



FCC RF Test Report

APPLICANT : Ubiquiti Networks, Inc.
EQUIPMENT : Mesh Points
BRAND NAME : ULABS
MODEL NAME : AFi-P-HD
FCC ID : SWX-AFPHD
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Mar. 07, 2016 and testing was completed on Jul. 20, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR630314-01E	Rev. 01	Initial issue of report	Jul. 26, 2016



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) ≤ -17, -27 dBm/MHz &15.209(a)	Pass	Under limit 1.44 dB at 209.820 MHz for Quasi-Peak
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 18.90 dB at 0.822 MHz
3.6	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Ubiquiti Networks, Inc.

12F, No. 105, Song Ren Rd., SinYi District, Taipei 110, Taiwan

1.2 Manufacturer

Ubiquiti Networks, Inc.

12F, No. 105, Song Ren Rd., SinYi District, Taipei 110, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mesh Points
Brand Name	ULABS
Model Name	AFi-P-HD
FCC ID	SWX-AFPHD
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth v4.0 EDR/LE
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification												
Tx/Rx Channel Frequency Range		5745 MHz ~ 5825 MHz										
Maximum Output Power		MIMO <Ant. 1+2+3> 802.11a : 23.10 dBm / 0.2042 W 802.11n HT20 : 22.05 dBm / 0.1603 W 802.11n HT40 : 22.28 dBm / 0.1690 W 802.11ac VHT20: 22.03 dBm / 0.1596 W 802.11ac VHT40: 22.26 dBm / 0.1683 W 802.11ac VHT80: 20.48 dBm / 0.1117 W										
99% Occupied Bandwidth		802.11a : 18.00 MHz 802.11n HT20 : 18.90 MHz 802.11n HT40 : 36.80 MHz 802.11ac VHT20 : 18.90 MHz 802.11ac VHT40 : 36.80 MHz 802.11ac VHT80 : 76.08 MHz										
Type of Modulation		802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)										
Antenna Type		Ant. 1 : PIFA Antenna Ant. 2 : PIFA Antenna Ant. 3 : PIFA Antenna										
Antenna Gain		Ant. 1 : 5.00 dBi Ant. 2 : 5.00 dBi Ant. 3 : 5.00 dBi										
Antenna Function Description		<table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td><td>Ant. 3</td></tr><tr><td>802.11 a/n/ac MIMO</td><td>V</td><td>V</td><td>V</td></tr></table>				Ant. 1	Ant. 2	Ant. 3	802.11 a/n/ac MIMO	V	V	V
	Ant. 1	Ant. 2	Ant. 3									
802.11 a/n/ac MIMO	V	V	V									

1.5 Modification of EUT

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



1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan 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	03CH06-HY

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

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855		
Test Site No.	Sporton Site No.		
	03CH13-HY		

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



1.7 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 v01r02
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ♦ 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

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: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

2.1 Carrier Frequency and Channel

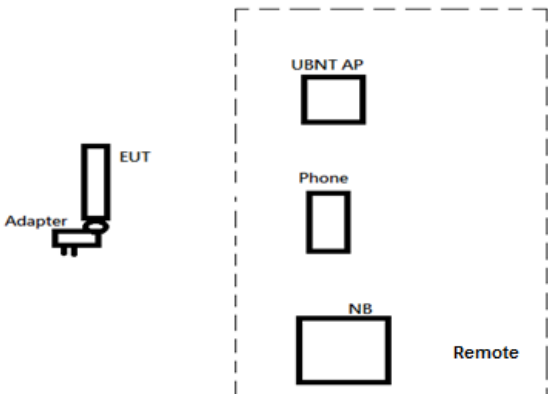
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151	5755	159	5795
	153	5765	161	5805
	155	5775	165	5825

Note: The above Frequency and Channel in boldface were 802.11n HT40.

2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

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

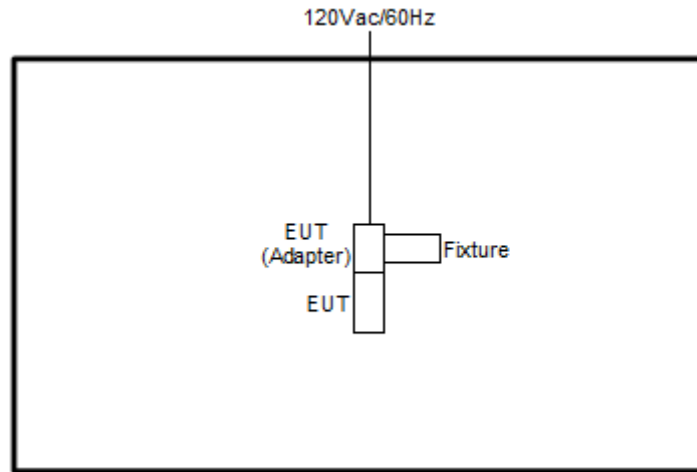
AC Conducted Emission	Mode 1 : WLAN Link + Adapter
Remark: The following figure was the connection diagram. 	

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

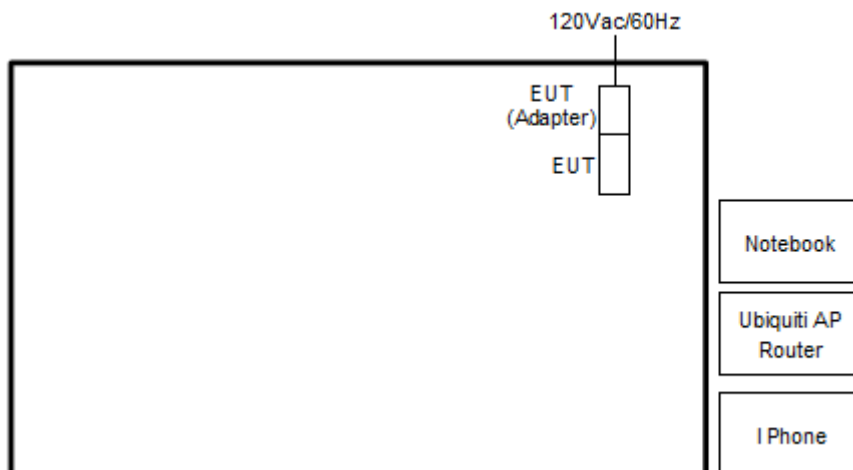
Ch. #		Band IV : 5725-5850 MHz		
		802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

2.3 Connection Diagram of Test System

<WLAN Tx 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.	Ubiquiti AP Router	Ubiquiti	AFi-R	N/A	N/A	N/A
2.	Fixture	N/A	N/A	N/A	N/A	N/A
3.	I Phone	Apple	I Phone6S	N/A	N/A	N/A
4.	PoE	Ubiquiti	GP-A240-050G	N/A	N/A	POE
5.	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

2.5 EUT Operation Test Setup

For WLAN function, programmed RF utility, “cart” installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting and receiving signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.
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.

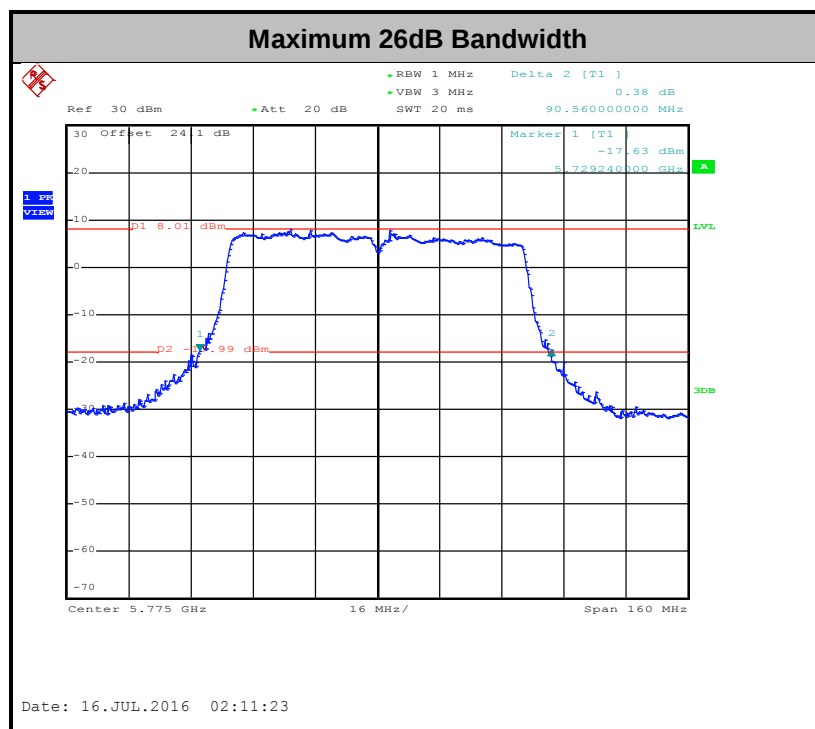
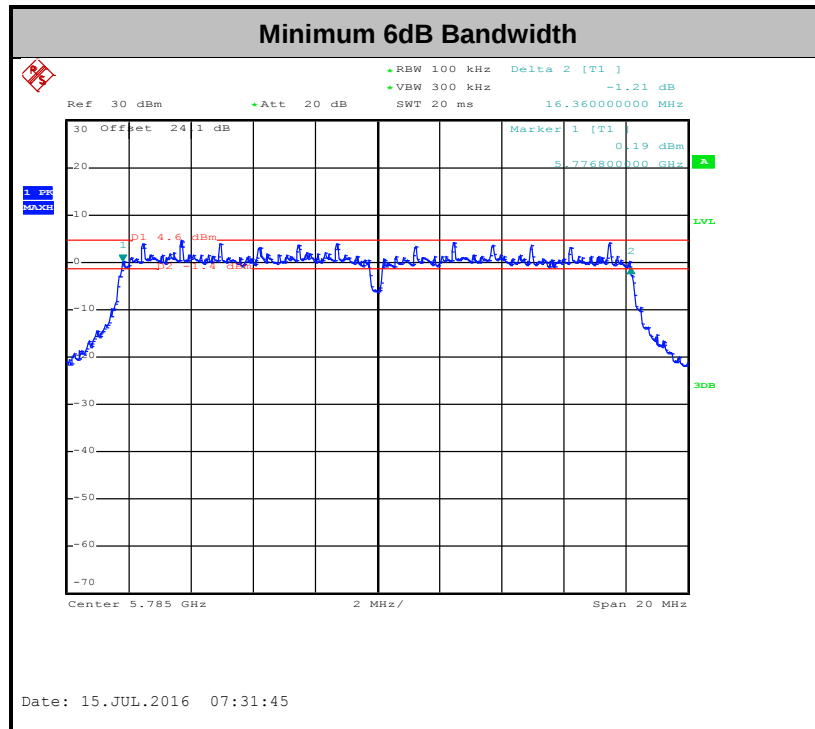
3.1.4 Test Setup

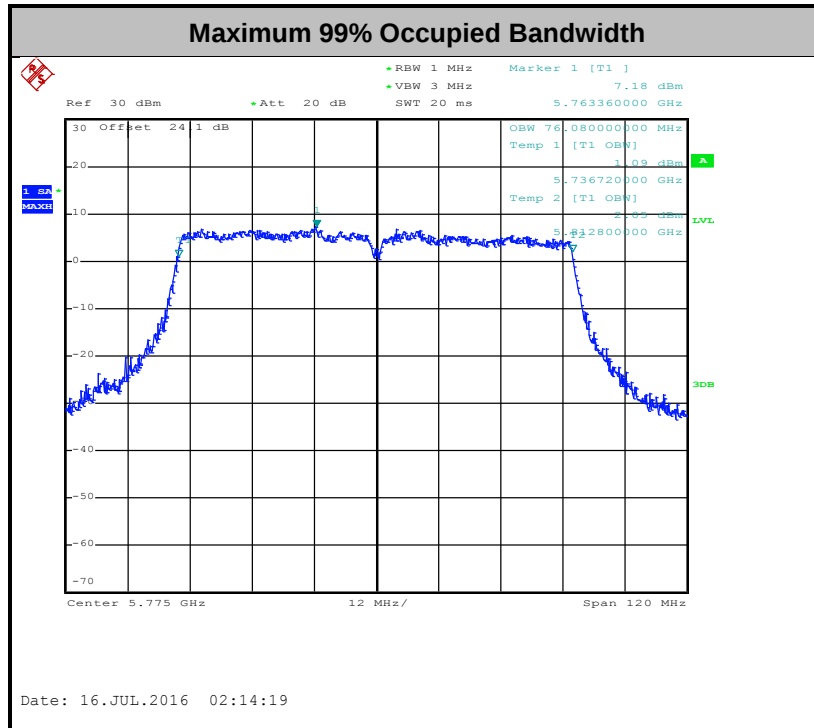




3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.





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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.

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.

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

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.
Section F) Maximum power spectral density.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

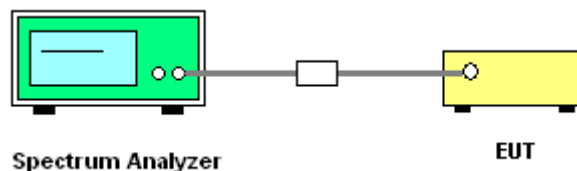
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(500\text{kHz}/\text{RBW})$ to the test result.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PSD and record it.
4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (a): Measure and sum the spectra across the outputs.

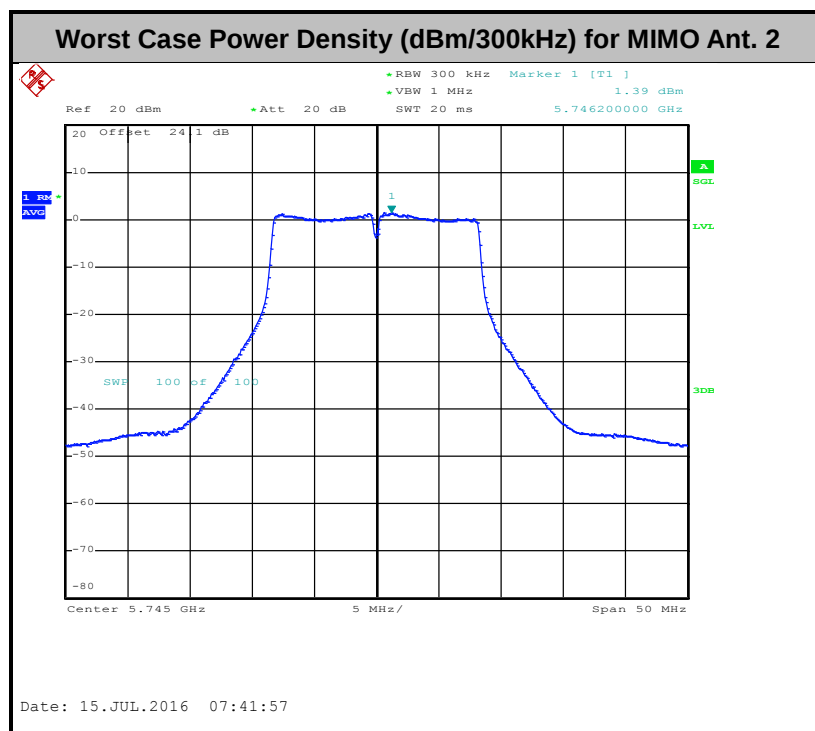
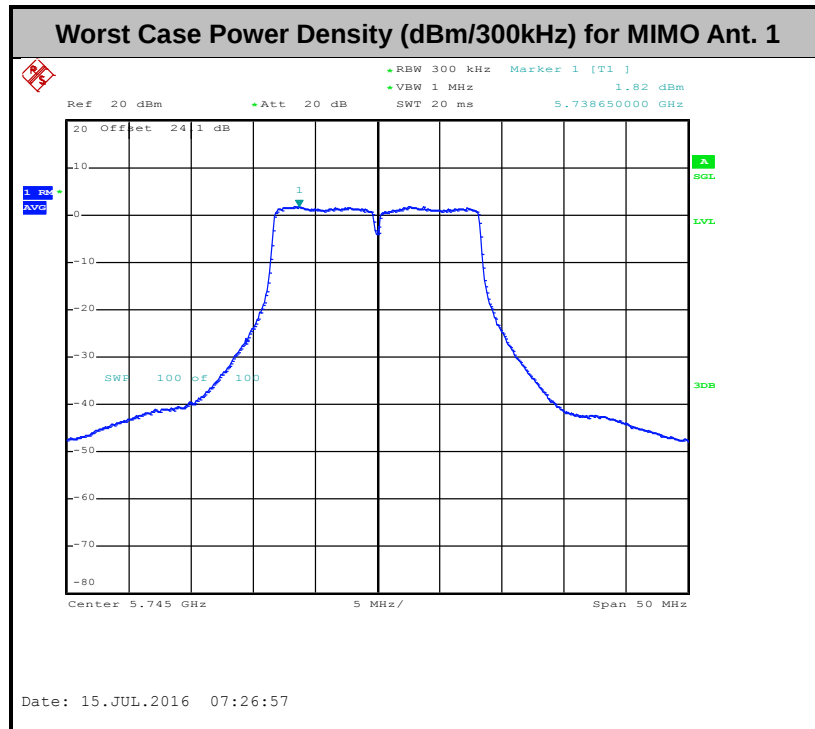
The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

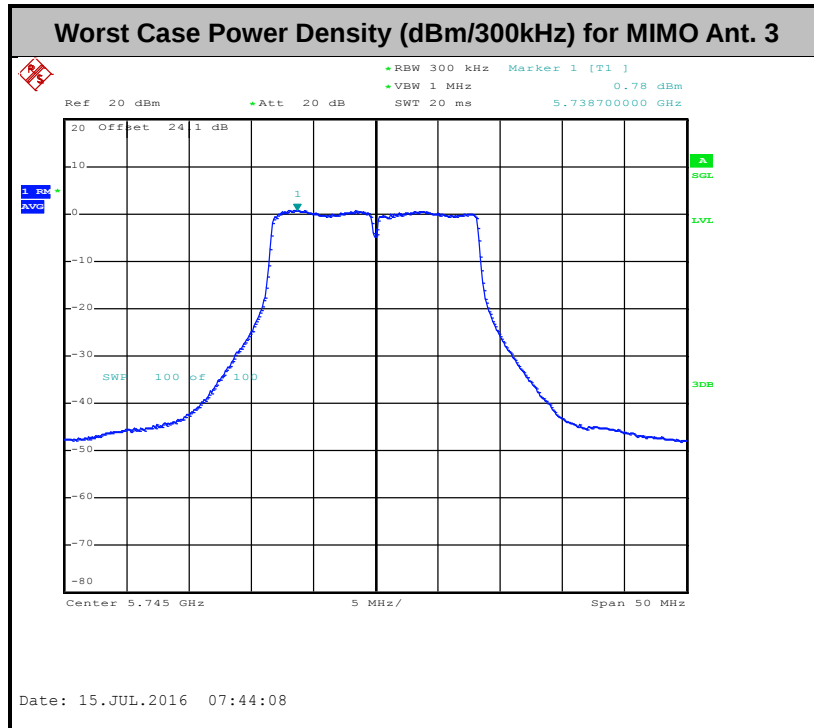
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.





