FCC CO-LOCATION RADIO TEST REPORT

FCC ID	:	**2A4DH-3284**
Equipment	:	**Digital Media Receiver**
Model Name	:	**CL32P4**
Applicant	:	**Amazon.com Services LLC** **410 Terry Avenue N, Seattle, WA 98109-5210 United States**
Standard	:	**FCC Part 15 Subpart C §15.247** **FCC Part 15 Subpart E §15.407**

The product was received on Dec. 18, 2023 and testing was performed from Dec. 22, 2023 to Feb. 06, 2024. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

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

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History of this test report

Report No.	Version	Description	Issue Date
FR362718-01G	01	Initial issue of report	Feb. 26, 2024
FR362718-01G	02	Revise Test Configuration of Equipment Under Test and Section 1.2 This report is an updated version, replacing the report issued on Feb. 26, 2024.	Apr. 17, 2024
FR362718-01G	03	Revise List of Measuring Equipment This report is an updated version, replacing the report issued on Apr. 17, 2024.	May 03, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)
3.1	15.407(b)	Unwanted Emissions	Pass
3.2	15.203	Antenna Requirement	Pass

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. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Alan Liu

Report Producer: Ming Chen

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	CL32P4
FCC ID	2A4DH-3284
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Channel Frequency Range	2402 MHz ~ 2480 MHz 2412 MHz ~ 2472 MHz 5150 MHz ~ 5250 MHz
Antenna Gain / Gain	**Bluetooth:** Printed PCB slot Antenna with gain 1.5 dBi **WLAN** **<2412 MHz ~ 2472 MHz>** Ant. 0: Printed PCB slot Antenna with gain 1.5 dBi Ant. 1: Printed PCB slot Antenna with gain 1.5 dBi **<5150 MHz ~ 5250 MHz>** Ant. 0: Printed PCB Loop Antenna with gain 2.0 dBi Ant. 1: Printed PCB Loop Antenna with gain 2.5 dBi

<table>
<tr><th colspan="2">Product Specification is subject to this standard</th></tr>
<tr><td>Type of Modulation</td><td>Bluetooth - LE: GFSK
802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)</td></tr>
<tr><td>Antenna Function for Transmitter</td><td><table>
<tr><th></th><th>Ant. 0</th><th>Ant. 1</th></tr>
<tr><td>Bluetooth-LE</td><td>V</td><td>-</td></tr>
<tr><td>802.11 a</td><td>V</td><td>-</td></tr>
<tr><td>802.11 a/n/ac</td><td>-</td><td>V</td></tr>
<tr><td>802.11 a/n/ac MIMO</td><td>V</td><td>V</td></tr>
</table></td></tr>
</table>

Remark: MIMO Ant. 0 + Ant. 1 is a calculated result from sum of the power MIMO Ant. 0 and MIMO Ant. 1.

1.3 Modification of EUT

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

1.4 Testing Location

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

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

FCC designation No.: TW3786

1.5 Applicable Standards

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

- FCC Part 15 Subpart E
- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

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 find Y plane with Notebook as worst plane emissions were reported in this report.

2.1 Carrier Frequency and Channel

2400-2483.5 MHz			
Bluetooth - LE (1Mbps)			
Channel	Freq. (MHz)	Channel	Freq. (MHz)
00	2402	29	2460
01	2404	39	2480
18	2438	-	-

2400-2483.5 MHz			
802.11b		802.11n HT20	
Channel	Freq. (MHz)	Channel	Freq. (MHz)
01	2412	01	2412
03	2422	11	-
08	2447	-	-

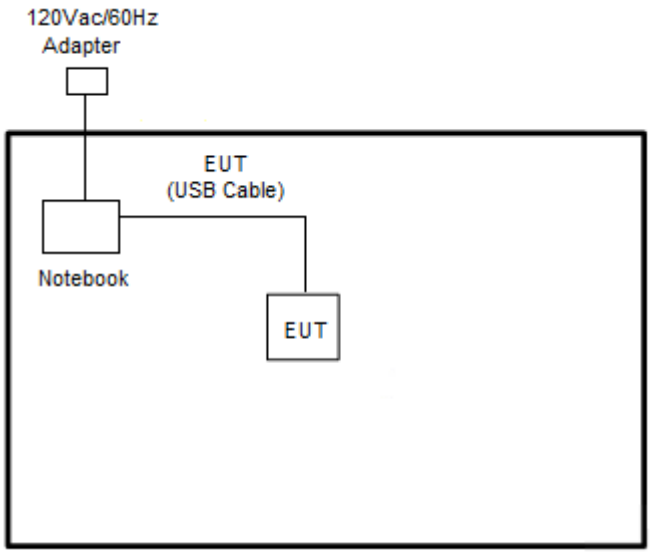
5180 MHz ~ 5240 MHz			
802.11a		802.11ac VHT80	
Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	42	5210

2.2 Test Mode

<Co-Location>

Test Mode	Modulation	Data Rate
Mode 1	WLAN 2.4GHz 802.11n HT20 Ch01 for Ant. 1+ Bluetooth-LE(1Mbps) Ch00	MCS0 + 1 Mbps
Mode 2	WLAN 2.4GHz 802.1b Ch 01 for Ant. 1 + Bluetooth-LE(1Mbps) Ch 18 for Ant. 0	1 Mbps + 1 Mbps
Mode 3	WLAN 2.4GHz 802.1b Ch 03 for Ant. 1 + Bluetooth-LE(1Mbps) Ch 29 for Ant. 0	1 Mbps + 1 Mbps
Mode 4	WLAN 2.4GHz 802.1b Ch 08 for Ant. 1 + Bluetooth-LE(1Mbps) Ch 01 for Ant. 0	1 Mbps + 1 Mbps
Mode 5	WLAN 2.4GHz 802.11n HT20 Ch 11 for Ant. 1 + Bluetooth-LE(1Mbps) Ch 39 for Ant. 0	MCS0 + 1 Mbps
Mode 6	WLAN 5GHz 802.11a Ch 36 for Ant. 1 + Bluetooth-LE(1Mbps) Ch 39 for Ant. 0	6 Mbps + 1 Mbps
Mode 7	WLAN 5GHz 802.11ac VHT80 Ch 42 for MIMO <Ant. 0+1> + Bluetooth-LE(2Mbps) Ch 39 for Ant. 0	MCS0 + 2 Mbps

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Serial number	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	Latitude5310	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “ComplianceTool 1.0.1.25” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Unwanted Emissions Measurement

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

3.1.1 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.

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section 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

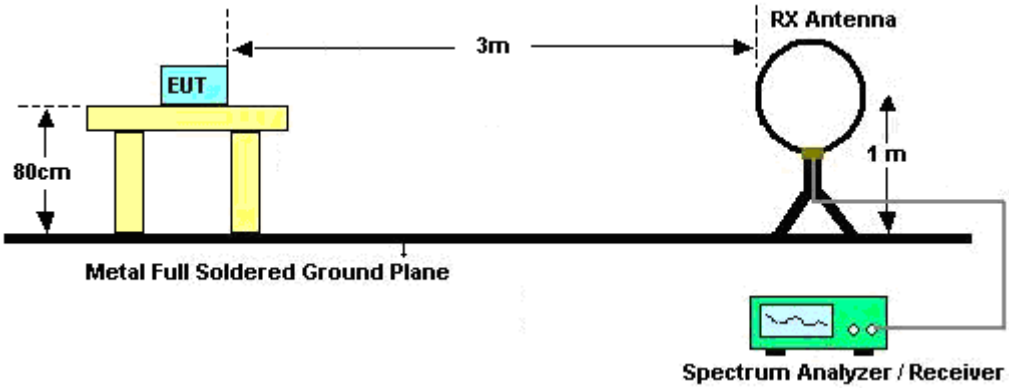
(3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz

- 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.

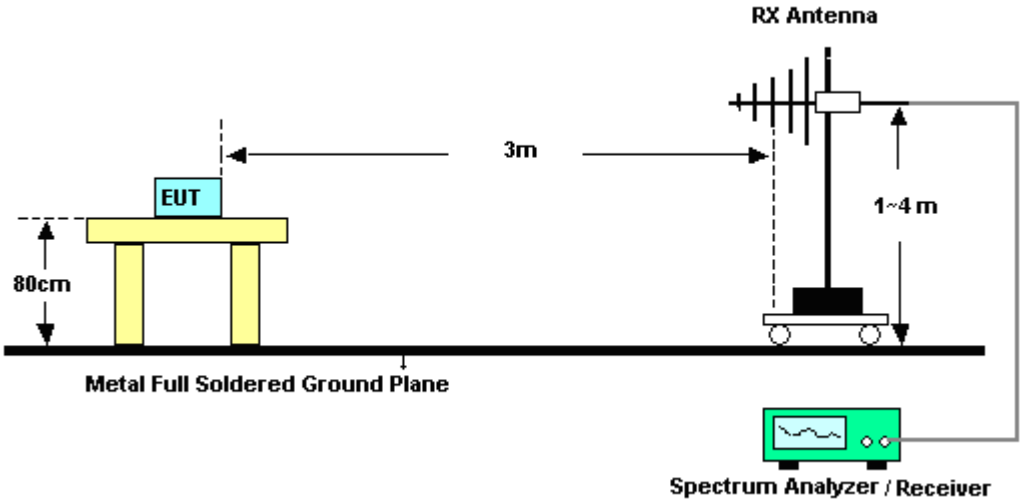
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna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

3.1.4 Test Setup

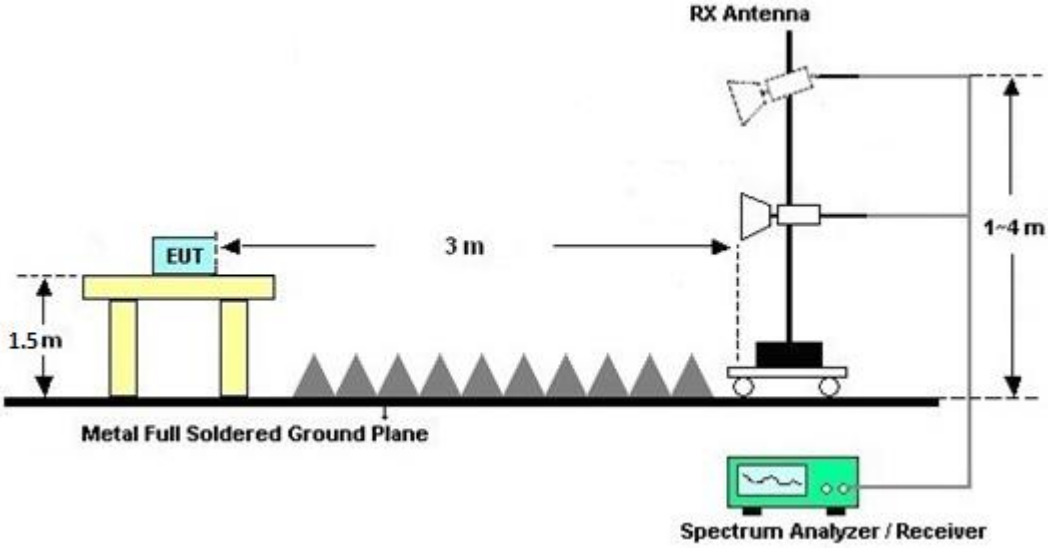
For radiated emissions below 30MHz



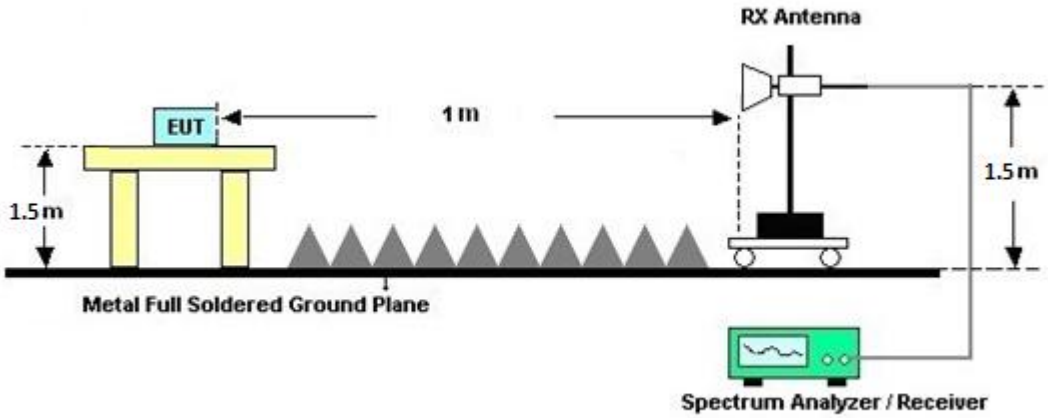
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.1.5 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.

3.1.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A and B.

3.1.7 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix A and B.

3.2 Antenna Requirements

3.2.1 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.

