FCC RADIO TEST REPORT

FCC ID	:	**2AEIM-WL18DBMOD**
Equipment	:	**WiFi Module**
Brand Name	:	**Tesla, Inc.**
Model Name	:	**TSLA-WL18DBMOD**
Applicant	:	**Tesla, Inc.** **3500 DEER CREEK ROAD PALO ALTO, CA 94304**
Manufacturer	:	**Texas Instruments Incorporated** **12500 TI Boulevard, M/S 8751, Dallas, TX 75243, USA**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Nov. 30, 2022 and testing was performed from Dec. 02, 2022 to Dec. 27, 2022. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International (USA) Inc., the test report shall not be reproduced except in full.

Lance Tang

Approved by: Lance Tang

Sporton International (USA) Inc.
1175 Montague Expressway, Milpitas, CA 95035

Table of Contents

History of this test report

Report No.	Version	Description	Issue Date
FR221118001B	01	Initial issue of report	Jan. 09, 2023

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(a)	Maximum Conducted Output Power	Pass	-
3.2	15.407(b)	Unwanted Emissions	Pass	2.86 dB under the limit at 350.100 MHz
3.3	15.203	Antenna Requirement	Pass	-

Note:

1. The report contains power measurement and radiated spurious emission test results to validate if the conditions of Class II Permissive Change are complied with, the rest of the test items not covered in this test report are conditionally leveraged from the existing modular approval (FCC ID : 2AEIM-WL18DBMOD).
2. Bluetooth function has been disabled by software configuration, the change will also be reflected in the Permissive Change Request Letter.
3. The original module supports 2x2 MIMO but in this application for Permissive Change, it has been configured to 1Tx from only the Main Port through software configuration.

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. 2. Please refer to the section ” Uncertainty of Evaluation ” for measurement uncertainty.
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.

1 General Description

1.1 Product Feature of Equipment Under Test

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

Product Feature	
Antenna Type	WLAN: PCB Antenna

Antenna information		
5150 MHz ~ 5250 MHz	Peak Gain (dBi)	4.52
5250 MHz ~ 5350 MHz	Peak Gain (dBi)	4.70
5470 MHz ~ 5725 MHz	Peak Gain (dBi)	3.42

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 (USA) Inc.
Test Site Location	1175 Montague Expressway, Milpitas, CA 95035 TEL : 408 9043300
Test Site No.	**Sporton Site No.**
	TH01-CA, 03CH01-CA, 03CH02-CA

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

FCC Designation No.: US1250

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.
- ANSI C63.10-2013

Remark:

All the test items were validated and recorded in accordance with the standards without any modification during the testing.

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: 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 only the worst case emissions were reported in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42#	5210		

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

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

2.2 Test Mode

The final test modes include the worst data rates for each modulation shown in the table below.

Single Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

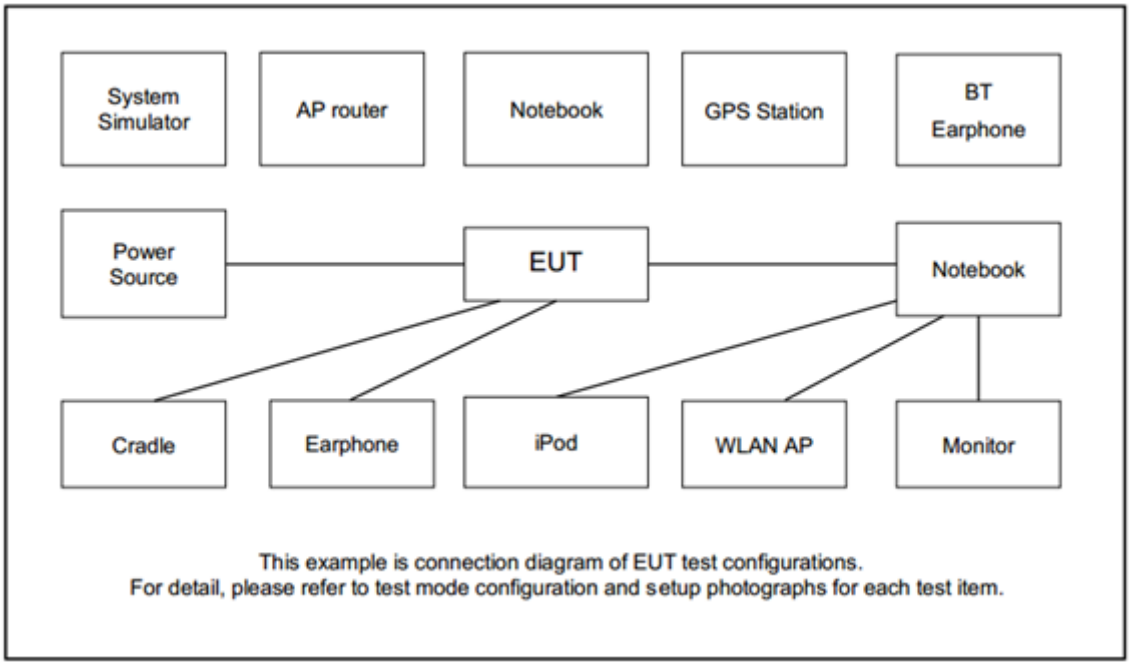
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

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.	Notebook	Acer	Altos PS548-G1	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	YUASA	YUASA	YTX9-BS	N/A	N/A	12V 8Ah

2.5 EUT Operation Test Setup

The RF test items, utility “Teraterm v4.106” was installed in Host which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For the 5.15–5.25 GHz bands:

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

For the 5.25–5.725 GHz bands:

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

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

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

3.1.2 Measuring Instruments

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

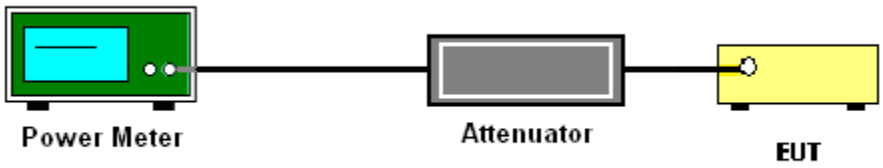
3.1.3 Test Procedures

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

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

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

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

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

3.2.1 Limit of Unwanted Emissions

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

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

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

(2) Unwanted spurious emissions 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.

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

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

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

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of −27 dBm/MHz.
(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.2.2 Measuring Instruments

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

3.2.3 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 ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

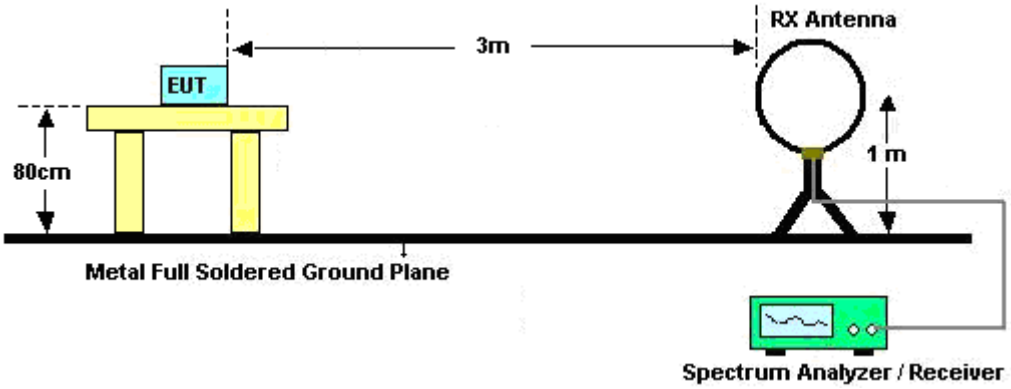
(3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 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.

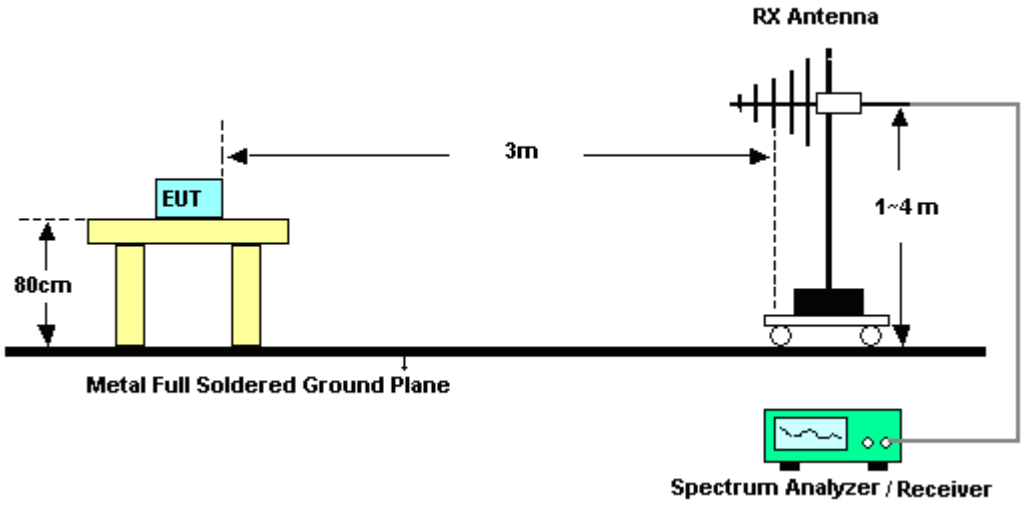
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna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

3.2.4 Test Setup

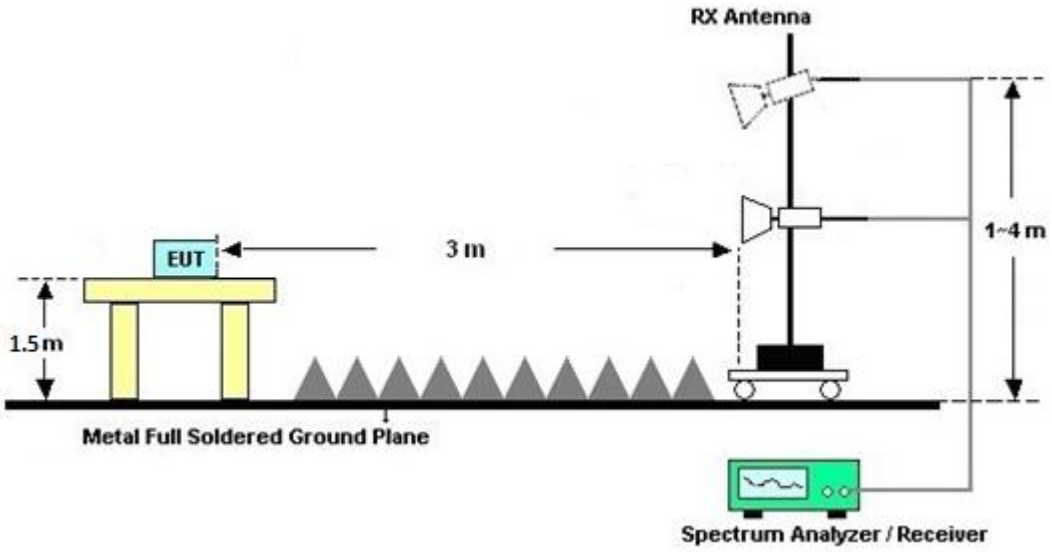
For radiated emissions below 30MHz



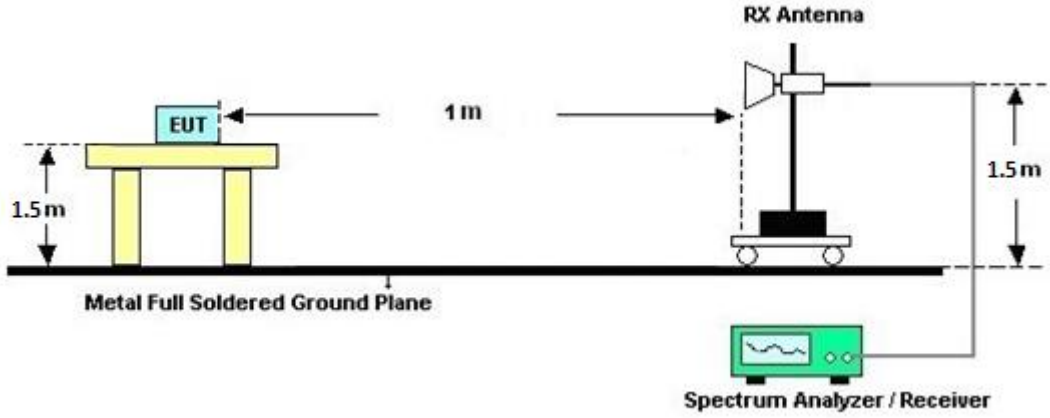
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.2.5 Test Results of Radiated Spurious 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.

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.3 Antenna Requirements

3.3.1 Standard Applicable

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	45141354	N/A	Jul. 27, 2022	Dec. 02, 2022~ Dec. 08, 2022	Jul. 26, 2023	Conducted (TH01-CA)
Power Sensor	DARE!!	RPR3006W	RPR6W-191024	N/A	May 10, 2022	Dec. 02, 2022~ Dec. 08, 2022	May 09, 2023	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101545	10Hz-40GHz	May 31, 2022	Dec. 02, 2022~ Dec. 08, 2022	May 30, 2023	Conducted (TH01-CA)
Horn Antenna	SCHWARZBECK	BBHA 9120D	02113	1GHz~18GHz	Jun. 22, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jun. 21, 2023	Radiation (03CH02-CA)
Horn Antenna	SCHWARZBECK	BBHA 9170D	00842	18GHz~40GHz	Aug. 16, 2022	Dec. 02, 2022~ Dec. 27, 2022	Aug. 15, 2023	Radiation (03CH02-CA)
Preamplifier	Keysight	83017A	MY53270323	1GHz~26.5GHz	May 11, 2022	Dec. 02, 2022~ Dec. 27, 2022	May 10, 2023	Radiation (03CH02-CA)
Preamplifier	E-instrument	ERA-100M-18G-56-01-A70	EC1900251	1GHz~18GHz	May 10, 2022	Dec. 02, 2022~ Dec. 27, 2022	May 09, 2023	Radiation (03CH02-CA)
Preamplifier	EMEC	EMC18G40G	060726	18GHz-40GHz	Feb. 10, 2022	Dec. 02, 2022~ Dec. 27, 2022	Feb. 09, 2023	Radiation (03CH02-CA)
Spectrum Analyzer	Keysight	N9010A	MY57420221	10Hz~44GHz	Aug. 30, 2022	Dec. 02, 2022~ Dec. 27, 2022	Aug. 29, 2023	Radiation (03CH02-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	8024032/2, 802406/2, 802875/2	N/A	Jun. 22, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jun. 21, 2023	Radiation (03CH02-CA)
Filter	WOKEN	WFIL-H6750-18000F	WFIL-H6750-18000F	6.75Hz High Pass Filter	Sep. 01, 2022	Dec. 02, 2022~ Dec. 27, 2022	Aug. 31, 2023	Radiation (03CH02-CA)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN10	3GHz High Pass Filter	Jul. 22, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jul. 21, 2023	Radiation (03CH02-CA)
Hygrometer	TESEO	608-H1	45142602	N/A	Sep. 12, 2022	Dec. 02, 2022~ Dec. 27, 2022	Sep. 11, 2023	Radiation (03CH02-CA)
Controller	ChainTek	EM-1000	060876	NA	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH02-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH02-CA)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH02-CA)
Software	Audix	E3	N/A	N/A	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH02-CA)
Bilog Antenna	TESEQ	6111D	50392	30MHz~1GHz	Jul. 11, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jul. 10, 2023	Radiation (03CH01-CA)
Loop Antenna	R&S	HFH2-Z2E	100840	9kHz~30MHz	Jul. 05, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jul. 04, 2023	Radiation (03CH01-CA)
Preamplifier	SONOMA	310N	372241	9kHz~1GHz	May 09, 2022	Dec. 02, 2022~ Dec. 27, 2022	May 08, 2023	Radiation (03CH01-CA)
EMI Test Receiver	R&S	ESU26	100049	20Hz~26.5GHz	Jun. 01, 2022	Dec. 02, 2022~ Dec. 27, 2022	May 31, 2023	Radiation (03CH01-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	8015932/2, 8015762/2, 6015772/2	N/A	Aug. 08, 2022	Dec. 02, 2022~ Dec. 27, 2022	Aug. 07, 2023	Radiation (03CH01-CA)
Hygrometer	TESTO	608-H1	45141354	N/A	Jul. 27, 2022	Dec. 02, 2022~ Dec. 27, 2022	Jul. 26, 2023	Radiation (03CH01-CA)
Controller	Chaintek	EM-1000	060881	Control Turn Table & Antenna Mast	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH01-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH01-CA)
Test Software	Audix E3	E6.2009-8-24d	PK-002093	N/A	N/A	Dec. 02, 2022~ Dec. 27, 2022	N/A	Radiation (03CH01-CA)

5 Uncertainty of Evaluation

<03CH01-CA>

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.6 dB**

<03CH02-CA>

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.9 dB**

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

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

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Venkata Kondepudi	Temperature:	17.7 ~ 20.6	°C
Test Date:	2022/12/02 ~ 2022/12/08	Relative Humidity:	36.8 ~ 50.9	%

TEST RESULTS DATA
Average Power Table

FCC UNII-1 single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)			Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	36	5180	14.08	-		24.00	-	4.52	-		Pass
11a	6Mbps	1	44	5220	13.85	-		24.00	-	4.52	-		Pass
11a	6Mbps	1	48	5240	13.84	-		24.00	-	4.52	-		Pass
HT20	MCS0	1	36	5180	13.85	-		24.00	-	4.52	-		Pass
HT20	MCS0	1	44	5220	13.51	-		24.00	-	4.52	-		Pass
HT20	MCS0	1	48	5240	13.47	-		24.00	-	4.52	-		Pass
HT40	MCS0	1	38	5190	11.14	-		24.00	-	4.52	-		Pass
HT40	MCS0	1	46	5230	10.80	-		24.00	-	4.52	-		Pass

