

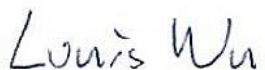


FCC RADIO TEST REPORT

FCC ID : 2AIWVN302
Equipment : Nanit Pro Baby Monitor
Brand Name : Nanit
Model Name : N302
Applicant : Udisense Inc. DBA: Nanit
244 Fifth Avenue Suite #2702, New
York, NY, United States 10001
Manufacturer : Udisense Inc. DBA: Nanit
244 Fifth Avenue Suite #2702, New
York, NY, United States 10001
Standard : FCC Part 15 Subpart E §15.407

The product was received on Feb. 18, 2022 and testing was performed from Mar. 03, 2022 to Mar. 30, 2022. We, Sporton International Inc. Wensan 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 report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR221836E	01	Initial issue of report	May 03, 2022
FR221836E	02	Revise description for Antenna Requirements	May 10, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	6.58 dB under the limit at 11490.000 MHz
3.5	15.207	AC Conducted Emission	Pass	16.35 dB under the limit at 0.614 MHz
3.6	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to this report "Uncertainty of Evaluation".

Comments and Explanations:

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Yun Huang

Report Producer: Ruby Zou

1 General Description

1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac

Product Feature	
Antenna Type	WLAN <Ant. 1>: Dipole Antenna <Ant. 2>: Dipole Antenna Bluetooth: Dipole Antenna

Antenna information		
5745 MHz ~ 5825 MHz	Peak Gain (dBi)	Ant. 1: 3.0 Ant. 2: 2.5

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

1.2 Modification of EUT

No modifications made to the EUT during the testing.

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 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH20-HY

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

FCC designation No.: TW1190 and TW3786

1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. 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, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane with Notebook for Ant. 1 and MIMO <Ant. 1+2>; Z plane with Notebook for Ant. 2 as worst plane.
- 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 with "*" are 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel with "[#]" are 802.11ac VHT80.

2.2 Test Mode

The CDD mode is chosen as worst case configuration for all test cases due to higher power than SISO mode.

The 802.11ac mode has no higher power and PSD than 802.11n mode, thus the 802.11n mode is chosen as main test configuration, and the 802.11ac mode is verified the power.

The final test modes consider the modulation and the worst data rates as shown in the table below.

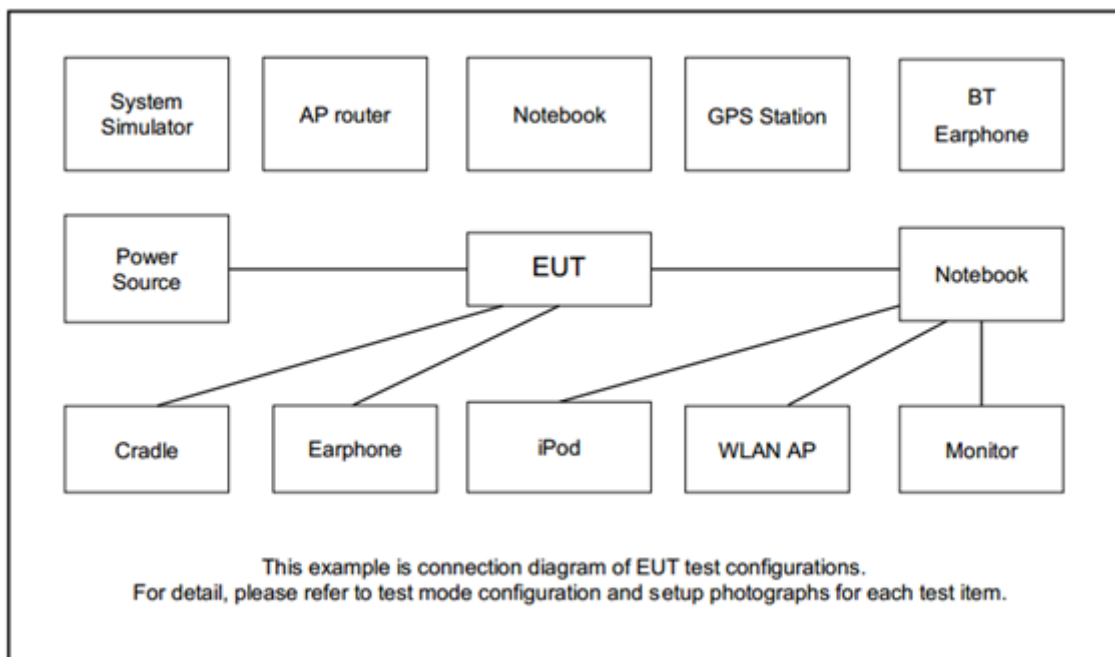
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20 (Covered by HT20)	MCS0
802.11ac VHT40 (Covered by HT40)	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN (5GHz) Link + Multi Stand + Adapter (US)

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	-

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by 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.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	Latitude5310	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Mobile Phone	SAMSUNG	SM-A730F/DS	A3LSMA730F	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility "Putty 0.7" 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 10 dB attenuator.

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

3 Test Result

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

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

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

26dB and 99% Occupied bandwidth are reporting only.

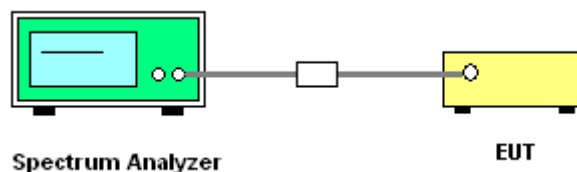
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in 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 5.725-5.85 GHz
2. Set RBW = 100 kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup

