



FCC RADIO TEST REPORT

FCC ID : PPD-QCNFA344AH
Equipment : 802.11a/b/g/n/ac + BT 4.1 M.2 2230 Type Card
Brand Name : Qualcomm Atheros
Model Name : QCNFA344A
Applicant : Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA 95110
Manufacturer : Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA 95110
Standard : FCC Part 15 Subpart E §15.407

Equipment: Qualcomm Atheros QCNFA344A tested inside of Lenovo Notebook Computer.

The product was received on Jan. 07, 2020 and testing was started from Jan. 28, 2020 and completed on Mar. 18, 2020. 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 partial report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan



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History of this test report

Report No.	Version	Description	Issued Date
FR010908-05E	01	Initial issue of report	Mar. 19, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407 (a)	Maximum Conducted Output Power	Pass	-
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 14.31 dB at 5646.600 MHz
3.3	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

Note: The test plan for power measurement is designated by manufacturer as worst case for Test Lab. measurement. Then, all test cases are performed, based on the worst power measured by Test Lab, and reported accordingly

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: Tina Chuang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	802.11a/b/g/n/ac + BT 4.1 M.2 2230 Type Card
Brand Name	Qualcomm Atheros
Model Name	QCNFA344A
FCC ID	PPD-QCNFA344AH
Sample 1	EUT with Host 1
Sample 2	EUT with Host 2
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer.
2. Equipment: Qualcomm Atheros QCNFA344A tested inside of Lenovo Notebook Computer.

The product was installed into Notebook Computer (Brand Name: Lenovo, Model Name: IdeaPad Flex 5 14ARE05) during test, and the host information was recorded in the following table.

Host Information	
Host 1	Host with AWAN Antenna
Host 2	Host with High-Tek Antenna

Antenna Information													
Antenna 1	Manufacturer			AWAN			Antenna 2	Manufacturer			AWAN		
	Ant. Type			PIFA				Ant. Type			PIFA		
	Part Number			025.901MZ.0001				Part Number			025.901N0.0001		
	Min Freq.	Max Freq.	Peak Gain (dBi)	Min Freq.	Max Freq.	Peak Gain (dBi)		Min Freq.	Max Freq.	Peak Gain (dBi)	Min Freq.	Max Freq.	Peak Gain (dBi)
	2400 MHz	2483.5 MHz	1.23	5470 MHz	5725 MHz	-3.97		2400 MHz	2483.5 MHz	0.73	5470 MHz	5725 MHz	-2.16
	5150 MHz	5250 MHz	-0.12	5725 MHz	5850 MHz	-3.33		5150 MHz	5250 MHz	-0.88	5725 MHz	5850 MHz	-0.77
	5250 MHz	5350 MHz	-1.47					5250 MHz	5350 MHz	-0.9			
Antenna 1	Manufacturer			High-tek			Antenna 2	Manufacturer			High-tek		
	Ant. Type			PIFA				Ant. Type			PIFA		
	Part Number			025.901N3.0001				Part Number			025.901N4.0001		
	Min Freq.	Max Freq.	Peak Gain (dBi)	Min Freq.	Max Freq.	Peak Gain (dBi)		Min Freq.	Max Freq.	Peak Gain (dBi)	Min Freq.	Max Freq.	Peak Gain (dBi)
	2400 MHz	2483.5 MHz	2.95	5470 MHz	5725 MHz	2.03		2400 MHz	2483.5 MHz	1.27	5470 MHz	5725 MHz	-0.76
	5150 MHz	5250 MHz	1.24	5725 MHz	5850 MHz	2.54		5150 MHz	5250 MHz	0.83	5725 MHz	5850 MHz	-0.06
	5250 MHz	5350 MHz	0.5					5250 MHz	5350 MHz	0.83			
Remark: All the tests were performed with “High-tek” as representative.													

Remark: All the tests were performed with "High-tek" as representative.

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification			
Tx/Rx Frequency Range	5745 MHz ~ 5825 MHz		
Maximum Output Power	MIMO < Ant. 1 + 2> 802.11a : 13.77 dBm / 0.0238 W 802.11n HT20 : 13.67 dBm / 0.0233 W 802.11n HT40 : 14.01 dBm / 0.0252 W 802.11ac VHT20: 13.57 dBm / 0.0228 W 802.11ac VHT40: 13.91 dBm / 0.0246 W 802.11ac VHT80: 10.96 dBm / 0.0125 W		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Function Description		Ant. 1	Ant.2
	802.11 a/n/ac MIMO	V	V

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

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. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan
Test Site No.	Sporton Site No.
	TH05-HY

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

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan
Test Site No.	Sporton Site No.
	03CH13-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.
- ♦ ANSI C63.10-2013

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

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

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.

MIMO Mode

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

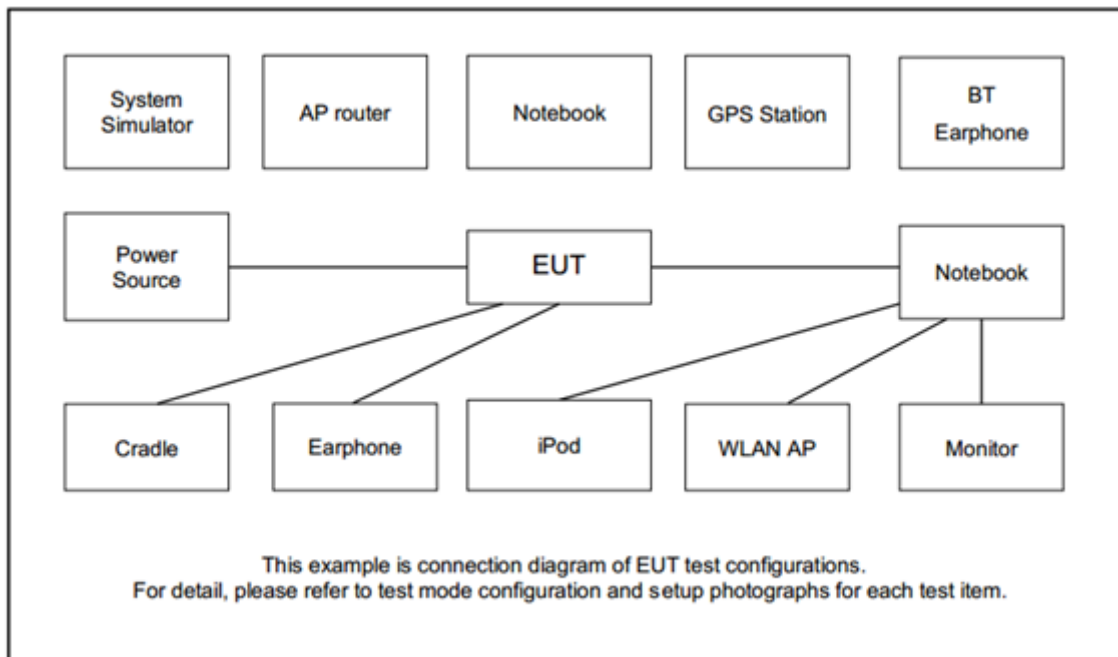
Remark: For Radiated Test Cases, the tests were performed with Adapter 2, Battery 1.

