



FCC RADIO TEST REPORT

FCC ID : A4R-H2D
Equipment : Interactive internet streaming device
Model name : H2D
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jun. 05, 2019 and testing was started from Jun. 18, 2019 and completed on Aug. 12, 2019. 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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
FR960558F	01	Initial issue of report	Aug. 15, 2019
FR960558F	02	Revise the accessory mobile FCC ID	Aug. 20, 2019
FR960558F	03	Remove description of out-of-band emission for KDB789033 D02 v02r01 G)2)c)	Sep. 02, 2019
FR960558F	04	- Revise the description of EUT supported radio to 802.15.4. - Revised Connection Diagram of Test System config.	Sep. 20, 2019

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 3.44 dB at 5645.200 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 4.04 dB at 0.618 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: Ann Lee



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Interactive internet streaming device
Model Name	H2D
FCC ID	A4R-H2D
EUT supports Radios application	WLAN 11b/g/n HT20/HT40 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE 802.15.4
EUT Stage	Identical Prototype

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

EUT Information List	
No.	S/N
#1	96040EXANZZ144
#2	96010EXANZZ0YK
#3	96050EXANZZ2T3

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power <CDD Modes>	MIMO <Ant. 1+2+3+4> 802.11a : 29.95 dBm / 0.9886 W 802.11n HT20 : 29.98 dBm / 0.9954 W 802.11n HT40 : 29.14 dBm / 0.8204 W 802.11ac VHT20: 29.90 dBm / 0.9772 W 802.11ac VHT40: 29.04 dBm / 0.8017 W 802.11ac VHT80: 24.27 dBm / 0.2673 W
Maximum Output Power <TXBF Modes>	MIMO <Ant. 1+2+3+4> 802.11ac VHT20: 27.95 dBm / 0.6237 W 802.11ac VHT40: 27.55 dBm / 0.5689 W 802.11ac VHT80: 24.66 dBm / 0.2924 W
99% Occupied Bandwidth <CDD Modes>	MIMO <Ant. 1> 802.11a : 33.90 MHz 802.11n HT20 : 35.40 MHz 802.11 n HT40 : 52.30 MHz 802.11ac VHT80 : 76.92 MHz MIMO <Ant. 2> 802.11a : 32.90 MHz 802.11n HT20 : 33.85 MHz 802.11 n HT40 : 58.80 MHz 802.11ac VHT80 : 76.80 MHz MIMO <Ant. 3> 802.11a : 34.45 MHz 802.11n HT20 : 37.05 MHz 802.11 n HT40 : 55.20 MHz 802.11ac VHT80 : 76.80 MHz MIMO <Ant. 4> 802.11a : 34.15 MHz 802.11n HT20 : 34.80 MHz 802.11 n HT40 : 64.10 MHz 802.11ac VHT80 : 76.80 MHz
99% Occupied Bandwidth <TXBF Modes>	MIMO <Ant. 1> 802.11ac VHT20 : 17.95 MHz 802.11ac VHT40 : 37.60 MHz 802.11ac VHT80 : 77.88 MHz MIMO <Ant. 2> 802.11ac VHT20 : 17.80 MHz 802.11ac VHT40 : 37.20 MHz 802.11ac VHT80 : 78.36 MHz MIMO <Ant. 3> 802.11ac VHT20 : 17.85 MHz 802.11ac VHT40 : 37.20 MHz 802.11ac VHT80 : 77.28 MHz MIMO <Ant. 4> 802.11ac VHT20 : 18.00 MHz 802.11ac VHT40 : 37.30 MHz 802.11ac VHT80 : 77.88 MHz

Standards-related Product Specification					
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)				
Antenna Type / Gain	<Ant. 1> : PIFA Antenna with gain 4.62 dBi <Ant. 2> : PIFA Antenna with gain 5.40 dBi <Ant. 3> : PIFA Antenna with gain 4.01 dBi <Ant. 4> : PIFA Antenna with gain 4.98 dBi				
Antenna Function Description		Ant. 1	Ant. 2	Ant. 3	Ant. 4
	802.11 a/n/ac	V	V	V	V
	802.11 a/n/ac MIMO	V	V	V	V
	802.11 ac TXBF	V	V	V	V

Note:

1. MIMO Ant. 1+2+3+4 is a calculated result from sum of the power MIMO Ant. 1, MIMO Ant. 2, MIMO Ant. 3 and MIMO Ant. 4.
2. Ant. 1 & 2 and Ant. 3 & 4 are cross-polarization antenna.

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	DFS02-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.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ FCC KDB 662911 D02 MIMO with Cross- Polarized Antennas 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. 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).
- 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.

CDD Mode

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

TXBF Mode

Modulation	Data Rate
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz) Link + WLAN (5GHz) Link + Bluetooth Link + 802.15.4 Link + Wan Link + Lan Link + AC Adapter 1

<CDD Mode>

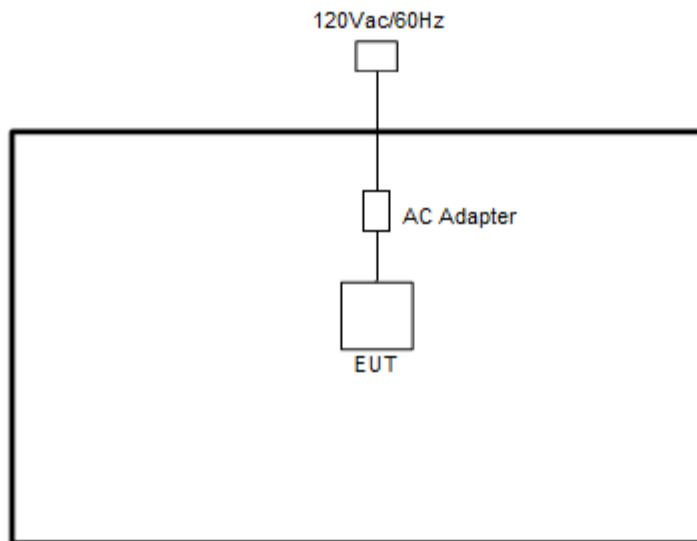
Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

<TXBF Mode>

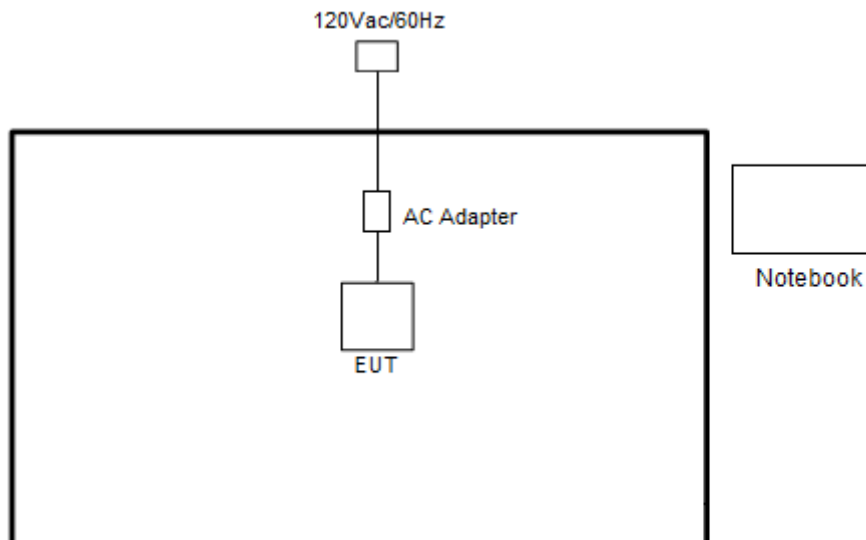
Ch. #		Band IV : 5725-5850 MHz		
		802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

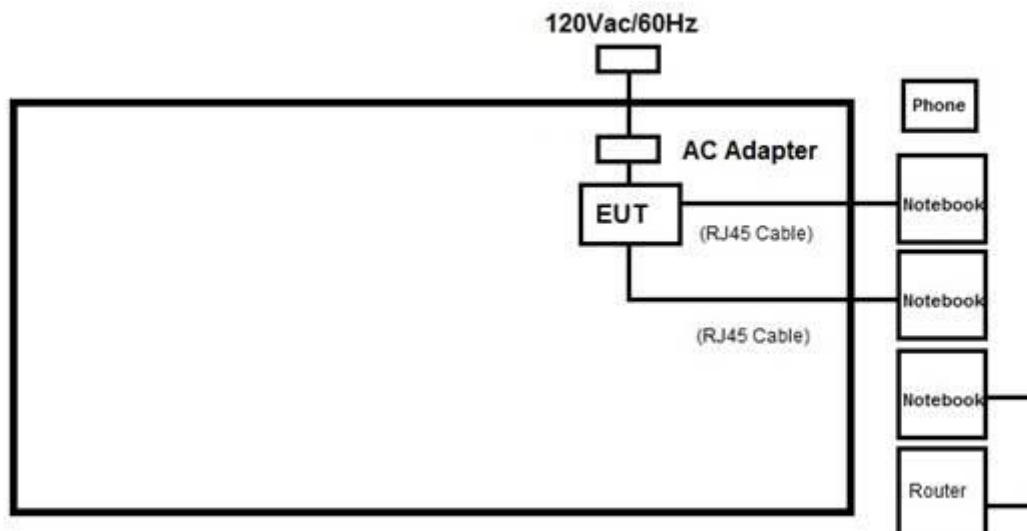
2.3 Connection Diagram of Test System

<CDD Mode>



<TXBF Mode>



<AC Conducted Emission Mode>

2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	Latitude E3340	FCC DoC/ Contains FCC ID: PD97260NGU	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Mobile Phone	Apple	A1687	BCG-E2944A	N/A	N/A
5.	Router	N/A	N/A	N/A	N/A	N/A



2.5 EUT Operation Test Setup

The RF test items, utility “QRCT version: 4.0-00113” 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.

For TXBF mode, the modulation modes and data rates manipulated by the command lines in the engineering program made the EUT link to notebook by power under the normal operation. The “Putty” software tool was used to enable the EUT to transmit signals continuously.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

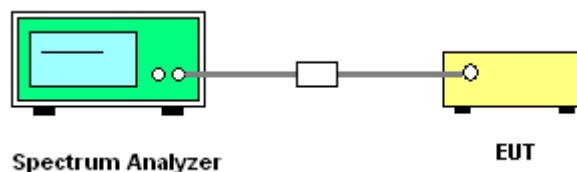
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

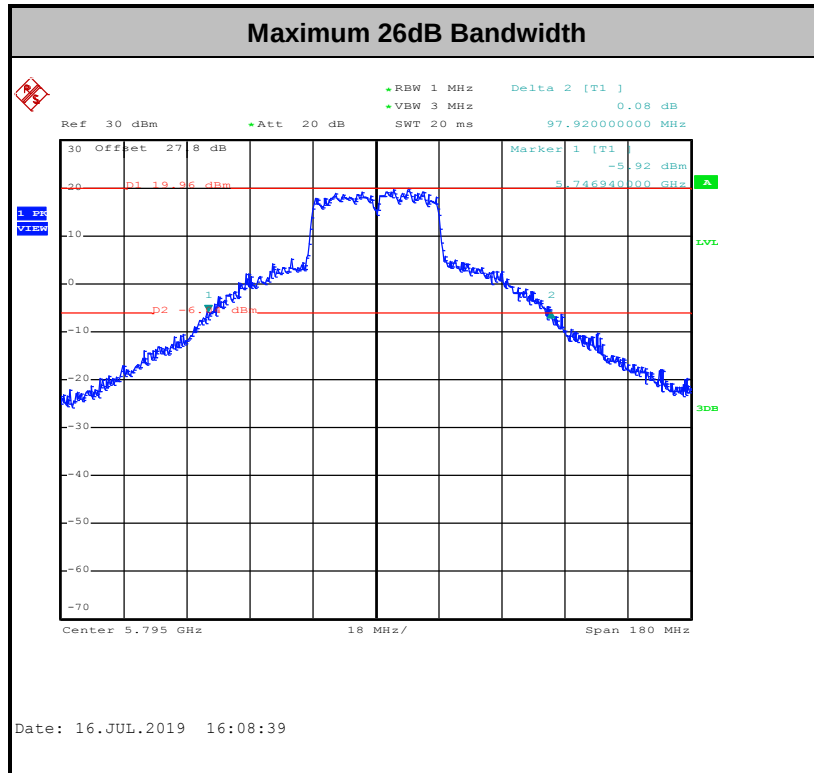
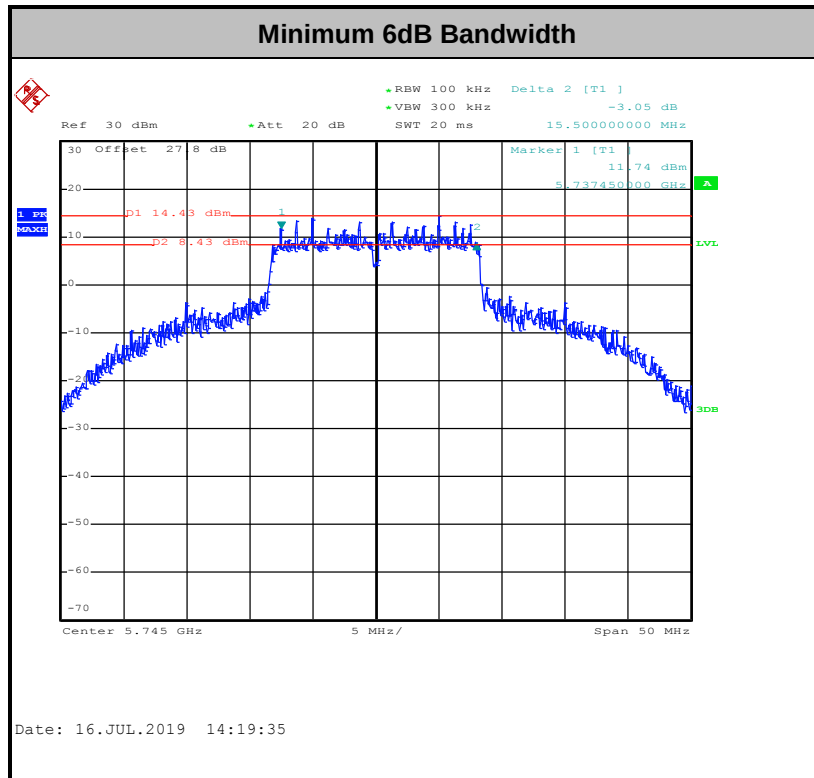
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is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

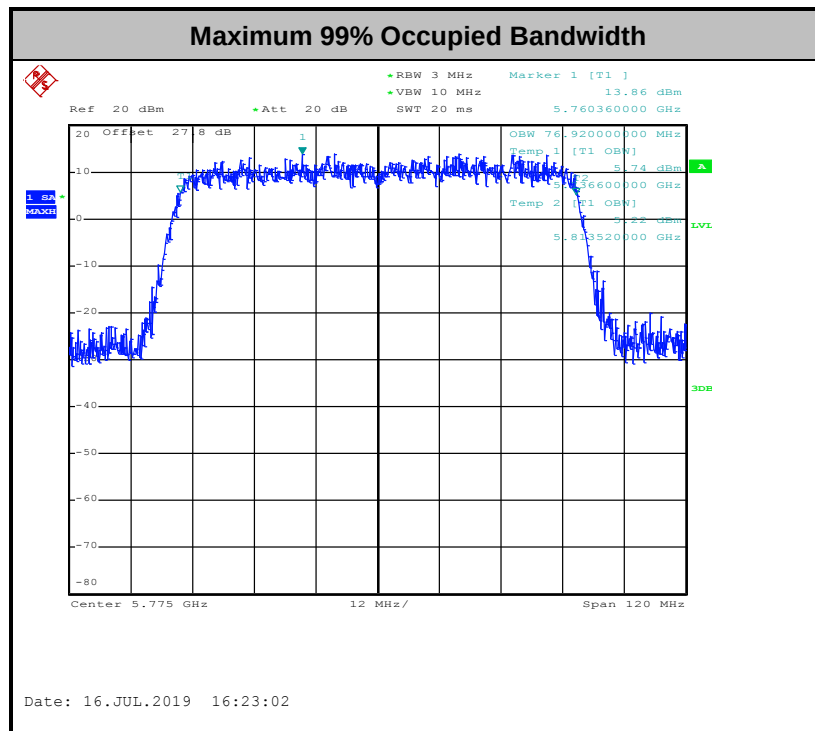
3.1.4 Test Setup



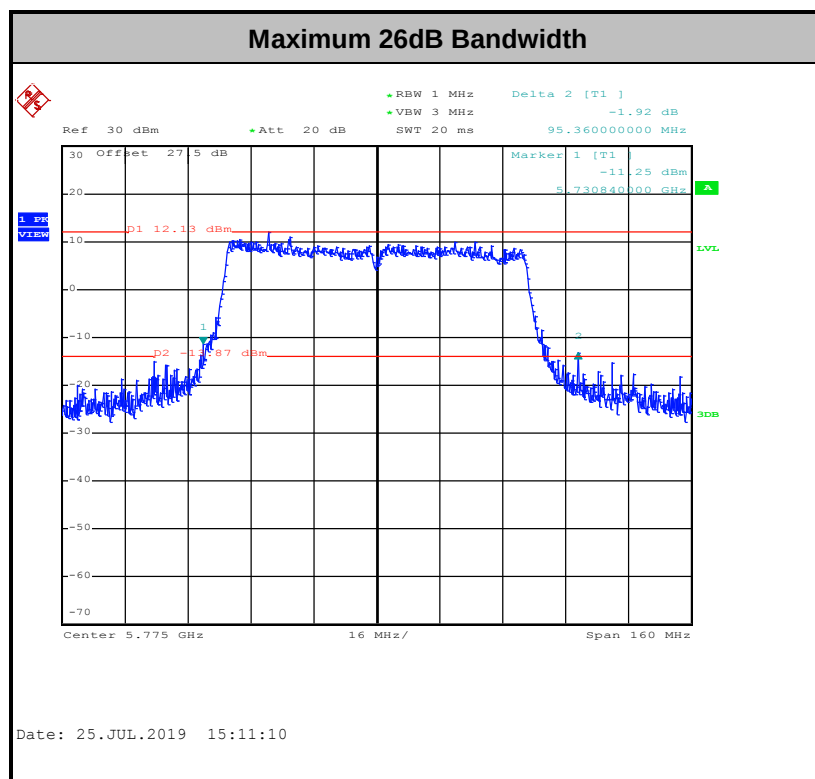
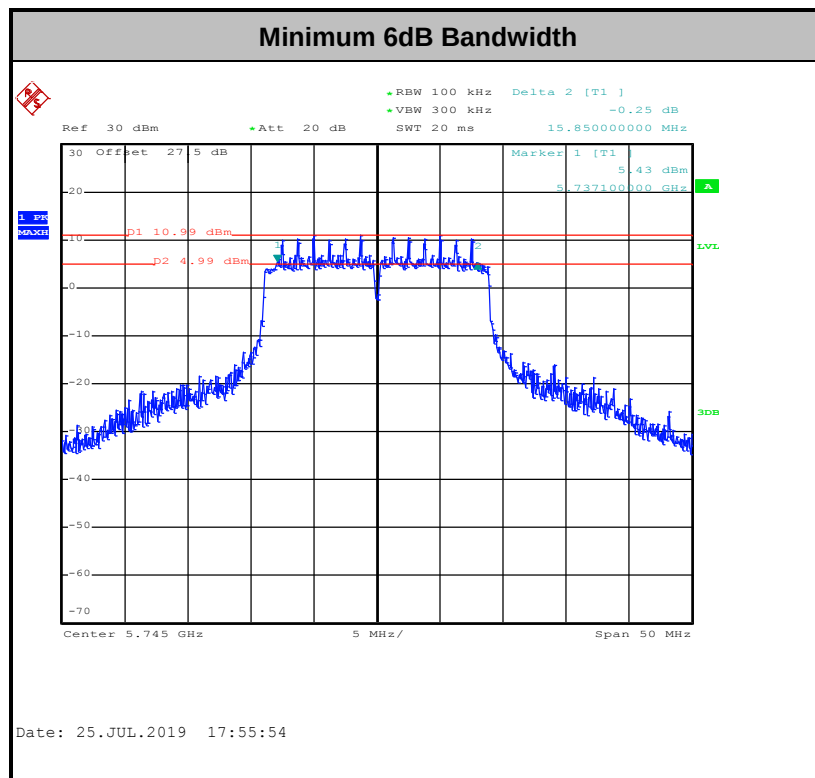
3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