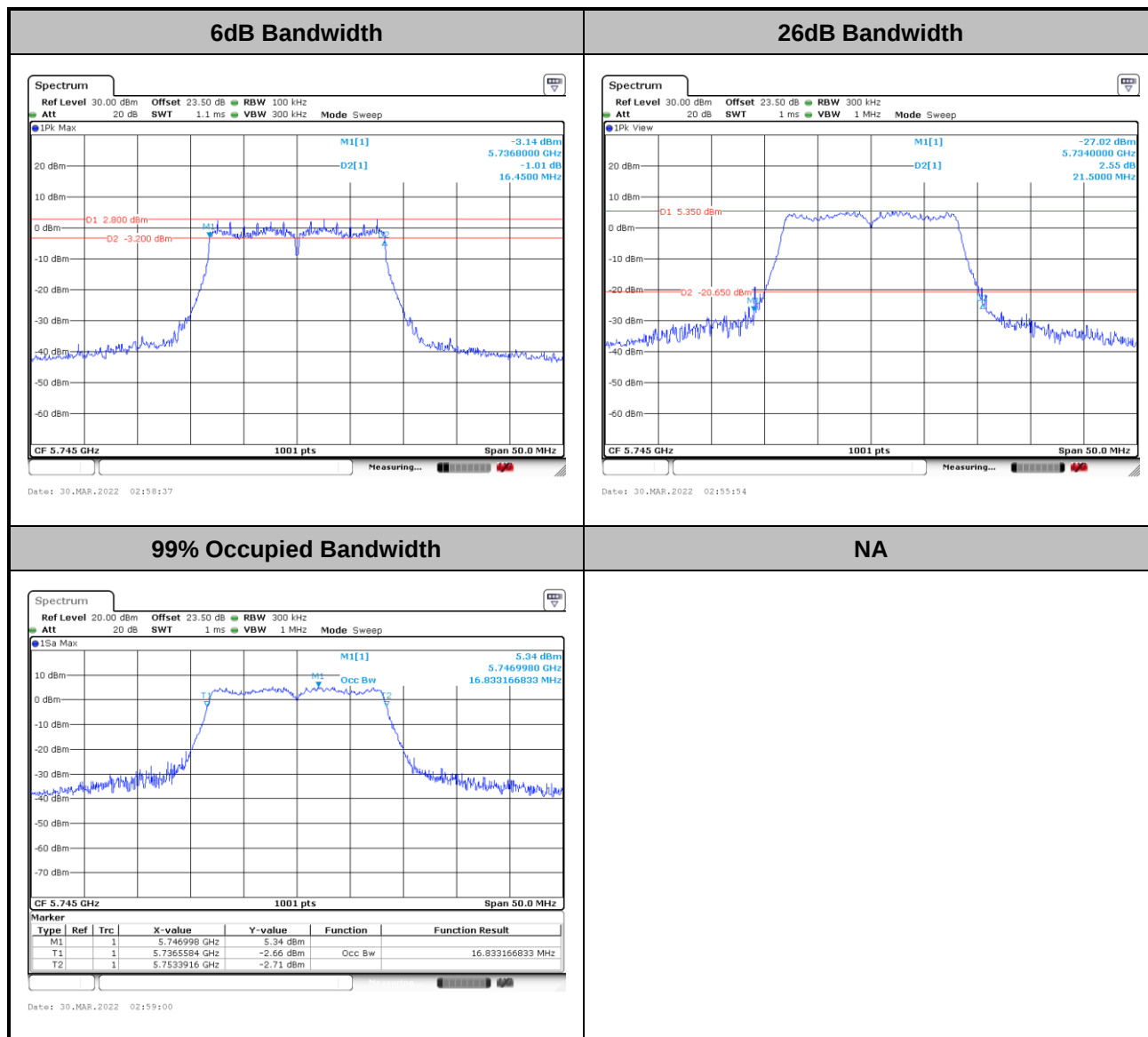


3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

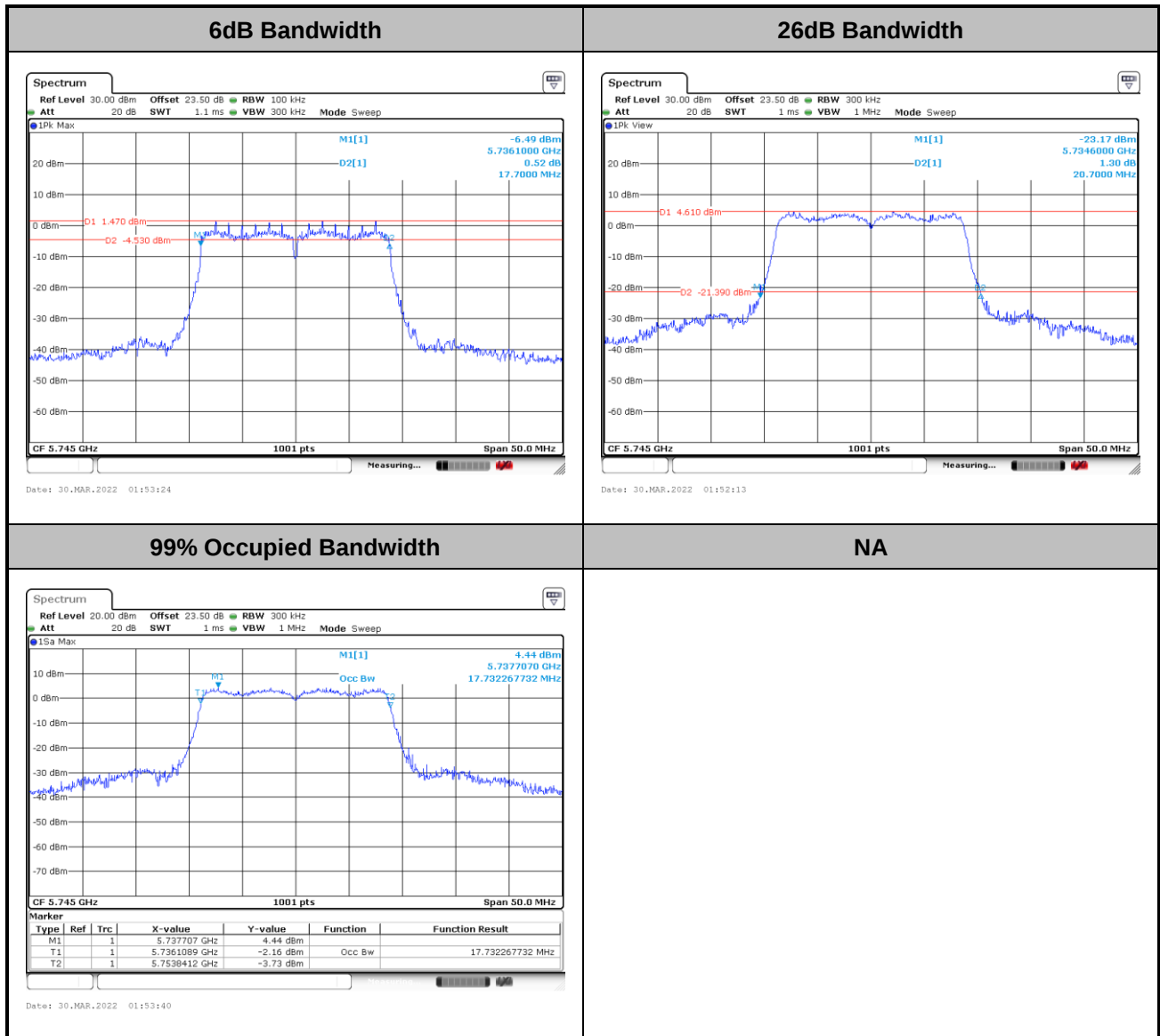


<802.11a>



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

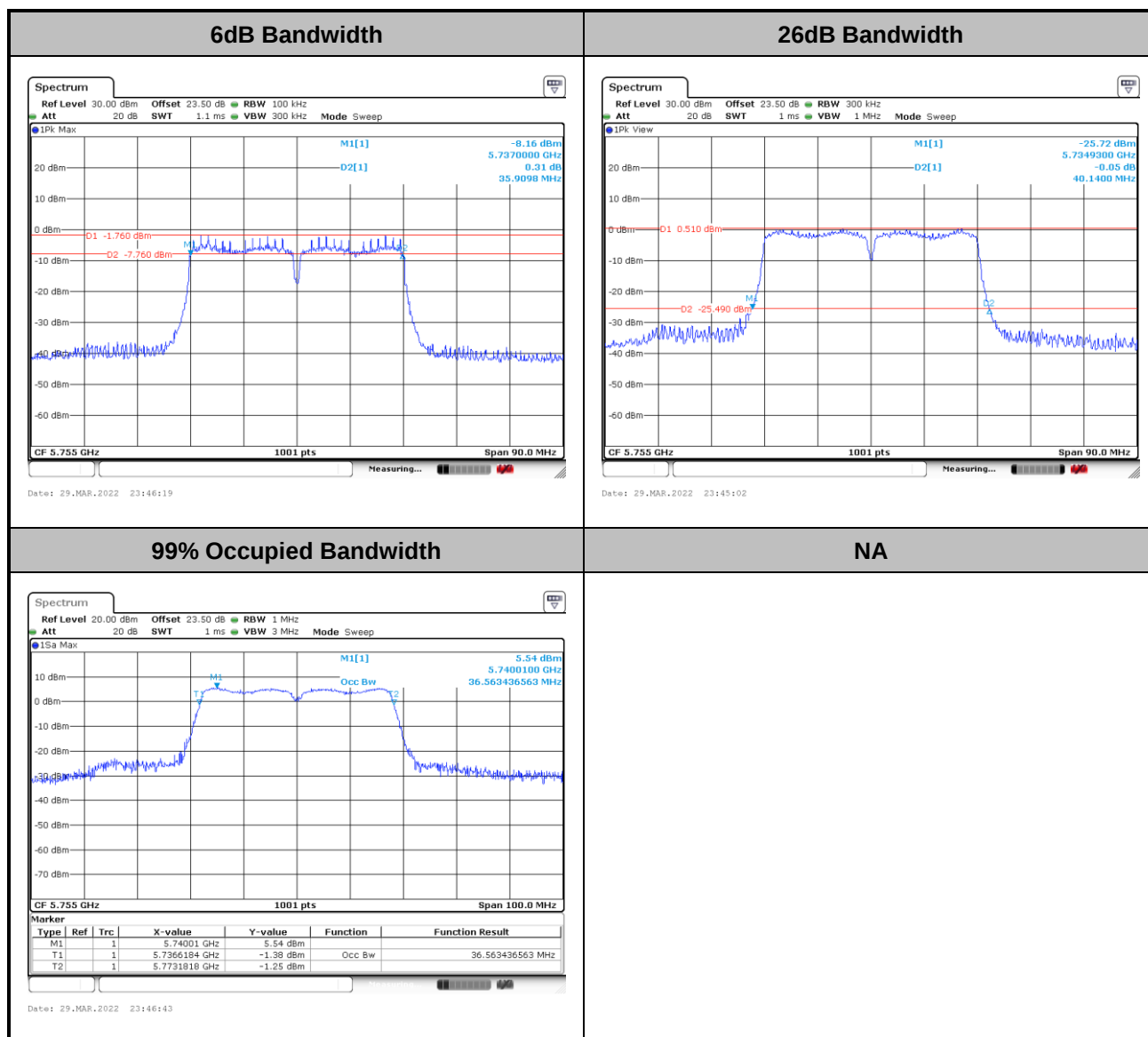
<802.11n HT20>



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

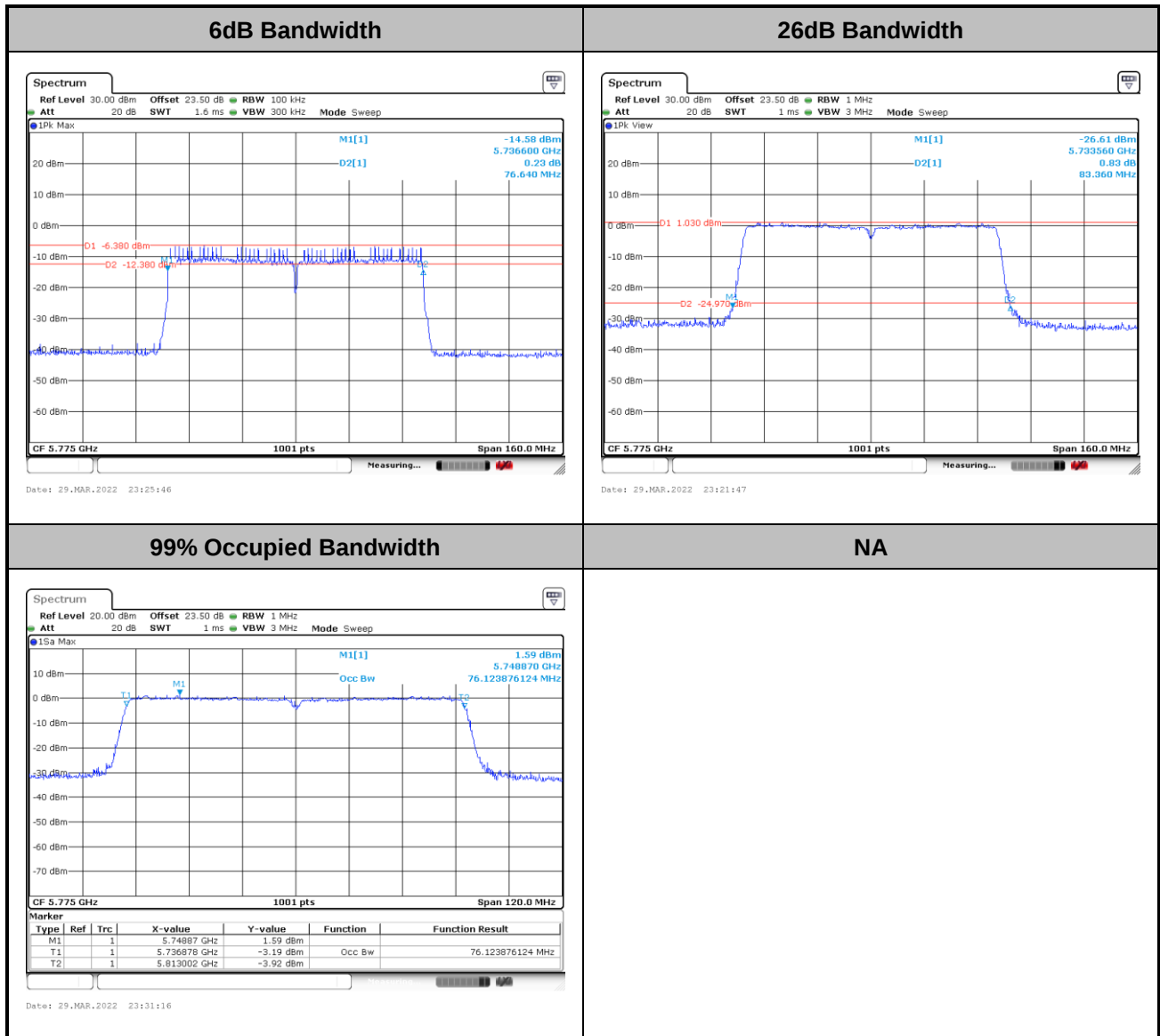


<802.11n HT40>



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

<802.11ac VHT80>



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

Please refer to the measuring equipment list in this test report.

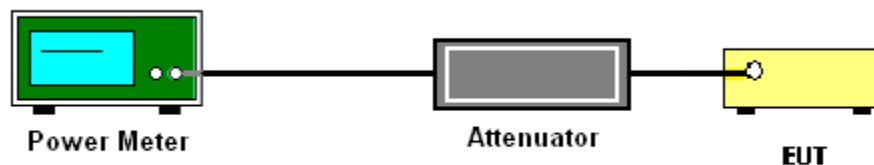
3.2.3 Test Procedures

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

Method PM-G (Measurement using 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.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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

Please refer to the measuring equipment list in 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

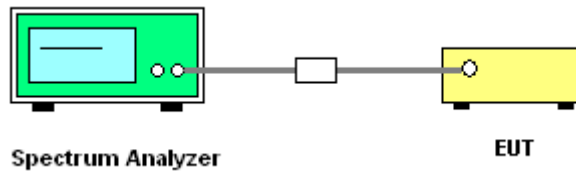
(power averaging (rms) detection with max hold):

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW $\geq$ 1 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Add $10 \log(500 \text{ kHz/RBW})$ to the measured result, whereas RBW ($<500 \text{ kHz}$) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
 - Sweep time $\leq$ (number of points in sweep) $\times$ 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 is connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

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

3.3.4 Test Setup

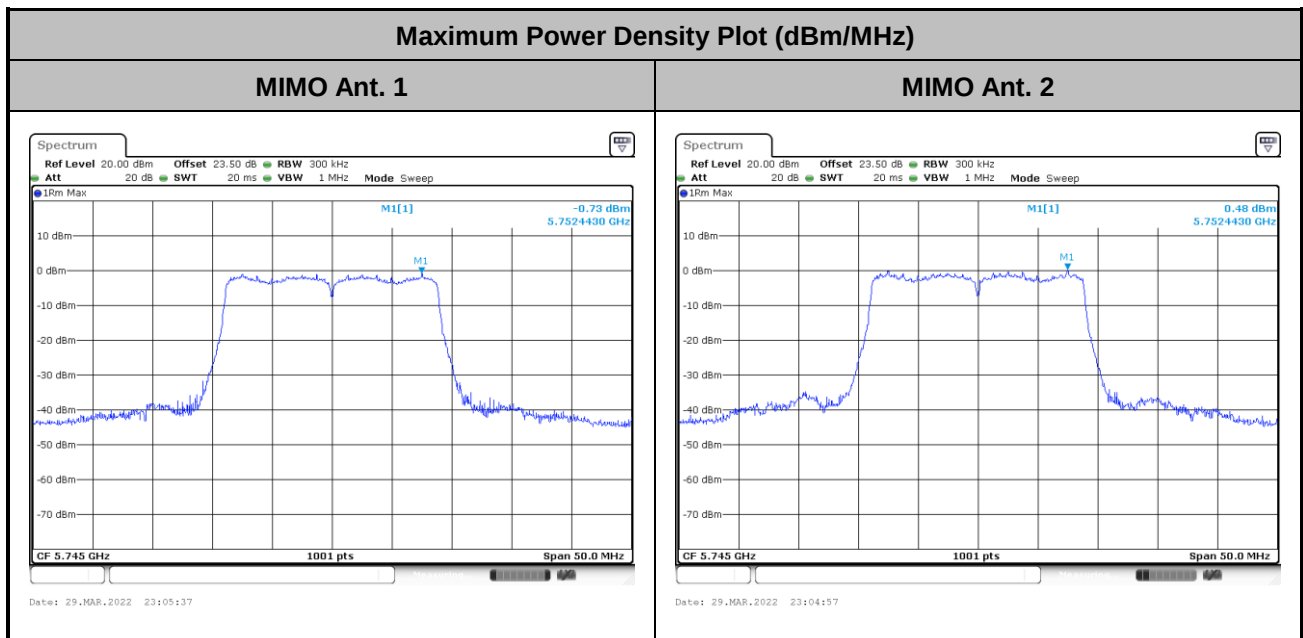


3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<CDD Modes>

<802.11n HT20>



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 falls 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.

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

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

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

(i) 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.

3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

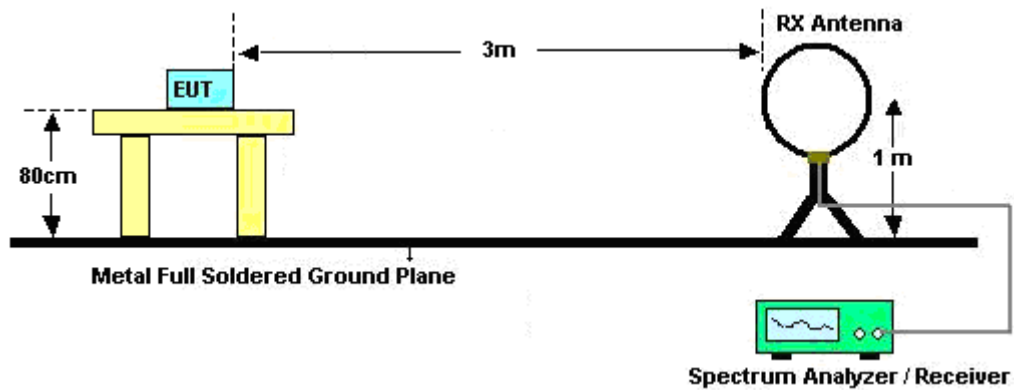
3.4.3 Test Procedures

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 1000 MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz
 - 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 is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is 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 is 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.

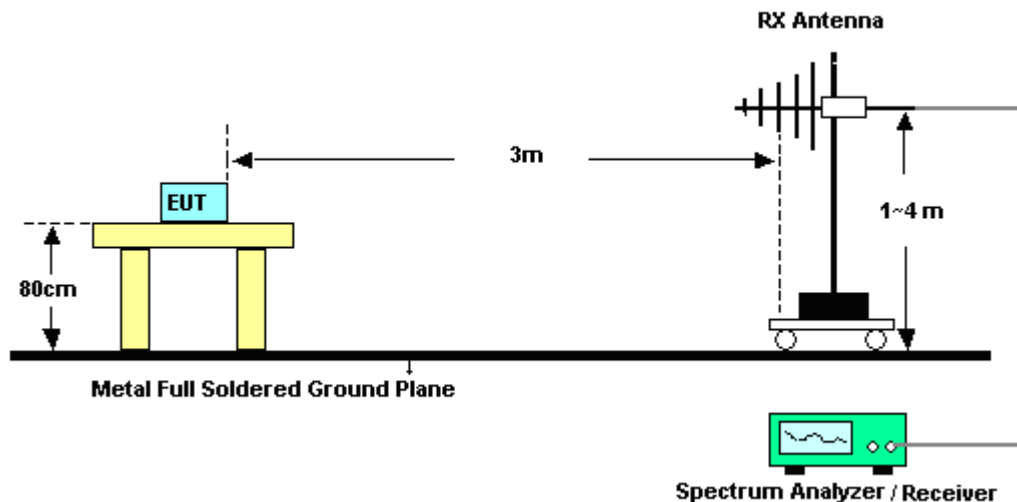
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“.

