FCC RADIO TEST REPORT

FCC ID	:	**2AS3Y-6275**
Equipment	:	**Digital Media Receiver**
Model name	:	**R9P2A5**
Applicant	:	**Engineering Cowboys US LLC** **7 Skyline Drive, 3rd Floor, Hawthorne, New York, 10532, USA**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Mar. 01, 2019 and testing was started from Jun. 10, 2019 and completed on Jul. 06, 2019. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

The test results in this 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
FR930103-01E	01	Initial issue of report	Aug. 03, 2019

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)
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
3.5	15.207	AC Conducted Emission	Pass
3.6	15.407 (c)	Automatically Discontinue Transmission	Pass
3.7	15.203 & 15.407 (a)	Antenna Requirement	Pass

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

Reviewed by: Wii Chang
Report Producer: Maggie Chiang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	R9P2A5
FCC ID	2AS3Y-6275
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	802.11a : 15.90 dBm / 0.0389 W 802.11n HT20 : 15.90 dBm / 0.0389 W 802.11n HT40 : 15.90 dBm / 0.0389 W 802.11ac VHT20 : 15.80 dBm / 0.0380 W 802.11ac VHT40 : 15.80 dBm / 0.0380 W 802.11ac VHT80 : 15.90 dBm / 0.0389 W
99% Occupied Bandwidth	802.11a : 17.00 MHz 802.11n HT20 : 17.85 MHz 802.11n HT40 : 36.80 MHz 802.11ac VHT80 : 77.40 MHz
Antenna Gain / Gain	PCB Inv F Antenna type with gain 3.90 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)

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 (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		
	TH05-HY	CO05-HY	DFS02-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 (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH12-HY

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

FCC designation No.: TW1190 and TW0007

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- 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 two setup, without accessories and with accessories. The worst cases (with earphone) 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.

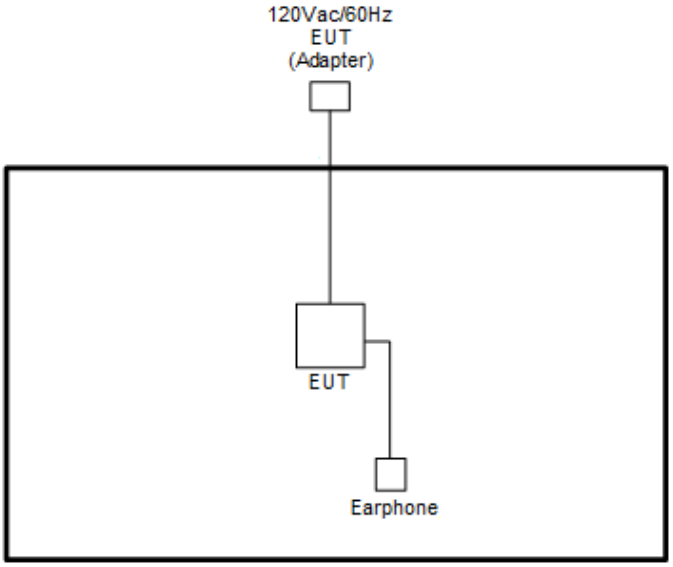
Modulation	Data Rate
802.11a	**6 Mbps**
802.11n HT20	**MCS0**
802.11n HT40	**MCS0**
802.11ac VHT20 (Covered by HT20)	**MCS0**
802.11ac VHT40 (Covered by HT40)	**MCS0**
802.11ac VHT80	**MCS0**

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth Link + Music + LED + Charging from Adapter

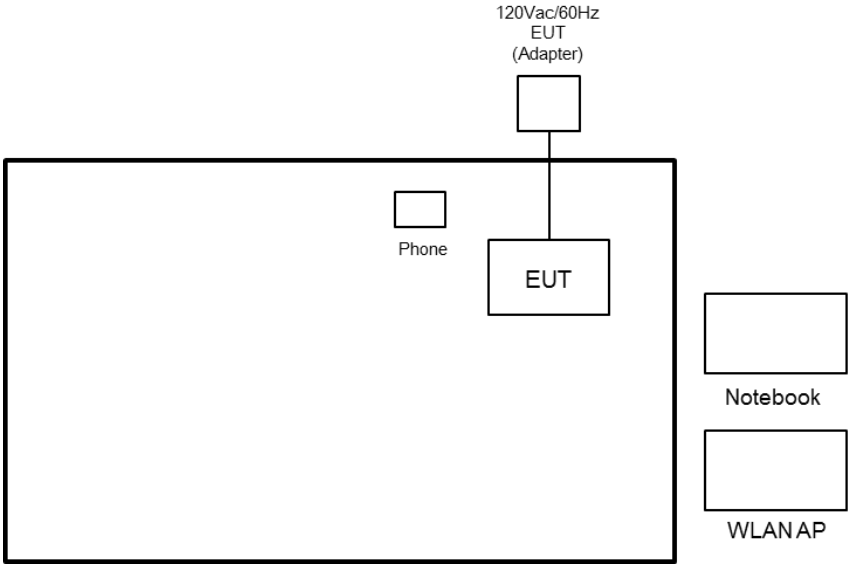
Ch. #		Band IV：5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	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
3.	Mobile Phone	Apple	A1524	NM8PB31200	N/A	N/A
4.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “Compliance tool 1.0.0.49” 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.

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

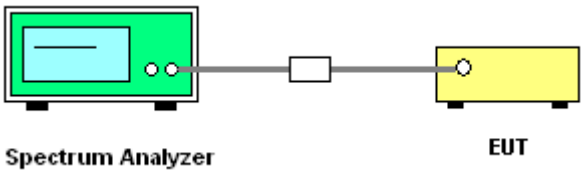
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

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

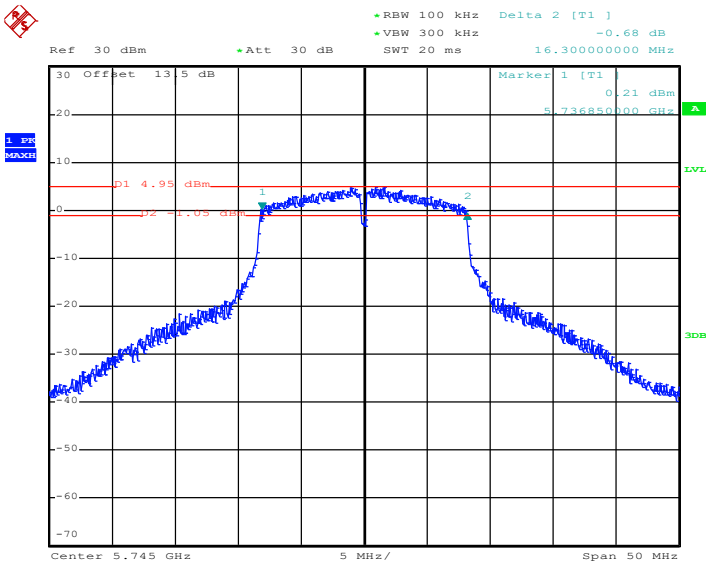
3.1.4 Test Setup



3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

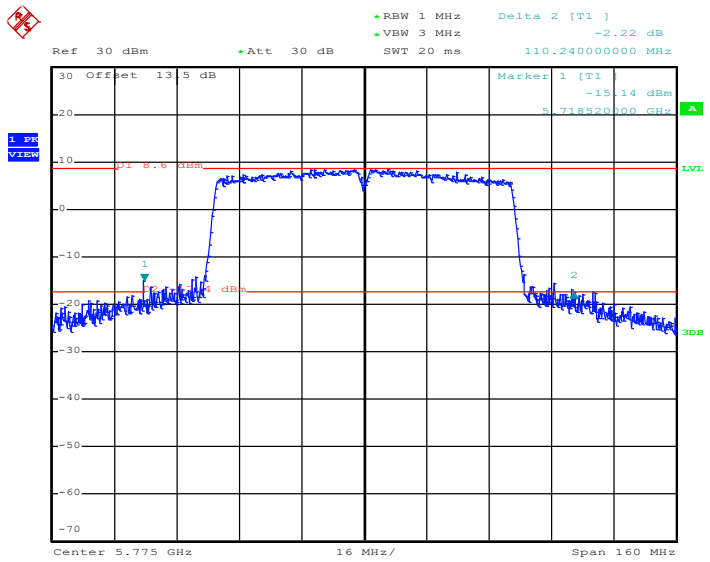
Please refer to Appendix A.

Minimum 6dB Bandwidth



Date: 19.JUN.2019 03:12:26

Maximum 26dB Bandwidth



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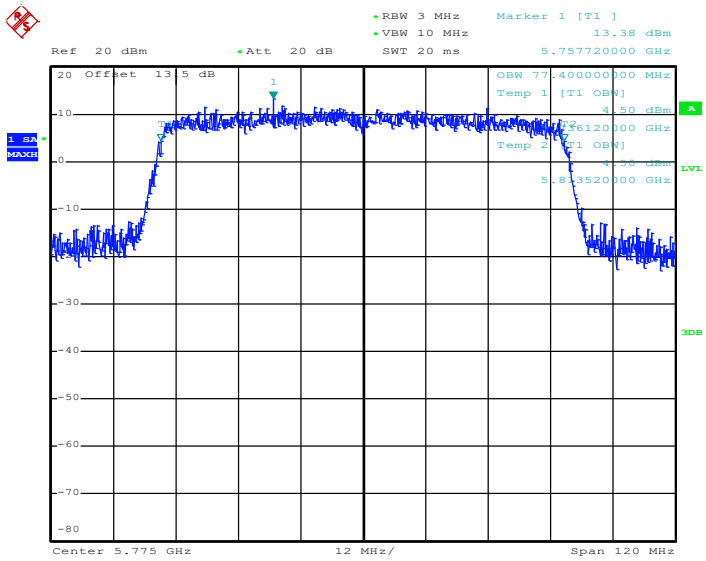
Maximum 99% Occupied Bandwidth



Date: 19.JUN.2019 03:59:48

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.

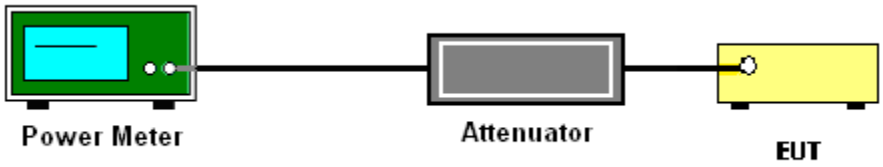
3.2.3 Test Procedures

The testing follows Method PM-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.

3.2.4 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.

