



FCC RADIO TEST REPORT

FCC ID : 2A4B7-1021
Equipment : Contactless Sleep Tracker and Wake Light
Model Name : V4E6N2
Applicant : Blueberry Cornel LLC
2150 S. Central Expressway Suite 200
McKinney, TX 75070
Standard : FCC Part 15 Subpart E §15.407

The product was received on Apr. 06, 2022 and testing was performed from May 26, 2022 to Jun. 16, 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.

Louis Wu

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
FR1D2427-01E	01	Initial issue of report	Jul. 22, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass
3.1	2.1049	99% Occupied Bandwidth	Reporting only
3.2	15.407(a)	Maximum Conducted Output Power	Pass
3.3	15.407(a)	Power Spectral Density	Pass
3.4	15.407(b)	Unwanted Emissions	Pass
3.5	15.207	AC Conducted Emission	Pass
3.6	15.407(c)	Automatically Discontinue Transmission	Pass
3.7	15.203 15.407(a)	Antenna Requirement	Pass

Declaration of Conformity:

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: Alan Liu

Report Producer: Kaye Yang



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Contactless Sleep Tracker and Wake Light
Model Name	V4E6N2
FCC ID	2A4B7-1021
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20 Bluetooth BR/EDR/LE 60GHz

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to antenna	802.11a : 15.80 dBm / 0.0380 W 802.11n HT20 : 15.60 dBm / 0.0363 W
99% Occupied Bandwidth	802.11a: 18.23 MHz 802.11n HT20: 19.18 MHz
Antenna Type / Gain	PIFA Antenna with gain 6.5 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY, DF02-HY (TAF Code: 1190)
Remark	The Conducted Emission and Automatically Discontinue Transmission 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

1.5 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.
- ♦ 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.

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).
- 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

2.2 Test Mode

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

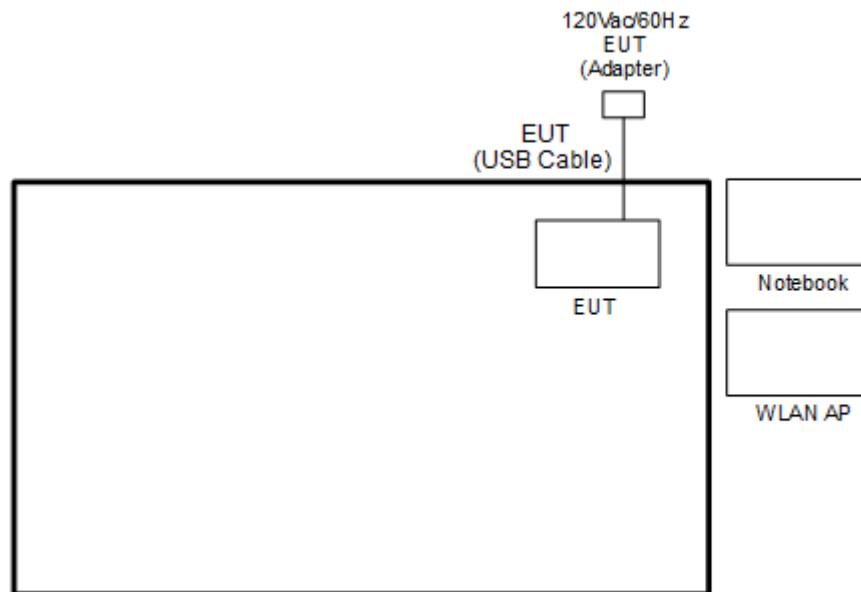
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + rel start - Continuous Stress (CPU + SOC + FLASH + Radar + LED + Clock + Buzzer/Audio + Temp Sensors) with NA AP31 Adapter
Remark: For Radiated Test Cases, the tests were performed with Adapter (AP31).	

Ch. #		Band IV : 5725-5850 MHz	
		802.11a	802.11n HT20
L	Low	149	149
M	Middle	157	157
H	High	165	165

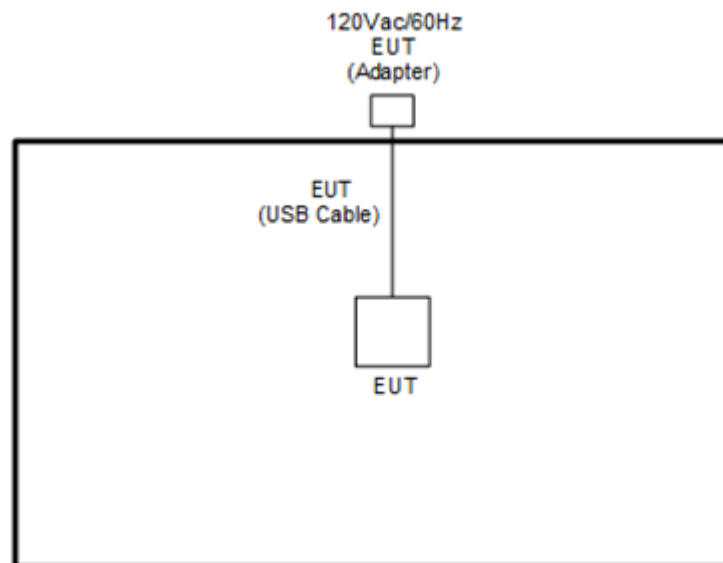
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission>



<WLAN Tx Mode>



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

2.5 EUT Operation Test Setup

The RF test items, utility "Compliance 1.0.1.9" 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.

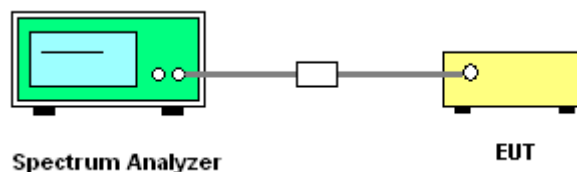
3.1.2 Measuring Instruments

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



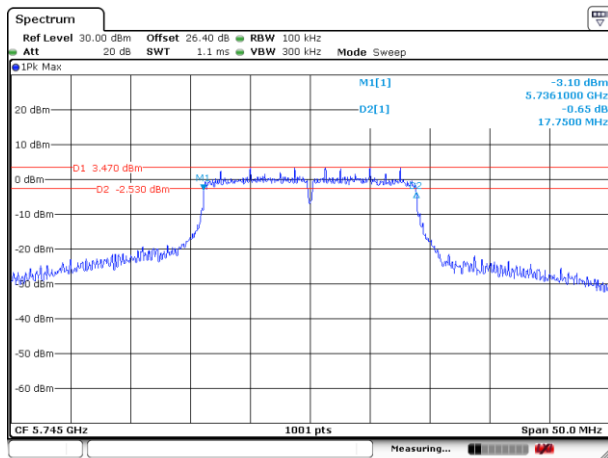
3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

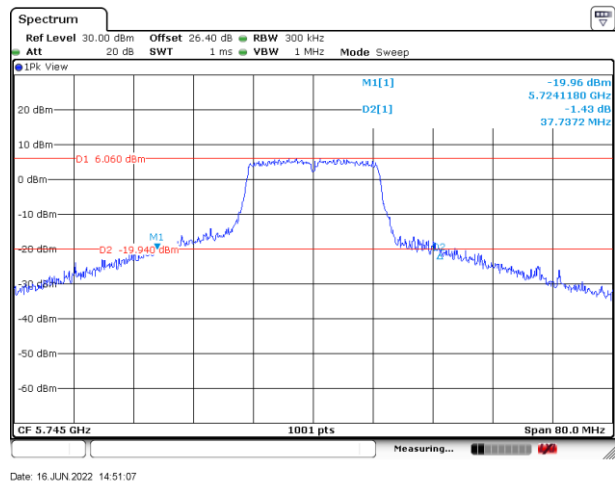


<802.11n HT20>

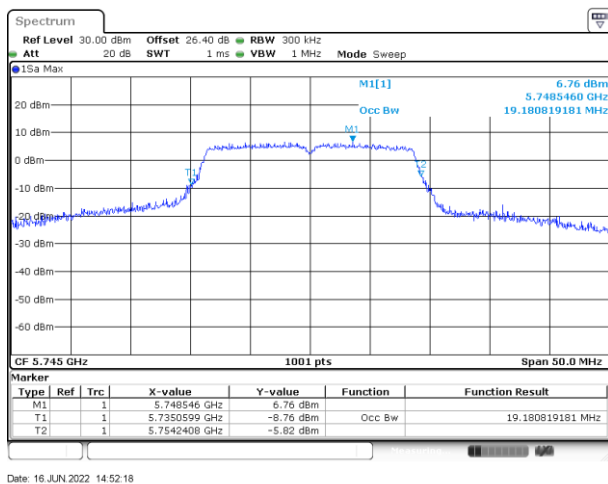
6dB Bandwidth



26dB Bandwidth



99% Occupied Bandwidth



NA

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.

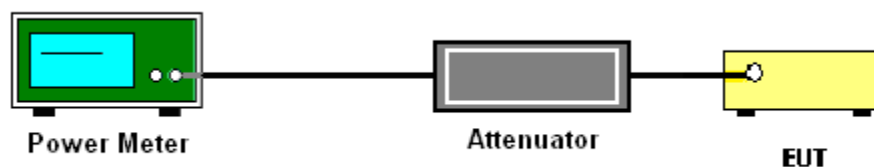
3.2.3 Test Procedures

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.

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

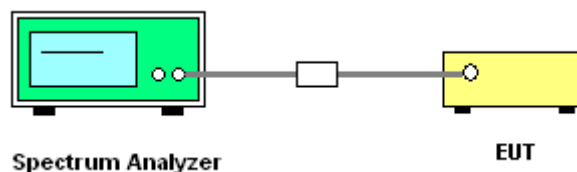
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

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.