3.2.2 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
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	N/A	Oct. 06, 2023	Dec. 22, 2023~ Feb. 06, 2024	Oct. 05, 2024	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Dec. 22, 2023~ Feb. 06, 2024	Sep. 11, 2024	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Dec. 22, 2023~ Feb. 06, 2024	Jun. 26, 2024	Radiation (03CH20-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Dec. 22, 2023~ Feb. 06, 2024	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 22, 2023~ Feb. 06, 2024	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 22, 2023~ Feb. 06, 2024	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 12, 2023	Dec. 22, 2023~ Feb. 06, 2024	Dec. 11, 2024	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 20, 2023	Dec. 22, 2023~ Feb. 06, 2024	Oct. 19, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	02360	1GHz-18GHz	Oct. 30, 2023	Dec. 22, 2023~ Feb. 06, 2024	Oct. 29, 2024	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	1223	18GHz-40GHz	Jul. 10, 2023	Dec. 22, 2023~ Feb. 06, 2024	Jul. 09, 2024	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 02, 2023	Dec. 22, 2023~ Feb. 06, 2024	Jan. 01, 2024	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 01, 2024	Dec. 22, 2023~ Feb. 06, 2024	Dec. 31, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45S E	980792	N/A	Nov. 13, 2023	Dec. 22, 2023~ Feb. 06, 2024	Nov. 12, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 18, 2023	Dec. 22, 2023~ Feb. 06, 2024	Jan. 17, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 17, 2024	Dec. 22, 2023~ Feb. 06, 2024	Jan. 16, 2025	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 28, 2023	Dec. 22, 2023~ Feb. 06, 2024	Mar. 27, 2024	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Dec. 22, 2023~ Feb. 06, 2024	N/A	Radiation (03CH20-HY)
Attenuator	Woken	WATT-218FS-10	N/A	30MHz~18GHz	Sep. 26, 2023	Dec. 22, 2023~ Feb. 06, 2024	Sep. 27, 2024	Radiation (03CH20-HY)

5 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.40 dB

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.50 dB

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.60 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.40 dB

Appendix A. Radiated Spurious Emission

Test Engineer :	John Chuang, David Dai and Howard Huang	Temperature :	19.6~23.3°C
		Relative Humidity :	65.8~70.3%

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 1 Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00		2389.59	58.73	-15.27	74	48.99	27.26	18.72	36.24	100	243	P	H
		2390	47.96	-6.04	54	38.22	27.26	18.72	36.24	100	243	A	H
	*	2412	112.02	-	-	102.16	27.35	18.76	36.25	100	243	P	H
	*	2412	104.29	-	-	94.43	27.35	18.76	36.25	100	243	A	H
		2389.695	55.04	-18.96	74	45.3	27.26	18.72	36.24	358	313	P	V
		2390	42.65	-11.35	54	32.91	27.26	18.72	36.24	358	313	A	V
	*	2412	106.34	-	-	96.48	27.35	18.76	36.25	358	313	P	V
	*	2412	98.71	-	-	88.85	27.35	18.76	36.25	358	313	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 1 Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00		2389.17	51.97	-22.03	74	42.23	27.26	18.72	36.24	100	304	P	H
		2389.905	43.31	-10.69	54	33.57	27.26	18.72	36.24	100	304	A	H
	*	2402	102.21	-	-	92.41	27.31	18.74	36.25	100	304	P	H
	*	2402	101.1	-	-	91.3	27.31	18.74	36.25	100	304	A	H
		2389.485	50.51	-23.49	74	40.77	27.26	18.72	36.24	399	19	P	V
		2388.96	41.52	-12.48	54	31.78	27.26	18.72	36.24	399	19	A	V
	*	2402	98.4	-	-	88.6	27.31	18.74	36.25	399	19	P	V
	*	2402	97.36	-	-	87.56	27.31	18.74	36.25	399	19	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz ((Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Margin Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 1		4804	44.06	-29.94	74	36.24	32.4	12.92	37.5	-	-	P	H
Ant 1		4824	51.81	-22.19	74	43.97	32.4	12.96	37.52	100	123	P	H
11n HT20 Ch01		4824	40.17	-13.83	54	32.33	32.4	12.96	37.52	100	123	A	H
+		4804	42.94	-31.06	74	35.12	32.4	12.92	37.5	-	-	P	V
Ant 0		4824	46.13	-27.87	74	38.29	32.4	12.96	37.52	299	68	P	V
BLE(1M) Ch00		4824	35.05	-18.95	54	27.21	32.4	12.96	37.52	299	68	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 2 Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18		2388.435	52.57	-21.43	74	42.84	27.25	18.72	36.24	100	244	P	H
		2378.985	42	-12	54	32.32	27.22	18.7	36.24	100	244	A	H
	*	2412	109.63	-	-	99.77	27.35	18.76	36.25	100	244	P	H
	*	2412	106.5	-	-	96.64	27.35	18.76	36.25	100	244	A	H
		2344.335	49.94	-24.06	74	40.44	27.1	18.63	36.23	397	91	P	V
		2386.02	39.07	-14.93	54	29.36	27.24	18.71	36.24	397	91	A	V
	*	2412	103.74	-	-	93.88	27.35	18.76	36.25	397	91	P	V
	*	2412	100.57	-	-	90.71	27.35	18.76	36.25	397	91	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 2 Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18		2379.6	49.09	-24.91	74	39.41	27.22	18.7	36.24	124	292	P	H
		2386	41.34	-12.66	54	31.63	27.24	18.71	36.24	124	292	A	H
	*	2438	101.35	-	-	91.35	27.45	18.81	36.26	124	292	P	H
	*	2438	100.8	-	-	90.8	27.45	18.81	36.26	124	292	A	H
		2494.08	50.28	-23.72	74	39.97	27.68	18.91	36.28	124	292	P	H
		2490.88	40.75	-13.25	54	30.46	27.66	18.91	36.28	124	292	A	H
		2375.76	48.98	-25.02	74	39.33	27.2	18.69	36.24	400	244	P	V
		2385.84	40.16	-13.84	54	30.45	27.24	18.71	36.24	400	244	A	V
	*	2438	98.09	-	-	88.09	27.45	18.81	36.26	400	244	P	V
	*	2438	97.54	-	-	87.54	27.45	18.81	36.26	400	244	A	V
		2489.6	50.62	-23.38	74	40.33	27.66	18.91	36.28	400	244	P	V
		2499.44	40.49	-13.51	54	30.15	27.7	18.92	36.28	400	244	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 2 Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18		2386	53.53	-20.47	74	43.91	27.24	18.62	36.24	248	228	P	H
		2386	45.57	-8.43	54	35.95	27.24	18.62	36.24	248	228	A	H
		2386	50.98	-23.02	74	41.36	27.24	18.62	36.24	400	308	P	V
		2386	43.15	-10.85	54	33.53	27.24	18.62	36.24	400	308	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz ((Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 2 Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18		4824	51.45	-22.55	74	43.62	32.4	12.95	37.52	109	121	P	H
		4824	48.17	-5.83	54	40.34	32.4	12.95	37.52	109	121	A	H
		4876	43.38	-30.62	74	35.34	32.5	13.1	37.56	-	-	P	H
		7314	47.58	-26.42	74	33.41	36.9	15.88	38.61	-	-	P	H
		4824	46.98	-27.02	74	39.15	32.4	12.95	37.52	359	101	P	V
		4824	41.3	-12.7	54	33.47	32.4	12.95	37.52	359	101	A	V
		4876	42.65	-31.35	74	34.61	32.5	13.1	37.56	-	-	P	V
		7314	47.77	-26.23	74	33.6	36.9	15.88	38.61	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 3 Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29		2377.83	52.16	-21.84	74	42.49	27.21	18.7	36.24	100	245	P	H
		2384.13	42.43	-11.57	54	32.72	27.24	18.71	36.24	100	245	A	H
	*	2422	109.17	-	-	99.25	27.39	18.78	36.25	100	245	P	H
	*	2422	106.02	-	-	96.1	27.39	18.78	36.25	100	245	A	H
		2354.205	49.56	-24.44	74	40.02	27.12	18.65	36.23	397	91	P	V
		2384.13	39.26	-14.74	54	29.55	27.24	18.71	36.24	397	91	A	V
	*	2422	103.85	-	-	93.93	27.39	18.78	36.25	397	91	P	V
	*	2422	100.68	-	-	90.76	27.39	18.78	36.25	397	91	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 3 Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29		2364.4	49.6	-24.4	74	40	27.16	18.67	36.23	110	131	P	H
		2375.12	40.07	-13.93	54	30.42	27.2	18.69	36.24	110	131	A	H
	*	2460	101.61	-	-	91.49	27.54	18.85	36.27	110	131	P	H
	*	2460	101.07	-	-	90.95	27.54	18.85	36.27	110	131	A	H
		2498.4	53.9	-20.1	74	43.57	27.69	18.92	36.28	110	131	P	H
		2499.2	47.12	-6.88	54	36.78	27.7	18.92	36.28	110	131	A	H
		2352.24	49.3	-24.7	74	39.77	27.11	18.65	36.23	393	250	P	V
		2382.96	40	-14	54	30.3	27.23	18.71	36.24	393	250	A	V
	*	2460	97.6	-	-	87.48	27.54	18.85	36.27	393	250	P	V
	*	2460	97.03	-	-	86.91	27.54	18.85	36.27	393	250	A	V
		2499.04	49.88	-24.12	74	39.54	27.7	18.92	36.28	393	250	P	V
		2496.96	41.81	-12.19	54	31.48	27.69	18.92	36.28	393	250	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 3 Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29		2384	54.65	-19.35	74	45.03	27.24	18.62	36.24	100	249	P	H
		2384	45.42	-8.58	54	35.8	27.24	18.62	36.24	100	249	A	H
													H
													H
		2384	51.02	-22.98	74	41.4	27.24	18.62	36.24	364	316	P	V
		2384	43.58	-10.42	54	33.96	27.24	18.62	36.24	364	316	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 3 Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29		2498	55.99	-18.01	74	45.73	27.69	18.85	36.28	202	289	P	H
		2498	48.18	-5.82	54	37.92	27.69	18.85	36.28	202	289	A	H
													H
													H
		2498	53.41	-20.59	74	43.15	27.69	18.85	36.28	369	0	P	V
		2498	45.46	-8.54	54	35.2	27.69	18.85	36.28	369	0	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz ((Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 3 Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29		4844	52.06	-21.94	74	44.19	32.4	13	37.53	100	133	P	H
		4844	47.52	-6.48	54	39.65	32.4	13	37.53	100	133	A	H
		4920	43.73	-30.27	74	35.46	32.72	13.15	37.6			P	H
		7266	50.79	-23.21	74	36.42	37.04	15.9	38.57	100	39	P	H
		7266	40.72	-13.28	54	26.35	37.04	15.9	38.57	100	39	A	H
		7380	47.33	-26.67	74	33.23	36.72	16.04	38.66			P	H
		4844	47.86	-26.14	74	39.99	32.4	13	37.53	379	86	P	V
		4844	40.49	-13.51	54	32.62	32.4	13	37.53	379	86	A	V
		4920	45.31	-28.69	74	37.04	32.72	13.15	37.6			P	V
		7266	50.18	-23.82	74	35.81	37.04	15.9	38.57	400	2	P	V
		7266	39.13	-14.87	54	24.76	37.04	15.9	38.57	400	2	A	V
		7380	47.86	-26.14	74	33.76	36.72	16.04	38.66			P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 4 Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01		2358.64	51.29	-22.71	74	41.73	27.13	18.66	36.23	100	231	P	H
		2387.92	40.61	-13.39	54	30.88	27.25	18.72	36.24	100	231	A	H
	*	2447	108.95	-	-	98.89	27.49	18.83	36.26	100	231	P	H
	*	2447	105.79	-	-	95.73	27.49	18.83	36.26	100	231	A	H
		2497.28	51.47	-22.53	74	41.14	27.69	18.92	36.28	100	231	P	H
		2490	41.59	-12.41	54	31.3	27.66	18.91	36.28	100	231	A	H
		2387.6	49.6	-24.4	74	39.87	27.25	18.72	36.24	392	315	P	V
		2388.56	38.5	-15.5	54	28.77	27.25	18.72	36.24	392	315	A	V
	*	2447	103.59	-	-	93.53	27.49	18.83	36.26	392	315	P	V
	*	2447	100.57	-	-	90.51	27.49	18.83	36.26	392	315	A	V
		2488	50.35	-23.65	74	40.08	27.65	18.9	36.28	392	315	P	V
		2490.08	39.37	-14.63	54	29.08	27.66	18.91	36.28	392	315	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 4 Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01		2362.605	50.25	-23.75	74	40.66	27.15	18.67	36.23	101	305	P	H
		2362.29	42.62	-11.38	54	33.03	27.15	18.67	36.23	101	305	A	H
	*	2404	101.86	-	-	92.04	27.32	18.75	36.25	101	305	P	H
	*	2404	101.28	-	-	91.46	27.32	18.75	36.25	101	305	A	H
		2328.795	50.06	-23.94	74	40.58	27.1	18.6	36.22	398	21	P	V
		2358.615	40.49	-13.51	54	30.93	27.13	18.66	36.23	398	21	A	V
	*	2404	97.91	-	-	88.09	27.32	18.75	36.25	398	21	P	V
	*	2404	97.33	-	-	87.51	27.32	18.75	36.25	398	21	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 4 Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01		2361	51.67	-22.33	74	42.19	27.14	18.57	36.23	335	295	P	H
		2361	43.4	-10.6	54	33.92	27.14	18.57	36.23	335	295	A	H
													H
													H
		2361	51.84	-22.16	74	42.36	27.14	18.57	36.23	283	0	P	V
		2361	43.44	-10.56	54	33.96	27.14	18.57	36.23	283	0	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 4 Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01		2490	53.45	-20.55	74	43.24	27.66	18.83	36.28	261	240	P	H
		2490	45.07	-8.93	54	34.86	27.66	18.83	36.28	261	240	A	H
													H
													H
		2490	51.27	-22.73	74	41.06	27.66	18.83	36.28	100	209	P	V
		2490	42.09	-11.91	54	31.88	27.66	18.83	36.28	100	209	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz ((Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 4 Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01		4808	42.89	-31.11	74	35.07	32.4	12.92	37.5	-	-	P	H
		4894	48.99	-25.01	74	40.9	32.58	13.09	37.58	100	133	P	H
		4894	44.2	-9.8	54	36.11	32.58	13.09	37.58	100	133	A	H
		7341	47.84	-26.16	74	33.58	36.9	15.99	38.63	-	-	P	H
		4808	42.59	-31.41	74	34.77	32.4	12.92	37.5	-	-	P	V
		4894	46.35	-27.65	74	38.26	32.58	13.09	37.58	400	91	P	V
		4894	39.57	-14.43	54	31.48	32.58	13.09	37.58	400	91	A	V
		7341	47.93	-26.07	74	33.67	36.9	15.99	38.63	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 5 Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	*	2462	111.55	-	-	101.42	27.55	18.85	36.27	117	231	P	H
	*	2462	103.76	-	-	93.63	27.55	18.85	36.27	117	231	A	H
		2484.12	61.55	-12.45	74	51.28	27.64	18.9	36.27	117	231	P	H
		2483.64	47.69	-6.31	54	37.44	27.63	18.89	36.27	117	231	A	H
	*	2462	106.79	-	-	96.66	27.55	18.85	36.27	392	319	P	V
	*	2462	98.94	-	-	88.81	27.55	18.85	36.27	392	319	A	V
		2484.04	54.96	-19.04	74	44.69	27.64	18.9	36.27	392	319	P	V
		2483.52	42.37	-11.63	54	32.12	27.63	18.89	36.27	392	319	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 5 Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	*	2480	101.62	-	-	91.38	27.62	18.89	36.27	298	202	P	H
	*	2480	101.08	-	-	90.84	27.62	18.89	36.27	298	202	A	H
		2484.28	54.63	-19.37	74	44.36	27.64	18.9	36.27	298	202	P	H
		2483.6	43.79	-10.21	54	33.54	27.63	18.89	36.27	298	202	A	H
	*	2480	95.87	-	-	85.63	27.62	18.89	36.27	299	238	P	V
	*	2480	95.34	-	-	85.1	27.62	18.89	36.27	299	238	A	V
		2491.44	50.57	-23.43	74	40.27	27.67	18.91	36.28	299	238	P	V
		2491.6	40.82	-13.18	54	30.52	27.67	18.91	36.28	299	238	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz ((Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 5 Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39		4924	43.68	-30.32	74	35.38	32.74	13.16	37.6	-	-	P	H
		4960	43.96	-30.04	74	35.42	32.94	13.23	37.63	-	-	P	H
		7386	48.06	-25.94	74	34	36.68	16.05	38.67	100	42	P	H
		7386	39.79	-14.21	54	25.73	36.68	16.05	38.67	100	42	A	H
		7440	48.62	-25.38	74	34.69	36.52	16.12	38.71	261	0	P	H
		7440	38.43	-15.57	54	24.5	36.52	16.12	38.71	261	0	A	H
		4924	43.81	-30.19	74	35.51	32.74	13.16	37.6	-	-	P	V
		4960	43.74	-30.26	74	35.2	32.94	13.23	37.63	-	-	P	V
		7386	47.93	-26.07	74	33.87	36.68	16.05	38.67	-	-	P	V
		7440	47.37	-26.63	74	33.44	36.52	16.12	38.71	-	-	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