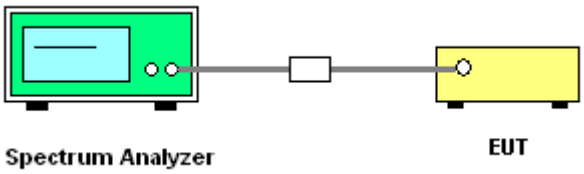
 # Method SA-3 #

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

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time ≤ (number of points in sweep) × T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
- Detector = power averaging (rms).
- Trace mode = max hold.
- Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

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

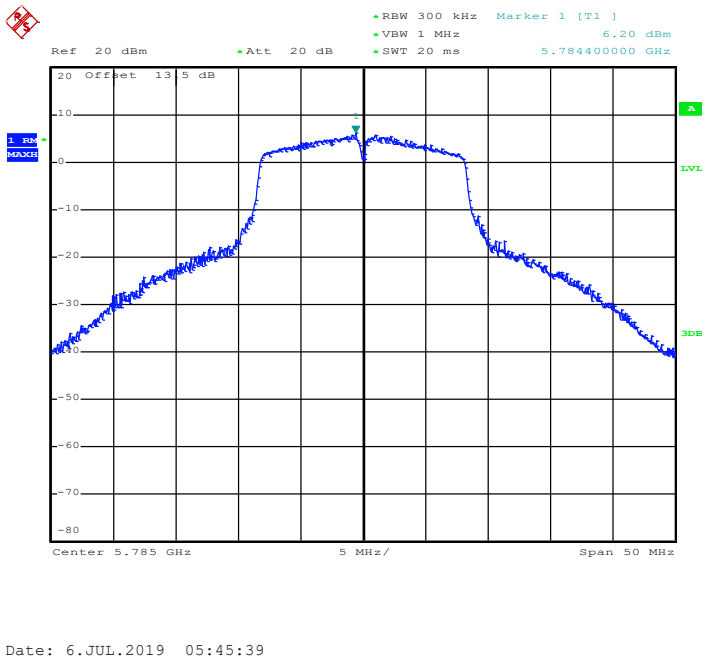
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/MHz)



3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

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

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

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

(i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.3

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.[4]

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

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

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

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

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

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

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

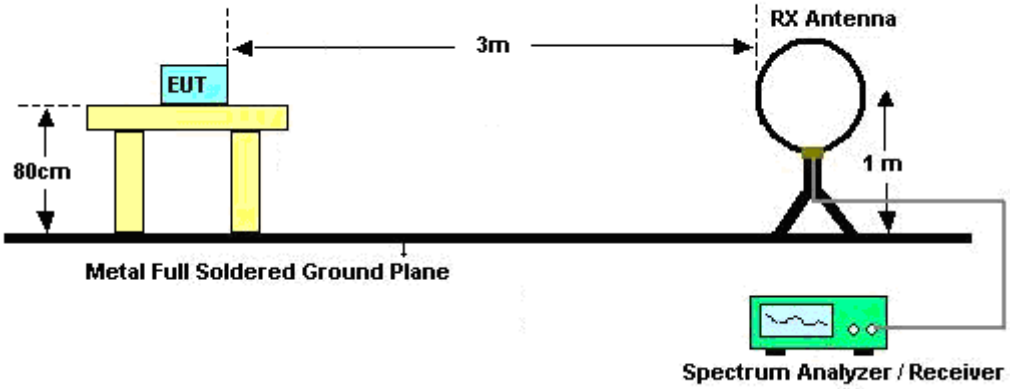
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

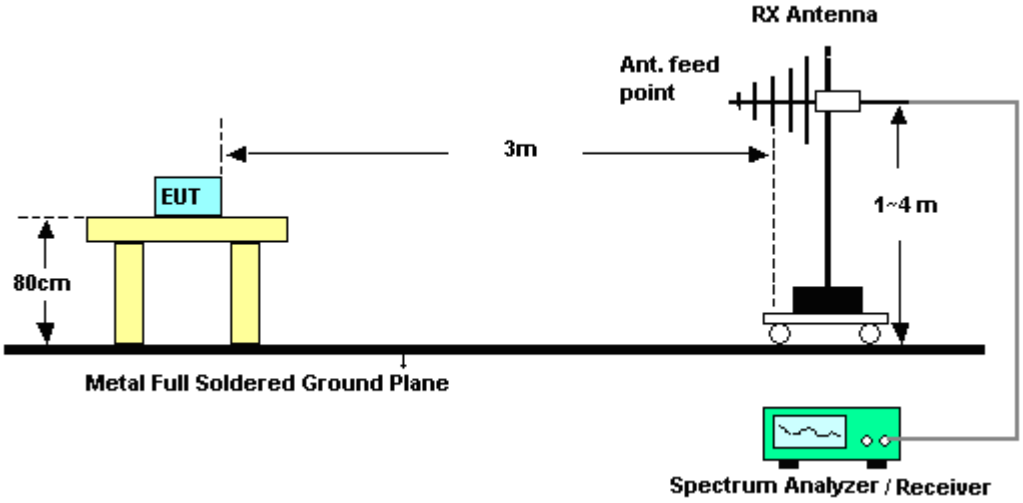
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

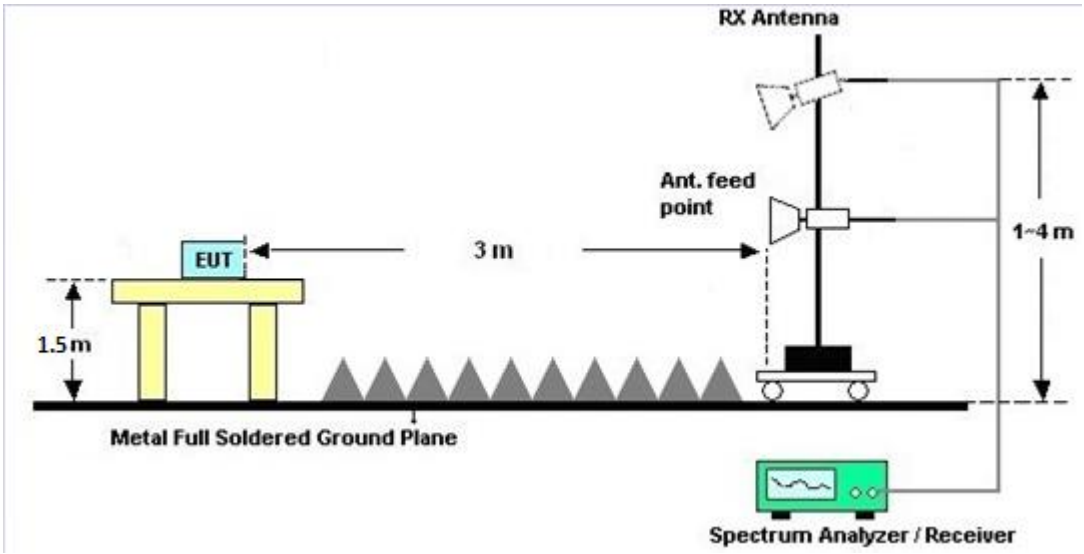
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



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 alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix 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 (dBμV)	
	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.

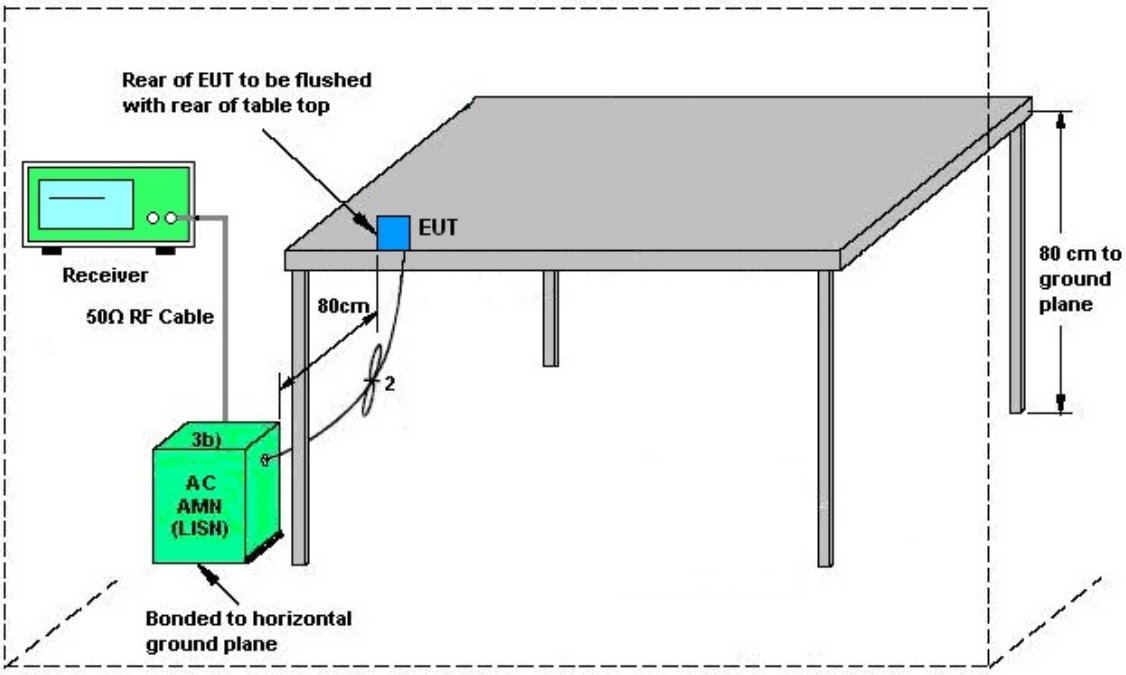
3.5.2 Measuring Instruments

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



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

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.

5745MHz

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

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jan. 07, 2019	May 31, 2019~ Jun. 12, 2019	Jan. 06, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800N 1D01N-06	37059&01	30MHz~1GHz	Oct. 13, 2018	May 31, 2019~ Jun. 12, 2019	Oct. 12, 2019	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 09, 2018	May 31, 2019~ Jun. 12, 2019	Nov. 08, 2019	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917058 4	18GHz ~ 40GHz	Dec. 05, 2018	May 31, 2019~ Jun. 12, 2019	Dec. 04, 2019	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2019	May 31, 2019~ Jun. 12, 2019	Mar. 24, 2020	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 27, 2019	May 31, 2019~ Jun. 12, 2019	May 26, 2020	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-00101 800-30-10P	1590074	1GHz~18GHz	May 20, 2019	May 31, 2019~ Jun. 12, 2019	May 19, 2020	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 06, 2018	May 31, 2019~ Jun. 12, 2019	Dec. 05, 2019	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 26, 2018	May 31, 2019~ Jun. 12, 2019	Dec. 25, 2019	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 19, 2019	May 31, 2019~ Jun. 12, 2019	Mar. 18, 2020	Radiation (03CH12-HY)
Filter	Wainwright	WLK4-1000-15 30-6000-40SS	SN11	1 GHz Lowpass	Sep. 16, 2018	May 31, 2019~ Jun. 12, 2019	Sep. 15, 2019	Radiation (03CH12-HY)
Filter	Woken	WHKX8-5272.5 -6750-18000-4 0ST	SN2	6.75G Highpass	Sep. 17, 2018	May 31, 2019~ Jun. 12, 2019	Sep.16, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 13, 2019	May 31, 2019~ Jun. 12, 2019	Mar. 12, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 16, 2018	May 31, 2019~ Jun. 12, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 16, 2018	May 31, 2019~ Jun. 12, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	May 31, 2019~ Jun. 12, 2019	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 31, 2019~ Jun. 12, 2019	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	May 31, 2019~ Jun. 12, 2019	N/A	Radiation (03CH12-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Keysight	N9010A	MY56070412	10Hz~7GHz	Aug. 16, 2018	Jun. 15, 2019	Aug. 15, 2019	DFS (DFS02-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO12	10MHz~6GHz	Dec. 27, 2018	Jun. 10, 2019~ Jul. 06, 2019	Dec. 26, 2019	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 13, 2018	Jun. 10, 2019~ Jul. 06, 2019	Nov. 12, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz~30GHz	Nov. 15, 2018	Jun. 10, 2019~ Jul. 06, 2019	Nov. 14, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1208382	N/A	Mar. 27, 2019	Jun. 10, 2019~ Jul. 06, 2019	Mar. 26, 2020	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 25, 2019	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 12, 2018	Jun. 25, 2019	Nov. 11, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 14, 2018	Jun. 25, 2019	Nov. 13, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 09, 2018	Jun. 25, 2019	Nov. 08, 2019	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 25, 2019	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Dec. 31, 2018	Jun. 25, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Dec. 31, 2018	Jun. 25, 2019	Dec. 30, 2019	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.2

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1

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

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

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

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

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Leo Li/CreedWu	Temperature:	21~25	°C
Test Date:	2019/6/10~2019/7/6	Relative Humidity:	51~54	%
TX Tool	Compliance Tool	TX Tool Version	1.0.0.57	

