



FCC RF Test Report

APPLICANT : Chilton Fern Limited Liability Company
EQUIPMENT : Digital Media Receiver
MODEL NAME : S04WQR
FCC ID : 2ABDW-1229
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The testing was completed on Oct. 24, 2015. 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.

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : 2ABDW-1229

Page Number : 1 of 37

Report Issued Date : Oct. 27, 2015

Report Version : Rev. 03

Report Template No.: BU5-FR15EWLB4 AC MA Version 1.0



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Feature of Equipment Under Test	5
1.3 Product Specification of Equipment Under Test.....	5
1.4 Modification of EUT	6
1.5 Testing Location	6
1.6 Applicable Standards	6
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	7
2.1 Carrier Frequency and Channel	7
2.2 Pre-Scanned RF Power	8
2.3 Test Mode	9
2.4 Connection Diagram of Test System	10
2.5 Support Unit used in test configuration and system	11
2.6 EUT Operation Test Setup	11
2.7 Measurement Results Explanation Example	11
3 TEST RESULT	12
3.1 6dB Bandwidth Measurement	12
3.2 Maximum Conducted Output Power Measurement	14
3.3 Power Spectral Density Measurement	15
3.4 Unwanted Emissions Measurement	18
3.5 AC Conducted Emission Measurement.....	26
3.6 Frequency Stability Measurement	31
3.7 Automatically Discontinue Transmission	32
3.8 Antenna Requirements	34
4 LIST OF MEASURING EQUIPMENT	36
5 UNCERTAINTY OF EVALUATION	37
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. RADIATED TEST RESULTS	
APPENDIX C. RADIATED SPURIOUS EMISSION	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR542541D	Rev. 01	Initial issue of report	Sep. 29, 2015
FR542541D	Rev. 02	Update report of revising plot and data of PSD.	Oct. 24, 2015
FR542541D	Rev. 03	Update report of test procedures of PSD.	Oct. 27, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB 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	$\leq -17, -27$ dBm/MHz & 15.209(a)	Pass	Under limit 0.51 dB at 5714.900 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 6.40 dB at 0.574 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

Chilton Fern Limited Liability Company
80 S.W 8th Street Miami, FL 33130

1.2 Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	S04WQR
FCC ID	2ABDW-1229
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 Bluetooth v3.0 ED

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

1.3 Product Specification of Equipment Under Test

Product Specification subjective to this standard															
Tx/Rx Channel Frequency Range		5725 MHz ~ 5850 MHz													
Maximum Output Power		<Ant. 1> 802.11a : 13.80 dBm / 0.0240 W SISO <Ant. 1> 802.11n HT20 : 14.03 dBm / 0.0253 W 802.11n HT40 : 13.58 dBm / 0.0228 W MIMO <Ant. 1 + 2> 802.11n HT20 : 16.86 dBm / 0.0485 W 802.11n HT40 : 16.88 dBm / 0.0488 W													
Type of Modulation		OFDM (BPSK / QPSK / 16QAM / 64QAM)													
Antenna Type		Ant. 1 : Fixed Internal Antenna Ant. 2 : Fixed Internal Antenna													
Antenna Gain		Ant. 1 : 4.40 dBi Ant. 2 : 4.30 dBi													
Antenna Function Description		<table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr><tr><td>802.11 a</td><td>V</td><td>-</td></tr><tr><td>802.11 n SISO</td><td>V</td><td>-</td></tr><tr><td>802.11 n MIMO</td><td>V</td><td>V</td></tr></table>			Ant. 1	Ant. 2	802.11 a	V	-	802.11 n SISO	V	-	802.11 n MIMO	V	V
	Ant. 1	Ant. 2													
802.11 a	V	-													
802.11 n SISO	V	-													
802.11 n MIMO	V	V													



1.4 Modification of EUT

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

1.5 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	03CH07-HY

Note: The test site complies with ANSI C63.4 2009 requirement.

1.6 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 v01
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2009

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. FCC permits the use of the 1.5 meter table as an alternative in C63.10-2013 through inquiry tracking number 961829.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

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). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency and Channel

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

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

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

<Ant. 1>

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Average Power (dBm)	13.80	13.66	13.60	13.78	13.74	13.72	13.79	13.64

SISO <Ant. 1>

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	14.03	13.91	13.93	13.89	13.80	13.75	13.76	13.82

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	13.58	13.49	13.42	12.81	12.87	12.73	12.87	12.81

MIMO <Ant. 1+2>

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
Average Power (dBm)	16.86	16.71	16.85	16.73	16.81	16.74	16.78	16.80

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
Average Power (dBm)	16.88	16.84	16.77	15.70	15.72	15.74	15.70	15.80

Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

2.3 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

Single Antenna

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

MIMO Antenna

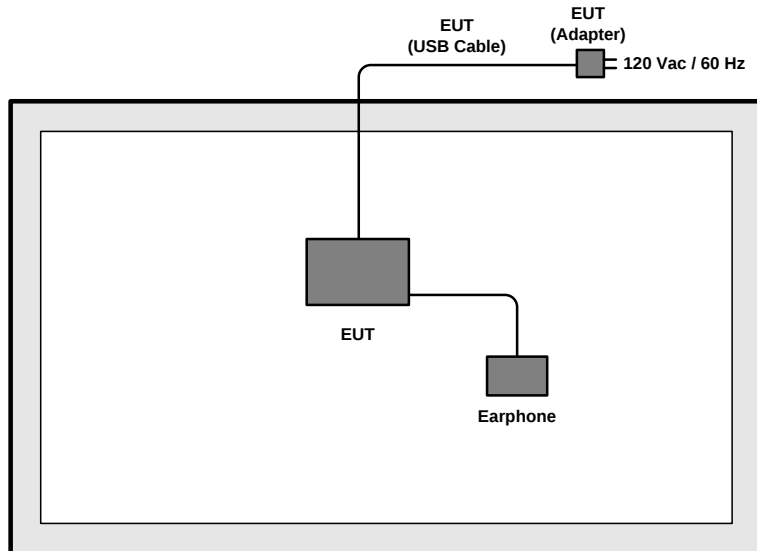
Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth Link

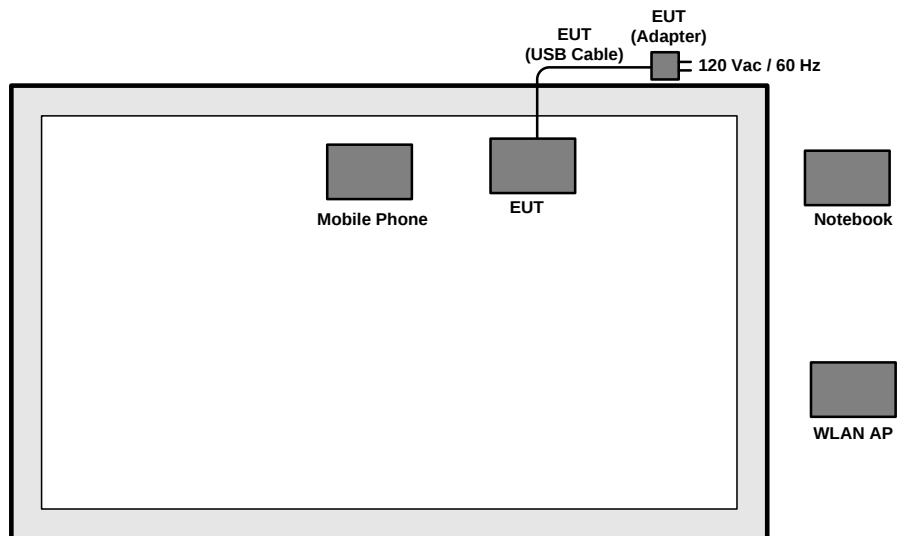
Ch. #		Band IV : 5725-5850 MHz		
		802.11a	802.11n HT20	802.11n HT40
L	Low	149	149	151
M	Middle	157	157	-
H	High	165	165	159

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	N/A	N/A	N/A	N/A	N/A
2.	Notebook	N/A	N/A	N/A	N/A	N/A
3.	Mobile Phone	N/A	N/A	N/A	N/A	N/A
4.	Earphone	N/A	N/A	N/A	N/A	N/A

2.6 EUT Operation Test Setup

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

2.7 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 Bandwidth Measurement

3.1.1 Description of 6dB Bandwidth

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

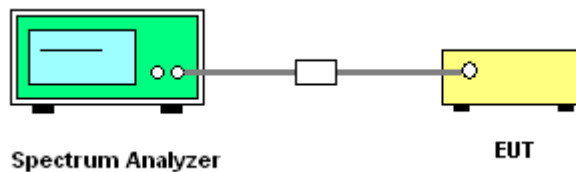
3.1.2 Measuring Instruments

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 v01.
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.

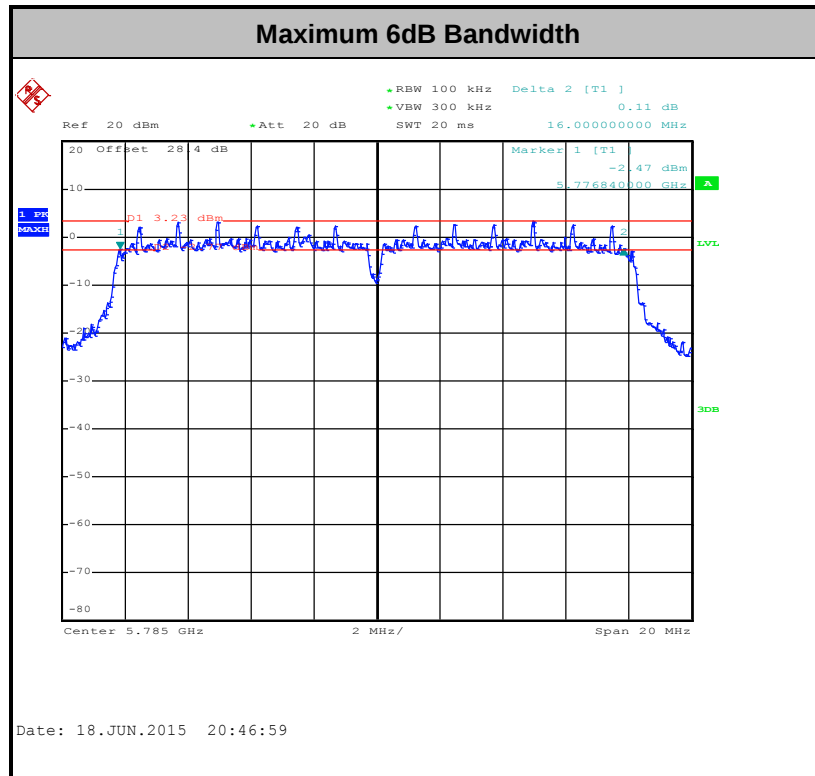
3.1.4 Test Setup





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.

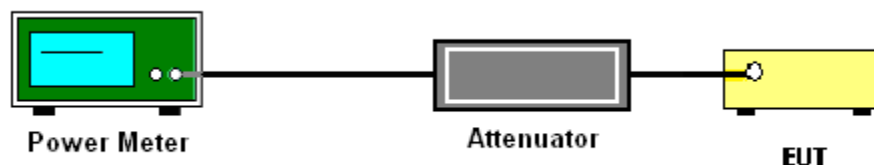
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.

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.

Test Setup



3.2.4 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 v01.
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).

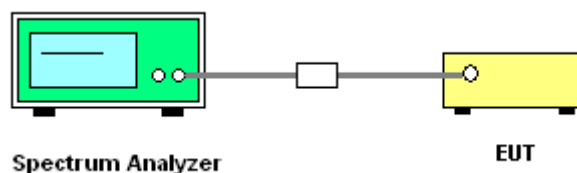
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - 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 PPSD and record it.
4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (1): 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.

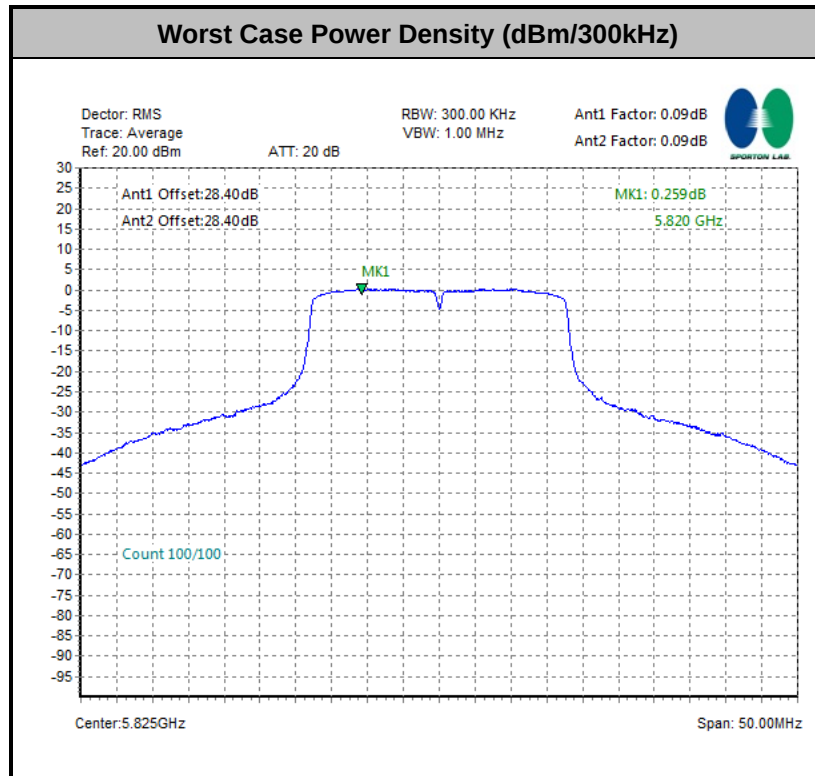
3.3.4 Test Setup





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 5725-5850 MHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBμV/m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBμV/m).
- (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.

