



FCC RADIO TEST REPORT

FCC ID : A4RG020H
Equipment : Smartphone
Model name : G020H
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, CA 94043, USA
Standard : FCC Part 15 Subpart E §15.407

The product was completed on Dec. 20, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Jones Tsai

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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



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History of this test report

Report No.	Version	Description	Issued Date
FR891148-01F	01	Initial issue of report	Dec. 26, 2018
FR891148-01F	02	Add test data.	Jan. 23, 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 6.45 dB at 11490.000 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 15.13 dB at 0.652 MHz
3.6	15.407 (c)	Automatically Discontinue Transmission	Pass	-
3.7	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

Reviewed by: **Wii Chang**

Report Producer: **Natasha Hsieh**

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	G020H
Sample 1	The device with 1st battery
Sample 2	The device with 2nd battery
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC/GNSS WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
EUT Stage	Identical Prototype

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

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power	<p><5745 MHz ~ 5825 MHz></p> <p><Ant. 1></p> <p>802.11a : 17.48 dBm / 0.0560 W 802.11n HT20 : 17.27 dBm / 0.0533 W 802.11n HT40 : 17.36 dBm / 0.0545 W 802.11ac VHT20: 17.24 dBm / 0.0530 W 802.11ac VHT40: 17.33 dBm / 0.0541 W 802.11ac VHT80: 17.32 dBm / 0.0540 W</p> <p><Ant. 2></p> <p>802.11a : 17.08 dBm / 0.0511 W 802.11n HT20 : 17.46 dBm / 0.0557 W 802.11n HT40 : 17.05 dBm / 0.0507 W 802.11ac VHT20: 17.42 dBm / 0.0552 W 802.11ac VHT40: 17.02 dBm / 0.0504 W 802.11ac VHT80: 17.15 dBm / 0.0519 W</p> <p>MIMO <Ant. 1 + 2></p> <p>802.11a : 20.41 dBm / 0.1099 W 802.11n HT20 : 20.48 dBm / 0.1117 W 802.11n HT40 : 20.37 dBm / 0.1089 W 802.11ac VHT20: 20.42 dBm / 0.1102 W 802.11ac VHT40: 20.36 dBm / 0.1086 W 802.11ac VHT80: 20.39 dBm / 0.1094 W</p>

Standards-related Product Specification											
99% Occupied Bandwidth	MIMO<Ant. 1> 802.11a : 16.83 MHz 802.11n HT20 : 18.03 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 75.88 MHz MIMO<Ant. 2> 802.11a : 16.78 MHz 802.11n HT20 : 18.08 MHz 802.11n HT40 : 36.66 MHz 802.11ac VHT80 : 76.00 MHz										
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)										
Antenna Type / Gain	<Ant. 1> : PIFA Antenna with gain -3.10 dBi <Ant. 2> : PIFA Antenna with gain -2.80 dBi										
Antenna Function Description	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">Ant. 1</th> <th style="width: 20%; text-align: center;">Ant. 2</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">802.11 a/n/ac</td> <td style="text-align: center;">V</td> <td style="text-align: center;">V</td> </tr> <tr> <td style="text-align: center;">802.11 n/ac MIMO</td> <td style="text-align: center;">V</td> <td style="text-align: center;">V</td> </tr> </tbody> </table>			Ant. 1	Ant. 2	802.11 a/n/ac	V	V	802.11 n/ac MIMO	V	V
	Ant. 1	Ant. 2									
802.11 a/n/ac	V	V									
802.11 n/ac MIMO	V	V									

Remark: 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

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

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		
	TH05-HY	CO05-HY	03CH07-HY

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

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 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

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



2 Test Configuration of Equipment Under Test

- a. 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 (Y Plane) were recorded in this report.

- b. AC power line Conducted Emission was tested under maximum output power.

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

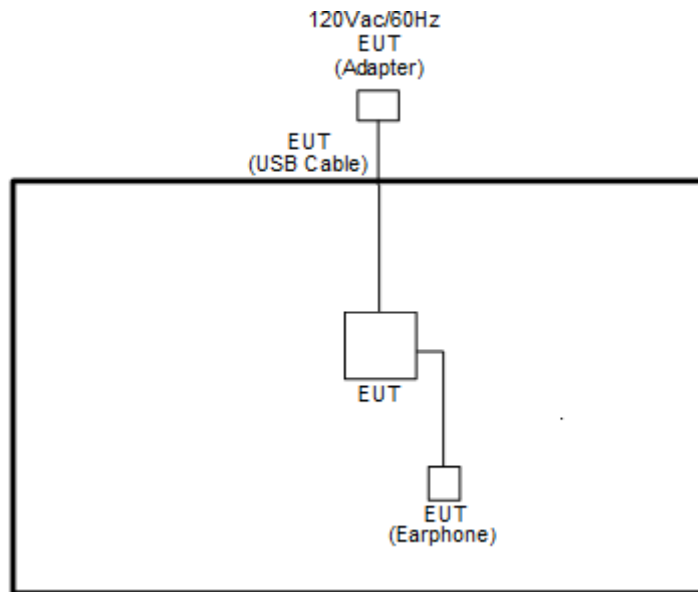
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20 (Covered by HT20)	MCS0
802.11ac VHT40 (Covered by HT40)	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + GPS Rx + Earphone + USB Type C Cable 1 (Charging form Adapter 1) + Battery<10% for Sample 1
Remark: For Radiated Test Cases, the tests were performed with USB Type C Cable 1.	

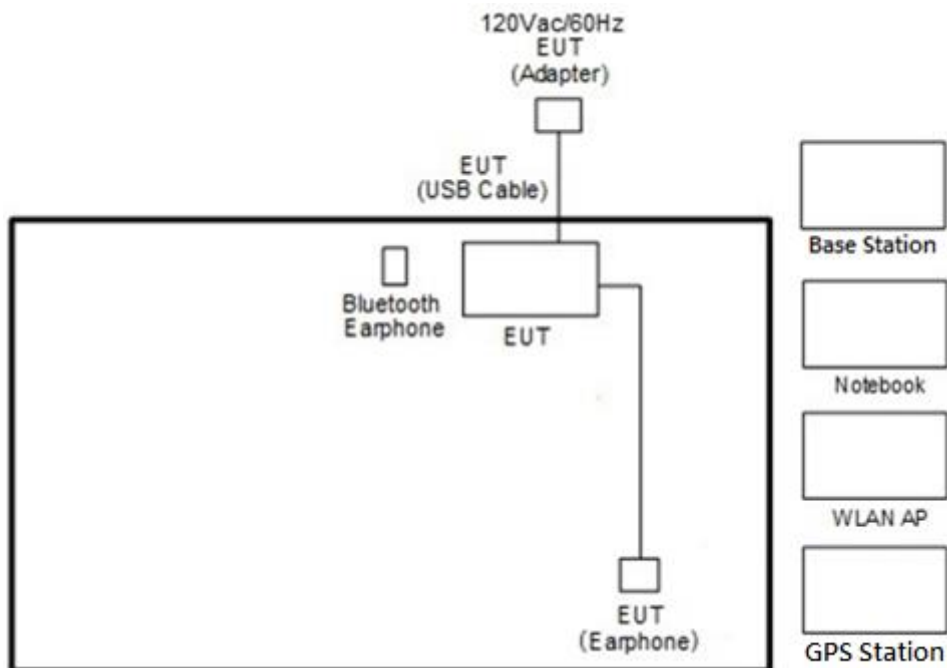
Ch. #	Band IV : 5725-5850 MHz			
	802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L Low	149	149	151	-
M Middle	157	157	-	155
H High	165	165	159	-

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emissions Mode>





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony	SBH20	PY7-RD0010	N/A	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
5.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “QRCT” was installed in Notebook 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.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

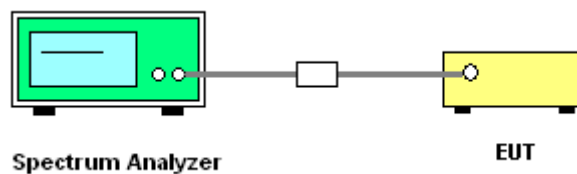
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

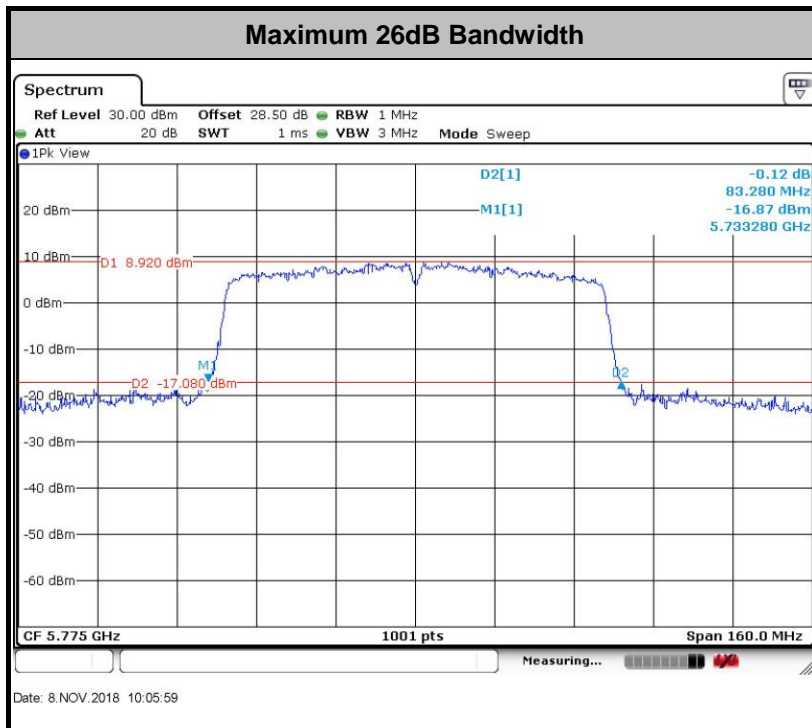
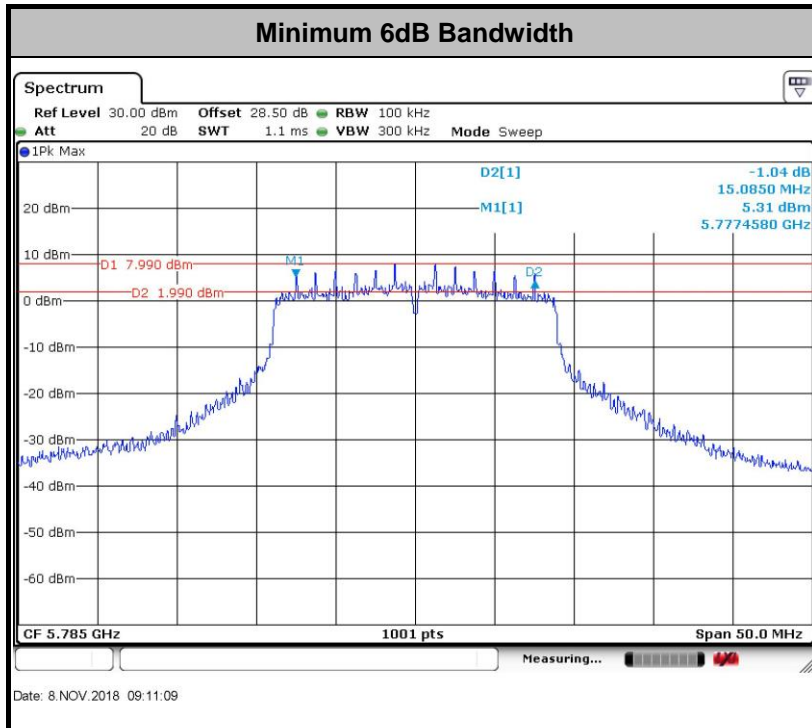
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is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

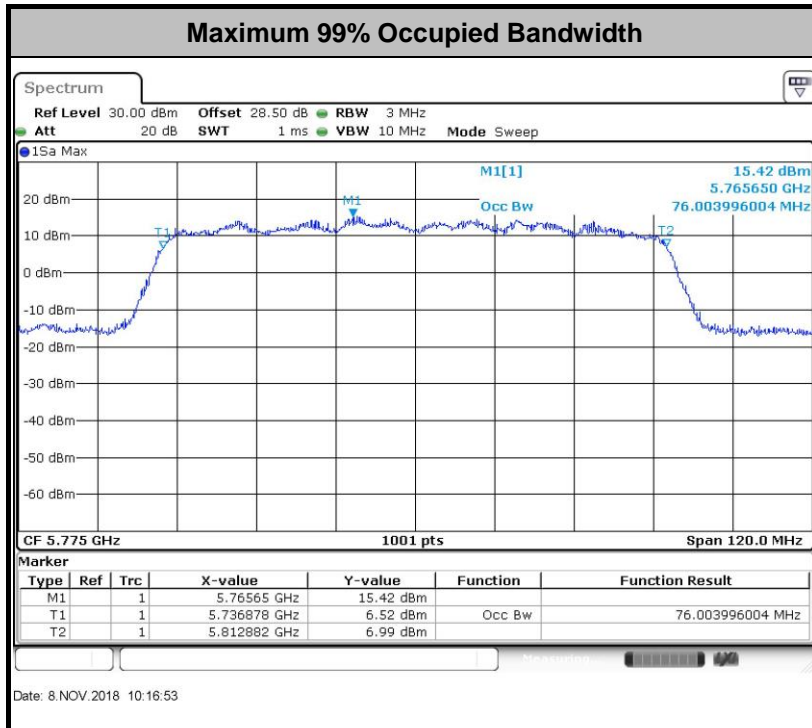
3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.





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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

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

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

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

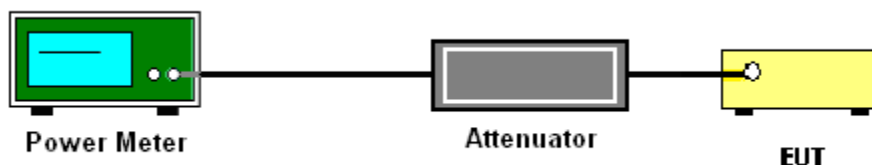
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

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

3.3.2 Measuring Instruments

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.

Method SA-2

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

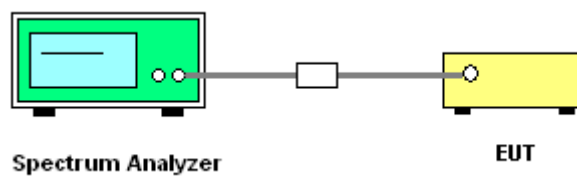
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW \geq 1 MHz.
- Number of points in sweep \geq 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10 \log(500\text{kHz}/\text{RBW})$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

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the 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 $1/N_{ANT}^{\text{th}}$ of the PSD limit.

