



FCC RF Test Report

APPLICANT : Ubiquiti Networks, Inc.
EQUIPMENT : Protect Cam
BRAND NAME : ULABS
MODEL NAME : AFi-VC
FCC ID : SWX-AFVC
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Aug. 13, 2016 and testing was completed on Sep. 28, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

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Approved by: Jones Tsai / Manager



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FCC ID : SWX-AFVC

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR681313-02D	Rev. 01	Initial issue of report	May 12, 2017
FR681313-02D	Rev. 02	Revising connection diagram of test system	May 16, 2017



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 0.35 dB at 71.040 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 4.50 dB at 0.494 MHz
3.6	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Ubiquiti Networks, Inc.
2580 Orchard Parkway San Jose, CA 95131

1.2 Manufacturer

Ubiquiti Networks, Inc.
2580 Orchard Parkway San Jose, CA 95131

1.3 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n

Product Specification subjective to this standard	
Antenna Type	WLAN: Internal Antenna Bluetooth: Internal Antenna

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. TW0007 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

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

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	Sporton Site No.	
	03CH12-HY	

Note: The test site complies with ANSI C63.4 2014 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 v01r03.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

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

2.1 Carrier Frequency and Channel

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

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

2.2 Test Mode

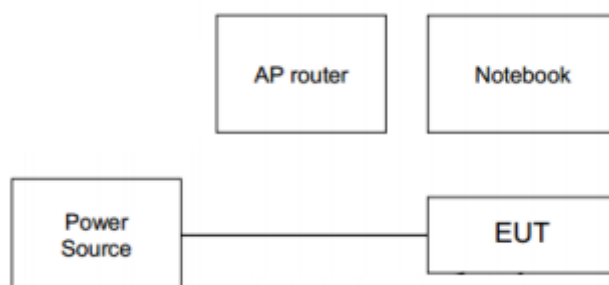
Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

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

AC Conducted Emission	Mode 1 : WLAN Link + USB Cable (Charging from Adapter (Side)) + Recoding
------------------------------	--

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

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude E3340	FCC DoC/ Contains FCC ID: PD97260NGU	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

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

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

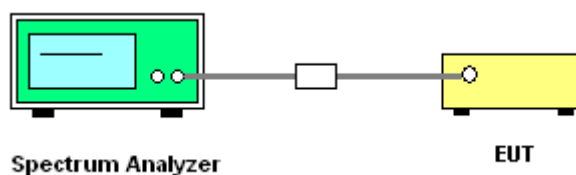
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
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.

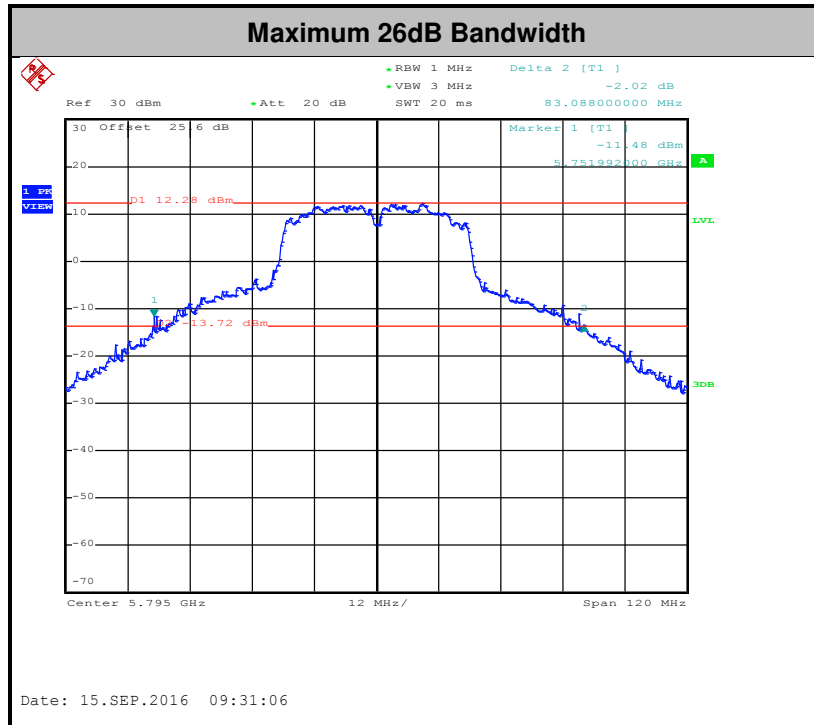
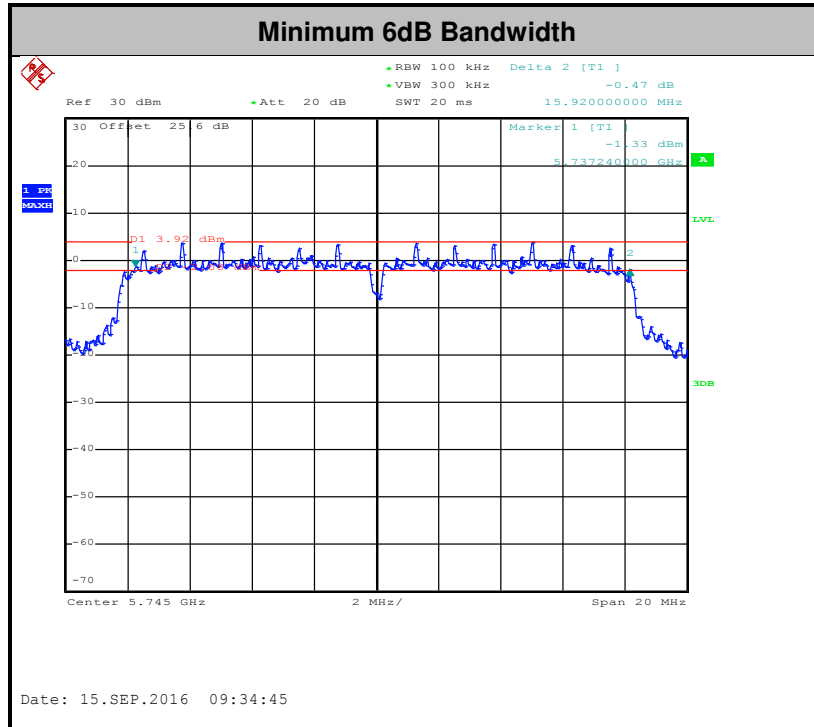
3.1.4 Test Setup

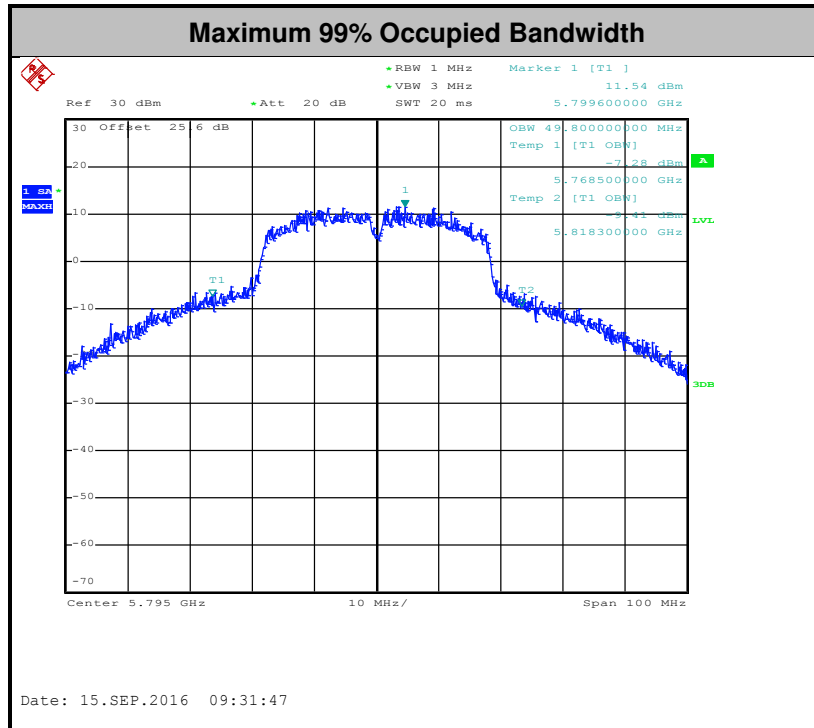




3.1.5 Test Result of 6dB Bandwidth

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.

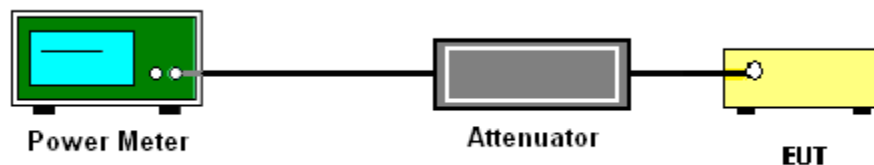
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

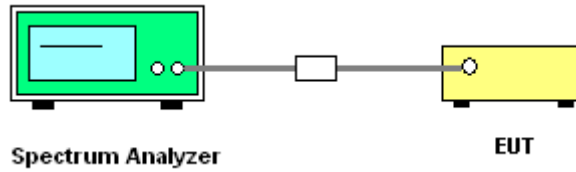
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
Section F) Maximum power spectral density.

