FCC RF Test Report

APPLICANT	:	ASUSTeK COMPUTER INC.
EQUIPMENT	:	ASUS Phone
BRAND NAME	:	ASUS
MODEL NAME	:	ASUS_Z016D
FCC ID	:	MSQZ016D
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Apr. 19, 2016 and testing was completed on Aug. 02, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR641901F	Rev. 01	Initial issue of report	Aug. 16, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) &15.209(a)	Pass	Under limit 3.06 dB at 37.830 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 10.20 dB at 0.150 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

ASUSTeK COMPUTER INC.
4F, No. 150, LI-TE RD., PEITOU, TAIPEI, TAIWAN

1.2 Manufacturer

COTEK ELECTRONICS (SUZHOU) CO., LTD.
No.288, Mayun Road, Suzhou New District, Jiangsu, PRC

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	ASUS Phone
Brand Name	ASUS
Model Name	ASUS_Z016D
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth v4.2 BR/EDR/LE
HW Version	REV2.0
SW Version	4.0.20.270
EUT Stage	Production Unit

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

1.4 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Standards-related Product Specification</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>5745 MHz ~ 5825 MHz</td></tr>
<tr><td>Maximum Output Power</td><td><5745 MHz ~ 5825 MHz>
<Ant. 1>
802.11a : 15.66 dBm / 0.0368 W
SISO <Ant. 1>
802.11n HT20 : 15.57 dBm / 0.0361 W
802.11n HT40 : 15.26 dBm / 0.0336 W
802.11ac VHT20: 15.57 dBm / 0.0361 W
802.11ac VHT40: 15.20 dBm / 0.0331 W
802.11ac VHT80: 15.52 dBm / 0.0356 W
<Ant. 2>
802.11a : 15.75 dBm / 0.0376 W
SISO <Ant. 2>
802.11n HT20 : 15.54 dBm / 0.0358 W
802.11n HT40 : 15.13 dBm / 0.0326 W
802.11ac VHT20: 15.65 dBm / 0.0367 W
802.11ac VHT40: 15.17 dBm / 0.0329 W
802.11ac VHT80: 15.51 dBm / 0.0356 W
MIMO <Ant. 1 + 2>
802.11n HT20 : 15.78 dBm / 0.0378 W
802.11n HT40 : 15.51 dBm / 0.0356 W
802.11ac VHT20: 15.60 dBm / 0.0363 W
802.11ac VHT40: 15.62 dBm / 0.0365 W
802.11ac VHT80: 15.85 dBm / 0.0385 W</td></tr>
<tr><td>99% Occupied Bandwidth</td><td>802.11a : 19.15 MHz
802.11n HT20 : 24.45 MHz
802.11n HT40 : 53.90 MHz
802.11ac VHT20 : 20.45 MHz
802.11ac VHT40 : 38.10 MHz
802.11ac VHT80 : 77.16 MHz</td></tr>
<tr><td>Type of Modulation</td><td>802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)</td></tr>
<tr><td>Antenna Type</td><td>Main Antenna : PIFA Antenna
Aux. Antenna : PIFA Antenna</td></tr>
<tr><td>Antenna Gain</td><td>Main Antenna : -3.90 dBi
Aux. Antenna : -7.40 dBi</td></tr>
<tr><td>Antenna Function Description</td><td>
<table>
<tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr>
<tr><td>802.11 a</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n/ac SISO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n/ac MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

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

1.5 Modification of EUT

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

1.6 Testing Location

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

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st 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.**		
	TH02-HY	CO05-HY	03CH06-HY

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

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane for Ant. 1; X plane for 1+2) were recorded in this report.

2.1 Carrier Frequency and Channel

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

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

2.2 Test Mode

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

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

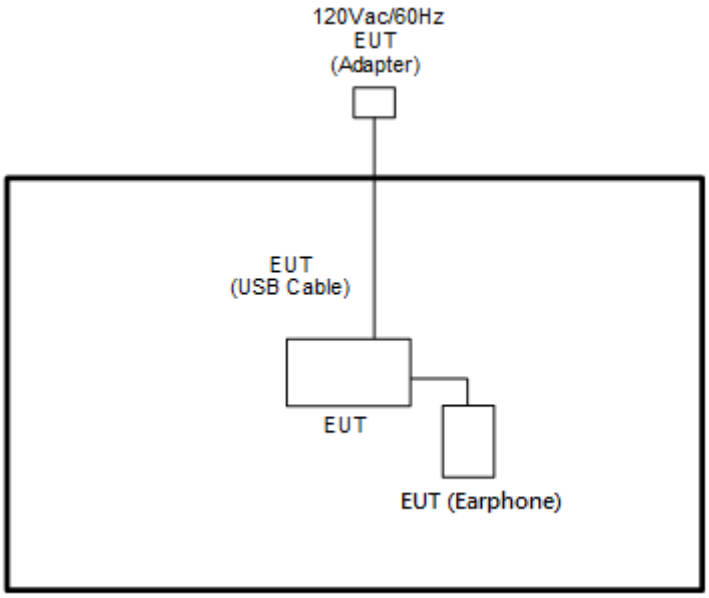
AC Conducted Emission	Mode 1 : LTE Band 30 Idle + Bluetooth Link + WLAN (5GHz) Link + Camera (Back) + MP3 + Earphone + USB Cable 5 (Charging from Adapter 2)

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

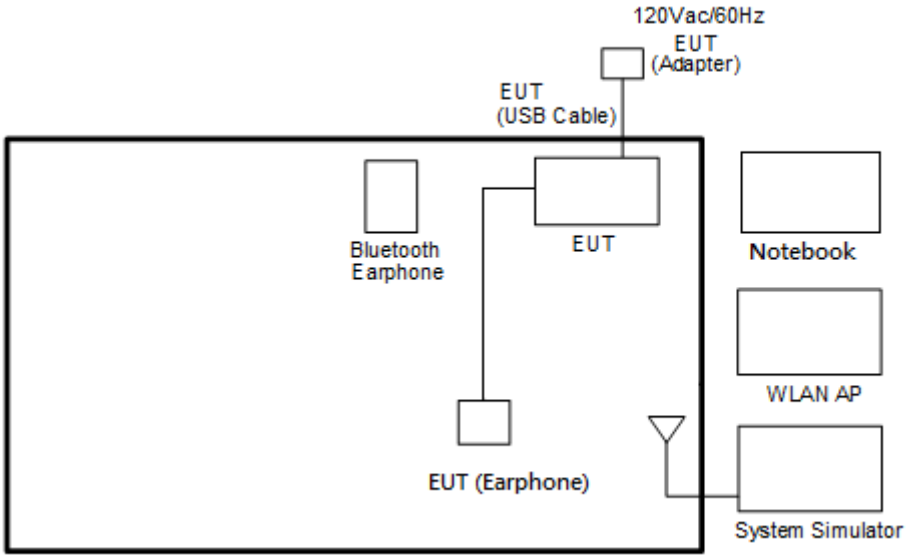
Ch. #		Band IV：5725-5850 MHz		
		802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	ASUS	RT-AC66U	MSQ-ETAC66U	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
4.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN function, programmed RF utility, “WiFi test tool” 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.

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

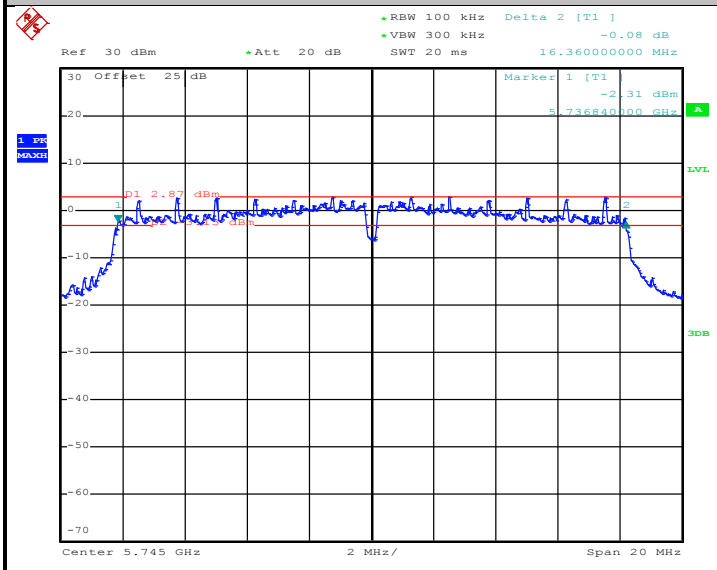
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup

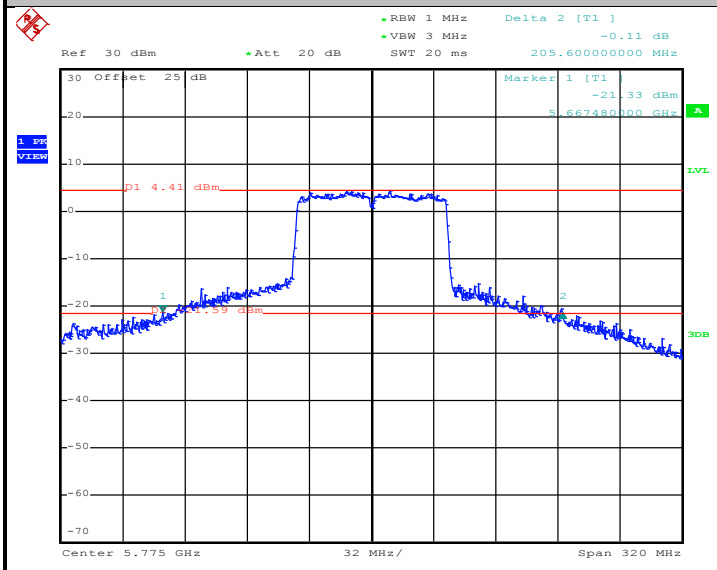
3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

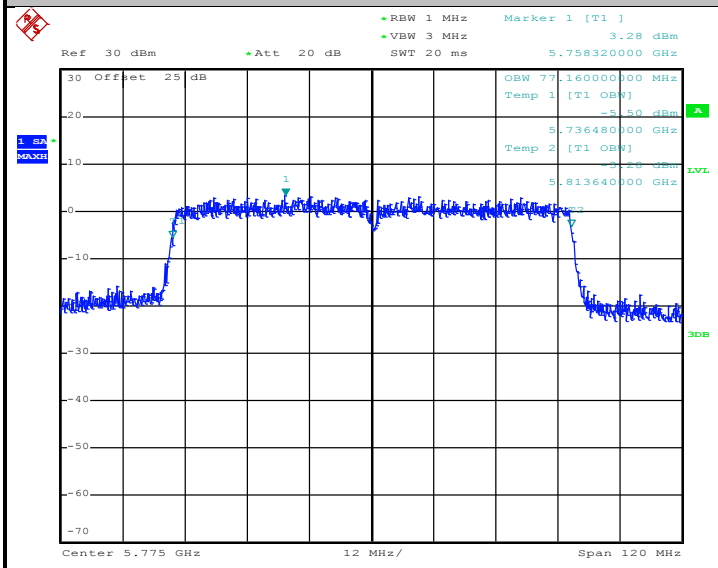
Minimum 6dB Bandwidth



Maximum 26dB Bandwidth



Maximum 99% Occupied Bandwidth



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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

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

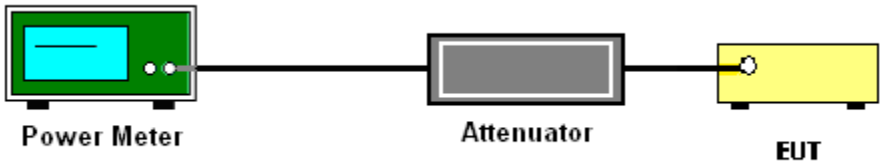
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

 # Method SA-2 #

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

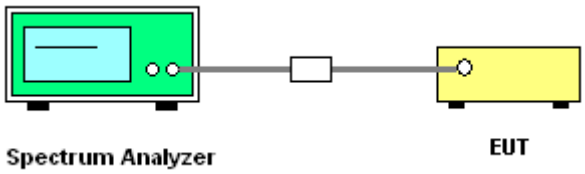
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(500kHz/RBW) 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. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

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

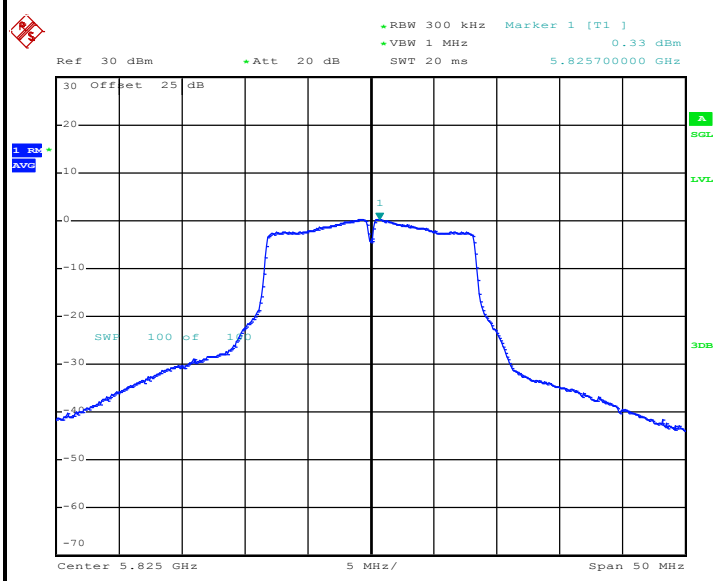
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/300kHz)



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 Part15.205.

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 Part15.205 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.

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

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

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

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

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

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

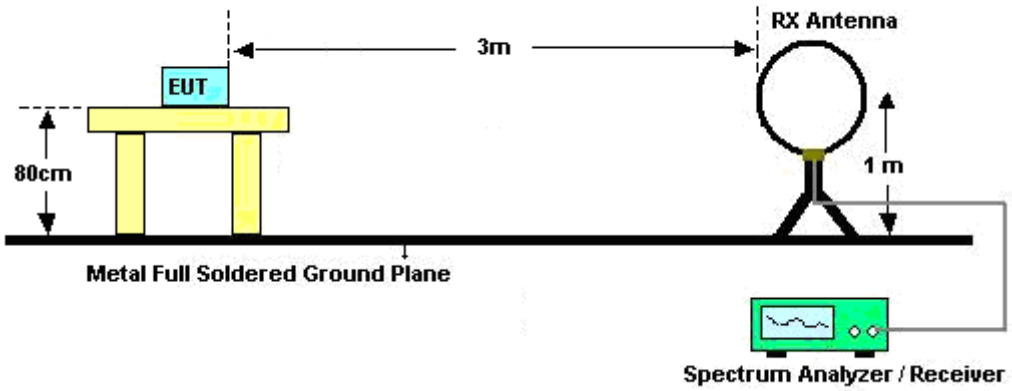
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

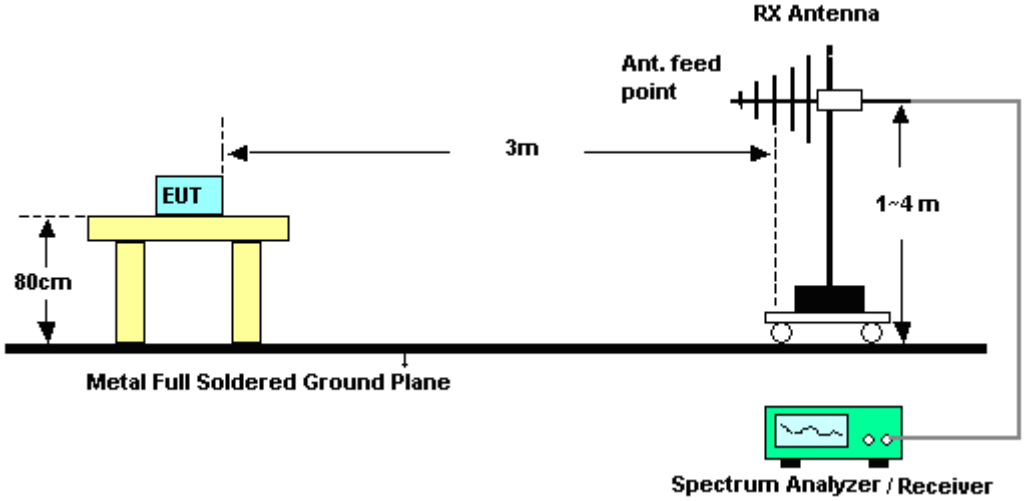
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

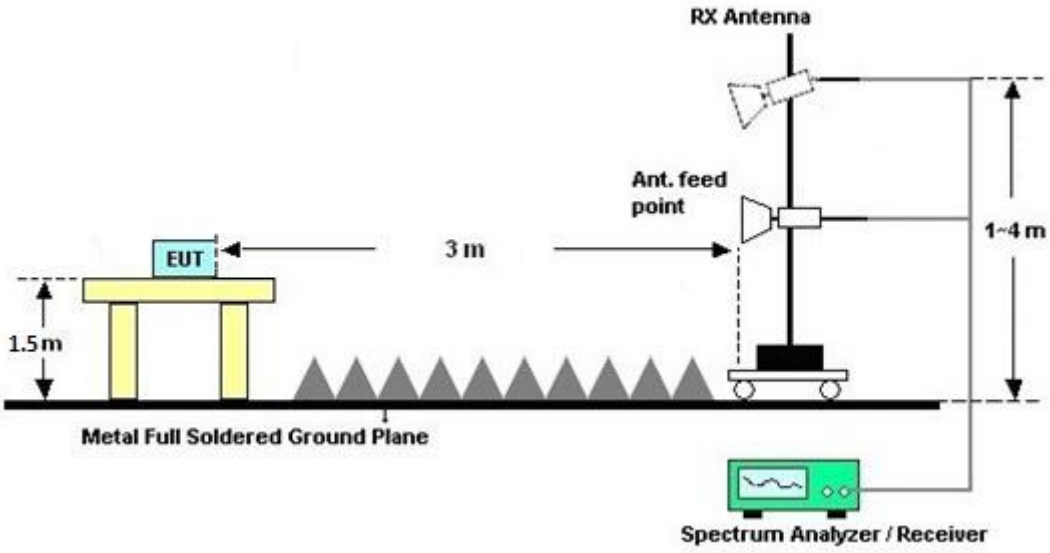
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

