



FCC RADIO TEST REPORT

FCC ID : P4Q-N672B
Equipment : LTE Module
Brand Name : MiTAC, Mio, NAVMAN, MAGELLAN
Model Name : SC600T-NA
Applicant : MiTAC Digital Technology Corporation
4F., NO. 1, R&D ROAD 2, HSINCHU SCIENCE
PARK, HSINCHU 30076, TAIWAN, R.O.C.
Manufacturer : MITAC Computer (Kunshan) Co., Ltd.
No. 269, 2nd Avenue, District A, Comprehensive
Free Trade Zone, 300 Kunshan, China
Standard : FCC Part 15 Subpart E §15.407

The product was received on Dec. 09, 2020 and testing was started from Dec. 30, 2020 and completed on Feb. 11, 2021. 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 test results in this partial report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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



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Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403(i)	26dB Bandwidth	-	See Note
-	2.1049	99% Occupied Bandwidth	-	See Note
3.1	15.407(a)	Maximum Conducted Output Power	Pass	-
-	15.407(a)	Power Spectral Density	-	See Note
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 0.34 dB at 5350.560 MHz
3.3	15.207	AC Conducted Emission	Pass	Under limit 13.63 dB at 0.501 MHz
-	15.407(c)	Automatically Discontinue Transmission	-	See Note
3.4	15.203 15.407(a)	Antenna Requirement	Pass	-

Note: The module (Model: SC600T-NA) makes no difference after verifying output power, this report reuses test data from the module report.

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: Dara Chiu



1 General Description

1.1 Product Feature of Equipment Under Test

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

Product Specification subjective to this standard	
Sample 1	EUT with Host 1
Sample 2	EUT with Host 2
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass : Patch Antenna

Antenna information		
5150 MHz ~ 5250 MHz	Peak Gain (dBi)	-0.20 dBi
5250 MHz ~ 5350 MHz	Peak Gain (dBi)	-0.20 dBi
5470 MHz ~ 5725 MHz	Peak Gain (dBi)	0.10 dBi

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.



The product was installed into Tablet (Brand Name: MiTAC, Mio, NAVMAN, MAGELLAN, Model Name: N672B) during test, and the host information was recorded in the following table.

Host Information	
Host 1	Host with SKU A
Host 2	Host with SKU B

Sample Information		
Functions	SKU A	SKU B
Screen	5" 720x1280 (HD), IPS, 350nits (w/ touch)	5" 720x1280 (HD), IPS, 350nits (w/ touch)
CPU	SD625 octa core 2.0GHz	SD625 octa core 2.0GHz
Battery	4110mAh (hard pack)	4110mAh (hard pack)
RAM	3GB	3GB
Storage	32GB	32GB
External storage	Support	Support
WWAN + WLAN Module	Support (SC600T-NA)	Support (SC600T-NA)
NFC/RFID(HF)	Support	Support
GPS	Support	Support
Barcode	Support(N6603)	Support(N3601)

Functions	SKU C	SKU D
Screen	5" 720x1280 (HD), IPS, 350nits (w/ touch)	5" 720x1280 (HD), IPS, 350nits (w/ touch)
CPU	SD625 octa core 2.0GHz	SD625 octa core 2.0GHz
Battery	4110mAh (hard pack)	4110mAh (hard pack)
RAM	2GB	2GB
Storage	16GB	16GB
External storage	Support	Support
WWAN + WLAN Module	Support (SC600T-NA)	Support (SC600T-NA)
NFC/RFID(HF)	Support	Support
GPS	Support	Support
Barcode	Support(N6603)	Support(N3601)

1.2 Modification of EUT

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



1.3 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

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.
	03CH15-HY

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

FCC designation No.: TW1190 and TW0007

1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ 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. The TAF code is not including all the FCC KDB listed without accreditation.



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 (Z Plane for Sample 1 and X Plane for Sample 2) 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)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42 [#]	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106 [#]	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	118*	5590	124	5620
	120	5600	126*	5630
	122 [#]	5610	128	5640

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.



2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

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

Test Cases	
AC Conducted Emission	Mode 1: WLAN (5GHz) Link + Bluetooth Link + H-Pattern + Earphone + Battery + USB Cable (Charging with Adapter) for Sample 2

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11a	802.11a
L	Low	-	100
H	High	64	-

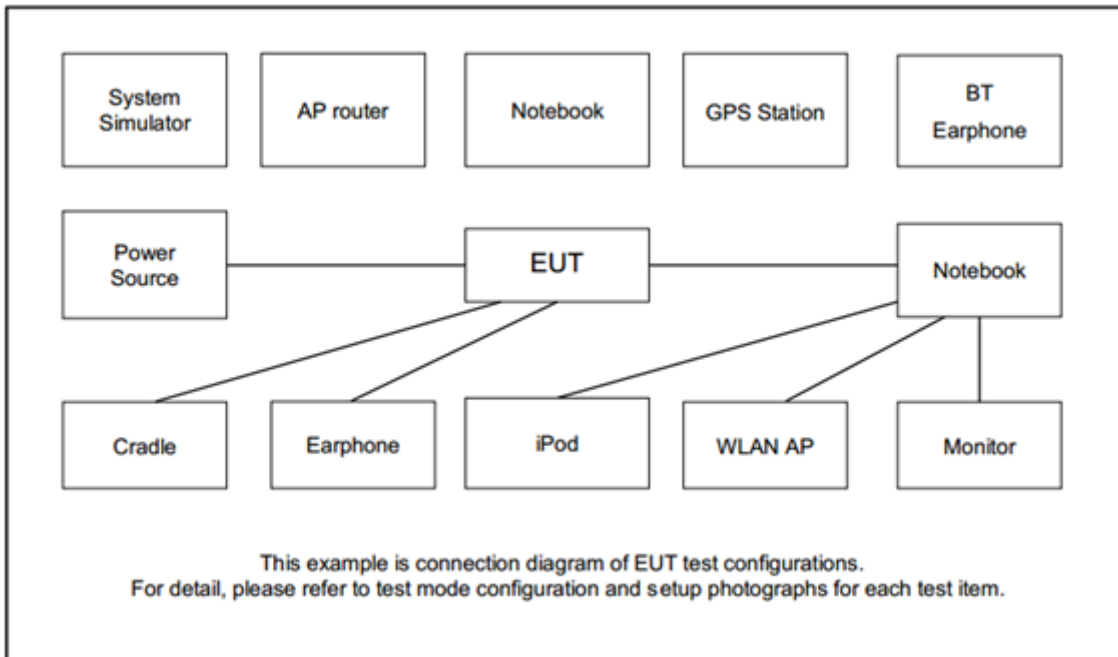
Ch. #		Band I : 5150-5250 MHz	Band III : 5470-5725MHz
		802.11n HT20	802.11n HT20
L	Low	36	-
H	High	-	140

Ch. #		Band I : 5150-5250 MHz	Band III : 5470-5725MHz
		802.11n HT40	802.11n HT40
L	Low	38	102

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80
L	Low	-	106
M	Middle	58	-

Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	Shielded, 1.6 m	Unshielded, 1.8 m
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
4.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “QRCT Version 3.0.303.0” 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.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For the 5.15–5.25 GHz bands:

■ For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

For the 5.25–5.725 GHz bands:

■ The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

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.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

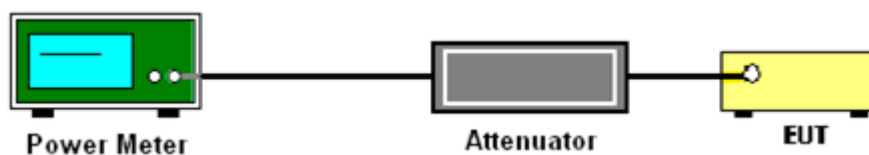
3.1.3 Test Procedures

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

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

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

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.2 Unwanted Emissions Measurement

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

<Limit of Unwanted Emissions>

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

- (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.

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



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

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

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

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

3.2.1 Measuring Instruments

See list of measuring equipment of this test report.