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

Remark:

1. For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.
2. The test plans were by manufacturer definition.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

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

2.5 EUT Operation Test Setup

The RF test items, utility “QCRT4_V3.0 169.0” was installed in EUT which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

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

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

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

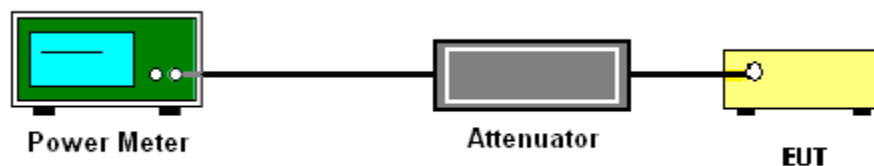
3.1.3 Test Procedures

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

Method PM-G (Measurement using an 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.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

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

3.2.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

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

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

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

EIRP (dBm)	Field Strength at 3m (dB μ V/m)
- 27	68.3

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

- (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit 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.
- (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

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

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

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

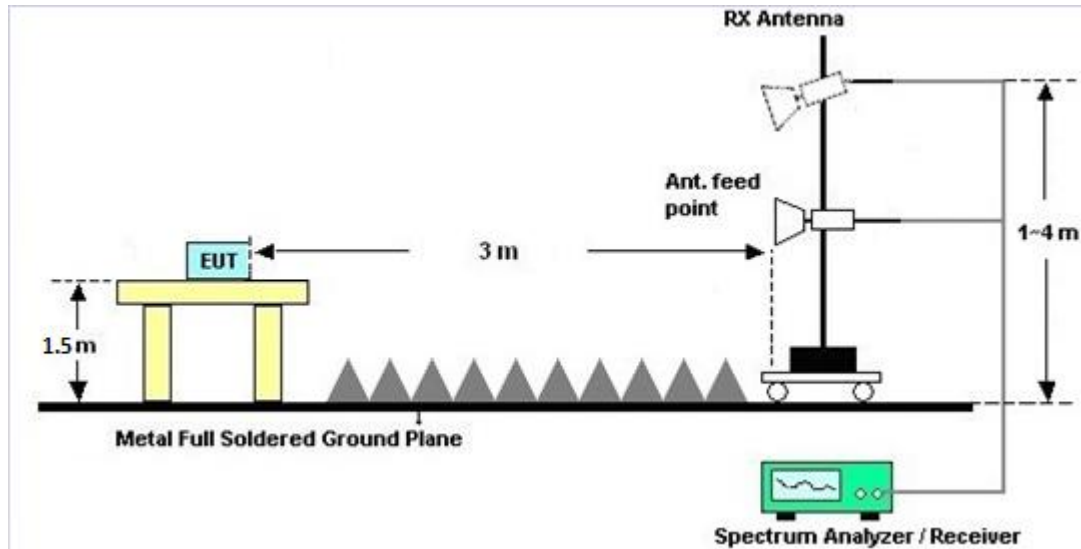
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.



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

3.2.4 Test Setup

For radiated emissions above 1GHz



3.2.5 Test Results of Radiated Emissions

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.

3.2.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

3.2.8 Test Result of Unwanted Radiated Emission

Please refer to Appendix B and C.

3.3 Antenna Requirements

3.3.1 Standard Applicable

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

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

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

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

For power measurements on IEEE 802.11 devices,

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

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

The EUT supports CDD mode.

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

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.

<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	2.54	-0.06	2.54	4.35	0.00	0.00

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H2	41410069	N/A	Jun. 17, 2019	Jan. 28, 2020~ Mar. 15, 2020	Jun. 16, 2020	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054S NO10	10MHz~6GHz	Dec. 23, 2019	Jan. 28, 2020~ Mar. 15, 2020	Dec. 22, 2020	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Jul. 15, 2019	Jan. 28, 2020~ Mar. 15, 2020	Jul. 14, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Aug. 14, 2019	Jan. 28, 2020~ Mar. 15, 2020	Aug. 13, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC120838 2	N/A	Mar. 27, 2019	Jan. 28, 2020~ Mar. 15, 2020	Mar. 26, 2020	Conducted (TH05-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-124 1	1GHz ~ 18GHz	Jul. 02, 2019	Feb. 13, 2020~ Mar. 18, 2020	Jul. 01, 2020	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170 576	18GHz- 40GHz	May 14, 2019	Feb. 13, 2020~ Mar. 18, 2020	May 13, 2020	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY532701 47	1GHz~26.5GHz	Mar. 15, 2019	Feb. 13, 2020~ Feb. 14, 2020	Mar. 14, 2020	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 20, 2019	Feb. 13, 2020~ Mar. 18, 2020	May 19, 2020	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Feb. 13, 2020~ Mar. 18, 2020	Dec. 12, 2020	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 19, 2019	Feb. 13, 2020~ Feb. 14, 2020	Mar. 18, 2020	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY542004 86	10Hz~44GHz	Oct. 28, 2019	Mar. 18, 2020	Oct. 27, 2020	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Feb. 13, 2020~ Mar. 18, 2020	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1m~4m	N/A	Feb. 13, 2020~ Mar. 18, 2020	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Feb. 13, 2020~ Mar. 18, 2020	N/A	Radiation (03CH13-HY)
Software	AUDIX	E3 6.2009-8-24c	RK-001124	N/A	N/A	Feb. 13, 2020~ Mar. 18, 2020	N/A	Radiation (03CH13-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000 -40ST	SN5	6.75GHz High Pass Filter	Mar. 13, 2019	Feb. 13, 2020~ Feb. 14, 2020	Mar. 12, 2020	Radiation (03CH13-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000 -40SS	SN3	6.75GHz High Pass Filter	Sep. 16, 2019	Mar. 18, 2020	Sep. 15, 2020	Radiation (03CH13-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.5
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Rebecca Li	Temperature:	21~25	°C
Test Date:	2020/1/28~2020/03/15	Relative Humidity:	51~54	%