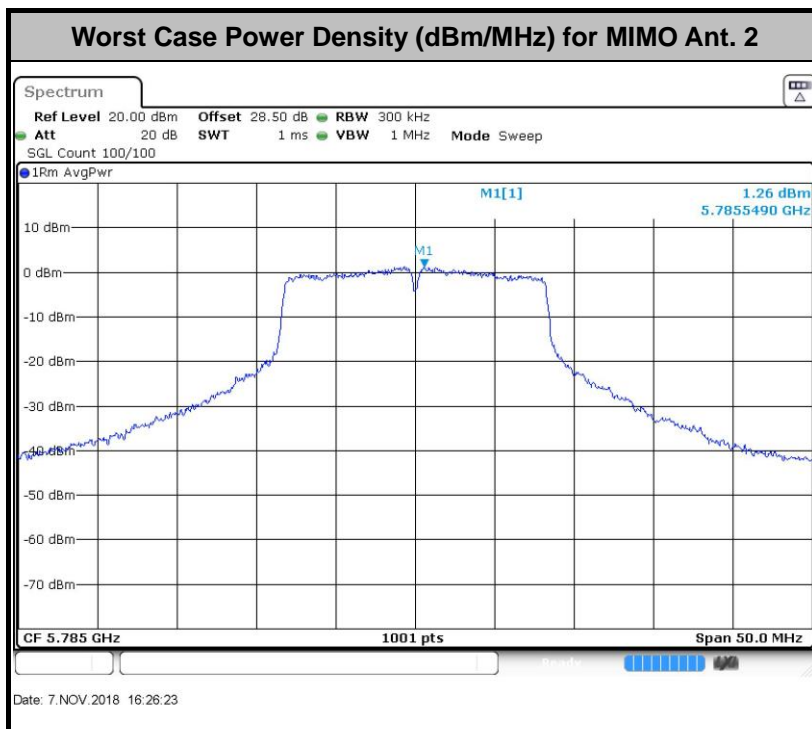
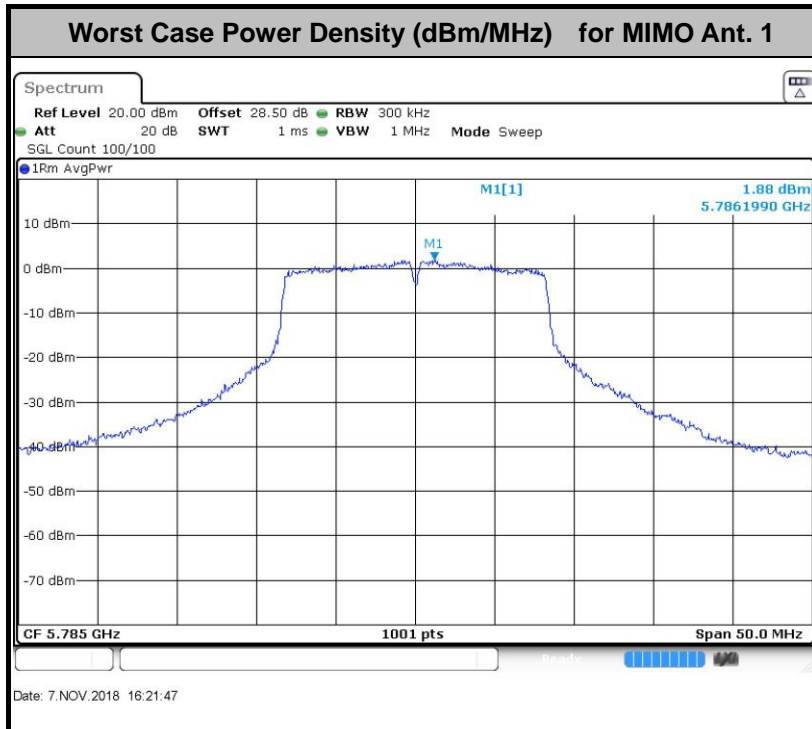
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.





3.4 Unwanted Emissions Measurement

This section 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.

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



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

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

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

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

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

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.



3.4.3 Test Procedures

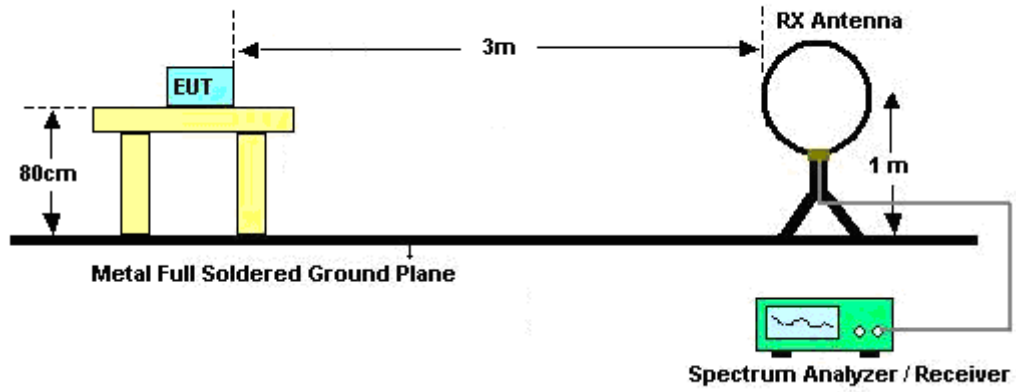
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \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.



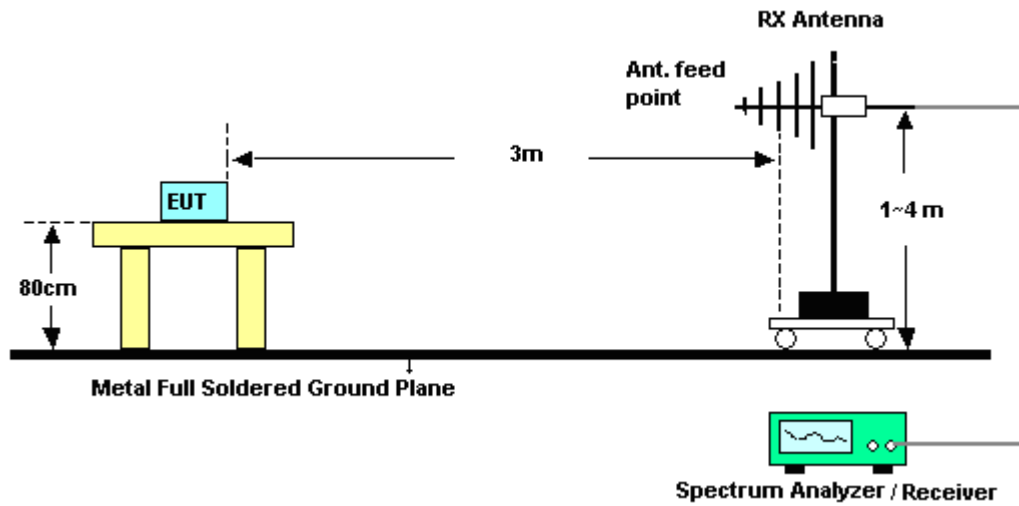
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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.

3.4.4 Test Setup

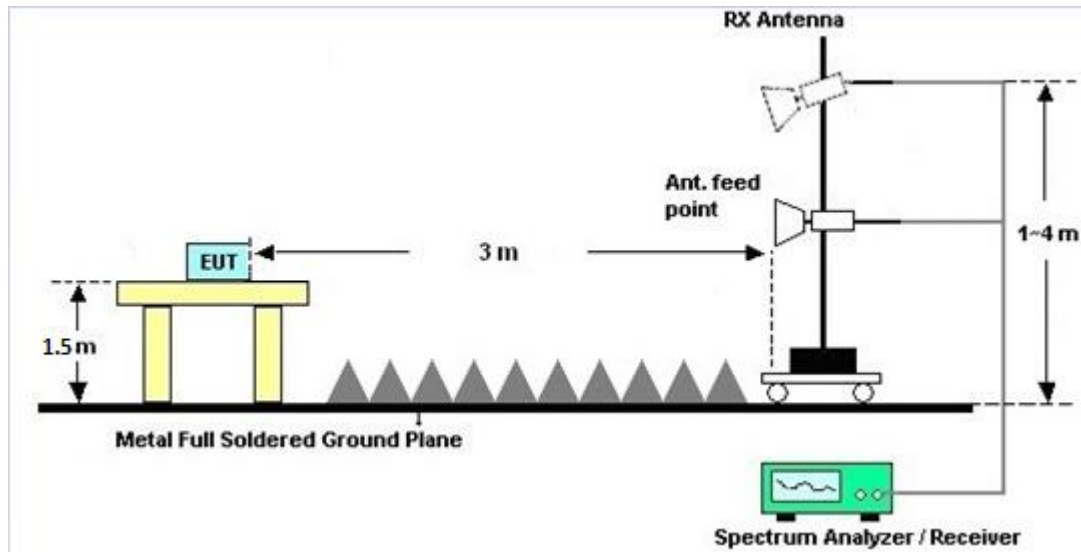
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

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

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.



3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

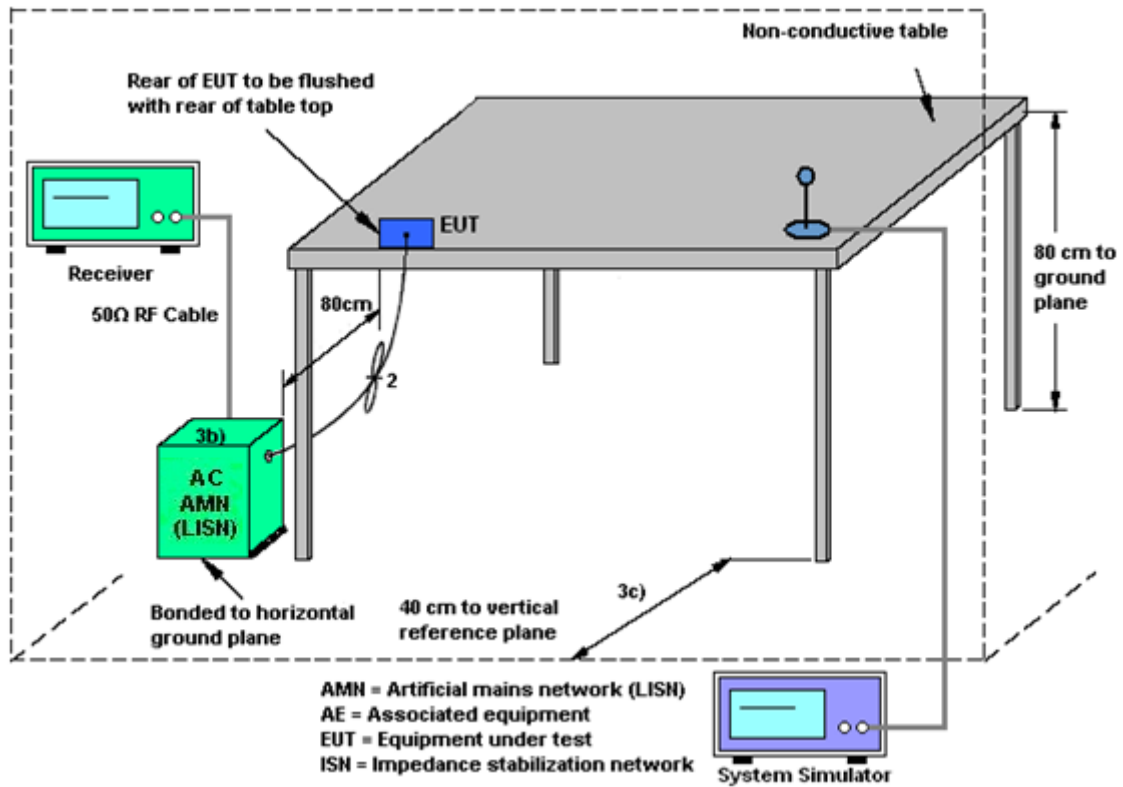
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Automatically Discontinue Transmission

3.6.1 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.

3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

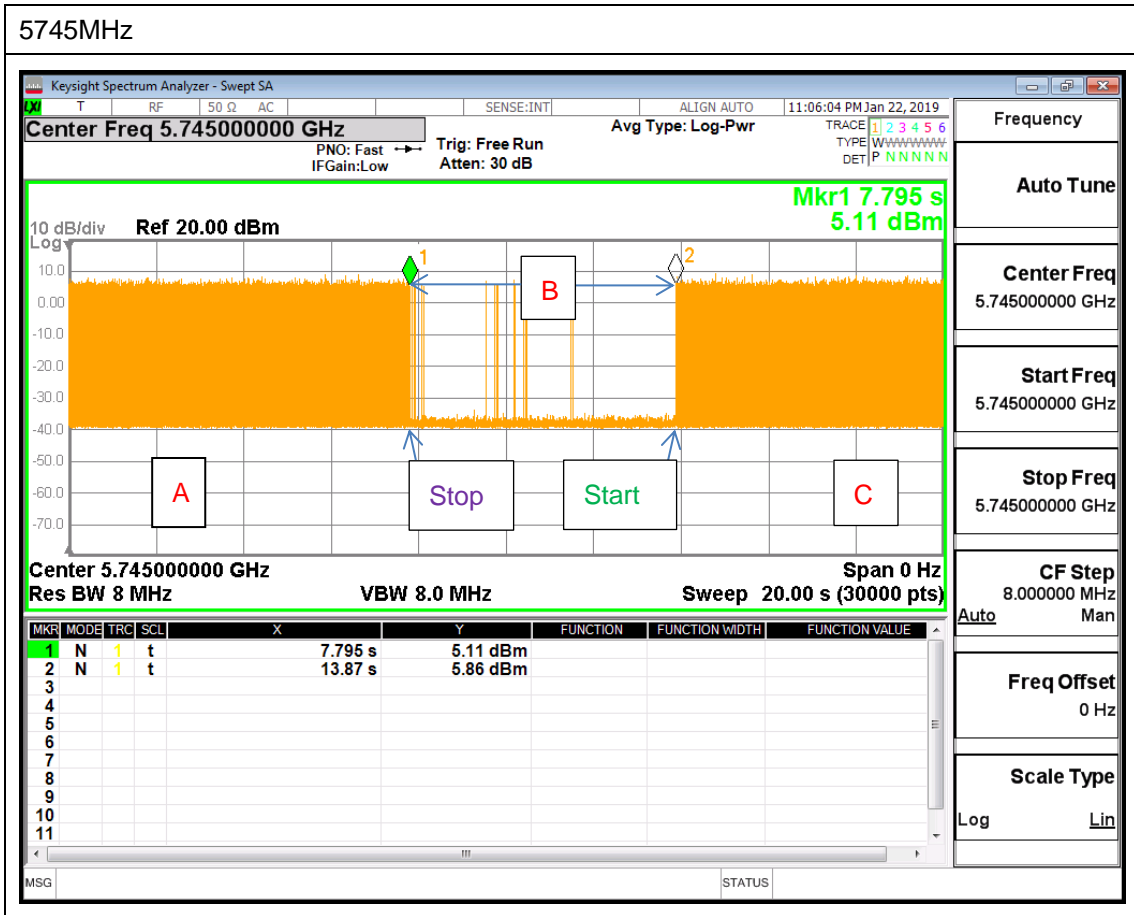
EUT is verified this characteristic during the function check of normal sample associated with an access point:

- A. Information start: make EUT supply information to the access point.
- B. Information stop: stop supplying information to the access point.

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving.

- C. Information start: make EUT supply information to the access point again.

The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



Note : The control / signalling information during the period B is precluded.



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

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

Array Gain = 10 log(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4.

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

The EUT supports CDD mode.

