



FCC RADIO TEST REPORT

FCC ID : PPD-QCNFA435
Equipment : Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card
Brand Name : Qualcomm Atheros
Model name : QCNFA435
Applicant : Qualcomm Atheros, Inc
1700 Technology Drive, San Jose, CA 95110
Manufacturer : Qualcomm Atheros, Inc
1700 Technology Drive, San Jose, CA 95110
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jun. 27, 2018 and testing was started from Jul. 24, 2018 and completed on Aug. 07, 2018. 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Jones Tsai

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FR862735E	01	Initial issue of report	Aug. 30, 2018



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407 (a)	Maximum Conducted Output Power	Pass	-
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 4.12 dB at 34.050 MHz
3.3	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

Reviewed by: Joseph Lin

Report Producer: Nancy Yang

1 General Description

1.1 Product Feature of Equipment Under Test

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

Product Specification subjective to this standard	
Sample 1	EUT with Host 1
Sample 2	EUT with Host 2

The product was installed into Portable Computer (Brand Name: DELL, Model Name: P93G) during test, and the host information was recorded in the following table.

Host Information	
Host 1	Host with WNC Antenna
Host 2	Host with HB Antenna

Antenna Information								
Mode	Manufacturer	Antenna type	Antenna	2.4G	5G B1	5G B2	5G B3	5G B4
Notebook	HB	PIFA	1(main)	0.86	-0.24	-1.62	-0.75	-0.21
			2(aux)	-0.53	-0.24	0.05	1.14	0.38
	WNC	PIFA	1(main)	-0.87	-4.57	-4	-5.76	-5.19
			2(aux)	-0.16	-2.63	-2.7	-1.12	-1.12

Antenna Information								
Mode	Manufacturer	Antenna type	Antenna	2.4G	5G B1	5G B2	5G B3	5G B4
Tablet	HB	PIFA	1(main)	0.38	-1.58	-1.7	-0.65	0.05
			2(aux)	-1.66	-0.7	-0.35	-0.7	0.47
	WNC	PIFA	1(main)	-2	-4.41	-4.41	-4.67	-4.39
			2(aux)	-0.57	-3.1	-3.1	-3.46	-3.31

1.2 Modification of EUT

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

1.3 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
	TH05-HY

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

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

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

1.4 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 v02r01.
- ♦ ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

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: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z, and Notebook type, the worst cases (Notebook mode for Sample 1 and X plane for Sample 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:

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 modes 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

Remark:

1. For Radiated Test Cases, the tests were performed with Adapter 1.
2. The test configuration was designated by manufacturer.

<Sample 1>

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	-

<Sample 2>

Ch. #		Band IV : 5725-5850 MHz	
		802.11a	
L	Low	-	
M	Middle	157	
H	High	-	

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “QRCT” was installed in Portable Computer which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 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.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

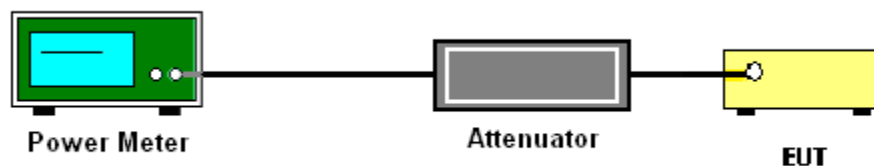
3.1.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 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 shall comply with the general field strength limits 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)
- 27	68.3

(3) KDB789033 D02 v02r01 G)2)c)

- (i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.³
- (ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.⁴

Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

3.2.2 Measuring Instruments

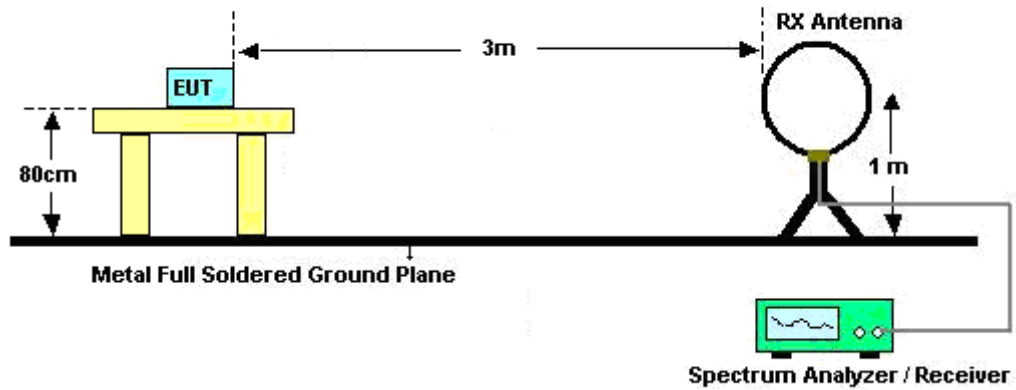
See list of measuring equipment of this test report.

3.2.3 Test Procedures

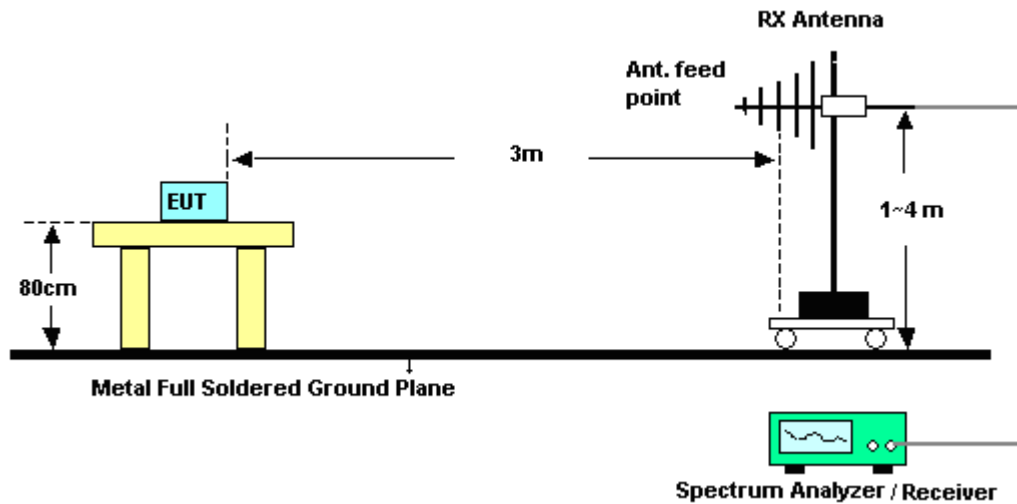
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
(1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.2.4 Test Setup

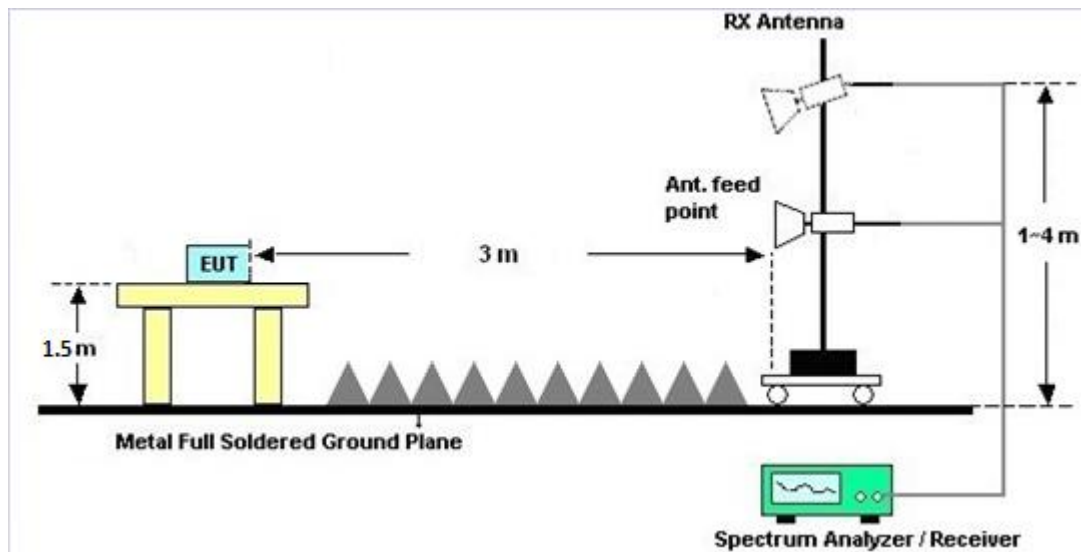
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.2.5 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 was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.2.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.