5GHz 5150~5250MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 6 Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39		5129.48	53.42	-20.58	74	44.85	32.94	13.39	37.76	100	326	P	H
		5150	43.33	-10.67	54	34.83	32.9	13.38	37.78	100	326	A	H
	*	5180	106.98	-	-	98.45	32.96	13.37	37.8	100	326	P	H
	*	5180	100.07	-	-	91.54	32.96	13.37	37.8	100	326	A	H
		5137.02	48.63	-25.37	74	40.08	32.93	13.39	37.77	400	242	P	V
		5150	39.59	-14.41	54	31.09	32.9	13.38	37.78	400	242	A	V
	*	5180	98.61	-	-	90.08	32.96	13.37	37.8	400	242	P	V
	*	5180	91.78	-	-	83.25	32.96	13.37	37.8	400	242	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 6 Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	*	2480	99.81	-	-	89.65	27.62	18.81	36.27	283	67	P	H
	*	2480	99.09	-	-	88.93	27.62	18.81	36.27	283	67	A	H
		2486.96	50.81	-23.19	74	40.62	27.65	18.82	36.28	283	67	P	H
		2485.48	40.64	-13.36	54	30.46	27.64	18.82	36.28	283	67	A	H
	*	2480	89.82	-	-	79.66	27.62	18.81	36.27	100	199	P	V
	*	2480	88.29	-	-	78.13	27.62	18.81	36.27	100	199	A	V
		2493	49.77	-24.23	74	39.54	27.67	18.84	36.28	100	199	P	V
		2490.48	40.52	-13.48	54	30.31	27.66	18.83	36.28	100	199	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 6 Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39		4960	47.94	-26.06	74	39.29	32.94	13.34	37.63	-	-	P	H
		7440	48.45	-25.55	74	33.82	36.52	16.82	38.71	130	360	P	H
		7440	39.49	-14.51	54	24.86	36.52	16.82	38.71	130	360	A	H
		10360	50.34	-17.86	68.2	34.02	38.78	18.96	41.42	-	-	P	H
		15540	50.81	-23.19	74	34.05	38.22	23.28	44.74	400	163	P	H
		15540	41.93	-12.07	54	25.17	38.22	23.28	44.74	400	163	A	H
		4960	47.6	-26.4	74	38.95	32.94	13.34	37.63	-	-	P	V
		7440	48.58	-25.42	74	33.95	36.52	16.82	38.71	100	43	P	V
		7440	39.51	-14.49	54	24.88	36.52	16.82	38.71	100	43	A	V
		10360	50.29	-17.91	68.2	33.97	38.78	18.96	41.42	-	-	P	V
		15540	50.97	-23.03	74	34.21	38.22	23.28	44.74	100	122	P	V
		15540	42.48	-11.52	54	25.72	38.22	23.28	44.74	100	122	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

5GHz 5150~5250MHz (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 7 Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39		5148.98	54.16	-19.84	74	45.6	32.9	13.44	37.78	100	112	P	H
		5149.76	45.14	-8.86	54	36.58	32.9	13.44	37.78	100	112	A	H
	*	5210	97.36	-	-	88.7	32.98	13.5	37.82	100	112	P	H
	*	5210	89.9	-	-	81.24	32.98	13.5	37.82	100	112	A	H
		5373.42	47.27	-26.73	74	38.68	32.79	13.74	37.94	100	112	P	H
		5356.78	37.31	-16.69	54	28.79	32.73	13.72	37.93	100	112	A	H
		5150	58.09	-15.91	74	49.54	32.9	13.43	37.78	100	83	P	V
		5149.76	48.96	-5.04	54	40.4	32.9	13.44	37.78	100	83	A	V
	*	5210	102.02	-	-	93.36	32.98	13.5	37.82	100	83	P	V
	*	5210	94.79	-	-	86.13	32.98	13.5	37.82	100	83	A	V
		5371.6	47.73	-26.27	74	39.14	32.79	13.74	37.94	100	83	P	V
		5350.28	38.66	-15.34	54	30.17	32.7	13.71	37.92	100	83	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE (Band Edge @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Margin Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 7 Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	*	2480	100.99	-	-	90.75	27.62	18.89	36.27	137	163	P	H
	*	2480	99.4	-	-	89.16	27.62	18.89	36.27	137	163	A	H
		2488.92	51.32	-22.68	74	41.04	27.66	18.9	36.28	137	163	P	H
		2483.52	42.16	-11.84	54	31.91	27.63	18.89	36.27	137	163	A	H
	*	2480	101.32	-	-	91.08	27.62	18.89	36.27	316	299	P	V
	*	2480	99.72	-	-	89.48	27.62	18.89	36.27	316	299	A	V
		2490.36	52.39	-21.61	74	42.1	27.66	18.91	36.28	316	299	P	V
		2483.52	42.23	-11.77	54	31.98	27.63	18.89	36.27	316	299	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

Ant. Simultaneously	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
Mode 7 Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39		4960	48.2	-25.8	74	39.66	32.94	13.23	37.63	150	290	P	H
		4960	39.85	-14.15	54	31.31	32.94	13.23	37.63	150	290	A	H
		7440	48.63	-25.37	74	34	36.52	16.82	38.71	250	160	P	H
		7440	39.45	-14.55	54	24.82	36.52	16.82	38.71	250	160	A	H
		10420	51.91	-16.29	68.2	35.64	38.72	19	41.45	-	-	P	H
		15630	50.69	-23.31	74	33.97	38.01	23.36	44.65	250	46	P	H
		15630	41.73	-12.27	54	25.01	38.01	23.36	44.65	250	46	A	H
		4960	48.35	-25.65	74	39.81	32.94	13.23	37.63	200	135	P	V
		4960	40.39	-13.61	54	31.85	32.94	13.23	37.63	200	135	A	V
		7440	48.45	-25.55	74	33.82	36.52	16.82	38.71	250	16	P	V
		7440	39.37	-14.63	54	24.74	36.52	16.82	38.71	250	16	A	V
		10420	50.73	-17.47	68.2	34.46	38.72	19	41.45	-	-	P	V
		15630	51.23	-22.77	74	34.51	38.01	23.36	44.65	300	200	P	V
		15630	41.71	-12.29	54	24.99	38.01	23.36	44.65	300	200	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission above 18GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
Mode 7		39496	55.67	-18.33	74	39.95	44.91	27.31	56.5	-	-	P	H
Ant 0+1		39496	43.55	-10.45	54	27.83	44.91	27.31	56.5	-	-	A	H
11ac VHT80		39552	55.16	-18.84	74	38.92	45.36	27.32	56.44	-	-	P	V
Ch42 + Ant 0 BLE(2M) Ch39		39552	44.05	-9.95	54	27.81	45.36	27.32	56.44	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
Mode 7 Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39		82.53	29.11	-10.89	40	48.98	13.89	1.78	35.54	-	-	P	H
		130.3	26.42	-17.08	43.5	41.87	17.77	2.24	35.46	-	-	P	H
		153.08	30.94	-12.56	43.5	46.77	17.18	2.41	35.42	-	-	P	H
		281.6	25.74	-20.26	46	38.8	18.93	3.17	35.16	-	-	P	H
		792.8	33.29	-12.71	46	33.5	28.04	5.24	33.49	-	-	P	H
		995.2	38.38	-15.62	54	34.96	30.24	5.94	32.76	-	-	P	H
		62.81	27.29	-12.71	40	49.03	12.24	1.57	35.55	-	-	P	V
		114.83	28.12	-15.38	43.5	44	17.5	2.1	35.48	-	-	P	V
		143.39	32.34	-11.16	43.5	47.59	17.84	2.35	35.44	-	-	P	V
		276.8	25.2	-20.8	46	38.37	18.86	3.14	35.17	-	-	P	V
		716	30.25	-15.75	46	32.05	27.07	4.99	33.86	-	-	P	V
		982.4	36.03	-17.97	54	32.36	30.6	5.89	32.82	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **Margin 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:

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

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Margin Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Margin Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

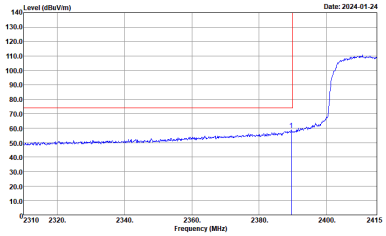
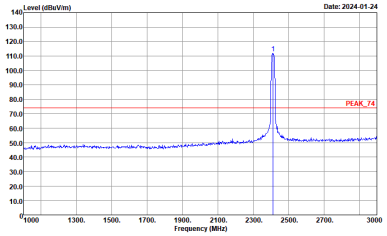
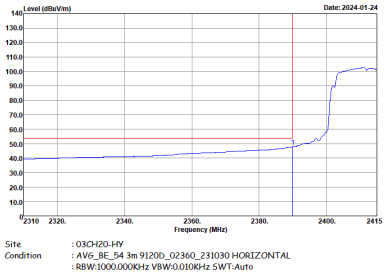
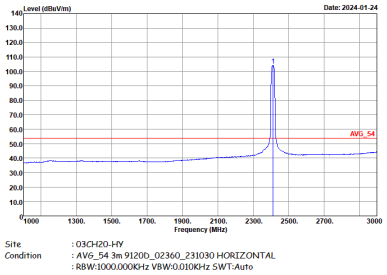
Appendix B. Radiated Spurious Emission Plots

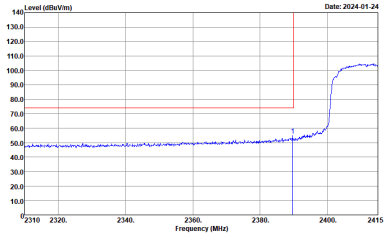
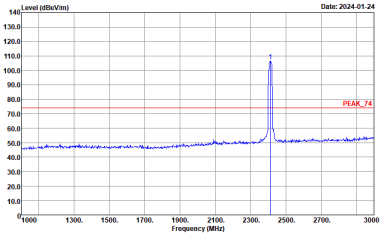
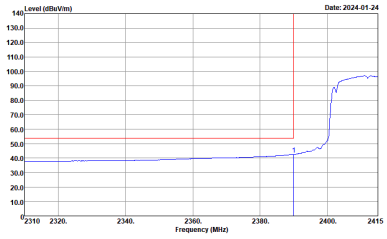
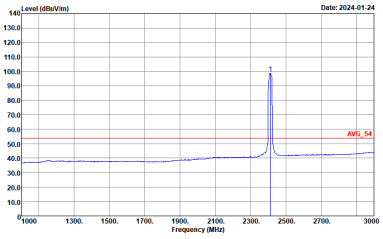
Test Engineer :	John Chuang, David Dai and Howard Huang	**Temperature :**	19.6~23.3°C
		Relative Humidity :	65.8~70.3%

Note symbol

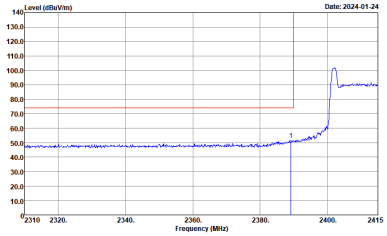
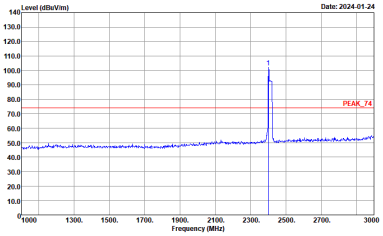
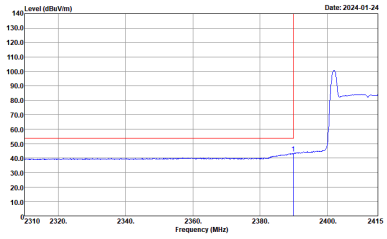
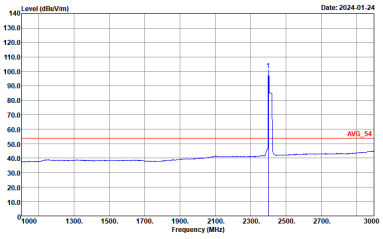
-L	**Low channel location**
-R	**High channel location**