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

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

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

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

<CDD Modes>						
			DG	DG	Power	PSD
	Ant. 1	Ant. 2	for	for	Limit	Limit
	(dBi)	(dBi)	Power	PSD	Reduction	Reduction
			(dBi)	(dBi)	(dB)	(dB)
Band IV	-3.10	-2.80	-2.80	0.06	0.00	0.00

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 Meter	Anritsu	ML2495A	1132003	N/A	Aug. 16, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Aug. 15, 2019	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Aug. 16, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Aug. 15, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jun. 14, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Jun. 13, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV 30	100895	9kHz~30GHz	Apr. 20, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Apr. 19, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Mar. 01, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Feb. 28, 2019	Conducted (TH05-HY)
Hygrometer	Testo	DTM-303A	TP157075	N/A	Mar. 06, 2018	Oct. 05, 2018 ~ Nov. 07, 2018	Mar. 05, 2019	Conducted (TH05-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	1GHz~26GHz	Dec. 01, 2017	Oct. 05, 2018 ~ Nov. 07, 2018	Nov. 30, 2018	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec.05, 2018	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9KHz~3.6GHz	Nov. 12, 2018	Dec. 05, 2018	Nov. 11, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 14, 2018	Dec. 05, 2018	Nov. 13, 2019	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 03, 2018	Dec. 05, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Test Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Dec. 05, 2018	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 03, 2018	Dec. 05, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 06, 2018	Dec. 05, 2018	Mar. 05, 2019	Conduction (CO05-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	May 29, 2018	Dec. 05, 2018~ Dec. 20, 2018	May 28, 2019	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D&N-6-06	35414&AT-N0602	30MHz to 1GHz	Oct. 13, 2018	Dec. 05, 2018~ Dec. 20, 2018	Oct. 12, 2019	Radiation (03CH07-HY)
Horn Antenna	ESCO	3117	00211469	1GHz~18GHz	Apr. 06, 2018	Dec. 05, 2018~ Dec. 20, 2018	Apr. 05, 2019	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	May 08, 2018	Dec. 05, 2018~ Dec. 20, 2018	May 07, 2019	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A (MXE)	MY53290053	20Hz to 26.5GHz	Jan. 16, 2018	Dec. 05, 2018~ Dec. 20, 2018	Jan. 15, 2019	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	Apr. 25, 2018	Dec. 05, 2018~ Dec. 20, 2018	Apr. 24, 2019	Radiation (03CH07-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz ~ 18GHz	Apr. 25, 2018	Dec. 05, 2018~ Dec. 20, 2018	Apr. 24, 2019	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	May 21, 2018	Dec. 05, 2018~ Dec. 20, 2018	May 20, 2019	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Nov. 02, 2018	Dec. 05, 2018~ Dec. 20, 2018	Nov. 01, 2019	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Apr. 23, 2018	Dec. 05, 2018~ Dec. 20, 2018	Apr. 22, 2019	Radiation (03CH07-HY)
Amplifier	MITEQ	TTA1840-35- HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 16, 2018	Dec. 05, 2018~ Dec. 20, 2018	Jul. 15, 2019	Radiation (03CH07-HY)
Hygrometer	TECPEL	HTC-2	1	N/A	May 12, 2018	Dec. 05, 2018~ Dec. 20, 2018	May 11, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4,M Y28655/4	9KHz~30MHz	Jan. 02, 2018	Dec. 05, 2018~ Dec. 20, 2018	Jan. 01, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 27, 2018	Dec. 05, 2018~ Dec. 20, 2018	Feb. 26, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 27, 2018	Dec. 05, 2018~ Dec. 20, 2018	Feb. 26, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SF102/2*11S K252	MY4278/2	9kHz~40GHz	May 17, 2018	Dec. 05, 2018~ Dec. 20, 2018	May 16, 2019	Radiation (03CH07-HY)
Filter	Wainwright	WLKS1200-1 2SS	SN2	1.2GHz Low Pass	Mar. 21, 2018	Dec. 05, 2018~ Dec. 20, 2018	Mar. 20, 2019	Radiation (03CH07-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60ST	SN2	3GHz High Pass	Mar. 21, 2018	Dec. 05, 2018~ Dec. 20, 2018	Mar. 20, 2019	Radiation (03CH07-HY)
Filter	Woken	WHKX8-5272. 5-6750-18000 -40ST	SN2	6.75G Highpas s	Mar. 21, 2018	Dec. 05, 2018~ Dec. 20, 2018	Mar. 20, 2019	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Dec. 05, 2018~ Dec. 20, 2018	N/A	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF78020836 8	Control Ant Mast	N/A	Dec. 05, 2018~ Dec. 20, 2018	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Dec. 05, 2018~ Dec. 20, 2018	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Dec. 05, 2018~ Dec. 20, 2018	N/A	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	RK-001042	N/A	N/A	Dec. 05, 2018~ Dec. 20, 2018	N/A	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.20
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.70
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

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

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

Test Engineer:	Shiming Liu / Kai Liao	Temperature:	21~25	°C
Test Date:	2018/10/6~2018/11/08	Relative Humidity:	51~54	%

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

Band IV												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		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		
11a	6Mbps	2	149	5745	16.83	16.83	25.47	25.62	15.53	15.33	0.5	Pass
11a	6Mbps	2	157	5785	16.73	16.78	25.02	25.67	15.34	15.13	0.5	Pass
11a	6Mbps	2	165	5825	16.78	16.78	24.88	25.32	15.53	15.48	0.5	Pass
HT20	MCS0	2	149	5745	18.03	18.08	26.02	26.97	15.98	16.53	0.5	Pass
HT20	MCS0	2	157	5785	17.98	17.98	25.87	26.02	15.09	15.09	0.5	Pass
HT20	MCS0	2	165	5825	17.98	17.98	26.67	25.77	15.93	15.98	0.5	Pass
HT40	MCS0	2	151	5755	36.66	36.56	42.08	41.81	35.51	35.24	0.5	Pass
HT40	MCS0	2	159	5795	36.56	36.66	41.71	42.08	35.24	35.06	0.5	Pass
VHT80	MCS0	2	155	5775	75.88	76.00	83.28	83.28	75.12	75.12	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.10	0.09	17.08	17.06		30.00	30.00	-3.10	-2.80	Pass
11a	6Mbps	1	157	5785	0.10	0.09	17.40	17.08		30.00	30.00	-3.10	-2.80	Pass
11a	6Mbps	1	165	5825	0.10	0.09	17.48	17.00		30.00	30.00	-3.10	-2.80	Pass
HT20	MCS0	1	149	5745	0.12	0.09	17.26	17.46		30.00	30.00	-3.10	-2.80	Pass
HT20	MCS0	1	157	5785	0.12	0.09	17.27	17.00		30.00	30.00	-3.10	-2.80	Pass
HT20	MCS0	1	165	5825	0.12	0.09	17.18	17.00		30.00	30.00	-3.10	-2.80	Pass
HT40	MCS0	1	151	5755	0.16	0.18	17.09	17.05		30.00	30.00	-3.10	-2.80	Pass
HT40	MCS0	1	159	5795	0.16	0.18	17.36	17.00		30.00	30.00	-3.10	-2.80	Pass
VHT20	MCS0	1	149	5745	0.10	0.11	17.21	17.42		30.00	30.00	-3.10	-2.80	Pass
VHT20	MCS0	1	157	5785	0.10	0.11	17.24	17.24		30.00	30.00	-3.10	-2.80	Pass
VHT20	MCS0	1	165	5825	0.10	0.11	17.10	17.19		30.00	30.00	-3.10	-2.80	Pass
VHT40	MCS0	1	151	5755	0.18	0.18	17.04	17.02		30.00	30.00	-3.10	-2.80	Pass
VHT40	MCS0	1	159	5795	0.18	0.18	17.33	17.01		30.00	30.00	-3.10	-2.80	Pass
VHT80	MCS0	1	155	5775	0.37	0.37	17.32	17.15		30.00	30.00	-3.10	-2.80	Pass
11a	6Mbps	2	149	5745	0.12	0.07	17.09	17.16	20.14	30.00		-2.80		Pass
11a	6Mbps	2	157	5785	0.12	0.07	17.50	17.30	20.41	30.00		-2.80		Pass
11a	6Mbps	2	165	5825	0.12	0.07	17.48	17.22	20.36	30.00		-2.80		Pass
HT20	MCS0	2	149	5745	0.12	0.09	17.48	17.47	20.48	30.00		-2.80		Pass
HT20	MCS0	2	157	5785	0.12	0.09	17.50	17.08	20.30	30.00		-2.80		Pass
HT20	MCS0	2	165	5825	0.12	0.09	17.42	17.00	20.22	30.00		-2.80		Pass
HT40	MCS0	2	151	5755	0.18	0.18	17.21	17.14	20.19	30.00		-2.80		Pass
HT40	MCS0	2	159	5795	0.18	0.18	17.48	17.23	20.37	30.00		-2.80		Pass
VHT20	MCS0	2	149	5745	0.12	0.13	17.34	17.49	20.42	30.00		-2.80		Pass
VHT20	MCS0	2	157	5785	0.12	0.13	17.49	17.01	20.26	30.00		-2.80		Pass
VHT20	MCS0	2	165	5825	0.12	0.13	17.40	17.00	20.21	30.00		-2.80		Pass
VHT40	MCS0	2	151	5755	0.16	0.19	17.12	17.05	20.09	30.00		-2.80		Pass
VHT40	MCS0	2	159	5795	0.16	0.19	17.50	17.20	20.36	30.00		-2.80		Pass
VHT80	MCS0	2	155	5775	0.37	0.36	17.48	17.27	20.39	30.00		-2.80		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	0.12	0.07	2.22	3.62	3.13	6.63	30.00	0.06	0.06	0.06	Pass	
11a	6Mbps	2	157	5785	0.12	0.07	2.22	4.22	3.55	7.23	30.00	0.06	0.06	0.06	Pass	
11a	6Mbps	2	165	5825	0.12	0.07	2.22	4.01	3.02	7.02	30.00	0.06	0.06	0.06	Pass	
HT20	MCS0	2	149	5745	0.12	0.09	2.22	3.38	3.26	6.39	30.00	0.06	0.06	0.06	Pass	
HT20	MCS0	2	157	5785	0.12	0.09	2.22	3.92	2.81	6.93	30.00	0.06	0.06	0.06	Pass	
HT20	MCS0	2	165	5825	0.12	0.09	2.22	3.54	2.69	6.55	30.00	0.06	0.06	0.06	Pass	
HT40	MCS0	2	151	5755	0.18	0.18	2.22	-0.18	0.16	3.17	30.00	0.06	0.06	0.06	Pass	
HT40	MCS0	2	159	5795	0.18	0.18	2.22	0.87	0.16	3.88	30.00	0.06	0.06	0.06	Pass	
VHT80	MCS0	2	155	5775	0.37	0.36	2.22	-2.41	-2.93	0.60	30.00	0.06	0.06	0.06	Pass	

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)



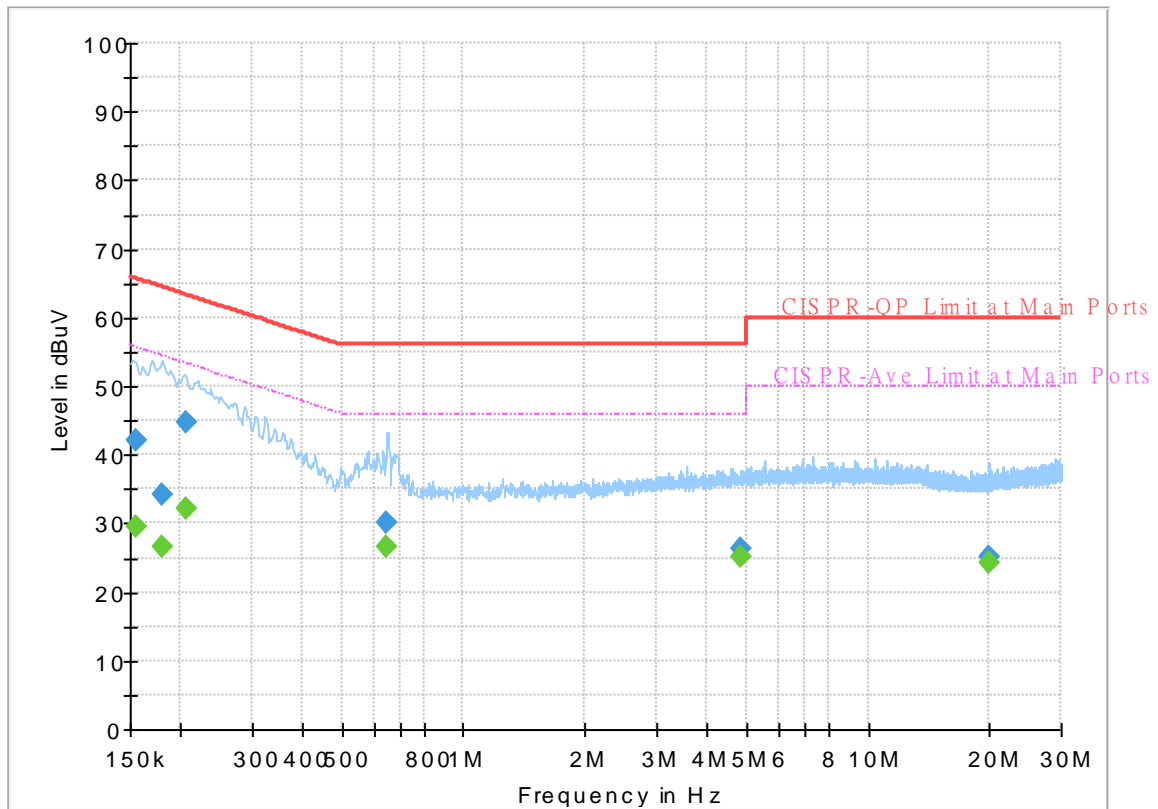
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Jimmy Chang	Temperature :	22~23°C
		Relative Humidity :	55~57%