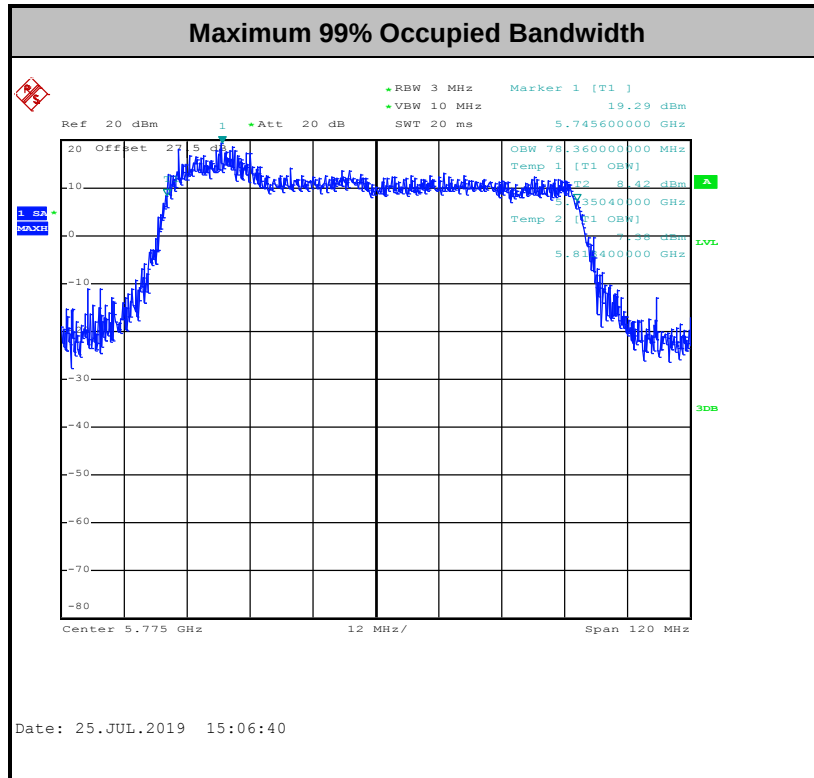
Please refer to Appendix A.

**<CDD Mode>**



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

<TXBF Modes>




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

<CDD Modes>

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

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

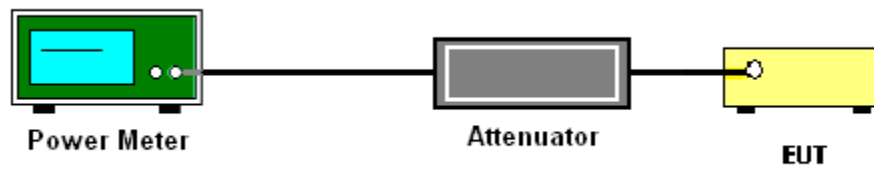
<TXBF Modes>

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

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):

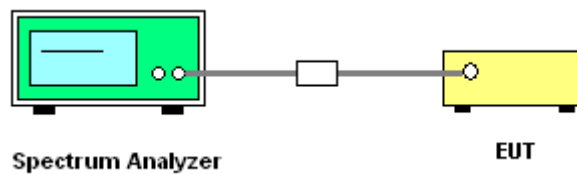
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time $\leq$ (number of points in sweep) $\times$ T, when duty cycle is less than 98 percent where T is the minimum transmission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

3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ 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 $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

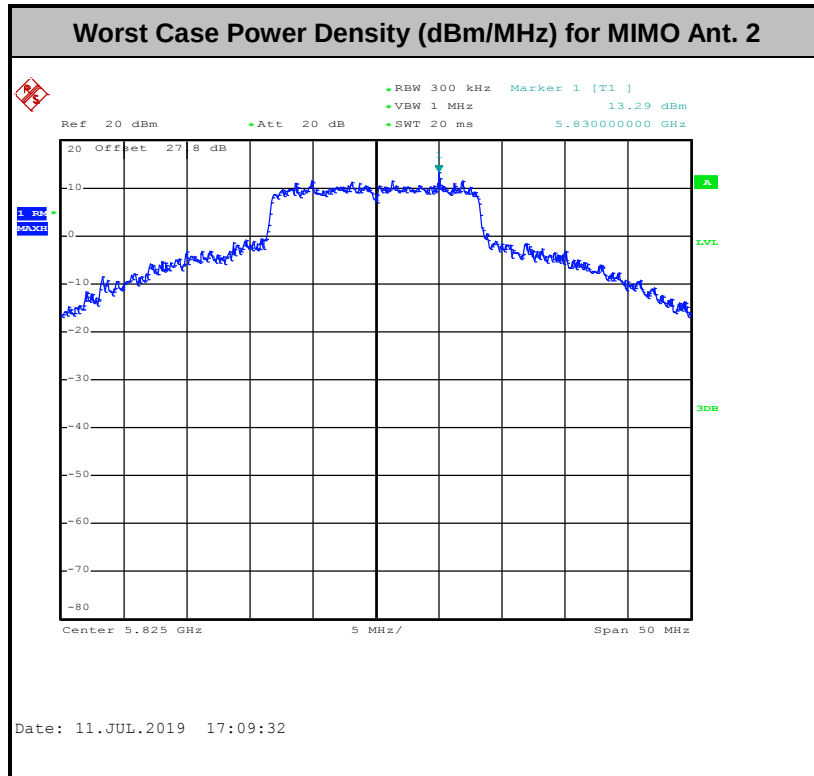
3.3.4 Test Setup



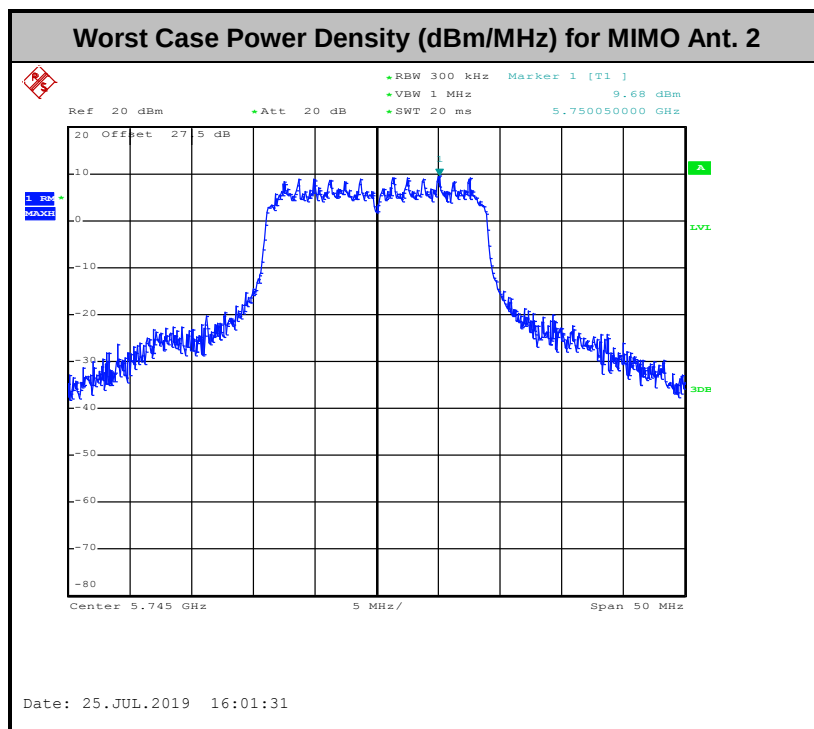
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<CDD Modes>



<TXBF Modes>



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.

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

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

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

- (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.
- (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.4.2 Measuring Instruments

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 $\geq$ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

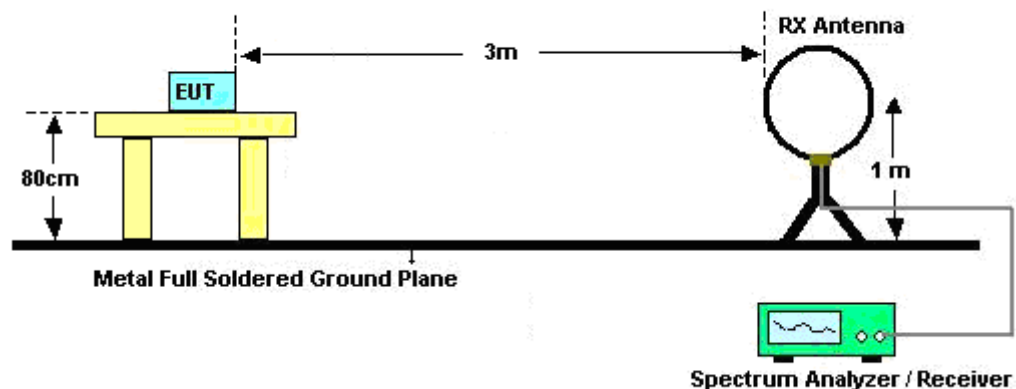
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

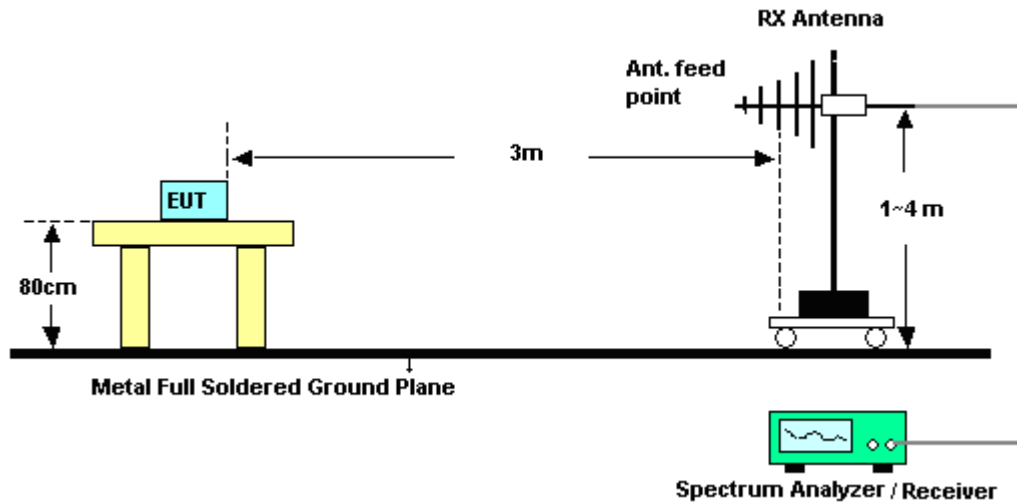
3.4.4 Test Setup

For radiated emissions below 30MHz

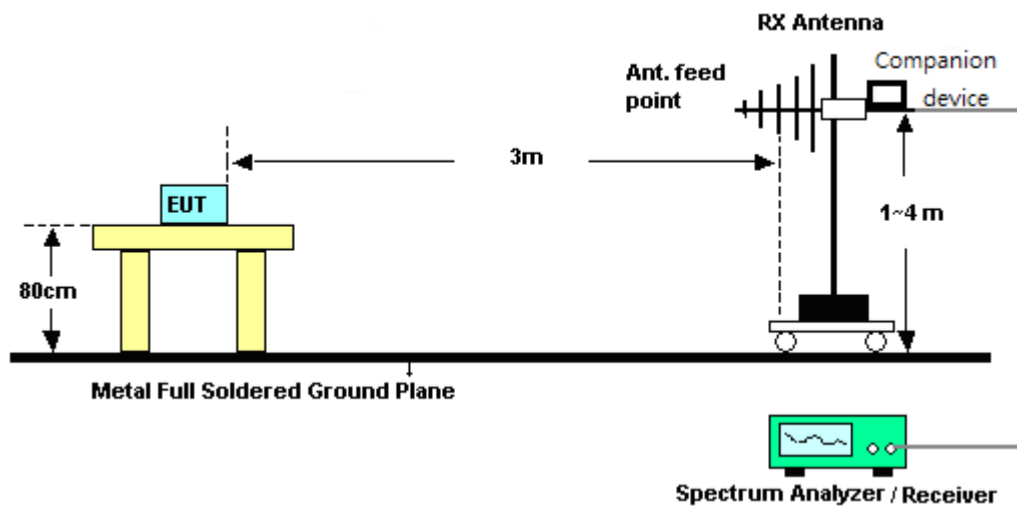


For radiated emissions from 30MHz to 1GHz

<CDD Mode>

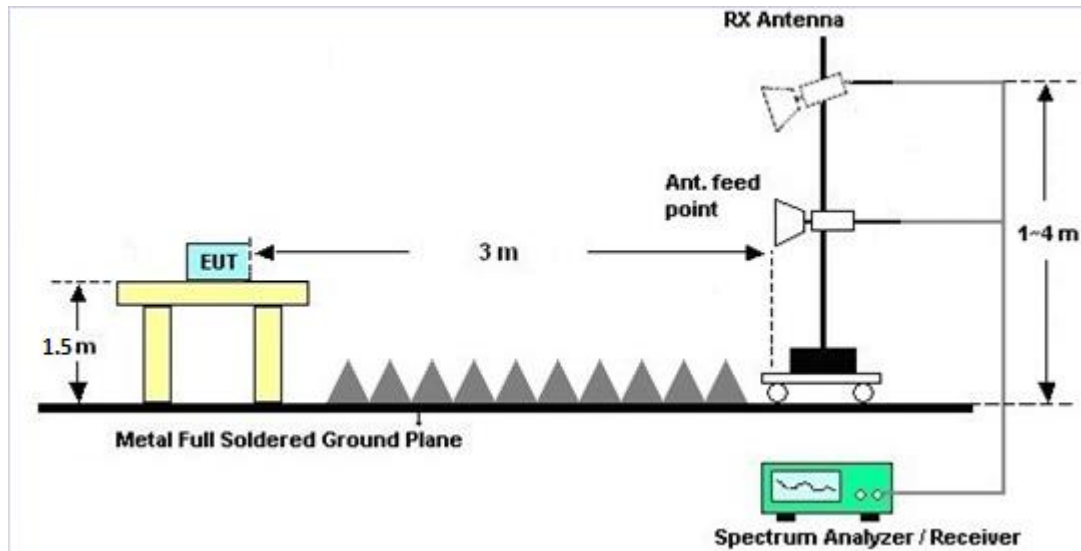


<TXBF Modes>

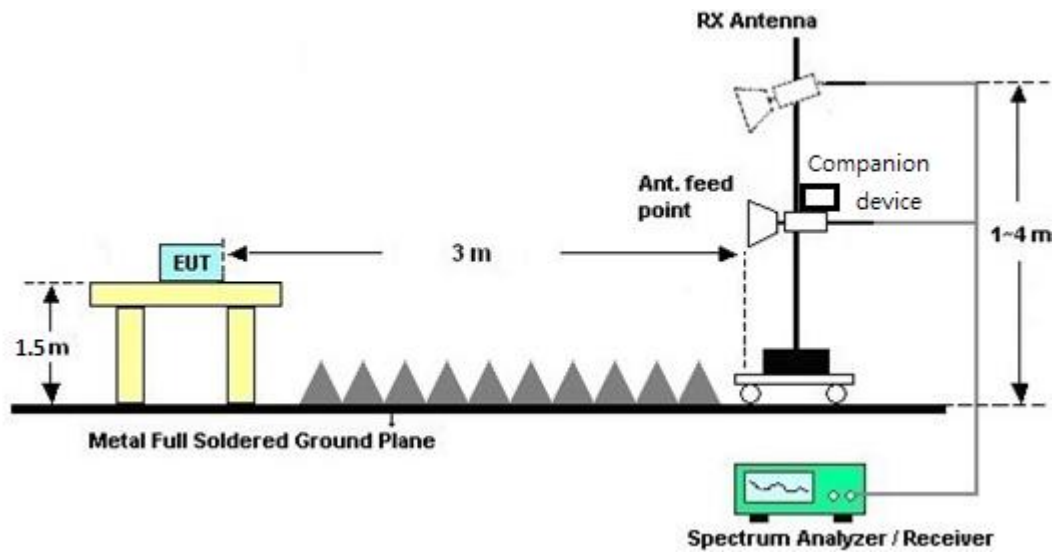


For radiated emissions above 1GHz

<CDD Mode>



<TXBF Modes>



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

*Decreases with the logarithm of the frequency.

