FCC RADIO TEST REPORT

FCC ID	:	**UZ7MC220J**
Equipment	:	**Mobile computer**
Brand Name	:	**Zebra**
Model Name	:	**MC220J**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Jun. 12, 2020 and testing was started from Jun. 30, 2020 and completed on Jul. 30, 2020. 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 variant 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, Taiwan (R.O.C.)

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History of this test report

<table>
<tr><th>Report No.</th><th>Version</th><th>Description</th><th>Issued Date</th></tr>
<tr><td>FR040803-03E</td><td>01</td><td>This is a variant report for MC220J (FCC ID: UZ7MC220J), and the differences between this model name and MC220K (FCC ID: UZ7MC220K) are as listed below:
<table>
<tr><th>Item/Model</th><th>MC220K</th><th>MC220J</th></tr>
<tr><td>Camera</td><td>O</td><td>X</td></tr>
<tr><td>NFC</td><td>O</td><td>X</td></tr>
</table>
All the test cases were performed on original report which can be referred to Sporton Report Number FR040803-02F as appendix F. Based on the original report, the test cases were verified.</td><td>Aug. 28, 2020</td></tr>
<tr><td>FR040803-03E</td><td>02</td><td>Revising history description.</td><td>Sep. 02, 2020</td></tr>
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Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403 (i)	6dB & 26dB Bandwidth	Pass	-
-	2.1049	99% Occupied Bandwidth	Reporting only	-
3.1	15.407 (a)	Maximum Conducted Output Power	Pass	-
-	15.407 (a)	Power Spectral Density	Pass	-
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 8.06 dB at 5647.800 MHz
3.3	15.207	AC Conducted Emission	Pass	Under limit 16.45 dB at 0.168 MHz
-	15.407 (c)	Automatically Discontinue Transmission	Pass	-
3.4	15.203 & 15.407 (a)	Antenna Requirement	Pass	-
Note: Not required means after assessing, test items are not necessary to carry out.				

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: Dara Chiu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Specification subjective to this standard	
Equipment	Mobile computer
Brand Name	Zebra
Model Name	MC220J
FCC ID	UZ7MC220J
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	EV1
SW Version	10-11-31.00-QG-U00-PRD-HEL-04
OS Version	Android 10
MFD	02JUN20
EUT Stage	Engineering Sample

Remark: The above EUT's information was declared by manufacturer.

Specification of Accessories				
AC Adapter	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Battery	**Brand Name**	Zebra	**Part Number**	BT-000418-10
USB Cable (TypeA plug to TypeC plug)	**Brand Name**	Zebra	**Part Number**	CBL-TC2X-USBC-01
Trigger Handle	**Brand Name**	Zebra	**Part Number**	TRG-MC2X-SNP1-01
Holster 1	**Brand Name**	Zebra	**Part Number**	SG-MC2X-HLSTR-01
Holster 2	**Brand Name**	Zebra	**Part Number**	SG-MC3021212-01R

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5725 MHz ~ 5850 MHz
Maximum Output Power to Antenna	802.11a : 21.00 dBm / 0.1259 W 802.11n HT20 : 20.90 dBm / 0.1230 W 802.11n HT40 : 20.80 dBm / 0.1202 W 802.11ac VHT20: 21.00 dBm / 0.1259 W 802.11ac VHT40: 20.90 dBm / 0.1230 W 802.11ac VHT80: 20.80 dBm / 0.1202 W
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Antenna Type/ Gain	Monopole Antenna with gain 3.40 dBi

1.3 Modification of EUT

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

1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, 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.

FCC designation No.: TW1190

1.5 Applicable Standards

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

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

Remark:

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

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z 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:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "#" were 802.11ac VHT80.

2.2 Test Mode

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

Modulation	Data Rate
802.11a	**6 Mbps**
802.11n HT20	**MCS0**
802.11n HT40	**MCS0**
802.11ac VHT20	**MCS0**
802.11ac VHT40	**MCS0**
802.11ac VHT80	**MCS0**

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

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

802.11a RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	Data Rate (bps)
		6M
CH 149	5745	20.20
CH 157	5785	20.50
CH 165	5825	21.00

802.11n HT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 149	5745	20.90
CH 157	5785	20.70
CH 165	5825	19.90

802.11n HT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 151	5755	20.40
CH 159	5795	20.80

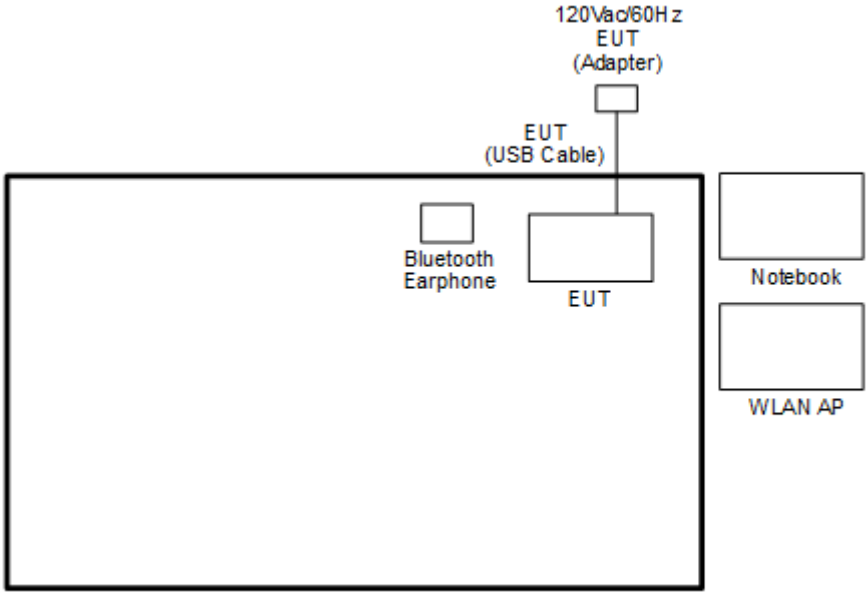
802.11ac VHT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 149	5745	21.00
CH 157	5785	20.80
CH 165	5825	20.00

802.11ac VHT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 151	5755	20.50
CH 159	5795	20.90

