



FCC RF Test Report

APPLICANT : IEI Intagration Corp
EQUIPMENT : Tablet PC
BRAND NAME : iEi
MODEL NAME : TRN-3200T
FCC ID : RFH-TRN3200T
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Sep. 02, 2016 and testing was completed on Sep. 30, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : RFH-TRN3200T

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR690221F	Rev. 01	Initial issue of report	Oct. 04, 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 5.24 dB at 194.700 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 5.70 dB at 2.470 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

IEI Intagrations Corp

No.29, Zhongxing Rd., Xizhi Dist., New Taipei City 221. Taiwan (R.O.C)

1.2 Manufacturer

IEI Intagrations Corp

No.29, Zhongxing Rd., Xizhi Dist., New Taipei City 221. Taiwan (R.O.C)

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Tablet PC
Brand Name	iEi
Model Name	TRN-3200T
FCC ID	RFH-TRN3200T
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	1.01
SW Version	1.00
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

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power	<5745 MHz ~ 5825 MHz> 802.11a : 12.99 dBm / 0.0199 W 802.11n HT20 : 11.94 dBm / 0.0156 W 802.11n HT40 : 11.54 dBm / 0.0143 W 802.11ac VHT20: 11.96 dBm / 0.0157 W 802.11ac VHT40: 11.64 dBm / 0.0146 W 802.11ac VHT80: 10.00 dBm / 0.0100 W
99% Occupied Bandwidth	802.11a : 18.70 MHz 802.11ac VHT20 : 18.65 MHz 802.11ac VHT40 : 36.90 MHz 802.11ac VHT80 : 75.36 MHz
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Antenna Type / Gain	PCB Antenna with gain 2.00 dBi

1.5 Modification of EUT

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

1.6 Testing Location

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

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		
	TH02-HY	CO05-HY	03CH07-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 v01r03
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

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) 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	-

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.

2.2 Test Mode

Final test 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

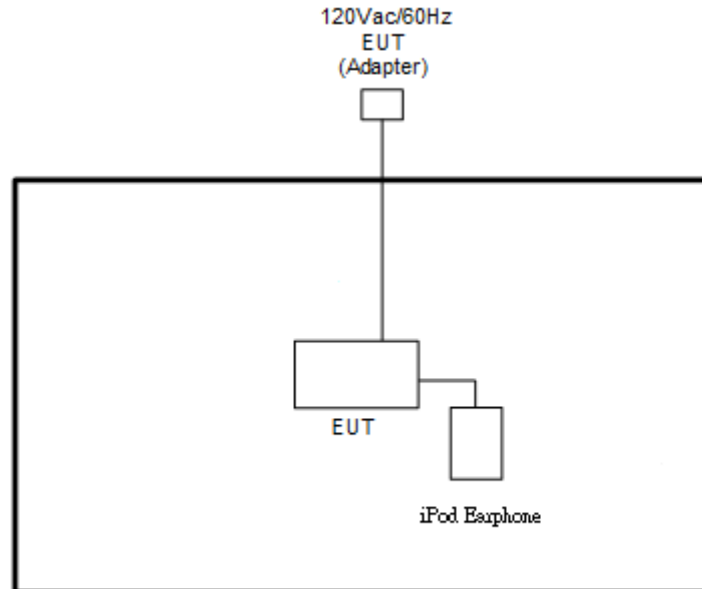
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN (5GHz) Link + TC + TF
Remark: 1. TF stands for Test Function, and consists of H-Pattern, MPEG4, and Camera. 2. TC stands for Test Configuration, and consists of SD Card, Earphone, LCD Monitor (Mini HDMI Out), USB HD, RJ-45 Link, Ultrasound Probe (Load), and Adapter.	

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

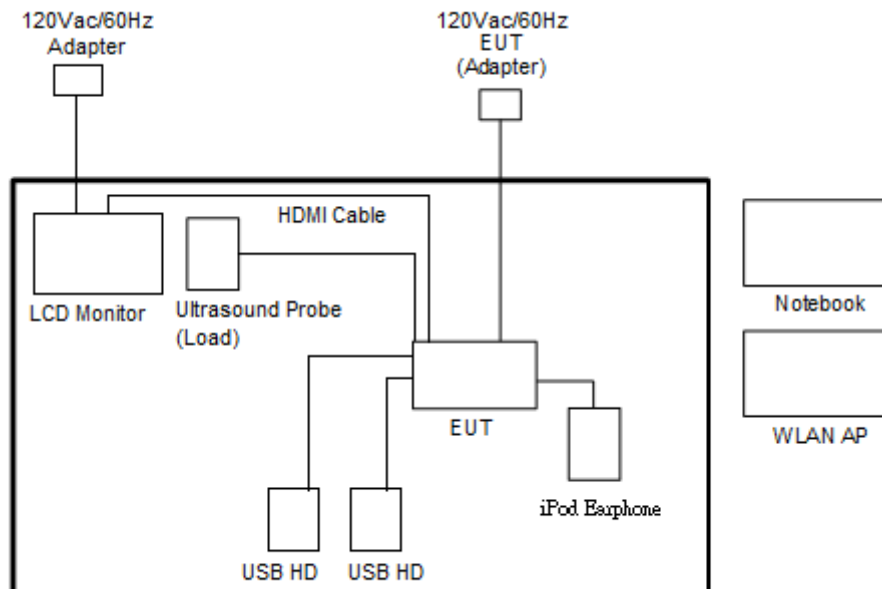
Ch. #		Band IV : 5725-5850 MHz		
		802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

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.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	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
4.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Ultrasound Probe	Terason	5C2A	N/A	Shielded, 2.0 m	N/A
6.	USB HD	WD	WDBAAR3200A BK-PESN	FCC DoC	Unshielded, 0.5 m	N/A
7.	USB HD	lenovo	F310S	FCC DoC	Unshielded, 0.5 m	N/A
8.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
9.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The programmed RF utility “TX Tool”, is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.



2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

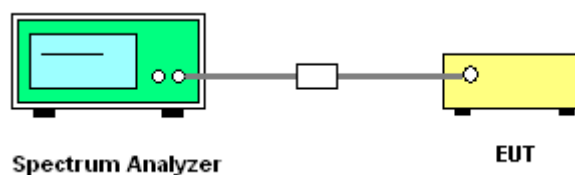
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

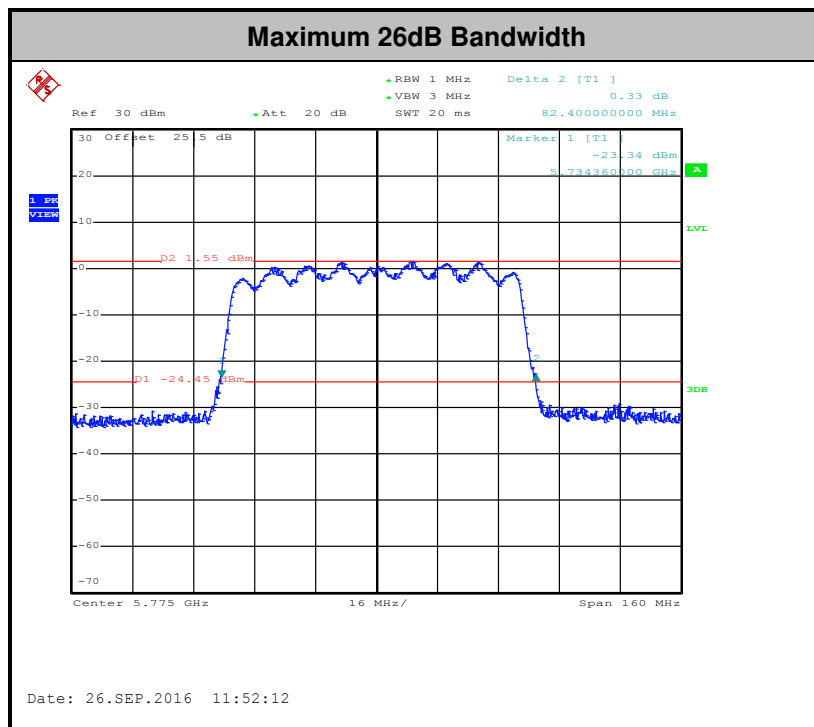
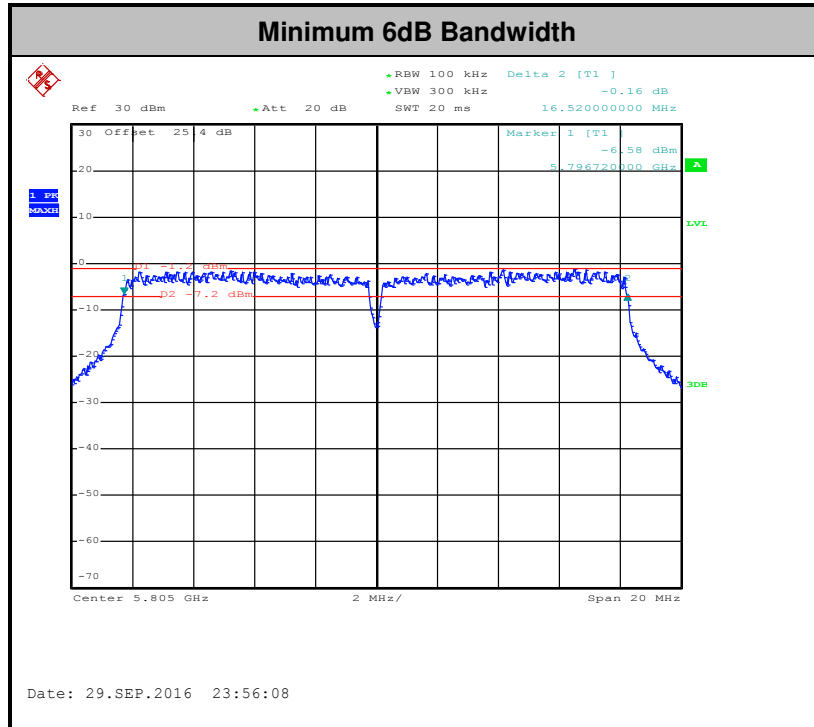
3.1.4 Test Setup

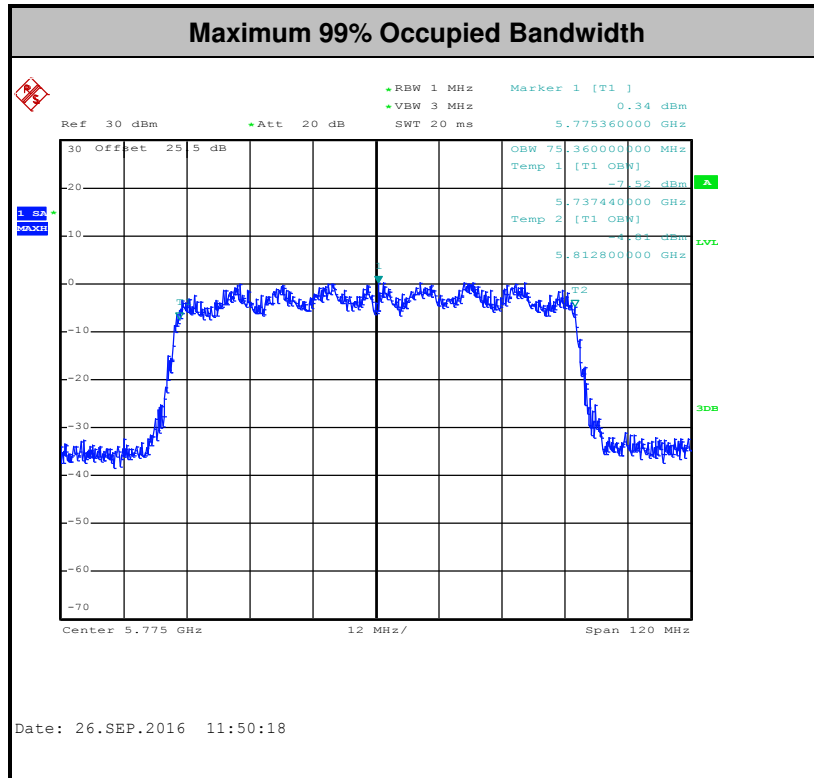




3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.





