FCC RADIO TEST REPORT

FCC ID	**:**	**UZ7VC8300**
Equipment	**:**	**Vehicle Computer**
Brand Name	**:**	**Zebra**
Model name	**:**	**VC8300**
Applicant	**:**	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	**:**	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	**:**	**FCC Part 15 Subpart E §15.407**

The product was received on Feb. 15, 2019 and testing was started from Apr. 08, 2019 and completed on Apr. 15, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, 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 variant 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.

Jones Tsai

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
FR8N0846-03E	01	Initial issue of report	May 06, 2019

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403 (i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407 (a)	Maximum Conducted Output Power	Pass	-
3.3	15.407 (a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	Under limit 6.89 dB at 36.790 MHz
-	15.207	AC Conducted Emission	Pass	-
3.5	15.407 (c)	Automatically Discontinue Transmission	Pass	-
3.6	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

Remark:
1. Not required means after assessing, test items are not necessary to carry out.
2. This is a variant report by adding TXBF Mode. All the test cases were performed on original report which can be referred to Sporton Report Number FR8N0846E. Based on the original report, only worst case was verified.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Maggie Chiang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Vehicle Computer
Brand Name	Zebra
Model Name	VC8300
FCC ID	UZ7VC8300
Sample 1	EUT with SKU 1
Sample 2	EUT with SKU 2
Sample 3	EUT with SKU 3
Sample 4	EUT with SKU 4
Sample 5	EUT with SKU 5
Sample 6	EUT with SKU 6
Sample 7	EUT with SKU 7
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	EVT1
SW Version	Zebra/VC8300/VC8310:8.1.0/01-14-12-00-ON-U00-PRD/266:eng/release-keys
FW Version	01-14-12.00-ON-U00-PRD
MFD	03Nov18
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer.

Specification of Accessories				
AC Adapter	**Brand Name**	Zebra	**Model Name**	FSP150-AAAN2-Z
Battery	**Brand Name**	Zebra	**Model Name**	BT000254A01
Car Charger	**Brand Name**	Zebra	**Model Name**	CA1210
RJ50/USB cable	**Brand Name**	Zebra	**Model Name**	CBA-U01-S07ZAR
Scanner	**Brand Name**	Zebra	**Model Name**	DS3508
Scanner	**Brand Name**	Zebra	**Model Name**	LS3408
Audio Speaker	**Brand Name**	Zebra	**Model Name**	M1000
Ferrite Core	**Brand Name**	Zebra	**Model Name**	M1000
Keyboard (ikey)	**Brand Name**	Zebra	**Model Name**	SLK-101-M-USB-3F
Keyboard (remote keyboard)	**Brand Name**	Zebra	**Model Name**	KYBD-QWH-VC80
External Antenna (Monopole)	**Brand Name**	Zebra	**Model Name**	AN2010
External Antenna (Monopole)	**Brand Name**	Zebra	**Model Name**	AN2020
External Antenna (Dipole)	**Brand Name**	Zebra	**Model Name**	AN2030
Power Pre-regulator	**Brand Name**	PSION	**Model Name**	PS1370

<Sample Information>

Model Name	VC80x 8"			VC80x 10"			
	SKU1	SKU2	SKU3	SKU4	SKU5	SKU6	SKU7
SKU Name	Warehouse 1	Warehouse 2	Freezer SK HYNIX eMMC & MICRON DRAM	Warehouse	Outdoor	Warehouse	Freezer
OS	Android O	Android O	Android O	Android O	Android O	Android O	Android O
Display	Tianma	Tianma	Tianma	AUO	Mitsubishi	AUO	AUO
DTB board / Fuxture	DTB 8" CTP (TCA8414)	DTB 8" CTP (TCA8414)	DTB 8" CTP (TCA8414)	DTB AUO CTP (TCA8414)	DTB MIT CTP (TCA8414)	DTB AUO RTP (TCA8414)	DTB AUO RTP (TCA8414)
TP Type (Gunze)	CTP 8"	CTP 8"	CTP 8" w/ Heater	CTP 10"	CTP 10"	RTP	RTP w/ Heater
KB printing	QWERTY	AZETY	QWERTY				
KB Board	NO	NO	NO	Yes	Yes	Yes	Yes
KB	Yes	Yes	Yes	NO	NO	NO	NO
MLB	SDA660	SDA660	SDA660	SDA660	SDA660	SDA660	SDA660
PWR Board	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USB Board	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DB9 Board	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Battery Heater Board	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	**MIMO < Chain. 1+2>** 802.11ac VHT20: 21.72 dBm / 0.1486 W 802.11ac VHT40: 22.07 dBm / 0.1611 W 802.11ac VHT80: 19.72 dBm / 0.0938 W
99% Occupied Bandwidth	**MIMO <Chain. 1>** 802.11n VHT20 : 18.05 MHz 802.11n VHT40 : 36.70 MHz 802.11ac VHT80 : 77.28 MHz **MIMO <Chain. 2>** 802.11n VHT20 : 17.95 MHz 802.11n VHT40 : 36.60 MHz 802.11ac VHT80 : 77.04 MHz
Type of Modulation	802.11a/n : OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ac : OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)
Antenna Function Description	<table><tr><td></td><td>Chain 1</td><td>Chain 2</td></tr><tr><td>802.11 a/n/ac TXBF</td><td>V</td><td>V</td></tr></table>

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

Antenna No.	Chain No.	Model	Antenna Type	Antenna Gain (dBi) Exclude Cable loss	Internal Cable loss (dB)	External Cable loss (dB)	Antenna Gain (dBi) Include Cable loss	Frequency (GHz)
1	Int. Chain 0	AN-000242-01	Patch	3.30	N/A	N/A	3.30	2.4~2.4835
				4.53	N/A	N/A	4.53	5.15~5.85
	Int. Chain 1			4.00	N/A	N/A	4.00	2.4~2.4835
				4.79	N/A	N/A	4.79	5.15~5.85
2	Ext. Chain 0	AN2010	Monopole	2	0.6	1.8	-0.4	2.4~2.4835
				2	0.9	2.6	-1.5	5.15~5.85
	Ext. Chain 1			2	0.6	1.8	-0.4	2.4~2.4835
				2	0.9	2.6	-1.5	5.15~5.85
3	Ext. Chain 0	AN2020	Monopole	5	0.6	1.8	2.6	2.4~2.4835
	Ext. Chain 1			5	0.6	1.8	2.6	2.4~2.4835
4	Ext. Chain 0	AN2030	Dipole	2	0.6	N/A	1.4	2.4~2.4835
				3.7	0.9	N/A	2.8	5.15~5.85
	Ext. Chain 1			2	0.6	N/A	1.4	2.4~2.4835
				3.7	0.9	N/A	2.8	5.15~5.85

1.3 Modification of EUT

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

1.4 Testing Location

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.**
	03CH12-HY

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

FCC Designation No.: TW1190 and TW0007

1.5 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.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output 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: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for Antenna 1; Y plane for Antenna 2; Vertical for Antenna 4) 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.

TXBF Mode

Modulation	Data Rate
802.11ac VHT20	**MCS0**
802.11ac VHT40	**MCS0**
802.11ac VHT80	**MCS0**

Remark: For Radiated Test Cases, the tests were performed with Sample 3 and each antenna (Ant. 1, Ant. 2, and Ant. 4).

Ch. #		Band IV：5725-5850 MHz		
		802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	151	-
M	Middle	157	-	155
H	High	165	159	-

<Chain 1+2>

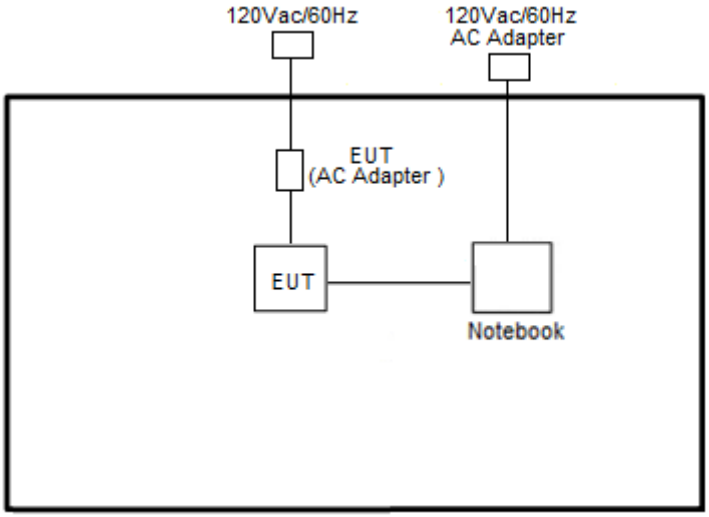
802.11ac VHT20 RF Output Power (dBm)											
Power vs. Channel			Power vs Data Rate								
Channel	Frequency (MHz)	MCS Index MCS0	channel	MCS Index MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 149	5745	21.36	CH 165	21.67	21.62	21.60	21.61	21.67	21.68	21.64	21.65
CH 157	5785	21.61									
CH 165	5825	21.72									

802.11ac VHT40 RF Output Power (dBm)											
Power vs. Channel			Power vs Data Rate								
Channel	Frequency (MHz)	MCS Index MCS0	channel	MCS Index MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 151	5755	21.91	CH 159	21.87	21.87	21.87	21.62	21.68	21.67	21.68	21.67	21.80
CH 159	5795	22.07										

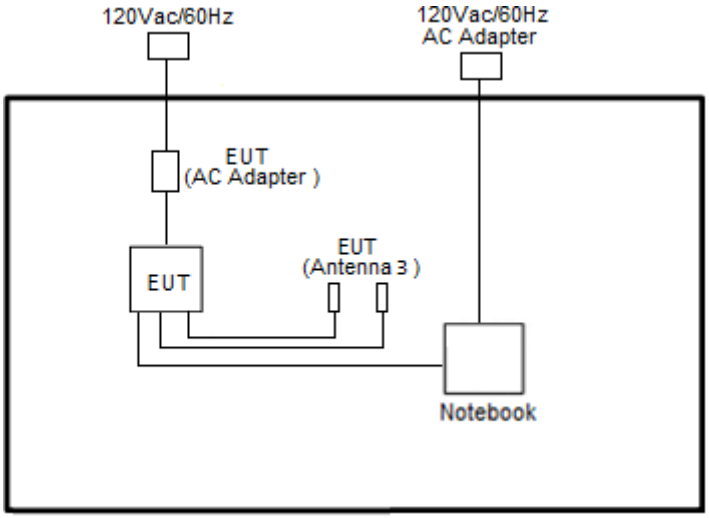
802.11ac VHT80 RF Output Power (dBm)											
Power vs. Channel			Power vs Data Rate								
Channel	Frequency (MHz)	MCS Index MCS0	channel	MCS Index MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH155	5775	19.72	CH155	19.62	19.61	19.67	19.52	19.68	19.67	19.67	19.68	19.72

2.3 Connection Diagram of Test System

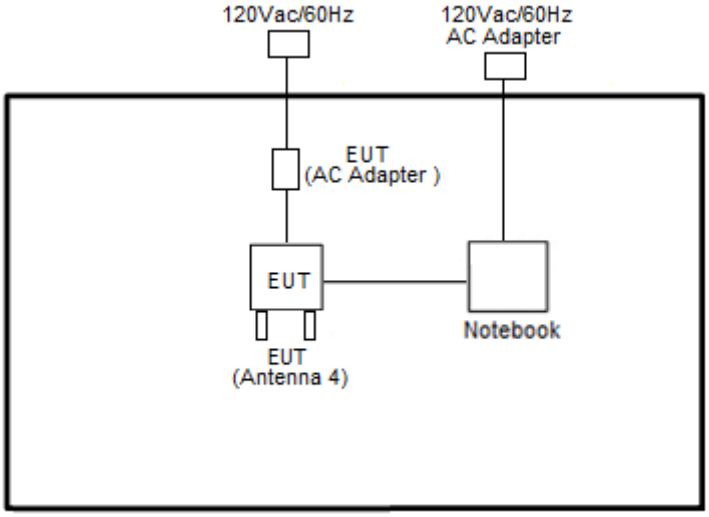
<EUT with Antenna 1>



<EUT with Antenna 2>



<EUT with Antenna 4>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	E330	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Notebook	MSI	MS-16J5	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

For TXBF mode, the modulation modes and data rates manipulated by the command lines in the engineering program made the EUT link to another EUT by power under the normal operation. The “ADB” software tool was used to enable the EUT to transmit signals continuously.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

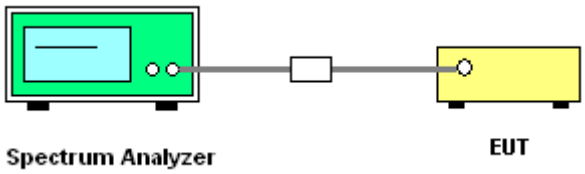
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup

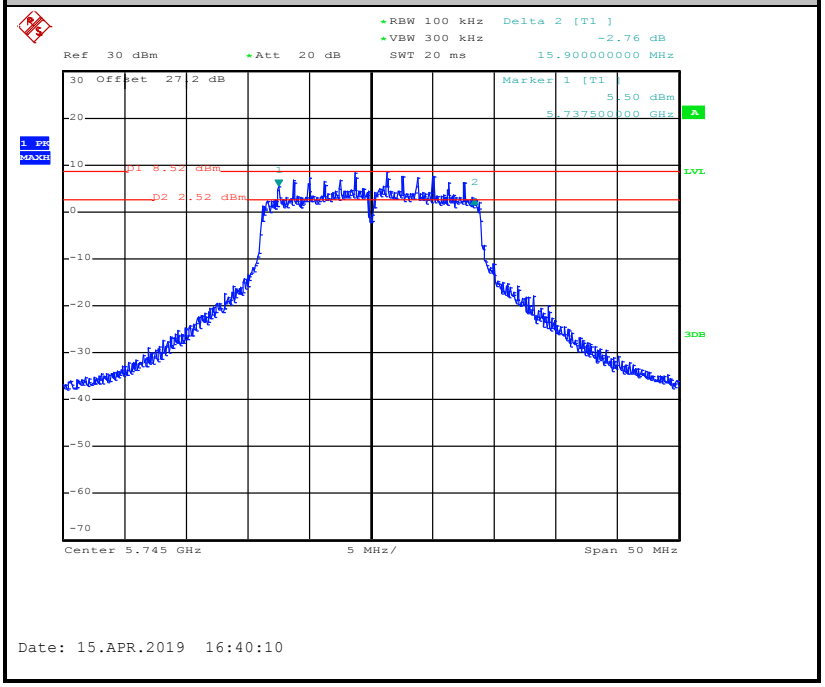


3.1.5 Test Results

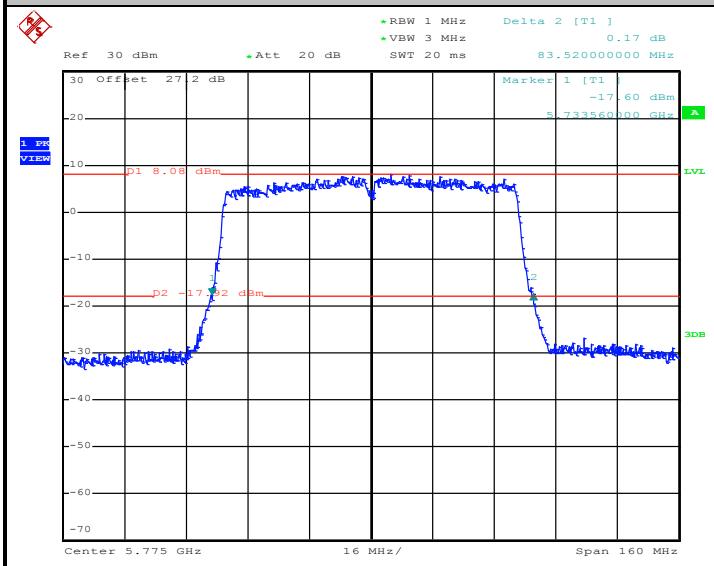
Test Engineer :	Richard Qiu	Temperature :	21~25℃
		Relative Humidity :	51~54%