3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part 15.205.

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 per FCC Part 15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

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

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

EIRP (dBm)	Field Strength at 3m (dBμV/m)
-17	78.3
- 27	68.3

- (3) KDB 789033 D02 General UNII Test Procedures New Rules v01r02 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.



3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.

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

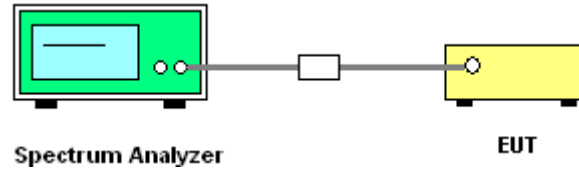
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.



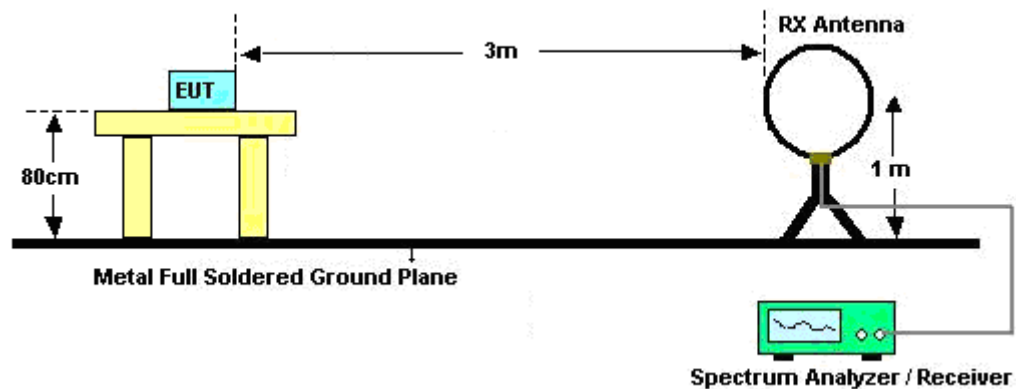
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

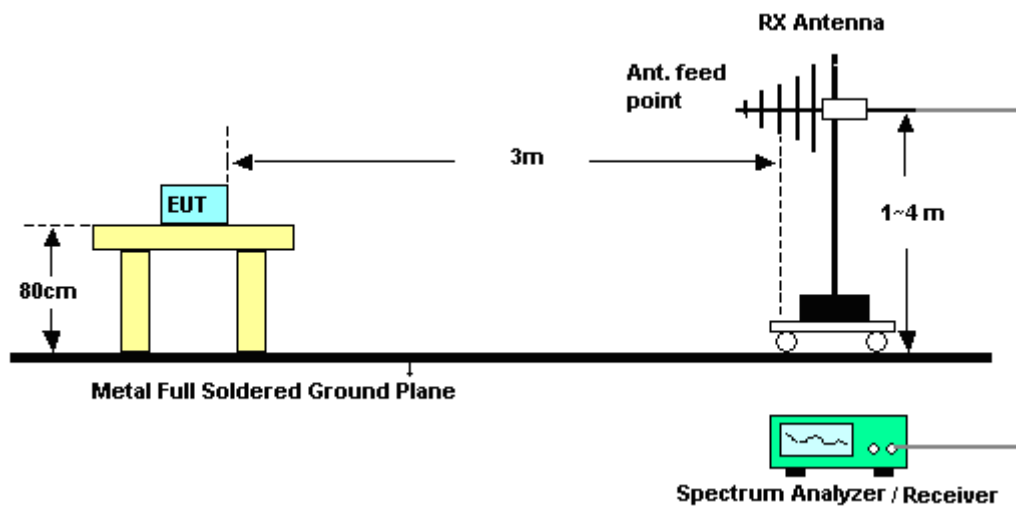
For Conducted Measurement Setup:



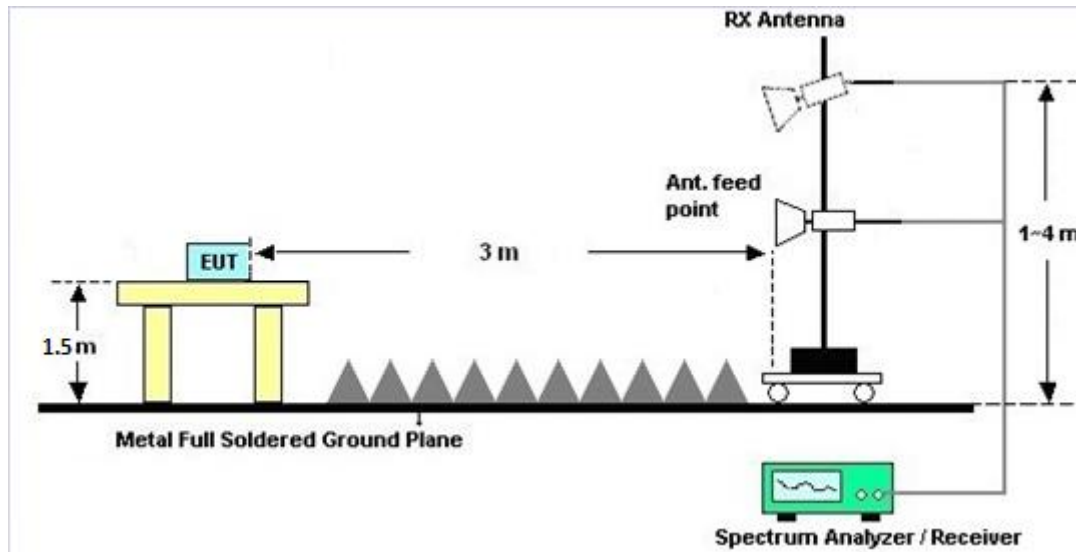
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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 per 15.31(o) was not reported.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.



3.4.9 Test Result of Conducted Spurious at Band Edges in the Restricted Band

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		5611	-34.45	-7.45	-27	-50.52	5	6.3	0	0	4.77	P
		5678.8	-35.36	-29.71	-5.65	-51.43	5	6.3	0	0	4.77	P
		5717.8	-31	-47.23	16.23	-47.07	5	6.3	0	0	4.77	P
		5723.4	-22.3	-46.1	23.8	-38.37	5	6.3	0	0	4.77	P
		5745	23.12	-	-	7.05	5	6.3	0	0	4.77	P
		5745	15.66	-	-	-0.41	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 157 5785MHz		5613	-34.6	-7.6	-27	-50.67	5	6.3	0	0	4.77	P
		5674	-37.05	-27.85	-9.2	-53.12	5	6.3	0	0	4.77	P
		5703.8	-37.39	-48.72	11.33	-53.46	5	6.3	0	0	4.77	P
		5722.4	-38.92	-60.72	21.8	-54.99	5	6.3	0	0	4.77	P
		5788	20.08	-	-	4.01	5	6.3	0	0	4.77	P
		5788	10.97	-	-	-5.1	5	6.3	0	0	4.77	A
		5852.6	-42.42	-64.22	21.8	-58.49	5	6.3	0	0	4.77	P
		5871	-37.89	-49.29	11.4	-53.96	5	6.3	0	0	4.77	P
		5924.6	-33.41	-6.7	-26.71	-49.48	5	6.3	0	0	4.77	P
		5939.2	-33.87	-6.87	-27	-49.94	5	6.3	0	0	4.77	P



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 165 5825MHz		5824	20.99	-	-	4.92	5	6.3	0	0	4.77	P
		5824	11.78	-	-	-4.29	5	6.3	0	0	4.77	A
		5850.6	-34.23	-60.03	25.8	-50.3	5	6.3	0	0	4.77	P
		5857.2	-35.55	-51.78	16.23	-51.62	5	6.3	0	0	4.77	P
		5918.8	-34.07	-11.64	-22.43	-50.14	5	6.3	0	0	4.77	P
		5935	-32.53	-5.53	-27	-48.6	5	6.3	0	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		5111	-36.41	-15.21	-21.2	-52.48	5	6.3	0	0	4.77	P
		5111	-45.31	-4.11	-41.2	-61.38	5	6.3	0	0	4.77	A
		5430	-33.72	-12.52	-21.2	-49.79	5	6.3	0	0	4.77	P
		5430.74	-41.52	-0.32	-41.2	-57.59	5	6.3	0	0	4.77	A
		7660	-66.6	-45.4	-21.2	-47.91	5	6.3	34.76	0	4.77	P
		11485	-56.81	-35.61	-21.2	-38.8	5	6.3	34.08	0	4.77	P
		17222	-53.73	-26.73	-27	-35.48	5	6.3	34.32	0	4.77	P
802.11a CH 157 5785MHz		5140	-35.94	-14.74	-21.2	-52.01	5	6.3	0	0	4.77	P
		5140.9	-45.64	-4.44	-41.2	-61.71	5	6.3	0	0	4.77	A
		5458	-34.22	-13.02	-21.2	-50.29	5	6.3	0	0	4.77	P
		5458.9	-41.89	-0.69	-41.2	-57.96	5	6.3	0	0	4.77	A
		7715	-72.07	-50.87	-21.2	-53.36	5	6.3	34.78	0	4.77	P
		11570	-55.86	-34.66	-21.2	-37.88	5	6.3	34.05	0	4.77	P
		17362	-69.16	-42.16	-27	-50.95	5	6.3	34.28	0	4.77	P
802.11a CH 165 5825MHz		5146	-36.7	-15.5	-21.2	-52.77	5	6.3	0	0	4.77	P
		5146.75	-45.97	-4.77	-41.2	-62.04	5	6.3	0	0	4.77	A
		5441	-32.52	-11.32	-21.2	-48.59	5	6.3	0	0	4.77	P
		5441.19	-41.51	-0.31	-41.2	-57.58	5	6.3	0	0	4.77	A
		7765	-71.95	-44.95	-27	-53.23	5	6.3	34.79	0	4.77	P
		11650	-55.89	-34.69	-21.2	-37.94	5	6.3	34.02	0	4.77	P
		17474	-64.9	-37.9	-27	-46.71	5	6.3	34.26	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		5625.6	-35.53	-8.53	-27	-51.6	5	6.3	0	0	4.77	P
		5653.4	-36.36	-11.89	-24.47	-52.43	5	6.3	0	0	4.77	P
		5719.6	-34.05	-50.91	16.86	-50.12	5	6.3	0	0	4.77	P
		5724.4	-32.39	-58.19	25.8	-48.46	5	6.3	0	0	4.77	P
		5745	17.19	-	-	1.12	5	6.3	0	0	4.77	P
		5745	11.29	-	-	-4.78	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 157 5785MHz		5631.6	-36.95	-9.95	-27	-53.02	5	6.3	0	0	4.77	P
		5652.8	-37.98	-13.06	-24.92	-54.05	5	6.3	0	0	4.77	P
		5703.2	-39.14	-50.26	11.12	-55.21	5	6.3	0	0	4.77	P
		5720.6	-39.63	-57.83	18.2	-55.7	5	6.3	0	0	4.77	P
		5782	17	-	-	0.93	5	6.3	0	0	4.77	P
		5782	7.31	-	-	-8.76	5	6.3	0	0	4.77	A
		5854	-42.77	-61.77	19	-58.84	5	6.3	0	0	4.77	P
		5859.2	-43.9	-59.43	15.53	-59.97	5	6.3	0	0	4.77	P
		5895	-43.84	-39	-4.84	-59.91	5	6.3	0	0	4.77	P
		5934.2	-44.12	-17.12	-27	-60.19	5	6.3	0	0	4.77	P



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 165 5825MHz		5825	20.75	-	-	4.68	5	6.3	0	0	4.77	P
		5825	11.24	-	-	-4.83	5	6.3	0	0	4.77	A
		5851.2	-32.64	-57.24	24.6	-48.71	5	6.3	0	0	4.77	P
		5856.8	-36.09	-52.46	16.37	-52.16	5	6.3	0	0	4.77	P
		5915.4	-32.72	-12.8	-19.92	-48.79	5	6.3	0	0	4.77	P
		5933.6	-33.55	-6.55	-27	-49.62	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		5110	-32.28	-11.08	-21.2	-48.35	5	6.3	0	0	4.77	P
		5110	-43.79	-2.59	-41.2	-59.86	5	6.3	0	0	4.77	A
		5410	-30.9	-9.7	-21.2	-46.97	5	6.3	0	0	4.77	P
		5410	-41.56	-0.36	-41.2	-57.63	5	6.3	0	0	4.77	A
		7660	-71.11	-49.91	-21.2	-52.42	5	6.3	34.76	0	4.77	P
		11490	-54.59	-33.39	-21.2	-36.58	5	6.3	34.08	0	4.77	P
		17236	-76.51	-49.51	-27	-58.27	5	6.3	34.31	0	4.77	P
802.11n HT20 CH 157 5785MHz		5144	-37.29	-16.09	-21.2	-53.36	5	6.3	0	0	4.77	P
		5144.8	-46.58	-5.38	-41.2	-62.65	5	6.3	0	0	4.77	A
		5458	-36.96	-15.76	-21.2	-53.03	5	6.3	0	0	4.77	P
		5458.68	-45.78	-4.58	-41.2	-61.85	5	6.3	0	0	4.77	A
		7715	-74.74	-53.54	-21.2	-56.03	5	6.3	34.78	0	4.77	P
		11565	-54.24	-33.04	-21.2	-36.25	5	6.3	34.06	0	4.77	P
		17362	-70.82	-43.82	-27	-52.61	5	6.3	34.28	0	4.77	P
802.11n HT20 CH 165 5825MHz		5144	-37.2	-16	-21.2	-53.27	5	6.3	0	0	4.77	P
		5144.8	-46.17	-4.97	-41.2	-62.24	5	6.3	0	0	4.77	A
		5453	-32.51	-11.31	-21.2	-48.58	5	6.3	0	0	4.77	P
		5453.73	-41.76	-0.56	-41.2	-57.83	5	6.3	0	0	4.77	A
		7765	-72.58	-45.58	-27	-53.86	5	6.3	34.79	0	4.77	P
		11640	-56.38	-35.18	-21.2	-38.42	5	6.3	34.03	0	4.77	P
		17460	-66.93	-39.93	-27	-48.74	5	6.3	34.26	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5646.2	-35.5	-8.5	-27	-51.57	5	6.3	0	0	4.77	P
		5700	-35.71	-45.71	10	-51.78	5	6.3	0	0	4.77	P
		5717.2	-27.5	-43.52	16.02	-43.57	5	6.3	0	0	4.77	P
		5725	-25.48	-52.48	27	-41.55	5	6.3	0	0	4.77	P
		5755	17.5	-	-	1.43	5	6.3	0	0	4.77	P
		5755	7.85	-	-	-8.22	5	6.3	0	0	4.77	A
		5853.8	-42.7	-62.1	19.4	-58.77	5	6.3	0	0	4.77	P
		5861.6	-42.93	-57.62	14.69	-59	5	6.3	0	0	4.77	P
		5911.2	-38.34	-21.52	-16.82	-54.41	5	6.3	0	0	4.77	P
		5942.6	-35.27	-8.27	-27	-51.34	5	6.3	0	0	4.77	P



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 159 5795MHz		5610.4	-36.76	-9.76	-27	-52.83	5	6.3	0	0	4.77	P
		5668.2	-37.32	-23.83	-13.49	-53.39	5	6.3	0	0	4.77	P
		5715.4	-37.26	-52.65	15.39	-53.33	5	6.3	0	0	4.77	P
		5721.4	-37.57	-57.37	19.8	-53.64	5	6.3	0	0	4.77	P
		5795	17.5	-	-	1.43	5	6.3	0	0	4.77	P
		5795	8.27	-	-	-7.8	5	6.3	0	0	4.77	A
		5853.4	-37.27	-57.47	20.2	-53.34	5	6.3	0	0	4.77	P
		5856.4	-39.38	-55.89	16.51	-55.45	5	6.3	0	0	4.77	P
		5910.4	-37.07	-20.84	-16.23	-53.14	5	6.3	0	0	4.77	P
		5935.2	-35.23	-8.23	-27	-51.3	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5127	-37.07	-15.87	-21.2	-53.14	5	6.3	0	0	4.77	P
		5127.9	-45.82	-4.62	-41.2	-61.89	5	6.3	0	0	4.77	A
		5441	-35.17	-13.97	-21.2	-51.24	5	6.3	0	0	4.77	P
		5441.19	-42.47	-1.27	-41.2	-58.54	5	6.3	0	0	4.77	A
		7685	-71.86	-50.66	-21.2	-53.16	5	6.3	34.77	0	4.77	P
		11520	-55.53	-34.33	-21.2	-37.53	5	6.3	34.07	0	4.77	P
		17264	-71.31	-44.31	-27	-53.08	5	6.3	34.3	0	4.77	P
802.11n HT40 CH 159 5795MHz		5150	-37.45	-16.25	-21.2	-53.52	5	6.3	0	0	4.77	P
		5150	-45.92	-4.72	-41.2	-61.99	5	6.3	0	0	4.77	A
		5459	-34.13	-12.93	-21.2	-50.2	5	6.3	0	0	4.77	P
		5459.12	-41.9	-0.7	-41.2	-57.97	5	6.3	0	0	4.77	A
		7740	-71.35	-50.15	-21.2	-52.63	5	6.3	34.79	0	4.77	P
		11595	-64.16	-42.96	-21.2	-46.18	5	6.3	34.05	0	4.77	P
		17432	-59.83	-32.83	-27	-41.63	5	6.3	34.27	0	4.77	P
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)

[illegible]



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11ac VHT80 CH 155 5775MHz		5137	-37.8	-16.6	-21.2	-53.87	5	6.3	0	0	4.77	P
		5137	-44.73	-3.53	-41.2	-60.8	5	6.3	0	0	4.77	A
		5457	-34.95	-13.75	-21.2	-51.02	5	6.3	0	0	4.77	P
		5457.91	-41.51	-0.31	-41.2	-57.58	5	6.3	0	0	4.77	A
		7700	-75.22	-54.02	-21.2	-56.51	5	6.3	34.78	0	4.77	P
		11535	-67.29	-46.09	-21.2	-49.29	5	6.3	34.07	0	4.77	P
		17348	-67.59	-40.59	-27	-49.37	5	6.3	34.29	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Emission below 1GHz

5GHz WIFI 802.11a (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(1)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
5GHz 802.11a LF		113.43	-87.88	-36.18	-51.7	-76.45	5	6.3	32.2	4.7	4.77	P
		188.49	-84.43	-32.73	-51.7	-72.97	5	6.3	32.23	4.7	4.77	P
		297.3	-85.14	-35.94	-49.2	-73.84	5	6.3	32.07	4.7	4.77	P
		361.6	-84.75	-35.55	-49.2	-73.43	5	6.3	32.09	4.7	4.77	P
		449.1	-72.04	-22.84	-49.2	-60.67	5	6.3	32.14	4.7	4.77	P
		968.5	-83.41	-42.21	-41.2	-73.36	5	6.3	30.82	4.7	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against limit line.											