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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

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

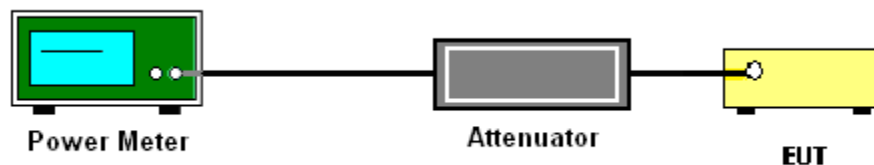
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

Method SA-2

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

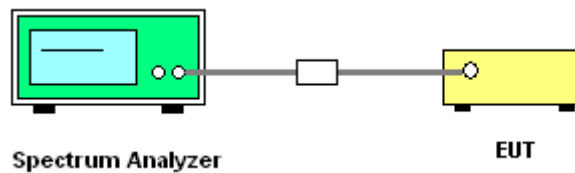
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW $\geq$ 1 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10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

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

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

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

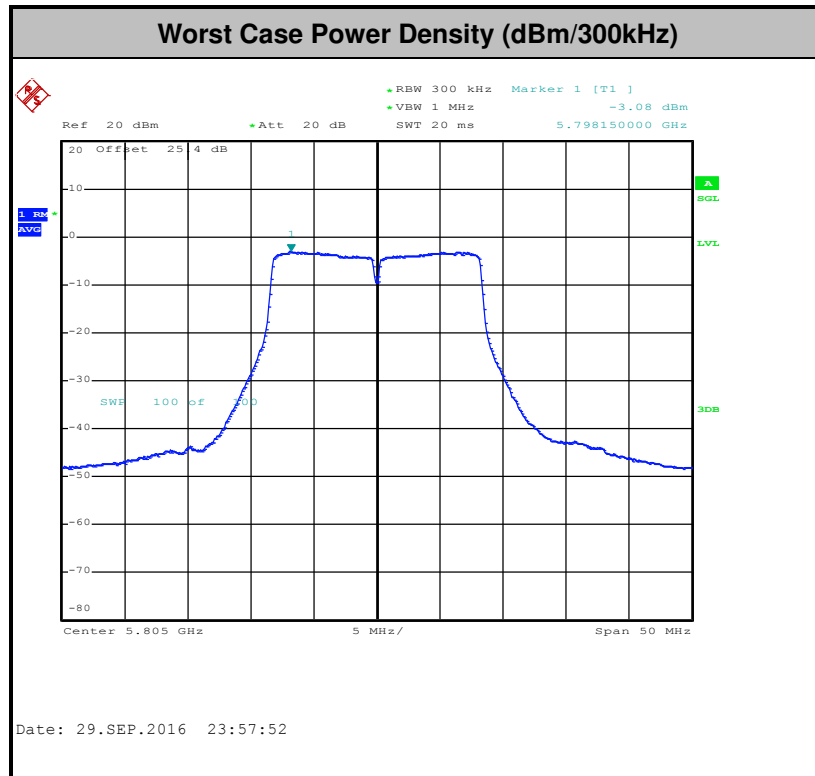
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

- (3) KDB 789033 D02 General UNII Test Procedures New Rules v01r03 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.

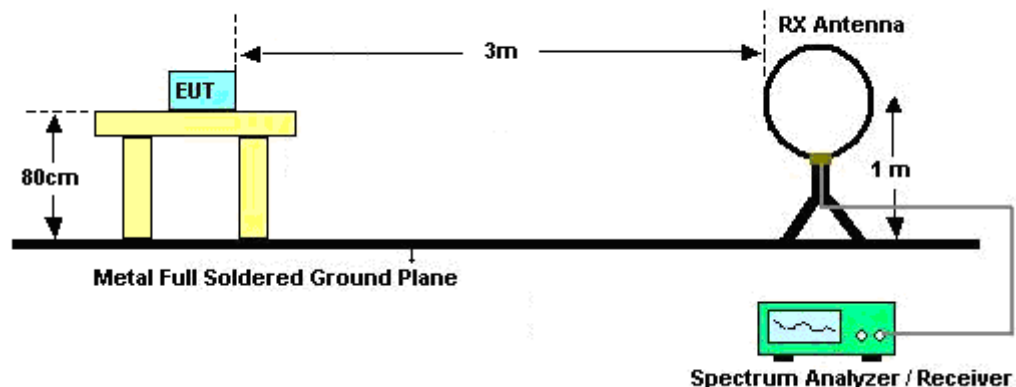
3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW ≥ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

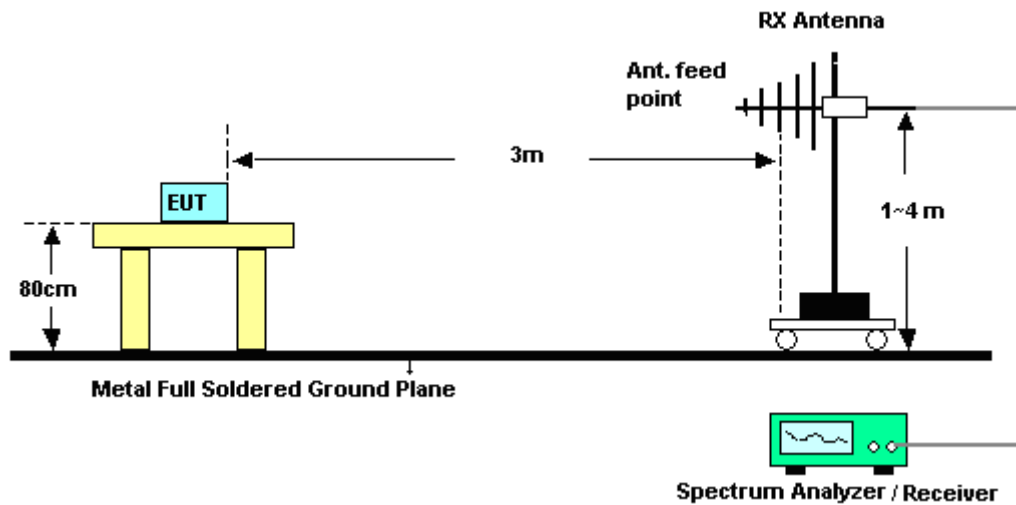
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

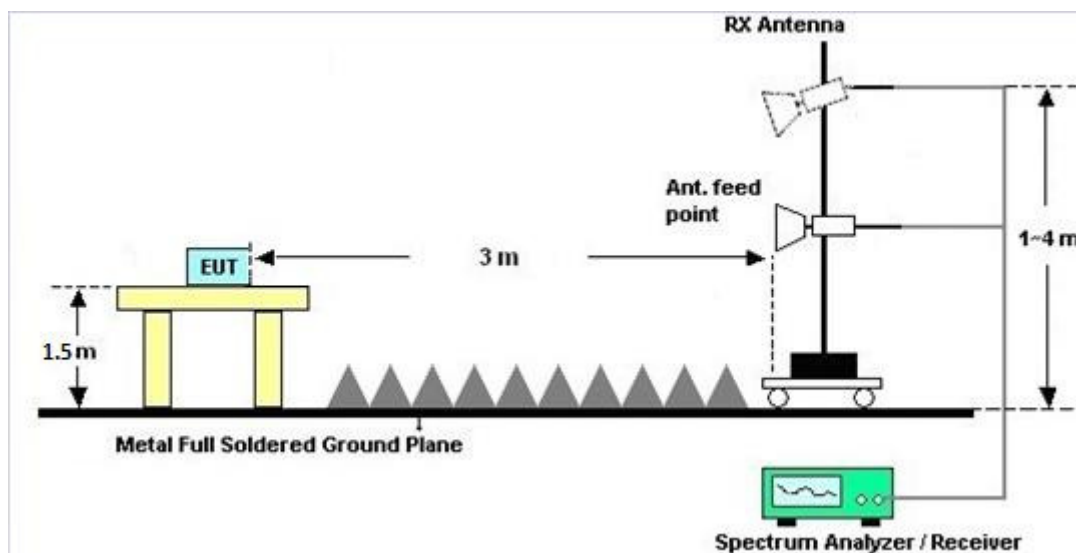
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





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

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

3.4.6 Test Result of Radiated Spurious at 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 Radiated Spurious Emissions (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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

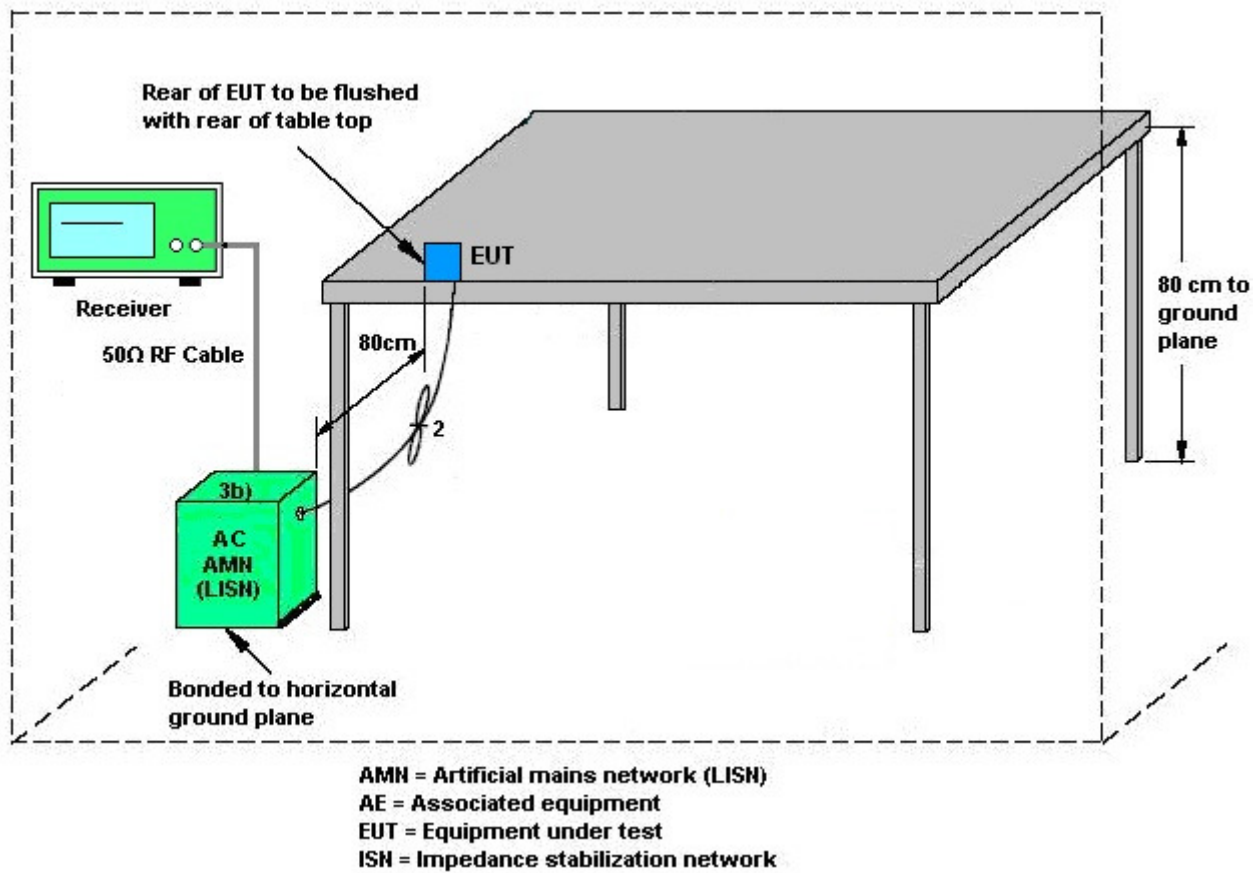
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