3.3.4 Test Setup

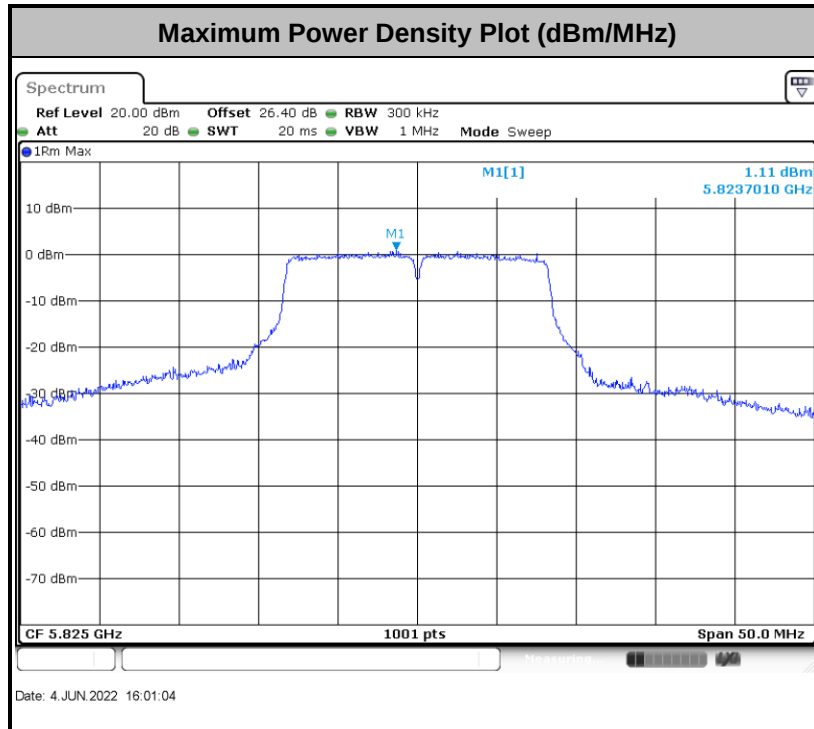




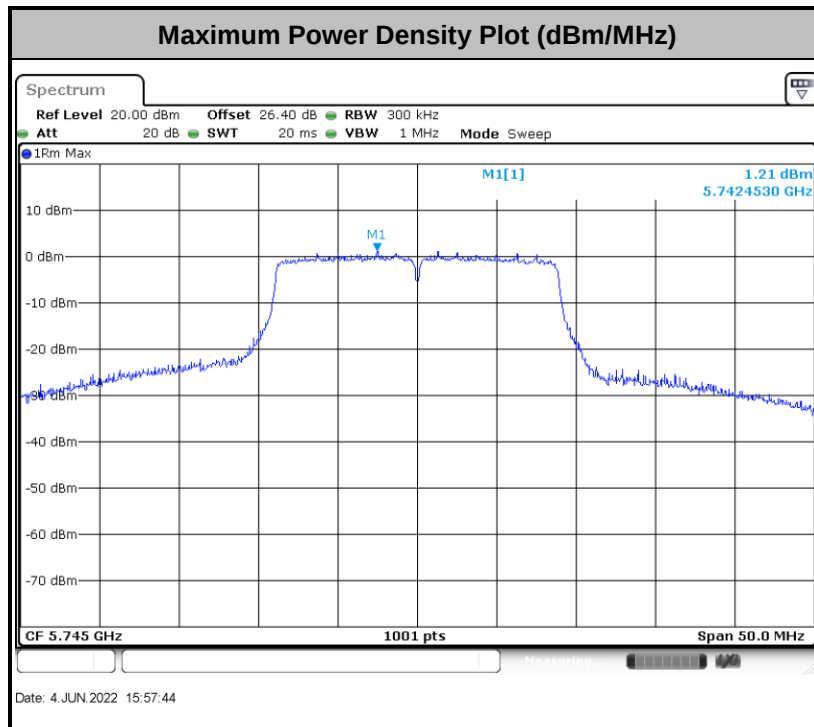
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11a>



<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.

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

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

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

(i) 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

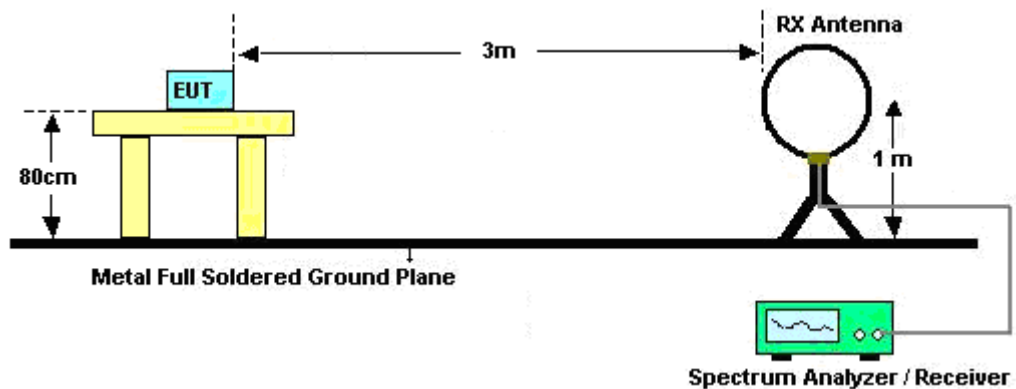
against QP limit line, the position is marked as “-“.

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.

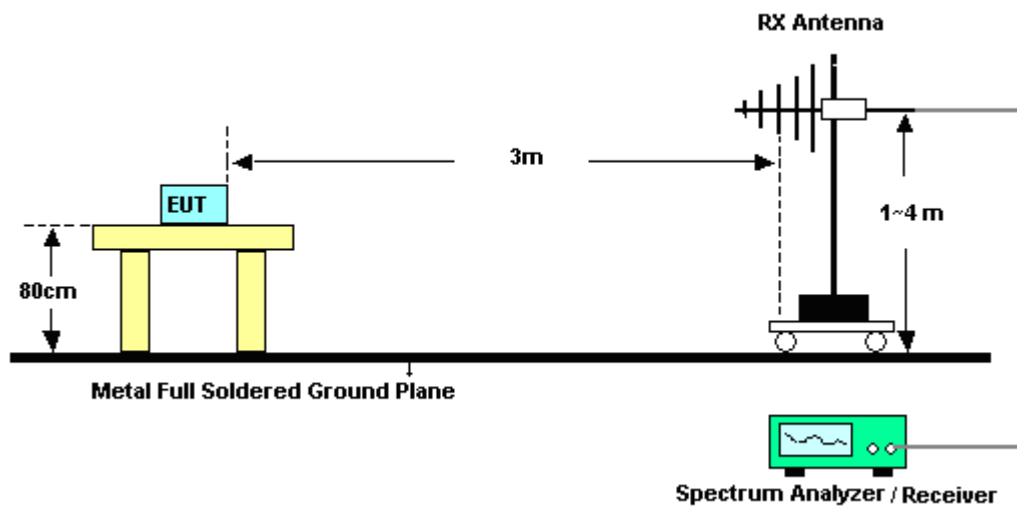
When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“.

3.4.4 Test Setup

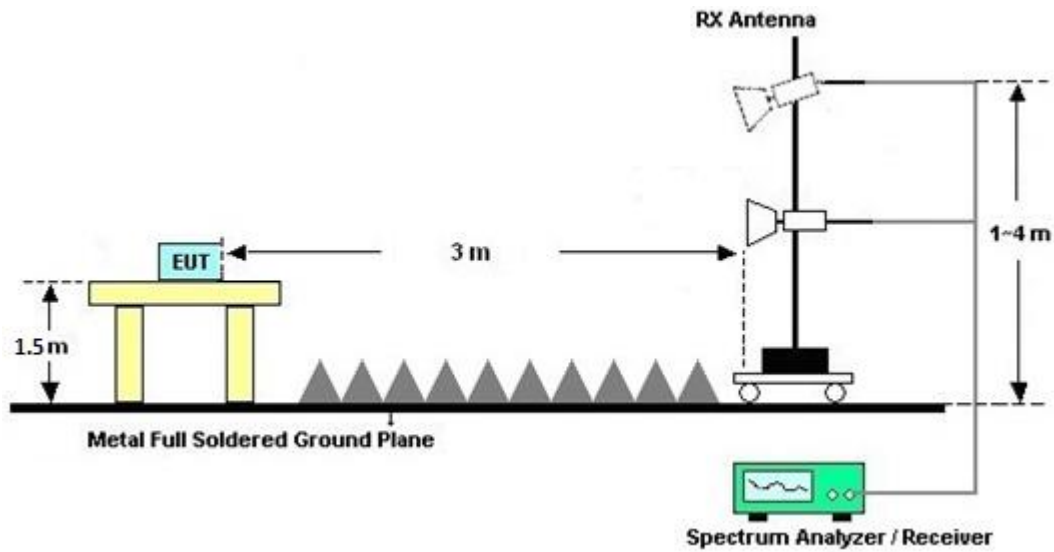
For radiated emissions below 30MHz



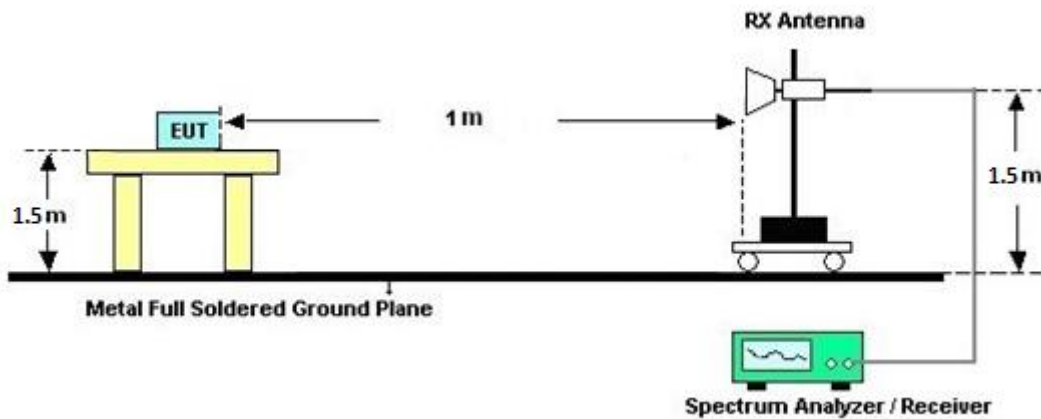
For radiated emissions from 30MHz to 1GHz



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.