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	1	149	5745	16.90	-	32.90	-	16.30	-	0.5	Pass
11a	6Mbps	1	157	5785	16.95	-	36.00	-	16.30	-	0.5	Pass
11a	6Mbps	1	165	5825	17.00	-	34.90	-	16.30	-	0.5	Pass
HT20	MCS0	1	149	5745	17.80	-	34.92	-	17.55	-	0.5	Pass
HT20	MCS0	1	157	5785	17.85	-	34.50	-	17.55	-	0.5	Pass
HT20	MCS0	1	165	5825	17.85	-	32.28	-	17.55	-	0.5	Pass
HT40	MCS0	1	151	5755	36.80	-	63.90	-	36.36	-	0.5	Pass
HT40	MCS0	1	159	5795	36.80	-	66.06	-	36.36	-	0.5	Pass
VHT80	MCS0	1	155	5775	77.40	-	110.24	-	76.48	-	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	15.60	-		30.00	-	3.90	-	Pass
11a	6Mbps	1	157	5785	15.60	-		30.00	-	3.90	-	Pass
11a	6Mbps	1	165	5825	15.90	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	149	5745	15.90	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	157	5785	15.60	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	165	5825	15.80	-		30.00	-	3.90	-	Pass
HT40	MCS0	1	151	5755	15.90	-		30.00	-	3.90	-	Pass
HT40	MCS0	1	159	5795	15.60	-		30.00	-	3.90	-	Pass
VHT20	MCS0	1	149	5745	15.80	-		30.00	-	3.90	-	Pass
VHT20	MCS0	1	157	5785	15.50	-		30.00	-	3.90	-	Pass
VHT20	MCS0	1	165	5825	15.70	-		30.00	-	3.90	-	Pass
VHT40	MCS0	1	151	5755	15.80	-		30.00	-	3.90	-	Pass
VHT40	MCS0	1	159	5795	15.50	-		30.00	-	3.90	-	Pass
VHT80	MCS0	1	155	5775	15.90	-		30.00	-	3.90	-	Pass

TEST RESULTS DATA
Power Spectral Density

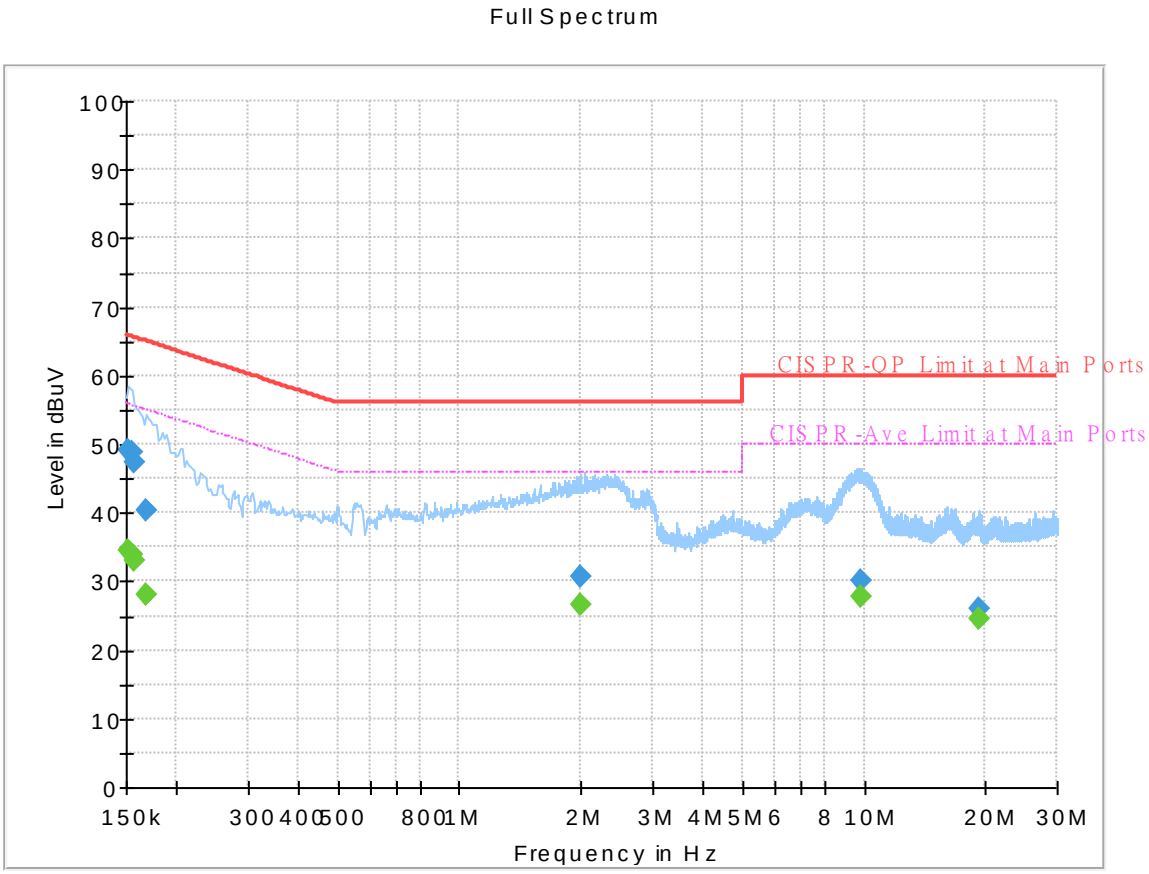
Band IV																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.00	-	2.22	-	7.96	-		30.00	-	3.90	-	Pass
11a	6Mbps	1	157	5785	0.00	-	2.22	-	8.42	-		30.00	-	3.90	-	Pass
11a	6Mbps	1	165	5825	0.00	-	2.22	-	7.47	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	149	5745	0.00	-	2.22	-	6.33	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	157	5785	0.00	-	2.22	-	6.69	-		30.00	-	3.90	-	Pass
HT20	MCS0	1	165	5825	0.00	-	2.22	-	5.87	-		30.00	-	3.90	-	Pass
HT40	MCS0	1	151	5755	0.00	-	2.22	-	3.27	-		30.00	-	3.90	-	Pass
HT40	MCS0	1	159	5795	0.00	-	2.22	-	2.99	-		30.00	-	3.90	-	Pass
VHT80	MCS0	1	155	5775	0.00	-	2.22	-	-0.80	-		30.00	-	3.90	-	Pass

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Jimmy Chang	**Temperature :**	24~26℃
		Relative Humidity :	52~55%

EUT Information

Report NO :	930103-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line



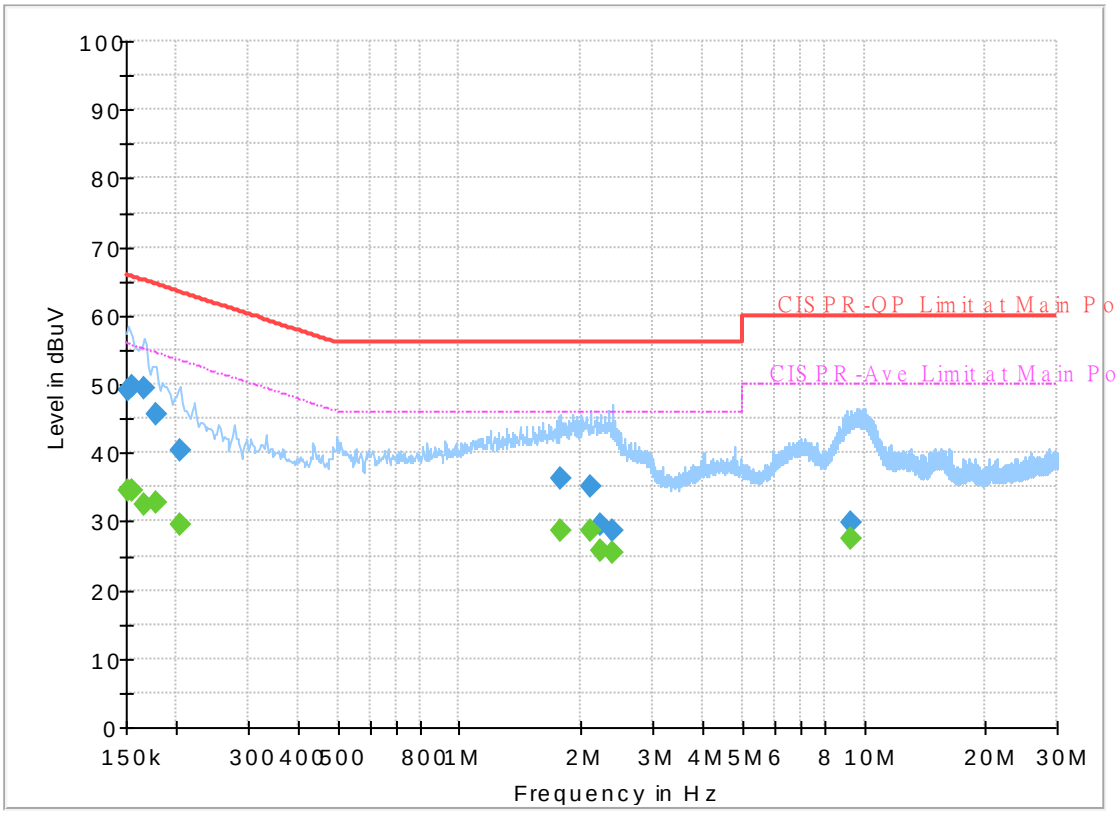
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	34.48	55.88	21.40	L1	OFF	19.4
0.152250	49.07	---	65.88	16.81	L1	OFF	19.4
0.154500	---	33.89	55.75	21.86	L1	OFF	19.4
0.154500	48.69	---	65.75	17.06	L1	OFF	19.4
0.156750	---	32.91	55.63	22.72	L1	OFF	19.4
0.156750	47.41	---	65.63	18.22	L1	OFF	19.4
0.168000	---	27.96	55.06	27.10	L1	OFF	19.4
0.168000	40.29	---	65.06	24.77	L1	OFF	19.4
1.990500	---	26.64	46.00	19.36	L1	OFF	19.5
1.990500	30.60	---	56.00	25.40	L1	OFF	19.5
9.870000	---	27.81	50.00	22.19	L1	OFF	19.8
9.870000	30.21	---	60.00	29.79	L1	OFF	19.8
19.194000	---	24.51	50.00	25.49	L1	OFF	20.1
19.194000	25.90	---	60.00	34.10	L1	OFF	20.1

EUT Information

Report NO :	930103-01
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)
0.152250	---	34.36	55.88	21.52	N	OFF	19.5
0.152250	49.22	---	65.88	16.66	N	OFF	19.5
0.154500	---	34.60	55.75	21.15	N	OFF	19.5
0.154500	49.77	---	65.75	15.98	N	OFF	19.5
0.165750	---	32.43	55.17	22.74	N	OFF	19.5
0.165750	49.53	---	65.17	15.64	N	OFF	19.5
0.177000	---	32.70	54.63	21.93	N	OFF	19.5
0.177000	45.69	---	64.63	18.94	N	OFF	19.5
0.204000	---	29.65	53.45	23.80	N	OFF	19.5
0.204000	40.32	---	63.45	23.13	N	OFF	19.5
1.770000	---	28.64	46.00	17.36	N	OFF	19.5
1.770000	36.16	---	56.00	19.84	N	OFF	19.5
2.114250	---	28.55	46.00	17.45	N	OFF	19.4
2.114250	35.05	---	56.00	20.95	N	OFF	19.4
2.224500	---	25.72	46.00	20.28	N	OFF	19.4
2.224500	29.62	---	56.00	26.38	N	OFF	19.4
2.386500	---	25.31	46.00	20.69	N	OFF	19.5
2.386500	28.62	---	56.00	27.38	N	OFF	19.5
9.312000	---	27.41	50.00	22.59	N	OFF	19.8
9.312000	29.85	---	60.00	30.15	N	OFF	19.8