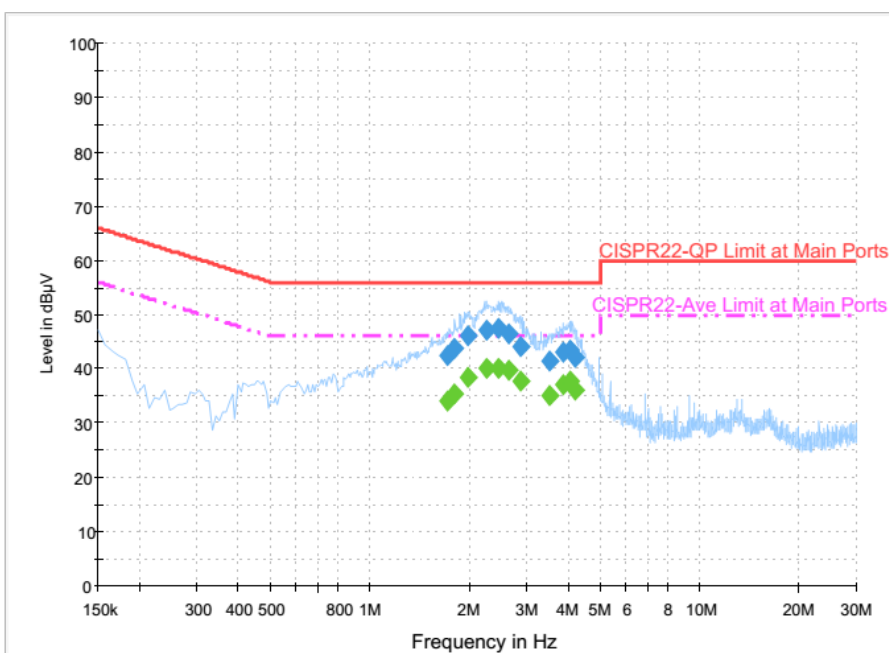
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

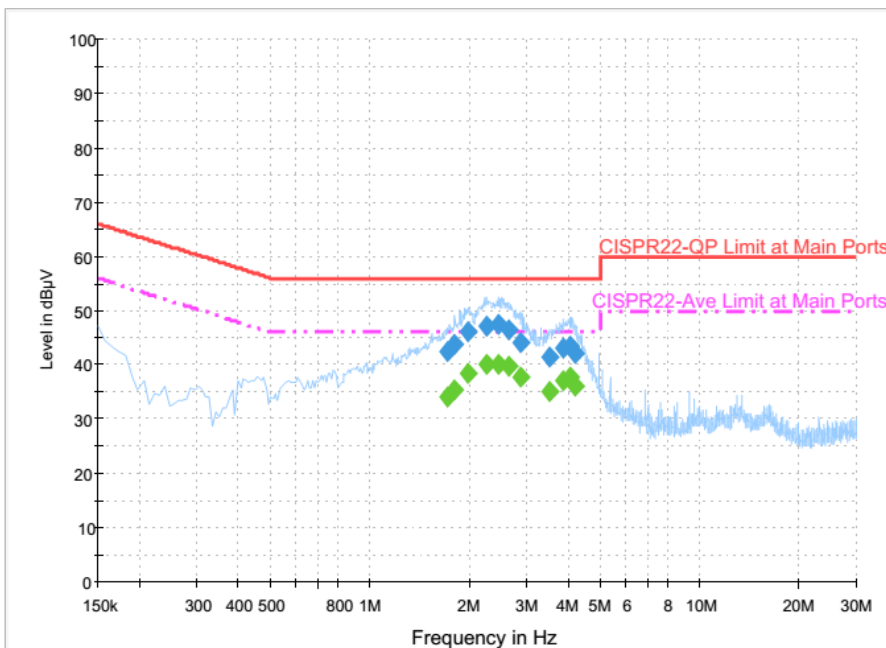
Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN (5GHz) Link + TC + TF		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.718000	42.4	Off	L1	19.6	13.6	56.0
1.814000	43.7	Off	L1	19.6	12.3	56.0
1.998000	46.3	Off	L1	19.6	9.7	56.0
2.270000	47.3	Off	L1	18.4	8.7	56.0
2.470000	47.4	Off	L1	19.0	8.6	56.0
2.630000	46.6	Off	L1	19.2	9.4	56.0
2.862000	44.0	Off	L1	19.4	12.0	56.0
3.510000	41.3	Off	L1	19.6	14.7	56.0
3.862000	43.0	Off	L1	19.7	13.0	56.0
4.078000	43.6	Off	L1	19.7	12.4	56.0
4.230000	42.0	Off	L1	19.7	14.0	56.0

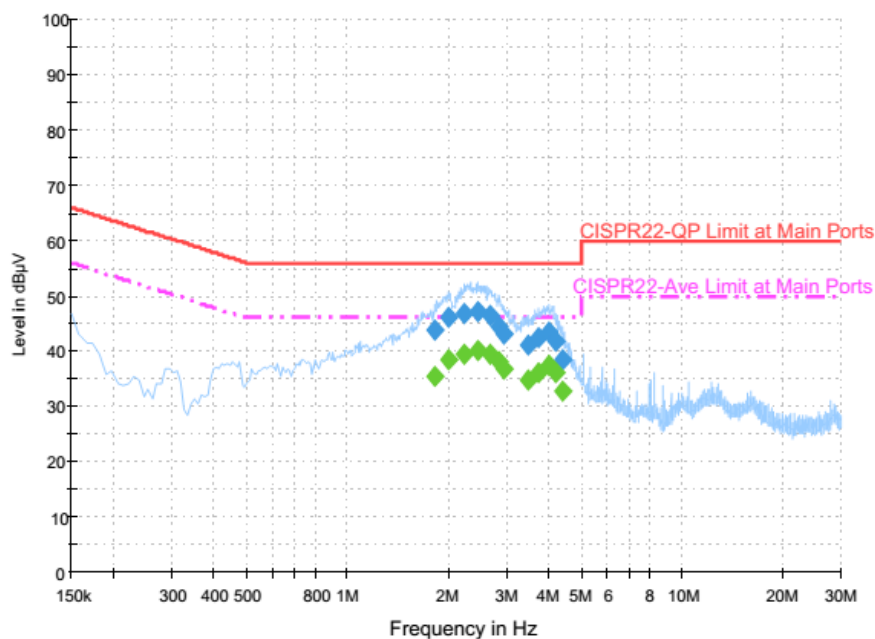
Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN (5GHz) Link + TC + TF		


Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.718000	34.3	Off	L1	19.6	11.7	46.0
1.814000	35.5	Off	L1	19.6	10.5	46.0
1.998000	38.4	Off	L1	19.6	7.6	46.0
2.270000	40.2	Off	L1	18.4	5.8	46.0
2.470000	40.3	Off	L1	19.0	5.7	46.0
2.630000	39.7	Off	L1	19.2	6.3	46.0
2.862000	37.9	Off	L1	19.4	8.1	46.0
3.510000	35.3	Off	L1	19.6	10.7	46.0
3.862000	37.1	Off	L1	19.7	8.9	46.0
4.078000	37.7	Off	L1	19.7	8.3	46.0
4.230000	36.2	Off	L1	19.7	9.8	46.0

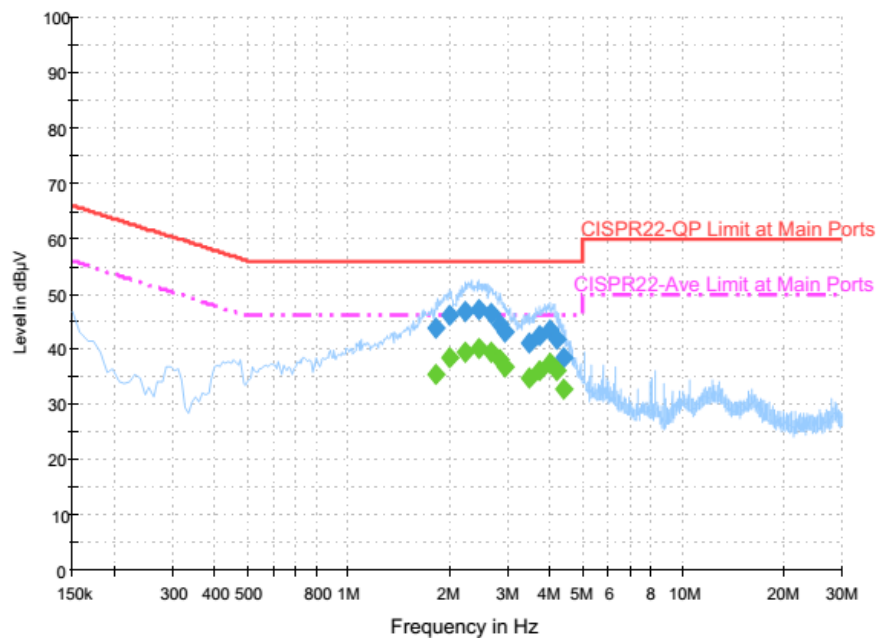


Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN (5GHz) Link + TC + TF		

**Final Result : QuasiPeak**

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.822000	43.7	Off	N	19.6	12.3	56.0
2.014000	46.2	Off	N	19.6	9.8	56.0
2.238000	46.9	Off	N	18.3	9.1	56.0
2.462000	47.1	Off	N	19.0	8.9	56.0
2.686000	46.4	Off	N	19.3	9.6	56.0
2.854000	44.6	Off	N	19.4	11.4	56.0
2.958000	43.3	Off	N	19.5	12.7	56.0
3.462000	41.0	Off	N	19.6	15.0	56.0
3.734000	42.4	Off	N	19.6	13.6	56.0
4.022000	43.4	Off	N	19.6	12.6	56.0
4.206000	41.9	Off	N	19.7	14.1	56.0
4.398000	38.5	Off	N	19.7	17.5	56.0

Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN (5GHz) Link + TC + TF		


Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.822000	35.6	Off	N	19.6	10.4	46.0
2.014000	38.4	Off	N	19.6	7.6	46.0
2.238000	39.6	Off	N	18.3	6.4	46.0
2.462000	40.1	Off	N	19.0	5.9	46.0
2.686000	39.5	Off	N	19.3	6.5	46.0
2.854000	38.1	Off	N	19.4	7.9	46.0
2.958000	36.8	Off	N	19.5	9.2	46.0
3.462000	34.8	Off	N	19.6	11.2	46.0
3.734000	36.2	Off	N	19.6	9.8	46.0
4.022000	37.4	Off	N	19.6	8.6	46.0
4.206000	36.0	Off	N	19.7	10.0	46.0
4.398000	32.7	Off	N	19.7	13.3	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.