3.4.4 Test Setup

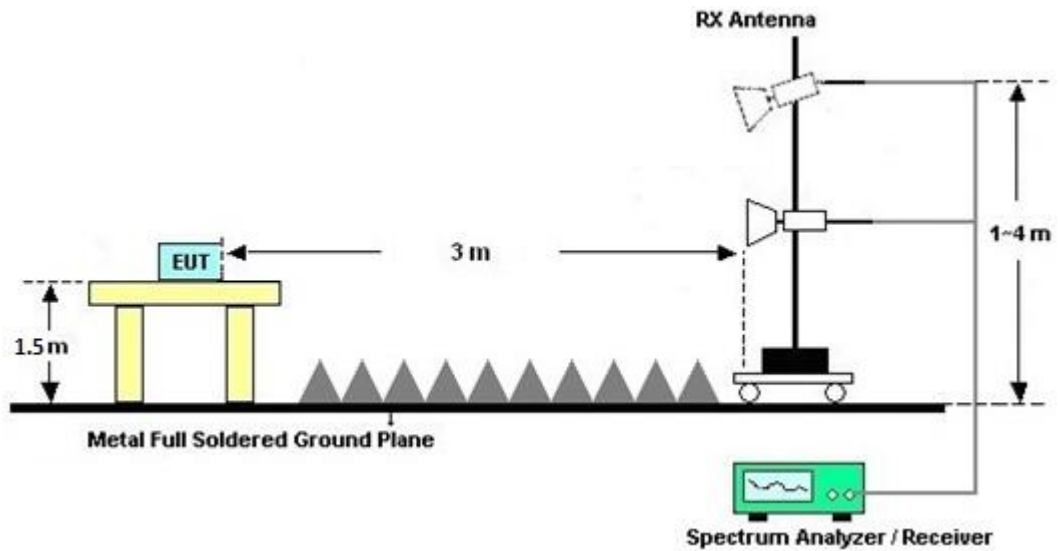
For radiated emissions below 30MHz



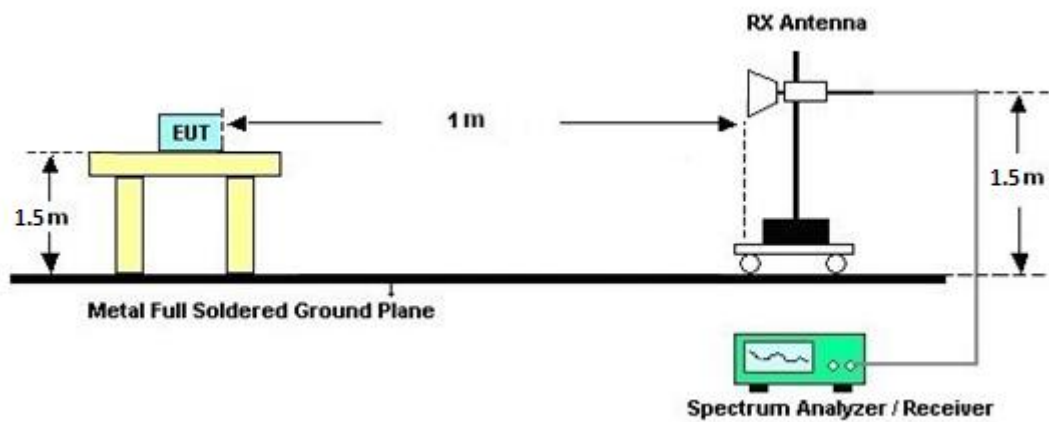
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

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

There is adequate comparison measurement 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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

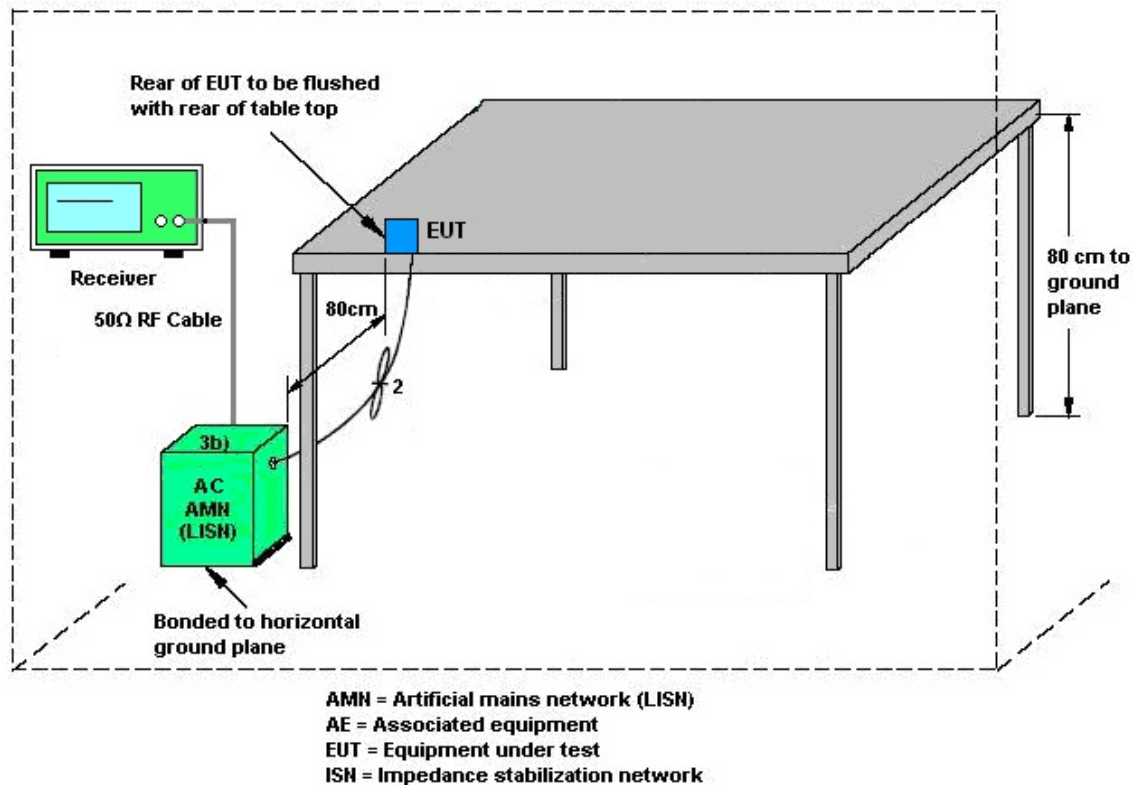
3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.5.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is 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 shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 Standard Applicable

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

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For power measurements on IEEE 802.11 devices,

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

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

G_{ANT} is set equal to the gain of the antenna having the highest gain.

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

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

where

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

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

N_{ANT} = the total number of antennas

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

G_k is the gain in dBi of the k th antenna.

As minimum $N_{SS}=1$ is supported by EUT, the formula can be simplified as:

Directional gain = $10 \cdot \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi

Where $G_1, G_2, \dots, G_N$ denote single antenna gain.

For example: If a device has two antenna, $G_{ANT1} = 3.6$ dBi; $G_{ANT2} = 4.2$ dBi

Directional gain of power measurement = $\max(3.6, 4.2) + 0 = 4.2$ dBi

Directional gain of PSD measurement = $10 \cdot \log[(10^{3.6/20} + 10^{4.2/20})^2 / 2] = 6.92$ dBi

The directional gain "DG" is calculated as following table.

<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	2.50	3.00	3.00	5.76	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

Calculation example:

The DG for PSD is derived from formula is

$$10 \times \log \{ \{ [10^{\wedge} (2.50 \text{ dBi} / 20) + 10^{\wedge} (3.00 \text{ dBi} / 20)] ^ 2 \} / 2 \}$$

$$= 5.76 \text{ dBi}$$



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECEP	DTM-303A	TP201996	N/A	Nov. 16, 2021	Mar. 04, 2022~ Mar. 30, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO 10 (NO:248)	10MHz~6GHz	Dec. 29, 2021	Mar. 04, 2022~ Mar. 30, 2022	Dec. 28, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Mar. 04, 2022~ Mar. 30, 2022	Aug. 29, 2022	Conducted (TH05-HY)
Switch Control Manframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Mar. 04, 2022~ Mar. 30, 2022	Aug. 11, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Mar. 03, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Mar. 03, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	Mar. 03, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Mar. 03, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Mar. 03, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Mar. 03, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Mar. 03, 2022	Dec. 29, 2022	Conduction (CO05-HY)
EMI Test Receiver	Keysight	N9010B	MY60241055	10Hz~44GHz	Jul. 12, 2021	Mar. 15, 2022~ Mar. 26, 2022	Jul. 11, 2022	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz~1000MHz	Jan. 03, 2022	Mar. 15, 2022~ Mar. 26, 2022	Jan. 02, 2023	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 15, 2021	Mar. 15, 2022~ Mar. 26, 2022	Nov. 14, 2022	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Mar. 15, 2022~ Mar. 26, 2022	Jun. 21, 2022	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Mar. 15, 2022~ Mar. 26, 2022	Jan. 06, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 17, 2021	Mar. 15, 2022~ Mar. 26, 2022	Oct. 16, 2022	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 23, 2021	Mar. 15, 2022~ Mar. 26, 2022	Jun. 22, 2022	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz~40GHz	Nov. 30, 2021	Mar. 15, 2022~ Mar. 26, 2022	Nov. 29, 2022	Radiation (03CH20-HY)
Hygrometer	TECEP	DTM-303B	TP200889	N/A	Sep. 30, 2021	Mar. 15, 2022~ Mar. 26, 2022	Sep. 29, 2022	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 19, 2022	Mar. 15, 2022~ Mar. 26, 2022	Jan. 18, 2023	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8-24	RK-002156	N/A	N/A	Mar. 15, 2022~ Mar. 26, 2022	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Mar. 15, 2022~ Mar. 26, 2022	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Mar. 15, 2022~ Mar. 26, 2022	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Mar. 15, 2022~ Mar. 26, 2022	N/A	Radiation (03CH20-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.9 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.7 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Ching Chen	Temperature:	21~25	°C
Test Date:	2022/3/7-2022/3/30	Relative Humidity:	51~54	%

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

Band IV single antenna												
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	16.83	16.83	21.50	20.70	16.45	16.45	0.5	Pass
11a	6Mbps	1	157	5785	16.83	16.83	20.30	20.25	16.45	16.45	0.5	Pass
11a	6Mbps	1	165	5825	16.78	16.83	20.10	20.15	16.45	16.45	0.5	Pass

Band IV MIMO												
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		
HT20	MCS0	2	149	5745	17.73	17.68	20.70	21.00	17.70	17.65	0.5	Pass
HT20	MCS0	2	157	5785	17.73	17.73	21.05	20.40	17.65	17.65	0.5	Pass
HT20	MCS0	2	165	5825	17.73	17.68	20.35	20.45	17.70	17.70	0.5	Pass
HT40	MCS0	2	151	5755	36.56	36.66	40.14	40.23	35.91	36.18	0.5	Pass
HT40	MCS0	2	159	5795	36.76	36.66	40.68	40.59	35.82	36.27	0.5	Pass
VHT80	MCS0	2	155	5775	76.12	76.12	83.36	81.92	76.64	76.64	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV 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	149	5745	14.30	14.60		30.00	30.00	2.50	3.00	Pass
11a	6Mbps	1	157	5785	13.60	14.50		30.00	30.00	2.50	3.00	Pass
11a	6Mbps	1	165	5825	13.70	14.40		30.00	30.00	2.50	3.00	Pass
HT20	MCS0	1	149	5745	13.30	13.60		30.00	30.00	2.50	3.00	Pass
HT20	MCS0	1	157	5785	12.70	13.60		30.00	30.00	2.50	3.00	Pass
HT20	MCS0	1	165	5825	12.70	13.40		30.00	30.00	2.50	3.00	Pass
HT40	MCS0	1	151	5755	12.10	12.50		30.00	30.00	2.50	3.00	Pass
HT40	MCS0	1	159	5795	11.70	12.50		30.00	30.00	2.50	3.00	Pass
VHT20	MCS0	1	149	5745	13.20	13.50		30.00	30.00	2.50	3.00	Pass
VHT20	MCS0	1	157	5785	12.60	13.50		30.00	30.00	2.50	3.00	Pass
VHT20	MCS0	1	165	5825	12.60	13.30		30.00	30.00	2.50	3.00	Pass
VHT40	MCS0	1	151	5755	12.00	12.40		30.00	30.00	2.50	3.00	Pass
VHT40	MCS0	1	159	5795	11.60	12.40		30.00	30.00	2.50	3.00	Pass
VHT80	MCS0	1	155	5775	10.50	11.10		30.00	30.00	2.50	3.00	Pass

Band IV MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HT20	MCS0	2	149	5745	13.40	13.70	16.56	30.00		3.00		Pass
HT20	MCS0	2	157	5785	12.80	13.70	16.28	30.00		3.00		Pass
HT20	MCS0	2	165	5825	12.80	13.50	16.17	30.00		3.00		Pass
HT40	MCS0	2	151	5755	12.20	12.60	15.41	30.00		3.00		Pass
HT40	MCS0	2	159	5795	11.80	12.60	15.23	30.00		3.00		Pass
VHT20	MCS0	2	149	5745	13.40	13.60	16.51	30.00		3.00		Pass
VHT20	MCS0	2	157	5785	12.80	13.60	16.23	30.00		3.00		Pass
VHT20	MCS0	2	165	5825	12.80	13.40	16.12	30.00		3.00		Pass
VHT40	MCS0	2	151	5755	12.10	12.50	15.31	30.00		3.00		Pass
VHT40	MCS0	2	159	5795	11.70	12.50	15.13	30.00		3.00		Pass
VHT80	MCS0	2	155	5775	10.50	11.10	13.82	30.00		3.00		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV single antenna														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	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	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	2.22	2.22	2.76	3.12		30.00	30.00	2.50	3.00	Pass
11a	6Mbps	1	157	5785	2.22	2.22	2.45	3.09		30.00	30.00	2.50	3.00	Pass
11a	6Mbps	1	165	5825	2.22	2.22	2.40	2.99		30.00	30.00	2.50	3.00	Pass

Band IV MIMO														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	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	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HT20	MCS0	2	149	5745	2.22		1.49	2.70	5.71	30.00		5.76		Pass
HT20	MCS0	2	157	5785	2.22		1.46	2.05	5.06	30.00		5.76		Pass
HT20	MCS0	2	165	5825	2.22		1.41	2.11	5.12	30.00		5.76		Pass
HT40	MCS0	2	151	5755	2.22		-2.00	-1.42	1.59	30.00		5.76		Pass
HT40	MCS0	2	159	5795	2.22		-2.43	-1.57	1.44	30.00		5.76		Pass
VHT80	MCS0	2	155	5775	2.22		-6.63	-5.97	-2.96	30.00		5.76		Pass

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



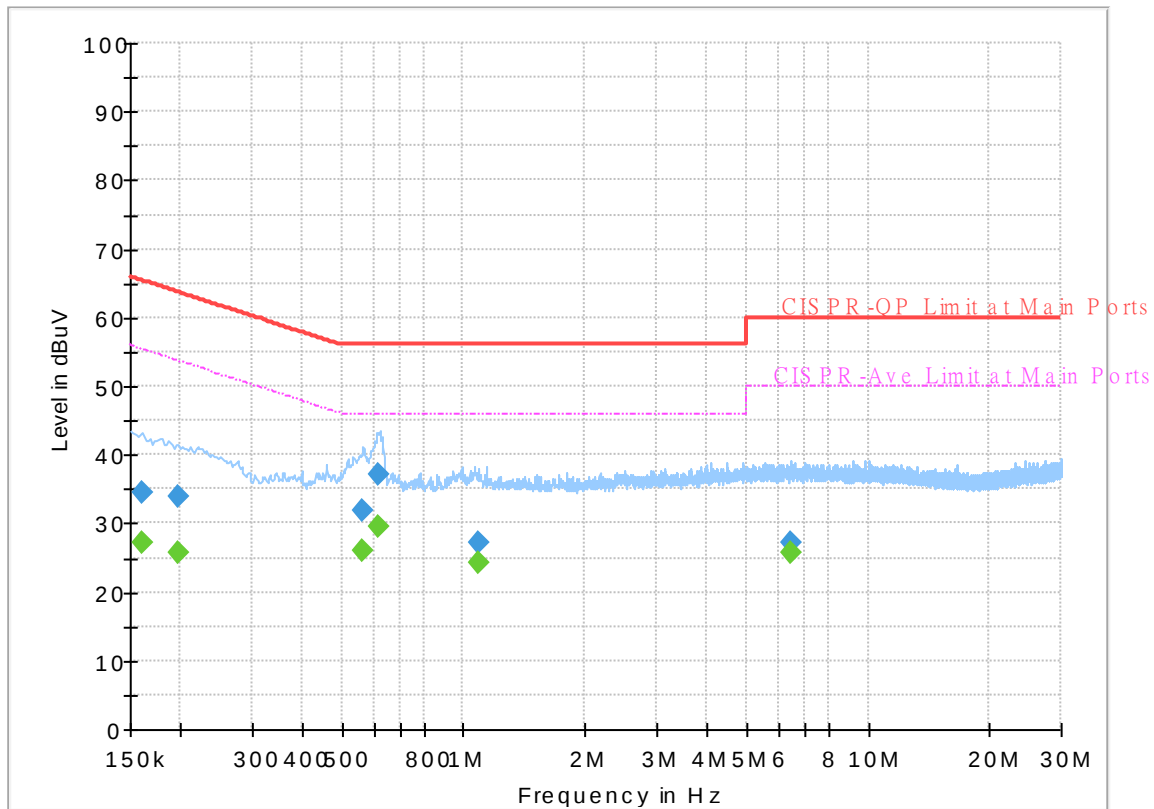
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO : 221836
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