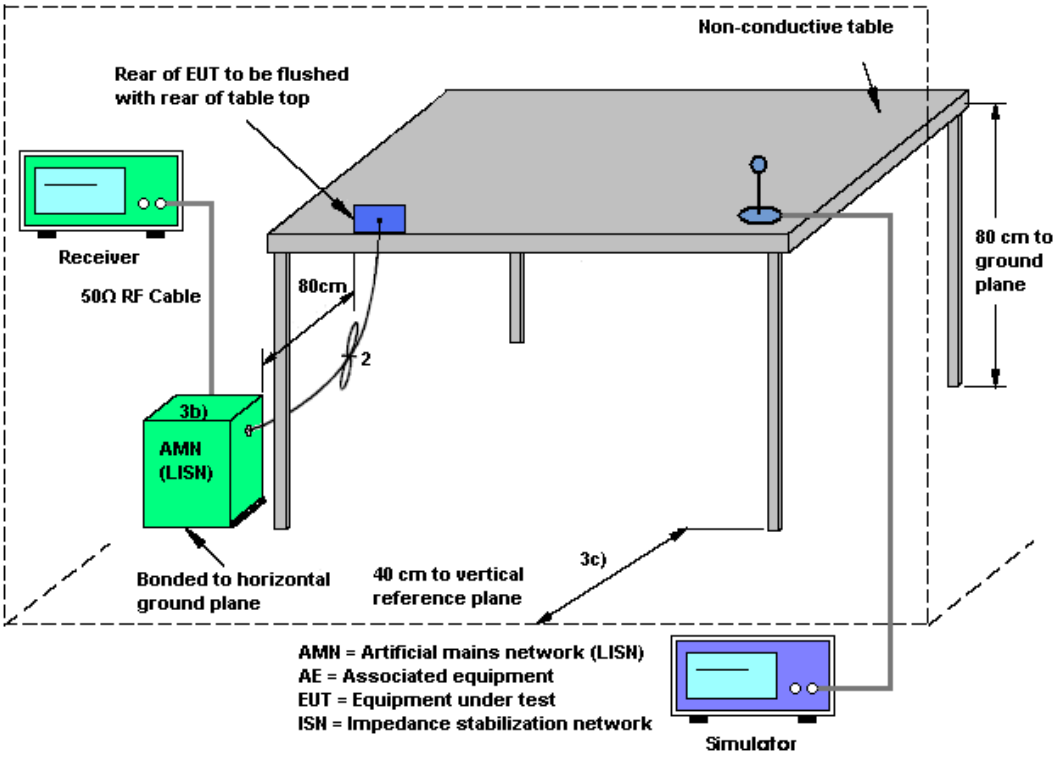
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

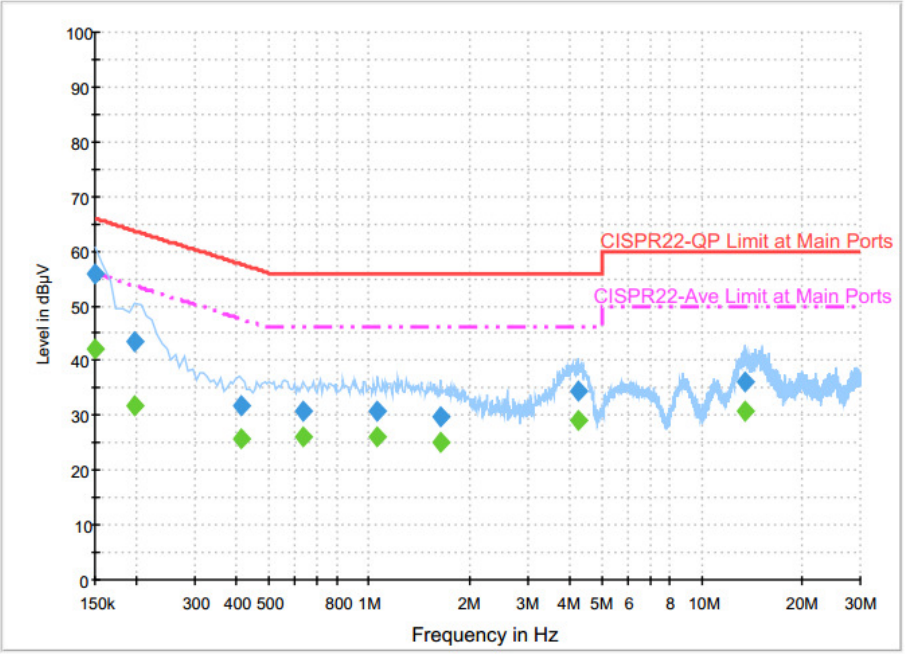
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 :	24~25℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	49~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 30 Idle + Bluetooth Link + WLAN (5GHz) Link + Camera (Back) + MP3 + Earphone + USB Cable 5 (Charging from Adapter 2)		



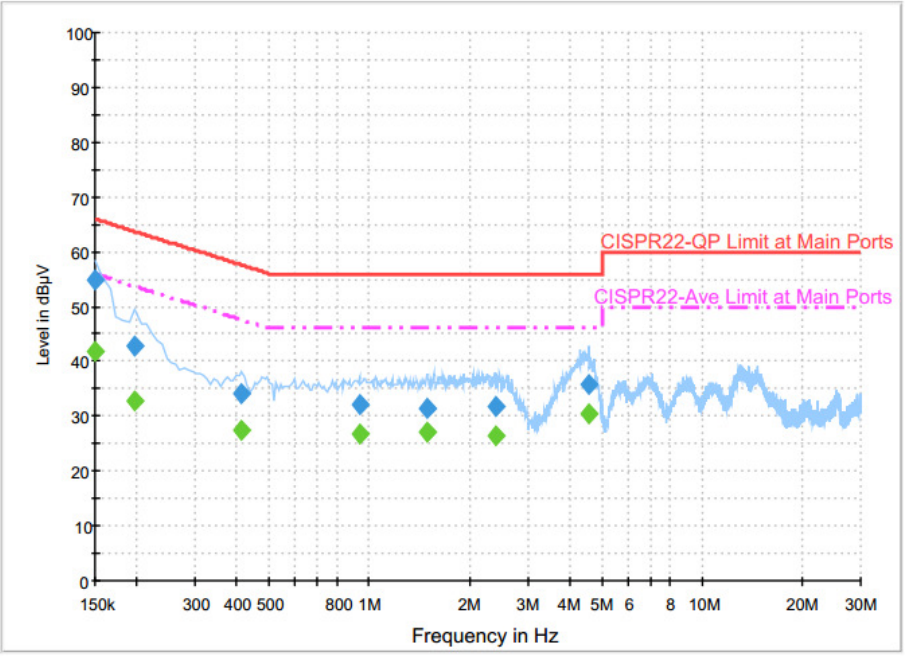
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	55.8	Off	L1	19.6	10.2	66.0
0.198000	43.5	Off	L1	19.6	20.2	63.7
0.414000	31.8	Off	L1	19.6	25.8	57.6
0.630000	30.7	Off	L1	19.6	25.3	56.0
1.062000	30.6	Off	L1	19.7	25.4	56.0
1.638000	29.7	Off	L1	19.7	26.3	56.0
4.262000	34.4	Off	L1	19.8	21.6	56.0
13.454000	36.0	Off	L1	20.3	24.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.2	Off	L1	19.6	13.8	56.0
0.198000	31.9	Off	L1	19.6	21.8	53.7
0.414000	25.9	Off	L1	19.6	21.7	47.6
0.630000	26.0	Off	L1	19.6	20.0	46.0
1.062000	26.0	Off	L1	19.7	20.0	46.0
1.638000	25.1	Off	L1	19.7	20.9	46.0
4.262000	29.0	Off	L1	19.8	17.0	46.0
13.454000	30.7	Off	L1	20.3	19.3	50.0

Test Mode :	Mode 1	Temperature :	24~25℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	49~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 30 Idle + Bluetooth Link + WLAN (5GHz) Link + Camera (Back) + MP3 + Earphone + USB Cable 5 (Charging from Adapter 2)		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	54.8	Off	N	19.6	11.2	66.0
0.198000	42.7	Off	N	19.6	21.0	63.7
0.414000	34.0	Off	N	19.6	23.6	57.6
0.934000	32.1	Off	N	19.6	23.9	56.0
1.494000	31.5	Off	N	19.7	24.5	56.0
2.390000	31.7	Off	N	19.6	24.3	56.0
4.590000	35.8	Off	N	19.8	20.2	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.0	Off	N	19.6	14.0	56.0
0.198000	32.9	Off	N	19.6	20.8	53.7
0.414000	27.5	Off	N	19.6	20.1	47.6
0.934000	26.7	Off	N	19.6	19.3	46.0
1.494000	27.0	Off	N	19.7	19.0	46.0
2.390000	26.3	Off	N	19.6	19.7	46.0
4.590000	30.6	Off	N	19.8	15.4	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

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

3.8 Antenna Requirements

3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

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

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

For power measurements on IEEE 802.11 devices,

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

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

The EUT supports CDD mode.

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

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

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

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

	Ant 1 (dBi)	Ant 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band IV	-3.90	-7.40	-3.90	-2.46	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
DC Power Supply	TOPWARD	3303D	740889	N/A	May 20, 2016	Jul. 28, 2016 ~ Aug. 02, 2016	May 19, 2017	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1132003	300MHz~40GHz	Aug. 12, 2015	Jul. 28, 2016 ~ Aug. 02, 2016	Aug. 11, 2016	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Aug. 12, 2015	Jul. 28, 2016 ~ Aug. 02, 2016	Aug. 11, 2016	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 23, 2015	Jul. 28, 2016 ~ Aug. 02, 2016	Nov. 22, 2016	Conducted (TH02-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 08, 2015	Jul. 28, 2016 ~ Aug. 02, 2016	Sep. 07, 2016	Conducted (TH02-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 12, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	Jun. 12, 2016	Aug. 25, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Jun. 12, 2016	Dec. 01, 2016	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Jul. 18, 2016 ~ Jul. 23, 2016	Sep. 01, 2016	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	10MHz~1GHz	Dec. 31, 2015	Jul. 18, 2016 ~ Jul. 23, 2016	Dec. 30, 2016	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D	40103	30MHz to 1GHz	Jan. 13, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Jan. 12, 2017	Radiation (03CH13-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	N/A	Mar. 10, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Mar. 09, 2017	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Apr. 25, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Apr. 24, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590074	1GHz~18GHz	Jun. 27, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Jun. 26, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Jun. 13, 2017	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Jan. 30, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Jan. 29, 2017	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	N/A	Mar. 14, 2016	Jul. 18, 2016 ~ Jul. 23, 2016	Mar. 13, 2017	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jul. 18, 2016 ~ Jul. 23, 2016	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jul. 18, 2016 ~ Jul. 23, 2016	N/A	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Jul. 18, 2016 ~ Jul. 23, 2016	Nov. 01, 2016	Radiation (03CH13-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 (30MHz ~ 1000MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.70**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.30**

Appendix A. Conducted Test Results

Report Number : FR641901F

Test Engineer:	Phyang	Temperature:	21~25	°C
Test Date:	2016/7/28~2016/08/02	Relative Humidity:	51~54	%

Report Number : FR641901F

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

Band IV													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	19.05	18.25	35.38	26.96	16.36	16.36	0.5	0.5	Pass
11a	6Mbps	1	157	5785	18.80	18.35	39.90	27.61	16.36	16.36	0.5	0.5	Pass
11a	6Mbps	1	165	5825	19.15	18.30	35.51	27.31	16.36	16.36	0.5	0.5	Pass
HT20	MCS0	1	149	5745	19.85	19.10	44.63	38.23	17.60	17.60	0.5	0.5	Pass
HT20	MCS0	1	157	5785	19.70	19.45	45.53	38.15	17.60	17.60	0.5	0.5	Pass
HT20	MCS0	1	165	5825	19.50	19.15	39.44	30.88	17.60	17.60	0.5	0.5	Pass
HT40	MCS0	1	151	5755	37.20	36.90	74.56	66.02	36.32	36.32	0.5	0.5	Pass
HT40	MCS0	1	159	5795	37.30	37.10	82.87	79.38	36.40	36.40	0.5	0.5	Pass
VHT20	MCS0	1	149	5745	19.15	19.35	40.90	37.49	17.64	17.60	0.5	0.5	Pass
VHT20	MCS0	1	157	5785	19.25	19.20	39.81	29.60	17.56	17.60	0.5	0.5	Pass
VHT20	MCS0	1	165	5825	19.15	19.30	42.14	39.43	17.64	17.60	0.5	0.5	Pass
VHT40	MCS0	1	151	5755	37.00	36.90	70.80	61.76	36.32	36.40	0.5	0.5	Pass
VHT40	MCS0	1	159	5795	37.10	37.00	70.72	76.85	36.40	36.40	0.5	0.5	Pass
VHT80	MCS0	1	155	5775	76.08	75.96	147.20	95.52	75.84	75.84	0.5	0.5	Pass
HT20	MCS0	2	149	5745	24.10	24.45	54.59	60.23	17.64	17.68	0.5		Pass
HT20	MCS0	2	157	5785	20.95	21.30	52.00	42.91	17.68	17.84	0.5		Pass
HT20	MCS0	2	165	5825	19.90	20.30	46.41	44.04	17.68	17.84	0.5		Pass
HT40	MCS0	2	151	5755	37.70	53.90	84.48	106.48	36.48	36.48	0.5		Pass
HT40	MCS0	2	159	5795	38.10	38.60	82.19	85.53	36.64	36.64	0.5		Pass
VHT20	MCS0	2	149	5745	19.65	19.85	44.48	40.59	17.68	17.76	0.5		Pass
VHT20	MCS0	2	157	5785	20.05	19.65	44.98	46.43	17.64	17.84	0.5		Pass
VHT20	MCS0	2	165	5825	19.90	20.45	45.68	36.65	17.64	17.72	0.5		Pass
VHT40	MCS0	2	151	5755	37.80	37.90	83.48	72.53	36.48	36.40	0.5		Pass
VHT40	MCS0	2	159	5795	38.10	37.80	93.19	75.36	36.56	36.56	0.5		Pass
VHT80	MCS0	2	155	5775	77.16	76.92	205.60	168.80	76.16	76.64	0.5		Pass

Report Number : FR641901F

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	0.00	0.00	15.54	15.57		30.00	30.00	-3.90	-7.40		Pass
11a	6Mbps	1	157	5785	0.00	0.00	15.51	15.54		30.00	30.00	-3.90	-7.40		Pass
11a	6Mbps	1	165	5825	0.00	0.00	15.66	15.75		30.00	30.00	-3.90	-7.40		Pass
HT20	MCS0	1	149	5745	0.00	0.00	15.51	15.52		30.00	30.00	-3.90	-7.40		Pass
HT20	MCS0	1	157	5785	0.00	0.00	15.55	15.51		30.00	30.00	-3.90	-7.40		Pass
HT20	MCS0	1	165	5825	0.00	0.00	15.57	15.54		30.00	30.00	-3.90	-7.40		Pass
HT40	MCS0	1	151	5755	0.09	0.09	15.20	15.10		30.00	30.00	-3.90	-7.40		Pass
HT40	MCS0	1	159	5795	0.09	0.09	15.26	15.13		30.00	30.00	-3.90	-7.40		Pass
VHT20	MCS0	1	149	5745	0.00	0.00	15.52	15.56		30.00	30.00	-3.90	-7.40		Pass
VHT20	MCS0	1	157	5785	0.00	0.00	15.57	15.51		30.00	30.00	-3.90	-7.40		Pass
VHT20	MCS0	1	165	5825	0.00	0.00	15.51	15.65		30.00	30.00	-3.90	-7.40		Pass
VHT40	MCS0	1	151	5755	0.09	0.09	15.11	15.12		30.00	30.00	-3.90	-7.40		Pass
VHT40	MCS0	1	159	5795	0.09	0.09	15.20	15.17		30.00	30.00	-3.90	-7.40		Pass
VHT80	MCS0	1	155	5775	0.15	0.15	15.52	15.51		30.00	30.00	-3.90	-7.40		Pass
HT20	MCS0	2	149	5745	0.09	0.09	12.74	12.71	15.73	30.00		-3.90			Pass
HT20	MCS0	2	157	5785	0.09	0.09	12.60	12.77	15.69	30.00		-3.90			Pass
HT20	MCS0	2	165	5825	0.09	0.09	12.83	12.72	15.78	30.00		-3.90			Pass
HT40	MCS0	2	151	5755	0.14	0.14	12.26	12.47	15.38	30.00		-3.90			Pass
HT40	MCS0	2	159	5795	0.14	0.14	12.44	12.55	15.51	30.00		-3.90			Pass
VHT20	MCS0	2	149	5745	0.09	0.06	12.51	12.58	15.55	30.00		-3.90			Pass
VHT20	MCS0	2	157	5785	0.09	0.06	12.51	12.55	15.54	30.00		-3.90			Pass
VHT20	MCS0	2	165	5825	0.09	0.06	12.71	12.47	15.60	30.00		-3.90			Pass
VHT40	MCS0	2	151	5755	0.15	0.14	12.40	12.62	15.52	30.00		-3.90			Pass
VHT40	MCS0	2	159	5795	0.15	0.14	12.34	12.87	15.62	30.00		-3.90			Pass
VHT80	MCS0	2	155	5775	0.28	0.30	12.75	12.92	15.85	30.00		-3.90			Pass