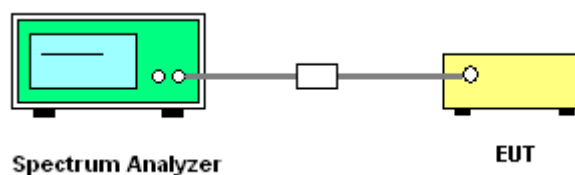
3.6.2 Measuring Instruments

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Jul. 28, 2016	Sep. 18, 2016 ~ Sep. 30, 2016	Jul. 27, 2017	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Jul. 28, 2016	Sep. 18, 2016 ~ Sep. 30, 2016	Jul. 27, 2017	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 17, 2016	Sep. 18, 2016 ~ Sep. 30, 2016	Jun. 16, 2017	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 11, 2016	Sep. 18, 2016 ~ Sep. 30, 2016	Jul. 10, 2017	Conducted (TH02-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890001	1V~20V 0.5A~4A	Oct. 05, 2015	Sep. 18, 2016 ~ Sep. 30, 2016	Oct. 04, 2016	Conducted (TH02-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Sep. 26, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Sep. 26, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Sep. 26, 2016	Dec. 01, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 14, 2015	Sep. 26, 2016	Dec. 13, 2016	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 08, 2016	Sep. 26, 2016	Jan. 07, 2017	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Sep. 19, 2016 ~ Sep. 23, 2016	Sep. 01, 2017	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D	35419	30MHz to 1GHz	Jan. 13, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Jan. 12, 2017	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Aug. 18, 2017	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Sep. 19, 2016 ~ Sep. 23, 2016	Nov. 01, 2016	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 18, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Mar. 17, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz ~ 18GHz	Apr. 15, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Apr. 14, 2017	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 19, 2015	Sep. 19, 2016 ~ Sep. 23, 2016	Oct. 18, 2016	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-1800400 0-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Jun. 13, 2017	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20Hz ~ 8.4GHz	Nov. 04, 2015	Sep. 19, 2016 ~ Sep. 23, 2016	Nov. 03, 2016	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Feb. 27, 2016	Sep. 19, 2016 ~ Sep. 23, 2016	Feb. 26, 2017	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Sep. 19, 2016 ~ Sep. 23, 2016	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Sep. 19, 2016 ~ Sep. 23, 2016	N/A	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.70
--	------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.50
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.20
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Appendix A. Conducted Test Results

Report Number : FR690221F

Test Engineer:	AC Chang	Temperature:	21~25	°C
Test Date:	2016/9/18~2016/9/30	Relative Humidity:	51~54	%

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

Band IV									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	6 dB Bandwidth (MHz)	6dB Bandwidth min. Limit (MHz)	Pass/Fail
11a	6M bps	1	149	5745	18.70	23.80	17.64	0.5	Pass
11a	6Mbps	1	157	5785	18.55	23.70	17.64	0.5	Pass
11a	6Mbps	1	161	5805	17.70	23.00	16.52	0.5	Pass
VHT20	MCS 0	1	149	5745	18.65	23.70	17.72	0.5	Pass
VHT20	MCS 0	1	157	5785	18.55	23.60	17.70	0.5	Pass
VHT20	MCS 0	1	161	5805	18.55	23.55	17.64	0.5	Pass
VHT40	MCS 0	1	151	5755	36.80	45.90	36.48	0.5	Pass
VHT40	MCS 0	1	159	5795	36.90	45.63	36.52	0.5	Pass
VHT80	MCS 0	1	155	5775	75.36	82.40	75.12	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6M bps	1	149	5745	0.00	12.92	30.00	2.00		Pass
11a	6Mbps	1	157	5785	0.00	12.76	30.00	2.00		Pass
11a	6Mbps	1	161	5805	0.00	12.99	30.00	2.00		Pass
HT20	MCS 0	1	149	5745	0.00	11.68	30.00	2.00		Pass
HT20	MCS 0	1	157	5785	0.00	11.74	30.00	2.00		Pass
HT20	MCS 0	1	161	5805	0.00	11.94	30.00	2.00		Pass
HT40	MCS 0	1	151	5755	0.00	11.54	30.00	2.00		Pass
HT40	MCS 0	1	159	5795	0.00	11.52	30.00	2.00		Pass
VHT20	MCS 0	1	149	5745	0.00	11.69	30.00	2.00		Pass
VHT20	MCS 0	1	157	5785	0.00	11.75	30.00	2.00		Pass
VHT20	MCS 0	1	161	5805	0.00	11.96	30.00	2.00		Pass
VHT40	MCS 0	1	151	5755	0.00	11.63	30.00	2.00		Pass
VHT40	MCS 0	1	159	5795	0.00	11.64	30.00	2.00		Pass
VHT80	MCS 0	1	155	5775	0.00	10.00	30.00	2.00		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	10log (500kHz /RBW) Factor (dB)	Average Power Density (dBm/500kHz)	Average PSD Limit (dBm/500kHz)	DG (dBi)	Pass/Fail
11a	6M bps	1	149	5745	0.00	2.22	-2.12	30.00	2.00	Pass
11a	6Mbps	1	157	5785	0.00	2.22	-2.47	30.00	2.00	Pass
11a	6Mbps	1	161	5805	0.00	2.22	-0.86	30.00	2.00	Pass
VHT20	MCS 0	1	149	5745	0.00	2.22	-2.89	30.00	2.00	Pass
VHT20	MCS 0	1	157	5785	0.00	2.22	-3.35	30.00	2.00	Pass
VHT20	MCS 0	1	161	5805	0.00	2.22	-2.71	30.00	2.00	Pass
VHT40	MCS 0	1	151	5755	0.00	2.22	-5.97	30.00	2.00	Pass
VHT40	MCS 0	1	159	5795	0.00	2.22	-6.55	30.00	2.00	Pass
VHT80	MCS 0	1	155	5775	0.00	2.22	-9.57	30.00	2.00	Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6M bps	1	149	5745	5745.000	0.000	0.00	50	19	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	-30	19	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	20	19.95	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	20	18.05	
11a	6M bps	1	149	5745	5745.000	0.000	0.00	20	19	

Appendix B. Radiated Spurious Emission

Test Engineer :	Jesse Wang and James Chiu and Ken Wu	Temperature :	20~24°C
		Relative Humidity :	50~54%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

[illegible]

[illegible]

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 161 5805MHz		5632.6	49.49	-18.71	68.2	38.21	34.6	11.95	35.27	319	182	P	H
		5667.2	50.55	-30.41	80.96	39.22	34.6	12	35.27	319	182	P	H
		5709.8	49.39	-58.56	107.95	38.01	34.6	12.06	35.28	319	182	P	H
		5724.4	49.15	-71.68	120.83	37.77	34.6	12.06	35.28	319	182	P	H
	*	5805	102.17	-	-	90.7	34.6	12.17	35.3	319	182	P	H
	*	5805	94.68	-	-	83.21	34.6	12.17	35.3	319	182	A	H
		5852	50.87	-66.77	117.64	39.3	34.6	12.28	35.31	319	182	P	H
		5875	50.18	-55.02	105.2	38.51	34.6	12.39	35.32	319	182	P	H
		5885.2	50.6	-47.03	97.63	38.93	34.6	12.39	35.32	319	182	P	H
		5935.8	49.38	-18.82	68.2	37.6	34.6	12.51	35.33	319	182	P	H
		5628.4	49.71	-18.49	68.2	38.43	34.6	11.95	35.27	100	163	P	V
		5664.2	50.24	-28.5	78.74	38.91	34.6	12	35.27	100	163	P	V
		5716.8	50.52	-59.39	109.91	39.14	34.6	12.06	35.28	100	163	P	V
		5721.6	48.79	-65.66	114.45	37.41	34.6	12.06	35.28	100	163	P	V
	*	5805	101.3	-	-	89.83	34.6	12.17	35.3	100	163	P	V
	*	5805	93.92	-	-	82.45	34.6	12.17	35.3	100	163	A	V
		5854.6	48.89	-62.82	111.71	37.32	34.6	12.28	35.31	100	163	P	V
		5865.8	50.39	-57.38	107.77	38.71	34.6	12.39	35.31	100	163	P	V
		5882.2	50.14	-49.71	99.85	38.47	34.6	12.39	35.32	100	163	P	V
		5927.2	50.62	-17.58	68.2	38.84	34.6	12.51	35.33	100	163	P	V
		5628.4	49.71	-18.49	68.2	38.43	34.6	11.95	35.27	100	163	P	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	42.8	-31.2	74	43.71	39.27	17.16	57.34	100	0	P	H
		17232	45.51	-22.69	68.2	38.21	42.43	20.76	55.89	100	0	P	H
													H
													H
		11490	41.71	-32.29	74	42.62	39.27	17.16	57.34	100	0	P	V
		17232	45.95	-22.25	68.2	38.65	42.43	20.76	55.89	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	42.69	-31.31	74	43.52	39.2	17.16	57.19	100	0	P	H
		17352	46.34	-21.86	68.2	39.2	42.24	20.84	55.94	100	0	P	H
													H
													H
		11570	43.01	-30.99	74	43.84	39.2	17.16	57.19	100	0	P	V
		17352	45.22	-22.98	68.2	38.08	42.24	20.84	55.94	100	0	P	V
													V
													V
802.11a CH 161 5805MHz		11610	42.21	-31.79	74	43.02	39.16	17.16	57.13	100	0	P	H
		17412	45.59	-22.61	68.2	38.52	42.16	20.87	55.96	100	0	P	H
													H
													H
		11610	42.68	-31.32	74	43.49	39.16	17.16	57.13	100	0	P	V
		17412	45.6	-22.6	68.2	38.53	42.16	20.87	55.96	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

[illegible]

[illegible]

[illegible]

Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (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)
802.11ac VHT20 CH 149 5745MHz		11490	42.09	-31.91	74	43	39.27	17.16	57.34	100	0	P	H
		17232	45.11	-23.09	68.2	37.81	42.43	20.76	55.89	100	0	P	H
													H
													H
		11490	43.19	-30.81	74	44.1	39.27	17.16	57.34	100	0	P	V
		17232	45.49	-22.71	68.2	38.19	42.43	20.76	55.89	100	0	P	V
													V
													V
802.11ac VHT20 CH 157 5785MHz		11570	42.76	-31.24	74	43.59	39.2	17.16	57.19	100	0	P	H
		17352	45.11	-23.09	68.2	37.97	42.24	20.84	55.94	100	0	P	H
													H
													H
		11570	41.96	-32.04	74	42.79	39.2	17.16	57.19	100	0	P	V
		17352	46.45	-21.75	68.2	39.31	42.24	20.84	55.94	100	0	P	V
													V
													V
802.11ac VHT20 CH 161 5805MHz		11610	42.22	-31.78	74	43.03	39.16	17.16	57.13	100	0	P	H
		17415	45.75	-22.45	68.2	38.72	42.13	20.87	55.97	100	0	P	H
													H
													H
		11610	41.63	-32.37	74	42.44	39.16	17.16	57.13	100	0	P	V
		17415	46.44	-21.76	68.2	39.41	42.13	20.87	55.97	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

[illegible]

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)
802.11ac VHT40 CH 159 5795MHz		5635.6	50.51	-17.69	68.2	39.23	34.6	11.95	35.27	209	179	P	H
		5671.6	50.62	-33.6	84.22	39.29	34.6	12	35.27	209	179	P	H
		5711	49.19	-59.09	108.28	37.81	34.6	12.06	35.28	209	179	P	H
		5723.8	49.8	-69.66	119.46	38.42	34.6	12.06	35.28	209	179	P	H
	*	5795	98.85	-	-	87.38	34.6	12.17	35.3	209	179	P	H
	*	5795	91.2	-	-	79.73	34.6	12.17	35.3	209	179	A	H
		5850.6	49.38	-71.45	120.83	37.81	34.6	12.28	35.31	209	179	P	H
		5861.2	50.73	-58.33	109.06	39.05	34.6	12.39	35.31	209	179	P	H
		5890.6	51.17	-42.45	93.62	39.5	34.6	12.39	35.32	209	179	P	H
		5932.2	49.79	-18.41	68.2	38.01	34.6	12.51	35.33	209	179	P	H
													H
													H
		5649.4	49.71	-18.49	68.2	38.43	34.6	11.95	35.27	100	163	P	V
		5665	49.1	-30.23	79.33	37.77	34.6	12	35.27	100	163	P	V
		5717.4	50.35	-59.72	110.07	38.97	34.6	12.06	35.28	100	163	P	V
		5720.4	49.34	-62.37	111.71	37.96	34.6	12.06	35.28	100	163	P	V
	*	5795	97.21	-	-	85.74	34.6	12.17	35.3	100	163	P	V
	*	5795	89.51	-	-	78.04	34.6	12.17	35.3	100	163	A	V
		5855	50.61	-60.19	110.8	39.04	34.6	12.28	35.31	100	163	P	V
		5855	50.61	-60.19	110.8	39.04	34.6	12.28	35.31	100	163	P	V
	5902.8	50.35	-34.24	84.59	38.56	34.6	12.51	35.32	100	163	P	V	
	5936.2	51.1	-17.1	68.2	39.32	34.6	12.51	35.33	100	163	P	V	
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