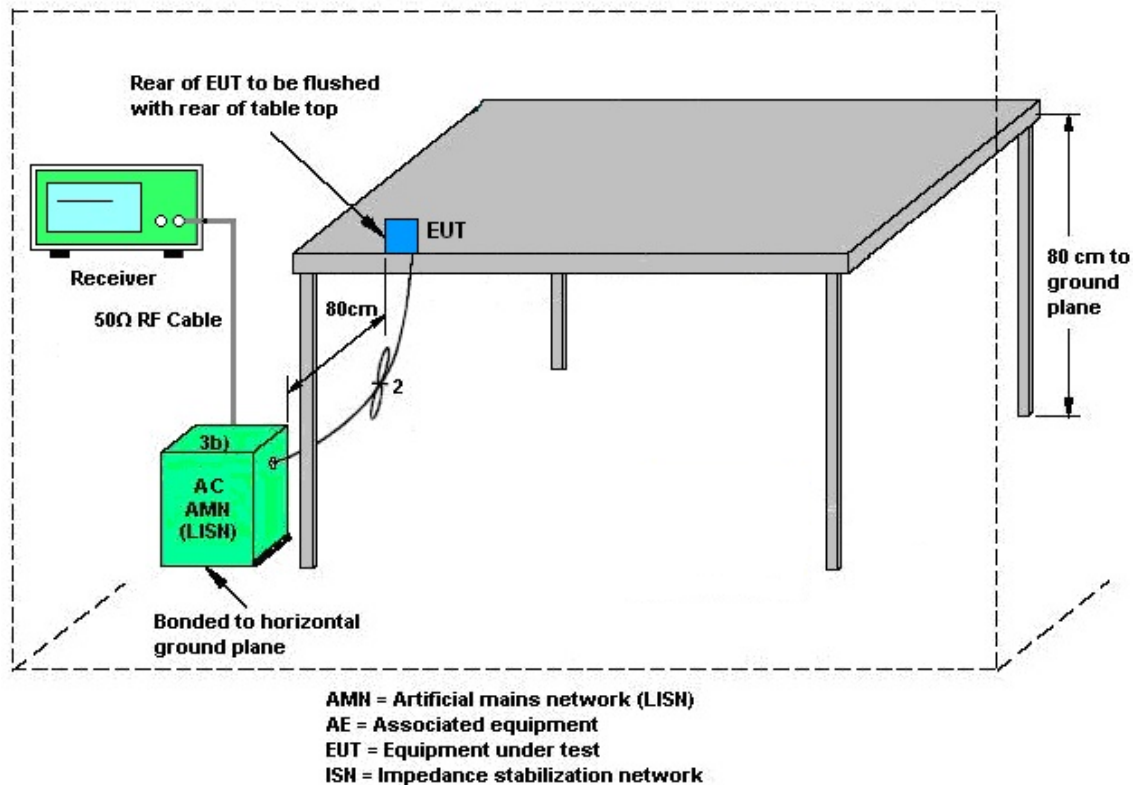
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

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

3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

EUT is verified this characteristic during the function check of normal sample associated with an access point:

- A. Information start: make EUT supply information to the access point.
- B. Information stop: stop supplying information to the access point.

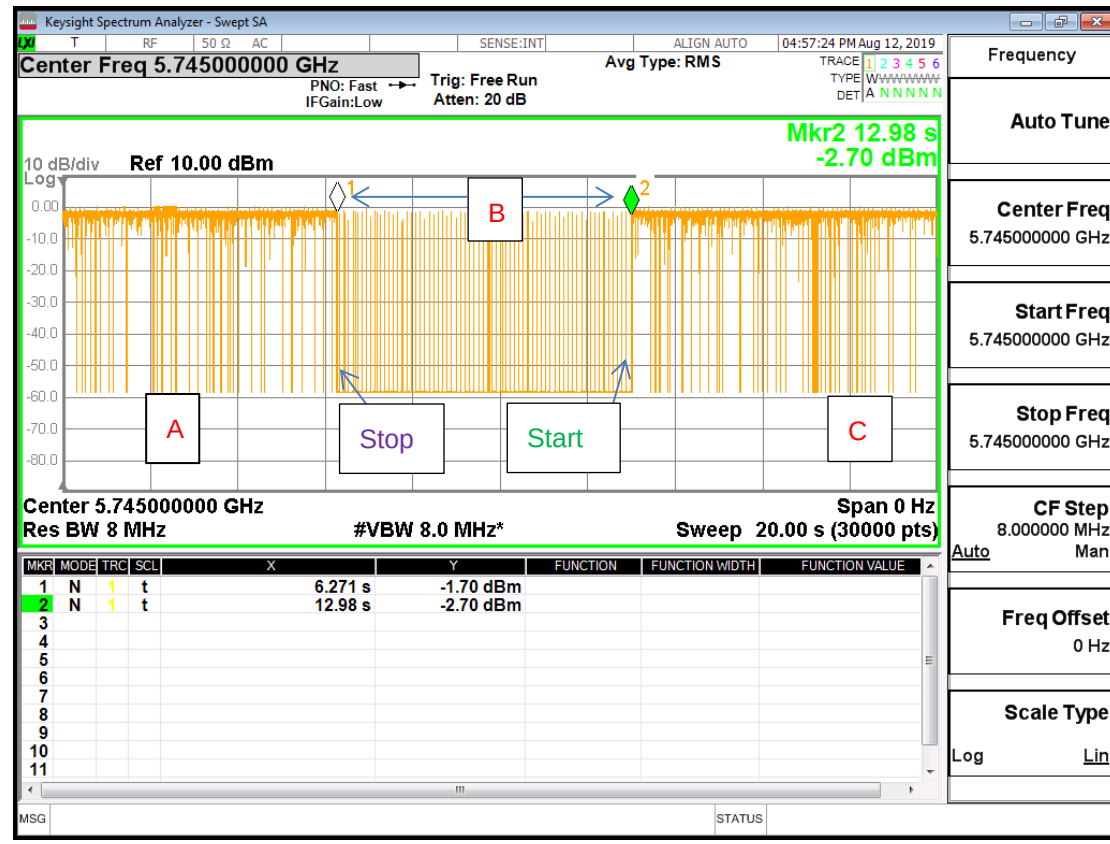
While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving.

- C. Information start: make EUT supply information to the access point again.

The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



5745MHz



Note: The control / signaling information during the period B is precluded.

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

FCC KDB 662911 D02 MIMO with Cross-Polarized Antennas v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

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

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with

G_{ANT} 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) & F)2)c)ii)

For PSD, the directional gain calculation is following F)2)f)ii) & F)2)c)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>				
Antenna polarization	Vertical		Horizontal	
5.8 Band	Ant 1	Ant 2	Ant 3	Ant 4
	(dBi)	(dBi)	(dBi)	(dBi)
	4.62	5.40	4.01	4.98
Note:Ant 1 & 2 and Ant 3 & 4 are cross-polarization antenna.				
5.8G Band Antenna	DG	DG	Power	PSD
	for	for	Limit	Limit
	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dB)	(dB)
1+2+3+4	5.40	8.03	0.00	2.03

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

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

TXBF modes

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 662911 D02 MIMO with Cross-Polarized Antennas v02r01

Directional gain is calculated as

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;

G_k is the gain in dBi of the k th antenna.

The EUT supports beamforming for 802.11ac modes.

The directional gain calculation is following F)2)e)ii) & F)2)c)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.

Antenna polarization	Vertical		Horizontal	
5.8G Band	Ant 1	Ant 2	Ant 3	Ant 4
	(dBi)	(dBi)	(dBi)	(dBi)
	4.62	5.40	4.01	4.98
Note:Ant 1 & 2 and Ant 3 & 4 are cross-polarization antenna.				
5.8G Band Antenna	DG	DG	Power	PSD
	for	for	Limit	Limit
	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dB)	(dB)
1	4.62	4.62	0.00	0.00
2	5.40	5.40	0.00	0.00
3	4.01	4.01	0.00	0.00
4	4.98	4.98	0.00	0.00
1+2+3+4	8.03	8.03	2.03	2.03

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	Jan. 23, 2019	Jun.10, 2019~ Jul. 26, 2019	Jan. 22, 2020	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 18, 2019	Jun.10, 2019~ Jul. 26, 2019	Apr. 17, 2020	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 11, 2019	Jun.10, 2019~ Jul. 26, 2019	Jan. 10, 2020	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 30, 2019	Jun.10, 2019~ Jul. 26, 2019	Apr. 29, 2020	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2018	Jun.10, 2019~ Jul. 26, 2019	Dec. 02, 2019	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Nov. 20, 2018	Jun.10, 2019~ Jul. 26, 2019	Nov. 19, 2019	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 20, 2019	Jun.10, 2019~ Jul. 26, 2019	May 19, 2020	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 24, 2019	Jun.10, 2019~ Jul. 26, 2019	Apr. 23, 2020	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 02, 2018	Jun.10, 2019~ Jul. 26, 2019	Nov. 01, 2019	Radiation (03CH07-HY)
Preamplifier	MITEQ	TTA1840-35-H G	1871923	18GHz~40GHz, VSWR : 2.5:1 max	N/A	Jun.10, 2019~ Jul. 26, 2019	N/A	Radiation (03CH07-HY)
Filter	Microwave	H1G013G1	SN477215	1GHz High Pass Filter	Nov. 02, 2018	Jun.10, 2019~ Jul. 26, 2019	Nov. 01, 2019	Radiation (03CH07-HY)
Filter	Wainwright	WLKS1200-8S S	SN3	1.2GHz Low Pass Filter	Nov. 02, 2018	Jun.10, 2019~ Jul. 26, 2019	Nov. 01, 2019	Radiation (03CH07-HY)
Filter	Microwave	H3G018G1	SN477220	3GHz High Pass Filter	Nov. 02, 2018	Jun.10, 2019~ Jul. 26, 2019	Nov. 01, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4, MY28655/4	9kHz~30MHz	Feb. 26, 2019	Jun.10, 2019~ Jul. 26, 2019	Feb. 25, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 26, 2019	Jun.10, 2019~ Jul. 26, 2019	Feb. 25, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 26, 2019	Jun.10, 2019~ Jul. 26, 2019	Feb. 25, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 26, 2019	Jun.10, 2019~ Jul. 26, 2019	Feb. 25, 2020	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Jun.10, 2019~ Jul. 26, 2019	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Jun.10, 2019~ Jul. 26, 2019	N/A	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	80504004656 H	N/A	N/A	Jun.10, 2019~ Jul. 26, 2019	N/A	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. 18, 2019	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 12, 2018	Jun. 18, 2019	Nov. 11, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 14, 2018	Jun. 18, 2019	Nov. 13, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 09, 2018	Jun. 18, 2019	Nov. 08, 2019	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 18, 2019	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Dec. 31, 2018	Jun. 18, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Dec. 31, 2018	Jun. 18, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Spectrum Analyzer	Keysight	N9010A	MY560704 12	10Hz~7GHz	Aug. 16, 2018	Aug. 12, 2019	Aug. 15, 2019	DFS (DFS02-HY)
<CCD Mode>								
Power Sensor	DARE	RPR3006W	13I00030S NO32	9kHz~6GHz	Dec. 03, 2018	Jul. 10, 2019~ Jul. 16, 2019	Dec. 02, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz~40GHz	Nov. 21, 2018	Jul. 10, 2019~ Jul. 16, 2019	Nov. 20, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC120838 2	N/A	Mar. 27, 2019	Jul. 10, 2019~ Jul. 16, 2019	Mar. 26, 2020	Conducted (TH05-HY)
<TXBF Mode>								
Power Sensor	DARE	RPR3006W	13I00030S NO32	9kHz~6GHz	Dec. 03, 2018	Jul. 23, 2019~ Jul. 26, 2019	Dec. 02, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz~40GHz	Nov. 21, 2018	Jul. 23, 2019~ Jul. 26, 2019	Nov. 20, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC120838 2	N/A	Mar. 27, 2019	Jul. 23, 2019~ Jul. 26, 2019	Mar. 26, 2020	Conducted (TH05-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.2
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.7
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.5
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2
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Appendix A. Test Result of Conducted Test Items

<CDD Mode>

Test Engineer:	Richard Qiu	Temperature:	21~25	°C
Test Date:	2019/7/10~2019/7/16	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% OBW

Band IV														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	26dB Bandwidth (MHz)				6 dB Bandwidth (MHz)				6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4		
11a	6Mbps	4	149	5745	48.05	48.42	45.00	48.35	16.32	16.25	15.50	16.31	0.5	Pass
11a	6Mbps	4	157	5785	48.20	48.00	54.25	48.00	15.80	15.80	16.28	16.25	0.5	Pass
11a	6Mbps	4	165	5825	53.05	47.70	51.00	50.60	15.80	16.30	16.25	16.30	0.5	Pass
HT20	MCS0	4	149	5745	49.20	49.45	50.80	50.05	17.45	17.60	17.60	17.50	0.5	Pass
HT20	MCS0	4	157	5785	50.25	49.80	50.80	50.40	17.50	17.55	17.55	17.55	0.5	Pass
HT20	MCS0	4	165	5825	50.60	49.60	53.25	50.40	17.55	17.50	17.25	17.60	0.5	Pass
HT40	MCS0	4	151	5755	73.29	82.55	80.64	79.10	35.15	35.12	35.13	33.84	0.5	Pass
HT40	MCS0	4	159	5795	88.92	93.35	89.28	97.92	35.01	34.97	35.01	33.71	0.5	Pass
VHT80	MCS0	4	155	5775	83.52	82.50	84.40	83.42	75.96	75.70	75.20	75.78	0.5	Pass

Band IV														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	99% Bandwidth (MHz)				6 dB Bandwidth (MHz)				6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4		
11a	6Mbps	4	149	5745	33.05	32.90	28.05	34.15	16.32	16.25	15.50	16.31	0.5	Pass
11a	6Mbps	4	157	5785	33.10	32.90	34.45	33.60	15.80	15.80	16.28	16.25	0.5	Pass
11a	6Mbps	4	165	5825	33.90	32.20	32.95	33.00	15.80	16.30	16.25	16.30	0.5	Pass
HT20	MCS0	4	149	5745	33.35	33.55	35.70	33.60	17.45	17.60	17.60	17.50	0.5	Pass
HT20	MCS0	4	157	5785	34.70	33.85	36.20	34.80	17.50	17.55	17.55	17.55	0.5	Pass
HT20	MCS0	4	165	5825	35.40	33.70	37.05	34.70	17.55	17.50	17.25	17.60	0.5	Pass
HT40	MCS0	4	151	5755	37.10	38.10	37.60	38.20	35.15	35.12	35.13	33.84	0.5	Pass
HT40	MCS0	4	159	5795	52.30	58.80	55.20	64.10	35.01	34.97	35.01	33.71	0.5	Pass
VHT80	MCS0	4	155	5775	76.92	76.80	76.80	76.80	75.96	75.70	75.20	75.78	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)					FCC Conducted Power Limit (dBm)	DG (dBi)				Pass/ Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM		Ant 1	Ant 2	Ant 3	Ant 4	
11a	6Mbps	4	149	5745	23.80	24.10	23.80	24.00	29.95	30.00	5.40				Pass
11a	6Mbps	4	157	5785	23.40	24.00	23.90	24.10	29.88	30.00	5.40				Pass
11a	6Mbps	4	165	5825	23.50	23.90	24.20	24.10	29.95	30.00	5.40				Pass
HT20	MCS0	4	149	5745	23.50	24.10	24.10	24.10	29.98	30.00	5.40				Pass
HT20	MCS0	4	157	5785	23.50	24.00	24.10	24.20	29.98	30.00	5.40				Pass
HT20	MCS0	4	165	5825	23.40	23.90	24.10	24.00	29.88	30.00	5.40				Pass
HT40	MCS0	4	151	5755	21.60	22.20	22.20	22.40	28.13	30.00	5.40				Pass
HT40	MCS0	4	159	5795	22.50	23.40	23.10	23.40	29.14	30.00	5.40				Pass
VHT20	MCS0	4	149	5745	23.40	24.00	24.00	24.00	29.88	30.00	5.40				Pass
VHT20	MCS0	4	157	5785	23.40	24.00	24.00	24.10	29.90	30.00	5.40				Pass
VHT20	MCS0	4	165	5825	23.30	23.80	24.20	24.10	29.88	30.00	5.40				Pass
VHT40	MCS0	4	151	5755	21.50	22.10	22.10	22.30	28.03	30.00	5.40				Pass
VHT40	MCS0	4	159	5795	22.40	23.30	23.00	23.30	29.04	30.00	5.40				Pass
VHT80	MCS0	4	155	5775	17.40	18.20	18.60	18.70	24.27	30.00	5.40				Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band IV															
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Average Power Density with RBW and duty factor (dBm/500kHz)					Average PSD Limit (dBm/500kHz)	Correlated antenna gain (dBi)				Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM		Ant 1	Ant 2	Ant 3	Ant 4	
11a	6Mbps	4	149	5745	13.85	13.81	13.84	14.44	20.46	27.97	8.03				Pass
11a	6Mbps	4	157	5785	14.47	14.47	14.96	15.21	21.23	27.97	8.03				Pass
11a	6Mbps	4	165	5825	15.04	15.14	15.24	15.51	21.53	27.97	8.03				Pass
HT20	MCS0	4	149	5745	13.40	13.77	14.12	13.94	20.14	27.97	8.03				Pass
HT20	MCS0	4	157	5785	14.00	15.16	13.87	14.21	21.18	27.97	8.03				Pass
HT20	MCS0	4	165	5825	15.03	14.88	15.48	15.29	21.50	27.97	8.03				Pass
HT40	MCS0	4	151	5755	7.88	8.87	8.60	8.87	14.89	27.97	8.03				Pass
HT40	MCS0	4	159	5795	9.97	10.49	10.32	10.40	16.51	27.97	8.03				Pass
VHT80	MCS0	4	155	5775	0.59	1.66	1.64	1.84	7.86	27.97	8.03				Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2, Ant. 3, Ant. 4) + 10 log (n)

Appendix A. Test Result of Conducted Test Items

<TXBF Mode>

Test Engineer:	Richard Qiu	Temperature:	21~25	°C
Test Date:	2019/7/23~2019/7/26	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% OBW

Band IV														
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	26dB Bandwidth (MHz)				6 dB Bandwidth (MHz)				6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4		
VHT20	MCS0	4	149	5745	25.80	30.30	26.65	25.60	16.60	16.75	17.45	15.85	0.5	Pass
VHT20	MCS0	4	157	5785	25.90	25.10	25.15	29.85	16.75	17.00	16.40	16.50	0.5	Pass
VHT20	MCS0	4	165	5825	25.75	24.65	27.35	28.10	16.35	16.10	17.35	17.50	0.5	Pass
VHT40	MCS0	4	151	5755	71.06	74.47	71.10	71.20	35.60	36.35	35.50	35.10	0.5	Pass
VHT40	MCS0	4	159	5795	68.22	73.44	69.18	71.82	35.75	35.10	35.70	35.80	0.5	Pass
VHT80	MCS0	4	155	5775	84.80	87.14	87.48	95.36	75.80	76.50	75.70	75.10	0.5	Pass