TEST RESULTS DATA
Average Power Table

Band IV MIMO												
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	
11a	6Mbps	2	149	5745	11.00	10.10	13.58	30.00		2.54		Pass
11a	6Mbps	2	157	5785	10.50	11.00	13.77	30.00		2.54		Pass
11a	6Mbps	2	165	5825	11.00	10.40	13.72	30.00		2.54		Pass
HT20	MCS0	2	149	5745	10.80	10.10	13.47	30.00		2.54		Pass
HT20	MCS0	2	157	5785	10.40	10.90	13.67	30.00		2.54		Pass
HT20	MCS0	2	165	5825	10.70	10.30	13.51	30.00		2.54		Pass
HT40	MCS0	2	151	5755	11.00	11.00	14.01	30.00		2.54		Pass
HT40	MCS0	2	159	5795	11.00	11.00	14.01	30.00		2.54		Pass
VHT20	MCS0	2	149	5745	10.70	10.10	13.42	30.00		2.54		Pass
VHT20	MCS0	2	157	5785	10.30	10.80	13.57	30.00		2.54		Pass
VHT20	MCS0	2	165	5825	10.60	10.20	13.41	30.00		2.54		Pass
VHT40	MCS0	2	151	5755	10.90	10.90	13.91	30.00		2.54		Pass
VHT40	MCS0	2	159	5795	10.90	10.90	13.91	30.00		2.54		Pass
VHT80	MCS0	2	155	5775	8.00	7.90	10.96	30.00		2.54		Pass



Appendix B. Radiated Spurious Emission

Test Engineer :	Jummy Chung, Karl Hou, Wilson Wu	Temperature :	21.5~23.5°C
		Relative Humidity :	49.5~55.5%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5621.4	51.29	-16.91	68.2	39.96	31.8	6.33	26.8	337	154	P	H
		5693.4	52.59	-47.74	100.33	41.12	31.97	6.36	26.86	337	154	P	H
		5716.8	58	-51.91	109.91	46.44	32.07	6.37	26.88	337	154	P	H
		5725	61.92	-60.28	122.2	50.34	32.1	6.37	26.89	337	154	P	H
	*	5745	106.82	-	-	95.17	32.18	6.38	26.91	337	154	P	H
	*	5745	99.47	-	-	87.82	32.18	6.38	26.91	337	154	A	H
													H
													H
		5629.8	51.66	-16.54	68.2	40.33	31.8	6.33	26.8	351	154	P	V
		5694.4	53.08	-47.99	101.07	41.6	31.98	6.36	26.86	351	154	P	V
		5715.4	60.87	-48.64	109.51	49.32	32.06	6.37	26.88	351	154	P	V
		5723.4	59.63	-58.92	118.55	48.06	32.09	6.37	26.89	351	154	P	V
	*	5745	103.34	-	-	91.69	32.18	6.38	26.91	351	154	P	V
	*	5745	96.02	-	-	84.37	32.18	6.38	26.91	351	154	A	V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	107.34	-	-	95.55	32.35	6.42	26.98	339	153	P	H
	*	5825	100.22	-	-	88.43	32.35	6.42	26.98	339	153	A	H
		5851.6	56.98	-61.57	118.55	45.13	32.41	6.44	27	339	153	P	H
		5856.8	62.57	-47.73	110.3	50.69	32.43	6.45	27	339	153	P	H
		5890	52.54	-41.53	94.07	40.54	32.56	6.47	27.03	339	153	P	H
		5945.4	51.83	-16.37	68.2	39.7	32.69	6.52	27.08	339	153	P	H
													H
													H
	*	5825	102.24	-	-	90.45	32.35	6.42	26.98	358	155	P	V
	*	5825	95.23	-	-	83.44	32.35	6.42	26.98	358	155	A	V
		5850.8	51.78	-68.6	120.38	39.94	32.4	6.44	27	358	155	P	V
		5855.6	52.04	-58.59	110.63	40.18	32.42	6.44	27	358	155	P	V
		5916.8	51.88	-22.37	74.25	39.82	32.63	6.49	27.06	358	155	P	V
		5938.6	51.18	-17.02	68.2	39.07	32.68	6.51	27.08	358	155	P	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		11570	49.24	-24.76	74	55.21	39.83	10.5	56.3	100	0	P	H
		17355	48.03	-20.17	68.2	51.43	40.33	13.08	56.81	100	0	P	H
													H
													H
		11570	49.54	-24.46	74	55.51	39.83	10.5	56.3	100	0	P	V
		17355	48.36	-19.84	68.2	51.76	40.33	13.08	56.81	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5628.8	50.38	-17.82	68.2	39.05	31.8	6.33	26.8	300	149	P	H
		5692.2	60.76	-38.69	99.45	49.24	31.97	6.41	26.86	300	149	P	H
		5719	67.03	-43.49	110.52	55.39	32.08	6.44	26.88	300	149	P	H
		5721.8	69.65	-45.25	114.9	58	32.09	6.45	26.89	300	149	P	H
	*	5755	105.67	-	-	93.88	32.21	6.49	26.91	300	149	P	H
	*	5755	98.71	-	-	86.92	32.21	6.49	26.91	300	149	A	H
		5850.4	55.22	-66.07	121.29	43.28	32.4	6.54	27	300	149	P	H
		5865.4	55.17	-52.72	107.89	43.18	32.46	6.54	27.01	300	149	P	H
		5897	54.68	-34.2	88.88	42.59	32.59	6.54	27.04	300	149	P	H
		5946	51.54	-16.66	68.2	39.39	32.69	6.54	27.08	300	149	P	H
													H
													H
		5600.6	49.86	-18.34	68.2	38.54	31.8	6.3	26.78	309	168	P	V
		5688	55.08	-41.27	96.35	43.58	31.95	6.41	26.86	309	168	P	V
		5720	61.44	-49.36	110.8	49.8	32.08	6.44	26.88	309	168	P	V
		5723	64.97	-52.67	117.64	53.32	32.09	6.45	26.89	309	168	P	V
	*	5755	100.47	-	-	88.68	32.21	6.49	26.91	309	168	P	V
	*	5755	93.41	-	-	81.62	32.21	6.49	26.91	309	168	A	V
		5850.8	49.93	-70.45	120.38	37.99	32.4	6.54	27	309	168	P	V
		5865	51.83	-56.17	108	39.84	32.46	6.54	27.01	309	168	P	V
		5890.2	51.74	-42.18	93.92	39.67	32.56	6.54	27.03	309	168	P	V
		5931.8	51.95	-16.25	68.2	39.82	32.66	6.54	27.07	309	168	P	V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5641	53.51	-14.69	68.2	42.18	31.8	6.34	26.81	342	140	P	H
		5671	53.57	-30.21	83.78	42.18	31.88	6.35	26.84	342	140	P	H
		5701.4	52.49	-53.1	105.59	40.99	32.01	6.36	26.87	342	140	P	H
		5721.4	50.99	-63	113.99	39.41	32.09	6.37	26.88	342	140	P	H
	*	5795	105.2	-	-	93.46	32.29	6.4	26.95	342	140	P	H
	*	5795	97.85	-	-	86.11	32.29	6.4	26.95	342	140	A	H
		5852.8	53.62	-62.2	115.82	41.77	32.41	6.44	27	342	140	P	H
		5858.4	58.81	-51.04	109.85	46.94	32.43	6.45	27.01	342	140	P	H
		5907.6	52.98	-28.06	81.04	40.92	32.62	6.49	27.05	342	140	P	H
		5932.6	52.51	-15.69	68.2	40.4	32.67	6.51	27.07	342	140	P	H
													H
													H
		5613.4	52.54	-15.66	68.2	41.2	31.8	6.33	26.79	357	156	P	V
		5676.2	51.66	-35.97	87.63	40.26	31.9	6.35	26.85	357	156	P	V
		5716.6	51.81	-58.04	109.85	40.25	32.07	6.37	26.88	357	156	P	V
		5722	55.17	-60.19	115.36	43.6	32.09	6.37	26.89	357	156	P	V
	*	5795	101.49	-	-	89.75	32.29	6.4	26.95	357	156	P	V
	*	5795	93.97	-	-	82.23	32.29	6.4	26.95	357	156	A	V
		5853	52.49	-62.87	115.36	40.64	32.41	6.44	27	357	156	P	V
		5873.4	52.16	-53.49	105.65	40.23	32.49	6.46	27.02	357	156	P	V
		5886.6	51.32	-45.27	96.59	39.33	32.55	6.47	27.03	357	156	P	V
		5949.8	51.06	-17.14	68.2	38.93	32.7	6.52	27.09	357	156	P	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5646.6	53.89	-14.31	68.2	42.57	31.8	6.34	26.82	342	139	P	H
		5699	59.88	-44.58	104.46	48.39	32	6.36	26.87	342	139	P	H
		5718	61.03	-49.21	110.24	49.47	32.07	6.37	26.88	342	139	P	H
		5722.2	63.78	-52.04	115.82	52.21	32.09	6.37	26.89	342	139	P	H
	*	5775	99.19	-	-	87.48	32.25	6.39	26.93	342	139	P	H
	*	5775	91.56	-	-	79.85	32.25	6.39	26.93	342	139	A	H
		5850	54.29	-67.91	122.2	42.45	32.4	6.44	27	342	139	P	H
		5856.4	56.51	-53.9	110.41	44.63	32.43	6.45	27	342	139	P	H
		5881.8	54.12	-46.03	100.15	42.15	32.53	6.47	27.03	342	139	P	H
		5932.6	51.83	-16.37	68.2	39.72	32.67	6.51	27.07	342	139	P	H
													H
													H
		5643.8	53.45	-14.75	68.2	42.13	31.8	6.34	26.82	363	156	P	V
		5695.4	55.48	-46.33	101.81	44	31.98	6.36	26.86	363	156	P	V
		5716.2	59	-50.74	109.74	47.45	32.06	6.37	26.88	363	156	P	V
		5724.4	60.63	-60.2	120.83	49.05	32.1	6.37	26.89	363	156	P	V
	*	5775	95.8	-	-	84.09	32.25	6.39	26.93	363	156	P	V
	*	5775	87.86	-	-	76.15	32.25	6.39	26.93	363	156	A	V
		5854.4	52.53	-59.64	112.17	40.67	32.42	6.44	27	363	156	P	V
		5865	52.48	-55.52	108	40.58	32.46	6.45	27.01	363	156	P	V
		5920	52.66	-19.23	71.89	40.58	32.64	6.5	27.06	363	156	P	V
		5930.2	51.35	-16.85	68.2	39.26	32.66	6.5	27.07	363	156	P	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		11550	46.47	-27.53	74	52.43	39.85	10.49	56.3	100	0	P	H
		17325	48.11	-20.09	68.2	51.67	40.15	13.04	56.75	100	0	P	H
													H
													H
		11550	46.79	-27.21	74	52.75	39.85	10.49	56.3	100	0	P	V
		17325	47.53	-20.67	68.2	51.09	40.15	13.04	56.75	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Note symbol

