



FCC CO-LOCATION RADIO TEST REPORT

FCC ID : IHDT56AA6
Equipment : Wearable Cellular Device
Brand Name : Motorola
Model Name : XT2209-1
Applicant : Motorola Mobility, LLC
222 W Merchandise Mart Plaza, Suite
1800, Chicago, IL 60654, United States
Manufacturer : Motorola Mobility, LLC
222 W Merchandise Mart Plaza, Suite
1800, Chicago, IL 60654, United States
Standard : FCC Part 15 Subpart E §15.407

The product was received on Oct. 25, 2021 and testing was performed from Nov. 24, 2021 to Nov. 24, 2021. 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 of Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



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Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(b)	Unwanted Emissions	Pass	3.14 dB under the limit at 2483.530 MHz
3.2	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Keven Cheng

Report Producer: Cindy Liu



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wearable Cellular Device
Brand Name	Motorola
Model Name	XT2209-1
FCC ID	IHDT56AA6
IMEI Code	356636550004429
EUT supports Radios application	LTE/5G NR/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	EVT1
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer.

Accessory List		
Battery	Brand Name :	Motorola
	Model Name :	NR70

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz 5150 MHz ~ 5250 MHz
Antenna Type / Gain	<2400 MHz ~ 2483.5 MHz> Ant. 4 : Printed ILA Antenna Type with gain -4.0 dBi Ant. 5 : Printed ILA Antenna Type with gain -5.6 dBi <5150 MHz ~ 5250 MHz> Ant. 4 : Printed ILA Antenna Type with gain -0.6 dBi Ant. 5 : Printed ILA Antenna Type with gain -2.5 dBi
Type of Modulation	Bluetooth LE : GFSK 802.11ax : OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)

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

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 TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH15-HY

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

FCC designation No.: 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 DTS Meas. Guidance v05r02
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ 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.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

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). The measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find (X Plane for Mode 1 and Mode 3; Y Plane for Mode 2) as worst plane.

2.1 Carrier Frequency and Channel

2400-2483.5 MHz				5150-5250 MHz	
Bluetooth - LE 2Mbps		802.11ax HE40		802.11ax HE20	
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
39	2480	09	2452	36	5180

2.2 Test Mode

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

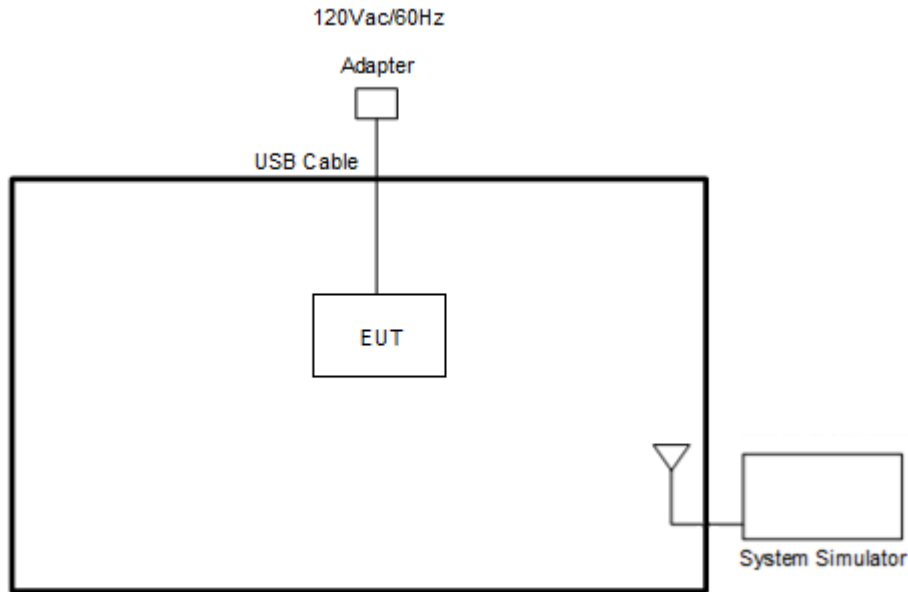
<Co-Location>

Test Mode	Modulation	Plane	Data Rate
Mode 1	WLAN 2.4GHz 802.11ax HE40 for Ant. 5 + WLAN 5GHz 802.11ax HE20 for Ant. 4 + LTE Band 66 Link	X	MCS0 + MCS0+ QPSK
Mode 2	Bluetooth-LE for Ant. 5 + WLAN 2.4GHz 802.11ax HE40 for Ant. 4 + LTE Band 66 Link	Y	2Mbps + MCS0+ QPSK
Mode 3	Bluetooth-LE for Ant. 5 + WLAN 5GHz 802.11ax HE20 for MIMO <Ant. 4+5> + 5G NR n77 Link	X	2Mbps + MCS0+ QPSK

Remark: During the Radiated Spurious Emission test, the EUT turn on the WWAN functions simultaneously, the WWAN mode selected the frequency band with the closest transmission frequency and used the WLAN worst case output power.

2.3 Connection Diagram of Test System

<Co-Location Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Adapter	Samsung	GT-N7000	NA	N/A	N/A
2.	USB Cable	NA	NA	NA	Unshielded,0.8m	N/A
3.	System Simulator	Anritsu	Anritsu	N/A	N/A	Unshielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility "QRCT 4.0.00195.0" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.



3 Test Result

3.1 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.
- (2) Unwanted spurious emissions falls in restricted bands shall comply with the general field strength limits as below table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

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

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

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

- (3) KDB789033 D02 v02r01 G)2)c)
 - (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.
 - (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.