Appendix C. Radiated Spurious Emission

Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	Temperature :	21~24°C
		Relative Humidity :	56~68%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		5632.6	54.67	-13.53	68.2	45.94	31.73	10.45	33.45	204	5	P	H
		5683.8	56.82	-36.43	93.25	47.9	31.9	10.48	33.46	204	5	P	H
		5719.6	64.33	-46.36	110.69	55.25	32.04	10.5	33.46	204	5	P	H
		5724.8	77.58	-44.16	121.74	68.49	32.05	10.5	33.46	204	5	P	H
	*	5745	112.18	-	-	103.04	32.09	10.51	33.46	204	5	P	H
	*	5745	104.77	-	-	95.63	32.09	10.51	33.46	204	5	A	H
		5644.4	52.1	-16.1	68.2	43.39	31.71	10.45	33.45	368	2	P	V
		5694.4	54.27	-46.8	101.07	45.28	31.97	10.48	33.46	368	2	P	V
		5720	64.16	-46.64	110.8	55.08	32.04	10.5	33.46	368	2	P	V
		5723	72.01	-45.63	117.64	62.92	32.05	10.5	33.46	368	2	P	V
	*	5745	109.96	-	-	100.82	32.09	10.51	33.46	368	2	P	V
	*	5745	102.65	-	-	93.51	32.09	10.51	33.46	368	2	A	V

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 157 5785MHz		5611.4	53.49	-14.71	68.2	44.72	31.78	10.44	33.45	199	5	P	H
		5696.4	55.87	-46.68	102.55	46.87	31.98	10.48	33.46	199	5	P	H
		5719.4	55.64	-54.99	110.63	46.56	32.04	10.5	33.46	199	5	P	H
		5723.4	55.7	-62.85	118.55	46.61	32.05	10.5	33.46	199	5	P	H
	*	5785	113.54	-	-	104.31	32.17	10.53	33.47	199	5	P	H
	*	5785	106.09	-	-	96.86	32.17	10.53	33.47	199	5	A	H
		5855	54.82	-55.98	110.8	45.4	32.31	10.59	33.48	199	5	P	H
		5866	56.6	-51.12	107.72	47.15	32.33	10.6	33.48	199	5	P	H
		5906.6	55.83	-25.95	81.78	46.25	32.43	10.64	33.49	199	5	P	H
		5944.6	53.42	-14.78	68.2	43.66	32.58	10.67	33.49	199	5	P	H
		5631.8	52.17	-16.03	68.2	43.43	31.74	10.45	33.45	298	179	P	V
		5696.2	54.4	-48	102.4	45.4	31.98	10.48	33.46	298	179	P	V
		5705.2	53.8	-52.86	106.66	44.76	32.01	10.49	33.46	298	179	P	V
		5720.2	53.71	-57.55	111.26	44.63	32.04	10.5	33.46	298	179	P	V
	*	5785	111.53	-	-	102.3	32.17	10.53	33.47	298	179	P	V
	*	5785	103.88	-	-	94.65	32.17	10.53	33.47	298	179	A	V
		5853.8	53.39	-60.15	113.54	43.97	32.31	10.59	33.48	298	179	P	V
		5856.8	53.85	-56.45	110.3	44.43	32.31	10.59	33.48	298	179	P	V
		5880.4	53.53	-47.66	101.19	44.04	32.36	10.61	33.48	298	179	P	V
		5927.4	53.33	-14.87	68.2	43.66	32.51	10.65	33.49	298	179	P	V

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 165 5825MHz	*	5825	112.7	-	-	103.37	32.25	10.56	33.48	177	0	P	H
	*	5825	105.19	-	-	95.86	32.25	10.56	33.48	177	0	A	H
		5851.6	65.54	-53.01	118.55	56.13	32.3	10.59	33.48	177	0	P	H
		5857.8	60.5	-49.51	110.01	51.07	32.32	10.59	33.48	177	0	P	H
		5880.2	58.49	-42.85	101.34	49	32.36	10.61	33.48	177	0	P	H
		5938.8	54.31	-13.89	68.2	44.58	32.56	10.66	33.49	177	0	P	H
	*	5825	110.72	-	-	101.39	32.25	10.56	33.48	280	182	P	V
	*	5825	103.33	-	-	94	32.25	10.56	33.48	280	182	A	V
		5850	66.4	-55.8	122.2	56.99	32.3	10.59	33.48	280	182	P	V
		5855.6	57.76	-52.87	110.63	48.34	32.31	10.59	33.48	280	182	P	V
		5882.4	55.28	-44.42	99.7	45.79	32.36	10.61	33.48	280	182	P	V
		5932.8	52.84	-15.36	68.2	43.14	32.53	10.66	33.49	280	182	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		11490	63.01	-10.99	74	63.32	39.78	16.21	56.3	177	247	P	H
		11490	51.62	-2.38	54	51.93	39.78	16.21	56.3	177	247	A	H
		17235	52.24	-15.96	68.2	47.19	40.7	20.92	56.57	100	0	P	H
		11490	65.04	-8.96	74	65.35	39.78	16.21	56.3	100	283	P	V
		11490	53.21	-0.79	54	53.52	39.78	16.21	56.3	100	283	A	V
		17235	51.26	-16.94	68.2	46.21	40.7	20.92	56.57	100	0	P	V
802.11a CH 157 5785MHz		11570	61.07	-12.93	74	61.41	39.66	16.3	56.3	100	169	P	H
		11570	50.78	-3.22	54	51.12	39.66	16.3	56.3	100	169	A	H
		17355	51.16	-17.04	68.2	45.57	41.4	21	56.81	100	0	P	H
		11570	64.29	-9.71	74	64.63	39.66	16.3	56.3	100	285	P	V
		11570	53.5	-0.5	54	53.84	39.66	16.3	56.3	100	285	A	V
		17355	50.35	-17.85	68.2	44.76	41.4	21	56.81	100	0	P	V
802.11a CH 165 5825MHz		11650	62.69	-11.31	74	63.26	39.35	16.38	56.3	100	172	P	H
		11650	49.85	-4.15	54	50.42	39.35	16.38	56.3	100	172	A	H
		17475	51.32	-16.88	68.2	45.11	42.17	21.09	57.05	100	0	P	H
		11650	64.44	-9.56	74	65.01	39.35	16.38	56.3	100	282	P	V
		11650	51.31	-2.69	54	51.88	39.35	16.38	56.3	100	282	A	V
		17475	49.81	-18.39	68.2	43.6	42.17	21.09	57.05	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.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5639.8	57.05	-11.15	68.2	48.33	31.72	10.45	33.45	161	6	P	H
		5700	59.3	-45.9	105.2	50.27	32	10.49	33.46	161	6	P	H
		5718.6	72.46	-37.95	110.41	63.38	32.04	10.5	33.46	161	6	P	H
		5724.2	80.59	-39.79	120.38	71.5	32.05	10.5	33.46	161	6	P	H
	*	5745	113.68	-	-	104.54	32.09	10.51	33.46	161	6	P	H
	*	5745	103.34	-	-	94.2	32.09	10.51	33.46	161	6	A	H
		5649.2	55.51	-12.69	68.2	46.8	31.7	10.46	33.45	275	182	P	V
		5685.6	56.49	-38.09	94.58	47.56	31.91	10.48	33.46	275	182	P	V
		5719.8	68.28	-42.46	110.74	59.2	32.04	10.5	33.46	275	182	P	V
		5723.8	78.44	-41.02	119.46	69.35	32.05	10.5	33.46	275	182	P	V
	*	5745	111.58	-	-	102.44	32.09	10.51	33.46	275	182	P	V
	*	5745	101.29	-	-	92.15	32.09	10.51	33.46	275	182	A	V

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 157 5785MHz		5640.2	53.84	-14.36	68.2	45.12	31.72	10.45	33.45	168	2	P	H
		5672.8	54.34	-30.77	85.11	45.48	31.84	10.47	33.45	168	2	P	H
		5707	55.96	-51.2	107.16	46.92	32.01	10.49	33.46	168	2	P	H
		5724.2	55.33	-65.05	120.38	46.24	32.05	10.5	33.46	168	2	P	H
	*	5785	112.97	-	-	103.74	32.17	10.53	33.47	168	2	P	H
	*	5785	105.38	-	-	96.15	32.17	10.53	33.47	168	2	A	H
		5853	53.13	-62.23	115.36	43.71	32.31	10.59	33.48	168	2	P	H
		5868.4	53.7	-53.35	107.05	44.24	32.34	10.6	33.48	168	2	P	H
		5906.2	53.82	-28.26	82.08	44.25	32.42	10.64	33.49	168	2	P	H
		5950	52.84	-15.36	68.2	43.05	32.6	10.68	33.49	168	2	P	H
		5638.2	52.58	-15.62	68.2	43.86	31.72	10.45	33.45	299	178	P	V
		5673.4	53.2	-32.36	85.56	44.34	31.84	10.47	33.45	299	178	P	V
		5705.6	52.21	-54.56	106.77	43.17	32.01	10.49	33.46	299	178	P	V
		5721	52.98	-60.1	113.08	43.9	32.04	10.5	33.46	299	178	P	V
	*	5785	110.42	-	-	101.19	32.17	10.53	33.47	299	178	P	V
	*	5785	103.05	-	-	93.82	32.17	10.53	33.47	299	178	A	V
		5854.4	53.68	-58.49	112.17	44.26	32.31	10.59	33.48	299	178	P	V
		5861.8	53.9	-54.99	108.89	44.46	32.32	10.6	33.48	299	178	P	V
		5884	53.65	-44.87	98.52	44.14	32.37	10.62	33.48	299	178	P	V
		5949.2	53.31	-14.89	68.2	43.53	32.6	10.67	33.49	299	178	P	V

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 165 5825MHz	*	5825	113.6	-	-	104.27	32.25	10.56	33.48	176	8	P	H
	*	5825	103.2	-	-	93.87	32.25	10.56	33.48	176	8	A	H
		5850.2	70.49	-51.25	121.74	61.08	32.3	10.59	33.48	176	8	P	H
		5855	65.35	-45.45	110.8	55.93	32.31	10.59	33.48	176	8	P	H
		5916	57.25	-17.59	74.84	47.64	32.46	10.64	33.49	176	8	P	H
		5933.6	56.68	-11.52	68.2	46.98	32.53	10.66	33.49	176	8	P	H
	*	5825	111.67	-	-	102.34	32.25	10.56	33.48	281	180	P	V
	*	5825	101.44	-	-	92.11	32.25	10.56	33.48	281	180	A	V
		5850.8	67.69	-52.69	120.38	58.28	32.3	10.59	33.48	281	180	P	V
		5855.6	63.34	-47.29	110.63	53.92	32.31	10.59	33.48	281	180	P	V
		5883.6	57.79	-41.02	98.81	48.28	32.37	10.62	33.48	281	180	P	V
		5927.6	56.4	-11.8	68.2	46.73	32.51	10.65	33.49	281	180	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 (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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		11490	61.07	-12.93	74	61.38	39.78	16.21	56.3	100	172	P	H
		11490	49.16	-4.84	54	49.47	39.78	16.21	56.3	100	172	A	H
		17235	49.66	-18.54	68.2	44.61	40.7	20.92	56.57	100	0	P	H
		11490	62.91	-11.09	74	63.22	39.78	16.21	56.3	100	283	P	V
		11490	51.82	-2.18	54	52.13	39.78	16.21	56.3	100	283	A	V
		17235	48.87	-19.33	68.2	43.82	40.7	20.92	56.57	100	0	P	V
802.11n HT20 CH 157 5785MHz		11570	62.51	-11.49	74	62.85	39.66	16.3	56.3	100	170	P	H
		11570	50.18	-3.82	54	50.52	39.66	16.3	56.3	100	170	A	H
		17355	49.51	-18.69	68.2	43.92	41.4	21	56.81	100	0	P	H
		11570	65.18	-8.82	74	65.52	39.66	16.3	56.3	100	284	P	V
		11570	52.89	-1.11	54	53.23	39.66	16.3	56.3	100	284	A	V
		17355	49.35	-18.85	68.2	43.76	41.4	21	56.81	100	0	P	V
802.11n HT20 CH 165 5825MHz		11650	62.23	-11.77	74	62.8	39.35	16.38	56.3	171	254	P	H
		11650	50.44	-3.56	54	51.01	39.35	16.38	56.3	171	254	A	H
		17475	51.83	-16.37	68.2	45.62	42.17	21.09	57.05	100	0	P	H
		11650	62.83	-11.17	74	63.4	39.35	16.38	56.3	100	284	P	V
		11650	50.84	-3.16	54	51.41	39.35	16.38	56.3	100	284	A	V
		17475	51.64	-16.56	68.2	45.43	42.17	21.09	57.05	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 HT40 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		5618.4	55.95	-12.25	68.2	47.2	31.76	10.44	33.45	179	7	P	H
		5697.6	64.69	-38.74	103.43	55.68	31.99	10.48	33.46	179	7	P	H
		5720	80.03	-30.77	110.8	70.95	32.04	10.5	33.46	179	7	P	H
		5725	83.33	-38.87	122.2	74.24	32.05	10.5	33.46	179	7	P	H
	*	5755	110.67	-	-	101.51	32.11	10.52	33.47	179	7	P	H
	*	5755	99.5	-	-	90.34	32.11	10.52	33.47	179	7	A	H
		5853.4	56.08	-58.37	114.45	46.66	32.31	10.59	33.48	179	7	P	H
		5859.4	56.58	-52.99	109.57	47.15	32.32	10.59	33.48	179	7	P	H
		5878.6	57.42	-45.11	102.53	47.93	32.36	10.61	33.48	179	7	P	H
		5930.8	56.57	-11.63	68.2	46.88	32.52	10.66	33.49	179	7	P	H
		5612.4	55.15	-13.05	68.2	46.38	31.78	10.44	33.45	274	181	P	V
		5697.8	62.45	-41.13	103.58	53.44	31.99	10.48	33.46	274	181	P	V
		5717.8	75.92	-34.26	110.18	66.85	32.04	10.49	33.46	274	181	P	V
		5724.8	79.96	-41.78	121.74	70.87	32.05	10.5	33.46	274	181	P	V
	*	5755	108.25	-	-	99.09	32.11	10.52	33.47	274	181	P	V
	*	5755	97.73	-	-	88.57	32.11	10.52	33.47	274	181	A	V
		5852.4	55.43	-61.3	116.73	46.02	32.3	10.59	33.48	274	181	P	V
		5867.2	56.73	-50.65	107.38	47.28	32.33	10.6	33.48	274	181	P	V
		5882	56.49	-43.51	100	47	32.36	10.61	33.48	274	181	P	V
		5930.6	55.53	-12.67	68.2	45.84	32.52	10.66	33.49	274	181	P	V