Method SA-2

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

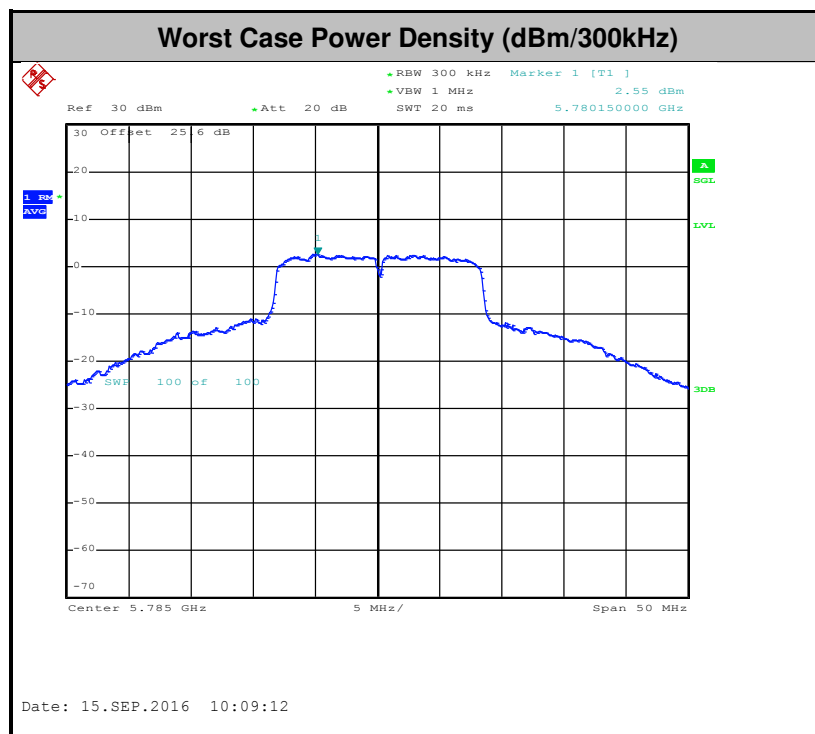
- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - 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.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:
15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (2) Unwanted spurious emissions fallen in restricted bands per FCC Part 15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

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

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

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

(3) KDB789033 D02 v01r03 G)2)c)

- (i) Section 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and 2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz. However, an out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz dBm/MHz peak emission limit.
- (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative 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 v01r03.

Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

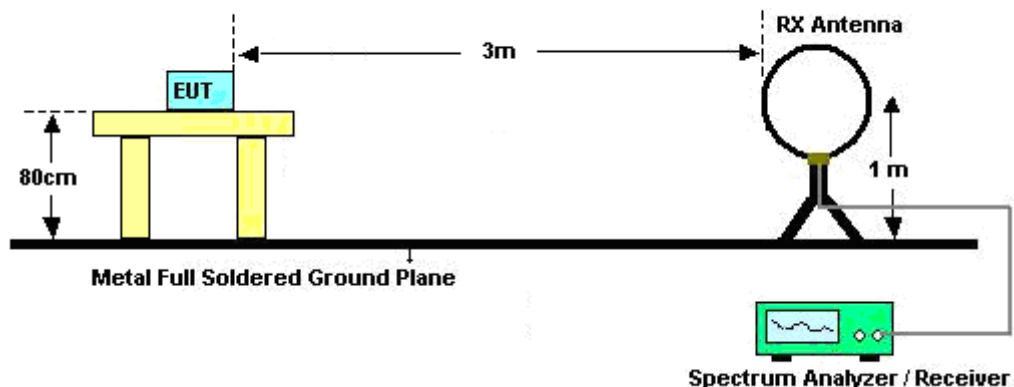
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

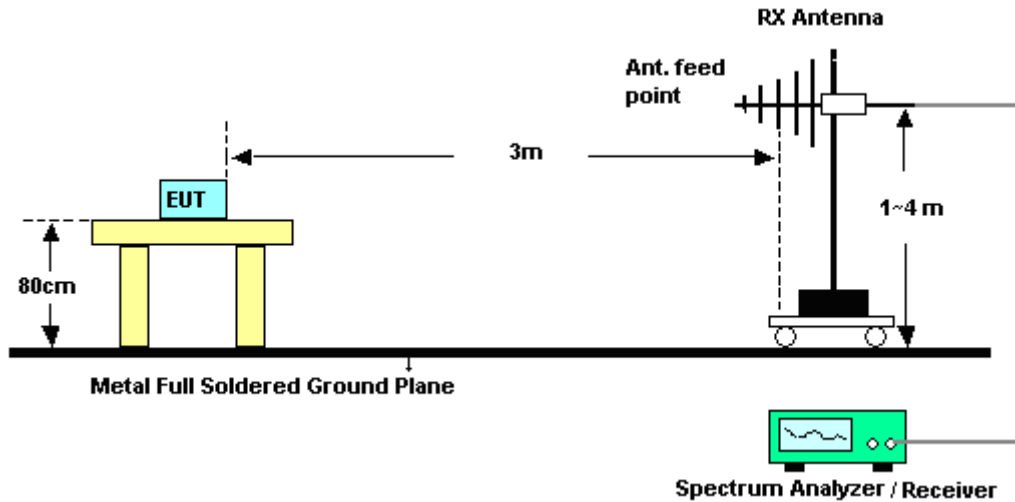
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

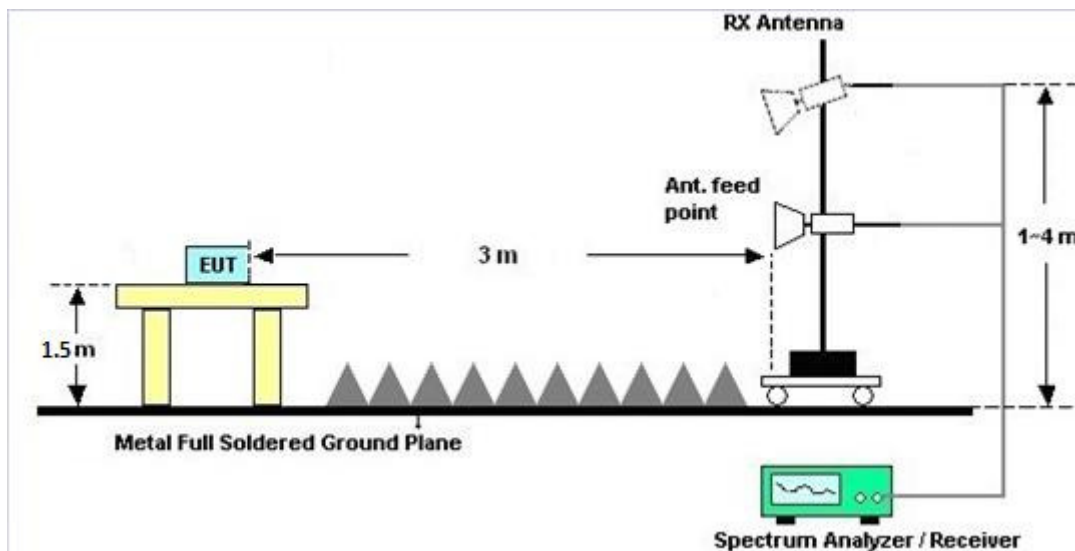
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.



3.4.7 Duty Cycle

Please refer to Appendix E.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

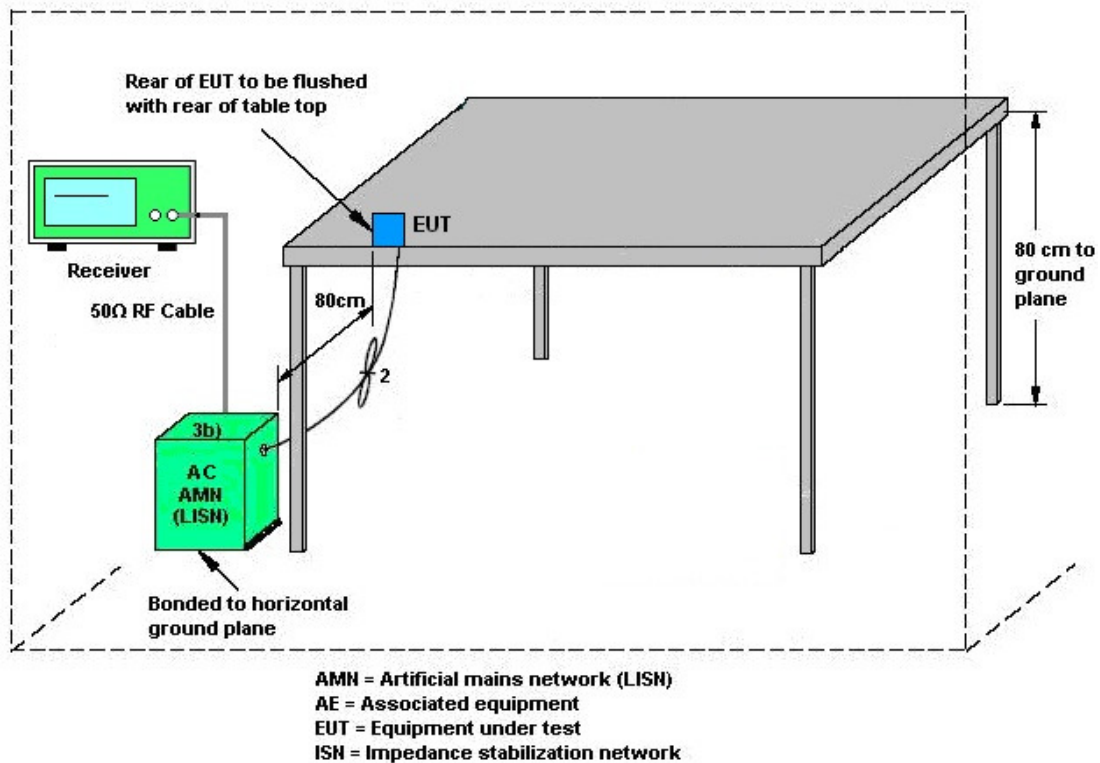
3.5.2 Measuring Instruments

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

Please refer to Appendix B.