Band IV												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2		
VHT20	MCS0	2	149	5745	17.95	17.90	25.85	26.75	15.90	17.00	0.5	Pass
VHT20	MCS0	2	157	5785	18.05	17.95	26.65	26.10	16.75	17.30	0.5	Pass
VHT20	MCS0	2	165	5825	17.95	17.90	26.65	26.30	16.35	16.30	0.5	Pass
VHT40	MCS0	2	151	5755	36.70	36.60	41.94	41.94	35.40	36.36	0.5	Pass
VHT40	MCS0	2	159	5795	36.70	36.60	42.35	42.48	35.28	35.64	0.5	Pass
VHT80	MCS0	2	155	5775	77.28	77.04	82.88	83.52	75.52	72.64	0.5	Pass

Minimum 6dB Bandwidth



Maximum 26dB Bandwidth



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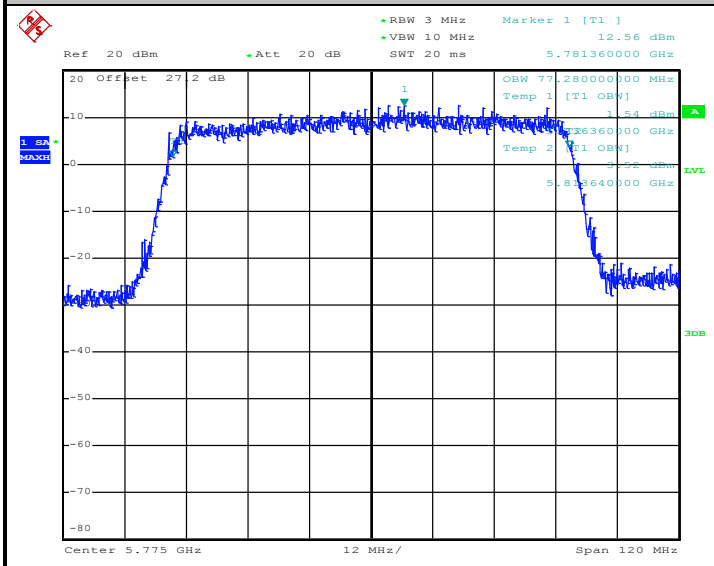
Maximum 99% Occupied Bandwidth



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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

See list of measuring equipment of this test report.

3.2.3 Test Procedures

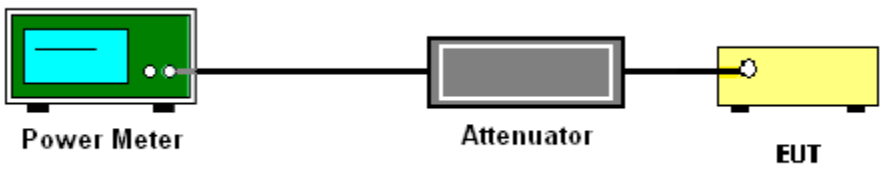
<TXBF Modes>

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 for TXBF modes.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Engineer :	Richard Qiu	Temperature :	21~25℃
		Relative Humidity :	51~54%

Band IV												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
VHT20	MCS0	2	149	5745	19.20	17.30	21.36	28.63		7.37		Pass
VHT20	MCS0	2	157	5785	19.20	17.90	21.61	28.63		7.37		Pass
VHT20	MCS0	2	165	5825	19.40	17.90	21.72	28.63		7.37		Pass
VHT40	MCS0	2	151	5755	19.50	18.20	21.91	28.63		7.37		Pass
VHT40	MCS0	2	159	5795	19.70	18.30	22.07	28.63		7.37		Pass
VHT80	MCS0	2	155	5775	17.40	15.90	19.72	28.63		7.37		Pass

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

See list of measuring equipment of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

<TXBF Modes>

 # Method SA-3 #

(power averaging (rms) detection with max hold):

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time ≤ (number of points in sweep) × 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.
- Detector = power averaging (rms).
- Trace mode = max hold.
- Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

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

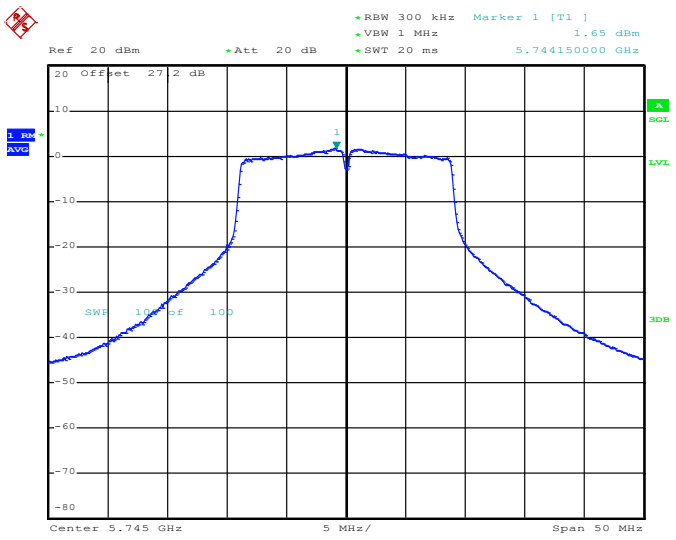
3.3.4 Test Setup

3.3.5 Test Result of Power Spectral Density

Test Engineer :	Richard Qiu	Temperature :	21~25℃
		Relative Humidity :	51~54%

Band IV																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
VHT20	MCS0	2	149	5745	0.17	0.16	2.22		4.04	2.46	7.05	28.63		7.37		Pass
VHT20	MCS0	2	157	5785	0.17	0.16	2.22		3.96	1.65	6.97	28.63		7.37		Pass
VHT20	MCS0	2	165	5825	0.17	0.16	2.22		3.38	2.30	6.39	28.63		7.37		Pass
VHT40	MCS0	2	151	5755	0.19	0.18	2.22		0.34	-0.24	3.35	28.63		7.37		Pass
VHT40	MCS0	2	159	5795	0.19	0.18	2.22		1.57	0.47	4.58	28.63		7.37		Pass
VHT80	MCS0	2	155	5775	0.29	0.18	2.22		-4.00	-5.00	-0.99	28.63		7.37		Pass

Worst Case Power Density (dBm/MHz) for MIMO Chain 1



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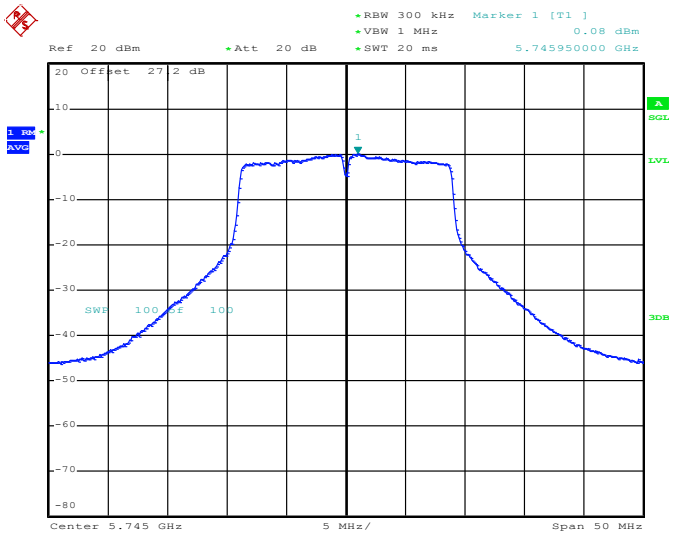
Worst Case Power Density (dBm/MHz) for MIMO Chain 2



Date: 15.APR.2019 16:53:18

3.4 Unwanted Emissions Measurement

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

3.4.1 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 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.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/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).

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 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 ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

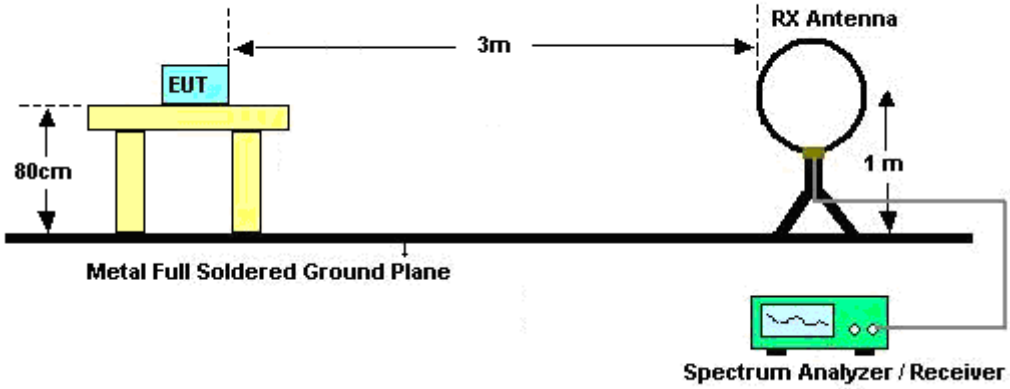
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

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

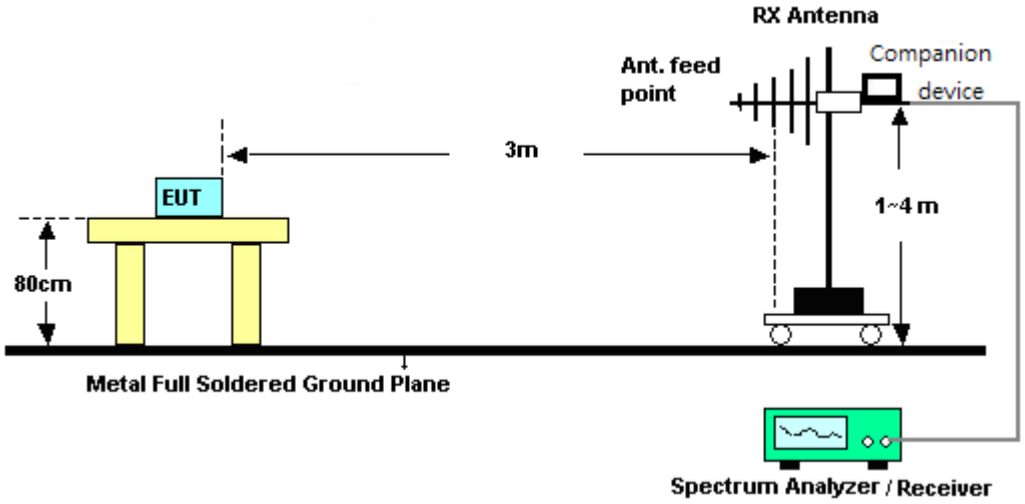
3.4.4 Test Setup

For radiated emissions below 30MHz



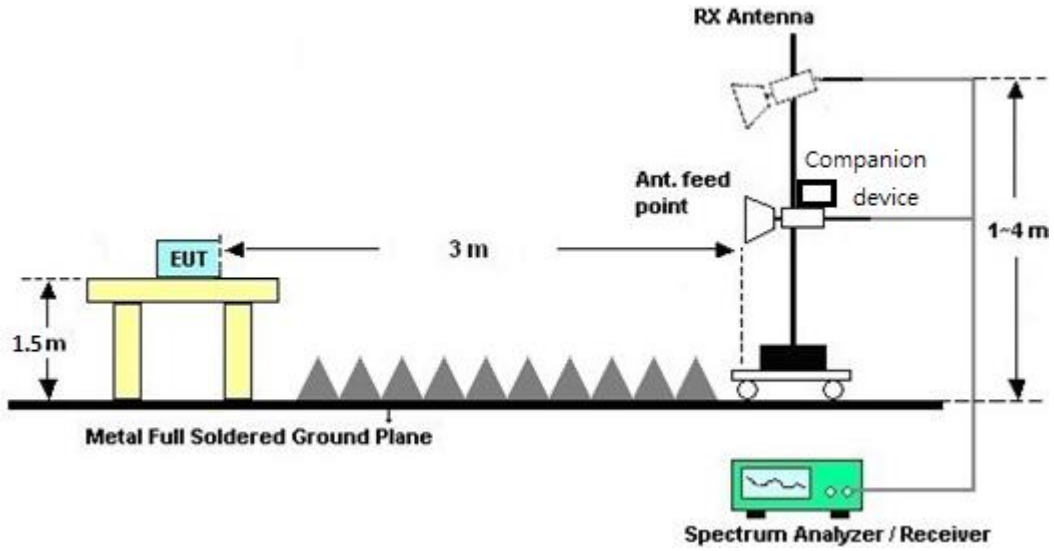
For radiated emissions from 30MHz to 1GHz

<TXBF Mode>



For radiated emissions above 1GHz

<TXBF Mode>



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

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

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix A and B.

3.4.7 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix A and B.

3.5 Automatically Discontinue Transmission

3.5.1 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.

3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 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.

3.6 Antenna Requirements

3.6.1 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.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

<TXBF Mode>

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

where

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

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

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The EUT supports beamforming for 802.11ac modes.

The directional gain calculation is following F)2)e)ii) of KDB 662911 D01 v02r01.

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

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

			DG for Power	DG for PSD	Power Limit Reduction	PSD Limit Reduction
	Ant 1 (dBi)	Ant 2 (dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	4.17	4.55	7.37	7.37	1.37	1.37

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Sensor	DARE	RadiPower	15I00041SNO09	10MHz~6GHz	May 07, 2018	Apr. 11, 2019~ Apr. 15, 2019	May 06, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 21, 2018	Apr. 11, 2019~ Apr. 15, 2019	Nov. 20, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Apr. 17, 2018	Apr. 11, 2019~ Apr. 15, 2019	Apr. 16, 2019	Conducted (TH05-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	Jan. 07, 2019	Apr. 08, 2019~ Apr. 13, 2019	Jan. 06, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	37059&01	30MHz~1GHz	Oct. 13, 2018	Apr. 08, 2019~ Apr. 13, 2019	Oct. 12, 2019	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Oct. 19, 2018	Apr. 08, 2019~ Apr. 13, 2019	Oct. 18, 2019	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	May 08, 2018	Apr. 08, 2019~ Apr. 13, 2019	May 07, 2019	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2019	Apr. 08, 2019~ Apr. 13, 2019	Mar. 24, 2020	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 28, 2018	Apr. 08, 2019~ Apr. 13, 2019	May 27, 2019	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA0118-55-303K	1710001800054002	1GHz~18GHz	Apr. 17, 2018	Apr. 08, 2019~ Apr. 13, 2019	Apr. 16, 2019	Radiation (03CH12-HY)
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	Aug. 24, 2018	Apr. 08, 2019~ Apr. 13, 2019	Aug. 23, 2019	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370118	10Hz~44GHz	Apr. 17, 2018	Apr. 08, 2019~ Apr. 13, 2019	Apr. 16, 2019	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12SS	SN2	1.2GHz Low Pass	Mar. 20, 2019	Apr. 08, 2019~ Apr. 13, 2019	Mar. 19, 2020	Radiation (03CH12-HY)
Filter	Woken	WHKX8-5272.5-6750-18000-40ST	SN2	6.75G Highpass	Mar. 20, 2019	Apr. 08, 2019~ Apr. 13, 2019	Mar. 19, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 13, 2019	Apr. 08, 2019~ Apr. 13, 2019	Mar. 12, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 16, 2018	Apr. 08, 2019~ Apr. 13, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 16, 2018	Apr. 08, 2019~ Apr. 13, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Apr. 08, 2019~ Apr. 13, 2019	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Apr. 08, 2019~ Apr. 13, 2019	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Apr. 08, 2019~ Apr. 13, 2019	N/A	Radiation (03CH12-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))	**5.1**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.2**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.7**