EUT Information

Report NO : 891148-01
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



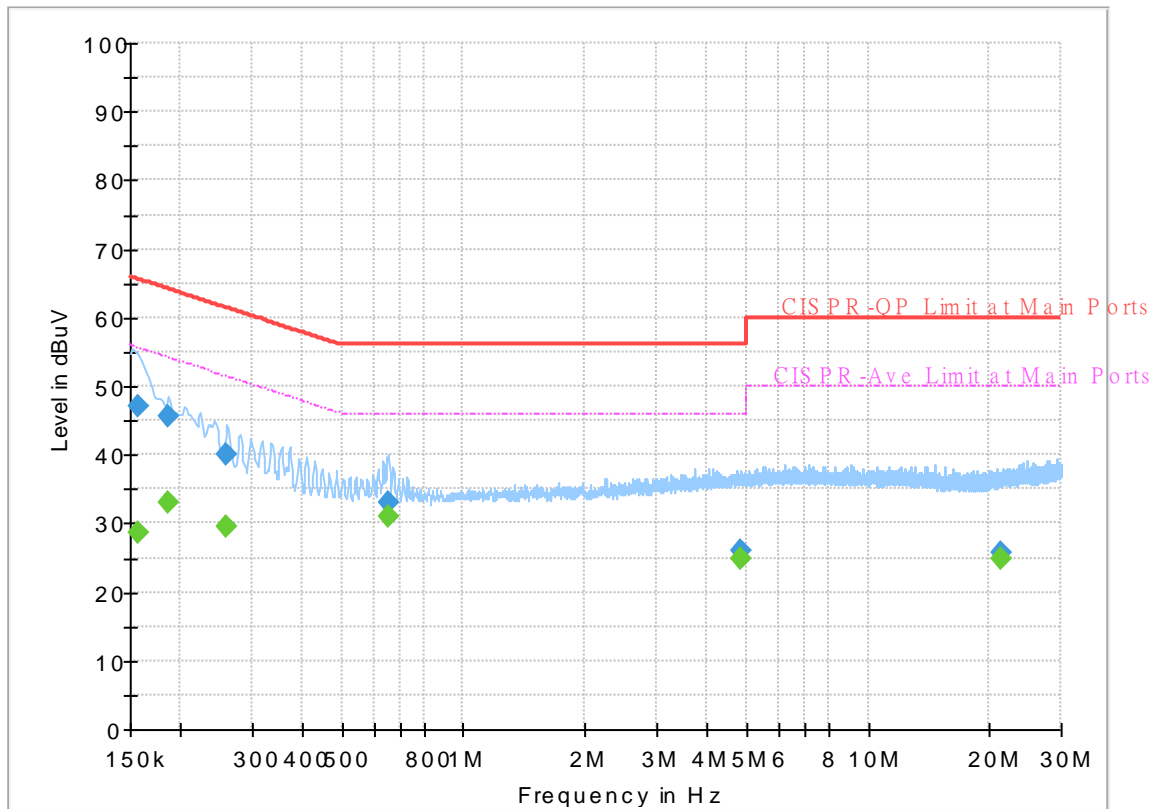
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154500	---	29.66	55.75	26.09	L1	OFF	19.5
0.154500	42.08	---	65.75	23.67	L1	OFF	19.5
0.179250	---	26.70	54.52	27.82	L1	OFF	19.5
0.179250	34.34	---	64.52	30.18	L1	OFF	19.5
0.206250	---	32.25	53.36	21.11	L1	OFF	19.5
0.206250	44.65	---	63.36	18.71	L1	OFF	19.5
0.647250	---	26.53	46.00	19.47	L1	OFF	19.6
0.647250	29.98	---	56.00	26.02	L1	OFF	19.6
4.863750	---	25.18	46.00	20.82	L1	OFF	19.7
4.863750	26.42	---	56.00	29.58	L1	OFF	19.7
19.925250	---	24.30	50.00	25.70	L1	OFF	20.3
19.925250	25.08	---	60.00	34.92	L1	OFF	20.3

EUT Information

Report NO : 891148-01
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	---	28.58	55.63	27.05	N	OFF	19.5
0.156750	47.08	---	65.63	18.55	N	OFF	19.5
0.186000	---	33.00	54.21	21.21	N	OFF	19.5
0.186000	45.53	---	64.21	18.68	N	OFF	19.5
0.260250	---	29.41	51.42	22.01	N	OFF	19.5
0.260250	40.09	---	61.42	21.33	N	OFF	19.5
0.651750	---	30.87	46.00	15.13	N	OFF	19.6
0.651750	32.99	---	56.00	23.01	N	OFF	19.6
4.823250	---	24.75	46.00	21.25	N	OFF	19.7
4.823250	25.90	---	56.00	30.10	N	OFF	19.7
21.293250	---	24.75	50.00	25.25	N	OFF	20.4
21.293250	25.83	---	60.00	34.17	N	OFF	20.4



Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh, and Troye Hsien	Temperature :	24~26 °C
		Relative Humidity :	50~51 %

<For Sample 1>

<Adapter 1>

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a CH 149 5745MHz		5646.8	49.63	-18.57	68.2	38.78	34.5	11.43	35.08	197	150	P	H	
		5688.2	51.62	-44.88	96.5	40.75	34.5	11.46	35.09	197	150	P	H	
		5716.8	63.65	-46.26	109.91	52.72	34.53	11.5	35.1	197	150	P	H	
		5723.6	70.38	-48.63	119.01	59.41	34.57	11.5	35.1	197	150	P	H	
	*	5745	111.98	-	-	100.95	34.6	11.53	35.1	197	150	P	H	
	*	5745	104.46	-	-	93.43	34.6	11.53	35.1	197	150	A	H	
														H
														H
			5623.4	49.78	-18.42	68.2	38.93	34.5	11.43	35.08	336	10	P	V
			5699.4	51.67	-53.09	104.76	40.8	34.5	11.46	35.09	336	10	P	V
			5717.2	62.4	-47.62	110.02	51.47	34.53	11.5	35.1	336	10	P	V
			5725	72.75	-49.45	122.2	61.78	34.57	11.5	35.1	336	10	P	V
	*		5745	113.36	-	-	102.33	34.6	11.53	35.1	336	10	P	V
	*		5745	105.42	-	-	94.39	34.6	11.53	35.1	336	10	A	V
														V
													V	



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)	
802.11a CH 157 5785MHz		5643.2	49.1	-19.1	68.2	38.25	34.5	11.43	35.08	197	147	P	H	
		5699.2	49.94	-54.67	104.61	39.07	34.5	11.46	35.09	197	147	P	H	
		5701.8	50.49	-55.21	105.7	39.55	34.53	11.5	35.09	197	147	P	H	
		5720.6	50.43	-61.74	112.17	39.46	34.57	11.5	35.1	197	147	P	H	
	*	5785	111.59	-	-	100.41	34.73	11.56	35.11	197	147	P	H	
	*	5785	104.28	-	-	93.1	34.73	11.56	35.11	197	147	A	H	
		5852.4	49.14	-67.59	116.73	37.86	34.8	11.6	35.12	197	147	P	H	
		5868	49.55	-57.61	107.16	38.22	34.8	11.65	35.12	197	147	P	H	
		5883.2	49.57	-49.54	99.11	38.24	34.8	11.65	35.12	197	147	P	H	
		5934.8	48.08	-20.12	68.2	36.65	34.87	11.69	35.13	197	147	P	H	
														H
														H
			5603.6	49.54	-18.66	68.2	38.72	34.5	11.4	35.08	332	12	P	V
			5685.4	50.34	-44.09	94.43	39.47	34.5	11.46	35.09	332	12	P	V
			5709.4	51.83	-56	107.83	40.9	34.53	11.5	35.1	332	12	P	V
			5723	50.51	-67.13	117.64	39.54	34.57	11.5	35.1	332	12	P	V
	*		5785	112.83	-	-	101.65	34.73	11.56	35.11	332	12	P	V
	*		5785	105.4	-	-	94.22	34.73	11.56	35.11	332	12	A	V
			5851.6	49.56	-68.99	118.55	38.28	34.8	11.6	35.12	332	12	P	V
			5861.6	48.96	-59.99	108.95	37.63	34.8	11.65	35.12	332	12	P	V
		5883.2	49.2	-49.91	99.11	37.87	34.8	11.65	35.12	332	12	P	V	
		5932.8	48.43	-19.77	68.2	37	34.87	11.69	35.13	332	12	P	V	
													V	
													V	



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant. 1+2		(MHz)	(dBμV/m)	(dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)	
802.11a CH 165 5825MHz	*	5825	112.2	-	-	100.91	34.8	11.6	35.11	196	148	P	H	
	*	5825	105.1	-	-	93.81	34.8	11.6	35.11	196	148	A	H	
		5850.2	59.25	-62.49	121.74	47.97	34.8	11.6	35.12	196	148	P	H	
		5855.6	57.11	-53.52	110.63	45.83	34.8	11.6	35.12	196	148	P	H	
		5879.4	50.11	-51.82	101.93	38.78	34.8	11.65	35.12	196	148	P	H	
		5933	48.91	-19.29	68.2	37.48	34.87	11.69	35.13	196	148	P	H	
														H
														H
	*	5825	112.98	-	-	101.69	34.8	11.6	35.11	345	16	P	V	
	*	5825	105.84	-	-	94.55	34.8	11.6	35.11	345	16	A	V	
		5851.6	66.06	-52.49	118.55	54.78	34.8	11.6	35.12	345	16	P	V	
		5855.8	61.48	-49.1	110.58	50.2	34.8	11.6	35.12	345	16	P	V	
		5876.2	49.57	-54.74	104.31	38.24	34.8	11.65	35.12	345	16	P	V	
		5933	48.91	-19.29	68.2	37.48	34.87	11.69	35.13	345	16	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.	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		11490	56.4	-17.6	74	57.32	37.98	18.44	57.34	107	350	P	H
		11490	47.55	-6.45	54	48.47	37.98	18.44	57.34	107	350	A	H
		17235	52.93	-15.27	68.2	45.88	41	21.8	55.75	100	0	P	H
													H
		11490	53.44	-20.56	74	54.36	37.98	18.44	57.34	208	360	P	V
		11490	44.45	-9.55	54	45.37	37.98	18.44	57.34	208	360	A	V
		17235	52.19	-16.01	68.2	45.14	41	21.8	55.75	100	0	P	V
802.11a CH 157 5785MHz		11570	54.58	-19.42	74	55.17	38.07	18.54	57.2	100	351	P	H
		11570	45.91	-8.09	54	46.5	38.07	18.54	57.2	100	351	A	H
		17355	53.13	-15.07	68.2	46.05	40.9	21.91	55.73	100	0	P	H
													H
		11570	52.13	-21.87	74	52.72	38.07	18.54	57.2	203	360	P	V
		11570	43.47	-10.53	54	44.06	38.07	18.54	57.2	203	360	A	V
		17355	52.15	-16.05	68.2	45.07	40.9	21.91	55.73	100	0	P	V
802.11a CH 165 5825MHz		11650	55.69	-18.31	74	55.98	38.18	18.64	57.11	100	349	P	H
		11650	46.66	-7.34	54	46.95	38.18	18.64	57.11	100	349	A	H
		17475	52.14	-16.06	68.2	45.17	40.67	22.01	55.71	100	0	P	H
													H
		11650	53.12	-20.88	74	53.41	38.18	18.64	57.11	208	360	P	V
		11650	43.66	-10.34	54	43.95	38.18	18.64	57.11	208	360	A	V
		17475	52.11	-16.09	68.2	45.14	40.67	22.01	55.71	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11n HT20 CH 149 5745MHz		5650	49.62	-18.58	68.2	38.77	34.5	11.43	35.08	202	149	P	H	
		5700	54.13	-51.07	105.2	43.26	34.5	11.46	35.09	202	149	P	H	
		5720	71.04	-39.76	110.8	60.07	34.57	11.5	35.1	202	149	P	H	
		5721.6	74.23	-40.22	114.45	63.26	34.57	11.5	35.1	202	149	P	H	
	*	5745	112.56	-	-	101.53	34.6	11.53	35.1	202	149	P	H	
	*	5745	104.54	-	-	93.51	34.6	11.53	35.1	202	149	A	H	
														H
														H
			5627.4	49.8	-18.4	68.2	38.95	34.5	11.43	35.08	320	12	P	V
			5698.2	52.37	-51.5	103.87	41.5	34.5	11.46	35.09	320	12	P	V
			5715.8	64.93	-44.7	109.63	54	34.53	11.5	35.1	320	12	P	V
			5724.8	71.65	-50.09	121.74	60.68	34.57	11.5	35.1	320	12	P	V
	*		5745	113.5	-	-	102.47	34.6	11.53	35.1	320	12	P	V
	*		5745	104.62	-	-	93.59	34.6	11.53	35.1	320	12	A	V
													V	
													V	



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)	
802.11n HT20 CH 157 5785MHz		5638.6	49.65	-18.55	68.2	38.8	34.5	11.43	35.08	181	147	P	H	
		5693.6	50.32	-50.16	100.48	39.45	34.5	11.46	35.09	181	147	P	H	
		5718.6	51.19	-59.22	110.41	40.22	34.57	11.5	35.1	181	147	P	H	
		5724.6	51.36	-69.93	121.29	40.39	34.57	11.5	35.1	181	147	P	H	
	*	5785	111.72	-	-	100.54	34.73	11.56	35.11	181	147	P	H	
	*	5785	103.96	-	-	92.78	34.73	11.56	35.11	181	147	A	H	
		5851	49.36	-70.56	119.92	38.08	34.8	11.6	35.12	181	147	P	H	
		5862	49.27	-59.57	108.84	37.94	34.8	11.65	35.12	181	147	P	H	
		5888	49.54	-46.01	95.55	38.21	34.8	11.65	35.12	181	147	P	H	
		5948	49.15	-19.05	68.2	37.64	34.9	11.74	35.13	181	147	P	H	
														H
														H
			5630.6	50.5	-17.7	68.2	39.65	34.5	11.43	35.08	333	12	P	V
			5698.2	49.38	-54.49	103.87	38.51	34.5	11.46	35.09	333	12	P	V
			5705.6	49.75	-57.02	106.77	38.82	34.53	11.5	35.1	333	12	P	V
			5724.2	50.11	-70.27	120.38	39.14	34.57	11.5	35.1	333	12	P	V
	*		5785	113.98	-	-	102.8	34.73	11.56	35.11	333	12	P	V
	*		5785	106.33	-	-	95.15	34.73	11.56	35.11	333	12	A	V
			5853.2	48.95	-65.95	114.9	37.67	34.8	11.6	35.12	333	12	P	V
			5872.4	49.61	-56.32	105.93	38.28	34.8	11.65	35.12	333	12	P	V
		5919.2	48.52	-23.96	72.48	37.13	34.83	11.69	35.13	333	12	P	V	
		5929.8	49.45	-18.75	68.2	38.02	34.87	11.69	35.13	333	12	P	V	
													V	
													V	



WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant. 1+2		(MHz)	(dBμV/m)	(dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)	
802.11n HT20 CH 165 5825MHz	*	5825	112.82	-	-	101.53	34.8	11.6	35.11	198	149	P	H	
	*	5825	104.82	-	-	93.53	34.8	11.6	35.11	198	149	A	H	
		5853.4	61.73	-52.72	114.45	50.45	34.8	11.6	35.12	198	149	P	H	
		5857.8	57.59	-52.42	110.01	46.31	34.8	11.6	35.12	198	149	P	H	
		5884.4	50.4	-47.82	98.22	39.07	34.8	11.65	35.12	198	149	P	H	
		5925.4	49.7	-18.5	68.2	38.27	34.87	11.69	35.13	198	149	P	H	
														H
														H
	*	5825	112.42	-	-	101.13	34.8	11.6	35.11	328	16	P	V	
	*	5825	104.76	-	-	93.47	34.8	11.6	35.11	328	16	A	V	
		5850.2	74.78	-46.96	121.74	63.5	34.8	11.6	35.12	328	16	P	V	
		5859.6	63.11	-46.4	109.51	51.83	34.8	11.6	35.12	328	16	P	V	
		5876.6	51.4	-52.61	104.01	40.07	34.8	11.65	35.12	328	16	P	V	
		5935.6	49.22	-18.98	68.2	37.79	34.87	11.69	35.13	328	16	P	V	
														V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