3.6 Frequency Stability Measurement

3.6.1 Limit of Frequency Stability

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

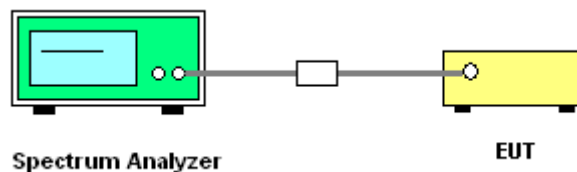
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 Limit of Automatically Discontinue Transmission

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

3.7.2 Measuring Instruments

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

3.7.3 Test Result of Automatically Discontinue Transmission

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



3.8 Antenna Requirements

3.8.1 Standard Applicable

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

The antenna gain is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1218006	300MHz~40GHz	Oct. 07, 2015	Aug. 18, 2016 ~ Sep. 15, 2016	Oct. 06, 2016	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1207363	300MHz~40GHz	Oct. 07, 2015	Aug. 18, 2016 ~ Sep. 15, 2016	Oct. 06, 2016	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 23, 2015	Aug. 18, 2016 ~ Sep. 15, 2016	Nov. 22, 2016	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 08, 2015	Aug. 18, 2016 ~ Sep. 01, 2016	Sep. 07, 2016	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 01, 2016	Sep. 02, 2016 ~ Sep. 15, 2016	Aug. 31, 2017	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	GEO821763	N/A	Nov. 13, 2015	Aug. 18, 2016 ~ Sep. 15, 2016	Nov. 12, 2016	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Sep. 15, 2016 ~ Sep. 28, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Sep. 15, 2016 ~ Sep. 28, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Sep. 15, 2016 ~ Sep. 28, 2016	Dec. 01, 2016	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Sep. 01, 2017	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D	37059	30MHz~1GHz	Dec. 29, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Dec. 28, 2016	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 21, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Dec. 20, 2016	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 02, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Nov. 01, 2016	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1815698	1GHz~18GHz	Dec. 14, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Dec. 13, 2016	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY53270148	1GHz~26.5GHz	Jan. 30, 2016	Sep. 08, 2016 ~ Sep. 13, 2016	Jan. 29, 2017	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Sep. 08, 2016 ~ Sep. 13, 2016	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Sep. 08, 2016 ~ Sep. 13, 2016	N/A	Radiation (03CH12-HY)
Preamplifier	MITEQ	JS44-1800400 0-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Sep. 08, 2016 ~ Sep. 13, 2016	Jun. 13, 2017	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917058 4	18GHz- 40GHz	Nov. 02, 2015	Sep. 08, 2016 ~ Sep. 13, 2016	Nov. 01, 2016	Radiation (03CH12-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.7
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7
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Appendix A. Conducted Test Results

Test Engineer:	Bill Kuo	Temperature:	21~25	°C
Test Date:	2016/08/18 ~ 2016/09/15	Relative Humidity:	51~54	%

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

Band IV									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	6 dB Bandwidth (MHz)	6dB Bandwidth min. Limit (MHz)	Pass/Fail
11a	6M bps	1	149	5745	18.3	39.28	15.92	0.5	Pass
11a	6Mbps	1	157	5785	33.9	57.36	16.36	0.5	Pass
11a	6Mbps	1	165	5825	23.15	42.29	15.92	0.5	Pass
HT20	MCS 0	1	149	5745	18.5	34.14	16.8	0.5	Pass
HT20	MCS 0	1	157	5785	35.5	59.6	17.2	0.5	Pass
HT20	MCS 0	1	165	5825	22.7	45.14	16.8	0.5	Pass
HT40	MCS 0	1	151	5755	36.1	45.96	32.64	0.5	Pass
HT40	MCS 0	1	159	5795	49.8	83.088	32.64	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
11a	6M bps	1	149	5745	0.08	14.63	30.00	3.00		Pass
11a	6Mbps	1	157	5785	0.08	19.59	30.00	3.00		Pass
11a	6Mbps	1	165	5825	0.08	13.90	30.00	3.00		Pass
HT20	MCS 0	1	149	5745	0.09	13.44	30.00	3.00		Pass
HT20	MCS 0	1	157	5785	0.09	19.54	30.00	3.00		Pass
HT20	MCS 0	1	165	5825	0.09	16.38	30.00	3.00		Pass
HT40	MCS 0	1	151	5755	0.18	12.43	30.00	3.00		Pass
HT40	MCS 0	1	159	5795	0.18	17.47	30.00	3.00		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV										
Mod.	Data Rate	N _{TX}	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
11a	6M bps	1	149	5745	0.08	2.22	0.07	30.00	3.00	Pass
11a	6Mbps	1	157	5785	0.08	2.22	4.85	30.00	3.00	Pass
11a	6Mbps	1	165	5825	0.08	2.22	1.94	30.00	3.00	Pass
HT20	MCS 0	1	149	5745	0.09	2.22	-1.24	30.00	3.00	Pass
HT20	MCS 0	1	157	5785	0.09	2.22	4.67	30.00	3.00	Pass
HT20	MCS 0	1	165	5825	0.09	2.22	1.96	30.00	3.00	Pass
HT40	MCS 0	1	151	5755	0.18	2.22	-4.76	30.00	3.00	Pass
HT40	MCS 0	1	159	5795	0.18	2.22	0.11	30.00	3.00	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	6M bps	1	149	5745	5745.050	0.050	8.70	50	5	
11a	6M bps	1	149	5745	5744.950	-0.050	-8.70	-30	5	
11a	6M bps	1	149	5745	5745.050	0.050	8.70	20	5.25	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	20	4.75	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	20	5	



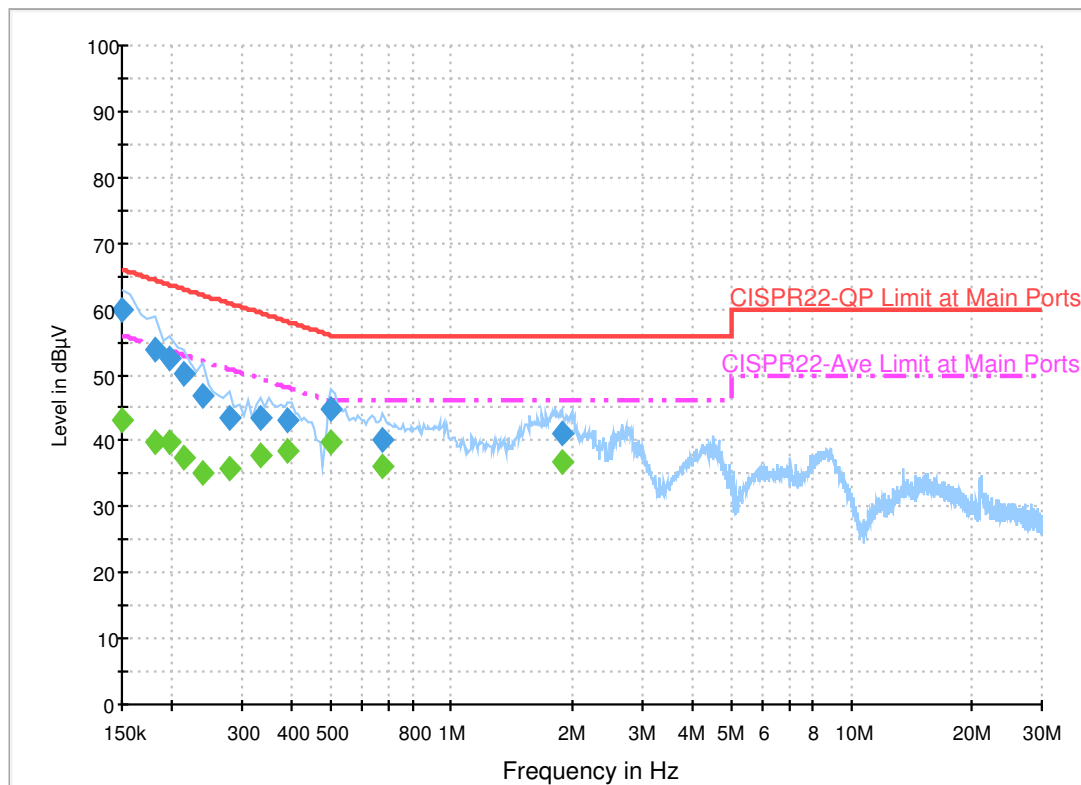
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Kai-Chun Chu	Temperature :	24~25°C
		Relative Humidity :	49~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line

EUT Information

Report NO : 681313
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

ENV216 Auto Test FCC Power Bar - L



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	59.9	Off	L1	19.6	6.1	66.0
0.182000	53.8	Off	L1	19.6	10.6	64.4
0.198000	52.4	Off	L1	19.6	11.3	63.7
0.214000	50.1	Off	L1	19.6	12.9	63.0
0.238000	46.7	Off	L1	19.6	15.5	62.2
0.278000	43.4	Off	L1	19.6	17.5	60.9
0.334000	43.5	Off	L1	19.6	15.9	59.4
0.390000	43.3	Off	L1	19.6	14.8	58.1
0.502000	44.9	Off	L1	19.6	11.1	56.0
0.670000	40.1	Off	L1	19.6	15.9	56.0
1.886000	41.2	Off	L1	19.7	14.8	56.0