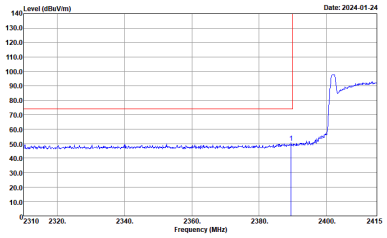
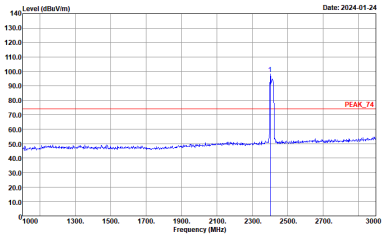
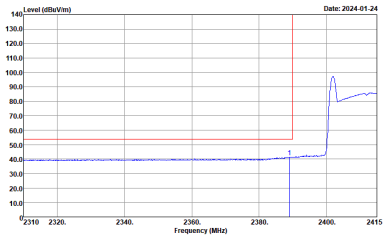
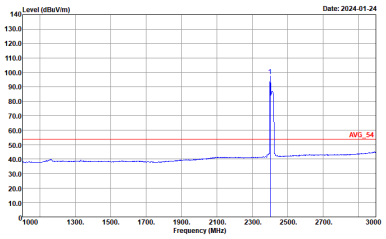
2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

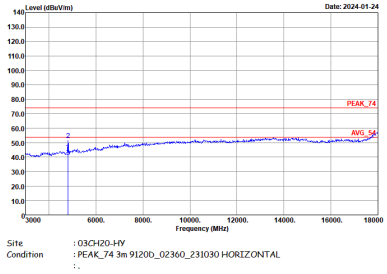
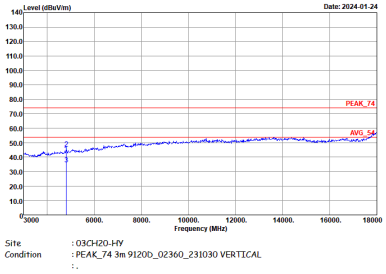
ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

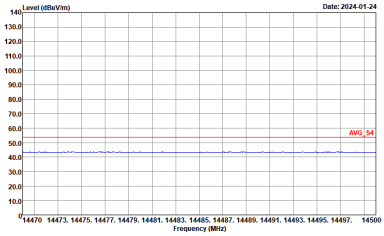
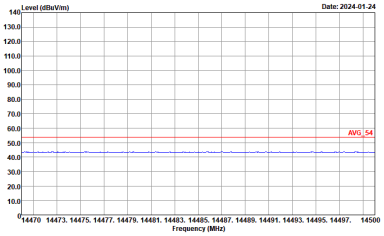
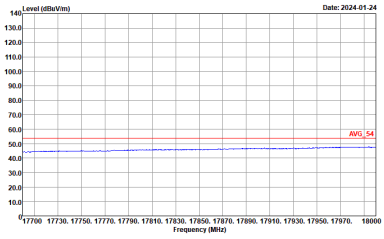
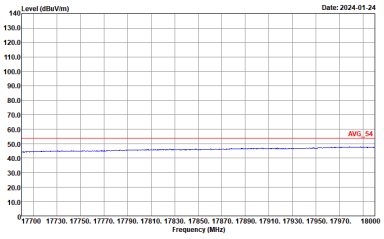
BLE (Band Edge @ 3m)

ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

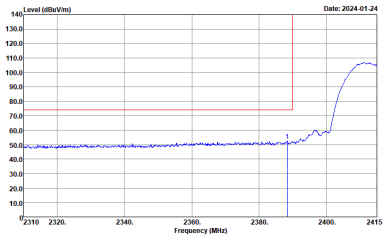
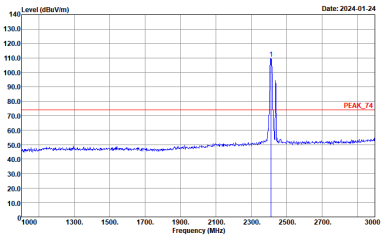
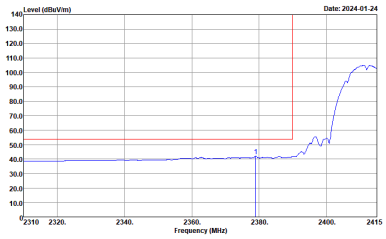
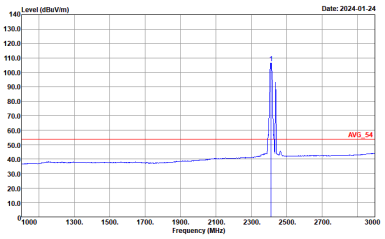
ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

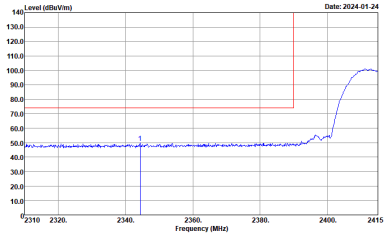
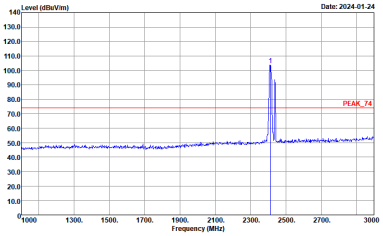
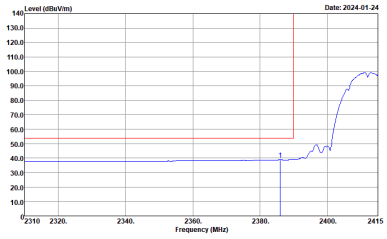
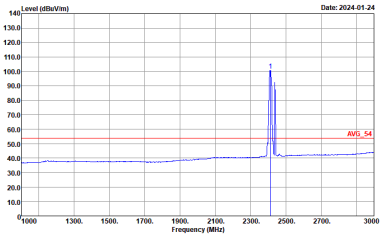
2.4GHz 2400~2483.5MHz (Harmonic @ 3m)

ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Horizontal	Vertical
Peak Avg.		

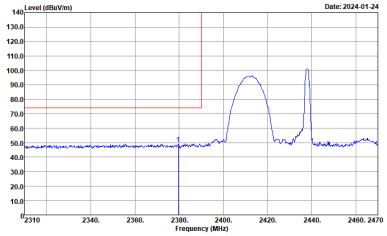
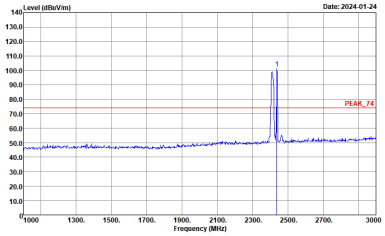
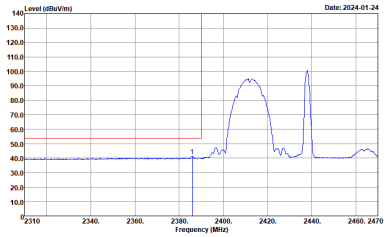
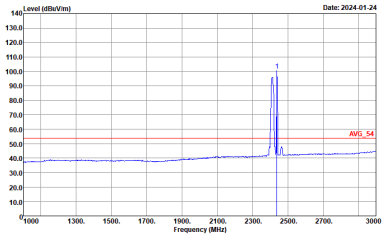
ANT	Mode 1:Ant 1 11n HT20 Ch01 + Ant 0 BLE(1M) Ch00	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

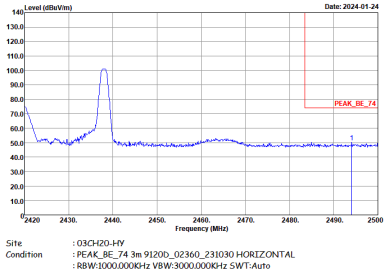
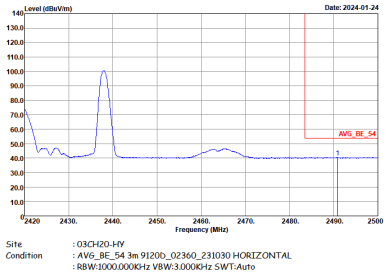
2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

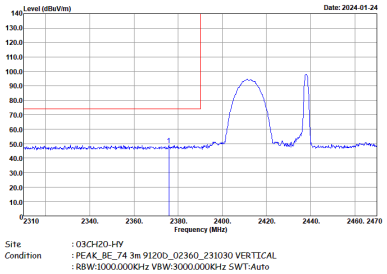
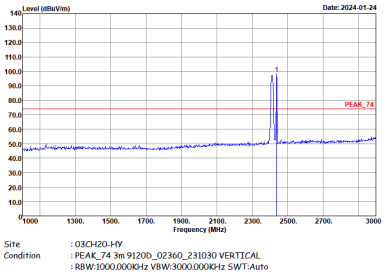
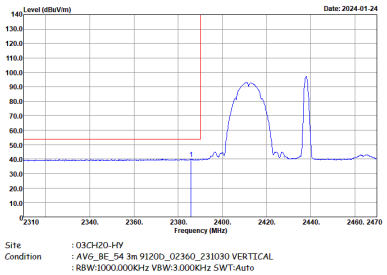
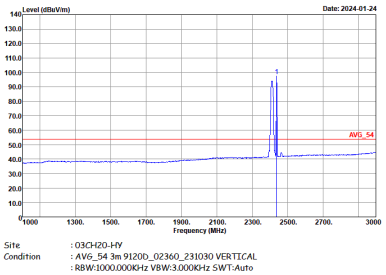
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

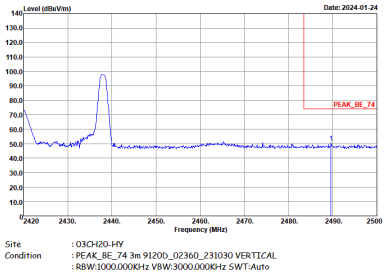
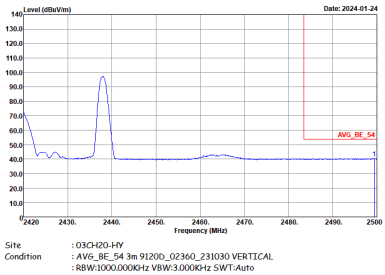
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

BLE (Band Edge @ 3m)

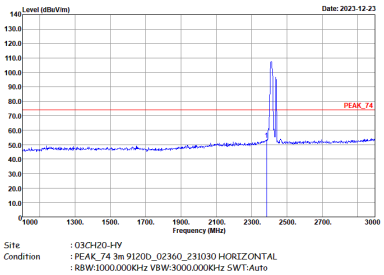
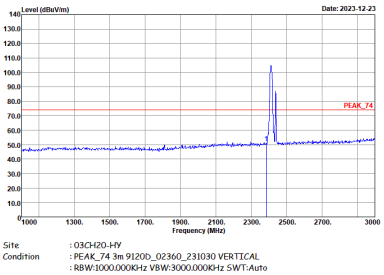
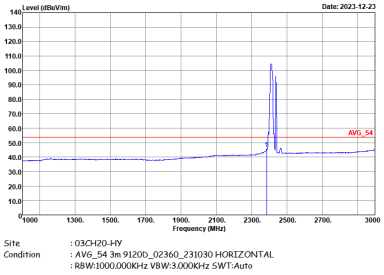
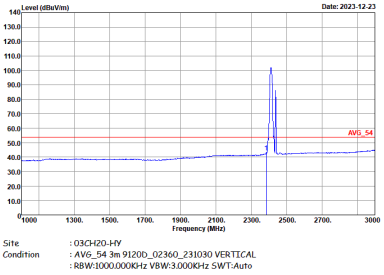
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18 - L	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18- R	
Simultaneously	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

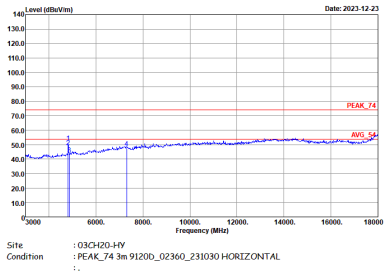
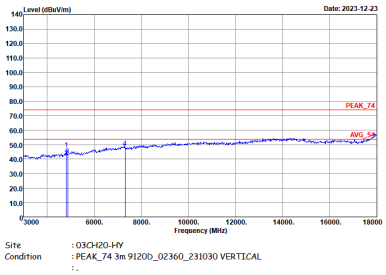
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18 - L	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

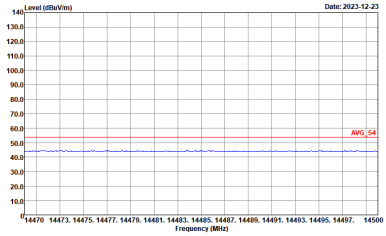
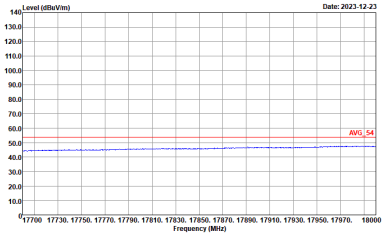
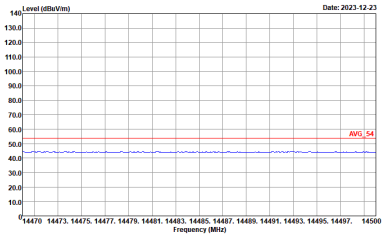
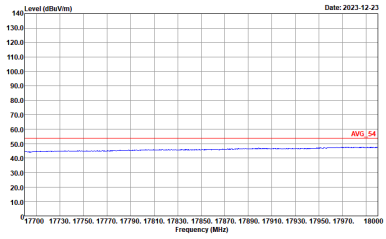
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18 - R	
Simultaneously	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

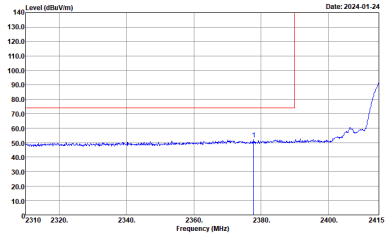
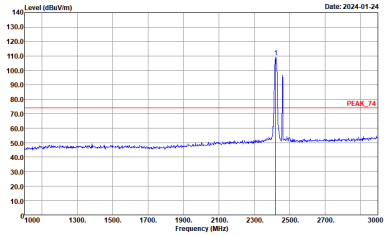
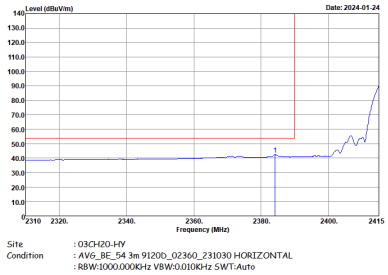
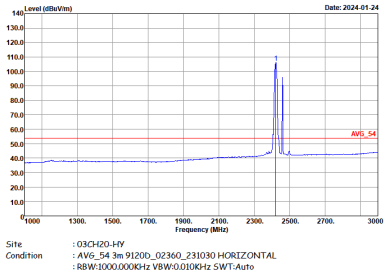
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18	
Simultaneously	Horizontal	Vertical
Peak		
Avg.		