Report Number : FR641901F

TEST RESULTS DATA
Power Spectral Density

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	0.00	0.00	2.22	2.22	1.94	2.20		30.00	30.00	-3.90	-7.40	Pass
11a	6Mbps	1	157	5785	0.00	0.00	2.22	2.22	2.15	2.03		30.00	30.00	-3.90	-7.40	Pass
11a	6Mbps	1	165	5825	0.00	0.00	2.22	2.22	2.46	2.55		30.00	30.00	-3.90	-7.40	Pass
HT20	MCS0	1	149	5745	0.00	0.00	2.22	2.22	1.64	1.90		30.00	30.00	-3.90	-7.40	Pass
HT20	MCS0	1	157	5785	0.00	0.00	2.22	2.22	1.61	1.74		30.00	30.00	-3.90	-7.40	Pass
HT20	MCS0	1	165	5825	0.00	0.00	2.22	2.22	1.98	1.99		30.00	30.00	-3.90	-7.40	Pass
HT40	MCS0	1	151	5755	0.09	0.09	2.22	2.22	-1.48	-1.76		30.00	30.00	-3.90	-7.40	Pass
HT40	MCS0	1	159	5795	0.09	0.09	2.22	2.22	-1.66	-1.56		30.00	30.00	-3.90	-7.40	Pass
VHT20	MCS0	1	149	5745	0.00	0.00	2.22	2.22	1.65	1.94		30.00	30.00	-3.90	-7.40	Pass
VHT20	MCS0	1	157	5785	0.00	0.00	2.22	2.22	1.58	1.65		30.00	30.00	-3.90	-7.40	Pass
VHT20	MCS0	1	165	5825	0.00	0.00	2.22	2.22	2.02	2.17		30.00	30.00	-3.90	-7.40	Pass
VHT40	MCS0	1	151	5755	0.09	0.09	2.22	2.22	-1.41	-1.53		30.00	30.00	-3.90	-7.40	Pass
VHT40	MCS0	1	159	5795	0.09	0.09	2.22	2.22	-1.80	-1.59		30.00	30.00	-3.90	-7.40	Pass
VHT80	MCS0	1	155	5775	0.15	0.15	2.22	2.22	-4.44	-4.59		30.00	30.00	-3.90	-7.40	Pass
HT20	MCS0	2	149	5745	0.09	0.09	2.22				1.09	30.00		-2.46		Pass
HT20	MCS0	2	157	5785	0.09	0.09	2.22				0.93	30.00		-2.46		Pass
HT20	MCS0	2	165	5825	0.09	0.09	2.22				1.31	30.00		-2.46		Pass
HT40	MCS0	2	151	5755	0.14	0.14	2.22				-1.93	30.00		-2.46		Pass
HT40	MCS0	2	159	5795	0.14	0.14	2.22				-1.99	30.00		-2.46		Pass
VHT20	MCS0	2	149	5745	0.09	0.06	2.22				0.91	30.00		-2.46		Pass
VHT20	MCS0	2	157	5785	0.09	0.06	2.22				0.76	30.00		-2.46		Pass
VHT20	MCS0	2	165	5825	0.09	0.06	2.22				1.24	30.00		-2.46		Pass
VHT40	MCS0	2	151	5755	0.15	0.14	2.22				-2.06	30.00		-2.46		Pass
VHT40	MCS0	2	159	5795	0.15	0.14	2.22				-1.96	30.00		-2.46		Pass
VHT80	MCS0	2	155	5775	0.28	0.30	2.22				-4.56	30.00		-2.46		Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stablility (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	3.6	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	4.35	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	3.8	
11a	6Mbps	1	149	5745	5745.000	0.000	0.00	-30	3.8	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	55	3.8	

Appendix B. Radiated Spurious Emission

Test Engineer :	Bill Chang, Kyle Jhuang, and Alex Jeng	Temperature :	22~26℃
		Relative Humidity :	45~50%

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		5607	50.92	-17.38	68.3	38.99	32.04	10.89	31	138	249	P	H
		5692.4	53.15	-46.55	99.7	40.99	32.17	11.02	31.03	138	249	P	H
		5718.8	59.61	-50.95	110.56	47.37	32.21	11.07	31.04	138	249	P	H
		5723	62.35	-55.39	117.74	50.11	32.21	11.07	31.04	138	249	P	H
		5745	95.06	-27.24	122.3	82.77	32.24	11.1	31.05	138	249	P	H
		5745	87.67	-	-	75.38	32.24	11.1	31.05	138	249	A	H
													H
													H
		5639.6	50.15	-18.15	68.3	38.13	32.09	10.94	31.01	166	227	P	V
		5688.4	51.76	-44.98	96.74	39.6	32.17	11.02	31.03	166	227	P	V
		5718	55.53	-54.81	110.34	43.29	32.21	11.07	31.04	166	227	P	V
		5724	57.26	-62.76	120.02	45.02	32.21	11.07	31.04	166	227	P	V
		5746	90.92	-31.38	122.3	78.63	32.24	11.1	31.05	166	227	P	V
		5746	83.63	-	-	71.34	32.24	11.1	31.05	166	227	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		5647.6	50.64	-17.66	68.3	38.62	32.09	10.94	31.01	166	227	P	H
		5689.6	50.58	-47.05	97.63	38.42	32.17	11.02	31.03	166	227	P	H
		5703.2	49.58	-56.62	106.2	37.37	32.19	11.05	31.03	166	227	P	H
		5725	50.69	-71.61	122.3	38.45	32.21	11.07	31.04	166	227	P	H
		5785	94.91	-27.39	122.3	82.54	32.29	11.15	31.07	166	227	P	H
		5785	87.5	-	-	75.13	32.29	11.15	31.07	166	227	A	H
		5850.6	51.25	-69.68	120.93	38.69	32.38	11.27	31.09	166	227	P	H
		5864.2	50.82	-57.5	108.32	38.21	32.41	11.3	31.1	166	227	P	H
		5896.2	51.27	-38.3	89.57	38.58	32.46	11.35	31.12	166	227	P	H
		5944	50.66	-17.64	68.3	37.83	32.53	11.44	31.14	166	227	P	H
													H
													H
		5610.6	51.24	-17.06	68.3	39.31	32.04	10.89	31	133	222	P	V
		5651.6	51.05	-18.44	69.49	38.97	32.12	10.97	31.01	133	222	P	V
		5710.8	50.31	-58.02	108.33	38.11	32.19	11.05	31.04	133	222	P	V
		5722	50.01	-65.45	115.46	37.77	32.21	11.07	31.04	133	222	P	V
		5785	91.45	-30.85	122.3	79.08	32.29	11.15	31.07	133	222	P	V
		5785	83.48	-	-	71.11	32.29	11.15	31.07	133	222	A	V
		5852.6	50.66	-65.71	116.37	38.1	32.38	11.27	31.09	133	222	P	V
		5855.4	51.2	-59.59	110.79	38.58	32.41	11.3	31.09	133	222	P	V
		5881.2	51.78	-48.91	100.69	39.12	32.43	11.33	31.1	133	222	P	V
		5934.4	51.61	-16.69	68.3	38.84	32.5	11.41	31.14	133	222	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)
		5825	95.89	-26.41	122.3	83.37	32.36	11.24	31.08	159	243	P	H
		5825	88.5	-	-	75.98	32.36	11.24	31.08	159	243	A	H
		5850.6	58.34	-62.59	120.93	45.78	32.38	11.27	31.09	159	243	P	H
		5855	57.48	-53.42	110.9	44.86	32.41	11.3	31.09	159	243	P	H
		5892.6	51.41	-40.83	92.24	38.72	32.46	11.35	31.12	159	243	P	H
		5936	52.34	-15.96	68.3	39.57	32.5	11.41	31.14	159	243	P	H
													H
802.11a													H
CH 165		5825	91.47	-30.83	122.3	78.95	32.36	11.24	31.08	295	228	P	V
5825MHz		5825	84.59	-	-	72.07	32.36	11.24	31.08	295	228	A	V
		5851.6	55.57	-63.08	118.65	43.01	32.38	11.27	31.09	295	228	P	V
		5856.4	52.66	-57.85	110.51	40.04	32.41	11.3	31.09	295	228	P	V
		5885.6	51.89	-45.54	97.43	39.25	32.43	11.33	31.12	295	228	P	V
		5932.6	51.32	-16.98	68.3	38.54	32.5	11.41	31.13	295	228	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	47.74	-26.26	74	48.54	40.3	15.2	56.3	100	0	P	H
		17235	50.42	-17.88	68.3	45.54	41.09	19.52	55.73	100	0	P	H
													H
													H
		11490	48.5	-25.5	74	49.3	40.3	15.2	56.3	100	0	P	V
		17235	45.61	-22.69	68.3	40.73	41.09	19.52	55.73	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	45.39	-28.61	74	46.34	40.12	15.22	56.29	100	0	P	H
		17355	53.3	-15	68.3	48.04	41.53	19.62	55.89	100	0	P	H
													H
													H
		11570	47.26	-26.74	74	48.21	40.12	15.22	56.29	100	0	P	V
		17355	46.59	-21.71	68.3	41.33	41.53	19.62	55.89	100	0	P	V
													V
													V
802.11a CH 165 5825MHz		11650	45.76	-28.24	74	46.86	39.94	15.23	56.27	100	0	P	H
		17475	52.47	-15.83	68.3	46.84	41.97	19.71	56.05	100	0	P	H
													H
													H
		11650	48.32	-25.68	74	49.42	39.94	15.23	56.27	100	0	P	V
		17475	45.65	-22.65	68.3	40.02	41.97	19.71	56.05	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n 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)
		5612	50.72	-17.58	68.3	38.79	32.04	10.89	31	118	241	P	H
		5697.8	53.18	-50.5	103.68	41.02	32.17	11.02	31.03	118	241	P	H
		5717.4	60.9	-49.27	110.17	48.7	32.19	11.05	31.04	118	241	P	H
		5724.2	62.07	-58.41	120.48	49.83	32.21	11.07	31.04	118	241	P	H
		5745	93.59	-28.71	122.3	81.3	32.24	11.1	31.05	118	241	P	H
		5745	86.85	-	-	74.56	32.24	11.1	31.05	118	241	A	H
802.11n													H
HT20													H
CH 149		5627.4	50.06	-18.24	68.3	38.07	32.07	10.92	31	106	211	P	V
5745MHz		5699.8	52.28	-52.87	105.15	40.12	32.17	11.02	31.03	106	211	P	V
		5714.6	55.49	-53.9	109.39	43.29	32.19	11.05	31.04	106	211	P	V
		5724.4	58.1	-62.83	120.93	45.86	32.21	11.07	31.04	106	211	P	V
		5745	88.89	-33.41	122.3	76.6	32.24	11.1	31.05	106	211	P	V
		5745	81.67	-	-	69.38	32.24	11.1	31.05	106	211	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)
		5627.4	50.5	-17.8	68.3	38.51	32.07	10.92	31	154	248	P	H
		5656	51.06	-21.7	72.76	38.99	32.12	10.97	31.02	154	248	P	H
		5714.8	50.84	-58.61	109.45	38.64	32.19	11.05	31.04	154	248	P	H
		5720.2	50.48	-60.88	111.36	38.24	32.21	11.07	31.04	154	248	P	H
		5785	93.89	-28.41	122.3	81.52	32.29	11.15	31.07	154	248	P	H
		5785	87.05	-	-	74.68	32.29	11.15	31.07	154	248	A	H
		5852	52.31	-65.43	117.74	39.75	32.38	11.27	31.09	154	248	P	H
		5874.6	51.83	-53.58	105.41	39.17	32.43	11.33	31.1	154	248	P	H
		5879.2	50.61	-51.57	102.18	37.95	32.43	11.33	31.1	154	248	P	H
		5945.6	50.9	-17.4	68.3	38.07	32.53	11.44	31.14	154	248	P	H
802.11n													H
HT20													H
CH 157		5617.4	51.14	-17.16	68.3	39.15	32.07	10.92	31	139	224	P	V
5785MHz		5663.2	50.69	-27.41	78.1	38.62	32.12	10.97	31.02	139	224	P	V
		5704.2	51.2	-55.28	106.48	38.99	32.19	11.05	31.03	139	224	P	V
		5723.8	50.28	-69.28	119.56	38.04	32.21	11.07	31.04	139	224	P	V
		5785	91.44	-30.86	122.3	79.07	32.29	11.15	31.07	139	224	P	V
		5785	84.15	-	-	71.78	32.29	11.15	31.07	139	224	A	V
		5850.6	51.24	-69.69	120.93	38.68	32.38	11.27	31.09	139	224	P	V
		5871.2	51.81	-54.55	106.36	39.15	32.43	11.33	31.1	139	224	P	V
		5881.6	51.85	-48.55	100.4	39.19	32.43	11.33	31.1	139	224	P	V
		5936.4	51.23	-17.07	68.3	38.46	32.5	11.41	31.14	139	224	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)
		5825	93.82	-28.48	122.3	81.3	32.36	11.24	31.08	158	241	P	H
		5825	87.76	-	-	75.24	32.36	11.24	31.08	158	241	A	H
		5850.8	56.96	-63.52	120.48	44.4	32.38	11.27	31.09	158	241	P	H
		5855.2	55.82	-55.02	110.84	43.2	32.41	11.3	31.09	158	241	P	H
		5877.6	52.29	-51.08	103.37	39.63	32.43	11.33	31.1	158	241	P	H
		5938	50.78	-17.52	68.3	38.01	32.5	11.41	31.14	158	241	P	H
802.11n													H
HT20													H
CH 165		5825	91.11	-31.19	122.3	78.59	32.36	11.24	31.08	131	226	P	V
5825MHz		5825	84.13	-	-	71.61	32.36	11.24	31.08	131	226	A	V
		5850.2	55.86	-65.98	121.84	43.3	32.38	11.27	31.09	131	226	P	V
		5857.4	53.28	-56.95	110.23	40.66	32.41	11.3	31.09	131	226	P	V
		5878.2	52.72	-50.2	102.92	40.06	32.43	11.33	31.1	131	226	P	V
		5943.2	51.57	-16.73	68.3	38.74	32.53	11.44	31.14	131	226	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)
		11490	47.03	-26.97	74	47.83	40.3	15.2	56.3	100	0	P	H
		17235	52.13	-16.17	68.3	47.25	41.09	19.52	55.73	100	0	P	H
802.11n													H
HT20													H
CH 149		11490	48.05	-25.95	74	48.85	40.3	15.2	56.3	100	0	P	V
5745MHz		17235	46.69	-21.61	68.3	41.81	41.09	19.52	55.73	100	0	P	V
													V
													V
		11570	46.49	-27.51	74	47.44	40.12	15.22	56.29	100	0	P	H
		17355	53.49	-14.81	68.3	48.23	41.53	19.62	55.89	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	48.47	-25.53	74	49.42	40.12	15.22	56.29	100	0	P	V
5785MHz		17355	46.77	-21.53	68.3	41.51	41.53	19.62	55.89	100	0	P	V
													V
													V
		11650	46.61	-27.39	74	47.71	39.94	15.23	56.27	100	0	P	H
		17475	53.98	-14.32	68.3	48.35	41.97	19.71	56.05	100	0	P	H
802.11n													H
HT20													H
CH 165		11650	49.42	-24.58	74	50.52	39.94	15.23	56.27	100	0	P	V
5825MHz		17475	47.7	-20.6	68.3	42.07	41.97	19.71	56.05	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	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)
		5604.4	52.09	-16.21	68.3	40.16	32.04	10.89	31	103	240	P	H
		5698	55.67	-48.16	103.83	43.51	32.17	11.02	31.03	103	240	P	H
		5718.6	59.93	-50.58	110.51	47.69	32.21	11.07	31.04	103	240	P	H
		5721.6	62.35	-52.2	114.55	50.11	32.21	11.07	31.04	103	240	P	H
		5755	90.49	-31.81	122.3	78.15	32.26	11.13	31.05	103	240	P	H
		5755	84.06	-	-	71.72	32.26	11.13	31.05	103	240	A	H
		5852.8	50.46	-65.46	115.92	37.9	32.38	11.27	31.09	103	240	P	H
		5863.2	50.87	-57.73	108.6	38.26	32.41	11.3	31.1	103	240	P	H
		5914.2	52.19	-24.08	76.27	39.46	32.48	11.38	31.13	103	240	P	H
		5947.8	51.49	-16.81	68.3	38.66	32.53	11.44	31.14	103	240	P	H
802.11n													H
HT40													H
CH 151		5638	50.47	-17.83	68.3	38.45	32.09	10.94	31.01	117	223	P	V
5755MHz		5651.8	51.05	-18.59	69.64	38.97	32.12	10.97	31.01	117	223	P	V
		5718	55.01	-55.33	110.34	42.77	32.21	11.07	31.04	117	223	P	V
		5723.2	57.17	-61.03	118.2	44.93	32.21	11.07	31.04	117	223	P	V
		5755	86.21	-36.09	122.3	73.87	32.26	11.13	31.05	117	223	P	V
		5755	79.22	-	-	66.88	32.26	11.13	31.05	117	223	A	V
		5851.6	49.76	-68.89	118.65	37.2	32.38	11.27	31.09	117	223	P	V
		5858.6	51.73	-58.16	109.89	39.12	32.41	11.3	31.1	117	223	P	V
		5880.2	51.29	-50.15	101.44	38.63	32.43	11.33	31.1	117	223	P	V
		5945.2	51.55	-16.75	68.3	38.72	32.53	11.44	31.14	117	223	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)
		5625.4	50.3	-18	68.3	38.31	32.07	10.92	31	112	247	P	H
		5683.6	50.56	-42.64	93.2	38.4	32.17	11.02	31.03	112	247	P	H
		5714.4	51.69	-57.64	109.33	39.49	32.19	11.05	31.04	112	247	P	H
		5723.6	51.59	-67.52	119.11	39.35	32.21	11.07	31.04	112	247	P	H
		5795	90.51	-31.79	122.3	78.09	32.31	11.18	31.07	112	247	P	H
		5795	84.41	-	-	71.99	32.31	11.18	31.07	112	247	A	H
		5852	52.76	-64.98	117.74	40.2	32.38	11.27	31.09	112	247	P	H
		5859.2	53.19	-56.53	109.72	40.58	32.41	11.3	31.1	112	247	P	H
		5922.6	52.11	-17.96	70.07	39.33	32.5	11.41	31.13	112	247	P	H
		5937.4	51.26	-17.04	68.3	38.49	32.5	11.41	31.14	112	247	P	H
802.11n													H
HT40													H
CH 159		5648.4	50.55	-17.75	68.3	38.53	32.09	10.94	31.01	129	223	P	V
5795MHz		5687.4	50.68	-45.33	96.01	38.52	32.17	11.02	31.03	129	223	P	V
		5710.4	51.42	-56.79	108.21	39.22	32.19	11.05	31.04	129	223	P	V
		5723.8	53.96	-65.6	119.56	41.72	32.21	11.07	31.04	129	223	P	V
		5795	88.6	-33.7	122.3	76.18	32.31	11.18	31.07	129	223	P	V
		5795	81.04	-	-	68.62	32.31	11.18	31.07	129	223	A	V
		5850.4	51.31	-70.08	121.39	38.75	32.38	11.27	31.09	129	223	P	V
		5866.4	52.89	-54.82	107.71	40.28	32.41	11.3	31.1	129	223	P	V
		5877.6	51.91	-51.46	103.37	39.25	32.43	11.33	31.1	129	223	P	V
		5938.2	51.27	-17.03	68.3	38.5	32.5	11.41	31.14	129	223	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)
		11510	45.91	-28.09	74	46.7	40.3	15.21	56.3	100	0	P	H
		17265	49.63	-18.67	68.3	44.64	41.21	19.55	55.77	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	47.68	-26.32	74	48.47	40.3	15.21	56.3	100	0	P	V
5755MHz		17265	46.41	-21.89	68.3	41.42	41.21	19.55	55.77	100	0	P	V
													V
													V
		11590	45.66	-28.34	74	46.64	40.08	15.22	56.28	100	0	P	H
		17385	50.97	-17.33	68.3	45.61	41.66	19.64	55.94	100	0	P	H
802.11n													H
HT40													H
CH 159		11590	47.33	-26.67	74	48.31	40.08	15.22	56.28	100	0	P	V
5795MHz		17385	47.33	-20.97	68.3	41.97	41.66	19.64	55.94	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	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)
		5628.6	50.32	-17.98	68.3	38.34	32.07	10.92	31.01	105	240	P	H
		5698.6	57.05	-47.22	104.27	44.89	32.17	11.02	31.03	105	240	P	H
		5718	58.59	-51.75	110.34	46.35	32.21	11.07	31.04	105	240	P	H
		5723.8	58.29	-61.27	119.56	46.05	32.21	11.07	31.04	105	240	P	H
		5775	87.84	-34.46	122.3	75.46	32.29	11.15	31.06	105	240	P	H
		5775	81.88	-	-	69.5	32.29	11.15	31.06	105	240	A	H
		5851.8	56.63	-61.57	118.2	44.07	32.38	11.27	31.09	105	240	P	H
		5863.2	56.06	-52.54	108.6	43.45	32.41	11.3	31.1	105	240	P	H
		5882.4	53.93	-45.87	99.8	41.27	32.43	11.33	31.1	105	240	P	H
		5926	52.05	-16.25	68.3	39.27	32.5	11.41	31.13	105	240	P	H
802.11ac													H
VHT80													H
CH 155		5645.6	51.25	-17.05	68.3	39.23	32.09	10.94	31.01	141	224	P	V
5775MHz		5696.2	55.42	-47.08	102.5	43.26	32.17	11.02	31.03	141	224	P	V
		5710.6	54.85	-53.42	108.27	42.65	32.19	11.05	31.04	141	224	P	V
		5724.4	54.97	-65.96	120.93	42.73	32.21	11.07	31.04	141	224	P	V
		5775	84.63	-37.67	122.3	72.25	32.29	11.15	31.06	141	224	P	V
		5775	78.72	-	-	66.34	32.29	11.15	31.06	141	224	A	V
		5850.8	53.31	-67.17	120.48	40.75	32.38	11.27	31.09	141	224	P	V
		5858.6	54.36	-55.53	109.89	41.75	32.41	11.3	31.1	141	224	P	V
		5920.6	52.93	-18.61	71.54	40.2	32.48	11.38	31.13	141	224	P	V
		5941	51.79	-16.51	68.3	38.96	32.53	11.44	31.14	141	224	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1	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)
		11550	45.04	-28.96	74	45.95	40.17	15.21	56.29	100	0	P	H
		17325	47.21	-21.09	68.3	42.06	41.4	19.59	55.84	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	46.22	-27.78	74	47.13	40.17	15.21	56.29	100	0	P	V
5775MHz		17325	47.19	-21.11	68.3	42.04	41.4	19.59	55.84	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF @ 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)
		37.29	24.68	-15.32	40	34.64	21.36	0.62	31.94	-	-	P	H
		109.92	31.37	-12.13	43.5	45.06	17.1	1.09	31.88	-	-	P	H
		176.34	33.53	-9.97	43.5	48.45	15.52	1.39	31.83	125	40	P	H
		359.5	27.31	-18.69	46	35.78	21.24	2.05	31.76	-	-	P	H
		573	25.99	-20.01	46	30.44	24.76	2.72	31.93	-	-	P	H
		867.7	30.22	-15.78	46	29.91	28.52	3.45	31.66	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		38.64	36.72	-3.28	40	47.26	20.78	0.62	31.94	100	40	P	V
LF		65.64	34.35	-5.65	40	53.22	12.16	0.88	31.91	-	-	P	V
		157.71	29.33	-14.17	43.5	42.91	16.94	1.32	31.84	-	-	P	V
		357.4	26.56	-19.44	46	35.09	21.19	2.04	31.76	-	-	P	V
		627.6	26.43	-19.57	46	30.03	25.52	2.85	31.97	-	-	P	V
		860	29.72	-16.28	46	29.53	28.43	3.45	31.69	-	-	P	V
													V
													V
													V
													V
													V
													V