Final Result 2

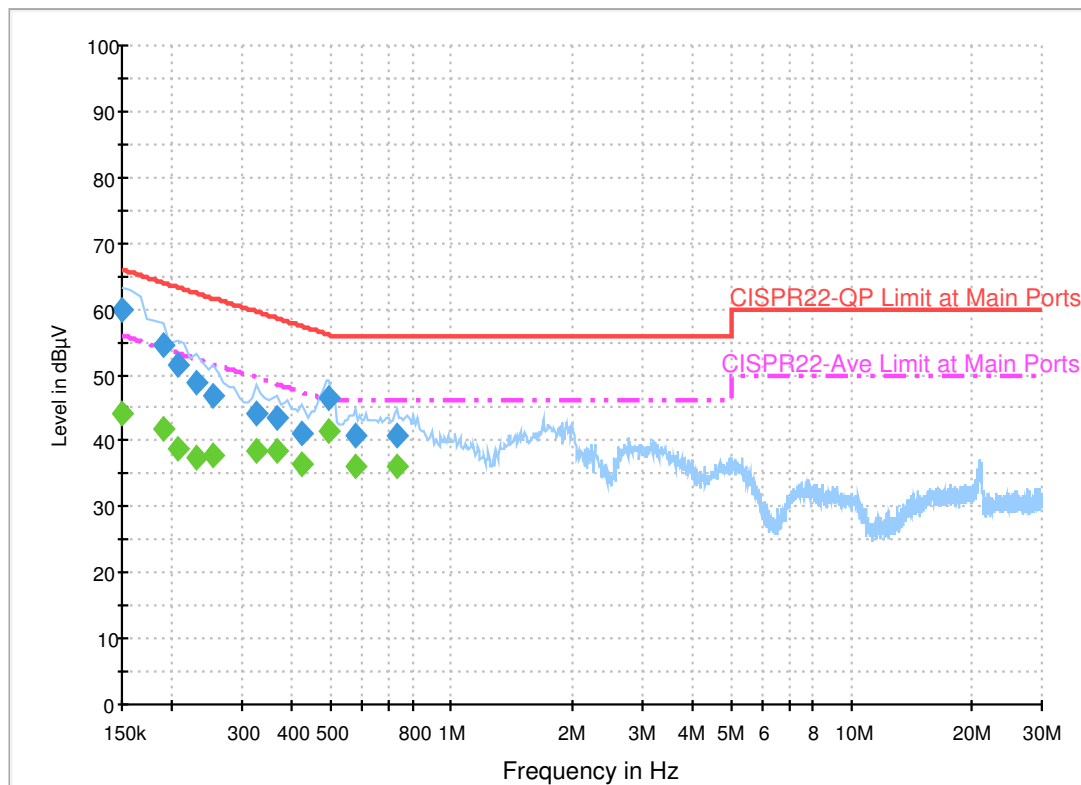
Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	43.2	Off	L1	19.6	12.8	56.0
0.182000	39.7	Off	L1	19.6	14.7	54.4
0.198000	39.6	Off	L1	19.6	14.1	53.7
0.214000	37.6	Off	L1	19.6	15.4	53.0
0.238000	35.1	Off	L1	19.6	17.1	52.2
0.278000	35.9	Off	L1	19.6	15.0	50.9
0.334000	37.9	Off	L1	19.6	11.5	49.4

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.390000	38.4	Off	L1	19.6	9.7	48.1
0.502000	39.8	Off	L1	19.6	6.2	46.0
0.670000	36.1	Off	L1	19.6	9.9	46.0
1.886000	36.9	Off	L1	19.7	9.1	46.0

EUT Information

Report NO : 681313
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

ENV216 Auto Test FCC Power Bar - N



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	60.0	Off	N	19.6	6.0	66.0
0.190000	54.4	Off	N	19.6	9.6	64.0
0.206000	51.3	Off	N	19.6	12.1	63.4
0.230000	48.8	Off	N	19.6	13.6	62.4
0.254000	46.7	Off	N	19.6	14.9	61.6
0.326000	44.0	Off	N	19.6	15.6	59.6
0.366000	43.3	Off	N	19.6	15.3	58.6
0.422000	41.3	Off	N	19.6	16.1	57.4
0.494000	46.4	Off	N	19.6	9.7	56.1
0.574000	40.8	Off	N	19.6	15.2	56.0
0.734000	40.7	Off	N	19.6	15.3	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	44.3	Off	N	19.6	11.7	56.0
0.190000	41.9	Off	N	19.6	12.1	54.0
0.206000	38.8	Off	N	19.6	14.6	53.4
0.230000	37.6	Off	N	19.6	14.8	52.4
0.254000	37.9	Off	N	19.6	13.7	51.6
0.326000	38.5	Off	N	19.6	11.1	49.6
0.366000	38.5	Off	N	19.6	10.1	48.6