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

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

- (3) KDB789033 v01r03 H)2)c)(i) 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 v01.

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

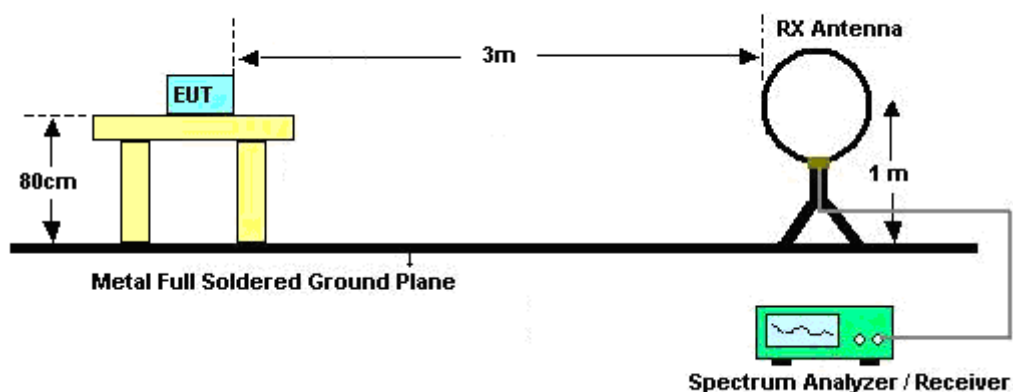
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11a	98.85	-	-	10Hz
1	5GHz 802.11n HT20	98.77	-	-	10Hz
1	5GHz 802.11n HT40	95.96	951.92	1.05	2kHz
1+2	5GHz 802.11n HT20 for Ant 1	97.96	1919.87	0.52	1kHz
1+2	5GHz 802.11n HT20 for Ant 2	97.96	1924.68	0.52	1kHz
1+2	5GHz 802.11n HT40 for Ant 1	95.92	940.71	1.06	2kHz
1+2	5GHz 802.11n HT40 for Ant 2	96.73	948.72	1.05	2kHz

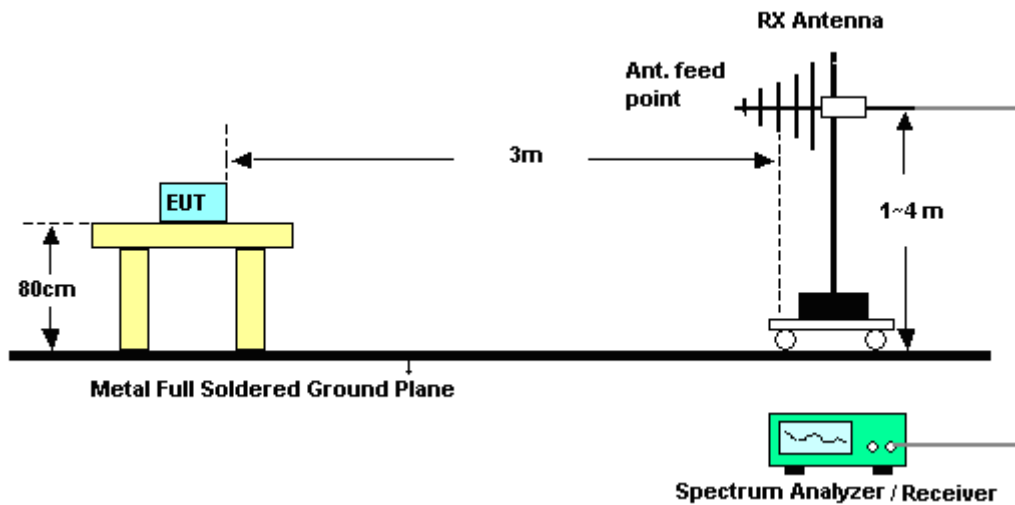
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

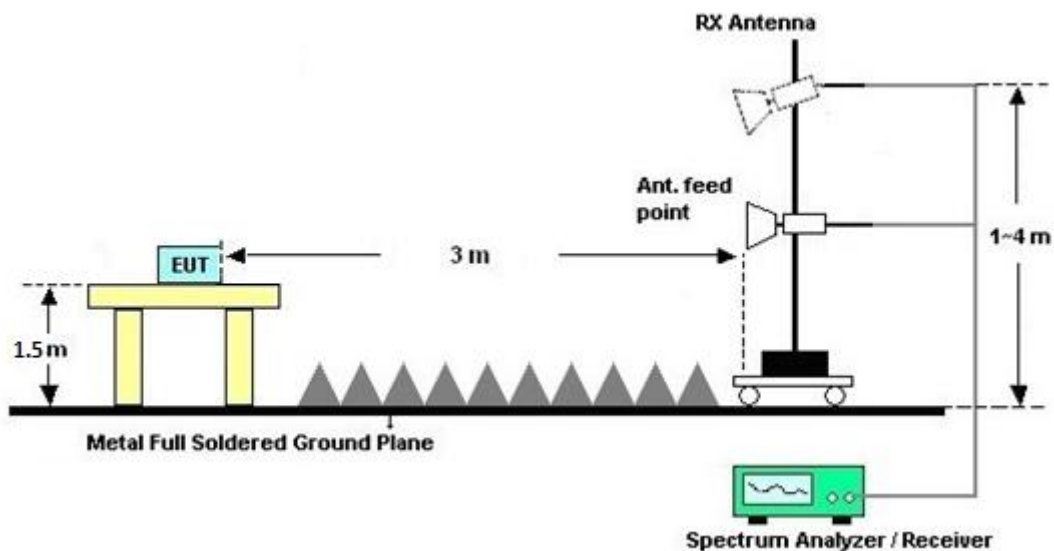
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions 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.

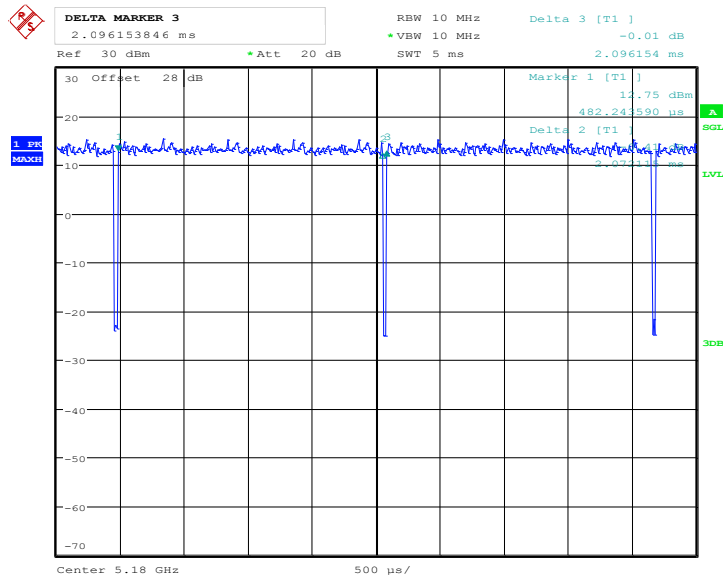
3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix A.



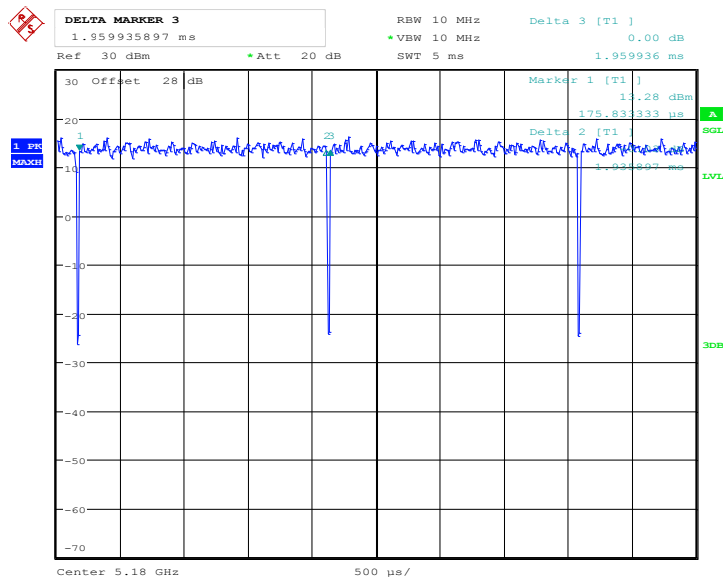
3.4.7 Duty Cycle

802.11a Ant. 1



Date: 15.JUN.2015 21:22:14

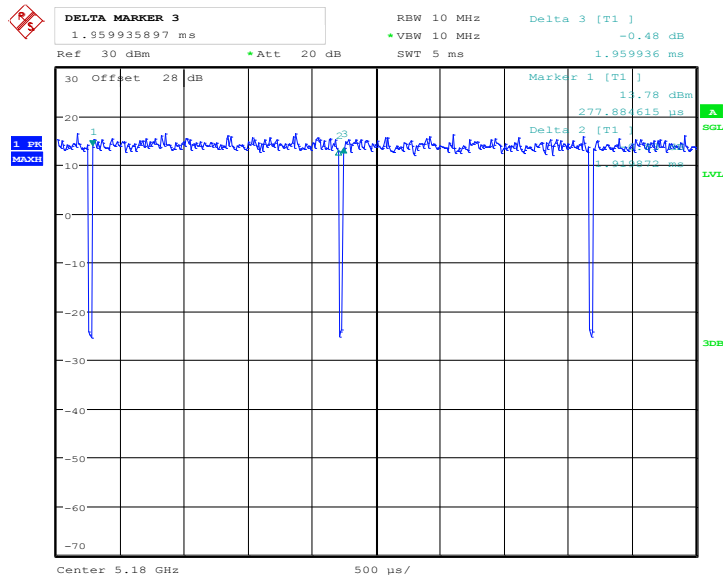
802.11n HT20 SISO Ant. 1



Date: 15.JUN.2015 21:23:58

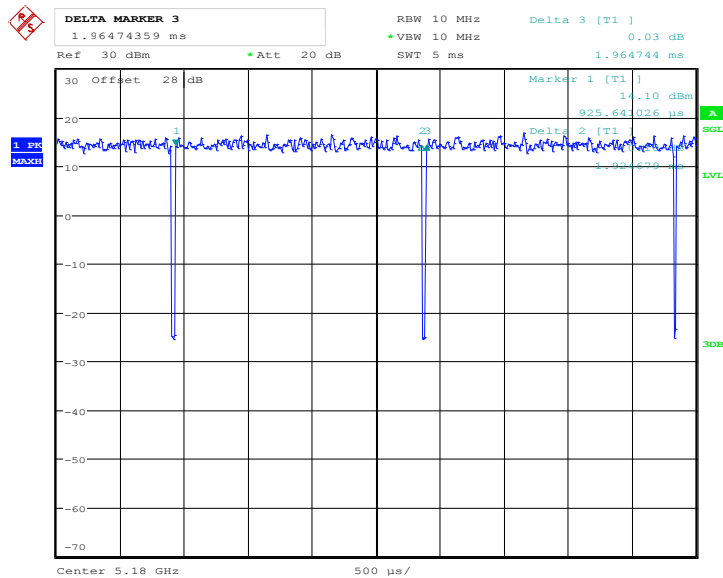


802.11n HT20 MIMO Ant. 1+2(1)