3.2.2 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

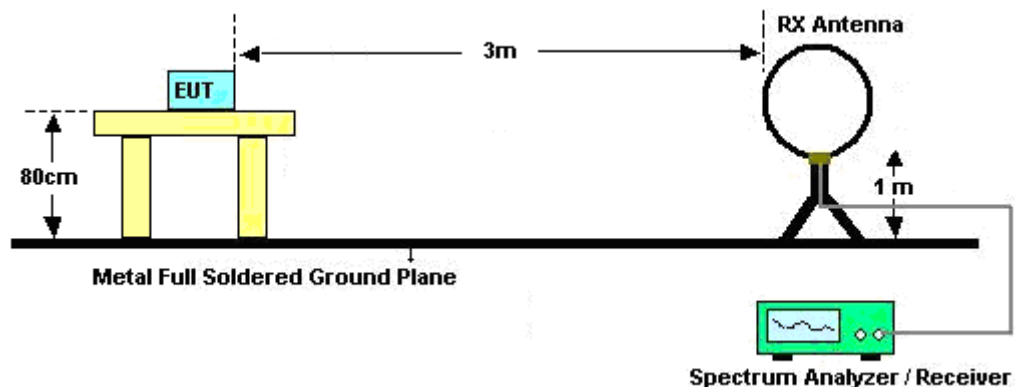
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

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

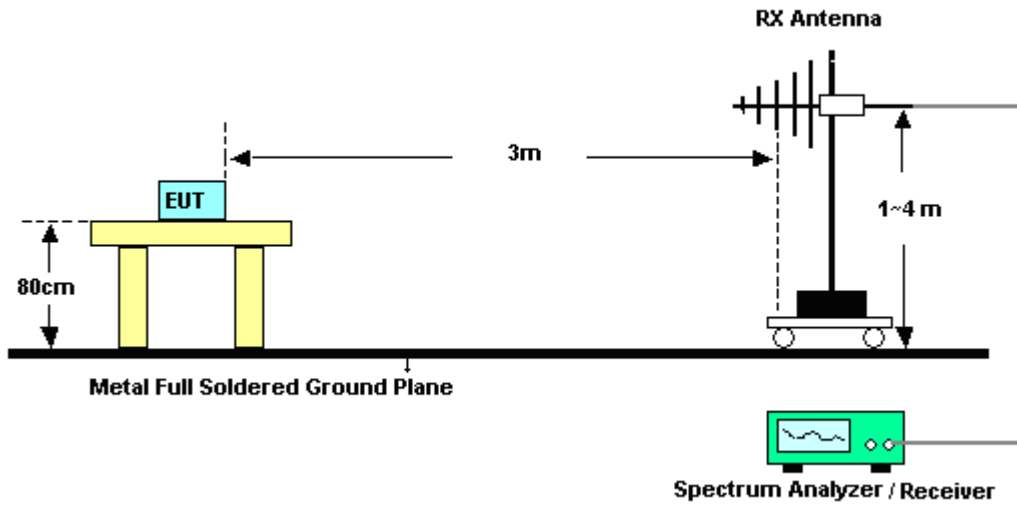
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.2.3 Test Setup

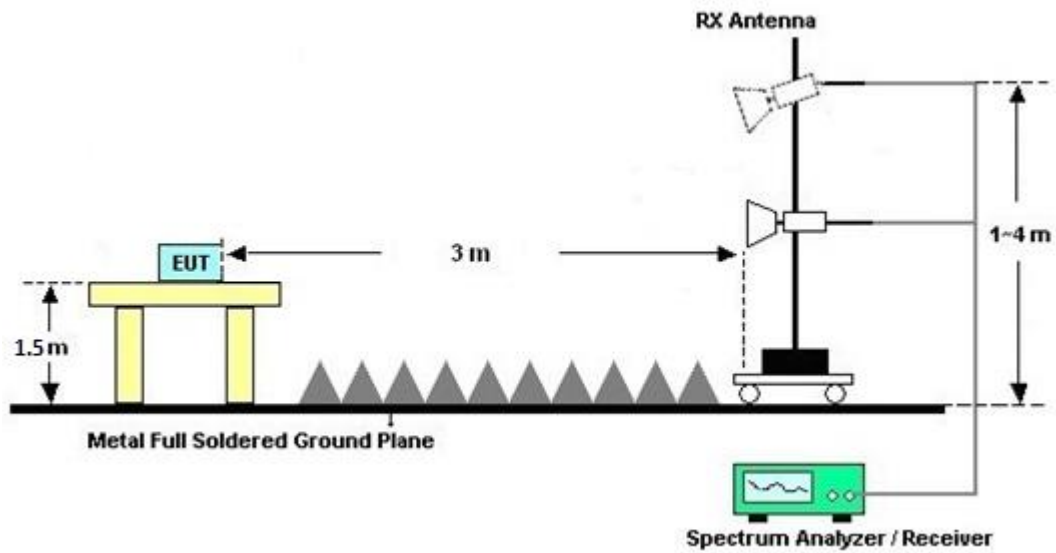
For radiated emissions below 30MHz



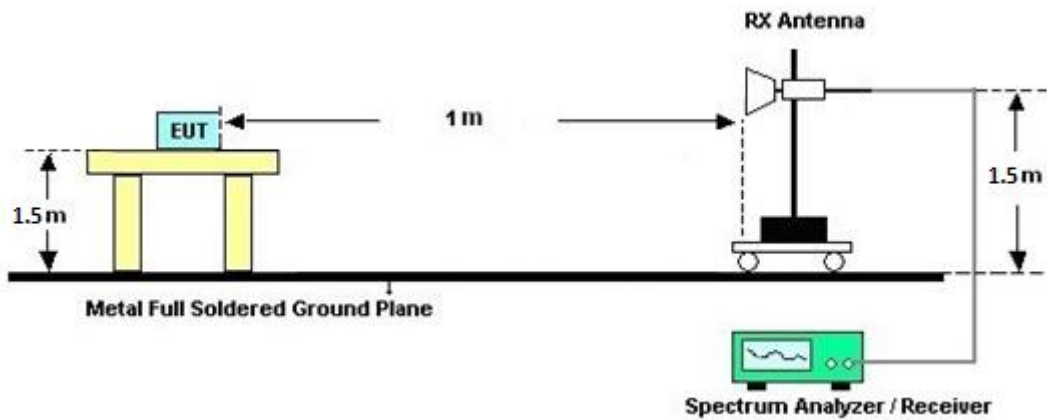
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.2.4 Test Results of Radiated Spurious 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.

3.2.5 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.2.6 Duty Cycle

Please refer to Appendix E.

3.2.7 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.



3.3 AC Conducted Emission Measurement

3.3.1 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.

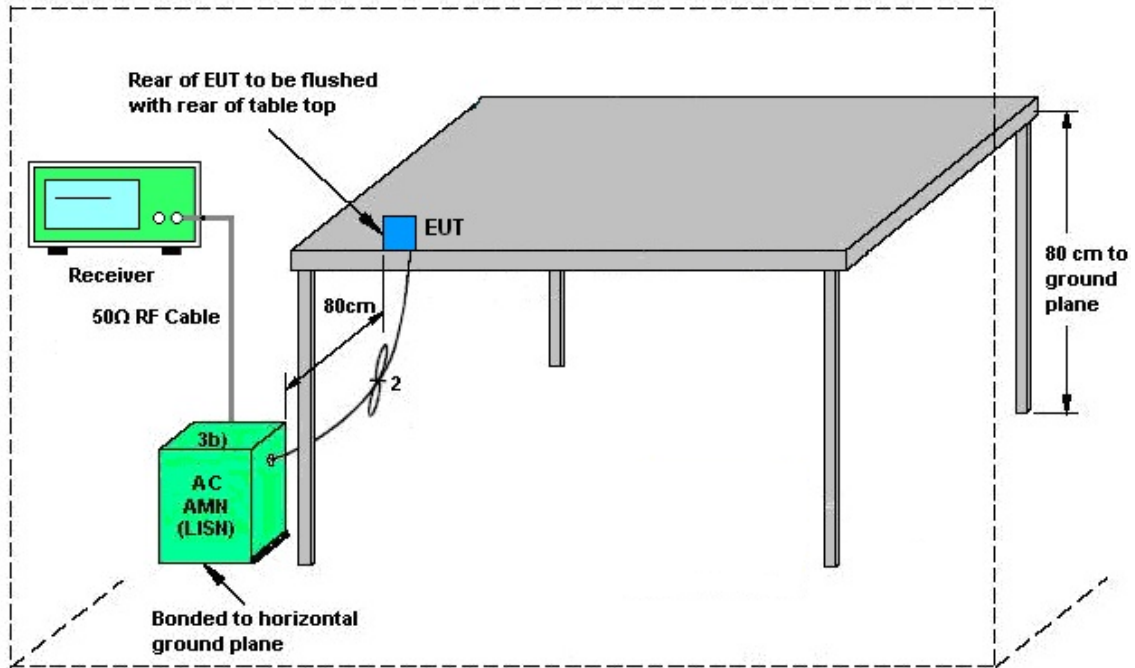
3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 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.

3.3.4 Test Setup



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

3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.4 Antenna Requirements

3.4.1 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.