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.422000	36.5	Off	N	19.6	10.9	47.4
0.494000	41.6	Off	N	19.6	4.5	46.1
0.574000	36.2	Off	N	19.6	9.8	46.0
0.734000	36.2	Off	N	19.6	9.8	46.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Nick Yu, Peter Chiu, and Citta Ke	Temperature :	22~23°C
		Relative Humidity :	52~55%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5605.2	59.4	-8.8	68.2	46.48	32.14	11.77	30.99	301	51	P	H
		5694.8	59.54	-41.83	101.37	46.46	32.27	11.82	31.01	301	51	P	H
		5715	63.12	-46.28	109.4	50.01	32.29	11.84	31.02	301	51	P	H
		5725	74.11	-48.09	122.2	60.98	32.31	11.84	31.02	301	51	P	H
	*	5743	103.9	-	-	90.73	32.34	11.86	31.03	301	51	P	H
	*	5743	92.95	-	-	79.78	32.34	11.86	31.03	301	51	A	H
													H
													H
		5638.4	59.48	-8.72	68.2	46.5	32.19	11.79	31	296	334	P	V
		5681.6	60.6	-31.02	91.62	47.55	32.24	11.82	31.01	296	334	P	V
		5717.6	68.63	-41.5	110.13	55.5	32.31	11.84	31.02	296	334	P	V
		5724.8	80.24	-41.5	121.74	67.11	32.31	11.84	31.02	296	334	P	V
	*	5747	109.79	-	-	96.62	32.34	11.86	31.03	296	334	P	V
	*	5747	98.72	-	-	85.55	32.34	11.86	31.03	296	334	A	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5642.4	59.84	-8.36	68.2	46.86	32.19	11.79	31	262	46	P	H
		5657.8	59.26	-14.73	73.99	46.26	32.22	11.79	31.01	262	46	P	H
		5705.4	59.06	-47.65	106.71	45.95	32.29	11.84	31.02	262	46	P	H
		5722.2	58.73	-57.09	115.82	45.6	32.31	11.84	31.02	262	46	P	H
	*	5783	109.13	-	-	95.91	32.39	11.88	31.05	262	46	P	H
	*	5783	97.74	-	-	84.52	32.39	11.88	31.05	262	46	A	H
		5853.8	60.09	-53.45	113.54	46.61	32.51	12.03	31.06	262	46	P	H
		5864.2	60	-48.22	108.22	46.39	32.51	12.17	31.07	262	46	P	H
		5903	59.93	-24.51	84.44	46.14	32.56	12.31	31.08	262	46	P	H
		5949.8	60.42	-7.78	68.2	46.43	32.63	12.45	31.09	262	46	P	H
													H
													H
		5636.8	59.83	-8.37	68.2	46.85	32.19	11.79	31	265	313	P	V
		5688.2	60.77	-35.73	96.5	47.69	32.27	11.82	31.01	265	313	P	V
		5719.6	60.62	-50.07	110.69	47.49	32.31	11.84	31.02	265	313	P	V
		5721.6	61.61	-52.84	114.45	48.48	32.31	11.84	31.02	265	313	P	V
	*	5783	114.59	-	-	101.37	32.39	11.88	31.05	265	313	P	V
	*	5783	103.22	-	-	90	32.39	11.88	31.05	265	313	A	V
		5852.4	60.46	-56.27	116.73	47.01	32.48	12.03	31.06	265	313	P	V
		5872.6	60.31	-45.56	105.87	46.68	32.53	12.17	31.07	265	313	P	V
		5902	60.75	-24.43	85.18	46.96	32.56	12.31	31.08	265	313	P	V
		5933.2	60.92	-7.28	68.2	47.1	32.6	12.31	31.09	265	313	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5824	107.21	-	-	93.77	32.46	12.03	31.05	276	45	P	H
	*	5824	96.18	-	-	82.74	32.46	12.03	31.05	276	45	A	H
		5852.8	65.98	-49.83	115.81	52.53	32.48	12.03	31.06	276	45	P	H
		5855	63	-47.8	110.8	49.52	32.51	12.03	31.06	276	45	P	H
		5876	60.59	-43.87	104.46	46.96	32.53	12.17	31.07	276	45	P	H
		5926.2	60.99	-7.21	68.2	47.17	32.6	12.31	31.09	276	45	P	H
													H
													H
	*	5824	112.36	-	-	98.92	32.46	12.03	31.05	259	313	P	V
	*	5824	101.04	-	-	87.6	32.46	12.03	31.05	259	313	A	V
		5850.6	74.06	-46.77	120.83	60.61	32.48	12.03	31.06	259	313	P	V
		5855.8	69.23	-41.35	110.58	55.75	32.51	12.03	31.06	259	313	P	V
		5887.2	60.49	-35.65	96.14	46.87	32.53	12.17	31.08	259	313	P	V
		5947.4	60.62	-7.58	68.2	46.63	32.63	12.45	31.09	259	313	P	V
													V
													V
													V
Remark 1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	47.03	-26.97	74	46.3	40.11	18.4	57.78	100	0	P	H
		17235	48.36	-19.84	68.2	40.71	41.65	23.14	57.14	100	0	P	H
													H
													H
		11490	50.56	-23.44	74	49.83	40.11	18.4	57.78	100	0	P	V
		17235	50.03	-18.17	68.2	42.38	41.65	23.14	57.14	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	59.52	-14.48	74	58.88	39.95	18.49	57.8	100	342	P	H
		11570	46.32	-7.68	54	45.68	39.95	18.49	57.8	100	342	A	H
		17355	50.2	-18	68.2	42.49	42.02	23.25	57.56	100	0	P	H
													H
		11570	65.46	-8.54	74	64.82	39.95	18.49	57.8	200	135	P	V
		11570	52.68	-1.32	54	52.04	39.95	18.49	57.8	200	135	A	V
		17355	49.11	-19.09	68.2	41.4	42.02	23.25	57.56	100	0	P	V
													V
802.11a CH 165 5825MHz		11650	53.5	-20.5	74	52.92	39.8	18.58	57.8	100	0	P	H
		17475	47.81	-20.39	68.2	40.04	42.39	23.36	57.98	100	0	P	H
													H
													H
		11650	61.03	-12.97	74	60.45	39.8	18.58	57.8	100	230	P	V
		11650	48.13	-5.87	54	47.55	39.8	18.58	57.8	100	230	A	V
		17475	48.56	-19.64	68.2	40.79	42.39	23.36	57.98	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5618	59.72	-8.48	68.2	46.77	32.17	11.77	30.99	299	51	P	H
		5663.8	60.18	-18.26	78.44	47.15	32.22	11.82	31.01	299	51	P	H
		5709.8	59.45	-48.5	107.95	46.34	32.29	11.84	31.02	299	51	P	H
		5725	65.98	-56.22	122.2	52.85	32.31	11.84	31.02	299	51	P	H
	*	5743	102	-	-	88.83	32.34	11.86	31.03	299	51	P	H
	*	5743	91.03	-	-	77.86	32.34	11.86	31.03	299	51	A	H
													H
													H
		5622.8	59.75	-8.45	68.2	46.78	32.17	11.79	30.99	298	334	P	V
		5677	59.93	-28.29	88.22	46.88	32.24	11.82	31.01	298	334	P	V
		5719.8	61.85	-48.89	110.74	48.72	32.31	11.84	31.02	298	334	P	V
		5724.2	71.44	-48.94	120.38	58.31	32.31	11.84	31.02	298	334	P	V
	*	5743	107.89	-	-	94.72	32.34	11.86	31.03	298	334	P	V
	*	5743	96.93	-	-	83.76	32.34	11.86	31.03	298	334	A	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		5620.2	59.75	-8.45	68.2	46.78	32.17	11.79	30.99	267	46	P	H
		5660	60.39	-15.24	75.63	47.39	32.22	11.79	31.01	267	46	P	H
		5718.6	60.04	-50.37	110.41	46.91	32.31	11.84	31.02	267	46	P	H
		5722.8	59.31	-57.88	117.19	46.18	32.31	11.84	31.02	267	46	P	H
	*	5783	108.47	-	-	95.25	32.39	11.88	31.05	267	46	P	H
	*	5783	97.4	-	-	84.18	32.39	11.88	31.05	267	46	A	H
		5850.6	59.98	-60.85	120.83	46.53	32.48	12.03	31.06	267	46	P	H
		5868.4	59.56	-47.49	107.05	45.95	32.51	12.17	31.07	267	46	P	H
		5895.2	60.68	-29.53	90.21	47.03	32.56	12.17	31.08	267	46	P	H
		5930.8	60.53	-7.67	68.2	46.71	32.6	12.31	31.09	267	46	P	H
													H
													H
		5607.8	59.65	-8.55	68.2	46.73	32.14	11.77	30.99	277	310	P	V
		5685.8	59.59	-35.14	94.73	46.51	32.27	11.82	31.01	277	310	P	V
		5714.4	59.33	-49.9	109.23	46.22	32.29	11.84	31.02	277	310	P	V
		5724.8	64.82	-56.92	121.74	51.69	32.31	11.84	31.02	277	310	P	V
	*	5783	114.2	-	-	100.98	32.39	11.88	31.05	277	310	P	V
	*	5783	103.05	-	-	89.83	32.39	11.88	31.05	277	310	A	V
		5850	60.82	-61.38	122.2	47.37	32.48	12.03	31.06	277	310	P	V
		5866.2	59.93	-47.73	107.66	46.32	32.51	12.17	31.07	277	310	P	V
		5913.4	59.83	-16.93	76.76	46.03	32.58	12.31	31.09	277	310	P	V
		5936.2	60.04	-8.16	68.2	46.22	32.6	12.31	31.09	277	310	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz	*	5827	107.2	-	-	93.76	32.46	12.03	31.05	274	46	P	H
	*	5827	96.3	-	-	82.86	32.46	12.03	31.05	274	46	A	H
		5850.2	69.36	-52.38	121.74	55.91	32.48	12.03	31.06	274	46	P	H
		5855.4	64.18	-46.51	110.69	50.7	32.51	12.03	31.06	274	46	P	H
		5913.8	60.21	-16.25	76.46	46.41	32.58	12.31	31.09	274	46	P	H
		5946.4	60.52	-7.68	68.2	46.53	32.63	12.45	31.09	274	46	P	H
													H
													H
	*	5827	112.05	-	-	98.61	32.46	12.03	31.05	274	311	P	V
	*	5827	101.08	-	-	87.64	32.46	12.03	31.05	274	311	A	V
		5850	76.15	-46.05	122.2	62.7	32.48	12.03	31.06	274	311	P	V
		5855.2	69.88	-40.86	110.74	56.4	32.51	12.03	31.06	274	311	P	V
		5908.2	60.25	-20.35	80.6	46.44	32.58	12.31	31.08	274	311	P	V
		5941.2	60.29	-7.91	68.2	46.3	32.63	12.45	31.09	274	311	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	47.49	-26.51	74	46.76	40.11	18.4	57.78	100	0	P	H
		17235	49.3	-18.9	68.2	41.65	41.65	23.14	57.14	100	0	P	H
													H
													H
		11490	49.82	-24.18	74	49.09	40.11	18.4	57.78	100	0	P	V
		17235	49.74	-18.46	68.2	42.09	41.65	23.14	57.14	100	0	P	V
													V
													V
802.11n HT20 CH 157 5785MHz		11570	62.43	-11.57	74	61.79	39.95	18.49	57.8	220	343	P	H
		11570	47.65	-6.35	54	47.01	39.95	18.49	57.8	220	343	A	H
		17355	49.96	-18.24	68.2	42.25	42.02	23.25	57.56	100	0	P	H
													H
		11570	65.78	-8.22	74	65.14	39.95	18.49	57.8	213	142	P	V
		11570	51.97	-2.03	54	51.33	39.95	18.49	57.8	213	142	A	V
		17355	49.66	-18.54	68.2	41.95	42.02	23.25	57.56	100	0	P	V
													V
802.11n HT20 CH 165 5825MHz		11650	53.79	-20.21	74	53.21	39.8	18.58	57.8	100	0	P	H
		17475	48.7	-19.5	68.2	40.93	42.39	23.36	57.98	100	0	P	H
													H
													H
		11650	62.9	-11.1	74	62.32	39.8	18.58	57.8	200	140	P	V
		11650	47.46	-6.54	54	46.88	39.8	18.58	57.8	200	140	A	V
		17475	47.9	-20.3	68.2	40.13	42.39	23.36	57.98	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5626	59.64	-8.56	68.2	46.67	32.17	11.79	30.99	282	46	P	H
		5678.2	59.29	-29.82	89.11	46.24	32.24	11.82	31.01	282	46	P	H
		5719	62.02	-48.5	110.52	48.89	32.31	11.84	31.02	282	46	P	H
		5722.8	63.11	-54.08	117.19	49.98	32.31	11.84	31.02	282	46	P	H
	*	5753	98.56	-	-	85.37	32.36	11.86	31.03	282	46	P	H
	*	5753	87.89	-	-	74.7	32.36	11.86	31.03	282	46	A	H
		5854.4	59.07	-53.1	112.17	45.59	32.51	12.03	31.06	282	46	P	H
		5856.2	59.98	-50.48	110.46	46.5	32.51	12.03	31.06	282	46	P	H
		5910.6	60.46	-18.36	78.82	46.66	32.58	12.31	31.09	282	46	P	H
		5927.8	60.71	-7.49	68.2	46.89	32.6	12.31	31.09	282	46	P	H
													H
													H
		5606	59.53	-8.67	68.2	46.61	32.14	11.77	30.99	281	330	P	V
		5687.8	59.87	-36.33	96.2	46.79	32.27	11.82	31.01	281	330	P	V
		5719	66.32	-44.2	110.52	53.19	32.31	11.84	31.02	281	330	P	V
		5724.8	68.45	-53.29	121.74	55.32	32.31	11.84	31.02	281	330	P	V
	*	5757	104.7	-	-	91.52	32.36	11.86	31.04	281	330	P	V
	*	5757	93.97	-	-	80.79	32.36	11.86	31.04	281	330	A	V
		5852.2	59.19	-57.99	117.18	45.74	32.48	12.03	31.06	281	330	P	V
		5867.6	60.43	-46.84	107.27	46.82	32.51	12.17	31.07	281	330	P	V
		5903.8	60.38	-23.47	83.85	46.59	32.56	12.31	31.08	281	330	P	V
		5938	60.36	-7.84	68.2	46.54	32.6	12.31	31.09	281	330	P	V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5633.2	59.35	-8.85	68.2	46.37	32.19	11.79	31	278	45	P	H
		5662.2	59.46	-17.8	77.26	46.43	32.22	11.82	31.01	278	45	P	H
		5709.6	59.73	-48.16	107.89	46.62	32.29	11.84	31.02	278	45	P	H
		5723.2	60.23	-57.87	118.1	47.1	32.31	11.84	31.02	278	45	P	H
	*	5797	105.1	-	-	91.86	32.41	11.88	31.05	278	45	P	H
	*	5797	94.07	-	-	80.83	32.41	11.88	31.05	278	45	A	H
		5854.2	61.34	-51.28	112.62	47.86	32.51	12.03	31.06	278	45	P	H
		5855.6	61.7	-48.93	110.63	48.22	32.51	12.03	31.06	278	45	P	H
		5884.8	60.06	-37.86	97.92	46.44	32.53	12.17	31.08	278	45	P	H
		5945.2	60.23	-7.97	68.2	46.24	32.63	12.45	31.09	278	45	P	H
													H
													H
		5636.8	59.67	-8.53	68.2	46.69	32.19	11.79	31	278	332	P	V
		5658	59.56	-14.58	74.14	46.56	32.22	11.79	31.01	278	332	P	V
		5709	60.35	-47.37	107.72	47.24	32.29	11.84	31.02	278	332	P	V
		5721	61.04	-52.04	113.08	47.91	32.31	11.84	31.02	278	332	P	V
	*	5797	110.64	-	-	97.4	32.41	11.88	31.05	278	332	P	V
	*	5797	99.43	-	-	86.19	32.41	11.88	31.05	278	332	A	V
		5852.6	65.62	-50.65	116.27	52.17	32.48	12.03	31.06	278	332	P	V
		5856.2	63.69	-46.77	110.46	50.21	32.51	12.03	31.06	278	332	P	V
		5904	61.11	-22.59	83.7	47.32	32.56	12.31	31.08	278	332	P	V
		5943.6	60.76	-7.44	68.2	46.77	32.63	12.45	31.09	278	332	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	47.27	-26.73	74	46.52	40.1	18.45	57.8	100	0	P	H
		17265	49.26	-18.94	68.2	41.6	41.75	23.17	57.26	100	0	P	H
													H
													H
		11510	47.17	-26.83	74	46.42	40.1	18.45	57.8	100	0	P	V
		17265	48.77	-19.43	68.2	41.11	41.75	23.17	57.26	100	0	P	V
													V
													V
802.11n HT40 CH 159 5795MHz		11590	50.47	-23.53	74	49.82	39.91	18.54	57.8	100	0	P	H
		17385	49.61	-18.59	68.2	41.87	42.13	23.29	57.68	100	0	P	H
													H
													H
		11590	57.5	-16.5	74	56.85	39.91	18.54	57.8	214	140	P	V
		11590	45.66	-8.34	54	45.01	39.91	18.54	57.8	214	140	A	V
		17385	49.89	-18.31	68.2	42.15	42.13	23.29	57.68	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