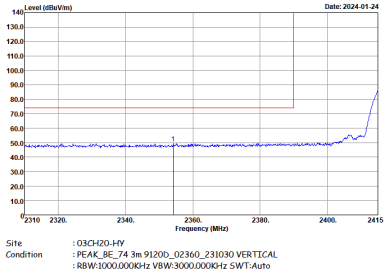
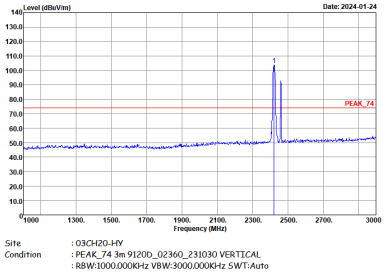
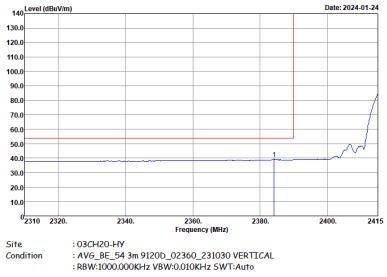
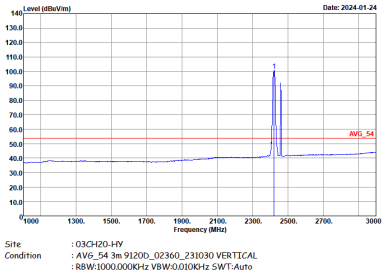
2.4GHz 2400~2483.5MHz (Harmonic @ 3m)

ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18	
Simultaneously	Horizontal	Vertical
Peak Avg.		

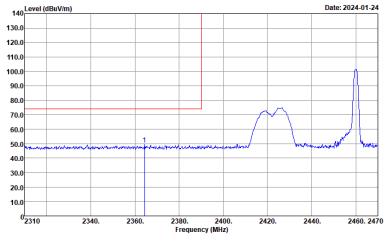
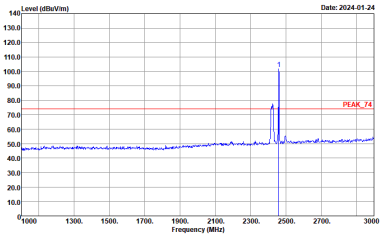
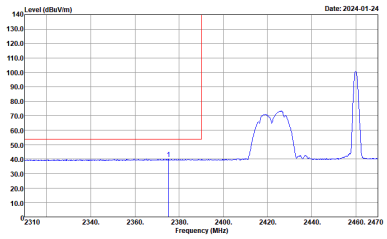
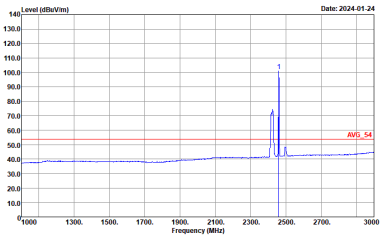
ANT	Mode 2: Ant 1 11b Ch01 + Ant 0 BLE(1M) Ch18	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .  Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .
17.7G ~18G Avg	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	

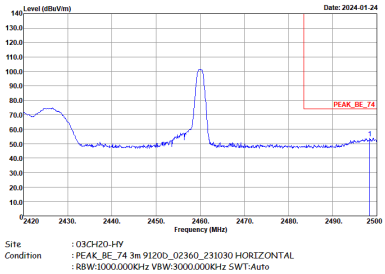
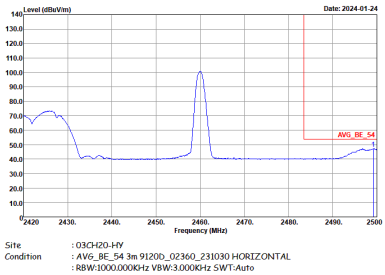
2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

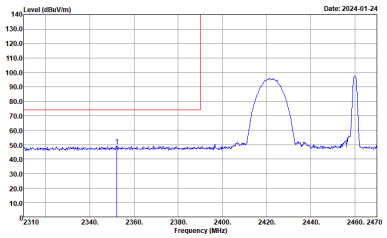
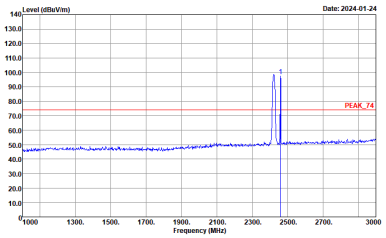
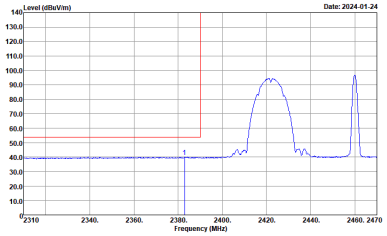
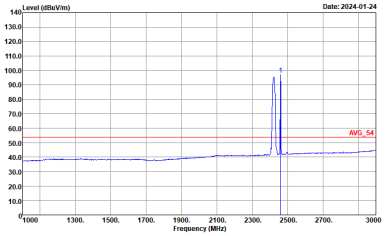
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

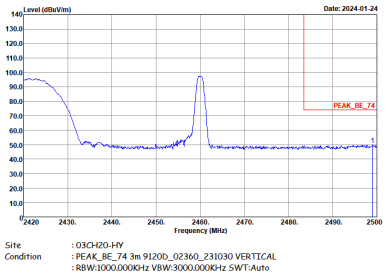
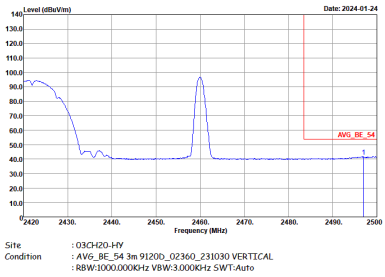
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

BLE (Band Edge @ 3m)

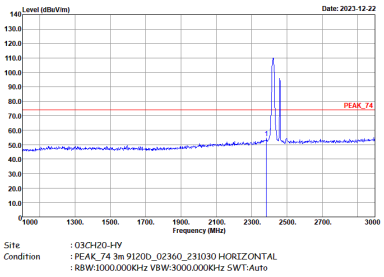
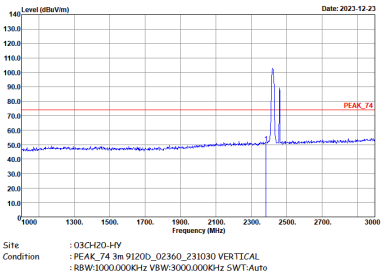
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29 - L	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

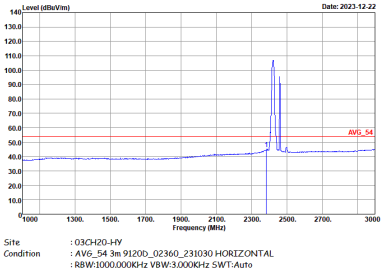
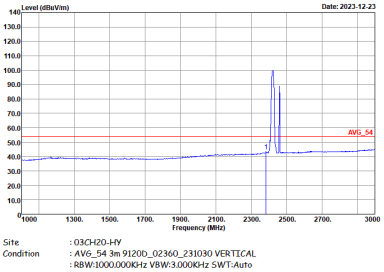
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29- R	
Simultaneously	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29 - L	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

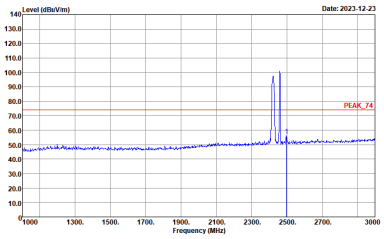
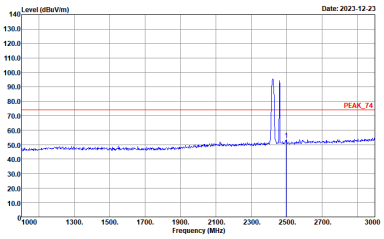
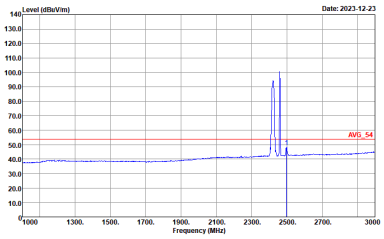
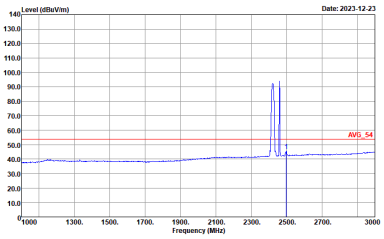
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29 - R	
Simultaneously	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

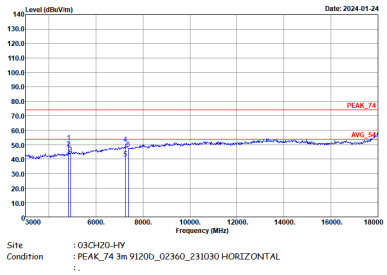
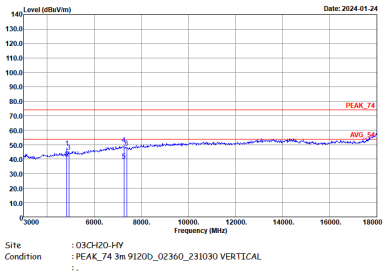
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Horizontal	Vertical
Peak		

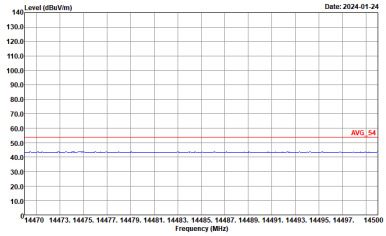
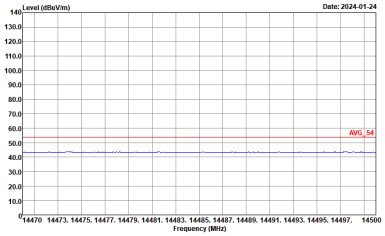
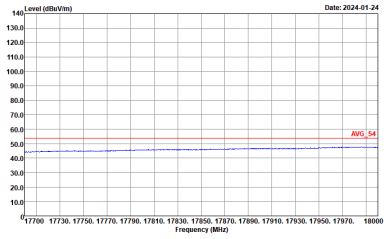
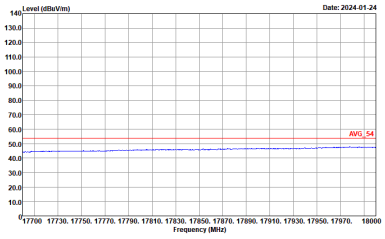
Avg.	 Level (dBuV/m) Date: 2023-12-22 AVG_54 Frequency (MHz) Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Level (dBuV/m) Date: 2023-12-23 AVG_54 Frequency (MHz) Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

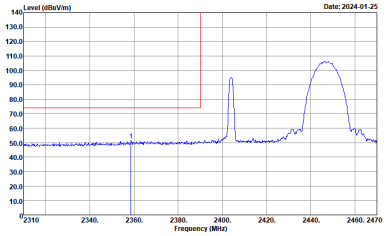
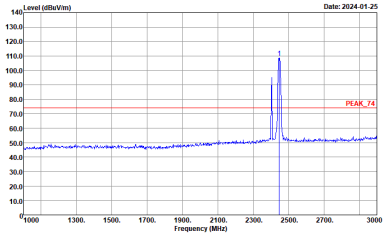
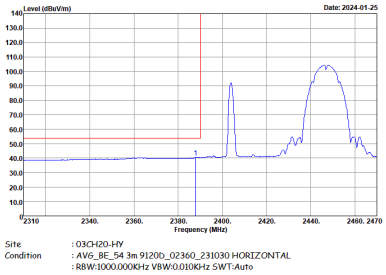
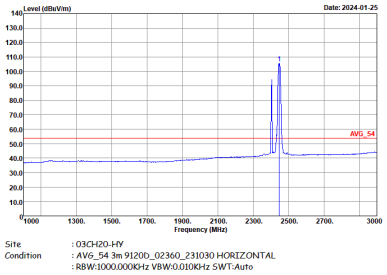
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Horizontal	Vertical
Peak	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

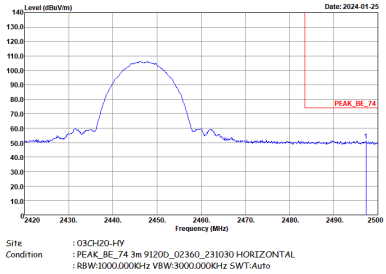
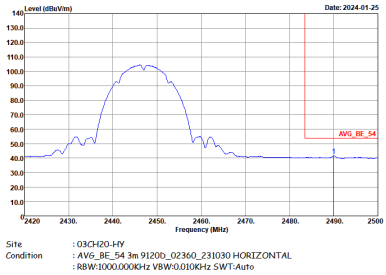
2.4GHz 2400~2483.5MHz (Harmonic @ 3m)

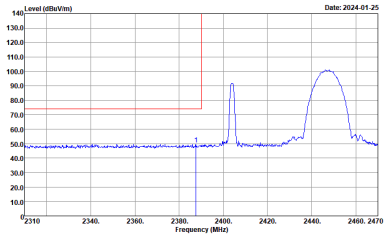
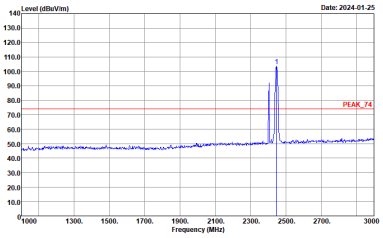
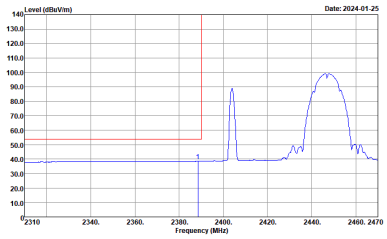
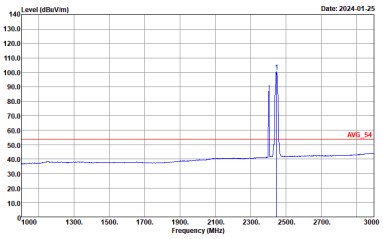
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Horizontal	Vertical
Peak Avg.		