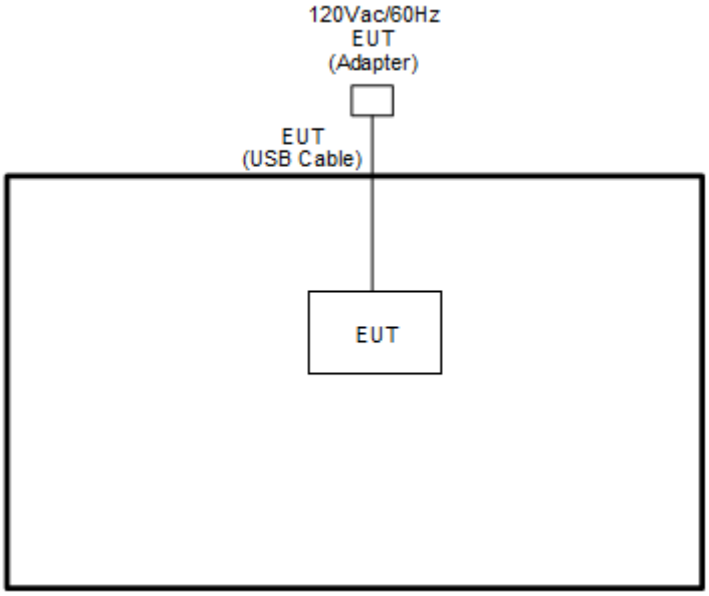
802.11ac VHT80 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 155	5775	20.80

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<For WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade 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.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “QRCT V4.0.00142.0” 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.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 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.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

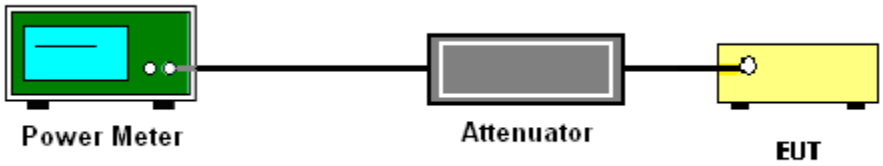
3.1.3 Test Procedures

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

Method PM-G (Measurement using an 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.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Test Engineer :	Tommy Lee	Temperature :	21~25 ℃
		Relative Humidity :	51~54 %

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	20.20	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	157	5785	20.50	-		30.00	-	3.40	-	Pass
11a	6Mbps	1	165	5825	21.00	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	149	5745	20.90	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	157	5785	20.70	-		30.00	-	3.40	-	Pass
HT20	MCS0	1	165	5825	19.90	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	151	5755	20.40	-		30.00	-	3.40	-	Pass
HT40	MCS0	1	159	5795	20.80	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	149	5745	21.00	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	157	5785	20.80	-		30.00	-	3.40	-	Pass
VHT20	MCS0	1	165	5825	20.00	-		30.00	-	3.40	-	Pass
VHT40	MCS0	1	151	5755	20.50	-		30.00	-	3.40	-	Pass
VHT40	MCS0	1	159	5795	20.90	-		30.00	-	3.40	-	Pass
VHT80	MCS0	1	155	5775	20.80	-		30.00	-	3.40	-	Pass

3.2 Unwanted Emissions Measurement

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

3.2.1 Limit of Unwanted Emissions

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

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

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

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

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

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/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.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 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 1000MHz
   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

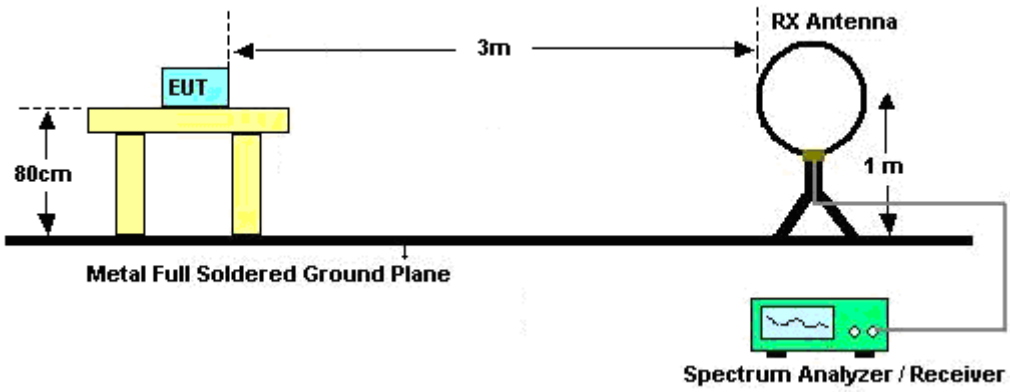
   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (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 ≥ 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.

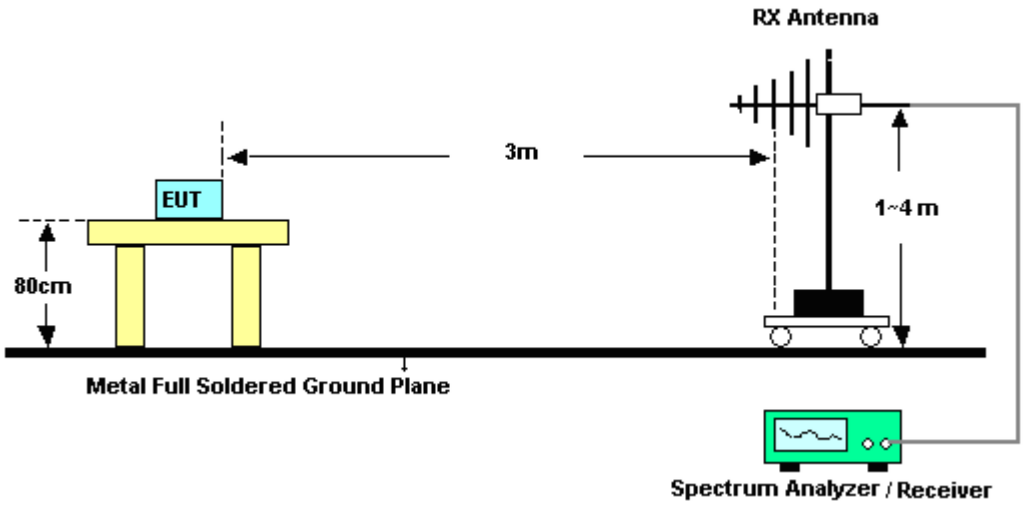
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again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