3.3 Antenna Requirements

3.3.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 Antenna Gain

The antenna peak gain of EUT 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	0932001	N/A	Sep. 26, 2017	Jul. 24, 2018~ Jul. 25, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz z	Sep. 26, 2017	Jul. 24, 2018~ Jul. 25, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	Jul. 24, 2018~ Jul. 25, 2018	Nov. 12, 2018	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC130048 4	N/A	Mar. 01, 2018	Jul. 24, 2018~ Jul. 25, 2018	Feb. 28, 2019	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Nov. 10, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Nov. 09, 2018	Radiation (03CH13-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 16, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jul. 15, 2019	Radiation (03CH13-HY)
Filter	WI	WLK4-1000-1 530-8000-40S S	SN1	1G Lowpass Filter	Sep. 18, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Sep. 17, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 21, 2016	Jul. 28, 2018 ~ Aug. 07, 2018	Dec. 20, 2018	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Jan. 10, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jan. 09, 2019	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-124 1	1GHz ~ 18GHz	Jun. 29, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jun. 28, 2019	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May. 21, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	May. 20, 2019	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY532701 47	1GHz~26.5GHz	Feb. 02, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Feb. 01, 2019	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 15, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Mar. 14, 2019	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jul. 28, 2018 ~ Aug. 07, 2018	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jul. 28, 2018 ~ Aug. 07, 2018	N/A	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz- 40GHz	Nov. 27, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Nov. 26, 2018	Radiation (03CH13-HY)
EMI Test Receiver	Agilent	N9038A (MXE)	MY532900 53	20Hz to 26.5GHz	Jan. 16, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jan. 15, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Jan. 22, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	335041/4	30M-18G	Jan. 22, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/ 4	30M~18GHz	Jan. 22, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 17, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Oct. 16, 2018	Radiation (03CH13-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 17, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Oct. 16, 2018	Radiation (03CH13-HY)
Software	AUDIX	E3 6.2009-8-24c	RK-001124	N/A	N/A	Jul. 28, 2018 ~ Aug. 07, 2018	N/A	Radiation (03CH13-HY)
Filter	Woken	WHKX8-5872.5-6750-18000-40ST	SN3	6.75GHz High Pass	Sep. 18, 2017	Jul. 28, 2018 ~ Aug. 07, 2018	Sep. 17, 2018	Radiation (03CH13-HY)
Preamplifier	Jet-Power	JPA0118-55-303K	1710001800054002	1GHz~18GHz	Apr. 16, 2018	Jul. 28, 2018 ~ Aug. 07, 2018	Apr. 15, 2019	Radiation (03CH13-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.3
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Luffy Lin	Temperature:	21~25	°C
Test Date:	2018/07/24 ~ 2018/07/25	Relative Humidity:	51~54	%

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	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.29	-	12.99	-	30.00	-	0.47	-	Pass
11a	6Mbps	1	157	5785	0.29	-	12.74	-	30.00	-	0.47	-	Pass
11a	6Mbps	1	165	5825	0.29	-	12.97	-	30.00	-	0.47	-	Pass
HT20	MCS0	1	149	5745	0.29	-	12.82	-	30.00	-	0.47	-	Pass
HT20	MCS0	1	157	5785	0.29	-	12.93	-	30.00	-	0.47	-	Pass
HT20	MCS0	1	165	5825	0.29	-	12.84	-	30.00	-	0.47	-	Pass
HT40	MCS0	1	151	5755	0.48	-	12.83	-	30.00	-	0.47	-	Pass
HT40	MCS0	1	159	5795	0.48	-	12.87	-	30.00	-	0.47	-	Pass
VHT20	MCS0	1	149	5745	0.26	-	12.88	-	30.00	-	0.47	-	Pass
VHT20	MCS0	1	157	5785	0.26	-	12.95	-	30.00	-	0.47	-	Pass
VHT20	MCS0	1	165	5825	0.26	-	12.86	-	30.00	-	0.47	-	Pass
VHT40	MCS0	1	151	5755	0.47	-	12.85	-	30.00	-	0.47	-	Pass
VHT40	MCS0	1	159	5795	0.47	-	12.89	-	30.00	-	0.47	-	Pass
VHT80	MCS0	1	155	5775	0.61	-	12.38	-	30.00	-	0.47	-	Pass



Appendix B. Radiated Spurious Emission

Test Engineer :	Alex Jheng, Fu Chen, Wilson Wu	Temperature :	24~25°C
		Relative Humidity :	55~56%