Report Number : FR221118001B

TEST RESULTS DATA
Average Power Table

FCC UNII-2aI single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	11.73	-		23.98	-	4.70	-	30	Pass
11a	6Mbps	1	60	5300	11.58	-		23.98	-	4.70	-	30	Pass
11a	6Mbps	1	64	5320	11.57	-		23.98	-	4.70	-	30	Pass
HT20	MCS0	1	52	5260	11.03	-		23.98	-	4.70	-	30	Pass
HT20	MCS0	1	60	5300	11.55	-		23.98	-	4.70	-	30	Pass
HT20	MCS0	1	64	5320	11.53	-		23.98	-	4.70	-	30	Pass
HT40	MCS0	1	54	5270	11.39	-		23.98	-	4.70	-	30	Pass
HT40	MCS0	1	62	5310	11.66	-		23.98	-	4.70	-	30	Pass

TEST RESULTS DATA
Average Power Table

FCC UNII-2c single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	13.38	-		23.98	-	3.42	-	30	Pass
11a	6Mbps	1	116	5580	17.33	-		23.98	-	3.42	-	30	Pass
11a	6Mbps	1	140	5700	11.10	-		23.98	-	3.42	-	30	Pass
HT20	MCS0	1	100	5500	13.45	-		23.98	-	3.42	-	30	Pass
HT20	MCS0	1	116	5580	17.20	-		23.98	-	3.42	-	30	Pass
HT20	MCS0	1	140	5700	11.28	-		23.98	-	3.42	-	30	Pass
HT40	MCS0	1	102	5510	11.38	-		23.98	-	3.42	-	30	Pass
HT40	MCS0	1	110	5550	10.98	-		23.98	-	3.42	-	30	Pass
HT40	MCS0	1	134	5670	10.35	-		23.98	-	3.42	-	30	Pass

Appendix B. Radiated Spurious Emission

Test Engineer :	Daniel Lee and Leo Liu	**Temperature :**	20~24°C
		Relative Humidity :	42~47%

Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	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 36 5180MHz		5144.04	56.52	-17.48	74	41.75	33.22	11.9	30.35	100	140	P	H
		5150	47.11	-6.89	54	32.34	33.22	11.9	30.35	100	140	A	H
	*	5180	106.94	-	-	92.16	33.24	11.9	30.36	100	140	P	H
	*	5180	100.42	-	-	85.64	33.24	11.9	30.36	100	140	A	H
		5131.04	54.1	-19.9	74	39.32	33.24	11.9	30.36	400	234	P	V
		5150	45.59	-8.41	54	30.82	33.22	11.9	30.35	400	234	A	V
	*	5180	97.82	-	-	83.04	33.24	11.9	30.36	400	234	P	V
	*	5180	91.33	-	-	76.55	33.24	11.9	30.36	400	234	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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 36 5180MHz		10360	47.4	-20.8	68.2	60.38	38.67	17.52	69.17	-	-	P	H
		15540	47.12	-26.88	74	55.93	37.87	21.62	68.3	-	-	P	H
		10360	52.36	-15.84	68.2	65.34	38.67	17.52	69.17	-	-	P	V
		15540	47.45	-26.55	74	56.26	37.87	21.62	68.3	-	-	P	V
802.11a CH 44 5220MHz		10440	47.28	-20.92	68.2	59.86	38.8	17.6	68.98	-	-	P	H
		15660	47.1	-26.9	74	56.23	37.68	21.68	68.49	-	-	P	H
		10440	50.95	-17.25	68.2	63.53	38.8	17.6	68.98	-	-	P	V
		15660	46.5	-27.5	74	55.63	37.68	21.68	68.49	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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 48 5240MHz		10480	46.98	-21.22	68.2	59.36	38.81	17.63	68.82	-	-	P	H
		15720	46.48	-27.52	74	55.99	37.55	21.7	68.76	-	-	P	H
		10480	49.62	-18.58	68.2	62	38.81	17.63	68.82	-	-	P	V
		15720	46.19	-27.81	74	55.7	37.55	21.7	68.76	-	-	P	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.												

Band 1 5150~5250MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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)
		5141.7	57.25	-16.75	74	42.47	33.23	11.9	30.35	100	127	P	H
		5149.76	47.81	-6.19	54	33.04	33.22	11.9	30.35	100	127	A	H
	*	5180	107.33	-	-	92.55	33.24	11.9	30.36	100	127	P	H
	*	5180	101.23	-	-	86.45	33.24	11.9	30.36	100	127	A	H
802.11n													
HT20													
CH 36		5146.9	55.29	-18.71	74	40.52	33.22	11.9	30.35	400	227	P	V
5180MHz		5150	46.22	-7.78	54	31.45	33.22	11.9	30.35	400	227	A	V
	*	5180	98.48	-	-	83.7	33.24	11.9	30.36	400	227	P	V
	*	5180	92.06	-	-	77.28	33.24	11.9	30.36	400	227	A	V

Remark	
	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.

Band 1 5150~5250MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10360	47.01	-21.19	68.2	59.99	38.67	17.52	69.17	-	-	P	H
		15540	46.83	-27.17	74	55.64	37.87	21.62	68.3	-	-	P	H
802.11n													
HT20													
CH 36		10360	51.02	-17.18	68.2	64	38.67	17.52	69.17	-	-	P	V
5180MHz		15540	47.44	-26.56	74	56.25	37.87	21.62	68.3	-	-	P	V
		10440	47.43	-20.77	68.2	60.01	38.8	17.6	68.98	-	-	P	H
		15660	46.8	-27.2	74	55.93	37.68	21.68	68.49	-	-	P	H
802.11n													
HT20													
CH 44		10440	48.9	-19.3	68.2	61.48	38.8	17.6	68.98	-	-	P	V
5220MHz		15660	47.08	-26.92	74	56.21	37.68	21.68	68.49	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10480	46.24	-21.96	68.2	58.62	38.81	17.63	68.82	-	-	P	H
		15720	46.42	-27.58	74	55.93	37.55	21.7	68.76	-	-	P	H
802.11n													
HT20													
CH 48		10480	48.8	-19.4	68.2	61.18	38.81	17.63	68.82	-	-	P	V
5240MHz		15720	47.54	-26.46	74	57.05	37.55	21.7	68.76	-	-	P	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.

Band 1 5150~5250MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 38 5190MHz		5149.5	56.94	-17.06	74	42.17	33.22	11.9	30.35	100	127	P	H
		5150	48.61	-5.39	54	33.84	33.22	11.9	30.35	100	127	A	H
	*	5190	97.93	-	-	83.15	33.24	11.9	30.36	100	127	P	H
	*	5190	93.2	-	-	78.42	33.24	11.9	30.36	100	127	A	H
		5453.28	52.94	-21.06	74	38.15	32.96	12.19	30.36	100	127	P	H
		5452.16	44.99	-9.01	54	30.2	32.96	12.19	30.36	100	127	A	H
		5143.52	56.16	-17.84	74	41.38	33.23	11.9	30.35	353	229	P	V
		5150	46.53	-7.47	54	31.76	33.22	11.9	30.35	353	229	A	V
	*	5190	89.5	-	-	74.72	33.24	11.9	30.36	353	229	P	V
	*	5190	84.13	-	-	69.35	33.24	11.9	30.36	353	229	A	V
		5390.84	52.8	-21.2	74	38.06	32.98	12.11	30.35	353	229	P	V
		5451.88	44.98	-9.02	54	30.19	32.96	12.19	30.36	353	229	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 1 5150~5250MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10380	45.61	-22.59	68.2	58.51	38.7	17.54	69.14	-	-	P	H
		15570	45.85	-28.15	74	54.63	37.82	21.63	68.23	-	-	P	H
802.11n													
HT40													
CH 38		10380	45.19	-23.01	68.2	58.09	38.7	17.54	69.14	-	-	P	V
5190MHz		15570	46.34	-27.66	74	55.12	37.82	21.63	68.23	-	-	P	V
		10460	46.21	-21.99	68.2	58.69	38.82	17.61	68.91	-	-	P	H
		15690	45.53	-28.47	74	54.9	37.6	21.69	68.66	-	-	P	H
802.11n													
HT40													
CH 46		10460	48	-20.2	68.2	60.48	38.82	17.61	68.91	-	-	P	V
5230MHz		15690	46.36	-27.64	74	55.73	37.6	21.69	68.66	-	-	P	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.												

Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 64 5320MHz	*	5320	105.95	-	-	91.24	33.03	12.03	30.35	100	125	P	H
	*	5320	99.52	-	-	84.81	33.03	12.03	30.35	100	125	A	H
		5399.84	55.78	-18.22	74	41.04	32.97	12.12	30.35	100	125	P	H
		5396.8	45.72	-8.28	54	30.98	32.97	12.12	30.35	100	125	A	H
	*	5320	97.75	-	-	83.04	33.03	12.03	30.35	400	335	P	V
	*	5320	91.19	-	-	76.48	33.03	12.03	30.35	400	335	A	V
		5433.12	54.2	-19.8	74	39.44	32.96	12.16	30.36	400	335	P	V
		5396.96	44.92	-9.08	54	30.18	32.97	12.12	30.35	400	335	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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 52 5260MHz		10520	46.85	-21.35	68.2	58.96	38.87	17.67	68.65	-	-	P	H
		15780	46.53	-27.47	74	56.11	37.45	21.72	68.75	-	-	P	H
		10520	47.87	-20.33	68.2	59.98	38.87	17.67	68.65	-	-	P	V
		15780	46.63	-27.37	74	56.21	37.45	21.72	68.75	-	-	P	V
802.11a CH 60 5300MHz		10600	45.82	-28.18	74	57.52	38.98	17.74	68.42	-	-	P	H
		15900	46.28	-27.72	74	55.29	37.52	21.78	68.31	-	-	P	H
		10600	47.51	-26.49	74	59.21	38.98	17.74	68.42	-	-	P	V
		15900	45.69	-28.31	74	54.7	37.52	21.78	68.31	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 64 5320MHz		10640	46.67	-27.33	74	58.33	38.95	17.78	68.39	-	-	P	H
		15960	46.31	-27.69	74	54.99	37.69	21.81	68.18	-	-	P	H
		10640	47.99	-26.01	74	59.65	38.95	17.78	68.39	-	-	P	V
		15960	46.76	-27.24	74	55.44	37.69	21.81	68.18	-	-	P	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.

Band 2 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
	*	5320	106.93	-	-	92.22	33.03	12.03	30.35	100	120	P	H
	*	5320	99.45	-	-	84.74	33.03	12.03	30.35	100	120	A	H
		5352.16	54.94	-19.06	74	40.2	33.03	12.07	30.36	100	120	P	H
		5399.36	45.83	-8.17	54	31.09	32.97	12.12	30.35	100	120	A	H
802.11n													
HT20													
CH 64	*	5320	98.17	-	-	83.46	33.03	12.03	30.35	400	334	P	V
5320MHz	*	5320	91.34	-	-	76.63	33.03	12.03	30.35	400	334	A	V
		5442.56	54.76	-19.24	74	39.98	32.96	12.18	30.36	400	334	P	V
		5399.04	44.72	-9.28	54	29.98	32.97	12.12	30.35	400	334	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 2 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10520	46.8	-21.4	68.2	58.91	38.87	17.67	68.65	-	-	P	H
		15780	46.69	-27.31	74	56.27	37.45	21.72	68.75	-	-	P	H
802.11n													
HT20													
CH 52		10520	46.24	-21.96	68.2	58.35	38.87	17.67	68.65	-	-	P	V
5260MHz		15780	46.81	-27.19	74	56.39	37.45	21.72	68.75	-	-	P	V
		10600	46.11	-27.89	74	57.81	38.98	17.74	68.42	-	-	P	H
		15900	45.77	-28.23	74	54.78	37.52	21.78	68.31	-	-	P	H
802.11n													
HT20													
CH 60		10600	47.44	-26.56	74	59.14	38.98	17.74	68.42	-	-	P	V
5300MHz		15900	45.8	-28.2	74	54.81	37.52	21.78	68.31	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10640	46.99	-27.01	74	58.65	38.95	17.78	68.39	-	-	P	H
		15960	46.42	-27.58	74	55.1	37.69	21.81	68.18	-	-	P	H
802.11n													
HT20													
CH 64		10640	46.76	-27.24	74	58.42	38.95	17.78	68.39	-	-	P	V
5320MHz		15960	46.33	-27.67	74	55.01	37.69	21.81	68.18	-	-	P	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.

Band 2 5250~5350MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (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 62 5310MHz		5129.54	54.34	-19.66	74	39.56	33.24	11.9	30.36	100	124	P	H
		5140.08	45.47	-8.53	54	30.69	33.23	11.9	30.35	100	124	A	H
	*	5310	101.73	-	-	87.02	33.03	12.02	30.34	100	124	P	H
	*	5310	94.42	-	-	79.71	33.03	12.02	30.34	100	124	A	H
		5351.04	58.75	-15.25	74	44.01	33.03	12.07	30.36	100	124	P	H
		5350.08	49.17	-4.83	54	34.43	33.03	12.07	30.36	100	124	A	H
		5025.5	53.97	-20.03	74	39.25	33.2	11.9	30.38	378	330	P	V
		5146.2	45.39	-8.61	54	30.62	33.22	11.9	30.35	378	330	A	V
	*	5310	92.69	-	-	77.98	33.03	12.02	30.34	378	330	P	V
	*	5310	86.17	-	-	71.46	33.03	12.02	30.34	378	330	A	V
		5350.32	54.36	-19.64	74	39.62	33.03	12.07	30.36	378	330	P	V
		5350.56	46.58	-7.42	54	31.84	33.03	12.07	30.36	378	330	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 2 5250~5350MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		10540	46.32	-21.88	68.2	58.27	38.94	17.69	68.58	-	-	P	H
		15810	46.55	-27.45	74	56.03	37.43	21.74	68.65	-	-	P	H
802.11n													
HT40													
CH 54		10540	48.83	-19.37	68.2	60.78	38.94	17.69	68.58	-	-	P	V
5270MHz		15810	46.48	-27.52	74	55.96	37.43	21.74	68.65	-	-	P	V
		10620	45.86	-28.14	74	57.54	38.96	17.76	68.4	-	-	P	H
		15930	45.46	-28.54	74	54.27	37.63	21.79	68.23	-	-	P	H
802.11n													
HT40													
CH 62		10620	46.08	-27.92	74	57.76	38.96	17.76	68.4	-	-	P	V
5310MHz		15930	46.58	-27.42	74	55.39	37.63	21.79	68.23	-	-	P	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.												

Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		5389.52	55.74	-18.26	74	41	32.98	12.11	30.35	100	122	P	H
		5470	61.71	-6.49	68.2	46.89	32.98	12.21	30.37	100	122	P	H
		5459.92	46.07	-7.93	54	31.26	32.97	12.2	30.36	100	122	A	H
	*	5500	108.86	-	-	93.97	33.02	12.25	30.38	100	122	P	H
	*	5500	102.28	-	-	87.39	33.02	12.25	30.38	100	122	A	H
		5456.72	54.75	-19.25	74	39.95	32.97	12.19	30.36	400	360	P	V
		5469.04	56.24	-11.96	68.2	41.42	32.98	12.21	30.37	400	360	P	V
		5459.92	45.03	-8.97	54	30.22	32.97	12.2	30.36	400	360	A	V
	*	5500	102.23	-	-	87.34	33.02	12.25	30.38	400	360	P	V
	*	5500	96.05	-	-	81.16	33.02	12.25	30.38	400	360	A	V
802.11a CH 140 5700MHz	*	5700	105.83	-	-	90.29	33.45	12.51	30.42	100	120	P	H
	*	5700	99.35	-	-	83.81	33.45	12.51	30.42	100	120	A	H
		5725.32	56.98	-11.22	68.2	41.24	33.62	12.54	30.42	100	120	P	H
	*	5700	96.22	-	-	80.68	33.45	12.51	30.42	378	360	P	V
	*	5700	89.71	-	-	74.17	33.45	12.51	30.42	378	360	A	V
		5725.88	56.63	-11.57	68.2	40.88	33.63	12.54	30.42	378	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 3 - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		11000	46.47	-27.53	74	57.94	38.66	18.11	68.24	-	-	P	H
		16500	47.55	-20.65	68.2	55.14	38.15	22.37	68.11	-	-	P	H
		11000	46.5	-27.5	74	57.97	38.66	18.11	68.24	-	-	P	V
		16500	47.76	-20.44	68.2	55.35	38.15	22.37	68.11	-	-	P	V
802.11a CH 116 5580MHz		11160	46.78	-27.22	74	57.99	38.75	18.25	68.21	-	-	P	H
		16740	48.14	-20.06	68.2	56.27	37.71	22.64	68.48	-	-	P	H
		11160	47.71	-26.29	74	58.92	38.75	18.25	68.21	-	-	P	V
		16740	47.52	-20.68	68.2	55.65	37.71	22.64	68.48	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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 140 5700MHz		11400	47.96	-26.04	74	58.46	39.08	18.48	68.06	-	-	P	H
		17100	47.55	-20.65	68.2	55.91	37.35	23.03	68.74	-	-	P	H
		11400	47.85	-26.15	74	58.35	39.08	18.48	68.06	-	-	P	V
		17100	48.34	-19.86	68.2	56.7	37.35	23.03	68.74	-	-	P	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.												