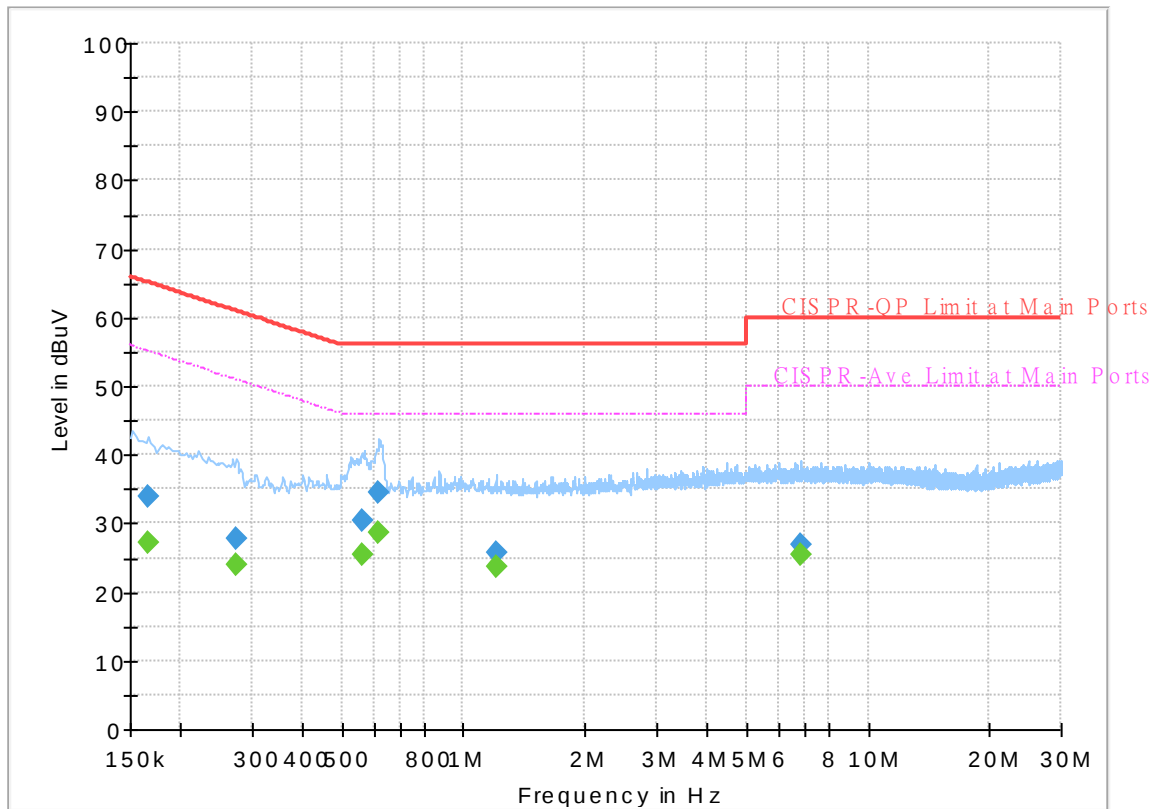
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	27.06	55.40	28.34	L1	OFF	19.6
0.161250	34.63	---	65.40	30.77	L1	OFF	19.6
0.197250	---	25.79	53.73	27.94	L1	OFF	19.6
0.197250	33.80	---	63.73	29.93	L1	OFF	19.6
0.564000	---	26.04	46.00	19.96	L1	OFF	19.6
0.564000	31.86	---	56.00	24.14	L1	OFF	19.6
0.613500	---	29.65	46.00	16.35	L1	OFF	19.6
0.613500	37.12	---	56.00	18.88	L1	OFF	19.6
1.086000	---	24.29	46.00	21.71	L1	OFF	19.6
1.086000	27.31	---	56.00	28.69	L1	OFF	19.6
6.429750	---	25.67	50.00	24.33	L1	OFF	19.9
6.429750	27.06	---	60.00	32.94	L1	OFF	19.9

EUT Information

Report NO : 221836
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)
0.165750	---	27.19	55.17	27.98	N	OFF	19.6
0.165750	34.06	---	65.17	31.11	N	OFF	19.6
0.273750	---	24.09	51.00	26.91	N	OFF	19.6
0.273750	27.92	---	61.00	33.08	N	OFF	19.6
0.559500	---	25.58	46.00	20.42	N	OFF	19.6
0.559500	30.48	---	56.00	25.52	N	OFF	19.6
0.618000	---	28.63	46.00	17.37	N	OFF	19.6
0.618000	34.39	---	56.00	21.61	N	OFF	19.6
1.203000	---	23.73	46.00	22.27	N	OFF	19.6
1.203000	25.77	---	56.00	30.23	N	OFF	19.6
6.803250	---	25.55	50.00	24.45	N	OFF	19.9
6.803250	26.85	---	60.00	33.15	N	OFF	19.9



Appendix C. Radiated Spurious Emission

Test Engineer :	Bill Chang, JC Liang and Bigshow Wang	Temperature :	18~20°C
		Relative Humidity :	68~70%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5607.65	53.67	-14.53	68.2	44.84	33.2	13.52	37.89	100	35	P	H
		5693.825	56.5	-44.15	100.65	47.3	33.55	13.56	37.91	100	35	P	H
		5716.775	64.47	-45.43	109.9	55.12	33.7	13.57	37.92	100	35	P	H
		5723.3	67.81	-50.51	118.32	58.42	33.74	13.57	37.92	100	35	P	H
	*	5745	109.34	-	-	99.81	33.87	13.58	37.92	100	35	P	H
	*	5745	101.64	-	-	92.11	33.87	13.58	37.92	100	35	A	H
													H
													H
		5610.575	49.77	-18.43	68.2	40.94	33.2	13.52	37.89	385	61	P	V
		5699.45	49.63	-55.16	104.79	40.38	33.6	13.56	37.91	385	61	P	V
		5719.925	56.95	-53.83	110.78	47.58	33.72	13.57	37.92	385	61	P	V
		5724.875	62.79	-59.13	121.92	53.39	33.75	13.57	37.92	385	61	P	V
	*	5745	104.8	-	-	95.27	33.87	13.58	37.92	385	61	P	V
	*	5745	96.9	-	-	87.37	33.87	13.58	37.92	385	61	A	V
													V
													V



Band 4 5725~5850MHz

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 149 5745MHz		11490	54.7	-19.3	74	38.48	38.92	19.94	42.64	253	37	P	H
		11490	44.83	-9.17	54	28.61	38.92	19.94	42.64	253	37	A	H
		12423	51.51	-22.49	74	34.99	39.05	20.73	43.26	-	-	P	H
		12423	41.03	-12.97	54	24.51	39.05	20.73	43.26	-	-	A	H
		13325	52.44	-21.56	74	34.22	39.85	21.53	43.16	-	-	P	H
		13325	42.57	-11.43	54	24.35	39.85	21.53	43.16	-	-	A	H
		17235	51.08	-17.12	68.2	33.59	38.03	24.2	44.74	-	-	P	H
		17967	54.51	-19.49	74	33.73	41.57	24.66	45.45	-	-	P	H
		17967	46.3	-7.7	54	25.52	41.57	24.66	45.45	-	-	A	H
													H
													H
													H
		11490	57.09	-16.91	74	40.87	38.92	19.94	42.64	104	288	P	V
		11490	45.53	-8.47	54	29.31	38.92	19.94	42.64	104	288	A	V
		12456	52.65	-21.35	74	36.06	39.11	20.76	43.28	-	-	P	V
		12456	41.04	-12.96	54	24.45	39.11	20.76	43.28	-	-	A	V
		13336	52.63	-21.37	74	34.38	39.87	21.54	43.16	-	-	P	V
		13336	42.62	-11.38	54	24.37	39.87	21.54	43.16	-	-	A	V
		17235	54.2	-14	68.2	36.71	38.03	24.2	44.74	-	-	P	V
		17978	54.91	-19.09	74	34.04	41.65	24.67	45.45	-	-	P	V
		17978	46.33	-7.67	54	25.46	41.65	24.67	45.45	-	-	A	V
													V
													V
													V

Emission above 18GHz

WIFI 802.11a (SHF @ 1m)

[illegible]

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)
802.11a LF		37.76	25.09	-14.91	40	38.99	20.42	1.31	35.63	-	-	P	H
		112.45	25.55	-17.95	43.5	41.67	17.26	2.14	35.52	-	-	P	H
		148.34	30.02	-13.48	43.5	45.69	17.35	2.45	35.47	-	-	P	H
		351.07	27.52	-18.48	46	38.5	20.44	3.58	35	-	-	P	H
		600.36	32.4	-13.6	46	36.62	25.47	4.69	34.38	-	-	P	H
		721.61	36.49	-9.51	46	38.43	26.85	5.06	33.85	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		73.65	24.96	-15.04	40	46.22	12.56	1.76	35.58	-	-	P	V
		136.7	27.19	-16.31	43.5	42.81	17.51	2.37	35.5	-	-	P	V
		183.26	24.9	-18.6	43.5	42.9	14.76	2.65	35.41	-	-	P	V
		600.36	33.87	-12.13	46	38.09	25.47	4.69	34.38	-	-	P	V
		716.76	36.45	-9.55	46	38.64	26.65	5.03	33.87	-	-	P	V
		749.74	33.79	-12.21	46	34.68	27.66	5.19	33.74	-	-	P	V
													V
													V
													V
													V
													V
												V	
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												



Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5642.075	48.78	-19.42	68.2	39.94	33.2	13.54	37.9	400	28	P	H
		5656.7	48.48	-24.7	73.18	39.59	33.25	13.54	37.9	400	28	P	H
		5719.475	55.13	-55.52	110.65	45.76	33.72	13.57	37.92	400	28	P	H
		5723.975	59.93	-59.93	119.86	50.54	33.74	13.57	37.92	400	28	P	H
	*	5745	104.38	-	-	94.85	33.87	13.58	37.92	400	28	P	H
	*	5745	96	-	-	86.47	33.87	13.58	37.92	400	28	A	H
													H
													H
		5618.9	51.71	-16.49	68.2	42.88	33.2	13.53	37.9	100	299	P	V
		5697.2	58.35	-44.79	103.14	49.12	33.58	13.56	37.91	100	299	P	V
		5719.925	65.09	-45.69	110.78	55.72	33.72	13.57	37.92	100	299	P	V
		5723.3	69.72	-48.6	118.32	60.33	33.74	13.57	37.92	100	299	P	V
	*	5745	110.48	-	-	100.95	33.87	13.58	37.92	100	299	P	V
	*	5745	102.79	-	-	93.26	33.87	13.58	37.92	100	299	A	V
													V
													V



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5641.25	48.61	-19.59	68.2	39.77	33.2	13.54	37.9	395	30	P	H
		5680	49.05	-41.39	90.44	39.97	33.44	13.55	37.91	395	30	P	H
		5702.25	48.69	-57.14	105.83	39.43	33.61	13.56	37.91	395	30	P	H
		5722.75	47.47	-69.6	117.07	38.08	33.74	13.57	37.92	395	30	P	H
	*	5785	103.44	-	-	93.81	33.97	13.59	37.93	395	30	P	H
	*	5785	96.05	-	-	86.42	33.97	13.59	37.93	395	30	A	H
		5853.75	48.07	-65.58	113.65	38.22	34.11	13.69	37.95	395	30	P	H
		5858	47.91	-62.05	109.96	38.05	34.12	13.69	37.95	395	30	P	H
		5903.5	49.62	-34.45	84.07	39.6	34.21	13.77	37.96	395	30	P	H
		5943	49.29	-18.91	68.2	39.14	34.29	13.83	37.97	395	30	P	H
													H
													H
		5605.75	52.32	-15.88	68.2	43.49	33.2	13.52	37.89	100	298	P	V
		5700	52.69	-52.51	105.2	43.44	33.6	13.56	37.91	100	298	P	V
		5719.5	52.94	-57.72	110.66	43.57	33.72	13.57	37.92	100	298	P	V
		5721.25	52.89	-60.76	113.65	43.51	33.73	13.57	37.92	100	298	P	V
	*	5785	111.21	-	-	101.58	33.97	13.59	37.93	100	298	P	V
	*	5785	103	-	-	93.37	33.97	13.59	37.93	100	298	A	V
		5850.25	54.74	-66.89	121.63	44.91	34.1	13.68	37.95	100	298	P	V
		5870.25	54.45	-52.08	106.53	44.55	34.14	13.71	37.95	100	298	P	V
		5889.5	54.86	-39.58	94.44	44.9	34.18	13.74	37.96	100	298	P	V
		5928	50.61	-17.59	68.2	40.51	34.26	13.8	37.96	100	298	P	V
													V
													V