Date: 15.JUN.2015 21:25:32

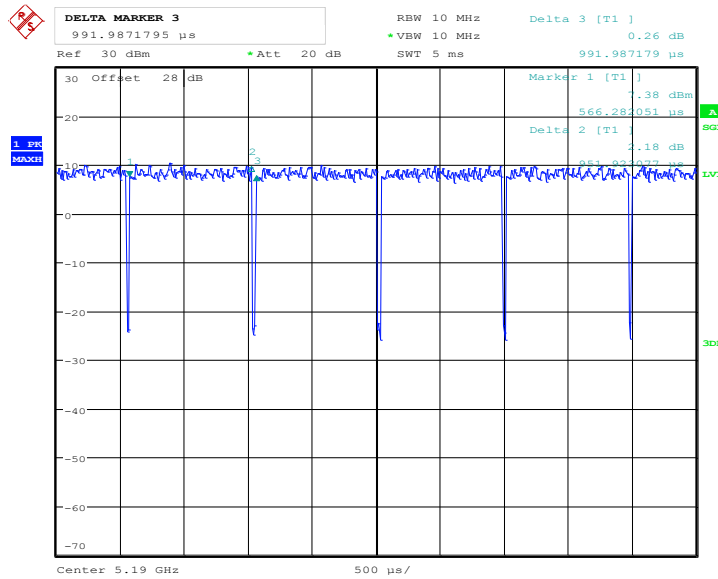
802.11n HT20 MIMO Ant. 1+2(2)



Date: 15.JUN.2015 21:26:14

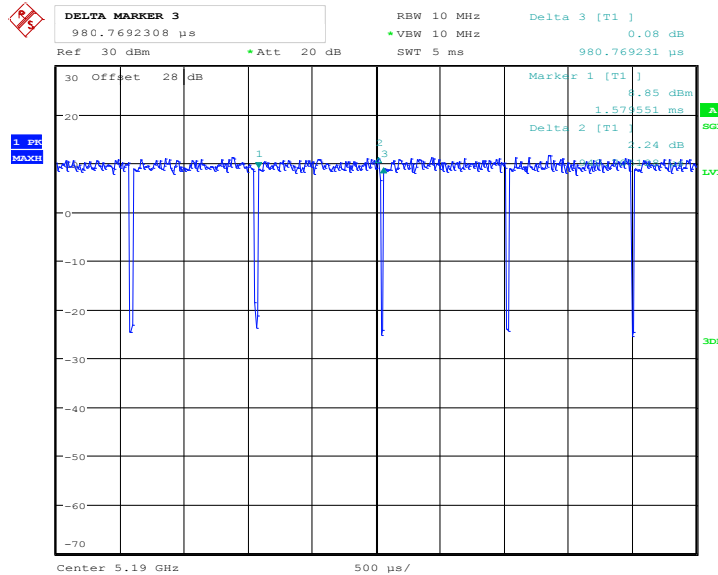


802.11n HT40 SISO Ant. 1



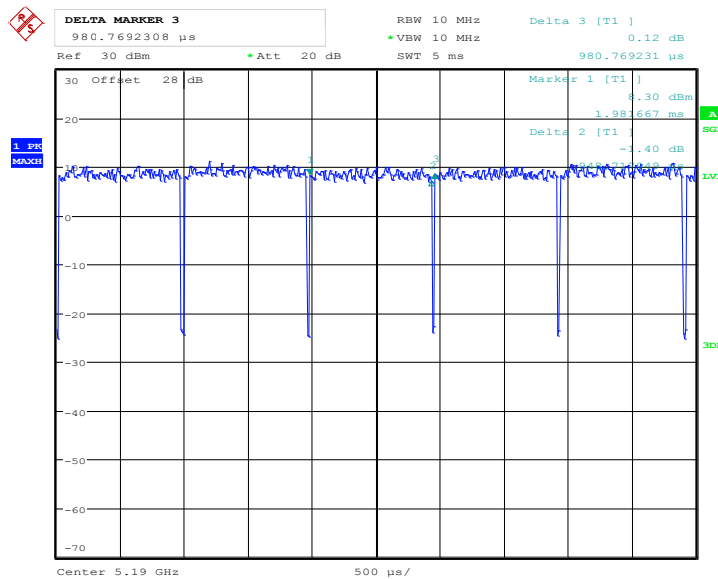
Date: 15.JUN.2015 21:28:10

802.11n HT40 MIMO Ant. 1+2(1)



Date: 15.JUN.2015 21:29:50

802.11n HT40 MIMO Ant. 1+2(2)



Date: 15.JUN.2015 21:30:28

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

Please refer to Appendix A.

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.

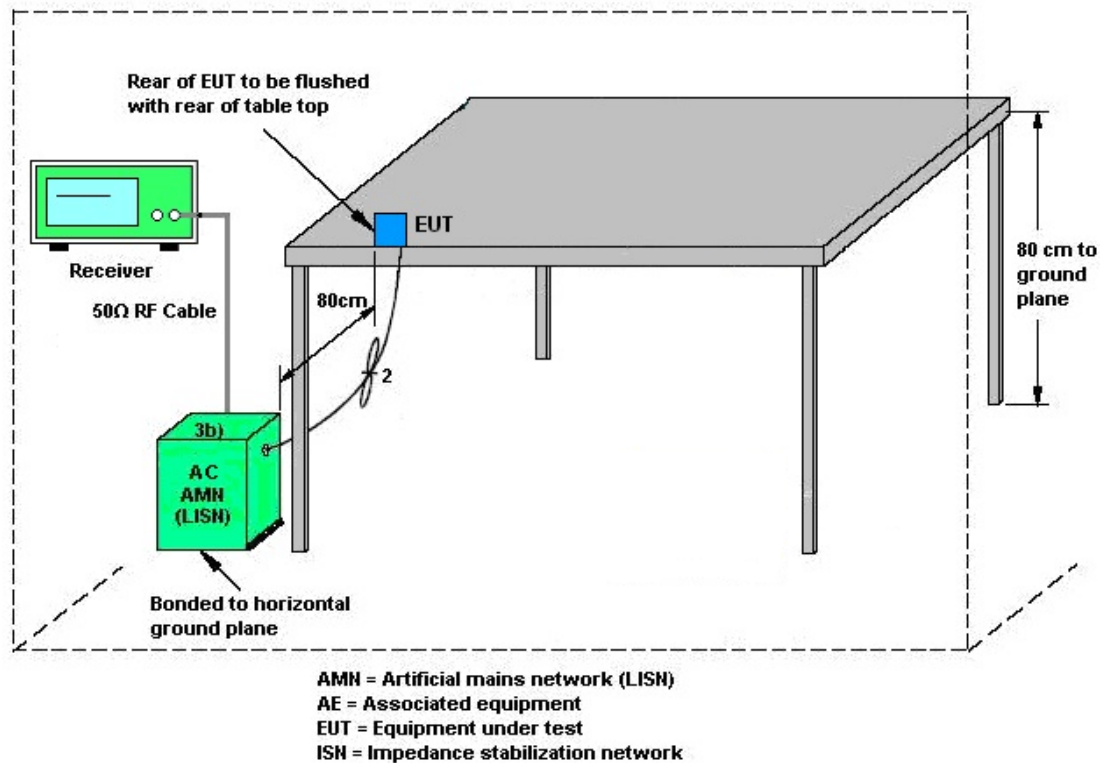
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

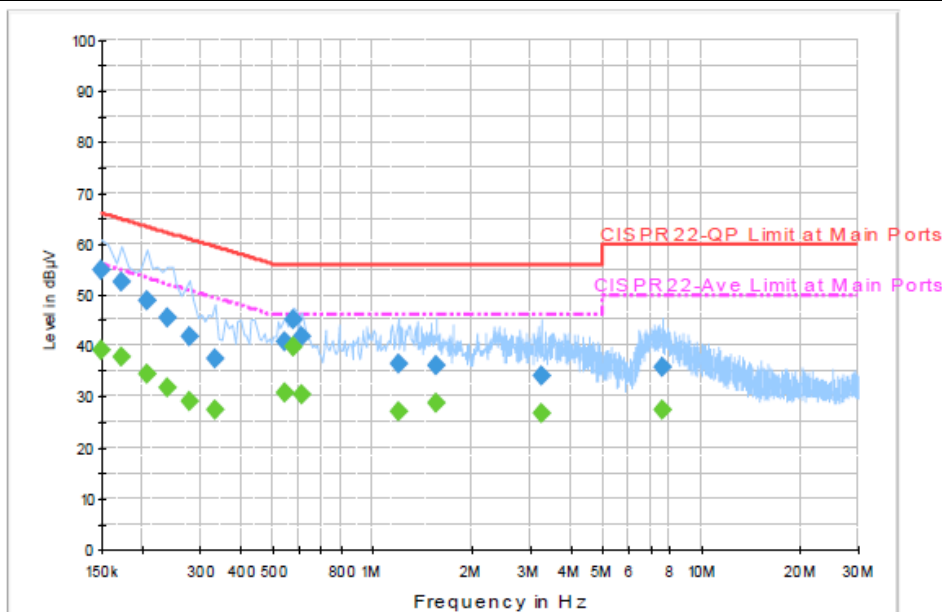
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

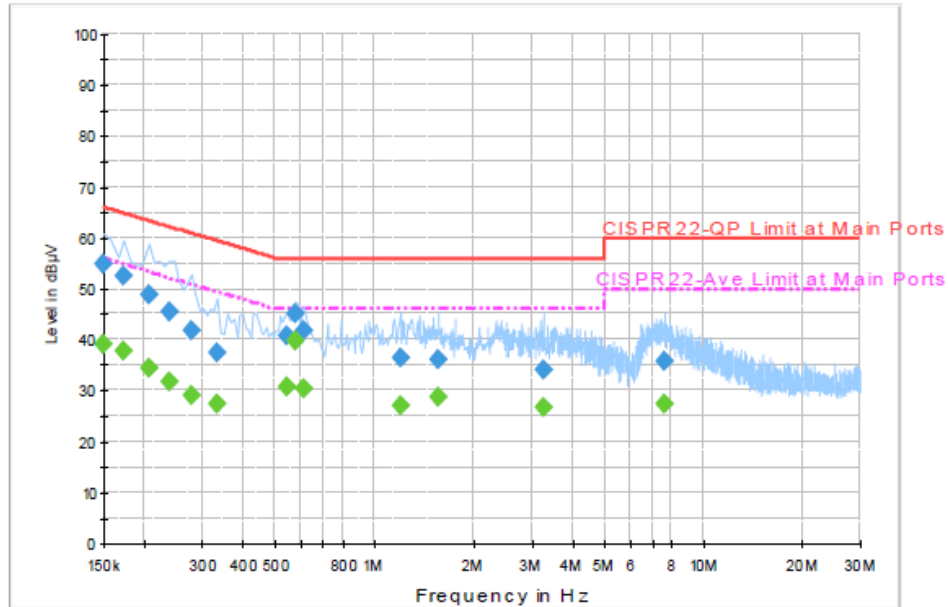
Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Eric Jeng	Relative Humidity :	53~56%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (5GHz) Link + Bluetooth Link		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	54.8	Off	L1	19.5	11.2	66.0
0.174000	52.4	Off	L1	19.5	12.4	64.8
0.206000	48.7	Off	L1	19.4	14.7	63.4
0.238000	45.5	Off	L1	19.5	16.7	62.2
0.278000	41.8	Off	L1	19.4	19.1	60.9
0.334000	37.4	Off	L1	19.5	22.0	59.4
0.542000	40.9	Off	L1	19.4	15.1	56.0
0.574000	45.1	Off	L1	19.5	10.9	56.0
0.614000	41.9	Off	L1	19.5	14.1	56.0
1.198000	36.5	Off	L1	19.6	19.5	56.0
1.566000	36.2	Off	L1	19.5	19.8	56.0
3.262000	34.2	Off	L1	19.7	21.8	56.0
7.630000	35.9	Off	L1	19.7	24.1	60.0

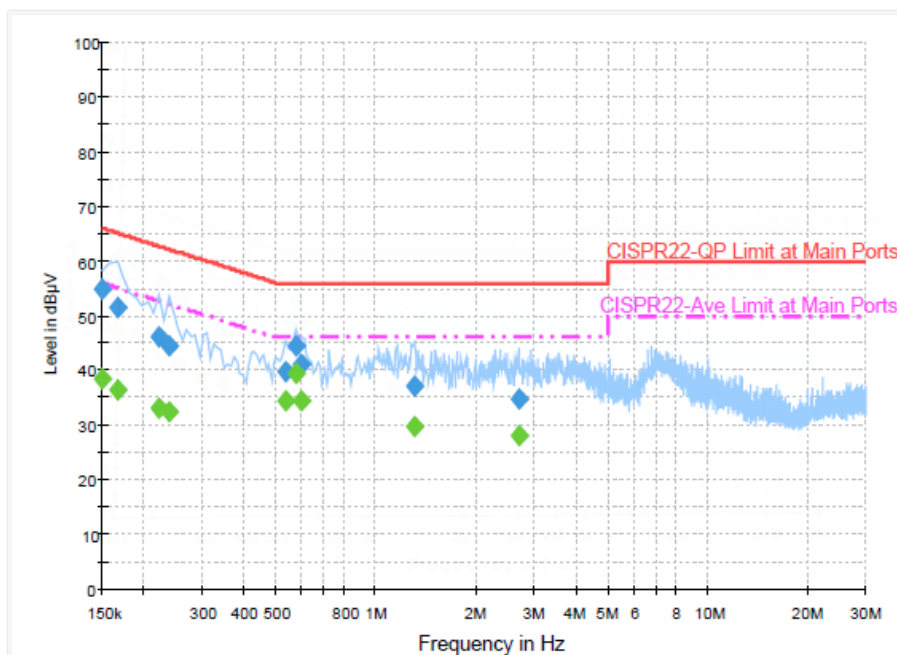
Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Eric Jeng	Relative Humidity :	53~56%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (5GHz) Link + Bluetooth Link		


Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	39.1	Off	L1	19.5	16.9	56.0
0.174000	37.8	Off	L1	19.5	17.0	54.8
0.206000	34.3	Off	L1	19.4	19.1	53.4
0.238000	31.9	Off	L1	19.5	20.3	52.2
0.278000	29.2	Off	L1	19.4	21.7	50.9
0.334000	27.5	Off	L1	19.5	21.9	49.4
0.542000	30.7	Off	L1	19.4	15.3	46.0
0.574000	39.6	Off	L1	19.5	6.4	46.0
0.614000	30.6	Off	L1	19.5	15.4	46.0
1.198000	27.1	Off	L1	19.6	18.9	46.0
1.566000	28.8	Off	L1	19.5	17.2	46.0
3.262000	26.9	Off	L1	19.7	19.1	46.0
7.630000	27.3	Off	L1	19.7	22.7	50.0



Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Eric Jeng	Relative Humidity :	53~56%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5GHz) Link + Bluetooth Link		

**Final Result : QuasiPeak**

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	55.0	Off	N	19.5	11.0	66.0
0.166000	51.6	Off	N	19.4	13.6	65.2
0.222000	46.3	Off	N	19.4	16.4	62.7
0.238000	44.5	Off	N	19.5	17.7	62.2
0.534000	40.0	Off	N	19.4	16.0	56.0
0.574000	44.5	Off	N	19.5	11.5	56.0
0.598000	41.3	Off	N	19.5	14.7	56.0
1.302000	37.1	Off	N	19.6	18.9	56.0
2.694000	34.9	Off	N	19.7	21.1	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.5	Off	N	19.5	17.5	56.0
0.166000	36.6	Off	N	19.4	18.6	55.2
0.222000	32.9	Off	N	19.4	19.8	52.7
0.238000	32.3	Off	N	19.5	19.9	52.2
0.534000	34.5	Off	N	19.4	11.5	46.0
0.574000	39.3	Off	N	19.5	6.7	46.0
0.598000	34.4	Off	N	19.5	11.6	46.0
1.302000	29.8	Off	N	19.6	16.2	46.0
2.694000	28.0	Off	N	19.7	18.0	46.0

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.

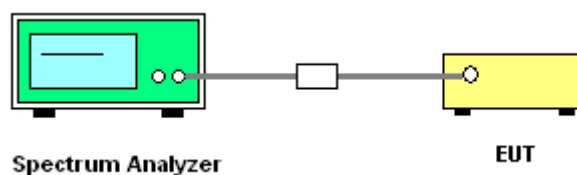
3.6.2 Measuring Instruments

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

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

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

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

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

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



5745MHz



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

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

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

where

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

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

N_{ANT} = the total number of antennas

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



The EUT supports 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.

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant 1	Ant 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	4.40	4.30	7.36	7.36	1.36	1.36

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1218006	300MHz~40GHz	Oct. 18, 2014	Jun. 15, 2015 ~ Sep. 09, 2015	Oct. 17, 2015	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Oct. 17, 2014	Jun. 15, 2015 ~ Sep. 09, 2015	Oct. 16, 2015	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	May 19, 2015	Jun. 15, 2015 ~ Oct. 24, 2015	May 18, 2016	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Oct. 18, 2014	Jun. 15, 2015 ~ Sep. 09, 2015	Oct. 17, 2015	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SU-241	92003713	-30℃~95℃	Jun. 15, 2015	Jun. 15, 2015 ~ Sep. 09, 2015	Jun. 14, 2016	Conducted (TH05-HY)
AC Power Source	AC POWER	AFC-500W	F104070011	50Hz~60Hz	Dec. 30, 2014	Jun. 15, 2015 ~ Sep. 09, 2015	Dec. 29, 2015	Conducted (TH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Sep. 27, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Sep. 26, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Aug. 18, 2015	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Aug. 29, 2015	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 03, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Nov. 02, 2015	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 05, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Nov. 04, 2015	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSV 30	101749	10Hz~30GHz	Mar. 10, 2015	Jun. 17, 2015 ~ Jun. 19, 2015	Mar. 09, 2016	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Jun. 17, 2015 ~ Jun. 19, 2015	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 degree	N/A	Jun. 17, 2015 ~ Jun. 19, 2015	N/A	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-1800400 0-33-8P	1840917	18GHz ~ 40GHz	Jun. 02, 2015	Jun. 17, 2015 ~ Jun. 19, 2015	Jun. 01, 2016	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1000MHz	Mar. 12, 2015	Jun. 17, 2015 ~ Jun. 19, 2015	Mar. 11, 2016	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 21, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Oct. 20, 2015	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Sep. 17, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Sep. 16, 2015	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jul. 28, 2014	Jun. 17, 2015 ~ Jun. 19, 2015	Jul. 27, 2015	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Dec. 01, 2014	Jun. 16, 2015	Nov. 30, 2015	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 20, 2015	Jun. 16, 2015	Apr. 19, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2014	Jun. 16, 2015	Dec. 01, 2015	Conduction (CO05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 16, 2015	N/A	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
---	------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.50
---	------

Appendix A. Conducted Test Results

Test Engineer:	Lyffy lin	Temperature:	21~25	°C
Test Date:	2015/06/15~2015/10/24	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB Bandwidth

FCC Band IV									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	6 dB Bandwidth (MHz)		FCC 6 dB Bandwidth Min. Limit (MHz)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	16.28		0.5	0.5	Pass
11a	6Mbps	1	157	5785	16.00		0.5	0.5	Pass
11a	6Mbps	1	165	5825	16.28		0.5	0.5	Pass
HT20	MCS0	1	149	5745	16.90		0.5	0.5	Pass
HT20	MCS0	1	157	5785	16.82		0.5	0.5	Pass
HT20	MCS0	1	165	5825	16.88		0.5	0.5	Pass
HT40	MCS0	1	151	5755	33.92		0.5	0.5	Pass
HT40	MCS0	1	159	5795	33.76		0.5	0.5	Pass
HT20	MCS0	2	149	5745	16.94	16.92	0.5		Pass
HT20	MCS0	2	157	5785	16.80	16.52	0.5		Pass
HT20	MCS0	2	165	5825	16.82	16.80	0.5		Pass
HT40	MCS0	2	151	5755	33.84	31.36	0.5		Pass
HT40	MCS0	2	159	5795	35.04	35.04	0.5		Pass

TEST RESULTS DATA
Average Power Table

Band IV														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.05		13.62			30.00	30.00	4.40	4.30	Pass
11a	6Mbps	1	157	5785	0.05		13.80			30.00	30.00	4.40	4.30	Pass
11a	6Mbps	1	165	5825	0.05		13.54			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	149	5745	0.05		13.62			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	157	5785	0.05		13.67			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	165	5825	0.05		14.03			30.00	30.00	4.40	4.30	Pass
HT40	MCS0	1	151	5755	0.18		10.89			30.00	30.00	4.40	4.30	Pass
HT40	MCS0	1	159	5795	0.18		13.58			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	2	149	5745	0.09	0.09	12.71	10.06	14.59	28.64		7.36		Pass
HT20	MCS0	2	157	5785	0.09	0.09	13.99	12.04	16.13	28.64		7.36		Pass
HT20	MCS0	2	165	5825	0.09	0.09	15.27	11.74	16.86	28.64		7.36		Pass
HT40	MCS0	2	151	5755	0.18	0.14	10.84	8.62	12.88	28.64		7.36		Pass
HT40	MCS0	2	159	5795	0.18	0.14	15.00	12.34	16.88	28.64		7.36		Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band IV																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.05		2.22	2.22	-0.63			30.00	30.00	4.40	4.30	Pass
11a	6Mbps	1	157	5785	0.05		2.22	2.22	-0.35			30.00	30.00	4.40	4.30	Pass
11a	6Mbps	1	165	5825	0.05		2.22	2.22	-0.81			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	149	5745	0.05		2.22	2.22	-1.01			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	157	5785	0.05		2.22	2.22	-0.79			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	1	165	5825	0.05		2.22	2.22	0.04			30.00	30.00	4.40	4.30	Pass
HT40	MCS0	1	151	5755	0.18		2.22	2.22	-0.64			30.00	30.00	4.40	4.30	Pass
HT40	MCS0	1	159	5795	0.18		2.22	2.22	-0.10			30.00	30.00	4.40	4.30	Pass
HT20	MCS0	2	149	5745	0.09	0.09	2.22				-0.42	28.64		7.36		Pass
HT20	MCS0	2	157	5785	0.09	0.09	2.22				1.31	28.64		7.36		Pass
HT20	MCS0	2	165	5825	0.09	0.09	2.22				2.48	28.64		7.36		Pass
HT40	MCS0	2	151	5755	0.18	0.14	2.22				-3.74	28.64		7.36		Pass
HT40	MCS0	2	159	5795	0.18	0.14	2.22				-0.80	28.64		7.36		Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	25	102	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	25	138	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	25	120	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	0	120	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	35	120	



Appendix B. Radiated Spurious Emission

Test Engineer :	Nick Yu and Ken Wu and James Chiu	Temperature :	22~23°C
		Relative Humidity :	58~62%

15E Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5699.96	59.51	-14.49	74	46.24	35.21	12.18	34.12	106	247	P	H
		5724.76	73.59	-4.71	78.3	60.25	35.23	12.26	34.15	106	247	P	H
		5688.04	44.06	-9.94	54	30.79	35.21	12.18	34.12	106	247	A	H
	*	5745	109.52	-	-	96.12	35.24	12.33	34.17	106	247	P	H
	*	5745	98.41	-	-	85.01	35.24	12.33	34.17	106	247	A	H
													H
													H
													H
		5699.48	57.53	-16.47	74	44.26	35.21	12.18	34.12	103	141	P	V
		5724.68	63.28	-15.02	78.3	49.94	35.23	12.26	34.15	103	141	P	V
		5700.44	43.1	-10.9	54	29.75	35.21	12.26	34.12	103	141	A	V
	*	5745	100.15	-	-	86.75	35.24	12.33	34.17	103	141	P	V
	*	5745	89.07	-	-	75.67	35.24	12.33	34.17	103	141	A	V
													V
													V
													V



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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 157 5785MHz		5696.36	57.4	-16.6	74	44.13	35.21	12.18	34.12	106	251	P	H
		5724.92	57.12	-21.18	78.3	43.78	35.23	12.26	34.15	106	251	P	H
		5702.04	43.51	-10.49	54	30.15	35.22	12.26	34.12	106	251	A	H
	*	5785	111.46	-	-	98.02	35.27	12.4	34.23	106	251	P	H
	*	5785	100.12	-	-	86.68	35.27	12.4	34.23	106	251	A	H
		5850.16	56.66	-21.64	78.3	43.21	35.31	12.45	34.31	106	251	P	H
		5876.16	57.63	-16.37	74	44.16	35.33	12.49	34.35	106	251	P	H
		5860.8	43.51	-10.49	54	30.05	35.32	12.49	34.35	106	251	A	H
		5710.28	57.71	-16.29	74	44.38	35.22	12.26	34.15	102	156	P	V
		5722.92	57.14	-21.16	78.3	43.8	35.23	12.26	34.15	102	156	P	V
		5704.44	43.06	-10.94	54	29.7	35.22	12.26	34.12	102	156	A	V
	*	5785	101.62	-	-	88.18	35.27	12.4	34.23	102	156	P	V
	*	5785	90.5	-	-	77.06	35.27	12.4	34.23	102	156	A	V
		5852.32	56.99	-21.31	78.3	43.54	35.31	12.45	34.31	102	156	P	V
		5881.76	56.85	-17.15	74	43.38	35.33	12.49	34.35	102	156	P	V
		5871.12	43.36	-10.64	54	29.89	35.33	12.49	34.35	102	156	A	V



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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 165 5825MHz	*	5825	108.95	-	-	95.47	35.3	12.45	34.27	106	250	P	H
	*	5825	97.96	-	-	84.48	35.3	12.45	34.27	106	250	A	H
		5850.16	59.09	-19.21	78.3	45.64	35.31	12.45	34.31	106	250	P	H
		5860.24	57.07	-16.93	74	43.61	35.32	12.49	34.35	106	250	P	H
		5871.12	43.55	-10.45	54	30.08	35.33	12.49	34.35	106	250	A	H
													H
													H
													H
	*	5825	100.13	-	-	86.65	35.3	12.45	34.27	100	149	P	V
	*	5825	89.29	-	-	75.81	35.3	12.45	34.27	100	149	A	V
		5853.76	56.79	-21.51	78.3	43.33	35.32	12.45	34.31	100	149	P	V
		5874.24	57.93	-16.07	74	44.46	35.33	12.49	34.35	100	149	P	V
		5861.2	43.35	-10.65	54	29.89	35.32	12.49	34.35	100	149	A	V
													V
													V
													V
													V
													V
Remark - No other spurious found. - All results are PASS against Peak and Average limit line.													