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

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

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

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

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



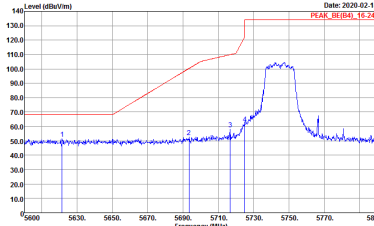
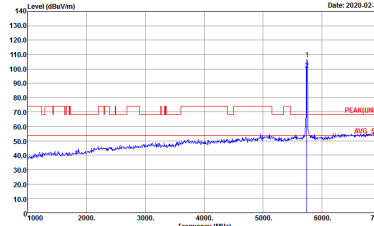
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Jummy Chung, Karl Hou, Wilson Wu	Temperature :	21.5~23.5°C
		Relative Humidity :	49.5~55.5%

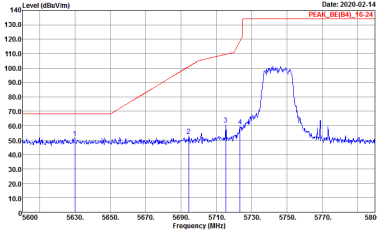
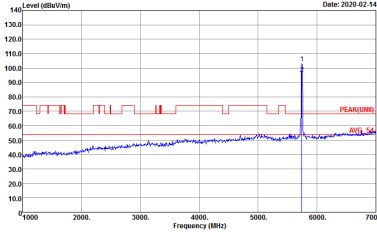
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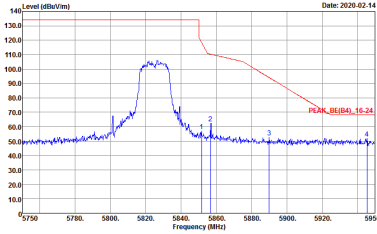
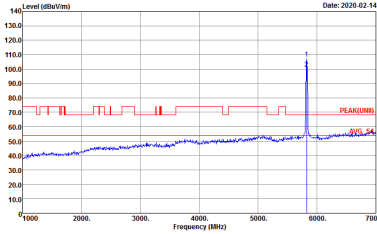
-L	Low channel location
-R	High channel location