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5825	102.58	-	-	92.83	34.05	13.64	37.94	395	24	P	H
	*	5825	94.97	-	-	85.22	34.05	13.64	37.94	395	24	A	H
		5853.65	57.39	-56.49	113.88	47.54	34.11	13.69	37.95	395	24	P	H
		5857.135	53.82	-56.38	110.2	43.97	34.11	13.69	37.95	395	24	P	H
		5898.955	48.95	-38.48	87.43	38.95	34.2	13.76	37.96	395	24	P	H
		5936.06	49	-19.2	68.2	38.88	34.27	13.82	37.97	395	24	P	H
													H
													H
	*	5825	110.33	-	-	100.58	34.05	13.64	37.94	100	302	P	V
	*	5825	102.59	-	-	92.84	34.05	13.64	37.94	100	302	A	V
		5850.985	67.27	-52.68	119.95	57.44	34.1	13.68	37.95	100	302	P	V
		5855.905	64.73	-45.82	110.55	54.88	34.11	13.69	37.95	100	302	P	V
		5879.275	57.19	-44.83	102.02	47.25	34.16	13.73	37.95	100	302	P	V
		5929.5	53.81	-14.39	68.2	43.7	34.26	13.81	37.96	100	302	P	V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	56.48	-17.52	74	40.26	38.92	19.94	42.64	182	207	P	H
		11490	44.88	-9.12	54	28.66	38.92	19.94	42.64	182	207	A	H
		12379	51.99	-22.01	74	35.51	39.02	20.69	43.23	-	-	P	H
		12379	40.72	-13.28	54	24.24	39.02	20.69	43.23	-	-	A	H
		13292	52.59	-21.41	74	34.45	39.79	21.5	43.15	-	-	P	H
		13292	42.31	-11.69	54	24.17	39.79	21.5	43.15	-	-	A	H
		17235	53.79	-14.41	68.2	36.3	38.03	24.2	44.74	-	-	P	H
		17857	54.91	-19.09	74	34.98	40.71	24.59	45.37	-	-	P	H
		17857	45.17	-8.83	54	25.24	40.71	24.59	45.37	-	-	A	H
													H
													H
													H
		11490	58.58	-15.42	74	42.36	38.92	19.94	42.64	201	151	P	V
		11490	47.42	-6.58	54	31.2	38.92	19.94	42.64	201	151	A	V
		12225	51.59	-22.41	74	35.03	39.17	20.54	43.15	-	-	P	V
		12225	40.89	-13.11	54	24.33	39.17	20.54	43.15	-	-	A	V
		13380	52.67	-21.33	74	34.31	39.96	21.57	43.17	-	-	P	V
		13380	42.51	-11.49	54	24.15	39.96	21.57	43.17	-	-	A	V
		17235	51.34	-16.86	68.2	33.85	38.03	24.2	44.74	-	-	P	V
		17956	54.86	-19.14	74	34.16	41.49	24.65	45.44	-	-	P	V
		17956	46.02	-7.98	54	25.32	41.49	24.65	45.44	-	-	A	V
													V
													V
													V



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		11570	56.12	-17.88	74	40.07	38.76	20	42.71	192	199	P	H
		11570	44.27	-9.73	54	28.22	38.76	20	42.71	192	199	A	H
		12665	51.49	-22.51	74	34.33	39.43	20.96	43.23	-	-	P	H
		12665	41.46	-12.54	54	24.3	39.43	20.96	43.23	-	-	A	H
		13391	53.31	-20.69	74	34.93	39.98	21.57	43.17	-	-	P	H
		13391	42.64	-11.36	54	24.26	39.98	21.57	43.17	-	-	A	H
		17355	53.37	-14.83	68.2	35.8	38.21	24.27	44.91	-	-	P	H
		17879	54.54	-19.46	74	34.41	40.91	24.6	45.38	-	-	P	H
		17879	45.55	-8.45	54	25.42	40.91	24.6	45.38	-	-	A	H
													H
													H
													H
		11570	58.41	-15.59	74	42.36	38.76	20	42.71	206	151	P	V
		11570	46.23	-7.77	54	30.18	38.76	20	42.71	206	151	A	V
		12445	51.67	-22.33	74	35.1	39.09	20.75	43.27	-	-	P	V
		12445	41.08	-12.92	54	24.51	39.09	20.75	43.27	-	-	A	V
		13358	52.91	-21.09	74	34.59	39.92	21.56	43.16	-	-	P	V
		13358	42.57	-11.43	54	24.25	39.92	21.56	43.16	-	-	A	V
		17355	53.28	-14.92	68.2	35.71	38.21	24.27	44.91	-	-	P	V
		17956	55.84	-18.16	74	35.14	41.49	24.65	45.44	-	-	P	V
		17956	46.02	-7.98	54	25.32	41.49	24.65	45.44	-	-	A	V
													V
													V
													V



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz		11650	55.76	-18.24	74	39.82	38.65	20.06	42.77	200	205	P	H
		11650	43.26	-10.74	54	27.32	38.65	20.06	42.77	200	205	A	H
		12357	51.65	-22.35	74	35.17	39.04	20.66	43.22	-	-	P	H
		12357	40.75	-13.25	54	24.27	39.04	20.66	43.22	-	-	A	H
		13369	52.49	-21.51	74	34.15	39.94	21.57	43.17	-	-	P	H
		13369	42.68	-11.32	54	24.34	39.94	21.57	43.17	-	-	A	H
		17475	55.3	-12.9	68.2	37.65	38.38	24.35	45.08	-	-	P	H
		17956	54.52	-19.48	74	33.82	41.49	24.65	45.44	-	-	P	H
		17956	46.09	-7.91	54	25.39	41.49	24.65	45.44	-	-	A	H
													H
													H
													H
		11650	56.49	-17.51	74	40.55	38.65	20.06	42.77	199	149	P	V
		11650	45.52	-8.48	54	29.58	38.65	20.06	42.77	199	149	A	V
		12368	51.29	-22.71	74	34.82	39.03	20.67	43.23	-	-	P	V
		12368	40.76	-13.24	54	24.29	39.03	20.67	43.23	-	-	A	V
		13391	52.71	-21.29	74	34.33	39.98	21.57	43.17	-	-	P	V
		13391	42.7	-11.3	54	24.32	39.98	21.57	43.17	-	-	A	V
		17475	53.12	-15.08	68.2	35.47	38.38	24.35	45.08	-	-	P	V
		17967	54.55	-19.45	74	33.77	41.57	24.66	45.45	-	-	P	V
		17967	45.92	-8.08	54	25.14	41.57	24.66	45.45	-	-	A	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

WIFI 802.11a (SHF @ 1m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a SHF		39450	53.18	-20.82	74	38.7	44.66	26.16	56.34	-	-	P	H
		39450	43.01	-10.99	54	28.53	44.66	26.16	56.34	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
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													H
													H
													H
													H
		39472	52.13	-21.87	74	37.6	44.68	26.17	56.32	-	-	P	V
		39472	42.97	-11.03	54	28.44	44.68	26.17	56.32	-	-	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												

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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a LF		38.73	25.25	-14.75	40	39.62	19.93	1.33	35.63	-	-	P	H
		111.48	24.52	-18.98	43.5	40.72	17.19	2.13	35.52	-	-	P	H
		146.4	28.15	-15.35	43.5	43.82	17.36	2.44	35.47	-	-	P	H
		351.07	27.53	-18.47	46	38.51	20.44	3.58	35	-	-	P	H
		600.36	32.25	-13.75	46	36.47	25.47	4.69	34.38	-	-	P	H
		729.37	33.44	-12.56	46	34.91	27.26	5.09	33.82	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		71.71	32.84	-7.16	40	54.34	12.35	1.74	35.59	-	-	P	V
		134.76	28.58	-14.92	43.5	44.32	17.43	2.34	35.51	-	-	P	V
		293.84	26.7	-19.3	46	39.31	19.27	3.3	35.18	-	-	P	V
		600.36	33.41	-12.59	46	37.63	25.47	4.69	34.38	-	-	P	V
		749.74	33.84	-12.16	46	34.73	27.66	5.19	33.74	-	-	P	V
		943.74	36.12	-9.88	46	32.99	30.15	5.98	33	-	-	P	V
													V
													V
													V
													V
													V
												V	
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												



Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5626.775	52.99	-15.21	68.2	44.16	33.2	13.53	37.9	105	300	P	H
		5691.125	55.22	-43.44	98.66	46.04	33.53	13.56	37.91	105	300	P	H
		5712.05	62.24	-46.34	108.58	52.93	33.67	13.56	37.92	105	300	P	H
		5725.1	71.96	-62.24	134.2	62.56	33.75	13.57	37.92	105	300	P	H
	*	5745	112.1	-	-	102.57	33.87	13.58	37.92	105	300	P	H
	*	5745	104.34	-	-	94.81	33.87	13.58	37.92	105	300	A	H
													H
													H
		5602.925	49.66	-18.54	68.2	40.83	33.2	13.52	37.89	366	295	P	V
		5696.525	54.05	-48.59	102.64	44.83	33.57	13.56	37.91	366	295	P	V
		5712.95	58.98	-49.85	108.83	49.65	33.68	13.57	37.92	366	295	P	V
		5722.85	62.81	-54.49	117.3	53.42	33.74	13.57	37.92	366	295	P	V
	*	5745	104.63	-	-	95.1	33.87	13.58	37.92	366	295	P	V
	*	5745	96.93	-	-	87.4	33.87	13.58	37.92	366	295	A	V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		5607.25	53.3	-14.9	68.2	44.47	33.2	13.52	37.89	100	298	P	H
		5652.25	52.95	-16.92	69.87	44.09	33.22	13.54	37.9	100	298	P	H
		5716	53.64	-56.04	109.68	44.29	33.7	13.57	37.92	100	298	P	H
		5721.5	52.98	-61.24	114.22	43.6	33.73	13.57	37.92	100	298	P	H
	*	5785	112.08	-	-	102.45	33.97	13.59	37.93	100	298	P	H
	*	5785	103.9	-	-	94.27	33.97	13.59	37.93	100	298	A	H
		5853	53.08	-62.28	115.36	43.24	34.11	13.68	37.95	100	298	P	H
		5855	53.17	-57.63	110.8	43.32	34.11	13.69	37.95	100	298	P	H
		5912.25	53.47	-24.14	77.61	43.43	34.22	13.78	37.96	100	298	P	H
		5926.25	51.62	-16.58	68.2	41.53	34.25	13.8	37.96	100	298	P	H
													H
													H
		5648.5	49.07	-19.13	68.2	40.23	33.2	13.54	37.9	381	349	P	V
		5675	49.23	-37.51	86.74	40.19	33.4	13.55	37.91	381	349	P	V
		5715.5	47.31	-62.23	109.54	37.97	33.69	13.57	37.92	381	349	P	V
		5721.75	48.05	-66.74	114.79	38.67	33.73	13.57	37.92	381	349	P	V
	*	5785	104.38	-	-	94.75	33.97	13.59	37.93	381	349	P	V
	*	5785	97.25	-	-	87.62	33.97	13.59	37.93	381	349	A	V
		5851	47.78	-72.14	119.92	37.95	34.1	13.68	37.95	381	349	P	V
		5860.5	48.13	-61.13	109.26	38.26	34.12	13.7	37.95	381	349	P	V
		5917.5	48.71	-25.02	73.73	38.64	34.24	13.79	37.96	381	349	P	V
		5947.5	48.9	-19.3	68.2	38.74	34.29	13.84	37.97	381	349	P	V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz	*	5825	110.92	-	-	101.17	34.05	13.64	37.94	100	287	P	H
	*	5825	103.34	-	-	93.59	34.05	13.64	37.94	100	287	A	H
		5850.165	70.71	-51.11	121.82	60.88	34.1	13.68	37.95	100	287	P	H
		5855.085	66.78	-44	110.78	56.93	34.11	13.69	37.95	100	287	P	H
		5876.2	58.23	-46.08	104.31	48.31	34.15	13.72	37.95	100	287	P	H
		5925.4	53.56	-14.64	68.2	43.47	34.25	13.8	37.96	100	287	P	H
													H
													H
	*	5825	102.27	-	-	92.52	34.05	13.64	37.94	400	296	P	V
	*	5825	94.75	-	-	85	34.05	13.64	37.94	400	296	A	V
		5850.165	61.07	-60.75	121.82	51.24	34.1	13.68	37.95	400	296	P	V
		5855.085	57.96	-52.82	110.78	48.11	34.11	13.69	37.95	400	296	P	V
		5879.07	51.65	-50.53	102.18	41.71	34.16	13.73	37.95	400	296	P	V
		5935.24	49.79	-18.41	68.2	39.67	34.27	13.82	37.97	400	296	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	55.88	-18.12	74	39.66	38.92	19.94	42.64	241	159	P	H
		11490	45.23	-8.77	54	29.01	38.92	19.94	42.64	241	159	A	H
		12291	51.96	-22.04	74	35.43	39.11	20.61	43.19	-	-	P	H
		12291	40.79	-13.21	54	24.26	39.11	20.61	43.19	-	-	A	H
		13369	52.71	-21.29	74	34.37	39.94	21.57	43.17	-	-	P	H
		13369	42.7	-11.3	54	24.36	39.94	21.57	43.17	-	-	A	H
		17235	51.75	-16.45	68.2	34.26	38.03	24.2	44.74	-	-	P	H
		17934	54.88	-19.12	74	34.32	41.34	24.64	45.42	-	-	P	H
		17934	45.82	-8.18	54	25.26	41.34	24.64	45.42	-	-	A	H
													H
													H
													H
		11490	57.58	-16.42	74	41.36	38.92	19.94	42.64	102	62	P	V
		11490	46.63	-7.37	54	30.41	38.92	19.94	42.64	102	62	A	V
		12247	51.82	-22.18	74	35.27	39.15	20.56	43.16	-	-	P	V
		12247	40.7	-13.3	54	24.15	39.15	20.56	43.16	-	-	A	V
		13369	52.88	-21.12	74	34.54	39.94	21.57	43.17	-	-	P	V
		13369	42.57	-11.43	54	24.23	39.94	21.57	43.17	-	-	A	V
		17235	58.18	-10.02	68.2	40.69	38.03	24.2	44.74	-	-	P	V
		17989	54.57	-19.43	74	33.64	41.72	24.67	45.46	-	-	P	V
		17989	46.29	-7.71	54	25.36	41.72	24.67	45.46	-	-	A	V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 157 5785MHz		11570	54.29	-19.71	74	38.24	38.76	20	42.71	247	156	P	H
		11570	44.31	-9.69	54	28.26	38.76	20	42.71	247	156	A	H
		12544	51.77	-22.23	74	34.97	39.24	20.84	43.28	-	-	P	H
		12544	41.12	-12.88	54	24.32	39.24	20.84	43.28	-	-	A	H
		13292	52.46	-21.54	74	34.32	39.79	21.5	43.15	-	-	P	H
		13292	42.41	-11.59	54	24.27	39.79	21.5	43.15	-	-	A	H
		17355	52.31	-15.89	68.2	34.74	38.21	24.27	44.91	-	-	P	H
		17978	54.65	-19.35	74	33.78	41.65	24.67	45.45	-	-	P	H
		17978	46.33	-7.67	54	25.46	41.65	24.67	45.45	-	-	A	H
													H
													H
													H
		11570	56.28	-17.72	74	40.23	38.76	20	42.71	102	64	P	V
		11570	46.29	-7.71	54	30.24	38.76	20	42.71	102	64	A	V
		12115	51.32	-22.68	74	34.78	39.2	20.43	43.09	-	-	P	V
		12115	40.91	-13.09	54	24.37	39.2	20.43	43.09	-	-	A	V
		13281	52.11	-21.89	74	33.99	39.78	21.49	43.15	-	-	P	V
		13281	42.44	-11.56	54	24.32	39.78	21.49	43.15	-	-	A	V
		17355	57.36	-10.84	68.2	39.79	38.21	24.27	44.91	-	-	P	V
		17901	55.27	-18.73	74	34.94	41.11	24.62	45.4	-	-	P	V
		17901	45.67	-8.33	54	25.34	41.11	24.62	45.4	-	-	A	V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz		11650	52.69	-21.31	74	36.75	38.65	20.06	42.77	251	37	P	H
		11650	43.87	-10.13	54	27.93	38.65	20.06	42.77	251	37	A	H
		13391	52.56	-21.44	74	34.18	39.98	21.57	43.17	-	-	P	H
		13391	43.36	-10.64	54	24.98	39.98	21.57	43.17	-	-	A	H
		16075	51.38	-22.62	74	34.62	37.67	23.44	44.35	-	-	P	H
		16075	41.79	-12.21	54	25.03	37.67	23.44	44.35	-	-	A	H
		17475	52.48	-15.72	68.2	34.83	38.38	24.35	45.08	-	-	P	H
		17945	55.33	-18.67	74	34.7	41.41	24.65	45.43	-	-	P	H
		17945	46.31	-7.69	54	25.68	41.41	24.65	45.43	-	-	A	H
													H
													H
													H
		11650	54.94	-19.06	74	39	38.65	20.06	42.77	100	245	P	V
		11650	45.77	-8.23	54	29.83	38.65	20.06	42.77	100	245	A	V
		13347	51.81	-22.19	74	33.53	39.89	21.55	43.16	-	-	P	V
		13347	42.8	-11.2	54	24.52	39.89	21.55	43.16	-	-	A	V
		16130	51.41	-22.59	74	34.67	37.61	23.48	44.35	-	-	P	V
		16130	42.45	-11.55	54	25.71	37.61	23.48	44.35	-	-	A	V
		17475	56.18	-12.02	68.2	38.53	38.38	24.35	45.08	-	-	P	V
		17912	54.4	-19.6	74	34.01	41.18	24.62	45.41	-	-	P	V
		17912	46.4	-7.6	54	26.01	41.18	24.62	45.41	-	-	A	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5607	54.64	-13.56	68.2	45.81	33.2	13.52	37.89	100	294	P	H
		5696	60.35	-41.9	102.25	51.13	33.57	13.56	37.91	100	294	P	H
		5716.5	71.18	-38.64	109.82	61.83	33.7	13.57	37.92	100	294	P	H
		5720	72.41	-38.39	110.8	63.04	33.72	13.57	37.92	100	294	P	H
	*	5755	108.94	-	-	99.38	33.91	13.58	37.93	100	294	P	H
	*	5755	101.55	-	-	91.99	33.91	13.58	37.93	100	294	A	H
		5850.25	58.26	-63.37	121.63	48.43	34.1	13.68	37.95	100	294	P	H
		5855.5	59.42	-51.24	110.66	49.57	34.11	13.69	37.95	100	294	P	H
		5912.5	54.83	-22.59	77.42	44.79	34.22	13.78	37.96	100	294	P	H
		5925	51.99	-16.21	68.2	41.9	34.25	13.8	37.96	100	294	P	H
													H
													H
		5618.75	49.58	-18.62	68.2	40.75	33.2	13.53	37.9	350	52	P	V
		5699	53.33	-51.13	104.46	44.09	33.59	13.56	37.91	350	52	P	V
		5720	68.28	-42.52	110.8	58.91	33.72	13.57	37.92	350	52	P	V
		5720	68.28	-42.52	110.8	58.91	33.72	13.57	37.92	350	52	P	V
	*	5755	102.42	-	-	92.86	33.91	13.58	37.93	350	52	P	V
	*	5755	94.68	-	-	85.12	33.91	13.58	37.93	350	52	A	V
		5854.5	51.56	-60.38	111.94	41.71	34.11	13.69	37.95	350	52	P	V
		5859.5	50.99	-58.55	109.54	41.12	34.12	13.7	37.95	350	52	P	V
		5905.5	49.47	-33.12	82.59	39.45	34.21	13.77	37.96	350	52	P	V
		5945.75	49.06	-19.14	68.2	38.91	34.29	13.83	37.97	350	52	P	V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5608.75	53.43	-14.77	68.2	44.6	33.2	13.52	37.89	100	300	P	H
		5683.75	53.38	-39.83	93.21	44.27	33.47	13.55	37.91	100	300	P	H
		5719.75	54.04	-56.69	110.73	44.67	33.72	13.57	37.92	100	300	P	H
		5724.5	55.37	-65.69	121.06	45.97	33.75	13.57	37.92	100	300	P	H
	*	5795	108.78	-	-	99.12	33.99	13.6	37.93	100	300	P	H
	*	5795	101.36	-	-	91.7	33.99	13.6	37.93	100	300	A	H
		5854.25	68.86	-43.65	112.51	59.01	34.11	13.69	37.95	100	300	P	H
		5857.5	63.89	-46.21	110.1	54.04	34.11	13.69	37.95	100	300	P	H
		5894.5	60.69	-30.04	90.73	50.71	34.19	13.75	37.96	100	300	P	H
		5938.5	54.44	-13.76	68.2	44.31	34.28	13.82	37.97	100	300	P	H
													H
													H
		5615	48.52	-19.68	68.2	39.69	33.2	13.53	37.9	400	349	P	V
		5666.75	49.69	-30.94	80.63	40.72	33.33	13.55	37.91	400	349	P	V
		5706.75	48.48	-58.61	107.09	39.2	33.64	13.56	37.92	400	349	P	V
		5721.5	48.03	-66.19	114.22	38.65	33.73	13.57	37.92	400	349	P	V
	*	5795	101.43	-	-	91.77	33.99	13.6	37.93	400	349	P	V
	*	5795	94.32	-	-	84.66	33.99	13.6	37.93	400	349	A	V
		5850.5	58.24	-62.82	121.06	48.41	34.1	13.68	37.95	400	349	P	V
		5856.5	56.82	-53.56	110.38	46.97	34.11	13.69	37.95	400	349	P	V
		5886.25	53.03	-43.82	96.85	43.07	34.17	13.74	37.95	400	349	P	V
		5941.25	48.4	-19.8	68.2	38.26	34.28	13.83	37.97	400	349	P	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	51.19	-22.81	74	35.04	38.88	19.94	42.67	250	156	P	H
		11510	42.05	-11.95	54	25.9	38.88	19.94	42.67	250	156	A	H
		13347	52.52	-21.48	74	34.24	39.89	21.55	43.16	-	-	P	H
		13347	43.31	-10.69	54	25.03	39.89	21.55	43.16	-	-	A	H
		15976	51.34	-22.66	74	34.78	37.55	23.37	44.36	-	-	P	H
		15976	41.51	-12.49	54	24.95	37.55	23.37	44.36	-	-	A	H
		17265	52.87	-15.33	68.2	35.38	38.06	24.22	44.79	-	-	P	H
		17967	54.28	-19.72	74	33.5	41.57	24.66	45.45	-	-	P	H
		17967	46.55	-7.45	54	25.77	41.57	24.66	45.45	-	-	A	H
													H
													H
													H
		11510	52.59	-21.41	74	36.44	38.88	19.94	42.67	100	254	P	V
		11510	43.12	-10.88	54	26.97	38.88	19.94	42.67	100	254	A	V
		13358	52.29	-21.71	74	33.97	39.92	21.56	43.16	-	-	P	V
		13358	44.12	-9.88	54	25.8	39.92	21.56	43.16	-	-	A	V
		16141	51.87	-22.13	74	35.16	37.58	23.48	44.35	-	-	P	V
		16141	42.08	-11.92	54	25.37	37.58	23.48	44.35	-	-	A	V
		17265	53.59	-14.61	68.2	36.1	38.06	24.22	44.79	-	-	P	V
		17945	54.01	-19.99	74	33.38	41.41	24.65	45.43	-	-	P	V
		17945	46.7	-7.3	54	26.07	41.41	24.65	45.43	-	-	A	V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		11590	49.47	-24.53	74	33.47	38.72	20.01	42.73	250	38	P	H
		11590	41.77	-12.23	54	25.77	38.72	20.01	42.73	250	38	A	H
		13270	52.54	-21.46	74	34.44	39.77	21.48	43.15	-	-	P	H
		13270	43.13	-10.87	54	25.03	39.77	21.48	43.15	-	-	A	H
		15536	51.48	-22.52	74	35.18	37.99	23.1	44.79	-	-	P	H
		15536	42.04	-11.96	54	25.74	37.99	23.1	44.79	-	-	A	H
		17385	51.17	-17.03	68.2	33.56	38.27	24.29	44.95	-	-	P	H
		17901	54.88	-19.12	74	34.55	41.11	24.62	45.4	-	-	P	H
		17901	46.21	-7.79	54	25.88	41.11	24.62	45.4	-	-	A	H
													H
													H
													H
		11590	50.77	-23.23	74	34.77	38.72	20.01	42.73	100	242	P	V
		11590	43.05	-10.95	54	27.05	38.72	20.01	42.73	100	242	A	V
		13303	52.51	-21.49	74	34.34	39.81	21.51	43.15	-	-	P	V
		13303	42.97	-11.03	54	24.8	39.81	21.51	43.15	-	-	A	V
		15591	50.84	-23.16	74	34.61	37.83	23.13	44.73	-	-	P	V
		15591	41.44	-12.56	54	25.21	37.83	23.13	44.73	-	-	A	V
		17385	54.85	-13.35	68.2	37.24	38.27	24.29	44.95	-	-	P	V
		17934	55.03	-18.97	74	34.47	41.34	24.64	45.42	-	-	P	V
		17934	46.38	-7.62	54	25.82	41.34	24.64	45.42	-	-	A	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5620.25	56.74	-11.46	68.2	47.91	33.2	13.53	37.9	100	296	P	H
		5699	65.54	-38.92	104.46	56.3	33.59	13.56	37.91	100	296	P	H
		5719	64.25	-46.27	110.52	54.89	33.71	13.57	37.92	100	296	P	H
		5724.25	65.11	-55.38	120.49	55.71	33.75	13.57	37.92	100	296	P	H
	*	5775	103.99	-	-	94.38	33.95	13.59	37.93	100	296	P	H
	*	5775	96.8	-	-	87.19	33.95	13.59	37.93	100	296	A	H
		5853	64.97	-50.39	115.36	55.13	34.11	13.68	37.95	100	296	P	H
		5863.75	64.19	-44.16	108.35	54.31	34.13	13.7	37.95	100	296	P	H
		5878.25	57.71	-45.08	102.79	47.77	34.16	13.73	37.95	100	296	P	H
		5927.5	55.6	-12.6	68.2	45.5	34.26	13.8	37.96	100	296	P	H
													H
													H
		5641.75	53.46	-14.74	68.2	44.62	33.2	13.54	37.9	400	294	P	V
		5688.25	56.95	-39.58	96.53	47.79	33.51	13.56	37.91	400	294	P	V
		5707.5	56.85	-50.45	107.3	47.56	33.65	13.56	37.92	400	294	P	V
		5722	56.13	-59.23	115.36	46.75	33.73	13.57	37.92	400	294	P	V
	*	5775	97.04	-	-	87.43	33.95	13.59	37.93	400	294	P	V
	*	5775	89.68	-	-	80.07	33.95	13.59	37.93	400	294	A	V
		5852	52.88	-64.76	117.64	43.05	34.1	13.68	37.95	400	294	P	V
		5861.5	55.23	-53.75	108.98	45.36	34.12	13.7	37.95	400	294	P	V
		5906.5	49.47	-32.38	81.85	39.45	34.21	13.77	37.96	400	294	P	V
		5926.5	49.52	-18.68	68.2	39.43	34.25	13.8	37.96	400	294	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
i802.11ac VHT80 CH 155 5775MHz		11550	50.33	-23.67	74	34.25	38.8	19.98	42.7	251	56	P	H
		11550	41.94	-12.06	54	25.86	38.8	19.98	42.7	251	56	A	H
		13358	52.24	-21.76	74	33.92	39.92	21.56	43.16	-	-	P	H
		13358	43.2	-10.8	54	24.88	39.92	21.56	43.16	-	-	A	H
		15481	51.52	-22.48	74	35.11	38.18	23.06	44.83	-	-	P	H
		15481	41.66	-12.34	54	25.25	38.18	23.06	44.83	-	-	A	H
		17325	50.89	-17.31	68.2	33.36	38.15	24.25	44.87	-	-	P	H
		17956	54.74	-19.26	74	34.04	41.49	24.65	45.44	-	-	P	H
		17956	46.18	-7.82	54	25.48	41.49	24.65	45.44	-	-	A	H
													H
													H
													H
		11550	50.55	-23.45	74	34.47	38.8	19.98	42.7	100	241	P	V
		11550	42.55	-11.45	54	26.47	38.8	19.98	42.7	100	241	A	V
		13336	51.9	-22.1	74	33.65	39.87	21.54	43.16	-	-	P	V
		13336	42.58	-11.42	54	24.33	39.87	21.54	43.16	-	-	A	V
		15492	50.76	-23.24	74	34.38	38.13	23.07	44.82	-	-	P	V
		15492	41.48	-12.52	54	25.1	38.13	23.07	44.82	-	-	A	V
		17325	52.68	-15.52	68.2	35.15	38.15	24.25	44.87	-	-	P	V
		17956	54.36	-19.64	74	33.66	41.49	24.65	45.44	-	-	P	V
		17956	46.17	-7.83	54	25.47	41.49	24.65	45.44	-	-	A	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

WIFI 802.11n HT20 (SHF @ 1m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 SHF		39274	52.22	-21.78	74	38.12	44.52	26.06	56.48	-	-	P	H
		39274	42.13	-11.87	54	28.03	44.52	26.06	56.48	-	-	A	H
													H
													H
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Emission below 1GHz