<For Sample 1>

Band 4 - 5725~5850MHz

WIFI 802.11a (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		5629	52.52	-15.68	68.2	41.26	32.07	8.84	29.65	100	196	P	H
		5692.2	51.58	-47.87	99.45	40.25	32.17	8.83	29.67	100	196	P	H
		5719	59.63	-50.89	110.52	48.28	32.21	8.82	29.68	100	196	P	H
		5724.8	61.55	-60.19	121.74	50.2	32.21	8.82	29.68	100	196	P	H
	*	5745	100.63	-	-	89.27	32.24	8.81	29.69	100	196	P	H
	*	5745	93.38	-	-	82.02	32.24	8.81	29.69	100	196	A	H
													H
													H
		5648.6	51.41	-16.79	68.2	40.13	32.09	8.84	29.65	376	182	P	V
		5695.4	55.37	-46.44	101.81	44.04	32.17	8.83	29.67	376	182	P	V
		5715.6	59.82	-49.75	109.57	48.49	32.19	8.82	29.68	376	182	P	V
		5724.2	61.8	-58.58	120.38	50.45	32.21	8.82	29.68	376	182	P	V
	*	5745	100.61	-	-	89.25	32.24	8.81	29.69	376	182	P	V
	*	5745	93.22	-	-	81.86	32.24	8.81	29.69	376	182	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	101.48	-	-	90.03	32.36	8.82	29.73	100	188	P	H
	*	5825	93.79	-	-	82.34	32.36	8.82	29.73	100	188	A	H
		5852.2	62.93	-54.25	117.18	51.44	32.38	8.85	29.74	100	188	P	H
		5856	58.92	-51.6	110.52	47.4	32.41	8.85	29.74	100	188	P	H
		5879.6	52.13	-49.65	101.78	40.57	32.43	8.88	29.75	100	188	P	H
		5947.6	51.15	-17.05	68.2	39.47	32.53	8.93	29.78	100	188	P	H
													H
													H
	*	5825	100.59	-	-	89.14	32.36	8.82	29.73	328	174	P	V
	*	5825	93.1	-	-	81.65	32.36	8.82	29.73	328	174	A	V
		5852.2	63.12	-54.06	117.18	51.63	32.38	8.85	29.74	328	174	P	V
		5855.6	60.54	-50.09	110.63	49.02	32.41	8.85	29.74	328	174	P	V
		5877.6	51.76	-51.51	103.27	40.21	32.43	8.87	29.75	328	174	P	V
		5936.4	51.88	-16.32	68.2	40.23	32.5	8.93	29.78	328	174	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		11570	47.18	-26.82	74	56.38	39.76	12.79	61.75	100	0	P	H
		17355	48.32	-19.88	68.2	47.44	41.26	15.15	55.53	100	0	P	H
													H
													H
		11570	48.82	-25.18	74	58.02	39.76	12.79	61.75	100	0	P	V
		17355	48.23	-19.97	68.2	47.35	41.26	15.15	55.53	100	0	A	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5642.6	51.11	-17.09	68.2	39.83	32.09	8.84	29.65	100	195	P	H
		5699.2	56.55	-48.06	104.61	45.22	32.17	8.83	29.67	100	195	P	H
		5719.6	64.9	-45.79	110.69	53.55	32.21	8.82	29.68	100	195	P	H
		5721.4	69.91	-44.08	113.99	58.56	32.21	8.82	29.68	100	195	P	H
	*	5745	102.07	-	-	90.71	32.24	8.81	29.69	100	195	P	H
	*	5745	93.26	-	-	81.9	32.24	8.81	29.69	100	195	A	H
													H
													H
		5623	50.93	-17.27	68.2	39.65	32.07	8.85	29.64	306	163	P	V
		5698.6	52.44	-51.73	104.17	41.11	32.17	8.83	29.67	306	163	P	V
		5717.8	64.95	-45.23	110.18	53.6	32.21	8.82	29.68	306	163	P	V
		5724.2	69.32	-51.06	120.38	57.97	32.21	8.82	29.68	306	163	P	V
	*	5745	101.84	-	-	90.48	32.24	8.81	29.69	306	163	P	V
	*	5745	93.31	-	-	81.95	32.24	8.81	29.69	306	163	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz	*	5825	102.06	-	-	90.61	32.36	8.82	29.73	100	194	P	H
	*	5825	93.81	-	-	82.36	32.36	8.82	29.73	100	194	A	H
		5852.6	65.98	-50.29	116.27	54.49	32.38	8.85	29.74	100	194	P	H
		5855.2	64.86	-45.88	110.74	53.34	32.41	8.85	29.74	100	194	P	H
		5915.6	52.53	-22.6	75.13	40.91	32.48	8.91	29.77	100	194	P	H
		5948.4	52.28	-15.92	68.2	40.6	32.53	8.93	29.78	100	194	P	H
													H
													H
	*	5825	102.04	-	-	90.59	32.36	8.82	29.73	344	177	P	V
	*	5825	93.88	-	-	82.43	32.36	8.82	29.73	344	177	A	V
		5850	64.94	-57.26	122.2	53.45	32.38	8.85	29.74	344	177	P	V
		5855	63.67	-47.13	110.8	52.15	32.41	8.85	29.74	344	177	P	V
		5880.6	54.6	-46.44	101.04	43.04	32.43	8.88	29.75	344	177	P	V
		5933.2	51.19	-17.01	68.2	39.53	32.5	8.93	29.77	344	177	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		11570	46.01	-27.99	74	55.21	39.76	12.79	61.75	100	0	P	H
		17355	47.71	-20.49	68.2	46.83	41.26	15.15	55.53	100	0	P	H
													H
													H
		11570	49.9	-24.1	74	59.1	39.76	12.79	61.75	100	0	P	V
		17355	48.5	-19.7	68.2	47.62	41.26	15.15	55.53	100	0	A	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5620	52.36	-15.84	68.2	41.08	32.07	8.85	29.64	100	195	P	H
		5695.4	57.88	-43.93	101.81	46.55	32.17	8.83	29.67	100	195	P	H
		5718.2	65.31	-44.99	110.3	53.96	32.21	8.82	29.68	100	195	P	H
		5723.4	68.01	-50.54	118.55	56.66	32.21	8.82	29.68	100	195	P	H
	*	5755	98.05	-	-	86.67	32.26	8.81	29.69	100	195	P	H
	*	5755	90.44	-	-	79.06	32.26	8.81	29.69	100	195	A	H
		5850.6	54.21	-66.62	120.83	42.72	32.38	8.85	29.74	100	195	P	H
		5859.6	52.05	-57.46	109.51	40.54	32.41	8.85	29.75	100	195	P	H
		5913	52.43	-24.62	77.05	40.82	32.48	8.9	29.77	100	195	P	H
		5937	51.89	-16.31	68.2	40.24	32.5	8.93	29.78	100	195	P	H
													H
													H
		5637.8	51.54	-16.66	68.2	40.26	32.09	8.84	29.65	332	193	P	V
		5696.6	54.36	-48.33	102.69	43.03	32.17	8.83	29.67	332	193	P	V
		5718.8	64.02	-46.44	110.46	52.67	32.21	8.82	29.68	332	193	P	V
		5723.8	65.18	-54.28	119.46	53.83	32.21	8.82	29.68	332	193	P	V
	*	5755	96.98	-	-	85.6	32.26	8.81	29.69	332	193	P	V
	*	5755	88.88	-	-	77.5	32.26	8.81	29.69	332	193	A	V
		5853	50.72	-64.64	115.36	39.23	32.38	8.85	29.74	332	193	P	V
		5867.4	52.02	-55.31	107.33	40.49	32.41	8.87	29.75	332	193	P	V
		5896.2	52.24	-37.23	89.47	40.66	32.46	8.88	29.76	332	193	P	V
		5946	51.25	-16.95	68.2	39.57	32.53	8.93	29.78	332	193	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5608.6	51.26	-16.94	68.2	40.01	32.04	8.85	29.64	110	259	P	H
		5696.2	52.93	-49.47	102.4	41.6	32.17	8.83	29.67	110	259	P	H
		5717.2	51.9	-58.12	110.02	40.57	32.19	8.82	29.68	110	259	P	H
		5724.8	56.56	-65.18	121.74	45.21	32.21	8.82	29.68	110	259	P	H
	*	5795	96.87	-	-	85.48	32.31	8.8	29.72	110	259	P	H
	*	5795	89.49	-	-	78.1	32.31	8.8	29.72	110	259	A	H
		5852.8	56.23	-59.59	115.82	44.74	32.38	8.85	29.74	110	259	P	H
		5856.2	54.81	-55.65	110.46	43.29	32.41	8.85	29.74	110	259	P	H
		5879.8	52.04	-49.59	101.63	40.48	32.43	8.88	29.75	110	259	P	H
		5929.2	51.23	-16.97	68.2	39.59	32.5	8.91	29.77	110	259	P	H
													H
													H
		5608.4	53.96	-14.24	68.2	42.71	32.04	8.85	29.64	369	183	P	V
		5666	52.68	-27.4	80.08	41.39	32.12	8.83	29.66	369	183	P	V
		5717.2	54.76	-55.26	110.02	43.43	32.19	8.82	29.68	369	183	P	V
		5720.6	52.33	-59.84	112.17	40.98	32.21	8.82	29.68	369	183	P	V
	*	5795	96.52	-	-	85.13	32.31	8.8	29.72	369	183	P	V
	*	5795	89.12	-	-	77.73	32.31	8.8	29.72	369	183	A	V
		5851.6	56.68	-61.87	118.55	45.19	32.38	8.85	29.74	369	183	P	V
		5859	55.33	-54.35	109.68	43.82	32.41	8.85	29.75	369	183	P	V
		5883	53.26	-46	99.26	41.7	32.43	8.88	29.75	369	183	P	V
		5928	51.2	-17	68.2	39.56	32.5	8.91	29.77	369	183	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)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 149 5745MHz		5609.2	52.53	-15.67	68.2	41.28	32.04	8.85	29.64	101	196	P	H
		5696.8	57.17	-45.67	102.84	45.84	32.17	8.83	29.67	101	196	P	H
		5719.2	65.03	-45.55	110.58	53.68	32.21	8.82	29.68	101	196	P	H
		5725	67.49	-54.71	122.2	56.14	32.21	8.82	29.68	101	196	P	H
	*	5745	102.88	-	-	91.52	32.24	8.81	29.69	101	196	P	H
	*	5745	94.05	-	-	82.69	32.24	8.81	29.69	101	196	A	H
													H
													H
		5631.8	51.81	-16.39	68.2	40.55	32.07	8.84	29.65	355	163	P	V
		5694.8	53.46	-47.91	101.37	42.13	32.17	8.83	29.67	355	163	P	V
		5720	63.97	-46.83	110.8	52.62	32.21	8.82	29.68	355	163	P	V
		5723.6	66.77	-52.24	119.01	55.42	32.21	8.82	29.68	355	163	P	V
	*	5745	101.94	-	-	90.58	32.24	8.81	29.69	355	163	P	V
	*	5745	93.03	-	-	81.67	32.24	8.81	29.69	355	163	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 165 5825MHz	*	5825	102.27	-	-	90.82	32.36	8.82	29.73	100	195	P	H
	*	5825	93.78	-	-	82.33	32.36	8.82	29.73	100	195	A	H
		5850.2	63.16	-58.58	121.74	51.67	32.38	8.85	29.74	100	195	P	H
		5855.8	58.66	-51.92	110.58	47.14	32.41	8.85	29.74	100	195	P	H
		5884.4	51.44	-46.78	98.22	39.89	32.43	8.88	29.76	100	195	P	H
		5945.8	52.64	-15.56	68.2	40.96	32.53	8.93	29.78	100	195	P	H
													H
													H
	*	5825	102.17	-	-	90.72	32.36	8.82	29.73	326	175	P	V
	*	5825	93.53	-	-	82.08	32.36	8.82	29.73	326	175	A	V
		5850	64.06	-58.14	122.2	52.57	32.38	8.85	29.74	326	175	P	V
		5856.2	62.51	-47.95	110.46	50.99	32.41	8.85	29.74	326	175	P	V
		5888.6	52.72	-42.38	95.1	41.14	32.46	8.88	29.76	326	175	P	V
		5947.2	51.84	-16.36	68.2	40.16	32.53	8.93	29.78	326	175	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 (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 157 5785MHz		11570	47.3	-26.7	74	56.5	39.76	12.79	61.75	100	0	P	H
		17355	48.98	-19.22	68.2	48.1	41.26	15.15	55.53	100	0	P	H
													H
													H
		11570	52.78	-21.22	74	61.98	39.76	12.79	61.75	105	110	P	V
		11570	44.62	-9.38	54	53.82	39.76	12.79	61.75	105	110	A	V
		17355	48.42	-19.78	68.2	47.54	41.26	15.15	55.53	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 151 5755MHz		5630.8	52.16	-16.04	68.2	40.9	32.07	8.84	29.65	100	195	P	H
		5700	59.42	-45.78	105.2	48.1	32.17	8.82	29.67	100	195	P	H
		5719.6	69.38	-41.31	110.69	58.03	32.21	8.82	29.68	100	195	P	H
		5723.2	69.7	-48.4	118.1	58.35	32.21	8.82	29.68	100	195	P	H
	*	5755	97.87	-	-	86.49	32.26	8.81	29.69	100	195	P	H
	*	5755	90.45	-	-	79.07	32.26	8.81	29.69	100	195	A	H
		5853.6	52.03	-61.96	113.99	40.51	32.41	8.85	29.74	100	195	P	H
		5866.2	52.64	-55.02	107.66	41.11	32.41	8.87	29.75	100	195	P	H
		5876.2	51.74	-52.57	104.31	40.19	32.43	8.87	29.75	100	195	P	H
		5946.6	51.3	-16.9	68.2	39.62	32.53	8.93	29.78	100	195	P	H
													H
													H
		5600	52.12	-16.08	68.2	40.86	32.04	8.85	29.63	341	165	P	V
		5697	56.98	-46.01	102.99	45.65	32.17	8.83	29.67	341	165	P	V
		5719.2	70.04	-40.54	110.58	58.69	32.21	8.82	29.68	341	165	P	V
		5723.2	68.38	-49.72	118.1	57.03	32.21	8.82	29.68	341	165	P	V
	*	5755	97.4	-	-	86.02	32.26	8.81	29.69	341	165	P	V
	*	5755	90	-	-	78.62	32.26	8.81	29.69	341	165	A	V
		5850	50.76	-71.44	122.2	39.27	32.38	8.85	29.74	341	165	P	V
		5857.2	51.04	-59.14	110.18	39.52	32.41	8.85	29.74	341	165	P	V
		5878.2	51.6	-51.22	102.82	40.05	32.43	8.87	29.75	341	165	P	V
		5942	50.76	-17.44	68.2	39.08	32.53	8.93	29.78	341	165	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 159 5795MHz		5622.2	52.88	-15.32	68.2	41.6	32.07	8.85	29.64	105	196	P	H
		5687.6	53.27	-42.78	96.05	41.94	32.17	8.83	29.67	105	196	P	H
		5702.8	55.05	-50.94	105.99	43.71	32.19	8.82	29.67	105	196	P	H
		5722.6	56.68	-60.05	116.73	45.33	32.21	8.82	29.68	105	196	P	H
	*	5795	97.61	-	-	86.22	32.31	8.8	29.72	105	196	P	H
	*	5795	90.37	-	-	78.98	32.31	8.8	29.72	105	196	A	H
		5850	59.48	-62.72	122.2	47.99	32.38	8.85	29.74	105	196	P	H
		5856.2	57.52	-52.94	110.46	46	32.41	8.85	29.74	105	196	P	H
		5877.2	53.1	-50.47	103.57	41.55	32.43	8.87	29.75	105	196	P	H
		5932.8	50.82	-17.38	68.2	39.18	32.5	8.91	29.77	105	196	P	H
													H
													H
		5646.2	51.65	-16.55	68.2	40.37	32.09	8.84	29.65	329	177	P	V
		5678.4	53.32	-35.94	89.26	42.01	32.14	8.83	29.66	329	177	P	V
		5719.6	53.21	-57.48	110.69	41.86	32.21	8.82	29.68	329	177	P	V
		5722.8	54.11	-63.07	117.18	42.76	32.21	8.82	29.68	329	177	P	V
	*	5795	96.49	-	-	85.1	32.31	8.8	29.72	329	177	P	V
	*	5795	89.39	-	-	78	32.31	8.8	29.72	329	177	A	V
		5852.6	57.59	-58.68	116.27	46.1	32.38	8.85	29.74	329	177	P	V
		5857.6	56.42	-53.65	110.07	44.9	32.41	8.85	29.74	329	177	P	V
		5913.2	52	-24.9	76.9	40.39	32.48	8.9	29.77	329	177	P	V
		5942.6	51.27	-16.93	68.2	39.59	32.53	8.93	29.78	329	177	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5608.2	51.18	-17.02	68.2	39.93	32.04	8.85	29.64	189	237	P	H
		5695.4	56.87	-44.94	101.81	45.54	32.17	8.83	29.67	189	237	P	H
		5710.6	56	-52.17	108.17	44.67	32.19	8.82	29.68	189	237	P	H
		5722.2	56.02	-59.8	115.82	44.67	32.21	8.82	29.68	189	237	P	H
	*	5775	93.4	-	-	82.02	32.29	8.8	29.71	189	237	P	H
	*	5775	84.32	-	-	72.94	32.29	8.8	29.71	189	237	A	H
		5852.4	58.36	-58.37	116.73	46.87	32.38	8.85	29.74	189	237	P	H
		5860.2	57.57	-51.77	109.34	46.06	32.41	8.85	29.75	189	237	P	H
		5875.6	52.45	-52.3	104.75	40.9	32.43	8.87	29.75	189	237	P	H
		5935.2	50.48	-17.72	68.2	38.83	32.5	8.93	29.78	189	237	P	H
													H
													H
		5646.2	53.2	-15	68.2	41.92	32.09	8.84	29.65	194	267	P	V
		5690.4	55.47	-42.65	98.12	44.14	32.17	8.83	29.67	194	267	P	V
		5716.4	57.28	-52.51	109.79	45.95	32.19	8.82	29.68	194	267	P	V
		5724.8	58.41	-63.33	121.74	47.06	32.21	8.82	29.68	194	267	P	V
	*	5775	93.75	-	-	82.37	32.29	8.8	29.71	194	267	P	V
	*	5775	85.17	-	-	73.79	32.29	8.8	29.71	194	267	A	V
		5854	59.02	-54.06	113.08	47.5	32.41	8.85	29.74	194	267	P	V
		5856.2	59.54	-50.92	110.46	48.02	32.41	8.85	29.74	194	267	P	V
		5887.6	54.94	-40.91	95.85	43.36	32.46	8.88	29.76	194	267	P	V
		5941.2	51.63	-16.57	68.2	39.95	32.53	8.93	29.78	194	267	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		11550	44.9	-29.1	74	54.03	39.8	12.78	61.71	100	0	P	H
		17325	45.51	-22.69	68.2	44.83	41.14	15.14	55.6	100	0	P	H
													H
													H
		11550	47.07	-26.93	74	56.2	39.8	12.78	61.71	100	0	P	V
		17325	46.11	-22.09	68.2	45.43	41.14	15.14	55.6	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 802.11an (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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 802.11an LF		65.91	31.71	-8.29	40	50.76	12.13	1.13	32.31	100	0	P	H
		176.61	28.65	-14.85	43.5	43.89	15.35	1.68	32.27	-	-	P	H
		207.93	31.05	-12.45	43.5	46.36	15.15	1.8	32.26	-	-	P	H
		360.2	32.62	-13.38	46	41.65	20.83	2.28	32.14	-	-	P	H
		829.2	34.75	-11.25	46	34.69	28.46	3.45	31.85	-	-	P	H
		938.4	33.24	-12.76	46	30.69	30.01	3.7	31.16	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		34.05	35.88	-4.12	40	44.74	22.69	0.79	32.34	100	0	P	V
		50.79	30.53	-9.47	40	47.33	14.53	0.99	32.32	-	-	P	V
		60.51	29.92	-10.08	40	49.13	12.06	1.04	32.31	-	-	P	V
		360.9	29.79	-16.21	46	38.8	20.85	2.28	32.14	-	-	P	V
		546.4	30.63	-15.37	46	35.22	24.74	2.87	32.2	-	-	P	V
		950.3	33.69	-12.31	46	30.39	30.65	3.71	31.06	-	-	P	V
													V
												V	
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