**Band 4 - 5725~5850MHz****WIFI 802.11a (Band Edge)**

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		5600.2	-34.89	-7.89	-27	-50.96	5	6.3	0	0	4.77	P
		5654	-35.29	-11.26	-24.03	-51.36	5	6.3	0	0	4.77	P
		5720	-31.77	-48.77	17	-47.84	5	6.3	0	0	4.77	P
		5724.4	-28.55	-54.35	25.8	-44.62	5	6.3	0	0	4.77	P
		5745	22.73	-	-	6.66	5	6.3	0	0	4.77	P
		5745	15.7	-	-	-0.37	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 157 5785MHz		5617.4	-37.34	-10.34	-27	-53.41	5	6.3	0	0	4.77	P
		5657.2	-38.14	-16.49	-21.65	-54.21	5	6.3	0	0	4.77	P
		5700.8	-39.09	-49.37	10.28	-55.16	5	6.3	0	0	4.77	P
		5723.2	-40.15	-63.55	23.4	-56.22	5	6.3	0	0	4.77	P
		5782	18.07	-	-	2	5	6.3	0	0	4.77	P
		5782	8.67	-	-	-7.4	5	6.3	0	0	4.77	A
		5851	-43.08	-68.08	25	-59.15	5	6.3	0	0	4.77	P
		5859.4	-43.89	-59.35	15.46	-59.96	5	6.3	0	0	4.77	P
		5888.8	-44.04	-43.8	-0.24	-60.11	5	6.3	0	0	4.77	P
		5940.4	-44.36	-17.36	-27	-60.43	5	6.3	0	0	4.77	P

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 165 5825MHz		5825	21	-	-	4.93	5	6.3	0	0	4.77	P
		5825	12.2	-	-	-3.87	5	6.3	0	0	4.77	A
		5851.2	-32.55	-57.15	24.6	-48.62	5	6.3	0	0	4.77	P
		5857.2	-35.78	-52.01	16.23	-51.85	5	6.3	0	0	4.77	P
		5892	-41.62	-39.01	-2.61	-57.69	5	6.3	0	0	4.77	P
		5943.4	-42.03	-15.03	-27	-58.1	5	6.3	0	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		5102	-35.62	-14.42	-21.2	-51.69	5	6.3	0	0	4.77	P
		5102.55	-44.5	-3.3	-41.2	-60.57	5	6.3	0	0	4.77	A
		5448	-34.88	-13.68	-21.2	-50.95	5	6.3	0	0	4.77	P
		5448.56	-43.3	-2.1	-41.2	-59.37	5	6.3	0	0	4.77	A
		7660	-71.22	-50.02	-21.2	-52.53	5	6.3	34.76	0	4.77	P
		11485	-59.88	-38.68	-21.2	-41.87	5	6.3	34.08	0	4.77	P
		17222	-81.92	-54.92	-27	-63.67	5	6.3	34.32	0	4.77	P
802.11a CH 157 5785MHz		5150	-37.82	-16.62	-21.2	-53.89	5	6.3	0	0	4.77	P
		5150	-46.36	-5.16	-41.2	-62.43	5	6.3	0	0	4.77	A
		5457	-37.76	-16.56	-21.2	-53.83	5	6.3	0	0	4.77	P
		5457.36	-45.87	-4.67	-41.2	-61.94	5	6.3	0	0	4.77	A
		7715	-73.95	-52.75	-21.2	-55.24	5	6.3	34.78	0	4.77	P
		11565	-63.18	-41.98	-21.2	-45.19	5	6.3	34.06	0	4.77	P
		17362	-81.13	-54.13	-27	-62.92	5	6.3	34.28	0	4.77	P
802.11a CH 165 5825MHz		5016	-35.88	-14.68	-21.2	-51.95	5	6.3	0	0	4.77	P
		5016.75	-44.37	-3.17	-41.2	-60.44	5	6.3	0	0	4.77	A
		5457	-34.8	-13.6	-21.2	-50.87	5	6.3	0	0	4.77	P
		5457.36	-43.07	-1.87	-41.2	-59.14	5	6.3	0	0	4.77	A
		7765	-71.03	-44.03	-27	-52.31	5	6.3	34.79	0	4.77	P
		11655	-59.97	-38.77	-21.2	-42.02	5	6.3	34.02	0	4.77	P
		17488	-80.49	-53.49	-27	-62.31	5	6.3	34.25	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		5618	-37.76	-10.76	-27	-53.83	5	6.3	0	0	4.77	P
		5696.8	-38.14	-45.78	7.64	-54.21	5	6.3	0	0	4.77	P
		5716	-33.14	-48.74	15.6	-49.21	5	6.3	0	0	4.77	P
		5724.8	-28.87	-55.47	26.6	-44.94	5	6.3	0	0	4.77	P
		5746	18.17	-	-	2.1	5	6.3	0	0	4.77	P
		5746	11.36	-	-	-4.71	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 157 5785MHz		5626.8	-36.29	-9.29	-27	-52.36	5	6.3	0	0	4.77	P
		5680	-38.32	-33.56	-4.76	-54.39	5	6.3	0	0	4.77	P
		5703	-38.36	-49.41	11.05	-54.43	5	6.3	0	0	4.77	P
		5722.6	-39.98	-62.18	22.2	-56.05	5	6.3	0	0	4.77	P
		5782	16.48	-	-	0.41	5	6.3	0	0	4.77	P
		5782	7.18	-	-	-8.89	5	6.3	0	0	4.77	A
		5852.6	-42.54	-64.34	21.8	-58.61	5	6.3	0	0	4.77	P
		5857.2	-43.01	-59.24	16.23	-59.08	5	6.3	0	0	4.77	P
		5918.4	-43.69	-21.56	-22.13	-59.76	5	6.3	0	0	4.77	P
		5932.4	-43.72	-16.72	-27	-59.79	5	6.3	0	0	4.77	P



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 165 5825MHz		5824	19.12	-	-	3.05	5	6.3	0	0	4.77	P
		5824	11.3	-	-	-4.77	5	6.3	0	0	4.77	A
		5850.2	-34.54	-61.14	26.6	-50.61	5	6.3	0	0	4.77	P
		5856.4	-36.9	-53.41	16.51	-52.97	5	6.3	0	0	4.77	P
		5891.2	-41.99	-39.97	-2.02	-58.06	5	6.3	0	0	4.77	P
		5937.8	-42.54	-15.54	-27	-58.61	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		4960	-35.16	-13.96	-21.2	-51.23	5	6.3	0	0	4.77	P
		4960.2	-43.76	-2.56	-41.2	-59.83	5	6.3	0	0	4.77	A
		5440	-33.76	-12.56	-21.2	-49.83	5	6.3	0	0	4.77	P
		5440.09	-41.82	-0.62	-41.2	-57.89	5	6.3	0	0	4.77	A
		7660	-68.19	-46.99	-21.2	-49.5	5	6.3	34.76	0	4.77	P
		11480	-66.14	-44.94	-21.2	-48.13	5	6.3	34.08	0	4.77	P
		17236	-84.97	-57.97	-27	-66.73	5	6.3	34.31	0	4.77	P
802.11n HT20 CH 157 5785MHz		5139	-37.42	-16.22	-21.2	-53.49	5	6.3	0	0	4.77	P
		5139.6	-45.07	-3.87	-41.2	-61.14	5	6.3	0	0	4.77	A
		5457	-37.29	-16.09	-21.2	-53.36	5	6.3	0	0	4.77	P
		5457.8	-44.38	-3.18	-41.2	-60.45	5	6.3	0	0	4.77	A
		7715	-70	-48.8	-21.2	-51.29	5	6.3	34.78	0	4.77	P
		10525	-76.6	-49.6	-27	-58.14	5	6.3	34.53	0	4.77	P
		11565	-66.8	-45.6	-21.2	-48.81	5	6.3	34.06	0	4.77	P
		17348	-82.13	-55.13	-27	-63.91	5	6.3	34.29	0	4.77	P
802.11n HT20 CH 165 5825MHz		5027	-34.87	-13.67	-21.2	-50.94	5	6.3	0	0	4.77	P
		5027.8	-45.34	-4.14	-41.2	-61.41	5	6.3	0	0	4.77	A
		5452	-34.89	-13.69	-21.2	-50.96	5	6.3	0	0	4.77	P
		5452.52	-43.4	-2.2	-41.2	-59.47	5	6.3	0	0	4.77	A
		7765	-71.65	-44.65	-27	-52.93	5	6.3	34.79	0	4.77	P
		11640	-62.23	-41.03	-21.2	-44.27	5	6.3	34.03	0	4.77	P
		17460	-80.83	-53.83	-27	-62.64	5	6.3	34.26	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5631	-39.4	-12.4	-27	-55.47	5	6.3	0	0	4.77	P
		5690.4	-36.81	-39.73	2.92	-52.88	5	6.3	0	0	4.77	P
		5720	-26.34	-43.34	17	-42.41	5	6.3	0	0	4.77	P
		5724.2	-21.38	-46.78	25.4	-37.45	5	6.3	0	0	4.77	P
		5752	17.95	-	-	1.88	5	6.3	0	0	4.77	P
		5752	8.53	-	-	-7.54	5	6.3	0	0	4.77	A
		5854.8	-43.8	-61.2	17.4	-59.87	5	6.3	0	0	4.77	P
		5860	-43.7	-58.95	15.25	-59.77	5	6.3	0	0	4.77	P
		5875.8	-44.24	-53.65	9.41	-60.31	5	6.3	0	0	4.77	P
		5931.8	-44.12	-17.12	-27	-60.19	5	6.3	0	0	4.77	P

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 159 5795MHz		5623.4	-39.13	-12.13	-27	-55.2	5	6.3	0	0	4.77	P
		5686	-40.18	-39.85	-0.33	-56.25	5	6.3	0	0	4.77	P
		5719.4	-39.82	-56.61	16.79	-55.89	5	6.3	0	0	4.77	P
		5720.8	-40.82	-59.42	18.6	-56.89	5	6.3	0	0	4.77	P
		5795	15.04	-	-	-1.03	5	6.3	0	0	4.77	P
		5795	5.87	-	-	-10.2	5	6.3	0	0	4.77	A
		5853.4	-40.12	-60.32	20.2	-56.19	5	6.3	0	0	4.77	P
		5858.2	-40.7	-56.58	15.88	-56.77	5	6.3	0	0	4.77	P
		5877.4	-43.57	-51.79	8.22	-59.64	5	6.3	0	0	4.77	P
		5944	-44.87	-17.87	-27	-60.94	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5108.4	-38.75	-17.55	-21.2	-54.82	5	6.3	0	0	4.77	P
		5108.4	-43.84	-2.64	-41.2	-59.91	5	6.3	0	0	4.77	A
		5442	-39.19	-17.99	-21.2	-55.26	5	6.3	0	0	4.77	P
		5442.73	-42.76	-1.56	-41.2	-58.83	5	6.3	0	0	4.77	A
		7685	-78.28	-57.08	-21.2	-59.58	5	6.3	34.77	0	4.77	P
		11540	-65.75	-44.55	-21.2	-47.75	5	6.3	34.07	0	4.77	P
		17278	-82.02	-55.02	-27	-63.79	5	6.3	34.3	0	4.77	P
802.11n HT40 CH 159 5795MHz		5145	-38.67	-17.47	-21.2	-54.74	5	6.3	0	0	4.77	P
		5145.45	-46.61	-5.41	-41.2	-62.68	5	6.3	0	0	4.77	A
		5457	-38.4	-17.2	-21.2	-54.47	5	6.3	0	0	4.77	P
		5457.69	-46.62	-5.42	-41.2	-62.69	5	6.3	0	0	4.77	A
		7740	-76.34	-55.14	-21.2	-57.62	5	6.3	34.79	0	4.77	P
		11605	-63.77	-42.57	-21.2	-45.8	5	6.3	34.04	0	4.77	P
		17404	-80.99	-53.99	-27	-62.79	5	6.3	34.27	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11ac VHT80 CH 155 5775MHz		5642.6	-40.6	-13.6	-27	-56.67	5	6.3	0	0	4.77	P
		5697.4	-29.5	-37.58	8.08	-45.57	5	6.3	0	0	4.77	P
		5718.2	-26.2	-42.57	16.37	-42.27	5	6.3	0	0	4.77	P
		5724.2	-22.72	-48.12	25.4	-38.79	5	6.3	0	0	4.77	P
		5775	10.63	-	-	-5.44	5	6.3	0	0	4.77	P
		5775	2.04	-	-	-14.03	5	6.3	0	0	4.77	A
		5850.8	-27.77	-53.17	25.4	-43.84	5	6.3	0	0	4.77	P
		5855.8	-29.19	-45.91	16.72	-45.26	5	6.3	0	0	4.77	P
		5877	-37.67	-46.18	8.51	-53.74	5	6.3	0	0	4.77	P
		5932.4	-44.22	-17.22	-27	-60.29	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11ac VHT80 CH 155 5775MHz		5027	-40.22	-19.02	-21.2	-56.29	5	6.3	0	0	4.77	P
		5027.15	-47.4	-6.2	-41.2	-63.47	5	6.3	0	0	4.77	A
		5448	-40.48	-19.28	-21.2	-56.55	5	6.3	0	0	4.77	P
		5448.23	-47.67	-6.47	-41.2	-63.74	5	6.3	0	0	4.77	A
		7700	-78.41	-57.21	-21.2	-59.7	5	6.3	34.78	0	4.77	P
		11555	-69.04	-47.84	-21.2	-51.05	5	6.3	34.06	0	4.77	P
		17320	-84.84	-57.84	-27	-66.62	5	6.3	34.29	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Emission below 1GHz

5GHz WIFI 802.11a (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(2)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
5GHz 802.11a LF		115.59	-86.11	-34.41	-51.7	-74.68	5	6.3	32.2	4.7	4.77	P
		165.27	-86.74	-35.04	-51.7	-75.29	5	6.3	32.22	4.7	4.77	P
		295.41	-81.27	-32.07	-49.2	-69.96	5	6.3	32.08	4.7	4.77	P
		427.4	-71.14	-21.94	-49.2	-59.78	5	6.3	32.13	4.7	4.77	P
		511.4	-78.7	-29.5	-49.2	-67.29	5	6.3	32.18	4.7	4.77	P
		976.2	-80.96	-39.76	-41.2	-70.98	5	6.3	30.75	4.7	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against limit line.											