Band 3 - 5470~5725MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		5450.48	55.67	-18.33	74	40.88	32.96	12.19	30.36	100	110	P	H
		5468.88	60.49	-7.71	68.2	45.67	32.98	12.21	30.37	100	110	P	H
		5459.44	45.62	-8.38	54	30.81	32.97	12.2	30.36	100	110	A	H
	*	5500	109.69	-	-	94.8	33.02	12.25	30.38	100	110	P	H
802.11n	*	5500	101.79	-	-	86.9	33.02	12.25	30.38	100	110	A	H
HT20													
CH 100		5441.68	54.25	-19.75	74	39.48	32.96	12.17	30.36	360	340	P	V
5500MHz		5469.84	58.49	-9.71	68.2	43.67	32.98	12.21	30.37	360	340	P	V
		5459.76	45.03	-8.97	54	30.22	32.97	12.2	30.36	360	340	A	V
	*	5500	106.29	-	-	91.4	33.02	12.25	30.38	360	340	P	V
	*	5500	99.06	-	-	84.17	33.02	12.25	30.38	360	340	A	V
	*	5700	106.02	-	-	90.48	33.45	12.51	30.42	100	123	P	H
	*	5700	98.9	-	-	83.36	33.45	12.51	30.42	100	123	A	H
		5728.6	59.48	-8.72	68.2	43.71	33.64	12.55	30.42	100	123	P	H
802.11n													
HT20													
CH 140	*	5700	103.94	-	-	88.4	33.45	12.51	30.42	366	339	P	V
5700MHz	*	5700	96.06	-	-	80.52	33.45	12.51	30.42	366	339	A	V
		5725.08	56.37	-11.83	68.2	40.63	33.62	12.54	30.42	366	339	P	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 3 - 5470~5725MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		11000	45.45	-28.55	74	56.92	38.66	18.11	68.24	-	-	P	H
		16500	46.88	-21.32	68.2	54.47	38.15	22.37	68.11	-	-	P	H
802.11n													
HT20													
CH 100		11000	46.3	-27.7	74	57.77	38.66	18.11	68.24	-	-	P	V
5500MHz		16500	47.02	-21.18	68.2	54.61	38.15	22.37	68.11	-	-	P	V
		11160	46.74	-27.26	74	57.95	38.75	18.25	68.21	-	-	P	H
		16740	46.26	-21.94	68.2	54.39	37.71	22.64	68.48	-	-	P	H
802.11n													
HT20													
CH 116		11160	47.26	-26.74	74	58.47	38.75	18.25	68.21	-	-	P	V
5580MHz		16740	46.87	-21.33	68.2	55	37.71	22.64	68.48	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		11400	47.91	-26.09	74	58.41	39.08	18.48	68.06	-	-	P	H
		17100	46.67	-21.53	68.2	55.03	37.35	23.03	68.74	-	-	P	H
802.11n													
HT20													
CH 140		11400	47.46	-26.54	74	57.96	39.08	18.48	68.06	-	-	P	V
5700MHz		17100	46.7	-21.5	68.2	55.06	37.35	23.03	68.74	-	-	P	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.

Band 3 - 5470~5725MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		5455.12	58.1	-15.9	74	43.3	32.97	12.19	30.36	100	93	P	H
		5467.6	63.46	-4.74	68.2	48.64	32.98	12.21	30.37	100	93	P	H
		5459.92	47.81	-6.19	54	33	32.97	12.2	30.36	100	93	A	H
	*	5510	103.29	-	-	88.37	33.04	12.26	30.38	100	93	P	H
	*	5510	95.68	-	-	80.76	33.04	12.26	30.38	100	93	A	H
		5747.99	53.94	-14.26	68.2	38.01	33.78	12.57	30.42	100	93	P	H
		5457.28	58.18	-15.82	74	43.38	32.97	12.19	30.36	400	353	P	V
		5466.88	59.65	-8.55	68.2	44.83	32.98	12.21	30.37	400	353	P	V
		5459.92	46.06	-7.94	54	31.25	32.97	12.2	30.36	400	353	A	V
	*	5510	99.07	-	-	84.15	33.04	12.26	30.38	400	353	P	V
	*	5510	91.62	-	-	76.7	33.04	12.26	30.38	400	353	A	V
		5727.83	54.18	-14.02	68.2	38.41	33.64	12.55	30.42	400	353	P	V
802.11n HT40 CH 134 5670MHz		5445.55	54.47	-19.53	74	39.69	32.96	12.18	30.36	100	126	P	H
		5464.8	53.25	-14.95	68.2	38.44	32.98	12.2	30.37	100	126	P	H
		5457.45	44.99	-9.01	54	30.19	32.97	12.19	30.36	100	126	A	H
	*	5670	104.55	-	-	89.16	33.33	12.47	30.41	100	126	P	H
	*	5670	97.33	-	-	81.94	33.33	12.47	30.41	100	126	A	H
		5725.625	59.14	-9.06	68.2	43.4	33.62	12.54	30.42	100	126	P	H
		5410.9	53.32	-20.68	74	38.57	32.97	12.13	30.35	379	340	P	V
		5469.35	52.86	-15.34	68.2	38.04	32.98	12.21	30.37	379	340	P	V
		5447.3	45.1	-8.9	54	30.32	32.96	12.18	30.36	379	340	A	V
	*	5670	101.29	-	-	85.9	33.33	12.47	30.41	379	340	P	V
	*	5670	94.32	-	-	78.93	33.33	12.47	30.41	379	340	A	V
		5742.775	54.34	-13.86	68.2	38.45	33.74	12.57	30.42	379	340	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 3 - 5470~5725MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		11020	45.59	-28.41	74	57.01	38.65	18.13	68.2	-	-	P	H
		16530	47.98	-20.22	68.2	55.67	38.2	22.41	68.3	-	-	P	H
802.11n													
HT40													
CH 102		11020	46.9	-27.1	74	58.32	38.65	18.13	68.2	-	-	P	V
5510MHz		16530	47.53	-20.67	68.2	55.22	38.2	22.41	68.3	-	-	P	V
		11100	45.28	-28.72	74	56.41	38.79	18.2	68.12	-	-	P	H
		16650	48.55	-19.65	68.2	56.66	38.07	22.54	68.72	-	-	P	H
802.11n													
HT40													
CH 110		11100	45.63	-28.37	74	56.76	38.79	18.2	68.12	-	-	P	V
5550MHz		16650	47.15	-21.05	68.2	55.26	38.07	22.54	68.72	-	-	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		11340	46.99	-27.01	74	57.69	39.12	18.42	68.24	-	-	P	H
		17010	46.44	-21.76	68.2	54.91	37.39	22.93	68.79	-	-	P	H
802.11n													
HT40													
CH 134		11340	47.93	-26.07	74	58.63	39.12	18.42	68.24	-	-	P	V
5670MHz		17010	45.9	-22.3	68.2	54.37	37.39	22.93	68.79	-	-	P	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.

Emission above 18GHz

WIFI 802.11n HT40 (SHF @ 1m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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)
802.11n HT40 SHF		22144	40.05	-33.95	74	38.11	38.09	16.17	52.32	-	-	P	H
		23664	40.56	-33.44	74	37.41	38.53	16.96	52.34	-	-	P	H
		36444	46.96	-27.04	74	36.32	42.35	23.92	55.63	-	-	P	H
		39202	52.57	-21.43	74	35.9	45.07	25.71	54.11	-	-	P	H
		39202	43.5	-10.5	54	26.83	45.07	25.71	54.11	-	-	A	H
													H
													H
													H
													H
													H
		22336	39	-35	74	36.86	38.15	16.27	52.28	-	-	P	V
		23680	39.43	-34.57	74	36.28	38.52	16.97	52.34	-	-	P	V
		36486	46.91	-27.09	74	36.24	42.35	23.94	55.62	-	-	P	V
		39188	52.32	-21.68	74	35.7	45.09	25.69	54.16	-	-	P	V
		39188	43.44	-10.56	54	26.82	45.09	25.69	54.16	-	-	A	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

WIFI 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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)
802.11n HT40 LF		350.1	43.14	-2.86	46	52.4	20.4	2.86	32.52	100	46	QP	H
		450.01	41.87	-4.13	46	48.3	22.9	3.34	32.67	101	310	QP	H
		500.45	40.06	-5.94	46	45.5	23.8	3.51	32.75	193	2	QP	H
		549.92	39.39	-6.61	46	43.15	25.39	3.66	32.81	-	-	P	H
		700.27	39.91	-6.09	46	42.04	26.5	4.19	32.82	-	-	P	H
		900.09	39.88	-6.12	46	37.89	29.2	4.72	31.93	-	-	P	H
													H
													H
													H
													H
													H
													H
		50.37	36.38	-3.62	40	53.51	14.11	1.13	32.37	101	1	QP	V
		83.35	32.08	-7.92	40	49.06	13.84	1.55	32.37	-	-	P	V
		133.79	31.08	-12.42	43.5	44.06	17.6	1.78	32.36	-	-	P	V
		350.1	34.42	-11.58	46	43.68	20.4	2.86	32.52	-	-	P	V
		450.01	36.51	-9.49	46	42.94	22.9	3.34	32.67	-	-	P	V
		794.36	37.18	-8.82	46	37.37	27.99	4.39	32.57	-	-	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 or emission level has at least 6dB margin against limit or 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	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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 CH 36 5180MHz		5150	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		5150	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 5150MHz:

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 (dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 5150MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

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

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

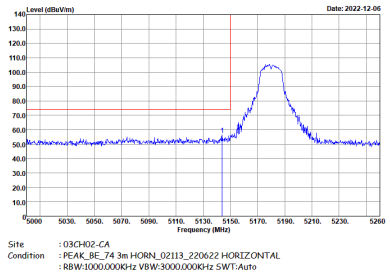
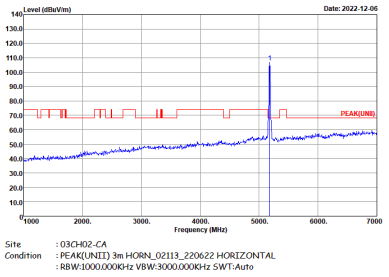
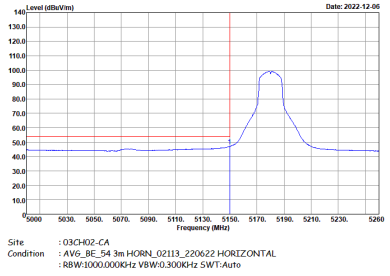
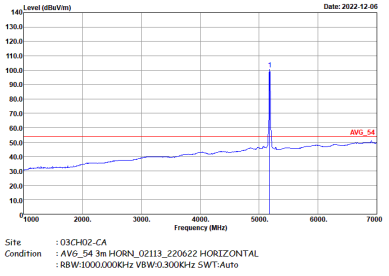
Both peak and average measured complies with the limit line, so test result is "PASS".

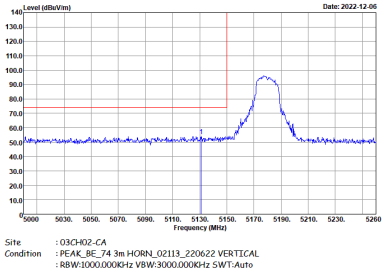
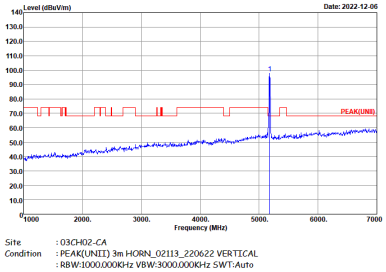
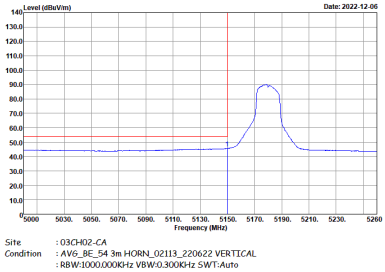
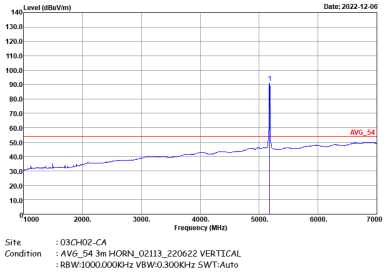
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Daniel Lee and Leo Liu	Temperature :	20~24°C
		Relative Humidity :	42~47%

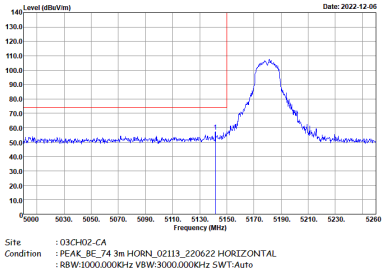
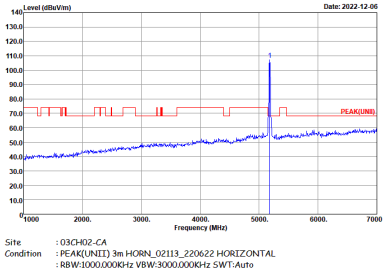
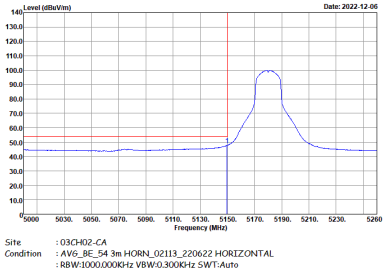
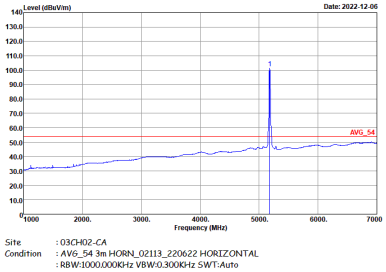
Band 1 - 5150~5250MHz

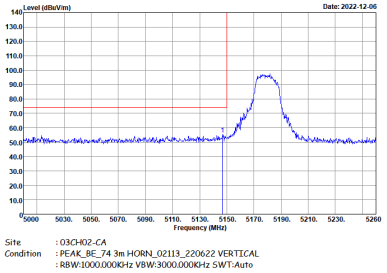
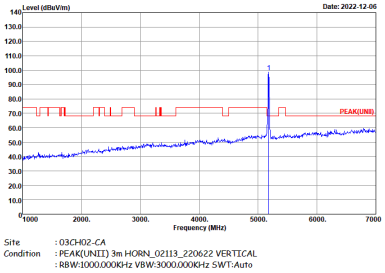
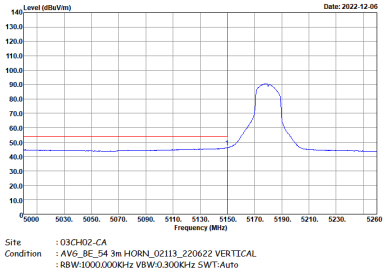
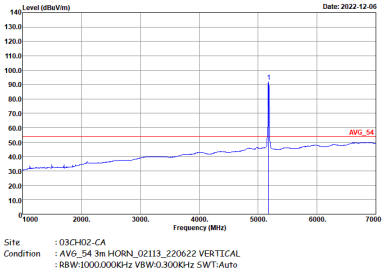
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

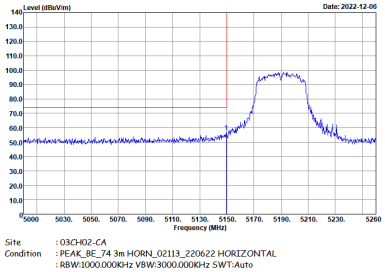
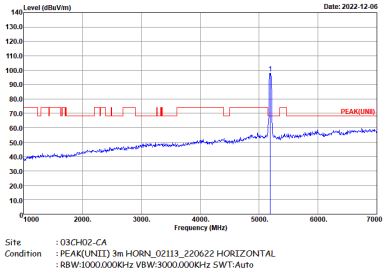
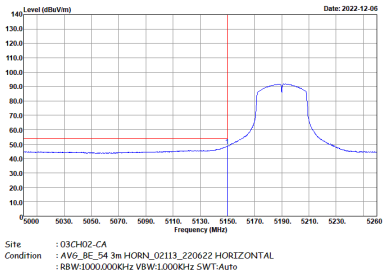
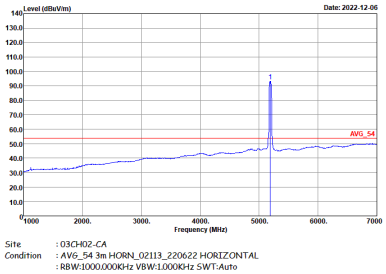
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Vertical	Fundamental
Peak		
Avg.		