Band IV														
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)				6 dB Bandwidth (MHz)				6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4		
VHT20	MCS0	4	149	5745	17.95	17.80	17.85	17.90	16.60	16.75	17.45	15.85	0.5	Pass
VHT20	MCS0	4	157	5785	17.95	17.50	17.80	17.95	16.75	17.00	16.40	16.50	0.5	Pass
VHT20	MCS0	4	165	5825	17.90	17.80	17.85	18.00	16.35	16.10	17.35	17.50	0.5	Pass
VHT40	MCS0	4	151	5755	37.50	37.20	36.70	37.30	35.60	36.35	35.50	35.10	0.5	Pass
VHT40	MCS0	4	159	5795	37.60	37.20	37.20	37.30	35.75	35.10	35.70	35.80	0.5	Pass
VHT80	MCS0	4	155	5775	77.88	78.36	77.28	77.88	75.80	76.50	75.70	75.10	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)					FCC Conducted Power Limit (dBm)	DG (dBi)				Pass/ Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM		Ant 1	Ant 2	Ant 3	Ant 4	
VHT20	MCS0	4	149	5745	21.70	22.10	22.00	21.90	27.95	27.97	8.03				Pass
VHT20	MCS0	4	157	5785	21.30	22.10	21.60	21.50	27.66	27.97	8.03				Pass
VHT20	MCS0	4	165	5825	21.70	21.80	22.20	21.80	27.90	27.97	8.03				Pass
VHT40	MCS0	4	151	5755	21.50	21.70	21.50	21.40	27.55	27.97	8.03				Pass
VHT40	MCS0	4	159	5795	20.90	21.80	21.10	21.10	27.26	27.97	8.03				Pass
VHT80	MCS0	4	155	5775	18.60	19.10	18.20	18.60	24.66	27.97	8.03				Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band IV															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Average Power Density with RBW and duty factor (dBm/500kHz)					Average PSD Limit (dBm/500kHz)	DG (dBi)				Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM		Ant 1	Ant 2	Ant 3	Ant 4	
VHT20	MCS0	4	149	5745	10.95	11.90	10.96	10.59	17.92	27.97	8.03				Pass
VHT20	MCS0	4	157	5785	11.17	11.53	11.09	11.28	17.55	27.97	8.03				Pass
VHT20	MCS0	4	165	5825	11.21	10.97	11.48	11.05	17.50	27.97	8.03				Pass
VHT40	MCS0	4	151	5755	10.10	10.64	11.10	9.72	17.12	27.97	8.03				Pass
VHT40	MCS0	4	159	5795	9.69	10.97	9.86	9.31	16.99	27.97	8.03				Pass
VHT80	MCS0	4	155	5775	4.68	4.86	3.13	3.73	10.88	27.97	8.03				Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2, Ant. 3, Ant. 4) + 10 log (n)



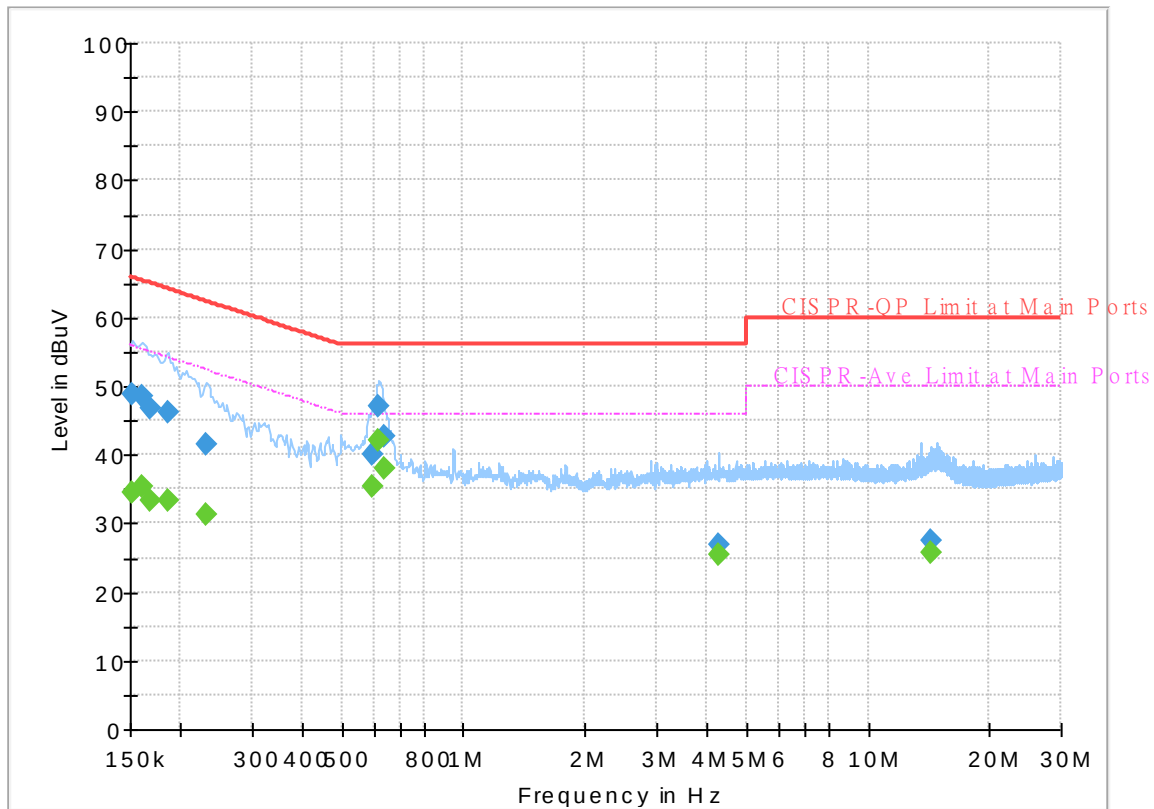
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Jimmy Chang	Temperature :	23~25℃
		Relative Humidity :	54~56%

EUT Information

Report NO : 960558-03
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



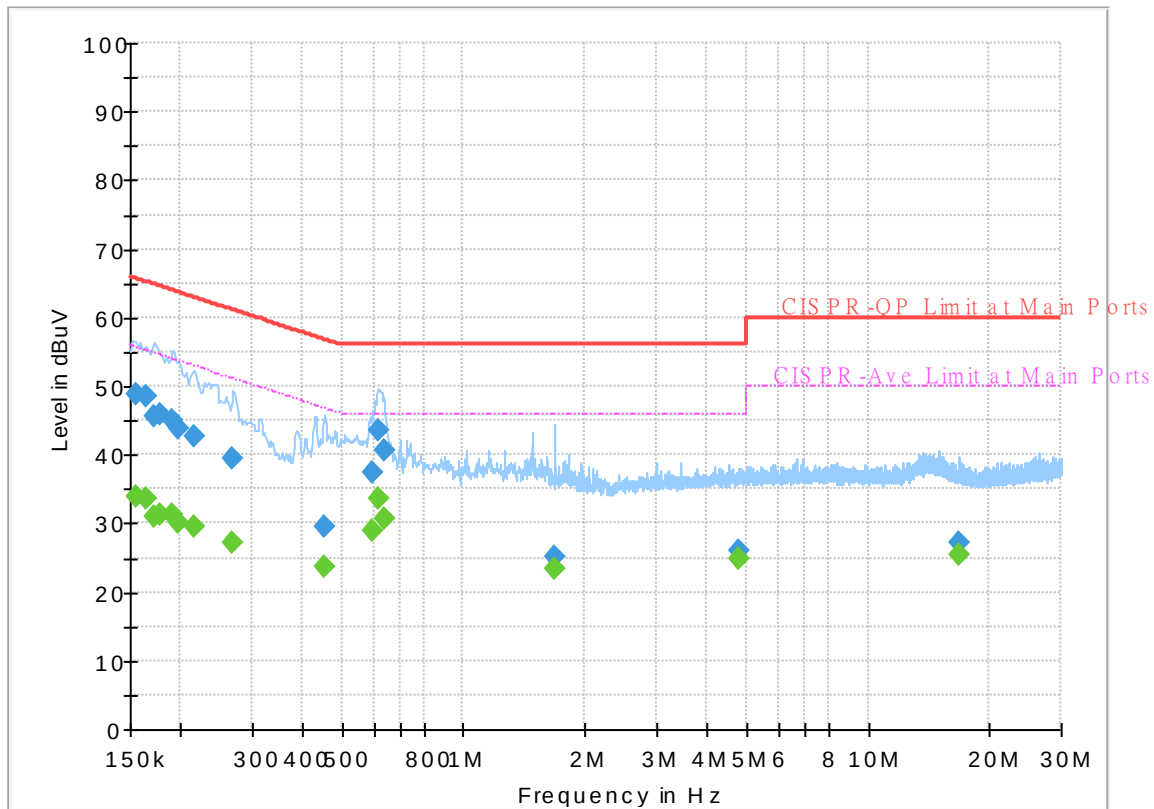
Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	34.37	55.88	21.51	L1	OFF	19.5
0.152250	48.84	---	65.88	17.04	L1	OFF	19.5
0.161250	---	35.46	55.40	19.94	L1	OFF	19.5
0.161250	48.52	---	65.40	16.88	L1	OFF	19.5
0.168000	---	33.46	55.06	21.60	L1	OFF	19.5
0.168000	46.73	---	65.06	18.33	L1	OFF	19.5
0.186000	---	33.30	54.21	20.91	L1	OFF	19.5
0.186000	46.16	---	64.21	18.05	L1	OFF	19.5
0.231000	---	31.29	52.41	21.12	L1	OFF	19.5
0.231000	41.38	---	62.41	21.03	L1	OFF	19.5
0.595500	---	35.31	46.00	10.69	L1	OFF	19.5
0.595500	40.07	---	56.00	15.93	L1	OFF	19.5
0.618000	---	41.96	46.00	4.04	L1	OFF	19.6
0.618000	47.14	---	56.00	8.86	L1	OFF	19.6
0.636000	---	37.88	46.00	8.12	L1	OFF	19.6
0.636000	42.58	---	56.00	13.42	L1	OFF	19.6
4.290000	---	25.32	46.00	20.68	L1	OFF	19.7
4.290000	27.04	---	56.00	28.96	L1	OFF	19.7
14.383500	---	25.62	50.00	24.38	L1	OFF	20.1
14.383500	27.36	---	60.00	32.64	L1	OFF	20.1

EUT Information

Report NO : 960558-03
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)
0.154500	---	33.84	55.75	21.91	N	OFF	19.5
0.154500	48.78	---	65.75	16.97	N	OFF	19.5
0.163500	---	33.51	55.28	21.77	N	OFF	19.5
0.163500	48.50	---	65.28	16.78	N	OFF	19.5
0.172500	---	31.08	54.84	23.76	N	OFF	19.5
0.172500	45.73	---	64.84	19.11	N	OFF	19.5
0.177000	---	31.38	54.63	23.25	N	OFF	19.5
0.177000	45.94	---	64.63	18.69	N	OFF	19.5
0.190500	---	31.28	54.02	22.74	N	OFF	19.5
0.190500	45.05	---	64.02	18.97	N	OFF	19.5
0.197250	---	30.09	53.73	23.64	N	OFF	19.5
0.197250	43.90	---	63.73	19.83	N	OFF	19.5
0.215250	---	29.40	53.00	23.60	N	OFF	19.5
0.215250	42.82	---	63.00	20.18	N	OFF	19.5
0.269250	---	27.32	51.14	23.82	N	OFF	19.5
0.269250	39.61	---	61.14	21.53	N	OFF	19.5
0.451500	---	23.74	46.85	23.11	N	OFF	19.5
0.451500	29.52	---	56.85	27.33	N	OFF	19.5
0.597750	---	28.86	46.00	17.14	N	OFF	19.5
0.597750	37.34	---	56.00	18.66	N	OFF	19.5
0.613500	---	33.60	46.00	12.40	N	OFF	19.6

0.613500	43.61	---	56.00	12.39	N	OFF	19.6
0.636000	---	30.83	46.00	15.17	N	OFF	19.6
0.636000	40.50	---	56.00	15.50	N	OFF	19.6
1.684500	---	23.46	46.00	22.54	N	OFF	19.6
1.684500	25.24	---	56.00	30.76	N	OFF	19.6
4.780500	---	24.80	46.00	21.20	N	OFF	19.7
4.780500	26.08	---	56.00	29.92	N	OFF	19.7
16.743750	---	25.47	50.00	24.53	N	OFF	20.2
16.743750	27.13	---	60.00	32.87	N	OFF	20.2



Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	21~28°C
		Relative Humidity :	51~68%

<CCD Mode>

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	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		5643.8	60.52	-7.68	68.2	49.2	34.67	11.73	35.08	256	149	P	H
		5684	76.67	-16.73	93.4	65.08	34.9	11.78	35.09	256	149	P	H
		5711.6	86.7	-21.75	108.45	75.1	34.87	11.83	35.1	256	149	P	H
		5723.8	103.91	-15.55	119.46	92.35	34.83	11.83	35.1	256	149	P	H
	*	5745	125.3	-	-	113.72	34.8	11.88	35.1	256	149	P	H
	*	5745	117.51	-	-	105.93	34.8	11.88	35.1	256	149	A	H
													H
													H
		5647.2	57.27	-10.93	68.2	45.95	34.67	11.73	35.08	207	292	P	V
		5687.6	78.22	-17.83	96.05	66.63	34.9	11.78	35.09	207	292	P	V
		5720	91.12	-19.68	110.8	79.56	34.83	11.83	35.1	207	292	P	V
		5725	96.89	-25.31	122.2	85.33	34.83	11.83	35.1	207	292	P	V
	*	5745	127.8	-	-	116.22	34.8	11.88	35.1	207	292	P	V
	*	5745	119.2	-	-	107.62	34.8	11.88	35.1	207	292	A	V
													V
													V



WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5644.6	52.77	-15.43	68.2	41.45	34.67	11.73	35.08	296	147	P	H
		5684.2	58.88	-34.66	93.54	47.29	34.9	11.78	35.09	296	147	P	H
		5705	68.48	-38.12	106.6	56.88	34.87	11.83	35.1	296	147	P	H
		5724.2	77	-43.38	120.38	65.44	34.83	11.83	35.1	296	147	P	H
	*	5785	126	-	-	114.31	34.87	11.93	35.11	296	147	P	H
	*	5785	117.7	-	-	106.01	34.87	11.93	35.11	296	147	A	H
		5853.2	68.28	-46.62	114.9	56.62	34.8	11.98	35.12	296	147	P	H
		5865.6	67.62	-40.21	107.83	55.85	34.87	12.02	35.12	296	147	P	H
		5884.8	56.87	-41.05	97.92	45.04	34.93	12.02	35.12	296	147	P	H
		5925	51.89	-16.31	68.2	39.95	35	12.07	35.13	296	147	P	H
													H
													H
		5649.6	54.82	-13.38	68.2	43.57	34.6	11.73	35.08	216	290	P	V
		5699.8	65.27	-39.78	105.05	53.68	34.9	11.78	35.09	216	290	P	V
		5719.6	70.84	-39.85	110.69	59.28	34.83	11.83	35.1	216	290	P	V
		5725	70.35	-51.85	122.2	58.79	34.83	11.83	35.1	216	290	P	V
	*	5785	127.94	-	-	116.25	34.87	11.93	35.11	216	290	P	V
	*	5785	119.36	-	-	107.67	34.87	11.93	35.11	216	290	A	V
		5850	73.91	-48.29	122.2	62.25	34.8	11.98	35.12	216	290	P	V
		5869	70.06	-36.82	106.88	58.29	34.87	12.02	35.12	216	290	P	V
		5879.2	60.55	-41.53	102.08	48.72	34.93	12.02	35.12	216	290	P	V
		5927	56.17	-12.03	68.2	44.23	35	12.07	35.13	216	290	P	V
													V
													V



WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	125.64	-	-	113.94	34.83	11.98	35.11	295	152	P	H
	*	5825	117.38	-	-	105.68	34.83	11.98	35.11	295	152	A	H
		5851.8	86.88	-31.22	118.1	75.22	34.8	11.98	35.12	295	152	P	H
		5866	80.29	-27.43	107.72	68.52	34.87	12.02	35.12	295	152	P	H
		5886.8	72.49	-23.95	96.44	60.66	34.93	12.02	35.12	295	152	P	H
		5926	55.53	-12.67	68.2	43.59	35	12.07	35.13	295	152	P	H
													H
													H
	*	5825	127.04	-	-	115.34	34.83	11.98	35.11	224	292	P	V
	*	5825	118.81	-	-	107.11	34.83	11.98	35.11	224	292	A	V
		5850	97.91	-24.29	122.2	86.25	34.8	11.98	35.12	224	292	P	V
		5857.4	85.18	-24.95	110.13	73.45	34.87	11.98	35.12	224	292	P	V
		5875.8	73.95	-30.66	104.61	62.12	34.93	12.02	35.12	224	292	P	V
		5929.4	57.24	-10.96	68.2	45.3	35	12.07	35.13	224	292	P	V
													V
													V
													V
Remark - No other spurious found. - All results are PASS against Peak and Average limit line.													