Remark

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

Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5638.2	50.23	-18.07	68.3	38.21	32.09	10.94	31.01	100	244	P	H
		5655	51.1	-20.91	72.01	39.03	32.12	10.97	31.02	100	244	P	H
		5719	52.12	-58.5	110.62	39.88	32.21	11.07	31.04	100	244	P	H
		5725	54.66	-67.64	122.3	42.42	32.21	11.07	31.04	100	244	P	H
		5745	89.4	-32.9	122.3	77.11	32.24	11.1	31.05	100	244	P	H
		5745	82.14	-	-	69.85	32.24	11.1	31.05	100	244	A	H
802.11n													H
HT20													H
CH 149		5613	50.81	-17.49	68.3	38.88	32.04	10.89	31	261	347	P	V
5745MHz		5660	51.34	-24.39	75.73	39.27	32.12	10.97	31.02	261	347	P	V
		5718	53.69	-56.65	110.34	41.45	32.21	11.07	31.04	261	347	P	V
		5723.2	56.37	-61.83	118.2	44.13	32.21	11.07	31.04	261	347	P	V
		5746	93.34	-28.96	122.3	81.05	32.24	11.1	31.05	261	347	P	V
		5746	86.79	-	-	74.5	32.24	11.1	31.05	261	347	A	V
													V
													V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	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		5616.8	51.24	-17.06	68.3	39.25	32.07	10.92	31	100	244	P	H
		5668.8	50.5	-31.75	82.25	38.38	32.14	11	31.02	100	244	P	H
		5709.6	50.46	-57.53	107.99	38.26	32.19	11.05	31.04	100	244	P	H
		5720.6	50.86	-61.41	112.27	38.62	32.21	11.07	31.04	100	244	P	H
		5785	89.6	-32.7	122.3	77.23	32.29	11.15	31.07	100	244	P	H
		5785	83.23	-	-	70.86	32.29	11.15	31.07	100	244	A	H
		5852.8	50.7	-65.22	115.92	38.14	32.38	11.27	31.09	100	244	P	H
		5860	51.26	-58.24	109.5	38.65	32.41	11.3	31.1	100	244	P	H
		5910.4	51.49	-27.58	79.07	38.76	32.48	11.38	31.13	100	244	P	H
		5939.8	52.48	-15.82	68.3	39.65	32.53	11.44	31.14	100	244	P	H
		5619	50.63	-17.67	68.3	38.64	32.07	10.92	31	261	347	P	V
		5677.6	50.67	-38.09	88.76	38.55	32.14	11	31.02	261	347	P	V
		5702	50.13	-55.73	105.86	37.92	32.19	11.05	31.03	261	347	P	V
		5721.6	49.76	-64.79	114.55	37.52	32.21	11.07	31.04	261	347	P	V
		5785	92.68	-29.62	122.3	80.31	32.29	11.15	31.07	261	347	P	V
		5785	86.6	-	-	74.23	32.29	11.15	31.07	261	347	A	V
		5853.4	50.52	-64.03	114.55	37.96	32.38	11.27	31.09	261	347	P	V
		5862.8	51.27	-57.44	108.71	38.66	32.41	11.3	31.1	261	347	P	V
		5894.8	51.39	-39.22	90.61	38.7	32.46	11.35	31.12	261	347	P	V
		5938.4	50.99	-17.31	68.3	38.22	32.5	11.41	31.14	261	347	P	V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5825	90.57	-31.73	122.3	78.05	32.36	11.24	31.08	100	245	P	H
		5825	83.33	-	-	70.81	32.36	11.24	31.08	100	245	A	H
		5854.4	51.36	-60.91	112.27	38.74	32.41	11.3	31.09	100	245	P	H
		5867.8	52.66	-54.65	107.31	40.05	32.41	11.3	31.1	100	245	P	H
		5906.2	51.57	-30.61	82.18	38.83	32.48	11.38	31.12	100	245	P	H
		5942.6	50.24	-18.06	68.3	37.41	32.53	11.44	31.14	100	245	P	H
802.11n													H
HT20													H
CH 165		5825	92.74	-29.56	122.3	80.22	32.36	11.24	31.08	292	347	P	V
5825MHz		5825	86.07	-	-	73.55	32.36	11.24	31.08	292	347	A	V
		5850.2	54.45	-67.39	121.84	41.89	32.38	11.27	31.09	292	347	P	V
		5857	52.78	-57.56	110.34	40.16	32.41	11.3	31.09	292	347	P	V
		5879.2	51.27	-50.91	102.18	38.61	32.43	11.33	31.1	292	347	P	V
		5946	51.56	-16.74	68.3	38.73	32.53	11.44	31.14	292	347	P	V
													V
													V

Remark

3. No other spurious found.
4. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11490	44.64	-29.36	74	45.44	40.3	15.2	56.3	100	0	P	H
		17235	46.52	-21.78	68.3	41.64	41.09	19.52	55.73	100	0	P	H
802.11n													H
HT20													H
CH 149		11490	48.31	-25.69	74	49.11	40.3	15.2	56.3	100	0	P	V
5745MHz		17235	47.46	-20.84	68.3	42.58	41.09	19.52	55.73	100	0	P	V
													V
													V
		11570	44.86	-29.14	74	45.81	40.12	15.22	56.29	100	0	P	H
		17355	47.06	-21.24	68.3	41.8	41.53	19.62	55.89	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	49.4	-24.6	74	50.35	40.12	15.22	56.29	100	0	P	V
5785MHz		17355	47.72	-20.58	68.3	42.46	41.53	19.62	55.89	100	0	P	V
													V
													V
		11650	46.07	-27.93	74	47.17	39.94	15.23	56.27	100	0	P	H
		17475	47.98	-20.32	68.3	42.35	41.97	19.71	56.05	100	0	P	H
802.11n													H
HT20													H
CH 165		11650	48.31	-25.69	74	49.41	39.94	15.23	56.27	100	0	P	V
5825MHz		17475	47.28	-21.02	68.3	41.65	41.97	19.71	56.05	100	0	P	V
													V
													V