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 159 5795MHz		5642.6	55.14	-13.06	68.2	46.43	31.71	10.45	33.45	155	6	P	H
		5692.6	56.84	-42.9	99.74	47.86	31.96	10.48	33.46	155	6	P	H
		5712.2	57.59	-51.03	108.62	48.54	32.02	10.49	33.46	155	6	P	H
		5724.6	57.61	-63.68	121.29	48.52	32.05	10.5	33.46	155	6	P	H
	*	5795	110.14	-	-	100.88	32.19	10.54	33.47	155	6	P	H
	*	5795	99.54	-	-	90.28	32.19	10.54	33.47	155	6	A	H
		5851.6	64.11	-54.44	118.55	54.7	32.3	10.59	33.48	155	6	P	H
		5856	62.9	-47.62	110.52	53.48	32.31	10.59	33.48	155	6	P	H
		5876.6	57.04	-46.97	104.01	47.56	32.35	10.61	33.48	155	6	P	H
		5925.2	56.36	-11.84	68.2	46.7	32.5	10.65	33.49	155	6	P	H
		5613.2	54.52	-13.68	68.2	45.76	31.77	10.44	33.45	269	182	P	V
		5695.2	56.37	-45.29	101.66	47.38	31.97	10.48	33.46	269	182	P	V
		5700.2	57.05	-48.21	105.26	48.02	32	10.49	33.46	269	182	P	V
		5723	58.83	-58.81	117.64	49.74	32.05	10.5	33.46	269	182	P	V
	*	5795	108.74	-	-	99.48	32.19	10.54	33.47	269	182	P	V
	*	5795	98.16	-	-	88.9	32.19	10.54	33.47	269	182	A	V
		5853	64.03	-51.33	115.36	54.61	32.31	10.59	33.48	269	182	P	V
		5858.4	62.12	-47.73	109.85	52.69	32.32	10.59	33.48	269	182	P	V
		5885.4	58.26	-39.22	97.48	48.75	32.37	10.62	33.48	269	182	P	V
		5930.4	56.18	-12.02	68.2	46.49	32.52	10.66	33.49	269	182	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 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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 151 5755MHz		11510	56.62	-17.38	74	56.9	39.78	16.24	56.3	175	248	P	H
		11510	46.27	-7.73	54	46.55	39.78	16.24	56.3	175	248	A	H
		17265	49.24	-18.96	68.2	44.13	40.8	20.94	56.63	100	0	P	H
		11510	57.44	-16.56	74	57.72	39.78	16.24	56.3	100	284	P	V
		11510	47.4	-6.6	54	47.68	39.78	16.24	56.3	100	284	A	V
		17265	49.64	-18.56	68.2	44.53	40.8	20.94	56.63	100	0	P	V
802.11n HT40 CH 159 5795MHz		11590	57.41	-16.59	74	57.77	39.62	16.32	56.3	180	253	P	H
		11590	47.88	-6.12	54	48.24	39.62	16.32	56.3	180	253	A	H
		17385	50.45	-17.75	68.2	44.62	41.67	21.03	56.87	100	0	P	H
		11590	58.23	-15.77	74	58.59	39.62	16.32	56.3	115	228	P	V
		11590	48.22	-5.78	54	48.58	39.62	16.32	56.3	115	228	A	V
		17385	51.02	-17.18	68.2	45.19	41.67	21.03	56.87	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 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 155 5775MHz		5644.2	59.14	-9.06	68.2	50.43	31.71	10.45	33.45	172	6	P	H
		5699.2	75.58	-29.03	104.61	66.56	32	10.48	33.46	172	6	P	H
		5715.2	79.61	-29.85	109.46	70.55	32.03	10.49	33.46	172	6	P	H
		5722.4	80.01	-36.26	116.27	70.93	32.04	10.5	33.46	172	6	P	H
	*	5775	106.68	-	-	97.47	32.15	10.53	33.47	172	6	P	H
	*	5775	95.5	-	-	86.29	32.15	10.53	33.47	172	6	A	H
		5852.4	75.55	-41.18	116.73	66.14	32.3	10.59	33.48	172	6	P	H
		5858.4	73.5	-36.35	109.85	64.07	32.32	10.59	33.48	172	6	P	H
		5876.2	67.21	-37.1	104.31	57.73	32.35	10.61	33.48	172	6	P	H
		5927.4	56.65	-11.55	68.2	46.98	32.51	10.65	33.49	172	6	P	H
		5635.6	56.06	-12.14	68.2	47.33	31.73	10.45	33.45	285	183	P	V
		5697.8	72.04	-31.54	103.58	63.03	31.99	10.48	33.46	285	183	P	V
		5717.6	76.79	-33.34	110.13	67.72	32.04	10.49	33.46	285	183	P	V
		5724.8	76.11	-45.63	121.74	67.02	32.05	10.5	33.46	285	183	P	V
	*	5775	104.66	-	-	95.45	32.15	10.53	33.47	285	183	P	V
	*	5775	93.69	-	-	84.48	32.15	10.53	33.47	285	183	A	V
		5850.2	71.75	-49.99	121.74	62.34	32.3	10.59	33.48	285	183	P	V
		5860.8	71.84	-37.33	109.17	62.41	32.32	10.59	33.48	285	183	P	V
		5875.6	66.94	-37.81	104.75	57.46	32.35	10.61	33.48	285	183	P	V
		5931.8	56.18	-12.02	68.2	46.48	32.53	10.66	33.49	285	183	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		11550	54.16	-19.84	74	54.48	39.7	16.28	56.3	179	249	P	H
		11550	44.16	-9.84	54	44.48	39.7	16.28	56.3	179	249	A	H
		17325	49.96	-18.24	68.2	44.61	41.12	20.98	56.75	100	0	P	H
		11550	54.82	-19.18	74	55.14	39.7	16.28	56.3	100	286	P	V
		11550	44.56	-9.44	54	44.88	39.7	16.28	56.3	100	286	A	V
		17325	49.87	-18.33	68.2	44.52	41.12	20.98	56.75	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11a LF		84.54	23.98	-16.02	40	39.42	13.94	1.06	30.44	-	-	P	H
		123.96	23.93	-19.57	43.5	35.42	17.48	1.43	30.4	-	-	P	H
		194.43	23.82	-19.68	43.5	37.52	14.93	1.7	30.33	-	-	P	H
		766.9	32.74	-13.26	46	30.11	28.03	3.97	29.37	-	-	P	H
		904.8	35.03	-10.97	46	30.48	29.08	4.6	29.13	100	0	P	H
		945.4	34.82	-11.18	46	28.71	30.37	4.75	29.01	-	-	P	H
		30.27	26.43	-13.57	40	31.78	24.05	0.78	30.18	-	-	P	V
		40.53	26.1	-13.9	40	36.72	18.94	0.78	30.34	-	-	P	V
		84.54	22.65	-17.35	40	38.09	13.94	1.06	30.44	-	-	P	V
		843.9	33.48	-12.52	46	29.45	28.97	4.28	29.22	-	-	P	V
		904.1	36.01	-9.99	46	31.47	29.07	4.6	29.13	100	0	P	V
		937.7	34.77	-11.23	46	29.1	30.1	4.6	29.03	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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

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

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

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

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix D. Radiated Spurious Emission Plots

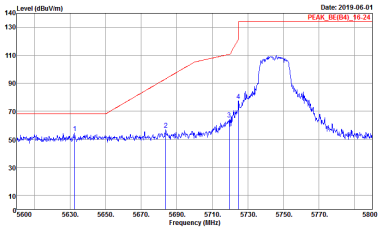
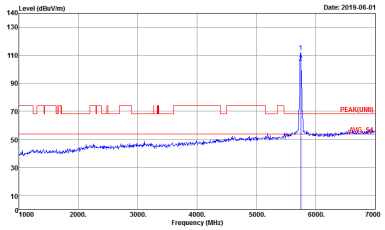
Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	**Temperature :**	21~24°C
		Relative Humidity :	56~68%

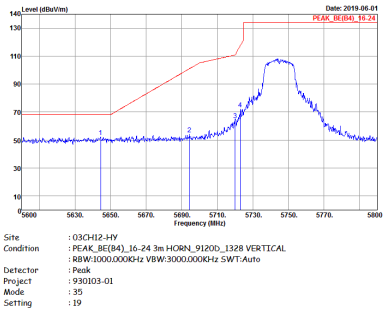
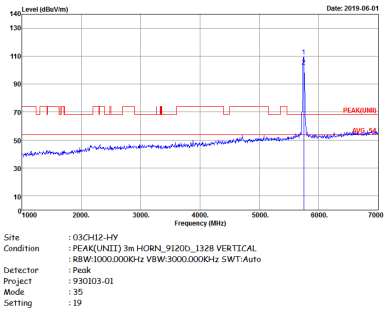
Note symbol

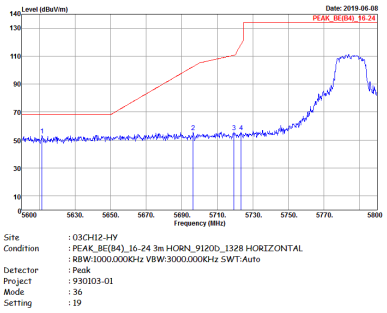
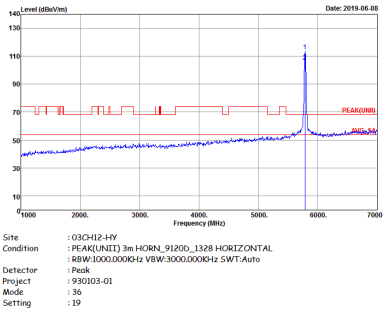
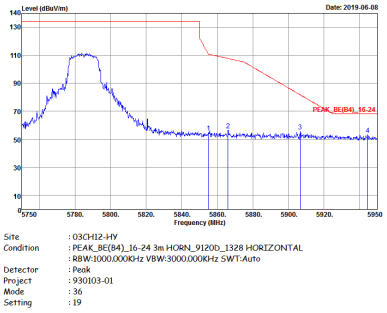
-L	**Low channel location**
-R	**High channel location**