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	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	47.74	-26.26	74	49.27	38.07	17.86	57.46	100	0	P	H
		17235	54.14	-14.06	68.2	46.79	41.57	21.81	56.03	100	0	P	H
													H
													H
		11490	48.1	-25.9	74	49.63	38.07	17.86	57.46	100	0	P	V
		17235	56.04	-12.16	68.2	48.69	41.57	21.81	56.03	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	47.39	-26.61	74	48.69	38.17	17.89	57.36	100	0	P	H
		17355	55.54	-12.66	68.2	47.99	41.55	21.94	55.94	100	0	P	H
													H
													H
		11570	48.26	-25.74	74	49.56	38.17	17.89	57.36	100	0	P	V
		17355	59.86	-8.34	68.2	52.31	41.55	21.94	55.94	100	0	P	V
													V
													V
802.11a CH 165 5825MHz		11650	48.1	-25.9	74	49.19	38.28	17.92	57.29	100	0	P	H
		17475	54.62	-13.58	68.2	47.09	41.33	22.05	55.85	100	0	P	H
													H
													H
		11650	51.91	-22.09	74	53	38.28	17.92	57.29	101	102	P	V
		11650	42.03	-11.97	54	43.12	38.28	17.92	57.29	101	102	A	V
		17475	57.2	-11	68.2	49.67	41.33	22.05	55.85	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 802.11n HT20 (Band Edge @ 3m)**

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5647	58.42	-9.78	68.2	47.1	34.67	11.73	35.08	314	150	P	H
		5688.4	75.4	-21.24	96.64	63.81	34.9	11.78	35.09	314	150	P	H
		5720	91.08	-19.72	110.8	79.52	34.83	11.83	35.1	314	150	P	H
		5721.8	98.33	-16.57	114.9	86.77	34.83	11.83	35.1	314	150	P	H
	*	5745	125.04	-	-	113.46	34.8	11.88	35.1	314	150	P	H
	*	5745	116.66	-	-	105.08	34.8	11.88	35.1	314	150	A	H
													H
													H
		5643.2	57.55	-10.65	68.2	46.23	34.67	11.73	35.08	215	291	P	V
		5685.8	77.2	-17.52	94.72	65.61	34.9	11.78	35.09	215	291	P	V
		5718.4	87.26	-23.09	110.35	75.7	34.83	11.83	35.1	215	291	P	V
		5724.2	103.68	-16.7	120.38	92.12	34.83	11.83	35.1	215	291	P	V
	*	5745	126.3	-	-	114.72	34.8	11.88	35.1	215	291	P	V
	*	5745	118.26	-	-	106.68	34.8	11.88	35.1	215	291	A	V
													V
													V



WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		5645	53.28	-14.92	68.2	41.96	34.67	11.73	35.08	312	148	P	H
		5683.6	57.77	-35.33	93.1	46.18	34.9	11.78	35.09	312	148	P	H
		5712.6	65.76	-42.97	108.73	54.16	34.87	11.83	35.1	312	148	P	H
		5724.6	75.59	-45.7	121.29	64.03	34.83	11.83	35.1	312	148	P	H
	*	5785	125.3	-	-	113.61	34.87	11.93	35.11	312	148	P	H
	*	5785	117.15	-	-	105.46	34.87	11.93	35.11	312	148	A	H
		5852.4	68.59	-48.14	116.73	56.93	34.8	11.98	35.12	312	148	P	H
		5865.4	66.09	-41.8	107.89	54.32	34.87	12.02	35.12	312	148	P	H
		5884	56.07	-42.45	98.52	44.24	34.93	12.02	35.12	312	148	P	H
		5927.4	53.72	-14.48	68.2	41.78	35	12.07	35.13	312	148	P	H
													H
													H
		5648.6	54.34	-13.86	68.2	43.02	34.67	11.73	35.08	215	291	P	V
		5699.4	60.21	-44.55	104.76	48.62	34.9	11.78	35.09	215	291	P	V
		5719.8	69.85	-40.89	110.74	58.29	34.83	11.83	35.1	215	291	P	V
		5720.6	70.02	-42.15	112.17	58.46	34.83	11.83	35.1	215	291	P	V
	*	5785	127.9	-	-	116.21	34.87	11.93	35.11	215	291	P	V
	*	5785	119.37	-	-	107.68	34.87	11.93	35.11	215	291	A	V
		5850.6	71.53	-49.3	120.83	59.87	34.8	11.98	35.12	215	291	P	V
		5857.6	66.77	-43.3	110.07	55.04	34.87	11.98	35.12	215	291	P	V
		5890	57.17	-36.9	94.07	45.27	35	12.02	35.12	215	291	P	V
		5929.8	52.88	-15.32	68.2	40.94	35	12.07	35.13	215	291	P	V
													V
													V



WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz	*	5825	123.61	-	-	111.91	34.83	11.98	35.11	296	152	P	H
	*	5825	115.78	-	-	104.08	34.83	11.98	35.11	296	152	A	H
		5851.8	88.55	-29.55	118.1	76.89	34.8	11.98	35.12	296	152	P	H
		5859	81.08	-28.6	109.68	69.35	34.87	11.98	35.12	296	152	P	H
		5887	72.77	-23.52	96.29	60.94	34.93	12.02	35.12	296	152	P	H
		5925.6	55	-13.2	68.2	43.06	35	12.07	35.13	296	152	P	H
													H
													H
	*	5825	126.95	-	-	115.25	34.83	11.98	35.11	224	292	P	V
	*	5825	118.71	-	-	107.01	34.83	11.98	35.11	224	292	A	V
		5850.2	96.32	-25.42	121.74	84.66	34.8	11.98	35.12	224	292	P	V
		5859	85.49	-24.19	109.68	73.76	34.87	11.98	35.12	224	292	P	V
		5876.8	74.99	-28.87	103.86	63.16	34.93	12.02	35.12	224	292	P	V
		5927.6	56.44	-11.76	68.2	44.5	35	12.07	35.13	224	292	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	47.33	-26.67	74	48.86	38.07	17.86	57.46	100	0	P	H
		17235	54.35	-13.85	68.2	47	41.57	21.81	56.03	100	0	P	H
													H
													H
		11490	47.65	-26.35	74	49.18	38.07	17.86	57.46	100	0	P	V
		17235	57.27	-10.93	68.2	49.92	41.57	21.81	56.03	100	0	P	V
													V
													V
802.11n HT20 CH 157 5785MHz		11570	47.91	-26.09	74	49.21	38.17	17.89	57.36	100	0	P	H
		17355	56.09	-12.11	68.2	48.54	41.55	21.94	55.94	100	0	P	H
													H
													H
		11570	47.48	-26.52	74	48.78	38.17	17.89	57.36	100	0	P	V
		17355	58.97	-9.23	68.2	51.42	41.55	21.94	55.94	100	0	P	V
													V
													V
802.11n HT20 CH 165 5825MHz		11650	48.28	-25.72	74	49.37	38.28	17.92	57.29	100	0	P	H
		17475	54.41	-13.79	68.2	46.88	41.33	22.05	55.85	100	0	P	H
													H
													H
		11650	49.93	-24.07	74	51.02	38.28	17.92	57.29	100	0	P	V
		17475	57.98	-10.22	68.2	50.45	41.33	22.05	55.85	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5636.4	59.57	-8.63	68.2	48.25	34.67	11.73	35.08	346	151	P	H
		5657.4	64.88	-8.82	73.7	53.64	34.6	11.73	35.09	346	151	P	H
		5717	92.02	-17.94	109.96	80.42	34.87	11.83	35.1	346	151	P	H
		5720.6	89.36	-22.81	112.17	77.8	34.83	11.83	35.1	346	151	P	H
	*	5755	121.34	-	-	109.73	34.83	11.88	35.1	346	151	P	H
	*	5755	113.28	-	-	101.67	34.83	11.88	35.1	346	151	A	H
		5853	61.36	-54	115.36	49.7	34.8	11.98	35.12	346	151	P	H
		5858.2	63.89	-46.01	109.9	52.16	34.87	11.98	35.12	346	151	P	H
		5878.4	57.47	-45.2	102.67	45.64	34.93	12.02	35.12	346	151	P	H
		5936	51.55	-16.65	68.2	39.61	35	12.07	35.13	346	151	P	H
													H
													H
		5632.6	60.4	-7.8	68.2	49.08	34.67	11.73	35.08	218	284	P	V
		5652.4	65.63	-4.35	69.98	54.38	34.6	11.73	35.08	218	284	P	V
		5717	93.19	-16.77	109.96	81.59	34.87	11.83	35.1	218	284	P	V
		5725	92.1	-30.1	122.2	80.54	34.83	11.83	35.1	218	284	P	V
	*	5755	122.41	-	-	110.8	34.83	11.88	35.1	218	284	P	V
	*	5755	114.64	-	-	103.03	34.83	11.88	35.1	218	284	A	V
		5854.8	66.15	-45.11	111.26	54.42	34.87	11.98	35.12	218	284	P	V
		5856.6	65.46	-44.89	110.35	53.73	34.87	11.98	35.12	218	284	P	V
		5875.2	59.66	-45.39	105.05	47.83	34.93	12.02	35.12	218	284	P	V
		5943.2	52.64	-15.56	68.2	40.66	35	12.11	35.13	218	284	P	V
													V
													V



WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5643.6	60.15	-8.05	68.2	48.83	34.67	11.73	35.08	342	151	P	H
		5697.6	70.95	-32.48	103.43	59.36	34.9	11.78	35.09	342	151	P	H
		5718.6	75.98	-34.43	110.41	64.42	34.83	11.83	35.1	342	151	P	H
		5724	76.66	-43.26	119.92	65.1	34.83	11.83	35.1	342	151	P	H
	*	5795	122.49	-	-	110.77	34.9	11.93	35.11	342	151	P	H
	*	5795	114.56	-	-	102.84	34.9	11.93	35.11	342	151	A	H
		5852.4	79.03	-37.7	116.73	67.37	34.8	11.98	35.12	342	151	P	H
		5857.4	81.61	-28.52	110.13	69.88	34.87	11.98	35.12	342	151	P	H
		5886.6	70.9	-25.69	96.59	59.07	34.93	12.02	35.12	342	151	P	H
		5925.6	61.04	-7.16	68.2	49.1	35	12.07	35.13	342	151	P	H
													H
													H
		5641	61.69	-6.51	68.2	50.37	34.67	11.73	35.08	214	286	P	V
		5694.2	70.79	-30.13	100.92	59.2	34.9	11.78	35.09	214	286	P	V
		5714	77.69	-31.43	109.12	66.09	34.87	11.83	35.1	214	286	P	V
		5722.4	77.2	-39.07	116.27	65.64	34.83	11.83	35.1	214	286	P	V
	*	5795	123.07	-	-	111.35	34.9	11.93	35.11	214	286	P	V
	*	5795	115.19	-	-	103.47	34.9	11.93	35.11	214	286	A	V
		5852.6	85.12	-31.15	116.27	73.46	34.8	11.98	35.12	214	286	P	V
		5855.6	83.29	-27.34	110.63	71.56	34.87	11.98	35.12	214	286	P	V
		5882	75.65	-24.35	100	63.82	34.93	12.02	35.12	214	286	P	V
		5927.4	64.69	-3.51	68.2	52.75	35	12.07	35.13	214	286	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	47.73	-26.27	74	49.18	38.1	17.88	57.43	100	0	P	H
		17265	54.34	-13.86	68.2	46.96	41.53	21.85	56	100	0	P	H
													H
													H
		11510	47.32	-26.68	74	48.77	38.1	17.88	57.43	100	0	P	V
		17265	54.78	-13.42	68.2	47.4	41.53	21.85	56	100	0	P	V
													V
													V
802.11n HT40 CH 159 5795MHz		11590	47.36	-26.64	74	48.61	38.18	17.91	57.34	100	0	P	H
		17385	54.17	-14.03	68.2	46.52	41.58	21.98	55.91	100	0	P	H
													H
													H
		11590	47.28	-26.72	74	48.53	38.18	17.91	57.34	100	0	P	V
		17385	59.14	-9.06	68.2	51.49	41.58	21.98	55.91	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+2+3+4	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		5637.8	63.58	-4.62	68.2	52.26	34.67	11.73	35.08	343	151	P	H
		5697.6	71.95	-31.48	103.43	60.36	34.9	11.78	35.09	343	151	P	H
		5719	72.12	-38.4	110.52	60.56	34.83	11.83	35.1	343	151	P	H
		5721	69.74	-43.34	113.08	58.18	34.83	11.83	35.1	343	151	P	H
	*	5775	113.87	-	-	102.22	34.87	11.88	35.1	343	151	P	H
	*	5775	105.7	-	-	94.05	34.87	11.88	35.1	343	151	A	H
		5855	69.27	-41.53	110.8	57.54	34.87	11.98	35.12	343	151	P	H
		5856.6	70.19	-40.16	110.35	58.46	34.87	11.98	35.12	343	151	P	H
		5878.8	67.75	-34.63	102.38	55.92	34.93	12.02	35.12	343	151	P	H
		5939.6	56.46	-11.74	68.2	44.52	35	12.07	35.13	343	151	P	H
													H
													H
		5631.8	64.58	-3.62	68.2	53.2	34.73	11.73	35.08	244	285	P	V
		5654.4	67.58	-3.89	71.47	56.34	34.6	11.73	35.09	244	285	P	V
		5714	75.01	-34.11	109.12	63.41	34.87	11.83	35.1	244	285	P	V
		5723.4	72.78	-45.77	118.55	61.22	34.83	11.83	35.1	244	285	P	V
	*	5775	113.95	-	-	102.3	34.87	11.88	35.1	244	285	P	V
	*	5775	107.08	-	-	95.43	34.87	11.88	35.1	244	285	A	V
		5855	73.46	-37.34	110.8	61.73	34.87	11.98	35.12	244	285	P	V
		5855.8	74.74	-35.84	110.58	63.01	34.87	11.98	35.12	244	285	P	V
		5875.4	68.97	-35.93	104.9	57.14	34.93	12.02	35.12	244	285	P	V
		5936.6	56.9	-11.3	68.2	44.96	35	12.07	35.13	244	285	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+3+4	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	47.59	-26.41	74	48.93	38.15	17.89	57.38	100	0	P	H
		17325	53.3	-14.9	68.2	45.84	41.52	21.9	55.96	100	0	P	H
													H
													H
		11550	47.59	-26.41	74	48.93	38.15	17.89	57.38	100	0	P	V
		17325	53.35	-14.85	68.2	45.89	41.52	21.9	55.96	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 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11n HT40 LF		47.01	23.52	-16.48	40	36.7	15.48	1.33	29.99	-	-	P	H
		129.9	31.1	-12.4	43.5	41.61	17.43	2.01	29.95	-	-	P	H
		172.02	28.78	-14.72	43.5	40.96	15.45	2.26	29.89	-	-	P	H
		383.3	35.79	-10.21	46	41.24	21.05	3.28	29.78	100	0	P	H
		449.1	35.67	-10.33	46	38.99	22.97	3.5	29.79	-	-	P	H
		960	34.72	-11.28	46	27.23	30.9	5.08	28.49	-	-	P	H
													H
													H
													H
													H
													H
													H
		34.32	28.6	-11.4	40	34.69	22.57	1.32	29.98	-	-	P	V
		41.07	29.73	-10.27	40	39.58	18.81	1.33	29.99	-	-	P	V
		49.44	32.41	-7.59	40	46.41	14.66	1.33	29.99	100	0	P	V
		414.8	33.03	-12.97	46	37.16	22.36	3.3	29.79	-	-	P	V
		456.8	34.43	-11.57	46	37.64	23.09	3.5	29.8	-	-	P	V
		955.9	34.21	-11.79	46	26.97	30.69	5.08	28.53	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



<TXBF Mode>

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (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+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 149 5745MHz		5622.2	52.71	-15.49	68.2	41.33	34.73	11.73	35.08	361	148	P	H
		5699.8	57.7	-47.35	105.05	46.11	34.9	11.78	35.09	361	148	P	H
		5720	70.78	-40.02	110.8	59.22	34.83	11.83	35.1	361	148	P	H
		5724.6	78.3	-42.99	121.29	66.74	34.83	11.83	35.1	361	148	P	H
	*	5745	121.51	-	-	109.93	34.8	11.88	35.1	361	148	P	H
	*	5745	112.88	-	-	101.3	34.8	11.88	35.1	361	148	A	H
													H
													H
		5649.6	53.47	-14.73	68.2	42.22	34.6	11.73	35.08	222	280	P	V
		5699.8	59.94	-45.11	105.05	48.35	34.9	11.78	35.09	222	280	P	V
		5719.8	76.53	-34.21	110.74	64.97	34.83	11.83	35.1	222	280	P	V
		5725	83.95	-38.25	122.2	72.39	34.83	11.83	35.1	222	280	P	V
	*	5745	123.08	-	-	111.5	34.8	11.88	35.1	222	280	P	V
	*	5745	115.52	-	-	103.94	34.8	11.88	35.1	222	280	A	V
													V
													V



WIFI Ant. 1+2+3+4	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 157 5785MHz		5649	52.65	-15.55	68.2	41.33	34.67	11.73	35.08	374	144	P	H
		5697	53.38	-49.61	102.99	41.79	34.9	11.78	35.09	374	144	P	H
		5711	53.68	-54.6	108.28	42.08	34.87	11.83	35.1	374	144	P	H
		5722.8	52.23	-64.95	117.18	40.67	34.83	11.83	35.1	374	144	P	H
	*	5785	122.03	-	-	110.34	34.87	11.93	35.11	374	144	P	H
	*	5785	113.45	-	-	101.76	34.87	11.93	35.11	374	144	A	H
		5852.6	52.57	-63.7	116.27	40.91	34.8	11.98	35.12	374	144	P	H
		5866.2	52.69	-54.97	107.66	40.92	34.87	12.02	35.12	374	144	P	H
		5888.2	51.97	-43.43	95.4	40.07	35	12.02	35.12	374	144	P	H
		5947.8	50.68	-17.52	68.2	38.7	35	12.11	35.13	374	144	P	H
													H
													H
		5601	52.3	-15.9	68.2	40.9	34.8	11.68	35.08	324	285	P	V
		5667	52.97	-27.85	80.82	41.53	34.75	11.78	35.09	324	285	P	V
		5705.4	53.76	-52.95	106.71	42.16	34.87	11.83	35.1	324	285	P	V
		5721.6	54.03	-60.42	114.45	42.47	34.83	11.83	35.1	324	285	P	V
	*	5785	123.42	-	-	111.73	34.87	11.93	35.11	324	285	P	V
	*	5785	114.97	-	-	103.28	34.87	11.93	35.11	324	285	A	V
		5853.2	52.36	-62.54	114.9	40.7	34.8	11.98	35.12	324	285	P	V
		5859.2	54.23	-55.39	109.62	42.5	34.87	11.98	35.12	324	285	P	V
		5897	52.88	-36	88.88	40.98	35	12.02	35.12	324	285	P	V
		5949.8	51.85	-16.35	68.2	39.87	35	12.11	35.13	324	285	P	V
													V
													V