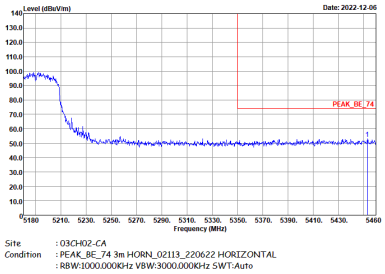
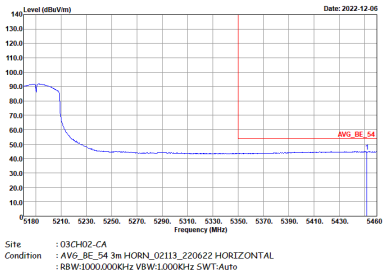
Band 1 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

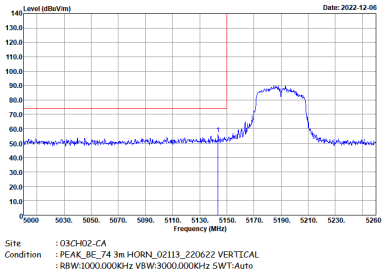
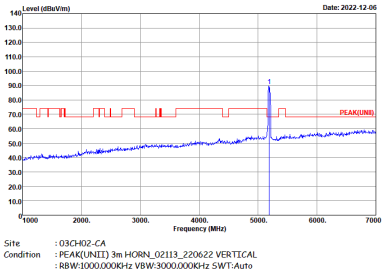
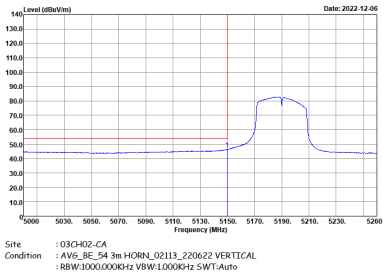
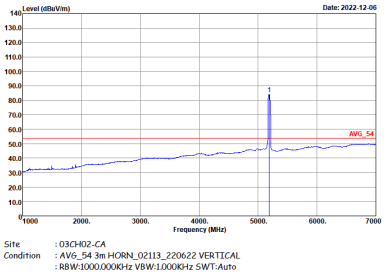
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

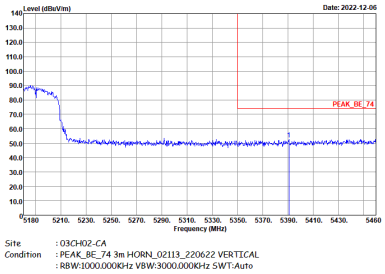
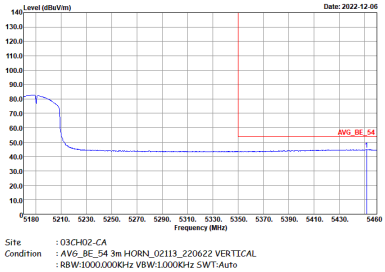
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

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

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

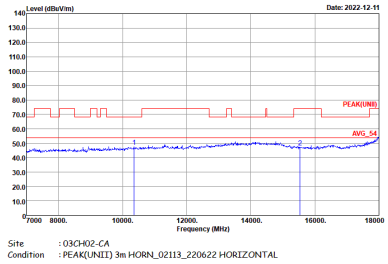
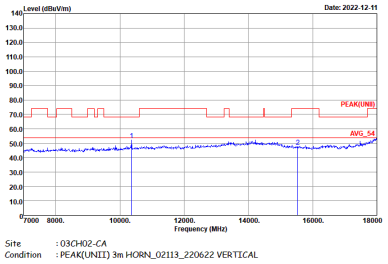
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

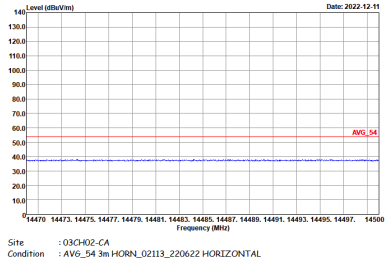
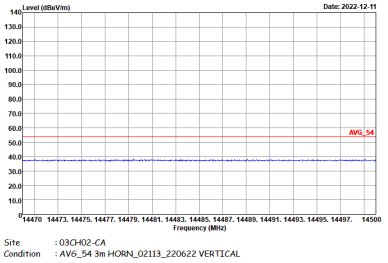
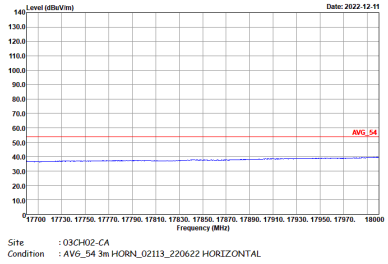
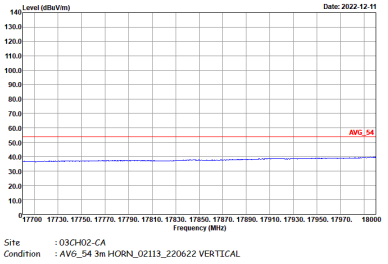
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto

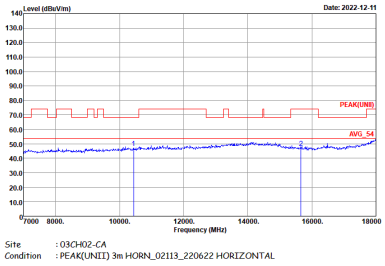
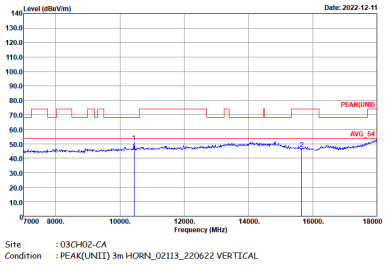
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT40 CH38 5190MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

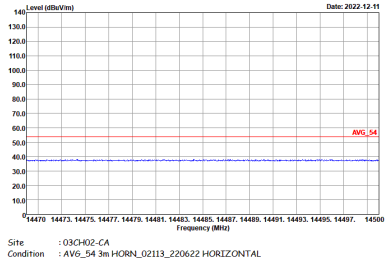
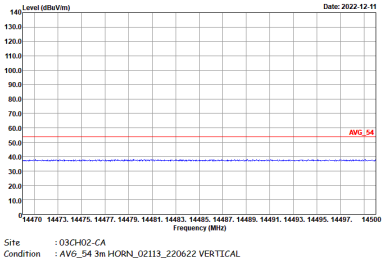
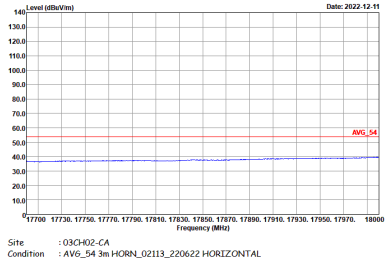
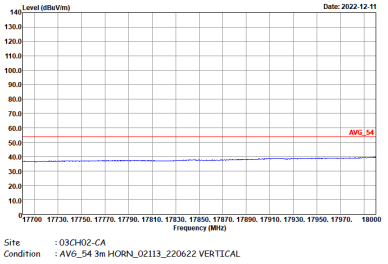
Band 1 - 5150~5250MHz

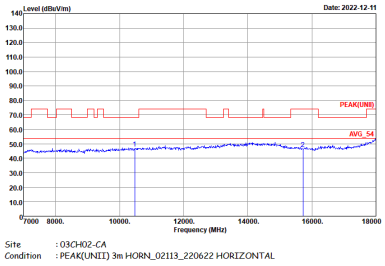
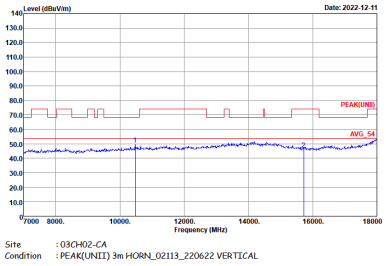
WIFI 802.11a (Harmonic @ 3m)

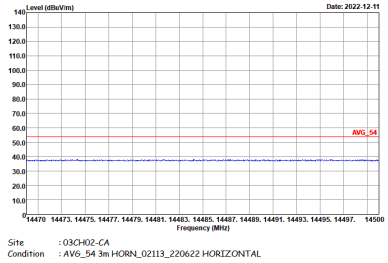
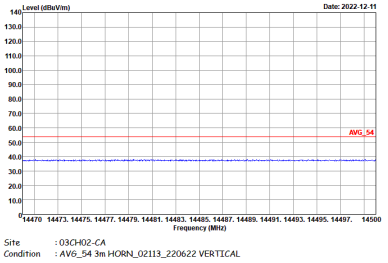
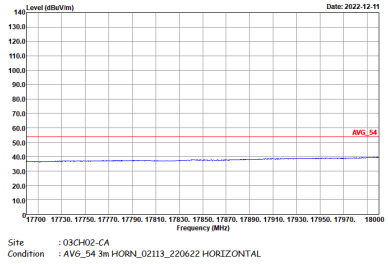
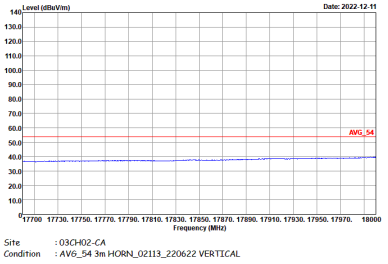
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

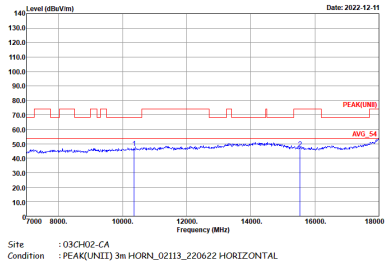
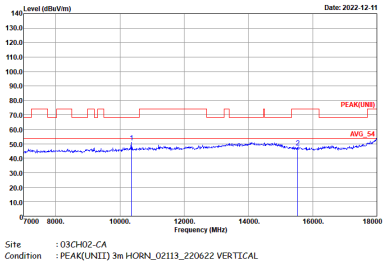
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH44 5220MHz	
1	Horizontal	Vertical
Peak Avg.		

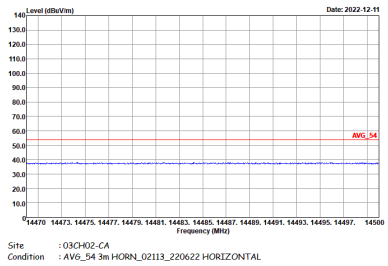
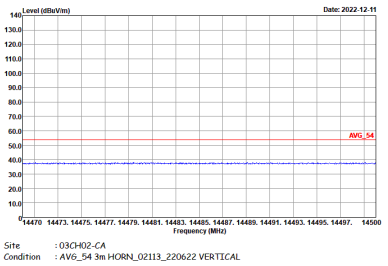
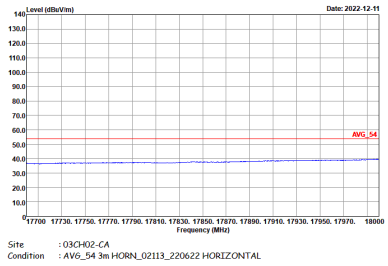
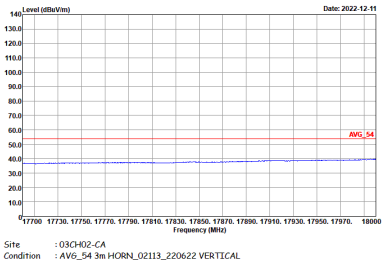
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH44 5220MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL
17.7G ~18G Avg	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL

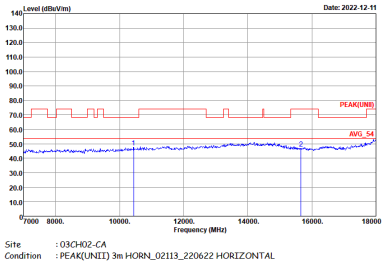
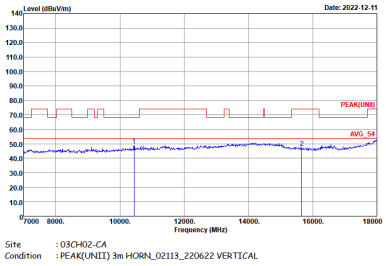
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH48 5240MHz	
1	Horizontal	Vertical
Peak Avg.		

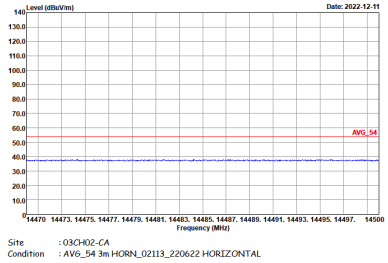
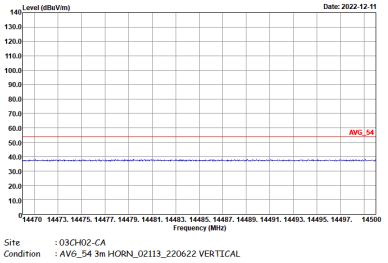
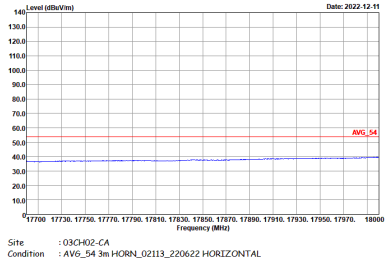
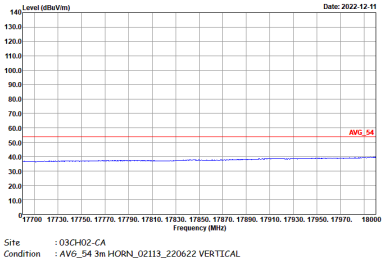
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH48 5240MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

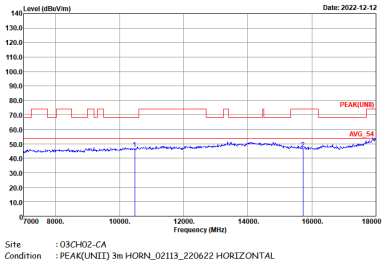
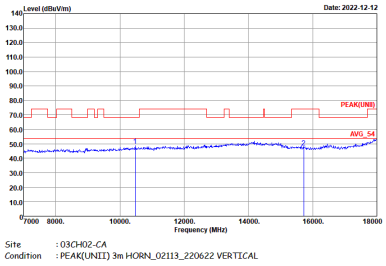
Band 1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

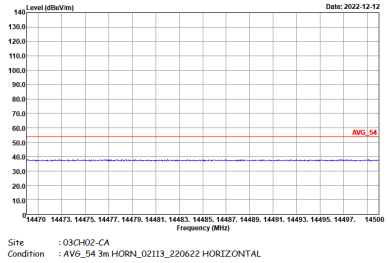
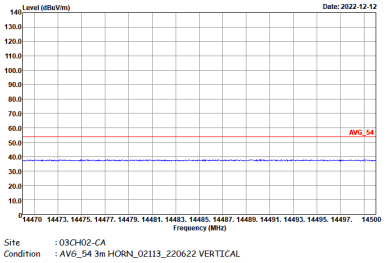
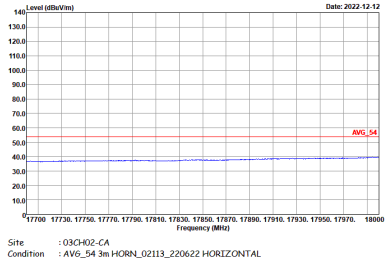
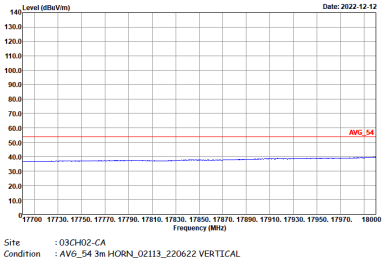
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

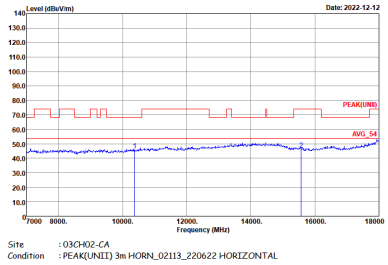
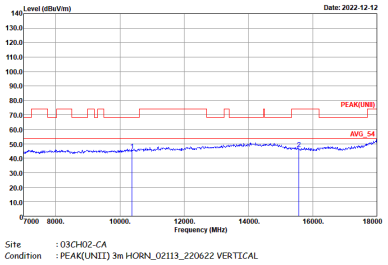
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH44 5220MHz	
1	Horizontal	Vertical
Peak Avg.		

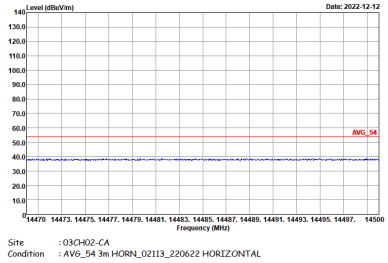
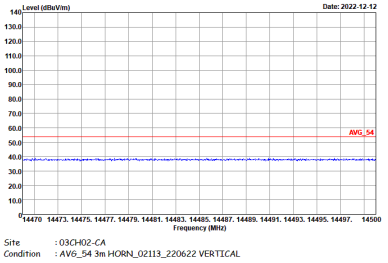
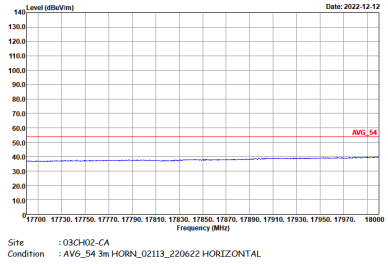
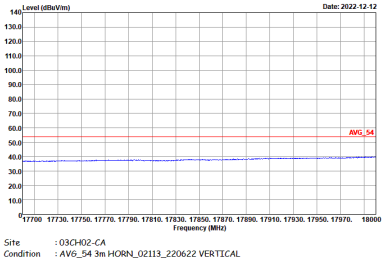
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH44 5220MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

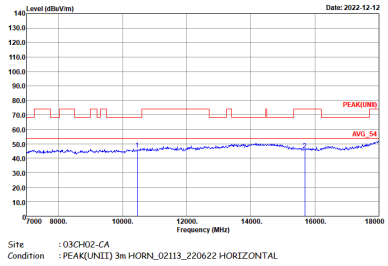
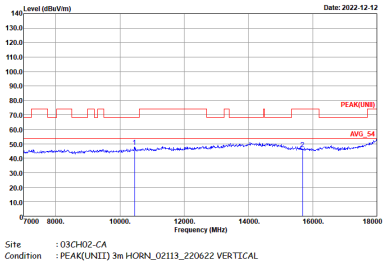
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH48 5240MHz	
1	Horizontal	Vertical
Peak Avg.		