3.2.4 Test Setup

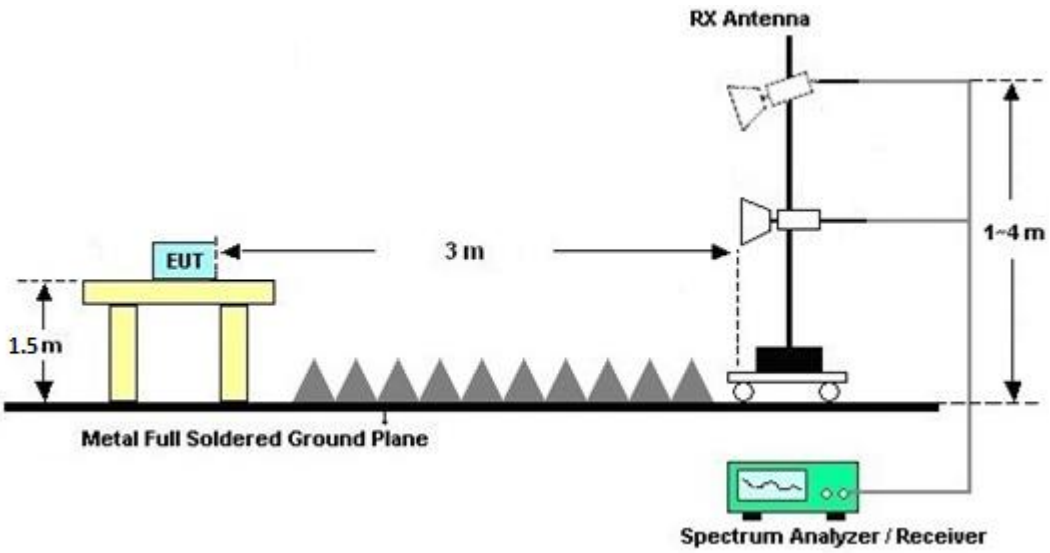
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

There is 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.

3.2.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.3 AC Conducted Emission Measurement

3.3.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

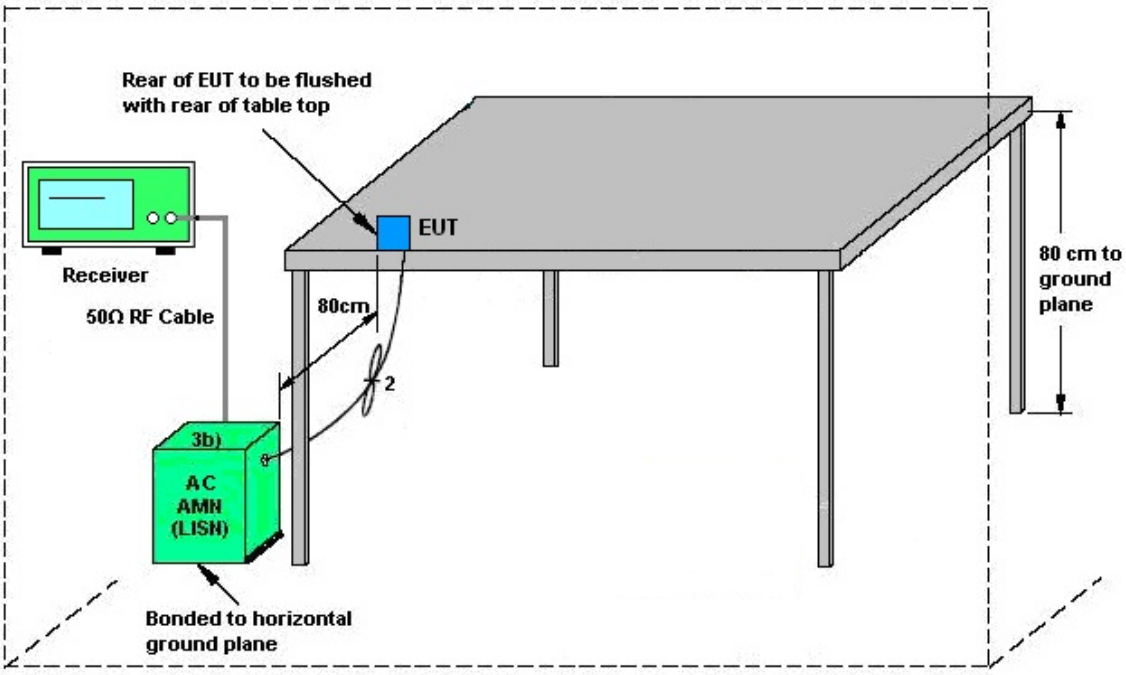
3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 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.

3.3.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.4 Antenna Requirements

3.4.1 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.

3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.4.3 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	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02. 2020	Jul. 23. 2020	Mar. 01. 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO10	10MHz~6GHz	Dec. 23, 2019	Jul. 23. 2020	Dec. 22, 2020	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Jul. 23. 2020	Nov. 14, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Aug. 22,2019	Jul. 23. 2020	Aug. 21, 2020	Conducted (TH05-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35419 & 03	30MHz~1GHz	Apr. 29, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Apr. 28, 2021	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 06, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Dec. 05, 2020	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 21, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	May 20, 2021	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Dec. 26, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Dec. 25, 2020	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590075	1GHz~18GHz	Apr. 23, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Apr. 22, 2021	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 19, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	May 18, 2021	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 01, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	SN1	5G Band 4	Mar. 15, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Mar. 14, 2021	Radiation (03CH07-HY)
Filter	Microwave	H1G013G1	SN477215	1GHz High Pass Filter	Nov. 01, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2,801606/2	18GHz~40GHz	Feb. 25, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4, MY28655/4	9kHz~30MHz	Feb. 25, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 25, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 25, 2020	Jul. 24, 2020 ~ Jul. 30, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF780208368	Control Ant Mast	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 26, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Nov. 25, 2020	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Jul. 24, 2020 ~ Jul. 30, 2020	N/A	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 13, 2019	Jul. 24, 2020 ~ Jul. 30, 2020	Dec. 12, 2020	Radiation (03CH07-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 30, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Jun. 30, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 07, 2019	Jun. 30, 2020	Nov. 06, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 15, 2019	Jun. 30, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 30, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Jun. 30, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Jun. 30, 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))	4.6