Appendix A. Radiated Spurious Emission

Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	Temperature :	22~24°C
		Relative Humidity :	52~60%

<For Antenna 1>

<Chain 1+2>

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5649.6	53.74	-14.46	68.2	45.03	31.7	10.46	33.45	100	219	P	H
		5693	63.49	-36.55	100.04	54.51	31.96	10.48	33.46	100	219	P	H
		5719.6	68.84	-41.85	110.69	59.76	32.04	10.5	33.46	100	219	P	H
		5725	75.91	-46.29	122.2	66.82	32.05	10.5	33.46	100	219	P	H
	*	5745	119.16	-	-	110.02	32.09	10.51	33.46	100	219	P	H
	*	5745	110.94	-	-	101.8	32.09	10.51	33.46	100	219	A	H
802.11ac													H
VHT20													H
CH 149		5637.8	51.03	-17.17	68.2	42.31	31.72	10.45	33.45	249	226	P	V
5745MHz		5688.6	52.97	-43.82	96.79	44.02	31.93	10.48	33.46	249	226	P	V
		5720	57.46	-53.34	110.8	48.38	32.04	10.5	33.46	249	226	P	V
		5724.8	67.64	-54.1	121.74	58.55	32.05	10.5	33.46	249	226	P	V
	*	5745	112.99	-	-	103.85	32.09	10.51	33.46	249	226	P	V
	*	5745	104.3	-	-	95.16	32.09	10.51	33.46	249	226	A	V
													V
													V

WIFI	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)
		5625.2	52.67	-15.53	68.2	43.93	31.75	10.44	33.45	103	222	P	H
		5681.4	54.11	-37.36	91.47	45.21	31.89	10.47	33.46	103	222	P	H
		5700.6	57.84	-47.53	105.37	48.81	32	10.49	33.46	103	222	P	H
		5722.2	63.46	-52.36	115.82	54.38	32.04	10.5	33.46	103	222	P	H
	*	5785	119.41	-	-	110.18	32.17	10.53	33.47	103	222	P	H
	*	5785	111	-	-	101.77	32.17	10.53	33.47	103	222	A	H
		5851	56.25	-63.67	119.92	46.84	32.3	10.59	33.48	103	222	P	H
		5856.2	57.17	-53.29	110.46	47.75	32.31	10.59	33.48	103	222	P	H
		5884.2	55.93	-42.44	98.37	46.42	32.37	10.62	33.48	103	222	P	H
		5926.8	54.18	-14.02	68.2	44.51	32.51	10.65	33.49	103	222	P	H
802.11ac													H
VHT20													H
CH 157		5617.4	50.89	-17.31	68.2	42.13	31.77	10.44	33.45	257	210	P	V
5785MHz		5700	50.79	-54.41	105.2	41.76	32	10.49	33.46	257	210	P	V
		5720	53.81	-56.99	110.8	44.73	32.04	10.5	33.46	257	210	P	V
		5720.2	53.83	-57.43	111.26	44.75	32.04	10.5	33.46	257	210	P	V
	*	5785	110.36	-	-	101.13	32.17	10.53	33.47	257	210	P	V
	*	5785	102.2	-	-	92.97	32.17	10.53	33.47	257	210	A	V
		5852.8	54.04	-61.78	115.82	44.62	32.31	10.59	33.48	257	210	P	V
		5856	52.13	-58.39	110.52	42.71	32.31	10.59	33.48	257	210	P	V
		5876.6	53.5	-50.51	104.01	44.02	32.35	10.61	33.48	257	210	P	V
		5940	52.28	-15.92	68.2	42.54	32.56	10.67	33.49	257	210	P	V
													V
													V

WIFI	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)
	*	5825	119.11	-	-	109.78	32.25	10.56	33.48	108	224	P	H
	*	5825	110.27	-	-	100.94	32.25	10.56	33.48	108	224	A	H
		5850	65.5	-56.7	122.2	56.09	32.3	10.59	33.48	108	224	P	H
		5864	72.3	-35.98	108.28	62.85	32.33	10.6	33.48	108	224	P	H
		5883.2	68.79	-30.32	99.11	59.29	32.37	10.61	33.48	108	224	P	H
		5949.6	54.64	-13.56	68.2	44.86	32.6	10.67	33.49	108	224	P	H
802.11ac													H
VHT20													H
CH 165	*	5825	110.52	-	-	101.19	32.25	10.56	33.48	241	206	P	V
5825MHz	*	5825	101.85	-	-	92.52	32.25	10.56	33.48	241	206	A	V
		5850.2	55.15	-66.59	121.74	45.74	32.3	10.59	33.48	241	206	P	V
		5865	54.03	-53.97	108	44.58	32.33	10.6	33.48	241	206	P	V
		5901.8	53.78	-31.55	85.33	44.23	32.41	10.63	33.49	241	206	P	V
		5933	52.37	-15.83	68.2	42.67	32.53	10.66	33.49	241	206	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	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)
		11490	46.85	-27.15	74	52.26	39.78	16.21	61.4	100	0	P	H
		17235	55.84	-12.36	68.2	51.73	40.7	20.92	57.51	195	133	P	H
802.11ac													H
VHT20													H
CH 149		11490	46.93	-27.07	74	52.34	39.78	16.21	61.4	100	0	P	V
5745MHz		17235	49.93	-18.27	68.2	45.82	40.7	20.92	57.51	100	0	P	V
													V
													V
		11570	45.78	-28.22	74	51.32	39.66	16.3	61.5	100	0	P	H
		17355	49.14	-19.06	68.2	43.85	41.4	21	57.11	100	0	P	H
802.11ac													H
VHT20													H
CH 157		11570	46.15	-27.85	74	51.69	39.66	16.3	61.5	100	0	P	V
5785MHz		17355	49.16	-19.04	68.2	43.87	41.4	21	57.11	100	0	P	V
													V
													V
		11650	46.85	-27.15	74	52.71	39.35	16.38	61.59	100	0	P	H
		17475	49	-19.2	68.2	42.45	42.17	21.09	56.71	100	0	P	H
802.11ac													H
VHT20													H
CH 165		11650	45.22	-28.78	74	51.08	39.35	16.38	61.59	100	0	P	V
5825MHz		17475	49.53	-18.67	68.2	42.98	42.17	21.09	56.71	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)

WIFI	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)
		5638.2	55.39	-12.81	68.2	46.67	31.72	10.45	33.45	106	237	P	H
		5693	65.49	-34.55	100.04	56.51	31.96	10.48	33.46	106	237	P	H
		5718.6	76.39	-34.02	110.41	67.31	32.04	10.5	33.46	106	237	P	H
		5725	79.51	-42.69	122.2	70.42	32.05	10.5	33.46	106	237	P	H
	*	5755	117.88	-	-	108.72	32.11	10.52	33.47	106	237	P	H
	*	5755	108.49	-	-	99.33	32.11	10.52	33.47	106	237	A	H
		5851.8	59.29	-58.81	118.1	49.88	32.3	10.59	33.48	106	237	P	H
		5856.2	61.7	-48.76	110.46	52.28	32.31	10.59	33.48	106	237	P	H
		5877.6	57.82	-45.45	103.27	48.33	32.36	10.61	33.48	106	237	P	H
		5942.4	55.97	-12.23	68.2	46.22	32.57	10.67	33.49	106	237	P	H
802.11ac													H
VHT40													H
CH 151		5607	50.8	-17.4	68.2	42.02	31.79	10.43	33.44	259	188	P	V
5755MHz		5697.4	55.79	-47.49	103.28	46.79	31.98	10.48	33.46	259	188	P	V
		5719.8	70.32	-40.42	110.74	61.24	32.04	10.5	33.46	259	188	P	V
		5725	72.73	-49.47	122.2	63.64	32.05	10.5	33.46	259	188	P	V
	*	5755	110.02	-	-	100.86	32.11	10.52	33.47	259	188	P	V
	*	5755	100.36	-	-	91.2	32.11	10.52	33.47	259	188	A	V
		5854.6	51.83	-59.88	111.71	42.41	32.31	10.59	33.48	259	188	P	V
		5855.2	53.4	-57.34	110.74	43.98	32.31	10.59	33.48	259	188	P	V
		5886	51.88	-45.15	97.03	42.37	32.37	10.62	33.48	259	188	P	V
		5942.2	51.14	-17.06	68.2	41.39	32.57	10.67	33.49	259	188	P	V
													V
													V

WIFI	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)
		5638.8	53.5	-14.7	68.2	44.78	31.72	10.45	33.45	100	223	P	H
		5693.8	54.66	-45.97	100.63	45.68	31.96	10.48	33.46	100	223	P	H
		5717.4	58.88	-51.19	110.07	49.82	32.03	10.49	33.46	100	223	P	H
		5721.2	59.81	-53.73	113.54	50.73	32.04	10.5	33.46	100	223	P	H
	*	5795	117.48	-	-	108.22	32.19	10.54	33.47	100	223	P	H
	*	5795	108.58	-	-	99.32	32.19	10.54	33.47	100	223	A	H
		5852.4	61.61	-55.12	116.73	52.2	32.3	10.59	33.48	100	223	P	H
		5861	61.2	-47.92	109.12	51.77	32.32	10.59	33.48	100	223	P	H
		5875.8	59.78	-44.83	104.61	50.3	32.35	10.61	33.48	100	223	P	H
		5933	54.61	-13.59	68.2	44.91	32.53	10.66	33.49	100	223	P	H
802.11ac													H
VHT40													H
CH 159		5642.2	52	-16.2	68.2	43.28	31.72	10.45	33.45	270	186	P	V
5795MHz		5679.6	52.61	-37.53	90.14	43.72	31.88	10.47	33.46	270	186	P	V
		5715.8	54.42	-55.21	109.63	45.36	32.03	10.49	33.46	270	186	P	V
		5721	55.62	-57.46	113.08	46.54	32.04	10.5	33.46	270	186	P	V
	*	5795	109.51	-	-	100.25	32.19	10.54	33.47	270	186	P	V
	*	5795	101.13	-	-	91.87	32.19	10.54	33.47	270	186	A	V
		5851	58.53	-61.39	119.92	49.12	32.3	10.59	33.48	270	186	P	V
		5857.4	59.72	-50.41	110.13	50.3	32.31	10.59	33.48	270	186	P	V
		5879.4	53.3	-48.63	101.93	43.81	32.36	10.61	33.48	270	186	P	V
		5928	53.11	-15.09	68.2	43.43	32.51	10.66	33.49	270	186	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)

WIFI	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)
		11510	47.92	-26.08	74	53.3	39.78	16.24	61.4	100	0	P	H
		17265	49.17	-19.03	68.2	44.82	40.8	20.94	57.39	100	0	P	H
802.11ac													H
VHT40													H
CH 151		11510	47.25	-26.75	74	52.63	39.78	16.24	61.4	100	0	P	V
5755MHz		17265	48.66	-19.54	68.2	44.31	40.8	20.94	57.39	100	0	P	V
													V
													V
		11590	46.67	-27.33	74	52.25	39.62	16.32	61.52	100	0	P	H
		17385	50.28	-17.92	68.2	44.58	41.67	21.03	57	100	0	P	H
802.11ac													H
VHT40													H
CH 159		11590	46.8	-27.2	74	52.38	39.62	16.32	61.52	100	0	P	V
5795MHz		17385	49.37	-18.83	68.2	43.67	41.67	21.03	57	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	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)
		5648.8	60.51	-7.69	68.2	51.8	31.7	10.46	33.45	100	240	P	H
		5700	78.66	-26.54	105.2	69.63	32	10.49	33.46	100	240	P	H
		5719.6	87.03	-23.66	110.69	77.95	32.04	10.5	33.46	100	240	P	H
		5725	81.94	-40.26	122.2	72.85	32.05	10.5	33.46	100	240	P	H
	*	5775	113.76	-	-	104.55	32.15	10.53	33.47	100	240	P	H
	*	5775	105.08	-	-	95.87	32.15	10.53	33.47	100	240	A	H
		5852.6	80.31	-35.96	116.27	70.89	32.31	10.59	33.48	100	240	P	H
		5856.8	80.15	-30.15	110.3	70.73	32.31	10.59	33.48	100	240	P	H
		5876.8	72.95	-30.91	103.86	63.47	32.35	10.61	33.48	100	240	P	H
		5930.2	60.86	-7.34	68.2	51.17	32.52	10.66	33.49	100	240	P	H
802.11ac													H
VHT80													H
CH 155		5646.6	52.83	-15.37	68.2	44.11	31.71	10.46	33.45	245	170	P	V
5775MHz		5694.8	64.07	-37.3	101.37	55.08	31.97	10.48	33.46	245	170	P	V
		5719	71.67	-38.85	110.52	62.59	32.04	10.5	33.46	245	170	P	V
		5720.4	71.18	-40.53	111.71	62.1	32.04	10.5	33.46	245	170	P	V
	*	5775	103.24	-	-	94.03	32.15	10.53	33.47	245	170	P	V
	*	5775	94.6	-	-	85.39	32.15	10.53	33.47	245	170	A	V
		5854.8	69.52	-41.74	111.26	60.1	32.31	10.59	33.48	245	170	P	V
		5855	68.55	-42.25	110.8	59.13	32.31	10.59	33.48	245	170	P	V
		5875	63.58	-41.62	105.2	54.1	32.35	10.61	33.48	245	170	P	V
		5927.2	51.15	-17.05	68.2	41.48	32.51	10.65	33.49	245	170	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	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)
		11550	46	-28	74	51.49	39.7	16.28	61.47	100	0	P	H
		17325	48.67	-19.53	68.2	43.79	41.12	20.98	57.22	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	46.02	-27.98	74	51.51	39.7	16.28	61.47	100	0	P	V
5775MHz		17325	49.01	-19.19	68.2	44.13	41.12	20.98	57.22	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		79.47	27.55	-12.45	40	43.51	13.2	1.29	30.45	-	-	P	H
		104.69	29.15	-14.35	43.5	41.68	16.4	1.49	30.42	-	-	P	H
		194.9	33.62	-9.88	43.5	47.18	14.83	1.94	30.33	100	0	P	H
		729.37	34.19	-11.81	46	32.31	27.36	3.97	29.45	-	-	P	H
		849.65	33.47	-12.53	46	29.49	28.87	4.33	29.22	-	-	P	H
		956.35	35.17	-10.83	46	28.7	30.81	4.64	28.98	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		36.79	32.3	-7.7	40	40.81	20.89	0.88	30.28	100	0	P	V
LF		155.13	31.97	-11.53	43.5	43.95	16.68	1.71	30.37	-	-	P	V
		194.9	32.45	-11.05	43.5	46.01	14.83	1.94	30.33	-	-	P	V
		729.37	32.23	-13.77	46	30.35	27.36	3.97	29.45	-	-	P	V
		870.02	33.12	-12.88	46	28.83	29.07	4.4	29.18	-	-	P	V
		957.32	34.96	-11.04	46	28.45	30.84	4.64	28.97	-	-	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	**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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. 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".