[illegible]

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

[illegible]

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

[illegible]

Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11a LF		30.54	27.19	-12.81	40	32.12	25.46	1.07	31.46	-	-	P	H
		76.44	33.16	-6.84	40	49.62	13.46	1.28	31.2	-	-	P	H
		194.7	38.26	-5.24	43.5	51.74	15.75	1.87	31.1	200	92	P	H
		307	33.61	-12.39	46	42.18	20.02	2.41	31	-	-	P	H
		518.4	34.7	-11.3	46	37.88	24.35	3.14	30.67	-	-	P	H
		759.2	36.74	-9.26	46	36	27.3	3.82	30.38	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	28.53	-11.47	40	32.96	26	1.07	31.5	-	-	P	V
		77.25	31.9	-8.1	40	48.25	13.57	1.28	31.2	100	72	P	V
		122.88	27.67	-15.83	43.5	39.2	18.02	1.55	31.1	-	-	P	V
		518.4	32.75	-13.25	46	35.93	24.35	3.14	30.67	-	-	P	V
		791.4	32.07	-13.93	46	30.88	27.61	3.9	30.32	-	-	P	V
		958.7	33.76	-12.24	46	29.83	30.22	4.07	30.36	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

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



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

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

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

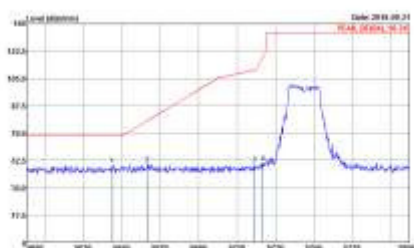


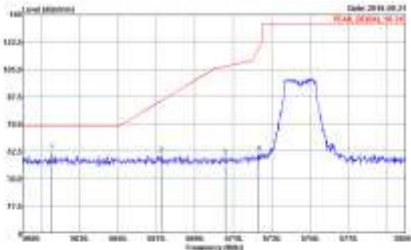
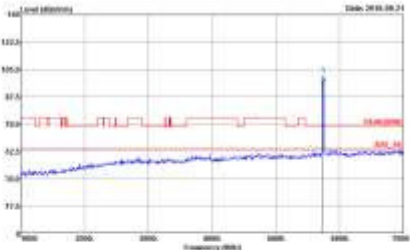
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Jesse Wang and James Chiu and Ken Wu	Temperature :	20~24°C
		Relative Humidity :	50~54%

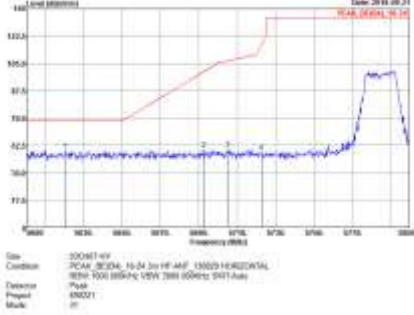
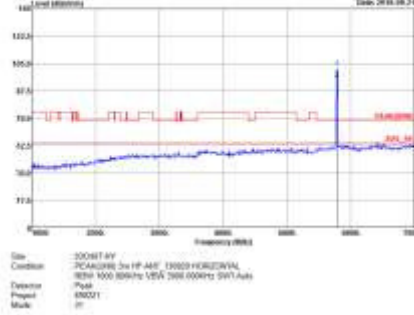
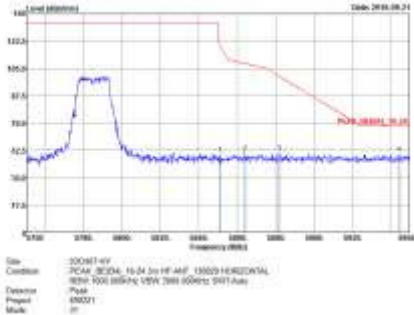
Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 File: 20081119 Condition: PCAN_20081119_04_3m_HF_4M_10000_HORIZONTAL Detector: Peak Preamp: 40000 Mode: dB	 File: 20081119 Condition: PCAN_20081119_04_3m_HF_4M_10000_HORIZONTAL Detector: Peak Preamp: 40000 Mode: dB

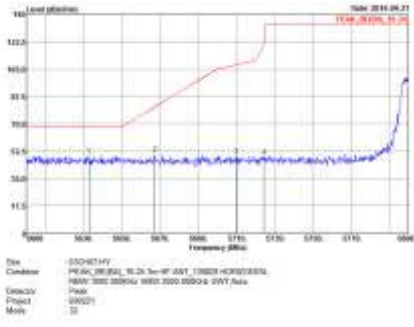
WIFI		Band 4 5725~5850MHz Band Edge @ 3m	
ANT		802.11a CH149 5745MHz	
1	Vertical	Fundamental	
Peak	 Title: 2019-08-24 PCAN_802.11a-15-04-3m HF-4M 130029 VERTICAL 802.11a 1000 800Hz VSW 2000 6000Hz SMT Auto Detector: Peak Project: 670021 Mark: 0	 Title: 2019-08-24 PCAN_802.11a-15-04-3m HF-4M 130029 VERTICAL 802.11a 1000 800Hz VSW 2000 6000Hz SMT Auto Detector: Peak Project: 670021 Mark: 0	



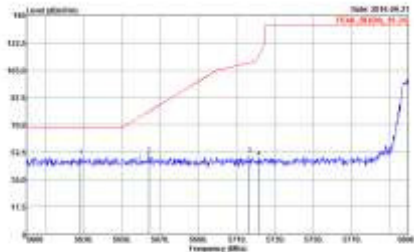
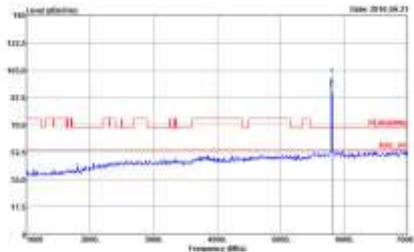
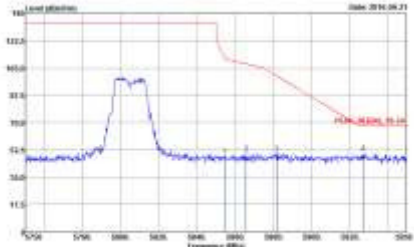
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical Date: 2008/7/17 Condition: PCAR_80211a_15-24 3m HF-AHF 15000 VERTICAL Detector: Peak Project: 80211 Marker: 01	Fundamental Date: 2008/7/17 Condition: PCAR80211a 3m HF-AHF 15000 VERTICAL Detector: Peak Project: 80211 Marker: 01
Peak		
	Date: 2008/7/17 Condition: PCAR_80211a_15-24 3m HF-AHF 15000 VERTICAL Detector: Peak Project: 80211 Marker: 01	Left blank
Peak		



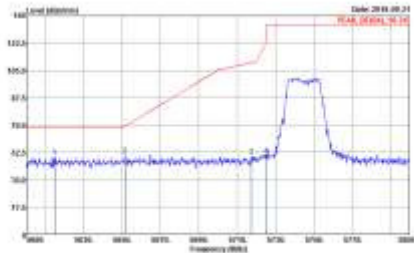
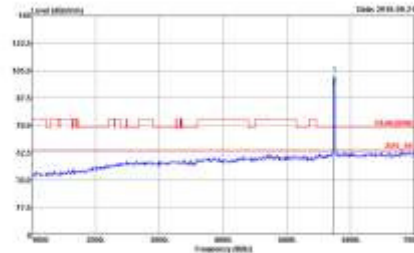
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH161 5805MHz	
1	Horizontal	Fundamental
Peak	 File: 2016_06_21 Date: 2016_06_21 Time: 15:25:11 F0: 5725.000000 F1: 5805.000000 F2: 5885.000000 F3: 5965.000000 F4: 6045.000000 F5: 6125.000000 F6: 6205.000000 F7: 6285.000000 F8: 6365.000000 F9: 6445.000000 F10: 6525.000000 F11: 6605.000000 F12: 6685.000000 F13: 6765.000000 F14: 6845.000000 F15: 6925.000000 F16: 7005.000000 F17: 7085.000000 F18: 7165.000000 F19: 7245.000000 F20: 7325.000000 F21: 7405.000000 F22: 7485.000000 F23: 7565.000000 F24: 7645.000000 F25: 7725.000000 F26: 7805.000000 F27: 7885.000000 F28: 7965.000000 F29: 8045.000000 F30: 8125.000000 F31: 8205.000000 F32: 8285.000000 F33: 8365.000000 F34: 8445.000000 F35: 8525.000000 F36: 8605.000000 F37: 8685.000000 F38: 8765.000000 F39: 8845.000000 F40: 8925.000000 F41: 9005.000000 F42: 9085.000000 F43: 9165.000000 F44: 9245.000000 F45: 9325.000000 F46: 9405.000000 F47: 9485.000000 F48: 9565.000000 F49: 9645.000000 F50: 9725.000000 F51: 9805.000000 F52: 9885.000000 F53: 9965.000000 F54: 10045.000000 F55: 10125.000000 F56: 10205.000000 F57: 10285.000000 F58: 10365.000000 F59: 10445.000000 F60: 10525.000000 F61: 10605.000000 F62: 10685.000000 F63: 10765.000000 F64: 10845.000000 F65: 10925.000000 F66: 11005.000000 F67: 11085.000000 F68: 11165.000000 F69: 11245.000000 F70: 11325.000000 F71: 11405.000000 F72: 11485.000000 F73: 11565.000000 F74: 11645.000000 F75: 11725.000000 F76: 11805.000000 F77: 11885.000000 F78: 11965.000000 F79: 12045.000000 F80: 12125.000000 F81: 12205.000000 F82: 12285.000000 F83: 12365.000000 F84: 12445.000000 F85: 12525.000000 F86: 12605.000000 F87: 12685.000000 F88: 12765.000000 F89: 12845.000000 F90: 12925.000000 F91: 13005.000000 F92: 13085.000000 F93: 13165.000000 F94: 13245.000000 F95: 13325.000000 F96: 13405.000000 F97: 13485.000000 F98: 13565.000000 F99: 13645.000000 F100: 13725.000000 F101: 13805.000000 F102: 13885.000000 F103: 13965.000000 F104: 14045.000000 F105: 14125.000000 F106: 14205.000000 F107: 14285.000000 F108: 14365.000000 F109: 14445.000000 F110: 14525.000000 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F531: 48205.000000 F532: 48285.000000 F533: 48365.000000 F534: 48445.000000 F535: 48525.000000 F536: 48605.000000 F537: 48685.000000 F538: 48765.000000 F539: 48845.000000 F540: 48925.000000 F541: 49005.000000 F542: 49085.000000 F543: 49165.000000 F544: 49245.000000 F545: 49325.000000 F546: 49405.000000 F547: 49485.000000 F548: 49565.000000 F549: 49645.000000 F550: 49725.000000 F551: 49805.000000 F552: 49885.000000 F553: 49965.000000 F554: 50045.000000 F555: 50125.000000 F556: 50205.000000 F557: 50285.000000 F558: 50365.000000 F559: 50445.000000 F560: 50525.000000 F561: 50605.000000 F562: 50685.000000 F563: 50765.000000 F564: 50845.000000 F565: 50925.000000 F566: 51005.000000 F567: 51085.000000 F568: 51165.000000 F569: 51245.000000 F570: 51325.000000 F571: 51405.000000 F572: 51485.000000 F573: 51565.000000 F574: 51645.000000 F575: 51725.000000 F576: 51805.000000 F577: 51885.000000 F578: 51965.000000 F579: 52045.000000 F580: 52125.000000 F581: 52205.000000 F582: 52285.000000 F583: 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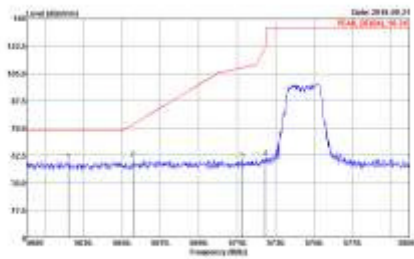
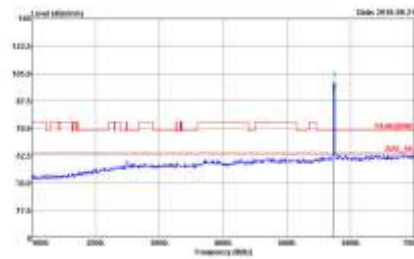
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH161 5805MHZ	
1	Vertical	Fundamental
Peak	 File: 000401.MY Combiner: PEAK_000401_16.25_3m_RF_001_1000000_VERTICAL BW: 1000.000000 MHz 3200.000000 dBm Full Detector: Peak Project: 000001 Mode: SI	 File: 000401.MY Combiner: PEAK_000401_16.25_3m_RF_001_1000000_VERTICAL BW: 1000.000000 MHz 3200.000000 dBm Full Detector: Peak Project: 000001 Mode: SI
Peak	 File: 000401.MY Combiner: PEAK_000401_16.25_3m_RF_001_1000000_VERTICAL BW: 1000.000000 MHz 3200.000000 dBm Full Detector: Peak Project: 000001 Mode: SI	Left blank