15E Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		11490	44.71	-29.29	74	46.98	38.19	17.38	57.84	100	0	P	H
		17232	49.09	-24.91	74	42.04	42.21	21.38	56.54	100	0	P	H
													H
													H
		11490	45.65	-28.35	74	47.92	38.19	17.38	57.84	100	0	P	V
		17232	49.6	-24.4	74	42.55	42.21	21.38	56.54	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	49.43	-24.57	74	51.36	38.3	17.46	57.69	100	0	P	H
		17352	49.4	-24.6	74	42.44	42.12	21.45	56.61	100	0	P	H
													H
													H
		11570	55.94	-18.06	74	57.87	38.3	17.46	57.69	110	60	P	V
		11570	41.62	-12.38	54	43.55	38.3	17.46	57.69	110	60	A	V
		17352	49.65	-24.35	74	42.69	42.12	21.45	56.61	100	0	P	V
													V
802.11a CH 165 5825MHz		11650	46.6	-27.4	74	48.26	38.39	17.53	57.58	100	0	P	H
		17472	49	-25	74	42.12	42.03	21.53	56.68	100	0	P	H
													H
													H
		11650	49.69	-24.31	74	51.35	38.39	17.53	57.58	100	0	P	V
		17472	49.24	-24.76	74	42.36	42.03	21.53	56.68	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5685.8	57.76	-16.24	74	44.49	35.21	12.18	34.12	106	251	P	H
		5724.84	75.79	-2.51	78.3	62.45	35.23	12.26	34.15	106	251	P	H
		5688.04	43.76	-10.24	54	30.49	35.21	12.18	34.12	106	251	A	H
	*	5745	108.42	-	-	95.02	35.24	12.33	34.17	106	251	P	H
	*	5745	97.53	-	-	84.13	35.24	12.33	34.17	106	251	A	H
													H
													H
													H
		5710.36	58.16	-15.84	74	44.83	35.22	12.26	34.15	102	147	P	V
		5724.84	68.68	-9.62	78.3	55.34	35.23	12.26	34.15	102	147	P	V
		5697.88	43.12	-10.88	54	29.85	35.21	12.18	34.12	102	147	A	V
	*	5745	100.68	-	-	87.28	35.24	12.33	34.17	102	147	P	V
	*	5745	89.87	-	-	76.47	35.24	12.33	34.17	102	147	A	V
													V
													V
													V



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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 157 5785MHz		5699.16	57.46	-16.54	74	44.19	35.21	12.18	34.12	100	244	P	H
		5722.04	57.37	-20.93	78.3	44.03	35.23	12.26	34.15	100	244	P	H
		5711.08	43.36	-10.64	54	30.03	35.22	12.26	34.15	100	244	A	H
	*	5785	110.04	-	-	96.6	35.27	12.4	34.23	100	244	P	H
	*	5785	100.46	-	-	87.02	35.27	12.4	34.23	100	244	A	H
		5850.64	57.35	-20.95	78.3	43.9	35.31	12.45	34.31	100	244	P	H
		5867.84	57.24	-16.76	74	43.78	35.32	12.49	34.35	100	244	P	H
		5860.72	43.42	-10.58	54	29.96	35.32	12.49	34.35	100	244	A	H
		5709.48	57.21	-16.79	74	43.88	35.22	12.26	34.15	102	147	P	V
		5718.68	56.76	-21.54	78.3	43.42	35.23	12.26	34.15	102	147	P	V
		5713.96	43.03	-10.97	54	29.7	35.22	12.26	34.15	102	147	A	V
	*	5785	101.24	-	-	87.8	35.27	12.4	34.23	102	147	P	V
	*	5785	91.56	-	-	78.12	35.27	12.4	34.23	102	147	A	V
		5852.56	56.98	-21.32	78.3	43.53	35.31	12.45	34.31	102	147	P	V
		5886.8	57.79	-16.21	74	44.36	35.33	12.49	34.39	102	147	P	V
		5864.16	43.33	-10.67	54	29.87	35.32	12.49	34.35	102	147	A	V



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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 165 5825MHz	*	5825	108.88	-	-	95.4	35.3	12.45	34.27	100	254	P	H
	*	5825	99.58	-	-	86.1	35.3	12.45	34.27	100	254	A	H
		5850.08	65.99	-12.31	78.3	52.54	35.31	12.45	34.31	100	254	P	H
		5863.84	57.73	-16.27	74	44.27	35.32	12.49	34.35	100	254	P	H
		5860	43.66	-10.34	54	30.24	35.32	12.45	34.35	100	254	A	H
													H
													H
													H
	*	5825	101.59	-	-	88.11	35.3	12.45	34.27	100	143	P	V
	*	5825	91.62	-	-	78.14	35.3	12.45	34.27	100	143	A	V
		5850.08	60.19	-18.11	78.3	46.74	35.31	12.45	34.31	100	143	P	V
		5872.64	57.36	-16.64	74	43.89	35.33	12.49	34.35	100	143	P	V
		5860.24	43.36	-10.64	54	29.9	35.32	12.49	34.35	100	143	A	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		11490	49.62	-24.38	74	51.89	38.19	17.38	57.84	100	0	P	H
		17232	49.11	-24.89	74	42.06	42.21	21.38	56.54	100	0	P	H
													H
													H
		11490	52.81	-21.19	74	55.08	38.19	17.38	57.84	112	62	P	V
		11490	36.87	-17.13	54	39.14	38.19	17.38	57.84	112	62	A	V
		17232	49.28	-24.72	74	42.23	42.21	21.38	56.54	100	0	P	V
													V
802.11n HT20 CH 157 5785MHz		11570	49	-25	74	50.93	38.3	17.46	57.69	100	0	P	H
		17352	49.82	-24.18	74	42.86	42.12	21.45	56.61	100	0	P	H
													H
													H
		11570	55.65	-18.35	74	57.58	38.3	17.46	57.69	113	61	P	V
		11570	37.55	-16.45	54	39.48	38.3	17.46	57.69	113	61	A	V
		17352	49.54	-24.46	74	42.58	42.12	21.45	56.61	100	0	P	V
													V
802.11n HT20 CH 165 5825MHz		11650	54.21	-19.79	74	55.87	38.39	17.53	57.58	105	17	P	H
		11650	36.71	-17.29	54	38.37	38.39	17.53	57.58	105	17	A	H
		17472	48.92	-25.08	74	42.04	42.03	21.53	56.68	100	0	P	H
													H
		11650	56.34	-17.66	74	58	38.39	17.53	57.58	114	62	P	V
		11650	38.54	-15.46	54	40.2	38.39	17.53	57.58	114	62	A	V
		17472	49.21	-24.79	74	42.33	42.03	21.53	56.68	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		5714.84	67.29	-1.01	68.3	53.96	35.22	12.26	34.15	258	223	P	H
		5724.92	73.46	-4.84	78.3	60.12	35.23	12.26	34.15	258	223	P	H
	*	5755	106.3	-	-	92.88	35.26	12.33	34.17	258	223	P	H
		5755	96.49	-	-	83.07	35.26	12.33	34.17	258	223	A	H
		5858.64	57.19	-21.11	78.3	43.77	35.32	12.45	34.35	258	223	P	H
		5875.04	57.57	-10.73	68.3	44.1	35.33	12.49	34.35	258	223	P	H
													H
													H
		5713.16	59.6	-8.7	68.3	46.27	35.22	12.26	34.15	105	158	P	V
		5725	65.85	-12.45	78.3	52.51	35.23	12.26	34.15	105	158	P	V
	*	5765	97.64	-	-	84.25	35.26	12.33	34.2	105	158	P	V
		5765	88.04	-	-	74.65	35.26	12.33	34.2	105	158	A	V
		5855.36	56.8	-21.5	78.3	43.34	35.32	12.45	34.31	105	158	P	V
		5888.4	58.37	-9.93	68.3	44.93	35.34	12.49	34.39	105	158	P	V
													V
													V



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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 159 5795MHz		5687.72	57.72	-16.28	74	44.45	35.21	12.18	34.12	245	232	P	H
		5715.1	56.82	-21.48	78.3	43.49	35.22	12.26	34.15	245	232	P	H
		5703	44.61	-9.39	54	31.25	35.22	12.26	34.12	245	232	A	H
	*	5795	109.6	-	-	96.15	35.28	12.4	34.23	245	232	P	H
	*	5795	100.01	-	-	86.56	35.28	12.4	34.23	245	232	A	H
		5851.84	58.44	-19.86	78.3	44.99	35.31	12.45	34.31	245	232	P	H
		5863.2	57.39	-16.61	74	43.93	35.32	12.49	34.35	245	232	P	H
		5874.8	44.85	-9.15	54	31.38	35.33	12.49	34.35	245	232	A	H
		5693	57.3	-16.7	74	44.03	35.21	12.18	34.12	100	157	P	V
		5724.44	56.65	-21.65	78.3	43.31	35.23	12.26	34.15	100	157	P	V
		5703.8	44.23	-9.77	54	30.87	35.22	12.26	34.12	100	157	A	V
	*	5795	100.11	-	-	86.66	35.28	12.4	34.23	100	157	P	V
	*	5795	90.67	-	-	77.22	35.28	12.4	34.23	100	157	A	V
		5852.72	56.77	-21.53	78.3	43.32	35.31	12.45	34.31	100	157	P	V
		5877.52	57.54	-16.46	74	44.07	35.33	12.49	34.35	100	157	P	V
		5867.52	44.54	-9.46	54	31.08	35.32	12.49	34.35	100	157	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		11510	44.21	-29.79	74	46.39	38.2	17.42	57.8	100	0	P	H
		17268	50.06	-18.24	68.3	43.03	42.19	21.4	56.56	100	0	P	H
													H
													H
		11510	44.58	-29.42	74	46.76	38.2	17.42	57.8	100	0	P	V
		17268	50.59	-17.71	68.3	43.56	42.19	21.4	56.56	100	0	P	V
													V
													V
802.11n HT40 CH 159 5795MHz		11590	48.51	-25.49	74	50.35	38.32	17.5	57.66	100	0	P	H
		17388	49	-25	74	42.06	42.09	21.48	56.63	100	0	P	H
													H
													H
		11590	54.02	-19.98	74	55.86	38.32	17.5	57.66	107	61	P	V
		11590	41.14	-12.86	54	42.98	38.32	17.5	57.66	107	61	A	V
		17388	49.24	-24.76	74	42.3	42.09	21.48	56.63	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15E Emission below 1GHz
5GHz WIFI 802.11n HT40 (LF @ 3m)

[illegible]



15E Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5713.88	59.06	-14.94	74	45.73	35.22	12.26	34.15	259	216	P	H
		5724.04	74.69	-3.61	78.3	61.35	35.23	12.26	34.15	259	216	P	H
		5713.64	45.72	-8.28	54	32.39	35.22	12.26	34.15	259	216	A	H
	*	5745	109.99	-	-	96.59	35.24	12.33	34.17	259	216	P	H
	*	5745	100.73	-	-	87.33	35.24	12.33	34.17	259	216	A	H
													H
													H
													H
		5685.24	57.68	-16.32	74	44.41	35.21	12.18	34.12	100	152	P	V
		5724.68	69.88	-8.42	78.3	56.54	35.23	12.26	34.15	100	152	P	V
		5712.04	44.26	-9.74	54	30.93	35.22	12.26	34.15	100	152	A	V
	*	5745	103.34	-	-	89.94	35.24	12.33	34.17	100	152	P	V
	*	5745	94.21	-	-	80.81	35.24	12.33	34.17	100	152	A	V
													V
													V
													V



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)
802.11n HT20 CH 157 5785MHz		5692.76	57.51	-16.49	74	44.24	35.21	12.18	34.12	239	222	P	H
		5721.48	57.01	-21.29	78.3	43.67	35.23	12.26	34.15	239	222	P	H
		5707.48	44.12	-9.88	54	30.79	35.22	12.26	34.15	239	222	A	H
	*	5785	112.48	-	-	99.04	35.27	12.4	34.23	239	222	P	H
	*	5785	102.78	-	-	89.34	35.27	12.4	34.23	239	222	A	H
		5859.12	56.89	-21.41	78.3	43.47	35.32	12.45	34.35	239	222	P	H
		5868.96	57.37	-16.63	74	43.91	35.32	12.49	34.35	239	222	P	H
		5862.56	44.3	-9.7	54	30.84	35.32	12.49	34.35	239	222	A	H
		5714.76	56.99	-17.01	74	43.66	35.22	12.26	34.15	100	209	P	V
		5717.48	57.31	-20.99	78.3	43.98	35.22	12.26	34.15	100	209	P	V
		5698.6	43.92	-10.08	54	30.65	35.21	12.18	34.12	100	209	A	V
	*	5785	105.36	-	-	91.92	35.27	12.4	34.23	100	209	P	V
	*	5785	95.83	-	-	82.39	35.27	12.4	34.23	100	209	A	V
		5855.84	57.09	-21.21	78.3	43.63	35.32	12.45	34.31	100	209	P	V
		5866	57.29	-16.71	74	43.83	35.32	12.49	34.35	100	209	P	V
		5868.32	44.13	-9.87	54	30.67	35.32	12.49	34.35	100	209	A	V



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)
802.11n HT20 CH 165 5825MHz	*	5825	111.38	-	-	97.9	35.3	12.45	34.27	239	231	P	H
	*	5825	101.95	-	-	88.47	35.3	12.45	34.27	239	231	A	H
		5850.08	74.15	-4.15	78.3	60.7	35.31	12.45	34.31	239	231	P	H
		5860	61.34	-12.66	74	47.92	35.32	12.45	34.35	239	231	P	H
		5860	47.53	-6.47	54	34.11	35.32	12.45	34.35	239	231	A	H
													H
													H
													H
	*	5824	106.15	-	-	92.67	35.3	12.45	34.27	100	137	P	V
	*	5824	96.55	-	-	83.07	35.3	12.45	34.27	100	137	A	V
		5850.1	69.1	-9.2	78.3	55.65	35.31	12.45	34.31	100	137	P	V
		5860	58.36	-15.64	74	44.94	35.32	12.45	34.35	100	137	P	V
		5860.16	45.76	-8.24	54	32.3	35.32	12.49	34.35	100	137	A	V
													V
													V
													V
Remark - No other spurious found. - All results are PASS against Peak and Average limit line.													