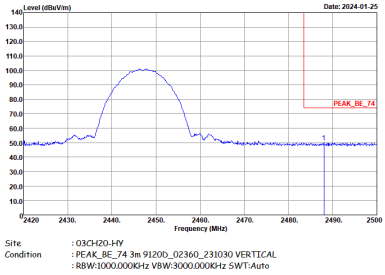
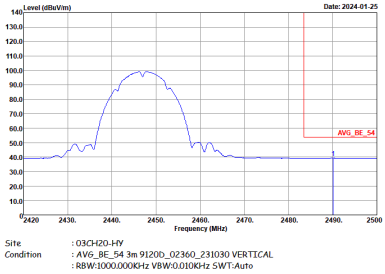
ANT	Mode 3: Ant 1 11b Ch03 + Ant 0 BLE(1M) Ch29	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .
17.7G ~18G Avg	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .

2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

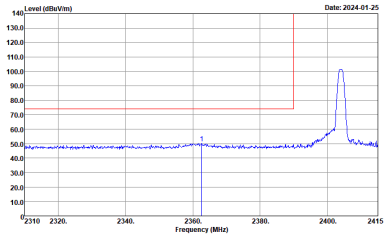
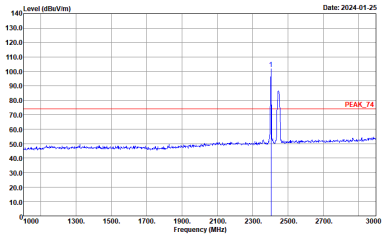
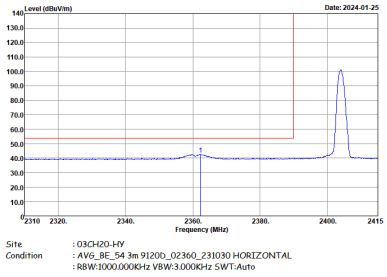
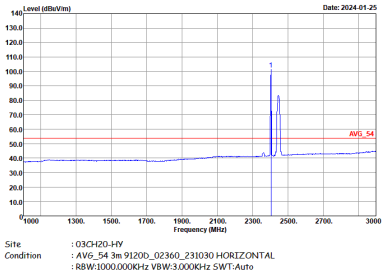
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01 - L	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

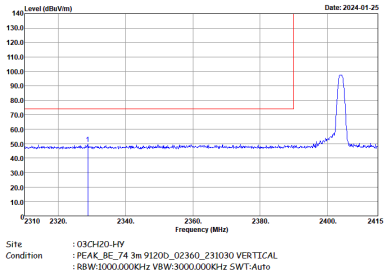
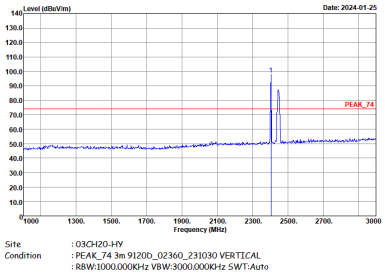
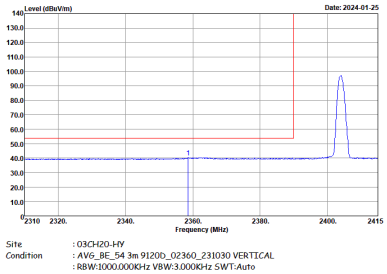
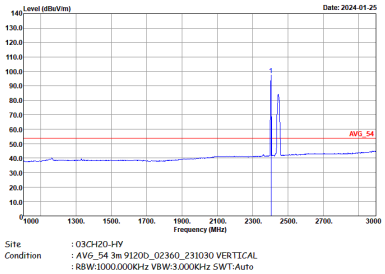
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01 - R	
Simultaneously	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01- L	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

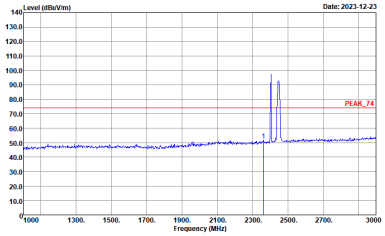
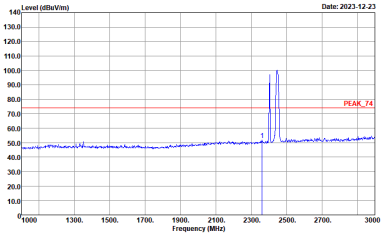
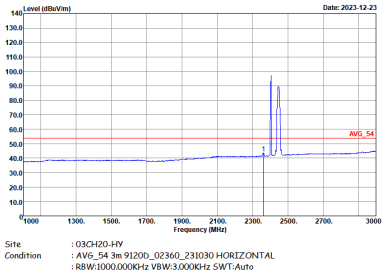
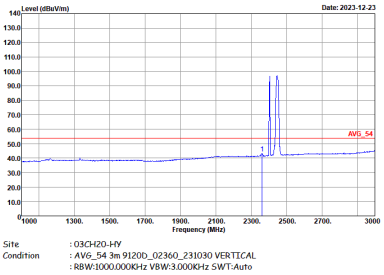
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01 - R	
Simultaneously	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

BLE (Band Edge @ 3m)

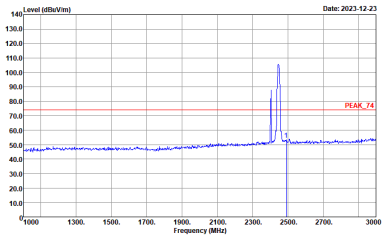
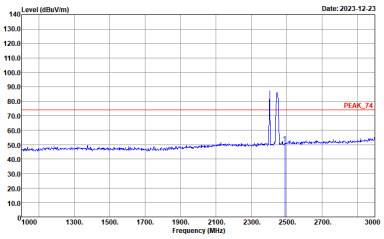
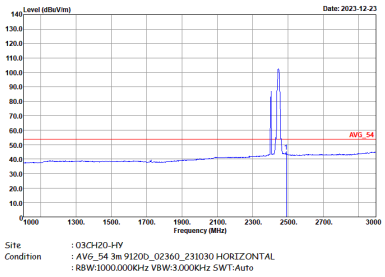
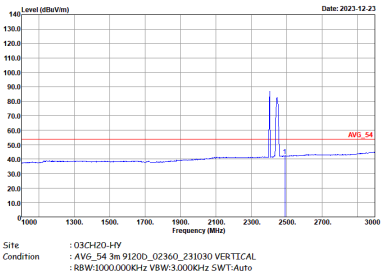
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

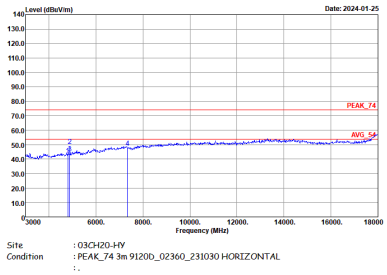
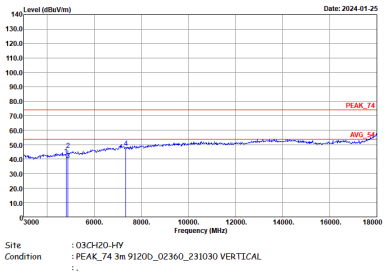
2.4GHz 2400~2483.5MHz (IM3 @ 3m)

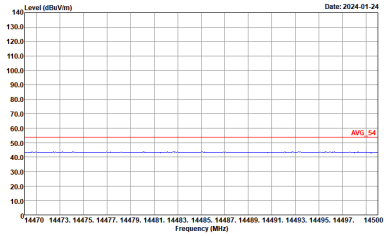
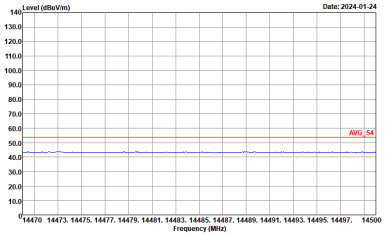
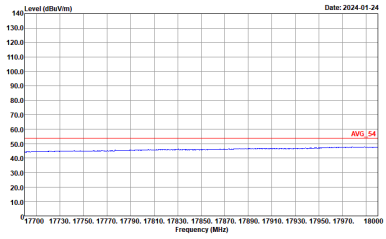
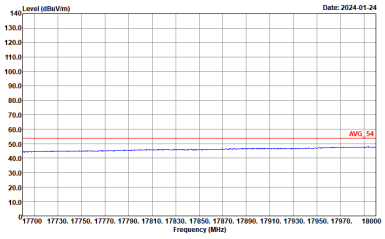
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Horizontal	Vertical
Peak		
Avg.		

2.4GHz 2400~2483.5MHz (IM3 @ 3m)

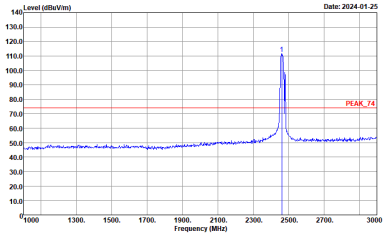
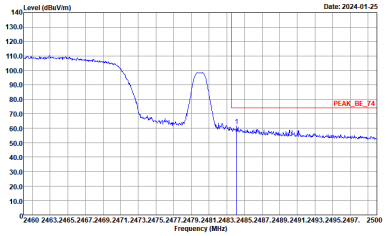
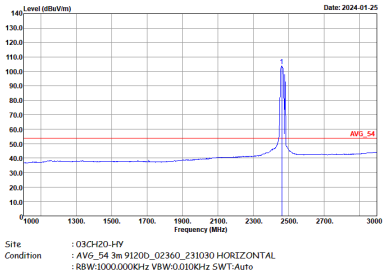
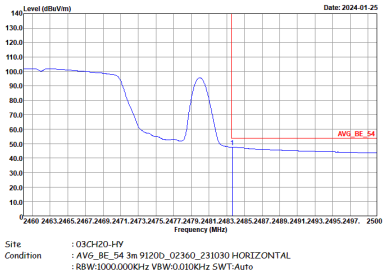
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Horizontal	Vertical
Peak		
Avg.		

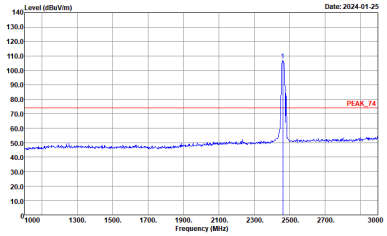
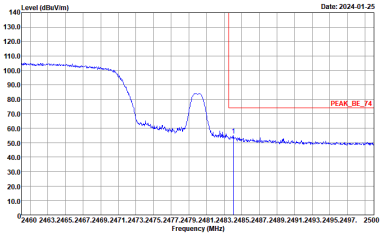
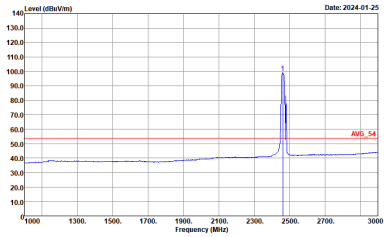
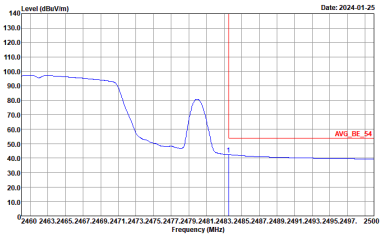
2.4GHz 2400~2483.5MHz (Harmonic @ 3m)

ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Horizontal	Vertical
Peak Avg.		