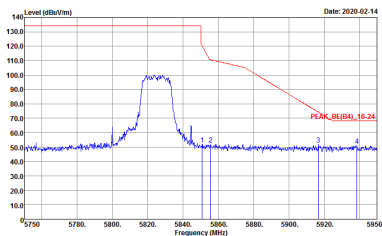
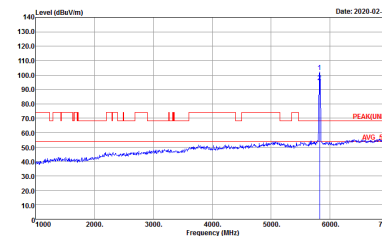
Band 4 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 15 Power : 12	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 15 Power : 12

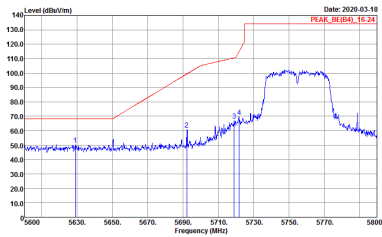
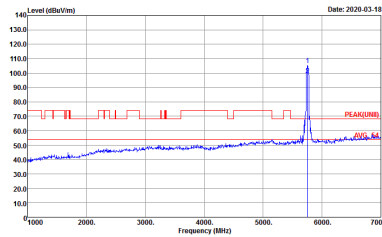
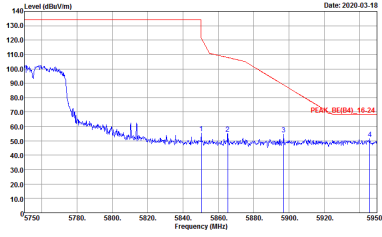


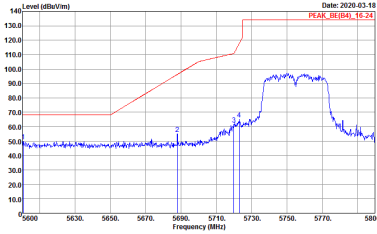
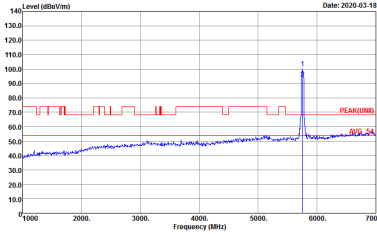
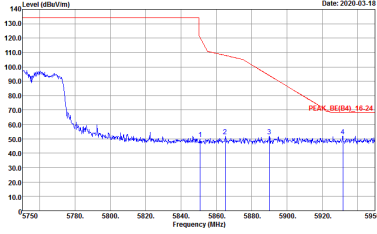
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010908-05 Mode : 15 Power : 12	 Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010908-05 Mode : 15 Power : 12

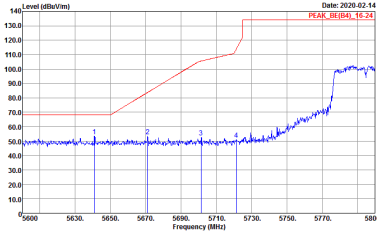
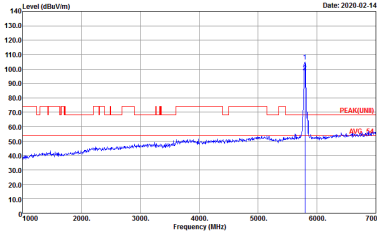
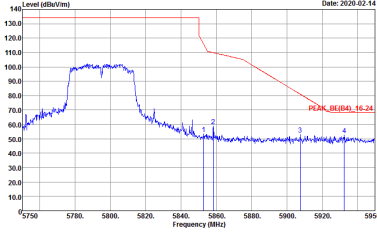
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-1V Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 17 Power : 13	 Site : 03CH13-1V Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 17 Power : 13

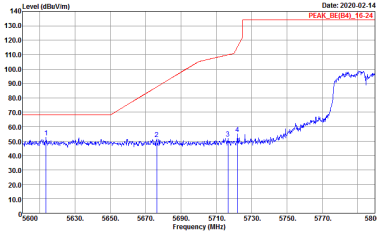
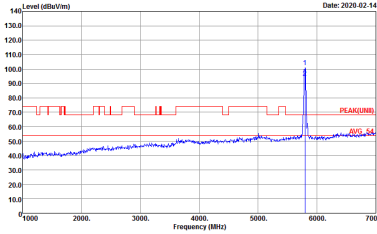
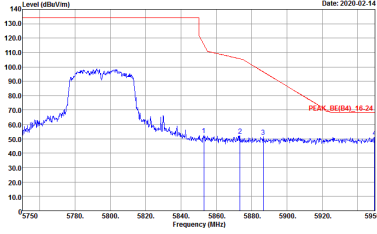
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-1V Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010908-05 Mode : 17 Power : 13	 Site : 03CH13-1V Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010908-05 Mode : 17 Power : 13

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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5
	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5	Left blank

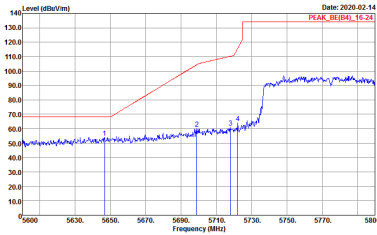
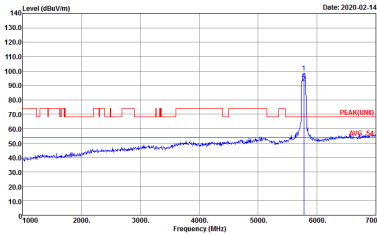
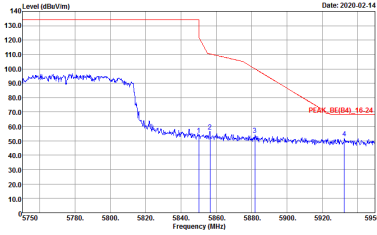
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5	 Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 18 Power : 11a(n40)_Tx_Ch151 : 13.5	Left blank