3.1.2 Measuring Instruments

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

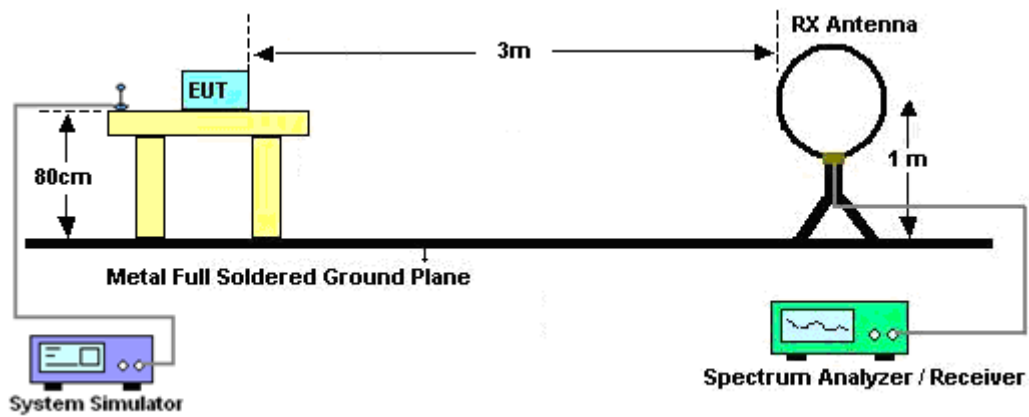
3.1.3 Test Procedures

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 \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.

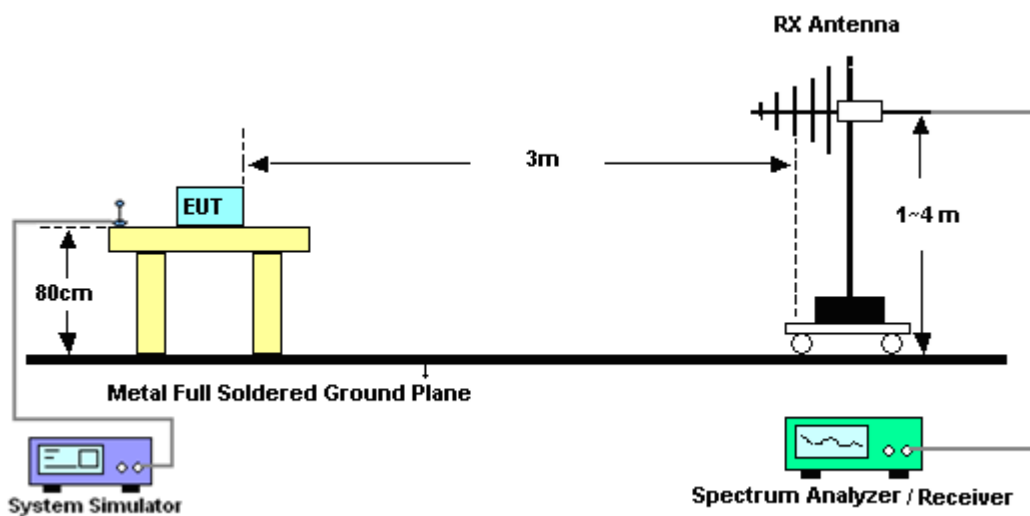
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit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