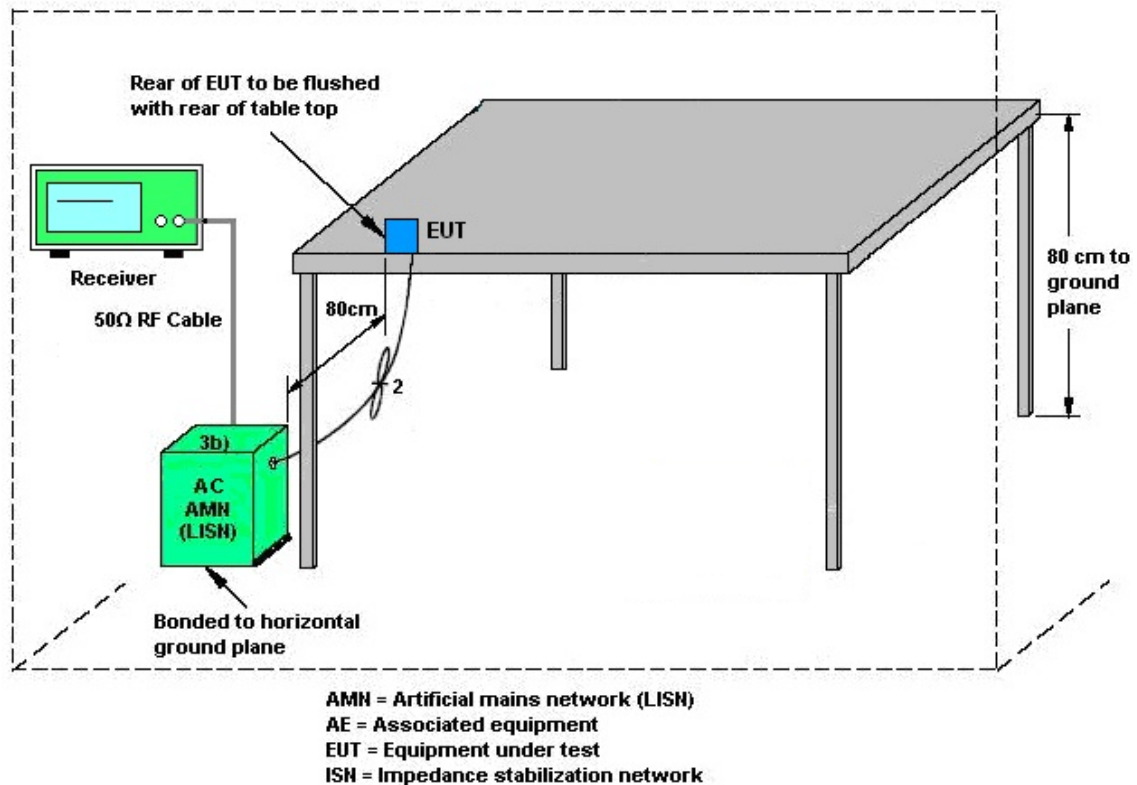
3.5.2 Measuring Instruments

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 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

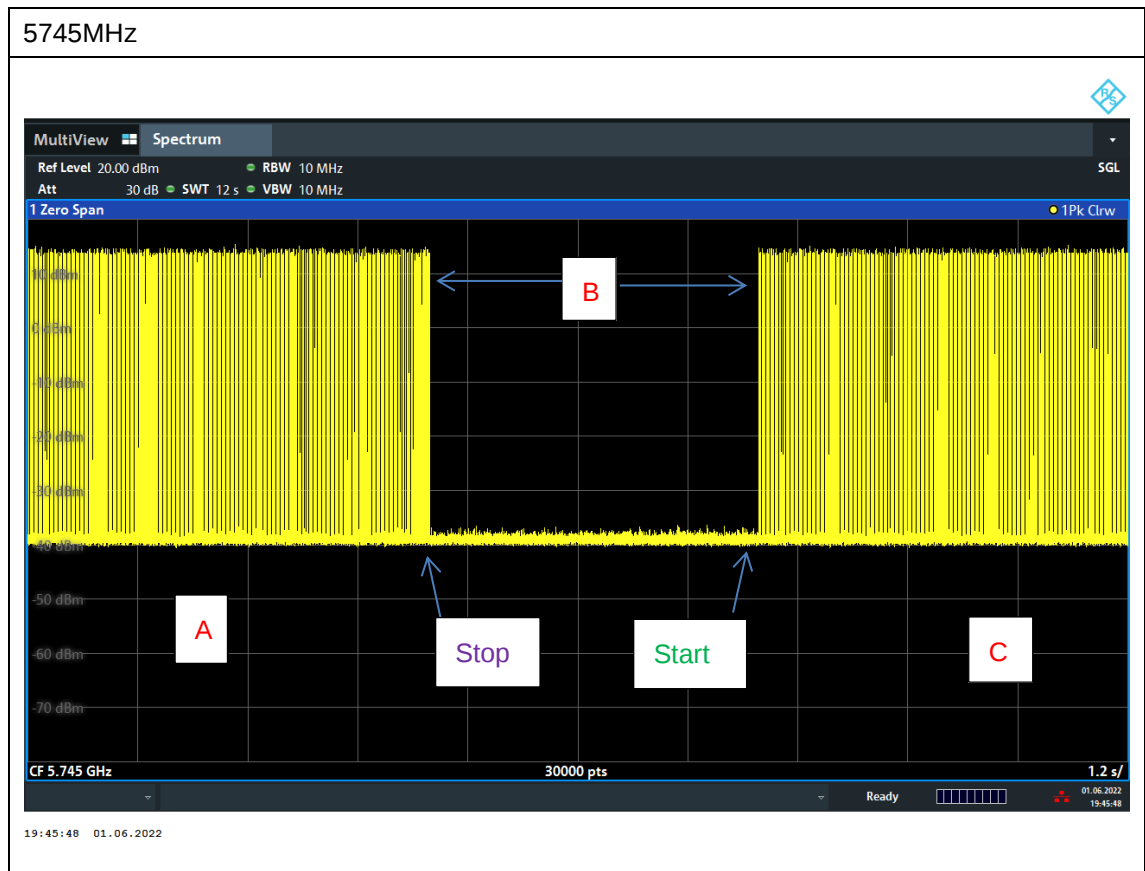
EUT is verified this characteristic during the function check of normal sample associated with an access point:

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

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

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

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



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



3.7 Antenna Requirements

3.7.1 Standard Applicable

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

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9010B	MY60241055	10Hz~44GHz	Jul. 12, 2021	May 26, 2022~Jun. 06, 2022	Jul. 11, 2022	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 03, 2022	May 26, 2022~Jun. 06, 2022	Jan. 02, 2023	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 15, 2021	May 26, 2022~Jun. 06, 2022	Nov. 14, 2022	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 24, 2021	May 26, 2022~Jun. 06, 2022	Dec. 23, 2022	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	May 26, 2022~Jun. 06, 2022	Jan. 06, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 17, 2021	May 26, 2022~Jun. 06, 2022	Oct. 16, 2022	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 23, 2021	May 26, 2022~Jun. 06, 2022	Jun. 22, 2022	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz-40GHz	Nov. 30, 2021	May 26, 2022~Jun. 06, 2022	Nov. 29, 2022	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200879	N/A	Sep. 30, 2021	May 26, 2022~Jun. 06, 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	May 26, 2022~Jun. 06, 2022	Jan. 18, 2023	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8-24	RK-002156	N/A	N/A	May 26, 2022~Jun. 06, 2022	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	May 26, 2022~Jun. 06, 2022	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 26, 2022~Jun. 06, 2022	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 26, 2022~Jun. 06, 2022	N/A	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Jun. 04, 2022~Jun. 16, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Jun. 04, 2022~Jun. 16, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Jun. 04, 2022~Jun. 16, 2022	Aug. 29, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jun. 07, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Jun. 07, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	Jun. 07, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Jun. 07, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Jun. 07, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Jun. 07, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Jun. 07, 2022	Dec. 29, 2022	Conduction (CO05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV3044	101048	10Hz~44GHz	Feb. 17, 2022	Jun. 01, 2022	Feb. 16, 2023	Conducted (DF02-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:	Benny Ku	Temperature:	21~25	°C
Test Date:	2022/6/4~2022/6/16	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	-	17.63	-	27.85	-	16.45	0.5	Pass
11a	6Mbps	1	157	5785	-	17.93	-	28.10	-	16.45	0.5	Pass
11a	6Mbps	1	165	5825	-	18.23	-	36.35	-	16.50	0.5	Pass
HT20	MCS0	1	149	5745	-	19.18	-	37.74	-	17.75	0.5	Pass
HT20	MCS0	1	157	5785	-	18.98	-	39.08	-	17.68	0.5	Pass
HT20	MCS0	1	165	5825	-	18.83	-	36.29	-	17.70	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	-	15.80		-	29.50	-	6.50	Pass
11a	6Mbps	1	157	5785	-	15.60		-	29.50	-	6.50	Pass
11a	6Mbps	1	165	5825	-	15.60		-	29.50	-	6.50	Pass
HT20	MCS0	1	149	5745	-	15.60		-	29.50	-	6.50	Pass
HT20	MCS0	1	157	5785	-	15.50		-	29.50	-	6.50	Pass
HT20	MCS0	1	165	5825	-	15.60		-	29.50	-	6.50	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	-	3.24		-	29.50	-	6.50	Pass
11a	6Mbps	1	157	5785	-	2.22	-	2.82		-	29.50	-	6.50	Pass
11a	6Mbps	1	165	5825	-	2.22	-	3.33		-	29.50	-	6.50	Pass
HT20	MCS0	1	149	5745	-	2.22	-	3.43		-	29.50	-	6.50	Pass
HT20	MCS0	1	157	5785	-	2.22	-	2.72		-	29.50	-	6.50	Pass
HT20	MCS0	1	165	5825	-	2.22	-	3.32		-	29.50	-	6.50	Pass