Remark

3. No other spurious found.
4. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		5646.2	50.56	-17.74	68.3	38.54	32.09	10.94	31.01	332	31	P	H
		5687.4	51.5	-44.51	96.01	39.34	32.17	11.02	31.03	332	31	P	H
		5718.2	60.94	-49.46	110.4	48.7	32.21	11.07	31.04	332	31	P	H
		5723.6	59.15	-59.96	119.11	46.91	32.21	11.07	31.04	332	31	P	H
		5755	89.93	-32.37	122.3	77.59	32.26	11.13	31.05	332	31	P	H
		5755	83.27	-	-	70.93	32.26	11.13	31.05	332	31	A	H
		5853	50.46	-65	115.46	37.9	32.38	11.27	31.09	332	31	P	H
		5857	51.7	-58.64	110.34	39.08	32.41	11.3	31.09	332	31	P	H
802.11n		5900.6	52.6	-33.72	86.32	39.91	32.46	11.35	31.12	332	31	P	H
HT40		5943.8	50.83	-17.47	68.3	38	32.53	11.44	31.14	332	31	P	H
CH 151		5627	51.96	-16.34	68.3	39.97	32.07	10.92	31	271	345	P	V
5755MHz		5676.2	51.02	-36.71	87.73	38.9	32.14	11	31.02	271	345	P	V
		5719	58.75	-51.87	110.62	46.51	32.21	11.07	31.04	271	345	P	V
		5720.8	59.59	-53.13	112.72	47.35	32.21	11.07	31.04	271	345	P	V
		5755	90.45	-31.85	122.3	78.11	32.26	11.13	31.05	271	345	P	V
		5755	83.59	-	-	71.25	32.26	11.13	31.05	271	345	A	V
		5852	50.41	-67.33	117.74	37.85	32.38	11.27	31.09	271	345	P	V
		5866.2	51.82	-55.94	107.76	39.21	32.41	11.3	31.1	271	345	P	V
		5875.2	50.59	-54.56	105.15	37.93	32.43	11.33	31.1	271	345	P	V
		5936.2	50.6	-17.7	68.3	37.83	32.5	11.41	31.14	271	345	P	V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	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		5626.6	50.57	-17.73	68.3	38.58	32.07	10.92	31	400	35	P	H
		5657.6	51.3	-22.65	73.95	39.23	32.12	10.97	31.02	400	35	P	H
		5700.8	50.46	-55.06	105.52	38.25	32.19	11.05	31.03	400	35	P	H
		5720	49.6	-61.3	110.9	37.36	32.21	11.07	31.04	400	35	P	H
		5795	88.29	-34.01	122.3	75.87	32.31	11.18	31.07	400	35	P	H
		5795	81.96	-	-	69.54	32.31	11.18	31.07	400	35	A	H
		5850	51.22	-71.08	122.3	38.66	32.38	11.27	31.09	400	35	P	H
		5873.6	52.46	-53.23	105.69	39.8	32.43	11.33	31.1	400	35	P	H
		5886	51.91	-45.22	97.13	39.27	32.43	11.33	31.12	400	35	P	H
		5926.4	51.96	-16.34	68.3	39.18	32.5	11.41	31.13	400	35	P	H
		5638.4	50.64	-17.66	68.3	38.62	32.09	10.94	31.01	323	350	P	V
		5662.6	50.48	-27.17	77.65	38.41	32.12	10.97	31.02	323	350	P	V
		5709.2	49.58	-58.3	107.88	37.38	32.19	11.05	31.04	323	350	P	V
		5722.4	49.25	-67.12	116.37	37.01	32.21	11.07	31.04	323	350	P	V
		5795	89.76	-32.54	122.3	77.34	32.31	11.18	31.07	323	350	P	V
		5795	82.14	-	-	69.72	32.31	11.18	31.07	323	350	A	V
		5853.4	50.31	-64.24	114.55	37.75	32.38	11.27	31.09	323	350	P	V
		5855.4	50.89	-59.9	110.79	38.27	32.41	11.3	31.09	323	350	P	V
		5898	51.53	-36.71	88.24	38.84	32.46	11.35	31.12	323	350	P	V
		5929.6	50.8	-17.5	68.3	38.02	32.5	11.41	31.13	323	350	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11510	46.41	-27.59	74	47.2	40.3	15.21	56.3	100	0	P	H
		17265	46.35	-21.95	68.3	41.36	41.21	19.55	55.77	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	47.3	-26.7	74	48.09	40.3	15.21	56.3	100	0	P	V
5755MHz		17265	47.1	-21.2	68.3	42.11	41.21	19.55	55.77	100	0	P	V
													V
													V
		11590	45.87	-28.13	74	46.85	40.08	15.22	56.28	100	0	P	H
		17385	47.46	-20.84	68.3	42.1	41.66	19.64	55.94	100	0	P	H
802.11n													H
HT40													H
CH 159		11590	47.83	-26.17	74	48.81	40.08	15.22	56.28	100	0	P	V
5795MHz		17385	47.88	-20.42	68.3	42.52	41.66	19.64	55.94	100	0	P	V
													V
													V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5617	51.31	-16.99	68.3	39.32	32.07	10.92	31	377	37	P	H
		5687.2	55.95	-39.91	95.86	43.79	32.17	11.02	31.03	377	37	P	H
		5715.2	58.06	-51.5	109.56	45.86	32.19	11.05	31.04	377	37	P	H
		5722	58.25	-57.21	115.46	46.01	32.21	11.07	31.04	377	37	P	H
		5775	87.44	-34.86	122.3	75.06	32.29	11.15	31.06	377	37	P	H
		5775	80.88	-	-	68.5	32.29	11.15	31.06	377	37	A	H
		5852.4	52.36	-64.47	116.83	39.8	32.38	11.27	31.09	377	37	P	H
		5871.8	53.2	-52.99	106.19	40.54	32.43	11.33	31.1	377	37	P	H
		5921.2	53.28	-17.82	71.1	40.55	32.48	11.38	31.13	377	37	P	H
		5931.6	51.43	-16.87	68.3	38.65	32.5	11.41	31.13	377	37	P	H
		5647	50.95	-17.35	68.3	38.93	32.09	10.94	31.01	253	345	P	V
		5698.6	56.43	-47.84	104.27	44.27	32.17	11.02	31.03	253	345	P	V
		5720	59.9	-51	110.9	47.66	32.21	11.07	31.04	253	345	P	V
		5724.8	62.37	-59.47	121.84	50.13	32.21	11.07	31.04	253	345	P	V
		5775	88.79	-33.51	122.3	76.41	32.29	11.15	31.06	253	345	P	V
		5775	81.79	-	-	69.41	32.29	11.15	31.06	253	345	A	V
		5852.2	55.82	-61.46	117.28	43.26	32.38	11.27	31.09	253	345	P	V
		5856.4	55.6	-54.91	110.51	42.98	32.41	11.3	31.09	253	345	P	V
		5877	53.23	-50.58	103.81	40.57	32.43	11.33	31.1	253	345	P	V
		5933.6	51.56	-16.74	68.3	38.78	32.5	11.41	31.13	253	345	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11550	44.28	-29.72	74	45.19	40.17	15.21	56.29	100	0	P	H
		17325	46.78	-21.52	68.3	41.63	41.4	19.59	55.84	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	47.33	-26.67	74	48.24	40.17	15.21	56.29	100	0	P	V
5775MHz		17325	45.87	-22.43	68.3	40.72	41.4	19.59	55.84	100	0	P	V
													V
													V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		113.97	32.9	-10.6	43.5	46.38	17.28	1.12	31.88	-	-	P	H
		194.97	36.7	-6.8	43.5	51.62	15.4	1.49	31.81	125	0	P	H
		233.04	31.26	-14.74	46	44.27	17.14	1.64	31.79	-	-	P	H
		484.1	24.03	-21.97	46	29.78	23.64	2.45	31.84	-	-	P	H
		694.8	26.92	-19.08	46	29.92	26.05	2.98	32.03	-	-	P	H
		875.4	30.12	-15.88	46	29.71	28.61	3.44	31.64	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		37.83	36.94	-3.06	40	46.9	21.36	0.62	31.94	100	45	P	V
LF		65.1	33.81	-6.19	40	52.74	12.1	0.88	31.91	-	-	P	V
		158.25	28.99	-14.51	43.5	42.57	16.94	1.32	31.84	-	-	P	V
		370.7	22.34	-23.66	46	30.52	21.49	2.09	31.76	-	-	P	V
		595.4	26.97	-19.03	46	30.95	25.2	2.77	31.95	-	-	P	V
		880.3	30.2	-15.8	46	29.71	28.67	3.44	31.62	-	-	P	V
													V
													V
													V
													V
													V
													V

Remark

3. No other spurious found.
4. All results are PASS against limit line.

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBµV/m)

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

= 32.22(dB/m) + 4.58(dB) + 54.51(dBµV) – 35.86 (dB)

= 55.45 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 43.54 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 43.54(dBµV/m) – 54(dBµV/m)

= -10.46(dB)

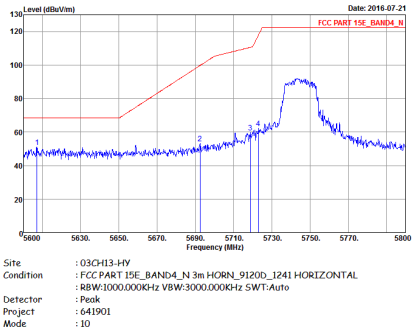
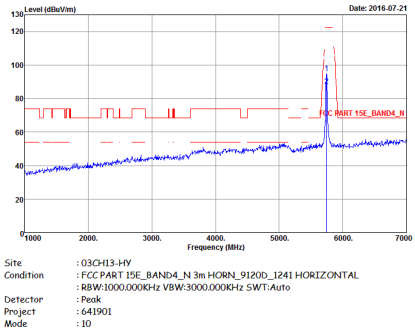
Both peak and average measured complies with the limit line, so test result is "PASS".

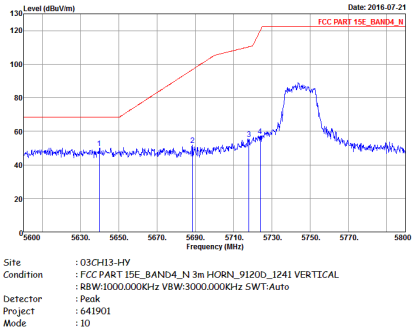
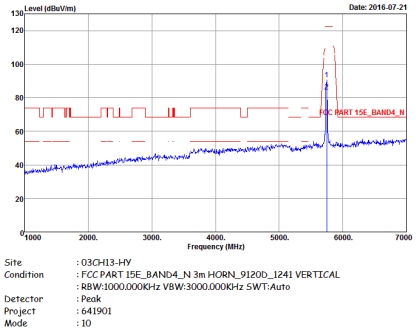
Appendix C. Radiated Spurious Emission Plots

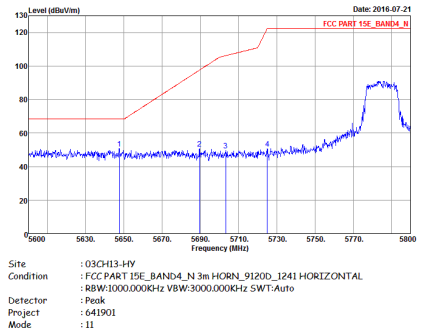
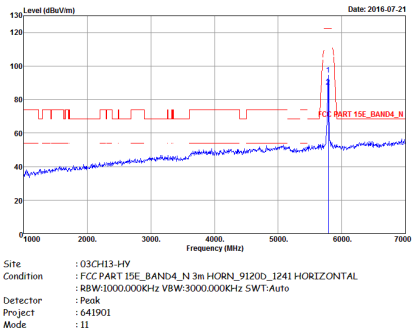
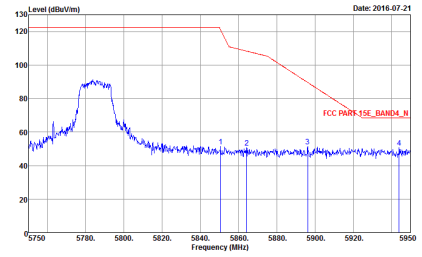
Test Engineer :	Bill Chang, Kyle Jhuang, and Alex Jeng	Temperature :	22~26℃
		Relative Humidity :	45~50%

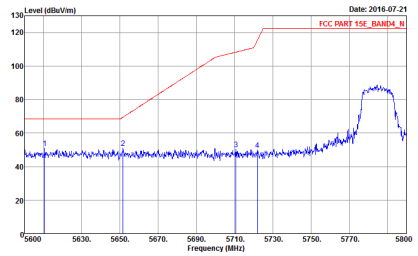
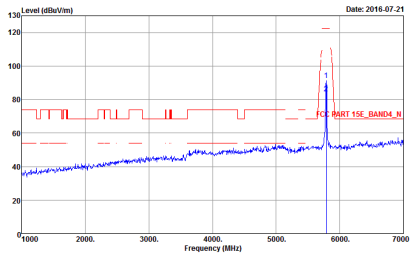
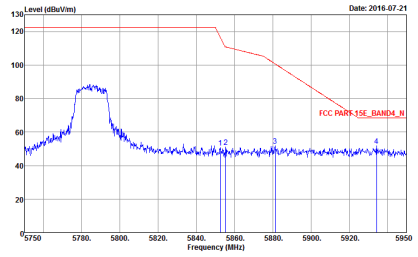
Band 4 - 5725~5850MHz

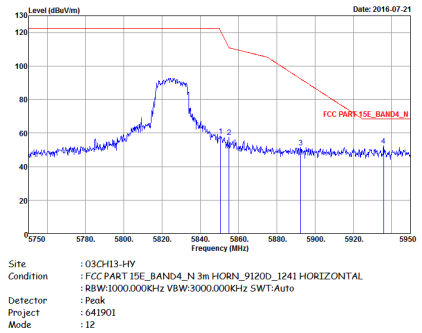
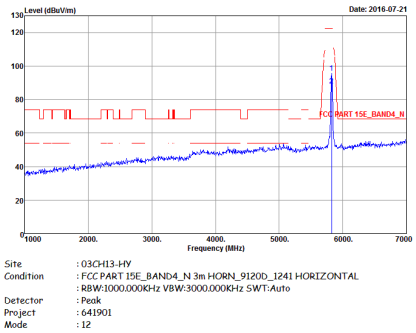
WIFI 802.11a (Band Edge @ 3m)

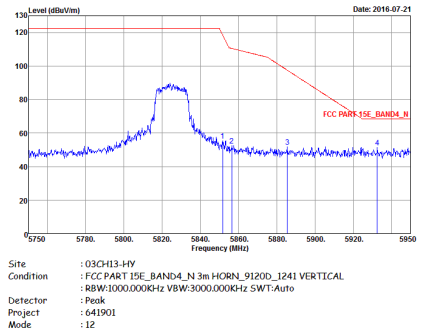
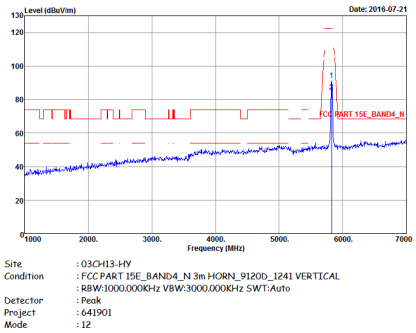
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak		

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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11	Left blank

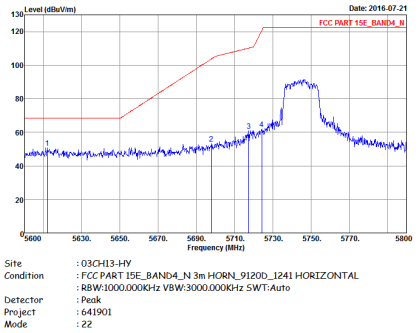
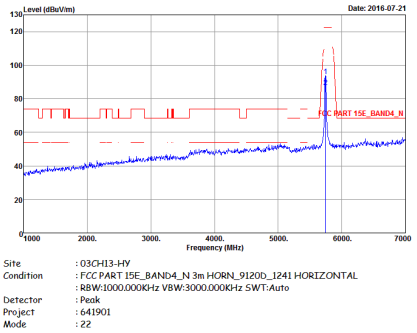
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 11	Left blank

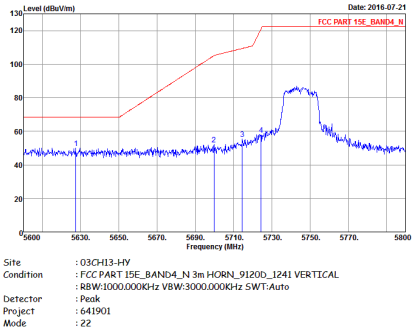
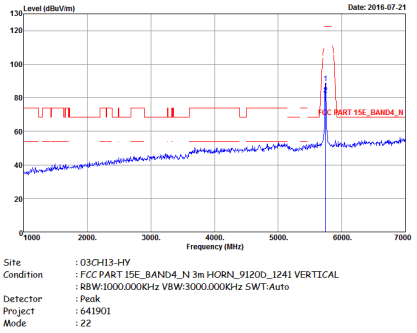
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

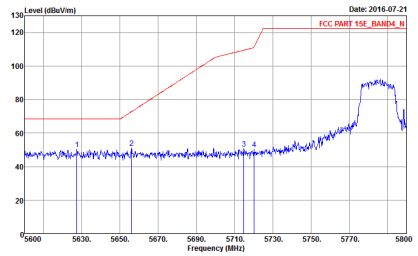
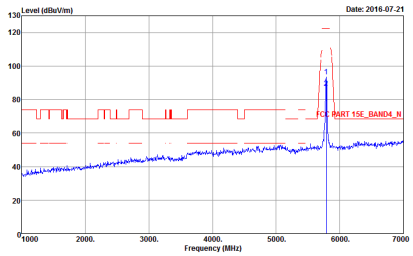
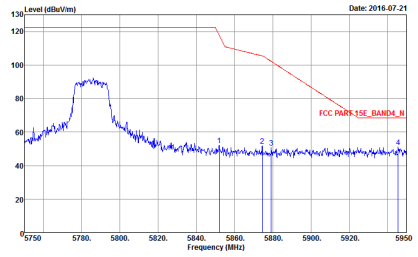
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak		

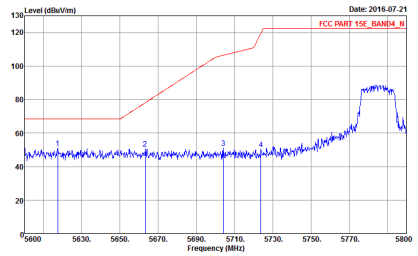
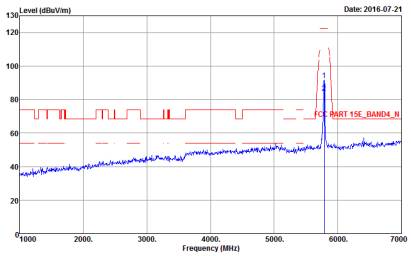
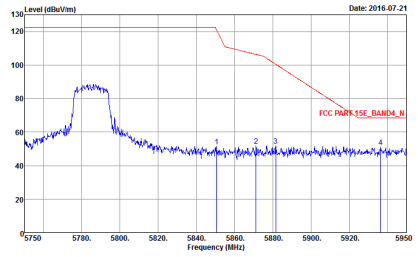
Band 4 5725~5850MHz

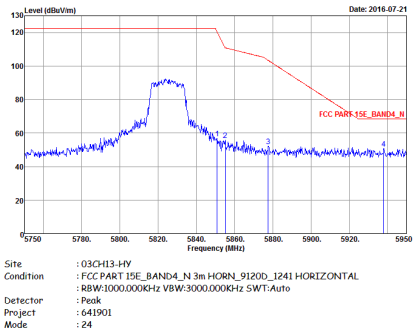
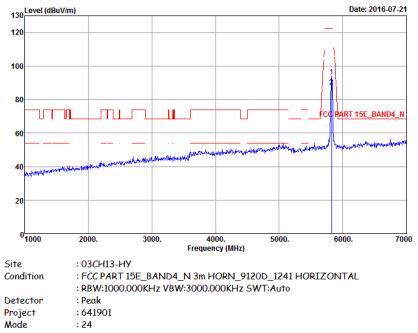
WIFI 802.11n HT20 (Band Edge @ 3m)

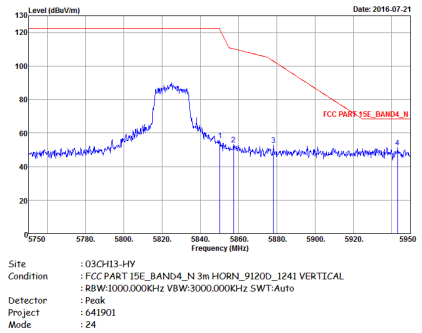
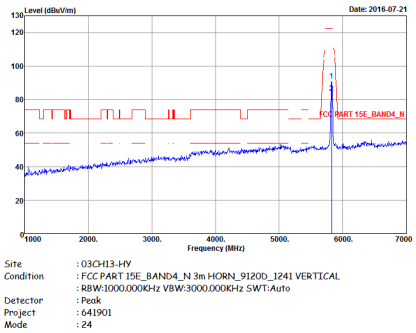
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23	Left blank