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.2

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

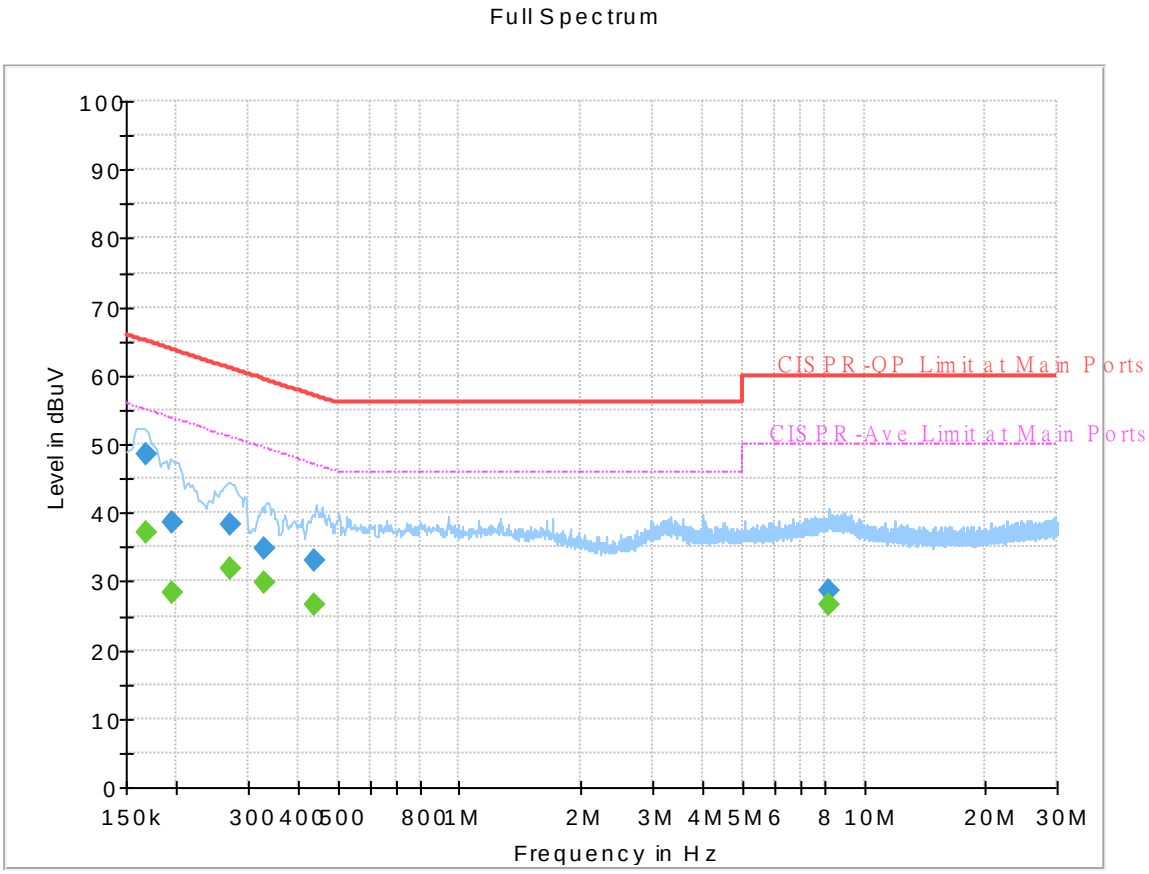
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.3

Appendix A. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	**Temperature :**	23~25℃
		Relative Humidity :	42~50%

