FCC RADIO TEST REPORT

FCC ID	:	**GKRPIXM01**
Equipment	:	**Smart Baby Camera**
Brand Name	:	**PIXSEE**
Model Name	:	**SC-PIXM01**
Applicant	:	**Compal Electronics, Inc.** **No.581 & 581-1, Ruiguang Rd.,** **Neihu District, Taipei, (114) Taiwan**
Manufacturer	:	**Compal Electronics, Inc.** **No.581 & 581-1, Ruiguang Rd.,** **Neihu District, Taipei, (114) Taiwan**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Jan. 15, 2020 and testing was started from Feb. 06, 2020 and completed on Nov. 11, 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 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

Report No.	Version	Description	Issued Date
FR010711-01C	01	Initial issue of report	Nov. 23, 2020

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 0.86 dB at 5649.800 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 19.95 dB at 0.189 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: Cindy Liu

1 General Description

1.1 Product Feature of Equipment Under Test

Wi-Fi 2.4GHz 802.11b/g/n and Wi-Fi 5GHz 802.11a/ac

Product Specification subjective to this standard	
Antenna Type	WLAN **<Ant.1>:** Chip Antenna **<Ant.2>:** Dipole Antenna

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, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	TH05-HY	CO05-HY

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

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH16-HY

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

FCC designation No.: TW1190 and TW0007

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.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- 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 (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:

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

2.2 Test Mode

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

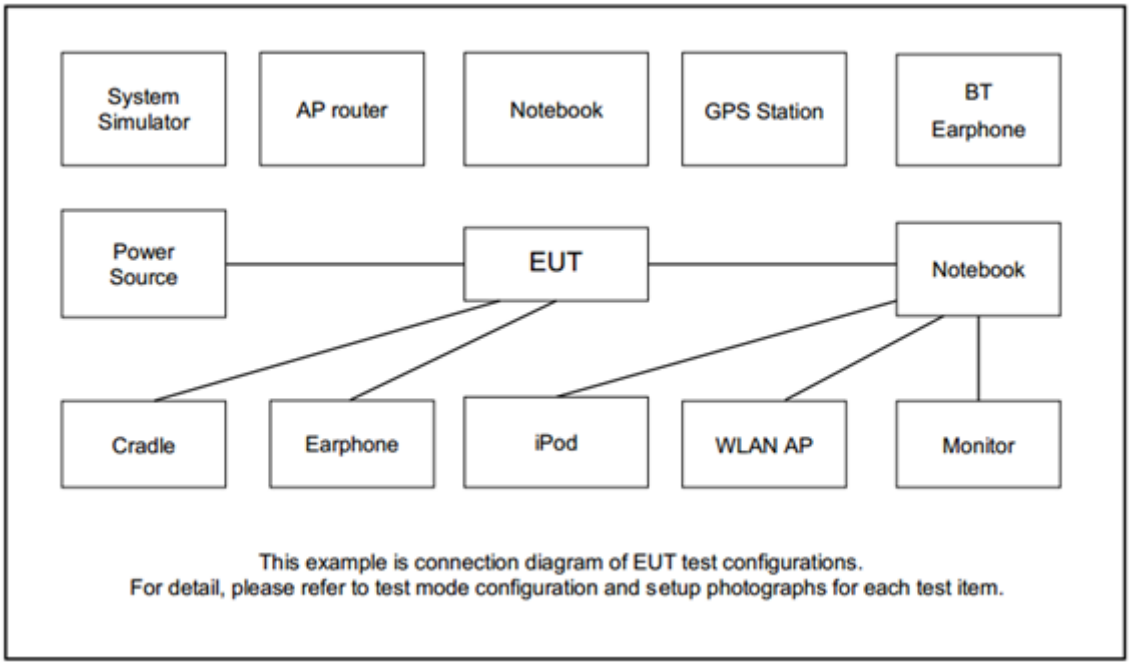
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Camera On + Adapter

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

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

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Smartphone	Sony	H3113	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “CMD v10.0.18362.1139” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

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.

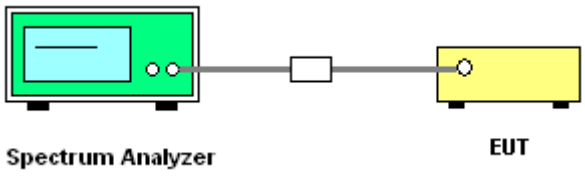
3.1.2 Measuring Instruments

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 ≥ 3 x 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.

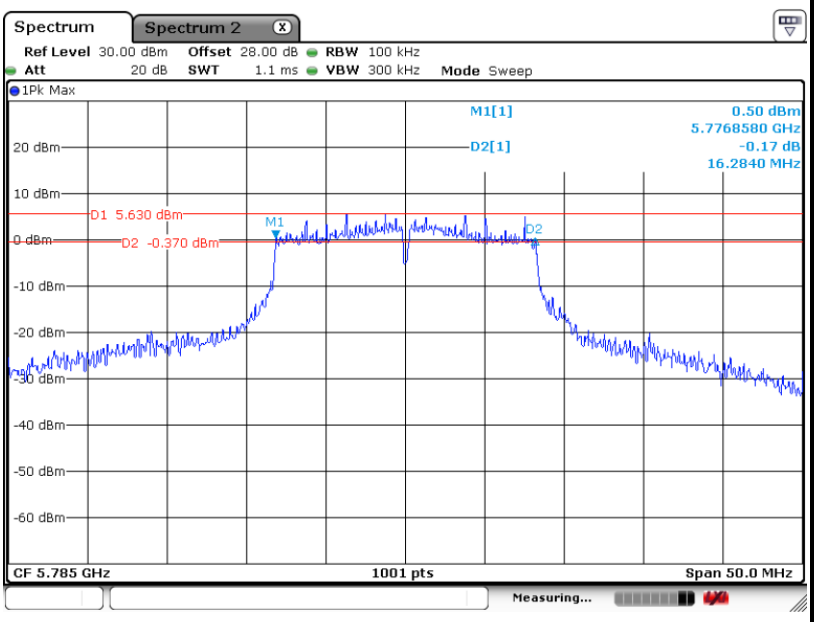
3.1.4 Test Setup



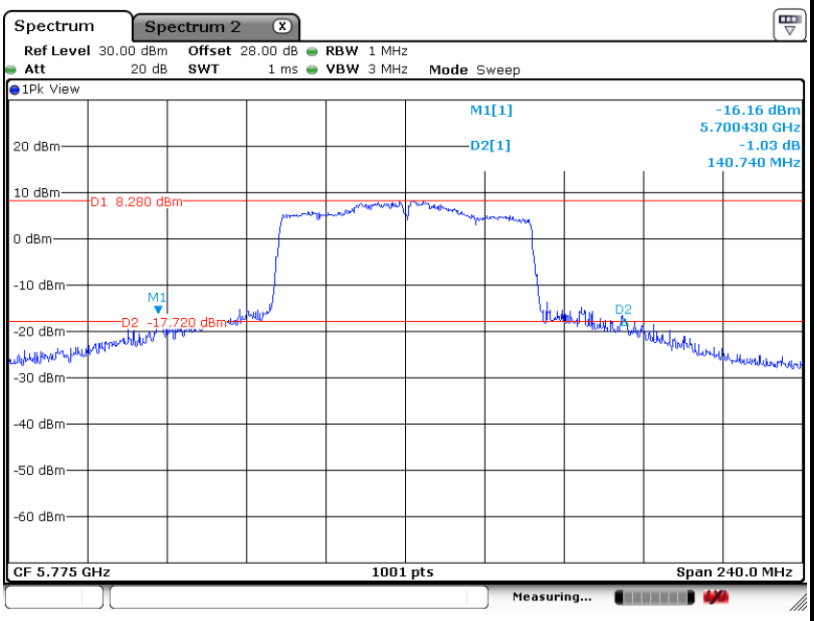
3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

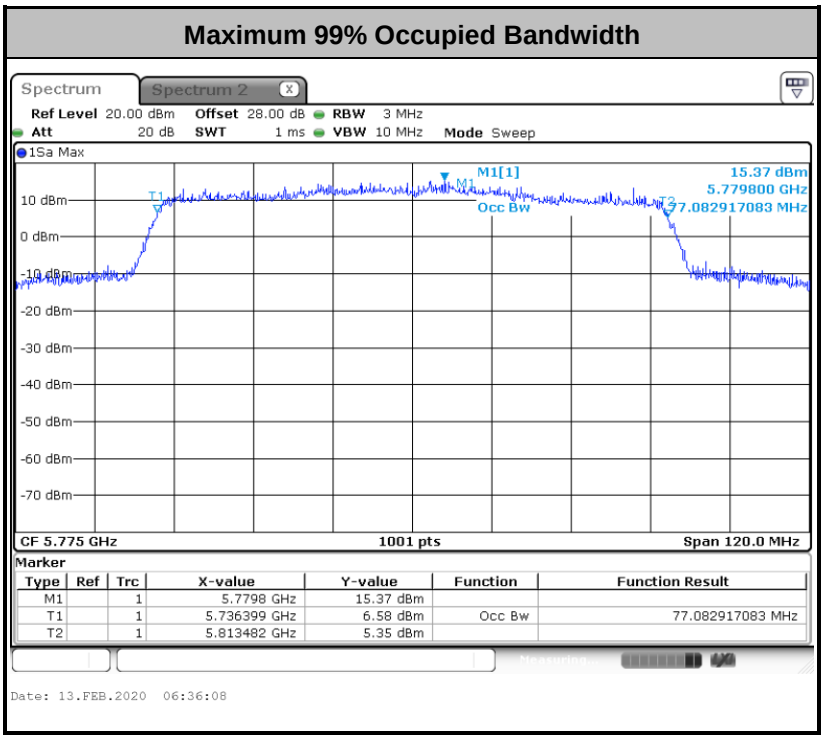
Minimum 6dB Bandwidth



Maximum 26dB Bandwidth



Maximum 99% Occupied Bandwidth



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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

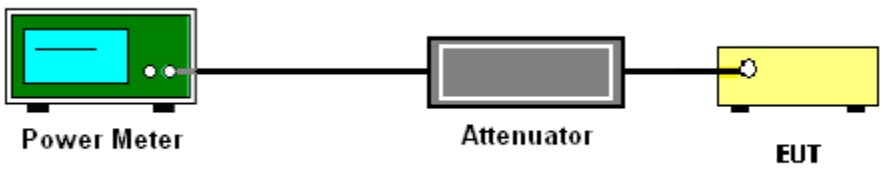
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

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

 # Method SA-3 #

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

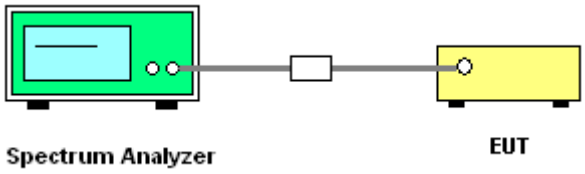
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time ≤ (number of points in sweep) × T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which 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. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

   Method (c): Measure and add 10 log(N_{ANT}) dB.

   With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. The addition of 10 log(N_{ANT}) dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{ANT}$ th of the PSD limit.