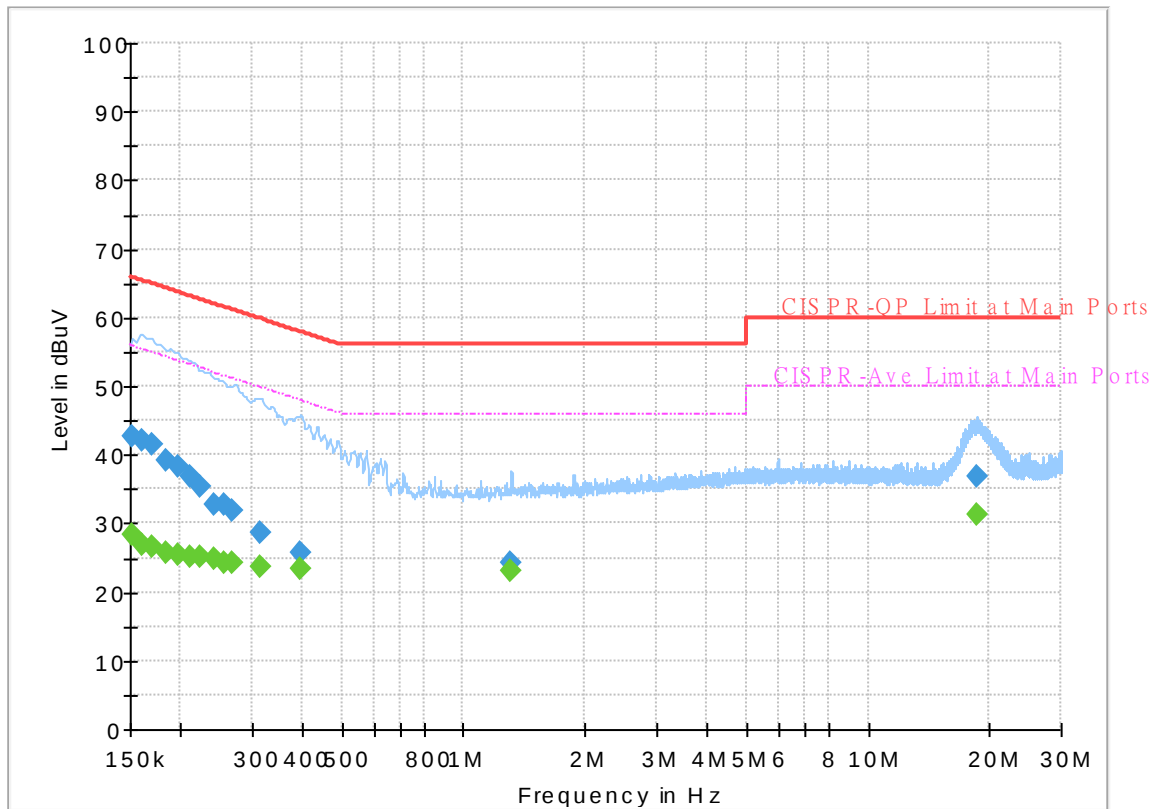
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO : 1D2427-01
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



Final_Result

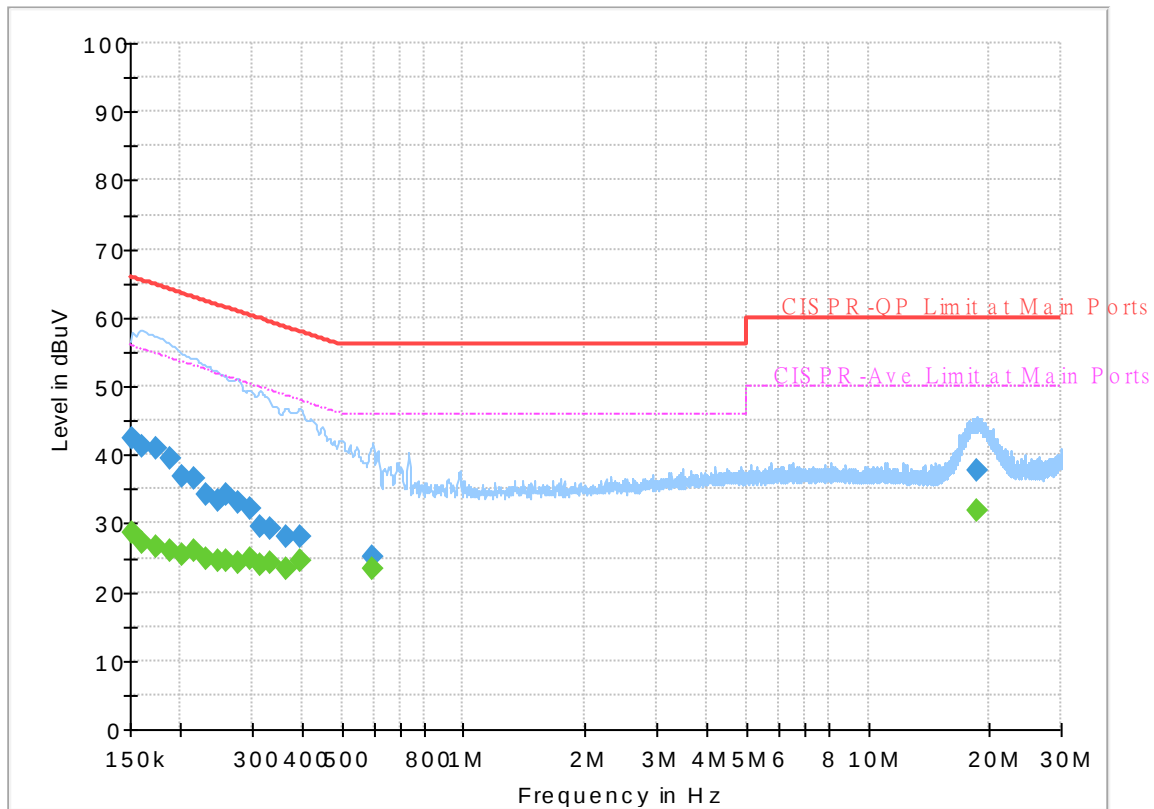
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	28.34	55.88	27.54	L1	OFF	19.6
0.152250	42.54	---	65.88	23.34	L1	OFF	19.6
0.161250	---	26.94	55.40	28.46	L1	OFF	19.6
0.161250	41.97	---	65.40	23.43	L1	OFF	19.6
0.170250	---	26.58	54.95	28.37	L1	OFF	19.6
0.170250	41.66	---	64.95	23.29	L1	OFF	19.6
0.183750	---	25.75	54.31	28.56	L1	OFF	19.6
0.183750	39.25	---	64.31	25.06	L1	OFF	19.6
0.197250	---	25.57	53.73	28.16	L1	OFF	19.6
0.197250	38.16	---	63.73	25.57	L1	OFF	19.6
0.210750	---	25.15	53.18	28.03	L1	OFF	19.6
0.210750	36.80	---	63.18	26.38	L1	OFF	19.6
0.224250	---	25.01	52.66	27.65	L1	OFF	19.6
0.224250	35.48	---	62.66	27.18	L1	OFF	19.6
0.242250	---	24.74	52.02	27.28	L1	OFF	19.6
0.242250	32.83	---	62.02	29.19	L1	OFF	19.6
0.255750	---	24.31	51.57	27.26	L1	OFF	19.6
0.255750	32.83	---	61.57	28.74	L1	OFF	19.6
0.269250	---	24.13	51.14	27.01	L1	OFF	19.6
0.269250	31.92	---	61.14	29.22	L1	OFF	19.6
0.314250	---	23.69	49.86	26.17	L1	OFF	19.6

0.314250	28.64	---	59.86	31.22	L1	OFF	19.6
0.395250	---	23.30	47.95	24.65	L1	OFF	19.6
0.395250	25.86	---	57.95	32.09	L1	OFF	19.6
1.313250	---	23.10	46.00	22.90	L1	OFF	19.7
1.313250	24.33	---	56.00	31.67	L1	OFF	19.7
18.647250	---	31.40	50.00	18.60	L1	OFF	20.4
18.647250	36.84	---	60.00	23.16	L1	OFF	20.4

EUT Information

Report NO : 1D2427-01
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	28.67	55.88	27.21	N	OFF	19.6
0.152250	42.45	---	65.88	23.43	N	OFF	19.6
0.161250	---	27.07	55.40	28.33	N	OFF	19.6
0.161250	41.15	---	65.40	24.25	N	OFF	19.6
0.174750	---	26.55	54.73	28.18	N	OFF	19.6
0.174750	40.85	---	64.73	23.88	N	OFF	19.6
0.188250	---	26.10	54.11	28.01	N	OFF	19.6
0.188250	39.41	---	64.11	24.70	N	OFF	19.6
0.201750	---	25.48	53.54	28.06	N	OFF	19.6
0.201750	36.96	---	63.54	26.58	N	OFF	19.6
0.215250	---	26.07	53.00	26.93	N	OFF	19.6
0.215250	36.61	---	63.00	26.39	N	OFF	19.6
0.231000	---	24.88	52.41	27.53	N	OFF	19.6
0.231000	34.25	---	62.41	28.16	N	OFF	19.6
0.249000	---	24.53	51.79	27.26	N	OFF	19.6
0.249000	33.32	---	61.79	28.47	N	OFF	19.6
0.260250	---	24.43	51.42	26.99	N	OFF	19.6
0.260250	34.21	---	61.42	27.21	N	OFF	19.6
0.276000	---	24.15	50.94	26.79	N	OFF	19.6
0.276000	32.96	---	60.94	27.98	N	OFF	19.6
0.296250	---	24.84	50.35	25.51	N	OFF	19.6