EUT Information

Report NO :	040803-03
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

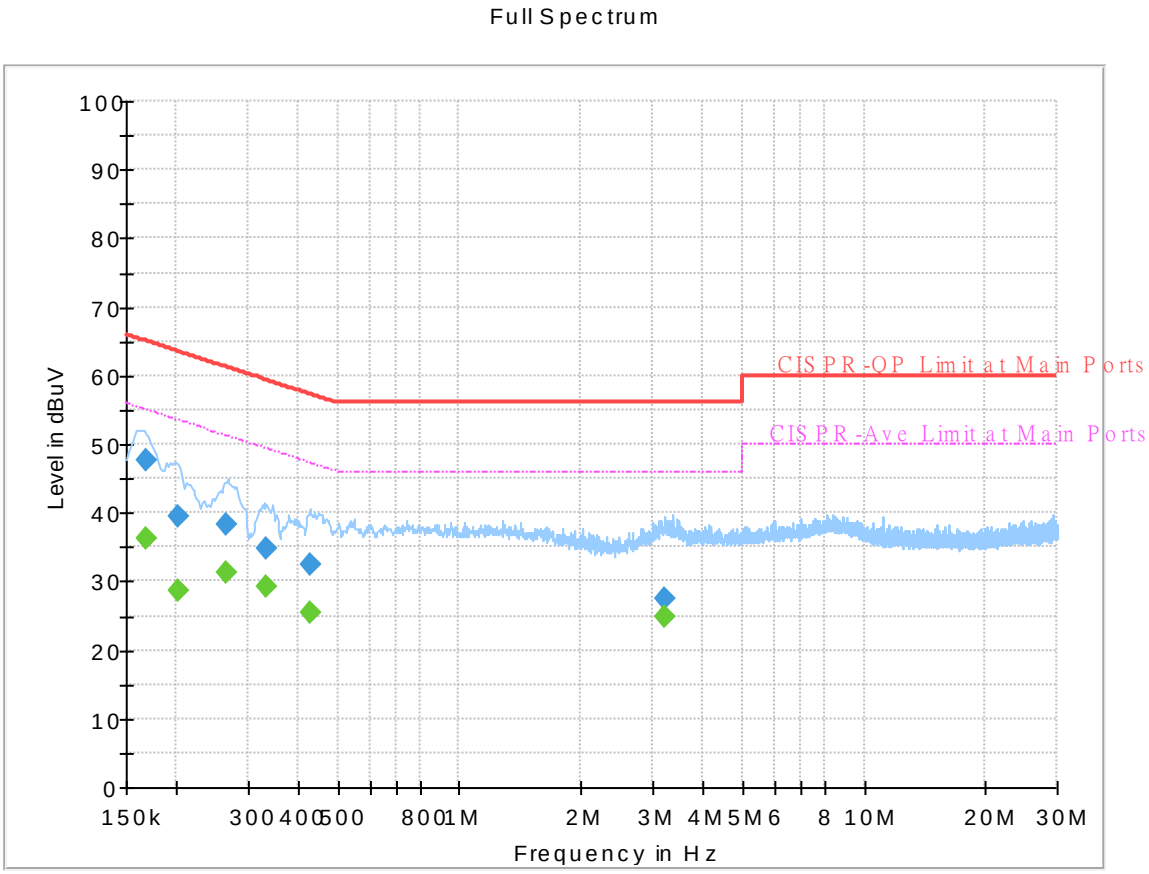


Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.168000	---	37.17	55.06	17.89	L1	OFF	19.6
0.168000	48.61	---	65.06	16.45	L1	OFF	19.6
0.195090	---	28.39	53.82	25.43	L1	OFF	19.6
0.195090	38.57	---	63.82	25.25	L1	OFF	19.6
0.270330	---	31.89	51.11	19.22	L1	OFF	19.6
0.270330	38.29	---	61.11	22.82	L1	OFF	19.6
0.329550	---	29.68	49.46	19.78	L1	OFF	19.6
0.329550	34.74	---	59.46	24.72	L1	OFF	19.6
0.438000	---	26.67	47.10	20.43	L1	OFF	19.6
0.438000	33.04	---	57.10	24.06	L1	OFF	19.6
8.162160	---	26.57	50.00	23.43	L1	OFF	20.0
8.162160	28.63	---	60.00	31.37	L1	OFF	20.0

EUT Information

Report NO :	040803-03
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.168000	---	36.25	55.06	18.81	N	OFF	19.5
0.168000	47.58	---	65.06	17.48	N	OFF	19.5
0.201750	---	28.72	53.54	24.82	N	OFF	19.5
0.201750	39.49	---	63.54	24.05	N	OFF	19.5
0.266280	---	31.15	51.23	20.08	N	OFF	19.5
0.266280	38.18	---	61.23	23.05	N	OFF	19.5
0.334500	---	29.26	49.34	20.08	N	OFF	19.5
0.334500	34.78	---	59.34	24.56	N	OFF	19.5
0.427830	---	25.51	47.30	21.79	N	OFF	19.5
0.427830	32.44	---	57.30	24.86	N	OFF	19.5
3.223500	---	24.81	46.00	21.19	N	OFF	19.6
3.223500	27.38	---	56.00	28.62	N	OFF	19.6

Appendix B. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh, and Ken Wu	Temperature :	23~25°C
		Relative Humidity :	51~53%

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5648.2	48.27	-19.93	68.2	36.66	34.8	12.12	35.31	190	356	P	H
		5689.4	51.48	-45.9	97.38	39.61	35	12.19	35.32	190	356	P	H
		5719.4	72.58	-38.05	110.63	60.66	35	12.24	35.32	190	356	P	H
		5725	82.56	-39.64	122.2	70.63	35	12.25	35.32	190	356	P	H
	*	5745	113.65	-	-	101.69	35	12.28	35.32	190	356	P	H
	*	5745	105.65	-	-	93.69	35	12.28	35.32	190	356	A	H
802.11ac													H
VHT20													H
CH 149		5639	48.17	-20.03	68.2	36.58	34.8	12.1	35.31	190	313	P	V
5745MHz		5693.4	51.25	-49.08	100.33	39.38	35	12.19	35.32	190	313	P	V
		5719.2	71	-39.58	110.58	59.08	35	12.24	35.32	190	313	P	V
		5724.8	76.84	-44.9	121.74	64.91	35	12.25	35.32	190	313	P	V
	*	5745	111.45	-	-	99.49	35	12.28	35.32	190	313	P	V
	*	5745	103.05	-	-	91.09	35	12.28	35.32	190	313	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 149 5745MHz		11490	47.68	-26.32	74	48.54	38.18	18.48	57.52	100	0	P	H
		17235	50.38	-17.82	68.2	42.21	41.53	22.95	56.31	100	0	P	H
													H
													H
		11490	47.49	-26.51	74	48.35	38.18	18.48	57.52	100	0	P	V
		17235	50.89	-17.31	68.2	42.72	41.53	22.95	56.31	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 VHT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5647.6	50.74	-17.46	68.2	39.13	34.8	12.12	35.31	189	355	P	H
		5697.4	67.28	-36	103.28	55.4	35	12.2	35.32	189	355	P	H
		5720	83.18	-27.62	110.8	71.26	35	12.24	35.32	189	355	P	H
		5723.8	85.88	-33.58	119.46	73.96	35	12.24	35.32	189	355	P	H
	*	5755	111.04	-	-	99.07	35	12.3	35.33	189	355	P	H
	*	5755	103.5	-	-	91.53	35	12.3	35.33	189	355	A	H
		5852.6	53.47	-62.8	116.27	41.41	35	12.4	35.34	189	355	P	H
		5863	54.27	-54.29	108.56	42.14	35.07	12.4	35.34	189	355	P	H
		5878.8	50.88	-51.5	102.38	38.68	35.13	12.41	35.34	189	355	P	H
		5933	49.48	-18.72	68.2	37.18	35.2	12.44	35.34	189	355	P	H
802.11ac													H
VHT40													H
CH 151		5648.6	49.54	-18.66	68.2	37.93	34.8	12.12	35.31	201	301	P	V
5755MHz		5699.2	64.78	-39.83	104.61	52.9	35	12.2	35.32	201	301	P	V
		5719.4	82.56	-28.07	110.63	70.64	35	12.24	35.32	201	301	P	V
		5722.6	82.72	-34.01	116.73	70.8	35	12.24	35.32	201	301	P	V
	*	5755	108.29	-	-	96.32	35	12.3	35.33	201	301	P	V
	*	5755	101.9	-	-	89.93	35	12.3	35.33	201	301	A	V
		5853.4	49.29	-65.16	114.45	37.23	35	12.4	35.34	201	301	P	V
		5858.4	49.83	-60.02	109.85	37.7	35.07	12.4	35.34	201	301	P	V
		5912.8	52.3	-24.9	77.2	40.01	35.2	12.43	35.34	201	301	P	V
		5941.2	50.1	-18.1	68.2	37.8	35.2	12.44	35.34	201	301	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 151 5755MHz		11510	44.27	-29.73	74	45.04	38.2	18.51	57.48	100	0	P	H
		17265	48.89	-19.31	68.2	40.78	41.47	22.96	56.32	100	0	P	H
													H
													H
		11510	45.77	-28.23	74	46.54	38.2	18.51	57.48	100	0	P	V
		17265	48.74	-19.46	68.2	40.63	41.47	22.96	56.32	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)
		5647.8	60.14	-8.06	68.2	48.53	34.8	12.12	35.31	188	358	P	H
		5699.2	78.86	-25.75	104.61	66.98	35	12.2	35.32	188	358	P	H
		5720	84.03	-26.77	110.8	72.11	35	12.24	35.32	188	358	P	H
		5723.4	85.1	-33.45	118.55	73.18	35	12.24	35.32	188	358	P	H
	*	5775	107.76	-	-	95.76	35	12.33	35.33	188	358	P	H
	*	5775	100.16	-	-	88.16	35	12.33	35.33	188	358	A	H
		5850.6	80.76	-40.07	120.83	68.7	35	12.4	35.34	188	358	P	H
		5858	79.64	-30.32	109.96	67.51	35.07	12.4	35.34	188	358	P	H
		5880.2	73.62	-27.72	101.34	61.42	35.13	12.41	35.34	188	358	P	H
		5928.4	57.74	-10.46	68.2	45.45	35.2	12.43	35.34	188	358	P	H
802.11ac													H
VHT80													H
CH 155		5649.2	57.34	-10.86	68.2	45.73	34.8	12.12	35.31	201	307	P	V
5775MHz		5694.6	78.34	-22.88	101.22	66.46	35	12.2	35.32	201	307	P	V
		5718.8	81.04	-29.42	110.46	69.12	35	12.24	35.32	201	307	P	V
		5721.8	82.81	-32.09	114.9	70.89	35	12.24	35.32	201	307	P	V
	*	5775	106.3	-	-	94.3	35	12.33	35.33	201	307	P	V
	*	5775	98.77	-	-	86.77	35	12.33	35.33	201	307	A	V
		5850	82	-40.2	122.2	69.93	35	12.4	35.33	201	307	P	V
		5858.6	79.53	-30.26	109.79	67.4	35.07	12.4	35.34	201	307	P	V
		5875.4	71.83	-33.07	104.9	59.63	35.13	12.41	35.34	201	307	P	V
		5925.4	58.69	-9.51	68.2	46.4	35.2	12.43	35.34	201	307	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	44.92	-29.08	74	45.46	38.3	18.54	57.38	100	0	P	H
		17325	49.43	-18.77	68.2	41.34	41.43	23	56.34	100	0	P	H
													H
													H
		11550	44.13	-29.87	74	44.67	38.3	18.54	57.38	100	0	P	V
		17325	49.39	-18.81	68.2	41.3	41.43	23	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 Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
5GHz 802.11ac VHT80 LF		30.54	30.71	-9.29	40	35.65	24.12	0.95	30.01	100	0	P	H
		46.74	25.07	-14.93	40	37.94	15.96	1.16	29.99	-	-	P	H
		127.47	28.63	-14.87	43.5	38.93	17.63	2.03	29.96	-	-	P	H
		725.6	29.49	-16.51	46	27.41	26.95	4.74	29.61	-	-	P	H
		840.4	31.27	-14.73	46	26.88	28.48	5.17	29.26	-	-	P	H
		954.5	34.51	-11.49	46	27.11	30.48	5.59	28.67	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	31.35	-8.65	40	36.1	24.32	0.94	30.01	100	0	P	V
		40.53	28.76	-11.24	40	38.67	19	1.09	30	-	-	P	V
		61.32	29.57	-10.43	40	46.44	11.78	1.34	29.99	-	-	P	V
		748	30.58	-15.42	46	27.57	27.78	4.8	29.57	-	-	P	V
		836.9	31.08	-14.92	46	26.87	28.34	5.15	29.28	-	-	P	V
		953.1	33.72	-12.28	46	26.39	30.42	5.59	28.68	-	-	P	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	**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 CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		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)