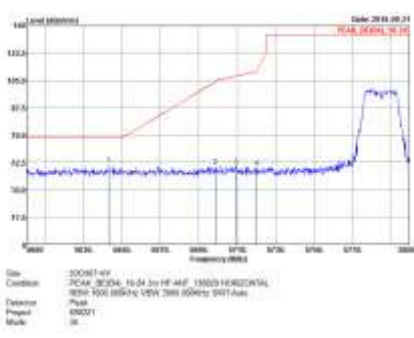
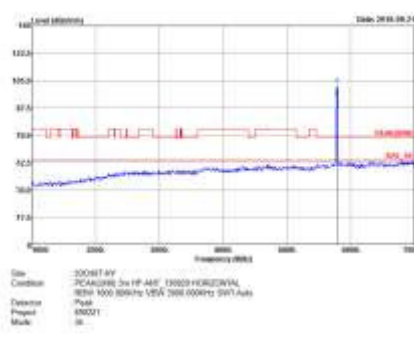
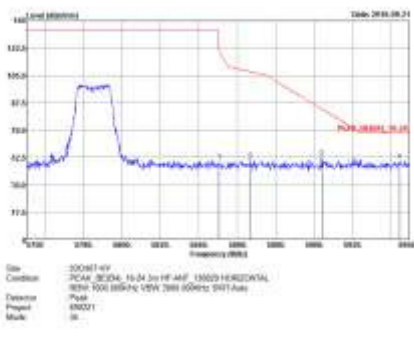
Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 File: 200817-01 Condition: PCAR_2024_15-24 3u HP-44F 13000 HORIZONTAL Reference: 1000 800Hz VIEW 2000 6000Hz SW1 Auto Detector: Peak Prepared: EN021 Mark: 02	 File: 200817-01 Condition: PCAR_2024_15-24 3u HP-44F 13000 HORIZONTAL Reference: 1000 800Hz VIEW 2000 6000Hz SW1 Auto Detector: Peak Prepared: EN021 Mark: 02

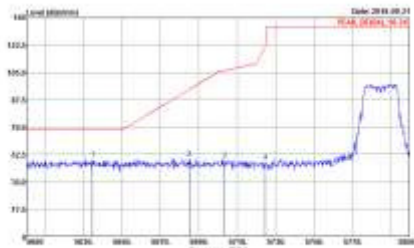
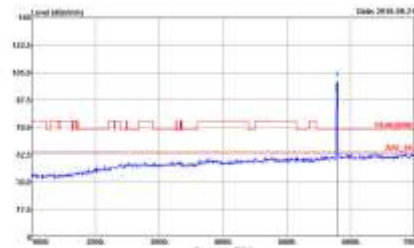
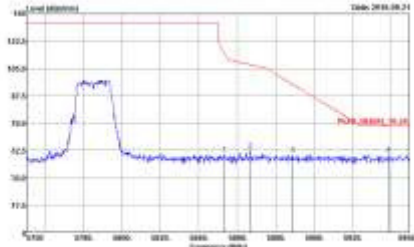


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak Avg.	 File: 200817-01F Condition: PCAN_20204_15-04_3m RF-44F_13020 VERTICAL Detector: RETN 1000 800Hz VSW 2000 600Hz SMT Peak Preprod: Peak Model: EN021 CIC	 File: 200817-01F Condition: PCAN_20204_15-04_3m RF-44F_13020 VERTICAL Detector: RETN 1000 800Hz VSW 2000 600Hz SMT Peak Preprod: Peak Model: EN021 CIC



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 File : 200817-01F Condition : PCAN_3C04L_16-04_3m HF-4M 13000 HORIZONTAL Reference : 1000 800Hz VSW 3000 6000Hz SW1 Auto Detector : Peak Prepared : 680221 Model : 08	 File : 200817-01F Condition : PCAN_3C04L_16-04_3m HF-4M 13000 HORIZONTAL Reference : 1000 800Hz VSW 3000 6000Hz SW1 Auto Detector : Peak Prepared : 680221 Model : 08
Peak	 File : 200817-01F Condition : PCAN_3C04L_16-04_3m HF-4M 13000 HORIZONTAL Reference : 1000 800Hz VSW 3000 6000Hz SW1 Auto Detector : Peak Prepared : 680221 Model : 08	Left blank



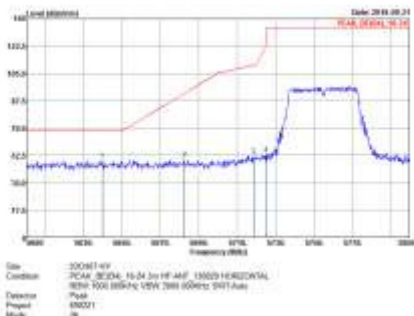
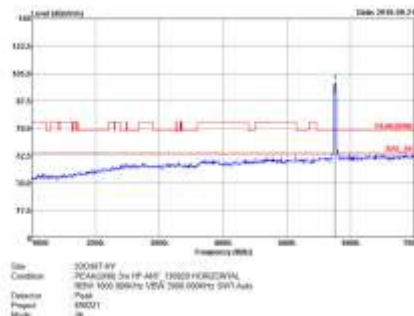
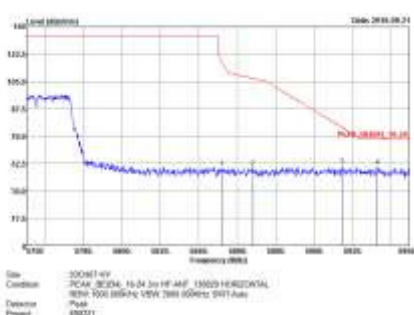
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 File: 200817-01 Condition: PCAR_200817-01-04 3m HP-44F 13000 VERTICAL Detector: Peak Preamp: EN021 Mode: IS	 File: 200817-01 Condition: PCAR_200817-01-04 3m HP-44F 13000 VERTICAL Detector: Peak Preamp: EN021 Mode: IS
Peak	 File: 200817-01 Condition: PCAR_200817-01-04 3m HP-44F 13000 VERTICAL Detector: Peak Preamp: EN021 Mode: IS	Left blank

[illegible]

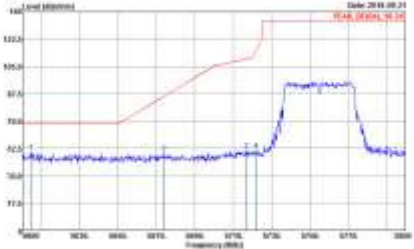
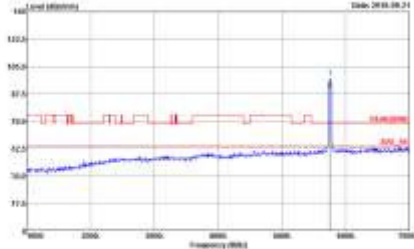
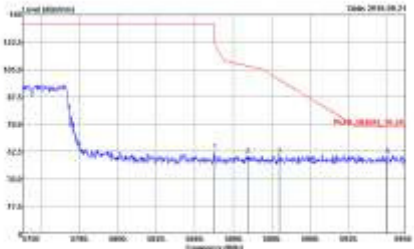
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH161 5805MHz	
1	Vertical	Fundamental
Peak Avg.	File: 00000101 Channel: 161 Span: 130 MHz Freq: 5725.000 MHz Res: 300.000 kHz Unit: dBm Project: 000001 Mode: 30	File: 00000101 Channel: 161 Span: 130 MHz Freq: 5725.000 MHz Res: 300.000 kHz Unit: dBm Project: 000001 Mode: 30
Peak	File: 00000101 Channel: 161 Span: 130 MHz Freq: 5725.000 MHz Res: 300.000 kHz Unit: dBm Project: 000001 Mode: 30	Left blank



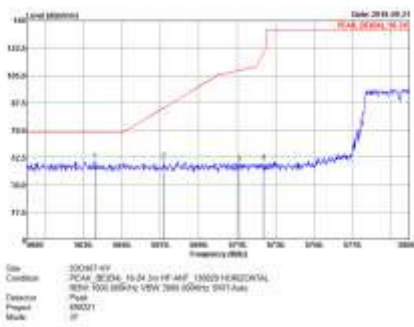
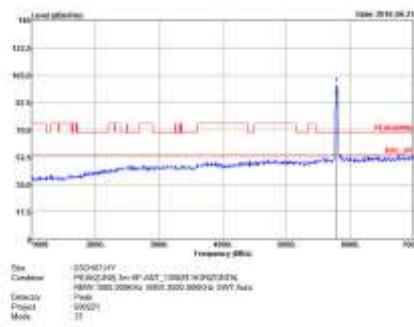
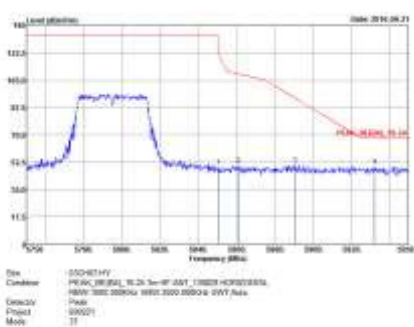
Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	 File: 200817-01 Condition: PCAR_20204_15-24_3m HP ANT 15000 HORIZONTAL Reference: 1000 1000Hz VNA 2000 1000Hz SW1 Auto Detector: Peak Project: 690221 Mode: 16	 File: 200817-01 Condition: PCAR_20204_15-24_3m HP ANT 15000 HORIZONTAL Reference: 1000 1000Hz VNA 2000 1000Hz SW1 Auto Detector: Peak Project: 690221 Mode: 16
Peak	 File: 200817-01 Condition: PCAR_20204_15-24_3m HP ANT 15000 HORIZONTAL Reference: 1000 1000Hz VNA 2000 1000Hz SW1 Auto Detector: Peak Project: 690221 Mode: 16	Left blank