3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.4.3 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	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Dec. 30, 2020	Mar. 01, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	13100030SNO 31	10MHz ~ 6GHz	Jan. 22, 2020	Dec. 30, 2020	Jan. 21, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSQ26	200578/026	20Hz ~ 26.5GHz	Jul. 17, 2020	Dec. 30, 2020	Jul. 16, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2020	Dec. 30, 2020	Mar. 16, 2021	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jul. 14, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Jul. 13, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	41912 & 05	30MHz~1GHz	Feb. 09, 2020	Jan. 16, 2021~ Feb. 07, 2021	Feb. 08, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	41912 & 05	30MHz~1GHz	Feb. 08, 2021	Feb. 08, 2021 ~ Feb. 11, 2021	Feb. 07, 2022	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 28, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Dec. 27, 2021	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-01620	1GHz~18GHz	Nov. 03, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Nov. 02, 2021	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Dec. 02, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Dec. 01, 2021	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-30 3	17100018000 55006	1GHz~18GHz	May 07, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	May 06, 2021	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY53270195	1GHz~26.5GHz	Aug. 21, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Aug. 20, 2021	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Oct. 27, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Oct. 26, 2021	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20MHz~8.4GHz	Nov. 02, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Nov. 01, 2021	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	May 04, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	May 03, 2021	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Jan. 16, 2021 ~ Feb. 11, 2021	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Jan. 16, 2021 ~ Feb. 11, 2021	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24 (k5)	RK-000451	N/A	N/A	Jan. 16, 2021 ~ Feb. 11, 2021	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY36980/4, MY9838/4PE, 508405/2E	30MHz~18G	Nov. 16, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Nov. 15, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 25, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Feb. 24, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 25, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Feb. 24, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 12, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Mar. 11, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WLJ4-1000-15 30-6000-40ST	SN4	1.53GHz Low Pass Filter	Jul. 03, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Jul. 02, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN6	6.75GHz High Pass Filter	Jul. 01, 2020	Jan. 16, 2021 ~ Feb. 11, 2021	Jun. 30, 2021	Radiation (03CH15-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 06, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 11, 2020	Jan. 06, 2021	Sep. 10, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Jan. 06, 2021	Nov. 17, 2021	Conduction (CO05-HY)
ISN	TESEQ	ISN T8-Cat6	41537	N/A	Feb. 03, 2020	Jan. 06, 2021	Feb. 02, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Jan. 06, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jan. 06, 2021	N/A	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Jan. 06, 2021	Dec. 30, 2021	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	ESHVTSD 9561-F N3-Z2	109561-F N003730851	9kHz-200MHz	Nov. 02, 2020	Jan. 06, 2021	Nov. 01, 2021	Conduction (CO05-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.3
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Rebecca Li	Temperature:	20~21	°C
Test Date:	2020/12/30	Relative Humidity:	55~56	%

TEST RESULTS DATA
Average Power Table

FCC Band I single antenna												
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	36	5180	13.20	-		24.00	-	-0.20	-	Pass
11a	6Mbps	1	44	5220	12.90	-		24.00	-	-0.20	-	Pass
11a	6Mbps	1	48	5240	12.80	-		24.00	-	-0.20	-	Pass
HT20	MCS0	1	36	5180	12.90	-		24.00	-	-0.20	-	Pass
HT20	MCS0	1	44	5220	12.70	-		24.00	-	-0.20	-	Pass
HT20	MCS0	1	48	5240	12.80	-		24.00	-	-0.20	-	Pass
HT40	MCS0	1	38	5190	13.00	-		24.00	-	-0.20	-	Pass
HT40	MCS0	1	46	5230	13.00	-		24.00	-	-0.20	-	Pass
VHT20	MCS0	1	36	5180	12.80	-		24.00	-	-0.20	-	Pass
VHT20	MCS0	1	44	5220	12.60	-		24.00	-	-0.20	-	Pass
VHT20	MCS0	1	48	5240	12.70	-		24.00	-	-0.20	-	Pass
VHT40	MCS0	1	38	5190	12.90	-		24.00	-	-0.20	-	Pass
VHT40	MCS0	1	46	5230	12.90	-		24.00	-	-0.20	-	Pass
VHT80	MCS0	1	42	5210	12.30	-		24.00	-	-0.20	-	Pass

TEST RESULTS DATA
Average Power Table

FCC Band II single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	13.10	-		23.98	-	-0.20	-	26.99	Pass
11a	6Mbps	1	60	5300	13.00	-		23.98	-	-0.20	-	26.99	Pass
11a	6Mbps	1	64	5320	13.00	-		23.98	-	-0.20	-	26.99	Pass
HT20	MCS0	1	52	5260	12.70	-		23.98	-	-0.20	-	26.99	Pass
HT20	MCS0	1	60	5300	12.70	-		23.98	-	-0.20	-	26.99	Pass
HT20	MCS0	1	64	5320	12.80	-		23.98	-	-0.20	-	26.99	Pass
HT40	MCS0	1	54	5270	13.00	-		23.98	-	-0.20	-	26.99	Pass
HT40	MCS0	1	62	5310	13.10	-		23.98	-	-0.20	-	26.99	Pass
VHT20	MCS0	1	52	5260	12.60	-		23.98	-	-0.20	-	26.99	Pass
VHT20	MCS0	1	60	5300	12.60	-		23.98	-	-0.20	-	26.99	Pass
VHT20	MCS0	1	64	5320	12.70	-		23.98	-	-0.20	-	26.99	Pass
VHT40	MCS0	1	54	5270	12.90	-		23.98	-	-0.20	-	26.99	Pass
VHT40	MCS0	1	62	5310	13.00	-		23.98	-	-0.20	-	26.99	Pass
VHT80	MCS0	1	58	5290	12.20	-		23.98	-	-0.20	-	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC Band III single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	12.20	-		23.98	-	0.10	-	26.99	Pass
11a	6Mbps	1	116	5580	11.60	-		23.98	-	0.10	-	26.99	Pass
11a	6Mbps	1	140	5700	11.90	-		23.98	-	0.10	-	26.99	Pass
HT20	MCS0	1	100	5500	12.00	-		23.98	-	0.10	-	26.99	Pass
HT20	MCS0	1	116	5580	11.90	-		23.98	-	0.10	-	26.99	Pass
HT20	MCS0	1	140	5700	11.70	-		23.98	-	0.10	-	26.99	Pass
HT40	MCS0	1	102	5510	12.60	-		23.98	-	0.10	-	26.99	Pass
HT40	MCS0	1	110	5550	12.40	-		23.98	-	0.10	-	26.99	Pass
HT40	MCS0	1	134	5670	11.70	-		23.98	-	0.10	-	26.99	Pass
VHT20	MCS0	1	100	5500	11.90	-		23.98	-	0.10	-	26.99	Pass
VHT20	MCS0	1	116	5580	11.80	-		23.98	-	0.10	-	26.99	Pass
VHT20	MCS0	1	140	5700	11.60	-		23.98	-	0.10	-	26.99	Pass
VHT40	MCS0	1	102	5510	12.50	-		23.98	-	0.10	-	26.99	Pass
VHT40	MCS0	1	110	5550	12.30	-		23.98	-	0.10	-	26.99	Pass
VHT40	MCS0	1	134	5670	11.60	-		23.98	-	0.10	-	26.99	Pass
VHT80	MCS0	1	106	5530	11.30	-		23.98	-	0.10	-	26.99	Pass
VHT80	MCS0	1	122	5610	11.40	-		23.98	-	0.10	-	26.99	Pass



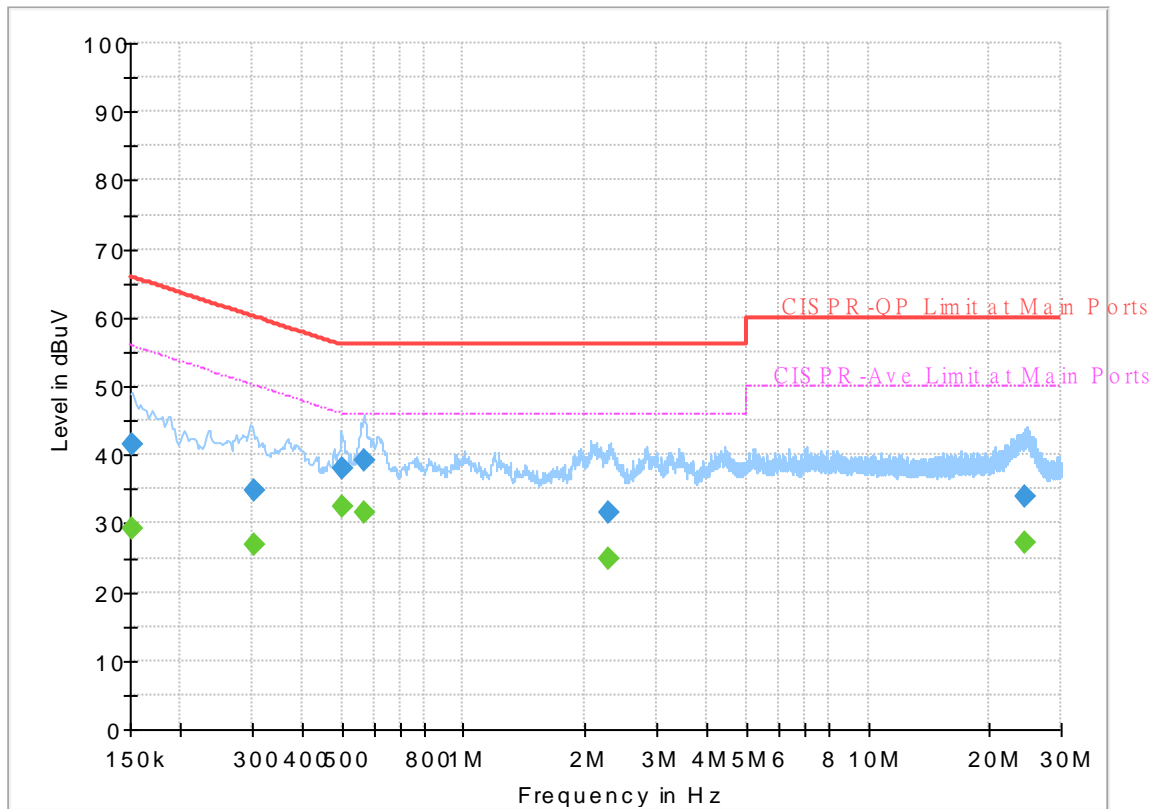
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	Temperature :	23~26°C
		Relative Humidity :	40~50%