15E Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		11490	45.65	-28.35	74	47.92	38.19	17.38	57.84	100	0	P	H
		17235	49.86	-24.14	74	42.81	42.21	21.38	56.54	100	0	P	H
													H
													H
		11490	47.14	-26.86	74	49.41	38.19	17.38	57.84	100	0	P	V
		17235	49.83	-24.17	74	42.78	42.21	21.38	56.54	100	0	P	V
													V
													V
802.11n HT20 CH 157 5785MHz		11571	53.65	-20.35	74	55.58	38.3	17.46	57.69	109	16	P	H
		11571	38.42	-15.58	54	40.35	38.3	17.46	57.69	109	16	A	H
		17355	49.46	-24.54	74	42.5	42.12	21.45	56.61	100	0	P	H
													H
		11571	56.82	-17.18	74	58.75	38.3	17.46	57.69	104	61	P	V
		11571	40.66	-13.34	54	42.59	38.3	17.46	57.69	104	61	A	V
		17355	49.76	-24.24	74	42.8	42.12	21.45	56.61	100	0	P	V
													V
802.11n HT20 CH 165 5825MHz		11650	55.55	-18.45	74	57.21	38.39	17.53	57.58	102	15	P	H
		11650	40.48	-13.52	54	42.14	38.39	17.53	57.58	102	15	A	H
		17472	49.48	-24.52	74	42.6	42.03	21.53	56.68	100	0	P	H
													H
		11650	58.79	-15.21	74	60.45	38.39	17.53	57.58	108	61	P	V
		11650	42.95	-11.05	54	44.61	38.39	17.53	57.58	108	61	A	V
		17472	49.51	-24.49	74	42.63	42.03	21.53	56.68	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		5714.9	67.79	-0.51	68.3	54.46	35.22	12.26	34.15	238	223	P	H
		5724.84	73.89	-4.41	78.3	60.55	35.23	12.26	34.15	238	223	P	H
	*	5755	107.03	-	-	93.61	35.26	12.33	34.17	238	223	P	H
	*	5755	97.46	-	-	84.04	35.26	12.33	34.17	238	223	A	H
		5855.44	57.85	-20.45	78.3	44.39	35.32	12.45	34.31	238	223	P	H
		5860.4	58.3	-10	68.3	44.84	35.32	12.49	34.35	238	223	P	H
													H
													H
		5714.92	60.24	-8.06	68.3	46.91	35.22	12.26	34.15	107	326	P	V
		5723.24	67.64	-10.66	78.3	54.3	35.23	12.26	34.15	107	326	P	V
	*	5755	100.2	-	-	86.78	35.26	12.33	34.17	107	326	P	V
	*	5755	90.62	-	-	77.2	35.26	12.33	34.17	107	326	A	V
		5851.68	56.59	-21.71	78.3	43.14	35.31	12.45	34.31	107	326	P	V
		5882.32	57.12	-11.18	68.3	43.65	35.33	12.49	34.35	107	326	P	V
													V
													V



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)
802.11n HT40 CH 159 5795MHz		5706.04	57.98	-16.02	74	44.65	35.22	12.26	34.15	241	234	P	H
		5715.88	57.75	-20.55	78.3	44.42	35.22	12.26	34.15	241	234	P	H
		5714.92	44.6	-9.4	54	31.27	35.22	12.26	34.15	241	234	A	H
	*	5795	109.85	-	-	96.4	35.28	12.4	34.23	241	234	P	H
	*	5795	100.47	-	-	87.02	35.28	12.4	34.23	241	234	A	H
		5851.84	59.99	-18.31	78.3	46.54	35.31	12.45	34.31	241	234	P	H
		5860.16	58.05	-15.95	74	44.59	35.32	12.49	34.35	241	234	P	H
		5860	45.14	-8.86	54	31.72	35.32	12.45	34.35	241	234	A	H
		5692.52	57.24	-16.76	74	43.97	35.21	12.18	34.12	100	222	P	V
		5724.6	57.18	-21.12	78.3	43.84	35.23	12.26	34.15	100	222	P	V
		5709.8	44.56	-9.44	54	31.23	35.22	12.26	34.15	100	222	A	V
	*	5795	103.28	-	-	89.83	35.28	12.4	34.23	100	222	P	V
	*	5795	93.75	-	-	80.3	35.28	12.4	34.23	100	222	A	V
		5851.68	57.69	-20.61	78.3	44.24	35.31	12.45	34.31	100	222	P	V
		5864.32	57.26	-16.74	74	43.8	35.32	12.49	34.35	100	222	P	V
		5861.2	44.81	-9.19	54	31.35	35.32	12.49	34.35	100	222	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		11510	44.28	-29.72	74	46.46	38.2	17.42	57.8	100	0	P	H
		17268	49.16	-19.14	68.3	42.13	42.19	21.4	56.56	100	0	P	H
													H
													H
		11510	44.48	-29.52	74	46.66	38.2	17.42	57.8	100	0	P	V
		17268	49.25	-19.05	68.3	42.22	42.19	21.4	56.56	100	0	P	V
													V
													V
802.11n HT40 CH 159 5795MHz		11590	47.36	-26.64	74	49.2	38.32	17.5	57.66	100	0	P	H
		17388	48.99	-25.01	74	42.05	42.09	21.48	56.63	100	0	P	H
													H
													H
		11590	53.21	-20.79	74	55.05	38.32	17.5	57.66	101	60	P	V
		11590	41.22	-12.78	54	43.06	38.32	17.5	57.66	101	60	A	V
		17388	49.29	-24.71	74	42.35	42.09	21.48	56.63	100	0	P	V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

15E Emission below 1GHz
5GHz WIFI 802.11n HT40 (LF @ 3m)

[illegible]



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is over limit line.
P/A	Peak or Average
H/V	H orizontal or V ertical

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. 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”.

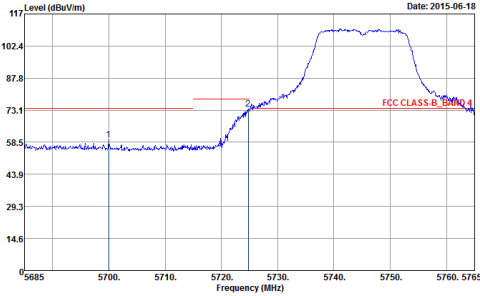
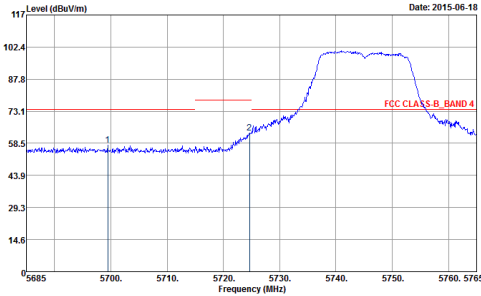
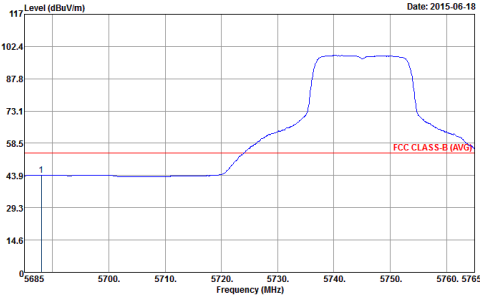
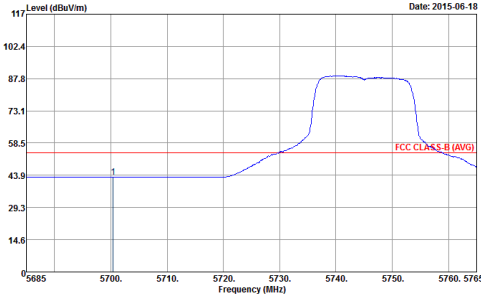


Appendix C. Radiated Spurious Emission

Test Engineer :	Nick Yu and Ken Wu and James Chiu	Temperature :	22~23°C
		Relative Humidity :	58~62%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz – Low channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a noisy baseline with a red line indicating the FCC CLASS-B BAND 4 limit. Two peaks are marked with blue vertical lines and labeled 1 and 2. The date is 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a noisy baseline with a red line indicating the FCC CLASS-B BAND 4 limit. Two peaks are marked with blue vertical lines and labeled 1 and 2. The date is 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a noisy baseline with a red line indicating the FCC CLASS-B (AVG) limit. A peak is marked with a blue vertical line and labeled 1. The date is 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a noisy baseline with a red line indicating the FCC CLASS-B (AVG) limit. A peak is marked with a blue vertical line and labeled 1. The date is 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz – High channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11a CH157. The plot shows a noisy baseline with two distinct peaks labeled 1 and 2. A red line indicates the FCC CLASS-B BAND 4 limit. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 0 to 117 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11a CH157. The plot shows a noisy baseline with two distinct peaks labeled 1 and 2. A red line indicates the FCC CLASS-B BAND 4 limit. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 0 to 117 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	Horizontal Average Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11a CH157. The plot shows a relatively flat baseline with a single peak labeled 1. A red line indicates the FCC CLASS-B (AVG) limit. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 0 to 117 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	Vertical Average Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11a CH157. The plot shows a relatively flat baseline with a single peak labeled 1. A red line indicates the FCC CLASS-B (AVG) limit. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 0 to 117 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak	Site : 03CH07-HY Condition : FCC CLASS-B, BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Site : 03CH07-HY Condition : FCC CLASS-B, BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak	Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak



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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot shows a signal peaking around 5825 MHz and dropping off towards 5850 MHz. A red line indicates the FCC CLASS-B_BAND 4 limit. The detector is Peak.	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot shows a signal peaking around 5825 MHz and dropping off towards 5850 MHz. A red line indicates the FCC CLASS-B_BAND 4 limit. The detector is Peak.
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot shows a signal peaking around 5825 MHz and dropping off towards 5850 MHz. A red line indicates the FCC CLASS-B (AVG) limit. The detector is Peak.	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot shows a signal peaking around 5825 MHz and dropping off towards 5850 MHz. A red line indicates the FCC CLASS-B (AVG) limit. The detector is Peak.