**Band 4 - 5725~5850MHz****WIFI 802.11a (Band Edge)**

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		5619	-36.64	-9.64	-27	-52.71	5	6.3	0	0	4.77	P
		5665.4	-37.38	-21.81	-15.57	-53.45	5	6.3	0	0	4.77	P
		5719.2	-33.45	-50.17	16.72	-49.52	5	6.3	0	0	4.77	P
		5723.6	-27.76	-51.96	24.2	-43.83	5	6.3	0	0	4.77	P
		5745	19.56	-	-	3.49	5	6.3	0	0	4.77	P
		5745	15.68	-	-	-0.39	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 157 5785MHz		5619.4	-37.34	-10.34	-27	-53.41	5	6.3	0	0	4.77	P
		5657.8	-38.35	-17.14	-21.21	-54.42	5	6.3	0	0	4.77	P
		5704.2	-40.01	-51.48	11.47	-56.08	5	6.3	0	0	4.77	P
		5725	-41.29	-68.29	27	-57.36	5	6.3	0	0	4.77	P
		5788	16.97	-	-	0.9	5	6.3	0	0	4.77	P
		5788	7.62	-	-	-8.45	5	6.3	0	0	4.77	A
		5853.8	-44.15	-63.55	19.4	-60.22	5	6.3	0	0	4.77	P
		5860.8	-43.95	-58.92	14.97	-60.02	5	6.3	0	0	4.77	P
		5876.6	-43.03	-51.84	8.81	-59.1	5	6.3	0	0	4.77	P
		5941.8	-43.12	-16.12	-27	-59.19	5	6.3	0	0	4.77	P

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 165 5825MHz		5825	20.12	-	-	4.05	5	6.3	0	0	4.77	P
		5825	12	-	-	-4.07	5	6.3	0	0	4.77	A
		5854	-34.57	-53.57	19	-50.64	5	6.3	0	0	4.77	P
		5858.6	-36.58	-52.32	15.74	-52.65	5	6.3	0	0	4.77	P
		5917	-42.76	-21.66	-21.1	-58.83	5	6.3	0	0	4.77	P
		5941	-42.43	-15.43	-27	-58.5	5	6.3	0	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11a CH 149 5745MHz		4960	-33.9	-12.7	-21.2	-49.97	5	6.3	0	0	4.77	P
		4960.2	-41.99	-0.79	-41.2	-58.06	5	6.3	0	0	4.77	A
		5440	-33.02	-11.82	-21.2	-49.09	5	6.3	0	0	4.77	P
		5440.09	-42.09	-0.89	-41.2	-58.16	5	6.3	0	0	4.77	A
		7660	-67.46	-46.26	-21.2	-48.77	5	6.3	34.76	0	4.77	P
		11485	-57.53	-36.33	-21.2	-39.52	5	6.3	34.08	0	4.77	P
		17222	-55.84	-28.84	-27	-37.59	5	6.3	34.32	0	4.77	P
802.11a CH 157 5785MHz		4960	-35.64	-14.44	-21.2	-51.71	5	6.3	0	0	4.77	P
		4960.2	-43.8	-2.6	-41.2	-59.87	5	6.3	0	0	4.77	A
		5439	-34.42	-13.22	-21.2	-50.49	5	6.3	0	0	4.77	P
		5439.98	-42.7	-1.5	-41.2	-58.77	5	6.3	0	0	4.77	A
		7715	-67.68	-46.48	-21.2	-48.97	5	6.3	34.78	0	4.77	P
		11570	-62.08	-40.88	-21.2	-44.1	5	6.3	34.05	0	4.77	P
		17334	-65.46	-38.46	-27	-47.24	5	6.3	34.29	0	4.77	P
802.11a CH 165 5825MHz		4960	-33.99	-12.79	-21.2	-50.06	5	6.3	0	0	4.77	P
		4960.2	-42.49	-1.29	-41.2	-58.56	5	6.3	0	0	4.77	A
		5440	-31.01	-9.81	-21.2	-47.08	5	6.3	0	0	4.77	P
		5440.09	-41.6	-0.4	-41.2	-57.67	5	6.3	0	0	4.77	A
		7765	-66.31	-39.31	-27	-47.59	5	6.3	34.79	0	4.77	P
		11650	-62.98	-41.78	-21.2	-45.03	5	6.3	34.02	0	4.77	P
		17460	-62.39	-35.39	-27	-44.2	5	6.3	34.26	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		5622.6	-37.57	-10.57	-27	-53.64	5	6.3	0	0	4.77	P
		5653.2	-38.49	-13.87	-24.62	-54.56	5	6.3	0	0	4.77	P
		5720	-35.04	-52.04	17	-51.11	5	6.3	0	0	4.77	P
		5724.6	-32.25	-58.45	26.2	-48.32	5	6.3	0	0	4.77	P
		5745	17.3	-	-	1.23	5	6.3	0	0	4.77	P
		5745	11.25	-	-	-4.82	5	6.3	0	0	4.77	A



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 157 5785MHz		5623.4	-36.05	-9.05	-27	-52.12	5	6.3	0	0	4.77	P
		5662	-38.29	-20.2	-18.09	-54.36	5	6.3	0	0	4.77	P
		5701.8	-38.9	-49.53	10.63	-54.97	5	6.3	0	0	4.77	P
		5724	-39.81	-64.81	25	-55.88	5	6.3	0	0	4.77	P
		5782	17.27	-	-	1.2	5	6.3	0	0	4.77	P
		5782	7.38	-	-	-8.69	5	6.3	0	0	4.77	A
		5852	-43.89	-66.89	23	-59.96	5	6.3	0	0	4.77	P
		5867	-43.29	-56.09	12.8	-59.36	5	6.3	0	0	4.77	P
		5899.4	-43.7	-35.61	-8.09	-59.77	5	6.3	0	0	4.77	P
		5930.8	-43.86	-16.86	-27	-59.93	5	6.3	0	0	4.77	P

[illegible]



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT20 CH 149 5745MHz		5120	-35.83	-14.63	-21.2	-51.9	5	6.3	0	0	4.77	P
		5120.1	-43.89	-2.69	-41.2	-59.96	5	6.3	0	0	4.77	A
		5360	-33.26	-12.06	-21.2	-49.33	5	6.3	0	0	4.77	P
		5360.12	-41.53	-0.33	-41.2	-57.6	5	6.3	0	0	4.77	A
		7660	-67.34	-46.14	-21.2	-48.65	5	6.3	34.76	0	4.77	P
		11485	-62.72	-41.52	-21.2	-44.71	5	6.3	34.08	0	4.77	P
		17236	-69.75	-42.75	-27	-51.51	5	6.3	34.31	0	4.77	P
802.11n HT20 CH 157 5785MHz		5146	-35.34	-14.14	-21.2	-51.41	5	6.3	0	0	4.77	P
		5146	-43.66	-2.46	-41.2	-59.73	5	6.3	0	0	4.77	A
		5439	-33.51	-12.31	-21.2	-49.58	5	6.3	0	0	4.77	P
		5439.76	-41.73	-0.53	-41.2	-57.8	5	6.3	0	0	4.77	A
		7715	-70.02	-48.82	-21.2	-51.31	5	6.3	34.78	0	4.77	P
		11570	-65.65	-44.45	-21.2	-47.67	5	6.3	34.05	0	4.77	P
		17348	-69.39	-42.39	-27	-51.17	5	6.3	34.29	0	4.77	P
802.11n HT20 CH 165 5825MHz		5074	-33.97	-12.77	-21.2	-50.04	5	6.3	0	0	4.77	P
		5074	-41.66	-0.46	-41.2	-57.73	5	6.3	0	0	4.77	A
		5398	-30.51	-9.31	-21.2	-46.58	5	6.3	0	0	4.77	P
		5398	-41.34	-0.14	-41.2	-57.41	5	6.3	0	0	4.77	A
		7765	-68.22	-41.22	-27	-49.5	5	6.3	34.79	0	4.77	P
		11640	-62.11	-40.91	-21.2	-44.15	5	6.3	34.03	0	4.77	P
		17474	-59.77	-32.77	-27	-41.58	5	6.3	34.26	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preampl	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5609.6	-37.24	-10.24	-27	-53.31	5	6.3	0	0	4.77	P
		5698.8	-34.23	-43.35	9.12	-50.3	5	6.3	0	0	4.77	P
		5719	-27.42	-44.07	16.65	-43.49	5	6.3	0	0	4.77	P
		5725	-25.19	-52.19	27	-41.26	5	6.3	0	0	4.77	P
		5755	14.93	-	-	-1.14	5	6.3	0	0	4.77	P
		5755	6.18	-	-	-9.89	5	6.3	0	0	4.77	A
		5851.2	-42.62	-67.22	24.6	-58.69	5	6.3	0	0	4.77	P
		5865.2	-42.92	-56.35	13.43	-58.99	5	6.3	0	0	4.77	P
		5916	-42.62	-22.26	-20.36	-58.69	5	6.3	0	0	4.77	P
		5935.2	-42.52	-15.52	-27	-58.59	5	6.3	0	0	4.77	P

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 159 5795MHz		5609.2	-38.44	-11.44	-27	-54.51	5	6.3	0	0	4.77	P
		5652.8	-39.6	-14.68	-24.92	-55.67	5	6.3	0	0	4.77	P
		5709	-39.91	-53.06	13.15	-55.98	5	6.3	0	0	4.77	P
		5720.4	-39.42	-57.22	17.8	-55.49	5	6.3	0	0	4.77	P
		5795	14.98	-	-	-1.09	5	6.3	0	0	4.77	P
		5795	5.2	-	-	-10.87	5	6.3	0	0	4.77	A
		5850.4	-40.05	-66.25	26.2	-56.12	5	6.3	0	0	4.77	P
		5856.4	-41.1	-57.61	16.51	-57.17	5	6.3	0	0	4.77	P
		5876	-44.09	-53.35	9.26	-60.16	5	6.3	0	0	4.77	P
		5934.4	-45.39	-18.39	-27	-61.46	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11n HT40 CH 151 5755MHz		5120	-33.95	-12.75	-21.2	-50.02	5	6.3	0	0	4.77	P
		5120.1	-46.52	-5.32	-41.2	-62.59	5	6.3	0	0	4.77	A
		5403	-33.63	-12.43	-21.2	-49.7	5	6.3	0	0	4.77	P
		5403.13	-41.8	-0.6	-41.2	-57.87	5	6.3	0	0	4.77	A
		7685	-73.45	-52.25	-21.2	-54.75	5	6.3	34.77	0	4.77	P
		11510	-63.97	-42.77	-21.2	-45.96	5	6.3	34.08	0	4.77	P
		17292	-66.44	-39.44	-27	-48.21	5	6.3	34.3	0	4.77	P
802.11n HT40 CH 159 5795MHz		5133	-38.28	-17.08	-21.2	-54.35	5	6.3	0	0	4.77	P
		5133.75	-47.38	-6.18	-41.2	-63.45	5	6.3	0	0	4.77	A
		5457	-38.22	-17.02	-21.2	-54.29	5	6.3	0	0	4.77	P
		5457.91	-46.58	-5.38	-41.2	-62.65	5	6.3	0	0	4.77	A
		7740	-69.62	-48.42	-21.2	-50.9	5	6.3	34.79	0	4.77	P
		11605	-63.46	-42.26	-21.2	-45.49	5	6.3	34.04	0	4.77	P
		17404	-62.71	-35.71	-27	-44.51	5	6.3	34.27	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11ac VHT80 CH 155 5775MHz		5647	-35.15	-8.15	-27	-51.22	5	6.3	0	0	4.77	P
		5689	-22.36	-24.25	1.89	-38.43	5	6.3	0	0	4.77	P
		5719.6	-20.35	-37.21	16.86	-36.42	5	6.3	0	0	4.77	P
		5721.8	-18.42	-39.02	20.6	-34.49	5	6.3	0	0	4.77	P
		5775	13.8	-	-	-2.27	5	6.3	0	0	4.77	P
		5775	6.22	-	-	-9.85	5	6.3	0	0	4.77	A
		5851.4	-22.79	-46.99	24.2	-38.86	5	6.3	0	0	4.77	P
		5855	-23.31	-40.31	17	-39.38	5	6.3	0	0	4.77	P
		5876	-31.61	-40.87	9.26	-47.68	5	6.3	0	0	4.77	P
		5930	-43.38	-16.38	-27	-59.45	5	6.3	0	0	4.77	P
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)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Grounding	MIMO	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Gain	Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
802.11ac VHT80 CH 155 5775MHz		5137	-38.82	-17.62	-21.2	-54.89	5	6.3	0	0	4.77	P
		5137	-45.3	-4.1	-41.2	-61.37	5	6.3	0	0	4.77	A
		5460	-36.59	-15.39	-21.2	-52.66	5	6.3	0	0	4.77	P
		5460	-41.49	-0.29	-41.2	-57.56	5	6.3	0	0	4.77	A
		11550	-86.89	-65.69	-21.2	-68.9	5	6.3	34.06	0	4.77	P
		17320	-86.33	-59.33	-27	-68.11	5	6.3	34.29	0	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Emission below 1GHz

5GHz WIFI 802.11a (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Cable Loss	Preamp Factor	Grounding Factor	MIMO Gain	Peak Avg.
1+2+3(3)		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(dBi)	(P/A)
5GHz 802.11a LF		49.71	-89.59	-34.39	-55.2	-78.1	5	6.3	32.26	4.7	4.77	P
		140.7	-88.08	-36.38	-51.7	-76.64	5	6.3	32.21	4.7	4.77	P
		192	-85.8	-34.1	-51.7	-74.34	5	6.3	32.23	4.7	4.77	P
		331.5	-84.1	-34.9	-49.2	-72.79	5	6.3	32.08	4.7	4.77	P
		456.1	-71	-21.8	-49.2	-59.62	5	6.3	32.15	4.7	4.77	P
		812.4	-82.32	-33.12	-49.2	-71.21	5	6.3	31.88	4.7	4.77	P
Remark	1. No other spurious found. 2. All results are PASS against limit line.											



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average

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

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.

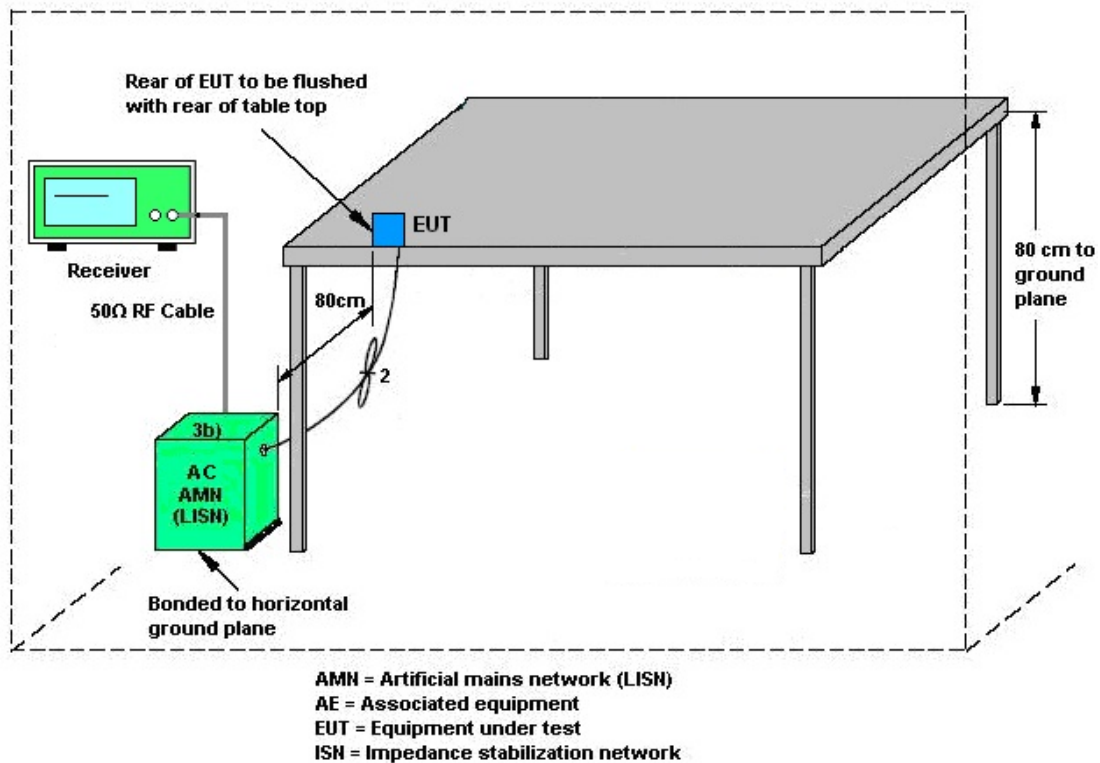
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

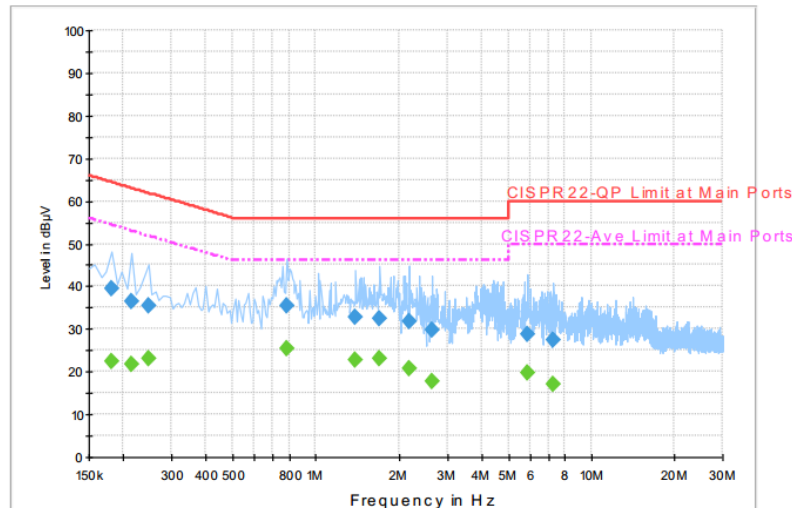
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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

Test Mode :	Mode 1	Temperature :	22~23℃
Test Engineer :	Arthur Hsieh	Relative Humidity :	59~60%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Adapter		



Final Result : QuasiPeak

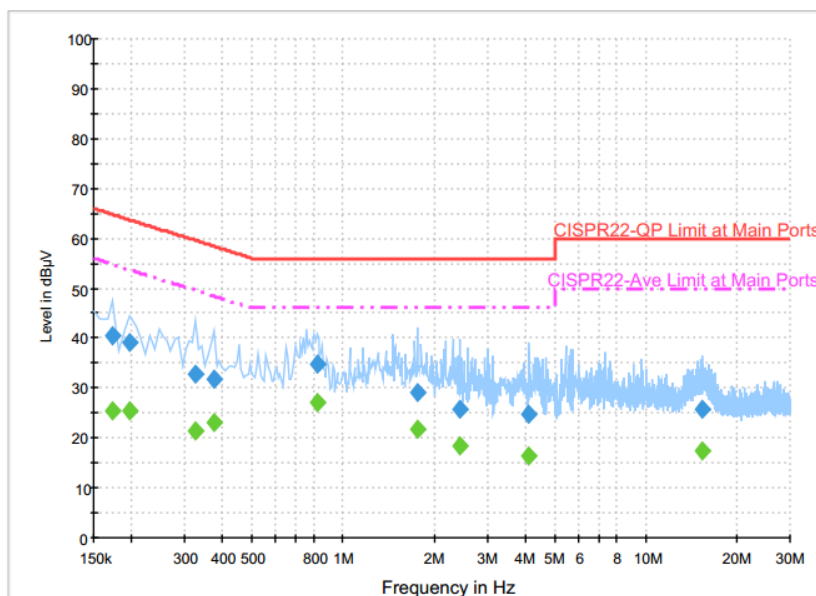
Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.182000	39.3	Off	L1	19.6	25.1	64.4
0.214000	36.6	Off	L1	19.6	26.4	63.0
0.246000	35.3	Off	L1	19.6	26.6	61.9
0.782000	35.5	Off	L1	19.6	20.5	56.0
1.398000	32.7	Off	L1	19.7	23.3	56.0
1.710000	32.5	Off	L1	19.7	23.5	56.0
2.182000	31.9	Off	L1	19.6	24.1	56.0
2.646000	29.6	Off	L1	19.7	26.4	56.0
5.854000	28.9	Off	L1	19.9	31.1	60.0
7.310000	27.5	Off	L1	20.0	32.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.182000	22.3	Off	L1	19.6	32.1	54.4
0.214000	21.7	Off	L1	19.6	31.3	53.0
0.246000	23.0	Off	L1	19.6	28.9	51.9
0.782000	25.3	Off	L1	19.6	20.7	46.0
1.398000	22.9	Off	L1	19.7	23.1	46.0
1.710000	23.0	Off	L1	19.7	23.0	46.0
2.182000	20.8	Off	L1	19.6	25.2	46.0
2.646000	17.6	Off	L1	19.7	28.4	46.0
5.854000	19.7	Off	L1	19.9	30.3	50.0
7.310000	17.2	Off	L1	20.0	32.8	50.0



Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	59~60%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Adapter		

**Final Result : QuasiPeak**

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	40.4	Off	N	19.6	24.4	64.8
0.198000	39.2	Off	N	19.6	24.5	63.7
0.326000	32.9	Off	N	19.6	26.7	59.6
0.374000	31.9	Off	N	19.6	26.5	58.4
0.822000	34.9	Off	N	19.6	21.1	56.0
1.766000	29.1	Off	N	19.7	26.9	56.0
2.430000	25.8	Off	N	19.6	30.2	56.0
4.126000	24.8	Off	N	19.8	31.2	56.0
15.438000	25.9	Off	N	20.5	34.1	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	25.5	Off	N	19.6	29.3	54.8
0.198000	25.3	Off	N	19.6	28.4	53.7
0.326000	21.3	Off	N	19.6	28.3	49.6
0.374000	23.2	Off	N	19.6	25.2	48.4
0.822000	27.1	Off	N	19.6	18.9	46.0
1.766000	21.6	Off	N	19.7	24.4	46.0
2.430000	18.4	Off	N	19.6	27.6	46.0
4.126000	16.3	Off	N	19.8	29.7	46.0
15.438000	17.3	Off	N	20.5	32.7	50.0

3.6 Frequency Stability Measurement

3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

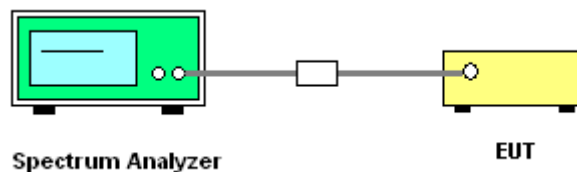
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 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.