<For Sample 2>

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 157 5785MHz		5619.6	52.01	-16.19	68.2	40.73	32.07	8.85	29.64	100	204	P	H
		5692	53.85	-45.45	99.3	42.52	32.17	8.83	29.67	100	204	P	H
		5709	51.87	-55.85	107.72	40.54	32.19	8.82	29.68	100	204	P	H
		5720.6	51.99	-60.18	112.17	40.64	32.21	8.82	29.68	100	204	P	H
	*	5785	102.75	-	-	91.38	32.29	8.8	29.72	100	204	P	H
	*	5785	95.38	-	-	84.01	32.29	8.8	29.72	100	204	A	H
		5855	51.41	-59.39	110.8	39.89	32.41	8.85	29.74	100	204	P	H
		5855.6	51.91	-58.72	110.63	40.39	32.41	8.85	29.74	100	204	P	H
		5904.6	52.19	-31.07	83.26	40.57	32.48	8.9	29.76	100	204	P	H
		5943.6	51.68	-16.52	68.2	40	32.53	8.93	29.78	100	204	P	H
													H
													H
		5610.4	51.57	-16.63	68.2	40.32	32.04	8.85	29.64	101	217	P	V
		5663.2	51.66	-26.34	78	40.36	32.12	8.84	29.66	101	217	P	V
		5703.2	51.8	-54.3	106.1	40.46	32.19	8.82	29.67	101	217	P	V
		5724.4	51.26	-69.57	120.83	39.91	32.21	8.82	29.68	101	217	P	V
	*	5785	101.54	-	-	90.17	32.29	8.8	29.72	101	217	P	V
	*	5785	94.13	-	-	82.76	32.29	8.8	29.72	101	217	A	V
		5851.4	51.11	-67.9	119.01	39.62	32.38	8.85	29.74	101	217	P	V
		5858.6	51.49	-58.3	109.79	39.98	32.41	8.85	29.75	101	217	P	V
		5885.8	52.21	-44.97	97.18	40.66	32.43	8.88	29.76	101	217	P	V
		5941.8	51.68	-16.52	68.2	40	32.53	8.93	29.78	101	217	P	V
													V
													V