<For Antenna 2>

<Chain 1+2>

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5602.2	50.97	-17.23	68.2	42.18	31.8	10.43	33.44	400	228	P	H
		5697.8	51.13	-52.45	103.58	42.12	31.99	10.48	33.46	400	228	P	H
		5713.6	52.71	-56.3	109.01	43.65	32.03	10.49	33.46	400	228	P	H
		5725	56.23	-65.97	122.2	47.14	32.05	10.5	33.46	400	228	P	H
	*	5745	101.32	-	-	92.18	32.09	10.51	33.46	400	228	P	H
	*	5745	92.53	-	-	83.39	32.09	10.51	33.46	400	228	A	H
802.11ac													H
VHT20													H
CH 149		5618.8	51.19	-17.01	68.2	42.44	31.76	10.44	33.45	279	190	P	V
5745MHz		5692.8	54.38	-45.51	99.89	45.4	31.96	10.48	33.46	279	190	P	V
		5720	55.83	-54.97	110.8	46.75	32.04	10.5	33.46	279	190	P	V
		5724.8	64.24	-57.5	121.74	55.15	32.05	10.5	33.46	279	190	P	V
	*	5745	112.66	-	-	103.52	32.09	10.51	33.46	279	190	P	V
	*	5745	104.06	-	-	94.92	32.09	10.51	33.46	279	190	A	V
													V
													V

WIFI	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)
		5603.2	51.55	-16.65	68.2	42.77	31.79	10.43	33.44	399	115	P	H
		5697.4	52.48	-50.8	103.28	43.48	31.98	10.48	33.46	399	115	P	H
		5716	51.67	-58.01	109.68	42.61	32.03	10.49	33.46	399	115	P	H
		5721.8	52.31	-62.59	114.9	43.23	32.04	10.5	33.46	399	115	P	H
	*	5785	102.47	-	-	93.24	32.17	10.53	33.47	399	115	P	H
	*	5785	92.98	-	-	83.75	32.17	10.53	33.47	399	115	A	H
		5851	51.77	-68.15	119.92	42.36	32.3	10.59	33.48	399	115	P	H
		5860	51.75	-57.65	109.4	42.32	32.32	10.59	33.48	399	115	P	H
		5903.6	53.01	-30.99	84	43.46	32.41	10.63	33.49	399	115	P	H
		5925	51.91	-16.29	68.2	42.25	32.5	10.65	33.49	399	115	P	H
802.11ac													H
VHT20													H
CH 157		5643.2	51.33	-16.87	68.2	42.62	31.71	10.45	33.45	297	192	P	V
5785MHz		5697.6	53.75	-49.68	103.43	44.74	31.99	10.48	33.46	297	192	P	V
		5716.8	58.93	-50.98	109.91	49.87	32.03	10.49	33.46	297	192	P	V
		5723.4	59.03	-59.52	118.55	49.94	32.05	10.5	33.46	297	192	P	V
	*	5785	112.41	-	-	103.18	32.17	10.53	33.47	297	192	P	V
	*	5785	103.74	-	-	94.51	32.17	10.53	33.47	297	192	A	V
		5850.8	60.05	-60.33	120.38	50.64	32.3	10.59	33.48	297	192	P	V
		5855.8	59.49	-51.09	110.58	50.07	32.31	10.59	33.48	297	192	P	V
		5880	56.57	-44.92	101.49	47.08	32.36	10.61	33.48	297	192	P	V
		5926.4	54.2	-14	68.2	44.53	32.51	10.65	33.49	297	192	P	V
													V
													V

WIFI	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)
	*	5825	100.42	-	-	91.09	32.25	10.56	33.48	400	118	P	H
	*	5825	91.9	-	-	82.57	32.25	10.56	33.48	400	118	A	H
		5851.8	55.46	-62.64	118.1	46.05	32.3	10.59	33.48	400	118	P	H
		5857	55.49	-54.75	110.24	46.07	32.31	10.59	33.48	400	118	P	H
		5875	53.82	-51.38	105.2	44.34	32.35	10.61	33.48	400	118	P	H
		5926.2	53.97	-14.23	68.2	44.31	32.5	10.65	33.49	400	118	P	H
802.11ac													H
VHT20													H
CH 165	*	5825	112.23	-	-	102.9	32.25	10.56	33.48	304	191	P	V
5825MHz	*	5825	103.32	-	-	93.99	32.25	10.56	33.48	304	191	A	V
		5850.8	58.88	-61.5	120.38	49.47	32.3	10.59	33.48	304	191	P	V
		5855	55.54	-55.26	110.8	46.12	32.31	10.59	33.48	304	191	P	V
		5880.2	54.98	-46.36	101.34	45.49	32.36	10.61	33.48	304	191	P	V
		5949.4	52.55	-15.65	68.2	42.77	32.6	10.67	33.49	304	191	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	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)
		11490	44.45	-29.55	74	49.86	39.78	16.21	61.4	100	0	P	H
		17235	47.24	-20.96	68.2	43.13	40.7	20.92	57.51	100	0	P	H
802.11ac													H
VHT20													H
CH 149		11490	44.18	-29.82	74	49.59	39.78	16.21	61.4	100	0	P	V
5745MHz		17235	47.63	-20.57	68.2	43.52	40.7	20.92	57.51	100	0	P	V
													V
													V
		11570	44.98	-29.02	74	50.52	39.66	16.3	61.5	100	0	P	H
		17355	46.85	-21.35	68.2	41.56	41.4	21	57.11	100	0	P	H
802.11ac													H
VHT20													H
CH 157		11570	44.13	-29.87	74	49.67	39.66	16.3	61.5	100	0	P	V
5785MHz		17355	48.11	-20.09	68.2	42.82	41.4	21	57.11	100	0	P	V
													V
													V
		11650	44.04	-29.96	74	49.9	39.35	16.38	61.59	100	0	P	H
		17475	48.05	-20.15	68.2	41.5	42.17	21.09	56.71	100	0	P	H
802.11ac													H
VHT20													H
CH 165		11650	44.35	-29.65	74	50.21	39.35	16.38	61.59	100	0	P	V
5825MHz		17475	48.69	-19.51	68.2	42.14	42.17	21.09	56.71	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)

WIFI	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)
		5645.8	51.69	-16.51	68.2	42.97	31.71	10.46	33.45	396	118	P	H
		5672	52.03	-32.49	84.52	43.18	31.83	10.47	33.45	396	118	P	H
		5717.6	57.9	-52.23	110.13	48.83	32.04	10.49	33.46	396	118	P	H
		5724.8	59.61	-62.13	121.74	50.52	32.05	10.5	33.46	396	118	P	H
	*	5755	99.77	-	-	90.61	32.11	10.52	33.47	396	118	P	H
	*	5755	91.36	-	-	82.2	32.11	10.52	33.47	396	118	A	H
		5854.6	53.05	-58.66	111.71	43.63	32.31	10.59	33.48	396	118	P	H
		5867.8	52.45	-54.76	107.21	42.99	32.34	10.6	33.48	396	118	P	H
		5922	52.96	-17.45	70.41	43.31	32.49	10.65	33.49	396	118	P	H
		5949.8	53.39	-14.81	68.2	43.61	32.6	10.67	33.49	396	118	P	H
802.11ac													H
VHT40													H
CH 151		5635	52.47	-15.73	68.2	43.74	31.73	10.45	33.45	301	189	P	V
5755MHz		5699.8	62.2	-42.85	105.05	53.18	32	10.48	33.46	301	189	P	V
		5719	71.96	-38.56	110.52	62.88	32.04	10.5	33.46	301	189	P	V
		5722.4	72.13	-44.14	116.27	63.05	32.04	10.5	33.46	301	189	P	V
	*	5755	110.42	-	-	101.26	32.11	10.52	33.47	301	189	P	V
	*	5755	101.92	-	-	92.76	32.11	10.52	33.47	301	189	A	V
		5850.4	56.03	-65.26	121.29	46.62	32.3	10.59	33.48	301	189	P	V
		5855.2	54.35	-56.39	110.74	44.93	32.31	10.59	33.48	301	189	P	V
		5878.8	53.44	-48.94	102.38	43.95	32.36	10.61	33.48	301	189	P	V
		5948	53.21	-14.99	68.2	43.44	32.59	10.67	33.49	301	189	P	V
													V
													V

WIFI	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)
		5645.8	51.52	-16.68	68.2	42.8	31.71	10.46	33.45	394	113	P	H
		5684.2	51.75	-41.79	93.54	42.82	31.91	10.48	33.46	394	113	P	H
		5714	52.95	-56.17	109.12	43.89	32.03	10.49	33.46	394	113	P	H
		5721.4	52.15	-61.84	113.99	43.07	32.04	10.5	33.46	394	113	P	H
	*	5795	99.86	-	-	90.6	32.19	10.54	33.47	394	113	P	H
	*	5795	91.32	-	-	82.06	32.19	10.54	33.47	394	113	A	H
		5854.2	52.85	-59.77	112.62	43.43	32.31	10.59	33.48	394	113	P	H
		5873.6	53.15	-52.44	105.59	43.67	32.35	10.61	33.48	394	113	P	H
		5882.6	53.02	-46.54	99.56	43.52	32.37	10.61	33.48	394	113	P	H
		5948.8	52.82	-15.38	68.2	43.04	32.6	10.67	33.49	394	113	P	H
802.11ac													H
VHT40													H
CH 159		5644.4	51.61	-16.59	68.2	42.9	31.71	10.45	33.45	257	155	P	V
5795MHz		5697.6	53.43	-50	103.43	44.42	31.99	10.48	33.46	257	155	P	V
		5710.4	55.32	-52.79	108.11	46.27	32.02	10.49	33.46	257	155	P	V
		5721.4	55.67	-58.32	113.99	46.59	32.04	10.5	33.46	257	155	P	V
	*	5795	110.55	-	-	101.29	32.19	10.54	33.47	257	155	P	V
	*	5795	102.73	-	-	93.47	32.19	10.54	33.47	257	155	A	V
		5851	60.27	-59.65	119.92	50.86	32.3	10.59	33.48	257	155	P	V
		5855.2	56.93	-53.81	110.74	47.51	32.31	10.59	33.48	257	155	P	V
		5887.2	54.98	-41.16	96.14	45.47	32.37	10.62	33.48	257	155	P	V
		5934.6	54.61	-13.59	68.2	44.9	32.54	10.66	33.49	257	155	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)

WIFI	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)
		11510	44.79	-29.21	74	50.17	39.78	16.24	61.4	100	0	P	H
		17265	49.27	-18.93	68.2	44.92	40.8	20.94	57.39	100	0	P	H
802.11ac													H
VHT40													H
CH 151		11510	45.02	-28.98	74	50.4	39.78	16.24	61.4	100	0	P	V
5755MHz		17265	46.22	-21.98	68.2	41.87	40.8	20.94	57.39	100	0	P	V
													V
													V
		11590	44.23	-29.77	74	49.81	39.62	16.32	61.52	100	0	P	H
		17385	47.36	-20.84	68.2	41.66	41.67	21.03	57	100	0	P	H
802.11ac													H
VHT40													H
CH 159		11590	43.42	-30.58	74	49	39.62	16.32	61.52	100	0	P	V
5795MHz		17385	47.92	-20.28	68.2	42.22	41.67	21.03	57	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	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)
		5650	50.98	-17.22	68.2	42.27	31.7	10.46	33.45	397	116	P	H
		5699.8	55.09	-49.96	105.05	46.07	32	10.48	33.46	397	116	P	H
		5719.8	56.24	-54.5	110.74	47.16	32.04	10.5	33.46	397	116	P	H
		5721.8	57.14	-57.76	114.9	48.06	32.04	10.5	33.46	397	116	P	H
	*	5775	95.12	-	-	85.91	32.15	10.53	33.47	397	116	P	H
	*	5775	87.75	-	-	78.54	32.15	10.53	33.47	397	116	A	H
		5851.4	57.32	-61.69	119.01	47.91	32.3	10.59	33.48	397	116	P	H
		5859.6	57.22	-52.29	109.51	47.79	32.32	10.59	33.48	397	116	P	H
		5877.8	53.51	-49.61	103.12	44.02	32.36	10.61	33.48	397	116	P	H
		5936.8	52.03	-16.17	68.2	42.31	32.55	10.66	33.49	397	116	P	H
802.11ac													H
VHT80													H
CH 155		5646.6	53.38	-14.82	68.2	44.66	31.71	10.46	33.45	293	191	P	V
5775MHz		5699	65.34	-39.12	104.46	56.33	31.99	10.48	33.46	293	191	P	V
		5719.2	70.86	-39.72	110.58	61.78	32.04	10.5	33.46	293	191	P	V
		5723	70.06	-47.58	117.64	60.97	32.05	10.5	33.46	293	191	P	V
	*	5775	106.36	-	-	97.15	32.15	10.53	33.47	293	191	P	V
	*	5775	98.1	-	-	88.89	32.15	10.53	33.47	293	191	A	V
		5851.4	70.5	-48.51	119.01	61.09	32.3	10.59	33.48	293	191	P	V
		5856.6	69.31	-41.04	110.35	59.89	32.31	10.59	33.48	293	191	P	V
		5876.4	62.47	-41.69	104.16	52.99	32.35	10.61	33.48	293	191	P	V
		5935	53.17	-15.03	68.2	43.46	32.54	10.66	33.49	293	191	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	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)
		11550	44.54	-29.46	74	50.03	39.7	16.28	61.47	100	0	P	H
		17325	46.46	-21.74	68.2	41.58	41.12	20.98	57.22	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	44.01	-29.99	74	49.5	39.7	16.28	61.47	100	0	P	V
5775MHz		17325	47.6	-20.6	68.2	42.72	41.12	20.98	57.22	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11ac VHT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		71.71	25.36	-14.64	40	42.12	12.48	1.21	30.45	-	-	P	H
		154.16	33.06	-10.44	43.5	44.99	16.73	1.71	30.37	-	-	P	H
		194.9	34.83	-8.67	43.5	48.39	14.83	1.94	30.33	100	0	P	H
		741.98	31.89	-14.11	46	29.44	27.85	4.02	29.42	-	-	P	H
		872.93	33.9	-12.1	46	29.63	29.04	4.41	29.18	-	-	P	H
		947.62	35.35	-10.65	46	29.27	30.48	4.6	29	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT40		51.34	32.92	-7.08	40	48.58	13.77	1.04	30.47	100	0	P	V
LF		154.16	34.32	-9.18	43.5	46.25	16.73	1.71	30.37	-	-	P	V
		194.9	33.94	-9.56	43.5	47.5	14.83	1.94	30.33	-	-	P	V
		786.6	32.21	-13.79	46	29.43	27.95	4.15	29.32	-	-	P	V
		854.5	33.2	-12.8	46	29.13	28.93	4.35	29.21	-	-	P	V
		955.38	35.37	-10.63	46	28.94	30.77	4.64	28.98	-	-	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	**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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. 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".