5GHz WIFI 802.11n HT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11n HT20 LF		71.04	36.7	-3.3	40	55.66	12.43	1.06	32.45	144	69	P	H
		119.64	37.68	-5.82	43.5	51.13	17.55	1.43	32.43	-	-	P	H
		215.76	36.01	-7.49	43.5	50.65	16.04	1.7	32.38	-	-	P	H
		430.9	38.82	-7.18	46	45.56	22.75	2.89	32.38	-	-	P	H
		598.9	37.43	-8.57	46	40.96	25.37	3.5	32.4	-	-	P	H
		647.2	37.08	-8.92	46	39.91	25.96	3.61	32.4	-	-	P	H
													H
													H
													H
													H
													H
													H
		71.04	39.65	-0.35	40	58.61	12.43	1.06	32.45	140	74	QP	V
	*	71.04	43.31	3.31	40	62.27	12.43	1.06	32.45	140	74	P	V
		130.71	35.78	-7.72	43.5	48.79	17.98	1.43	32.42	-	-	P	V
		215.76	31.97	-11.53	43.5	46.61	16.04	1.7	32.38	-	-	P	V
		383.3	35.71	-10.29	46	43.58	21.8	2.68	32.35	-	-	P	V
		430.9	34.24	-11.76	46	40.98	22.75	2.89	32.38	-	-	P	V
		598.9	35.57	-10.43	46	39.1	25.37	3.5	32.4	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Emission below 1GHz

Note symbol

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(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)

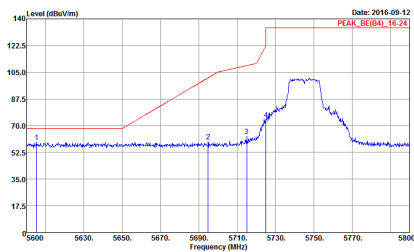
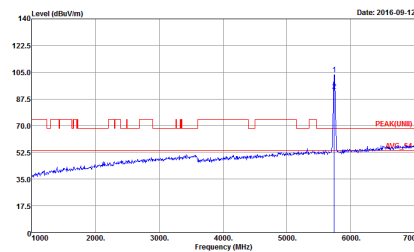
Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Nick Yu, Peter Chiu, and Citta Ke	Temperature :	22~23°C
		Relative Humidity :	52~55%

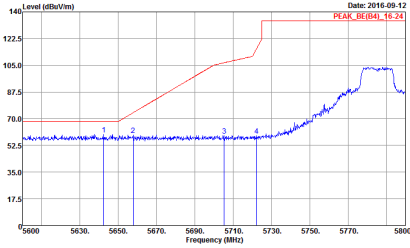
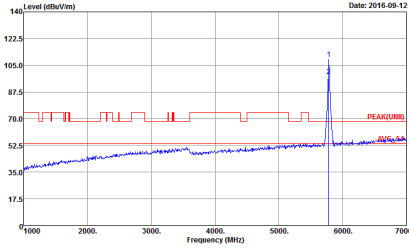
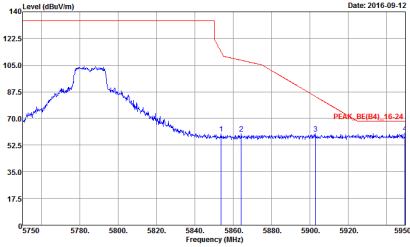
Band 4 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(94)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 661313 Mode : 30 Setting : 1B	 Site : 03CH12-HY Condition : PEAK(UNI) 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 661313 Mode : 30 Setting : 1B

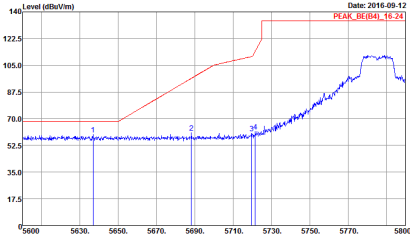
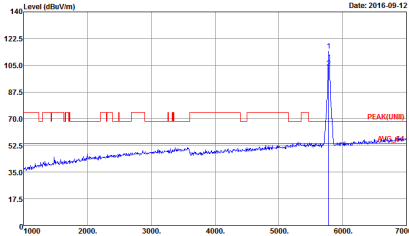
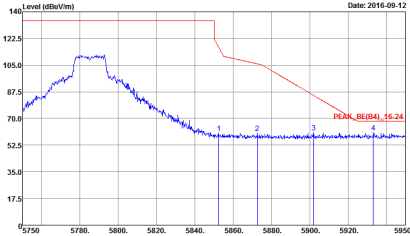


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 30 Setting : 10	Site : 03CH12-HY Condition : PEAK(UNI)_16-24 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 30 Setting : 10

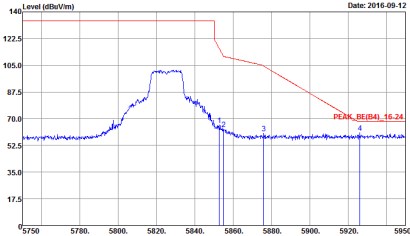
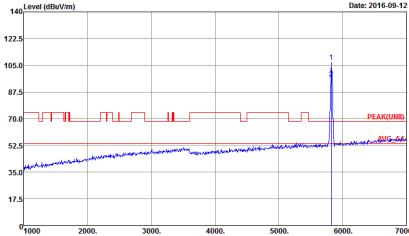


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 31 Setting : 30	 Site : 03CH12-HY Condition : PEAK(UNB) 3m HORN 9120D_1328 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 31 Setting : 30
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 31 Setting : 30	Left blank

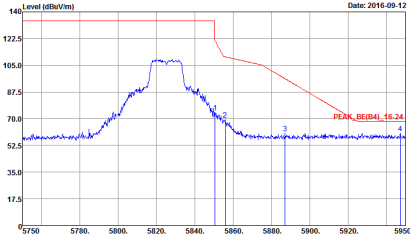
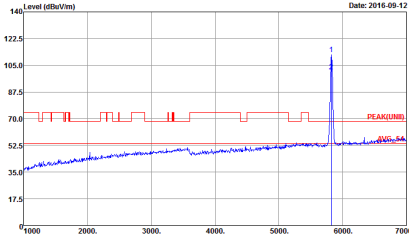


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 31 Setting : 30	 Site : 03CH12-HY Condition : PEAK(UMI) 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 31 Setting : 30
	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 31 Setting : 30	Left blank



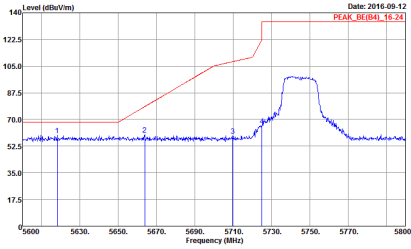
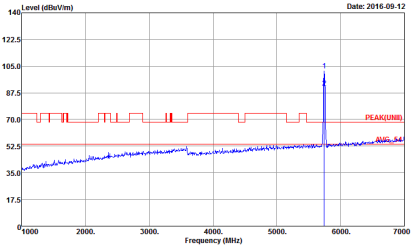
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 32 Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNI) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 32 Setting : 22



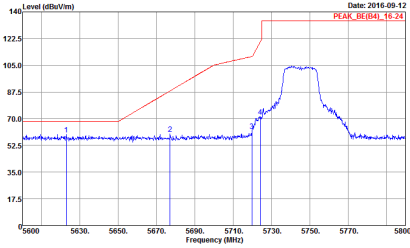
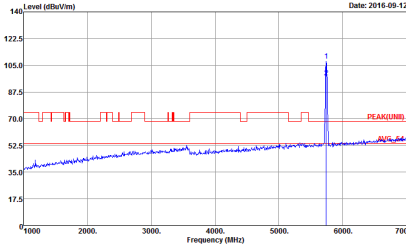
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 32 Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 32 Setting : 22