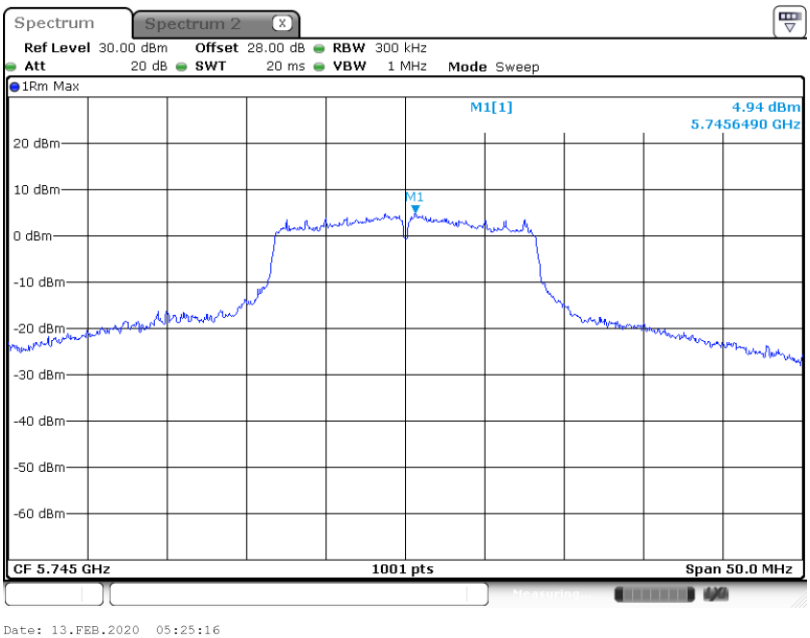
3.3.4 Test Setup



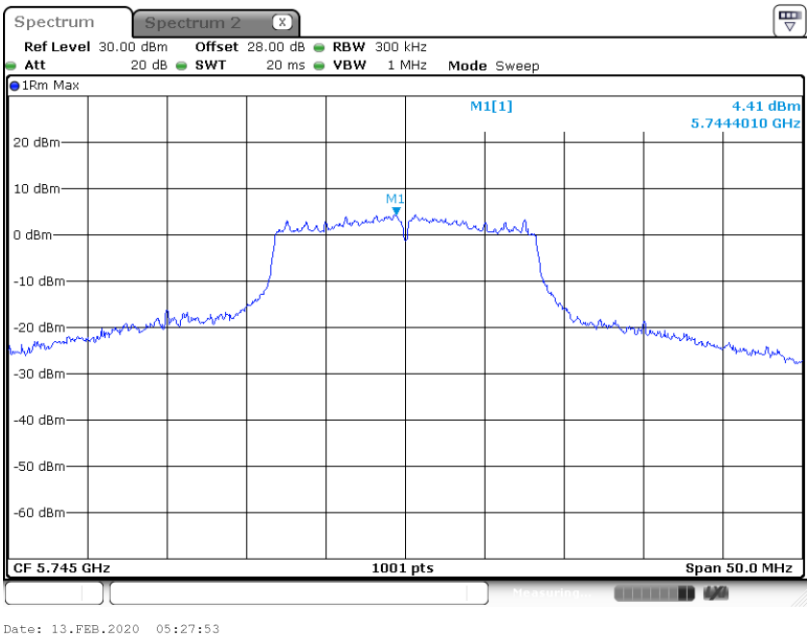
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/MHz) for MIMO Ant. 1



Worst Case Power Density (dBm/MHz) for MIMO Ant. 2



3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

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

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 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

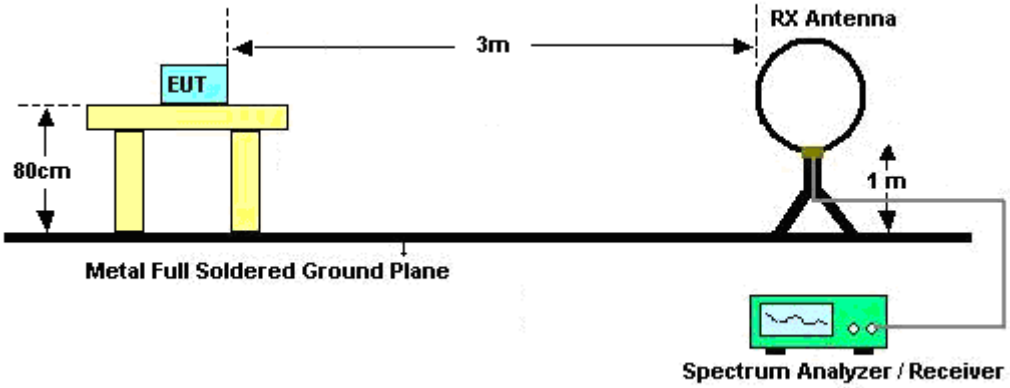
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- 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.

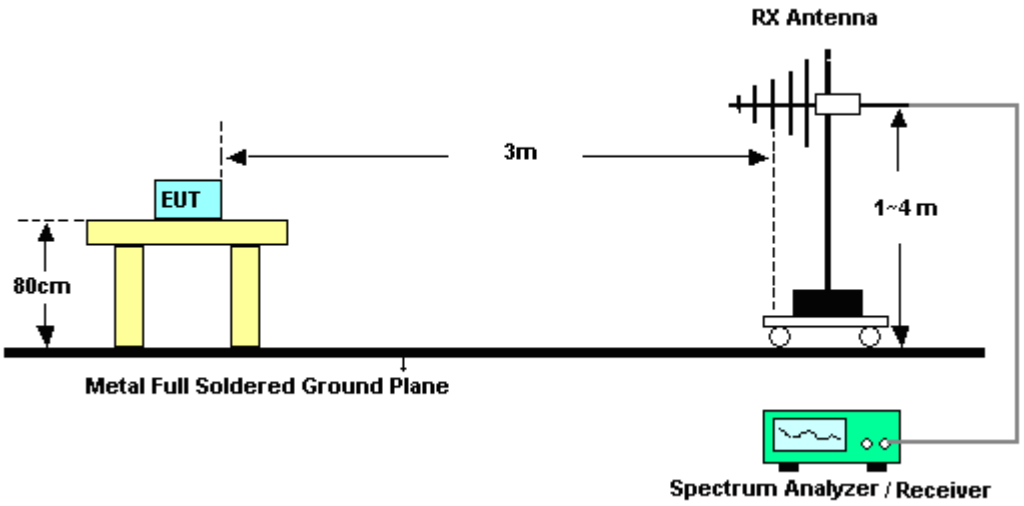
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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.

3.4.4 Test Setup

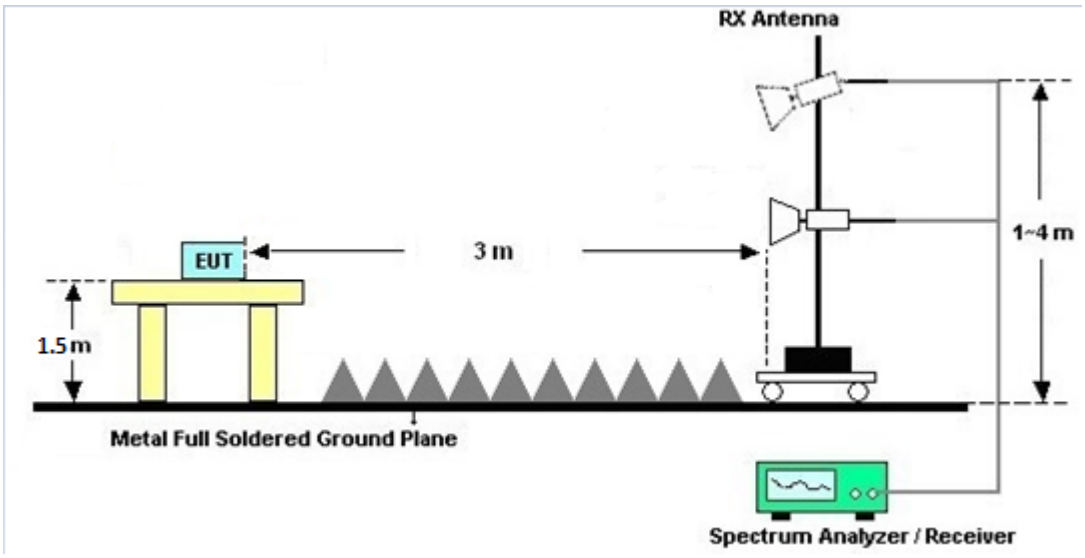
For radiated emissions below 30MHz



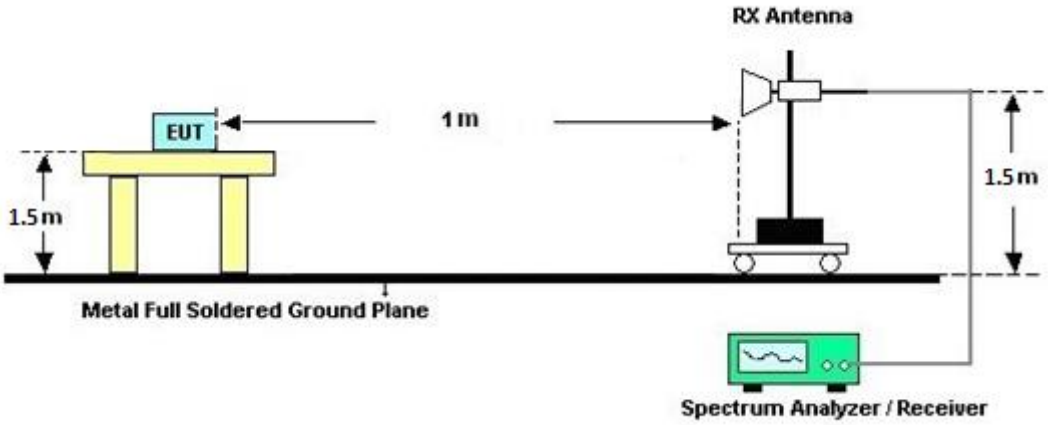
For radiated emissions from 30MHz to 1GHz



For radiated emissions from 1GHz to 18GHz



For radiated emissions above 18GHz



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

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

There is 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.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

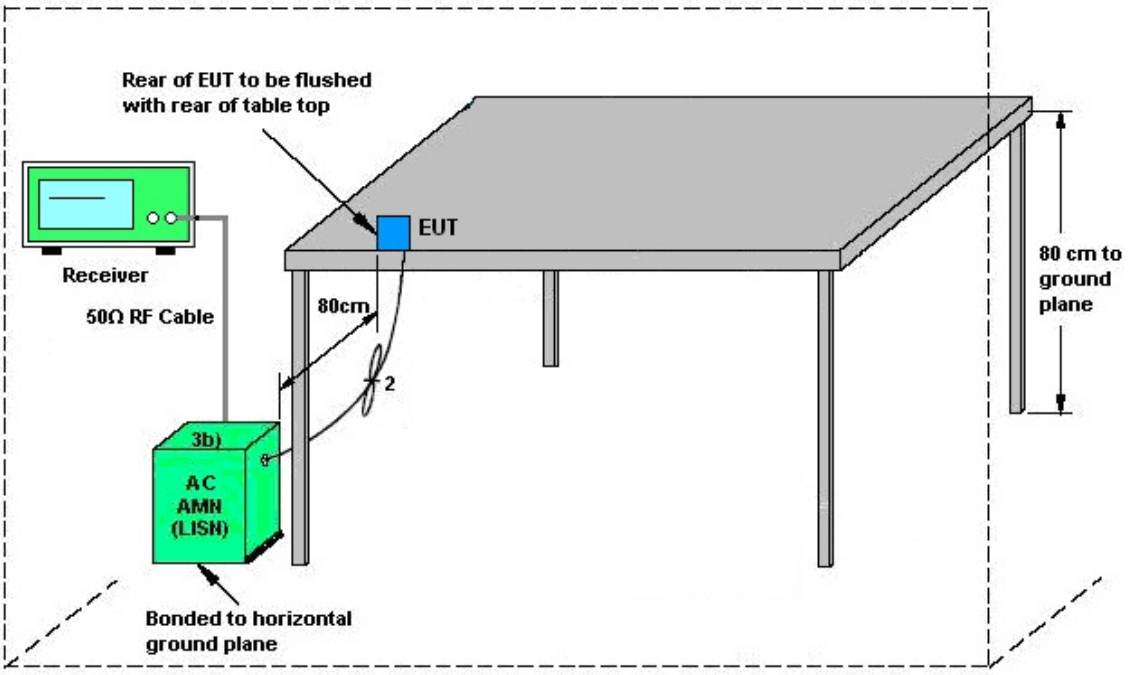
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN 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