3.1.4 Test Setup

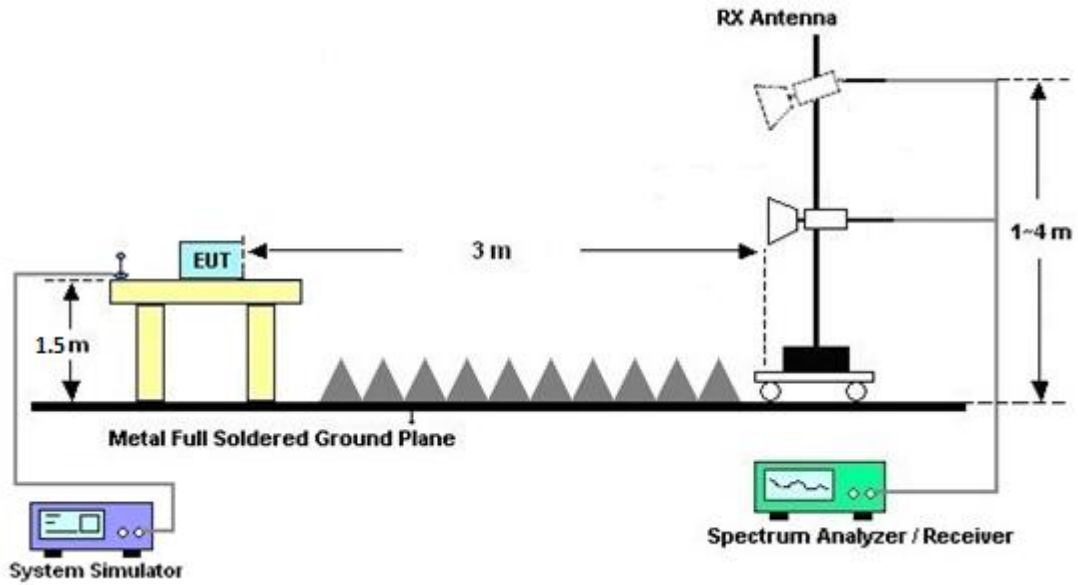
For radiated emissions below 30MHz



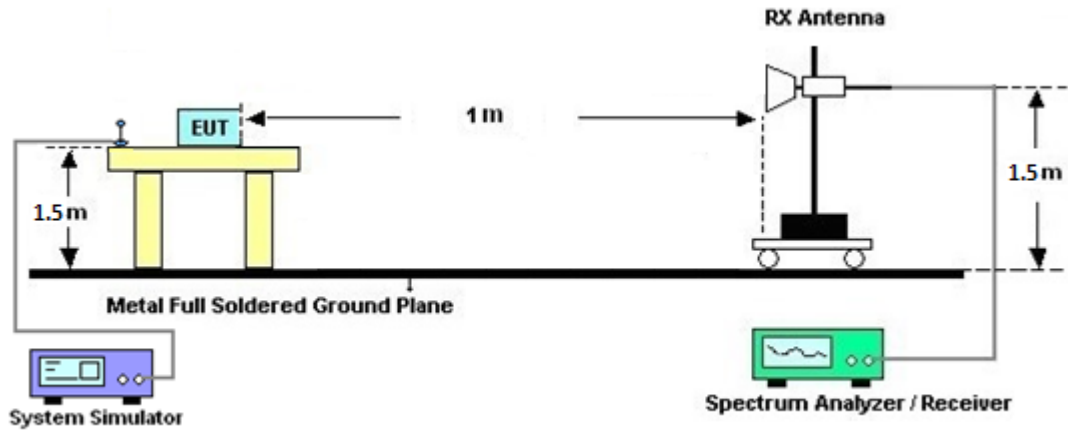
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





3.1.5 Test Results of Radiated 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 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 Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix A and B.



3.2 Antenna Requirements

3.2.1 Standard Applicable

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

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.2.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Nov. 24, 2021	Jan. 03, 2022	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	41912 & 05	30MHz~1GHz	Feb. 08, 2021	Nov. 24, 2021	Feb. 07, 2022	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 28, 2020	Nov. 24, 2021	Dec. 27, 2021	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-01620	1GHz~18GHz	Oct. 25, 2021	Nov. 24, 2021	Oct. 24, 2022	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00991	18GHz~40GHz	May 12, 2021	Nov. 24, 2021	May 11, 2022	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800055006	1GHz~18GHz	May 06, 2021	Nov. 24, 2021	May 05, 2022	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY53270195	1GHz~26.5GHz	Aug. 19, 2021	Nov. 24, 2021	Aug. 18, 2022	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060801	18-40GHz	Jun. 22, 2021	Nov. 24, 2021	Jun. 21, 2022	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	20MHz~8.4GHz	Jul. 15, 2021	Nov. 24, 2021	Jul. 14, 2022	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	May 07, 2021	Nov. 24, 2021	May 06, 2022	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 24, 2021	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 24, 2021	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k5)	RK-000451	N/A	N/A	Nov. 24, 2021	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY36980/4, MY9838/4PE, 508405/2E	30MHz~18G	Nov. 15, 2021	Nov. 24, 2021	Nov. 14, 2022	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 22, 2021	Nov. 24, 2021	Feb. 21, 2022	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 22, 2021	Nov. 24, 2021	Feb. 21, 2022	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Nov. 24, 2021	Mar. 10, 2022	Radiation (03CH15-HY)
Filter	Wainwright	WLJ4-1000-1530-6000-40ST	SN4	1.53GHz Low Pass Filter	Jul. 02, 2021	Nov. 24, 2021	Jul. 01, 2022	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN4	3GHz High Pass Filter	Sep. 15, 2021	Nov. 24, 2021	Sep. 14, 2022	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN6	6.75GHz High Pass Filter	Jun. 30, 2021	Nov. 24, 2021	Jun. 29, 2022	Radiation (03CH15-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.3 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.6 dB
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Appendix A. Radiated Spurious Emission

Test Engineer :	Leo Lee, Mancy Chou and Bigshow Wang	Temperature :	22.1~23.5°C
		Relative Humidity :	55~65%

WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09 + LTE Band 66 Link

2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI ANT 5	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Chain Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 09 2452MHz		2328.4	48.42	-25.58	74	45.15	27.94	16.46	41.13	303	125	P	H
		2389.68	37.7	-16.3	54	34.46	27.82	16.56	41.14	303	125	A	H
	*	2452	100.57	-	-	97.47	27.6	16.66	41.16	303	125	P	H
	*	2452	90.89	-	-	87.79	27.6	16.66	41.16	303	125	A	H
		2483.53	59.87	-14.13	74	56.73	27.6	16.71	41.17	303	125	P	H
		2483.53	49.07	-4.93	54	45.93	27.6	16.71	41.17	303	125	A	H
		2334.48	49.13	-24.87	74	45.86	27.93	16.47	41.13	100	240	P	V
		2390	37.94	-16.06	54	34.7	27.82	16.56	41.14	100	240	A	V
	*	2452	100.7	-	-	97.6	27.6	16.66	41.16	100	240	P	V
	*	2452	92.02	-	-	88.92	27.6	16.66	41.16	100	240	A	V
		2484.7	61.31	-12.69	74	58.17	27.6	16.71	41.17	100	240	P	V
		2483.53	50.86	-3.14	54	47.72	27.6	16.71	41.17	100	240	A	V