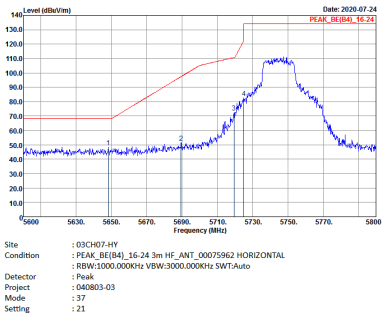
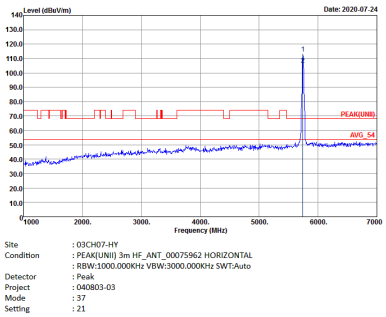
Both peak and average measured complies with the limit line, so test result is “PASS”.

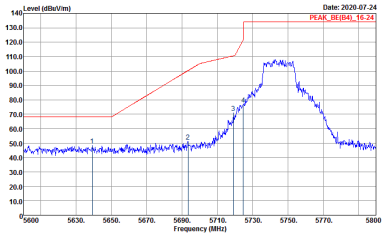
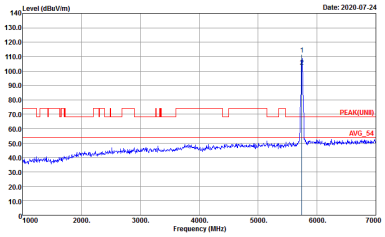
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Jesse Wang, Stan Hsieh, and Ken Wu	**Temperature :**	23~25°C
		Relative Humidity :	51~53%

Band 4 - 5725~5850MHz

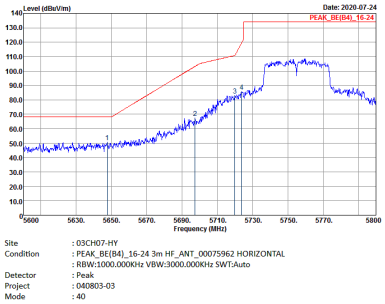
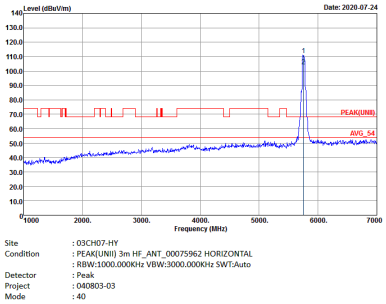
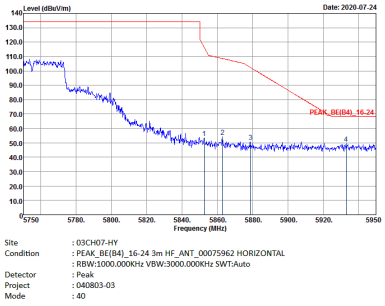
WIFI 802.11ac VHT20 (Band Edge @ 3m)