5GHz WIFI 802.11n HT20 (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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 LF		38.73	25.28	-14.72	40	39.65	19.93	1.33	35.63	-	-	P	H
		147.37	27.84	-15.66	43.5	43.51	17.35	2.45	35.47	-	-	P	H
		351.07	27.4	-18.6	46	38.38	20.44	3.58	35	-	-	P	H
		405.39	28.01	-17.99	46	36.86	22.13	3.85	34.83	-	-	P	H
		600.36	32.48	-13.52	46	36.7	25.47	4.69	34.38	-	-	P	H
		718.7	38.4	-7.6	46	40.53	26.71	5.03	33.87	-	-	P	H
													H
													H
													H
													H
													H
													H
		74.62	28.08	-11.92	40	49.17	12.72	1.77	35.58	-	-	P	V
		137.67	26.79	-16.71	43.5	42.33	17.58	2.38	35.5	-	-	P	V
		307.42	27.2	-18.8	46	39.65	19.32	3.37	35.14	-	-	P	V
		600.36	33.92	-12.08	46	38.14	25.47	4.69	34.38	-	-	P	V
		746.83	38.11	-7.89	46	39.01	27.67	5.18	33.75	-	-	P	V
		949.56	35.77	-10.23	46	32.34	30.42	5.99	32.98	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												



Note symbol

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5650	55.45	-12.75	68.2	54.51	32.22	4.58	35.86	103	308	P	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 @ 5650MHz:

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) – 68.2(dBμV/m)
= -12.75 (dB)

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



Appendix D. Radiated Spurious Emission Plots

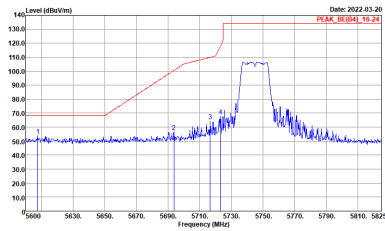
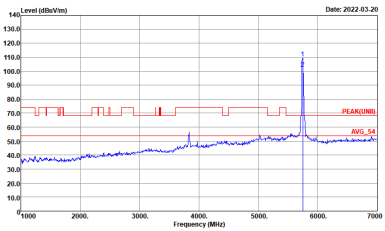
Test Engineer :	Bill Chang, JC Liang and Bigshow Wang	Temperature :	18~20°C
		Relative Humidity :	68~70%

Note symbol

-L	Low channel location
-R	High channel location



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

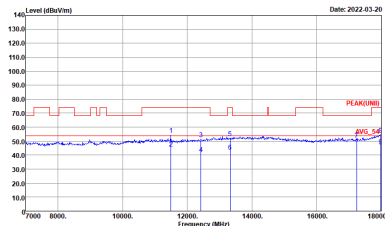
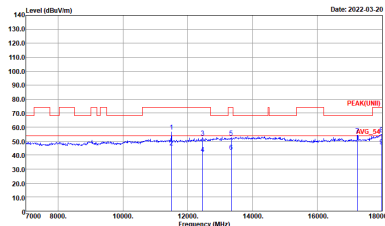
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



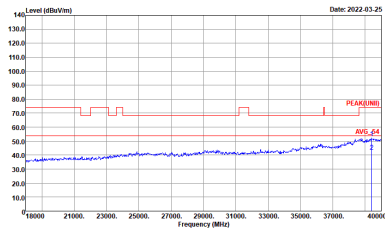
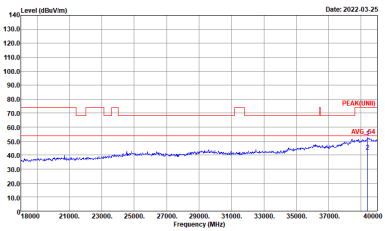
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	Site : 03CH20-HV Condition : PEAK_BE(84)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	Site : 03CH20-HV Condition : PEAK(FUND)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



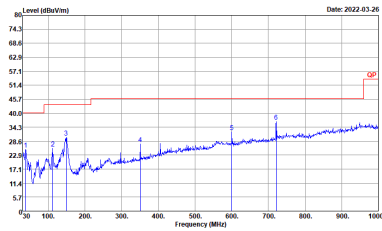
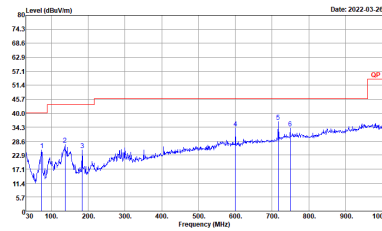
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak

Emission above 18GHz
5GHz WIFI 802.11a (SHF @ 1m)

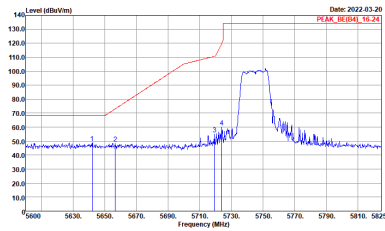
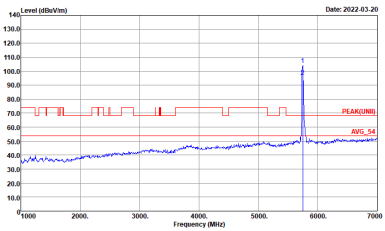
WIFI	5GHz WIFI	
ANT	802.11a SHF	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 VERTICAL Detector : Peak

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

WIFI	5GHz WIFI	
ANT	802.11a LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 HORIZONTAL Detector : Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 VERTICAL Detector : Peak



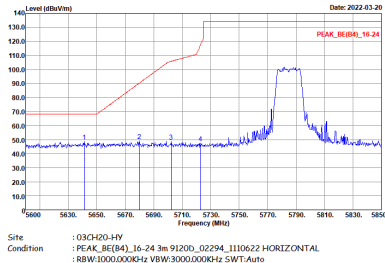
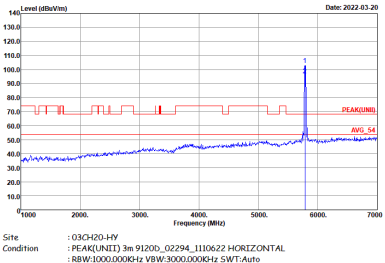
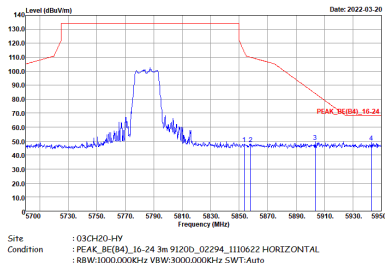
Band 4 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto

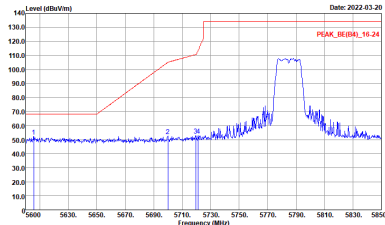
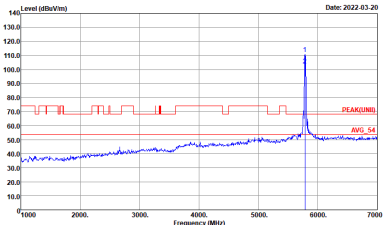
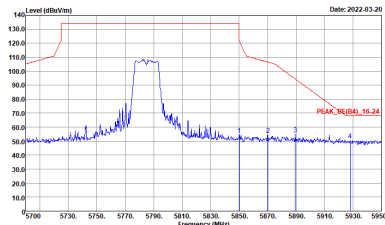


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
2	Vertical	Fundamental
Peak	Date: 2022-03-20 PEAK_BE(84)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	Date: 2022-03-20 PEAK(UNIT)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

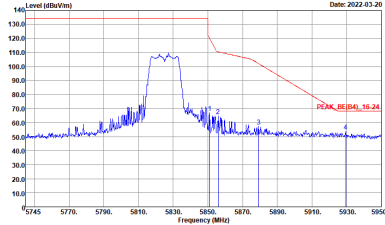
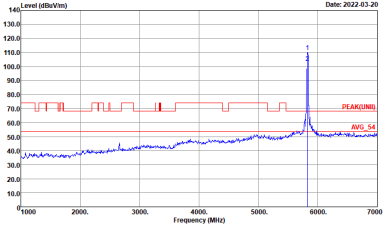


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



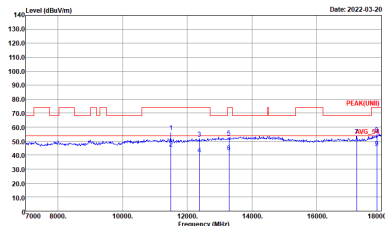
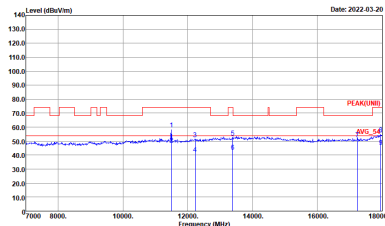
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
2	Horizontal	Fundamental
Peak	Site : 03CH20-HV Condition : PEAK_BE(165)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	Site : 03CH20-HV Condition : PEAK(UNIT)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



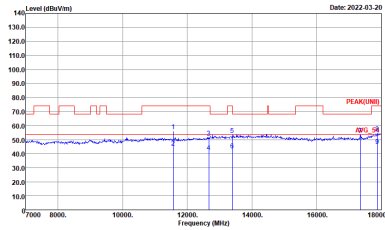
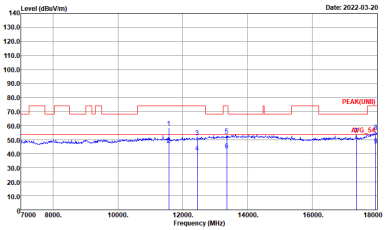
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



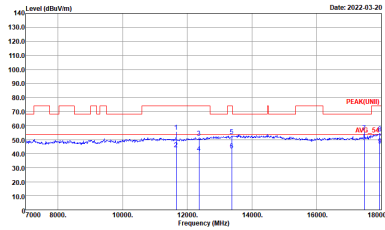
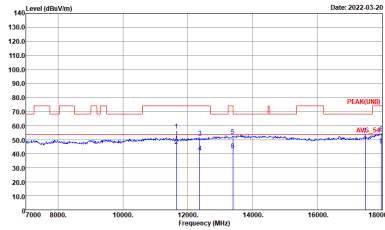
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak

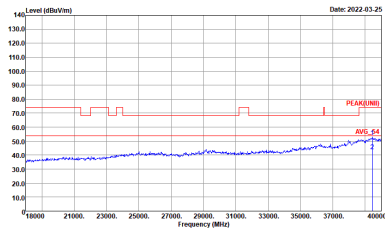
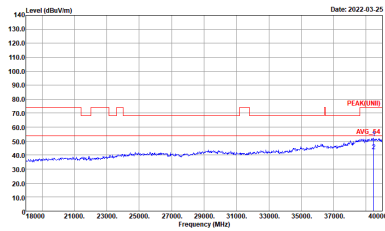


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak

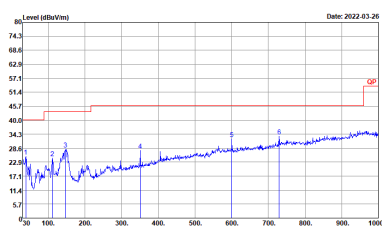
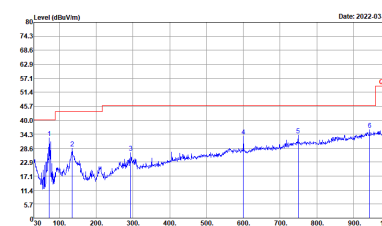


WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak

Emission above 18GHz
5GHz WIFI 802.11a (SHF @ 1m)

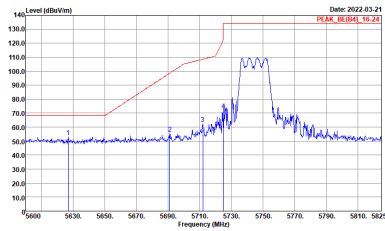
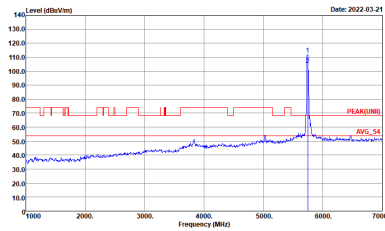
WIFI	5GHz WIFI	
ANT	802.11a SHF	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 VERTICAL Detector : Peak

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

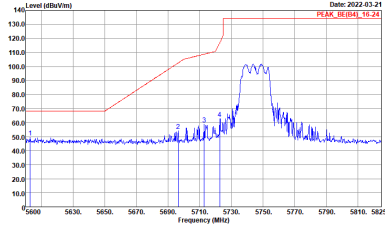
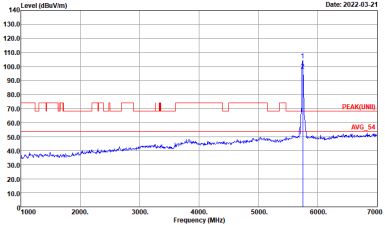
WIFI	5GHz WIFI	
ANT	802.11a LF	
2	Horizontal	Vertical
QP / Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 HORIZONTAL Detector : Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 VERTICAL Detector : Peak



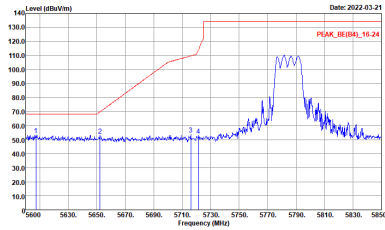
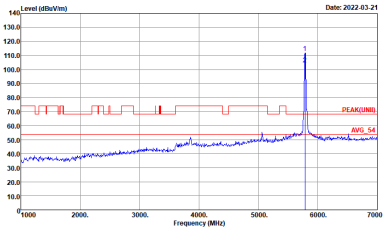
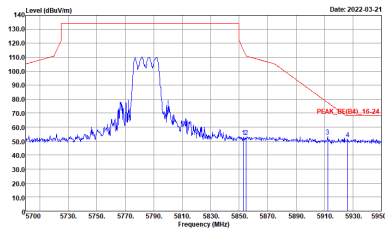
Band 4 - 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto

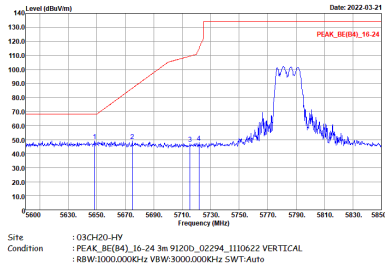
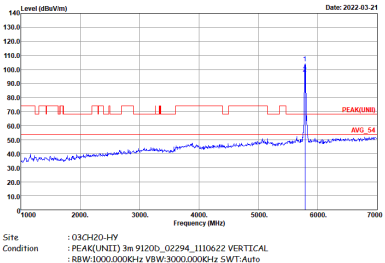
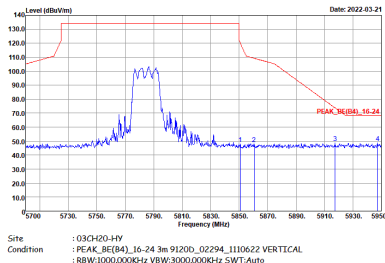