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz – Low channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B BAND 4 limit. The measured signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B BAND 4 limit. The measured signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B (AVG) limit. The measured signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B (AVG) limit. The measured signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz – High channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a noisy baseline around 58.5 dBuV/m with two distinct peaks labeled 1 and 2. Peak 1 is at approximately 5785 MHz and Peak 2 is at approximately 5795 MHz. A red line indicates the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a noisy baseline around 58.5 dBuV/m with two distinct peaks labeled 1 and 2. Peak 1 is at approximately 5785 MHz and Peak 2 is at approximately 5795 MHz. A red line indicates the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Horizontal Average Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a smooth average line around 43.9 dBuV/m with a single peak labeled 1 at approximately 5785 MHz. A red line indicates the FCC CLASS-B (AVG) limit at 58.5 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak	Vertical Average Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a smooth average line around 43.9 dBuV/m with a single peak labeled 1 at approximately 5785 MHz. A red line indicates the FCC CLASS-B (AVG) limit at 58.5 dBuV/m. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT20 CH165 5825MHz. The plot shows a peak level of approximately 102.4 dBuV/m at 5825 MHz, with a red line indicating the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 14.6 to 117 dBuV/m. A vertical line at 5825 MHz is labeled '2'. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT20 CH165 5825MHz. The plot shows a peak level of approximately 102.4 dBuV/m at 5825 MHz, with a red line indicating the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 14.6 to 117 dBuV/m. A vertical line at 5825 MHz is labeled '2'. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT20 CH165 5825MHz. The plot shows a peak level of approximately 102.4 dBuV/m at 5825 MHz, with a red line indicating the FCC CLASS-B (AVG) limit at 58.5 dBuV/m. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 14.6 to 117 dBuV/m. A vertical line at 5825 MHz is labeled '1'. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT20 CH165 5825MHz. The plot shows a peak level of approximately 102.4 dBuV/m at 5825 MHz, with a red line indicating the FCC CLASS-B (AVG) limit at 58.5 dBuV/m. The x-axis ranges from 5810 to 5890 MHz, and the y-axis ranges from 14.6 to 117 dBuV/m. A vertical line at 5825 MHz is labeled '1'. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 0.010KHz SWT: Auto Detector : Peak

**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 – Low channel location	
1	Horizontal	Vertical
Peak	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz – High channel location	
1	Horizontal	Vertical
Peak	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : FR 542541

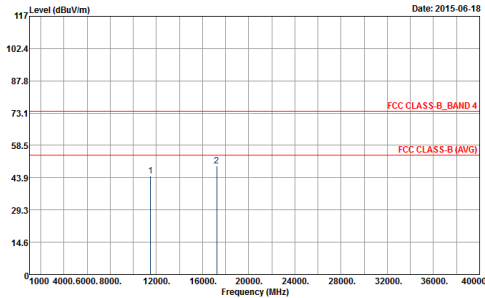
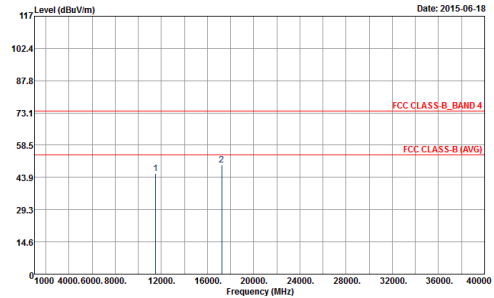


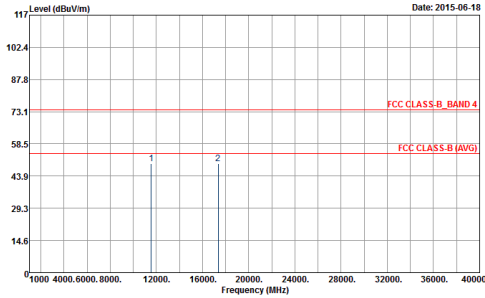
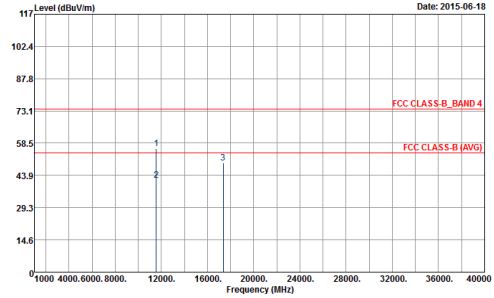
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz – Low channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B BAND 4 limit. The signal is below the limit across the entire frequency range. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B BAND 4 limit. The signal is below the limit across the entire frequency range. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B (AVG) limit. The signal is below the limit across the entire frequency range. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 2.000KHz SWT: Auto Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B (AVG) limit. The signal is below the limit across the entire frequency range. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 2.000KHz SWT: Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz – High channel location	
1	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT40 CH159. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B BAND 4 limit. The signal level is approximately 58.5 dBuV/m at 5795 MHz. The plot includes a date stamp of 2015-06-18 and a site identifier of 03CH07-HY.	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT40 CH159. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B BAND 4 limit. The signal level is approximately 58.5 dBuV/m at 5795 MHz. The plot includes a date stamp of 2015-06-18 and a site identifier of 03CH07-HY.
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT40 CH159. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B (AVG) limit. The signal level is approximately 58.5 dBuV/m at 5795 MHz. The plot includes a date stamp of 2015-06-18 and a site identifier of 03CH07-HY.	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for 802.11n HT40 CH159. The plot shows a blue line representing the measured signal, with a red line indicating the FCC CLASS-B (AVG) limit. The signal level is approximately 58.5 dBuV/m at 5795 MHz. The plot includes a date stamp of 2015-06-18 and a site identifier of 03CH07-HY.

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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak

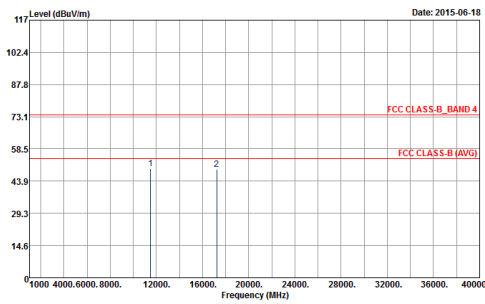
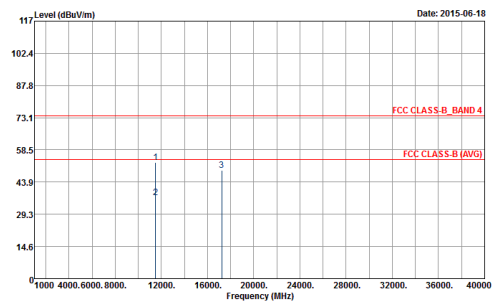


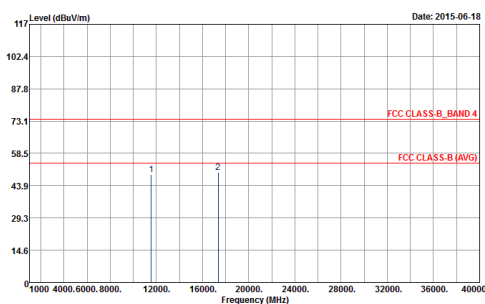
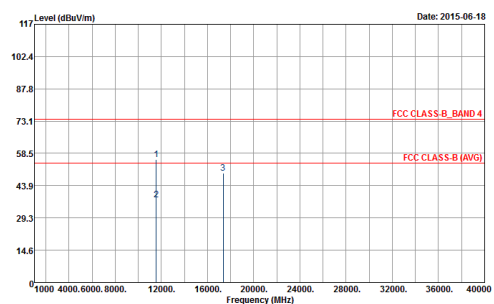
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2015-06-18 Frequency (MHz) Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2015-06-18 Frequency (MHz) Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak

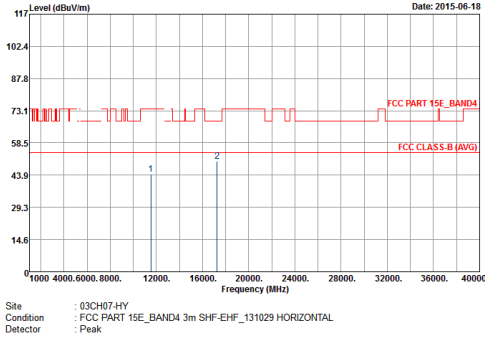
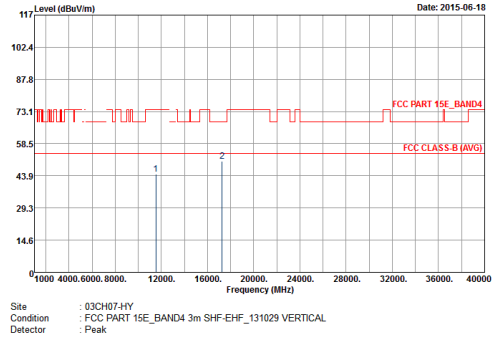
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak

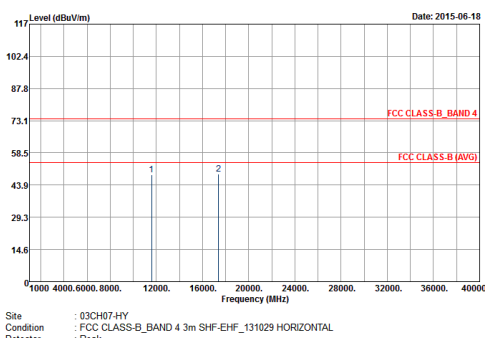
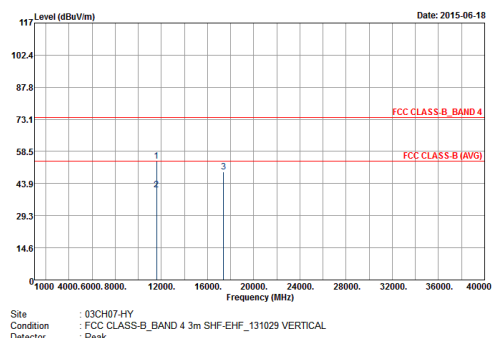


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak

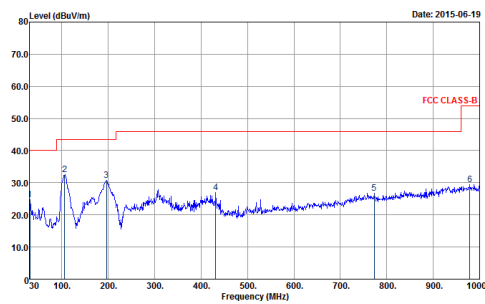
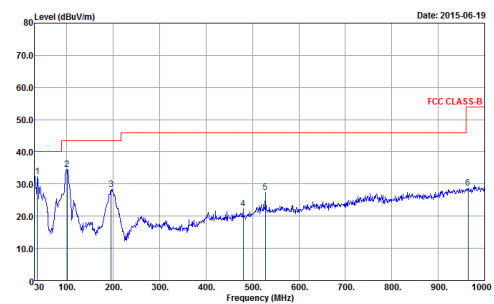


Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

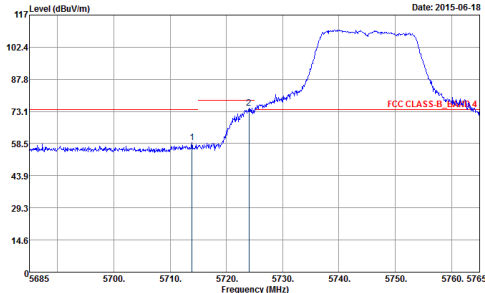
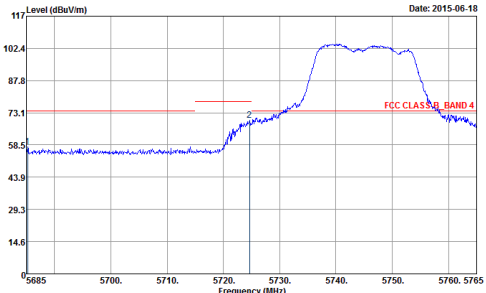
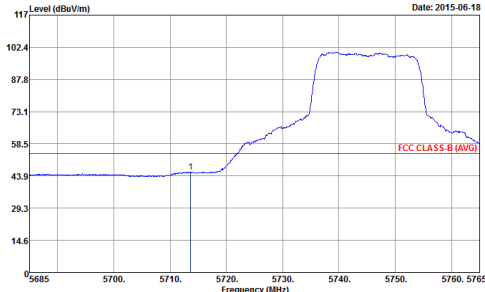
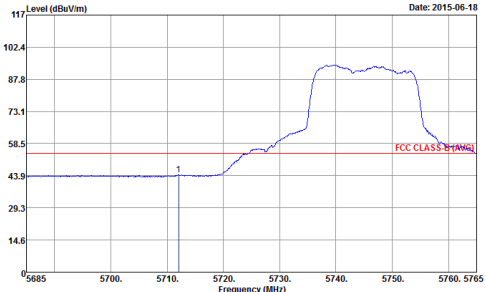
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m SHF-EHF_131029 VERTICAL Detector : Peak

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND4 3m SHF-EHF_131029 VERTICAL Detector : Peak