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

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

3.8 Antenna Requirements

3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), 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.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output 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.

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.

				for	for	Limit	Limit
	Ant 1	Ant 2	Ant 3	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band I	5.00	5.00	5.00	5.00	9.77	0.00	3.77

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1218006	300MHz~40GHz	Oct. 07, 2015	Mar. 25, 2016~ Jul. 16, 2016	Oct. 06, 2016	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Oct. 05, 2015	Mar. 25, 2016~ Jul. 16, 2016	Oct. 04, 2016	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 23, 2015	Mar. 25, 2016~ Jul. 16, 2016	Nov. 22, 2016	Conducted (TH05-HY)
AC Power Source	AC POWER	AFC-500W	F104070011	50Hz~60Hz	Dec. 02, 2015	Mar. 25, 2016~ Jul. 16, 2016	Dec. 01, 2016	Conducted (TH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~1GHz	Nov. 17, 2015	Jul. 16, 2016 ~ Jul. 20, 2016	Nov. 16, 2016	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 07, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Jan. 06, 2017	Radiation (03CH06-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 17, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Jun. 16, 2017	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Aug. 21, 2015	Jul. 16, 2016 ~ Jul. 20, 2016	Aug. 20, 2016	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Apr. 18, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Apr. 17, 2017	Radiation (03CH06-HY)
Preamplifier	SONOMA	310N	186713	9kHz~1GHz	Apr. 19, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Apr. 18, 2017	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1850117	1GHz ~ 18GHz	Jun. 22, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Jun. 21, 2017	Radiation (03CH06-HY)
Preamplifier	MITEQ	JS44-1800400 0-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Jul. 16, 2016 ~ Jul. 20, 2016	Jun. 13, 2017	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF78020821 2	1m~4m	N/A	Jul. 16, 2016 ~ Jul. 20, 2016	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	Jul. 16, 2016 ~ Jul. 20, 2016	N/A	Radiation (03CH06-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Jul. 16, 2016 ~ Jul. 20, 2016	Sep. 01, 2016	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz- 40GHz	Oct. 12, 2015	Jul. 16, 2016 ~ Jul. 20, 2016	Oct. 11, 2016	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	Jan. 05, 2016	Jul. 13, 2016 ~ Jul. 20, 2016	Jan. 04, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	TTA 0204	1872107	2GHz ~ 40GHz	Feb. 15, 2016	Jul. 13, 2016 ~ Jul. 20, 2016	Feb. 14, 2017	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 14, 2016	Jul. 13, 2016 ~ Jul. 20, 2016	Mar. 13, 2017	Radiation (03CH13-HY)
Preamplifier	SONOMA	310N	187282	10MHz~1GHz	Dec. 31, 2015	Jul. 13, 2016 ~ Jul. 20, 2016	Dec. 30, 2016	Radiation (03CH13-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 15, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	Jun. 15, 2016	Aug. 25, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Jun. 15, 2016	Dec. 01, 2016	Conduction (CO05-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.00
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Appendix A. Conducted Test Results

Report Number : FR630314-01E

Test Engineer:	Bill Kuo	Temperature:	21~25	°C
Test Date:	2016/03/25 ~ 2016/07/16	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% OBW

Band IV																	
Mod.	Data Rate	N _{rx}	CH.	Freq. (MHz)	99% Bandwidth (MHz)			26 dB Bandwidth (MHz)			6 dB Bandwidth (MHz)			6 dB Bandwidth Min. Limit (MHz)			Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	
11a	6Mbps	3	149	5745	17.85	17.65	17.55	23.64	23.76	23.16	16.40	16.40	16.4	0.5			Pass
11a	6Mbps	3	157	5785	18.00	17.70	17.6	24.12	22.92	23.52	16.36	16.40	16.4	0.5			Pass
11a	6Mbps	3	165	5825	17.75	17.55	17.55	23.52	23.88	23.28	16.36	16.40	16.4	0.5			Pass
HT20	MCS0	3	149	5745	18.85	18.90	18.75	24.96	25.68	24.84	17.60	17.60	17.6	0.5			Pass
HT20	MCS0	3	157	5785	18.70	18.75	18.65	25.08	24.84	24.24	17.60	17.60	17.6	0.5			Pass
HT20	MCS0	3	165	5825	18.70	18.70	18.65	24.48	25.08	24.12	17.60	17.60	17.6	0.5			Pass
HT40	MCS0	3	151	5755	36.80	36.70	36.7	45.93	45.27	44.61	36.40	36.16	36.4	0.5			Pass
HT40	MCS0	3	159	5795	36.80	36.80	36.8	47.13	45.15	45.75	36.40	36.40	36.4	0.5			Pass
VHT20	MCS0	3	149	5745	18.70	18.90	18.65	25.07	25.22	24.28	17.60	17.60	17.6	0.5			Pass
VHT20	MCS0	3	157	5785	18.70	18.65	18.6	25.56	24.24	24.6	17.60	17.36	17.6	0.5			Pass
VHT20	MCS0	3	165	5825	18.70	18.75	18.6	24.49	24.46	23.94	17.60	17.60	17.6	0.5			Pass
VHT40	MCS0	3	151	5755	36.90	36.80	36.7	45.60	44.40	44.64	36.16	35.76	36.4	0.5			Pass
VHT40	MCS0	3	159	5795	36.80	36.80	36.7	45.36	44.58	45.12	36.40	36.40	36.4	0.5			Pass
VHT80	MCS0	3	155	5775	76.08	75.84	75.84	90.56	87.04	90.24	76.00	73.28	75.84	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	SUM	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	
11a	6Mbps	3	149	5745	18.80	18.34	17.80	23.10	30.00			5.00			Pass
11a	6Mbps	3	157	5785	16.10	16.04	15.80	20.75	30.00			5.00			Pass
11a	6Mbps	3	165	5825	17.24	17.84	18.34	22.60	30.00			5.00			Pass
HT20	MCS0	3	149	5745	16.12	15.56	15.41	20.48	30.00			5.00			Pass
HT20	MCS0	3	157	5785	15.16	14.52	14.52	19.52	30.00			5.00			Pass
HT20	MCS0	3	165	5825	16.76	17.22	17.78	22.05	30.00			5.00			Pass
HT40	MCS0	3	151	5755	17.20	16.68	16.64	21.62	30.00			5.00			Pass
HT40	MCS0	3	159	5795	17.53	17.45	17.53	22.28	30.00			5.00			Pass
VHT20	MCS0	3	149	5745	16.11	15.62	15.22	20.44	30.00			5.00			Pass
VHT20	MCS0	3	157	5785	15.02	14.72	14.44	19.51	30.00			5.00			Pass
VHT20	MCS0	3	165	5825	16.62	17.25	17.82	22.03	30.00			5.00			Pass
VHT40	MCS0	3	151	5755	16.96	16.86	16.69	21.61	30.00			5.00			Pass
VHT40	MCS0	3	159	5795	17.52	17.46	17.49	22.26	30.00			5.00			Pass
VHT80	MCS0	3	155	5775	15.89	15.48	15.74	20.48	30.00			5.00			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	SUM	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	
11a	6Mbps	3	149	5745	4.29	1.64	1.03	9.06	26.23			9.77			Pass
11a	6Mbps	3	157	5785	1.30	-1.13	-0.95	6.07	26.23			9.77			Pass
11a	6Mbps	3	165	5825	3.05	1.15	1.49	8.48	26.23			9.77			Pass
HT20	MCS0	3	149	5745	1.00	-1.23	-2.02	5.77	26.23			9.77			Pass
HT20	MCS0	3	157	5785	0.12	-1.82	-2.48	5.17	26.23			9.77			Pass
HT20	MCS0	3	165	5825	2.07	0.30	0.55	7.54	26.23			9.77			Pass
HT40	MCS0	3	151	5755	-0.09	-2.41	-3.12	4.68	26.23			9.77			Pass
HT40	MCS0	3	159	5795	-0.03	-2.28	-2.37	4.74	26.23			9.77			Pass
VHT20	MCS0	3	149	5745	1.21	-1.07	-1.55	5.98	26.23			9.77			Pass
VHT20	MCS0	3	157	5785	0.47	-1.64	-2.15	5.35	26.23			9.77			Pass
VHT20	MCS0	3	165	5825	2.08	0.36	0.89	7.88	26.23			9.77			Pass
VHT40	MCS0	3	151	5755	-0.40	-2.46	-2.89	4.53	26.23			9.77			Pass
VHT40	MCS0	3	159	5795	0.04	-1.95	-2.23	5.04	26.23			9.77			Pass
VHT80	MCS0	3	155	5775	-4.05	-6.67	-6.68	0.72	26.23			9.77			Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	20	108	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	20	132	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	20	120	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	-30	120	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	50	120	



Appendix B. Radiated Spurious Emission

Test Engineer :	Donny Tang and Hayden Wu	Temperature :	19~21°C
		Relative Humidity :	50~55%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		5611.6	50.75	-17.55	68.3	41.64	32.04	10.94	33.87	107	54	P	H
		5664	51.84	-26.85	78.69	42.5	32.12	11.09	33.87	107	54	P	H
		5703.6	50.9	-55.41	106.31	41.41	32.19	11.17	33.87	107	54	P	H
		5724.6	53.83	-67.56	121.39	44.32	32.21	11.17	33.87	107	54	P	H
		5747	100.03	-22.27	122.3	90.39	32.26	11.24	33.86	107	54	P	H
		5747	91.55	-	-	81.91	32.26	11.24	33.86	107	54	A	H
													H
													H
		5644.6	50.2	-18.1	68.3	40.96	32.09	11.02	33.87	203	5	P	V
		5687	51.59	-44.12	95.71	42.2	32.17	11.09	33.87	203	5	P	V
		5705.4	50.47	-56.34	106.81	40.98	32.19	11.17	33.87	203	5	P	V
		5722.8	50.73	-66.55	117.28	41.22	32.21	11.17	33.87	203	5	P	V
		5745	97.39	-24.91	122.3	87.77	32.24	11.24	33.86	203	5	P	V
		5745	88.36	-	-	78.74	32.24	11.24	33.86	203	5	A	V
													V
													V



WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5623.8	50.7	-17.6	68.3	41.48	32.07	11.02	33.87	100	54	P	H
		5696.6	51.23	-51.56	102.79	41.84	32.17	11.09	33.87	100	54	P	H
		5710.4	50.28	-57.93	108.21	40.79	32.19	11.17	33.87	100	54	P	H
		5724.4	49.81	-71.12	120.93	40.3	32.21	11.17	33.87	100	54	P	H
		5783	97.17	-25.13	122.3	87.42	32.29	11.32	33.86	100	54	P	H
		5783	88.68	-	-	78.93	32.29	11.32	33.86	100	54	A	H
		5851.2	50.46	-69.1	119.56	40.68	32.38	11.26	33.86	100	54	P	H
		5873.4	50.91	-54.84	105.75	41.14	32.43	11.2	33.86	100	54	P	H
		5921.2	50.85	-20.25	71.1	41.09	32.48	11.14	33.86	100	54	P	H
		5928.8	50.3	-18	68.3	40.52	32.5	11.14	33.86	100	54	P	H
													H
													H
		5642.8	50.54	-17.76	68.3	41.3	32.09	11.02	33.87	167	5	P	V
		5687	51.15	-44.56	95.71	41.76	32.17	11.09	33.87	167	5	P	V
		5719.4	50.5	-60.23	110.73	40.99	32.21	11.17	33.87	167	5	P	V
		5724.4	49.56	-71.37	120.93	40.05	32.21	11.17	33.87	167	5	P	V
		5786	94.48	-27.82	122.3	84.73	32.29	11.32	33.86	167	5	P	V
		5786	85.6	-	-	75.85	32.29	11.32	33.86	167	5	A	V
		5852.2	50.44	-66.84	117.28	40.66	32.38	11.26	33.86	167	5	P	V
		5874.8	51.48	-53.88	105.36	41.71	32.43	11.2	33.86	167	5	P	V
		5891	51.23	-42.2	93.43	41.43	32.46	11.2	33.86	167	5	P	V
		5946.8	50.64	-17.66	68.3	40.89	32.53	11.08	33.86	167	5	P	V
													V
													V



WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz		5827	100.03	-22.27	122.3	90.27	32.36	11.26	33.86	101	54	P	H
		5827	91	-	-	81.24	32.36	11.26	33.86	101	54	A	H
		5852.2	50.3	-66.98	117.28	40.52	32.38	11.26	33.86	101	54	P	H
		5855.2	51.1	-59.74	110.84	41.29	32.41	11.26	33.86	101	54	P	H
		5888.8	50.64	-44.42	95.06	40.84	32.46	11.2	33.86	101	54	P	H
		5945.6	50.89	-17.41	68.3	41.14	32.53	11.08	33.86	101	54	P	H
													H
													H
		5825	98.27	-24.03	122.3	88.51	32.36	11.26	33.86	102	182	P	V
		5825	89.24	-	-	79.48	32.36	11.26	33.86	102	182	A	V
		5854.4	51.08	-61.19	112.27	41.27	32.41	11.26	33.86	102	182	P	V
		5875	50.54	-54.76	105.3	40.77	32.43	11.2	33.86	102	182	P	V
		5875	50.54	-54.76	105.3	40.77	32.43	11.2	33.86	102	182	P	V
		5931	51.78	-16.52	68.3	42	32.5	11.14	33.86	102	182	P	V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	56.86	-17.14	74	58.72	40.21	15.95	58.02	279	147	P	H
		11490	42.73	-11.27	54	44.59	40.21	15.95	58.02	279	147	A	H
		17235	44.61	-23.69	68.3	45	41.79	14.48	56.66	100	0	P	H
													H
		11490	63.08	-10.92	74	64.94	40.21	15.95	58.02	388	118	P	V
		11490	51.89	-2.11	54	53.75	40.21	15.95	58.02	388	118	A	V
		17235	50.62	-17.68	68.3	51.01	41.79	14.48	56.66	100	0	P	V
													V
802.11a CH 157 5785MHz		11570	52.87	-21.13	74	54.74	40.08	16.09	58.04	299	148	P	H
		11570	38.62	-15.38	54	40.49	40.08	16.09	58.04	299	148	A	H
		17355	43.85	-24.45	68.3	43.67	42.19	14.58	56.59	100	0	P	H
													H
		11570	58.6	-15.4	74	60.47	40.08	16.09	58.04	393	315	P	V
		11570	45.71	-8.29	54	47.58	40.08	16.09	58.04	393	315	A	V
		17355	45.73	-22.57	68.3	45.55	42.19	14.58	56.59	100	0	P	V
													V
802.11a CH 165 5825MHz		11650	56.04	-17.96	74	58.06	39.87	16.22	58.11	100	58	P	H
		11650	44.45	-9.55	54	46.47	39.87	16.22	58.11	100	58	A	H
		17475	45.09	-23.21	68.3	44.35	42.59	14.67	56.52	100	0	P	H
													H
		11650	61.76	-12.24	74	63.83	39.83	16.22	58.12	234	314	P	V
		11650	49.78	-4.22	54	51.8	39.87	16.22	58.11	234	314	A	V
		17475	52.03	-16.27	68.3	51.26	42.59	14.7	56.52	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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5639.6	50.18	-18.12	68.3	40.94	32.09	11.02	33.87	100	54	P	H
		5651.6	50.59	-18.9	69.49	41.32	32.12	11.02	33.87	100	54	P	H
		5714.8	50.75	-58.7	109.45	41.26	32.19	11.17	33.87	100	54	P	H
		5724.8	51.47	-70.37	121.84	41.96	32.21	11.17	33.87	100	54	P	H
		5747	96.37	-25.93	122.3	86.75	32.24	11.24	33.86	100	54	P	H
		5747	87.78	-	-	78.16	32.24	11.24	33.86	100	54	A	H
													H
													H
		5633.2	50.79	-17.51	68.3	41.55	32.09	11.02	33.87	258	320	P	V
		5687.4	52.11	-43.9	96.01	42.72	32.17	11.09	33.87	258	320	P	V
		5719.2	50.72	-59.96	110.68	41.21	32.21	11.17	33.87	258	320	P	V
		5722	50.29	-65.17	115.46	40.78	32.21	11.17	33.87	258	320	P	V
		5745	92.5	-29.8	122.3	82.88	32.24	11.24	33.86	258	320	P	V
		5745	83.36	-	-	73.74	32.24	11.24	33.86	258	320	A	V
													V
													V



WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		5615.8	50.26	-18.04	68.3	41.12	32.07	10.94	33.87	100	53	P	H
		5690.2	51.15	-46.92	98.07	41.76	32.17	11.09	33.87	100	53	P	H
		5703.2	49.89	-56.31	106.2	40.4	32.19	11.17	33.87	100	53	P	H
		5724.8	50.38	-71.46	121.84	40.87	32.21	11.17	33.87	100	53	P	H
		5787	94.95	-27.35	122.3	85.28	32.29	11.24	33.86	100	53	P	H
		5787	86.53	-	-	76.86	32.29	11.24	33.86	100	53	A	H
		5853.6	51.43	-62.66	114.09	41.62	32.41	11.26	33.86	100	53	P	H
		5862.4	50.33	-58.5	108.83	40.58	32.41	11.2	33.86	100	53	P	H
		5886.8	51.35	-45.19	96.54	41.58	32.43	11.2	33.86	100	53	P	H
		5936.2	51.85	-16.45	68.3	42.13	32.5	11.08	33.86	100	53	P	H
													H
													H
		5647.8	49.73	-18.57	68.3	40.49	32.09	11.02	33.87	135	321	P	V
		5687	51.52	-44.19	95.71	42.13	32.17	11.09	33.87	135	321	P	V
		5703.2	49.98	-56.22	106.2	40.49	32.19	11.17	33.87	135	321	P	V
		5723.4	50.73	-67.92	118.65	41.22	32.21	11.17	33.87	135	321	P	V
		5783	93.29	-29.01	122.3	83.54	32.29	11.32	33.86	135	321	P	V
		5783	84.41	-	-	74.66	32.29	11.32	33.86	135	321	A	V
		5853	49.87	-65.59	115.46	40.09	32.38	11.26	33.86	135	321	P	V
		5874.6	50.69	-54.72	105.41	40.92	32.43	11.2	33.86	135	321	P	V
		5904.4	50.46	-33.05	83.51	40.72	32.46	11.14	33.86	135	321	P	V
		5932.6	50.93	-17.37	68.3	41.15	32.5	11.14	33.86	135	321	P	V
													V
													V



WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz		5827	98.88	-23.42	122.3	89.12	32.36	11.26	33.86	100	52	P	H
		5827	90.16	-	-	80.4	32.36	11.26	33.86	100	52	A	H
		5851.8	51.42	-66.78	118.2	41.64	32.38	11.26	33.86	100	52	P	H
		5864.8	51.16	-56.99	108.15	41.41	32.41	11.2	33.86	100	52	P	H
		5920.8	51.01	-20.39	71.4	41.25	32.48	11.14	33.86	100	52	P	H
		5942.6	50.78	-17.52	68.3	41.03	32.53	11.08	33.86	100	52	P	H
													H
													H
		5825	94.56	-27.74	122.3	84.83	32.33	11.26	33.86	258	181	P	V
		5825	85.53	-	-	75.8	32.33	11.26	33.86	258	181	A	V
		5852.2	50.56	-66.72	117.28	40.78	32.38	11.26	33.86	258	181	P	V
		5875	50.98	-54.32	105.3	41.21	32.43	11.2	33.86	258	181	P	V
		5875	50.98	-54.32	105.3	41.21	32.43	11.2	33.86	258	181	P	V
		5937.6	50.89	-17.41	68.3	41.17	32.5	11.08	33.86	258	181	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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable 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	54.41	-19.59	74	56.27	40.21	15.95	58.02	200	63	P	H
		11490	40.9	-13.1	54	42.76	40.21	15.95	58.02	200	63	A	H
		17235	43.08	-25.22	68.3	43.47	41.79	14.48	56.66	100	0	P	H
													H
		11490	58.55	-15.45	74	60.41	40.21	15.95	58.02	375	117	P	V
		11490	47.23	-6.77	54	49.09	40.21	15.95	58.02	375	117	A	V
		17235	46.6	-21.7	68.3	46.99	41.79	14.48	56.66	100	0	P	V
													V
802.11n HT20 CH 157 5785MHz		11570	50.45	-23.55	74	52.39	40.03	16.09	58.06	100	0	P	H
		17355	43.28	-25.02	68.3	43.1	42.19	14.58	56.59	100	0	P	H
													H
													H
		11570	56.48	-17.52	74	58.42	40.03	16.09	58.06	377	118	P	V
		11570	44.57	-9.43	54	46.51	40.03	16.09	58.06	377	118	A	V
		17355	44.47	-23.83	68.3	44.29	42.19	14.58	56.59	100	0	P	V
													V
802.11n HT20 CH 165 5825MHz		11650	55.36	-18.64	74	57.38	39.87	16.22	58.11	100	64	P	H
		11650	43.58	-10.42	54	45.6	39.87	16.22	58.11	100	64	A	H
		17475	46.36	-21.94	68.3	45.62	42.59	14.67	56.52	100	0	P	H
													H
		11650	60.51	-13.49	74	62.53	39.87	16.22	58.11	298	179	P	V
		11650	48.84	-5.16	54	50.86	39.87	16.22	58.11	298	179	A	V
		17475	54.48	-13.82	68.3	53.74	42.59	14.67	56.52	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 HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5626.8	51.13	-17.17	68.3	41.91	32.07	11.02	33.87	100	53	P	H
		5686.8	51.02	-44.54	95.56	41.63	32.17	11.09	33.87	100	53	P	H
		5713.6	52.51	-56.6	109.11	43.02	32.19	11.17	33.87	100	53	P	H
		5724.8	55.91	-65.93	121.84	46.4	32.21	11.17	33.87	100	53	P	H
		5757	95.48	-26.82	122.3	85.84	32.26	11.24	33.86	100	53	P	H
		5757	86.89	-	-	77.25	32.26	11.24	33.86	100	53	A	H
		5850.6	50.3	-70.63	120.93	40.52	32.38	11.26	33.86	100	53	P	H
		5863.6	50.33	-58.16	108.49	40.58	32.41	11.2	33.86	100	53	P	H
		5902.2	51.17	-33.96	85.13	41.43	32.46	11.14	33.86	100	53	P	H
		5936.6	50.97	-17.33	68.3	41.25	32.5	11.08	33.86	100	53	P	H
													H
													H
		5606.4	50.13	-18.17	68.3	41.02	32.04	10.94	33.87	102	323	P	V
		5687.2	52.23	-43.63	95.86	42.84	32.17	11.09	33.87	102	323	P	V
		5719.8	52.14	-58.7	110.84	42.63	32.21	11.17	33.87	102	323	P	V
		5723.6	53	-66.11	119.11	43.49	32.21	11.17	33.87	102	323	P	V
		5753	93.66	-28.64	122.3	84.04	32.24	11.24	33.86	102	323	P	V
		5753	84.75	-	-	75.13	32.24	11.24	33.86	102	323	A	V
		5850.2	49.55	-72.29	121.84	39.77	32.38	11.26	33.86	102	323	P	V
		5856.4	51.38	-59.13	110.51	41.63	32.41	11.2	33.86	102	323	P	V
		5896.2	51.54	-38.03	89.57	41.8	32.46	11.14	33.86	102	323	P	V
		5927.2	51.67	-16.63	68.3	41.89	32.5	11.14	33.86	102	323	P	V
													V
													V



WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5631	49.84	-18.46	68.3	40.62	32.07	11.02	33.87	101	51	P	H
		5670.4	51.52	-31.92	83.44	42.16	32.14	11.09	33.87	101	51	P	H
		5713.4	50.23	-58.82	109.05	40.74	32.19	11.17	33.87	101	51	P	H
		5720	50.13	-60.77	110.9	40.62	32.21	11.17	33.87	101	51	P	H
		5797	96.45	-25.85	122.3	86.66	32.33	11.32	33.86	101	51	P	H
		5797	87.44	-	-	78.65	32.33	11.32	33.86	101	51	A	H
		5851.4	50.19	-68.92	119.11	40.41	32.38	11.26	33.86	101	51	P	H
		5866.2	50.73	-57.03	107.76	40.98	32.41	11.2	33.86	101	51	P	H
		5908.2	50.78	-29.92	80.7	41.02	32.48	11.14	33.86	101	51	P	H
		5938.8	51.15	-17.15	68.3	41.4	32.53	11.08	33.86	101	51	P	H
													H
													H
		5631.6	50.36	-17.94	68.3	41.14	32.07	11.02	33.87	108	322	P	V
		5687.4	51.88	-44.13	96.01	42.49	32.17	11.09	33.87	108	322	P	V
		5714.2	50.8	-58.48	109.28	41.31	32.19	11.17	33.87	108	322	P	V
		5724.4	50.48	-70.45	120.93	40.97	32.21	11.17	33.87	108	322	P	V
		5795	94.29	-28.01	122.3	84.52	32.31	11.32	33.86	108	322	P	V
		5795	85.87	-	-	76.1	32.31	11.32	33.86	108	322	A	V
		5852.4	50.67	-66.16	116.83	40.89	32.38	11.26	33.86	108	322	P	V
		5869	50.79	-56.19	106.98	41.04	32.41	11.2	33.86	108	322	P	V
		5923.4	50.72	-18.76	69.48	40.94	32.5	11.14	33.86	108	322	P	V
		5949.4	50.56	-17.74	68.3	40.81	32.53	11.08	33.86	108	322	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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable 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	54.7	-19.3	74	56.55	40.2	15.95	58	100	65	P	H
		11510	41.38	-12.62	54	43.23	40.2	15.95	58	100	65	A	H
		17265	43.53	-24.77	68.3	43.75	41.91	14.51	56.64	100	0	P	H
													H
		11510	57.81	-16.19	74	59.66	40.2	15.95	58	317	121	P	V
		11510	48.91	-5.09	54	50.76	40.2	15.95	58	317	121	A	V
		17265	47.71	-20.59	68.3	47.93	41.91	14.51	56.64	100	0	P	V
													V
802.11n HT40 CH 159 5795MHz		11590	52.04	-21.96	74	53.97	39.99	16.15	58.07	100	0	P	H
		17385	45.07	-23.23	68.3	44.73	42.3	14.61	56.57	100	0	P	H
													H
													H
		11590	58.08	-15.92	74	60.01	39.99	16.15	58.07	284	129	P	V
		11590	47.91	-6.09	54	49.84	39.99	16.15	58.07	284	129	A	V
		17385	47.99	-20.31	68.3	47.65	42.3	14.61	56.57	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5619	50.81	-17.49	68.3	41.67	32.07	10.94	33.87	100	53	P	H
		5698.8	53.22	-51.2	104.42	43.83	32.17	11.09	33.87	100	53	P	H
		5719.8	58.99	-51.85	110.84	49.48	32.21	11.17	33.87	100	53	P	H
		5722	59.39	-56.07	115.46	49.88	32.21	11.17	33.87	100	53	P	H
		5777	93.54	-28.76	122.3	83.9	32.26	11.24	33.86	100	53	P	H
		5777	85.79	-	-	76.15	32.26	11.24	33.86	100	53	A	H
		5852.4	51.05	-65.78	116.83	41.27	32.38	11.26	33.86	100	53	P	H
		5860	51.41	-58.09	109.5	41.66	32.41	11.2	33.86	100	53	P	H
		5879	50.7	-51.63	102.33	40.93	32.43	11.2	33.86	100	53	P	H
		5925.6	50.94	-17.36	68.3	41.16	32.5	11.14	33.86	100	53	P	H
													H
													H
		5644.2	50.37	-17.93	68.3	41.13	32.09	11.02	33.87	101	182	P	V
		5687.6	52.1	-44.05	96.15	42.71	32.17	11.09	33.87	101	182	P	V
		5719.4	53.01	-57.72	110.73	43.5	32.21	11.17	33.87	101	182	P	V
		5724.2	56.44	-64.04	120.48	46.93	32.21	11.17	33.87	101	182	P	V
		5775	89.47	-32.83	122.3	79.83	32.26	11.24	33.86	101	182	P	V
		5775	81.96	-	-	72.32	32.26	11.24	33.86	101	182	A	V
		5850.2	51.28	-70.56	121.84	41.5	32.38	11.26	33.86	101	182	P	V
		5870.2	51.22	-55.42	106.64	41.47	32.41	11.2	33.86	101	182	P	V
		5898.2	51.3	-36.79	88.09	41.56	32.46	11.14	33.86	101	182	P	V
		5939.8	50.58	-17.72	68.3	40.83	32.53	11.08	33.86	101	182	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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable 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	48.29	-25.71	74	50.16	40.08	16.09	58.04	100	0	P	H
		17325	43.87	-24.43	68.3	43.82	42.08	14.58	56.61	100	0	P	H
													H
													H
		11550	54.07	-19.93	74	55.94	40.08	16.09	58.04	299	115	P	V
		11550	44.67	-9.33	54	46.54	40.08	16.09	58.04	299	115	A	V
		17325	43.88	-24.42	68.3	43.83	42.08	14.58	56.61	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11a LF		186.33	38.14	-5.36	43.5	52.63	15.26	1.97	31.72			P	H
		209.82	42.06	-1.44	43.5	55.71	16.08	1.99	31.72	100	322	Q	H
		280.29	42.48	-3.52	46	52.83	19.1	2.25	31.7			P	H
		309.1	34.44	-11.56	46	44.06	19.81	2.27	31.7			P	H
		340.6	33.45	-12.55	46	42.12	20.79	2.25	31.71			P	H
		954.5	32.03	-13.97	46	29.29	30.7	3.06	31.02			P	H
													H
													H
													H
													H
													H
													H
		155.55	35.96	-7.54	43.5	48.5	17.05	2.13	31.72			P	V
		204.42	40.93	-2.57	43.5	54.7	15.99	1.96	31.72	100	0	Q	V
		278.4	37.89	-8.11	46	48.24	19.1	2.25	31.7			P	V
		350.4	35.29	-10.71	46	43.67	21.1	2.24	31.72			P	V
		895	30.8	-15.2	46	29.6	29.37	3.38	31.55			P	V
		926.5	31.44	-14.56	46	29.43	30.09	3.21	31.29			P	V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		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. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable 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) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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



Appendix C. Radiated Spurious Emission Plots

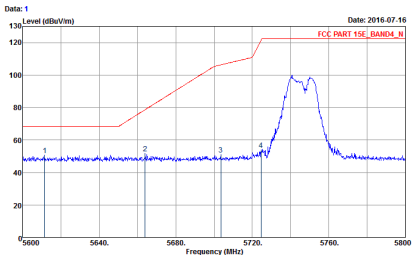
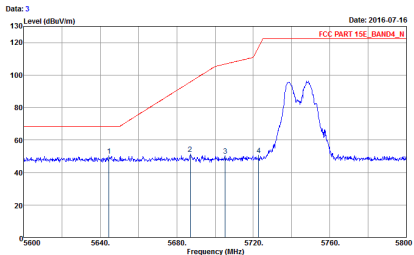
Test Engineer :	Donny Tang and Hayden Wu	Temperature :	19~21°C
		Relative Humidity :	50~55%

Note symbol

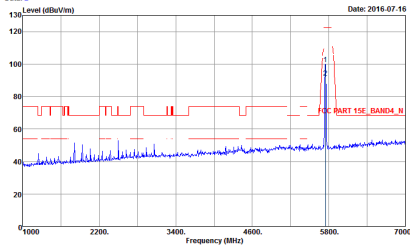
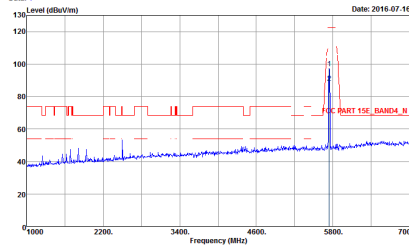
-L	Low channel location
-R	High channel location



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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak	Horizontal  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120B_1156_150827 HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11	Vertical  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120B_1156_150827 VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11

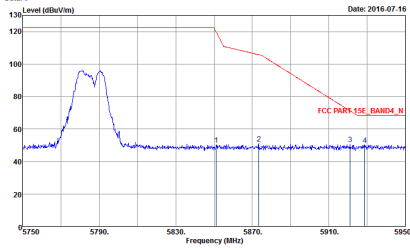
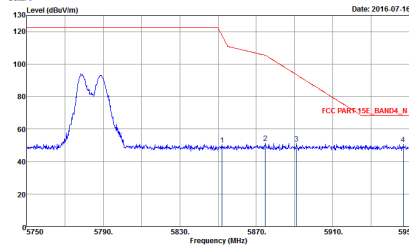


WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11	Date: 4  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11

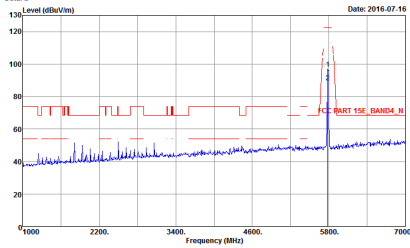
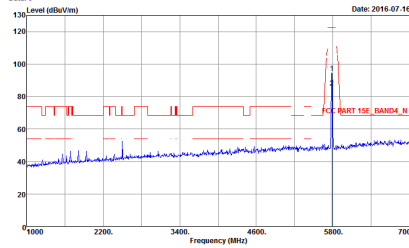


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz – L	
1+2	Horizontal	Vertical
Peak	Date: 1 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12	Date: 4 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz – R	
1+2	Horizontal	Vertical
Peak	Date: 3 Level (dBuV/m) Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12	Date: 6 Level (dBuV/m) Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12

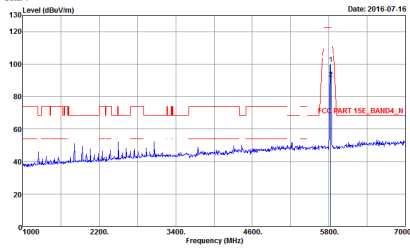
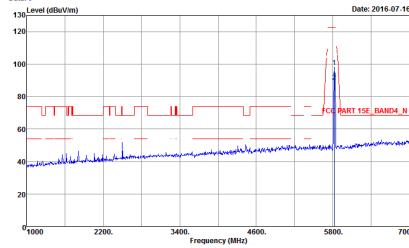


WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12	Date: 5  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
Peak	Date: 2 Level (dBuV/m) Date: 2016.07.16 Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13	Date: 4 Level (dBuV/m) Date: 2016.07.16 Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13