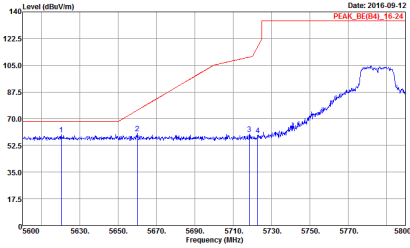
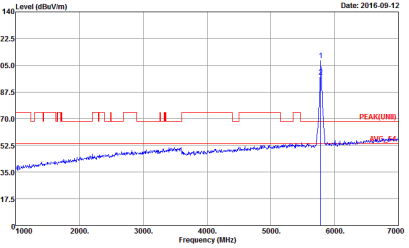
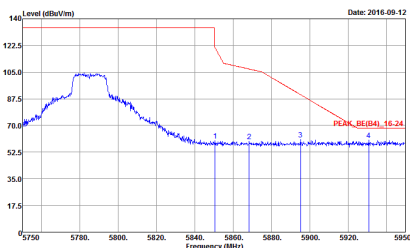
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_B4_16.24 3m HORN 91200.1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 33 Setting : 17	 Site : 03CH12-HY Condition : PEAK(UWB) 3m HORN 91200.1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 33 Setting : 17

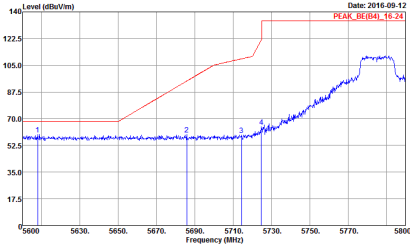
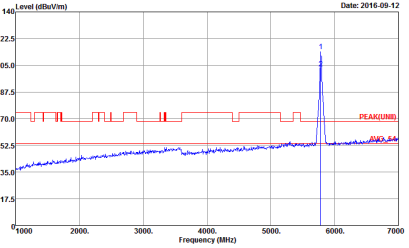
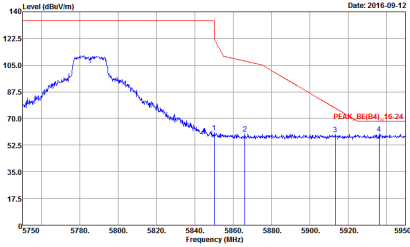


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 33 Setting : 17	 Site : 03CH12-HY Condition : PEAK(UNI) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 33 Setting : 17

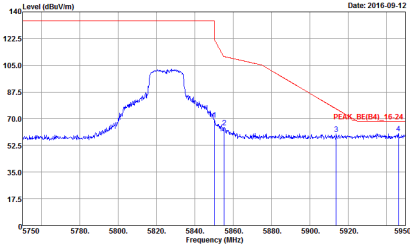
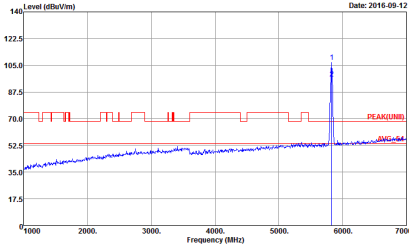


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 34 Setting : 30	 Site : 03CH12-HY Condition : PEAK(UNB) 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 34 Setting : 30
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 34 Setting : 30	Left blank

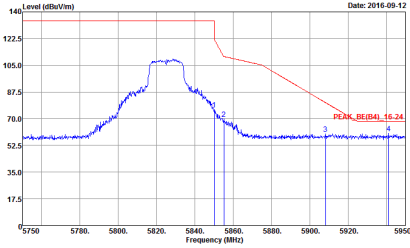
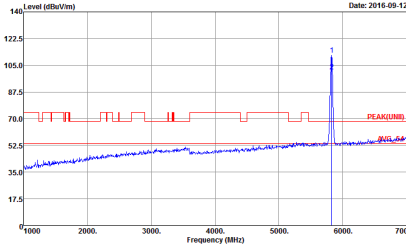


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site Condition : 03CH12-HY : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 34 Setting : 30	 Site Condition : 03CH12-HY : PEAK(UNB) 3m HORN 9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 34 Setting : 30
	 Site Condition : 03CH12-HY : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 34 Setting : 30	Left blank



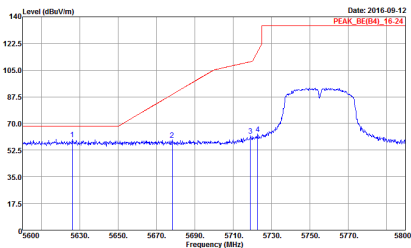
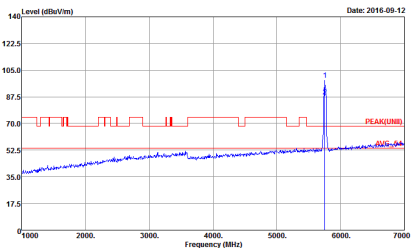
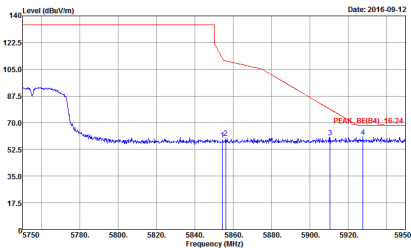
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 35 Setting : 23	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 35 Setting : 23



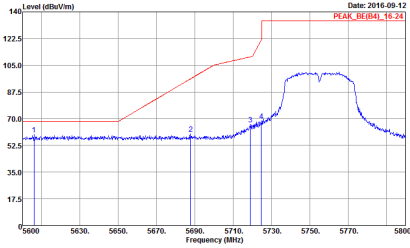
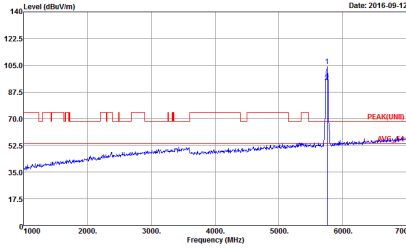
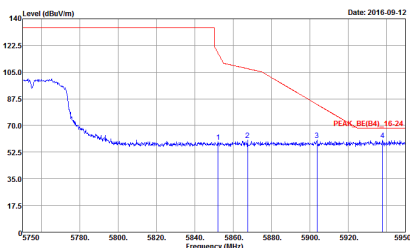
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN_9120D_1328 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 35 Setting : 23	 Site : 03CH12-HY Condition : PEAK(UNB) 3m HORN_9120D_1328 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 35 Setting : 23



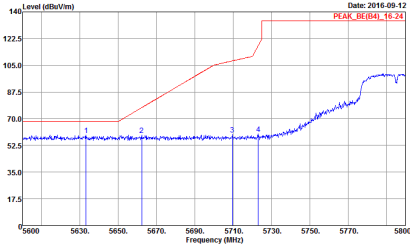
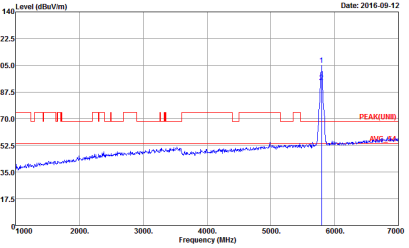
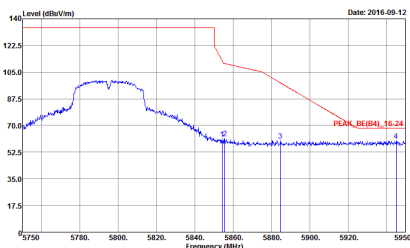
Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 36 Setting : 15	 Site : 03CH12-HY Condition : PEAK(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 36 Setting : 15
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 36 Setting : 15	Left blank

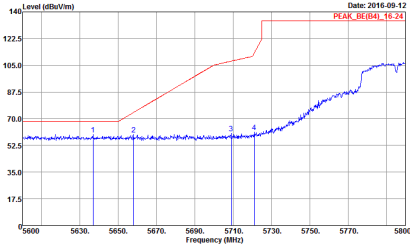
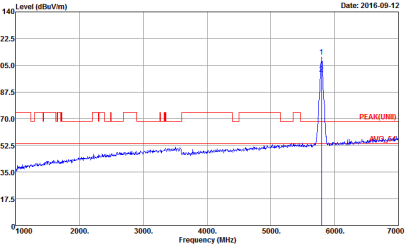
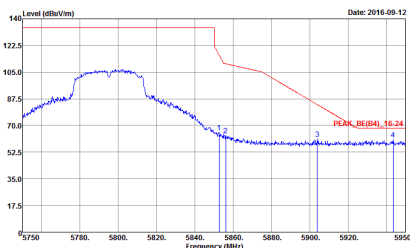


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 36 Setting : 15	 Site : 03CH12-HY Condition : PEAK(UNI) 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 36 Setting : 15
Peak	 Site : 03CH12-HY Condition : PEAK_BE(84)_16-24 3m HORN 9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 36 Setting : 15	Left blank



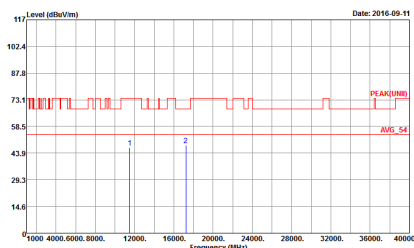
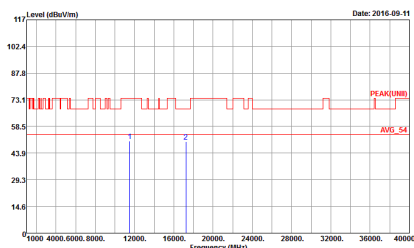
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 Site Condition : 03CH12-HY : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22	 Site Condition : 03CH12-HY : PEAK(UNB) 3m HORN 9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22
Peak	 Site Condition : 03CH12-HY : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22	Left blank