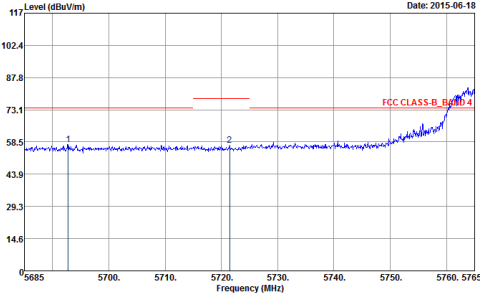
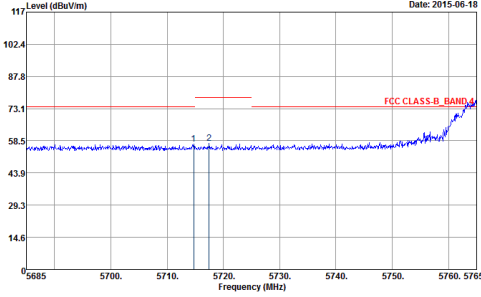
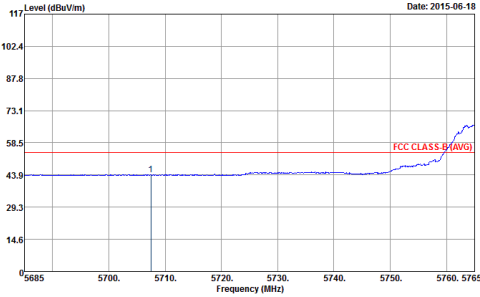
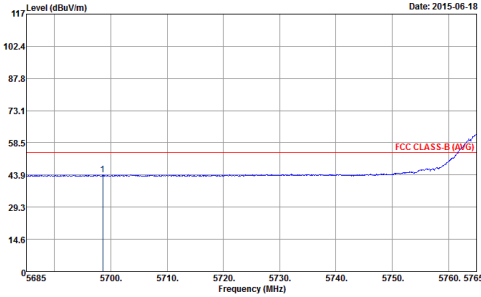
Emission below 1GHz
5GHz WIFI 802.11n HT40 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT40 LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH07-HY Condition : FCC CLASS-B 3m LF-ANT(131102) HORIZONTAL RBW: 120.000kHz VBW: 300.000kHz SWT: 0.500sec Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B 3m LF-ANT(131102) VERTICAL RBW: 120.000kHz VBW: 300.000kHz SWT: 0.500sec Detector : Peak

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	 Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000kHz VBW:1.000kHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000kHz VBW:1.000kHz SWT:Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz – Low channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz – High channel location	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal orientation. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B BAND 4 limit. Two peaks are marked with vertical lines and labeled '1' and '2'. The peak at 5785 MHz is the highest. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Level (dBuV/m) vs Frequency (MHz) plot for Vertical orientation. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B BAND 4 limit. Two peaks are marked with vertical lines and labeled '1' and '2'. The peak at 5785 MHz is the highest. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal orientation. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. A single peak is marked with a vertical line and labeled '1'. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	Level (dBuV/m) vs Frequency (MHz) plot for Vertical orientation. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. A single peak is marked with a vertical line and labeled '1'. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

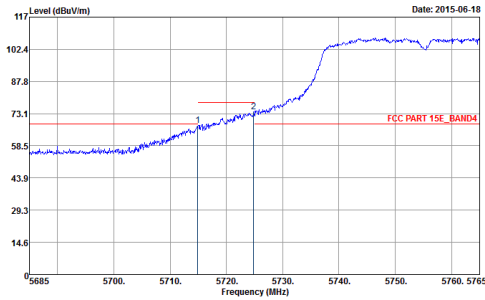
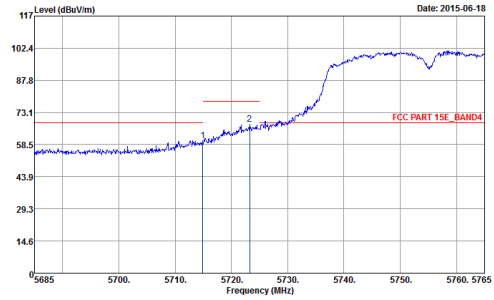


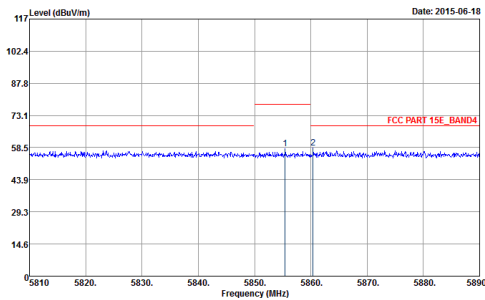
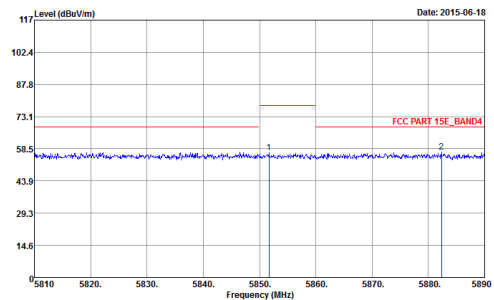
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) from 5810 to 5890 MHz. The plot shows a signal level starting at approximately 102.4 dBuV/m at 5810 MHz, dropping to about 73.1 dBuV/m by 5825 MHz, and then continuing to decrease to approximately 43.9 dBuV/m at 5890 MHz. A red line indicates the FCC CLASS-B_BAND 4 limit at 73.1 dBuV/m. The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 HORIZONTAL Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) from 5810 to 5890 MHz. The plot shows a signal level starting at approximately 102.4 dBuV/m at 5810 MHz, dropping to about 73.1 dBuV/m by 5825 MHz, and then continuing to decrease to approximately 43.9 dBuV/m at 5890 MHz. A red line indicates the FCC CLASS-B_BAND 4 limit at 73.1 dBuV/m. The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 VERTICAL Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) from 5810 to 5890 MHz. The plot shows a signal level starting at approximately 102.4 dBuV/m at 5810 MHz, dropping to about 73.1 dBuV/m by 5825 MHz, and then continuing to decrease to approximately 43.9 dBuV/m at 5890 MHz. A red line indicates the FCC CLASS-B (AVG) limit at 73.1 dBuV/m. The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) from 5810 to 5890 MHz. The plot shows a signal level starting at approximately 102.4 dBuV/m at 5810 MHz, dropping to about 73.1 dBuV/m by 5825 MHz, and then continuing to decrease to approximately 43.9 dBuV/m at 5890 MHz. A red line indicates the FCC CLASS-B (AVG) limit at 73.1 dBuV/m. The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL Detector : Peak



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 – Low channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto : Peak	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto : Peak

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz – High channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto : Peak	 Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m HF-ANT_130829 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto : Peak



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz – Low channel location	
1+2	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B BAND 4 limit. The signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B BAND 4 limit. The signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B BAND 4 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 3000.000KHz SWT: Auto Detector : Peak
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B (AVG) limit. The signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW: 1000.000KHz VBW: 2.000KHz SWT: Auto Detector : Peak	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz) for Vertical polarization. The plot shows a blue line representing the measured signal and a red line representing the FCC CLASS-B (AVG) limit. The signal is below the limit across the entire frequency range from 5685 to 5765 MHz. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW: 1000.000KHz VBW: 2.000KHz SWT: Auto Detector : Peak

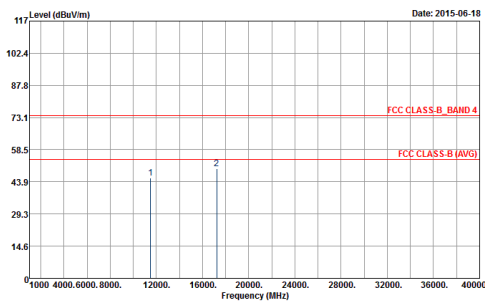
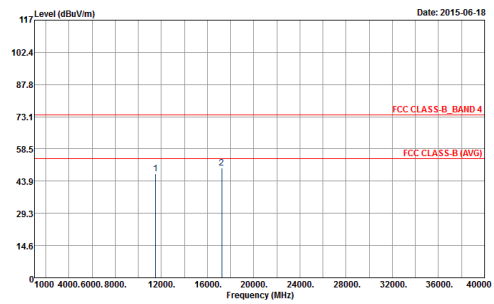


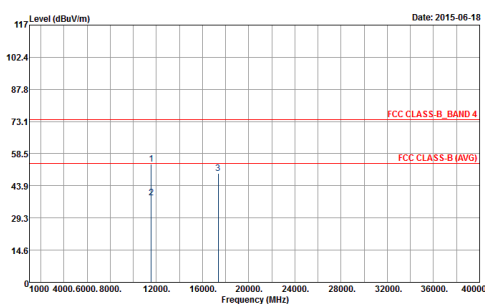
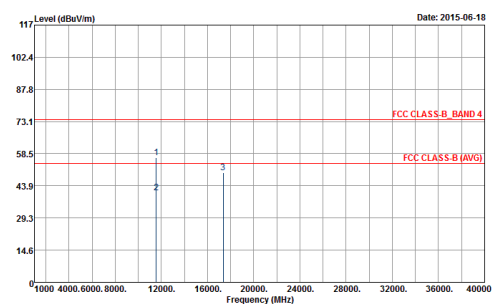
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz – High channel location	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the signal level, which decreases from approximately 102.4 dBuV/m at 5810 MHz to about 58.5 dBuV/m at 5890 MHz. A red horizontal line indicates the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. Two vertical blue lines are marked at 5855 MHz (labeled 1) and 5865 MHz (labeled 2). The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B, BAND 4 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the signal level, which decreases from approximately 102.4 dBuV/m at 5810 MHz to about 58.5 dBuV/m at 5890 MHz. A red horizontal line indicates the FCC CLASS-B BAND 4 limit at 73.1 dBuV/m. Two vertical blue lines are marked at 5855 MHz (labeled 1) and 5865 MHz (labeled 2). The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B, BAND 4 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the average signal level, which decreases from approximately 102.4 dBuV/m at 5810 MHz to about 58.5 dBuV/m at 5890 MHz. A red horizontal line indicates the FCC CLASS-B (AVG) limit at 73.1 dBuV/m. A single vertical blue line is marked at 5855 MHz (labeled 1). The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 HORIZONTAL RBW:1000.000KHz VBW:2.000KHz SWT:Auto Detector : Peak	Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the average signal level, which decreases from approximately 102.4 dBuV/m at 5810 MHz to about 58.5 dBuV/m at 5890 MHz. A red horizontal line indicates the FCC CLASS-B (AVG) limit at 73.1 dBuV/m. A single vertical blue line is marked at 5855 MHz (labeled 1). The plot is dated 2015-06-18. Site : 03CH07-HY Condition : FCC CLASS-B (AVG) 3m HF-ANT_130829 VERTICAL RBW:1000.000KHz VBW:2.000KHz SWT:Auto Detector : Peak



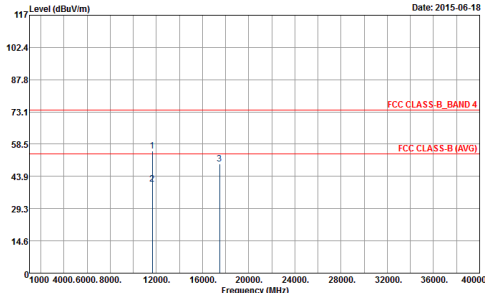
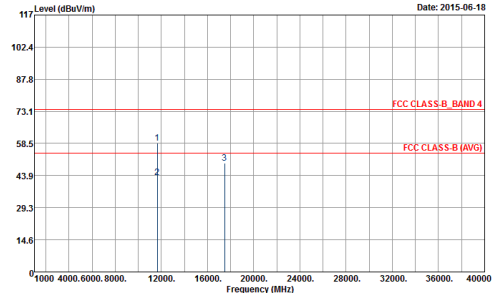
Band 4 5725~5850MHz

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.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 VERTICAL Detector : Peak

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m HF-ANT_130829 VERTICAL Detector : Peak



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak



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

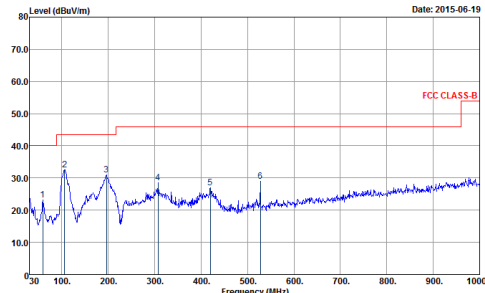
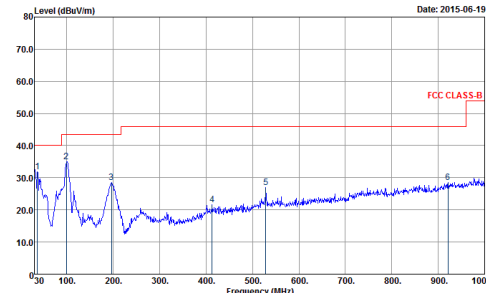
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	Site : 03CH07-HY Condition : FCC PART 15E_BAND4 3m SHF-EHF_131029 VERTICAL Detector : Peak

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 HORIZONTAL Detector : Peak	Site : 03CH07-HY Condition : FCC CLASS-B_BAND 4 3m SHF-EHF_131029 VERTICAL Detector : Peak



Emission below 1GHz

5GHz WIFI 802.11n HT40 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH07-HY Condition : FCC CLASS-B 3m LF-ANT(131102) HORIZONTAL RBW:120.000kHz VBW:300.000kHz SWT:0.500sec Detector : Peak	 Site : 03CH07-HY Condition : FCC CLASS-B 3m LF-ANT(131102) VERTICAL RBW:120.000kHz VBW:300.000kHz SWT:0.500sec Detector : Peak