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

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

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

<CDD Modes>

	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band IV	2.30	4.20	4.20	6.31	0.00	0.31

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

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	Nov. 05, 2020~ Nov. 09, 2020	Jul. 13, 2021	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N -06	41912 & 05	30MHz to 1GHz	Feb. 09, 2020	Nov. 05, 2020~ Nov. 09, 2020	Feb. 08, 2021	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz~40GHz	Dec. 10. 2019	Nov. 05, 2020~ Nov. 09, 2020	Dec. 09 2021	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Sep. 30. 2020	Nov. 05, 2020~ Nov. 09, 2020	Sep. 29. 2021	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1522	1G~18GHz	Sep. 29, 2020	Nov. 05, 2020~ Nov. 09, 2020	Sep. 28, 2021	Radiation (03CH16-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800054001	1GHz~18GHz	Sep. 04, 2020	Nov. 05, 2020~ Nov. 09, 2020	Sep. 03, 2021	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~40GHz	Dec. 13, 2019	Nov. 05, 2020~ Nov. 09, 2020	Dec. 12, 2020	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 11, 2019	Nov. 05, 2020~ Nov. 09, 2020	Dec.10, 2020	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY57290111	3Hz~26.5GHz	Dec. 05, 2019	Nov. 05, 2020~ Nov. 09, 2020	Dec. 04, 2020	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4PE	NA	Aug. 29, 2020	Nov. 05, 2020~ Nov. 09, 2020	Aug. 28, 2021	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4PE	NA	Aug. 29, 2020	Nov. 05, 2020~ Nov. 09, 2020	Aug. 28, 2021	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5757	NA	Aug. 29, 2020	Nov. 05, 2020~ Nov. 09, 2020	Aug. 28, 2021	Radiation (03CH16-HY)
Hygrometer	TECPEL	DTM-303B	TP200881	QA-3-031	Oct. 22, 2020	Nov. 05, 2020~ Nov. 09, 2020	Oct. 21, 2021	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Nov. 05, 2020~ Nov. 09, 2020	N/A	Radiation (03CH16-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Nov. 05, 2020~ Nov. 09, 2020	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 05, 2020~ Nov. 09, 2020	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 05, 2020~ Nov. 09, 2020	N/A	Radiation (03CH16-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H2	41410069	N/A	Jun. 17, 2019	Feb. 06, 2020~ Feb. 24, 2020	Jun. 16, 2020	Conducted (TH05-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Nov. 01, 2020~ Nov. 11, 2020	Mar. 01, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO10	10MHz~6GHz	Dec. 23, 2019	Feb. 06, 2020~ Nov. 11, 2020	Dec. 22, 2020	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Feb. 06, 2020~ Nov. 11, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Switch Control Manframe	E-IUSTRUMENT	ETF-1405-0	EC1900067	N/A	Aug. 15, 2019	Feb. 06, 2020~ Feb. 24, 2020	Aug. 14, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2020	Nov. 01, 2020~ Nov. 11, 2020	Mar. 16, 2021	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 11, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Nov. 11, 2020	Nov. 14, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 20, 2019	Nov. 11, 2020	Nov. 19, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Nov. 11, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Nov. 11, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Nov. 11, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Nov. 11, 2020	Mar. 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))	**4.5**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.3**

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

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

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Luffy Lin/Kathy Chen	Temperature:	22.8~24.1	°C
Test Date:	2020/2/6 ~ 2020/11/11	Relative Humidity:	53.1~54.6	%

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

Band IV MIMO												
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	2	149	5745	22.73	21.88	46.45	44.16	16.33	16.33	0.5	Pass
11a	6Mbps	2	157	5785	20.33	18.18	41.76	40.26	16.28	16.28	0.5	Pass
11a	6Mbps	2	165	5825	18.33	18.58	41.46	40.06	16.33	16.33	0.5	Pass
VHT20	MCS0	2	149	5745	20.13	20.38	43.69	45.24	17.58	17.58	0.5	Pass
VHT20	MCS0	2	157	5785	19.88	18.73	46.46	38.68	17.28	17.58	0.5	Pass
VHT20	MCS0	2	165	5825	18.38	18.28	39.56	33.01	17.53	17.58	0.5	Pass
VHT40	MCS0	2	151	5755	37.56	37.66	72.65	82.69	35.96	36.23	0.5	Pass
VHT40	MCS0	2	159	5795	37.56	37.16	79.96	70.37	36.23	36.23	0.5	Pass
VHT80	MCS0	2	155	5775	77.08	76.72	140.74	131.39	75.28	75.44	0.5	Pass

Report Number : FR010711-01C

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	17.90	17.90		30.00	30.00	2.30	4.20	Pass
11a	6Mbps	1	157	5785	17.20	17.80		30.00	30.00	2.30	4.20	Pass
11a	6Mbps	1	165	5825	17.10	17.80		30.00	30.00	2.30	4.20	Pass
HT20	MCS0	1	149	5745	17.00	16.60		30.00	30.00	2.30	4.20	Pass
HT20	MCS0	1	157	5785	17.00	17.00		30.00	30.00	2.30	4.20	Pass
HT20	MCS0	1	165	5825	17.10	16.90		30.00	30.00	2.30	4.20	Pass
HT40	MCS0	1	151	5755	17.10	17.10		30.00	30.00	2.30	4.20	Pass
HT40	MCS0	1	159	5795	17.10	17.00		30.00	30.00	2.30	4.20	Pass
VHT20	MCS0	1	149	5745	17.10	16.70		30.00	30.00	2.30	4.20	Pass
VHT20	MCS0	1	157	5785	17.10	17.10		30.00	30.00	2.30	4.20	Pass
VHT20	MCS0	1	165	5825	17.20	17.00		30.00	30.00	2.30	4.20	Pass
VHT40	MCS0	1	151	5755	17.20	17.20		30.00	30.00	2.30	4.20	Pass
VHT40	MCS0	1	159	5795	17.20	17.10		30.00	30.00	2.30	4.20	Pass
VHT80	MCS0	1	155	5775	15.40	15.30		30.00	30.00	2.30	4.20	Pass

Band IV MIMO												
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	2	149	5745	18.30	17.50	20.93	30.00		4.20		Pass
11a	6Mbps	2	157	5785	18.10	17.60	20.87	30.00		4.20		Pass
11a	6Mbps	2	165	5825	18.20	17.50	20.87	30.00		4.20		Pass
HT20	MCS0	2	149	5745	17.60	16.60	20.14	30.00		4.20		Pass
HT20	MCS0	2	157	5785	17.40	16.70	20.07	30.00		4.20		Pass
HT20	MCS0	2	165	5825	17.50	16.90	20.22	30.00		4.20		Pass
HT40	MCS0	2	151	5755	17.50	16.90	20.22	30.00		4.20		Pass
HT40	MCS0	2	159	5795	17.50	16.80	20.17	30.00		4.20		Pass
VHT20	MCS0	2	149	5745	17.70	16.70	20.24	30.00		4.20		Pass
VHT20	MCS0	2	157	5785	17.50	16.80	20.17	30.00		4.20		Pass
VHT20	MCS0	2	165	5825	17.60	17.00	20.32	30.00		4.20		Pass
VHT40	MCS0	2	151	5755	17.60	17.00	20.32	30.00		4.20		Pass
VHT40	MCS0	2	159	5795	17.60	16.90	20.27	30.00		4.20		Pass
VHT80	MCS0	2	155	5775	16.00	15.20	18.63	30.00		4.20		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV MIMO														
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	2	149	5745	2.22		7.16	6.63	10.17	29.69		6.31		Pass
11a	6Mbps	2	157	5785	2.22		6.75	6.70	9.76	29.69		6.31		Pass
11a	6Mbps	2	165	5825	2.22		6.75	6.58	9.76	29.69		6.31		Pass
VHT20	MCS0	2	149	5745	2.22		6.40	5.79	9.41	29.69		6.31		Pass
VHT20	MCS0	2	157	5785	2.22		5.94	5.68	8.95	29.69		6.31		Pass
VHT20	MCS0	2	165	5825	2.22		5.94	5.22	8.95	29.69		6.31		Pass
VHT40	MCS0	2	151	5755	2.22		3.45	2.77	6.46	29.69		6.31		Pass
VHT40	MCS0	2	159	5795	2.22		3.12	3.13	6.14	29.69		6.31		Pass
VHT80	MCS0	2	155	5775	2.22		-0.20	-0.07	2.94	29.69		6.31		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

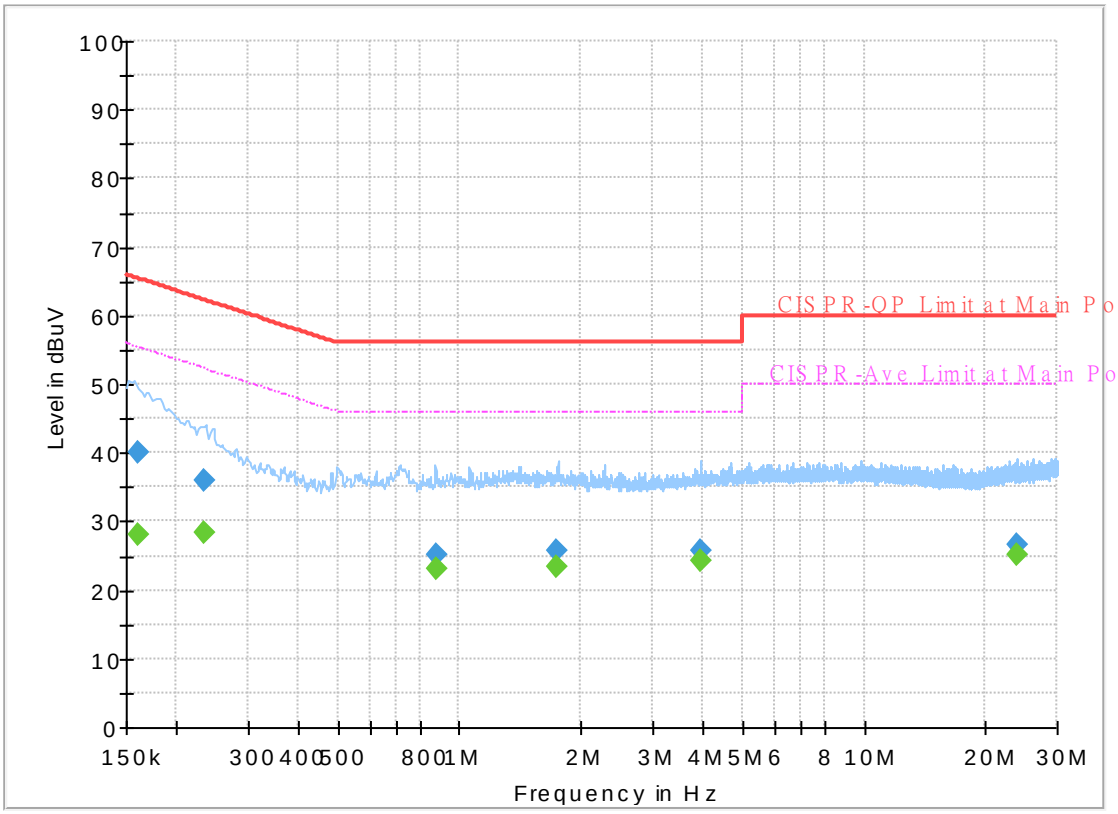
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Howard Huang and BorShiang Huang	**Temperature :**	21~24℃
		Relative Humidity :	40~44%