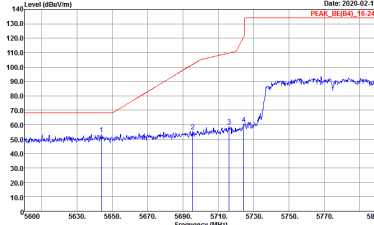
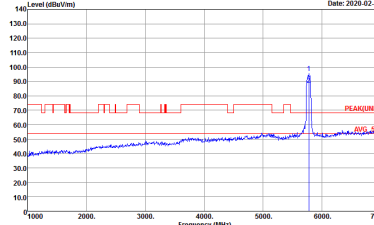
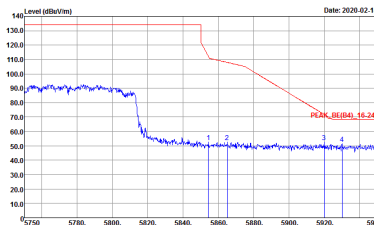
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5	 Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-IHV Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5	 Site : 03CH13-IHV Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5
Peak	 Site : 03CH13-IHV Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 19 Power : 13.5	Left blank

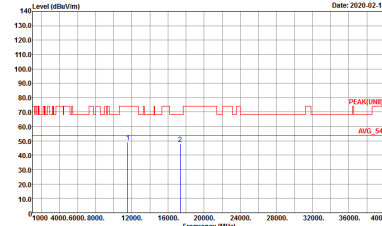
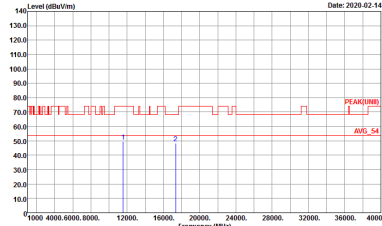


Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5	 Site : 03CH13-HY Condition : PEAK(UNIT) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5
Peak	 Site : 03CH13-HY Condition : PEAK_BE(B4)_16-24 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-1HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5	 Site : 03CH13-1HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5
Peak	 Site : 03CH13-1HY Condition : PEAK_BE(84)_16-24 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 20 Power : 10.5	Left blank

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

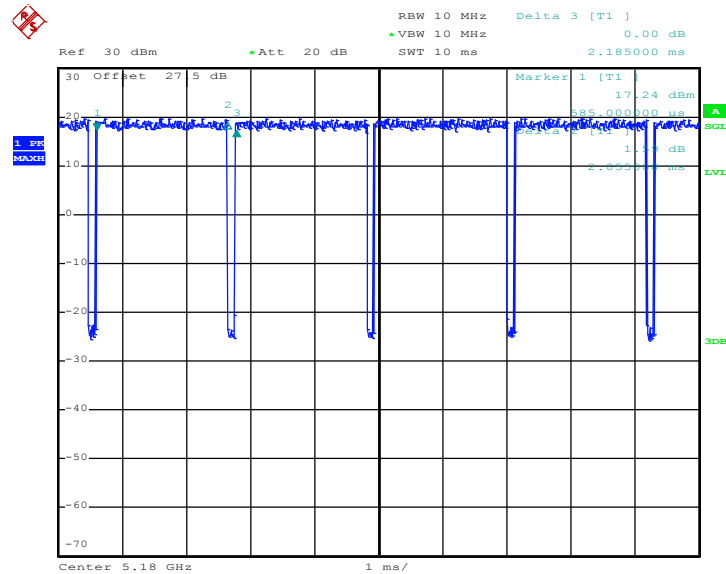
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 010908-05 Mode : 16 Power : 13	 Site : 03CH13-HY Condition : PEAK(UNII) 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 010908-05 Mode : 16 Power : 13

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1+2	802.11a for Ant. 1	94.05	2055	0.49	1kHz	0.27
1+2	802.11a for Ant. 2	94.93	2060	0.49	1kHz	0.23
1+2	5GHz 802.11n HT20 for Ant. 1	94.62	1935	0.52	1kHz	0.24
1+2	5GHz 802.11n HT20 for Ant. 2	94.62	1935	0.52	1kHz	0.24
1+2	5GHz 802.11n HT40 for Ant. 1	89.57	945	1.06	3kHz	0.48
1+2	5GHz 802.11n HT40 for Ant. 2	89.20	950	1.05	3kHz	0.50
1+2	5GHz 802.11ac VHT20 for Ant. 1	94.36	1925	0.52	1kHz	0.25
1+2	5GHz 802.11ac VHT20 for Ant. 2	94.59	1925	0.52	1kHz	0.24
1+2	5GHz 802.11ac VHT40 for Ant. 1	88.43	955	1.05	3kHz	0.53
1+2	5GHz 802.11ac VHT40 for Ant. 2	89.72	960	1.04	3kHz	0.47
1+2	5GHz 802.11ac VHT80 for Ant. 1	88.32	870	1.15	3kHz	0.54
1+2	5GHz 802.11ac VHT80 for Ant. 2	88.32	870	1.15	3kHz	0.54