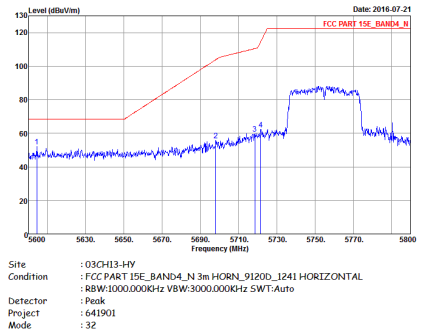
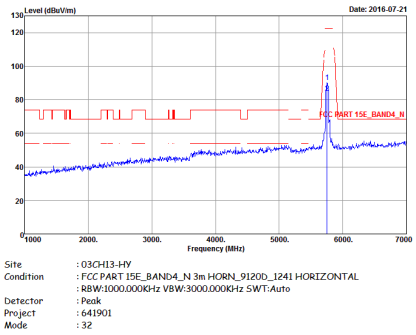
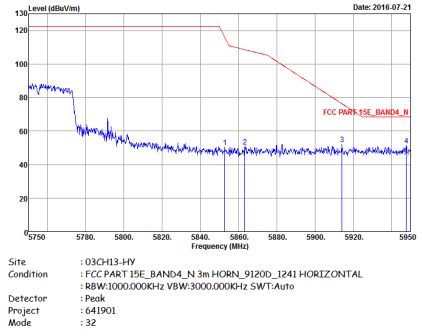
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 23	Left blank

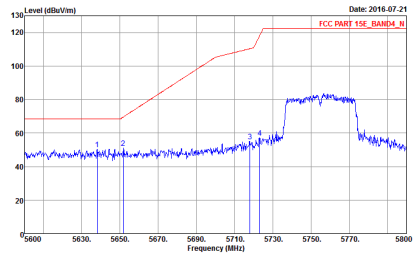
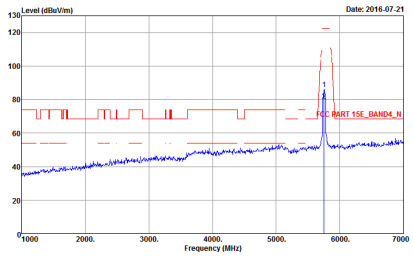
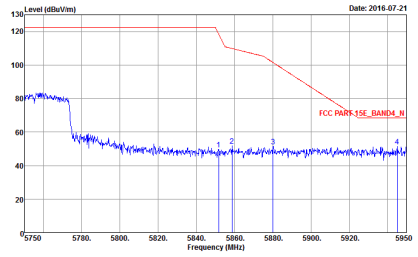
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

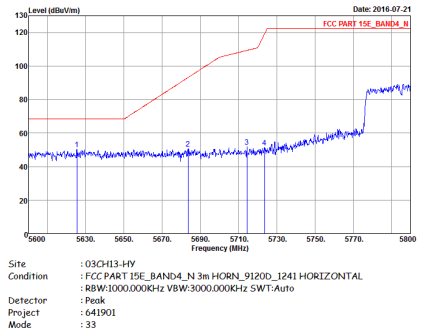
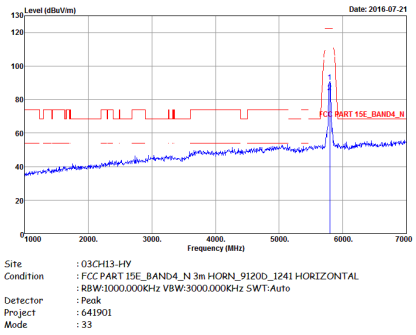
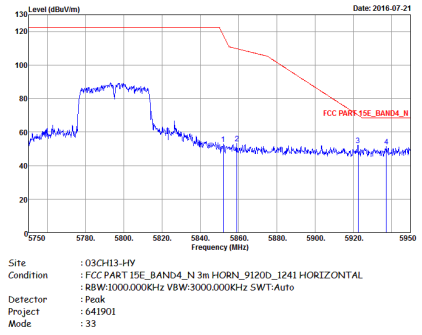
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak		

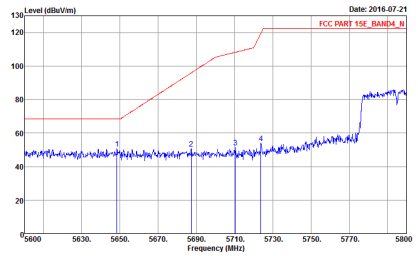
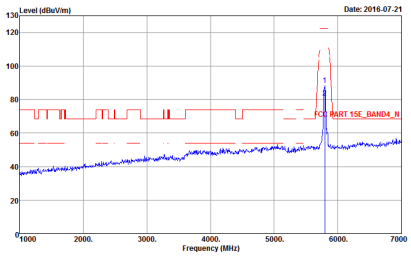
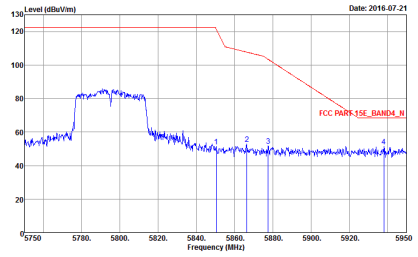
Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

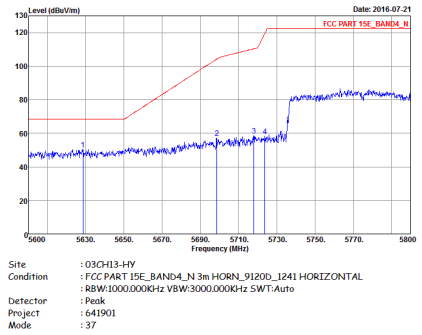
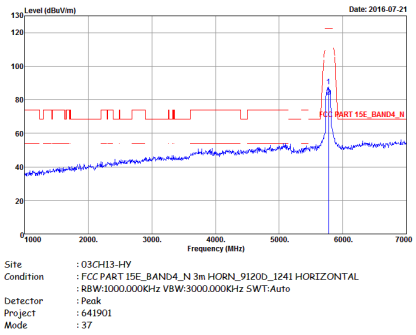
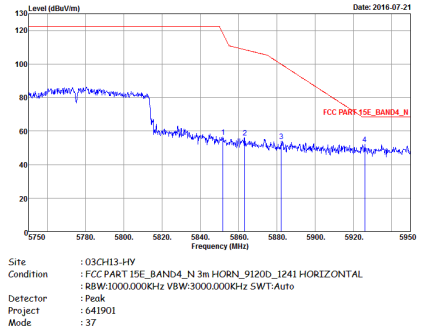
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 32	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 32
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 32	Left blank

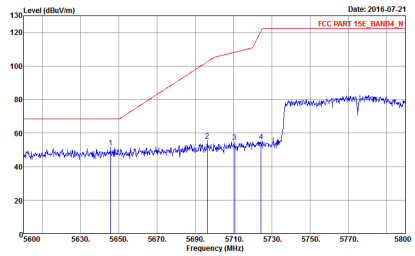
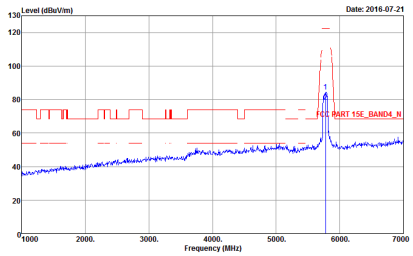
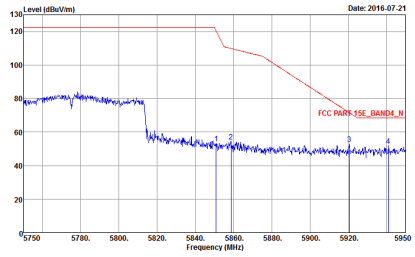
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 33	Left blank

Band 4 5725~5850MHz

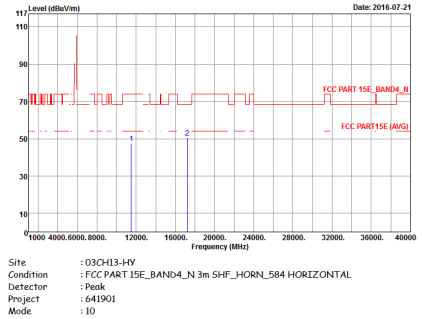
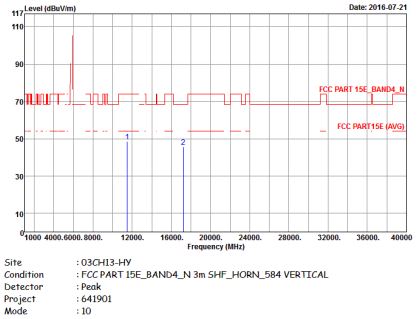
WIFI 802.11ac VHT80 (Band Edge @ 3m)

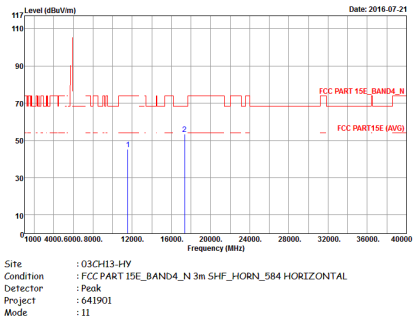
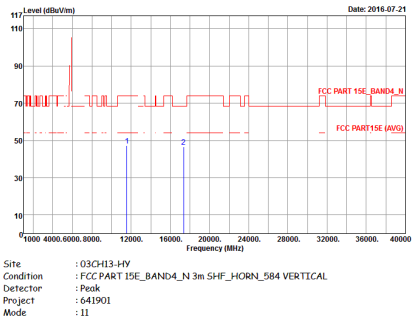
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

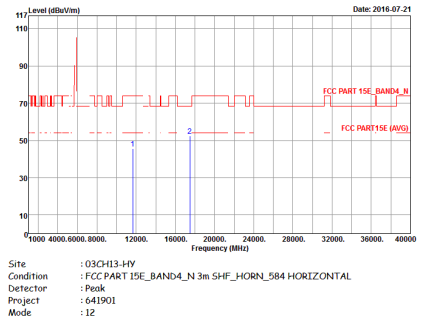
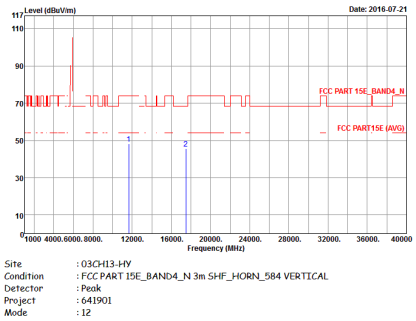
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 37	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 37
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 37	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

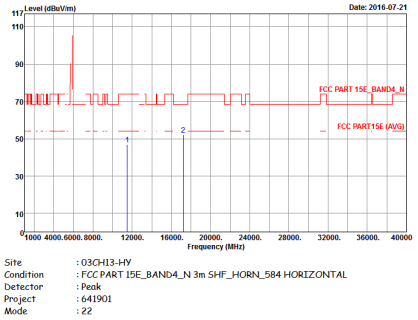
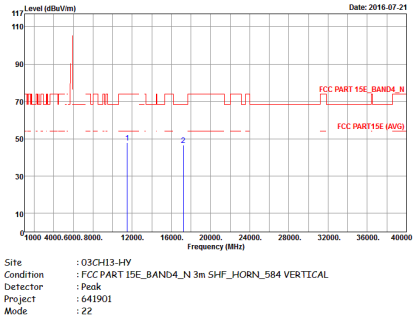
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.		

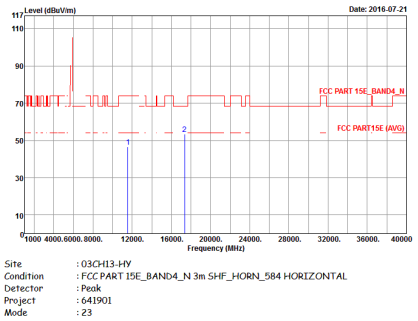
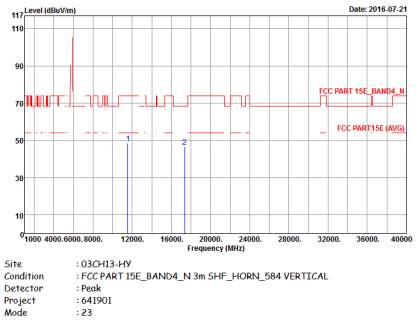
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.		

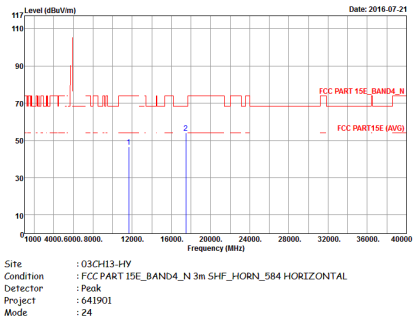
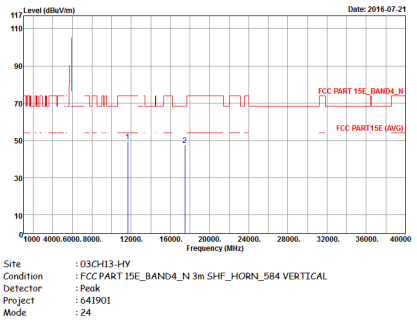
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.		

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

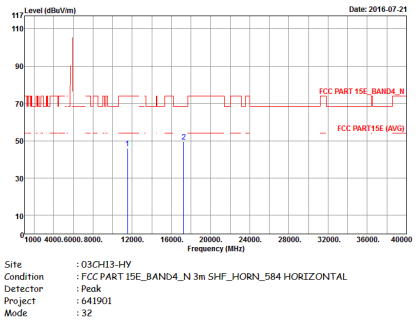
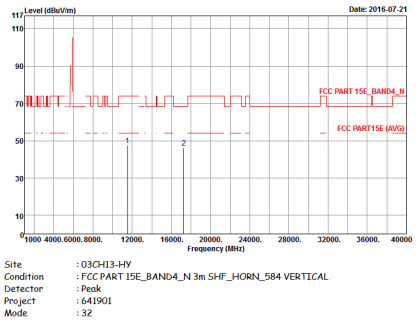
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.		

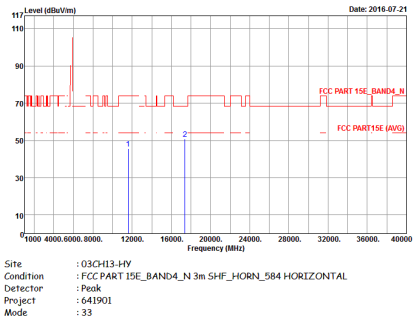
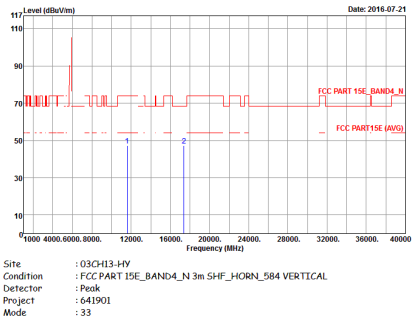
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.		

Band 4 5725~5850MHz

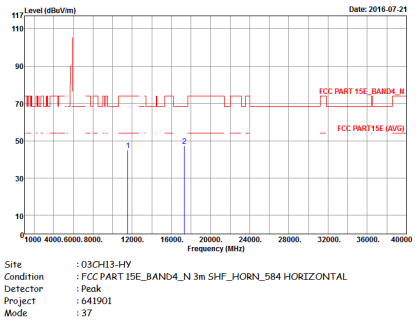
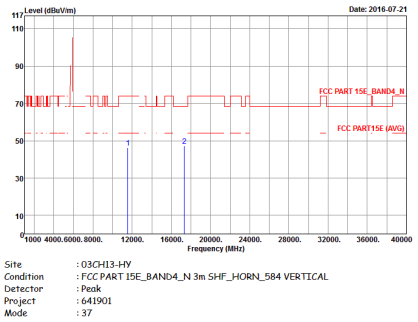
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.		