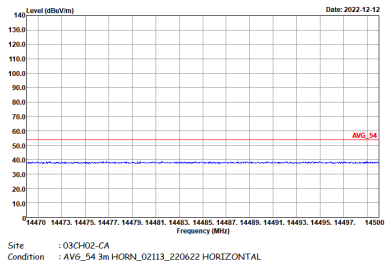
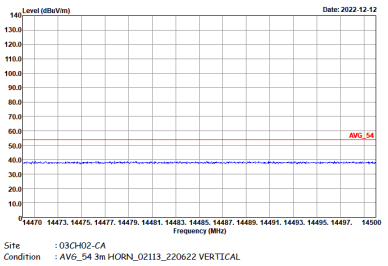
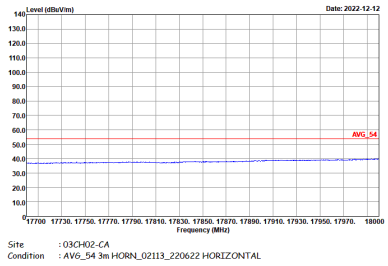
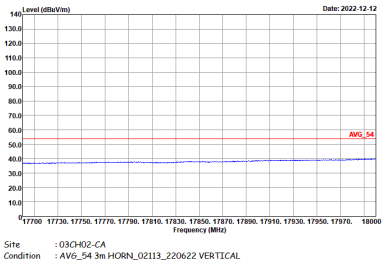
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH48 5240MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

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

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT40 CH38 5190MHz	
1	Horizontal	Vertical
Peak Avg.		

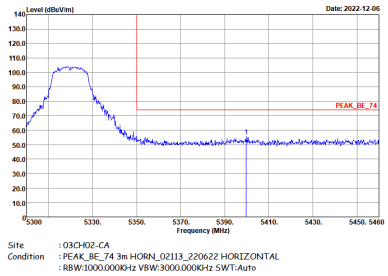
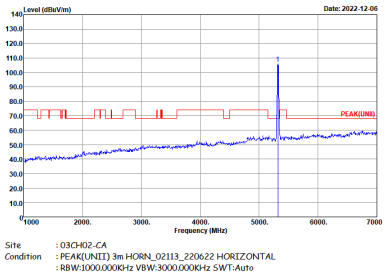
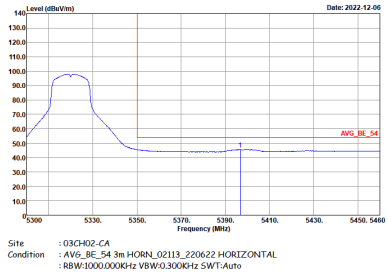
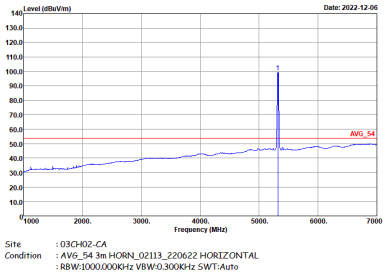
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT40 CH38 5190MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

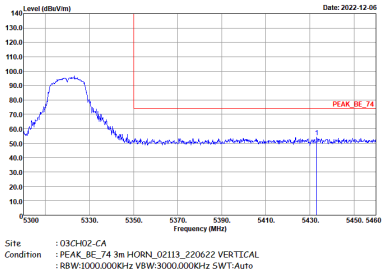
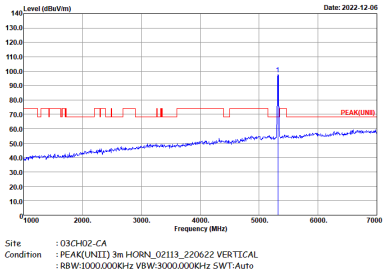
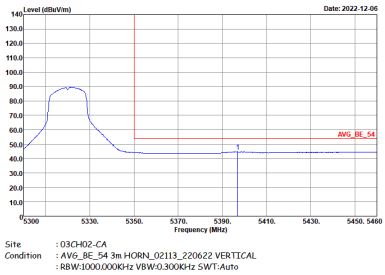
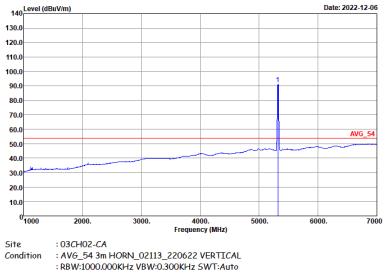
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT40 CH46 5230MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT40 CH46 5230MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL
17.7G ~18G Avg	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL

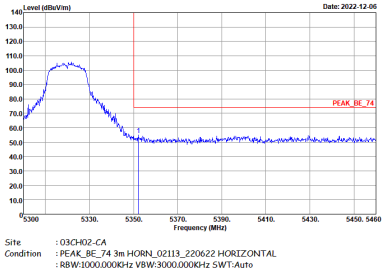
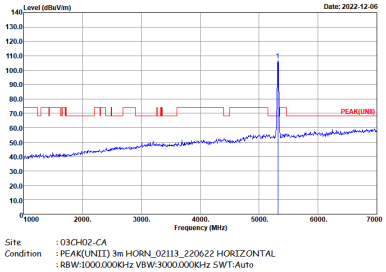
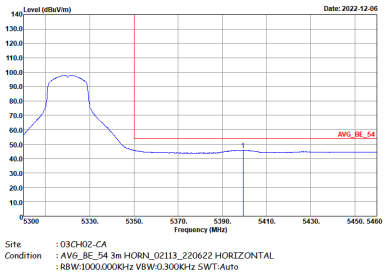
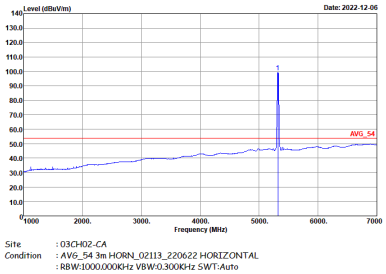
Band 2 - 5250~5350MHz

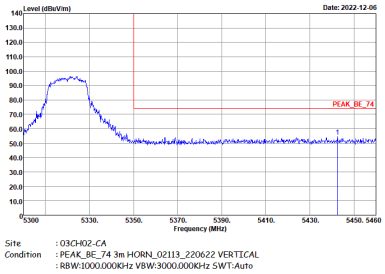
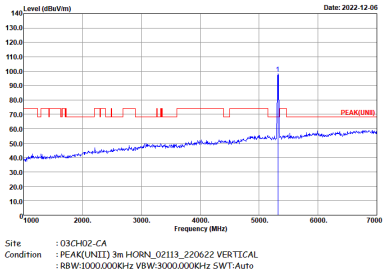
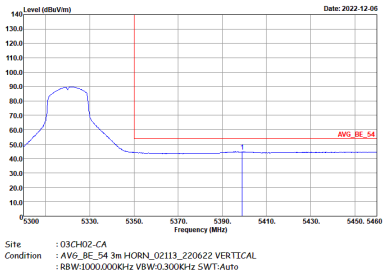
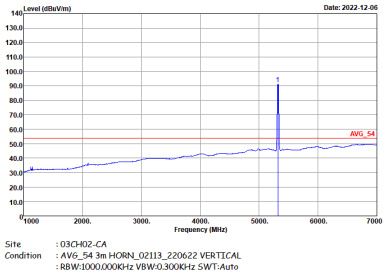
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

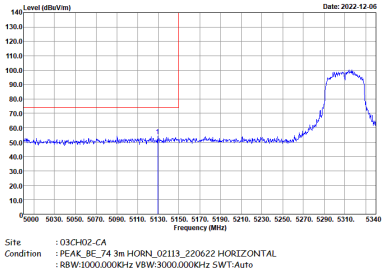
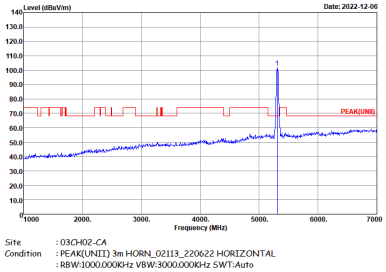
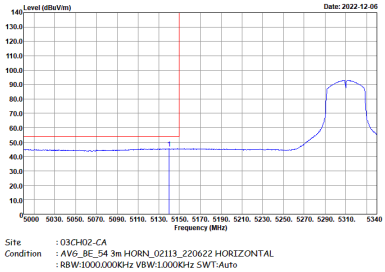
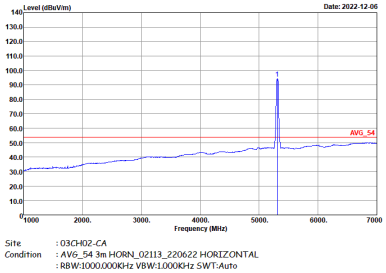
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

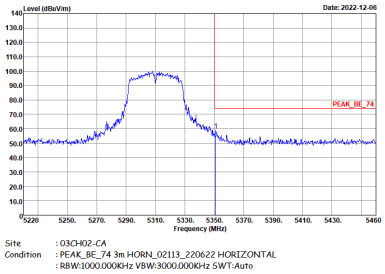
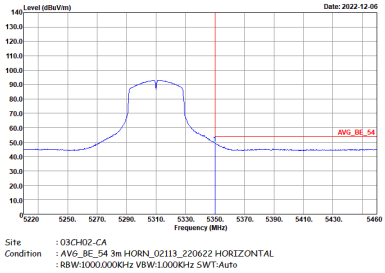
Band 2 5250~5350MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

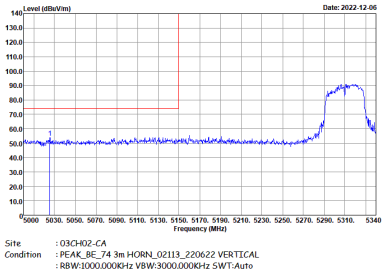
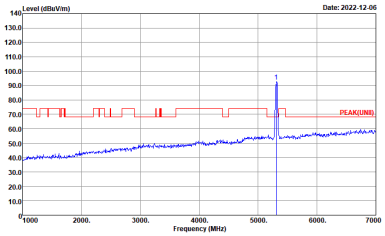
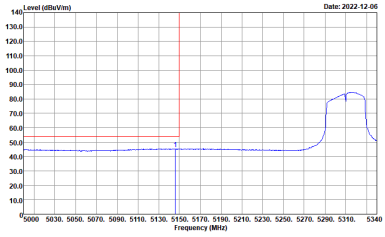
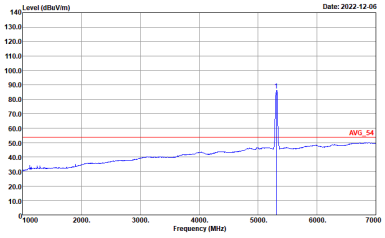
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

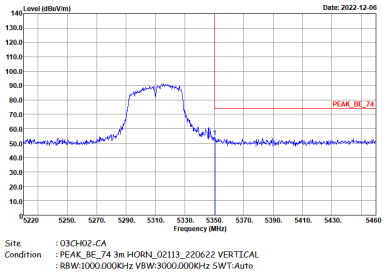
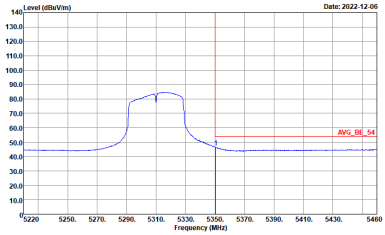
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

Band 2 5250~5350MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT40 CH62 5310 - L	
1	Horizontal	Fundamental
Peak		
Avg.		

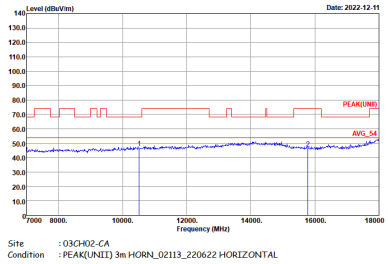
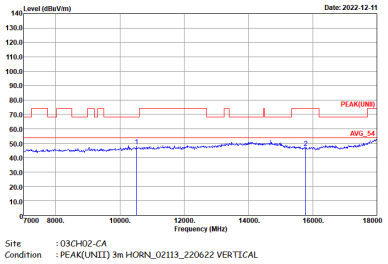
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT40 CH62 5310 - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

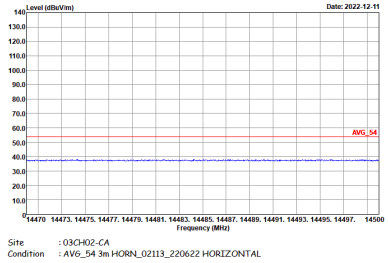
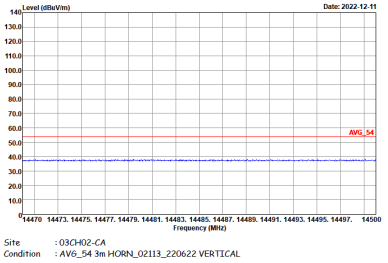
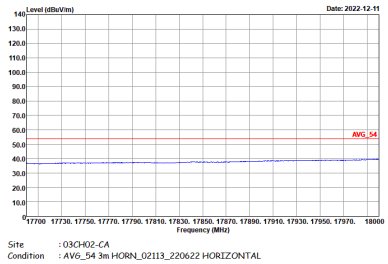
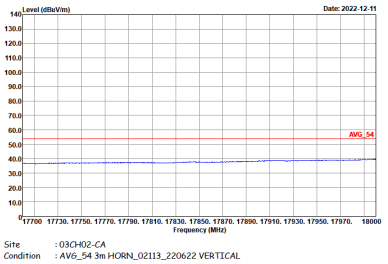
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT40 CH62 5310 - L	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto

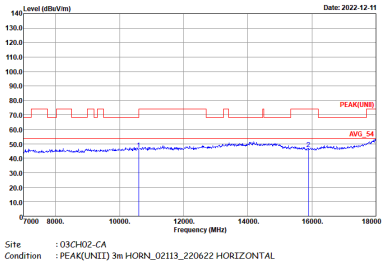
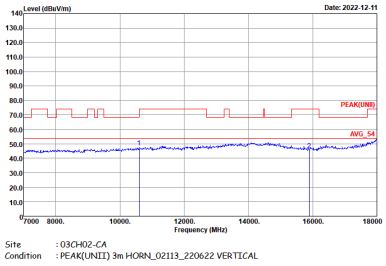
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT40 CH62 5310 - R	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank
Avg.	 Site : 03CH02-CA Condition : AVG_BE_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	Left blank

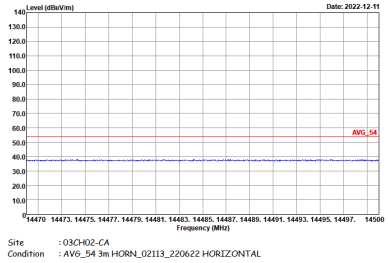
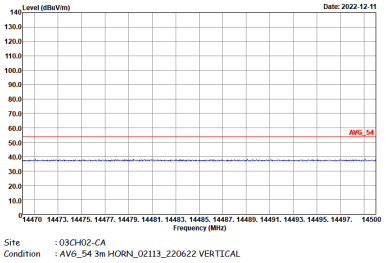
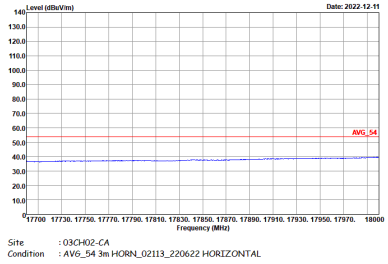
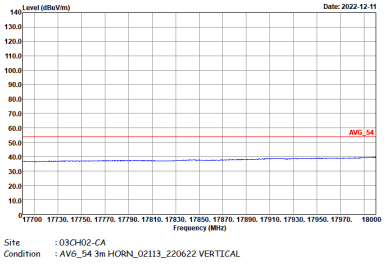
Band 2 - 5250~5350MHz

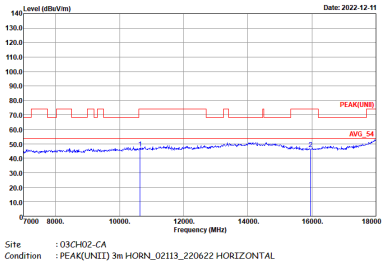
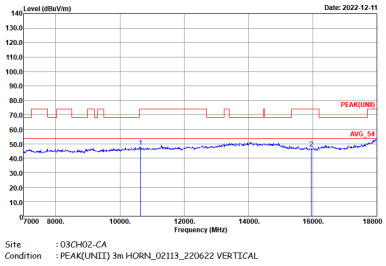
WIFI 802.11a (Harmonic @ 3m)

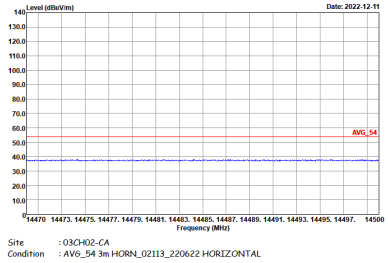
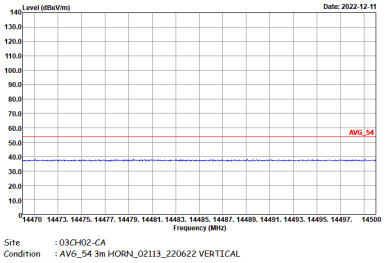
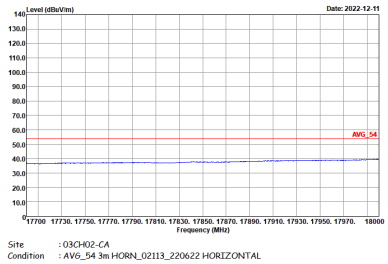
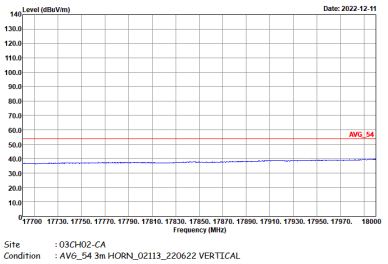
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH52 5260MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH52 5260MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL
17.7G ~18G Avg	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH60 5300MHz	
1	Horizontal	Vertical
Peak Avg.		