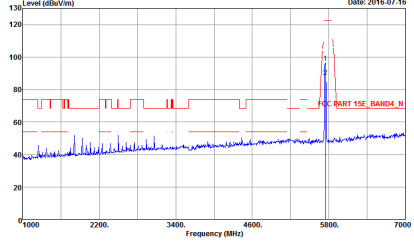
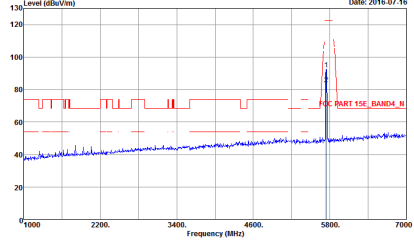
WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 1 Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13	Date: 3 Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13



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	Horizontal	Vertical
Peak	Data: 1 Level (dBuV/m) Date: 2016-07-16 FCC PART 15E, BAND4_N Site : 03CH06-HY Condition : FCC PART 15E, BAND4_N 3m 91200_1156_150827 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 630314-01 Power : POE 24V Memo : Mode 14	Data: 3 Level (dBuV/m) Date: 2016-07-16 FCC PART 15E, BAND4_N Site : 03CH06-HY Condition : FCC PART 15E, BAND4_N 3m 91200_1156_150827 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 630314-01 Power : POE 24V Memo : Mode 14



WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2 Level (dBuV/m)  Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 14	Date: 4 Level (dBuV/m)  Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 14

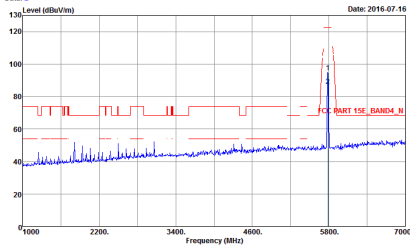
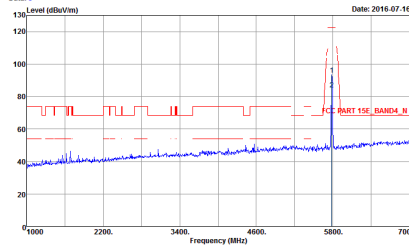


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz - L	
1+2	Horizontal	Vertical
Peak	Date: 1 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15	Date: 4 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz - R	
1+2	Horizontal	Vertical
Peak	Date: 3 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15	Date: 6 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15



WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15	Date: 5  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak	Date: 2 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16	Date: 4 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16



WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 1 Date: 2016.07.16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16	Date: 3 Date: 2016.07.16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16



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 - L	
1+2	Horizontal	Vertical
Peak	Data: 1 Level (dBuV/m) Date: 2016-07-16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 91200_1156_150827 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 630314-01 Power : POE 24V Memo : Mode 17	Data: 4 Level (dBuV/m) Date: 2016-07-16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 91200_1156_150827 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 630314-01 Power : POE 24V Memo : Mode 17



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz - R	
1+2	Horizontal	Vertical
Peak	Date: 3 Level (dBuV/m) Date: 2016.07.16 Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17	Date: 6 Level (dBuV/m) Date: 2016.07.16 Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17



WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17	Date: 5 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz - L	
1+2	Horizontal	Vertical
Peak	Date: 1 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18	Date: 4 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz - R	
1+2	Horizontal	Vertical
Peak	Date: 3 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18	Date: 6 Level (dBuV/m) Frequency (MHz) FCC PART 15E BAND4_N Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18



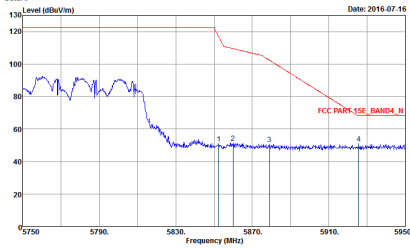
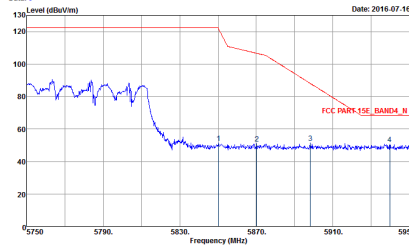
WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120d_1156_150827 HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18	Date: 5 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120d_1156_150827 VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18



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 - L	
1+2	Horizontal	Vertical
Peak	Data: 1 Level (dBuV/m) Date: 2016-07-16 Site : 03CH06-IHY Condition : FCC PART 15E_BAND4_N 3m 91200_1156_150827 HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19	Data: 4 Level (dBuV/m) Date: 2016-07-16 Site : 03CH06-IHY Condition : FCC PART 15E_BAND4_N 3m 91200_1156_150827 VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19

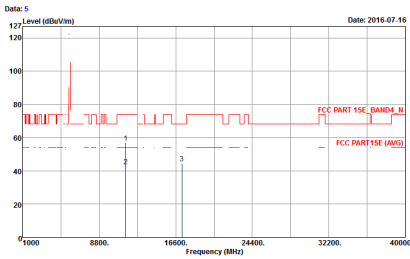
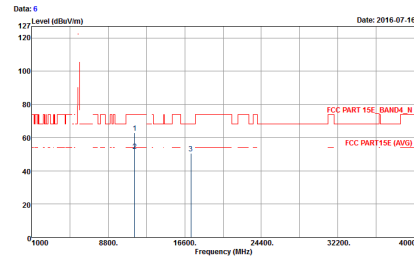


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz - R	
1+2	Horizontal	Vertical
Peak	Date: 3 Level (dBuV/m) Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19	Date: 6 Level (dBuV/m) Date: 2016.07.16  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19



WIFI	Band 4 5725~5850MHz Fundamental @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 2 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19	Date: 5 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m 9120D_1156_150827 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19

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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Date: 5 Level (dBuV/m) Date: 2016.07.16 FCC PART 15E BAND4_N FCC PART 15E (AVG) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11	 Date: 6 Level (dBuV/m) Date: 2016.07.16 FCC PART 15E BAND4_N FCC PART 15E (AVG) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 11



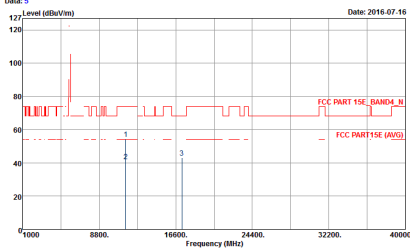
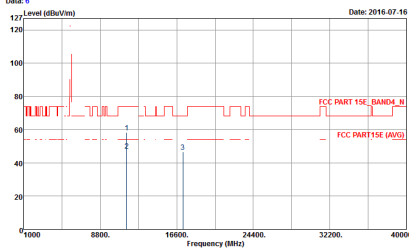
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 5 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12	Date: 6 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 12



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHZ	
1+2	Horizontal	Vertical
Peak Avg.	Date: 5 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13	Date: 6 Level (dBuV/m) Frequency (MHz) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 13



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	Horizontal	Vertical
Peak Avg.	Data: 5  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 14	Data: 6  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 14



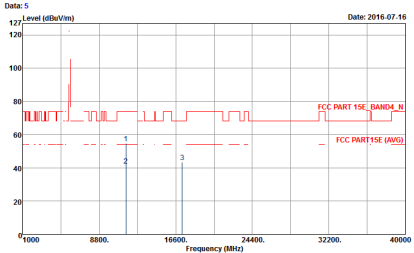
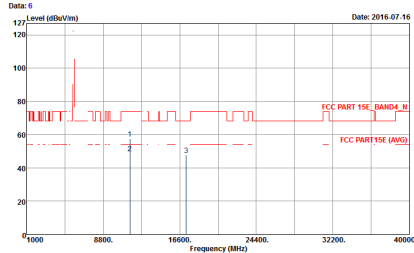
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 5 Level (dBuV/m) Date: 2016.07.16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15	Date: 6 Level (dBuV/m) Date: 2016.07.16 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 15



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 5 Level (dBuV/m) 120 100 80 60 40 20 0 1000 8800 16600 24400 32200 40000 Frequency (MHz) FCC PART 15E_BAND4_N FCC PART 15E (AUSG) 1 2 3 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16	Date: 6 Level (dBuV/m) 120 100 80 60 40 20 0 1000 8800 16600 24400 32200 40000 Frequency (MHz) FCC PART 15E_BAND4_N FCC PART 15E (AUSG) 1 2 3 Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 16



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

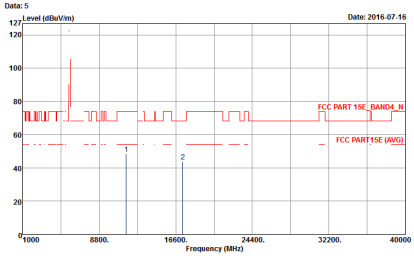
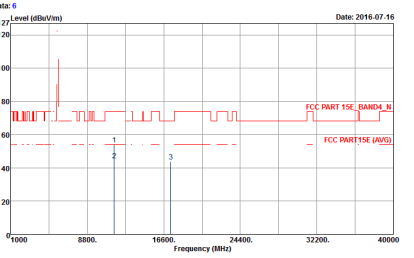
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.	Data: 5  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17	Data: 6  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 17



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 5 Level (dBuV/m) 120 100 80 60 40 20 0 1000 8800 16600 24400 32200 40000 Frequency (MHz) FCC PART 15E_BAND4_N FCC PART 15E (AUX) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18	Date: 6 Level (dBuV/m) 120 100 80 60 40 20 0 1000 8800 16600 24400 32200 40000 Frequency (MHz) FCC PART 15E_BAND4_N FCC PART 15E (AUX) Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 18



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.	Data: 5  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19	Data: 6  Site : 03CH06-HY Condition : FCC PART 15E_BAND4_N 3m SHF-EHF HORN VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 19

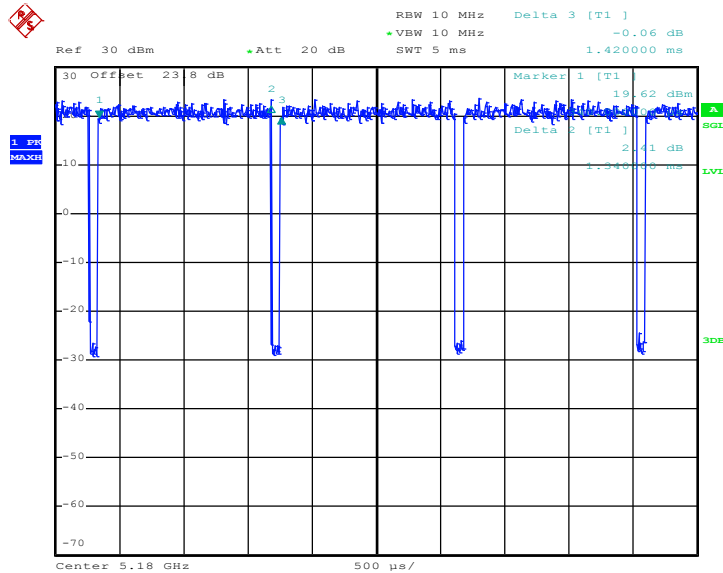


Emission below 1GHz
5GHz WIFI 802.11a (LF)

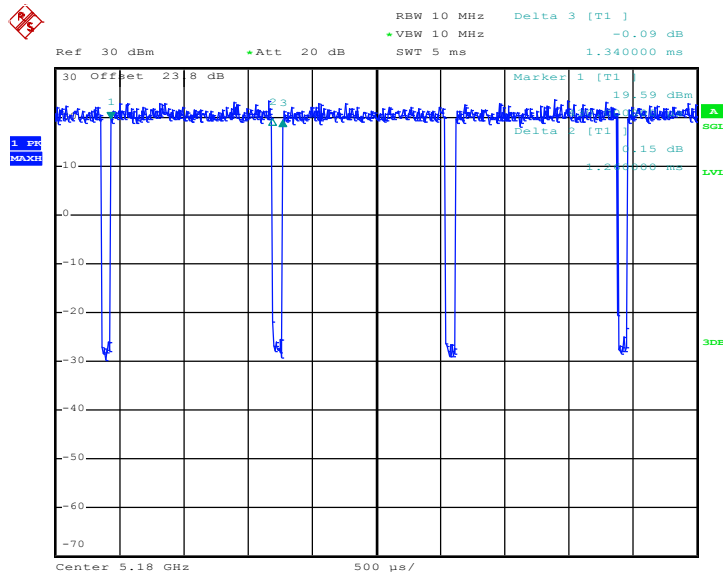
WIFI	5GHz 5725~5850MHz	
ANT	802.11a LF	
1+2	Horizontal	Vertical
QP / Peak	Date: 13 Level (dBuV/m) Date: 2016-07-20 Site : 03CH06-HY Condition : FCC CLASS-B 3m LF_ANT_2725 HORIZONTAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 20	Date: 13 Level (dBuV/m) Date: 2016-07-20 Site : 03CH06-HY Condition : FCC CLASS-B 3m LF_ANT_2725 VERTICAL Detector : Peak Project : 630314-01 Power : POE 24V Memo : Mode 20

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
MIMO Ant. 1	802.11a	94.37	1340	0.746268657	1kHz
MIMO Ant. 2	802.11a	94.41	1350	0.740740741	1kHz
MIMO Ant. 3	802.11a	94.37	1340	0.746268657	1kHz
MIMO Ant. 1	5GHz 802.11n HT20	94.03	1260	0.793650794	1kHz
MIMO Ant. 2	5GHz 802.11n HT20	94.74	1260	0.793650794	1kHz
MIMO Ant. 3	5GHz 802.11n HT20	94.74	1260	0.793650794	1kHz
MIMO Ant. 1	5GHz 802.11n HT40	88.89	624	1.602564103	3kHz
MIMO Ant. 2	5GHz 802.11n HT40	90.48	627	1.594896332	3kHz
MIMO Ant. 3	5GHz 802.11n HT40	90.52	630	1.587301587	3kHz
MIMO Ant. 1	5GHz 802.11ac VHT20	94.78	1270	0.787401575	1kHz
MIMO Ant. 2	5GHz 802.11ac VHT20	94.78	1270	0.787401575	1kHz
MIMO Ant. 3	5GHz 802.11ac VHT20	94.78	1270	0.787401575	1kHz
MIMO Ant. 1	5GHz 802.11ac VHT40	89.74	630	1.587301587	3kHz
MIMO Ant. 2	5GHz 802.11ac VHT40	89.74	630	1.587301587	3kHz
MIMO Ant. 3	5GHz 802.11ac VHT40	89.03	633	1.579778831	3kHz
MIMO Ant. 1	5GHz 802.11ac VHT80	81.25	312	3.205128205	10kHz
MIMO Ant. 2	5GHz 802.11ac VHT80	82.11	312	3.205128205	10kHz
MIMO Ant. 3	5GHz 802.11ac VHT80	82.29	316	3.164556962	10kHz

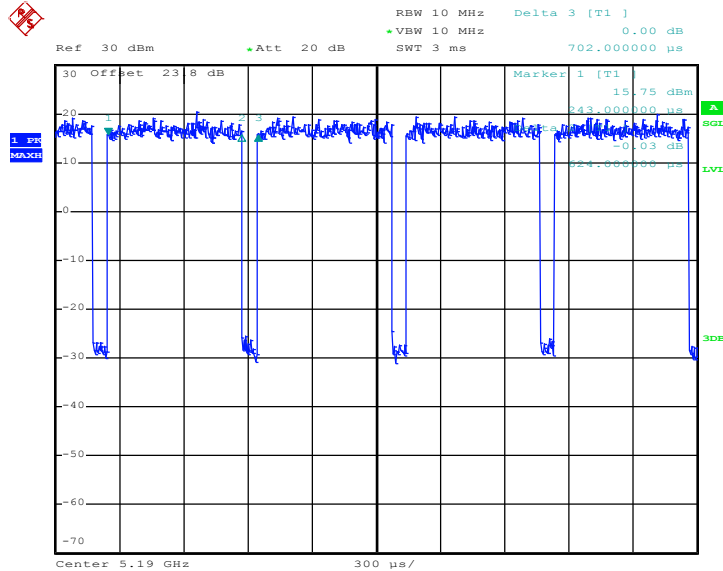
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802.11a


Date: 25.MAR.2016 20:58:21

802.11n HT20


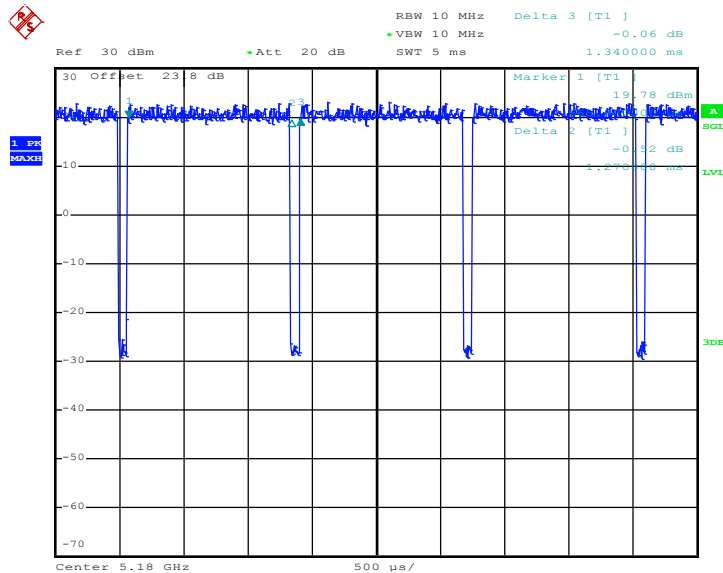
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802.11n HT40



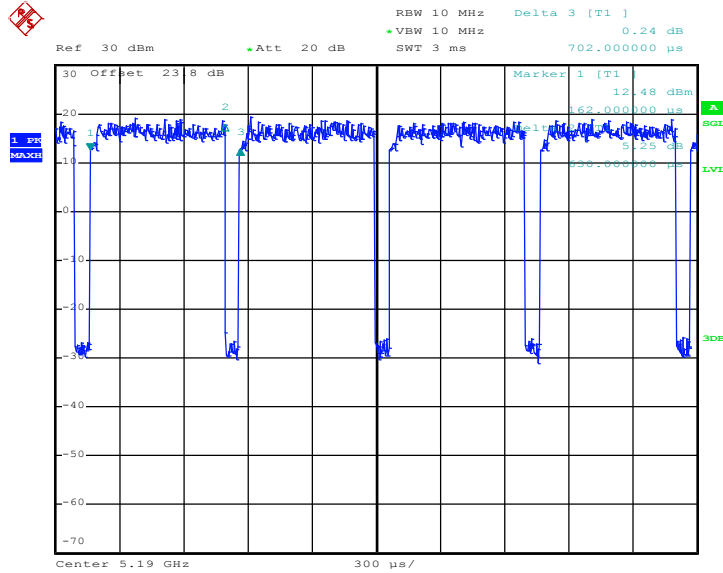
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802.11ac VHT20