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

WIFI Ant.	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)
802.11n HT20 CH 149 5745MHz		11490	56.34	-17.66	74	57.26	37.98	18.44	57.34	107	351	P	H
		11490	47.41	-6.59	54	48.33	37.98	18.44	57.34	107	351	A	H
		17235	52.51	-15.69	68.2	45.46	41	21.8	55.75	100	0	P	H
													H
		11490	54.42	-19.58	74	55.34	37.98	18.44	57.34	201	6	P	V
		11490	45.17	-8.83	54	46.09	37.98	18.44	57.34	201	6	A	V
		17235	53.4	-14.8	68.2	46.35	41	21.8	55.75	100	0	P	V
													V
802.11n HT20 CH 157 5785MHz		11570	56.64	-17.36	74	57.23	38.07	18.54	57.2	119	354	P	H
		11570	46.43	-7.57	54	47.02	38.07	18.54	57.2	119	354	A	H
		17355	53.2	-15	68.2	46.12	40.9	21.91	55.73	100	0	P	H
													H
		11570	50.23	-23.77	74	50.82	38.07	18.54	57.2	100	0	P	V
		17355	53.2	-15	68.2	46.12	40.9	21.91	55.73	100	0	P	V
													V
802.11n HT20 CH 165 5825MHz		11650	56.26	-17.74	74	56.55	38.18	18.64	57.11	120	354	P	H
		11650	46.66	-7.34	54	46.95	38.18	18.64	57.11	120	354	A	H
		17475	52.68	-15.52	68.2	45.71	40.67	22.01	55.71	100	0	P	H
													H
		11650	57.12	-16.88	74	57.41	38.18	18.64	57.11	210	11	P	V
		11650	46.09	-7.91	54	46.38	38.18	18.64	57.11	210	11	A	V
		17475	52.42	-15.78	68.2	45.45	40.67	22.01	55.71	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n 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)
		5648.6	50.96	-17.24	68.2	40.11	34.5	11.43	35.08	194	146	P	H
		5699.6	57.58	-47.33	104.91	46.71	34.5	11.46	35.09	194	146	P	H
		5718.4	75.41	-34.94	110.35	64.44	34.57	11.5	35.1	194	146	P	H
		5720.8	75.81	-36.81	112.62	64.84	34.57	11.5	35.1	194	146	P	H
	*	5755	109.18	-	-	98.08	34.67	11.53	35.1	194	146	P	H
	*	5755	101.28	-	-	90.18	34.67	11.53	35.1	194	146	A	H
		5854	50.51	-62.57	113.08	39.23	34.8	11.6	35.12	194	146	P	H
		5863.2	49.14	-59.36	108.5	37.81	34.8	11.65	35.12	194	146	P	H
		5900.4	48.63	-37.73	86.36	37.26	34.8	11.69	35.12	194	146	P	H
		5931.4	48.76	-19.44	68.2	37.33	34.87	11.69	35.13	194	146	P	H
802.11n													H
HT40													H
CH 151		5637.6	50.36	-17.84	68.2	39.51	34.5	11.43	35.08	320	11	P	V
5755MHz		5699.2	57.34	-47.27	104.61	46.47	34.5	11.46	35.09	320	11	P	V
		5718.4	76.17	-34.18	110.35	65.2	34.57	11.5	35.1	320	11	P	V
		5723.8	76.94	-42.52	119.46	65.97	34.57	11.5	35.1	320	11	P	V
	*	5755	110	-	-	98.9	34.67	11.53	35.1	320	11	P	V
	*	5755	102.64	-	-	91.54	34.67	11.53	35.1	320	11	A	V
		5853.6	49.81	-64.18	113.99	38.53	34.8	11.6	35.12	320	11	P	V
		5855.6	49.46	-61.17	110.63	38.18	34.8	11.6	35.12	320	11	P	V
		5897.6	49.35	-39.09	88.44	38.02	34.8	11.65	35.12	320	11	P	V
		5927.8	48.47	-19.73	68.2	37.04	34.87	11.69	35.13	320	11	P	V
													V
													V



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)	
802.11n HT40 CH 159 5795MHz		5626.8	50.16	-18.04	68.2	39.31	34.5	11.43	35.08	199	148	P	H	
		5696.4	50.65	-51.9	102.55	39.78	34.5	11.46	35.09	199	148	P	H	
		5712.8	52.28	-56.51	108.79	41.35	34.53	11.5	35.1	199	148	P	H	
		5723.8	53.51	-65.95	119.46	42.54	34.57	11.5	35.1	199	148	P	H	
	*	5795	108.62	-	-	97.37	34.8	11.56	35.11	199	148	P	H	
	*	5795	101.31	-	-	90.06	34.8	11.56	35.11	199	148	A	H	
		5851.2	55.96	-63.5	119.46	44.68	34.8	11.6	35.12	199	148	P	H	
		5858.4	53.19	-56.66	109.85	41.91	34.8	11.6	35.12	199	148	P	H	
		5878.4	51.79	-50.88	102.67	40.46	34.8	11.65	35.12	199	148	P	H	
		5929	48.69	-19.51	68.2	37.26	34.87	11.69	35.13	199	148	P	H	
														H
														H
			5647.2	50.3	-17.9	68.2	39.45	34.5	11.43	35.08	331	10	P	V
			5699.2	51.23	-53.38	104.61	40.36	34.5	11.46	35.09	331	10	P	V
			5718.2	52.51	-57.79	110.3	41.54	34.57	11.5	35.1	331	10	P	V
			5720.6	53.88	-58.29	112.17	42.91	34.57	11.5	35.1	331	10	P	V
	*		5795	109.25	-	-	98	34.8	11.56	35.11	331	10	P	V
	*		5795	101.65	-	-	90.4	34.8	11.56	35.11	331	10	A	V
			5851.2	58.69	-60.77	119.46	47.41	34.8	11.6	35.12	331	10	P	V
			5856	55.77	-54.75	110.52	44.49	34.8	11.6	35.12	331	10	P	V
		5877.2	51.02	-52.55	103.57	39.69	34.8	11.65	35.12	331	10	P	V	
		5937.2	49.53	-18.67	68.2	38.1	34.87	11.69	35.13	331	10	P	V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



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

WIFI Ant.	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)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		11510	53.84	-20.16	74	54.65	38	18.49	57.3	143	350	P	H
		11510	45.22	-8.78	54	46.03	38	18.49	57.3	143	350	A	H
		17265	52.85	-15.35	68.2	45.77	41	21.83	55.75	100	0	P	H
													H
		11510	50.59	-23.41	74	51.4	38	18.49	57.3	100	0	P	V
		17265	53.16	-15.04	68.2	46.08	41	21.83	55.75	100	0	P	V
													V
802.11n HT40 CH 159 5795MHz		11590	49.98	-24.02	74	50.49	38.08	18.59	57.18	100	0	P	H
		17385	52.34	-15.86	68.2	45.29	40.83	21.94	55.72	100	0	P	H
													H
													H
		11590	50.74	-23.26	74	51.25	38.08	18.59	57.18	100	0	P	V
		17385	53.05	-15.15	68.2	46	40.83	21.94	55.72	100	0	P	V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac 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)
		5649.6	51.2	-17	68.2	40.35	34.5	11.43	35.08	200	147	P	H
		5698.4	74.27	-29.75	104.02	63.4	34.5	11.46	35.09	200	147	P	H
		5719	76.75	-33.77	110.52	65.78	34.57	11.5	35.1	200	147	P	H
		5720.4	76.55	-35.16	111.71	65.58	34.57	11.5	35.1	200	147	P	H
	*	5775	105.71	-	-	94.55	34.73	11.53	35.1	200	147	P	H
	*	5775	98.18	-	-	87.02	34.73	11.53	35.1	200	147	A	H
		5850.8	70.31	-50.07	120.38	59.03	34.8	11.6	35.12	200	147	P	H
		5858.8	70.99	-38.74	109.73	59.71	34.8	11.6	35.12	200	147	P	H
		5879	65.47	-36.76	102.23	54.14	34.8	11.65	35.12	200	147	P	H
		5947.2	49.37	-18.83	68.2	37.86	34.9	11.74	35.13	200	147	P	H
802.11ac													H
VHT80													H
CH 155		5649.4	54.21	-13.99	68.2	43.36	34.5	11.43	35.08	318	2	P	V
5775MHz		5692.8	73.61	-26.28	99.89	62.74	34.5	11.46	35.09	318	2	P	V
		5720	75.76	-35.04	110.8	64.79	34.57	11.5	35.1	318	2	P	V
		5720.2	76.06	-35.2	111.26	65.09	34.57	11.5	35.1	318	2	P	V
	*	5775	107.27	-	-	96.11	34.73	11.53	35.1	318	2	P	V
	*	5775	99.14	-	-	87.98	34.73	11.53	35.1	318	2	A	V
		5852.2	73.37	-43.81	117.18	62.09	34.8	11.6	35.12	318	2	P	V
		5856.2	70.11	-40.35	110.46	58.83	34.8	11.6	35.12	318	2	P	V
		5875	64.9	-40.3	105.2	53.57	34.8	11.65	35.12	318	2	P	V
		5928	49.87	-18.33	68.2	38.44	34.87	11.69	35.13	318	2	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.	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)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 155 5775MHz		11550	49.19	-24.81	74	49.83	38.05	18.54	57.23	100	0	P	H
		17325	52.57	-15.63	68.2	45.46	40.97	21.88	55.74	100	0	P	H
													H
													H
		11550	48.64	-25.36	74	49.28	38.05	18.54	57.23	100	0	P	V
		17325	52.94	-15.26	68.2	45.83	40.97	21.88	55.74	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 802.11a (LF @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
5GHz 802.11a LF		30	31.63	-8.37	40	35.88	24.6	1.33	30.18	100	0	P	H	
		189.57	27.89	-15.61	43.5	40.74	14.75	2.37	29.97	-	-	P	H	
		240.6	30	-16	46	40.1	17.22	2.63	29.95	-	-	P	H	
		562.5	27.26	-18.74	46	27.5	25.82	3.81	29.87	-	-	P	H	
		907.6	32.65	-13.35	46	27.65	28.89	4.96	28.85	-	-	P	H	
		999.3	34.91	-19.09	54	27.72	30.3	5.12	28.23	-	-	P	H	
														H
														H
														H
														H
														H
														H
			30.27	32.73	-7.27	40	36.98	24.6	1.33	30.18	100	0	P	V
			128.28	27.53	-15.97	43.5	38.04	17.53	2.01	30.05	-	-	P	V
			183.63	26.17	-17.33	43.5	38.91	14.87	2.37	29.98	-	-	P	V
			567.4	27.27	-18.73	46	27.63	25.7	3.81	29.87	-	-	P	V
			881.7	32.42	-13.58	46	27.63	28.88	4.89	28.98	-	-	P	V
			1000	39.43	-14.57	54	32.26	30.27	5.12	28.22	-	-	P	V
														V
														V
													V	
													V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



<For Sample 1>

<Adapter 2>

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a CH 149 5745MHz		5616.8	51.01	-17.19	68.2	40.19	34.5	11.4	35.08	344	360	P	H	
		5696.6	55.73	-46.96	102.69	44.86	34.5	11.46	35.09	344	360	P	H	
		5720	65.8	-45	110.8	54.83	34.57	11.5	35.1	344	360	P	H	
		5725	75.79	-46.41	122.2	64.82	34.57	11.5	35.1	344	360	P	H	
	*	5745	115.14	-	-	104.11	34.6	11.53	35.1	344	360	P	H	
	*	5745	107.76	-	-	96.73	34.6	11.53	35.1	344	360	A	H	
														H
														H
			5613.4	50.24	-17.96	68.2	39.42	34.5	11.4	35.08	400	177	P	V
			5698.6	52.8	-51.37	104.17	41.93	34.5	11.46	35.09	400	177	P	V
			5718.8	64.82	-45.64	110.46	53.85	34.57	11.5	35.1	400	177	P	V
			5724	74.24	-45.68	119.92	63.27	34.57	11.5	35.1	400	177	P	V
	*		5745	114.04	-	-	103.01	34.6	11.53	35.1	400	177	P	V
	*		5745	106.8	-	-	95.77	34.6	11.53	35.1	400	177	A	V
														V
														V



**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 149 5745MHz		11490	52.92	-21.08	74	53.84	37.98	18.44	57.34	100	354	P	H	
		11490	43.03	-10.97	54	43.95	37.98	18.44	57.34	100	354	A	H	
		17235	52.58	-15.62	68.2	45.53	41	21.8	55.75	100	0	P	H	
													H	
			11490	52	-22	74	52.92	37.98	18.44	57.34	213	25	P	V
			11490	42.24	-11.76	54	43.16	37.98	18.44	57.34	213	25	A	V
			17235	53.62	-14.58	68.2	46.57	41	21.8	55.75	100	0	P	V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
5GHz 802.11a LF		30.81	22.47	-17.53	40	27.23	24.09	1.33	30.18	-	-	P	H	
		161.76	30.37	-13.13	43.5	41.77	16.36	2.25	30.01	-	-	P	H	
		285.15	28.1	-17.9	46	36.34	18.84	2.86	29.94	-	-	P	H	
		864.9	32.48	-13.52	46	27.65	29	4.88	29.05	-	-	P	H	
		944	33.42	-12.58	46	26.94	30.03	5.05	28.6	-	-	P	H	
		958.7	35.12	-10.88	46	27.77	30.8	5.05	28.5	100	0	P	H	
														H
														H
														H
														H
														H
														H
														H
			30.81	30.72	-9.28	40	35.48	24.09	1.33	30.18	100	0	P	V
			67.8	26.51	-13.49	40	42.79	12.14	1.71	30.13	-	-	P	V
			274.89	22.1	-23.9	46	30.2	18.97	2.87	29.94	-	-	P	V
			885.2	32.21	-13.79	46	27.44	28.85	4.89	28.97	-	-	P	V
			904.1	33.51	-12.49	46	28.61	28.81	4.96	28.87	-	-	P	V
			954.5	34.31	-11.69	46	27.2	30.59	5.05	28.53	-	-	P	V
														V
													V	
													V	
													V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



<For Sample 2>

<Adapter 1>

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a CH 149 5745MHz		5650	50.27	-17.93	68.2	39.42	34.5	11.43	35.08	207	141	P	H	
		5699.6	52.64	-52.27	104.91	41.77	34.5	11.46	35.09	207	141	P	H	
		5718.2	58.18	-52.12	110.3	47.21	34.57	11.5	35.1	207	141	P	H	
		5724.8	64.87	-56.87	121.74	53.9	34.57	11.5	35.1	207	141	P	H	
	*	5745	111.36	-	-	100.33	34.6	11.53	35.1	207	141	P	H	
	*	5745	103.87	-	-	92.84	34.6	11.53	35.1	207	141	A	H	
														H
														H
			5639.2	51.42	-16.78	68.2	40.57	34.5	11.43	35.08	345	17	P	V
			5697.8	51.68	-51.9	103.58	40.81	34.5	11.46	35.09	345	17	P	V
			5717.4	58.61	-51.46	110.07	47.68	34.53	11.5	35.1	345	17	P	V
			5725	69.29	-52.91	122.2	58.32	34.57	11.5	35.1	345	17	P	V
	*		5745	112.6	-	-	101.57	34.6	11.53	35.1	345	17	P	V
	*		5745	105.26	-	-	94.23	34.6	11.53	35.1	345	17	A	V
														V
														V