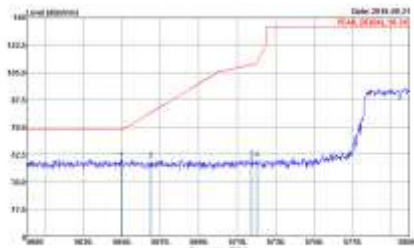
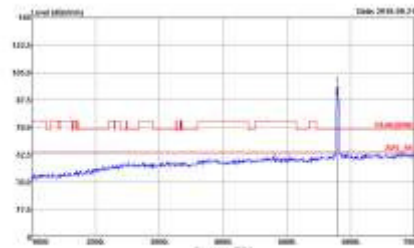
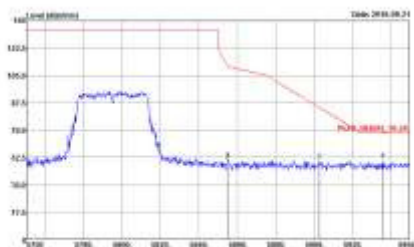


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 File: 200817.vi Condition: PCAN_3C04_15-24 3m HP-44F 13000 VERTICAL Reference: 1000 800Hz VSW 2000 6000Hz SHIT Adu Detector: Peak Prepared: 6/20/21 Model: 16	 File: 200817.vi Condition: PCAN_3C04_15-24 3m HP-44F 13000 VERTICAL Reference: 1000 800Hz VSW 2000 6000Hz SHIT Adu Detector: Peak Prepared: 6/20/21 Model: 16
	 File: 200817.vi Condition: PCAN_3C04_15-24 3m HP-44F 13000 VERTICAL Reference: 1000 800Hz VSW 2000 6000Hz SHIT Adu Detector: Peak Prepared: 6/20/21 Model: 16	Left blank



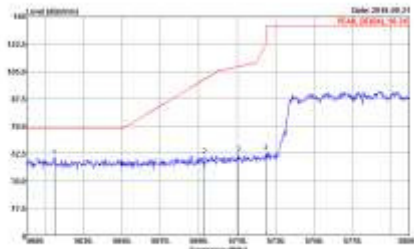
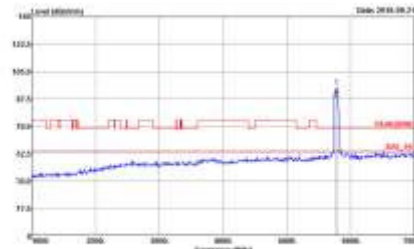
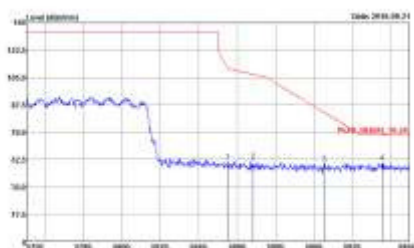
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 File: 000471.MY Condition: PEAK: 5795.15.10 110dB HORIZONTAL Reference: 1000.000000 VSWR 1000.000000 SWR 1.000000 Detector: Peak Project: 690021 Mode: 11	 File: 000471.MY Condition: PEAK: 5795.15.10 110dB HORIZONTAL Reference: 1000.000000 VSWR 1000.000000 SWR 1.000000 Detector: Peak Project: 690021 Mode: 11
Peak	 File: 000471.MY Condition: PEAK: 5795.15.10 110dB HORIZONTAL Reference: 1000.000000 VSWR 1000.000000 SWR 1.000000 Detector: Peak Project: 690021 Mode: 11	Left blank



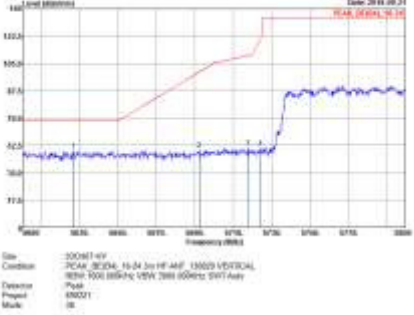
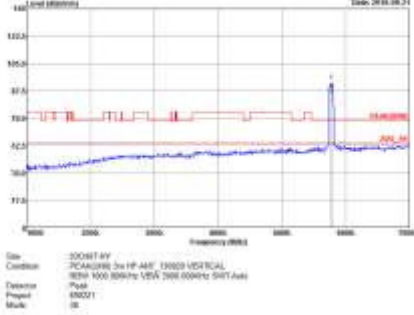
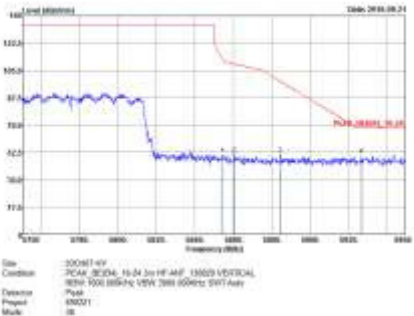
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 File: 200817-01 Condition: PCAR_0004_10-04_3m HP-4M 13000 VERTICAL Detector: Peak Preamp: 60000 Mode: IF	 File: 200817-01 Condition: PCAR_0004_10-04_3m HP-4M 13000 VERTICAL Detector: Peak Preamp: 60000 Mode: IF
	 File: 200817-01 Condition: PCAR_0004_10-04_3m HP-4M 13000 VERTICAL Detector: Peak Preamp: 60000 Mode: IF	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	 Date: 2008/11/11 Condition: PCAN_30204_15-24_3m HP-44F 15000 HORIZONTAL Ref: 1000 dBm/Hz VSWR 2000 6000Hz SW1 Auto Detector: Peak Preamp: 600271 Mod: 08	 Date: 2008/11/11 Condition: PCAN_30204_15-24_3m HP-44F 15000 HORIZONTAL Ref: 1000 dBm/Hz VSWR 2000 6000Hz SW1 Auto Detector: Peak Preamp: 600271 Mod: 08
Peak	 Date: 2008/11/11 Condition: PCAN_30204_15-24_3m HP-44F 15000 HORIZONTAL Ref: 1000 dBm/Hz VSWR 2000 6000Hz SW1 Auto Detector: Peak Preamp: 600271 Mod: 08	Left blank

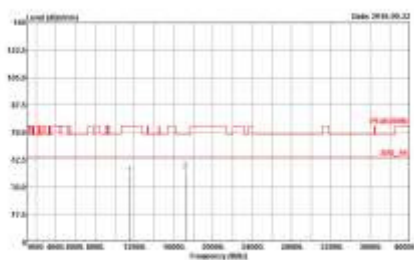
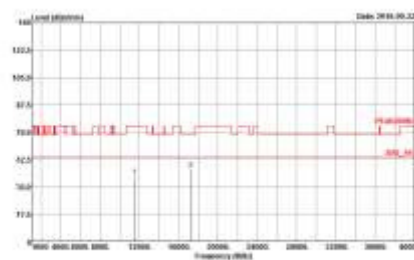


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

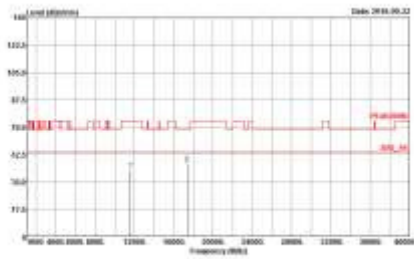
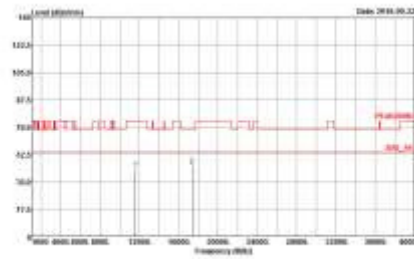


Band 4 - 5725~5850MHz

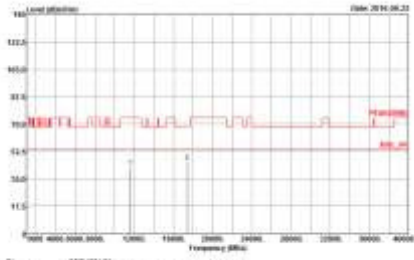
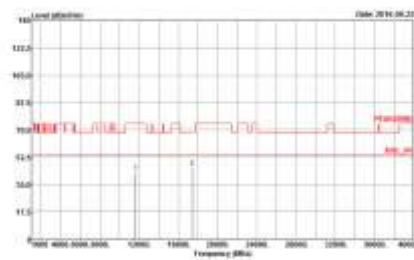
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Date: 2016.05.22 Site: 3008T-RV Condition: PCA0396 3m SWF-CH, 13129 HORIZONTAL Detector: Peak Project: 180221 Mode: IS	 Date: 2016.05.22 Site: 3008T-RV Condition: PCA0396 3m SWF-CH, 13129 VERTICAL Detector: Peak Project: 180221 Mode: IS



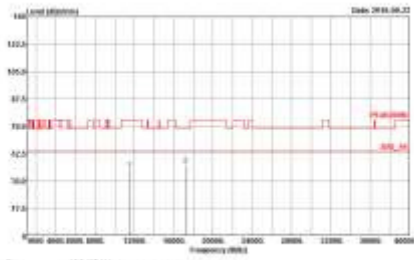
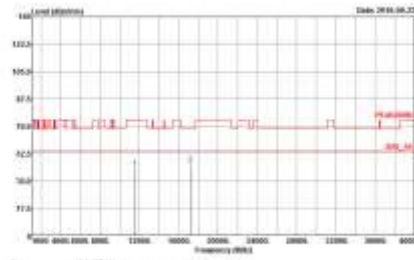
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 File : 20160522 Condition : PCAL0000 3m 5MHz CH157 HORIZONTAL Detector : Peak Preamp : 60dB Mode : IT	 File : 20160522 Condition : PCAL0000 3m 5MHz CH157 VERTICAL Detector : Peak Preamp : 60dB Mode : IT



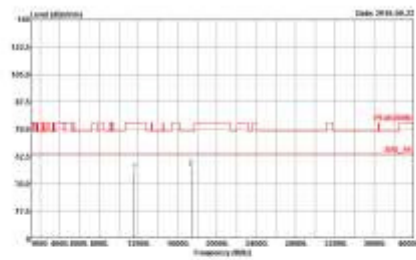
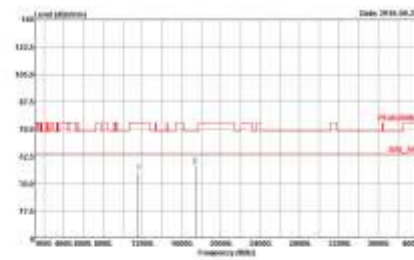
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH161 5805MHz	
1	Horizontal	Vertical
Peak Avg.	 File: 2016_08_22 Title: 2016_08_22 Date: 2016_08_22 Condition: Peak Detector: Peak Filter: 50000 Mode: 32	 File: 2016_08_22 Title: 2016_08_22 Date: 2016_08_22 Condition: Peak Detector: Peak Filter: 50000 Mode: 32



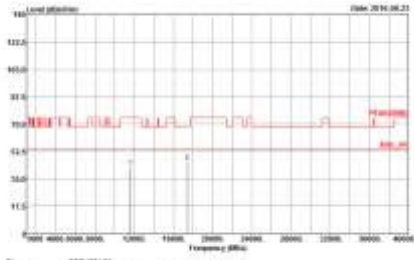
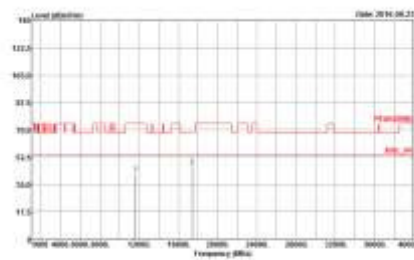
Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Date: 2018.08.22 Condition: 802.11ac VHT20 CH149 HORIZONTAL Detector: Peak Project: FR690221 Mode: IS	 Date: 2018.08.22 Condition: 802.11ac VHT20 CH149 VERTICAL Detector: Peak Project: FR690221 Mode: IS