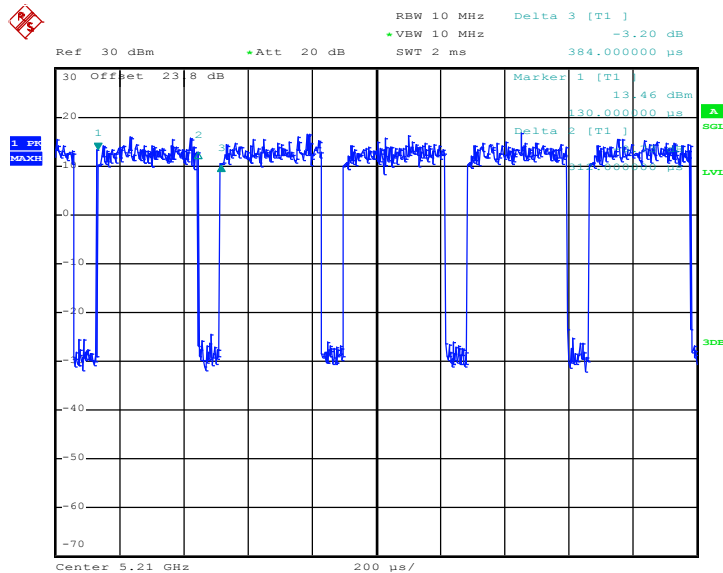
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802.11ac VHT40

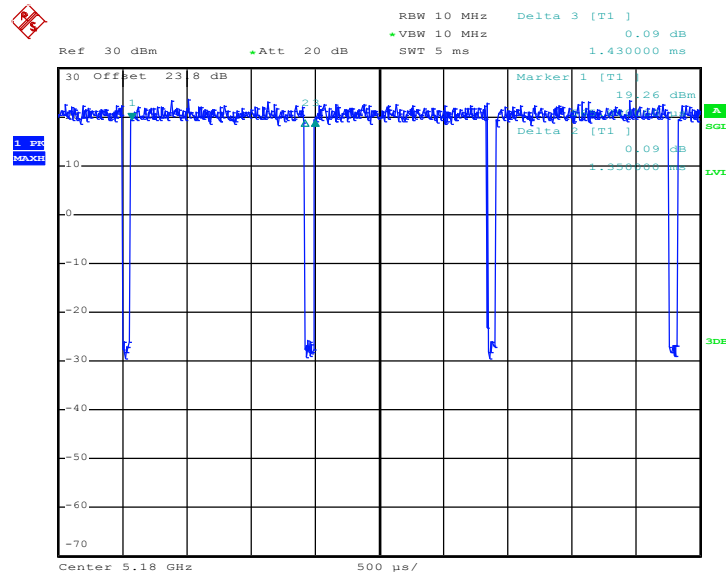


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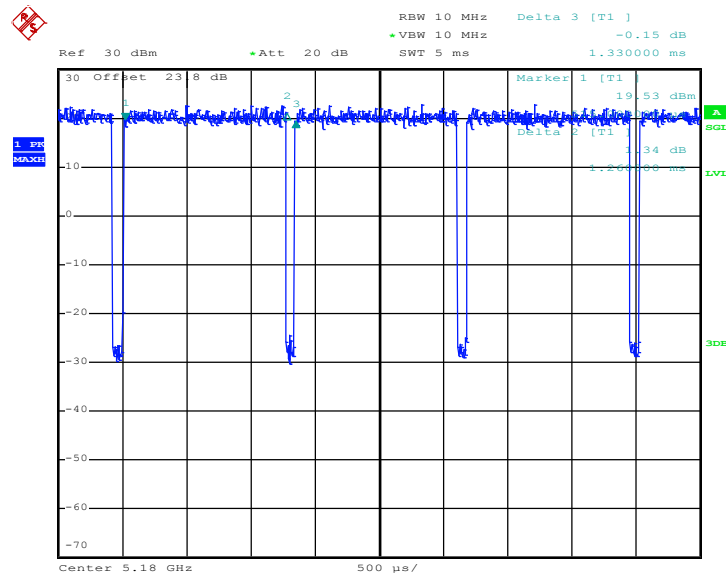
802.11ac VHT80



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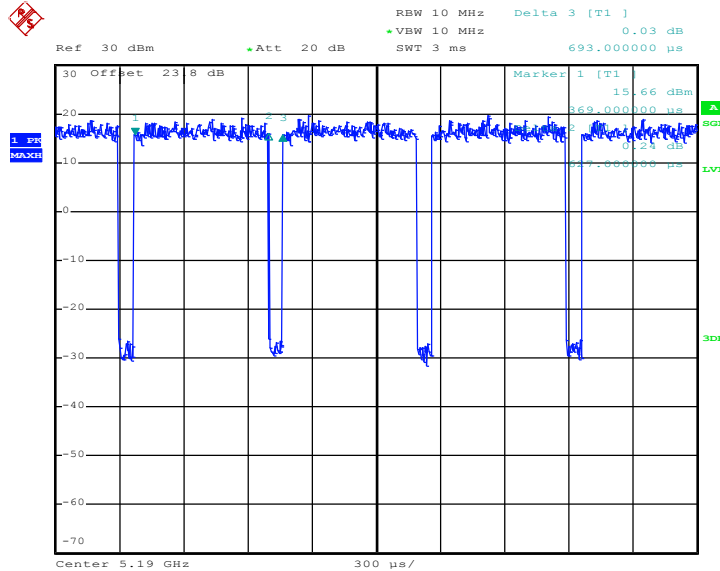
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802.11a


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802.11n HT20


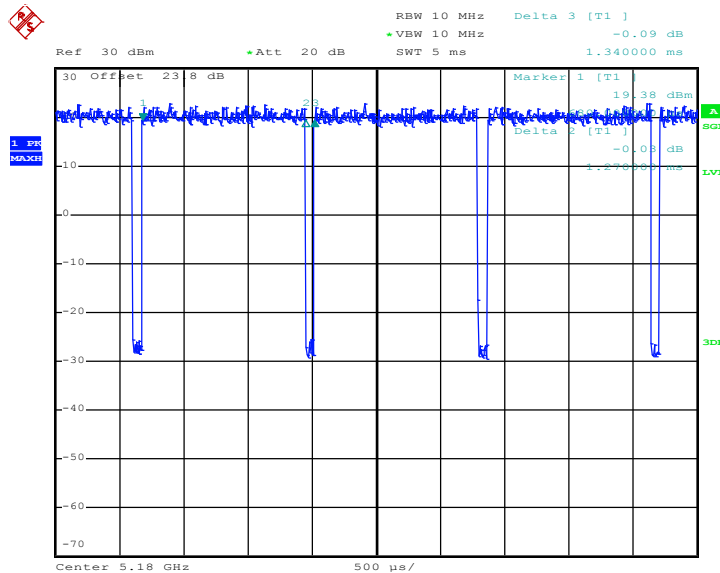
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802.11n HT40



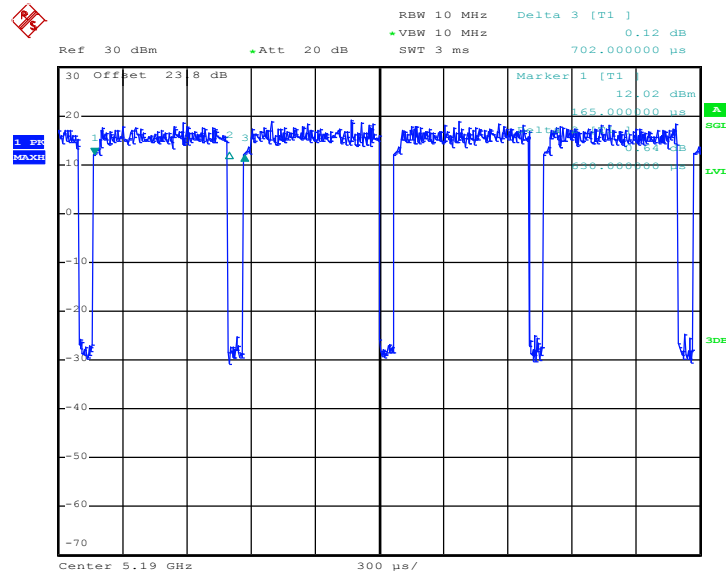
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802.11ac VHT20



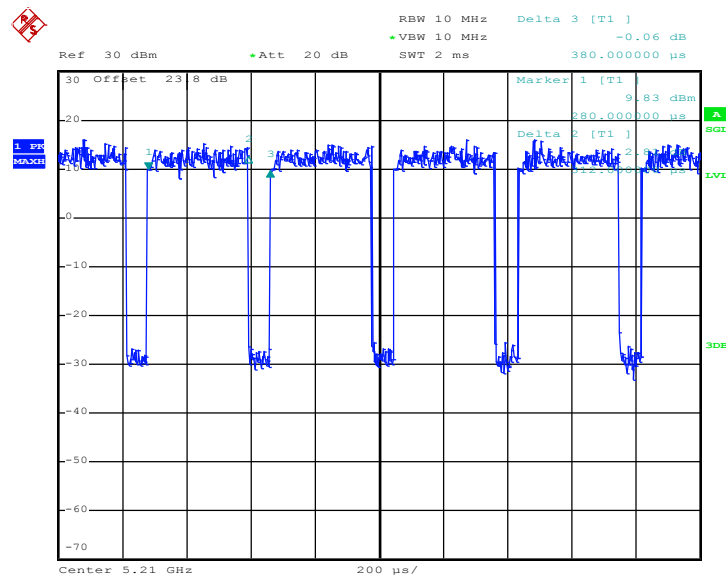
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802.11ac VHT40



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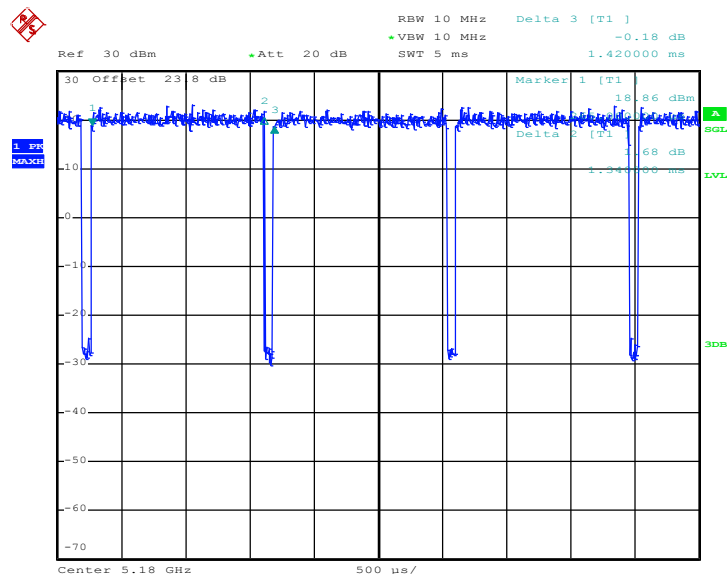
802.11ac VHT80



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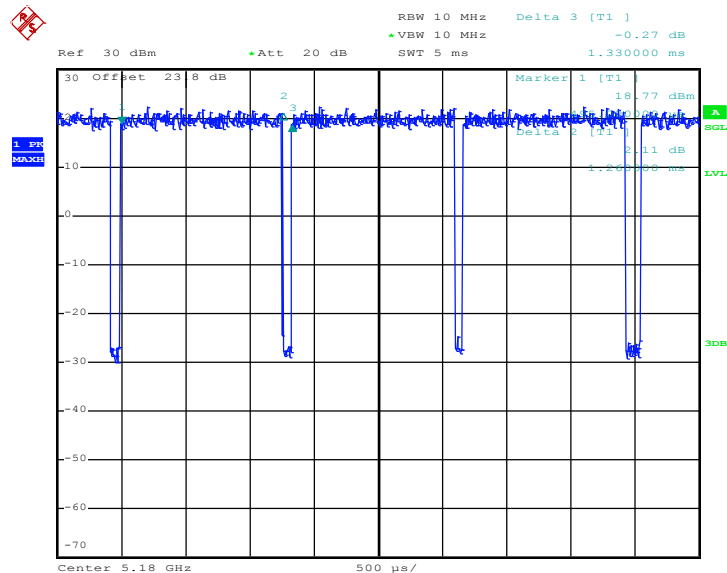
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802.11a



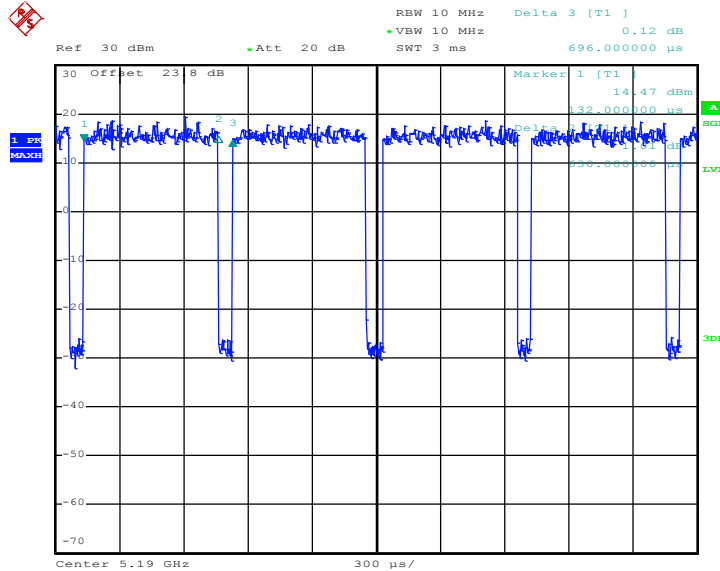
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802.11n HT20



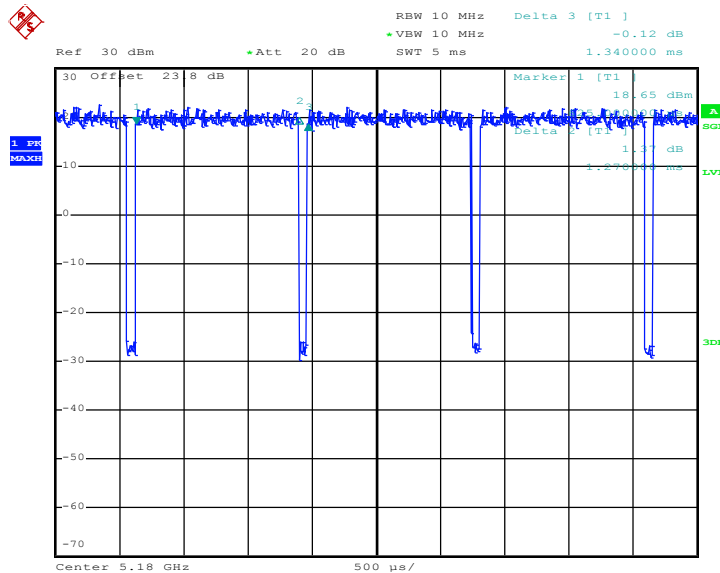
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802.11n HT40



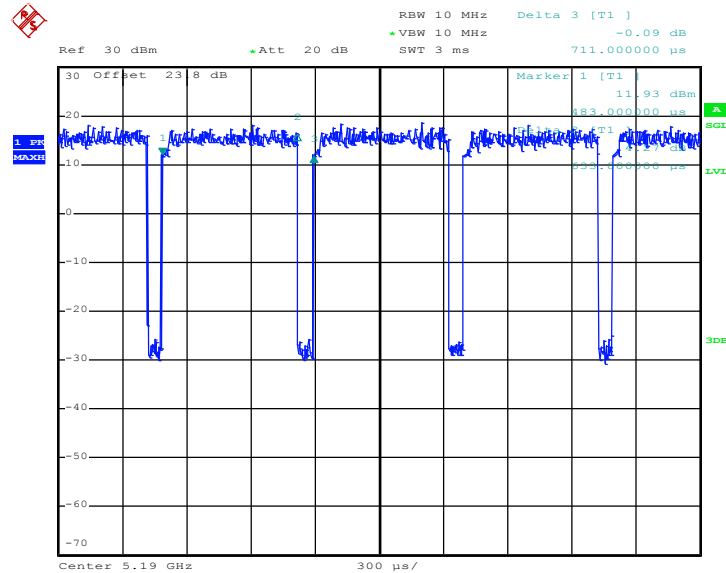
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802.11ac VHT20



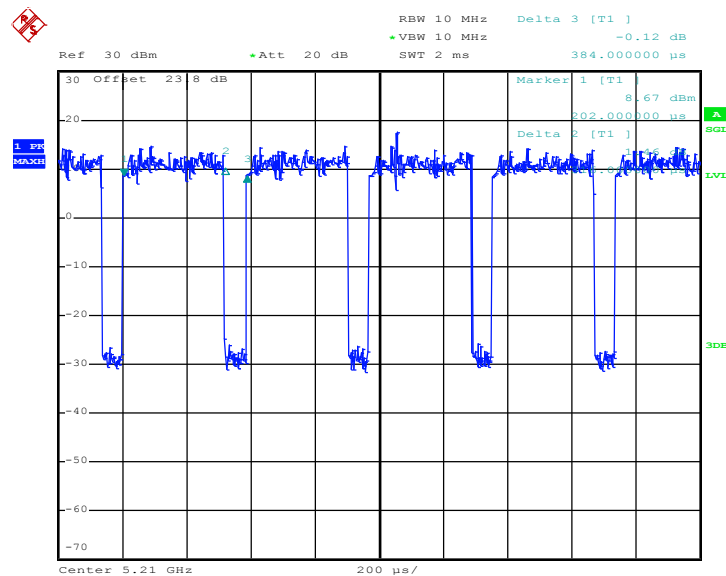
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802.11ac VHT40



Date: 25.MAR.2016 21:39:30

802.11ac VHT80



Date: 25.MAR.2016 21:45:07