<For Antenna 4>

<Chain 1+2>

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5645.6	51.49	-16.71	68.2	42.77	31.71	10.46	33.45	222	251	P	H
		5697.6	59.38	-44.05	103.43	50.37	31.99	10.48	33.46	222	251	P	H
		5719.2	63.61	-46.97	110.58	54.53	32.04	10.5	33.46	222	251	P	H
		5724.4	68.95	-51.88	120.83	59.86	32.05	10.5	33.46	222	251	P	H
	*	5745	106.75	-	-	97.61	32.09	10.51	33.46	222	251	P	H
	*	5745	97.2	-	-	88.06	32.09	10.51	33.46	222	251	A	H
802.11ac													H
VHT20													H
CH 149		5649.6	51.73	-16.47	68.2	43.02	31.7	10.46	33.45	200	303	P	V
5745MHz		5694.6	54.43	-46.79	101.22	45.44	31.97	10.48	33.46	200	303	P	V
		5717.8	64.06	-46.12	110.18	54.99	32.04	10.49	33.46	200	303	P	V
		5724	70.3	-49.62	119.92	61.21	32.05	10.5	33.46	200	303	P	V
	*	5745	114.17	-	-	105.03	32.09	10.51	33.46	200	303	P	V
	*	5745	106.7	-	-	97.56	32.09	10.51	33.46	200	303	A	V
													V
													V

WIFI	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)
		5615	51.04	-17.16	68.2	42.28	31.77	10.44	33.45	249	252	P	H
		5689.4	52.47	-44.91	97.38	43.51	31.94	10.48	33.46	249	252	P	H
		5716	52.74	-56.94	109.68	43.68	32.03	10.49	33.46	249	252	P	H
		5722	52.32	-63.04	115.36	43.24	32.04	10.5	33.46	249	252	P	H
	*	5785	108.74	-	-	99.51	32.17	10.53	33.47	249	252	P	H
	*	5785	100.34	-	-	91.11	32.17	10.53	33.47	249	252	A	H
		5850.4	51.46	-69.83	121.29	42.05	32.3	10.59	33.48	249	252	P	H
		5873.4	53.79	-51.86	105.65	44.31	32.35	10.61	33.48	249	252	P	H
		5896.4	52.99	-36.34	89.33	43.46	32.39	10.63	33.49	249	252	P	H
		5948.6	51.16	-17.04	68.2	41.39	32.59	10.67	33.49	249	252	P	H
802.11ac													H
VHT20													H
CH 157		5637.6	51.23	-16.97	68.2	42.51	31.72	10.45	33.45	211	234	P	V
5785MHz		5674.4	53.01	-33.29	86.3	44.14	31.85	10.47	33.45	211	234	P	V
		5713.6	56.47	-52.54	109.01	47.41	32.03	10.49	33.46	211	234	P	V
		5722.4	56.71	-59.56	116.27	47.63	32.04	10.5	33.46	211	234	P	V
	*	5785	116.94	-	-	107.71	32.17	10.53	33.47	211	234	P	V
	*	5785	108.29	-	-	99.06	32.17	10.53	33.47	211	234	A	V
		5850.8	54.02	-66.36	120.38	44.61	32.3	10.59	33.48	211	234	P	V
		5858	54.51	-55.45	109.96	45.08	32.32	10.59	33.48	211	234	P	V
		5884.8	55.43	-42.49	97.92	45.92	32.37	10.62	33.48	211	234	P	V
		5933.2	52.72	-15.48	68.2	43.02	32.53	10.66	33.49	211	234	P	V
													V
													V

WIFI	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)
	*	5825	108.26	-	-	98.93	32.25	10.56	33.48	247	250	P	H
	*	5825	100.41	-	-	91.08	32.25	10.56	33.48	247	250	A	H
		5850.4	54.32	-66.97	121.29	44.91	32.3	10.59	33.48	247	250	P	H
		5861.6	52.04	-56.91	108.95	42.6	32.32	10.6	33.48	247	250	P	H
		5884.4	58.47	-39.75	98.22	48.96	32.37	10.62	33.48	247	250	P	H
		5944.2	51.16	-17.04	68.2	41.4	32.58	10.67	33.49	247	250	P	H
802.11ac													H
VHT20													H
CH 165	*	5825	117.53	-	-	108.2	32.25	10.56	33.48	229	237	P	V
5825MHz	*	5825	108.36	-	-	99.03	32.25	10.56	33.48	229	237	A	V
		5850	62.66	-59.54	122.2	53.25	32.3	10.59	33.48	229	237	P	V
		5867.8	58.31	-48.9	107.21	48.85	32.34	10.6	33.48	229	237	P	V
		5875	57.82	-47.38	105.2	48.34	32.35	10.61	33.48	229	237	P	V
		5926.6	53.36	-14.84	68.2	43.69	32.51	10.65	33.49	229	237	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	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)
		11490	47.13	-26.87	74	52.54	39.78	16.21	61.4	100	0	P	H
		17235	48.65	-19.55	68.2	44.54	40.7	20.92	57.51	100	0	P	H
802.11ac													H
VHT20													H
CH 149		11490	46.21	-27.79	74	51.62	39.78	16.21	61.4	100	0	P	V
5745MHz		17235	49.21	-18.99	68.2	45.1	40.7	20.92	57.51	100	0	P	V
													V
													V
		11570	46.33	-27.67	74	51.87	39.66	16.3	61.5	100	0	P	H
		17355	50.25	-17.95	68.2	44.96	41.4	21	57.11	100	0	P	H
802.11ac													H
VHT20													H
CH 157		11570	47.29	-26.71	74	52.83	39.66	16.3	61.5	100	0	P	V
5785MHz		17355	49.84	-18.36	68.2	44.55	41.4	21	57.11	100	0	P	V
													V
													V
		11650	45.25	-28.75	74	51.11	39.35	16.38	61.59	100	0	P	H
		17475	49.96	-18.24	68.2	43.41	42.17	21.09	56.71	100	0	P	H
802.11ac													H
VHT20													H
CH 165		11650	45.89	-28.11	74	51.75	39.35	16.38	61.59	100	0	P	V
5825MHz		17475	49.99	-18.21	68.2	43.44	42.17	21.09	56.71	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)

WIFI	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)
		5627.2	51.86	-16.34	68.2	43.12	31.75	10.44	33.45	214	251	P	H
		5696	58.38	-43.87	102.25	49.38	31.98	10.48	33.46	214	251	P	H
		5719.8	70.19	-40.55	110.74	61.11	32.04	10.5	33.46	214	251	P	H
		5724.2	70.9	-49.48	120.38	61.81	32.05	10.5	33.46	214	251	P	H
	*	5755	108.07	-	-	98.91	32.11	10.52	33.47	214	251	P	H
	*	5755	98.46	-	-	89.3	32.11	10.52	33.47	214	251	A	H
		5851.6	52.61	-65.94	118.55	43.2	32.3	10.59	33.48	214	251	P	H
		5866.4	52.95	-54.66	107.61	43.5	32.33	10.6	33.48	214	251	P	H
		5918	53.24	-20.12	73.36	43.61	32.47	10.65	33.49	214	251	P	H
		5932.8	53.26	-14.94	68.2	43.56	32.53	10.66	33.49	214	251	P	H
802.11ac													H
VHT40													H
CH 151		5648.2	52	-16.2	68.2	43.29	31.7	10.46	33.45	203	233	P	V
5755MHz		5697.2	58.98	-44.16	103.14	49.98	31.98	10.48	33.46	203	233	P	V
		5718.8	75.19	-35.27	110.46	66.11	32.04	10.5	33.46	203	233	P	V
		5721	76.09	-36.99	113.08	67.01	32.04	10.5	33.46	203	233	P	V
	*	5755	114.21	-	-	105.05	32.11	10.52	33.47	203	233	P	V
	*	5755	106.2	-	-	97.04	32.11	10.52	33.47	203	233	A	V
		5850.4	57.31	-63.98	121.29	47.9	32.3	10.59	33.48	203	233	P	V
		5858.6	58.48	-51.31	109.79	49.05	32.32	10.59	33.48	203	233	P	V
		5875	55.77	-49.43	105.2	46.29	32.35	10.61	33.48	203	233	P	V
		5942	54.27	-13.93	68.2	44.52	32.57	10.67	33.49	203	233	P	V
													V
													V

WIFI	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)
		5634.4	51.9	-16.3	68.2	43.17	31.73	10.45	33.45	237	251	P	H
		5693.6	52.81	-47.67	100.48	43.83	31.96	10.48	33.46	237	251	P	H
		5719.2	53.56	-57.02	110.58	44.48	32.04	10.5	33.46	237	251	P	H
		5724.6	53.19	-68.1	121.29	44.1	32.05	10.5	33.46	237	251	P	H
	*	5795	107.35	-	-	98.09	32.19	10.54	33.47	237	251	P	H
	*	5795	98.62	-	-	89.36	32.19	10.54	33.47	237	251	A	H
		5851.4	54.41	-64.6	119.01	45	32.3	10.59	33.48	237	251	P	H
		5858.4	54.69	-55.16	109.85	45.26	32.32	10.59	33.48	237	251	P	H
		5876.6	52.75	-51.26	104.01	43.27	32.35	10.61	33.48	237	251	P	H
		5940	53.01	-15.19	68.2	43.27	32.56	10.67	33.49	237	251	P	H
802.11ac													H
VHT40													H
CH 159		5637	51.01	-17.19	68.2	42.28	31.73	10.45	33.45	217	234	P	V
5795MHz		5698.8	53.39	-50.93	104.32	44.38	31.99	10.48	33.46	217	234	P	V
		5713.6	57.15	-51.86	109.01	48.09	32.03	10.49	33.46	217	234	P	V
		5722	57.89	-57.47	115.36	48.81	32.04	10.5	33.46	217	234	P	V
	*	5795	114.8	-	-	105.54	32.19	10.54	33.47	217	234	P	V
	*	5795	106.25	-	-	96.99	32.19	10.54	33.47	217	234	A	V
		5851	67.68	-52.24	119.92	58.27	32.3	10.59	33.48	217	234	P	V
		5855.6	66.96	-43.67	110.63	57.54	32.31	10.59	33.48	217	234	P	V
		5880	61.87	-39.62	101.49	52.38	32.36	10.61	33.48	217	234	P	V
		5930	55.6	-12.6	68.2	45.91	32.52	10.66	33.49	217	234	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)

WIFI	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)
		11510	47.39	-26.61	74	52.77	39.78	16.24	61.4	100	0	P	H
		17265	49.07	-19.13	68.2	44.72	40.8	20.94	57.39	100	0	P	H
802.11ac													H
VHT40													H
CH 151		11510	46.83	-27.17	74	52.21	39.78	16.24	61.4	100	0	P	V
5755MHz		17265	48.81	-19.39	68.2	44.46	40.8	20.94	57.39	100	0	P	V
													V
													V
		11590	46.65	-27.35	74	52.23	39.62	16.32	61.52	100	0	P	H
		17385	49.88	-18.32	68.2	44.18	41.67	21.03	57	100	0	P	H
802.11ac													H
VHT40													H
CH 159		11590	46.18	-27.82	74	51.76	39.62	16.32	61.52	100	0	P	V
5795MHz		17385	50.05	-18.15	68.2	44.35	41.67	21.03	57	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	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)
		5629.6	50.51	-17.69	68.2	41.77	31.74	10.45	33.45	297	252	P	H
		5700	60.41	-44.79	105.2	51.38	32	10.49	33.46	297	252	P	H
		5718.8	64.78	-45.68	110.46	55.7	32.04	10.5	33.46	297	252	P	H
		5721	65.21	-47.87	113.08	56.13	32.04	10.5	33.46	297	252	P	H
	*	5775	103.77	-	-	94.56	32.15	10.53	33.47	297	252	P	H
	*	5775	94.84	-	-	85.63	32.15	10.53	33.47	297	252	A	H
		5850	66.18	-56.02	122.2	56.77	32.3	10.59	33.48	297	252	P	H
		5857	65.11	-45.13	110.24	55.69	32.31	10.59	33.48	297	252	P	H
		5876.4	57.83	-46.33	104.16	48.35	32.35	10.61	33.48	297	252	P	H
		5930.6	52.15	-16.05	68.2	42.46	32.52	10.66	33.49	297	252	P	H
802.11ac													H
VHT80													H
CH 155		5643.6	54.39	-13.81	68.2	45.68	31.71	10.45	33.45	213	308	P	V
5775MHz		5698.2	65.43	-38.44	103.87	56.42	31.99	10.48	33.46	213	308	P	V
		5716.8	71.76	-38.15	109.91	62.7	32.03	10.49	33.46	213	308	P	V
		5720.8	70.68	-41.94	112.62	61.6	32.04	10.5	33.46	213	308	P	V
	*	5775	107.57	-	-	98.36	32.15	10.53	33.47	213	308	P	V
	*	5775	100.29	-	-	91.08	32.15	10.53	33.47	213	308	A	V
		5850.8	71.82	-48.56	120.38	62.41	32.3	10.59	33.48	213	308	P	V
		5856	71.54	-38.98	110.52	62.12	32.31	10.59	33.48	213	308	P	V
		5876	63.39	-41.07	104.46	53.91	32.35	10.61	33.48	213	308	P	V
		5928	52.92	-15.28	68.2	43.24	32.51	10.66	33.49	213	308	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	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)
		11550	46.3	-27.7	74	51.79	39.7	16.28	61.47	100	0	P	H
		17325	49.27	-18.93	68.2	44.39	41.12	20.98	57.22	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	47.45	-26.55	74	52.94	39.7	16.28	61.47	100	0	P	V
5775MHz		17325	48.46	-19.74	68.2	43.58	41.12	20.98	57.22	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

WIFI 802.11ac VHT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		79.47	25.83	-14.17	40	41.79	13.2	1.29	30.45	-	-	P	H
		157.07	32.04	-11.46	43.5	44.09	16.59	1.73	30.37	-	-	P	H
		226.91	34.38	-11.62	46	46.87	15.77	2.01	30.27	-	-	P	H
		479.11	30.39	-15.61	46	33.59	23.43	3.19	29.82	-	-	P	H
		717.73	32.94	-13.06	46	31.63	26.85	3.94	29.48	-	-	P	H
		934.04	35.02	-10.98	46	29.6	29.89	4.57	29.04	100	0	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT40		36.79	33.11	-6.89	40	41.62	20.89	0.88	30.28	100	0	P	V
LF		194.9	34.49	-9.01	43.5	48.05	14.83	1.94	30.33	-	-	P	V
		212.36	31.06	-12.44	43.5	44.35	15.03	1.98	30.3	-	-	P	V
		479.11	34.36	-11.64	46	37.56	23.43	3.19	29.82	-	-	P	V
		746.83	33.81	-12.19	46	31.32	27.87	4.03	29.41	-	-	P	V
		953.44	35.29	-10.71	46	28.95	30.7	4.62	28.98	-	-	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	**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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. 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 B. Radiated Spurious Emission Plots

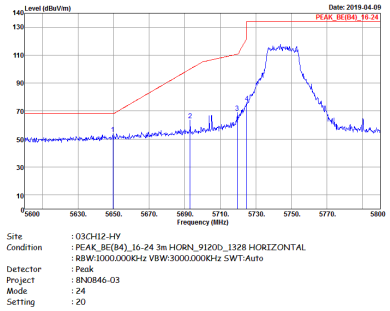
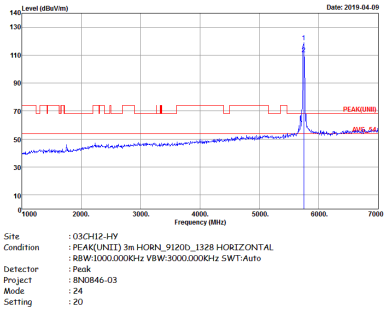
Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	Temperature :	22~24°C
		Relative Humidity :	52~60%

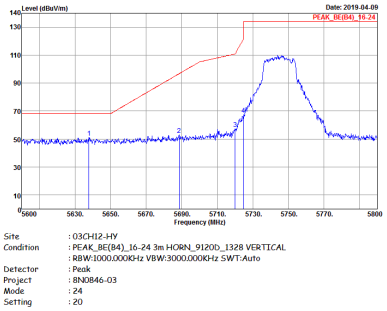
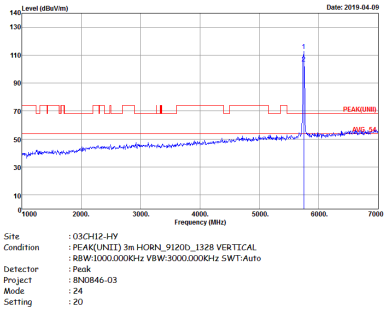
<For Antenna 1>