EUT Information

Report NO : 0D1806
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



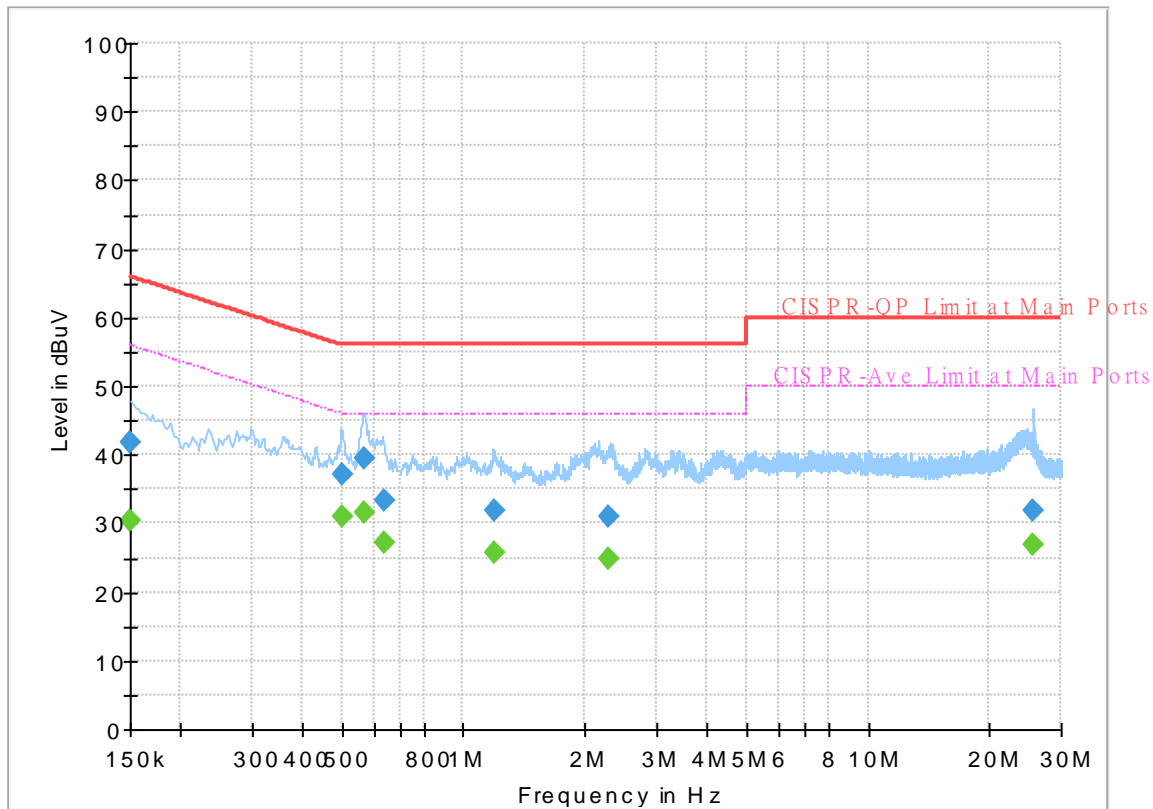
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.151755	---	29.18	55.90	26.72	L1	OFF	19.7
0.151755	41.58	---	65.90	24.32	L1	OFF	19.7
0.303000	---	26.97	50.16	23.19	L1	OFF	19.7
0.303000	34.74	---	60.16	25.42	L1	OFF	19.7
0.501000	---	32.37	46.00	13.63	L1	OFF	19.9
0.501000	38.01	---	56.00	17.99	L1	OFF	19.9
0.566520	---	31.55	46.00	14.45	L1	OFF	19.9
0.566520	39.14	---	56.00	16.86	L1	OFF	19.9
2.294250	---	24.97	46.00	21.03	L1	OFF	20.2
2.294250	31.56	---	56.00	24.44	L1	OFF	20.2
24.531000	---	27.31	50.00	22.69	L1	OFF	20.7
24.531000	33.87	---	60.00	26.13	L1	OFF	20.7

EUT Information

Report NO : 0D1806
 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)
0.150000	---	30.48	56.00	25.52	N	OFF	19.7
0.150000	41.93	---	66.00	24.07	N	OFF	19.7
0.499470	---	30.87	46.01	15.14	N	OFF	19.9
0.499470	37.02	---	56.01	18.99	N	OFF	19.9
0.566160	---	31.58	46.00	14.42	N	OFF	20.0
0.566160	39.40	---	56.00	16.60	N	OFF	20.0
0.638250	---	27.06	46.00	18.94	N	OFF	20.0
0.638250	33.29	---	56.00	22.71	N	OFF	20.0
1.189500	---	25.66	46.00	20.34	N	OFF	20.3
1.189500	31.73	---	56.00	24.27	N	OFF	20.3
2.280390	---	24.90	46.00	21.10	N	OFF	20.2
2.280390	31.06	---	56.00	24.94	N	OFF	20.2
25.721250	---	26.85	50.00	23.15	N	OFF	20.9
25.721250	31.83	---	60.00	28.17	N	OFF	20.9



Appendix C. Radiated Spurious Emission

Test Engineer :	Leo Lee, Mancy Chou, and Bigshow Wang	Temperature :	22.1 ~ 23.1°C
		Relative Humidity :	55 ~ 60%

<Sample 1>

Band 1 - 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11n HT20 CH 36 5180MHz		5150	57.56	-16.44	74	45.77	31.8	10	30.01	286	298	P	H	
		5149.5	47.31	-6.69	54	35.52	31.8	10	30.01	286	298	A	H	
	*	5180	102.38	-	-	90.74	31.62	10.03	30.01	286	298	P	H	
	*	5180	94.69	-	-	83.05	31.62	10.03	30.01	286	298	A	H	
													H	
														H
			5149.5	55.92	-18.08	74	44.13	31.8	10	30.01	141	277	P	V
			5150	46.96	-7.04	54	35.17	31.8	10	30.01	141	277	A	V
		*	5188	101.8	-	-	90.2	31.57	10.04	30.01	141	277	P	V
		*	5188	94.18	-	-	82.58	31.57	10.04	30.01	141	277	A	V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include data for 802.11n HT20 CH 36 5180MHz and a Remark section.



Band 1 5150~5250MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 38 5190MHz		5149.5	63.37	-10.63	74	51.58	31.8	10	30.01	360	298	P	H
		5150	52.67	-1.33	54	40.88	31.8	10	30.01	360	298	A	H
	*	5190	100.38	-	-	88.79	31.56	10.04	30.01	360	298	P	H
	*	5190	92.51	-	-	80.92	31.56	10.04	30.01	360	298	A	H
		5373.76	50.29	-23.71	74	38.86	31.24	10.19	30	360	298	P	H
		5442.64	41.86	-12.14	54	30.03	31.57	10.25	29.99	360	298	A	H
		5150	63.37	-10.63	74	51.58	31.8	10	30.01	100	267	P	V
		5150	52.37	-1.63	54	40.58	31.8	10	30.01	100	267	A	V
	*	5190	99.2	-	-	87.61	31.56	10.04	30.01	100	267	P	V
	*	5190	91.62	-	-	80.03	31.56	10.04	30.01	100	267	A	V
		5416.6	49.89	-24.11	74	38.2	31.47	10.22	30	100	267	P	V
		5435.92	41.98	-12.02	54	30.19	31.54	10.24	29.99	100	267	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include data for 802.11n HT40 CH 38 5190MHz and a Remark section.