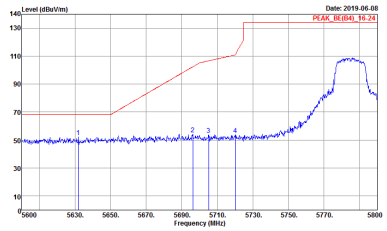
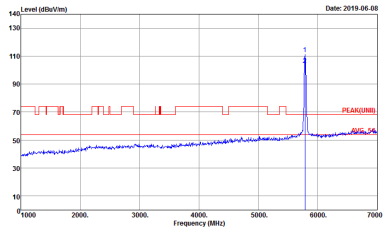
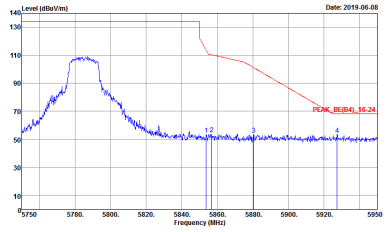
Band 4 - 5725~5850MHz

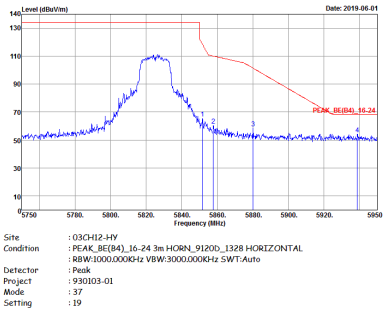
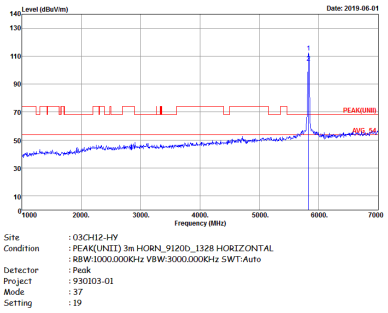
WIFI 802.11a (Band Edge @ 3m)

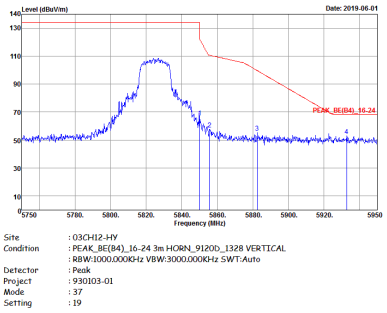
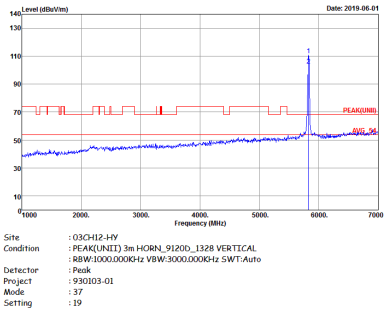
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_8E(84)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 35 Setting : 19	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 35 Setting : 19

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak		

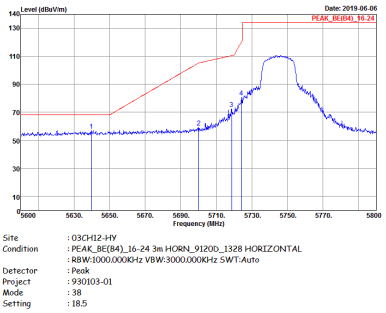
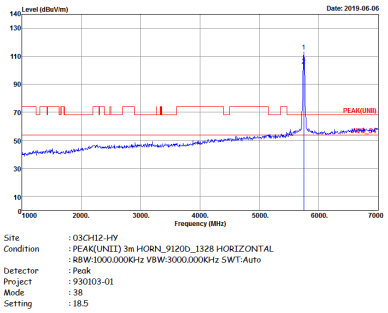
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

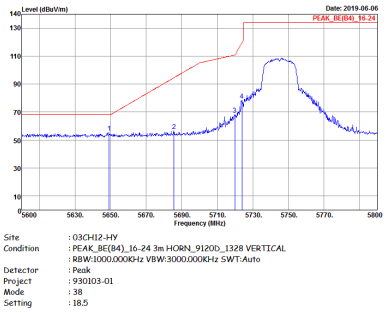
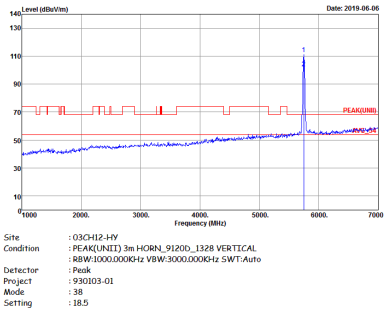
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 36 Setting : 19	 Site : 03CH12-HV Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 36 Setting : 19
Peak	 Site : 03CH12-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 36 Setting : 19	Left blank

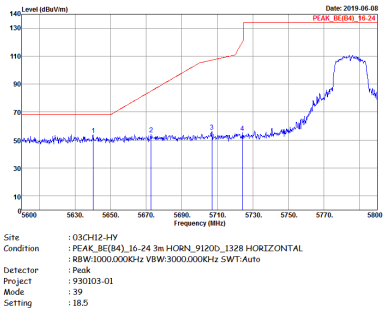
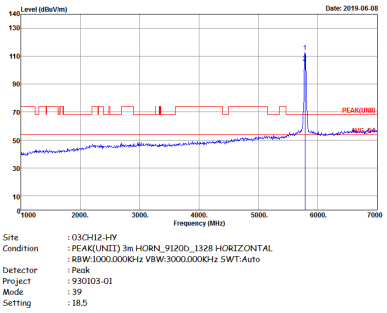
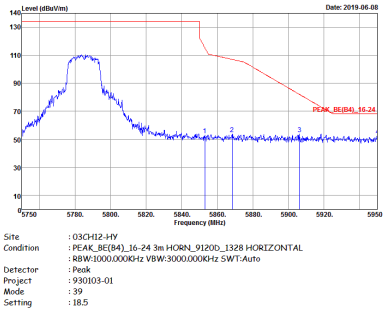
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

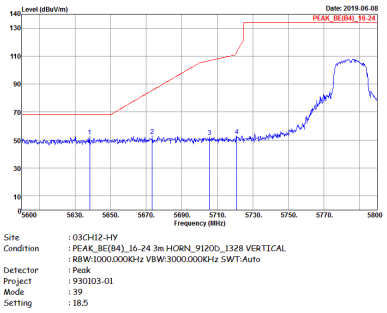
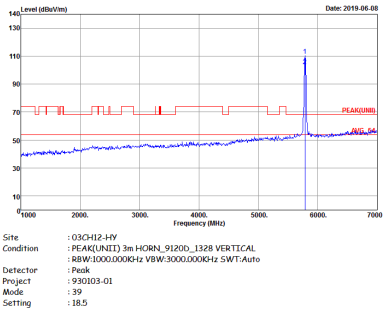
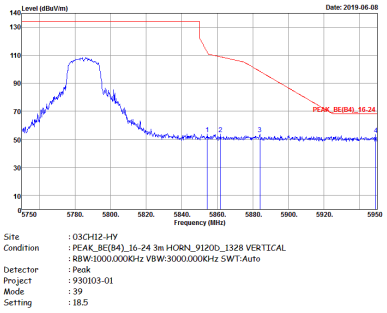
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak		

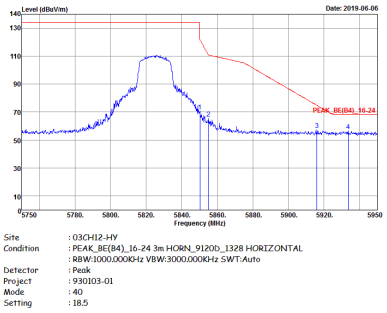
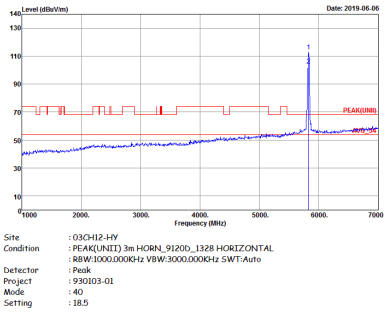
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

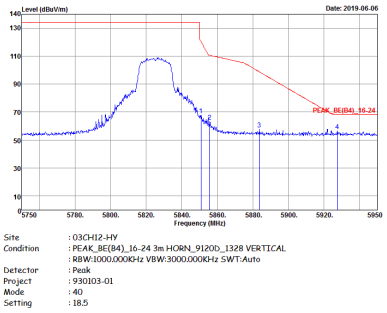
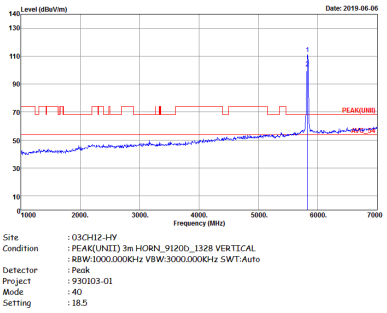
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak		

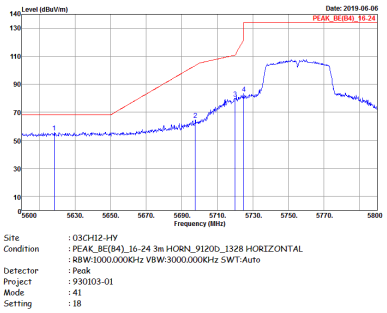
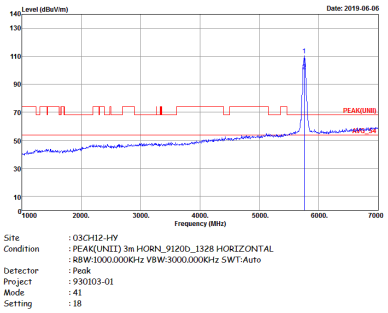
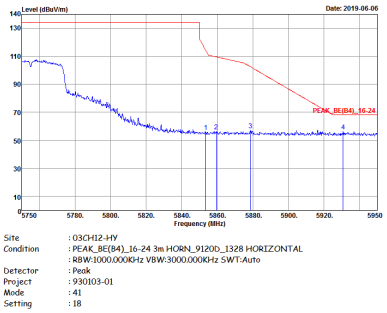
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

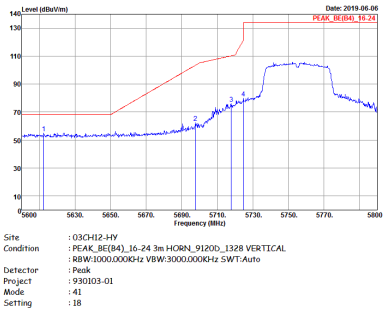
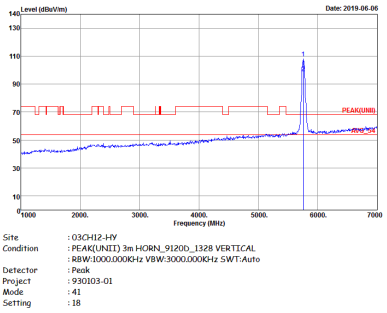
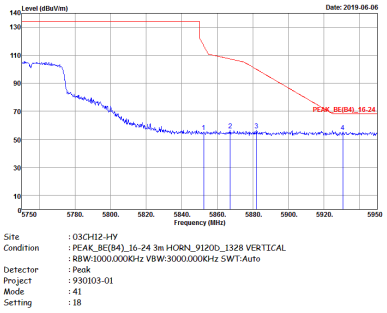
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

