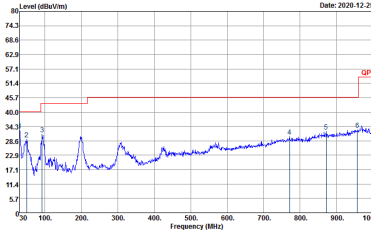
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N13531 Mode : 44	 Site : 03CH07-HY Condition : PEAK(UNB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N13531 Mode : 44



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 0N2651 Mode : -45	 Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 0N2651 Mode : -45

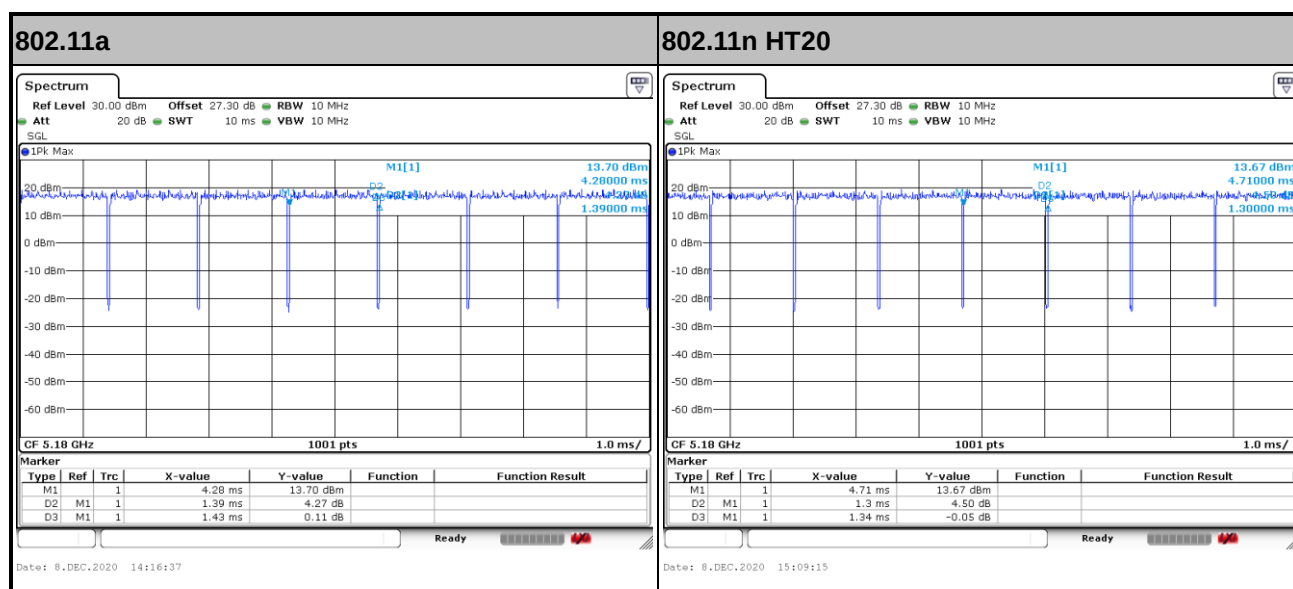
Emission below 1GHz
5GHz WIFI 802.11ac VHT80 (LF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH07-4H Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak Project : 0N2051 Mode : 45	 Site : 03CH07-4H Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak Project : 0N2051 Mode : 45



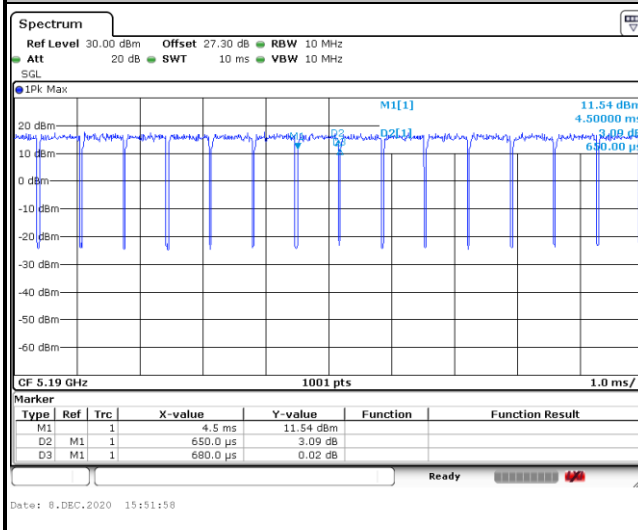
Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11a	97.20	1390	0.72	1kHz	0.12
5GHz 802.11n HT20	97.01	1300	0.77	1kHz	0.13
5GHz 802.11n HT40	95.59	650	1.54	3kHz	0.20
5GHz 802.11ac VHT20	97.04	1310	0.76	1kHz	0.13
5GHz 802.11ac VHT40	94.20	650	1.54	3kHz	0.26
5GHz 802.11ac VHT80	90.14	320	3.13	10kHz	0.45

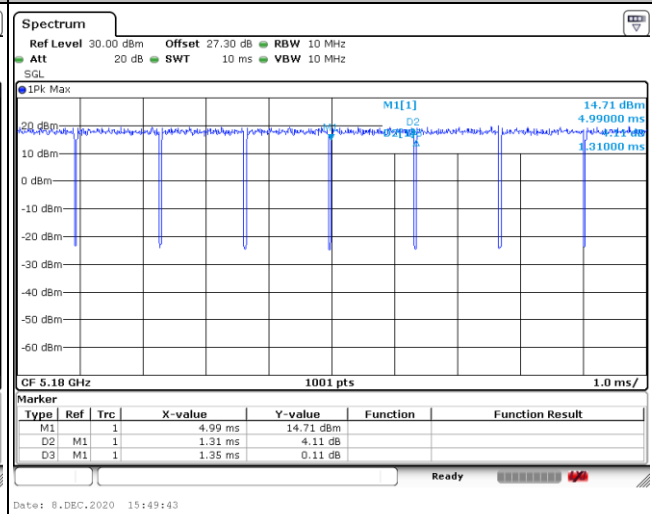




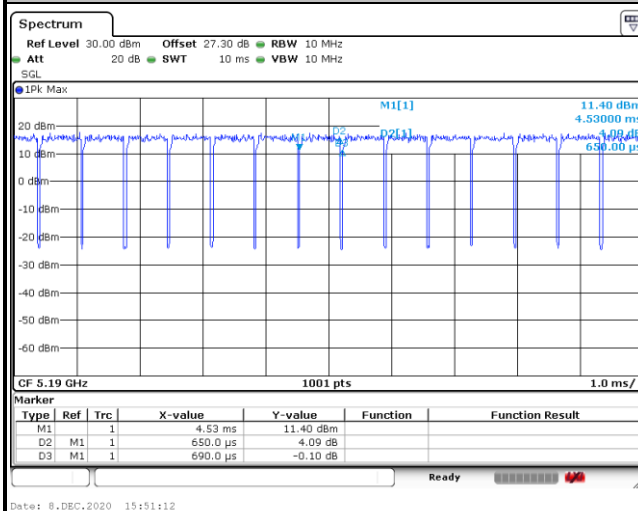
802.11n HT40



802.11ac VHT20



802.11ac VHT40



802.11ac VHT80