0.296250	32.19	---	60.35	28.16	N	OFF	19.6
0.314250	---	23.94	49.86	25.92	N	OFF	19.6
0.314250	29.62	---	59.86	30.24	N	OFF	19.6
0.332250	---	24.12	49.40	25.28	N	OFF	19.6
0.332250	29.28	---	59.40	30.12	N	OFF	19.6
0.363750	---	23.49	48.64	25.15	N	OFF	19.6
0.363750	27.98	---	58.64	30.66	N	OFF	19.6
0.395250	---	24.59	47.95	23.36	N	OFF	19.6
0.395250	28.18	---	57.95	29.77	N	OFF	19.6
0.597750	---	23.28	46.00	22.72	N	OFF	19.6
0.597750	25.29	---	56.00	30.71	N	OFF	19.6
18.568500	---	31.91	50.00	18.09	N	OFF	20.4
18.568500	37.63	---	60.00	22.37	N	OFF	20.4



Appendix C. Radiated Spurious Emission

Test Engineer :	JC Liang	Temperature :	18~20°C
		Relative Humidity :	60~68%



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		5648.15	50.06	-18.14	68.2	41.22	33.2	13.54	37.9	214	64	P	H
		5697.2	63.75	-39.39	103.14	54.52	33.58	13.56	37.91	214	64	P	H
		5719.925	79.63	-31.15	110.78	70.26	33.72	13.57	37.92	214	64	P	H
		5723.75	79.09	-40.26	119.35	69.7	33.74	13.57	37.92	214	64	P	H
	*	5745	109.53	-	-	100	33.87	13.58	37.92	214	64	P	H
	*	5745	101.93	-	-	92.4	33.87	13.58	37.92	214	64	A	H
		5602.925	49.39	-18.81	68.2	40.56	33.2	13.52	37.89	306	93	P	V
		5697.425	61.03	-42.27	103.3	51.8	33.58	13.56	37.91	306	93	P	V
		5718.8	73.36	-37.1	110.46	64	33.71	13.57	37.92	306	93	P	V
		5725.1	75.12	-59.08	134.2	65.72	33.75	13.57	37.92	306	93	P	V
	*	5745	107.38	-	-	97.85	33.87	13.58	37.92	306	93	P	V
	*	5745	99.37	-	-	89.84	33.87	13.58	37.92	306	93	A	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		5638.75	48.32	-19.88	68.2	39.48	33.2	13.54	37.9	400	123	P	H
		5675	50.32	-36.42	86.74	41.28	33.4	13.55	37.91	400	123	P	H
		5720	50.66	-60.14	110.8	41.29	33.72	13.57	37.92	400	123	P	H
		5724	51.81	-68.11	119.92	42.42	33.74	13.57	37.92	400	123	P	H
	*	5785	109.31	-	-	99.68	33.97	13.59	37.93	400	123	P	H
	*	5785	101.44	-	-	91.81	33.97	13.59	37.93	400	123	A	H
		5854	49.37	-63.71	113.08	39.52	34.11	13.69	37.95	400	123	P	H
		5860.75	48.94	-60.25	109.19	39.07	34.12	13.7	37.95	400	123	P	H
		5898.25	50.17	-37.79	87.96	40.17	34.2	13.76	37.96	400	123	P	H
		5928.75	48.66	-19.54	68.2	38.55	34.26	13.81	37.96	400	123	P	H
		5617.75	48.32	-19.88	68.2	39.49	33.2	13.53	37.9	131	105	P	V
		5698.75	47.86	-56.42	104.28	38.62	33.59	13.56	37.91	131	105	P	V
		5720	49.65	-61.15	110.8	40.28	33.72	13.57	37.92	131	105	P	V
		5723.75	50.92	-68.43	119.35	41.53	33.74	13.57	37.92	131	105	P	V
	*	5785	106.68	-	-	97.05	33.97	13.59	37.93	131	105	P	V
	*	5785	99.01	-	-	89.38	33.97	13.59	37.93	131	105	A	V
		5854.25	50.61	-61.9	112.51	40.76	34.11	13.69	37.95	131	105	P	V
		5856.5	49.9	-60.48	110.38	40.05	34.11	13.69	37.95	131	105	P	V
		5891.25	49.55	-43.59	93.14	39.58	34.18	13.75	37.96	131	105	P	V
		5936.25	48.12	-20.08	68.2	38	34.27	13.82	37.97	131	105	P	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	109.06	-	-	99.31	34.05	13.64	37.94	176	142	P	H
	*	5825	101.25	-	-	91.5	34.05	13.64	37.94	176	142	A	H
		5850.78	73.34	-47.08	120.42	63.51	34.1	13.68	37.95	176	142	P	H
		5855.7	70.29	-40.31	110.6	60.44	34.11	13.69	37.95	176	142	P	H
		5874.97	59.66	-45.55	105.21	49.74	34.15	13.72	37.95	176	142	P	H
		5939.545	49.2	-19	68.2	39.07	34.28	13.82	37.97	176	142	P	H
	*	5825	106.94	-	-	97.19	34.05	13.64	37.94	297	78	P	V
	*	5825	99.31	-	-	89.56	34.05	13.64	37.94	297	78	A	V
		5849.96	71.6	-62.6	134.2	61.77	34.1	13.68	37.95	297	78	P	V
		5855.085	65.62	-45.16	110.78	55.77	34.11	13.69	37.95	297	78	P	V
		5875.38	54.82	-50.1	104.92	44.9	34.15	13.72	37.95	297	78	P	V
		5947.54	48.26	-19.94	68.2	38.09	34.3	13.84	37.97	297	78	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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