**Band 2 - 5250~5350MHz
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 64 5320MHz	*	5320	101.94	-	-	90.63	31.16	10.15	30	276	297	P	H
	*	5320	94.82	-	-	83.51	31.16	10.15	30	276	297	A	H
		5354.72	57.02	-16.98	74	45.72	31.13	10.17	30	276	297	P	H
		5350.56	43.54	-10.46	54	32.27	31.1	10.17	30	276	297	A	H
													H
													H
	*	5320	99.86	-	-	88.55	31.16	10.15	30	140	271	P	V
	*	5320	102.84	-	-	91.53	31.16	10.15	30	140	271	A	V
		5350.08	53.32	-20.68	74	42.05	31.1	10.17	30	140	271	P	V
		5372.64	42.44	-11.56	54	31.01	31.24	10.19	30	140	271	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 64 5320MHz		10640	49.44	-24.56	74	56.16	39.78	14.6	61.1	100	0	P	H
		15960	46.44	-27.56	74	52.33	37.26	17.54	60.69	100	0	P	H
		18000	59.8	-14.2	74	49.66	49	19.04	57.9	100	31	P	H
		18000	49.62	-4.38	54	39.48	49	19.04	57.9	100	31	A	H
		10640	49.56	-24.44	74	56.28	39.78	14.6	61.1	100	0	P	V
		15960	47.09	-26.91	74	52.98	37.26	17.54	60.69	100	0	P	V
		17987.4	60.78	-13.22	74	50.9	48.77	19.03	57.92	100	21	P	V
		17987.4	50.65	-3.35	54	40.77	48.77	19.03	57.92	100	21	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5111.52	51.09	-22.91	74	39.34	31.8	9.96	30.01	291	299	P	H
		5098.26	43.96	-10.04	54	32.23	31.8	9.94	30.01	291	299	A	H
	*	5290	97.54	-	-	86.22	31.2	10.12	30	291	299	P	H
	*	5290	90.19	-	-	78.87	31.2	10.12	30	291	299	A	H
		5352.72	61.09	-12.91	74	49.8	31.12	10.17	30	291	299	P	H
		5350.56	53.66	-0.34	54	42.39	31.1	10.17	30	291	299	A	H
		5104.72	51.04	-22.96	74	39.3	31.8	9.95	30.01	100	266	P	V
		5109.14	43.93	-10.07	54	32.19	31.8	9.95	30.01	100	266	A	V
	*	5290	96.87	-	-	85.55	31.2	10.12	30	100	266	P	V
	*	5290	89.23	-	-	77.91	31.2	10.12	30	100	266	A	V
		5354.64	61.92	-12.08	74	50.62	31.13	10.17	30	100	266	P	V
		5350.32	53.43	-0.57	54	42.16	31.1	10.17	30	100	266	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

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 58 5290MHz		10580	47.52	-20.68	68.2	54.35	39.7	14.57	61.1	100	0	P	H
		15870	46.98	-27.02	74	53.44	37.17	17.49	61.12	100	0	P	H
		18000	59.29	-14.71	74	49.15	49	19.04	57.9	100	25	P	H
		18000	50.01	-3.99	54	39.87	49	19.04	57.9	100	25	A	H
		10580	46.94	-21.26	68.2	53.77	39.7	14.57	61.1	100	0	P	V
		15870	46.81	-27.19	74	53.27	37.17	17.49	61.12	100	0	P	V
		17989	59.72	-14.28	74	49.8	48.8	19.03	57.91	100	25	P	V
		17989	50.13	-3.87	54	40.21	48.8	19.03	57.91	100	25	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 3 - 5470~5725MHz
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 100 5500MHz		5426.96	51.03	-22.97	74	39.28	31.51	10.23	29.99	240	355	P	H	
		5464.24	49.38	-18.82	68.2	37.51	31.6	10.26	29.99	240	355	P	H	
		5447.92	42.45	-11.55	54	30.6	31.59	10.25	29.99	240	355	A	H	
	*	5500	99.77	-	-	87.86	31.6	10.3	29.99	240	355	P	H	
	*	5500	92.22	-	-	80.31	31.6	10.3	29.99	240	355	A	H	
														H
			5447.76	51.8	-22.2	74	39.95	31.59	10.25	29.99	136	270	P	V
			5464.56	50.29	-17.91	68.2	38.42	31.6	10.26	29.99	136	270	P	V
			5447.92	42.99	-11.01	54	31.14	31.59	10.25	29.99	136	270	A	V
	*		5500	102.46	-	-	90.55	31.6	10.3	29.99	136	270	P	V
	*		5500	94	-	-	82.09	31.6	10.3	29.99	136	270	A	V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11a CH 100 5500MHz and a Remark section.



**Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 140 5700MHz	*	5700	97.92	-	-	85.86	31.7	10.49	30.13	245	353	P	H
	*	5700	89.52	-	-	77.46	31.7	10.49	30.13	245	353	A	H
		5727.32	51.16	-17.04	68.2	39.04	31.75	10.52	30.15	245	353	P	H
													H
													H
													H
	*	5700	96.91	-	-	84.85	31.7	10.49	30.13	136	271	P	V
	*	5700	89.07	-	-	77.01	31.7	10.49	30.13	136	271	A	V
		5747.16	50.72	-17.48	68.2	38.56	31.79	10.54	30.17	136	271	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11n HT20 CH 140 at 5700MHz and a Remark section.



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		5459.35	50.94	-23.06	74	39.07	31.6	10.26	29.99	254	354	P	H
		5466.64	56.73	-11.47	68.2	44.85	31.6	10.27	29.99	254	354	P	H
		5451.79	42.11	-11.89	54	30.25	31.6	10.25	29.99	254	354	A	H
	*	5510	98.62	-	-	86.74	31.58	10.3	30	254	354	P	H
	*	5510	90.16	-	-	78.28	31.58	10.3	30	254	354	A	H
		5755.865	49.02	-19.18	68.2	36.84	31.8	10.55	30.17	254	354	P	H
		5454.22	51.65	-22.35	74	39.78	31.6	10.26	29.99	100	267	P	V
		5469.07	60.6	-7.6	68.2	48.72	31.6	10.27	29.99	100	267	P	V
		5459.62	42.47	-11.53	54	30.6	31.6	10.26	29.99	100	267	A	V
	*	5510	98.24	-	-	86.36	31.58	10.3	30	100	267	P	V
	*	5510	90.47	-	-	78.59	31.58	10.3	30	100	267	A	V
			5735.39	50.05	-18.15	68.2	37.91	31.77	10.53	30.16	100	267	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include data for 802.11n HT40 CH 102 at 5510MHz and a Remark section.



**Band 3 - 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 106 5530MHz		5441.44	51.45	-22.55	74	39.62	31.57	10.25	29.99	263	354	P	H
		5462.8	52.19	-16.01	68.2	40.32	31.6	10.26	29.99	263	354	P	H
		5458.72	44.01	-9.99	54	32.14	31.6	10.26	29.99	263	354	A	H
	*	5530	93.73	-	-	81.88	31.54	10.32	30.01	263	354	P	H
	*	5530	86	-	-	74.15	31.54	10.32	30.01	263	354	A	H
		5753.03	50.1	-18.1	68.2	37.92	31.8	10.55	30.17	263	354	P	H
		5459.68	53.75	-20.25	74	41.88	31.6	10.26	29.99	100	271	P	V
		5460	53.59	-14.64	68.2	41.72	31.6	10.26	29.99	100	271	P	V
		5459.68	44.85	-9.15	54	32.98	31.6	10.26	29.99	100	271	A	V
	*	5530	94.3	-	-	82.45	31.54	10.32	30.01	100	271	P	V
	*	5530	86.87	-	-	75.02	31.54	10.32	30.01	100	271	A	V
			5761.535	50.7	-17.5	68.2	38.52	31.8	10.56	30.18	100	271	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

Table with 14 columns: 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). Rows include test data for 802.11ac VHT80 CH 106 at 5530MHz and a Remark section.



Emission above 18GHz
5GHz WIFI 802.11ac VHT80 (SHF)

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)	
5GHz 802.11ac VHT80 SHF		20288	37.52	-36.48	74	42.64	38.56	11.22	54.9	150	0	P	H	
		35732	46.21	-21.99	68.2	44.26	42.05	18.6	58.7	150	0	P	H	
													H	
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													H	
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													H	
													H	
													H	
			22840	40.09	-33.91	74	43.16	38.76	12.4	54.23	150	0	P	V
			35578	46.15	-22.05	68.2	44.23	42.02	18.6	58.7	150	0	P	V
													V	
													V	
													V	
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													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



Emission below 1GHz
5GHz WIFI 802.11ac VHT80 (LF)

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)	
5GHz 802.11ac VHT80 LF		67.83	33.01	-6.99	40	51.88	12.54	1.13	32.54	274	226	Q	H	
		94.99	37.28	-6.22	43.5	52.86	15.52	1.38	32.48	-	-	P	H	
		189.08	36.9	-6.6	43.5	52.37	14.99	2	32.46	-	-	P	H	
		285.11	39.62	-6.38	46	51.01	18.71	2.36	32.46	-	-	P	H	
		433.52	38.27	-7.73	46	45.19	22.68	2.81	32.41	-	-	P	H	
		902.03	39.81	-6.19	46	38.68	28.59	4.16	31.62	-	-	P	H	
														H
														H
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														H
														H
			40.67	34.01	-5.99	40	46.64	19.11	0.82	32.56	100	306	Q	V
			94.99	37.35	-6.15	43.5	52.93	15.52	1.38	32.48	-	-	P	V
			176.47	37.47	-6.03	43.5	52.64	15.39	1.92	32.48	-	-	P	V
		298.69	34.04	-11.96	46	45.06	19.08	2.39	32.49	-	-	P	V	
		719.67	38.84	-7.16	46	40.77	26.88	3.64	32.45	-	-	P	V	
		903.97	39.67	-6.33	46	38.47	28.62	4.18	31.6	-	-	P	V	
													V	
													V	
													V	
													V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