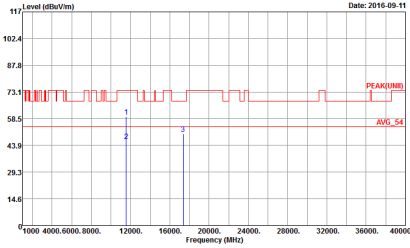
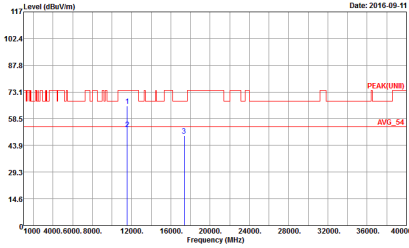
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNB) 3m HORN 9120D_1328 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN 9120D_1328 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 681313 Mode : 37 Setting : 22	Left blank



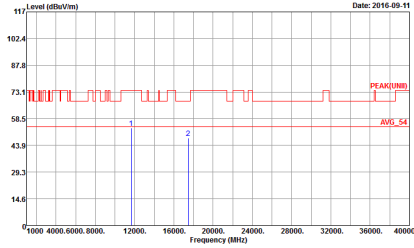
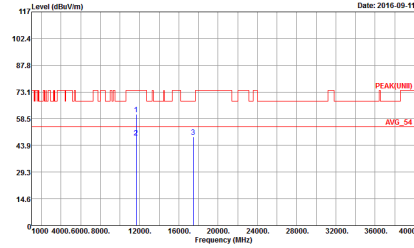
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UMI) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 30 Setting : 18	 Site : 03CH12-HY Condition : PEAK(UMI) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 30 Setting : 18



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 31 Setting : 30	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 31 Setting : 30



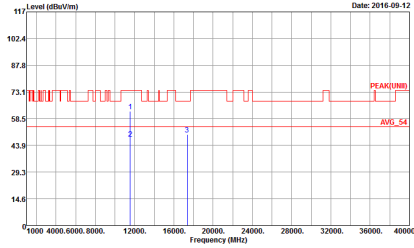
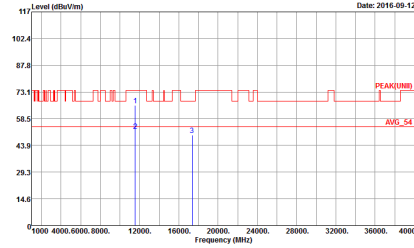
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 32 Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 32 Setting : 22



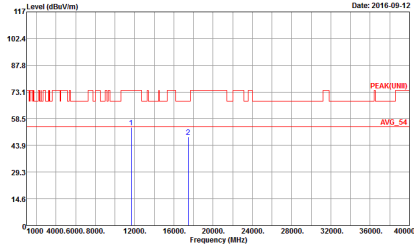
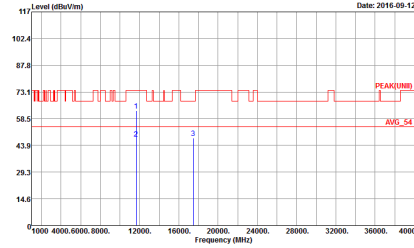
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 33 Setting : 17	Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 33 Setting : 17



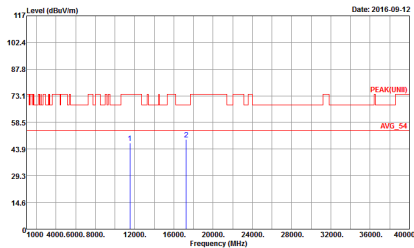
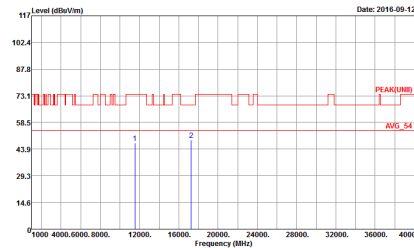
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UMI) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 34 Setting : 30	 Site : 03CH12-HY Condition : PEAK(UMI) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 34 Setting : 30



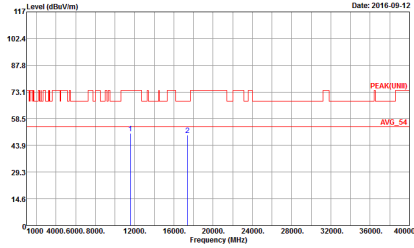
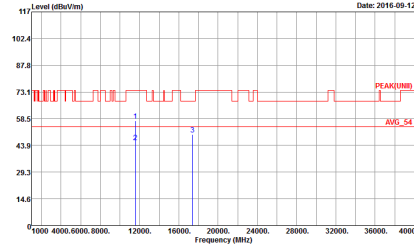
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 35 Setting : 23	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 35 Setting : 23



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 : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 36 Setting : 15	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 36 Setting : 15



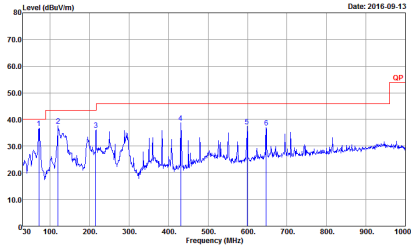
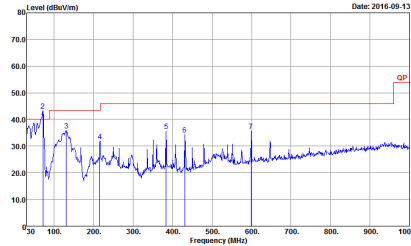
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 681313 Mode : 37 Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 681313 Mode : 37 Setting : 22



Band 4 5725~5850MHz

Emission below 1GHz

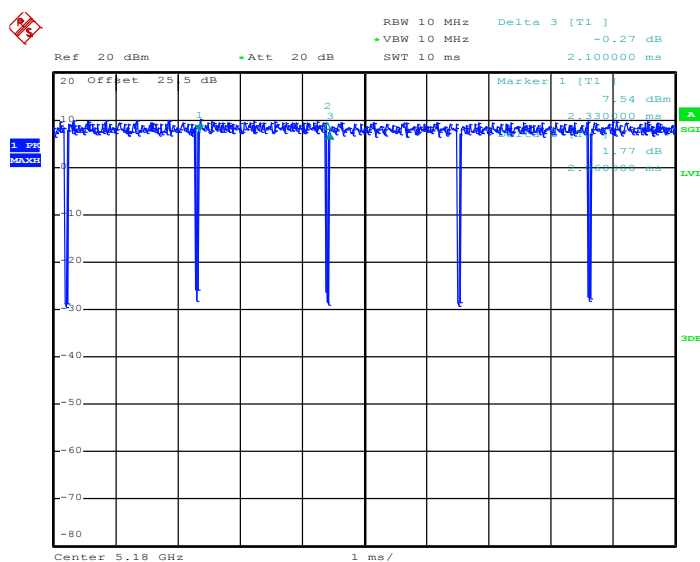
5GHz WIFI 802.11n HT20 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT20 LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 HORIZONTAL Detector : Peak Project : 681313 Mode : 3B	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 VERTICAL Detector : Peak Project : 681313 Mode : 3B

Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	98.10	-	-	10Hz
5GHz 802.11n HT20	97.96	1920.00	0.52	1kHz
5GHz 802.11n HT40	95.96	950.00	1.05	3kHz

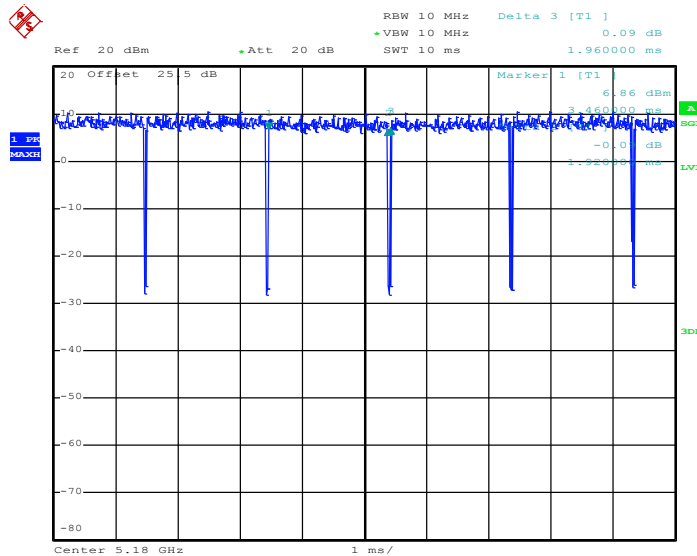
802.11a



Date: 18.AUG.2016 21:32:02

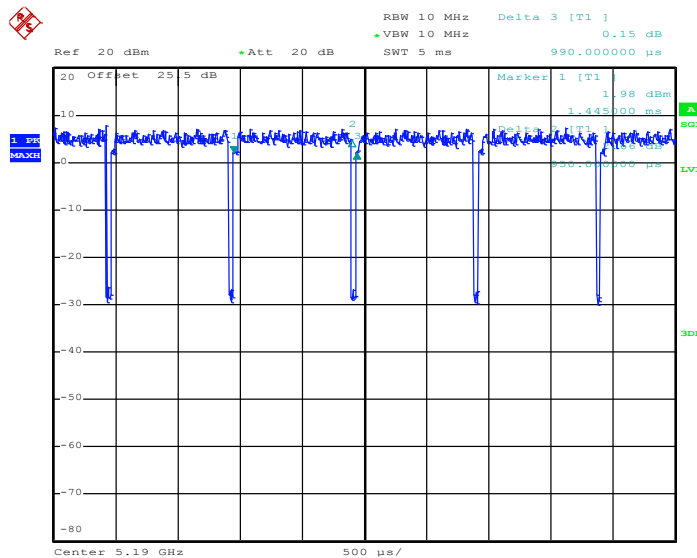


802.11n HT20



Date: 18.AUG.2016 21:34:27

802.11n HT40



Date: 18.AUG.2016 21:37:11