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 149 5745MHz		11490	55.7	-18.3	74	56.62	37.98	18.44	57.34	158	360	P	H
		11490	46.27	-7.73	54	47.19	37.98	18.44	57.34	158	360	A	H
		17235	52.74	-15.46	68.2	45.69	41	21.8	55.75	100	0	P	H
													H
		11490	54.08	-19.92	74	55	37.98	18.44	57.34	244	350	P	V
		11490	43.61	-10.39	54	44.53	37.98	18.44	57.34	244	350	A	V
		17235	53.09	-15.11	68.2	46.04	41	21.8	55.75	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz
5GHz WIFI 802.11a (LF @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
5GHz 802.11a LF		30.54	28.8	-11.2	40	33.56	24.09	1.33	30.18	-	-	P	H	
		48.9	25.18	-14.82	40	38.92	15.07	1.34	30.15	-	-	P	H	
		156.09	33.18	-10.32	43.5	44.18	16.76	2.25	30.01	100	0	P	H	
		870.5	32.47	-13.53	46	27.65	28.97	4.88	29.03	-	-	P	H	
		942.6	32.81	-13.19	46	26.4	29.97	5.05	28.61	-	-	P	H	
		950.3	34.04	-11.96	46	27.16	30.39	5.05	28.56	-	-	P	H	
														H
														H
														H
														H
														H
														H
			30	33.3	-6.7	40	37.55	24.6	1.33	30.18	100	0	P	V
			68.88	28.79	-11.21	40	44.97	12.24	1.7	30.12	-	-	P	V
			155.55	27.23	-16.27	43.5	38.18	16.81	2.25	30.01	-	-	P	V
			871.2	32.1	-13.9	46	27.29	28.96	4.88	29.03	-	-	P	V
			918.1	32.87	-13.13	46	27.55	29.13	4.97	28.78	-	-	P	V
			946.1	33.46	-12.54	46	26.86	30.13	5.05	28.58	-	-	P	V
														V
														V
													V	
													V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



Note symbol

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	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		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H
2412MHz													

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 D. Radiated Spurious Emission Plots

Test Engineer :	Jesse Wang, Stan Hsieh, and Troye Hsien	Temperature :	24~26 °C
		Relative Humidity :	50~51 %

Note symbol

-L	Low channel location
-R	High channel location



<For Sample 1>

<Adapter 1>

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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00211469 HORIZONTAL</p>

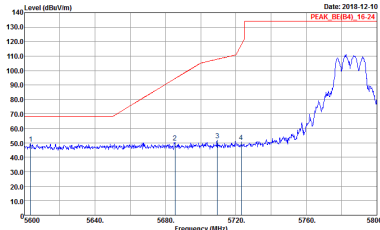
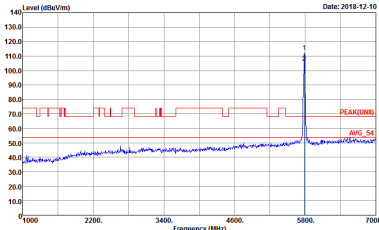
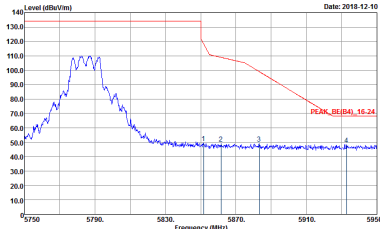


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>



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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(84)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00211469 HORIZONTAL</p>

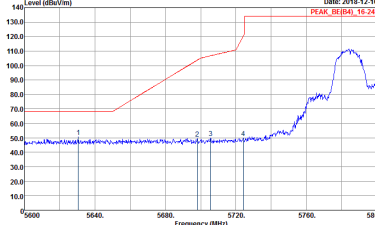
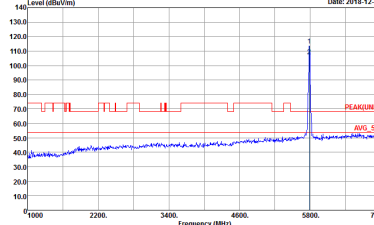
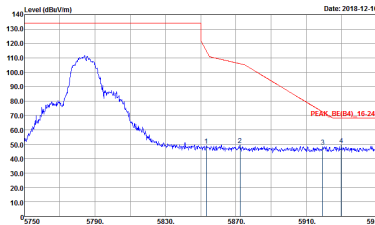


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>

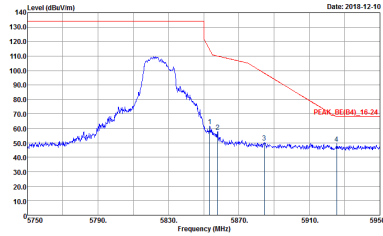
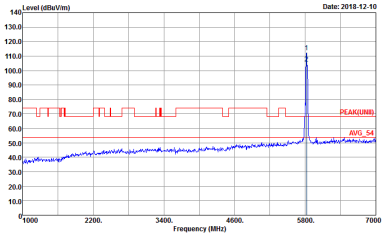


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	Left blank

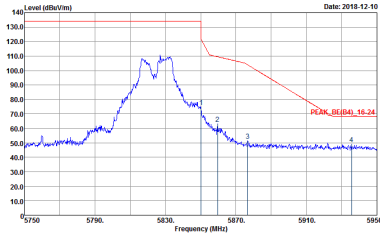
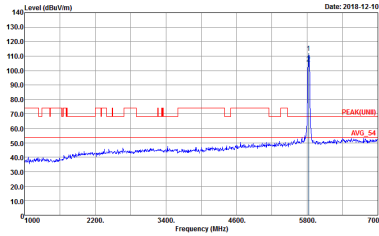


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	Left blank



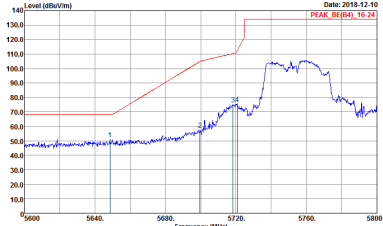
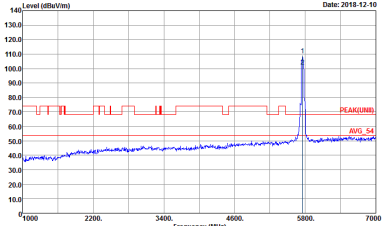
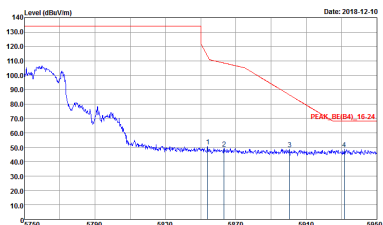
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(84)_16-24 3m HF_ANT_00211469 VERTICAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>



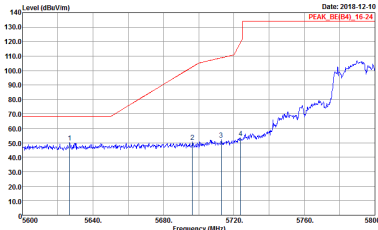
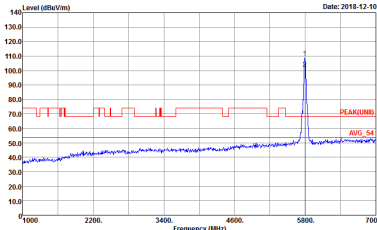
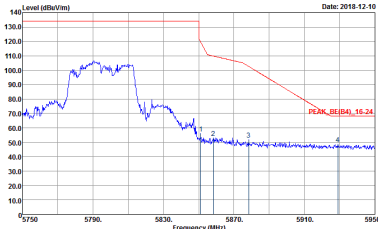
**Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00211469 HORIZONTAL</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	Left blank



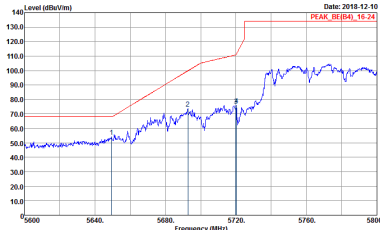
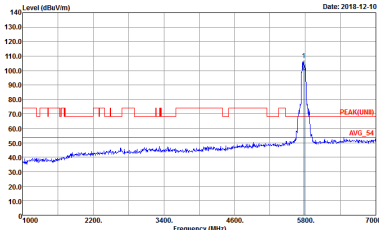
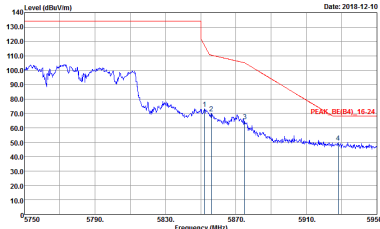
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	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	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(U11) 3m HF_ANT_00211469 HORIZONTAL</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	Left blank



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UM) 3m SHF-EHF_131029 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>



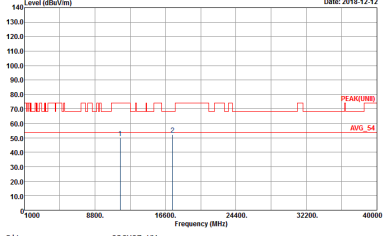
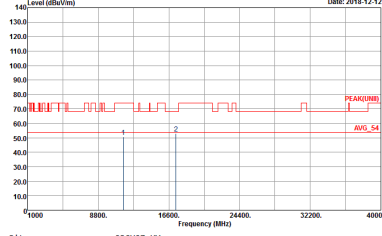
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
<p>Peak</p> <p>Avg.</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>

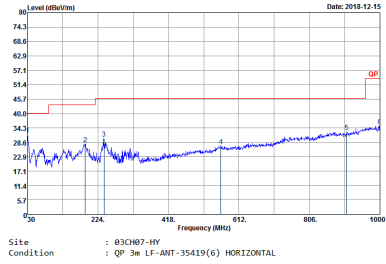
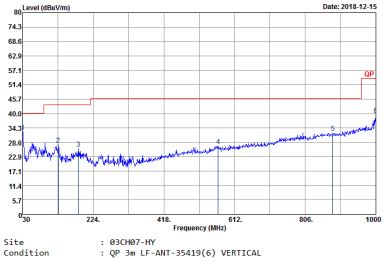


**Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL</p>



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

WIFI	5GHz 5725-5850MHz	
ANT	802.11a LF	
1+2	Horizontal	Vertical
QP / Peak	 <p>Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL</p>



<For Sample 1>

<Adapter 2>

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	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m SHF-EHF_131029 VERTICAL</p>



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

WIFI	5GHz 5725~5850MHz	
ANT	802.11a LF	
1+2	Horizontal	Vertical
QP / Peak	<p>Site : 03CH07-HY Condition : QP 3# LF-ANT-35419(6) HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : QP 3# LF-ANT-35419(6) VERTICAL</p>



<For Sample 2>

<Adapter 1>

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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 HORIZONTAL</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00211469 VERTICAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNIT) 3m HF_ANT_00211469 VERTICAL</p>



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m SHF-EHF_131029 VERTICAL</p>



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

WIFI	5GHz 5725-5850MHz	
ANT	802.11a LF	
1+2	Horizontal	Vertical
QP / Peak	<p>Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL</p>



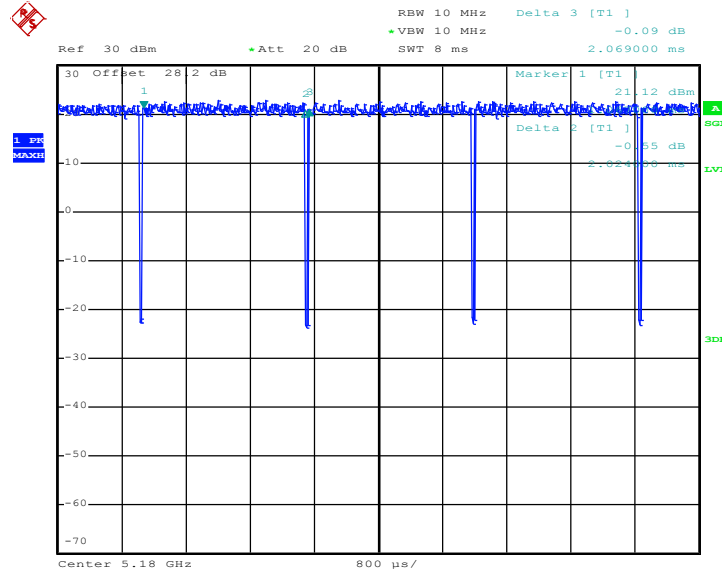
Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1	802.11a	97.83	2024	0.49	1kHz	0.10
2	802.11a	98.06	-	-	10Hz	0.09
1+2	802.11a for Ant. 1	97.35	2024	0.49	1kHz	0.12
1+2	802.11a for Ant. 2	98.31	-	-	10Hz	0.07
1	5GHz 802.11n HT20	97.36	1884	0.53	1kHz	0.12
2	5GHz 802.11n HT20	97.94	1900	0.53	1kHz	0.09
1+2	5GHz 802.11n HT20 for Ant. 1	97.36	1884	0.53	1kHz	0.12
1+2	5GHz 802.11n HT20 for Ant. 2	97.94	1900	0.53	1kHz	0.09
1	5GHz 802.11n HT40	96.48	932	1.07	3kHz	0.16
2	5GHz 802.11n HT40	95.95	924	1.08	3kHz	0.18
1+2	5GHz 802.11n HT40 for Ant. 1	95.95	924	1.08	3kHz	0.18
1+2	5GHz 802.11n HT40 for Ant. 2	95.85	924	1.08	3kHz	0.18
1	5GHz 802.11ac VHT20	97.83	1892	0.53	1kHz	0.10
2	5GHz 802.11ac VHT20	97.39	1902	0.53	1kHz	0.11
1+2	5GHz 802.11ac VHT20 for Ant. 1	97.38	1894	0.53	1kHz	0.12
1+2	5GHz 802.11ac VHT20 for Ant. 2	97.13	1894	0.53	1kHz	0.13
1	5GHz 802.11ac VHT40	95.98	931	1.07	3kHz	0.18
2	5GHz 802.11ac VHT40	95.98	931	1.07	3kHz	0.18
1+2	5GHz 802.11ac VHT40 for Ant. 1	96.48	933	1.07	3kHz	0.16
1+2	5GHz 802.11ac VHT40 for Ant. 2	95.78	931	1.07	3kHz	0.19
1	5GHz 802.11ac VHT80	91.87	452	2.21	3kHz	0.37
2	5GHz 802.11ac VHT80	91.87	452	2.21	3kHz	0.37
1+2	5GHz 802.11ac VHT80 for Ant. 1	91.87	452	2.21	3kHz	0.37
1+2	5GHz 802.11ac VHT80 for Ant. 2	91.94	456	2.19	3kHz	0.36



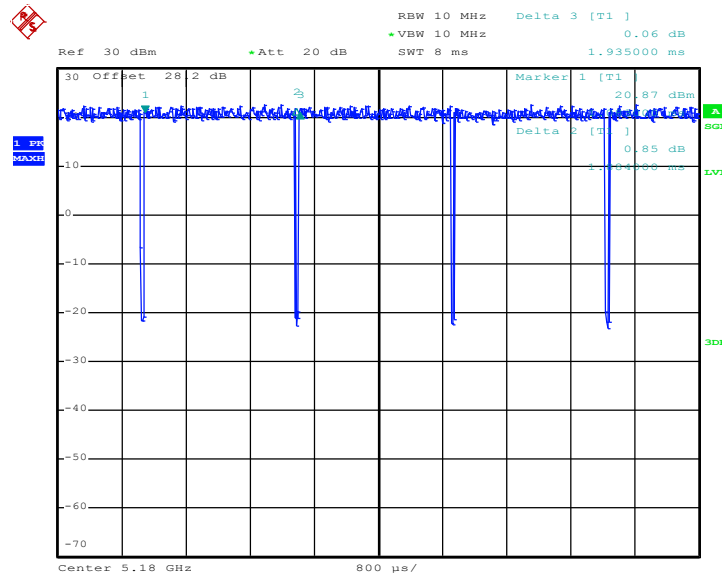
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802.11a