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

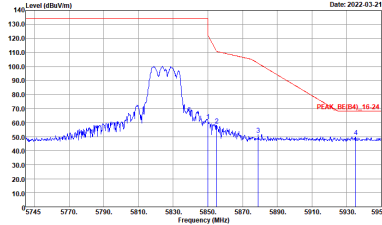
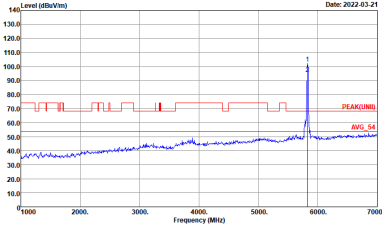


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

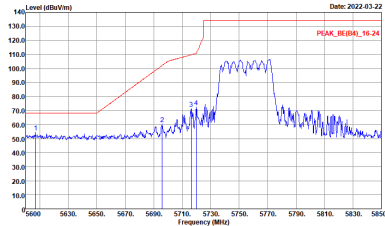
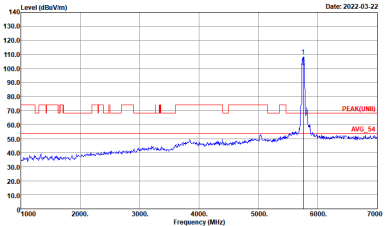
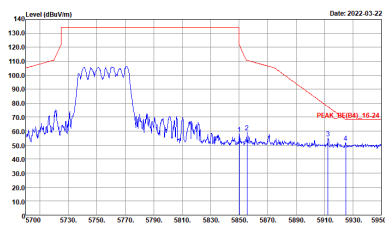


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto

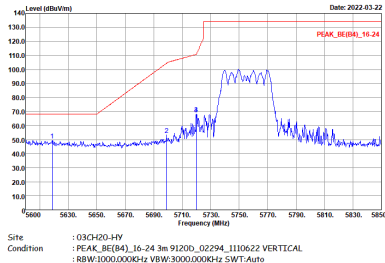
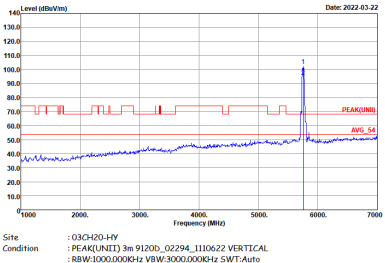
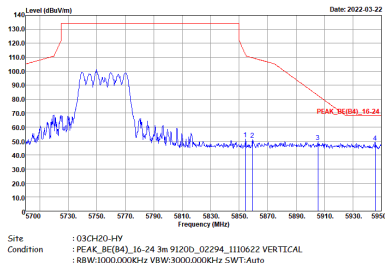


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:3000.000kHz VBW:3000.000kHz SWT:Auto

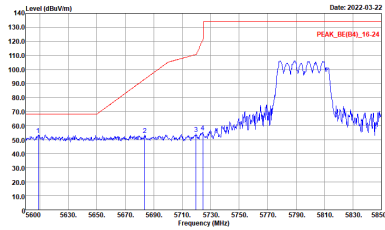
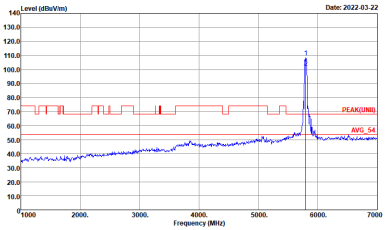
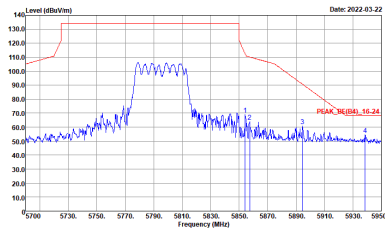
Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(04)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto
Peak	 Site : 03CH20-HY Condition : PEAK_BE(04)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Left blank

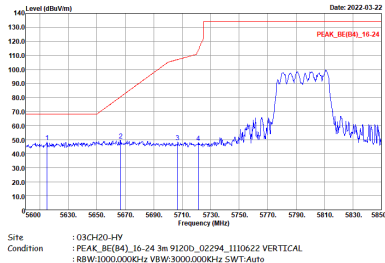
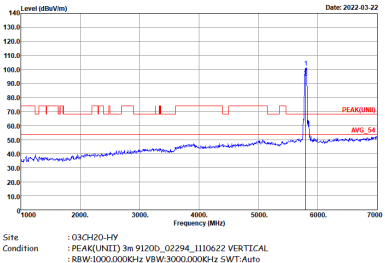
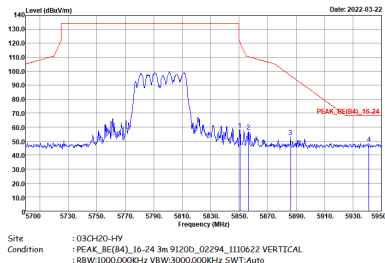


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



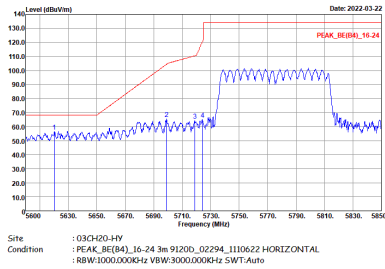
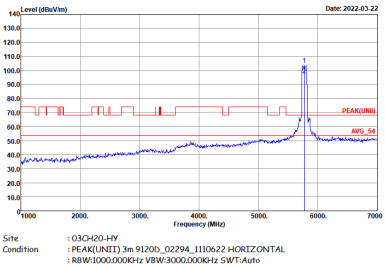
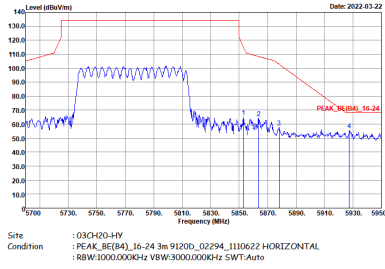
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(04)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(04)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



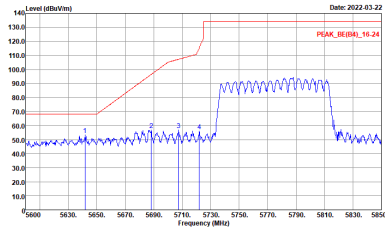
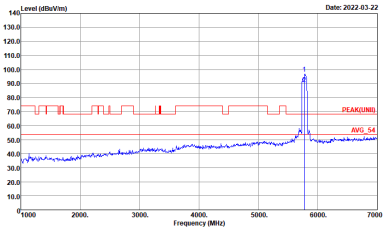
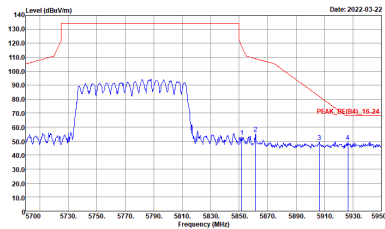
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



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

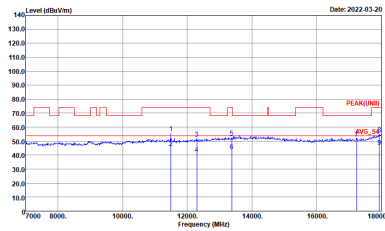
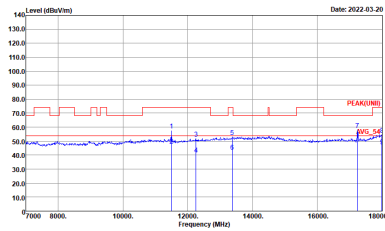
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(FUND)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Left blank

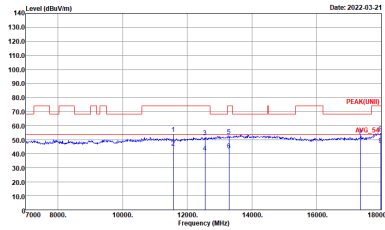
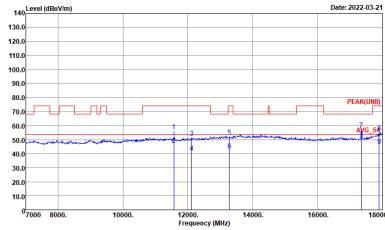


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

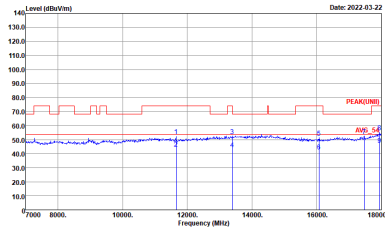
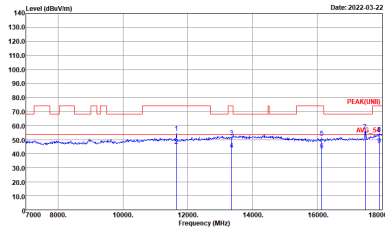


Band 4 - 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak

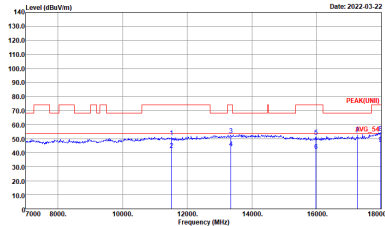
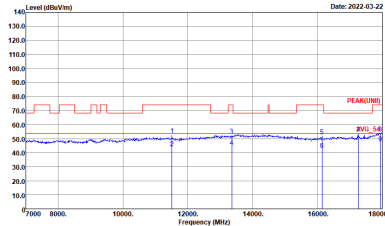
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak



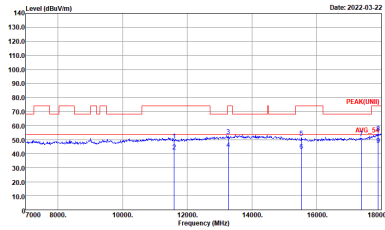
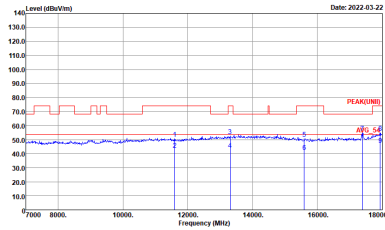
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak



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

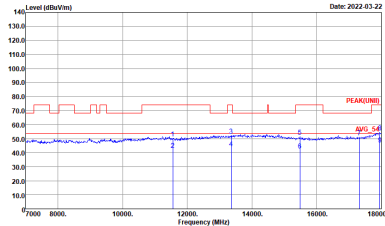
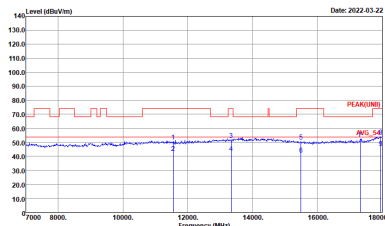
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak



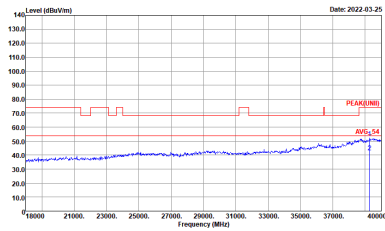
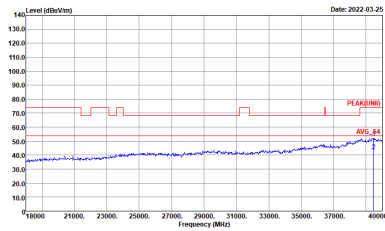
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak



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

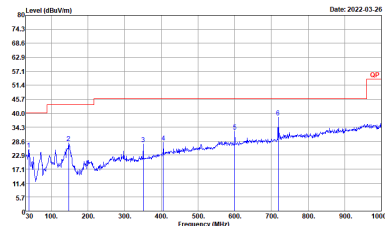
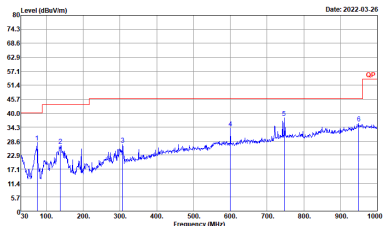
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 VERTICAL Detector : Peak Setting : 10

Emission above 18GHz
5GHz WIFI 802.11n HT20 (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11n HT20 SHF	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 HORIZONTAL Detector : Peak	 Site : 03CH20-HY Condition : PEAK(UNIT) 1m SHF_00993_211130 VERTICAL Detector : Peak



Emission below 1GHz
5GHz WIFI 802.11n HT20 (LF @ 3m)

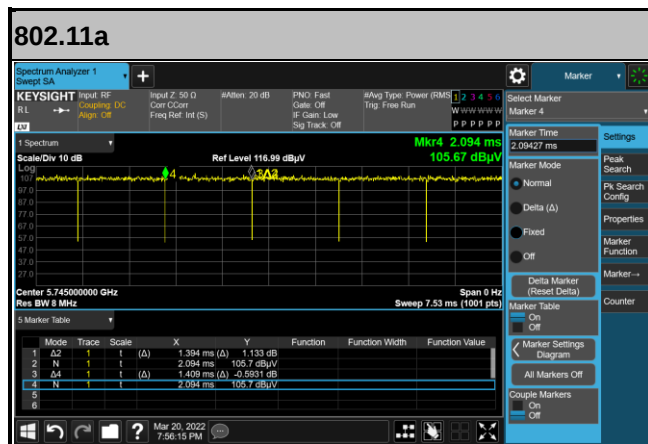
WIFI	5GHz WIFI	
ANT	802.11n HT20 LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 HORIZONTAL Detector : Peak	 Site : 03CH20-1HY Condition : QP 3m LF_55606408_1101017 VERTICAL Detector : Peak



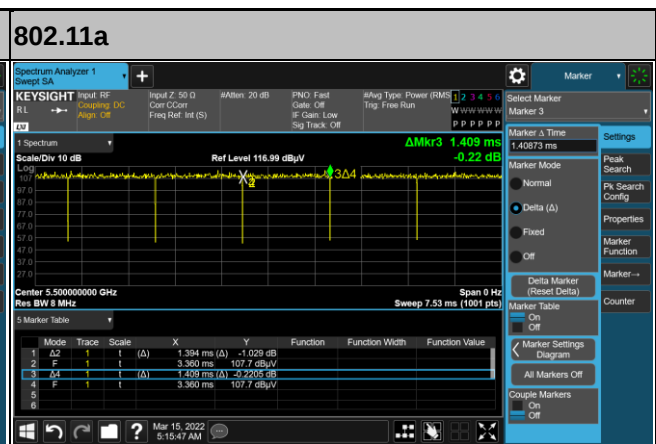
Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11a	98.94	-	-	10Hz
2	802.11a	98.94	-	-	10Hz
1+2	5GHz 802.11n HT20	98.33	-	-	10Hz
1+2	5GHz 802.11n HT40	97.74	647.9	1.54	3kHz
1+2	5GHz 802.11ac VHT80	95.55	323.9	3.09	10kHz

<Ant. 1>



<Ant. 2>



MIMO <Ant. 1+2>