**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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 157 5785MHz		11570	52.36	-21.64	74	61.56	39.76	12.79	61.75	102	146	P	H
		11570	41.58	-12.42	54	50.78	39.76	12.79	61.75	102	146	A	H
		17355	50.02	-18.18	68.2	49.14	41.26	15.15	55.53	100	0	P	H
													H
		11570	56.69	-17.31	74	65.89	39.76	12.79	61.75	103	239	P	V
		11570	45.25	-8.75	54	54.45	39.76	12.79	61.75	103	239	A	V
		17355	48.65	-19.55	68.2	47.77	41.26	15.15	55.53	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

Emission below 1GHz

5GHz WIFI 802.11ac (LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11ac LF		68.61	28.83	-11.17	40	47.53	12.45	1.16	32.31	100	0	P	H
		180.12	31.51	-11.99	43.5	46.94	15.16	1.68	32.27	-	-	P	H
		202.8	28.28	-15.22	43.5	43.63	15.12	1.8	32.27	-	-	P	H
		473.6	31.71	-14.29	46	37.7	23.57	2.63	32.19	-	-	P	H
		890.8	31.81	-14.19	46	30.81	29	3.55	31.55	-	-	P	H
		956.6	33.99	-12.01	46	30.31	30.96	3.71	30.99	-	-	P	H
													H
													H
													H
													H
													H
													H
		31.08	32.47	-7.53	40	40.06	23.96	0.79	32.34	100	0	P	V
		51.06	32.16	-7.84	40	49.36	14.13	0.99	32.32	-	-	P	V
		60.24	29.67	-10.33	40	48.88	12.06	1.04	32.31	-	-	P	V
		882.4	31.95	-14.05	46	31.04	28.98	3.53	31.6	-	-	P	V
		934.2	33.05	-12.95	46	30.73	29.86	3.66	31.2	-	-	P	V
		958	33.53	-12.47	46	29.73	31.07	3.71	30.98	-	-	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	Path	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. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path 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) + Path 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”.



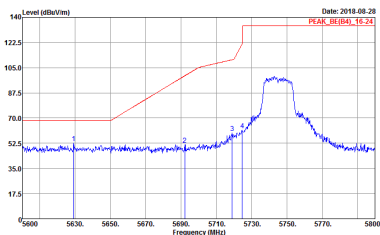
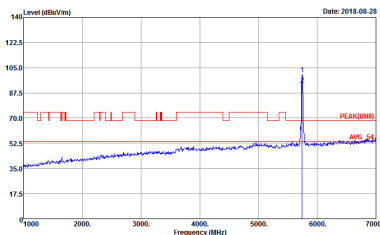
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Alex Jheng, Fu Chen, Wilson Wu	Temperature :	24~25°C
		Relative Humidity :	55~56%

<For Sample 1>

Band 4 - 5725~5850MHz

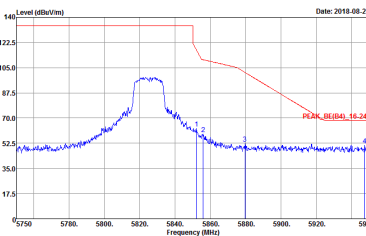
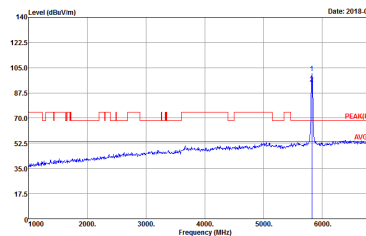
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN 91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 36 Power : 14	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN 91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 36 Power : 14

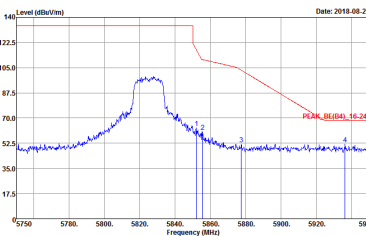
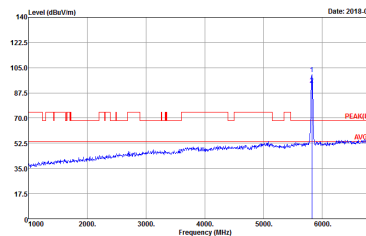


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 36 Power : 14	Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 36 Power : 14



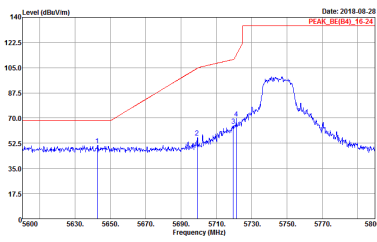
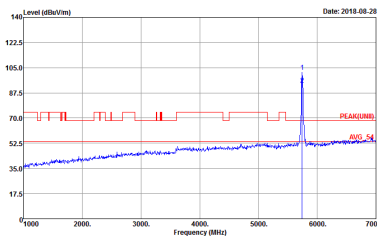
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(16)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 38 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 38 Power : 14.5



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 38 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 38 Power : 14.5



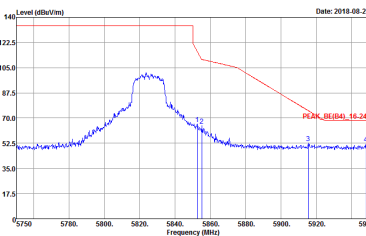
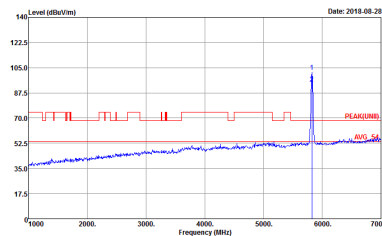
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_RE(84)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 862735 Mode : 39 Power : 14.5	 Site : 03CH13-HY Condition : PEAK_LIN(84)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 862735 Mode : 39 Power : 14.5



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 39 Power : 14.5	Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 39 Power : 14.5



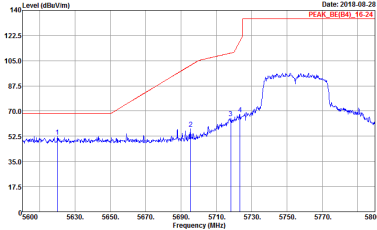
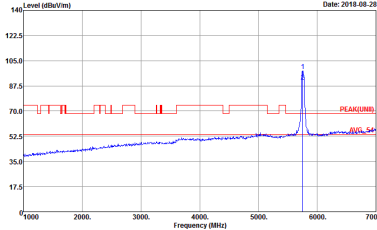
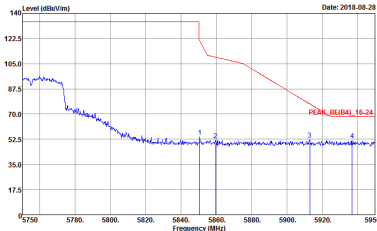
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 41 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 41 Power : 15



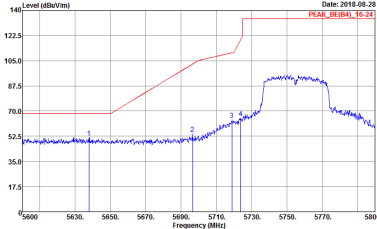
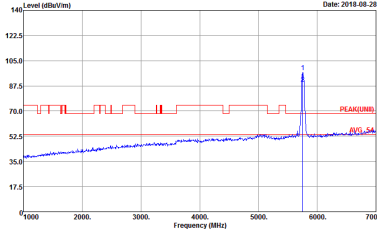
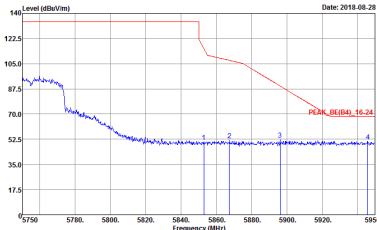
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(164)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 41 Power : 15	Site : 03CH13-HY Condition : PEAK(UNIT)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 41 Power : 15



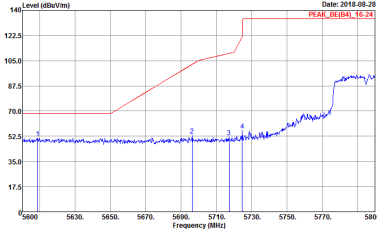
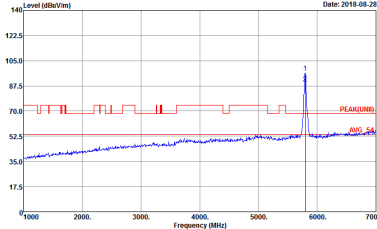
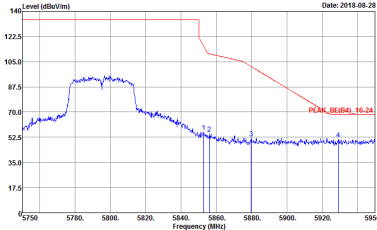
Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(LINE) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5	Left blank