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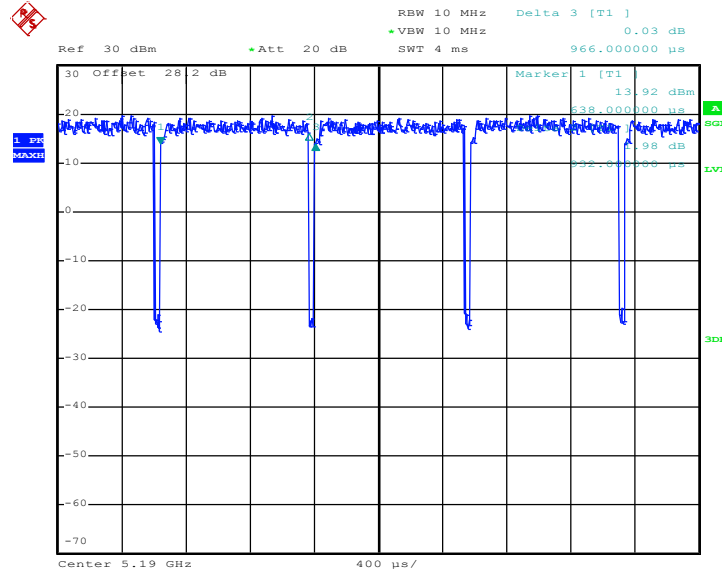
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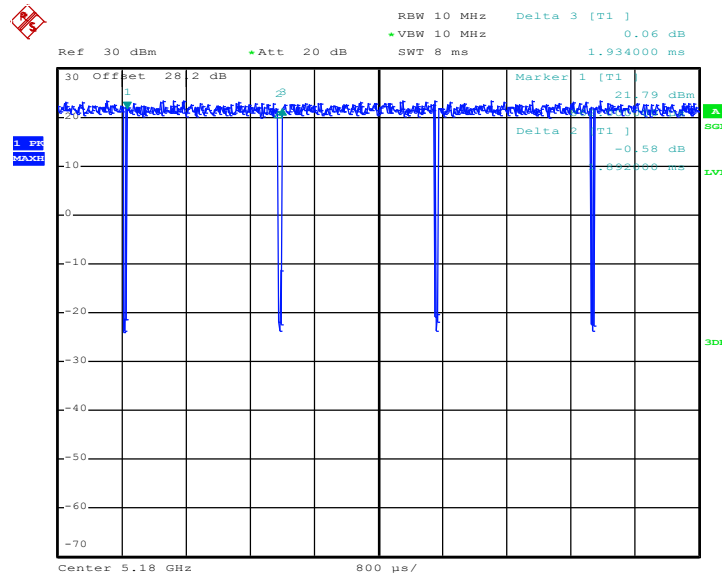


802.11n HT40



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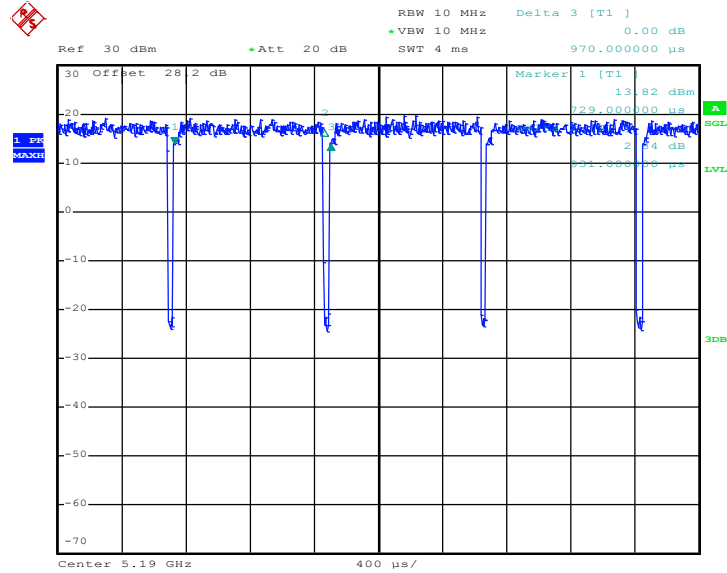
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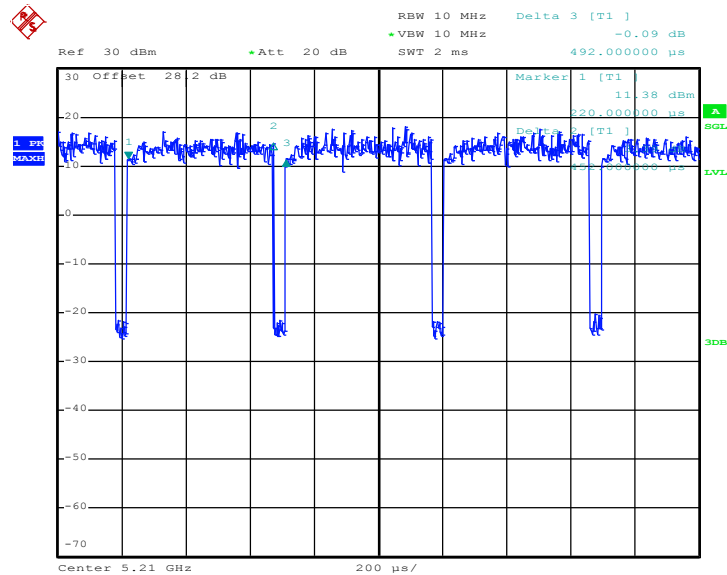


802.11ac VHT40



Date: 6.OCT.2018 01:14:20

802.11ac VHT80

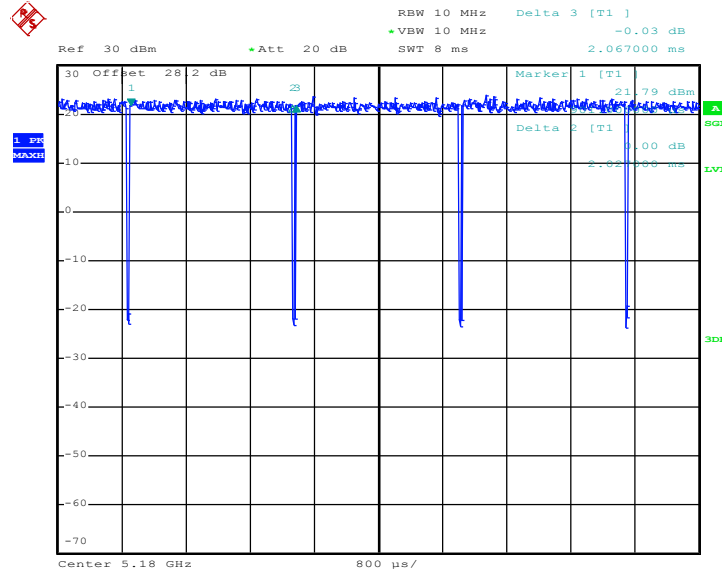


Date: 6.OCT.2018 01:42:04



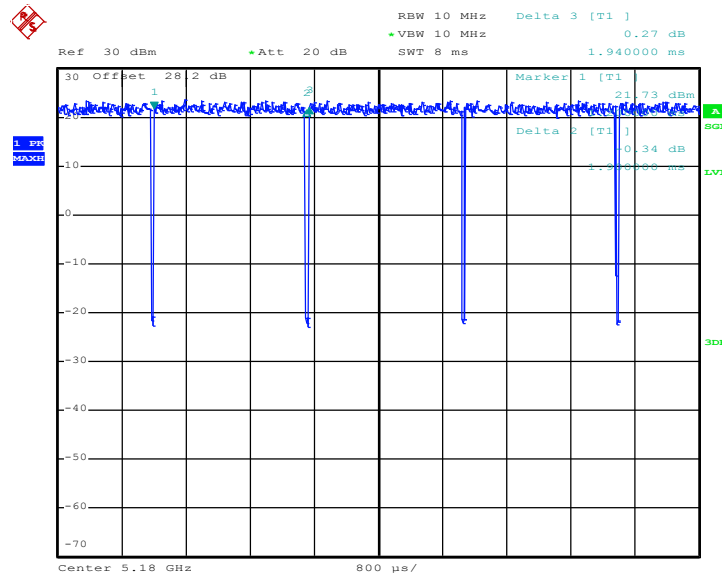
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802.11a



Date: 5.OCT.2018 22:55:02

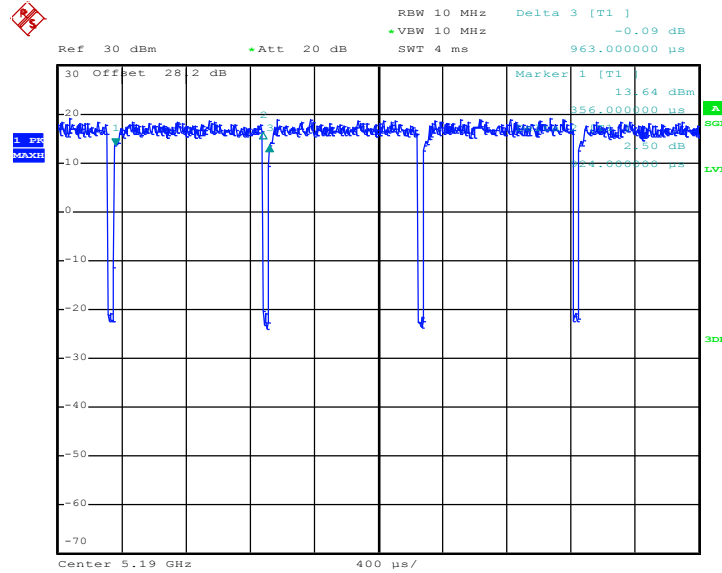
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Date: 5.OCT.2018 23:29:19

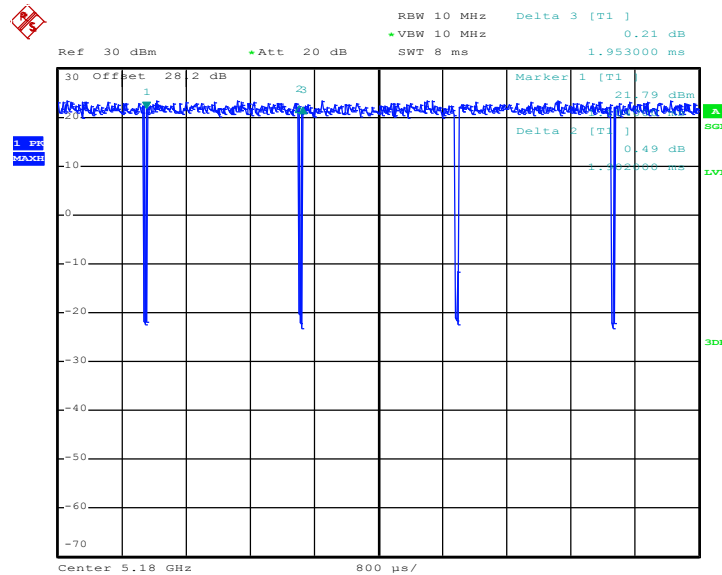


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Date: 6.OCT.2018 00:45:25

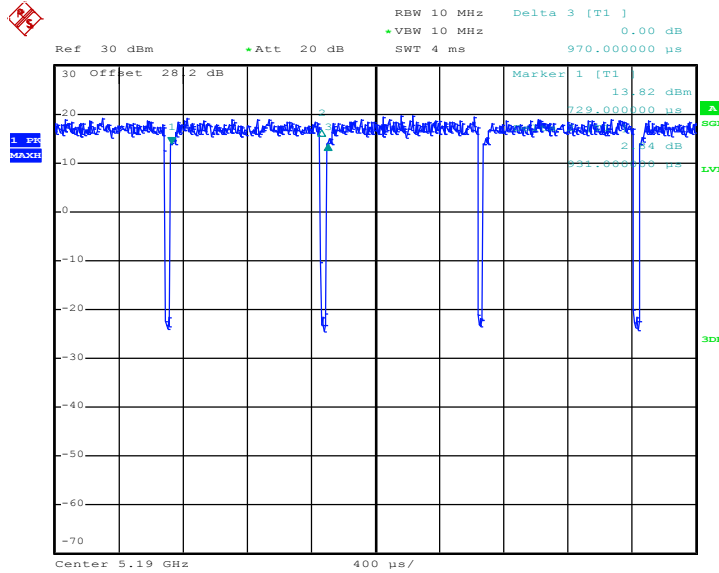
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Date: 6.OCT.2018 00:01:03

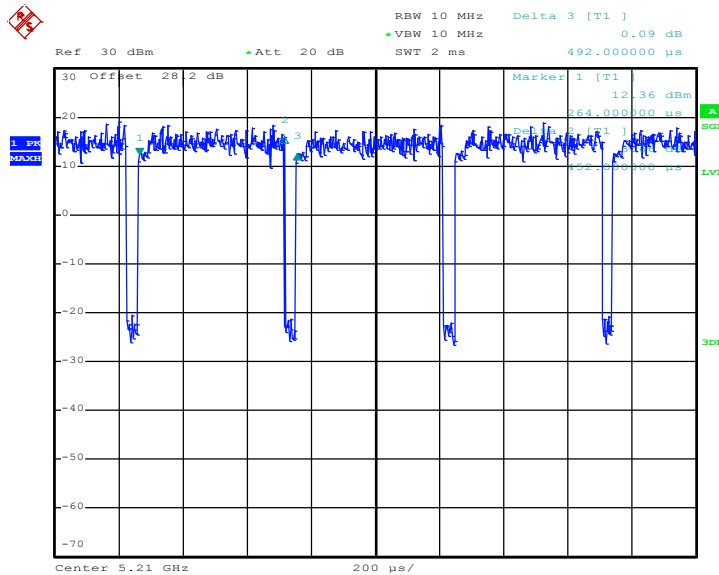


802.11ac VHT40



Date: 6.OCT.2018 01:14:20

802.11ac VHT80

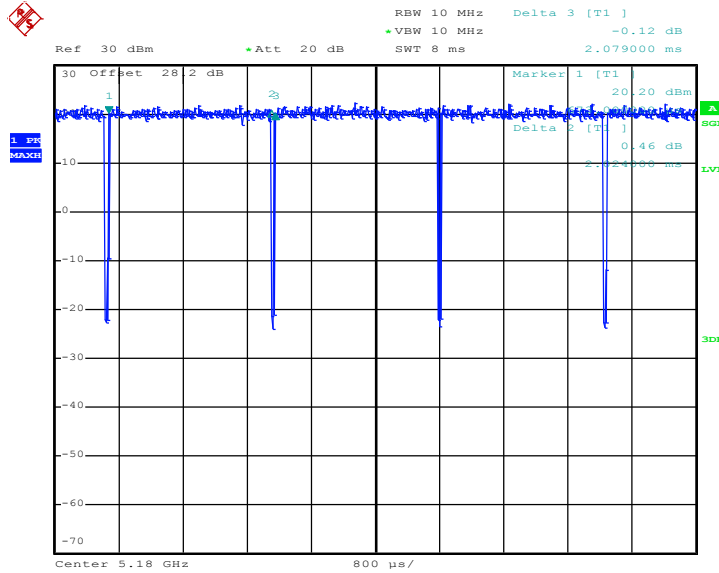


Date: 6.OCT.2018 01:47:41



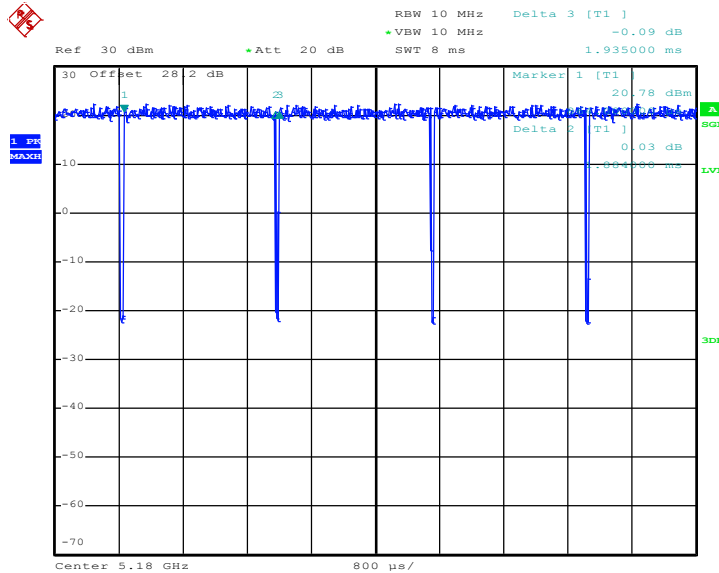
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Date: 5.OCT.2018 23:01:53