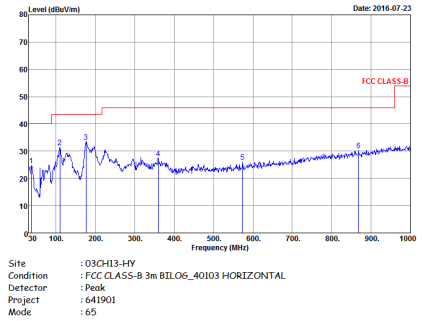
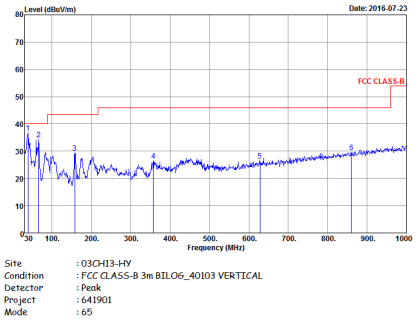
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

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

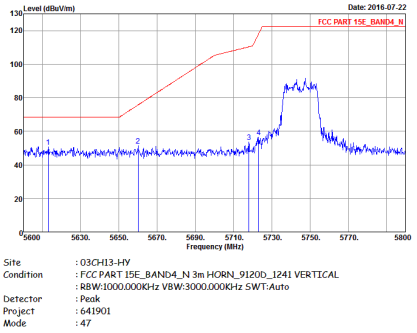
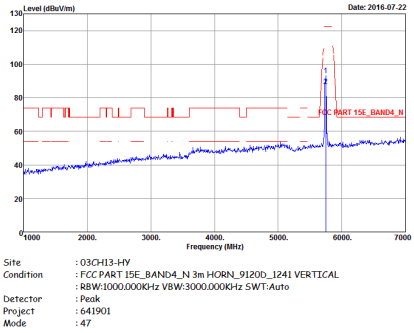
Emission below 1GHz

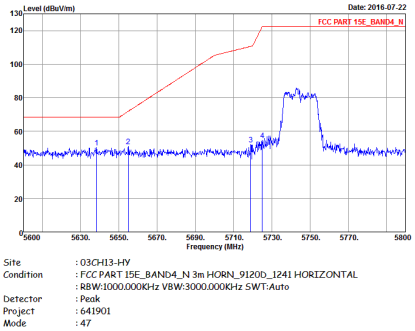
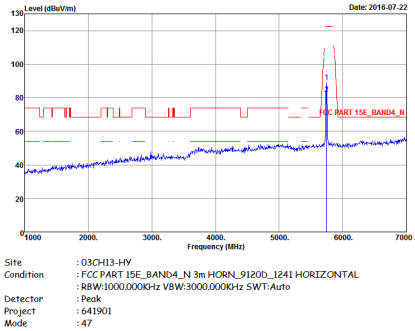
5GHz WIFI 802.11ac VHT80 (LF)

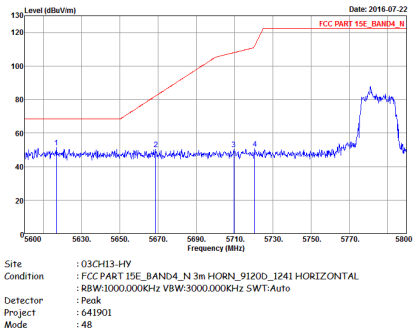
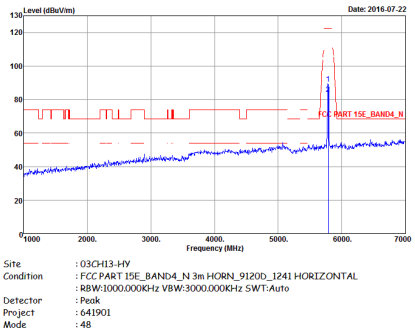
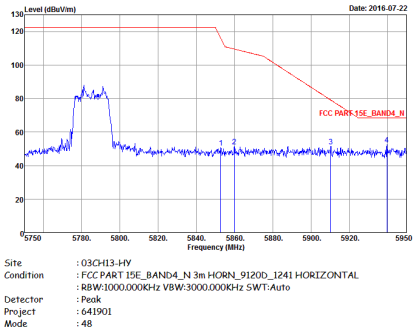
WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak		

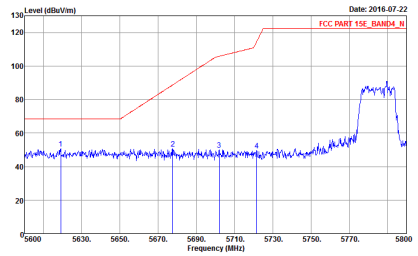
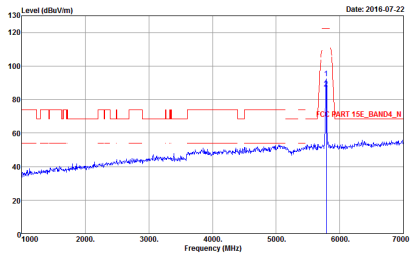
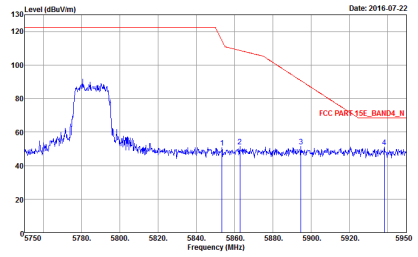
Band 4 - 5725~5850MHz

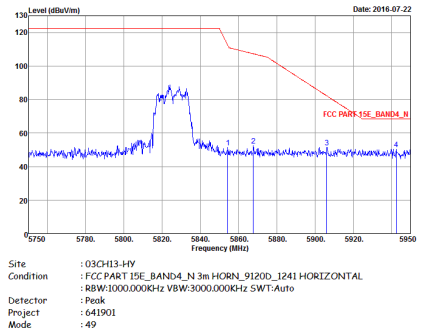
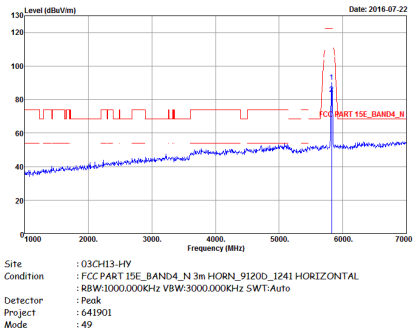
WIFI 802.11n HT20 (Band Edge @ 3m)

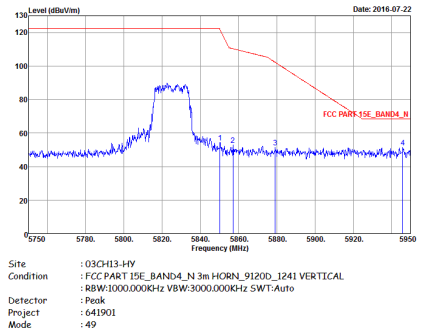
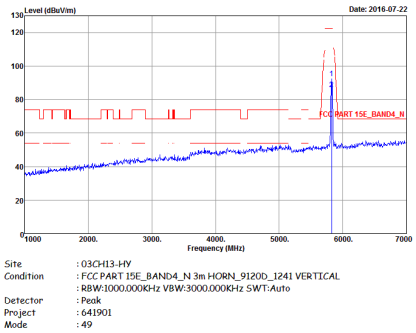
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48	Left blank

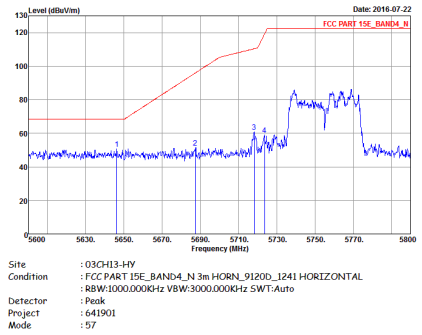
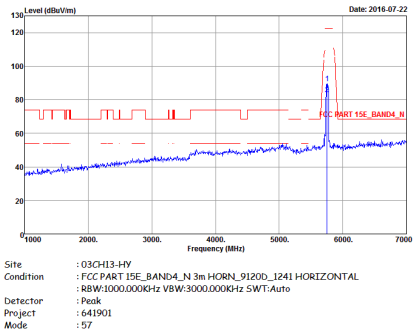
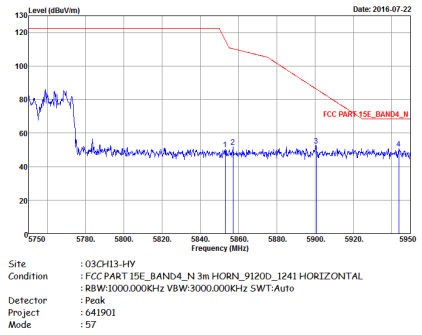
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 48	Left blank

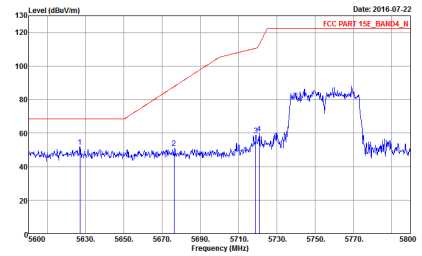
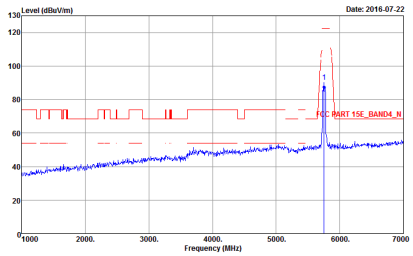
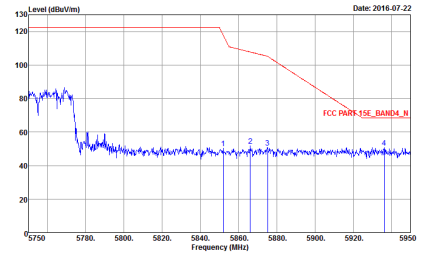
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak		

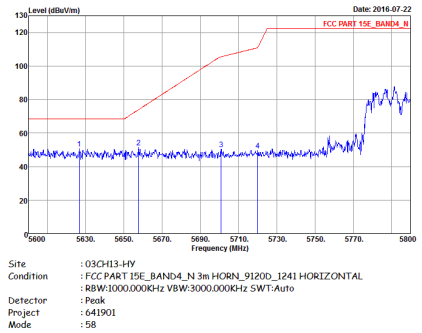
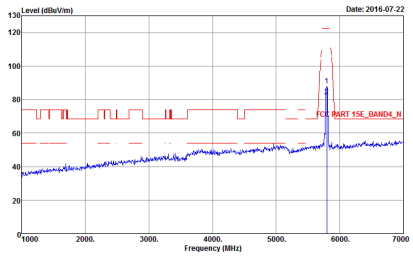
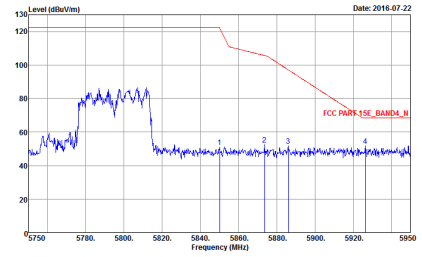
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak		

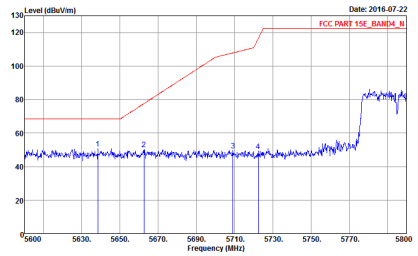
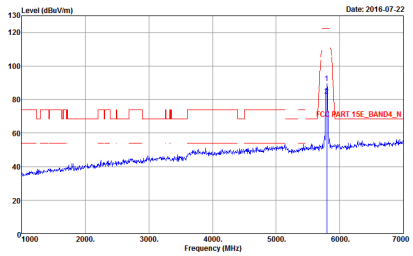
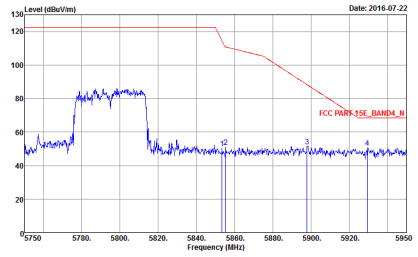
Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

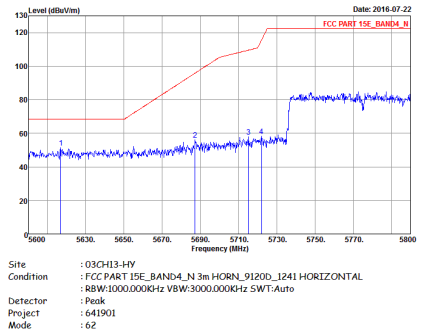
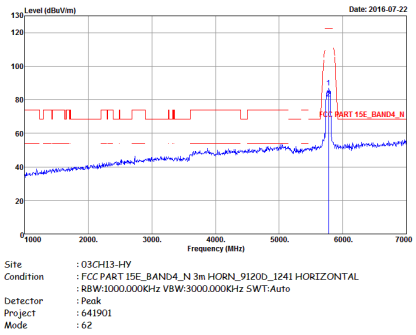
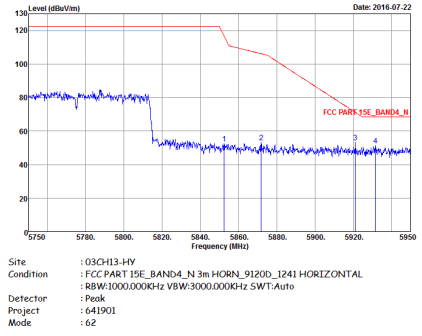
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 57	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 57
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 57	Left blank

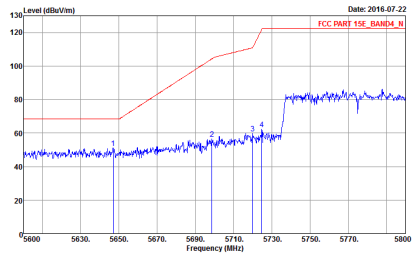
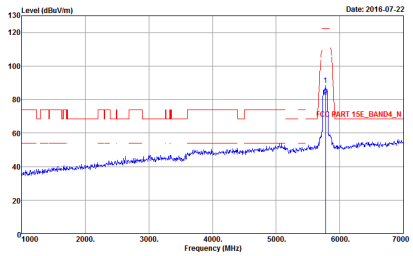
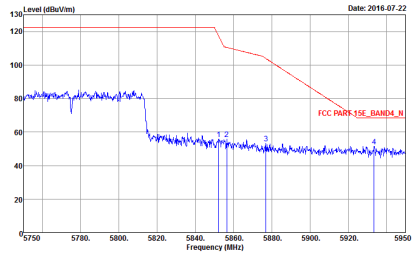
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 58	Left blank

Band 4 5725~5850MHz

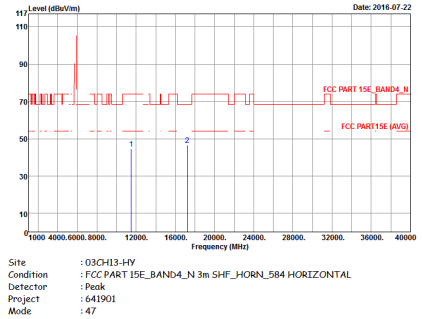
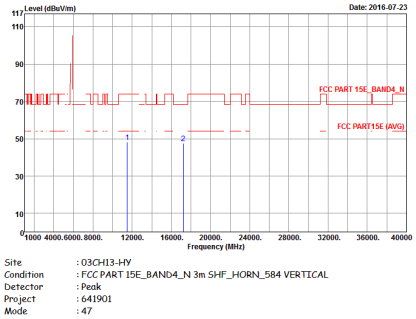
WIFI 802.11ac VHT80 (Band Edge @ 3m)

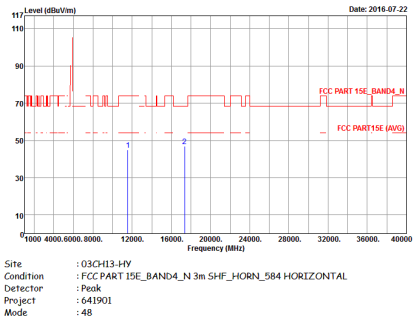
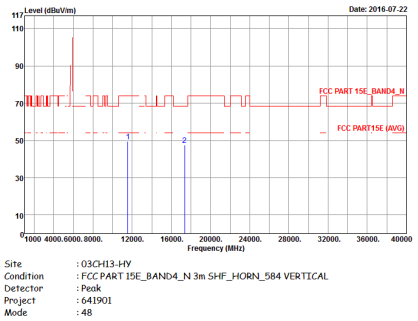
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

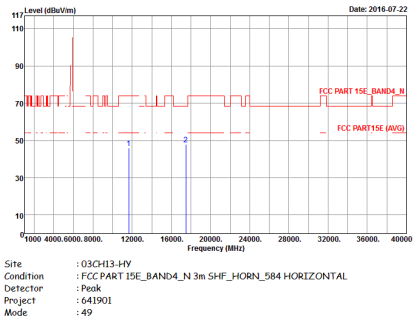
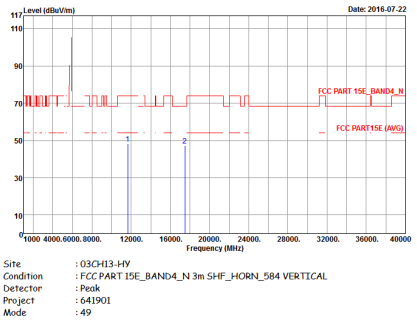
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 62	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 62
Peak	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 641901 Mode : 62	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

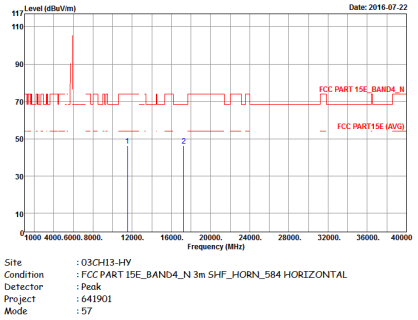
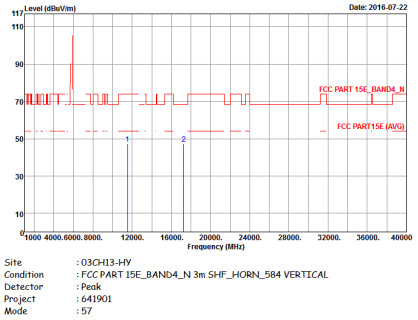
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

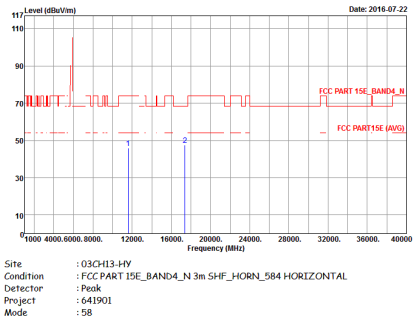
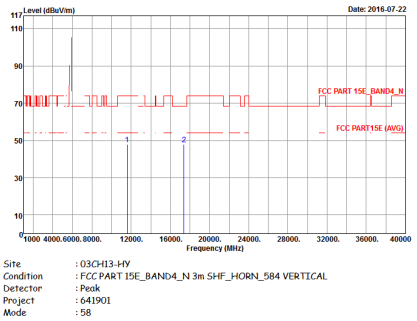
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m SHF_HORN_584 HORIZONTAL Detector : Peak Project : 641901 Mode : 49	 Site : 03CH13-HY Condition : FCC PART 15E_BAND4_N 3m SHF_HORN_584 VERTICAL Detector : Peak Project : 641901 Mode : 49

Band 4 5725~5850MHz

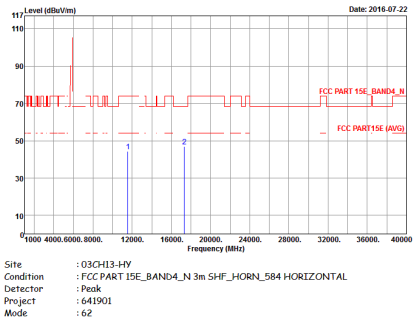
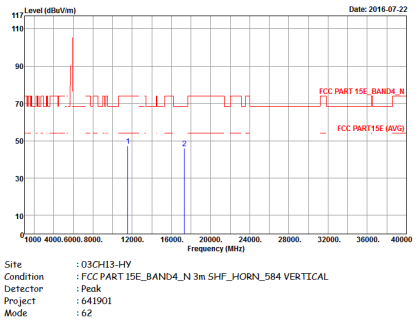
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.		