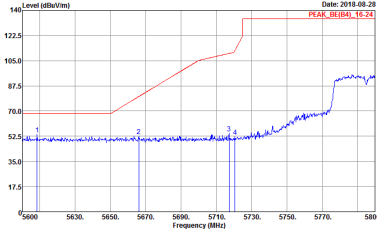
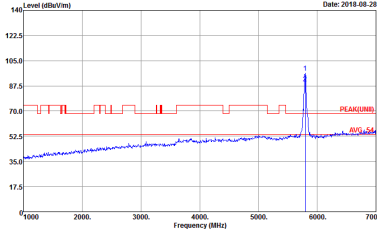
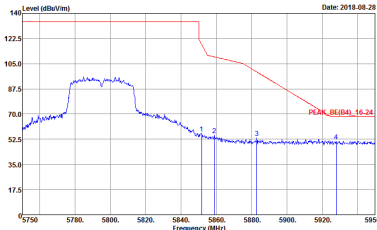


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5
	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 45 Power : 14.5	Left blank



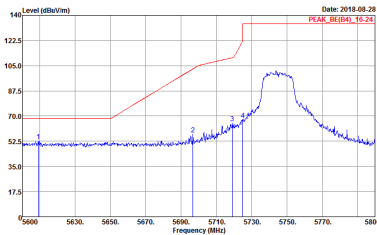
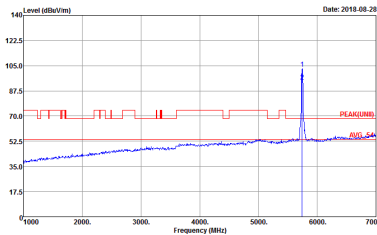
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 46 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 46 Power : 15
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 46 Power : 15	Left blank



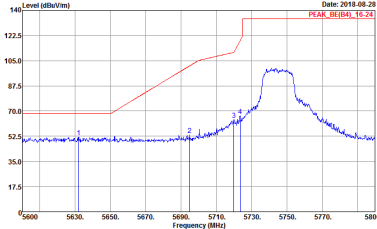
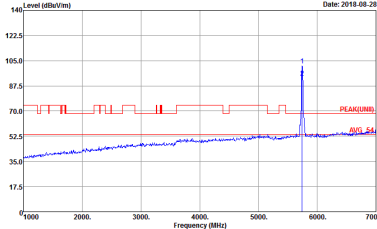
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 46 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 46 Power : 15
	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 46 Power : 15	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	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTA Detector : Peak Project : 862735 Mode : 42 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(FUND) 3m HORN_91200_1241 HORIZONTA Detector : Peak Project : 862735 Mode : 42 Power : 14.5

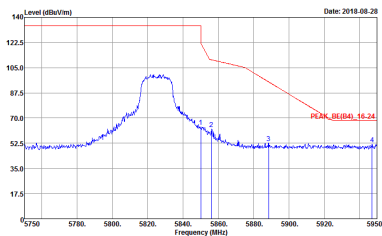
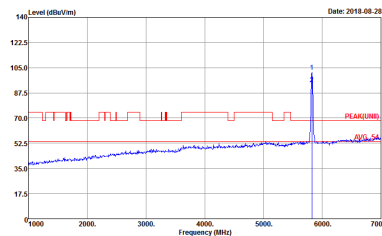


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 42 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 42 Power : 14.5



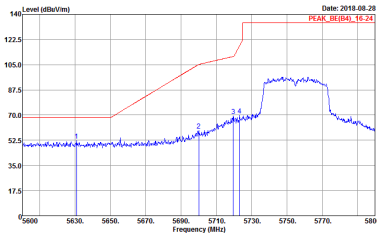
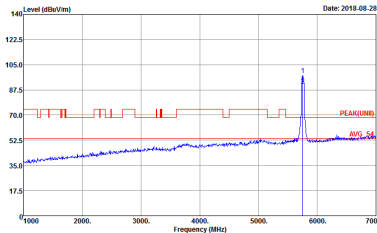
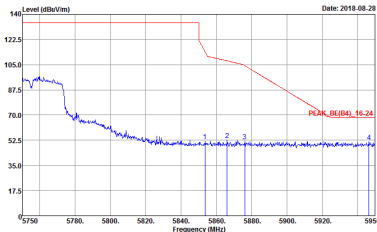
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 44 Power : 15	Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 862735 Mode : 44 Power : 15



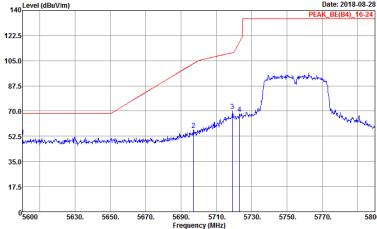
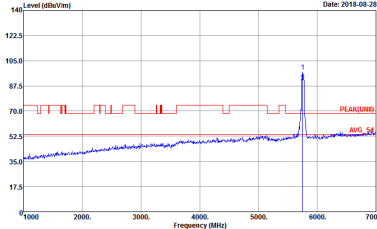
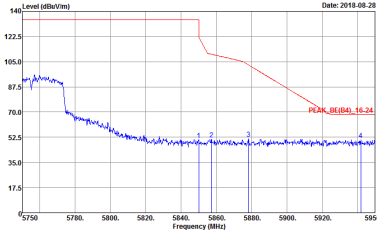
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 44 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 44 Power : 15

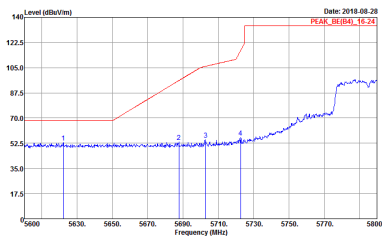
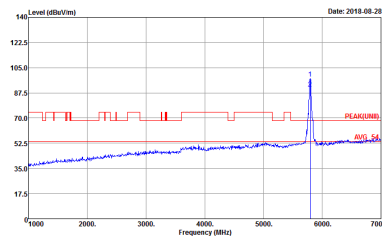
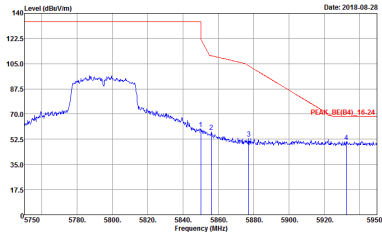


Band 4 5725~5850MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)

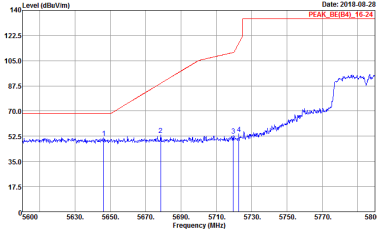
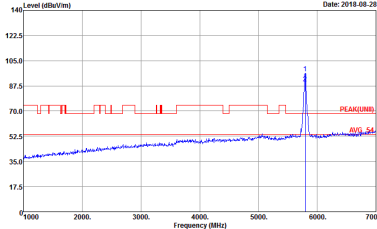
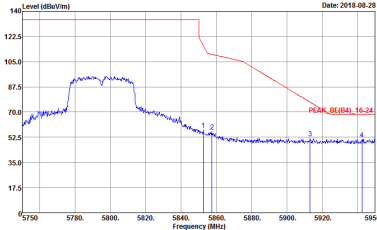
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 47 Power : 14.5	 Site : 03CH13-HY Condition : PEAK_LNB 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 47 Power : 14.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 47 Power : 14.5	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 47 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 47 Power : 14.5
	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 47 Power : 14.5	Left blank

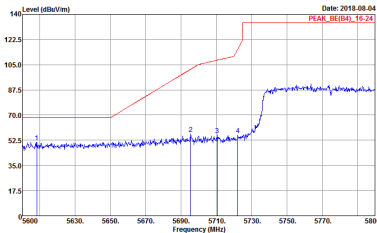
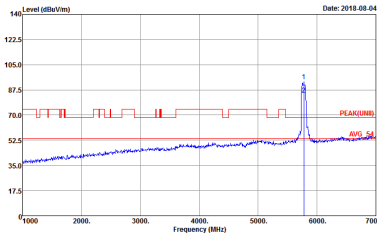
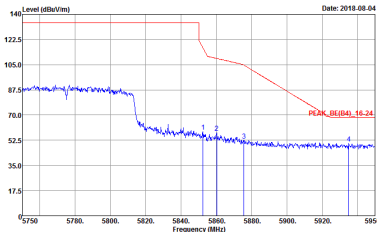
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15	Left blank