Band 1 - 5150~5250MHz

WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.	
ANT				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11ax HE20 Full CH 36 5180MHz		5147.16	63.56	-10.44	74	59.92	31.91	10.57	38.84	202	275	P	H	
		5150	50.85	-3.15	54	47.2	31.9	10.58	38.83	202	275	A	H	
	*	5180	109.45	-	-	105.66	31.9	10.64	38.75	202	275	P	H	
	*	5180	98.97	-	-	95.18	31.9	10.64	38.75	202	275	A	H	
													H	
													H	
													V	
			5149.24	61.07	-12.93	74	57.42	31.9	10.58	38.83	300	57	P	V
			5150	48.53	-5.47	54	44.88	31.9	10.58	38.83	300	57	A	V
	*		5180	106.32	-	-	102.53	31.9	10.64	38.75	300	57	P	V
	*		5180	93.7	-	-	89.91	31.9	10.64	38.75	300	57	A	V
												V		



WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09 + LTE Band 66 Link

(Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.	
ANT				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
5&4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11ax HE20 Full CH 36 5180MHz + 802.11ax HE40 Full CH 09 2452MHz + LTE Band 66 Link CH132322		4904	43.32	-30.68	74	41.04	31.4	10.22	39.34	-	-	P	H	
		7352	42.23	-31.77	74	51.46	36.39	12.73	58.35	-	-	P	H	
		10360	47.43	-20.77	68.2	54.06	39.62	14.55	60.8	-	-	P	H	
		15540	46.93	-27.07	74	53.88	38.4	17.01	62.36	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
			4904	43.44	-30.56	74	41.16	31.4	10.22	39.34	-	-	P	V
			7352	42.32	-31.68	74	51.55	36.39	12.73	58.35	-	-	P	V
			10360	47.71	-20.49	68.2	54.34	39.62	14.55	60.8	-	-	P	V
		15540	46.48	-27.52	74	53.43	38.4	17.01	62.36	-	-	P	V	
													V	
													V	
													V	
													V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only. 													



WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09+ LTE Band 66 Link

Emission below 1GHz (LF@ 3m)

WIFI ANT 5&4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Chainenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Chain Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 36		30	23.61	-16.39	40	30.9	24.59	0.61	32.49	-	-	P	H
5180MHz + 802.11ax HE40 Full CH 09		123.12	32.18	-11.32	43.5	45.76	17.45	1.51	32.54	-	-	P	H
		164.83	21.44	-22.06	43.5	36.1	16.02	1.82	32.5	-	-	P	H
		254.07	21.64	-24.36	46	32.84	18.96	2.25	32.41	-	-	P	H
		520.82	24.96	-21.04	46	30.51	23.97	3.08	32.6	-	-	P	H
		861.29	31.28	-14.72	46	30.04	29.04	4.02	31.82	-	-	P	H
2452MHz + LTE Band 66 Link		30	30.43	-9.57	40	37.72	24.59	0.61	32.49	-	-	P	V
		122.15	23.32	-20.18	43.5	36.98	17.39	1.49	32.54	-	-	P	V
		264.74	20.7	-25.3	46	30.88	19.97	2.28	32.43	-	-	P	V
		565.44	26.37	-19.63	46	29.56	26.14	3.25	32.58	-	-	P	V
		752.65	29.66	-16.34	46	30.44	27.95	3.7	32.43	-	-	P	V
CH132322		921.43	31.33	-14.67	46	29.28	29.36	4.18	31.49	-	-	P	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only. 												



WLAN 802.11ax HE40_Tx_CH09 + BLE 2Mbps_Tx_CH39 + LTE Band 66 Link

2.4GHz 2400~2483.5MHz

WIFI 802.11axHE40 Full (Band Edge @ 3m)

WIFI ANT. 4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Chain Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 09 2452MHz		2339.68	48.54	-25.46	74	45.27	27.92	16.48	41.13	350	294	P	H
		2357.04	40.91	-13.09	54	37.64	27.89	16.51	41.13	350	294	A	H
	*	2452	91.21	-	-	88.11	27.6	16.66	41.16	350	294	P	H
	*	2452	83.54	-	-	80.44	27.6	16.66	41.16	350	294	A	H
		2484.84	48.93	-25.07	74	45.79	27.6	16.71	41.17	350	294	P	H
		2488.6	41	-13	54	37.85	27.6	16.72	41.17	350	294	A	H
		2364.18	48.2	-25.8	74	44.94	27.87	16.52	41.13	347	296	P	V
		2322.18	40.44	-13.56	54	37.15	27.96	16.45	41.12	347	296	A	V
		2452	102.89	28.89	74	99.79	27.6	16.66	41.16	347	296	P	V
	*	2452	93.49	-	-	90.39	27.6	16.66	41.16	347	296	A	V
	*	2484.76	57.25	-	-	54.11	27.6	16.71	41.17	347	296	P	V
		2484.88	49.39	-4.61	54	46.25	27.6	16.71	41.17	347	296	A	V



2.4GHz 2400~2483.5MHz

BLE 2Mbps (Band Edge @ 3m)

BLE	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.
ANT.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
5		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BLE CH 39 2480MHz	*	2480	99.71	-	-	96.57	27.6	16.7	41.16	300	18	P	H
	*	2480	98.37	-	-	95.23	27.6	16.7	41.16	300	18	A	H
		2486.52	55.04	-18.96	74	51.9	27.6	16.71	41.17	300	18	P	H
		2484.32	47.12	-6.88	54	43.98	27.6	16.71	41.17	300	18	A	H
													H
													H
	*	2480	100.01	-	-	96.87	27.6	16.7	41.16	300	292	P	V
	*	2480	98.63	-	-	95.49	27.6	16.7	41.16	300	292	A	V
		2484.72	55.05	-18.95	74	51.91	27.6	16.71	41.17	300	292	P	V
		2484.72	46.93	-7.07	54	43.79	27.6	16.71	41.17	300	292	A	V
													V
													V