WIFI Ant. 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	49.64	-24.36	74	33.42	38.92	19.94	42.64	108	38	P	H
		11490	41.73	-12.27	54	25.51	38.92	19.94	42.64	108	38	A	H
		12225	51.63	-22.37	74	35.07	39.17	20.54	43.15	-	-	P	H
		12225	40.93	-13.07	54	24.37	39.17	20.54	43.15	-	-	A	H
		13391	52.59	-21.41	74	34.21	39.98	21.57	43.17	-	-	P	H
		13391	42.73	-11.27	54	24.35	39.98	21.57	43.17	-	-	A	H
		17235	50.98	-17.22	68.2	33.49	38.03	24.2	44.74	-	-	P	H
		17945	55.02	-18.98	74	34.39	41.41	24.65	45.43	-	-	P	H
		17945	46.01	-7.99	54	25.38	41.41	24.65	45.43	-	-	A	H
		11490	49.92	-24.08	74	33.7	38.92	19.94	42.64	137	93	P	V
		11490	41.58	-12.42	54	25.36	38.92	19.94	42.64	137	93	A	V
		12621	52.26	-21.74	74	35.26	39.34	20.91	43.25	-	-	P	V
		12621	42.22	-11.78	54	25.22	39.34	20.91	43.25	-	-	A	V
		13292	52.36	-21.64	74	34.22	39.79	21.5	43.15	-	-	P	V
		13292	42.35	-11.65	54	24.21	39.79	21.5	43.15	-	-	A	V
		17235	50.5	-17.7	68.2	33.01	38.03	24.2	44.74	-	-	P	V
		17989	54.56	-19.44	74	33.63	41.72	24.67	45.46	-	-	P	V
		17989	46.27	-7.73	54	25.34	41.72	24.67	45.46	-	-	A	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	50.08	-23.92	74	34.03	38.76	20	42.71	128	48	P	H
		11570	41.27	-12.73	54	25.22	38.76	20	42.71	128	48	A	H
		12522	52.23	-21.77	74	35.48	39.22	20.82	43.29	-	-	P	H
		12522	41.09	-12.91	54	24.34	39.22	20.82	43.29	-	-	A	H
		13347	53.39	-20.61	74	35.11	39.89	21.55	43.16	-	-	P	H
		13347	42.49	-11.51	54	24.21	39.89	21.55	43.16	-	-	A	H
		17355	51.77	-16.43	68.2	34.2	38.21	24.27	44.91	-	-	P	H
		17956	55.72	-18.28	74	35.02	41.49	24.65	45.44	-	-	P	H
		17956	46.02	-7.98	54	25.32	41.49	24.65	45.44	-	-	A	H
		11570	50.32	-23.68	74	34.27	38.76	20	42.71	211	148	P	V
		11570	41.46	-12.54	54	25.41	38.76	20	42.71	211	148	A	V
		12456	51.88	-22.12	74	35.29	39.11	20.76	43.28	-	-	P	V
		12456	40.82	-13.18	54	24.23	39.11	20.76	43.28	-	-	A	V
		13391	52.51	-21.49	74	34.13	39.98	21.57	43.17	-	-	P	V
		13391	42.6	-11.4	54	24.22	39.98	21.57	43.17	-	-	A	V
		17355	52.38	-15.82	68.2	34.81	38.21	24.27	44.91	-	-	P	V
		17989	55.84	-18.16	74	34.91	41.72	24.67	45.46	-	-	P	V
		17989	46.44	-7.56	54	25.51	41.72	24.67	45.46	-	-	A	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	49.45	-24.55	74	33.51	38.65	20.06	42.77	300	268	P	H
		11650	41.21	-12.79	54	25.27	38.65	20.06	42.77	300	268	A	H
		12698	51.92	-22.08	74	34.65	39.5	20.99	43.22	-	-	P	H
		12698	41.59	-12.41	54	24.32	39.5	20.99	43.22	-	-	A	H
		13255	52.41	-21.59	74	34.33	39.76	21.47	43.15	-	-	P	H
		13255	42.3	-11.7	54	24.22	39.76	21.47	43.15	-	-	A	H
		17475	50.76	-17.44	68.2	33.11	38.38	24.35	45.08	-	-	P	H
		17923	55.43	-18.57	74	34.95	41.26	24.63	45.41	-	-	P	H
		17923	45.95	-8.05	54	25.47	41.26	24.63	45.41	-	-	A	H
		11650	49.99	-24.01	74	34.05	38.65	20.06	42.77	100	47	P	V
		11650	41.32	-12.68	54	25.38	38.65	20.06	42.77	100	47	A	V
		12368	52.34	-21.66	74	35.87	39.03	20.67	43.23	-	-	P	V
		12368	40.71	-13.29	54	24.24	39.03	20.67	43.23	-	-	A	V
		13355	53.02	-20.98	74	34.72	39.91	21.55	43.16	-	-	P	V
		13355	42.42	-11.58	54	24.12	39.91	21.55	43.16	-	-	A	V
		17475	51.3	-16.9	68.2	33.65	38.38	24.35	45.08	-	-	P	V
		17978	55.18	-18.82	74	34.31	41.65	24.67	45.45	-	-	P	V
		17978	46.08	-7.92	54	25.21	41.65	24.67	45.45	-	-	A	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 HT20 (Band Edge @ 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)
802.11n HT20 CH 149 5745MHz		5639.825	47.83	-20.37	68.2	38.99	33.2	13.54	37.9	199	143	P	H
		5699	62.84	-41.62	104.46	53.6	33.59	13.56	37.91	199	143	P	H
		5719.7	74.87	-35.85	110.72	65.5	33.72	13.57	37.92	199	143	P	H
		5725.1	78.35	-55.85	134.2	68.95	33.75	13.57	37.92	199	143	P	H
	*	5745	108.33	-	-	98.8	33.87	13.58	37.92	199	143	P	H
	*	5745	100.53	-	-	91	33.87	13.58	37.92	199	143	A	H
		5620.475	48.12	-20.08	68.2	39.29	33.2	13.53	37.9	322	80	P	V
		5695.85	57.15	-44.99	102.14	47.93	33.57	13.56	37.91	322	80	P	V
		5718.35	74.19	-36.15	110.34	64.83	33.71	13.57	37.92	322	80	P	V
		5720.15	77.08	-34.06	111.14	67.71	33.72	13.57	37.92	322	80	P	V
	*	5745	107.66	-	-	98.13	33.87	13.58	37.92	322	80	P	V
	*	5745	99.23	-	-	89.7	33.87	13.58	37.92	322	80	A	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)
802.11n HT20 CH 157 5785MHz		5617	49.23	-18.97	68.2	40.4	33.2	13.53	37.9	146	144	P	H
		5655	48.62	-23.29	71.91	39.74	33.24	13.54	37.9	146	144	P	H
		5718.75	52.23	-58.22	110.45	42.87	33.71	13.57	37.92	146	144	P	H
		5724	54.1	-65.82	119.92	44.71	33.74	13.57	37.92	146	144	P	H
	*	5785	108.61	-	-	98.98	33.97	13.59	37.93	146	144	P	H
	*	5785	100.75	-	-	91.12	33.97	13.59	37.93	146	144	A	H
		5851.75	51.93	-66.28	118.21	42.1	34.1	13.68	37.95	146	144	P	H
		5855.25	51.65	-59.08	110.73	41.8	34.11	13.69	37.95	146	144	P	H
		5876.5	50.01	-54.08	104.09	40.09	34.15	13.72	37.95	146	144	P	H
		5949.5	49.16	-19.04	68.2	38.99	34.3	13.84	37.97	146	144	P	H
		5639.75	46.97	-21.23	68.2	38.13	33.2	13.54	37.9	100	240	P	V
		5688.25	46.67	-49.86	96.53	37.51	33.51	13.56	37.91	100	240	P	V
		5715.5	50.11	-59.43	109.54	40.77	33.69	13.57	37.92	100	240	P	V
		5720.75	49.24	-63.27	112.51	39.87	33.72	13.57	37.92	100	240	P	V
	*	5785	105.5	-	-	95.87	33.97	13.59	37.93	100	240	P	V
	*	5785	97.61	-	-	87.98	33.97	13.59	37.93	100	240	A	V
		5854	48.97	-64.11	113.08	39.12	34.11	13.69	37.95	100	240	P	V
		5862.25	48.01	-60.76	108.77	38.14	34.12	13.7	37.95	100	240	P	V
		5884.5	48.17	-49.98	98.15	38.21	34.17	13.74	37.95	100	240	P	V
		5945.25	46.98	-21.22	68.2	36.83	34.29	13.83	37.97	100	240	P	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)
802.11n HT20 CH 165 5825MHz	*	5825	108.33	-	-	98.58	34.05	13.64	37.94	174	142	P	H
	*	5825	100.58	-	-	90.83	34.05	13.64	37.94	174	142	A	H
		5851	72.65	-47.27	119.92	62.82	34.1	13.68	37.95	174	142	P	H
		5857.2	68.55	-41.63	110.18	58.7	34.11	13.69	37.95	174	142	P	H
		5875.4	58.61	-46.29	104.9	48.69	34.15	13.72	37.95	174	142	P	H
		5938.2	48.76	-19.44	68.2	38.63	34.28	13.82	37.97	174	142	P	H
	*	5825	105.13	-	-	95.38	34.05	13.64	37.94	100	253	P	V
	*	5825	97.57	-	-	87.82	34.05	13.64	37.94	100	253	A	V
		5851.8	70.49	-47.61	118.1	60.66	34.1	13.68	37.95	100	253	P	V
		5855.6	66.05	-44.58	110.63	56.2	34.11	13.69	37.95	100	253	P	V
		5880.6	51.8	-49.24	101.04	41.86	34.16	13.73	37.95	100	253	P	V
		5929.6	46.78	-21.42	68.2	36.67	34.26	13.81	37.96	100	253	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 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	50.25	-23.75	74	34.03	38.92	19.94	42.64	125	328	P	H
		11490	41.74	-12.26	54	25.52	38.92	19.94	42.64	125	328	A	H
		12665	51.69	-22.31	74	34.53	39.43	20.96	43.23	-	-	P	H
		12665	41.27	-12.73	54	24.11	39.43	20.96	43.23	-	-	A	H
		13292	52.23	-21.77	74	34.09	39.79	21.5	43.15	-	-	P	H
		13292	42.32	-11.68	54	24.18	39.79	21.5	43.15	-	-	A	H
		17235	50.25	-17.95	68.2	32.76	38.03	24.2	44.74	-	-	P	H
		18000	55.29	-18.71	74	34.28	41.8	24.68	45.47	-	-	P	H
		18000	46.13	-7.87	54	25.12	41.8	24.68	45.47	-	-	A	H
		11490	50.25	-23.75	74	34.03	38.92	19.94	42.64	125	328	P	H
		11490	49.61	-24.39	74	33.39	38.92	19.94	42.64	117	25	P	V
		11490	41.64	-12.36	54	25.42	38.92	19.94	42.64	117	25	A	V
		12632	52.49	-21.51	74	35.45	39.36	20.93	43.25	-	-	P	V
		12632	41.19	-12.81	54	24.15	39.36	20.93	43.25	-	-	A	V
		13369	52.71	-21.29	74	34.37	39.94	21.57	43.17	-	-	P	V
		13369	42.59	-11.41	54	24.25	39.94	21.57	43.17	-	-	A	V
		17235	51.12	-17.08	68.2	33.63	38.03	24.2	44.74	-	-	P	V
		17934	54.68	-19.32	74	34.12	41.34	24.64	45.42	-	-	P	V
		17934	45.76	-8.24	54	25.2	41.34	24.64	45.42	-	-	A	V
		11490	49.61	-24.39	74	33.39	38.92	19.94	42.64	117	25	P	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)
802.11n HT20 CH 157 5785MHz		11570	50.85	-23.15	74	34.8	38.76	20	42.71	125	273	P	H
		11570	41.42	-12.58	54	25.37	38.76	20	42.71	125	273	A	H
		12687	51.65	-22.35	74	34.43	39.47	20.98	43.23	-	-	P	H
		12687	41.33	-12.67	54	24.11	39.47	20.98	43.23	-	-	A	H
		13358	52.87	-21.13	74	34.55	39.92	21.56	43.16	-	-	P	H
		13358	42.46	-11.54	54	24.14	39.92	21.56	43.16	-	-	A	H
		17355	51.98	-16.22	68.2	34.41	38.21	24.27	44.91	-	-	P	H
		17967	55.21	-18.79	74	34.43	41.57	24.66	45.45	-	-	P	H
		17967	46.01	-7.99	54	25.23	41.57	24.66	45.45	-	-	A	H
		11570	50.83	-23.17	74	34.78	38.76	20	42.71	100	177	P	V
		11570	41.39	-12.61	54	25.34	38.76	20	42.71	100	177	A	V
		12291	52.82	-21.18	74	36.29	39.11	20.61	43.19	-	-	P	V
		12291	40.91	-13.09	54	24.38	39.11	20.61	43.19	-	-	A	V
		13358	52.55	-21.45	74	34.23	39.92	21.56	43.16	-	-	P	V
		13358	42.62	-11.38	54	24.3	39.92	21.56	43.16	-	-	A	V
		17355	51.71	-16.49	68.2	34.14	38.21	24.27	44.91	-	-	P	V
		17934	54.12	-19.88	74	33.56	41.34	24.64	45.42	-	-	P	V
		17934	45.66	-8.34	54	25.1	41.34	24.64	45.42	-	-	A	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)
802.11n HT20 CH 165 5825MHz		10817	52.15	-21.85	74	35.42	39.05	19.37	41.69	-	-	P	H
		10817	40.96	-13.04	54	24.23	39.05	19.37	41.69	-	-	A	H
		11650	49.86	-24.14	74	33.92	38.65	20.06	42.77	100	247	P	H
		11650	41.22	-12.78	54	25.28	38.65	20.06	42.77	100	247	A	H
		13388	52.51	-21.49	74	34.13	39.98	21.57	43.17	-	-	P	H
		13388	42.53	-11.47	54	24.15	39.98	21.57	43.17	-	-	A	H
		17475	50.08	-18.12	68.2	32.43	38.38	24.35	45.08	-	-	P	H
		17934	54.6	-19.4	74	34.04	41.34	24.64	45.42	-	-	P	H
		17934	45.83	-8.17	54	25.27	41.34	24.64	45.42	-	-	A	H
		10949	51.54	-22.46	74	34.96	38.75	19.5	41.67	-	-	P	V
		10949	40.89	-13.11	54	24.31	38.75	19.5	41.67	-	-	A	V
		11650	49.58	-24.42	74	33.64	38.65	20.06	42.77	183	72	P	V
		11650	41.4	-12.6	54	25.46	38.65	20.06	42.77	183	72	A	V
		13391	53.61	-20.39	74	35.23	39.98	21.57	43.17	-	-	P	V
		13391	42.51	-11.49	54	24.13	39.98	21.57	43.17	-	-	A	V
		17475	50.59	-17.61	68.2	32.94	38.38	24.35	45.08	-	-	P	V
		17978	54.76	-19.24	74	33.89	41.65	24.67	45.45	-	-	P	V
		17978	46.08	-7.92	54	25.21	41.65	24.67	45.45	-	-	A	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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 SHF		22980	50.55	-23.45	74	48.8	38.87	17.19	54.31	150	238	P	H
		22980	50.04	-3.96	54	48.29	38.87	17.19	54.31	150	238	A	H
		39428	52.79	-21.21	74	38.36	44.64	26.15	56.36	-	-	P	H
		39428	42.94	-11.06	54	28.51	44.64	26.15	56.36	-	-	A	H
		22980	45.48	-28.52	74	43.73	38.87	17.19	54.31	-	-	P	V
		39428	52.92	-21.08	74	38.49	44.64	26.15	56.36	-	-	P	V
		39428	42.24	-11.76	54	27.81	44.64	26.15	56.36	-	-	A	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 802.11n 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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 LF		66.86	28.37	-11.63	40	50.36	11.91	1.68	35.58	-	-	P	H
		124.09	26.46	-17.04	43.5	42.32	17.42	2.24	35.52	-	-	P	H
		213.33	31.62	-11.88	43.5	49.11	15.02	2.85	35.36	-	-	P	H
		320.03	25.89	-20.11	46	38.02	19.55	3.42	35.1	-	-	P	H
		729.37	32.53	-13.47	46	34	27.26	5.09	33.82	-	-	P	H
		876.81	34.2	-11.8	46	32.91	28.74	5.77	33.22	-	-	P	H
		51.34	30.1	-9.9	40	50.4	13.82	1.52	35.64	-	-	P	V
		121.18	28.83	-14.67	43.5	44.7	17.44	2.21	35.52	-	-	P	V
		213.33	33.45	-10.05	43.5	50.94	15.02	2.85	35.36	-	-	P	V
		411.21	26.88	-19.12	46	35.48	22.34	3.88	34.82	-	-	P	V
		572.23	29.09	-16.91	46	33.25	25.7	4.56	34.42	-	-	P	V
		735.19	31.64	-14.36	46	32.86	27.46	5.12	33.8	-	-	P	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	Peak or Average
H/V	Horizontal or Vertical