WIFI Ant. 1+2+3+4	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 165 5825MHz	*	5825	120.63	-	-	108.93	34.83	11.98	35.11	356	147	P	H
	*	5825	111.91	-	-	100.21	34.83	11.98	35.11	356	147	A	H
		5850.2	71.22	-50.52	121.74	59.56	34.8	11.98	35.12	356	147	P	H
		5855	66.29	-44.51	110.8	54.56	34.87	11.98	35.12	356	147	P	H
		5878.6	54.16	-48.37	102.53	42.33	34.93	12.02	35.12	356	147	P	H
		5932.4	52.49	-15.71	68.2	40.55	35	12.07	35.13	356	147	P	H
													H
													H
	*	5825	122.89	-	-	111.19	34.83	11.98	35.11	374	271	P	V
	*	5825	114.07	-	-	102.37	34.83	11.98	35.11	374	271	A	V
		5850	72.24	-49.96	122.2	60.58	34.8	11.98	35.12	374	271	P	V
		5855	67.68	-43.12	110.8	55.95	34.87	11.98	35.12	374	271	P	V
		5877.2	54.86	-48.71	103.57	43.03	34.93	12.02	35.12	374	271	P	V
		5946	53.74	-14.46	68.2	41.76	35	12.11	35.13	374	271	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+3+4	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	48.29	-25.71	74	49.82	38.07	17.86	57.46	100	0	P	H
		17235	53.19	-15.01	68.2	45.84	41.57	21.81	56.03	100	0	P	H
													H
													H
		11490	48.7	-25.3	74	50.23	38.07	17.86	57.46	100	0	P	V
		17235	53.39	-14.81	68.2	46.04	41.57	21.81	56.03	100	0	P	V
													V
													V
802.11ac VHT20 CH 157 5785MHz		11570	47.69	-26.31	74	48.99	38.17	17.89	57.36	100	0	P	H
		17355	53.85	-14.35	68.2	46.3	41.55	21.94	55.94	100	0	P	H
													H
													H
		11570	47.56	-26.44	74	48.86	38.17	17.89	57.36	100	0	P	V
		17355	53.93	-14.27	68.2	46.38	41.55	21.94	55.94	100	0	P	V
													V
													V
802.11ac VHT20 CH 165 5825MHz		11650	47.97	-26.03	74	49.06	38.28	17.92	57.29	100	0	P	H
		17475	53.27	-14.93	68.2	45.74	41.33	22.05	55.85	100	0	P	H
													H
													H
		11650	48.57	-25.43	74	49.66	38.28	17.92	57.29	100	0	P	V
		17475	53.68	-14.52	68.2	46.15	41.33	22.05	55.85	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+2+3+4	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		5646.2	57.56	-10.64	68.2	46.24	34.67	11.73	35.08	361	143	P	H
		5688.2	74.29	-22.21	96.5	62.7	34.9	11.78	35.09	361	143	P	H
		5718	88.94	-21.3	110.24	77.38	34.83	11.83	35.1	361	143	P	H
		5723.2	89.29	-28.81	118.1	77.73	34.83	11.83	35.1	361	143	P	H
	*	5755	121	-	-	109.39	34.83	11.88	35.1	361	143	P	H
	*	5755	113.86	-	-	102.25	34.83	11.88	35.1	361	143	A	H
		5850.2	61.75	-59.99	121.74	50.09	34.8	11.98	35.12	361	143	P	H
		5869.2	59.43	-47.39	106.82	47.66	34.87	12.02	35.12	361	143	P	H
		5889.2	55.32	-39.34	94.66	43.42	35	12.02	35.12	361	143	P	H
		5926.4	51.2	-17	68.2	39.26	35	12.07	35.13	361	143	P	H
													H
													H
		5640	61.09	-7.11	68.2	49.77	34.67	11.73	35.08	222	280	P	V
		5663.6	66.67	-11.63	78.3	55.38	34.6	11.78	35.09	222	280	P	V
		5720	87.81	-22.99	110.8	76.25	34.83	11.83	35.1	222	280	P	V
		5724.2	97.61	-22.77	120.38	86.05	34.83	11.83	35.1	222	280	P	V
	*	5755	123.22	-	-	111.61	34.83	11.88	35.1	222	280	P	V
	*	5755	115.92	-	-	104.31	34.83	11.88	35.1	222	280	A	V
		5851.2	61.46	-58	119.46	49.8	34.8	11.98	35.12	222	280	P	V
		5855.2	62.56	-48.18	110.74	50.83	34.87	11.98	35.12	222	280	P	V
		5883.6	62.84	-35.97	98.81	51.01	34.93	12.02	35.12	222	280	P	V
		5939	52.04	-16.16	68.2	40.1	35	12.07	35.13	222	280	P	V
													V
													V



WIFI Ant. 1+2+3+4	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 159 5795MHz		5648.8	55.42	-12.78	68.2	44.1	34.67	11.73	35.08	361	141	P	H
		5700	59.87	-45.33	105.2	48.28	34.9	11.78	35.09	361	141	P	H
		5718.8	67.54	-42.92	110.46	55.98	34.83	11.83	35.1	361	141	P	H
		5723.8	66.84	-52.62	119.46	55.28	34.83	11.83	35.1	361	141	P	H
	*	5795	121.24	-	-	109.52	34.9	11.93	35.11	361	141	P	H
	*	5795	114.06	-	-	102.34	34.9	11.93	35.11	361	141	A	H
		5850.4	73.12	-48.17	121.29	61.46	34.8	11.98	35.12	361	141	P	H
		5869	70.56	-36.32	106.88	58.79	34.87	12.02	35.12	361	141	P	H
		5876.4	63.39	-40.77	104.16	51.56	34.93	12.02	35.12	361	141	P	H
		5930	58.33	-9.87	68.2	46.39	35	12.07	35.13	361	141	P	H
													H
													H
		5640.2	53.07	-15.13	68.2	41.75	34.67	11.73	35.08	222	286	P	V
		5693	62.33	-37.71	100.04	50.74	34.9	11.78	35.09	222	286	P	V
		5712	68.8	-39.76	108.56	57.2	34.87	11.83	35.1	222	286	P	V
		5724.2	71.88	-48.5	120.38	60.32	34.83	11.83	35.1	222	286	P	V
	*	5795	122.2	-	-	110.48	34.9	11.93	35.11	222	286	P	V
	*	5795	114.64	-	-	102.92	34.9	11.93	35.11	222	286	A	V
		5853	75.74	-39.62	115.36	64.08	34.8	11.98	35.12	222	286	P	V
		5863.6	74.04	-34.35	108.39	62.27	34.87	12.02	35.12	222	286	P	V
		5924	61.92	-7.02	68.94	49.98	35	12.07	35.13	222	286	P	V
		5945	55	-13.2	68.2	43.02	35	12.11	35.13	222	286	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+3+4	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	47.21	-26.79	74	48.66	38.1	17.88	57.43	100	0	P	H
		17265	53.79	-14.41	68.2	46.41	41.53	21.85	56	100	0	P	H
													H
													H
		11510	47.26	-26.74	74	48.71	38.1	17.88	57.43	100	0	P	V
		17265	53.31	-14.89	68.2	45.93	41.53	21.85	56	100	0	P	V
													V
													V
802.11ac VHT40 CH 159 5795MHz		11590	47.45	-26.55	74	48.7	38.18	17.91	57.34	100	0	P	H
		17385	54.02	-14.18	68.2	46.37	41.58	21.98	55.91	100	0	P	H
													H
													H
		11590	47.44	-26.56	74	48.69	38.18	17.91	57.34	100	0	P	V
		17385	53.47	-14.73	68.2	45.82	41.58	21.98	55.91	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+2+3+4	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		5629.6	61.44	-6.76	68.2	50.06	34.73	11.73	35.08	346	152	P	H
		5690.4	81.91	-16.21	98.12	70.32	34.9	11.78	35.09	346	152	P	H
		5700.2	69.69	-35.57	105.26	58.05	34.9	11.83	35.09	346	152	P	H
		5722.4	73.6	-42.67	116.27	62.04	34.83	11.83	35.1	346	152	P	H
	*	5775	115.64	-	-	103.99	34.87	11.88	35.1	346	152	P	H
	*	5775	107.46	-	-	95.81	34.87	11.88	35.1	346	152	A	H
		5853.6	68.75	-45.24	113.99	57.02	34.87	11.98	35.12	346	152	P	H
		5871.2	76.83	-29.43	106.26	65	34.93	12.02	35.12	346	152	P	H
		5875.2	67.52	-37.53	105.05	55.69	34.93	12.02	35.12	346	152	P	H
		5930.6	57.22	-10.98	68.2	45.28	35	12.07	35.13	346	152	P	H
													H
													H
		5645.2	64.76	-3.44	68.2	53.44	34.67	11.73	35.08	196	296	P	V
		5688.6	79.05	-17.74	96.79	67.46	34.9	11.78	35.09	196	296	P	V
		5704.2	80.29	-26.09	106.38	68.68	34.87	11.83	35.09	196	296	P	V
		5724.6	81.05	-40.24	121.29	69.49	34.83	11.83	35.1	196	296	P	V
	*	5775	115.87	-	-	104.22	34.87	11.88	35.1	196	296	P	V
	*	5775	108.07	-	-	96.42	34.87	11.88	35.1	196	296	A	V
		5851.2	68.66	-50.8	119.46	57	34.8	11.98	35.12	196	296	P	V
		5865.8	73.94	-33.83	107.77	62.17	34.87	12.02	35.12	196	296	P	V
		5891	67.85	-25.48	93.33	55.95	35	12.02	35.12	196	296	P	V
		5931.2	61.84	-6.36	68.2	49.9	35	12.07	35.13	196	296	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+3+4	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	47.63	-26.37	74	48.97	38.15	17.89	57.38	100	0	P	H
		17325	54.14	-14.06	68.2	46.68	41.52	21.9	55.96	100	0	P	H
													H
													H
		11550	47.48	-26.52	74	48.82	38.15	17.89	57.38	100	0	P	V
		17325	53.65	-14.55	68.2	46.19	41.52	21.9	55.96	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

WIFI 802.11ac VHT80 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 LF		30	23.63	-16.37	40	27.69	24.6	1.32	29.98	-	-	P	H
		130.44	29.44	-14.06	43.5	39.96	17.42	2.01	29.95	-	-	P	H
		172.29	27.64	-15.86	43.5	39.89	15.38	2.26	29.89	-	-	P	H
		384.7	33.72	-12.28	46	39.11	21.12	3.28	29.79	-	-	P	H
		449.1	35.95	-10.05	46	39.27	22.97	3.5	29.79	100	0	P	H
		955.2	34.31	-11.69	46	27.12	30.64	5.08	28.53	-	-	P	H
													H
													H
													H
													H
													H
													H
		39.99	31	-9	40	40.33	19.33	1.33	29.99	100	0	P	V
		49.71	29.98	-10.02	40	43.98	14.66	1.33	29.99	-	-	P	V
		134.22	30.2	-13.3	43.5	40.72	17.41	2.01	29.94	-	-	P	V
		447	34.14	-11.86	46	37.49	22.94	3.5	29.79	-	-	P	V
		499.5	34.9	-11.1	46	37.22	23.84	3.64	29.8	-	-	P	V
		958	35.42	-10.58	46	28.04	30.8	5.08	28.5	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	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+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 = 55.45 (dBμV/m)
2. Over Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 74(dBμV/m)
 = -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

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



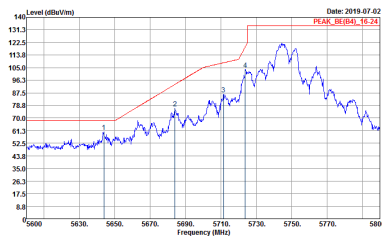
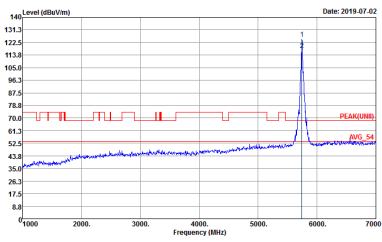
Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	21~28°C
		Relative Humidity :	51~68%

Note symbol

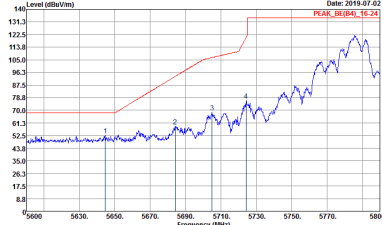
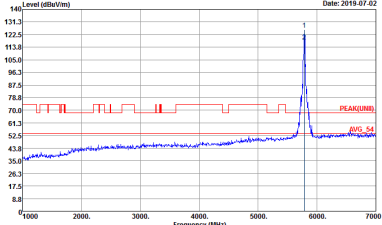
-L	Low channel location
-R	High channel location

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

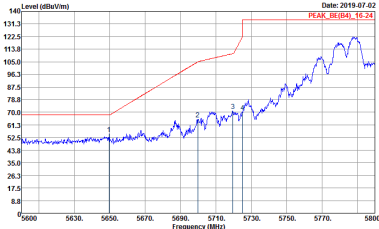
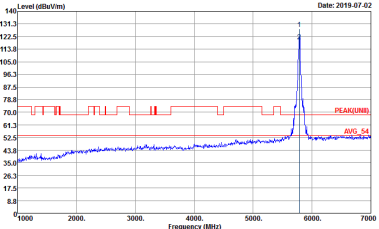
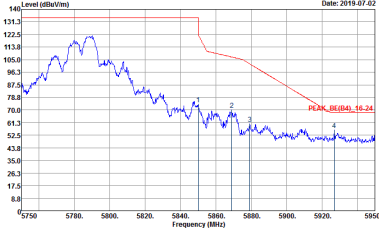
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 59 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 59 Setting : 25



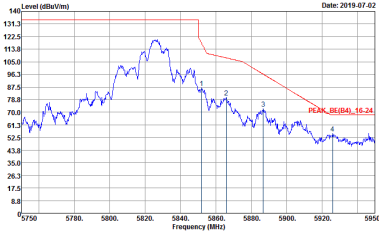
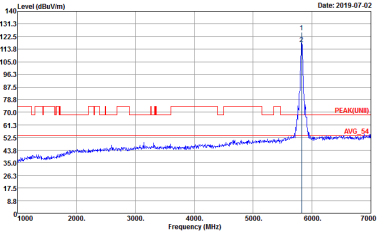
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2+3+4	Vertical	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 59 Setting : 25	Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 59 Setting : 25

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 60 Setting : 25	 Site : 03CH07-HY Condition : PEAK(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 60 Setting : 25
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 60 Setting : 25	Left blank

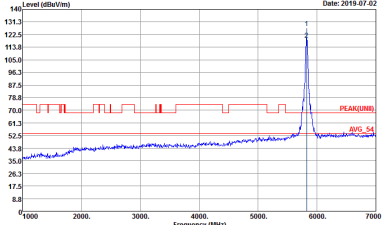


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 60 Setting : 25	 Site : 03CH07-HY Condition : PEAK(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 60 Setting : 25
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 60 Setting : 25	Left blank



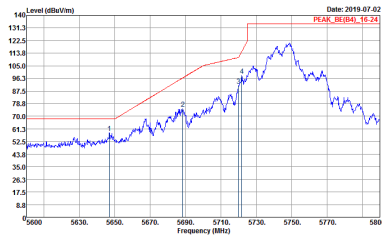
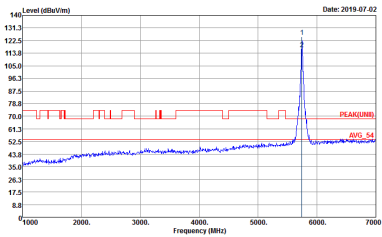
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 61 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 61 Setting : 25



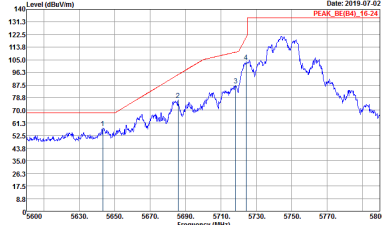
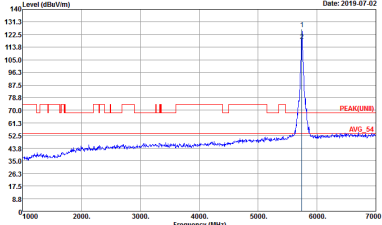
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 61 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 61 Setting : 25



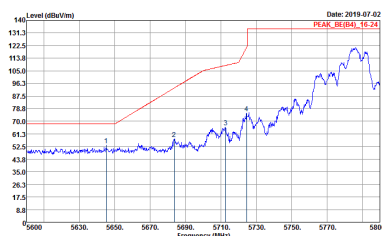
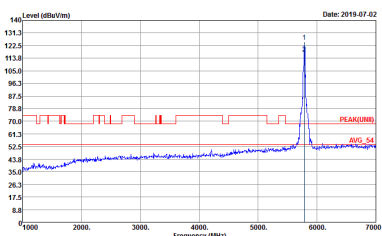
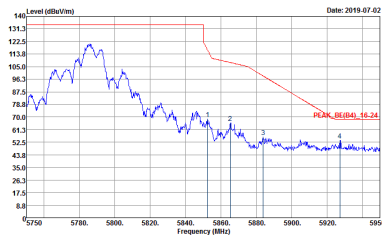
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK (B4) 16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 62 Setting : 25	 Site : 03CH07-HY Condition : PEAK (UHF) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 62 Setting : 25

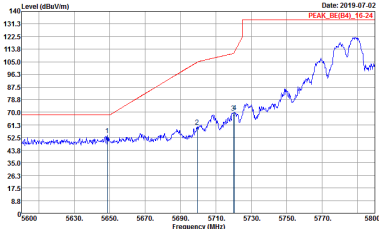
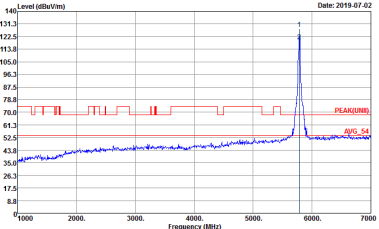


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 62 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 62 Setting : 25

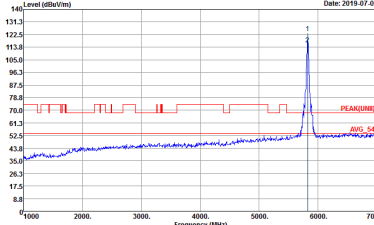


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 63 Setting : 25	 Site : 03CH07-HY Condition : PEAK(FUN)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 63 Setting : 25
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 63 Setting : 25	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 63 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 63 Setting : 25
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 63 Setting : 25	Left blank



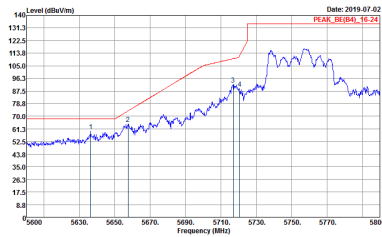
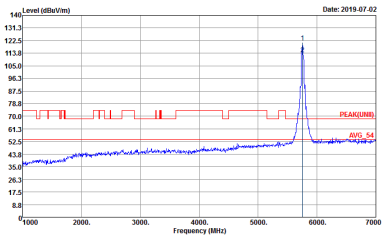
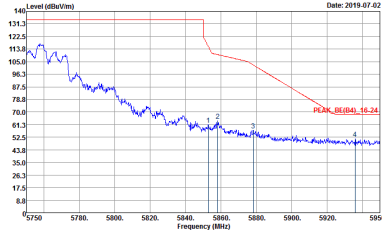
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 64 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 64 Setting : 25