WLAN 802.11ax HE40_Tx_CH09 + BLE 2Mbps_Tx_CH39 + LTE Band 66 Link

(Harmonic @ 3m)

ANT.	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.	
4&5		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11ax HE40 Full CH 09 2452MHz + BLE CH 39 2480MHz + LTE Band 66 Link CH132322		4904	39.36	-34.64	74	56.67	31.4	10.22	58.93	-	-	P	H	
		4960	39.3	-34.7	74	56.56	31.44	10.28	58.98	-	-	P	H	
		7356	44.17	-29.83	74	53.7	36.38	12.44	58.35	-	-	P	H	
		7440	46.05	-27.95	74	55.41	36.36	12.48	58.2	-	-	P	H	
													H	
														H
														H
														H
			4904	39.09	-34.91	74	56.4	31.4	10.22	58.93	-	-	P	V
			4960	38.76	-35.24	74	56.02	31.44	10.28	58.98	-	-	P	V
			7356	44.58	-29.42	74	54.11	36.38	12.44	58.35	-	-	P	V
			7440	45.41	-28.59	74	54.77	36.36	12.48	58.2	-	-	P	V
														V
														V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only. 													



WLAN 802.11ax HE20 Tx_CH36 + BLE 2Mbps_Tx_CH39 + 5G NR n77 Link

Band 1 - 5150~5250MHz

WIFI 802.11axHE20 Full (Band Edge @ 3m)

WIFI ANT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Chain Pos	Table Pos	Peak Avg.	Pol.	
4+5		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11ax HE20 Full CH 36 5180MHz		5149.76	63.61	-10.39	74	59.96	31.9	10.58	38.83	221	284	P	H	
		5150	50.58	-3.42	54	46.93	31.9	10.58	38.83	221	284	A	H	
	*	5180	110.96	-	-	107.17	31.9	10.64	38.75	221	284	P	H	
	*	5180	100.59	-	-	96.8	31.9	10.64	38.75	221	284	A	H	
													H	
														H
														V
			5149.24	61.3	-12.7	74	57.65	31.9	10.58	38.83	400	66	P	V
			5150	48.93	-5.07	54	45.28	31.9	10.58	38.83	400	66	A	V
	*		5180	108.83	-	-	105.04	31.9	10.64	38.75	400	66	P	V
*		5180	97.82	-	-	94.03	31.9	10.64	38.75	400	66	A	V	
													V	



2.4GHz 2400~2483.5MHz

BLE 2Mbps (Band Edge @ 3m)

BLE	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.
ANT				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
5		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BLE CH 39 2480MHz	*	2480	92.61	-	-	89.23	27.6	10.16	41.16	100	89	P	H
	*	2480	92.07	-	-	88.69	27.6	10.16	41.16	100	89	A	H
		2496.88	48.45	-25.55	74	45.05	27.6	10.16	41.17	100	89	P	H
		2485.6	39.53	-14.47	54	36.15	27.6	10.16	41.17	100	89	A	H
													H
													H
	*	2480	92.31	-	-	88.93	27.6	10.16	41.16	400	120	P	V
	*	2480	91.79	-	-	88.41	27.6	10.16	41.16	400	120	A	V
		2493.92	48.42	-25.58	74	45.02	27.6	10.16	41.17	400	120	P	V
		2489.8	39.56	-14.44	54	36.17	27.6	10.16	41.17	400	120	A	V
													V
													V



WLAN 802.11ax HE20 Tx_CH36 + BLE 2Mbps_Tx_CH39 + 5G NR n77 Link

(Harmonic @ 3m)

ANT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.	
4+5		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11ax HE20 Full CH 36 5180MHz + BLE CH 39 2480MHz + 5G NR n77 Link CH656000		4960	43.34	-30.66	74	40.88	31.44	10.28	39.26	-	-	P	H	
		7440	44.22	-29.78	74	53.32	36.36	12.74	58.2	-	-	P	H	
		10360	48.39	-19.81	68.2	55.02	39.62	14.55	60.8	-	-	P	H	
		15540	47.25	-26.75	74	54.2	38.4	17.01	62.36	-	-	P	H	
													H	
													H	
													H	
													H	
			4960	43.31	-30.69	74	40.85	31.44	10.28	39.26	-	-	P	V
			7440	43.68	-30.32	74	52.78	36.36	12.74	58.2	-	-	P	V
			10360	47.38	-20.82	68.2	54.01	39.62	14.55	60.8	-	-	P	V
			15540	46.89	-27.11	74	53.84	38.4	17.01	62.36	-	-	P	V
														V
														V
														V
														V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only. 													



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
-	The signal is Unintentional Radiators .
P/A	Peak or Average
H/V	Horizontal or Vertical



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Chain	Table	Peak	Pol.
Chain.				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)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 2390MHz:

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

For Average Limit @ 2390MHz:

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

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



Appendix B. Radiated Spurious Emission Plots

Test Engineer :	Leo Lee, Mancy Chou and Bigshow Wang	Temperature :	22.1~23.5°C
		Relative Humidity :	55~65%