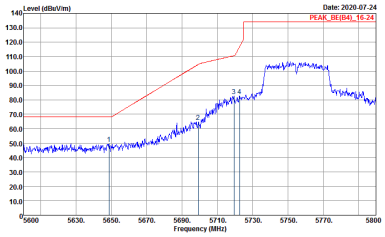
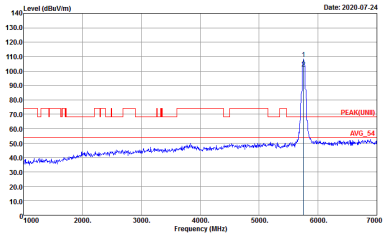
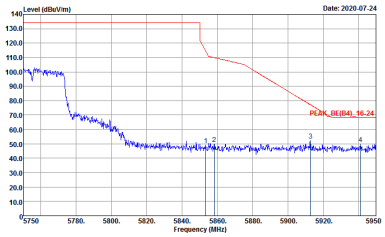
WIFI	**Band 4 5725~5850MHz Band Edge @ 3m**	
ANT	**802.11ac VHT20 CH149 5745MHz**	
1	**Horizontal**	**Fundamental**
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak Avg.	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 37 Setting : 21	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 37 Setting : 21

Band 4 5725~5850MHz

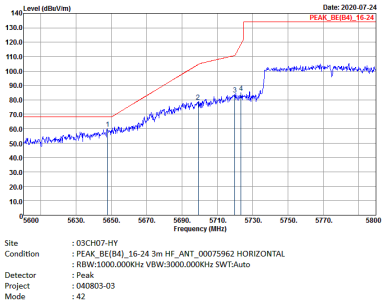
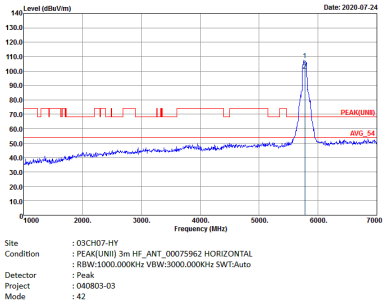
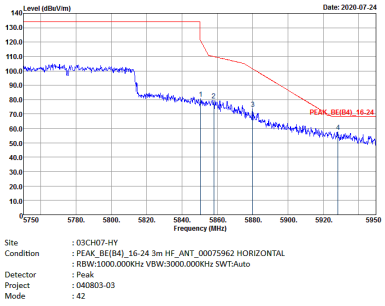
WIFI 802.11ac VHT40 (Band Edge @ 3m)

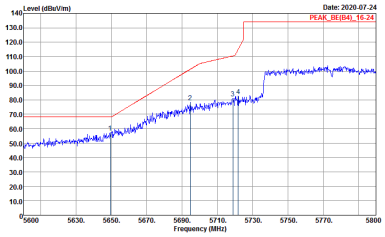
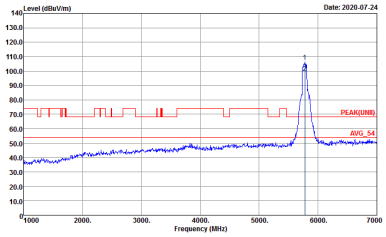
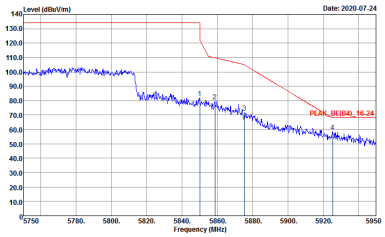
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 40	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 40
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 40	Left blank

Band 4 5725~5850MHz

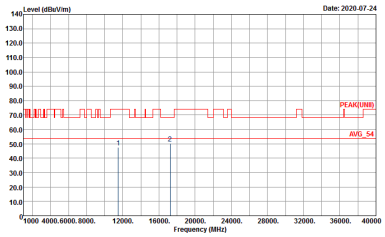
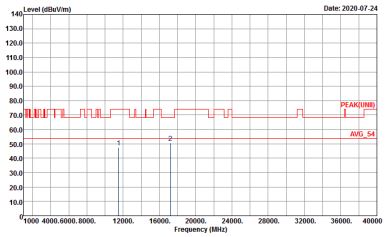
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak		
Peak		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)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 42	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 42
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 040803-03 Mode : 42	Left blank

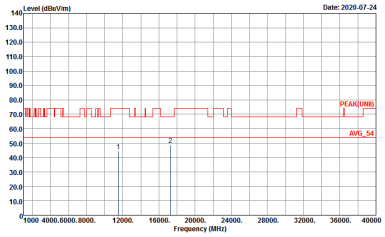
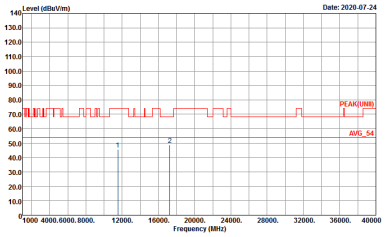
Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 040803-03 Mode : 37	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 040803-03 Mode : 37

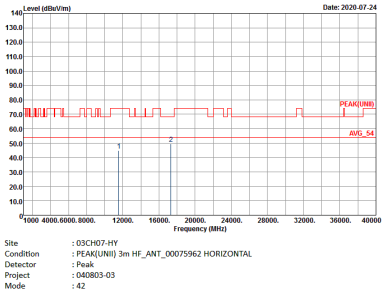
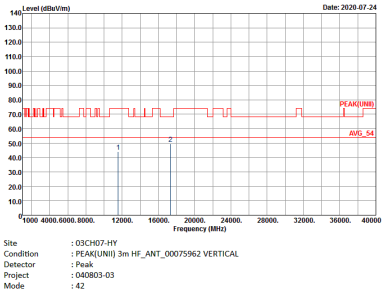
Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 040803-03 Mode : 40	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 040803-03 Mode : 40

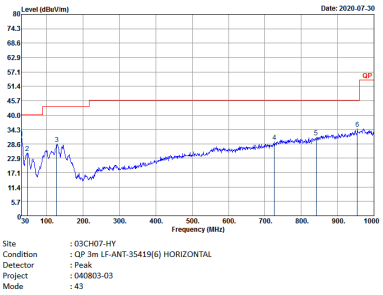
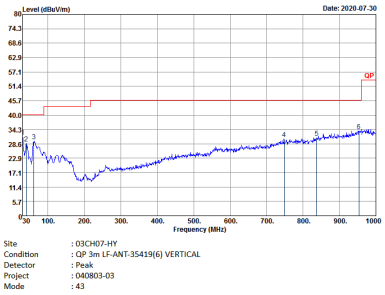
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.	 	