EUT Information

Report NO :	010711-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



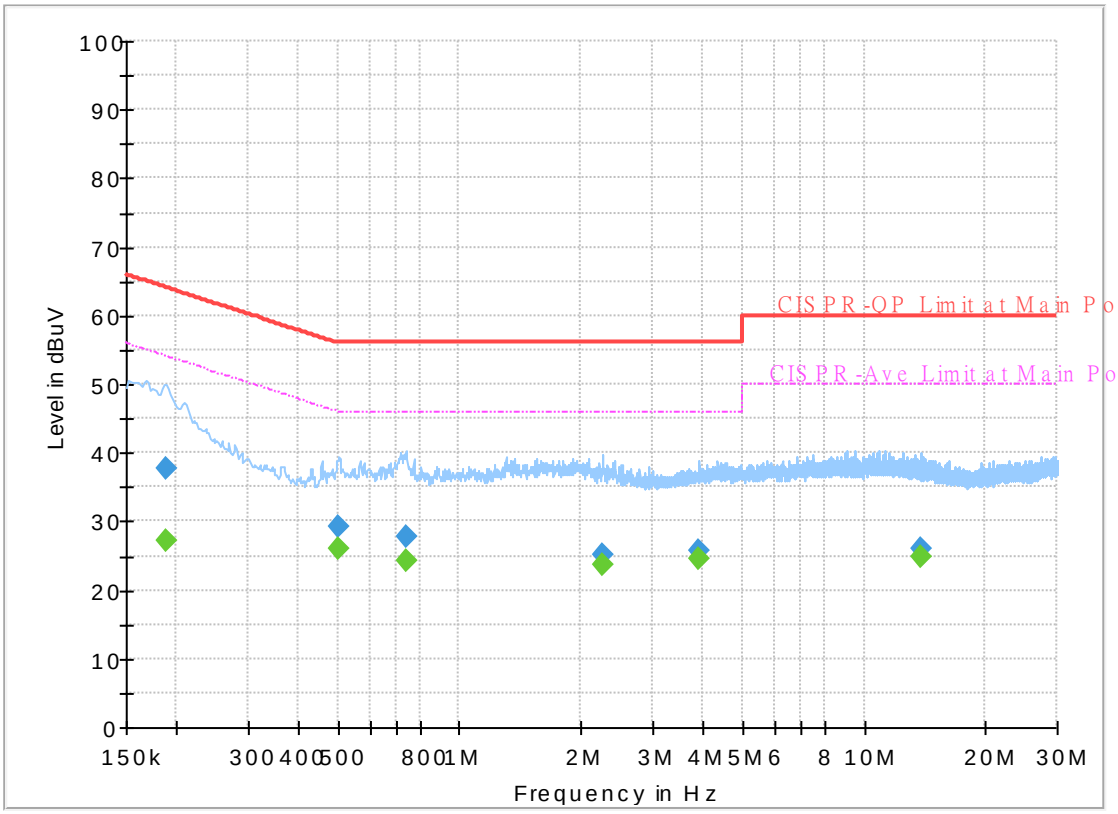
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	28.20	55.40	27.20	L1	OFF	19.4
0.161250	40.08	---	65.40	25.32	L1	OFF	19.4
0.234960	---	28.38	52.27	23.89	L1	OFF	19.4
0.234960	36.11	---	62.27	26.16	L1	OFF	19.4
0.872610	---	22.98	46.00	23.02	L1	OFF	19.5
0.872610	25.08	---	56.00	30.92	L1	OFF	19.5
1.745250	---	23.36	46.00	22.64	L1	OFF	19.6
1.745250	25.61	---	56.00	30.39	L1	OFF	19.6
3.957000	---	24.40	46.00	21.60	L1	OFF	19.6
3.957000	25.65	---	56.00	30.35	L1	OFF	19.6
23.815230	---	25.25	50.00	24.75	L1	OFF	20.3
23.815230	26.55	---	60.00	33.45	L1	OFF	20.3

EUT Information

Report NO :	010711-01
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)
0.189150	---	27.09	54.07	26.98	N	OFF	19.5
0.189150	37.70	---	64.07	26.37	N	OFF	19.5
0.501450	---	26.05	46.00	19.95	N	OFF	19.5
0.501450	29.22	---	56.00	26.78	N	OFF	19.5
0.740760	---	24.34	46.00	21.66	N	OFF	19.5
0.740760	27.87	---	56.00	28.13	N	OFF	19.5
2.264730	---	23.56	46.00	22.44	N	OFF	19.7
2.264730	25.25	---	56.00	30.75	N	OFF	19.7
3.908400	---	24.51	46.00	21.49	N	OFF	19.7
3.908400	25.60	---	56.00	30.40	N	OFF	19.7
13.845390	---	24.74	50.00	25.26	N	OFF	20.2
13.845390	25.96	---	60.00	34.04	N	OFF	20.2

Appendix C. Radiated Spurious Emission

Test Engineer :	Andy Yang and CR Liao	Temperature :	20~25°C
		Relative Humidity :	50~60%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5631.4	54.58	-13.62	68.2	38.32	31.64	13.67	29.05	285	42	P	H
		5700	71.92	-33.28	105.2	55.52	31.7	13.73	29.03	285	42	P	H
		5719.2	79.6	-30.98	110.58	63.06	31.82	13.75	29.03	285	42	P	H
		5725	83.1	-39.1	122.2	66.53	31.85	13.75	29.03	285	42	P	H
	*	5745	110.86	-	-	94.14	31.97	13.77	29.02	285	42	P	H
	*	5745	104.15	-	-	87.43	31.97	13.77	29.02	285	42	A	H
													H
802.11a													H
CH 149		5648	56.71	-11.49	68.2	40.47	31.6	13.68	29.04	100	238	P	V
5745MHz		5698.4	76.67	-27.35	104.02	60.27	31.7	13.73	29.03	100	238	P	V
		5718	86.13	-24.11	110.24	69.6	31.81	13.75	29.03	100	238	P	V
		5723.8	87.95	-31.51	119.46	71.39	31.84	13.75	29.03	100	238	P	V
	*	5745	116.9	-	-	100.18	31.97	13.77	29.02	100	238	P	V
	*	5745	110.41	-	-	93.69	31.97	13.77	29.02	100	238	A	V
													V
													V

WIFI Ant. 1+2	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)
		5612.8	55.33	-12.87	68.2	39.06	31.67	13.65	29.05	281	42	P	H
		5700	57.4	-47.8	105.2	41	31.7	13.73	29.03	281	42	P	H
		5716.2	65.47	-44.27	109.74	48.96	31.8	13.74	29.03	281	42	P	H
		5722.8	66.92	-50.26	117.18	50.36	31.84	13.75	29.03	281	42	P	H
	*	5785	111.36	-	-	94.56	32	13.81	29.01	281	42	P	H
	*	5785	104.48	-	-	87.68	32	13.81	29.01	281	42	A	H
		5850.6	61.33	-59.5	120.83	44.42	32.1	13.81	29	281	42	P	H
		5855.4	60.26	-50.43	110.69	43.33	32.11	13.81	28.99	281	42	P	H
		5898.4	55.9	-31.95	87.85	38.87	32.2	13.81	28.98	281	42	P	H
		5938	54.61	-13.59	68.2	37.49	32.28	13.81	28.97	281	42	P	H
													H
802.11a CH 157 5785MHz													H
		5639	54.88	-13.32	68.2	38.63	31.62	13.68	29.05	102	242	P	V
		5698	61.43	-42.3	103.73	45.03	31.7	13.73	29.03	102	242	P	V
		5716.8	69.3	-40.61	109.91	52.78	31.8	13.75	29.03	102	242	P	V
		5724.4	70.18	-50.65	120.83	53.61	31.85	13.75	29.03	102	242	P	V
	*	5785	116.84	-	-	100.04	32	13.81	29.01	102	242	P	V
	*	5785	109.51	-	-	92.71	32	13.81	29.01	102	242	A	V
		5854	66.49	-46.59	113.08	49.57	32.11	13.81	29	102	242	P	V
		5858	64.43	-45.53	109.96	47.49	32.12	13.81	28.99	102	242	P	V
		5878.8	57.19	-45.19	102.38	40.21	32.16	13.81	28.99	102	242	P	V
		5932.4	55.61	-12.59	68.2	38.52	32.26	13.81	28.98	102	242	P	V
													V
													V

WIFI Ant. 1+2	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)
	*	5825	111.11	-	-	94.24	32.05	13.82	29	287	40	P	H
	*	5825	104.01	-	-	87.14	32.05	13.82	29	287	40	A	H
		5850.6	80.66	-40.17	120.83	63.75	32.1	13.81	29	287	40	P	H
		5855.8	77.48	-33.1	110.58	60.55	32.11	13.81	28.99	287	40	P	H
		5875.2	68	-37.05	105.05	51.03	32.15	13.81	28.99	287	40	P	H
		5929.8	55.31	-12.89	68.2	38.22	32.26	13.81	28.98	287	40	P	H
													H
802.11a													H
CH 165	*	5825	116.29	-	-	99.42	32.05	13.82	29	101	235	P	V
5825MHz	*	5825	109.28	-	-	92.41	32.05	13.82	29	101	235	A	V
		5850.2	84.13	-37.61	121.74	67.22	32.1	13.81	29	101	235	P	V
		5857.4	80.57	-29.56	110.13	63.64	32.11	13.81	28.99	101	235	P	V
		5878	73.58	-29.39	102.97	56.6	32.16	13.81	28.99	101	235	P	V
		5929.4	56.27	-11.93	68.2	39.18	32.26	13.81	28.98	101	235	P	V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2	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	55.93	-18.07	74	57.12	39.91	20.11	61.21	184	103	P	H
		11490	48.64	-5.36	54	49.83	39.91	20.11	61.21	184	103	A	H
		17235	49.94	-18.26	68.2	43.37	40.9	25.16	59.49	100	0	P	H
													H
		11490	56.64	-17.36	74	57.83	39.91	20.11	61.21	183	120	P	V
		11490	46.8	-7.2	54	47.99	39.91	20.11	61.21	183	120	A	V
		17235	50.15	-18.05	68.2	43.58	40.9	25.16	59.49	100	0	P	V
													V
802.11a CH 157 5785MHz		11570	55.05	-18.95	74	56.32	39.76	20.18	61.21	180	104	P	H
		11570	48.29	-5.71	54	49.56	39.76	20.18	61.21	180	104	A	H
		17355	49.82	-18.38	68.2	42.15	41.6	25.21	59.14	100	0	P	H
													H
		11570	56.19	-17.81	74	57.46	39.76	20.18	61.21	176	120	P	V
		11570	46.82	-7.18	54	48.09	39.76	20.18	61.21	176	120	A	V
		17355	49.67	-18.53	68.2	42	41.6	25.21	59.14	100	0	P	V
													V
802.11a CH 165 5825MHz		11650	55.46	-18.54	74	56.91	39.55	20.23	61.23	178	103	P	H
		11650	48.19	-5.81	54	49.64	39.55	20.23	61.23	178	103	A	H
		17475	51.82	-16.38	68.2	42.9	42.45	25.25	58.78	100	0	P	H
													H
		11650	55.66	-18.34	74	57.11	39.55	20.23	61.23	176	120	P	V
		11650	46.91	-7.09	54	48.36	39.55	20.23	61.23	176	120	A	V
		17475	51.24	-16.96	68.2	42.32	42.45	25.25	58.78	100	0	P	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 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		5645	54.35	-13.85	68.2	38.11	31.61	13.68	29.05	288	42	P	H
		5699.2	72.01	-32.6	104.61	55.61	31.7	13.73	29.03	288	42	P	H
		5720	81.49	-29.31	110.8	64.95	31.82	13.75	29.03	288	42	P	H
		5724	83.76	-36.16	119.92	67.2	31.84	13.75	29.03	288	42	P	H
	*	5745	112.68	-	-	95.96	31.97	13.77	29.02	288	42	P	H
	*	5745	103.46	-	-	86.74	31.97	13.77	29.02	288	42	A	H
802.11ac													H
VHT20													H
CH 149		5650	56.27	-11.93	68.2	40.02	31.6	13.69	29.04	100	237	P	V
5745MHz		5698.6	77.15	-27.02	104.17	60.75	31.7	13.73	29.03	100	237	P	V
		5718.8	86.25	-24.21	110.46	69.72	31.81	13.75	29.03	100	237	P	V
		5723.8	89.97	-29.49	119.46	73.41	31.84	13.75	29.03	100	237	P	V
	*	5745	117.03	-	-	100.31	31.97	13.77	29.02	100	237	P	V
	*	5745	108.98	-	-	92.26	31.97	13.77	29.02	100	237	A	V
													V
													V