Note symbol

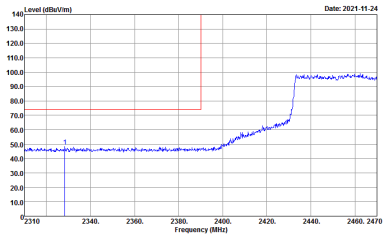
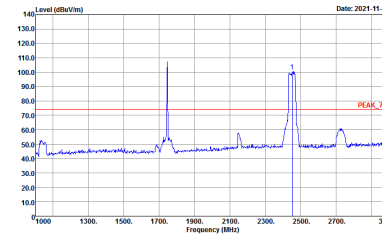
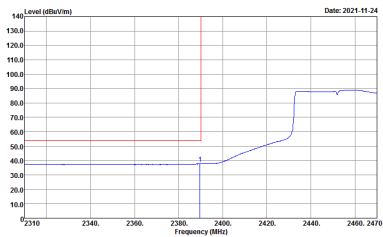
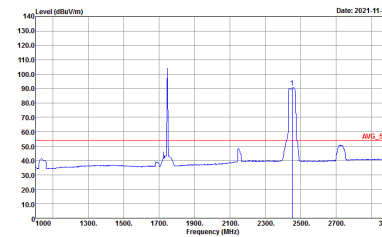
-L	Low channel location
-R	High channel location



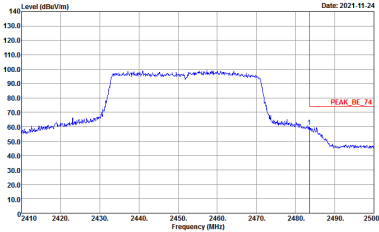
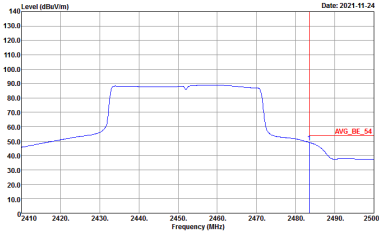
WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09 + LTE Band 66 Link

2.4GHz 2400~2483.5MHz

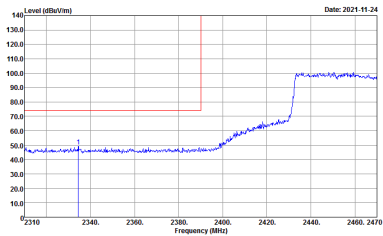
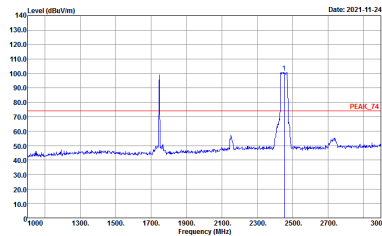
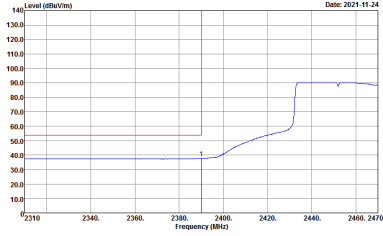
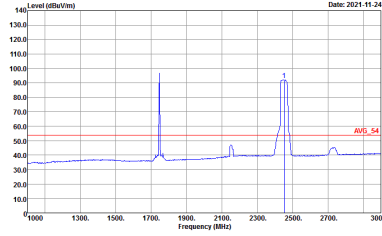
WIFI 802.11axHE40 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
5	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : AVG_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
5	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:3000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:3000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
5	Vertical	Fundamental
Peak	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Peak Vertical. The plot shows a signal level that rises from approximately 40 dBuV/m at 2380 MHz to about 100 dBuV/m at 2452 MHz. A red vertical line is drawn at 2452 MHz. The date is 2021-11-24.</p> <p>Site : 03CH15-HY Condition : PEAK_BE_F4 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Peak Fundamental. The plot shows a signal level with a prominent peak at 2452 MHz reaching approximately 100 dBuV/m. A red horizontal line labeled 'PEAK_F4' is drawn at this level. The date is 2021-11-24.</p> <p>Site : 03CH15-HY Condition : PEAK_F4 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Avg Vertical. The plot shows a smoothed signal level that rises from approximately 40 dBuV/m at 2380 MHz to about 85 dBuV/m at 2452 MHz. A red vertical line is drawn at 2452 MHz. The date is 2021-11-24.</p> <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Avg Fundamental. The plot shows a smoothed signal level with a peak at 2452 MHz reaching approximately 85 dBuV/m. A red horizontal line labeled 'AVG_F4' is drawn at this level. The date is 2021-11-24.</p> <p>Site : 03CH15-HY Condition : AVG_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
5	Vertical	Fundamental
<p>Peak</p>	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>

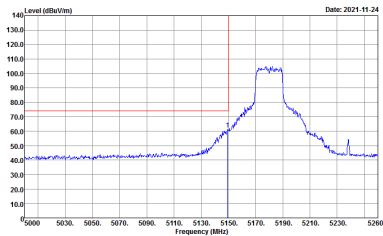
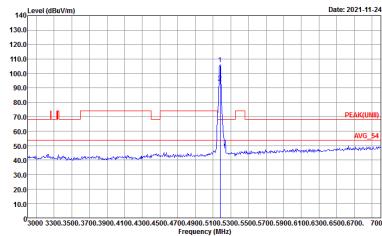
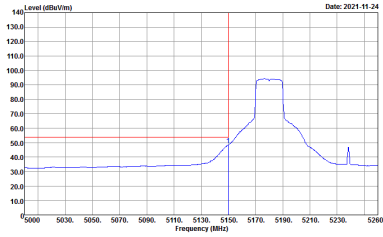


Band 1 - 5150~5250MHz

WIFI 802.11axHE20 Full (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
4	Horizontal	Fundamental
Peak	<p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : PEAK(FUND) 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	Left blank