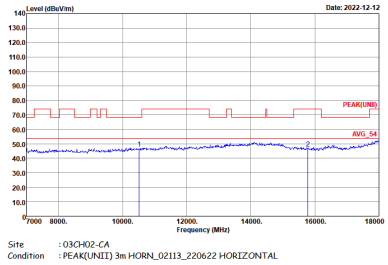
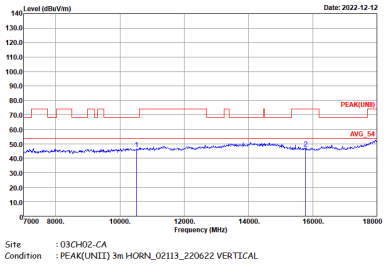
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH60 5300MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

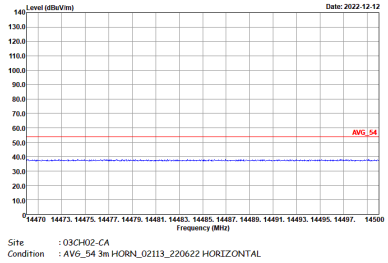
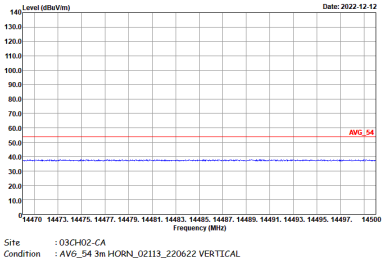
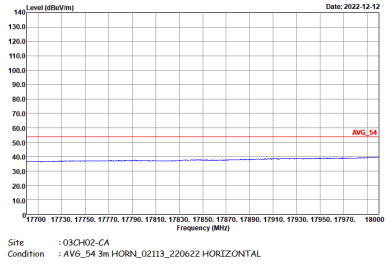
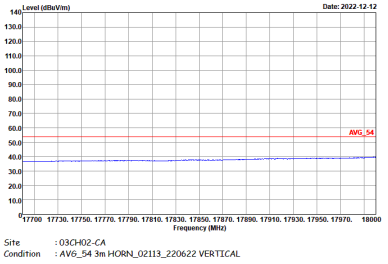
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Vertical
Peak Avg.		

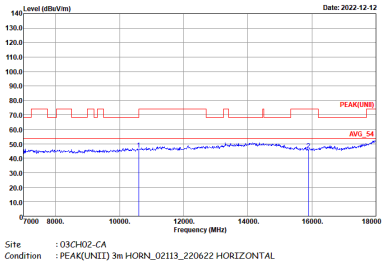
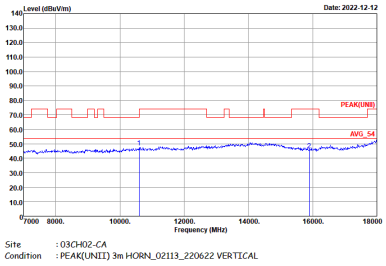
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL
17.7G ~18G Avg	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL

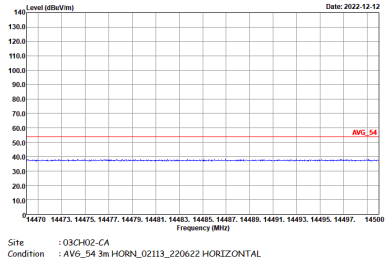
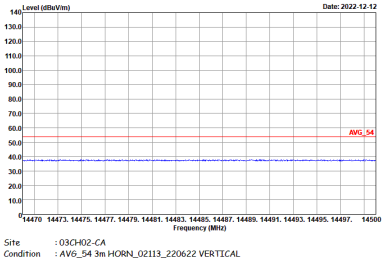
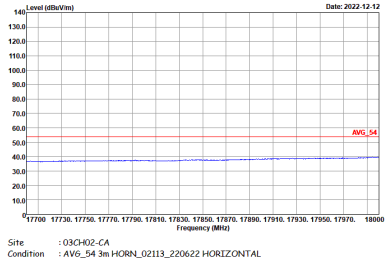
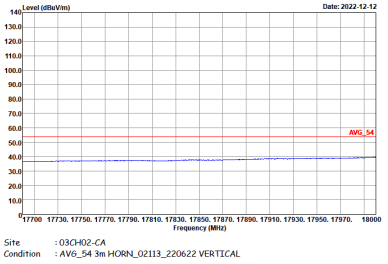
Band 2 5250~5350MHz

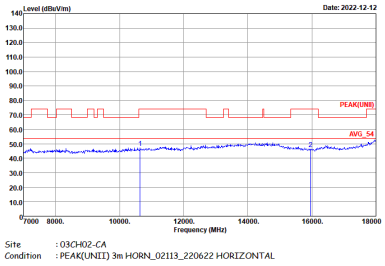
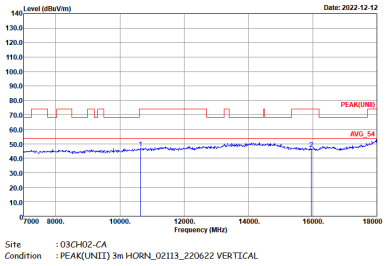
WIFI 802.11n HT20 (Harmonic @ 3m)

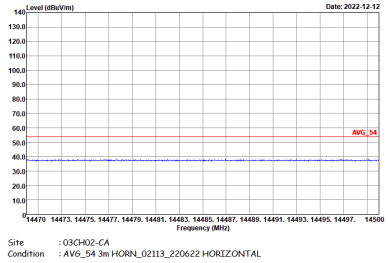
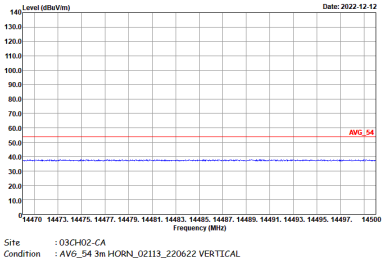
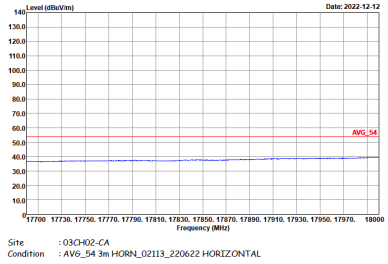
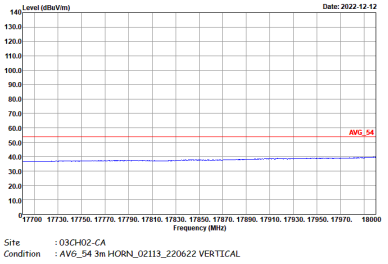
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH52 5260MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH52 5260MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

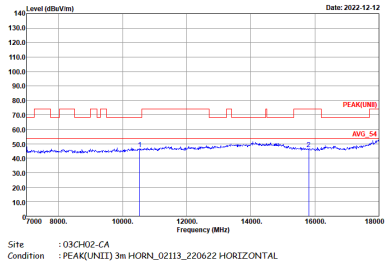
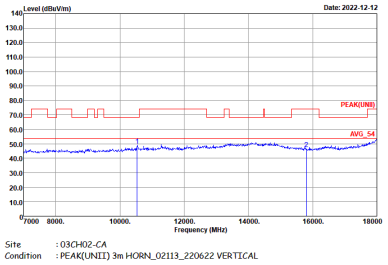
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH60 5300MHz	
1	Horizontal	Vertical
Peak Avg.		

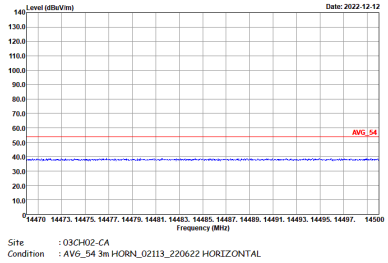
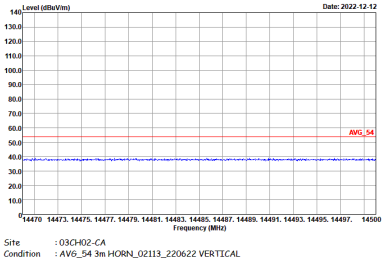
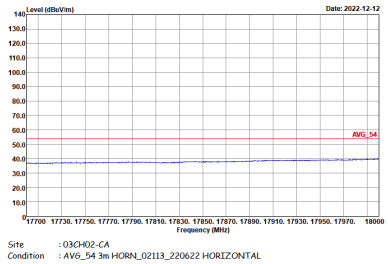
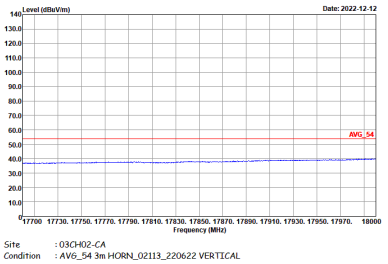
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH60 5300MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

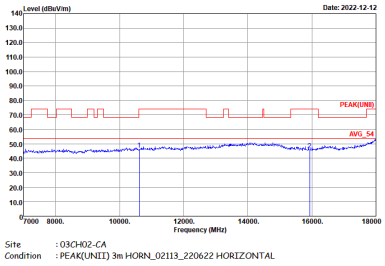
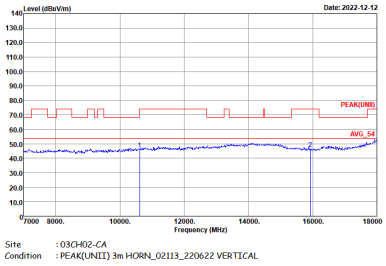
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Vertical
Peak Avg.		

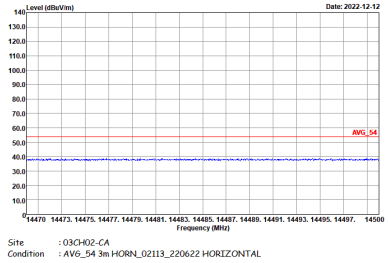
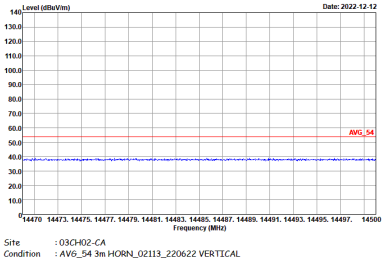
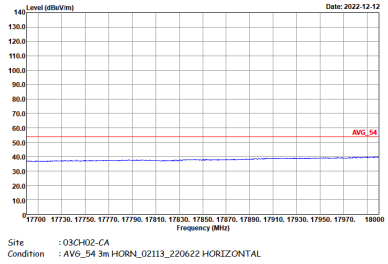
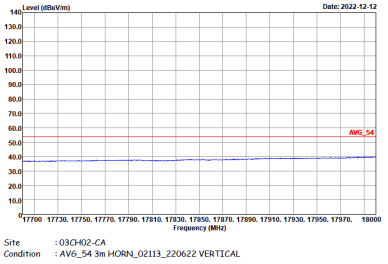
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

Band 2 5250~5350MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT40 CH54 5270	
1	Horizontal	Vertical
Peak Avg.		

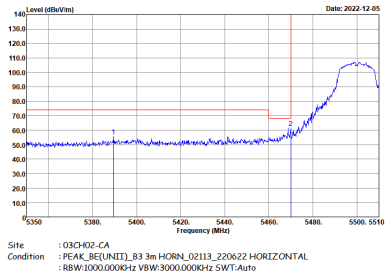
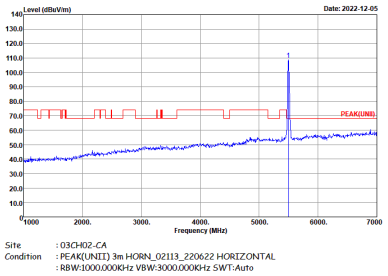
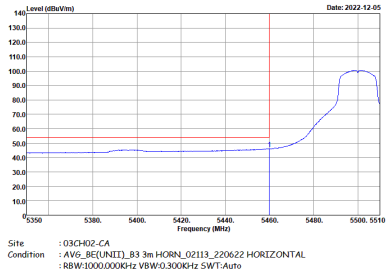
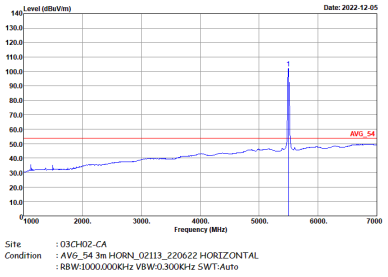
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT40 CH54 5270	
1	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL
17.7G ~18G Avg	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 HORIZONTAL	 Site : 03CH02-CA Condition : AV6_54 3m HORN_02113_220622 VERTICAL

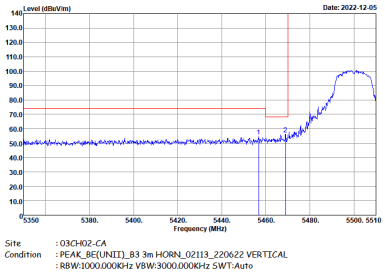
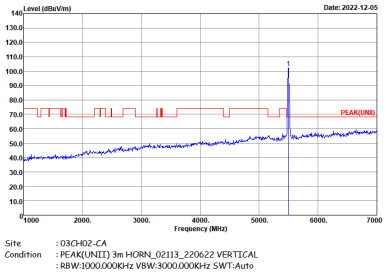
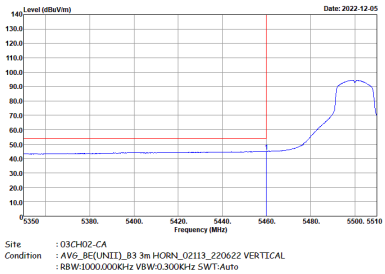
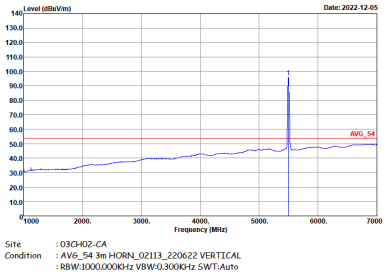
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT40 CH62 5310	
1	Horizontal	Vertical
Peak Avg.		

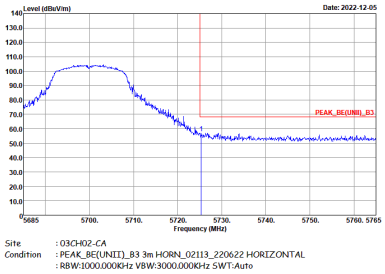
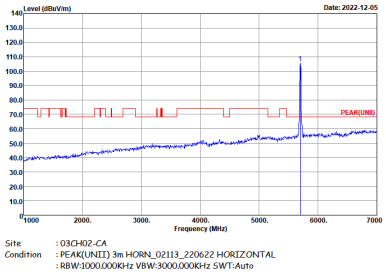
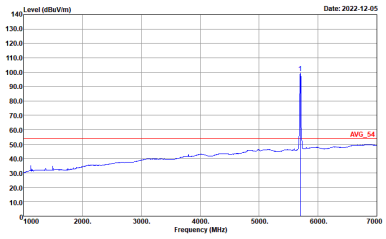
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT40 CH62 5310	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

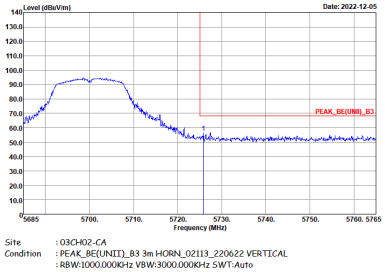
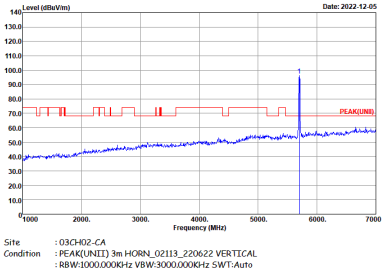
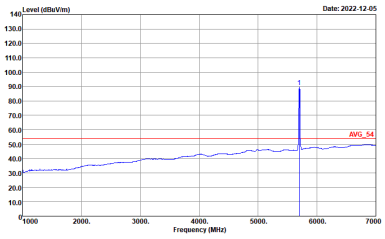
Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

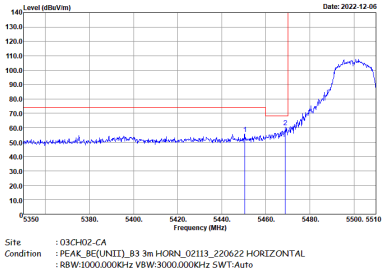
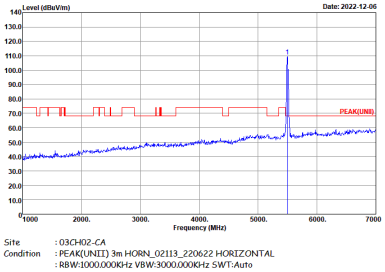
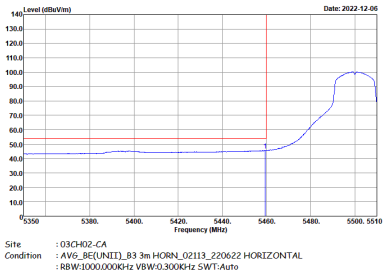
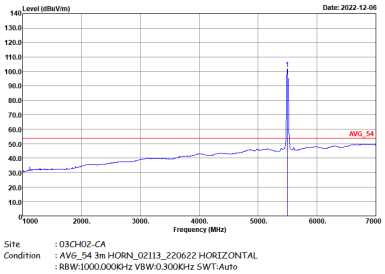
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

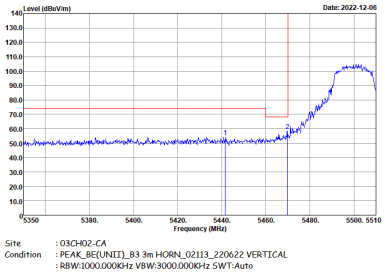
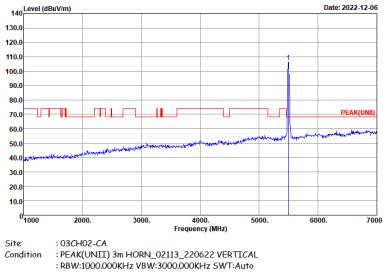
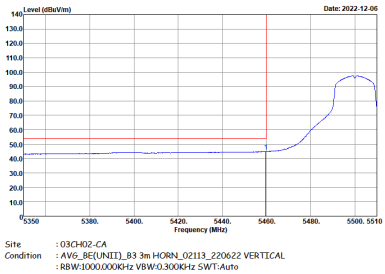
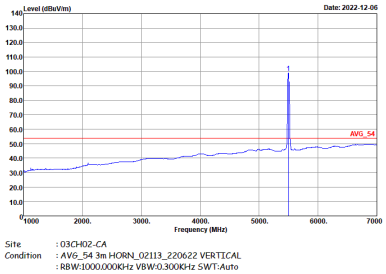
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Vertical	Fundamental
Peak		
Avg.		