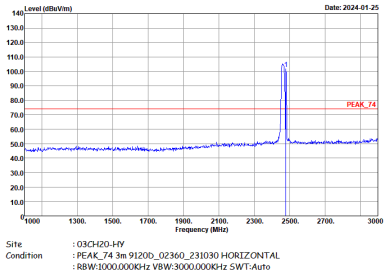
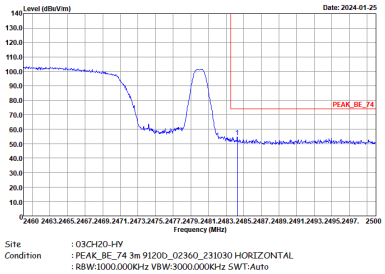
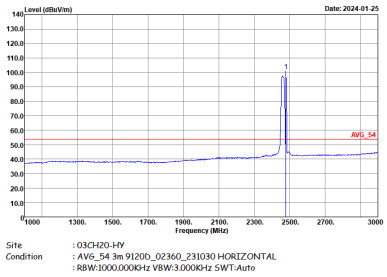
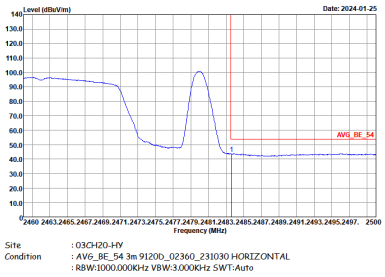
ANT	Mode 4: Ant 1 11b Ch08 + Ant 0 BLE(1M) Ch01	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

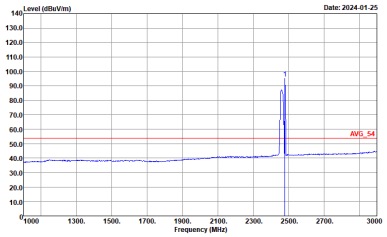
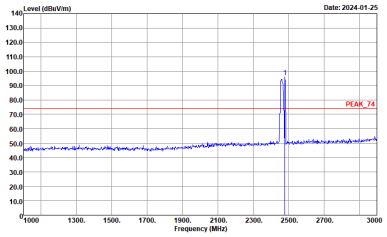
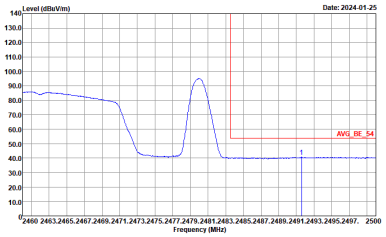
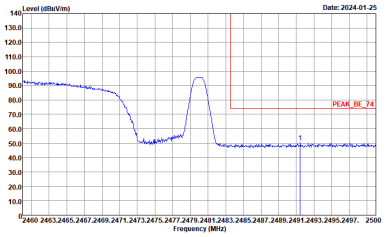
2.4GHz 2400~2483.5MHz (Band Edge @ 3m)

ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

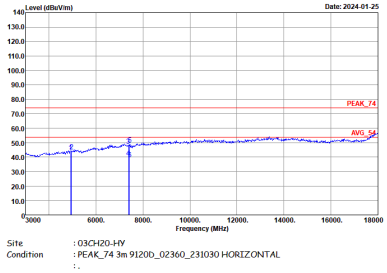
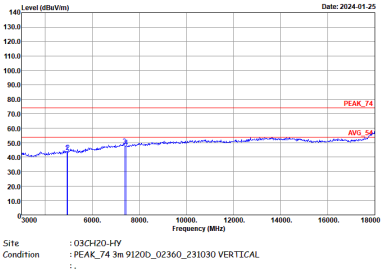
ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

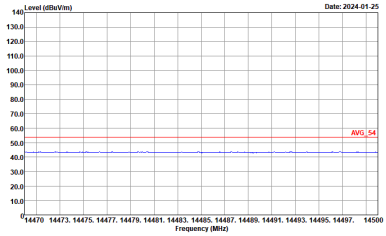
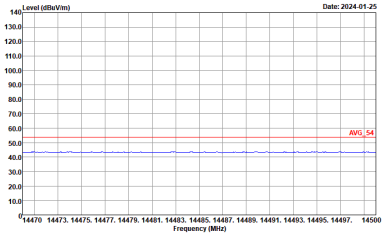
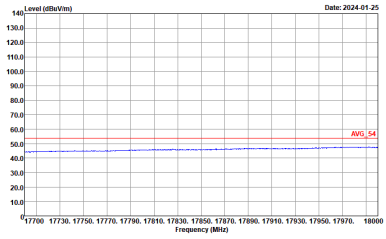
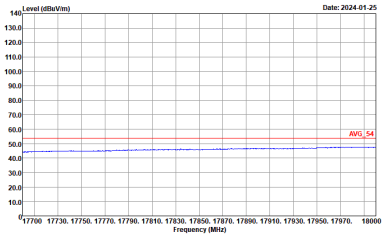
BLE (Band Edge @ 3m)

ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

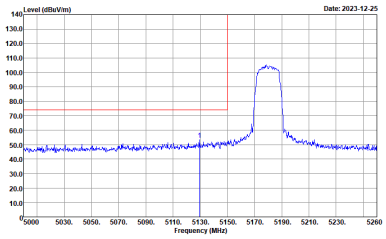
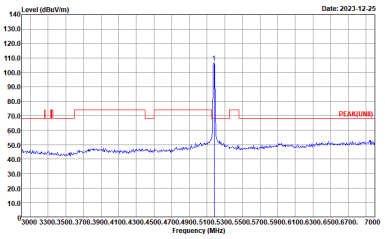
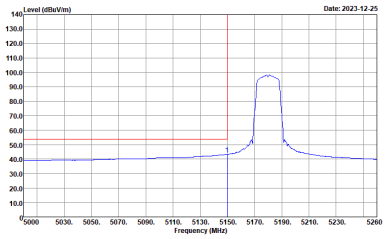
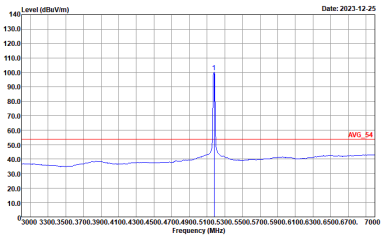
ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto  Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto  Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.		

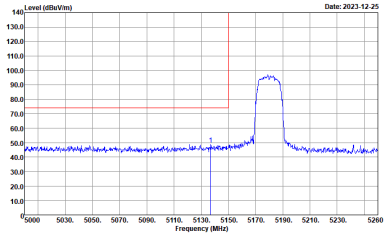
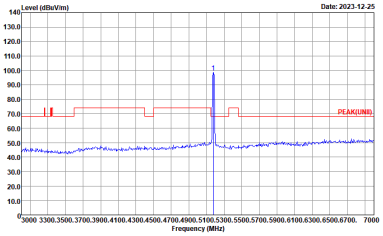
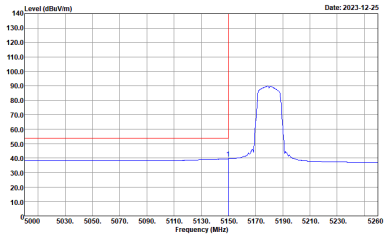
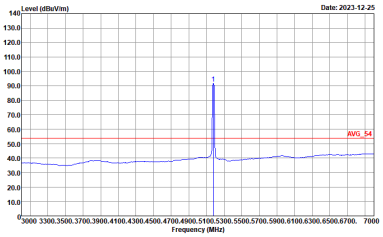
2.4GHz 2400~2483.5MHz (Harmonic @ 3m)

ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Vertical
Peak Avg.		

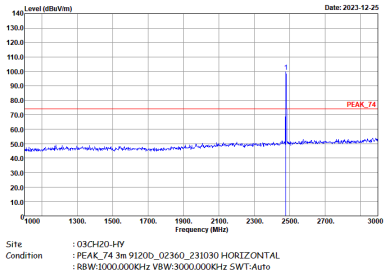
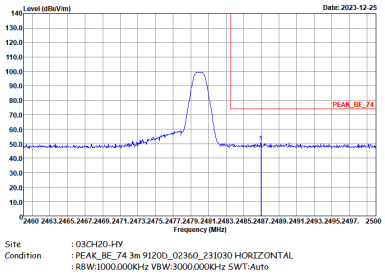
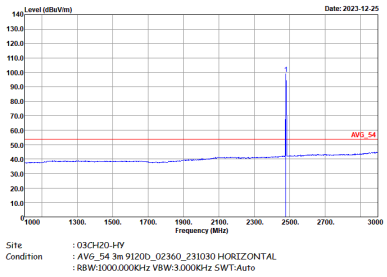
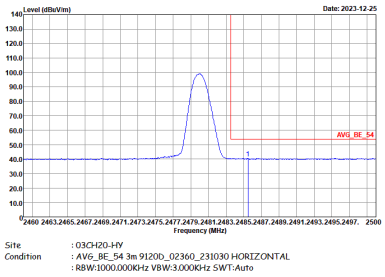
ANT	Mode 5: Ant 1 11n HT20 Ch11 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .
17.7G ~18G Avg	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .

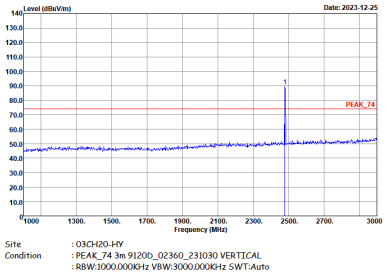
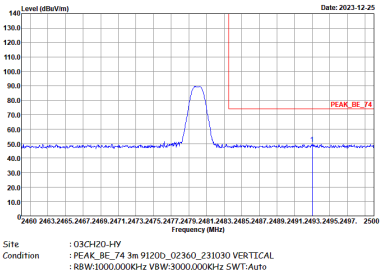
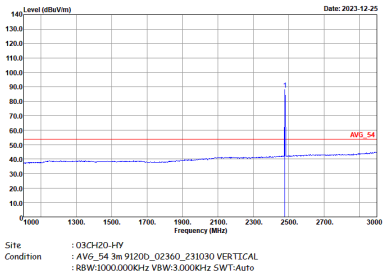
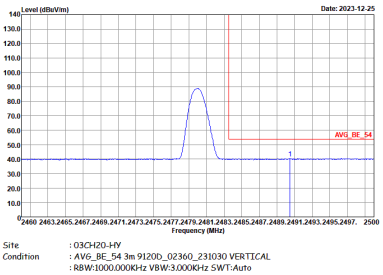
5GHz 5150~5250MHz (Band Edge @ 3m)

ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNII) 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

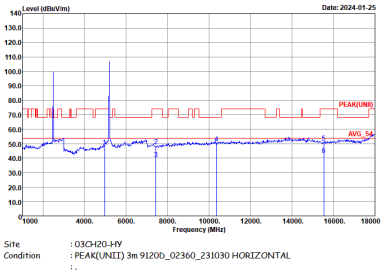
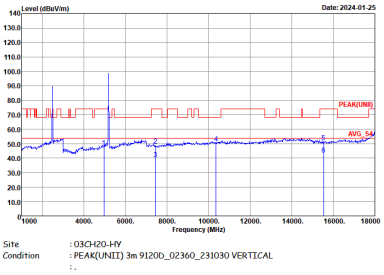
ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNII) 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

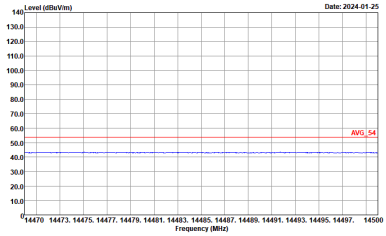
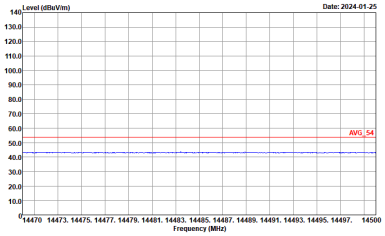
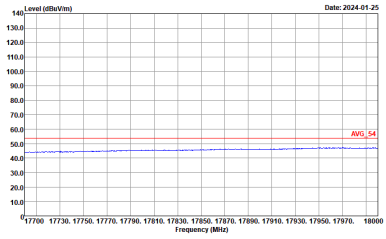
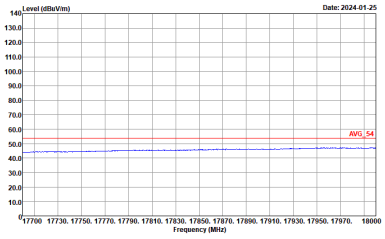
BLE (Band Edge @ 3m)

ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

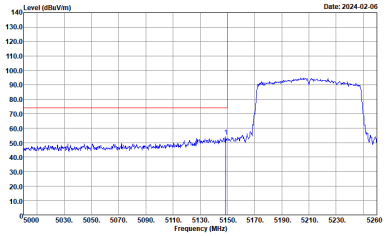
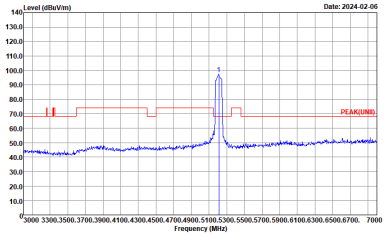
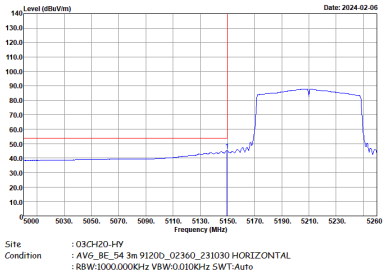
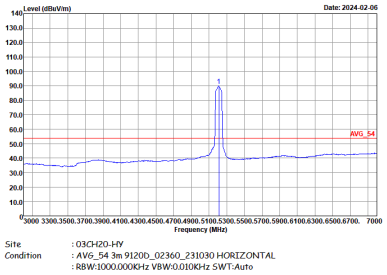
ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

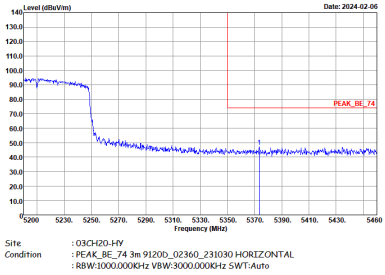
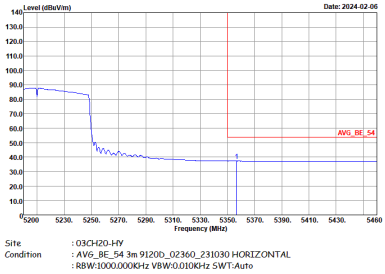
2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

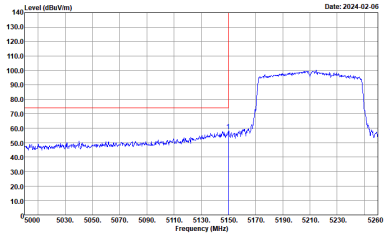
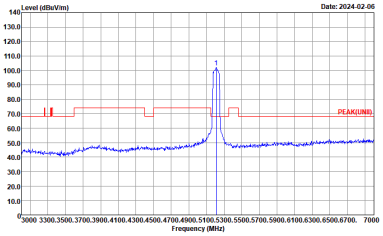
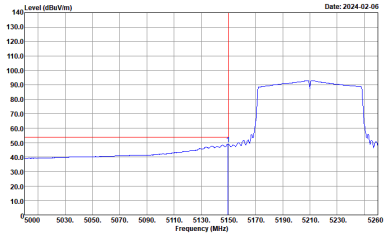
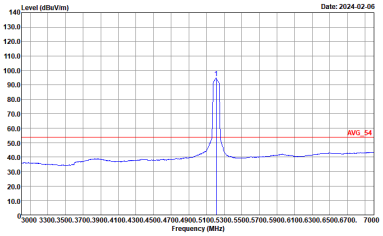
ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Vertical
Peak Avg.		