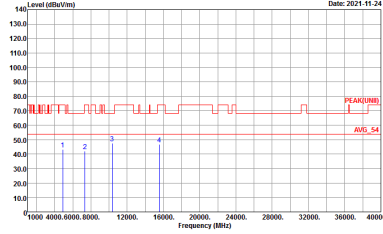
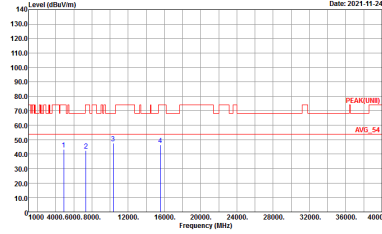


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
4	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_SE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(UND) 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	Left blank



WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09 + LTE Band 66 Link

(Harmonic @ 3m)

ANT	802.11ax HE20_Tx_CH36 + 802.11ax HE40_Tx_CH09+ LTE Band 66 Link	
5&4	Horizontal	Vertical
<p>Peak</p> <p>Avg.</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_1620_20211025 HORIZONTAL Detector : Peak</p>	 <p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_1620_20211025 VERTICAL Detector : Peak</p>



WLAN 802.11ax HE20_Tx_CH36 + WLAN 802.11ax HE40_Tx_CH09 + LTE Band 66 Link

(LF@ 3m)

ANT	802.11ax HE20_Tx_CH36 + 802.11ax HE40_Tx_CH09+ LTE Band 66 Link	
5&4	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : QP 3m BIL06_41912_20210208 HORIZONTAL Detector : Peak</p>	<p>Site : 03CH15-HY Condition : QP 3m BIL06_41912_20210208 VERTICAL Detector : Peak</p>



WLAN 802.11ax HE40_Tx_CH09 + BLE 2Mbps_Tx_CH39 + LTE Band 66 Link

2.4GHz 2400~2483.5MHz

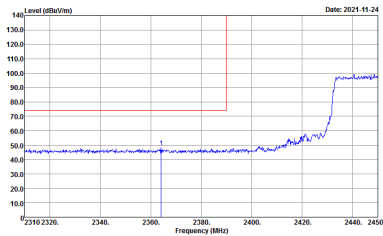
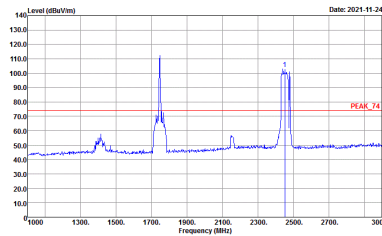
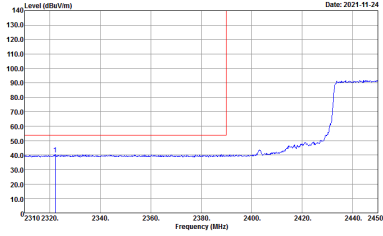
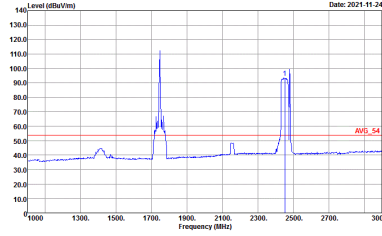
WIFI 802.11axHE40 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
4	Horizontal	Fundamental
Peak	<p>Level (dBu/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBu/m, and the x-axis ranges from 2310 to 2450 MHz. A red horizontal line is drawn at approximately 85 dBu/m. A blue spectral line shows a sharp peak at 2452 MHz. Metadata: Site: 03CH15-HY, Condition: PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL, RBW:1000.000kHz VSW:3000.000kHz SWT:Auto.</p>	<p>Level (dBu/m) vs Frequency (MHz) plot for Fundamental orientation. The y-axis ranges from 10.0 to 140.0 dBu/m, and the x-axis ranges from 1000 to 3000 MHz. A red horizontal line is drawn at approximately 85 dBu/m. A blue spectral line shows a sharp peak at 2452 MHz. Metadata: Site: 03CH15-HY, Condition: PEAK_74 3m 91200_1620_20211025 HORIZONTAL, RBW:1000.000kHz VSW:3000.000kHz SWT:Auto.</p>
Avg.	<p>Level (dBu/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBu/m, and the x-axis ranges from 2310 to 2450 MHz. A red horizontal line is drawn at approximately 85 dBu/m. A blue spectral line shows a sharp peak at 2452 MHz. Metadata: Site: 03CH15-HY, Condition: AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL, RBW:1000.000kHz VSW:30.000kHz SWT:Auto.</p>	<p>Level (dBu/m) vs Frequency (MHz) plot for Fundamental orientation. The y-axis ranges from 10.0 to 140.0 dBu/m, and the x-axis ranges from 1000 to 3000 MHz. A red horizontal line is drawn at approximately 85 dBu/m. A blue spectral line shows a sharp peak at 2452 MHz. Metadata: Site: 03CH15-HY, Condition: AVG_54 3m 91200_1620_20211025 HORIZONTAL, RBW:1000.000kHz VSW:30.000kHz SWT:Auto.</p>

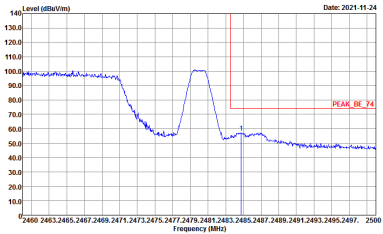
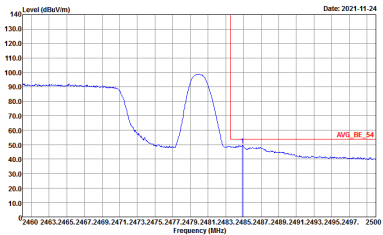