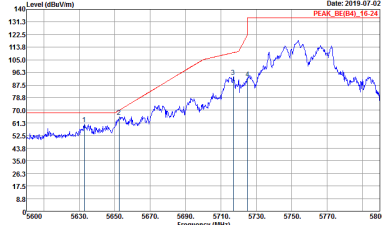
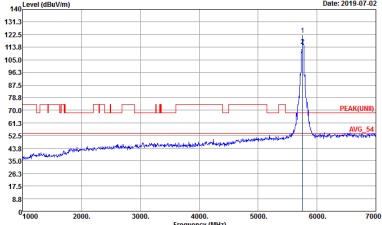


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2+3+4	Vertical	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 64 Setting : 25	Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 64 Setting : 25

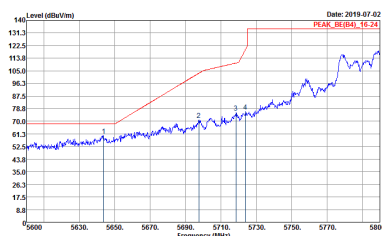
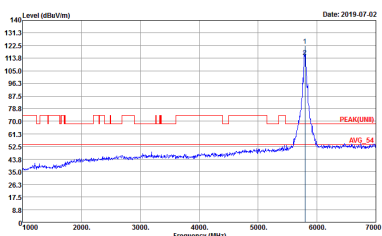
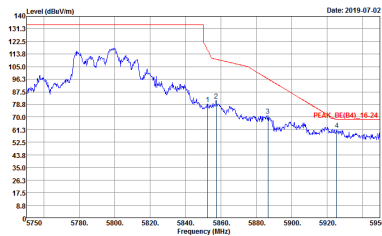


Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

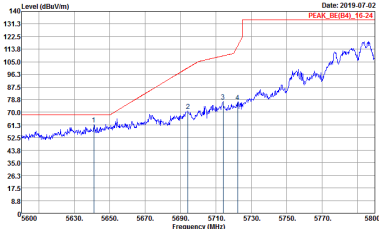
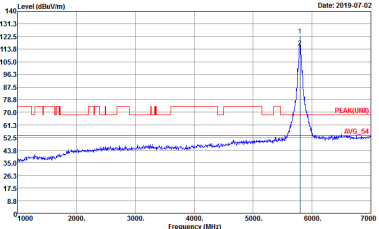
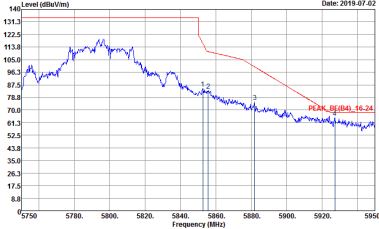
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 65 Setting : 21.5	 Site : 03CH07-HY Condition : PEAK(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 65 Setting : 21.5
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 65 Setting : 21.5	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 65 Setting : 21.5	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 65 Setting : 21.5
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 65 Setting : 21.5	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 66 Setting : 22.5	 Site : 03CH07-HY Condition : PEAK(FUN)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 66 Setting : 22.5
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 66 Setting : 22.5	Left blank

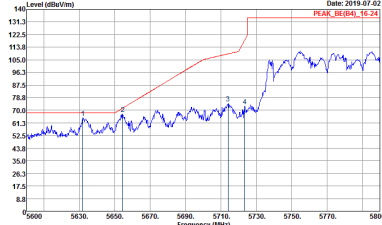
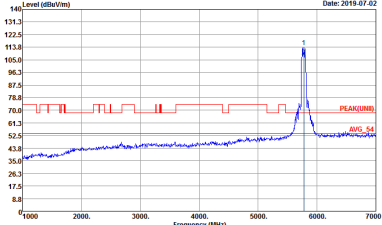


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 66 Setting : 22.5	 Site : 03CH07-HY Condition : PEAK(FUN) 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 66 Setting : 22.5
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Project : 960558 Mode : 66 Setting : 22.5	Left blank



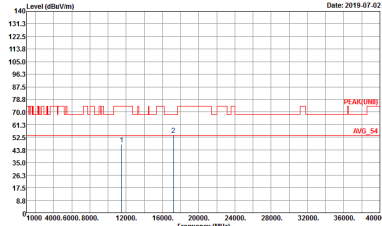
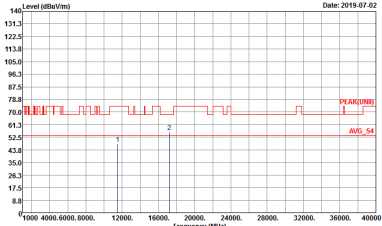
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2+3+4	Horizontal	Fundamental
Peak	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 67 Setting : 18	Site : 03CH07-HY Condition : PEAK(UMI) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 67 Setting : 18
Peak	Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 960558 Mode : 67 Setting : 18	Left blank

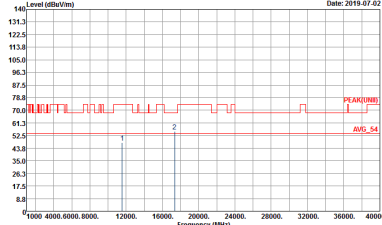
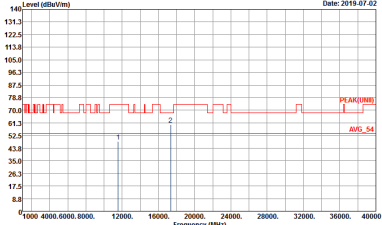
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Date: 2019-07-02 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 67 Setting : 18	 Date: 2019-07-02 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 67 Setting : 18
Peak	 Date: 2019-07-02 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Peak : Peak Project : 960558 Mode : 67 Setting : 18	Left blank



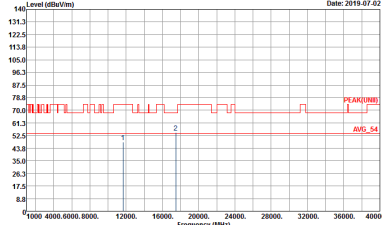
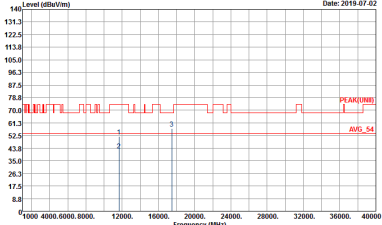
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-4HY Condition : PEAK(LNII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 59 Setting : 25	 Site : 03CH07-4HY Condition : PEAK(LNII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 59 Setting : 25



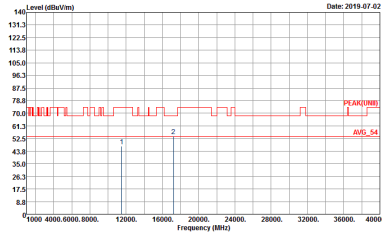
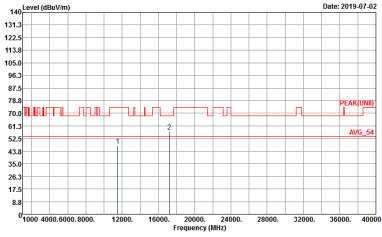
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 60 Setting : 25	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 60 Setting : 25



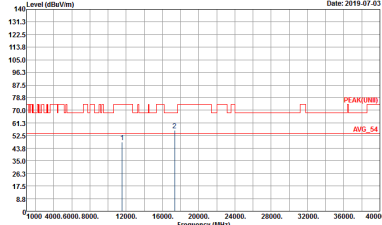
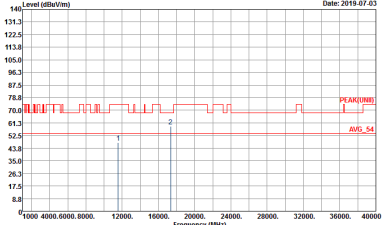
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 61 Setting : 25	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 61 Setting : 25



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(LNII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 62 Setting : 25	 Site : 03CH07-HY Condition : PEAK(LNII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 62 Setting : 25



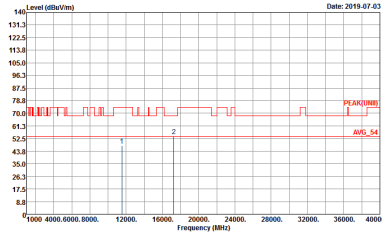
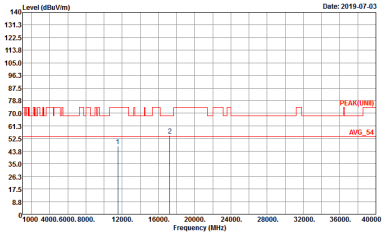
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 63 Setting : 25	 Site : 03CH07-HY Condition : PEAK(100) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 63 Setting : 25



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 64 Setting : 25	Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 64 Setting : 25



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

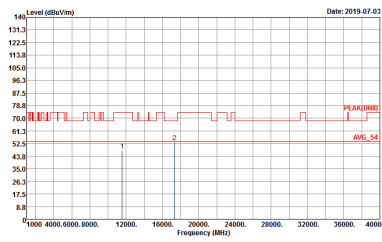
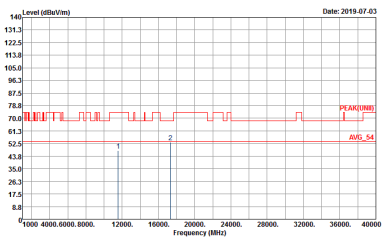
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(LINII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 65 Setting : 21.5	 Site : 03CH07-HY Condition : PEAK(LINII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 65 Setting : 21.5



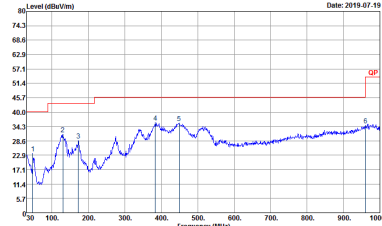
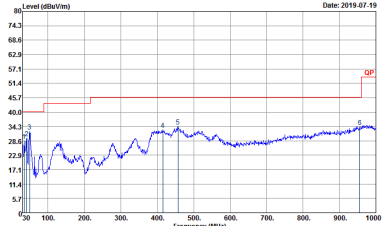
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 66 Setting : 22.5	Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 66 Setting : 22.5



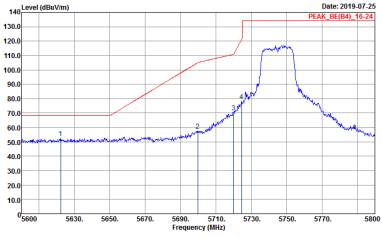
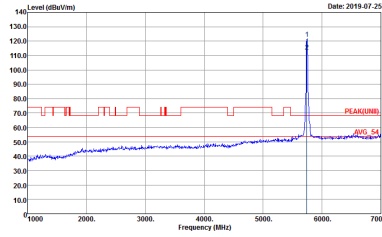
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(LNII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 67 Setting : 18	 Site : 03CH07-HY Condition : PEAK(LNII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 67 Setting : 18

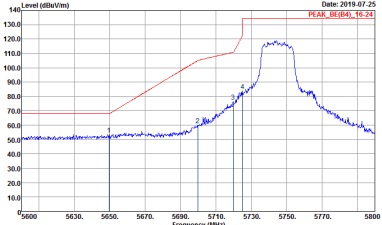
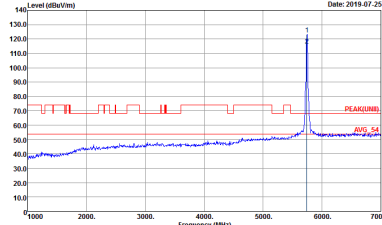
Emission below 1GHz
5GHz WIFI 802.11n HT40 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT40 LF	
1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak Project : 960558 Mode : 58	 Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak Project : 960558 Mode : 58

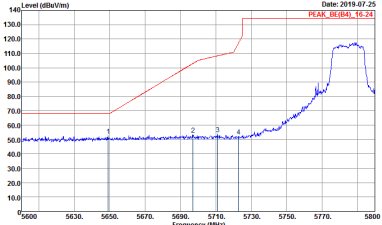
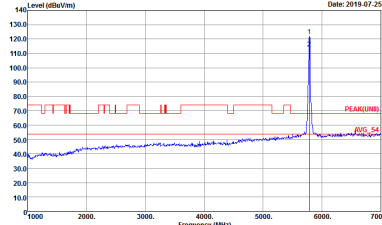
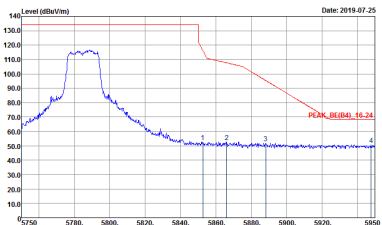
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Band 4 - 5725~5850MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 68 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 68 Setting : 27

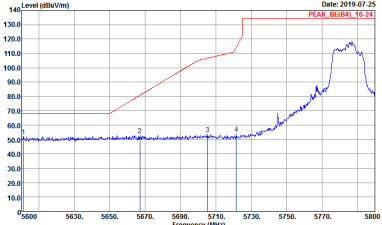
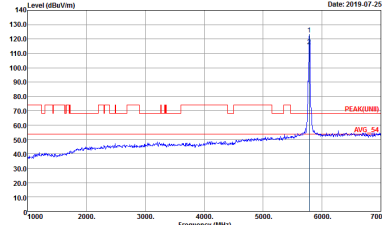
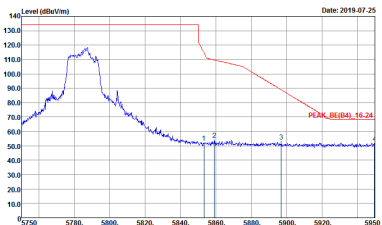


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2+3+4	Vertical	Fundamental
Peak Avg.	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 68 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 68 Setting : 27

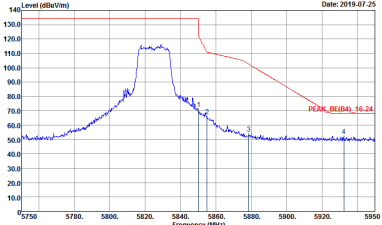
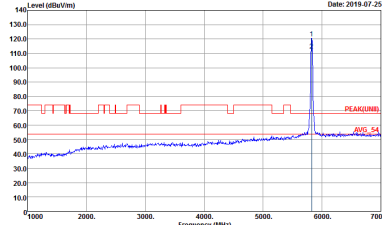


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 69 Setting : 27	 Site : 03CH07-HY Condition : PEAK(FUND) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 69 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 69 Setting : 27	Left blank

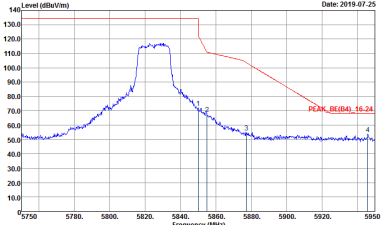
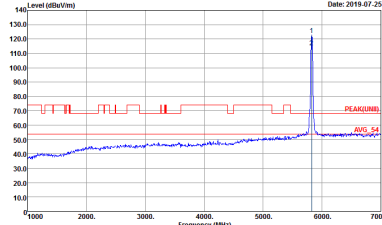


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 69 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 69 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 69 Setting : 27	Left blank



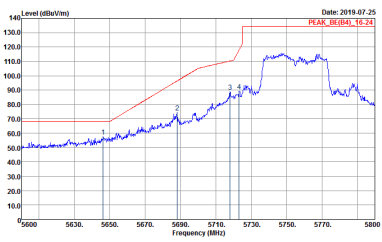
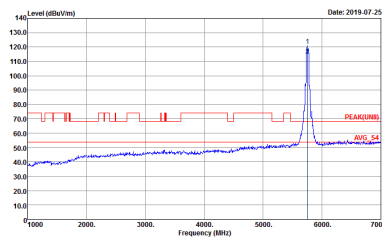
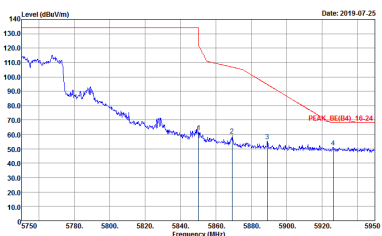
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 70 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 70 Setting : 27



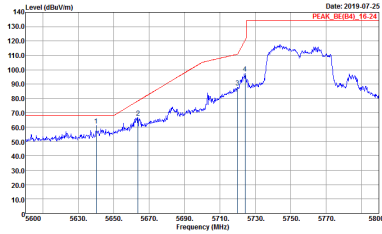
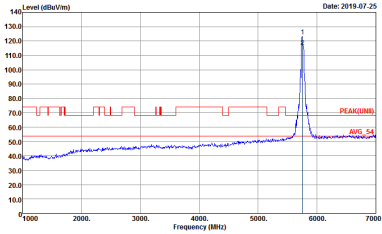
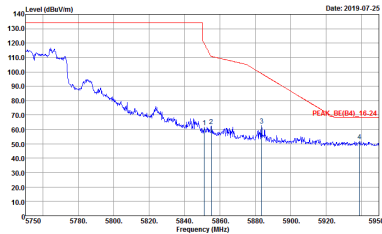
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2+3+4	Vertical	Fundamental
Peak Avg.	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 70 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 70 Setting : 27



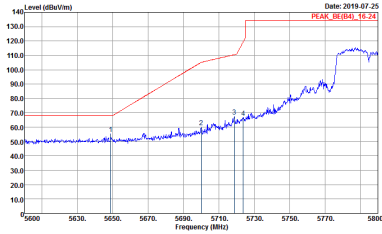
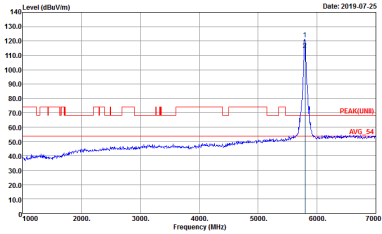
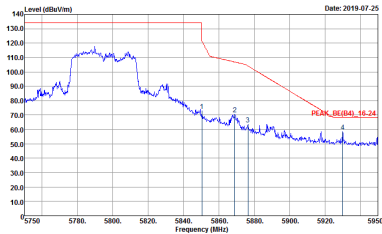
Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 71 Setting : 27	 Site : 03CH07-HY Condition : PEAK(LNB)_3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 71 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(BA)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 71 Setting : 27	Left blank