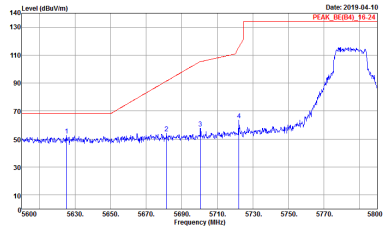
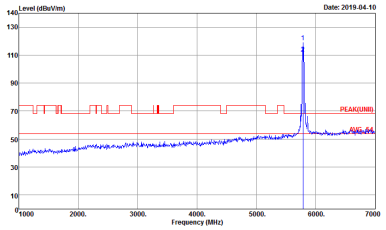
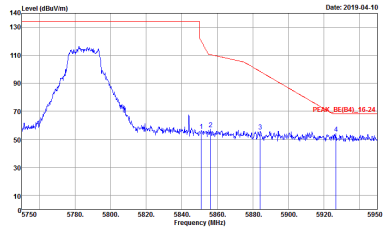
<Chain 1+2>

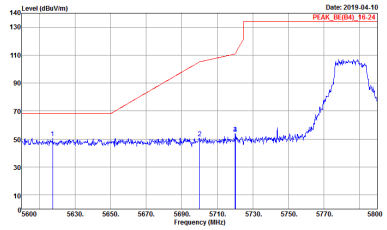
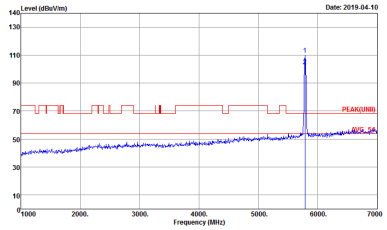
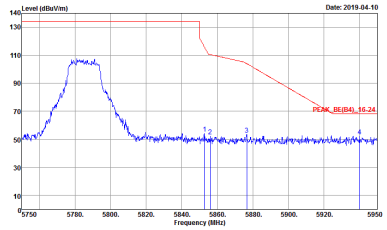
Band 4 - 5725~5850MHz

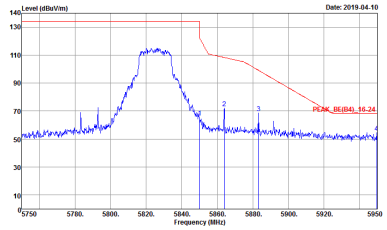
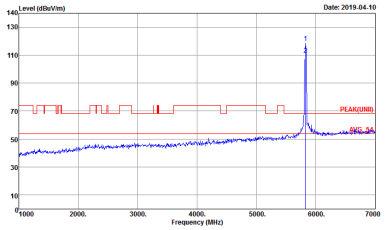
WIFI 802.11ac VHT20 (Band Edge @ 3m)

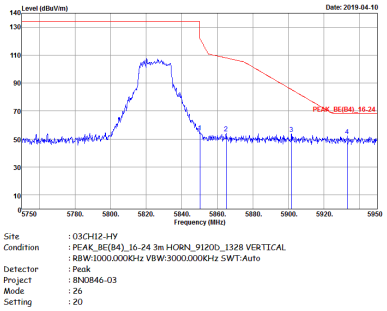
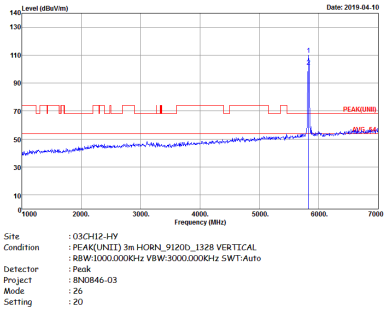
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak Avg.		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20	Left blank

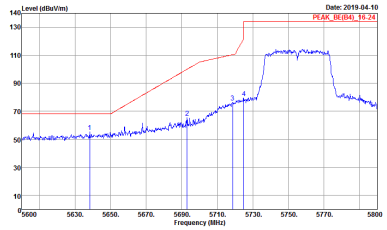
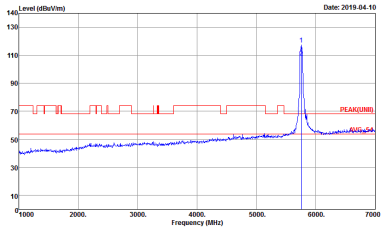
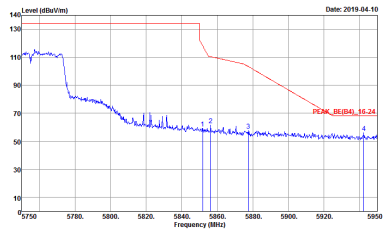
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20	Left blank

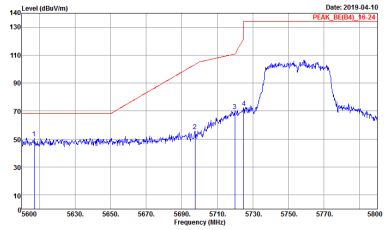
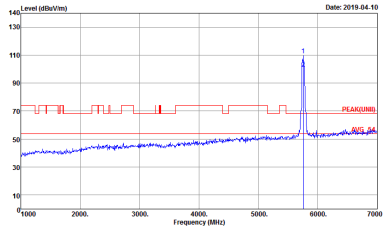
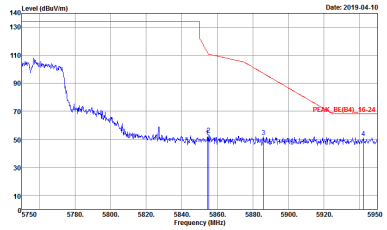
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 26 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 26 Setting : 20

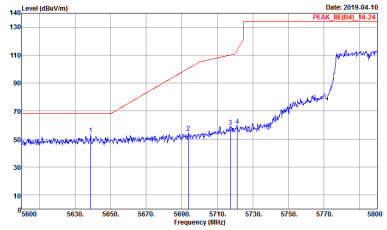
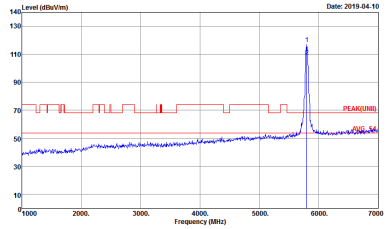
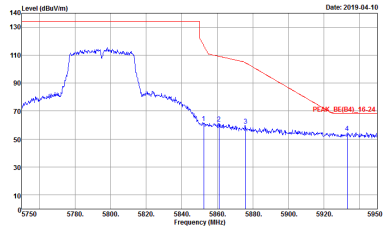
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak Avg.		

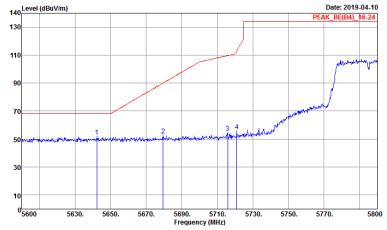
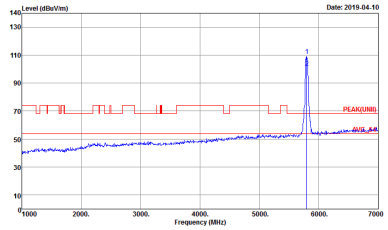
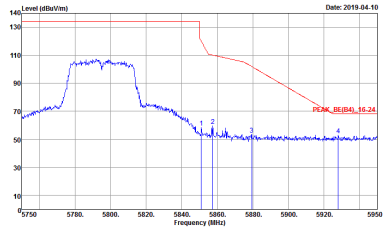
Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20	Left blank

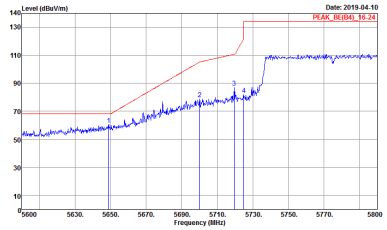
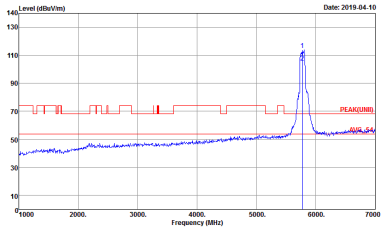
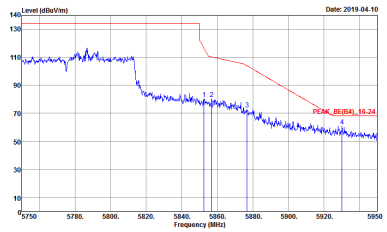
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 27 Setting : 20	Left blank

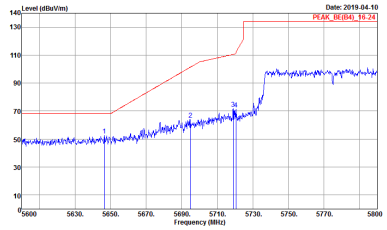
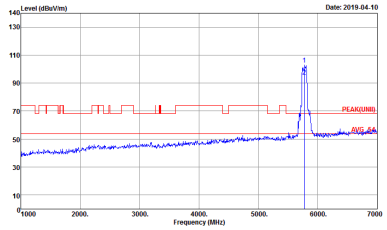
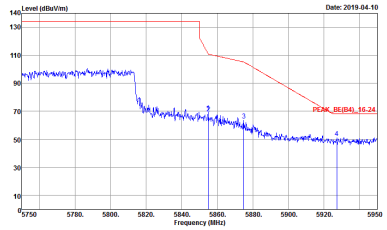
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20	Left blank

Band 4 5725~5850MHz

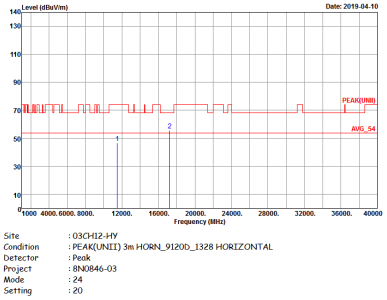
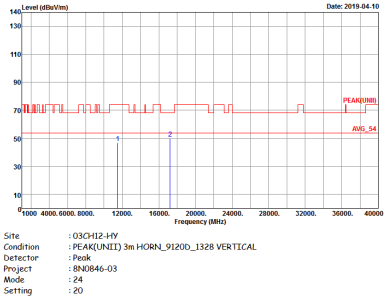
WIFI 802.11ac VHT80 (Band Edge @ 3m)

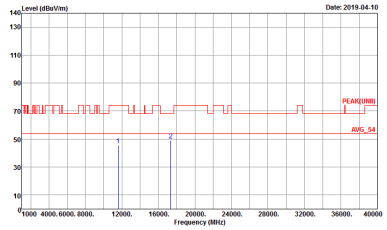
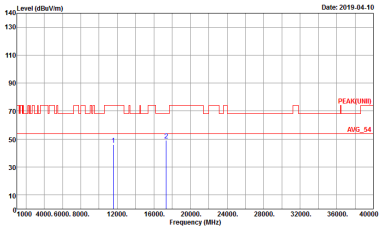
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20	Left blank

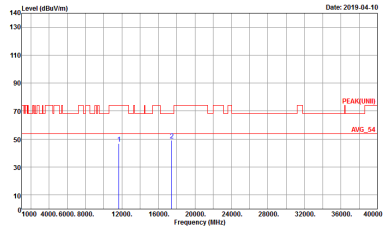
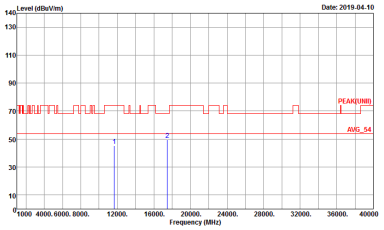
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 29 Setting : 20	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

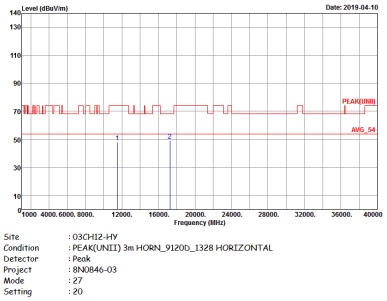
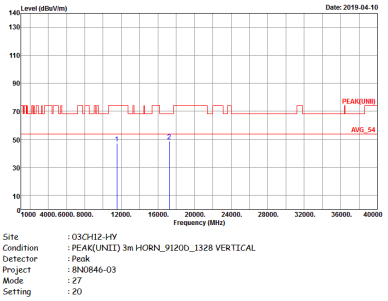
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

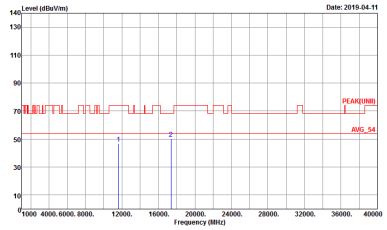
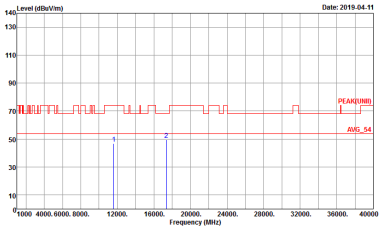
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 25 Setting : 20

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 26 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 26 Setting : 20

Band 4 5725~5850MHz

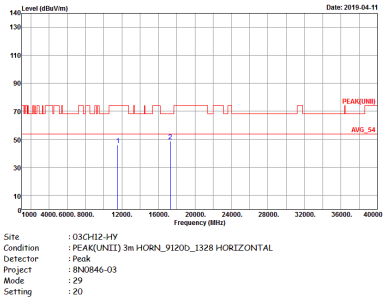
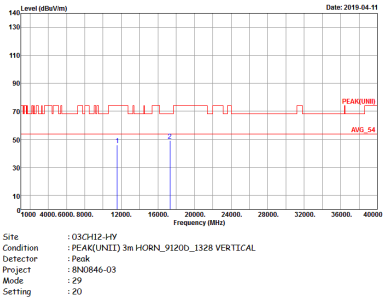
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 28 Setting : 20

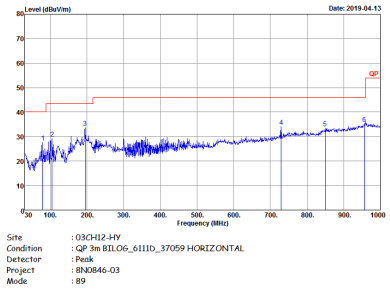
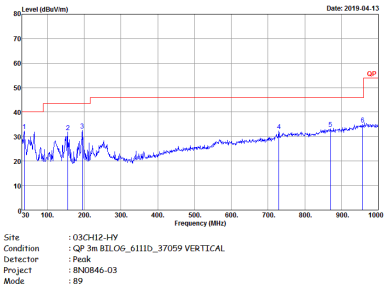
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

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

Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF)

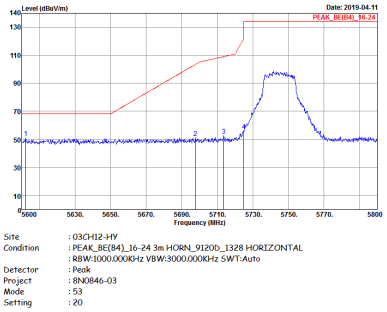
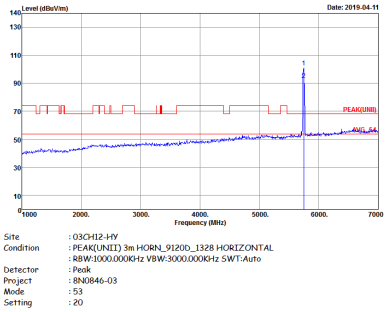
WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT80 LF	
1+2	Horizontal	Vertical
QP / Peak		

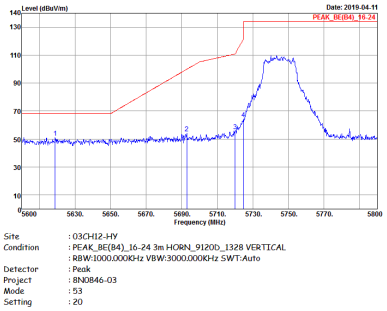
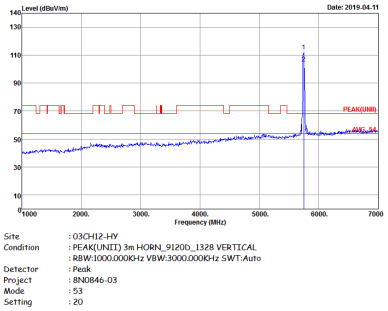
<For Antenna 2>