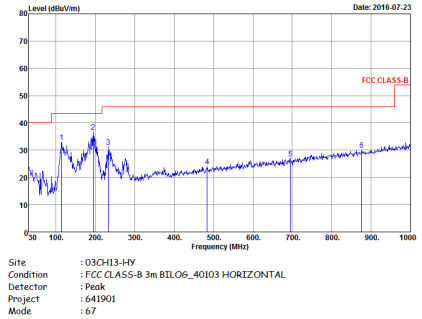
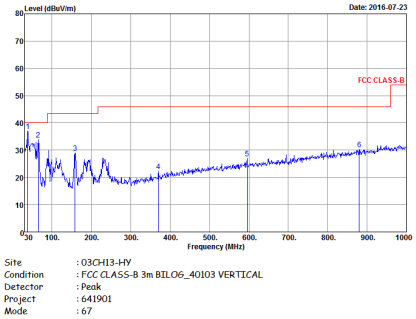
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

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

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF)

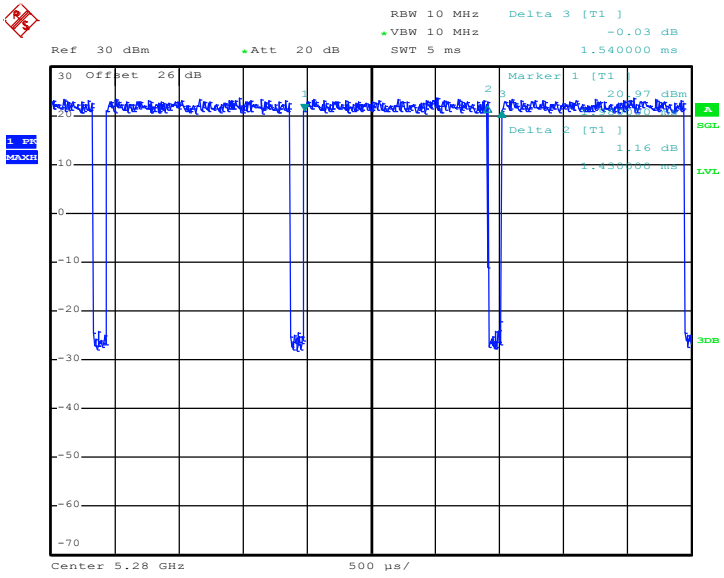
WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT80 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11a	92.86	1430.00	0.70	1kHz
1	5GHz 802.11n HT20	92.41	1340.00	0.75	1kHz
1+2	5GHz 802.11n HT20 for Ant 1	86.25	690.00	1.45	3kHz
1+2	5GHz 802.11n HT20 for Ant 2	86.94	692.00	1.45	3kHz
1	5GHz 802.11n HT40	86.72	666.00	1.50	3kHz
1+2	5GHz 802.11n HT40 for Ant 1	77.39	356.00	2.81	3kHz
1+2	5GHz 802.11n HT40 for Ant 2	77.39	356.00	2.81	3kHz
1	5GHz 802.11ac VHT80	76.15	332.00	3.01	10kHz
1+2	5GHz 802.11ac VHT80 for Ant 1	64.87	192.00	5.21	10kHz
1+2	5GHz 802.11ac VHT80 for Ant 2	63.51	188.00	5.32	10kHz

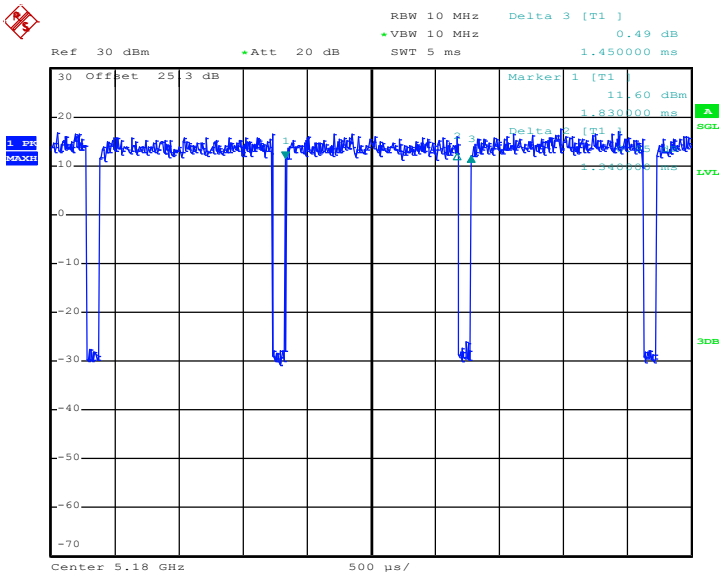
<Ant. 1>

802.11a



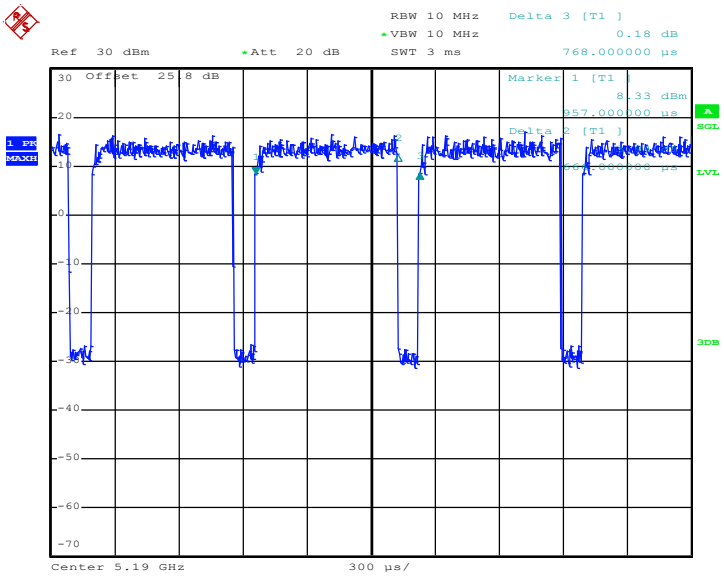
SISO <Ant. 1>

802.11n HT20



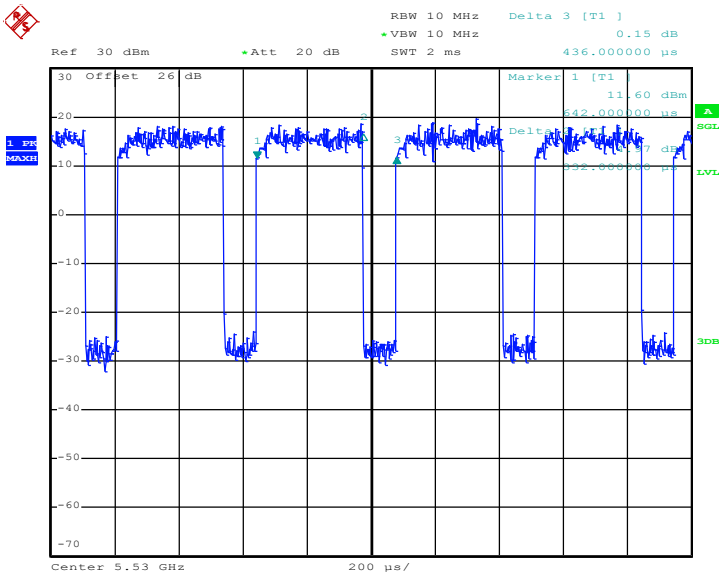
Date: 2.JUN.2016 23:02:35

802.11n HT40



Date: 2.JUN.2016 23:57:49

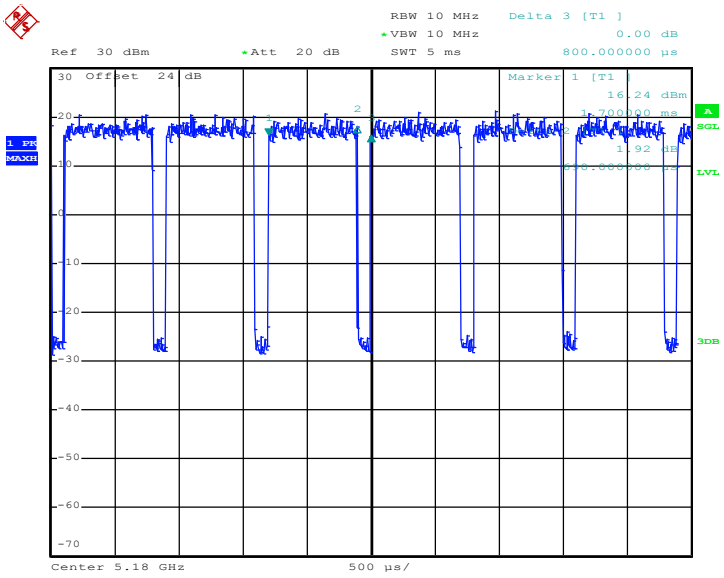
802.11ac VHT80



Date: 30.MAY.2016 23:32:36

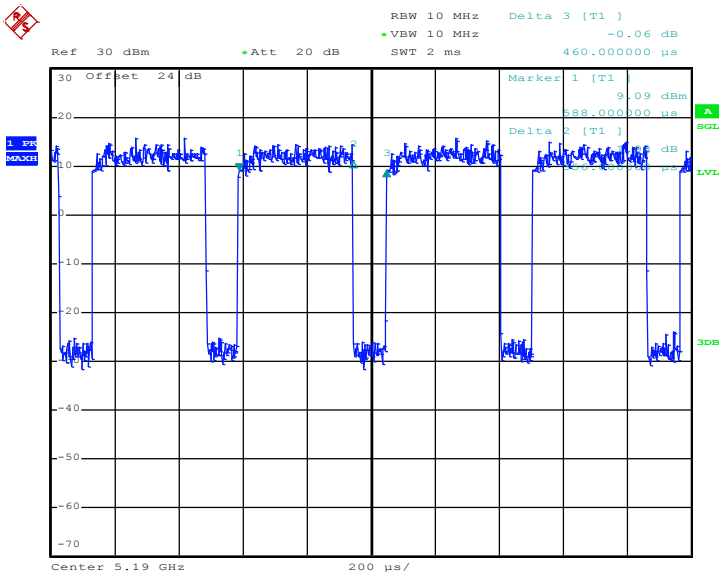
MIMO <Ant. 1 + 2(1)>

802.11n HT20



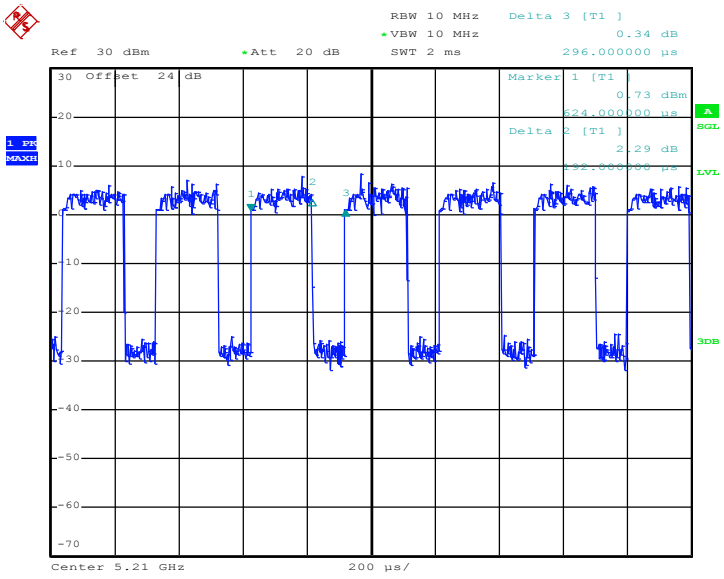
Date: 16.JUN.2016 03:46:46

802.11n HT40



Date: 16.JUN.2016 04:57:46

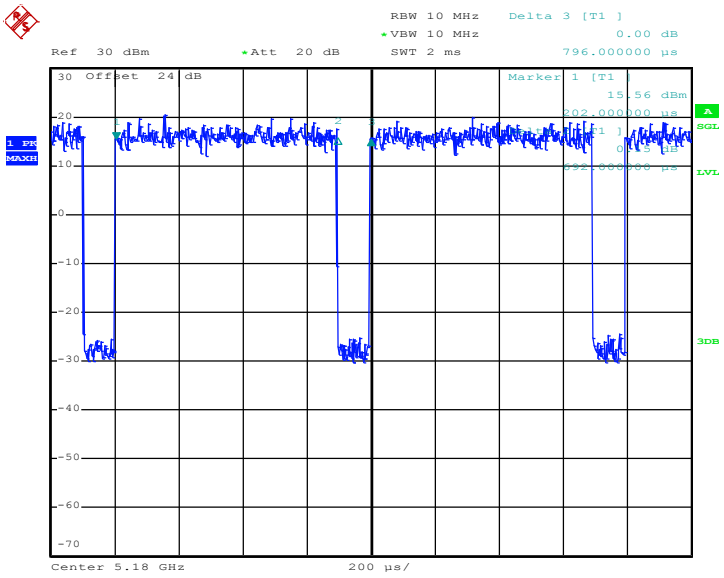
802.11ac VHT80



Date: 16.JUN.2016 06:58:03

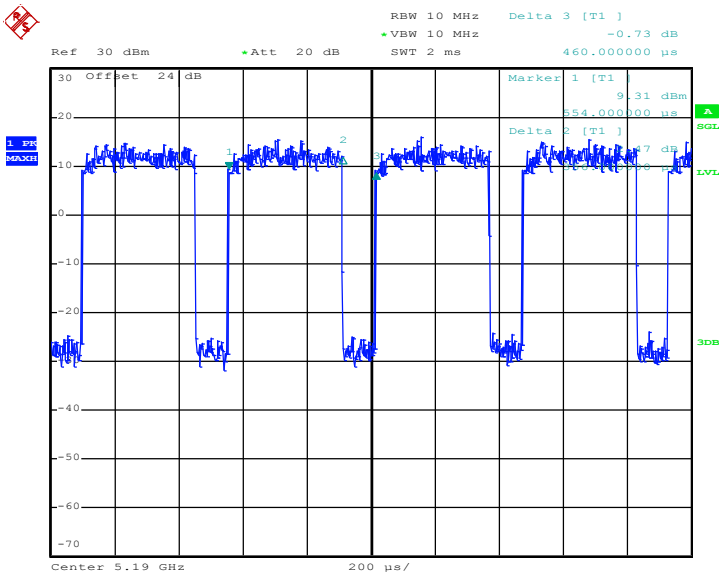
MIMO <Ant. 1 + 2(2)>

802.11n HT20



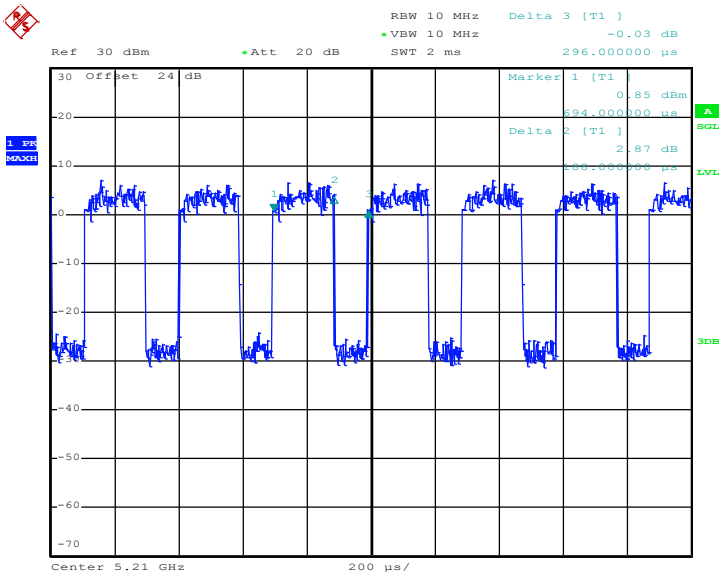
Date: 16.JUN.2016 03:45:13

802.11n HT40



Date: 16.JUN.2016 04:55:58

802.11ac VHT80



Date: 16.JUN.2016 06:56:56