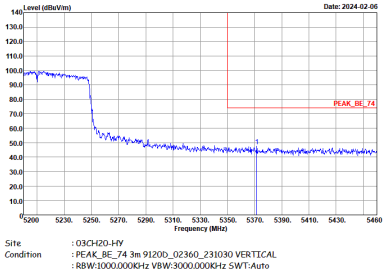
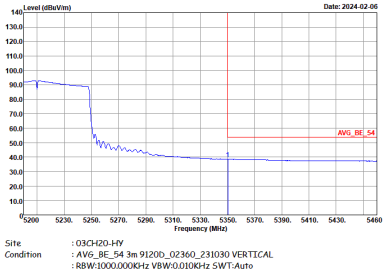
ANT	Mode 6: Ant 1 11a Ch36 + Ant 0 BLE(1M) Ch39	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .
17.7G ~18G Avg	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : .	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : .

5GHz 5150~5250MHz (Band Edge @ 3m)

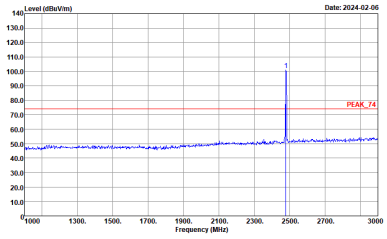
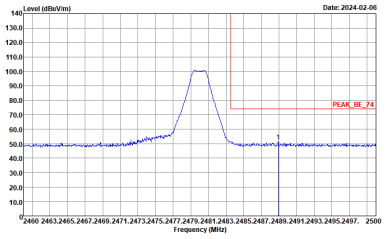
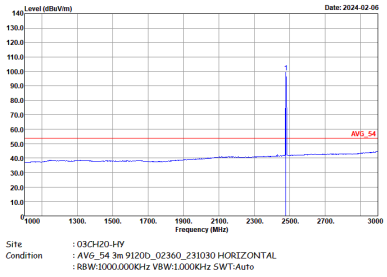
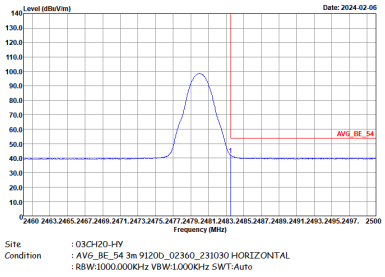
ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39 - L	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

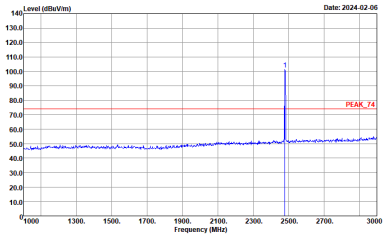
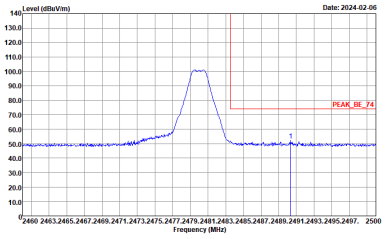
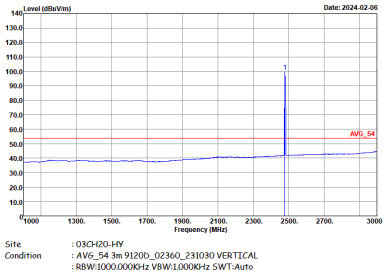
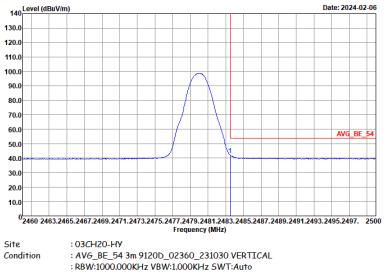
ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39 - R	
Simultaneously	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK(UNII) 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

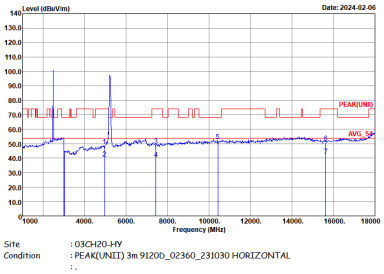
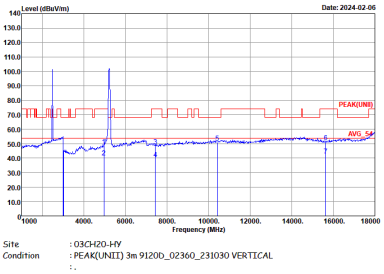
ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39 - R	
Simultaneously	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

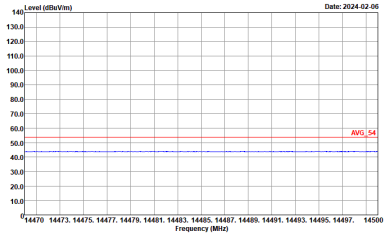
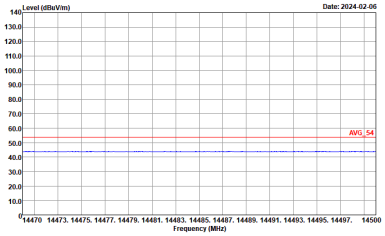
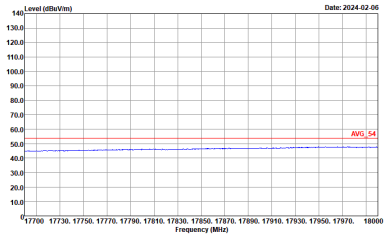
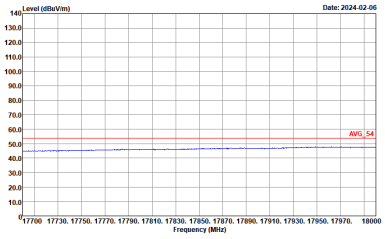
BLE (Band Edge @ 3m)

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Horizontal	Fundamental
Peak		
Avg.		

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Vertical	Fundamental
Peak		
Avg.		

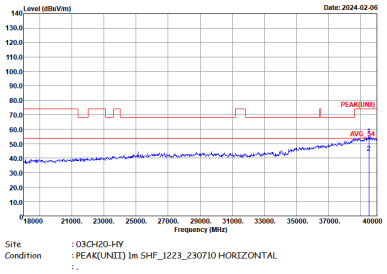
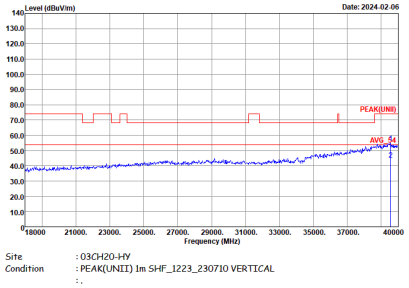
2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Horizontal	Vertical
Peak Avg.		

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

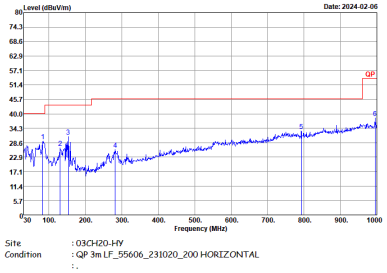
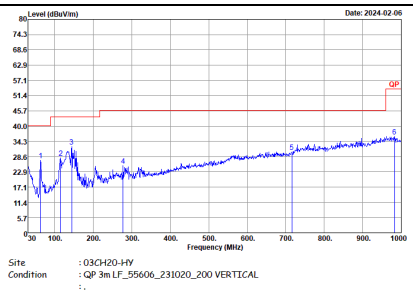
Emission above 18GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)

ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

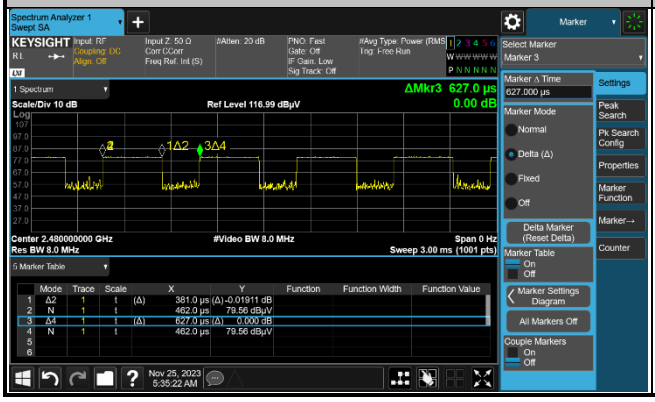
ANT	Mode 7: Ant 0+1 11ac VHT80 Ch42 + Ant 0 BLE(2M) Ch39	
Simultaneously	Horizontal	Vertical
QP / Peak		

Appendix C. Duty Cycle Plots

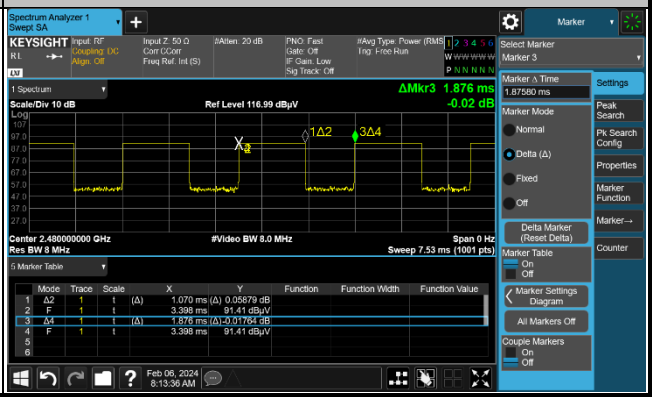
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
0	Bluetooth - LE for 1Mbps	61.06	381	2.62	3kHz
0	Bluetooth - LE for 2Mbps	57.04	1070	0.93	1kHz
1	2.4GHz 802.11n HT20	100.00	-	-	10Hz
1	802.11b	100.00	-	-	10Hz
1	5GHz 802.11a	100.00	-	-	10Hz
0+1	5GHz 802.11ac VHT80 Full RU	100.00	-	-	10Hz

<Ant. 0>

Bluetooth - LE for 1Mbps



Bluetooth - LE for 2Mbps



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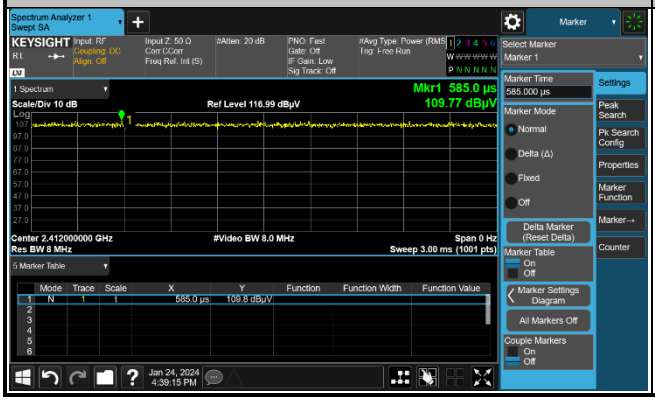
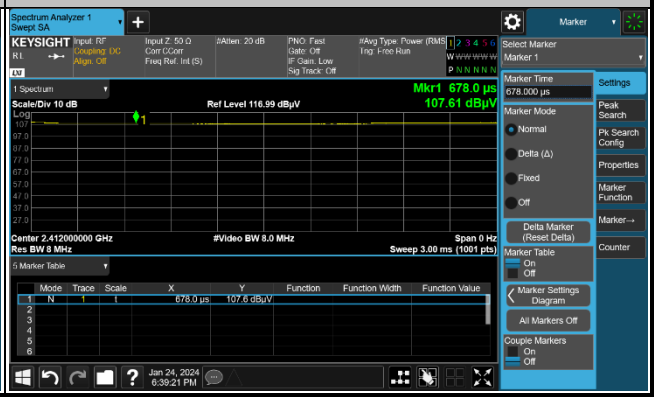
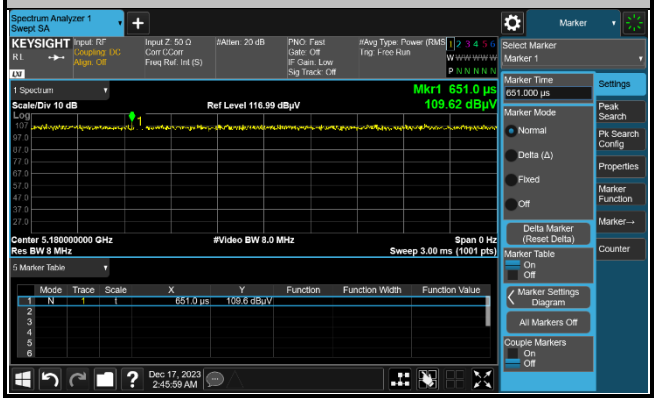
2.4GHz 802.11n HT20



802.11b

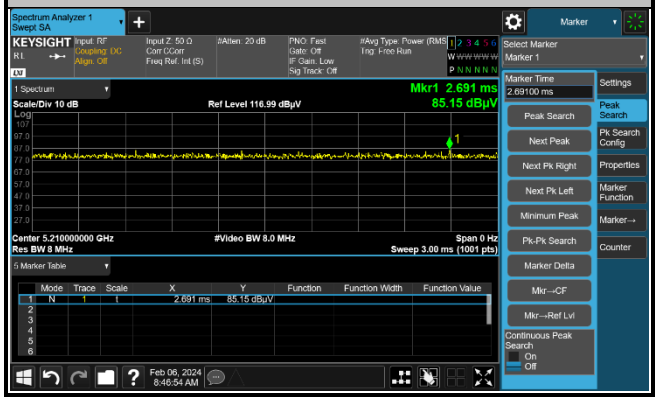


5GHz 802.11a



MIMO <Ant. 0+1>

2.4GHz 802.11ac VHT80 Full RU



————THE END————