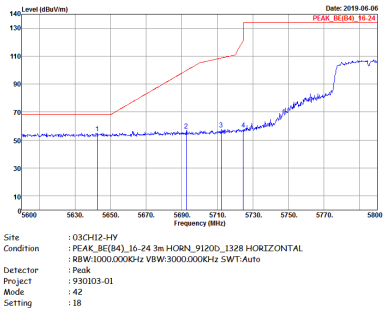
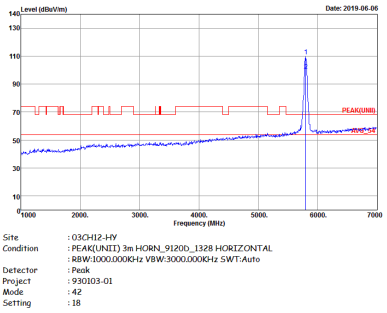
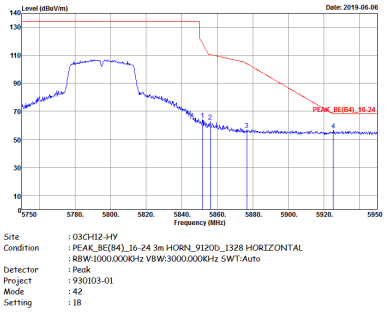
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

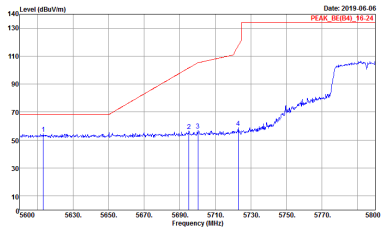
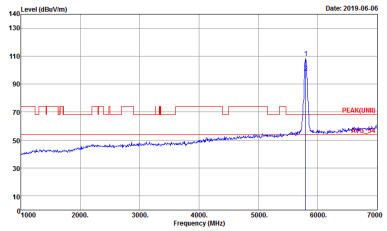
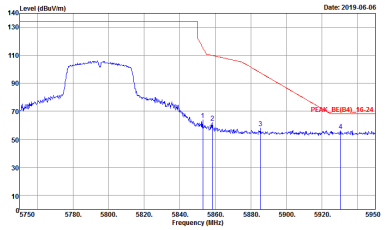
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak		

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

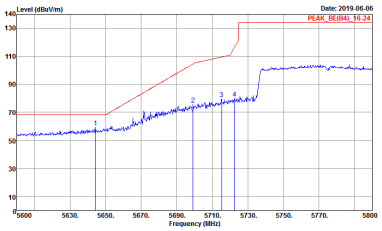
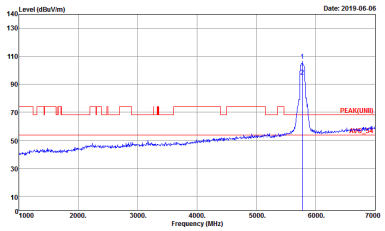
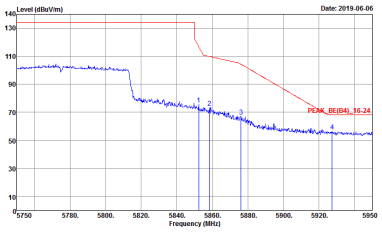
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

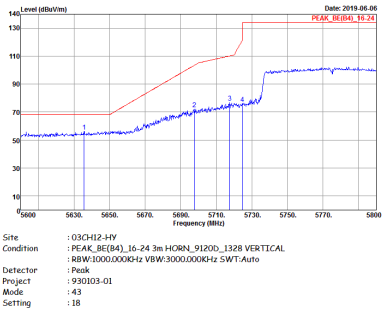
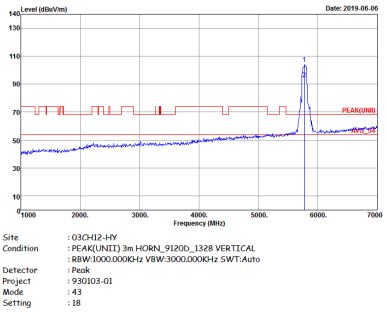
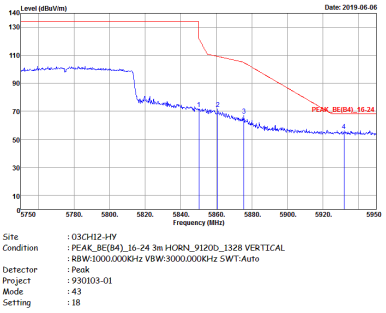
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 42 Setting : 18	 Site : 03CH12-HV Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 42 Setting : 18
Peak	 Site : 03CH12-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 42 Setting : 18	Left blank

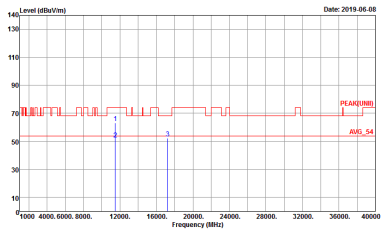
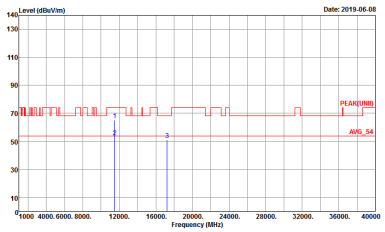
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

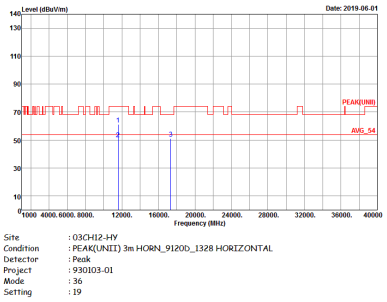
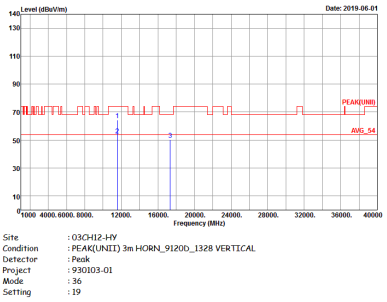
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 43 Setting : 18	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 43 Setting : 18
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 930103-01 Mode : 43 Setting : 18	Left blank

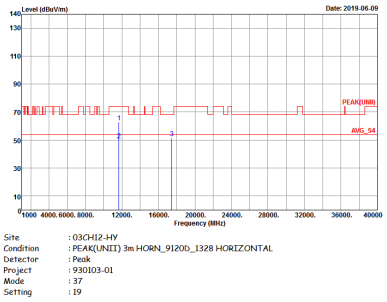
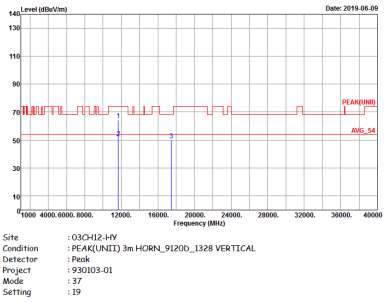
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 - 5725~5850MHz

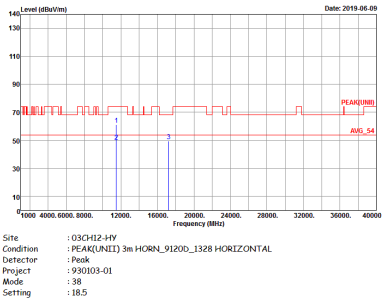
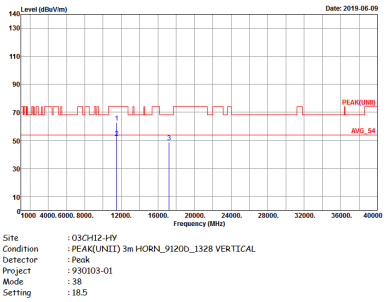
WIFI 802.11a (Harmonic @ 3m)

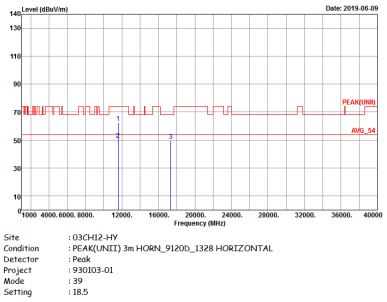
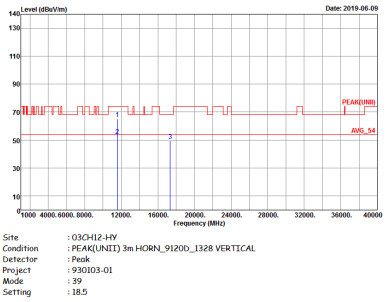
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 35 Setting : 19	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 35 Setting : 19

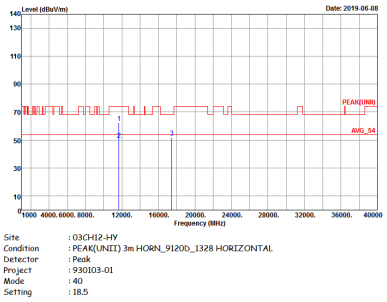
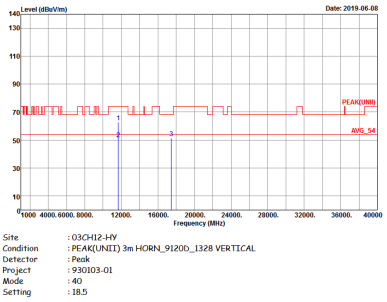
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 36 Setting : 19	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 36 Setting : 19

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 37 Setting : 19	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 37 Setting : 19

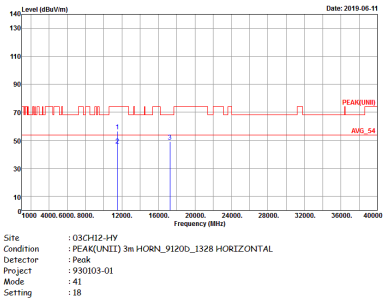
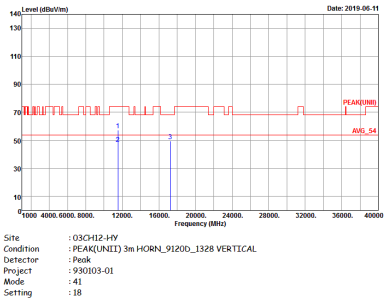
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

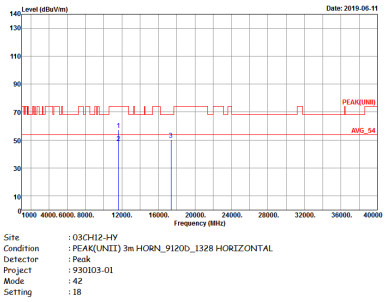
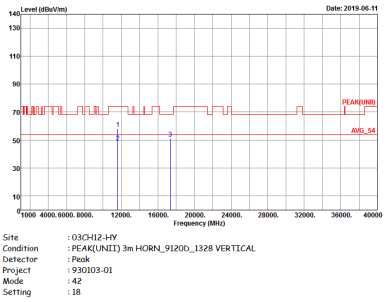
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 39 Setting : 18.5	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 39 Setting : 18.5

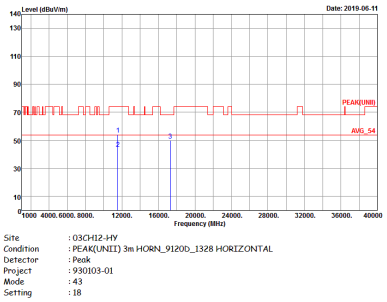
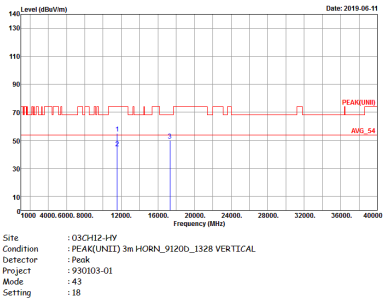
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 40 Setting : 18.5	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 40 Setting : 18.5

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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.		