<Sample 2>

**Band 2 - 5250~5350MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5026.18	50.92	-23.08	74	39.56	31.51	9.87	30.02	100	278	P	H
		5149.6	43.72	-10.28	54	31.93	31.8	10	30.01	100	278	A	H
	*	5290	93.02	-	-	81.7	31.2	10.12	30	100	278	P	H
	*	5290	85.83	-	-	74.51	31.2	10.12	30	100	278	A	H
		5373.12	60.74	-13.26	74	49.31	31.24	10.19	30	100	278	P	H
		5350.56	52.31	-1.69	54	41.04	31.1	10.17	30	100	278	A	H
		5023.12	50.81	-23.19	74	39.49	31.48	9.86	30.02	338	286	P	V
		5131.24	43.95	-10.05	54	32.18	31.8	9.98	30.01	338	286	A	V
	*	5290	90.43	-	-	79.11	31.2	10.12	30	338	286	P	V
	*	5290	83.64	-	-	72.32	31.2	10.12	30	338	286	A	V
		5352.96	57.95	-16.05	74	46.66	31.12	10.17	30	338	286	P	V
		5350.32	50.57	-3.43	54	39.3	31.1	10.17	30	338	286	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 2 5250~5350MHz
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 58 5290MHz		10580	47.35	-20.85	68.2	54.18	39.7	14.57	61.1	100	0	P	H
		15870	46.71	-27.29	74	53.17	37.17	17.49	61.12	100	0	P	H
		18000	59.89	-14.11	74	49.75	49	19.04	57.9	100	35	P	H
		18000	50.06	-3.94	54	39.92	49	19.04	57.9	100	35	A	H
		10580	46.72	-21.48	68.2	53.55	39.7	14.57	61.1	100	0	P	V
		15870	47.05	-26.95	74	53.51	37.17	17.49	61.12	100	0	P	V
		18000	59.7	-14.3	74	49.56	49	19.04	57.9	100	21	P	V
		18000	50.21	-3.79	54	40.07	49	19.04	57.9	100	21	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission above 18GHz
WIFI 802.11a (SHF @ 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 SHF		22352	40.21	-33.79	74	43.62	38.89	12.26	54.56	150	0	P	H
		35436	44.94	-23.26	68.2	43.07	41.94	18.6	58.67	150	0	P	H
													H
													H
													H
													H
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													H
													H
			23032	40.37	-33.63	74	43.39	38.61	12.46	54.09	150	0	P
		34960	45.47	-22.73	68.2	43.92	41.48	18.56	58.49	150	0	P	V
													V
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													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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 2390MHz:

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

For Average Limit @ 2390MHz:

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

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



Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Leo Lee, Mancy Chou, and Bigshow Wang	Temperature :	22.1 ~ 23.1°C
		Relative Humidity :	55 ~ 60%

Note symbol

-L	Low channel location
-R	High channel location

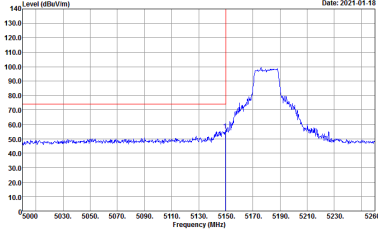
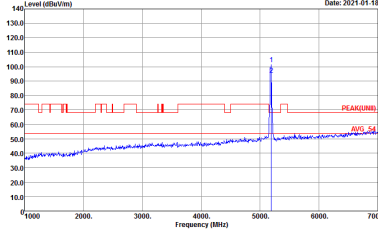
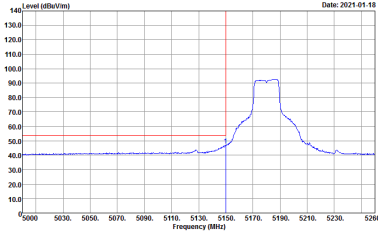


<Sample 1>

**Band 1 - 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

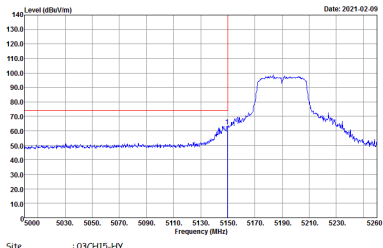
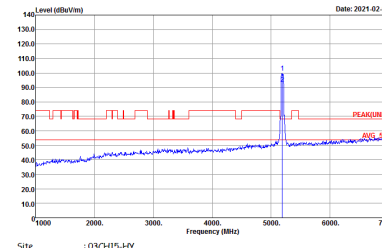
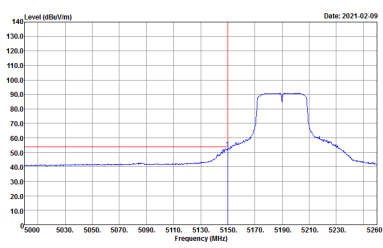
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_SE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(FUN1) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank



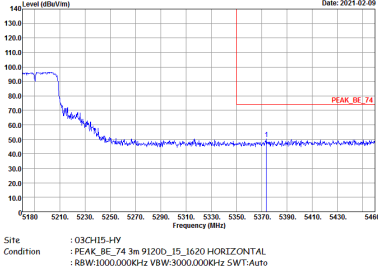
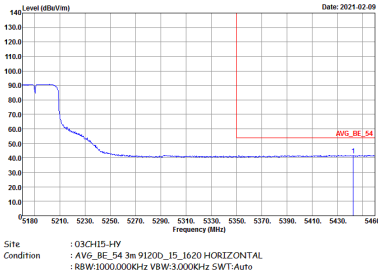
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_SE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(FUN1) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank



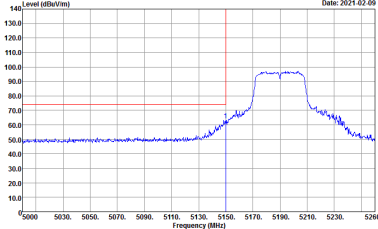
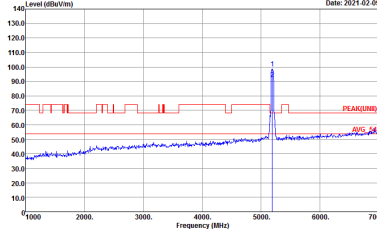
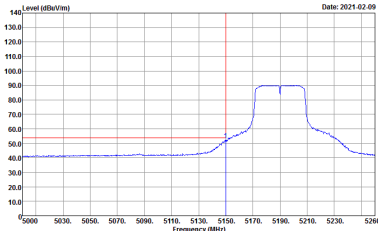
Band 1 5150~5250MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - L	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(FUND) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank

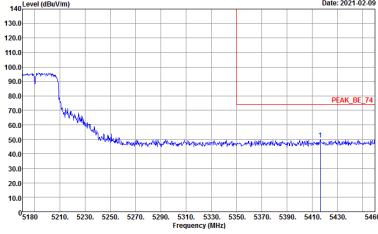
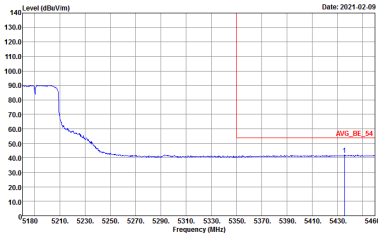


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - L	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - R	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWF:Auto</p>	Left blank
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWF:Auto</p>	Left blank



**Band 1 - 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 001806</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 001806</p>

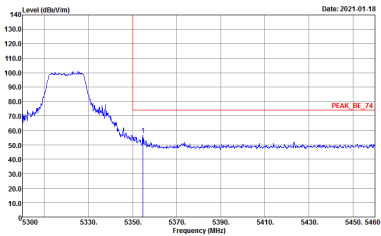
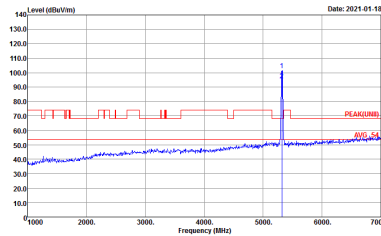
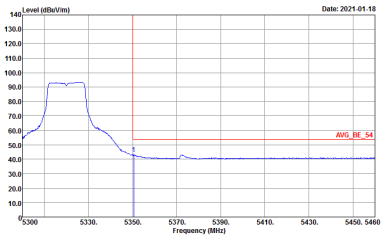


**Band 1 5150~5250MHz
WIFI 802.11n HT40 (Harmonic @ 3m)**

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT40 CH38 5190MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 001806</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 001806</p>