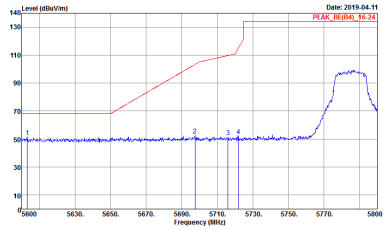
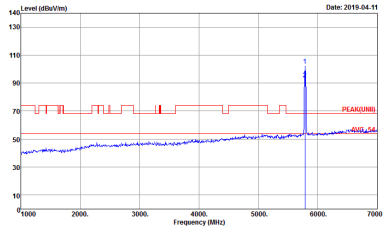
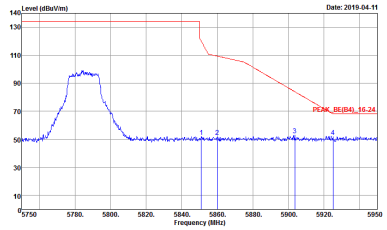
<Chain 1+2>

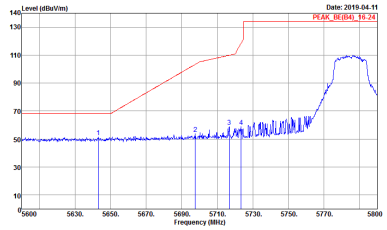
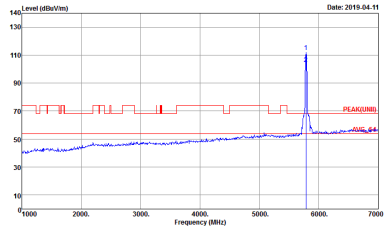
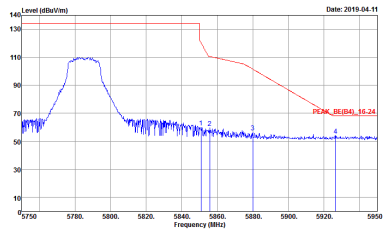
Band 4 - 5725~5850MHz

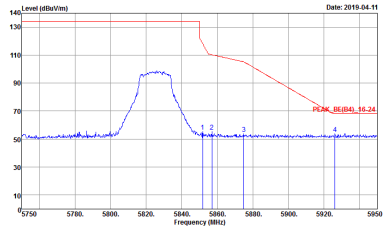
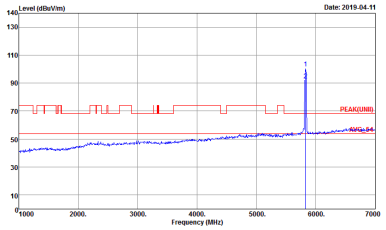
WIFI 802.11ac VHT20 (Band Edge @ 3m)

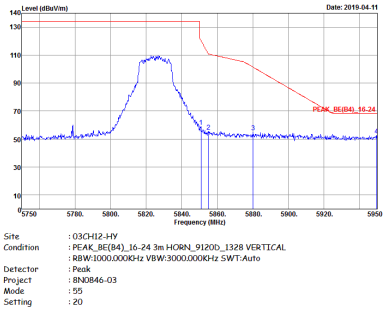
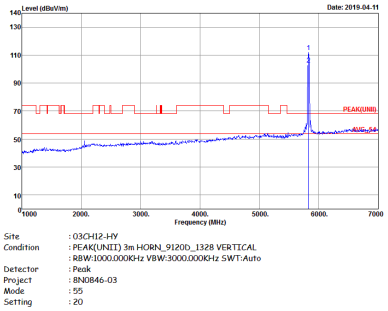
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Vertical	Fundamental
Peak Avg.		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20	Left blank

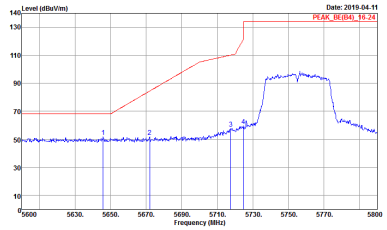
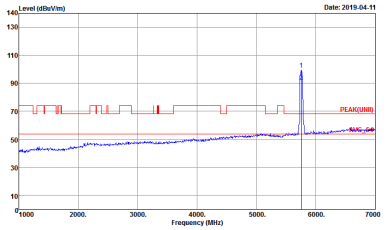
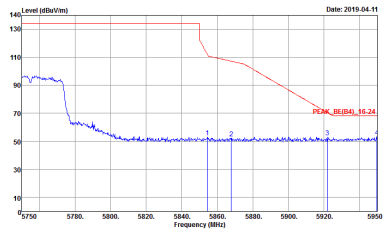
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20	Left blank

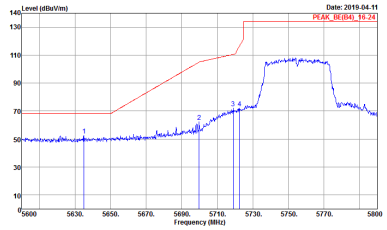
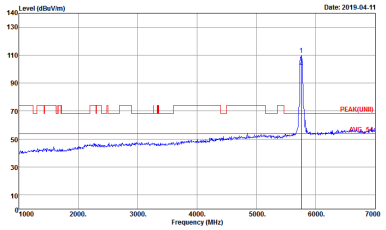
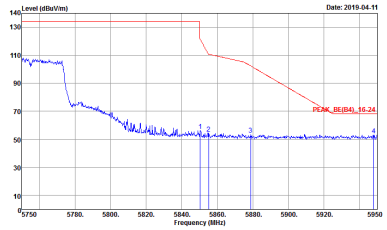
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 55 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 55 Setting : 20

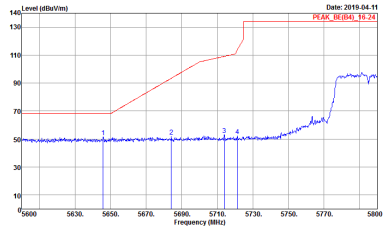
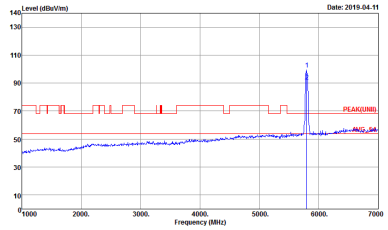
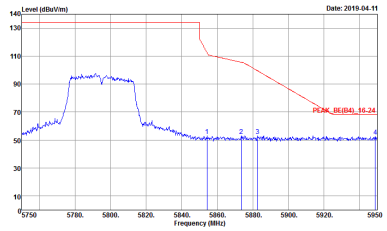
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Vertical	Fundamental
Peak Avg.		

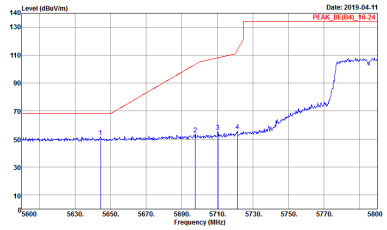
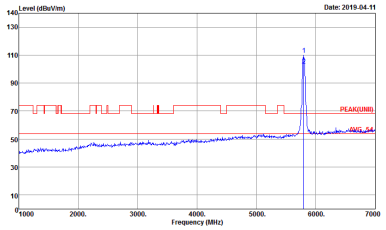
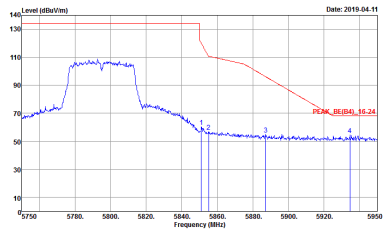
Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20	Left blank

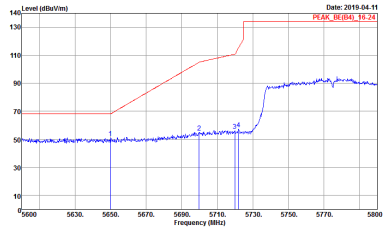
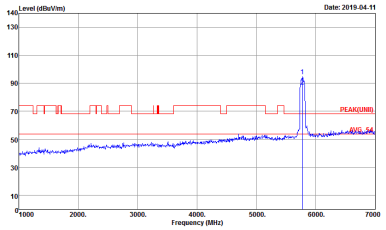
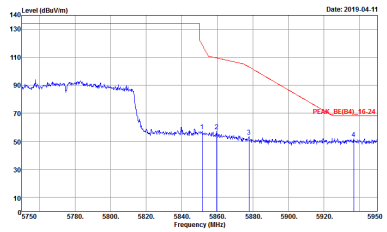
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 56 Setting : 20	Left blank

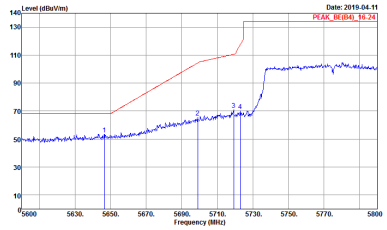
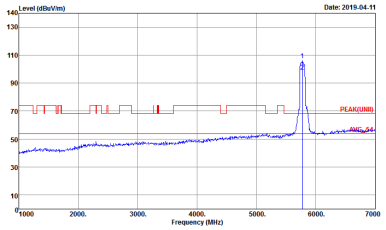
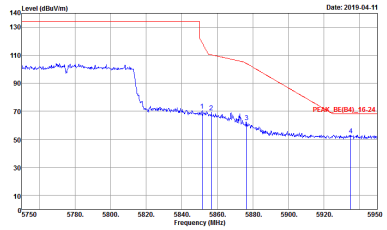
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20	Left blank

Band 4 5725~5850MHz

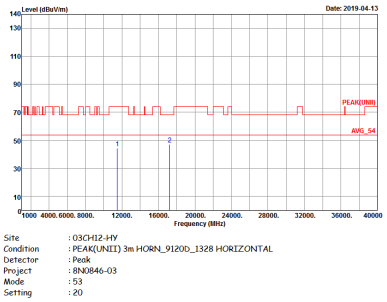
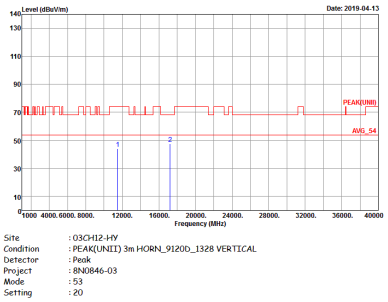
WIFI 802.11ac VHT80 (Band Edge @ 3m)

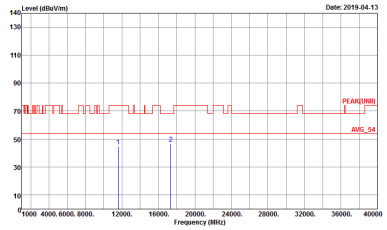
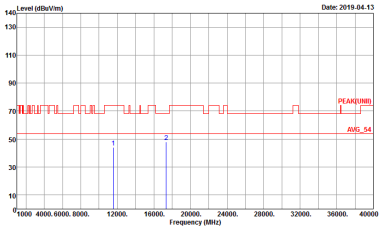
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT80 CH155 5775MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20	Left blank

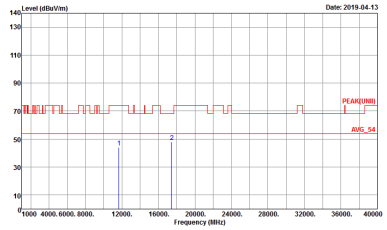
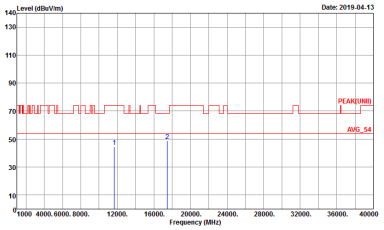
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT80 CH155 5775MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 58 Setting : 20	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

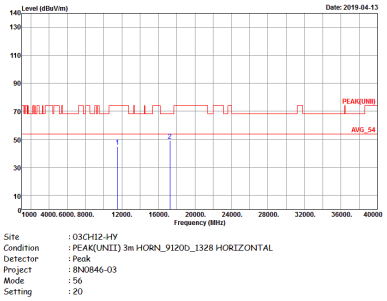
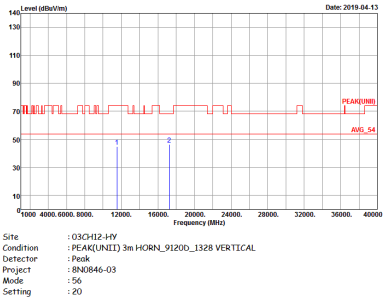
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Horizontal	Vertical
Peak Avg.		

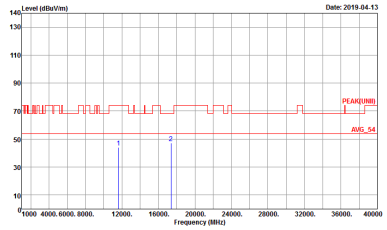
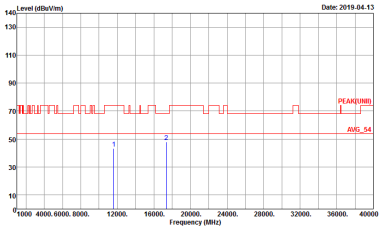
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 54 Setting : 20

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 55 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 55 Setting : 20

Band 4 5725~5850MHz

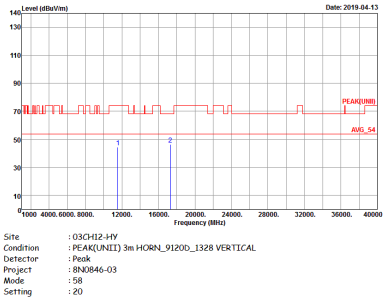
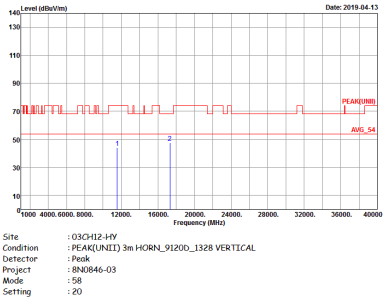
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 57 Setting : 20

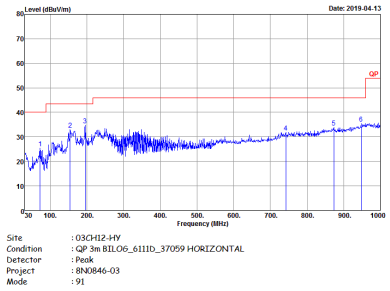
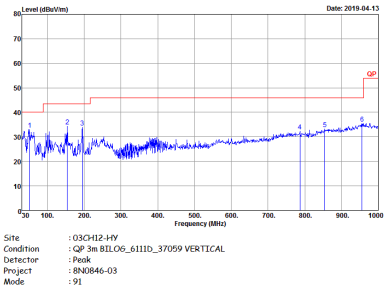
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

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

Emission below 1GHz

5GHz WIFI 802.11ac VHT40 (LF)

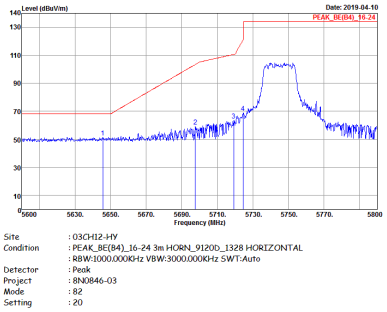
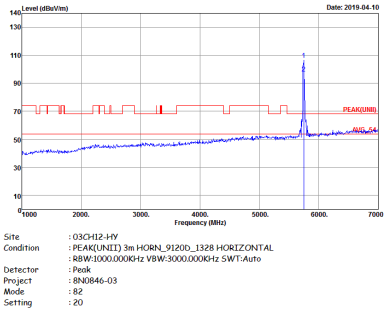
WIFI	5GHz 5725~5850MHz	
	802.11ac VHT40 LF	
	Horizontal	Vertical
QP / Peak		