WIFI Ant. 1+2	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)
		5634.8	53.76	-14.44	68.2	37.51	31.63	13.67	29.05	294	41	P	H
		5694.6	56.03	-45.19	101.22	39.64	31.69	13.73	29.03	294	41	P	H
		5719.4	63.47	-47.16	110.63	46.93	31.82	13.75	29.03	294	41	P	H
		5724.6	65.32	-55.97	121.29	48.75	31.85	13.75	29.03	294	41	P	H
	*	5785	109.94	-	-	93.14	32	13.81	29.01	294	41	P	H
	*	5785	102.46	-	-	85.66	32	13.81	29.01	294	41	A	H
		5852.4	61.8	-54.93	116.73	44.89	32.1	13.81	29	294	41	P	H
		5856.8	59.32	-50.98	110.3	42.39	32.11	13.81	28.99	294	41	P	H
		5879	56.8	-45.43	102.23	39.82	32.16	13.81	28.99	294	41	P	H
		5939.2	54.76	-13.44	68.2	37.64	32.28	13.81	28.97	294	41	P	H
802.11ac													H
VHT20													H
CH 157		5639.8	55.66	-12.54	68.2	39.41	31.62	13.68	29.05	101	238	P	V
5785MHz		5690.8	63.04	-35.38	98.42	46.67	31.68	13.72	29.03	101	238	P	V
		5719.2	67.24	-43.34	110.58	50.7	31.82	13.75	29.03	101	238	P	V
		5724.6	70.55	-50.74	121.29	53.98	31.85	13.75	29.03	101	238	P	V
	*	5785	116.46	-	-	99.66	32	13.81	29.01	101	238	P	V
	*	5785	108.55	-	-	91.75	32	13.81	29.01	101	238	A	V
		5852	64.82	-52.82	117.64	47.91	32.1	13.81	29	101	238	P	V
		5857.2	64.31	-45.87	110.18	47.38	32.11	13.81	28.99	101	238	P	V
		5879.8	57.15	-44.48	101.63	40.17	32.16	13.81	28.99	101	238	P	V
		5928.6	56.14	-12.06	68.2	39.05	32.26	13.81	28.98	101	238	P	V
													V
													V

WIFI Ant. 1+2	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)
	*	5825	111.69	-	-	94.82	32.05	13.82	29	291	42	P	H
	*	5825	102.94	-	-	86.07	32.05	13.82	29	291	42	A	H
		5850.2	78.9	-42.84	121.74	61.99	32.1	13.81	29	291	42	P	H
		5856.4	77.32	-33.09	110.41	60.39	32.11	13.81	28.99	291	42	P	H
		5875	68.2	-37	105.2	51.23	32.15	13.81	28.99	291	42	P	H
		5939.8	55.04	-13.16	68.2	37.92	32.28	13.81	28.97	291	42	P	H
802.11ac													H
VHT20													H
CH 165	*	5825	115.75	-	-	98.88	32.05	13.82	29	101	243	P	V
5825MHz	*	5825	108.36	-	-	91.49	32.05	13.82	29	101	243	A	V
		5850	84.5	-37.7	122.2	67.59	32.1	13.81	29	101	243	P	V
		5855.4	80.29	-30.4	110.69	63.36	32.11	13.81	28.99	101	243	P	V
		5875.8	72.37	-32.24	104.61	55.4	32.15	13.81	28.99	101	243	P	V
		5928	59.04	-9.16	68.2	41.95	32.26	13.81	28.98	101	243	P	V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1+2	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)
		11490	56.3	-17.7	74	57.49	39.91	20.11	61.21	100	143	P	H
		11490	48.07	-5.93	54	49.26	39.91	20.11	61.21	100	143	A	H
802.11ac		17235	49.29	-18.91	68.2	42.72	40.9	25.16	59.49	100	0	P	H
VHT20													H
CH 149		11490	57.49	-16.51	74	58.68	39.91	20.11	61.21	177	122	P	V
5745MHz		11490	46.85	-7.15	54	48.04	39.91	20.11	61.21	177	122	A	V
		17235	50.17	-18.03	68.2	43.6	40.9	25.16	59.49	100	0	P	V
													V
		11570	55.66	-18.34	74	56.93	39.76	20.18	61.21	179	108	P	H
		11570	49.74	-4.26	54	51.01	39.76	20.18	61.21	179	108	A	H
802.11ac		17355	50.92	-17.28	68.2	43.25	41.6	25.21	59.14	100	0	P	H
VHT20													H
CH 157		11570	56.36	-17.64	74	57.63	39.76	20.18	61.21	178	122	P	V
5785MHz		11570	46.4	-7.6	54	47.67	39.76	20.18	61.21	178	122	A	V
		17355	49.6	-18.6	68.2	41.93	41.6	25.21	59.14	100	0	P	V
													V
		11650	55.91	-18.09	74	57.36	39.55	20.23	61.23	179	108	P	H
		11650	49.39	-4.61	54	50.84	39.55	20.23	61.23	179	108	A	H
802.11ac		17475	51.26	-16.94	68.2	42.34	42.45	25.25	58.78	100	0	P	H
VHT20													H
CH 165		11650	55.15	-18.85	74	56.6	39.55	20.23	61.23	176	124	P	V
5825MHz		11650	45.39	-8.61	54	46.84	39.55	20.23	61.23	176	124	A	V
		17475	51.05	-17.15	68.2	42.13	42.45	25.25	58.78	100	0	P	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+2	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)
		5645.2	59.62	-8.58	68.2	43.38	31.61	13.68	29.05	299	44	P	H
		5698.8	74.95	-29.37	104.32	58.55	31.7	13.73	29.03	299	44	P	H
		5719.8	81.92	-28.82	110.74	65.38	31.82	13.75	29.03	299	44	P	H
		5722.8	79.47	-37.71	117.18	62.91	31.84	13.75	29.03	299	44	P	H
	*	5755	106.78	-	-	90.02	32	13.78	29.02	299	44	P	H
	*	5755	98.64	-	-	81.88	32	13.78	29.02	299	44	A	H
		5852.8	59.21	-56.61	115.82	42.29	32.11	13.81	29	299	44	P	H
		5855.8	58.39	-52.19	110.58	41.46	32.11	13.81	28.99	299	44	P	H
		5915.4	55.8	-19.48	75.28	38.74	32.23	13.81	28.98	299	44	P	H
		5939.4	55.43	-12.77	68.2	38.31	32.28	13.81	28.97	299	44	P	H
802.11ac													H
VHT40													H
CH 151		5644.6	66.3	-1.9	68.2	50.06	31.61	13.68	29.05	102	245	P	V
5755MHz		5695.6	80.57	-21.39	101.96	64.18	31.69	13.73	29.03	102	245	P	V
		5719.2	88.05	-22.53	110.58	71.51	31.82	13.75	29.03	102	245	P	V
		5724	87.54	-32.38	119.92	70.98	31.84	13.75	29.03	102	245	P	V
	*	5755	112.01	-	-	95.25	32	13.78	29.02	102	245	P	V
	*	5755	104.59	-	-	87.83	32	13.78	29.02	102	245	A	V
		5850	65.7	-56.5	122.2	48.79	32.1	13.81	29	102	245	P	V
		5863.4	63.33	-45.12	108.45	46.38	32.13	13.81	28.99	102	245	P	V
		5876.6	59.18	-44.83	104.01	42.21	32.15	13.81	28.99	102	245	P	V
		5933.4	54.88	-13.32	68.2	37.78	32.27	13.81	28.98	102	245	P	V
													V
													V

WIFI Ant. 1+2	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)
		5634.6	56.67	-11.53	68.2	40.42	31.63	13.67	29.05	296	44	P	H
		5698.8	67.24	-37.08	104.32	50.84	31.7	13.73	29.03	296	44	P	H
		5718.8	74.16	-36.3	110.46	57.63	31.81	13.75	29.03	296	44	P	H
		5724.2	73.49	-46.89	120.38	56.92	31.85	13.75	29.03	296	44	P	H
	*	5795	107.36	-	-	90.55	32	13.82	29.01	296	44	P	H
	*	5795	99.91	-	-	83.1	32	13.82	29.01	296	44	A	H
		5852.6	74.94	-41.33	116.27	58.02	32.11	13.81	29	296	44	P	H
		5855.8	73.15	-37.43	110.58	56.22	32.11	13.81	28.99	296	44	P	H
		5877.6	66.01	-37.26	103.27	49.03	32.16	13.81	28.99	296	44	P	H
		5927.4	56.74	-11.46	68.2	39.66	32.25	13.81	28.98	296	44	P	H
802.11ac													H
VHT40													H
CH 159		5643.8	60.47	-7.73	68.2	44.23	31.61	13.68	29.05	100	237	P	V
5795MHz		5696	73.84	-28.41	102.25	57.45	31.69	13.73	29.03	100	237	P	V
		5717.4	78.18	-31.89	110.07	61.66	31.8	13.75	29.03	100	237	P	V
		5724.8	80.03	-41.71	121.74	63.46	31.85	13.75	29.03	100	237	P	V
	*	5795	114.06	-	-	97.25	32	13.82	29.01	100	237	P	V
	*	5795	106.21	-	-	89.4	32	13.82	29.01	100	237	A	V
		5852.4	78.79	-37.94	116.73	61.88	32.1	13.81	29	100	237	P	V
		5855.2	78.52	-32.22	110.74	61.59	32.11	13.81	28.99	100	237	P	V
		5880.6	71.75	-29.29	101.04	54.77	32.16	13.81	28.99	100	237	P	V
		5925.4	60.1	-8.1	68.2	43.02	32.25	13.81	28.98	100	237	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+2	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)
		11510	54.34	-19.66	74	55.53	39.88	20.13	61.2	182	108	P	H
		11510	49.32	-4.68	54	50.51	39.88	20.13	61.2	182	108	A	H
802.11ac		17265	50.57	-17.63	68.2	43.82	40.99	25.17	59.41	100	0	P	H
VHT40													H
CH 151		11510	49.38	-24.62	74	50.57	39.88	20.13	61.2	100	0	P	V
5755MHz		17265	49.11	-19.09	68.2	42.36	40.99	25.17	59.41	100	0	P	V
		11510	49.38	-24.62	74	50.57	39.88	20.13	61.2	100	0	P	V
													V
		11590	54.7	-19.3	74	56.01	39.72	20.19	61.22	183	106	P	H
		11590	49.42	-4.58	54	50.73	39.72	20.19	61.22	183	106	A	H
802.11ac		17385	50.83	-17.37	68.2	42.8	41.86	25.22	59.05	100	0	P	H
VHT40													H
CH 159		11590	49.82	-24.18	74	51.13	39.72	20.19	61.22	100	0	P	V
5795MHz		17385	51.57	-16.63	68.2	43.54	41.86	25.22	59.05	100	0	P	V
		11590	49.82	-24.18	74	51.13	39.72	20.19	61.22	100	0	P	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+2	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)
		5624.4	58.74	-9.46	68.2	42.48	31.65	13.66	29.05	302	55	P	H
		5689	68.44	-28.65	97.09	52.07	31.68	13.72	29.03	302	55	P	H
		5719.2	73.92	-36.66	110.58	57.38	31.82	13.75	29.03	302	55	P	H
		5722	73.45	-41.91	115.36	56.9	31.83	13.75	29.03	302	55	P	H
	*	5775	104.02	-	-	87.23	32	13.8	29.01	302	55	P	H
	*	5775	97.12	-	-	80.33	32	13.8	29.01	302	55	A	H
		5851.4	70.01	-49	119.01	53.1	32.1	13.81	29	302	55	P	H
		5859.8	69.14	-40.31	109.45	52.2	32.12	13.81	28.99	302	55	P	H
		5880.4	62.51	-38.68	101.19	45.53	32.16	13.81	28.99	302	55	P	H
		5931	56.94	-11.26	68.2	39.85	32.26	13.81	28.98	302	55	P	H
802.11ac													H
VHT80													H
CH 155		5649.8	67.34	-0.86	68.2	51.1	31.6	13.68	29.04	100	234	P	V
5775MHz		5691.2	75.45	-23.26	98.71	59.08	31.68	13.72	29.03	100	234	P	V
		5716.4	78.97	-30.82	109.79	62.46	31.8	13.74	29.03	100	234	P	V
		5722.8	79.02	-38.16	117.18	62.46	31.84	13.75	29.03	100	234	P	V
	*	5775	109.16	-	-	92.37	32	13.8	29.01	100	234	P	V
	*	5775	102.24	-	-	85.45	32	13.8	29.01	100	234	A	V
		5850.6	71.23	-49.6	120.83	54.32	32.1	13.81	29	100	234	P	V
		5856.4	72.23	-38.18	110.41	55.3	32.11	13.81	28.99	100	234	P	V
		5880.2	66.14	-35.2	101.34	49.16	32.16	13.81	28.99	100	234	P	V
		5927	59.55	-8.65	68.2	42.47	32.25	13.81	28.98	100	234	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+2	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	49.85	-24.15	74	51.1	39.8	20.16	61.21	100	0	P	H
		17325	50.99	-17.21	68.2	43.7	41.32	25.2	59.23	100	0	P	H
		17879	56.02	-17.98	74	40.99	46.8	25.41	57.18	100	0	P	H
		17879	47.98	-6.02	54	32.95	46.8	25.41	57.18	100	0	A	H
		11550	48.78	-25.22	74	50.03	39.8	20.16	61.21	100	0	P	V
		17325	51.06	-17.14	68.2	43.77	41.32	25.2	59.23	100	0	P	V
		17835	56.02	-17.98	74	42.03	45.97	25.38	57.36	100	0	P	V
		17835	47.49	-6.51	54	33.5	45.97	25.38	57.36	100	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission above 18GHz