**Band 2 - 5250~5350MHz
WIFI 802.11a (Band Edge @ 3m)**

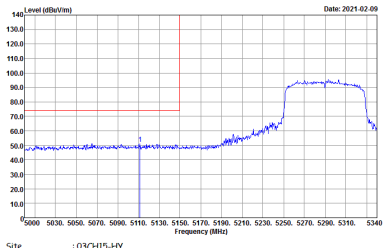
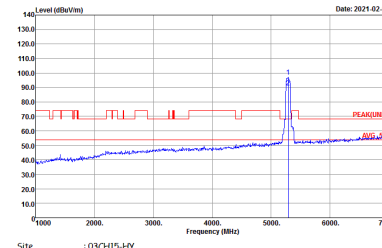
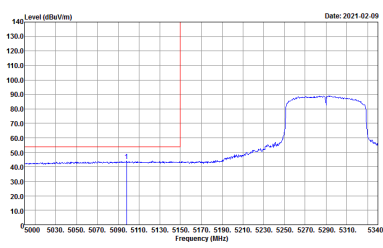
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Fundamental
Peak	 <p>Level (dBV/m) vs Frequency (MHz) plot showing a peak at 5320 MHz. The y-axis ranges from 10.0 to 140.0 dBV/m, and the x-axis ranges from 5300 to 5460 MHz. A red vertical line marks the peak at 5320 MHz, with a label 'PEAK_BE_74'.</p> <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Level (dBV/m) vs Frequency (MHz) plot showing a peak at 5320 MHz. The y-axis ranges from 10.0 to 140.0 dBV/m, and the x-axis ranges from 0 to 7000 MHz. A red vertical line marks the peak at 5320 MHz, with a label 'PEAK(UMB)'.</p> <p>Site : 03CH15-HY Condition : PEAK(UMB) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Level (dBV/m) vs Frequency (MHz) plot showing the average level. The y-axis ranges from 10.0 to 140.0 dBV/m, and the x-axis ranges from 5300 to 5460 MHz. A red vertical line marks the average level at 5320 MHz, with a label 'AVG_BE_54'.</p> <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p>	Left blank



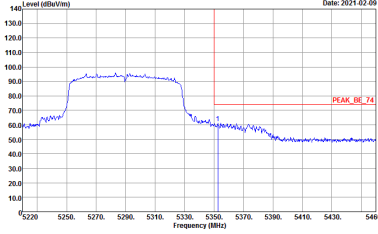
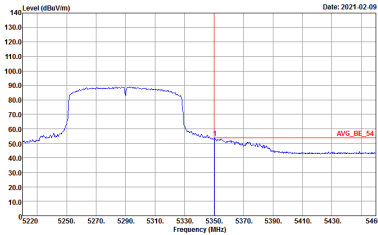
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(FUN1) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p>	Left blank



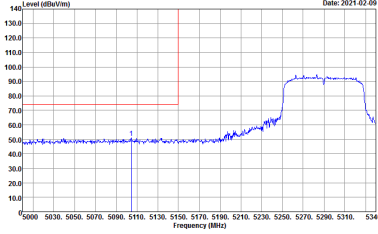
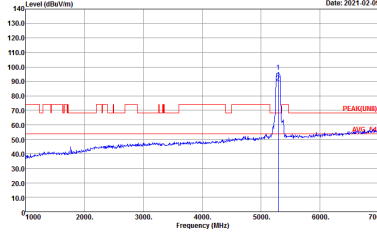
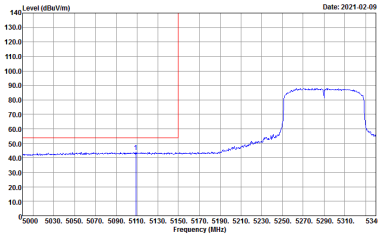
Band 2 5250~5350MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(LINE) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:10.000kHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Vertical	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



**Band 2 - 5250~5350MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Vertical
<p>Peak</p> <p>Avg.</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>

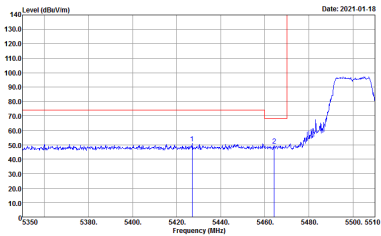
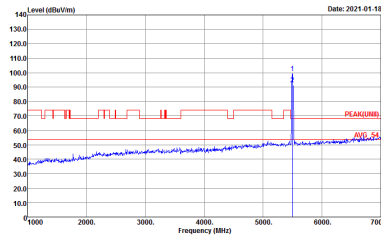
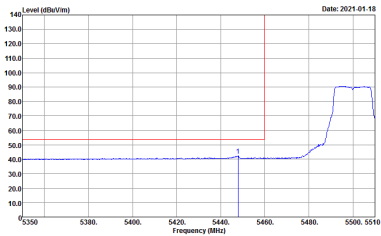


Band 2 5250~5350MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



**Band 3 - 5470~5725MHz
WIFI 802.11a (Band Edge @ 3m)**

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Fundamental
Peak	 <p>Level (dBV/m) vs Frequency (MHz) plot for Peak Horizontal. The plot shows a signal level rising from approximately 40 dBV/m at 5470 MHz to about 90 dBV/m at 5500 MHz. A red vertical line is at 5470 MHz. The date is 2021-01-18.</p> <p>Site : 03CH15-HY Condition : PEAK_BE(UNIT1)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Level (dBV/m) vs Frequency (MHz) plot for Peak Fundamental. The plot shows a signal level rising from approximately 40 dBV/m at 5470 MHz to about 90 dBV/m at 5500 MHz. A red vertical line is at 5470 MHz. The date is 2021-01-18.</p> <p>Site : 03CH15-HY Condition : PEAK(UNIT1) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Level (dBV/m) vs Frequency (MHz) plot for Avg Horizontal. The plot shows a signal level rising from approximately 40 dBV/m at 5470 MHz to about 90 dBV/m at 5500 MHz. A red vertical line is at 5470 MHz. The date is 2021-01-18.</p> <p>Site : 03CH15-HY Condition : AVG_BE(UNIT1)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p>	Left blank



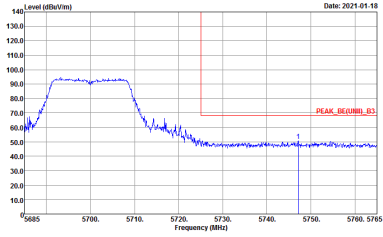
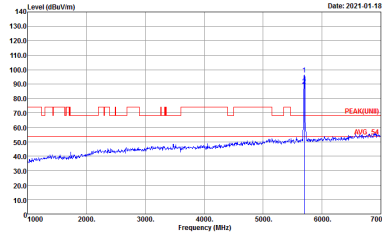
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE(UNIT1)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT1) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE(UNIT1)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	Left blank



Band 3 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_SE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VSW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VSW:3000.000KHz SWT:Auto</p>



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Vertical	Fundamental
Peak.	 <p>Site : 03CH15-HY Condition : PEAK_UNID_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VSW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK_UNID 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VSW:3000.000KHz SWT:Auto</p>



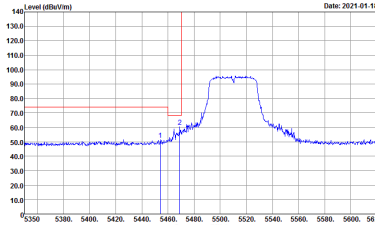
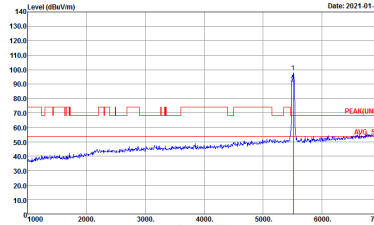
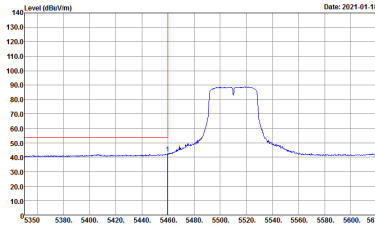
Band 3 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - L	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank

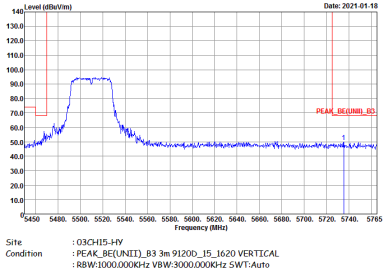


WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - R	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_SE[UNIT]_B3 3m 91200_15_1620 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank