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
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. Margin Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 74(dBμV/m)
 = -18.55(dB)

Peak measured complies with the limit line, so test result is “PASS”.

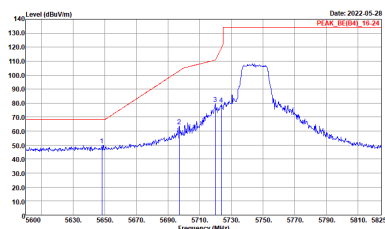
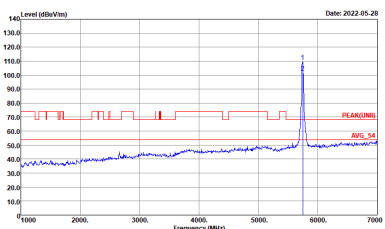


Appendix D. Radiated Spurious Emission Plots

Test Engineer :	JC Liang	Temperature :	18~20°C
		Relative Humidity :	60~68%

Band 4 - 5725~5850MHz

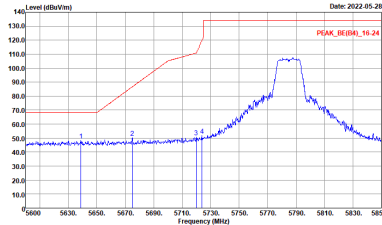
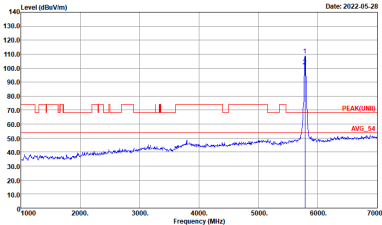
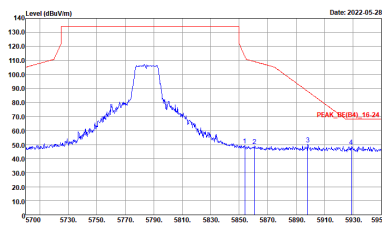
WIFI 802.11a (Band Edge @ 3m)

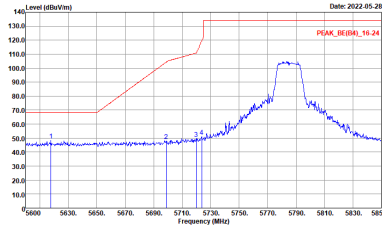
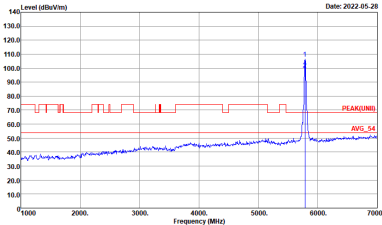
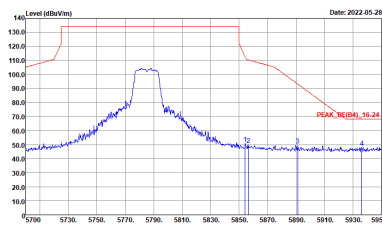
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(14)_16-24 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto



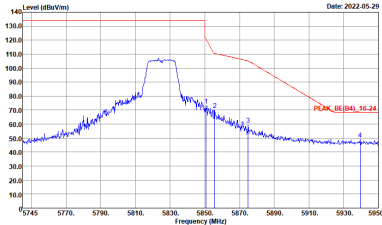
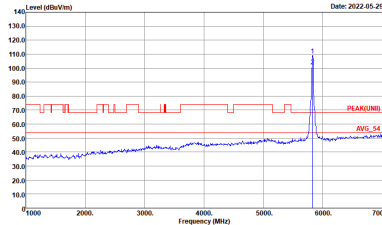
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
2	Vertical	Fundamental
Peak	Site : 03CH20-HY Condition : PEAK_8E(84)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH20-HY Condition : PEAK_8E(84)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



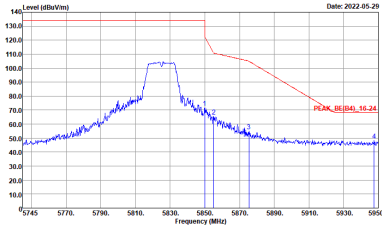
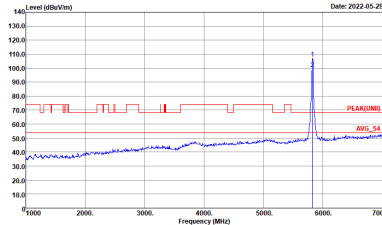
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT)_16-24 3m 91200_02294_1110622 HORIZONTAL : 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-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_02294_1110622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 9120D_02294_1110622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_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(B4)_16-24 3m 9120D_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 9120D_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



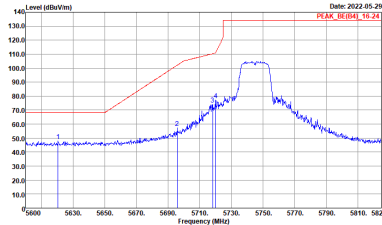
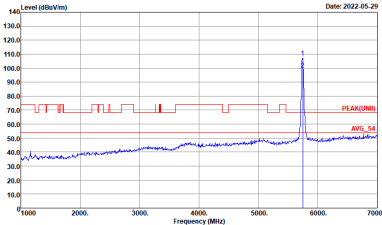
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



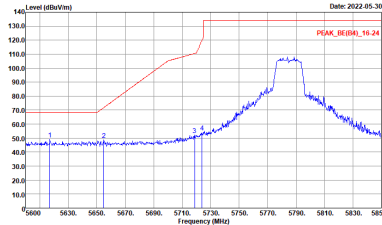
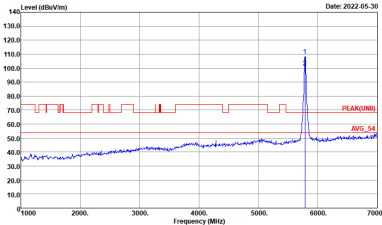
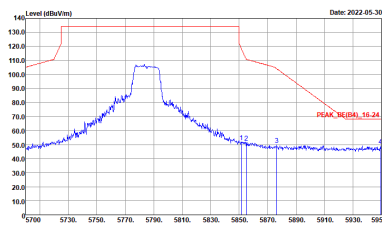
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Horizontal	Fundamental
Peak	Site : 03CH20-HY Condition : PEAK(REDA) 16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_8E(84)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK_8E(84)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