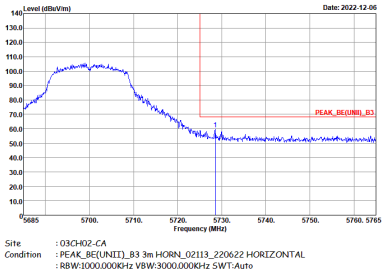
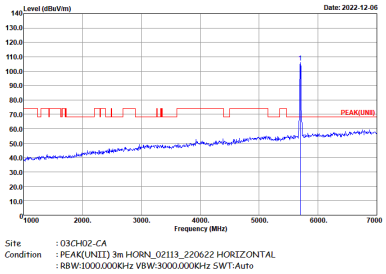
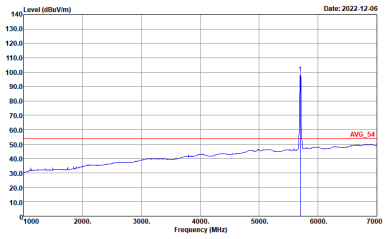
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Left blank	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

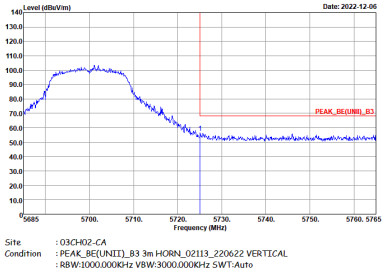
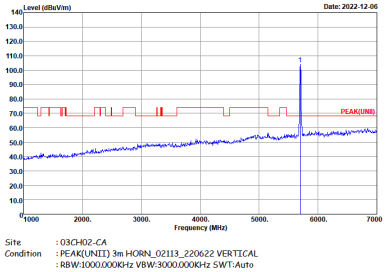
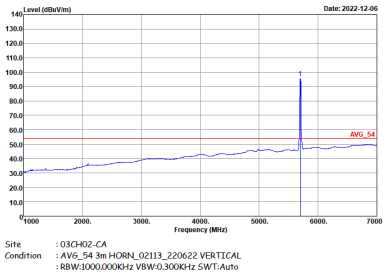
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Left blank	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

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

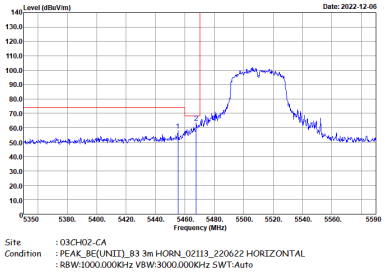
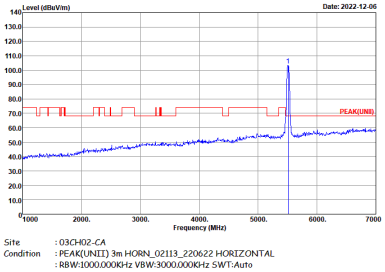
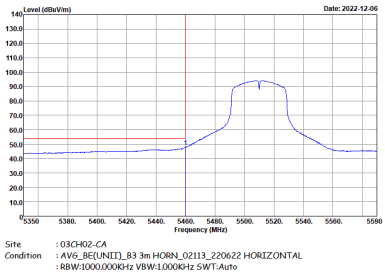
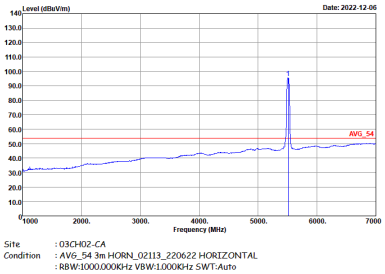
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

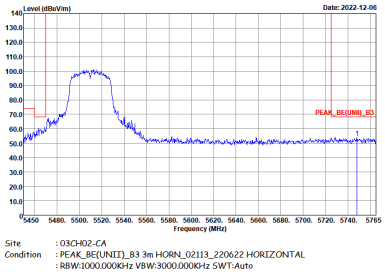
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Vertical	Fundamental
Peak		
Avg.		

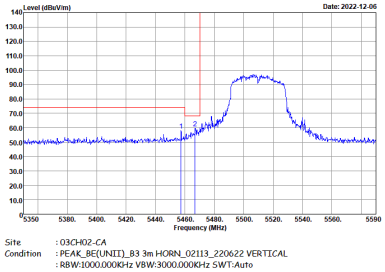
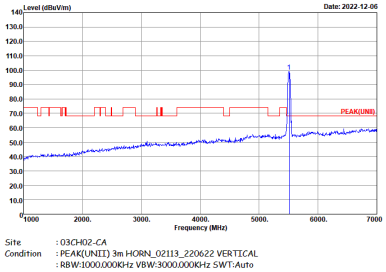
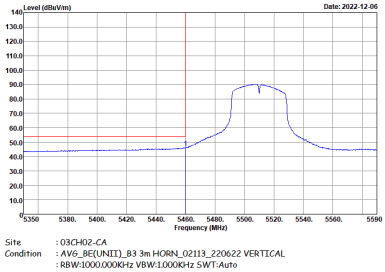
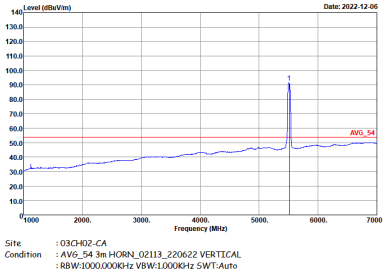
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Left blank	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

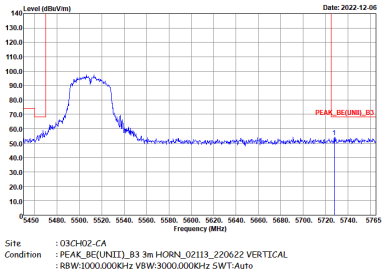
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Vertical	Fundamental
Peak.	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Left blank	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto

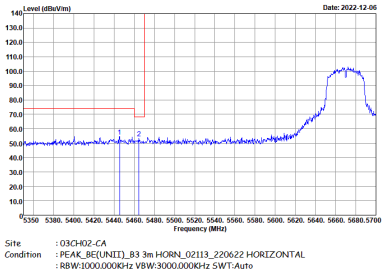
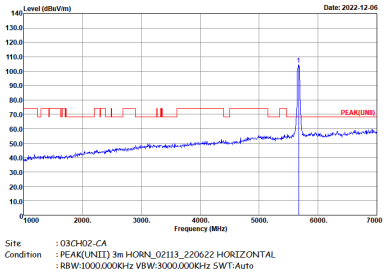
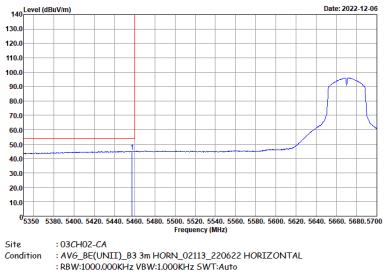
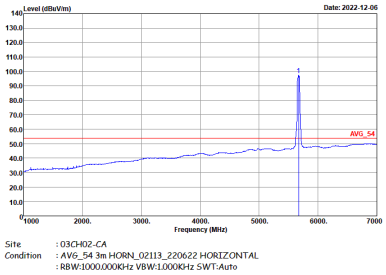
Band 3 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

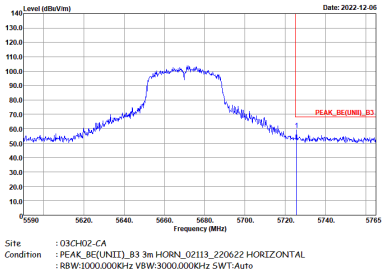
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

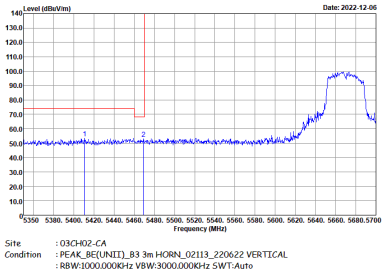
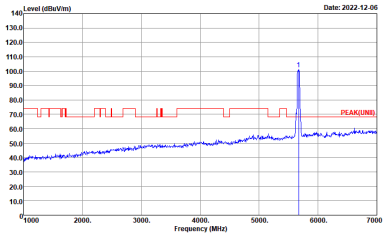
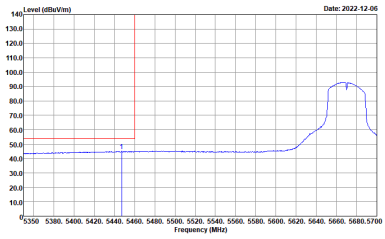
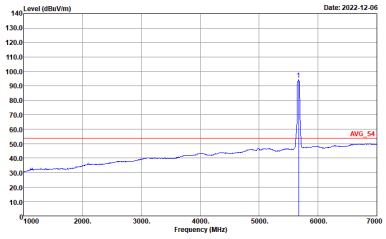
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - R	
1	Horizontal	Fundamental
Peak		Left blank

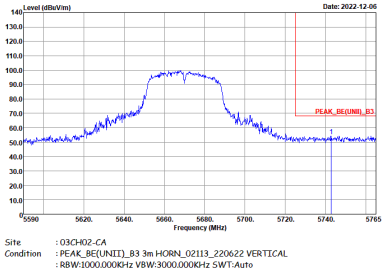
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH102 5510MHz - R	
1	Vertical	Fundamental
Peak		Left blank

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH134 5670MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE(UNII)_B3 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto

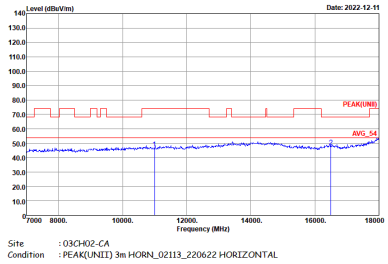
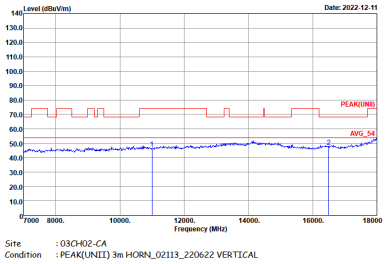
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH134 5670MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

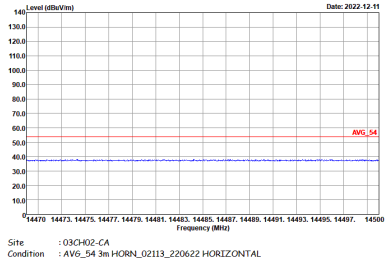
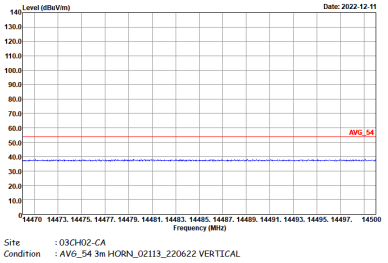
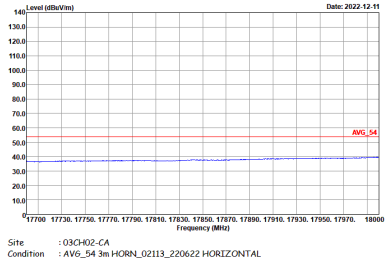
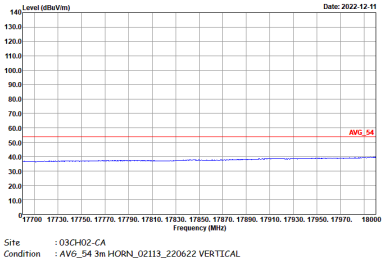
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH134 5670MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH02-CA Condition : AVG_BE(UNII)_B3 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH02-CA Condition : AVG_54 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto

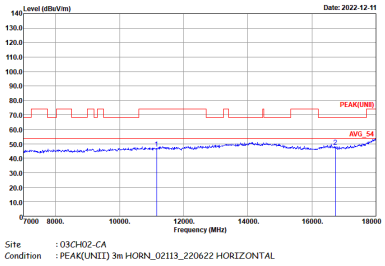
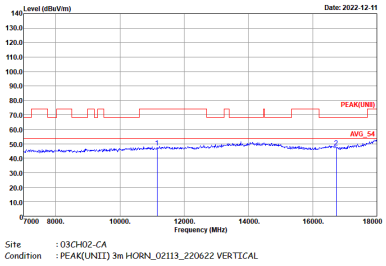
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT40 CH134 5670MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN_02113_220622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

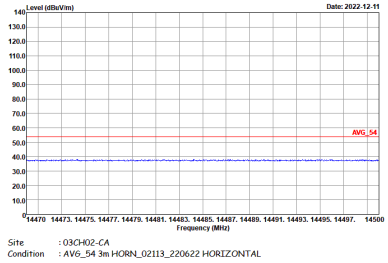
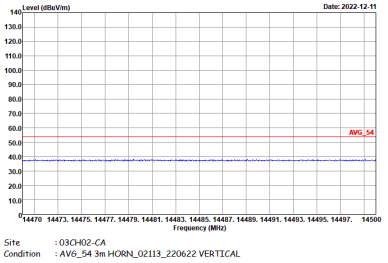
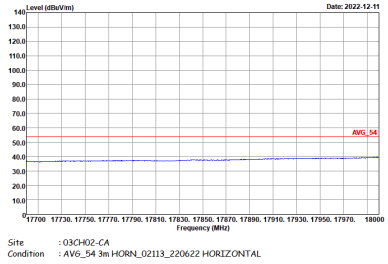
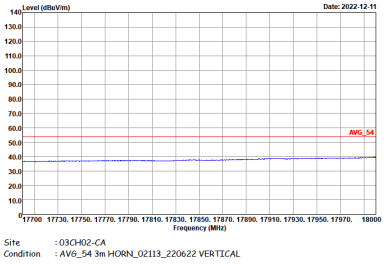
Band 3 - 5470~5725MHz

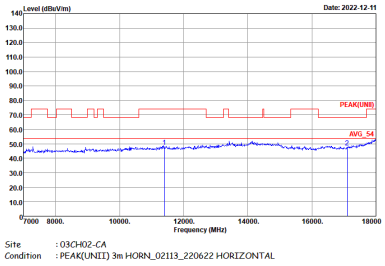
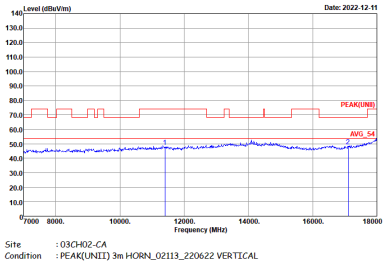
WIFI 802.11a (Harmonic @ 3m)

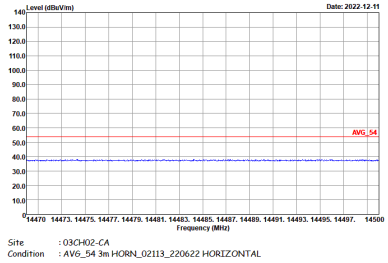
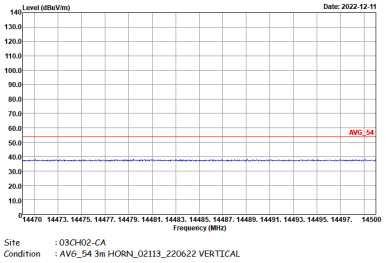
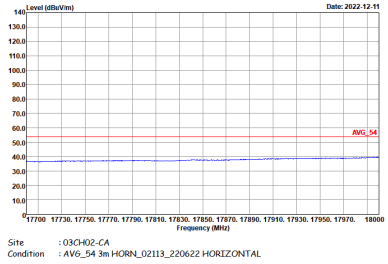
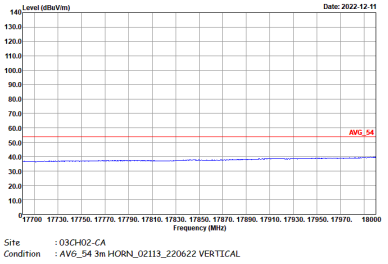
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

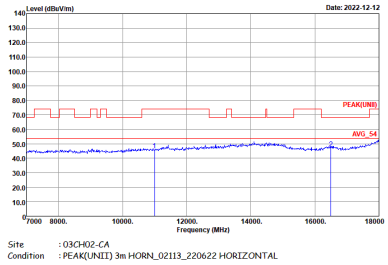
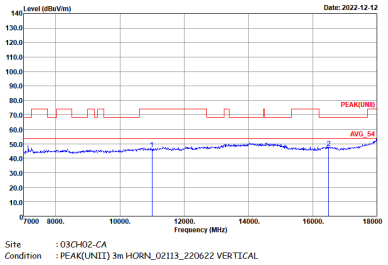
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH116 5580MHz	
1	Horizontal	Vertical
Peak Avg.		