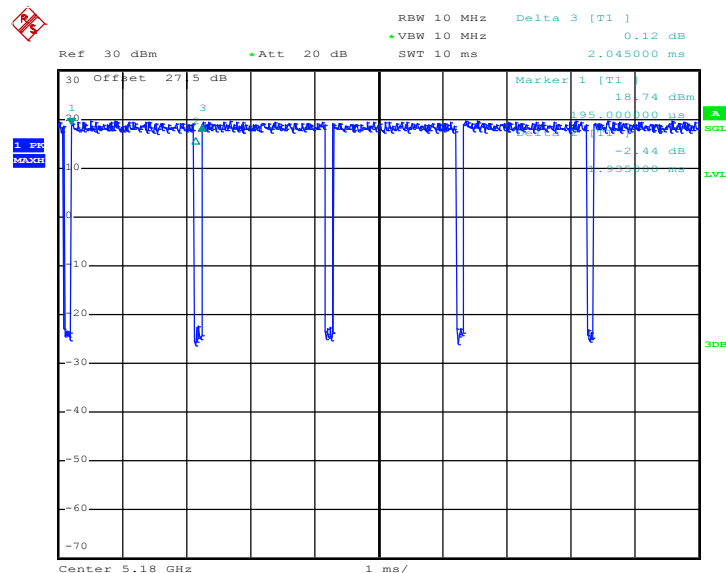
MIMO < Ant. 1>

802.11a

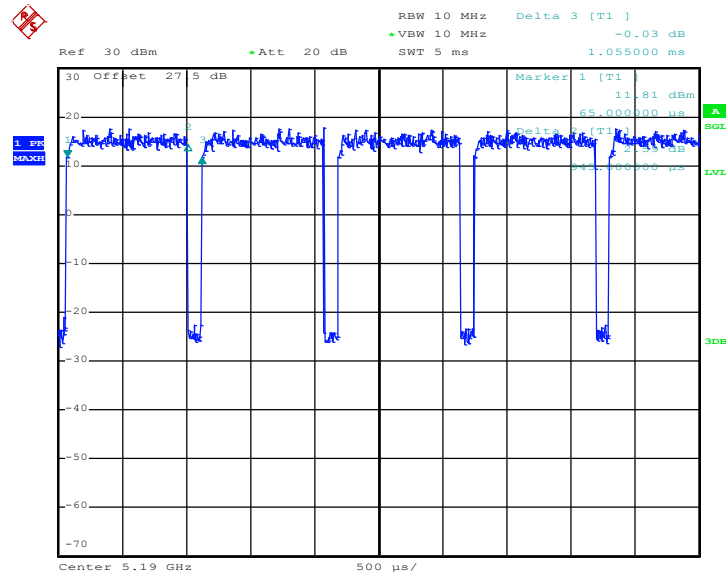


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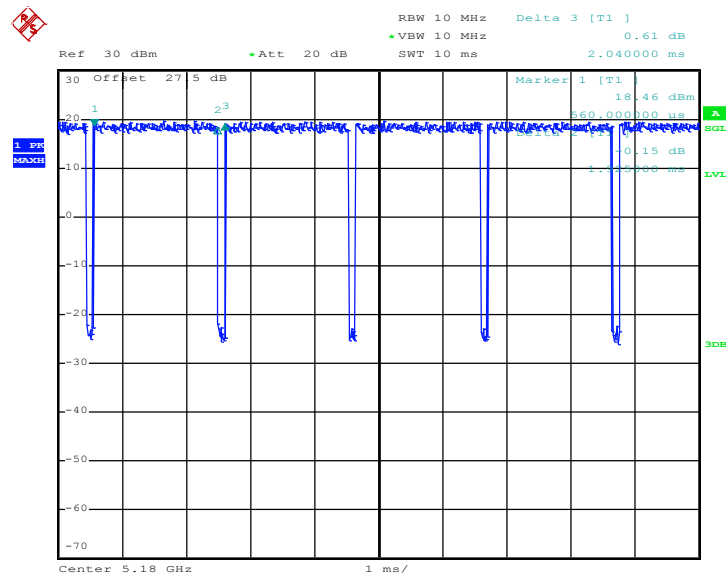
802.11n HT20



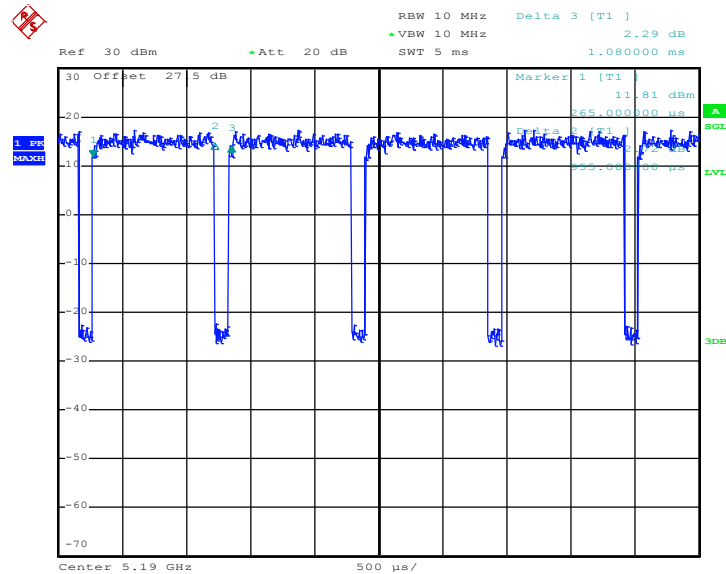
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802.11n HT40


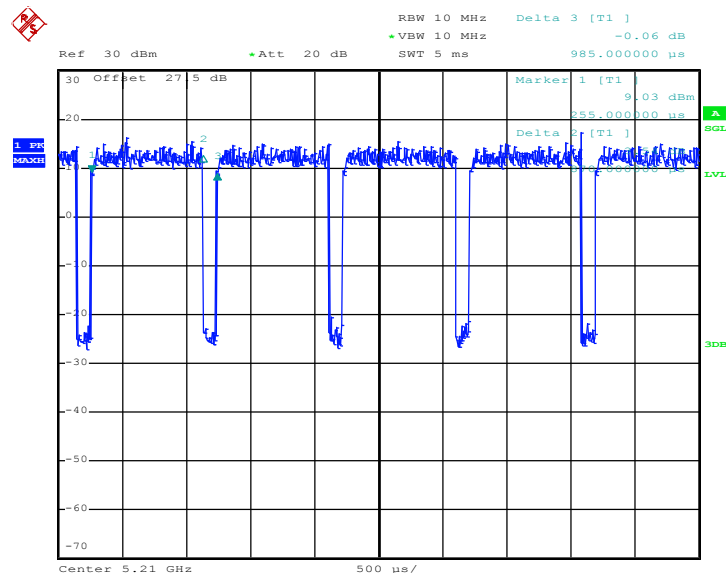
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802.11ac VHT20


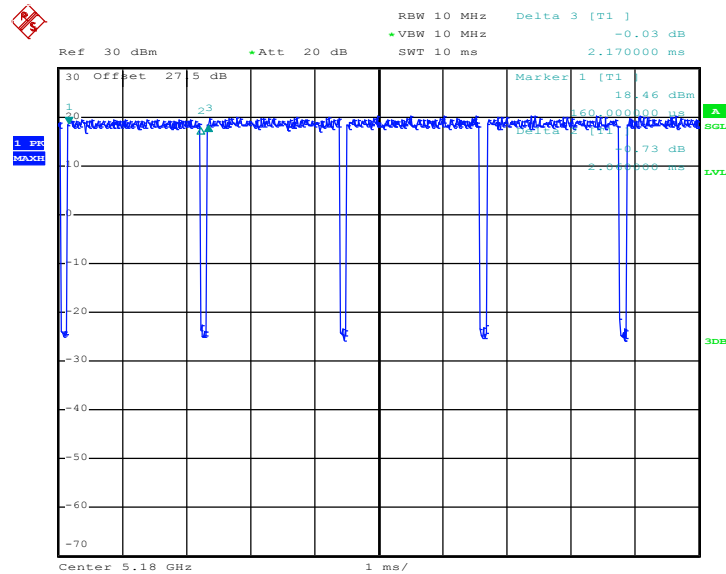
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802.11ac VHT40