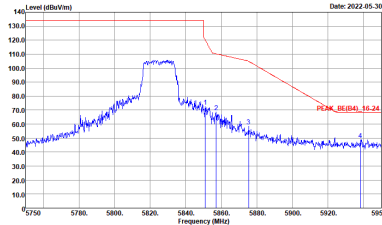
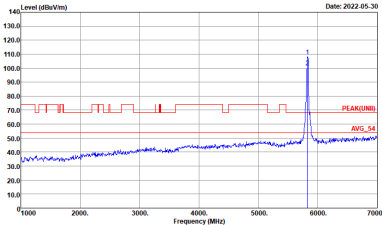


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 91200_02294_1110622 HORIZONTAL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

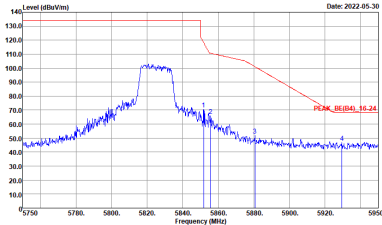
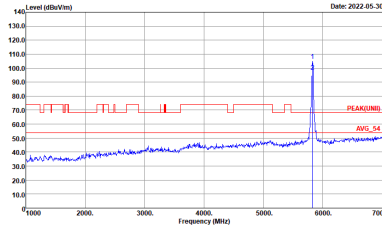


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Vertical	Fundamental
Peak	Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 91200_02294_1110622 VERTICAL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



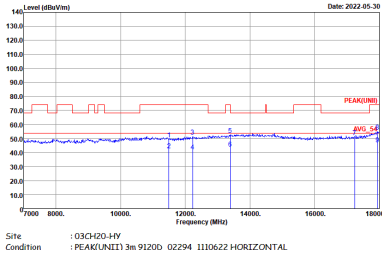
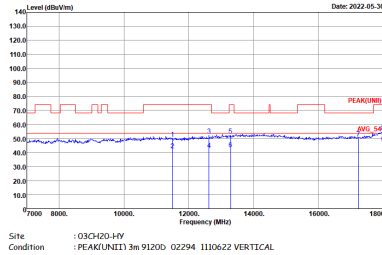
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH20-HV Condition : PEAK_BE(B4)_16-24 3m 9120D_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HV Condition : PEAK(UNIT) 3m 9120D_02294_1110622 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



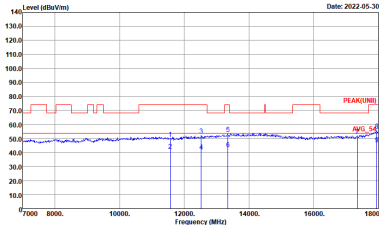
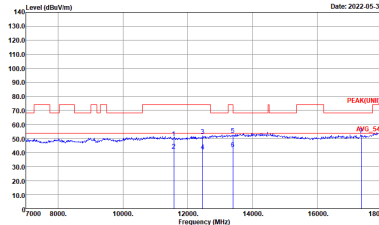
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE(B4)_16-24 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 9120D_02294_1110622 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



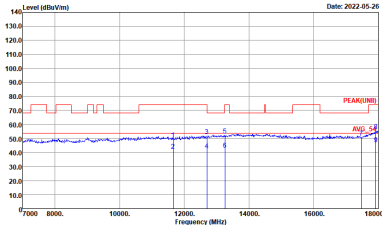
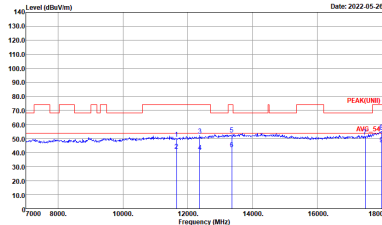
Band 4 - 5725~5850MHz
WIFI 802.11a (Harmonic @ 3m)

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	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 VERTICAL



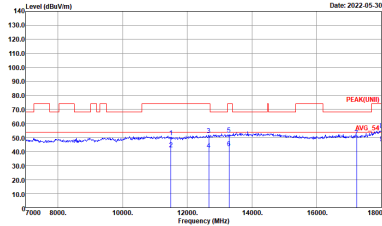
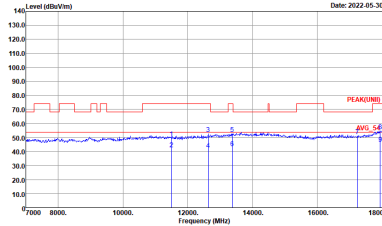
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 VERTICAL



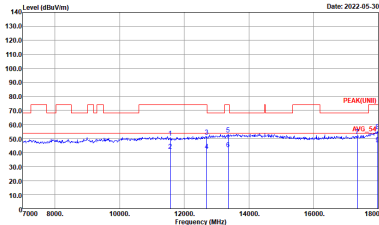
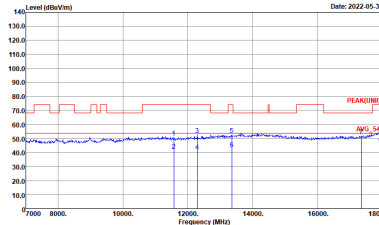
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UM)1.3m 91200 02294 1110622 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK(UM)1.3m 91200 02294 1110622 VERTICAL



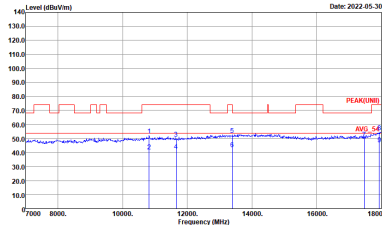
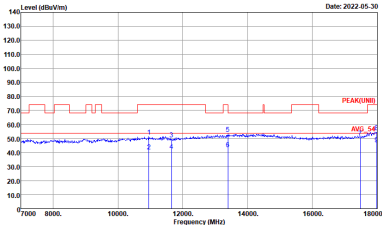
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 VERTICAL



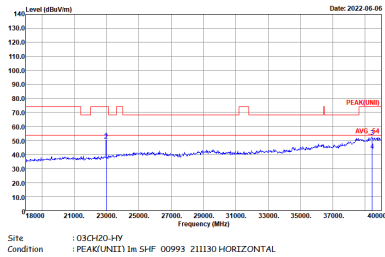
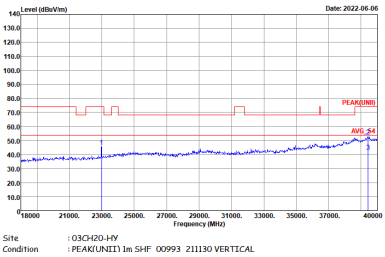
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK/UNIT1 3m 91200 02294 1110622 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK/UNIT1 3m 91200 02294 1110622 VERTICAL



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK(UNIT) 3m 91200 02294 1110622 VERTICAL

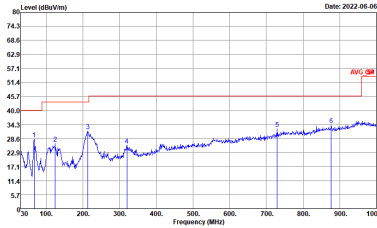
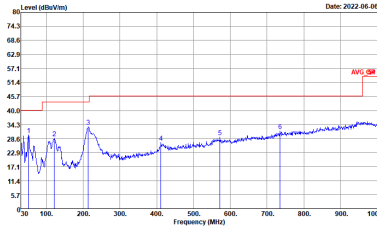


Emission above 18GHz
5GHz WIFI 802.11n HT20 (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11n HT20 SHF	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : :PEAK(UNIT) 1m SHF 00993 211130 HORIZONTAL	 Site : 03CH20-HY Condition : :PEAK(UNIT) 1m SHF 00993 211130 VERTICAL



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

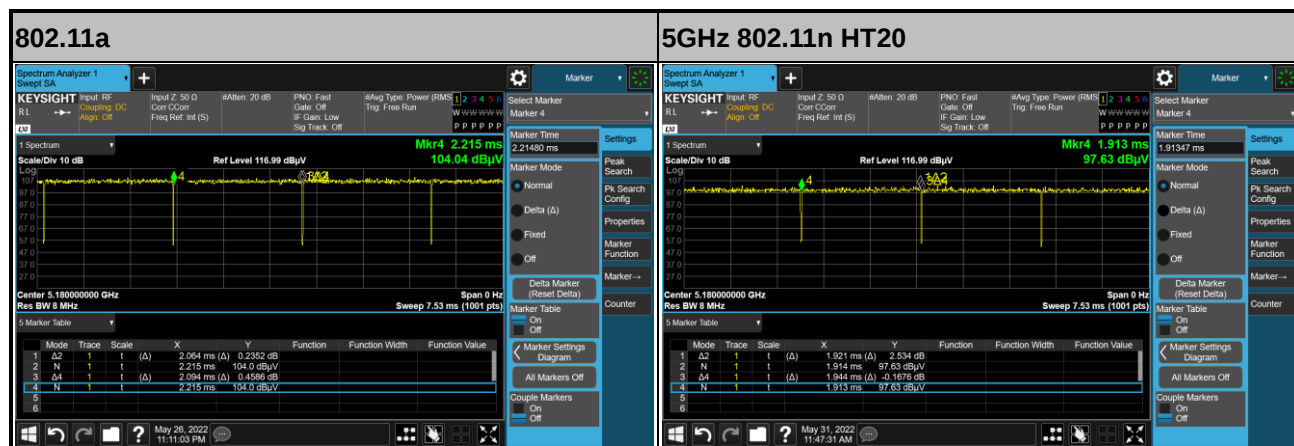
WIFI	5GHz WIFI	
ANT	802.11n HT20 LF	
2	Horizontal	Vertical
QP / Peak	 Site : 03CH20-HY Condition : QP 3m LF 55606408 1101017 HORIZONTAL	 Site : 03CH20-HY Condition : QP 3m LF 55606408 1101017 VERTICAL



Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	98.57	-	-	10Hz
5GHz 802.11n HT20	98.82	-	-	10Hz

<Ant. 1>



—THE END—