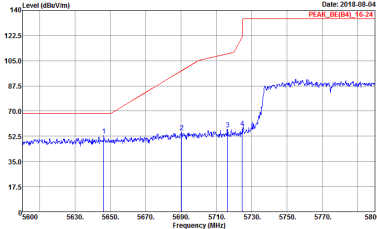
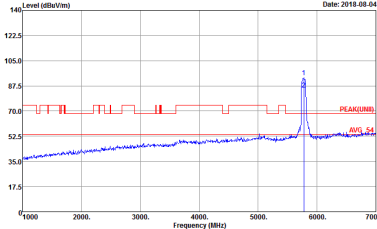
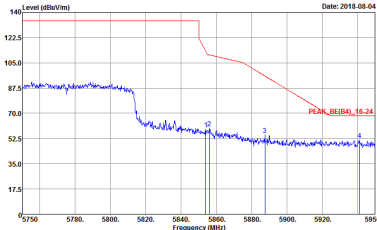


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15
	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : Peak Mode : 862735 Power : 48 Power : 15	Left blank



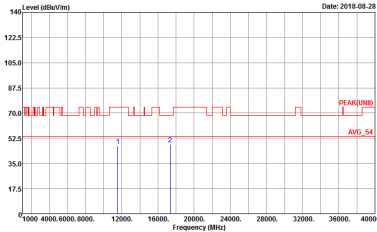
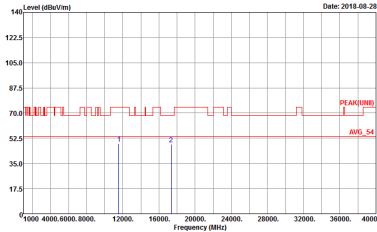
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 49	 Site : 03CH13-HY Condition : PEAK_LNB 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 49
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 49	Left blank

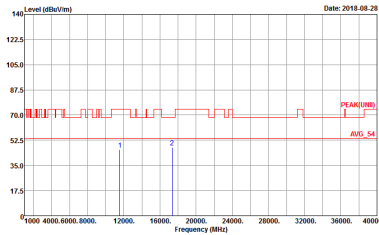
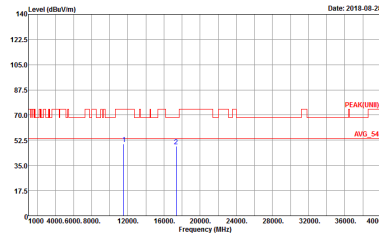
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Date: 2018-08-04 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 49	 Date: 2018-08-04 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 49
	 Date: 2018-08-04 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 49	Left blank



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

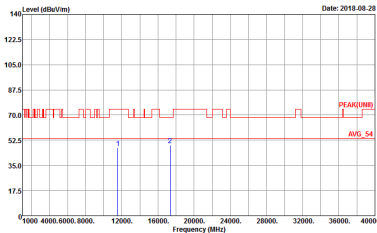
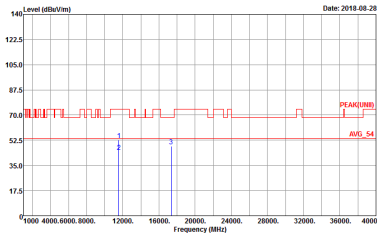
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-4V Condition : PEAK(UNIT) 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 862735 Mode : 37 Power : 14.5	 Site : 03CH13-4V Condition : PEAK(UNIT) 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 862735 Mode : 37 Power : 14.5

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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 862735 Mode : 40 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 862735 Mode : 40 Power : 14.5

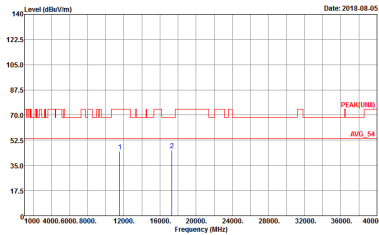
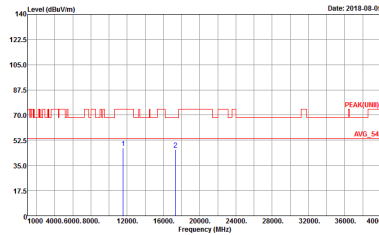


Band 4 5725~5850MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : :PEAK(UNIT) 3m SHF_HORN_576 HORIZONTAL Detector : :Peak Project : :862735 Mode : :43 Power : :14.5	 Site : 03CH13-HY Condition : :PEAK(UNIT) 3m SHF_HORN_576 VERTICAL Detector : :Peak Project : :862735 Mode : :43 Power : :14.5

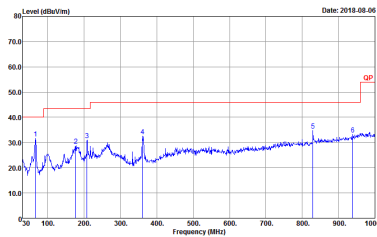
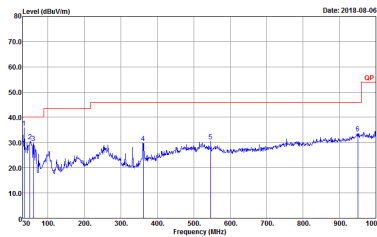


Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 862735 Mode : 49	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 862735 Mode : 49



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

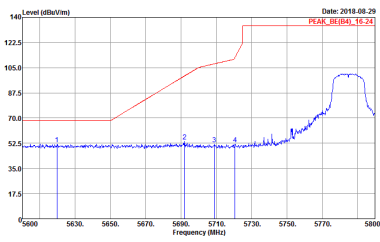
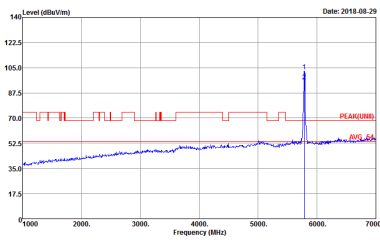
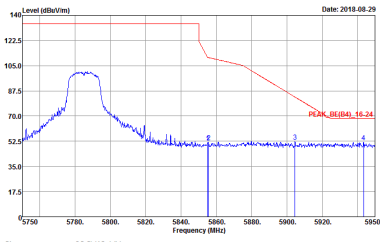
WIFI	5GHz 5725~5850MHz	
ANT	802.11a LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH13-4V Condition : QP 3m B1L06_40103 HORIZONTAL Detector : Peak Project : 862735 Mode : 50	 Site : 03CH13-4V Condition : QP 3m B1L06_40103 VERTICAL Detector : Peak Project : 862735 Mode : 50

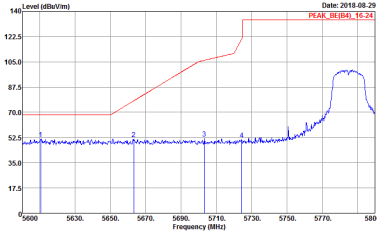
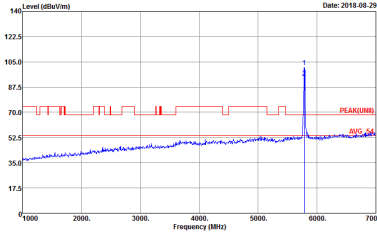
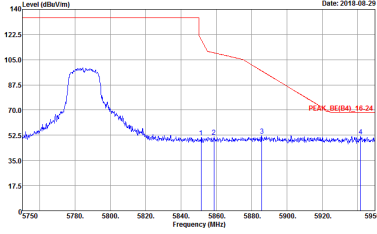


<For Sample 2>

Band 4 - 5725~5850MHz

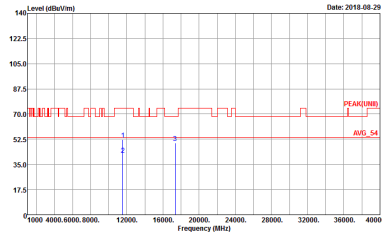
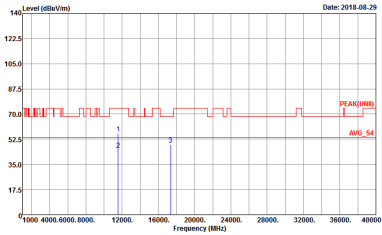
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 54 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 54 Power : 14.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 862735 Mode : 54 Power : 14.5	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-1HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 54 Power : 14.5	 Site : 03CH13-1HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 54 Power : 14.5
	 Site : 03CH13-1HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 862735 Mode : 54 Power : 14.5	Left blank

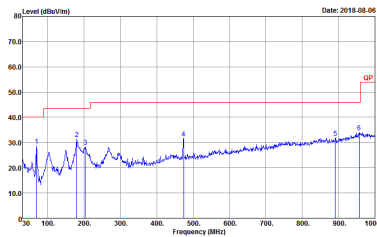
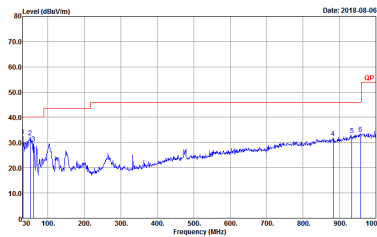


Band 4 - 5725~5850MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 862735 Mode : 54 Power : 14.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 862735 Mode : 54 Power : 14.5



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

WIFI	5GHz 5725~5850MHz	
ANT	802.11ac LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH13-4V Condition : QP 3m B1LO6_40103 HORIZONTAL Detector : Peak Project : 862735 Mode : 58	 Site : 03CH13-4V Condition : QP 3m B1LO6_40103 VERTICAL Detector : Peak Project : 862735 Mode : 58