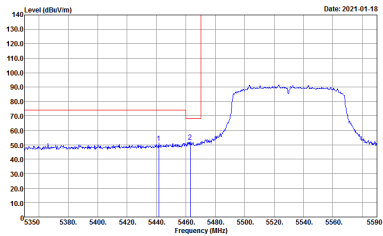
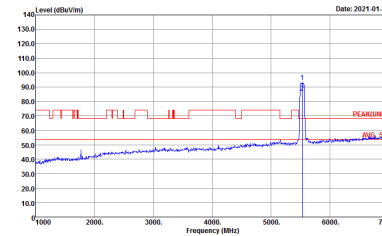
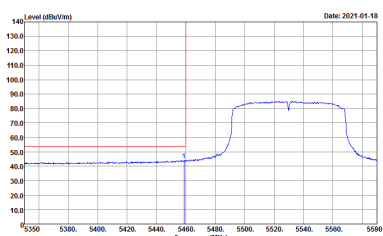
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - L	
1	Vertical	Fundamental
Peak	 <p>Date: 2021-01-18</p> <p>Site : 03CH15-HY Condition : PEAK_BE(UNIT)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Date: 2021-01-18</p> <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Date: 2021-01-18</p> <p>Site : 03CH15-HY Condition : AVG_BE(UNIT)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - R	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_SE[UNIT]_B3 3m 91200_15_1620 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



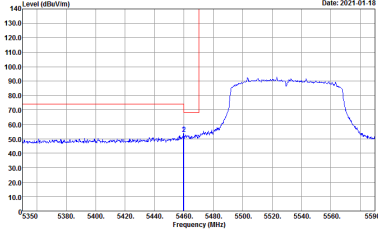
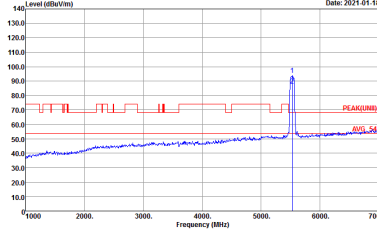
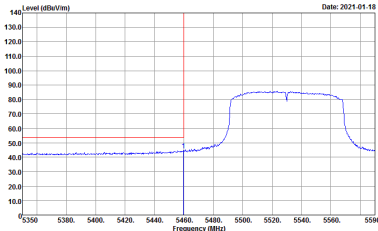
Band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH106 5530MHz - L	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:10.000kHz SWT:Auto</p>	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH106 5530MHz - R	
1	Horizontal	Fundamental
Peak	<p>Date: 2021-01-18 PEAK_DB(Chnl)_B3 Site : 03CH15-HY Condition : PEAK_SE(UNIT)_B3 3m 91200_15_1620 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH106 5530MHz - L	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE(UNIT)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT)_3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE(UNIT)_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH106 5530MHz - R	
1	Vertical	Fundamental
Peak	<p>Level (dBV/m)</p> <p>Date: 2021-01-18</p> <p>Frequency (MHz)</p> <p>Site : 03CH15-HY Condition : PEAK_SE[UNIT]_B3 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank



Band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



Band 3 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



Band 3 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH102 5510MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



Band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH106 5530MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



Emission above 18GHz
5GHz WIFI 802.11ac VHT80 (SHF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 SHF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH16-HY Condition : PEAK(UNII) 1m SHF HORN 88HA9170576 HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : PEAK(UNII) 1m SHF HORN 88HA9170576 VERTICAL</p>



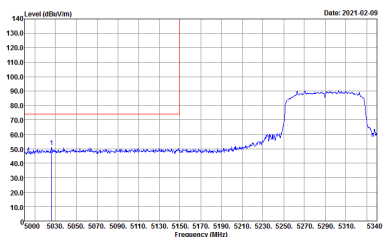
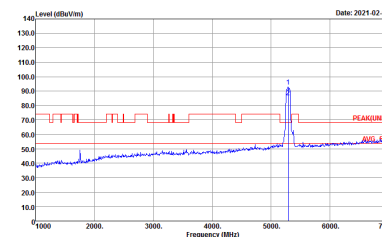
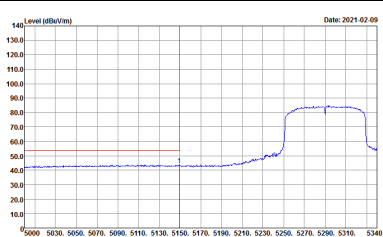
Emission below 1GHz
5GHz WIFI 802.11ac VHT80 (LF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH15-HY Condition : QP 3m BIL06_15_41912 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : QP 3m BIL06_15_41912 VERTICAL</p>

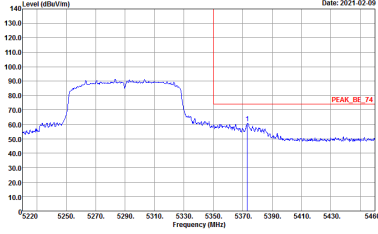
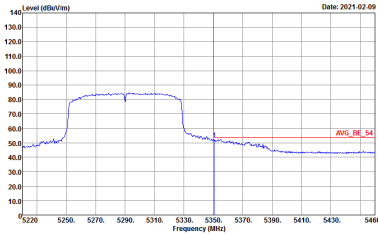


<Sample 2>

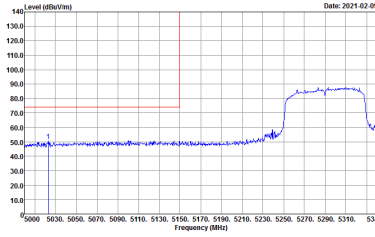
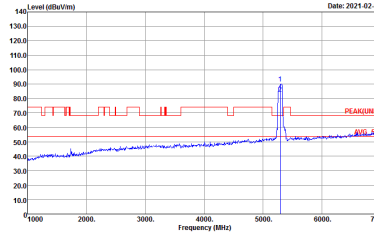
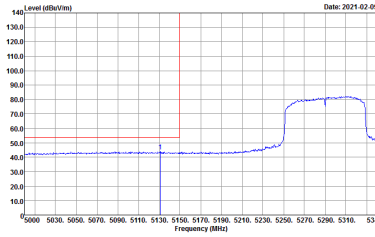
**Band 2 - 5250~5350MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_SE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(FUN1) 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000kHz VBW:10.000kHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH15+HY Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH15+HY Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



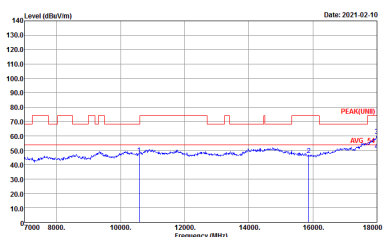
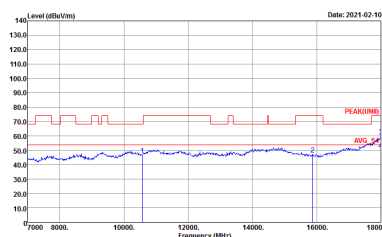
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Vertical	Fundamental
Peak	 <p>Level (dBm/100MHz) vs Frequency (MHz) plot for Vertical Peak. The plot shows a signal level rising from approximately 40 dBm/100MHz at 5250 MHz to about 80 dBm/100MHz at 5350 MHz. A red vertical line is drawn at 5290 MHz. The date is 2021-02-09.</p> <p>Site : 03CH15-HY Condition : PEAK_SE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Level (dBm/100MHz) vs Frequency (MHz) plot for Fundamental Peak. The plot shows a signal level rising from approximately 40 dBm/100MHz at 5250 MHz to about 80 dBm/100MHz at 5350 MHz. A red vertical line is drawn at 5290 MHz. The date is 2021-02-09.</p> <p>Site : 03CH15-HY Condition : PEAK(FUN1) 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Level (dBm/100MHz) vs Frequency (MHz) plot for Vertical Avg. The plot shows a signal level rising from approximately 40 dBm/100MHz at 5250 MHz to about 80 dBm/100MHz at 5350 MHz. A red vertical line is drawn at 5290 MHz. The date is 2021-02-09.</p> <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Vertical	Fundamental
Peak	<p>Site : 03CH15+HY Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank
Avg.	<p>Site : 03CH15+HY Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL : RBW:1000.000kHz VBW:10.000kHz SWF:Auto</p>	Left blank



Band 2 - 5250~5350MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz	
1	Horizontal	Vertical
<p>Peak</p> <p>Avg.</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 HORIZONTAL</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNII) 3m 91200_15_1620 VERTICAL</p>



Emission above 18GHz
5GHz WIFI 802.11ac VHT80 (SHF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 SHF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH16-HY Condition : PEAK(UNII) 3m SHF HORN 88HA9170576 HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : PEAK(UNII) 3m SHF HORN 88HA9170576 VERTICAL</p>



Emission below 1GHz
5GHz WIFI 802.11ac VHT80 (LF)

WIFI	5GHz WIFI	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH15-HY Condition : QP 3m 81LOG_15_41912 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : QP 3m 81LOG_15_41912 VERTICAL</p>



Appendix E. Duty Cycle Plots

Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
802.11a	95.15	1045.71	0.96	1kHz	0.22
5GHz 802.11n HT20	95.39	982.31	1.02	3kHz	0.20
5GHz 802.11n HT40	90.25	486.54	2.06	3kHz	0.45
5GHz 802.11ac VHT80	90.22	246.95	4.05	10kHz	0.45