5GHz WIFI 802.11ac VHT80 (SHF)

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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		20002	35.77	-38.23	74	40.55	37.8	11.22	53.8	150	0	P	H
		33730	43.17	-25.03	68.2	38.83	41.05	17.87	54.58	150	0	P	H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		22906	39.15	-34.85	74	41.77	38.54	12.42	53.58	150	0	P	V
SHF		36458	44.3	-29.7	74	39.71	42.78	18.75	56.94	150	0	P	V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against 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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		51.34	22.12	-17.88	40	39.85	14.12	0.99	32.84	-	-	P	H
		95.96	24.62	-18.88	43.5	40.1	15.64	1.5	32.62	-	-	P	H
		191.99	26.72	-16.78	43.5	42.32	15.01	2.28	32.89	-	-	P	H
		239.52	29.28	-16.72	46	42.5	16.95	2.6	32.77	-	-	P	H
		335.55	31.72	-14.28	46	41.34	19.79	3.08	32.49	-	-	P	H
		742.95	38.53	-7.47	46	38.81	27.63	4.69	32.6	100	0	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		51.34	33.82	-6.18	40	51.55	14.12	0.99	32.84	100	0	P	V
LF		95.96	21.66	-21.84	43.5	37.14	15.64	1.5	32.62	-	-	P	V
		191.99	22.69	-20.81	43.5	38.29	15.01	2.28	32.89	-	-	P	V
		288.02	20.51	-25.49	46	31.43	18.82	2.85	32.59	-	-	P	V
		335.55	25.6	-20.4	46	35.22	19.79	3.08	32.49	-	-	P	V
		740.04	39.15	-6.85	46	39.45	27.6	4.68	32.58	-	-	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+2		(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 D. Radiated Spurious Emission Plots

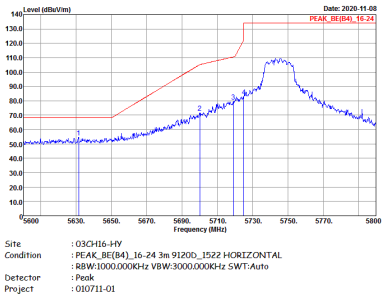
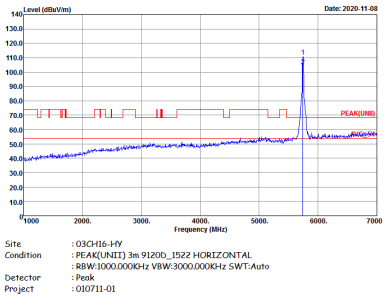
Test Engineer :	Andy Yang and CR Liro	**Temperature :**	20~25°C
		Relative Humidity :	50~60%

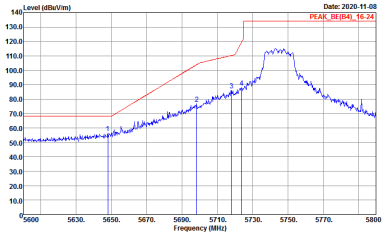
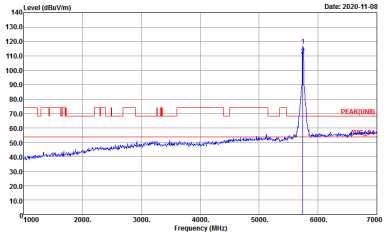
Note symbol

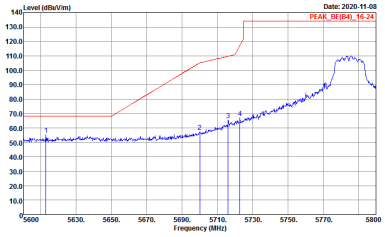
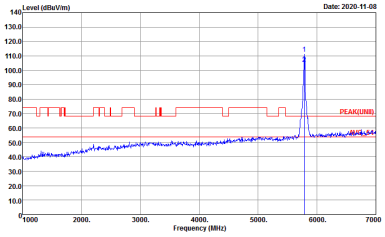
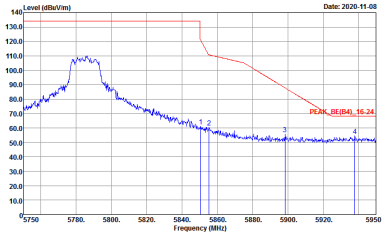
-L	**Low channel location**
-R	**High channel location**

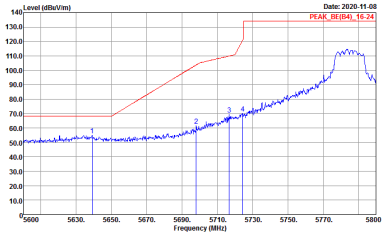
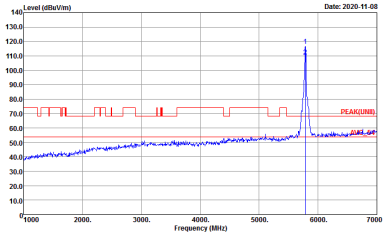
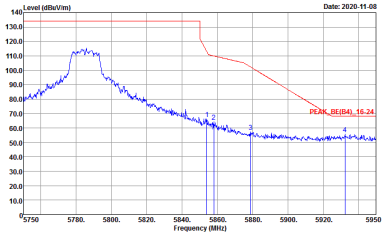
Band 4 - 5725~5850MHz

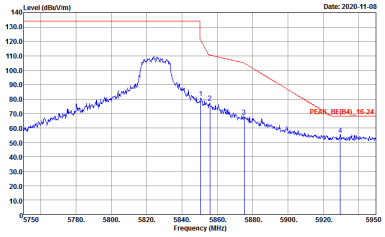
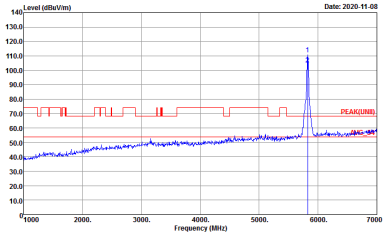
WIFI 802.11a (Band Edge @ 3m)

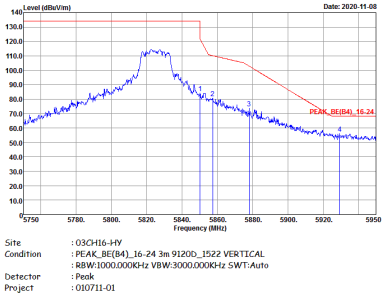
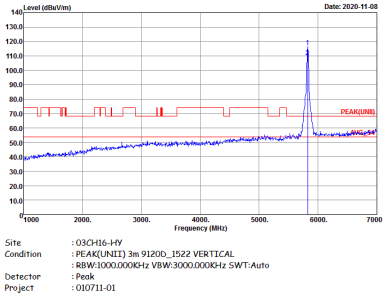
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

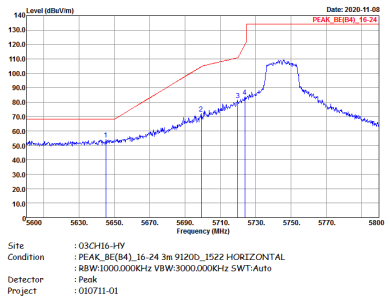
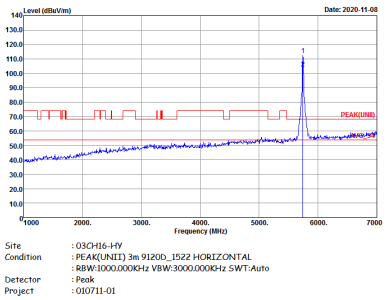
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

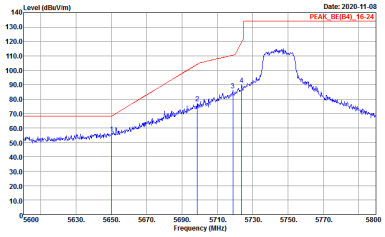
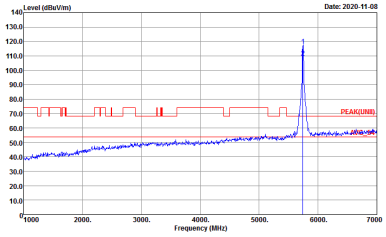
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

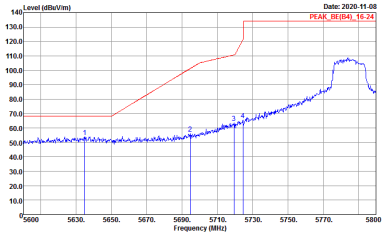
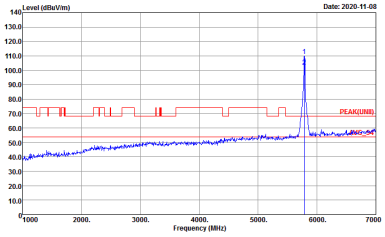
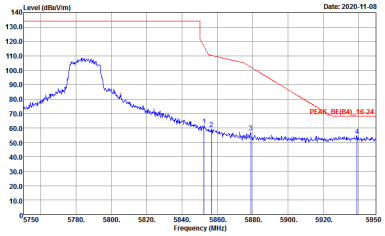
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

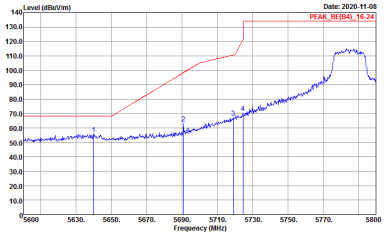
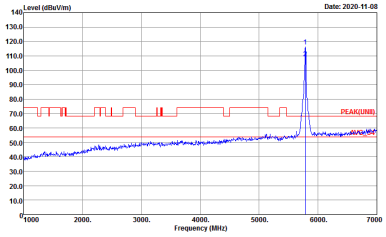
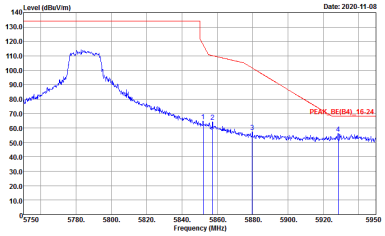
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