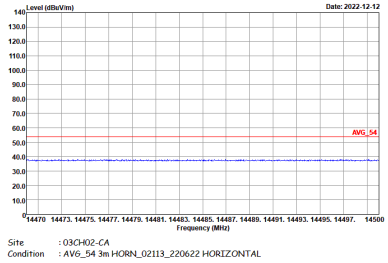
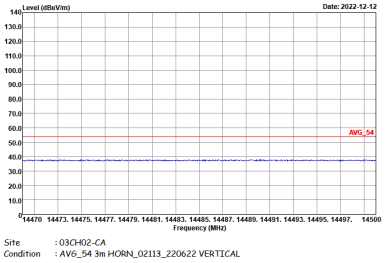
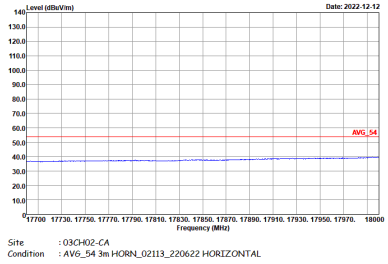
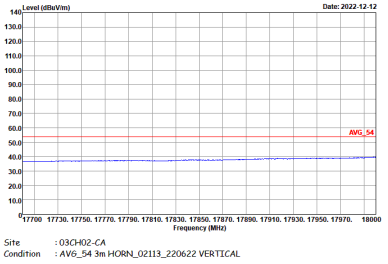
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH116 5580MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

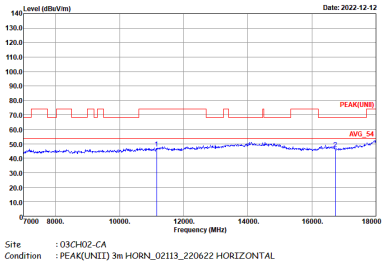
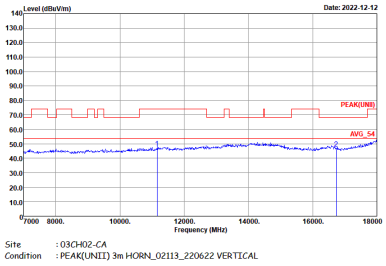
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Vertical
Peak Avg.		

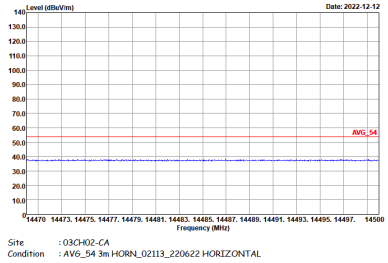
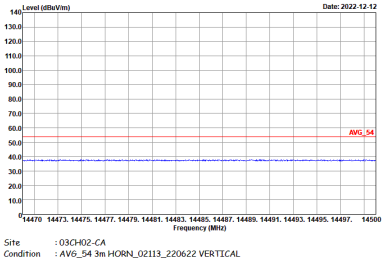
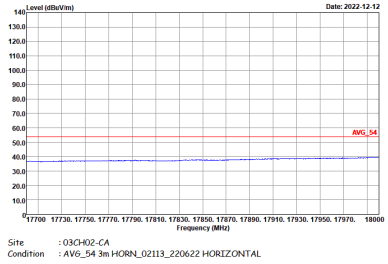
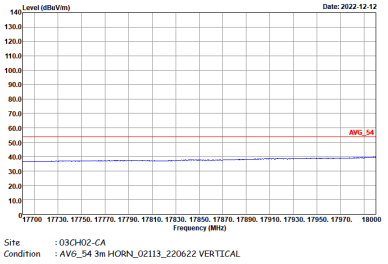
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

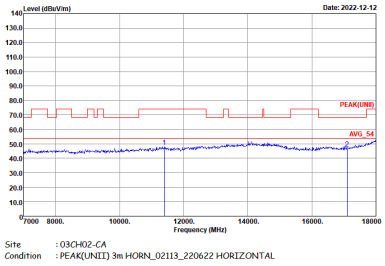
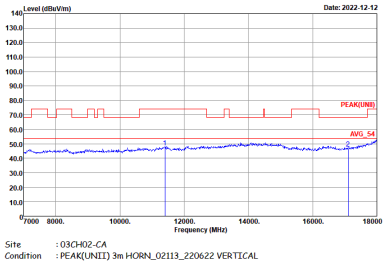
Band 3 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

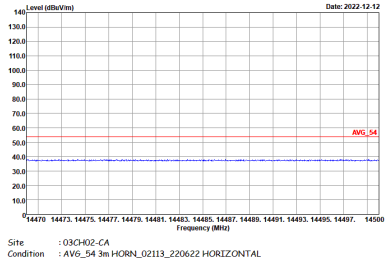
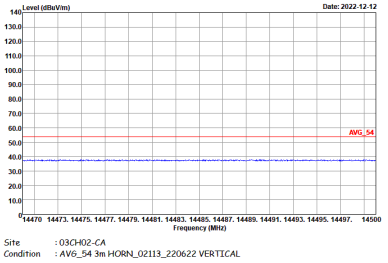
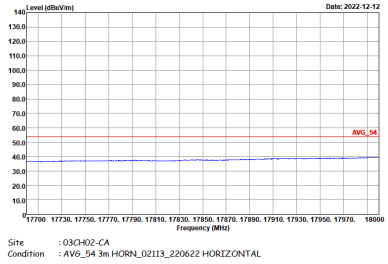
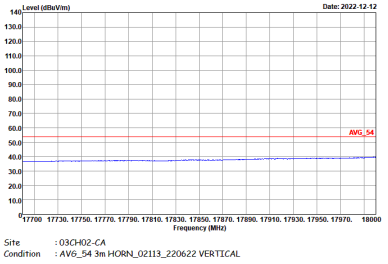
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

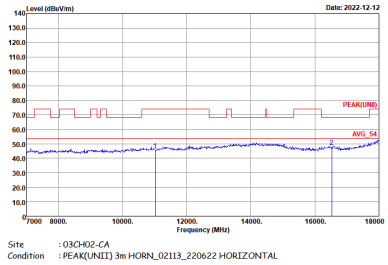
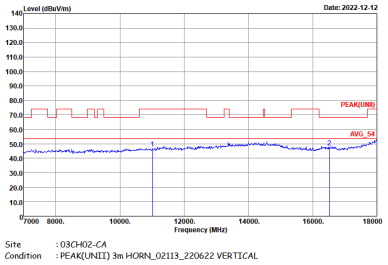
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH116 5580MHz	
1	Horizontal	Vertical
Peak Avg.		

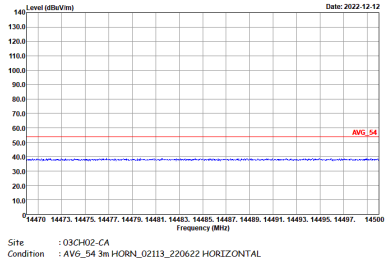
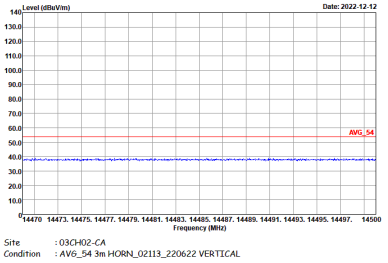
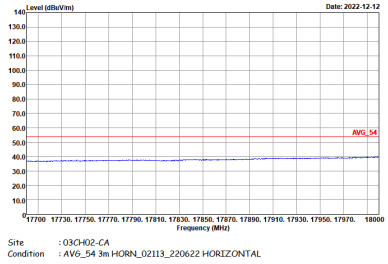
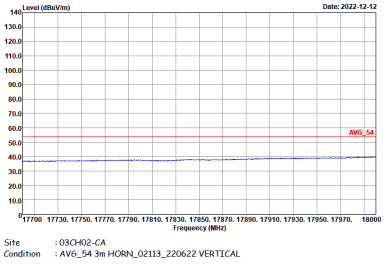
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH116 5580MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

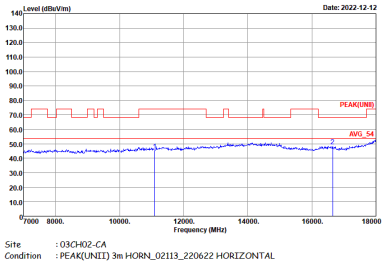
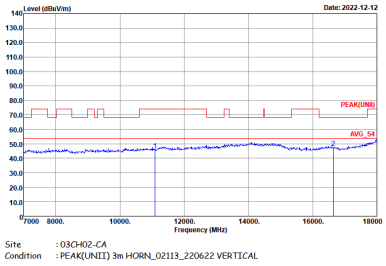
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Vertical
Peak Avg.		

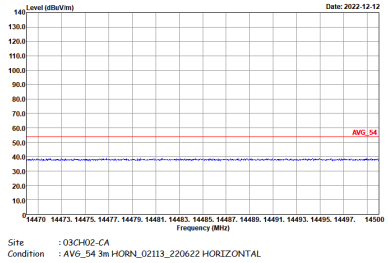
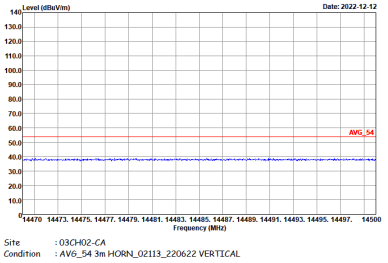
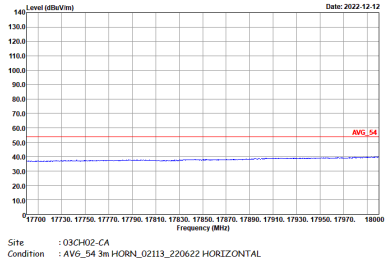
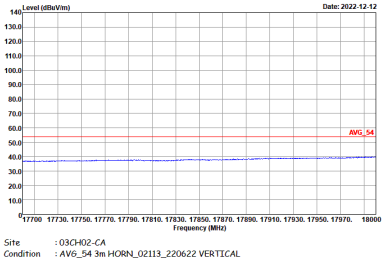
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

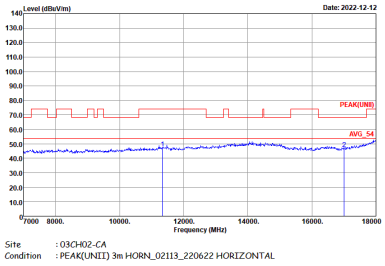
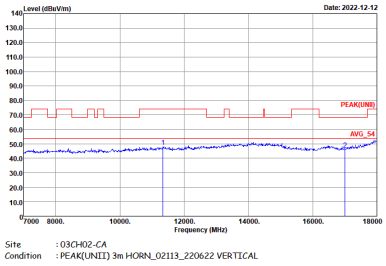
Band 3 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

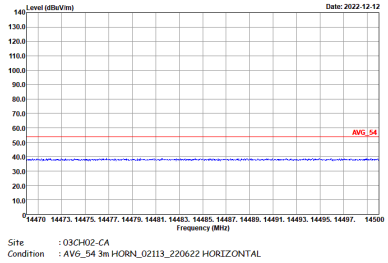
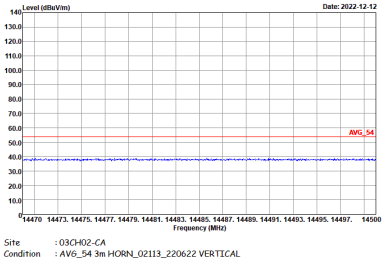
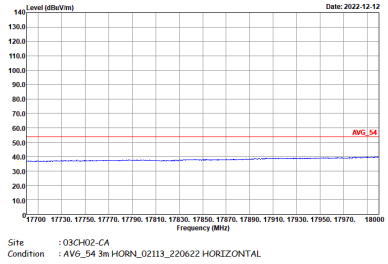
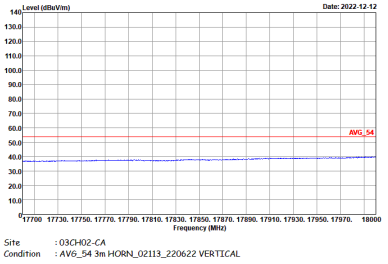
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH102 5510MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH102 5510MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH110 5550MHz	
1	Horizontal	Vertical
Peak Avg.		

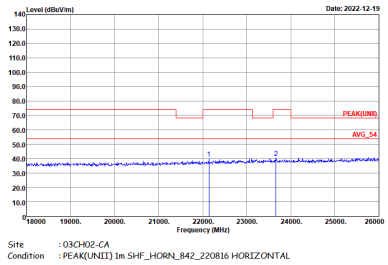
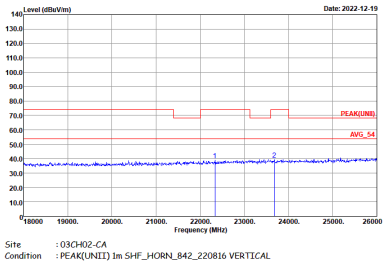
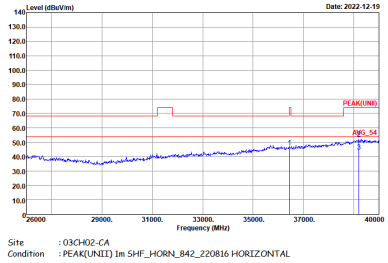
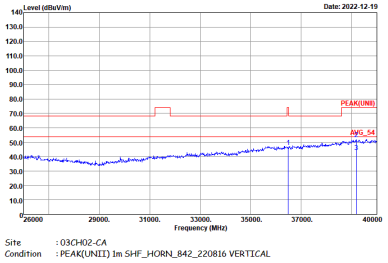
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH110 5550MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH134 5670MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT40 CH134 5670MHz	
1	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

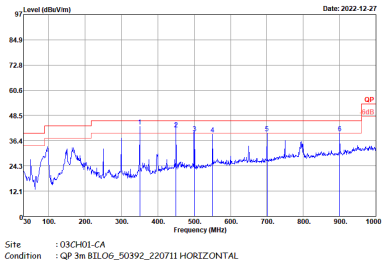
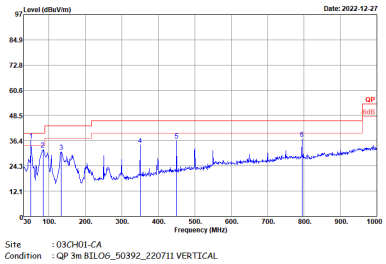
Emission above 18GHz

5GHz WIFI 802.11n HT40 (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11n HT40 SHF	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH02-CA Condition : PEAK(UNII) 1m SHF_HORN_842_220816 HORIZONTAL	 Site : 03CH02-CA Condition : PEAK(UNII) 1m SHF_HORN_842_220816 VERTICAL
Peak Avg.	 Site : 03CH02-CA Condition : PEAK(UNII) 1m SHF_HORN_842_220816 HORIZONTAL	 Site : 03CH02-CA Condition : PEAK(UNII) 1m SHF_HORN_842_220816 VERTICAL

Emission below 1GHz

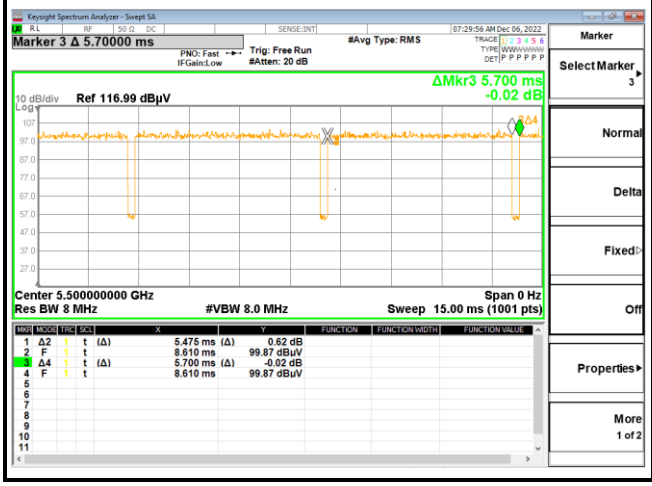
5GHz WIFI 802.11n HT40 (LF)

WIFI	5GHz WIFI	
ANT	802.11n HT40 LF	
1	Horizontal	Vertical
QP / Peak		

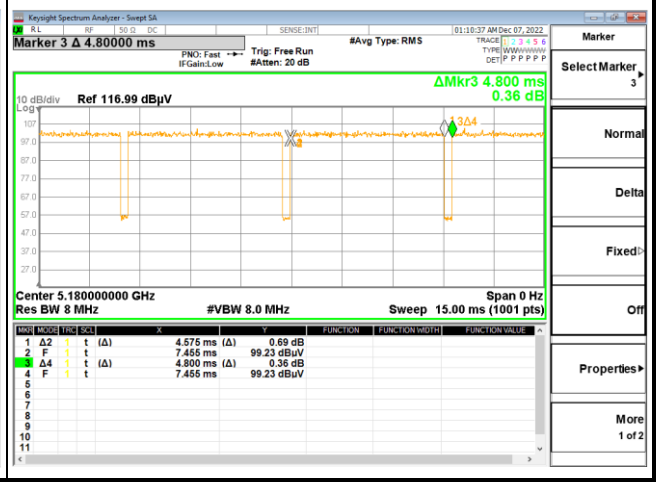
Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11a	96.05	5475	0.18	300Hz
5GHz 802.11n HT20	95.31	4575	0.22	300Hz
5GHz 802.11n HT40	90.10	2184	0.46	1kHz

802.11a



802.11n HT20



802.11n HT40