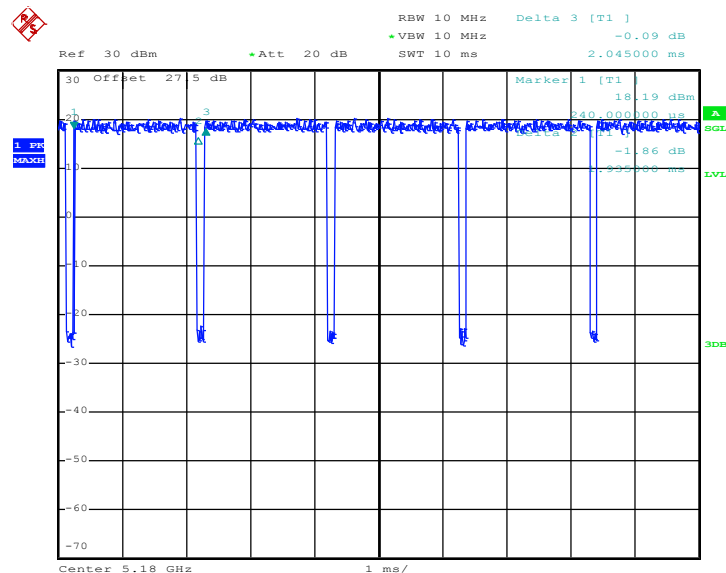
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802.11ac VHT80


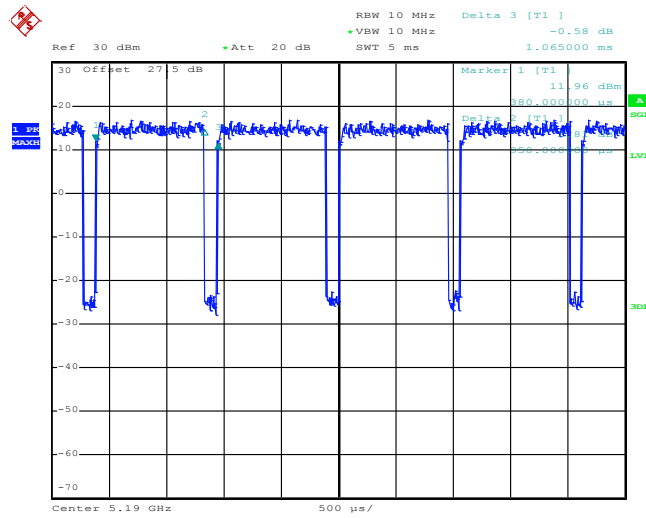
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MIMO < Ant. 2>
802.11a


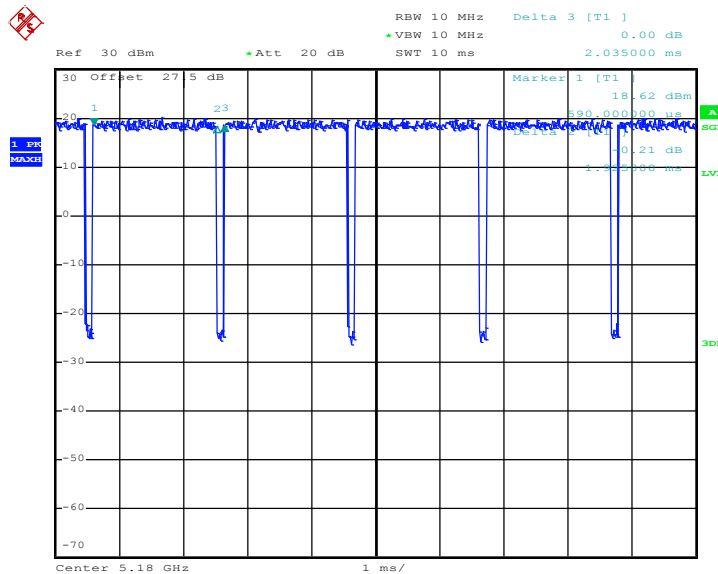
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802.11n HT20


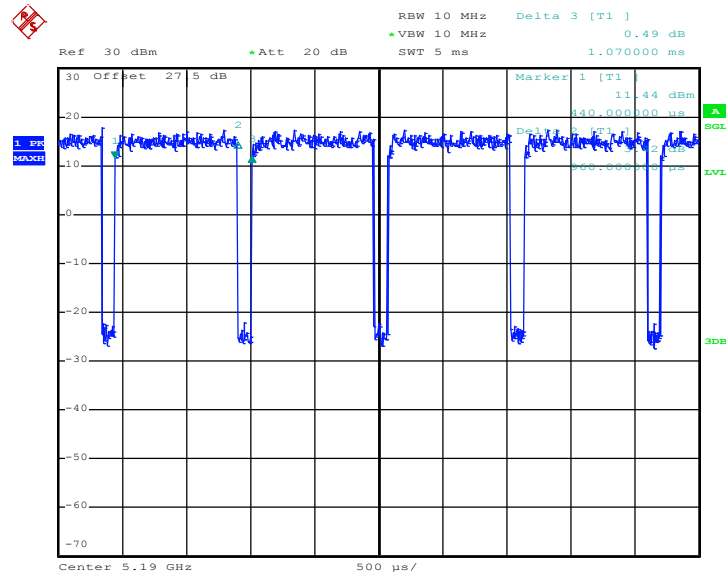
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802.11n HT40


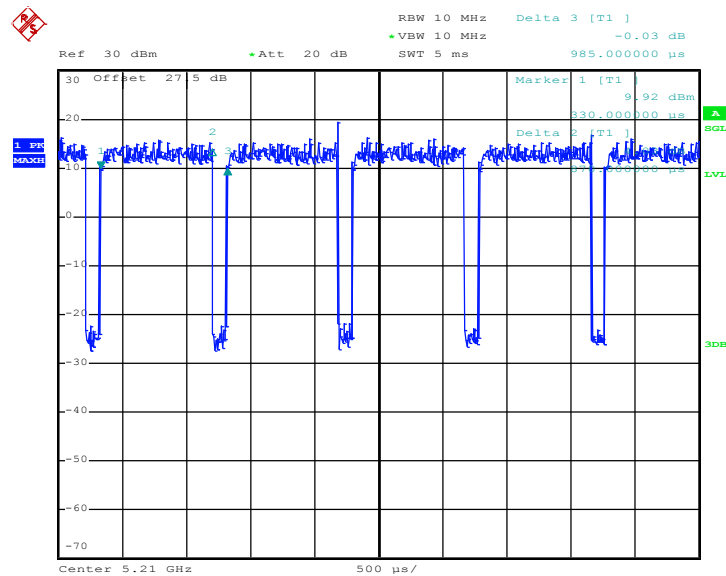
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802.11ac VHT20


Date: 28.JAN.2020 07:30:53

802.11ac VHT40


Date: 28.JAN.2020 07:34:50

802.11ac VHT80


Date: 28.JAN.2020 07:40:34