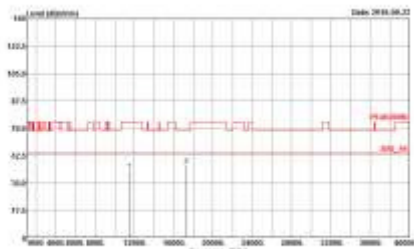
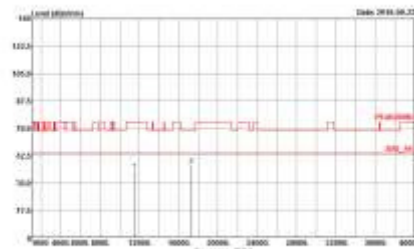
WIFI	Band 4 5725~5850MHz Harmonic @ 3m																					
ANT	802.11ac VHT20 CH157 5785MHz																					
1	Horizontal	Vertical																				
Peak Avg.	 Horizontal spectrum plot showing Peak and Avg. power levels across the frequency range 5725-5850 MHz. The plot includes a title bar with "Date: 2018.08.22" and a data table at the bottom. <table><tr><td>Date</td><td>2018.08.22</td></tr><tr><td>Condition</td><td>PCAN098 5m 5W CH157 HORIZONTAL</td></tr><tr><td>Detector</td><td>Peak</td></tr><tr><td>Project</td><td>FR690221</td></tr><tr><td>Mode</td><td>IS</td></tr></table>	Date	2018.08.22	Condition	PCAN098 5m 5W CH157 HORIZONTAL	Detector	Peak	Project	FR690221	Mode	IS	 Vertical spectrum plot showing Peak and Avg. power levels across the frequency range 5725-5850 MHz. The plot includes a title bar with "Date: 2018.08.22" and a data table at the bottom. <table><tr><td>Date</td><td>2018.08.22</td></tr><tr><td>Condition</td><td>PCAN098 5m 5W CH157 VERTICAL</td></tr><tr><td>Detector</td><td>Peak</td></tr><tr><td>Project</td><td>FR690221</td></tr><tr><td>Mode</td><td>IS</td></tr></table>	Date	2018.08.22	Condition	PCAN098 5m 5W CH157 VERTICAL	Detector	Peak	Project	FR690221	Mode	IS
	Date	2018.08.22																				
Condition	PCAN098 5m 5W CH157 HORIZONTAL																					
Detector	Peak																					
Project	FR690221																					
Mode	IS																					
Date	2018.08.22																					
Condition	PCAN098 5m 5W CH157 VERTICAL																					
Detector	Peak																					
Project	FR690221																					
Mode	IS																					



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH161 5805MHz	
1	Horizontal	Vertical
Peak Avg.	 File: 15048710V Condition: PEAK(20) 3m-24dB-11021-HORIZONTAL Detector: Peak Filter: 5000Hz Mode: 30	 File: 15048710V Condition: PEAK(20) 3m-24dB-11021-VERTICAL Detector: Peak Filter: 5000Hz Mode: 30



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.	 File : 200817.RV Condition : PCA80986 5m SWF CHF_01529 HORIZONTAL Detector : Peak Project : FR690221 Mode : 50	 File : 200817.RV Condition : PCA80986 5m SWF CHF_01529 VERTICAL Detector : Peak Project : FR690221 Mode : 50

WIFI	Band 4 5725~5850MHz Harmonic @ 3m																					
ANT	802.11ac VHT40 CH159 5795MHz																					
1	Horizontal	Vertical																				
Peak Avg.	<table><tr><td>Size</td><td>200MHz</td></tr><tr><td>Condition</td><td>PCANUS98 3m 5MHz CH159 HORIZONTAL</td></tr><tr><td>Detects</td><td>Peak</td></tr><tr><td>Preset</td><td>SNOZ1</td></tr><tr><td>Mode</td><td>0</td></tr></table>	Size	200MHz	Condition	PCANUS98 3m 5MHz CH159 HORIZONTAL	Detects	Peak	Preset	SNOZ1	Mode	0	<table><tr><td>Size</td><td>200MHz</td></tr><tr><td>Condition</td><td>PCANUS98 3m 5MHz CH159 VERTICAL</td></tr><tr><td>Detects</td><td>Peak</td></tr><tr><td>Preset</td><td>SNOZ1</td></tr><tr><td>Mode</td><td>0</td></tr></table>	Size	200MHz	Condition	PCANUS98 3m 5MHz CH159 VERTICAL	Detects	Peak	Preset	SNOZ1	Mode	0
	Size	200MHz																				
Condition	PCANUS98 3m 5MHz CH159 HORIZONTAL																					
Detects	Peak																					
Preset	SNOZ1																					
Mode	0																					
Size	200MHz																					
Condition	PCANUS98 3m 5MHz CH159 VERTICAL																					
Detects	Peak																					
Preset	SNOZ1																					
Mode	0																					

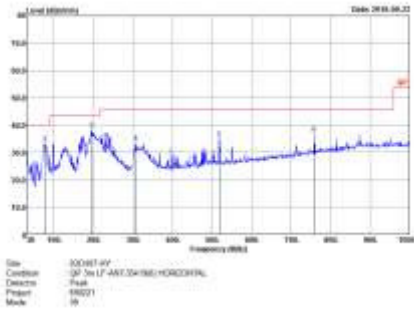
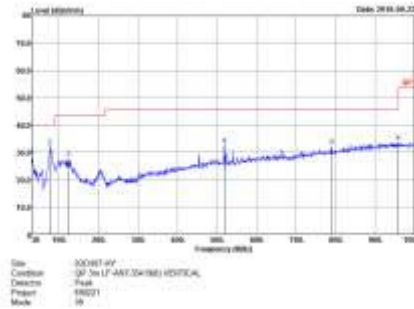
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.	Size: 100MHz Condition: PCAN155 3m 5MHz CH1 15/25 HORIZONTAL Detects: Peak Preset: R5021 Mode: IS	Size: 100MHz Condition: PCAN155 3m 5MHz CH1 15/25 VERTICAL Detects: Peak Preset: R5021 Mode: IS



Emission below 1GHz

5GHz WIFI 802.11a (LF)

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

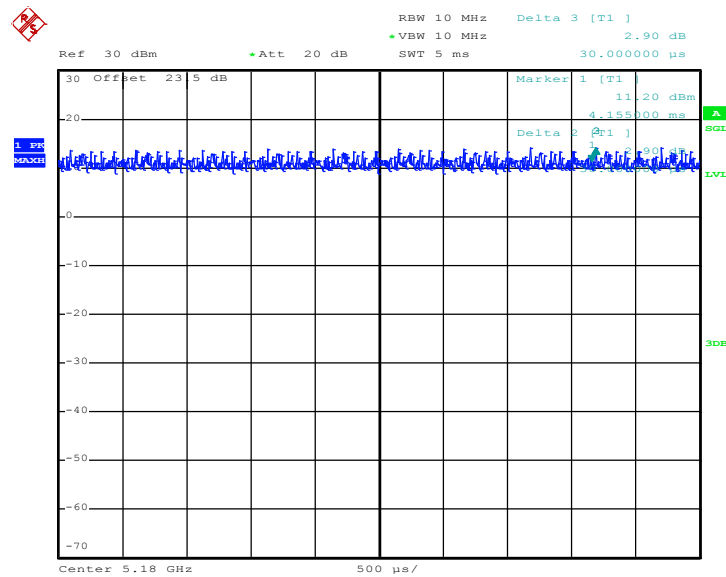


Appendix D Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	100	-	-	10Hz
5GHz 802.11n VHT20	100	-	-	10Hz
5GHz 802.11n VHT40	100	-	-	10Hz
5GHz 802.11n VHT80	100	-	-	10Hz

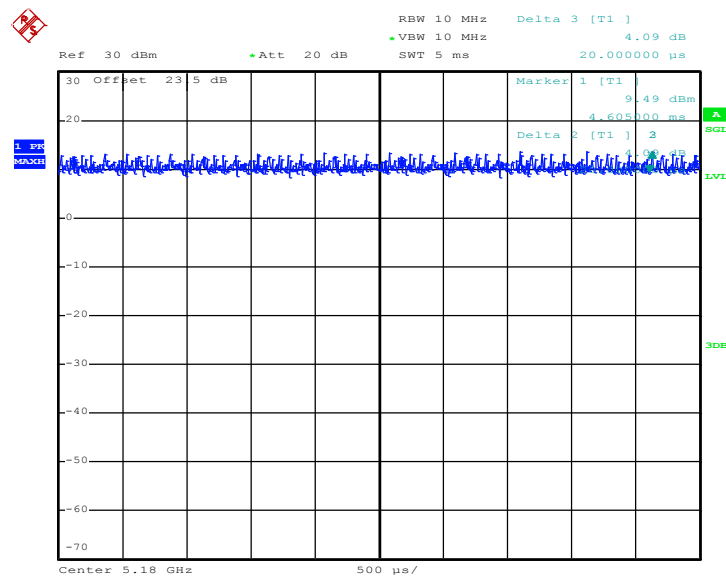


802.11a



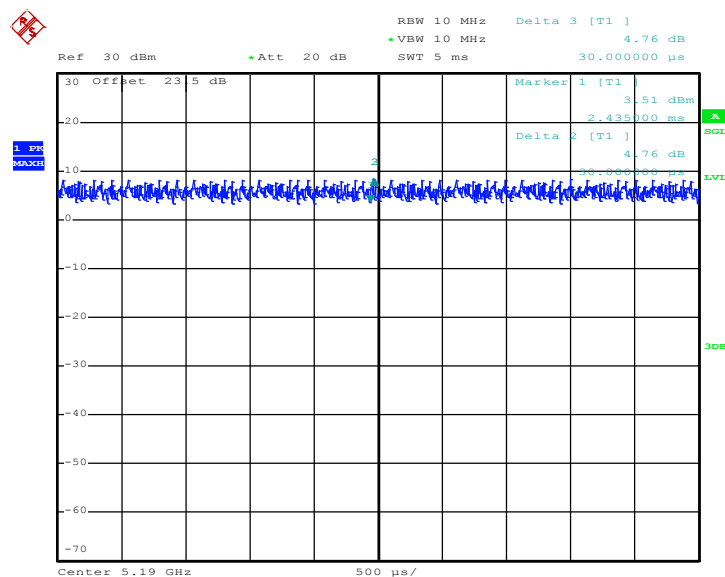
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5GHz 802.11n VHT20



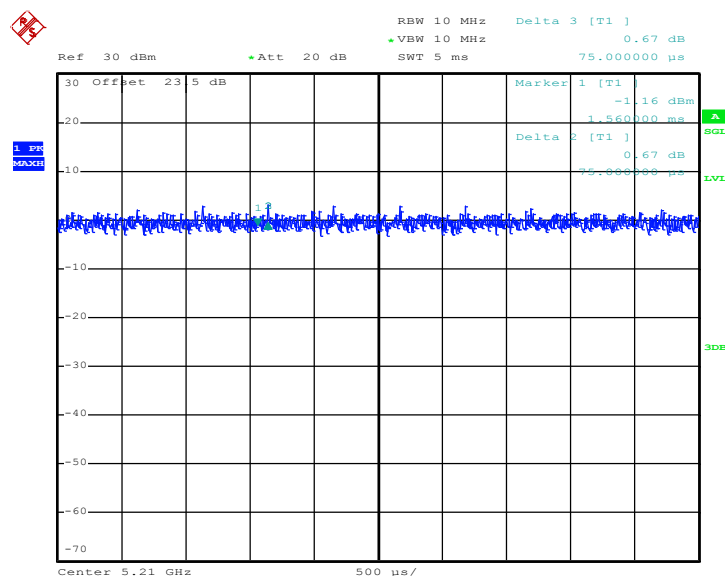
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5GHz 802.11n VHT40



Date: 18.SEP.2016 08:52:16

5GHz 802.11n VHT80



Date: 18.SEP.2016 08:53:09