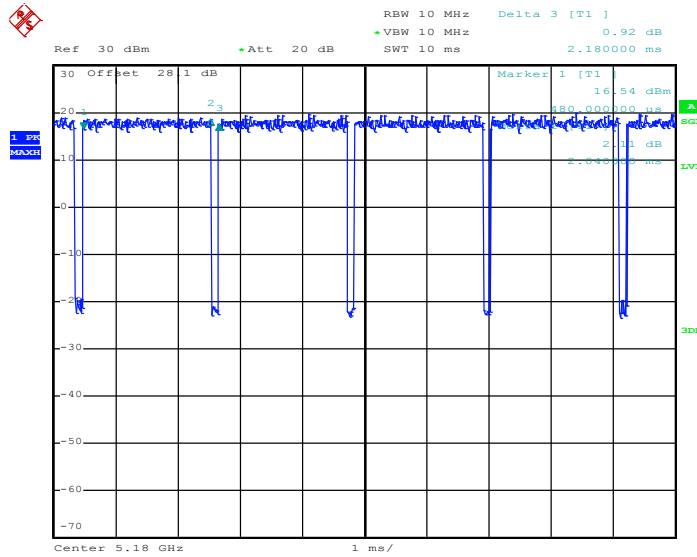


Appendix D. Duty Cycle Plots

Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
802.11a	93.58	2040.00	0.49	1kHz	0.29
5GHz 802.11n HT20	93.63	1910.00	0.52	1kHz	0.29
5GHz 802.11n HT40	89.62	950.00	1.05	3kHz	0.48
5GHz 802.11ac VHT20	94.12	1920.00	0.52	1kHz	0.26
5GHz 802.11ac VHT40	89.72	960.00	1.04	3kHz	0.47
5GHz 802.11ac VHT80	86.90	730.00	1.37	3kHz	0.61

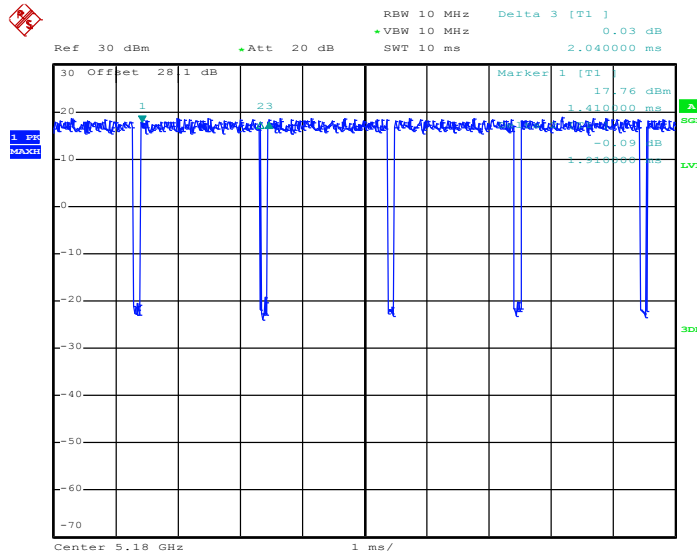


802.11a

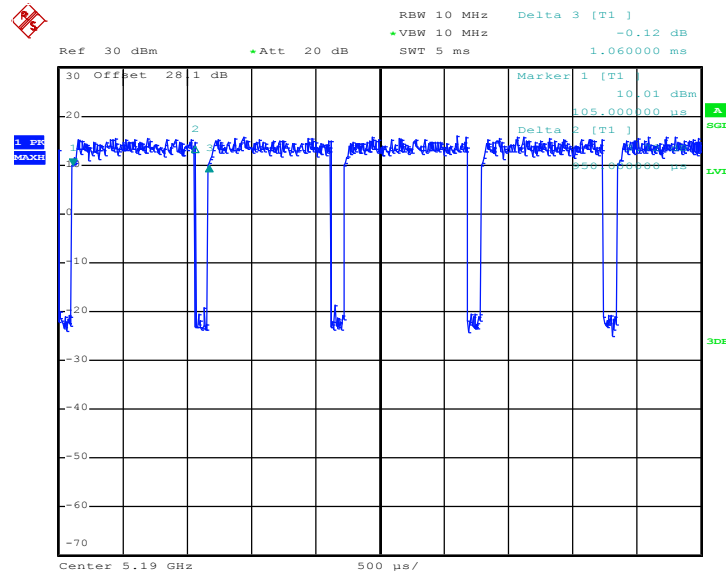


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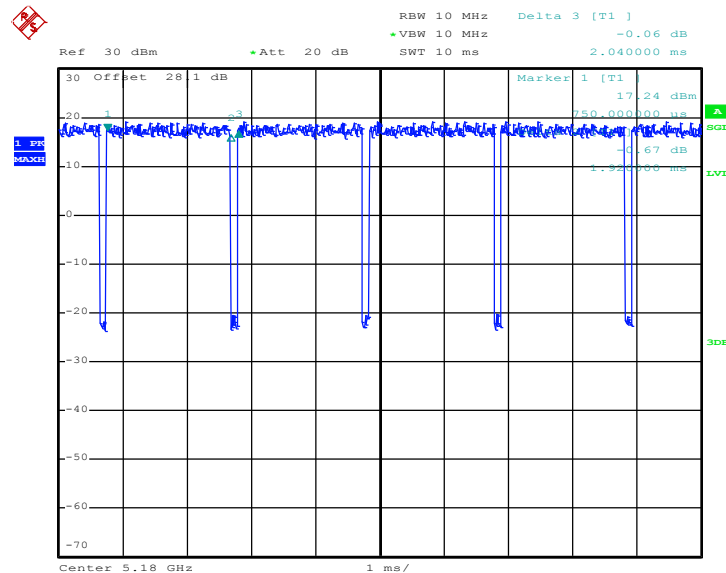
802.11n HT20



Date: 25.JUL.2018 00:02:02

802.11n HT40


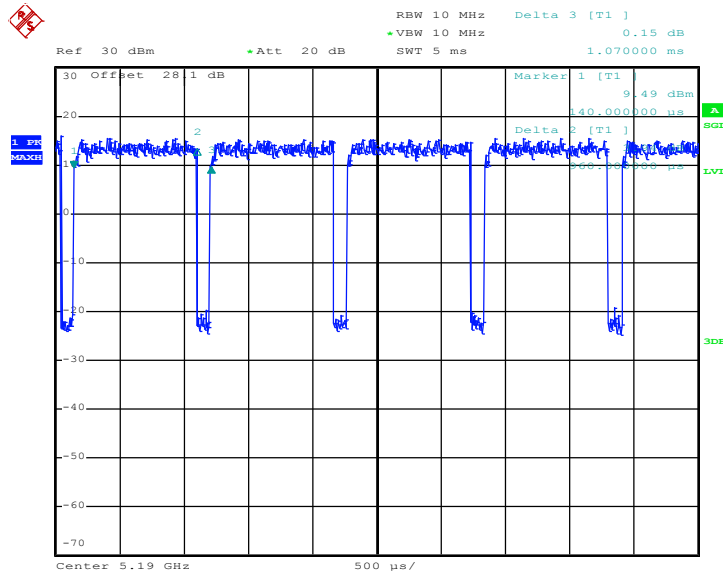
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802.11ac VHT20


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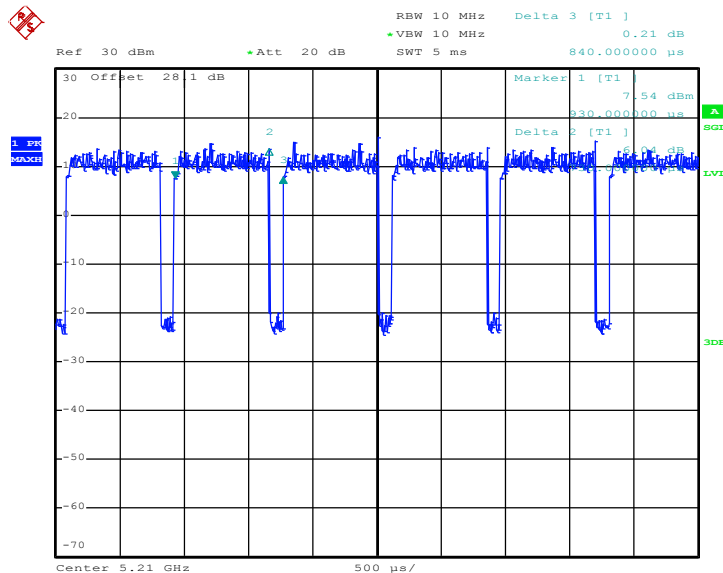


802.11ac VHT40



Date: 25.JUL.2018 02:22:18

802.11ac VHT80



Date: 25.JUL.2018 02:50:01