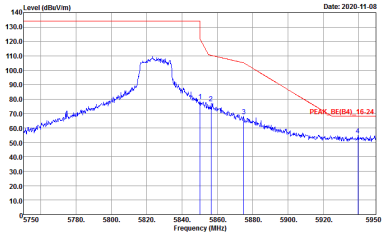
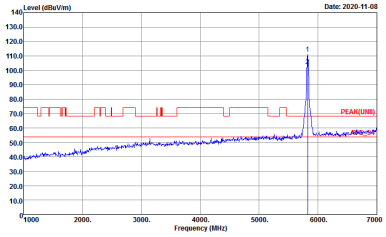
Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)

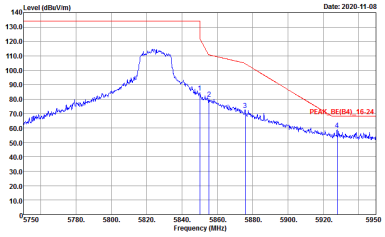
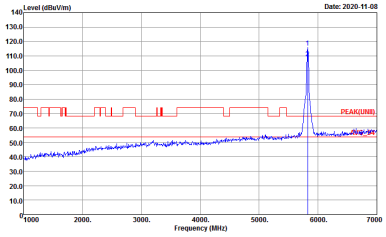
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

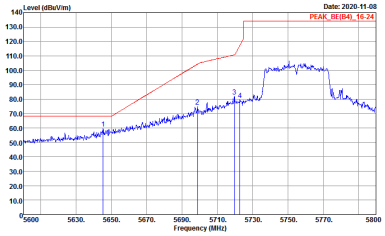
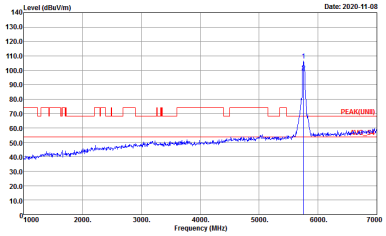
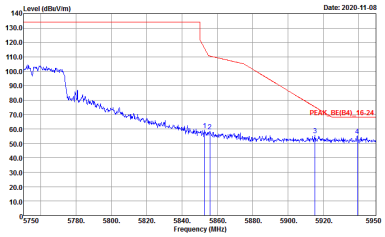
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

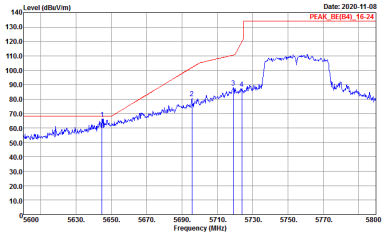
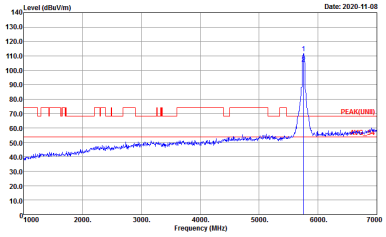
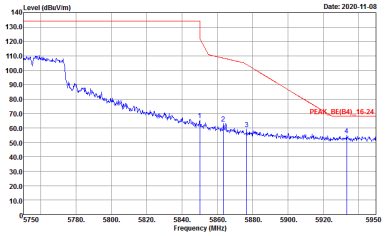
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

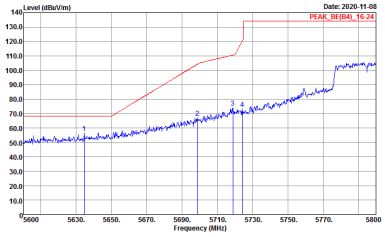
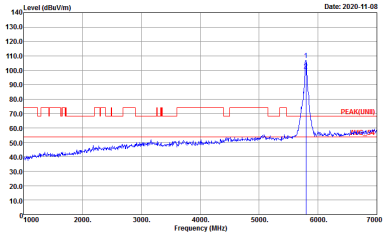
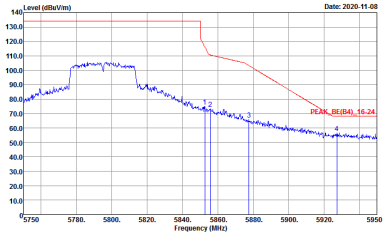
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

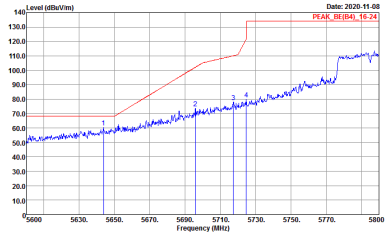
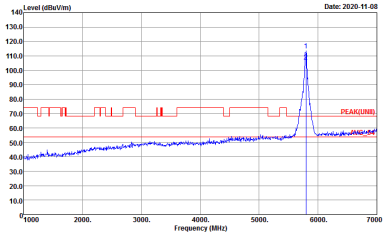
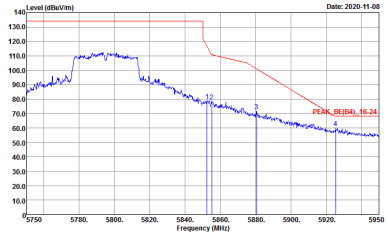
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01

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

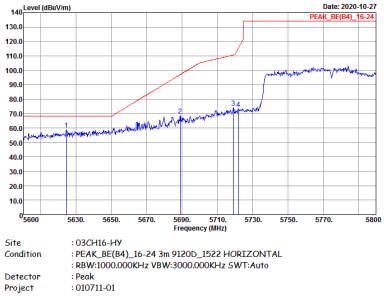
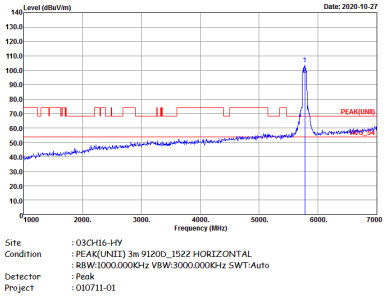
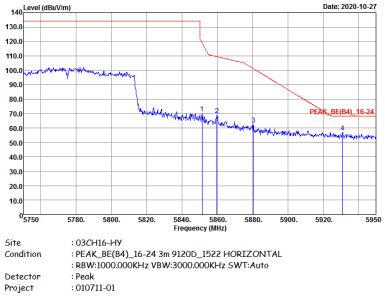
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HV Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HV Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HV Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

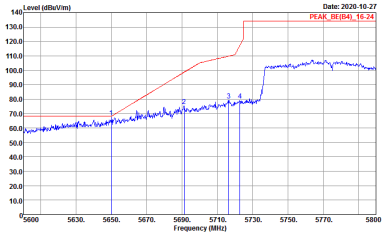
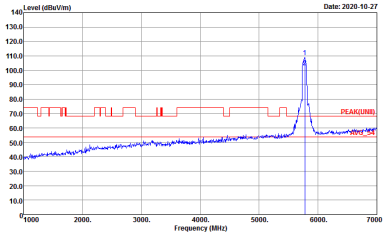
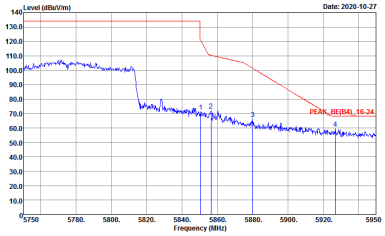
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

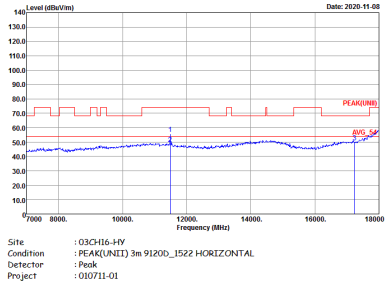
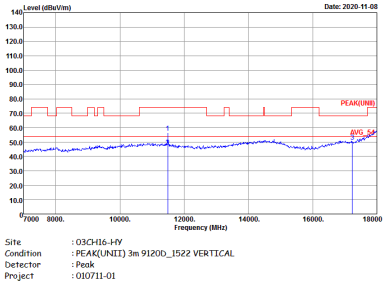
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

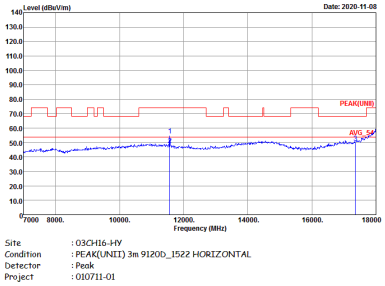
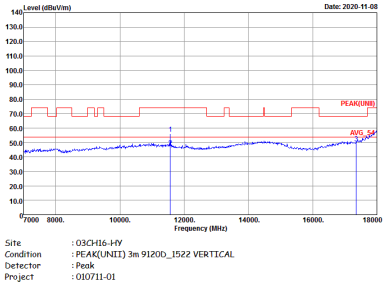
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

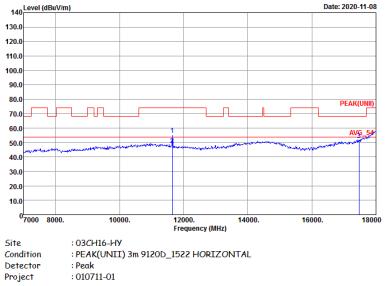
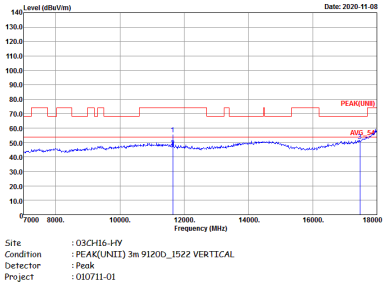
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010711-01	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

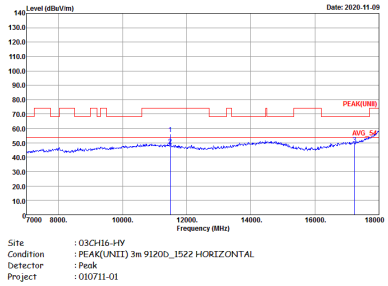
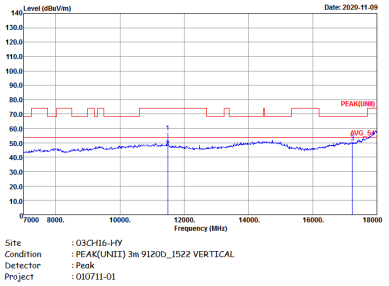
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

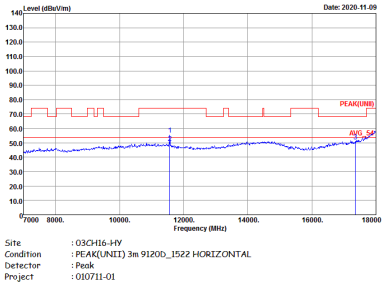
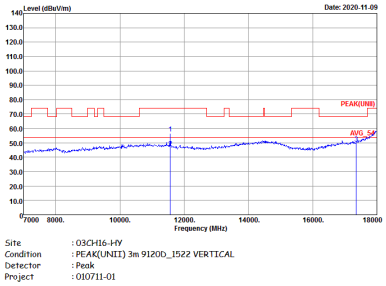
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

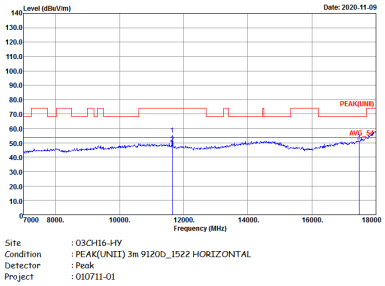
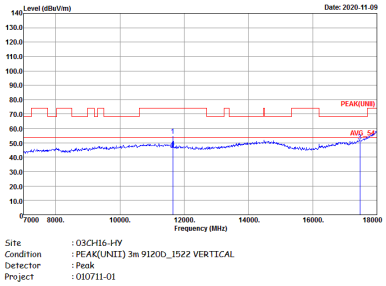
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