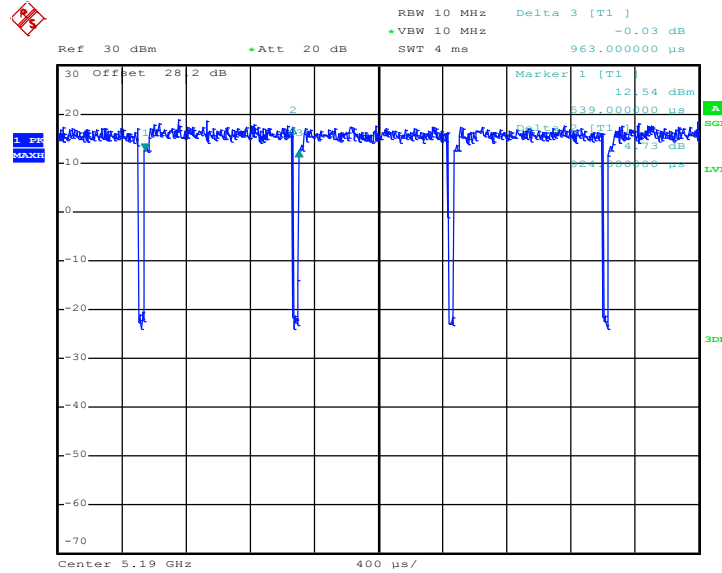
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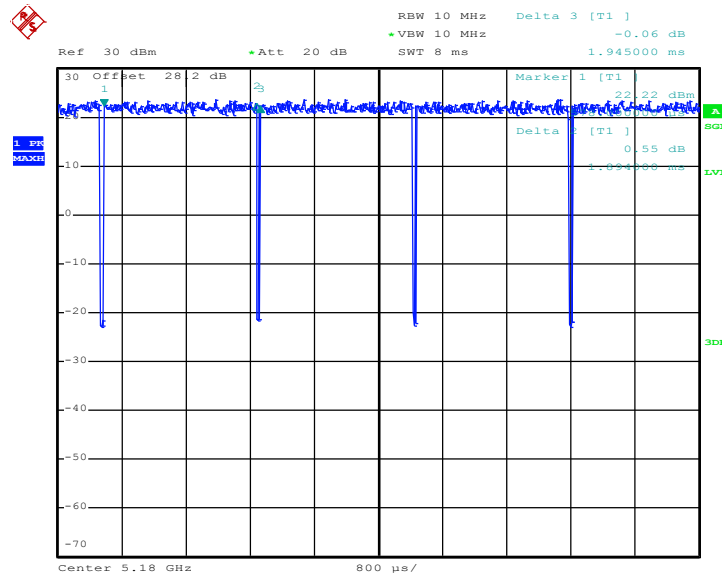


802.11n HT40



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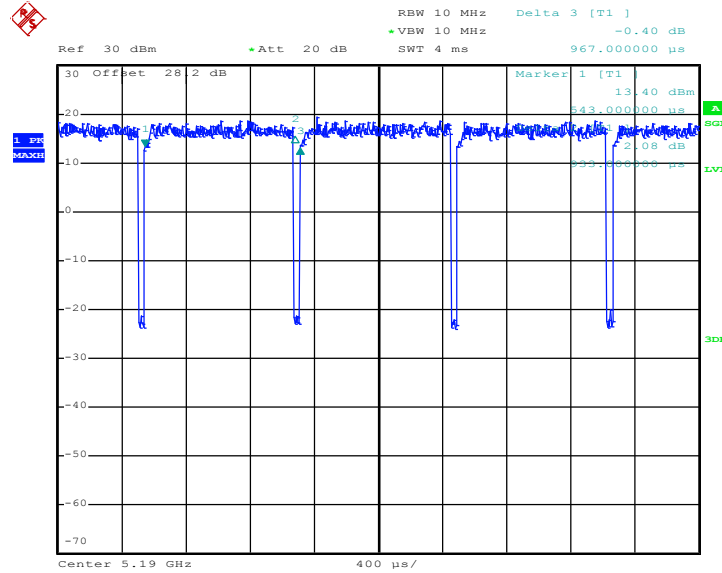
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Date: 6.OCT.2018 00:17:43

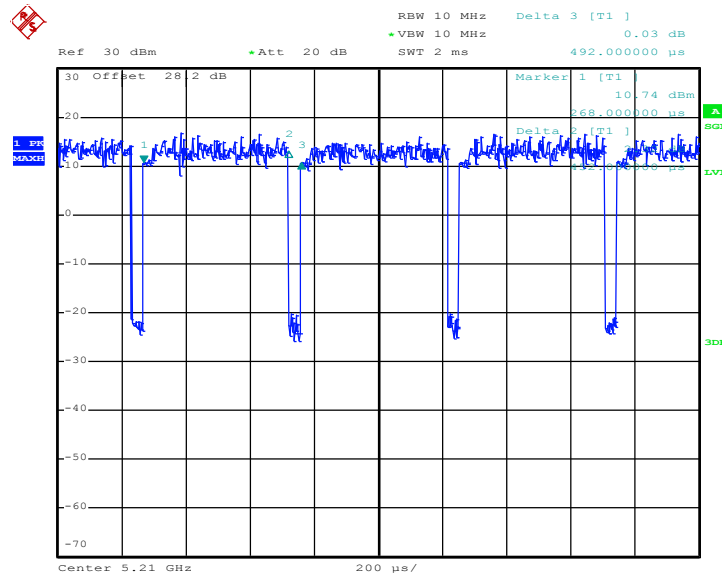


802.11ac VHT40



Date: 6.OCT.2018 01:15:48

802.11ac VHT80

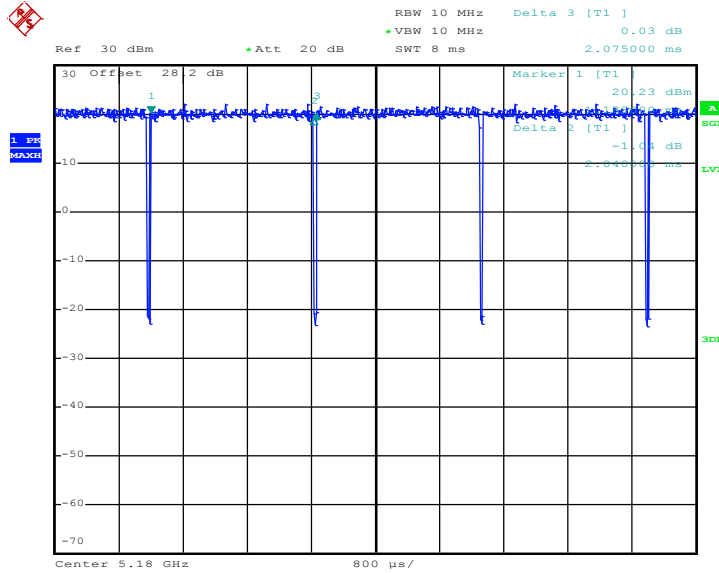


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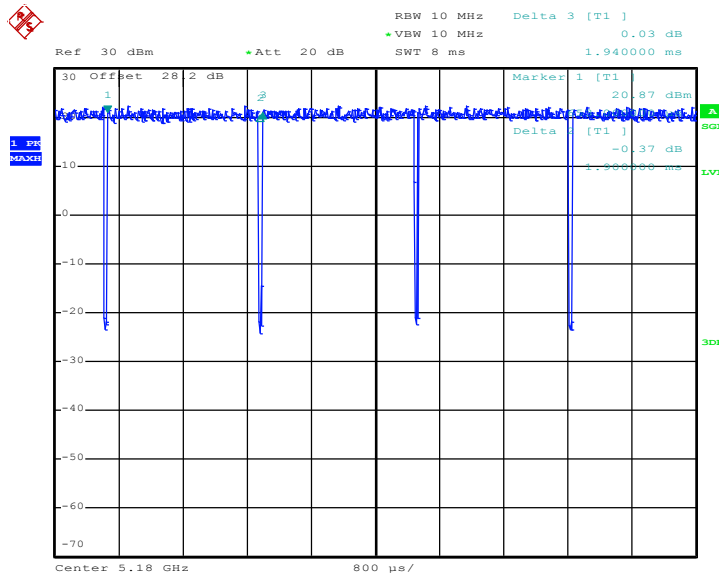
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Date: 5.OCT.2018 23:02:32

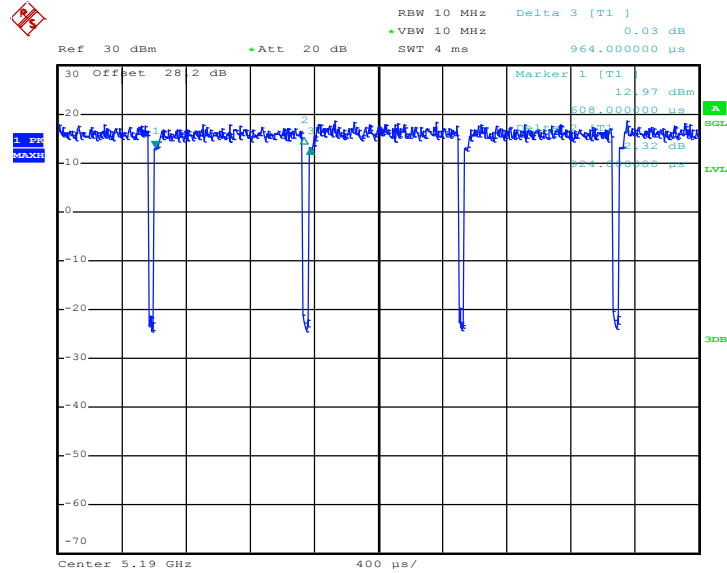
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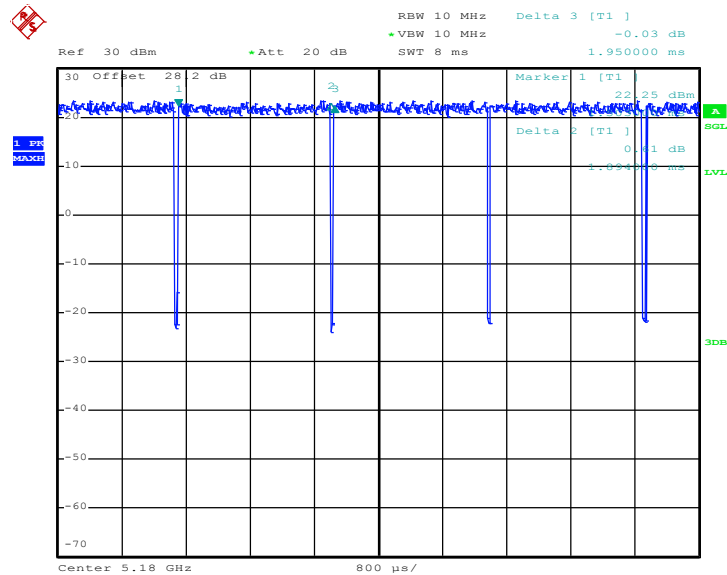


802.11n HT40



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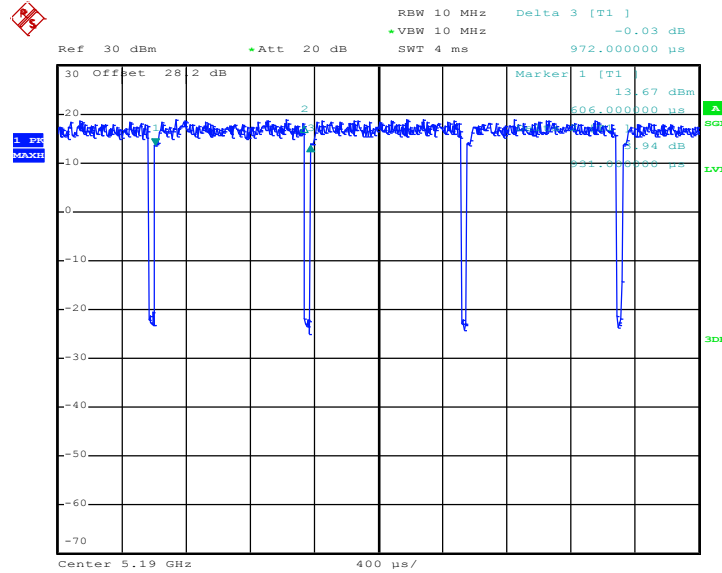
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Date: 6.OCT.2018 00:18:35

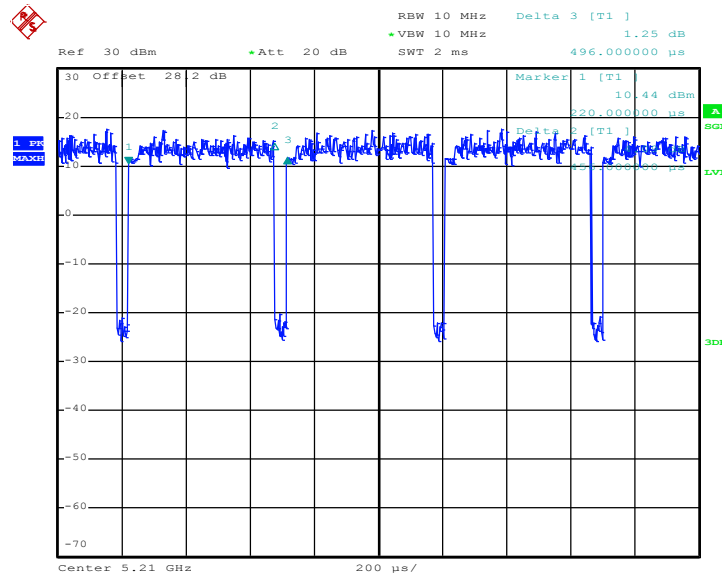


802.11ac VHT40



Date: 6.OCT.2018 01:16:27

802.11ac VHT80



Date: 6.OCT.2018 01:53:20

————THE END————