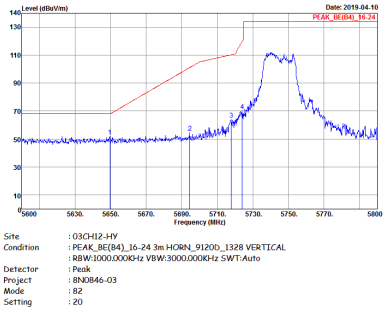
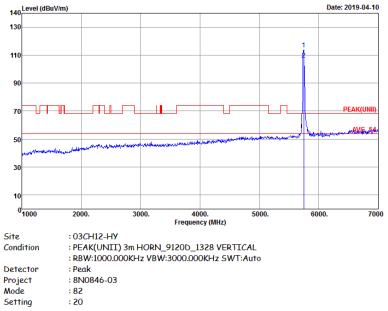
<For Antenna 4>

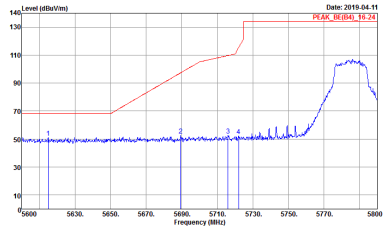
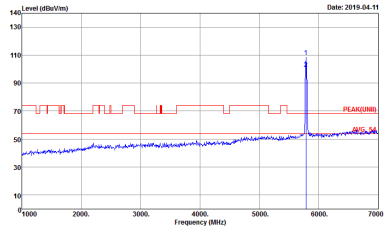
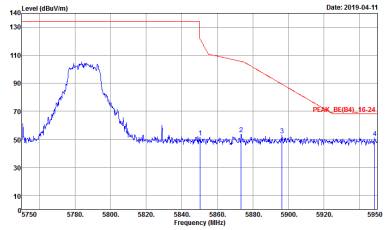
<Chain 1+2>

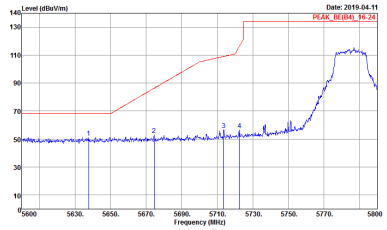
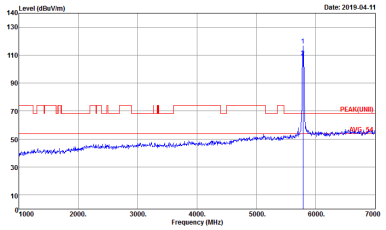
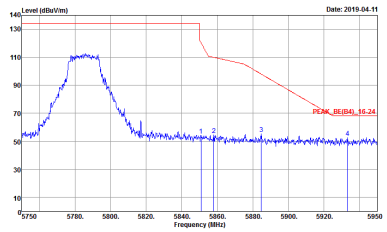
Band 4 - 5725~5850MHz

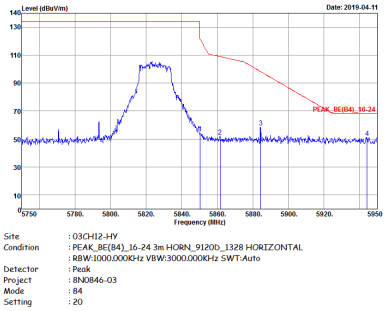
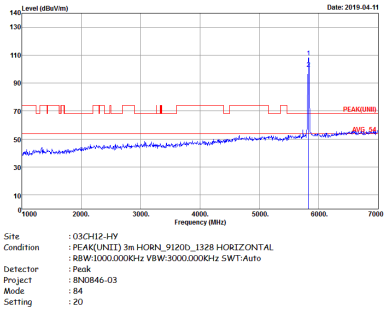
WIFI 802.11ac VHT20 (Band Edge @ 3m)

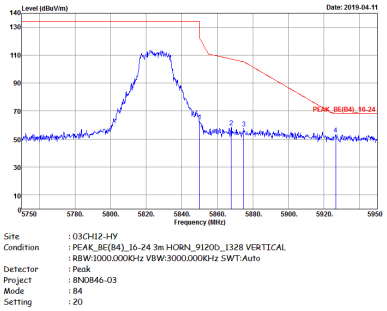
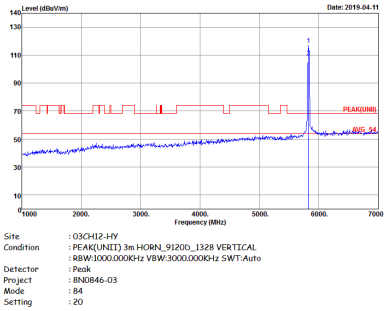
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Vertical	Fundamental
Peak Avg.		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20	Left blank

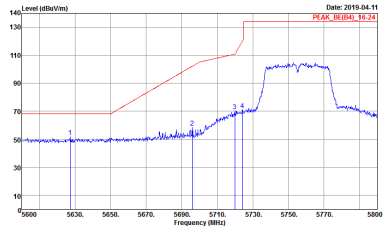
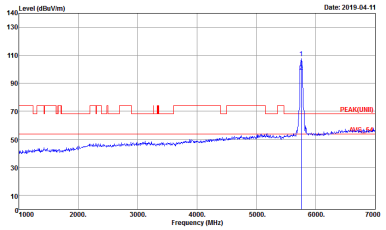
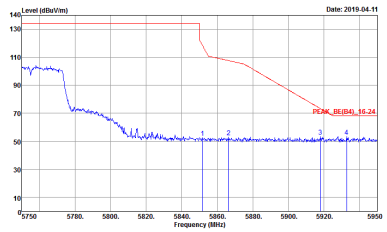
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20	Left blank

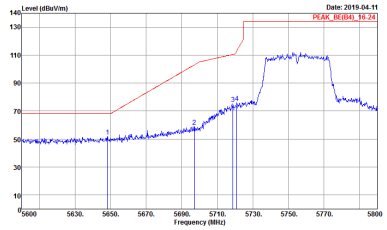
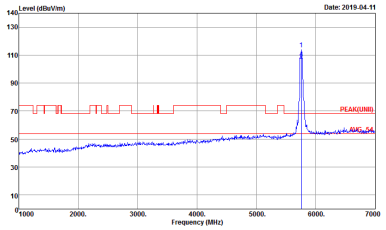
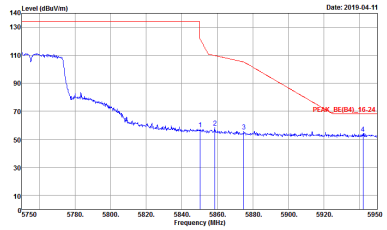
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Horizontal	Fundamental
Peak		

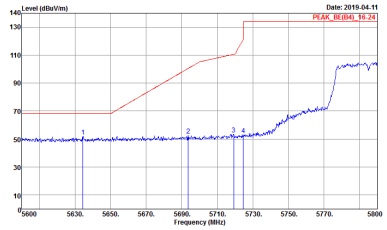
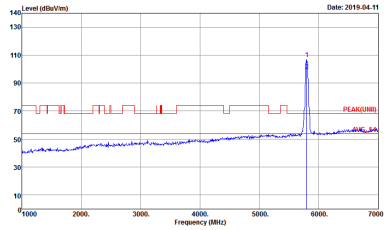
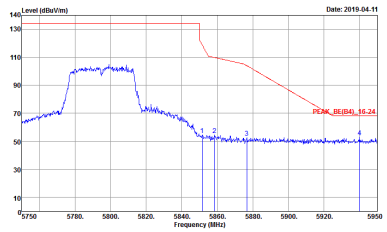
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Vertical	Fundamental
Peak Avg.		

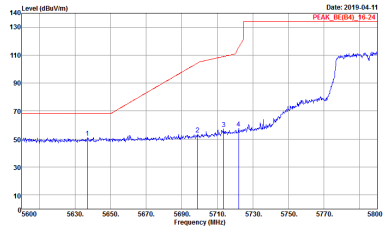
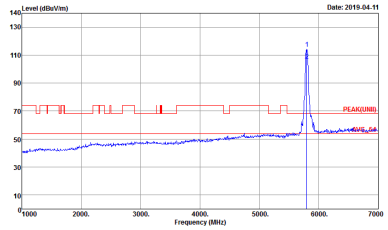
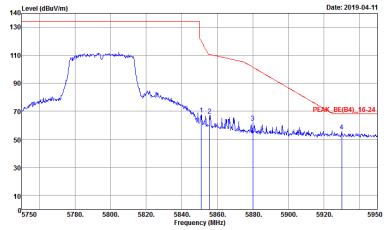
Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20	Left blank

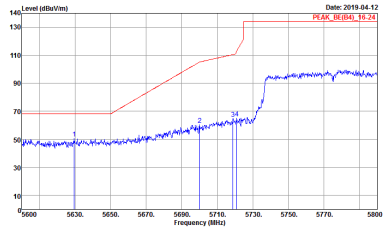
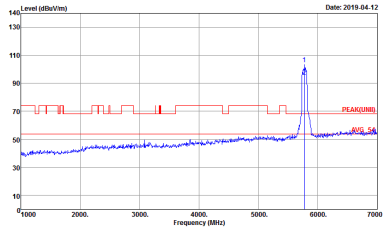
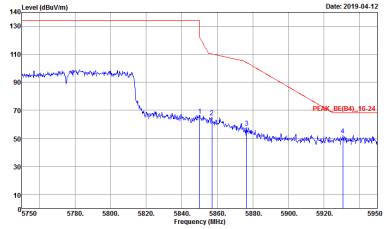
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 85 Setting : 20	Left blank

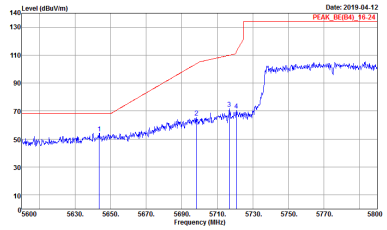
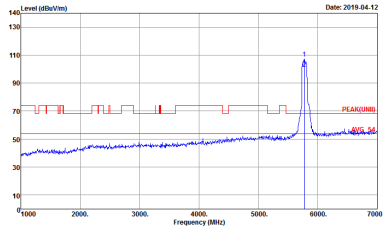
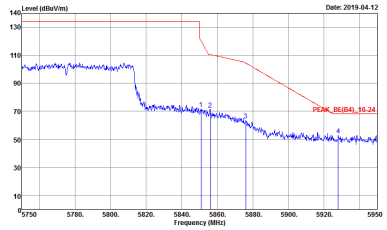
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20	Left blank

Band 4 5725~5850MHz

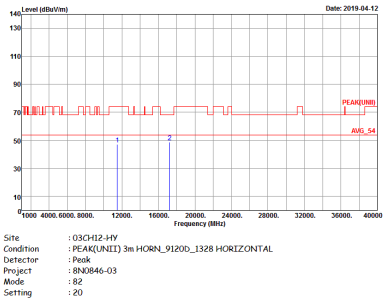
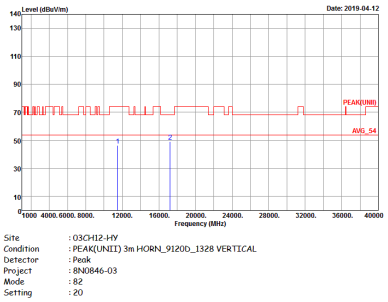
WIFI 802.11ac VHT80 (Band Edge @ 3m)

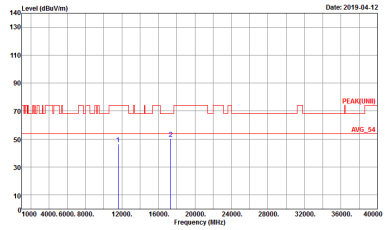
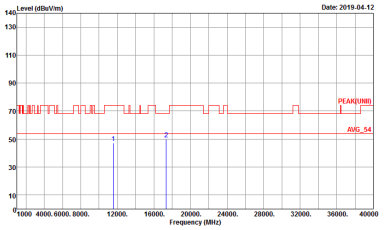
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT80 CH155 5775MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20	Left blank

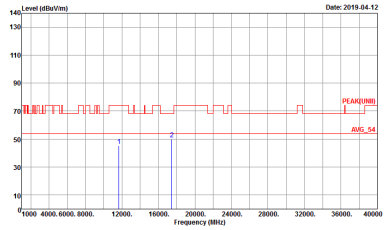
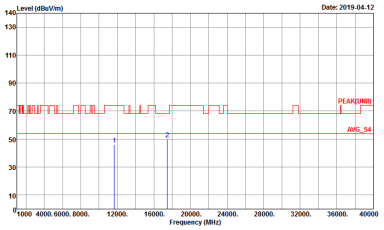
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
	802.11ac VHT80 CH155 5775MHz	
	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 8N0846-03 Mode : 87 Setting : 20	Left blank

Band 4 - 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

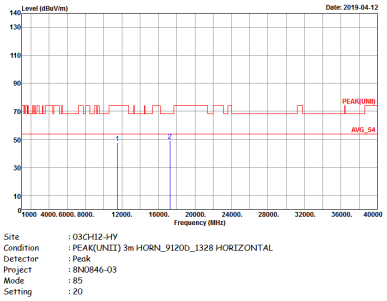
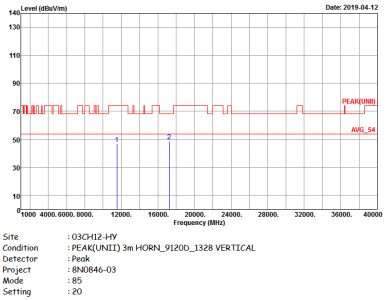
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH149 5745MHz	
	Horizontal	Vertical
Peak Avg.		

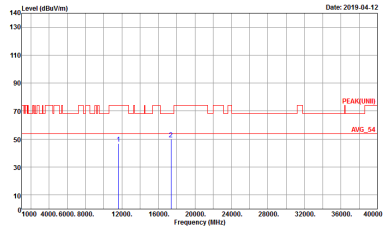
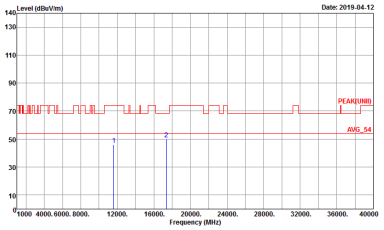
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH157 5785MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 83 Setting : 20

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT20 CH165 5825MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 84 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 84 Setting : 20

Band 4 5725~5850MHz

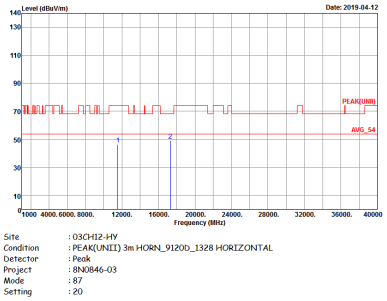
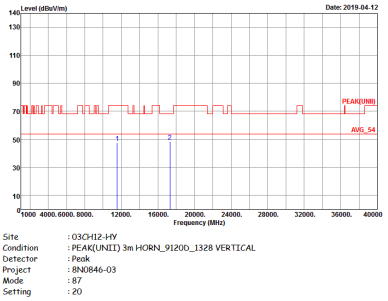
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT40 CH151 5755MHz	
	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
	802.11ac VHT40 CH159 5795MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 8N0846-03 Mode : 86 Setting : 20

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

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

Emission below 1GHz

5GHz WIFI 802.11ac VHT40 (LF)

WIFI	5GHz 5725~5850MHz	
	802.11ac VHT40 LF	
	Horizontal	Vertical
QP / Peak