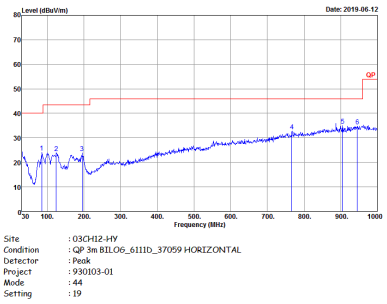
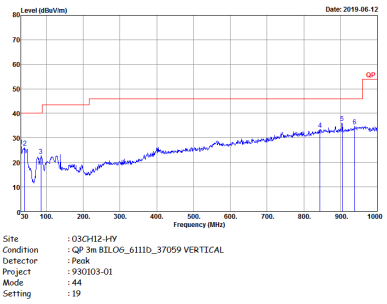
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 930103-01 Mode : 42 Setting : 18	 Site : 03CH12-HV Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 930103-01 Mode : 42 Setting : 18

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

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

Emission below 1GHz

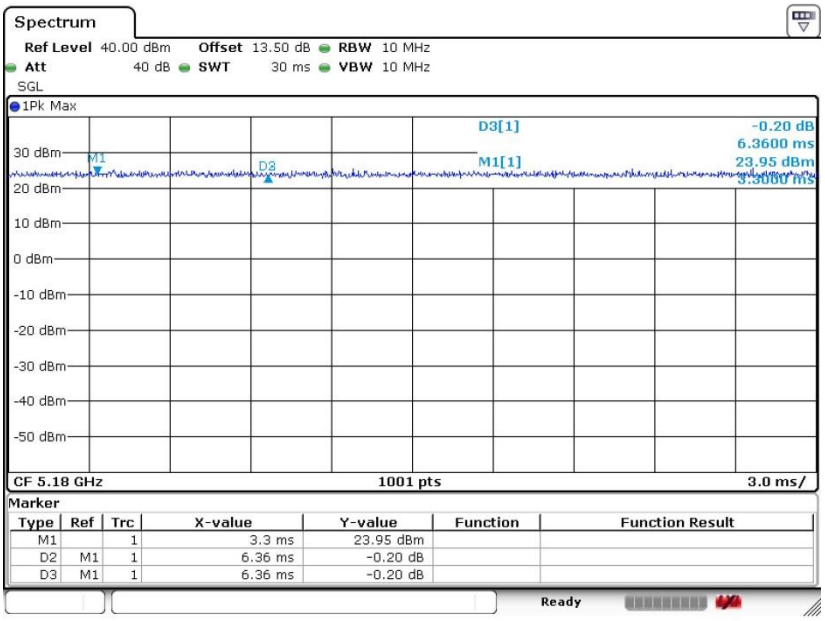
5GHz WIFI 802.11a (LF)

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

Appendix E. Duty Cycle Plots

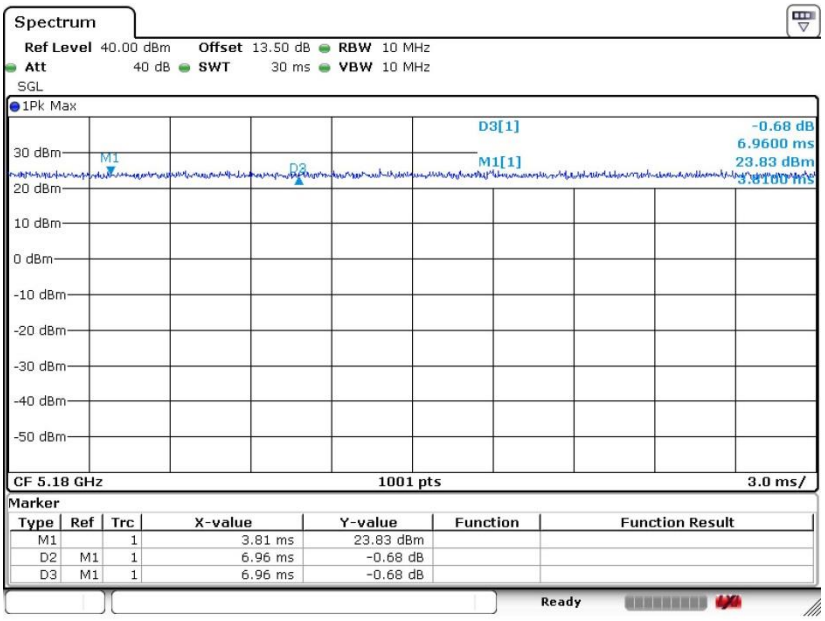
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11a	100.00	-	-	10Hz	0.00
5GHz 802.11n HT20	100.00	-	-	10Hz	0.00
5GHz 802.11n HT40	100.00	-	-	10Hz	0.00
5GHz 802.11ac VHT20	100.00	-	-	10Hz	0.00
5GHz 802.11ac VHT40	100.00	-	-	10Hz	0.00
5GHz 802.11ac VHT80	100.00	-	-	10Hz	0.00

802.11a



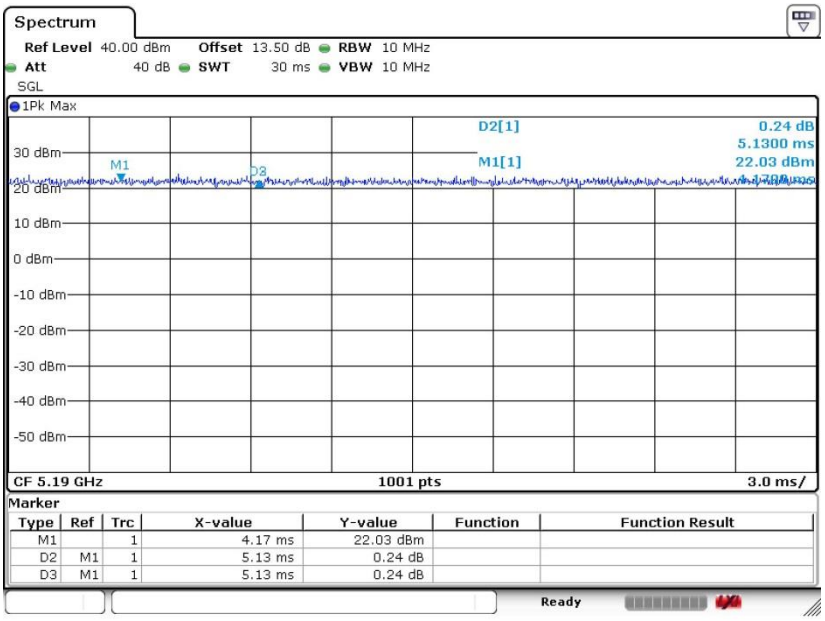
Date: 10.JUN.2019 14:18:56

802.11n HT20



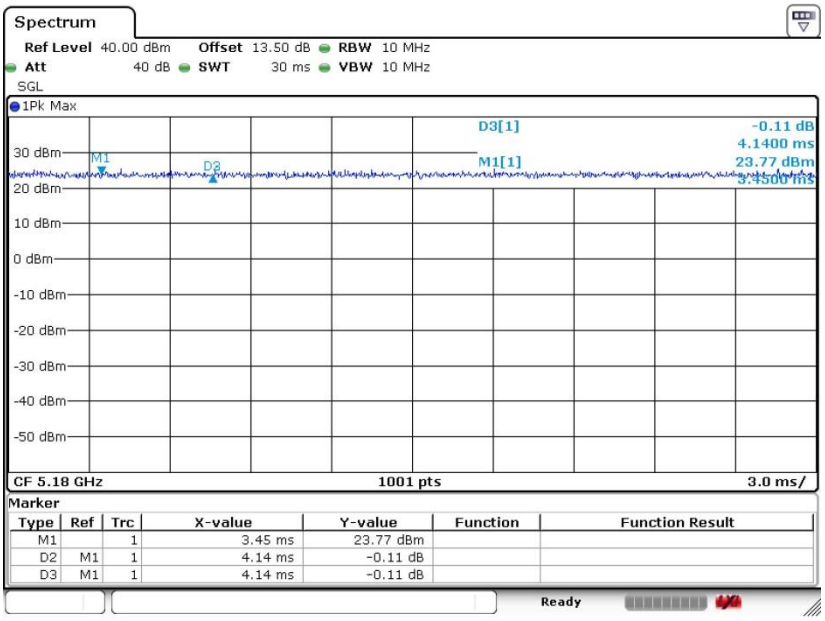
Date: 10.JUN.2019 14:19:56

802.11n HT40



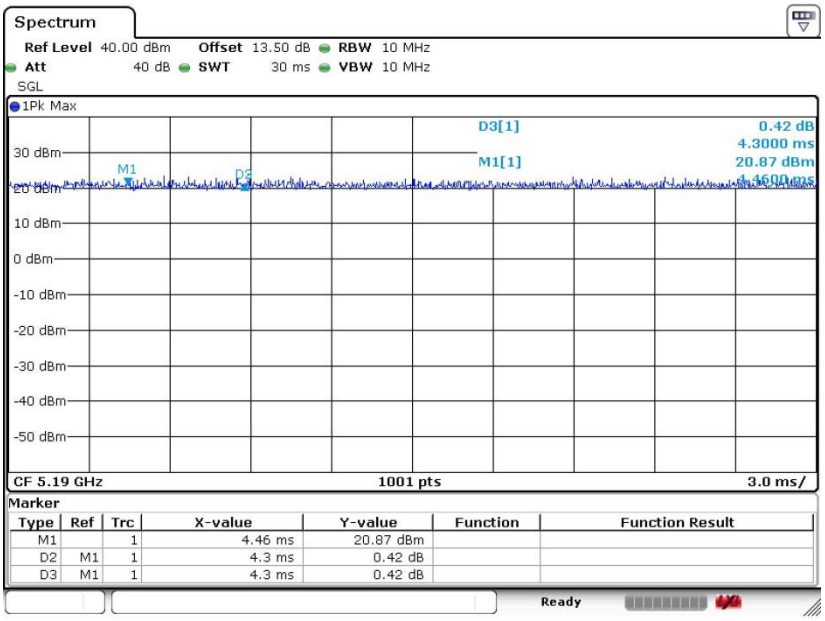
Date: 10.JUN.2019 14:20:48

802.11ac VHT20

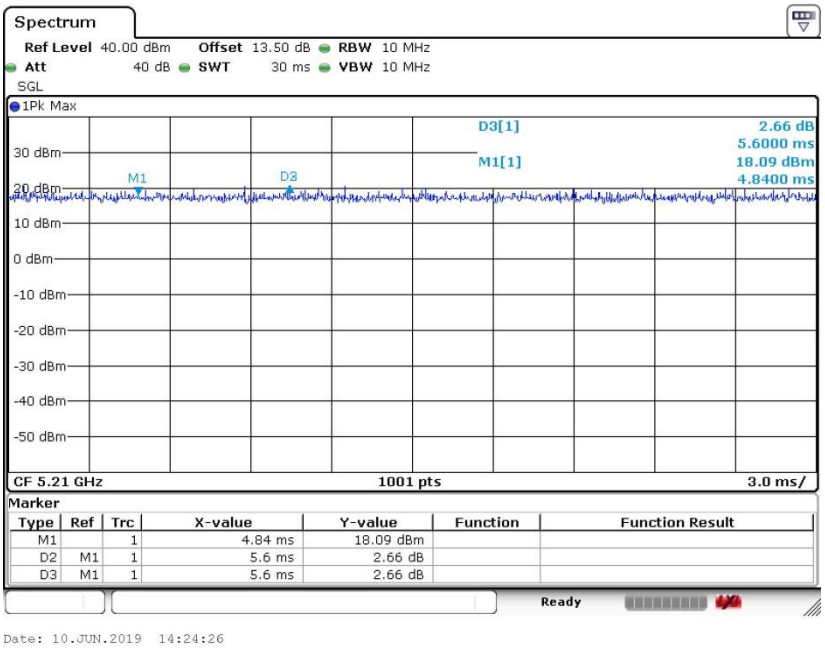


Date: 10.JUN.2019 14:22:57

802.11ac VHT40



802.11ac VHT80



———THE END———