Emission below 1GHz

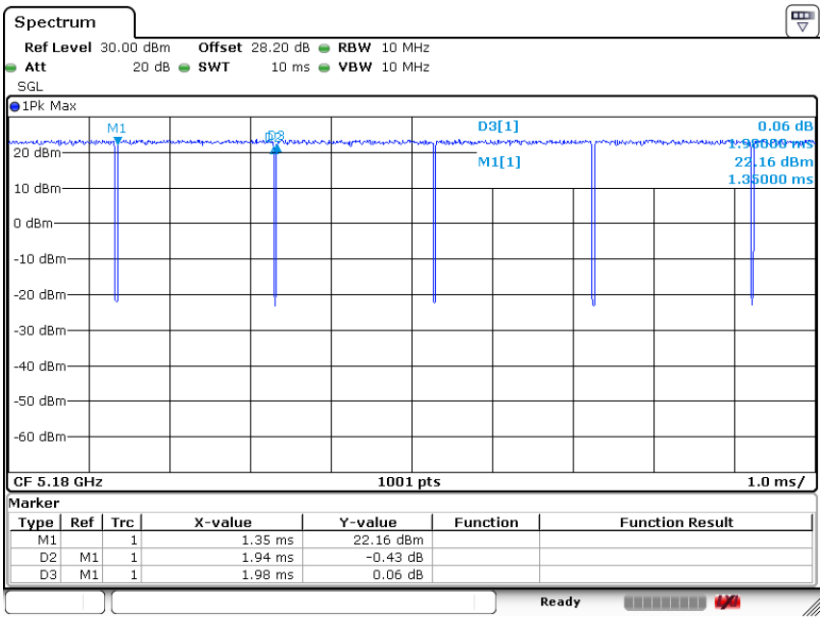
5GHz WIFI 802.11ac VHT80 (LF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak		

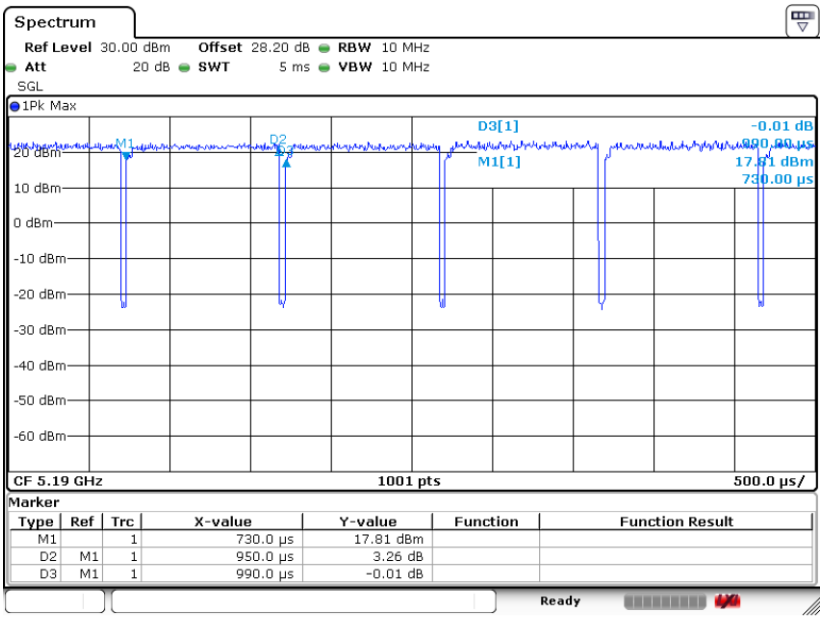
Appendix D. Duty Cycle Plots

Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
5GHz 802.11ac VHT20	97.98	1940.00	0.52	1kHz	0.09
5GHz 802.11ac VHT40	95.96	950.00	1.05	3kHz	0.18
5GHz 802.11ac VHT80	92.22	462.00	2.16	3kHz	0.35

802.11ac VHT20



802.11ac VHT40



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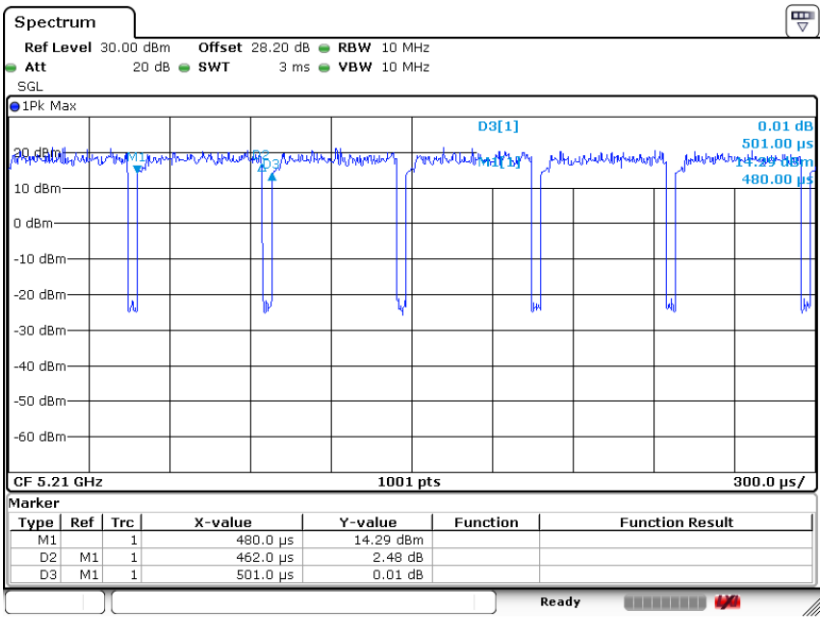
802.11ac VHT80



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