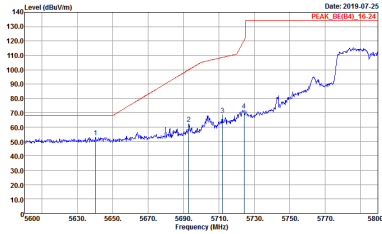
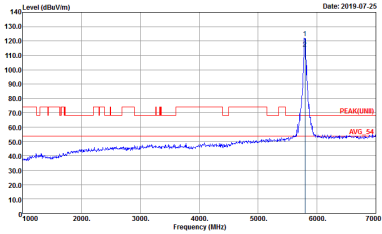
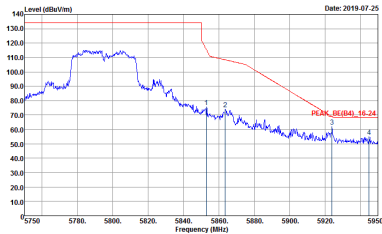


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 71 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 71 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 71 Setting : 27	Left blank

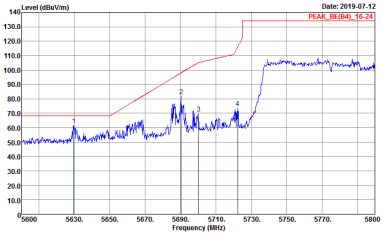
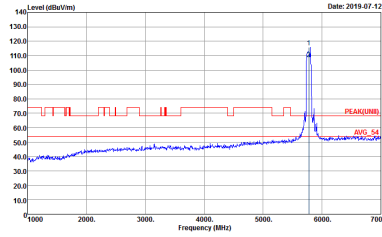
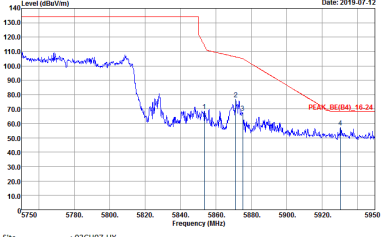


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 72 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 72 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 72 Setting : 27	Left blank

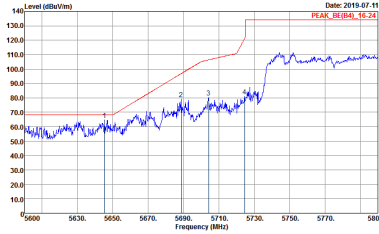
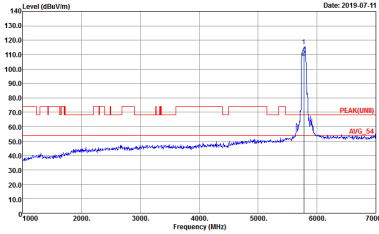
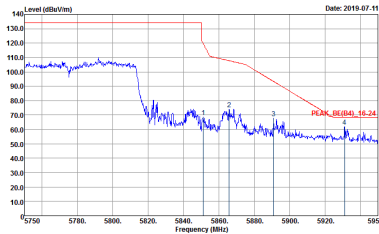


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 72 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 72 Setting : 27
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 72 Setting : 27	Left blank

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

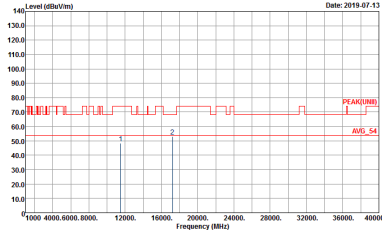
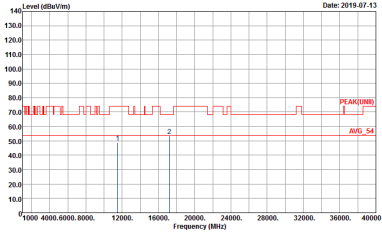
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Date: 2019-07-12 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 73 Setting : 23	 Date: 2019-07-12 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 73 Setting : 23
Peak	 Date: 2019-07-12 PEAK_BE(B4)_16-24 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL Detector : Peak Project : 960558 Mode : 73 Setting : 23	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 73 Setting : 23	 Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 73 Setting : 23
Peak	 Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL Detector : Peak Project : 960558 Mode : 73 Setting : 23	Left blank



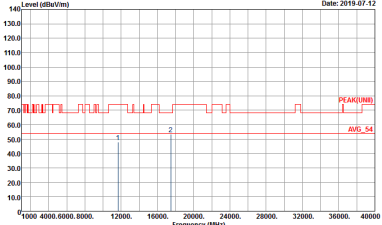
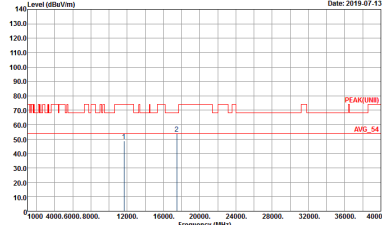
Band 4 - 5725~5850MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 68 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNI) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 68 Setting : 25



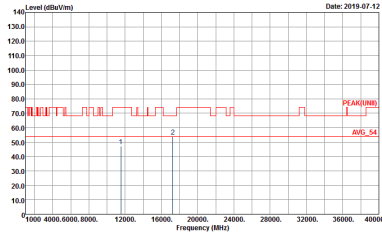
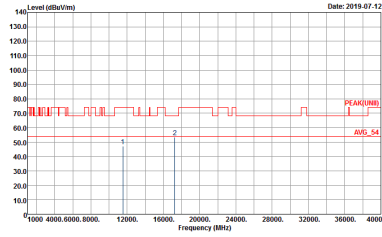
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : PEAK(UNB) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 69 Setting : 25	Site : 03CH07-HY Condition : PEAK(UNB) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 69 Setting : 25



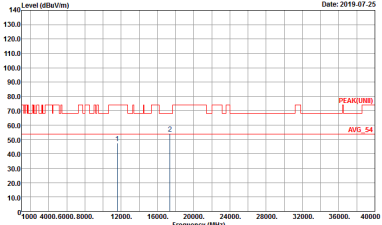
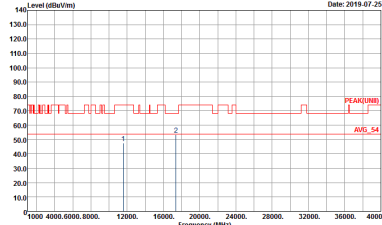
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 70 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 70 Setting : 25



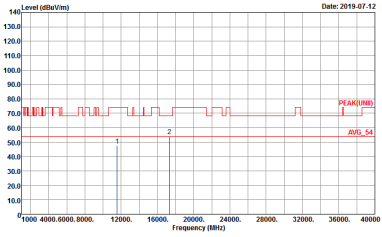
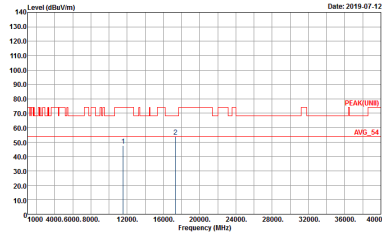
Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 71 Setting : 25	 Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 71 Setting : 25

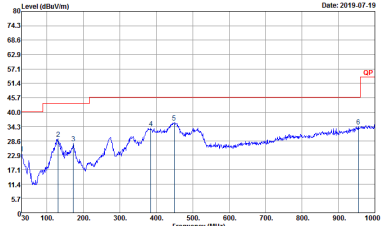
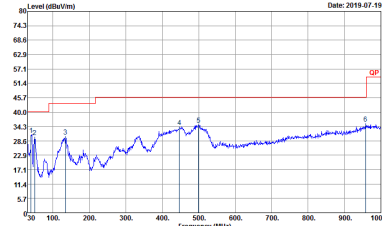


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 72 Setting : 27	 Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 72 Setting : 27

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+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 960558 Mode : 73 Setting : 23	 Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 960558 Mode : 73 Setting : 23

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

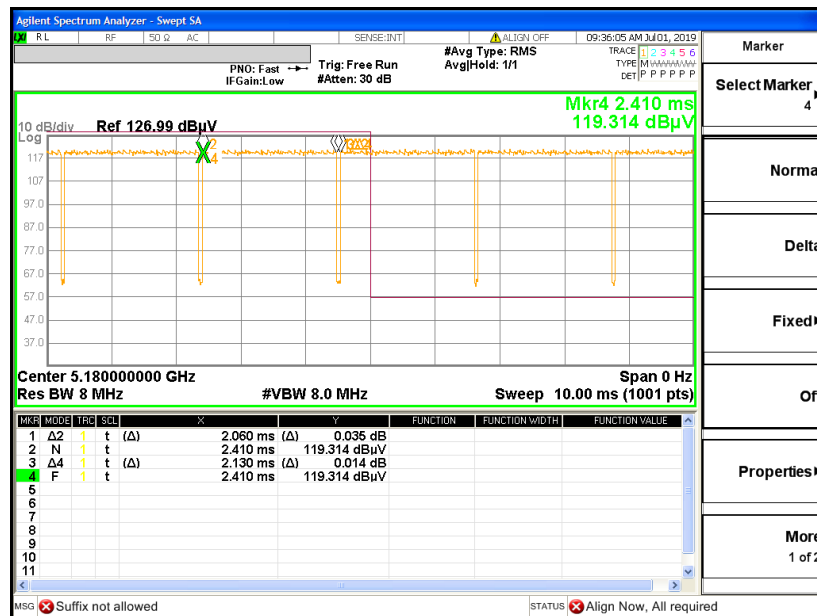
WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak Project : 960558 Mode : 76	 Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak Project : 960558 Mode : 76

Appendix E. Duty Cycle Plots

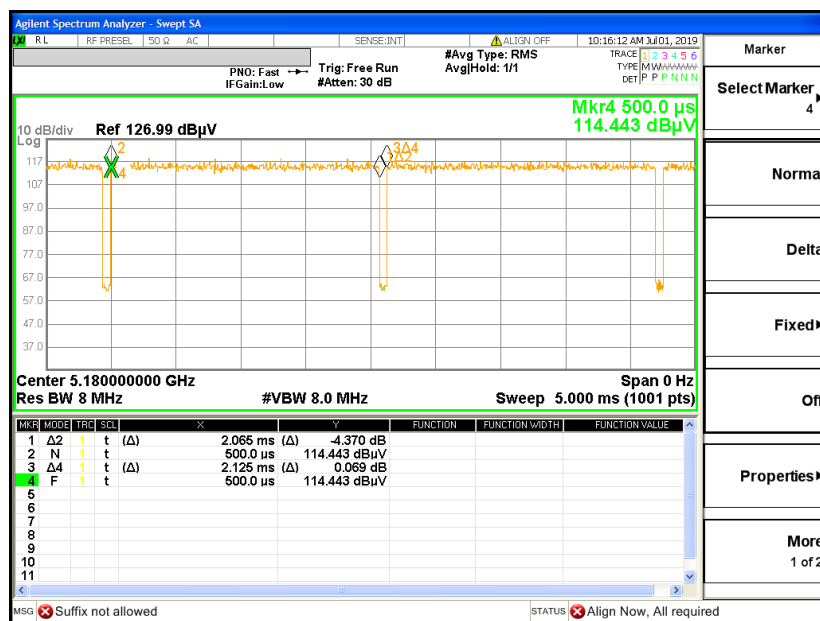
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Antenna	Band	T(us)	1/T(kHz)	VBW Setting
1+2+3+4	802.11a	2060	0.49	1kHz
1+2+3+4	5GHz 802.11n HT20	2065	0.48	1kHz
1+2+3+4	5GHz 802.11n HT40	2430	0.412	1kHz
1+2+3+4	5GHz 802.11ac VHT80	1149	0.87	1kHz

802.11a



802.11n HT20

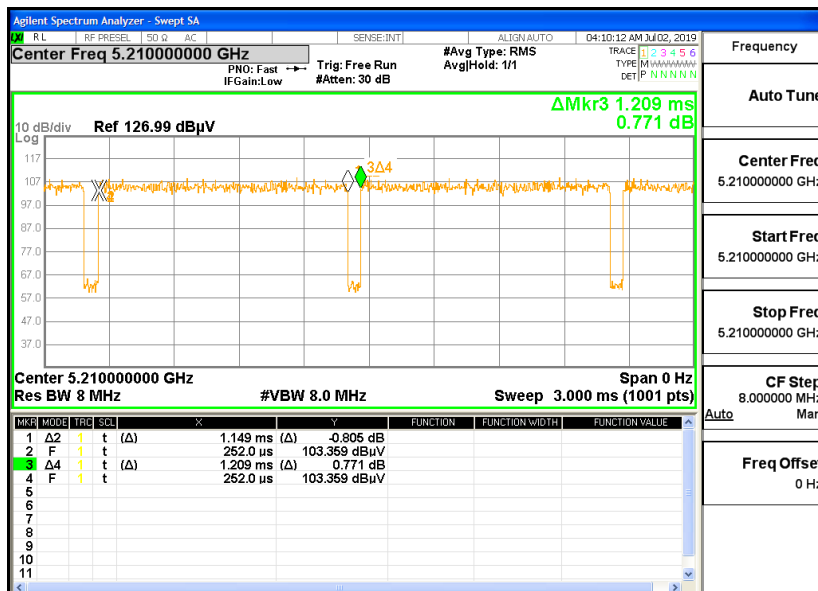


802.11n HT40



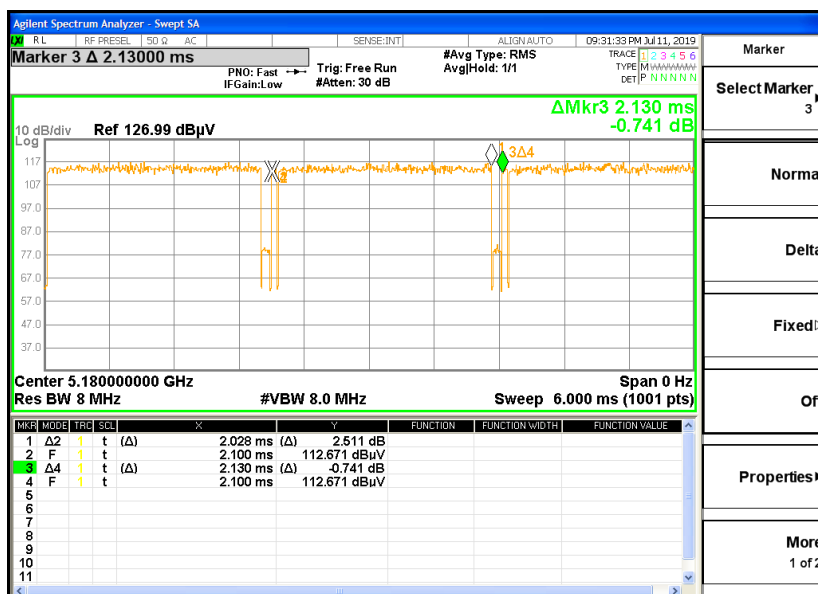


802.11ac VHT80

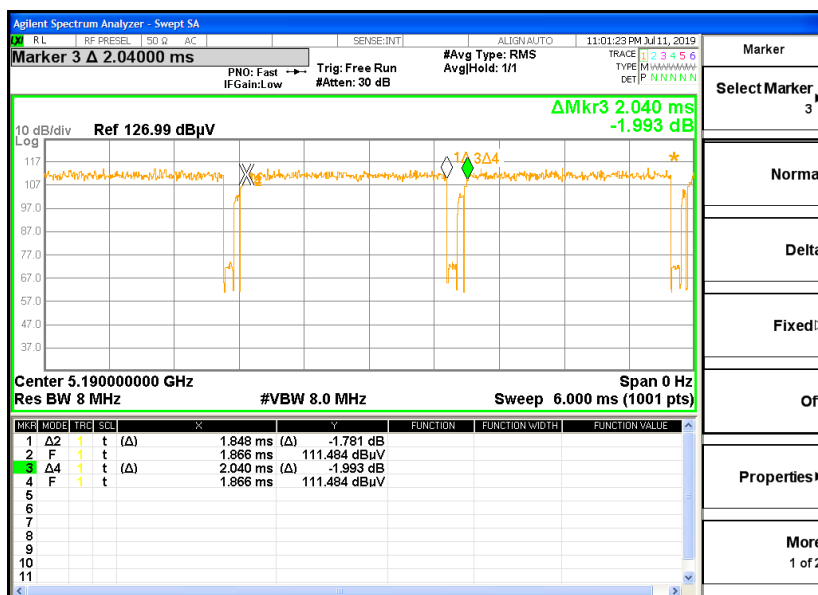


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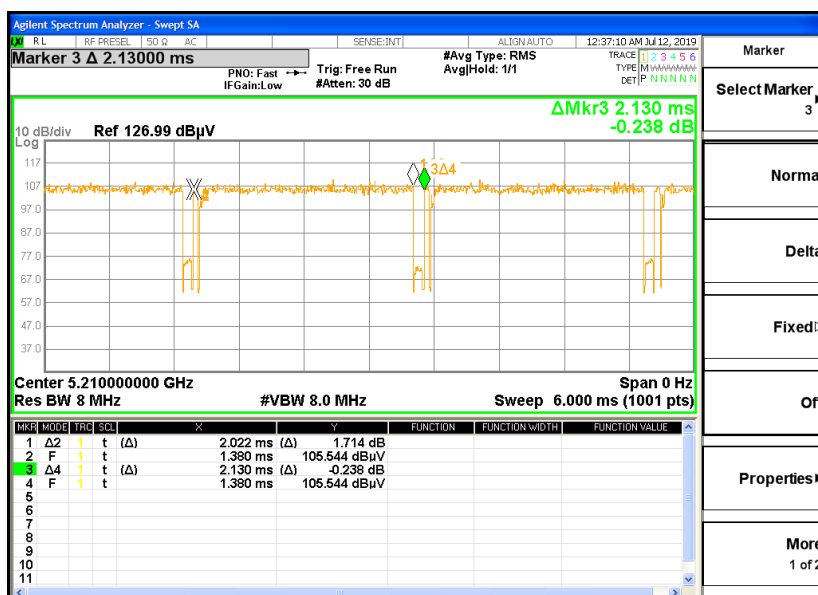
Antenna	Band	T(us)	1/T(kHz)	VBW Setting
1+2+3+4	5GHz 802.11ac VHT20	2028	0.49	1kHz
1+2+3+4	5GHz 802.11ac VHT40	1848	0.54	1kHz
1+2+3+4	5GHz 802.11ac VHT80	2022	0.49	1kHz

802.11ac VHT20


802.11ac VHT40



802.11ac VHT80



—THE END—