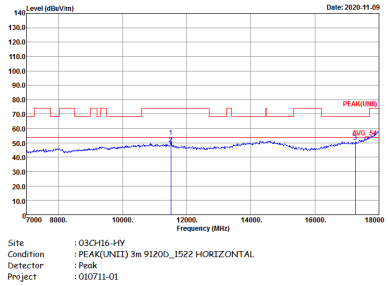
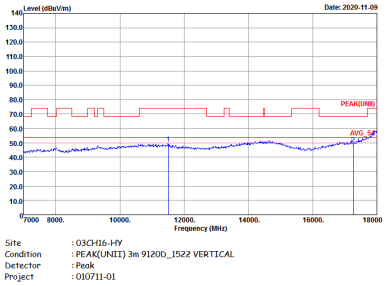
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

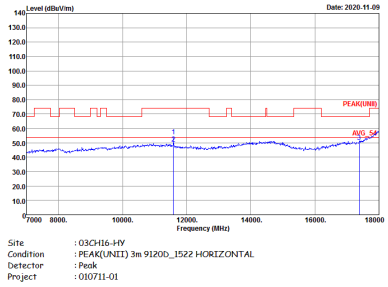
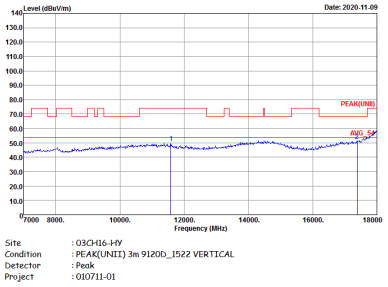
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Band 4 5725~5850MHz

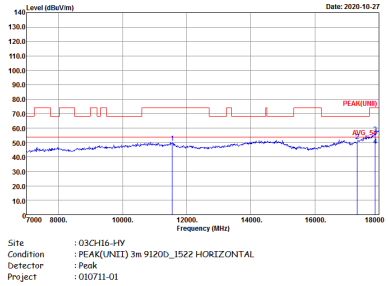
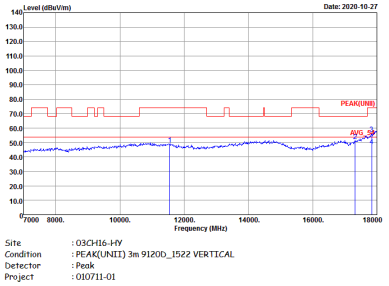
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.		

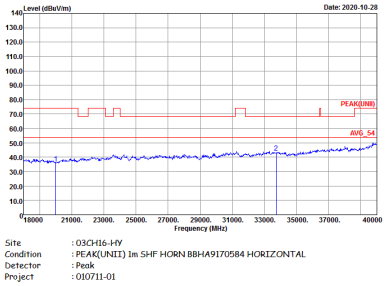
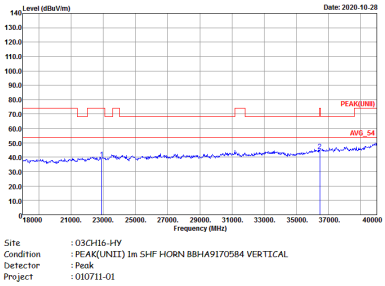
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.		

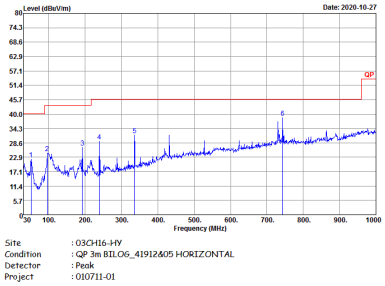
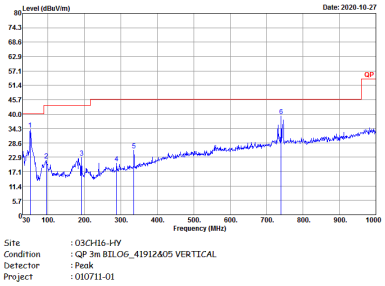
Emission above 18GHz

5GHz WIFI 802.11ac VHT80 (SHF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 SHF	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

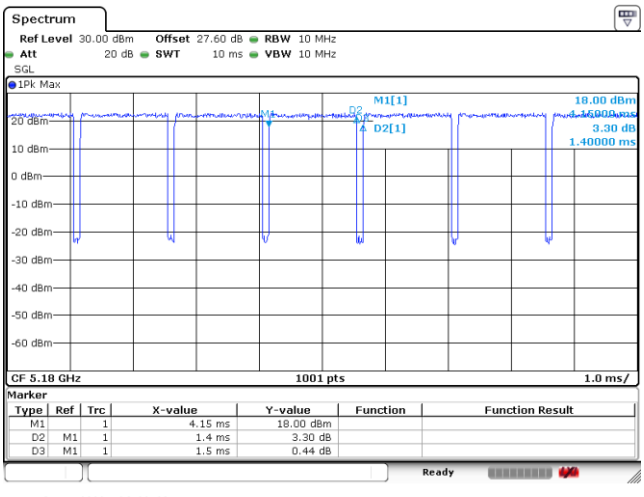
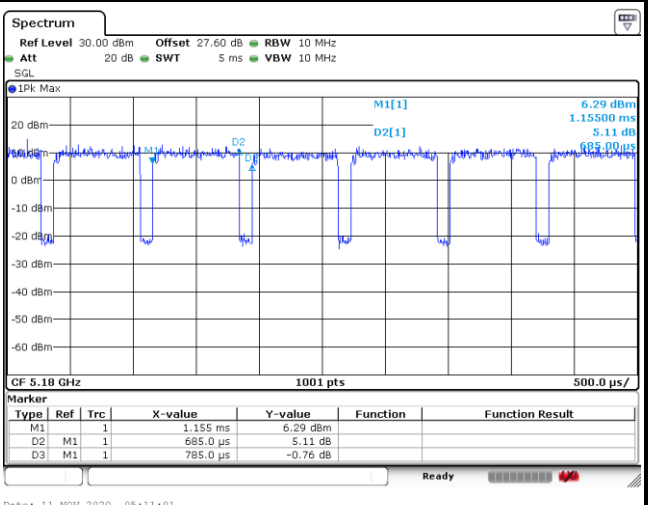
5GHz WIFI 802.11ac VHT80 (LF)

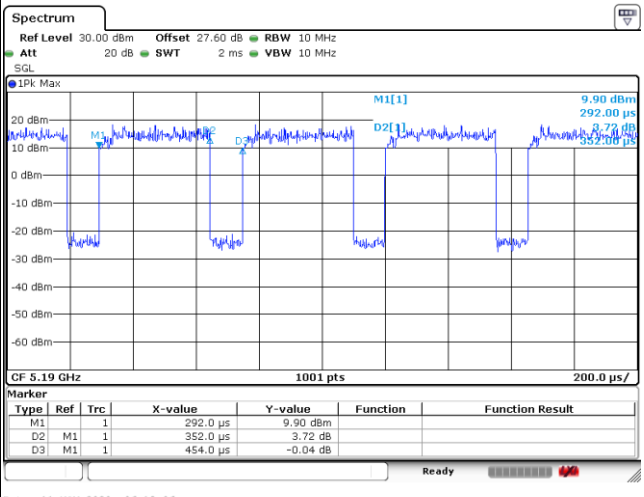
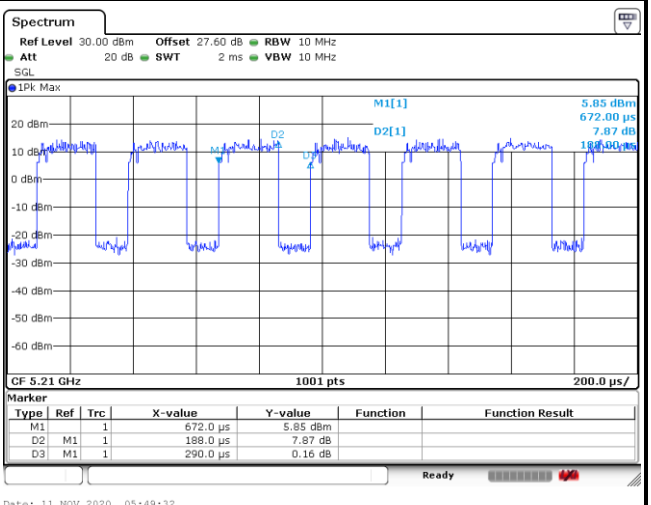
WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

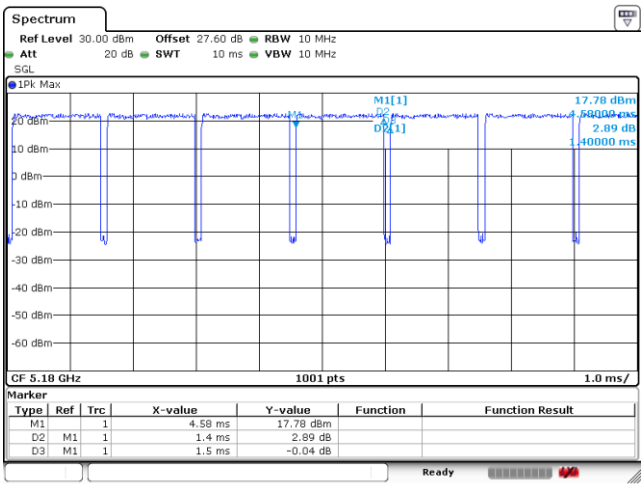
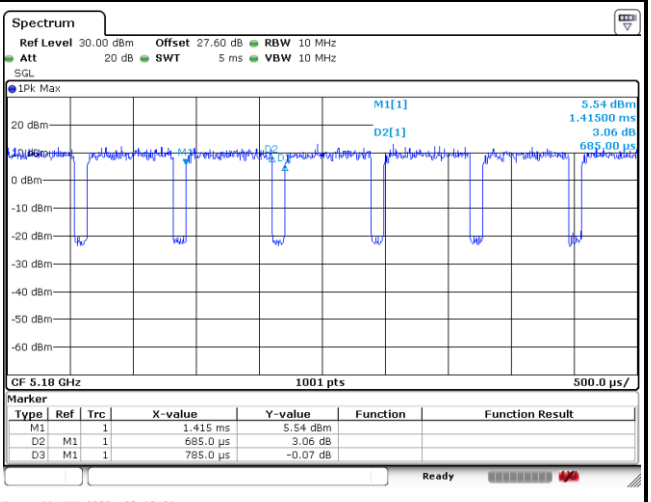
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1+2	802.11a for Ant. 1	93.33	1400	0.71	1kHz	0.30
1+2	802.11a for Ant. 2	93.33	1400	0.71	1kHz	0.30
1+2	5GHz 802.11ac VHT20 for Ant. 1	87.26	685	1.46	3kHz	0.59
1+2	5GHz 802.11ac VHT20 for Ant. 2	87.26	685	1.46	3kHz	0.59
1+2	5GHz 802.11ac VHT40 for Ant. 1	77.53	352	2.84	3kHz	1.11
1+2	5GHz 802.11ac VHT40 for Ant. 2	77.88	352	2.84	3kHz	1.09
1+2	5GHz 802.11ac VHT80 for Ant. 1	64.83	188	5.32	10kHz	1.88
1+2	5GHz 802.11ac VHT80 for Ant. 2	64.58	186	5.38	10kHz	1.90

MIMO <Ant. 1>

802.11a	802.11ac VHT20
	

802.11ac VHT40	802.11ac VHT80
	

MIMO <Ant. 2>

802.11a	802.11ac VHT20
	

802.11ac VHT40	802.11ac VHT80