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
4	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:10.000kHz SWT:Auto</p>	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
4	Vertical	Fundamental
Peak	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Vertical Peak. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 2310 to 2450 MHz. A red horizontal line is drawn at approximately 75 dBuV/m. The plot shows a sharp peak at approximately 2452 MHz reaching about 130 dBuV/m. Below the plot, the following text is present: Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Fundamental Peak. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 1600 to 3000 MHz. A red horizontal line is drawn at approximately 75 dBuV/m. The plot shows two main peaks at approximately 1750 MHz and 2452 MHz, both reaching about 110 dBuV/m. Below the plot, the following text is present: Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Vertical Avg. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 2310 to 2450 MHz. A red horizontal line is drawn at approximately 75 dBuV/m. The plot shows a sharp peak at approximately 2452 MHz reaching about 130 dBuV/m. Below the plot, the following text is present: Site : 03CH15-HY Condition : AV6_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Fundamental Avg. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 1600 to 3000 MHz. A red horizontal line is drawn at approximately 54 dBuV/m. The plot shows two main peaks at approximately 1750 MHz and 2452 MHz, both reaching about 110 dBuV/m. Below the plot, the following text is present: Site : 03CH15-HY Condition : AV6_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>

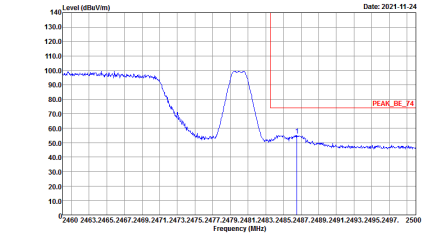
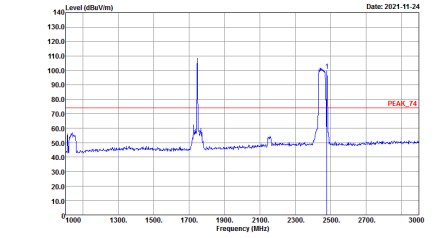
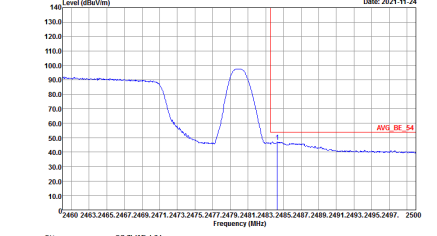
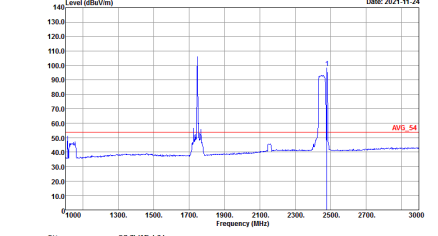


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
4	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	Left blank

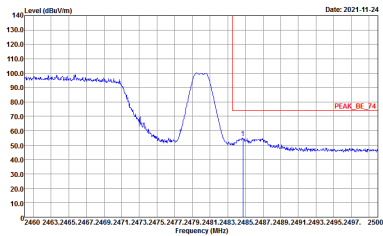
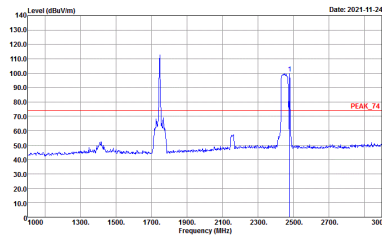
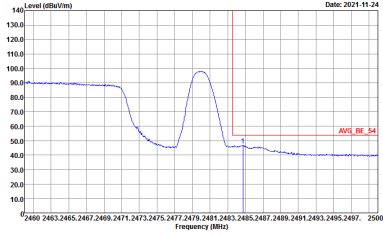
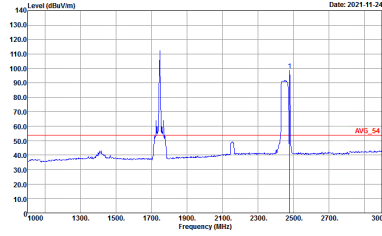


2.4GHz 2400~2483.5MHz

BLE 2Mbps (Band Edge @ 3m)

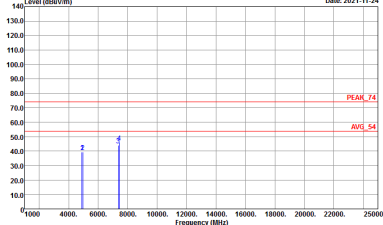
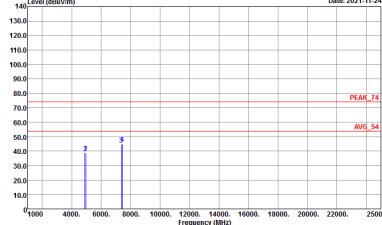
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH39 2480MHz	
5	Horizontal	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:30.000kHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : AVG_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000kHz VBW:30.000kHz SWT:Auto</p>



BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH39 2480MHz	
5	Vertical	Fundamental
Peak	 <p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : AV6_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>	 <p>Date: 2021-11-24</p> <p>Site : 03CH15-HY Condition : AV6_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>



**WLAN 802.11ax HE40_Tx_CH09 + BLE 2Mbps_Tx_CH39 + LTE Band 66 Link
(Harmonic @ 3m)**

ANT	802.11ax HE40_Tx_CH09 + BLE_Tx_CH39 + LTE Band 66 Link	
4&5	Horizontal	Vertical
<p>Peak</p> <p>Avg.</p>	 <p>Site : 03CH15-HY Condition : PEAK_74 3m 9120D_1620_20211025 HORIZONTAL Detector : Peak</p>	 <p>Site : 03CH15-HY Condition : PEAK_74 3m 9120D_1620_20211025 VERTICAL Detector : Peak</p>



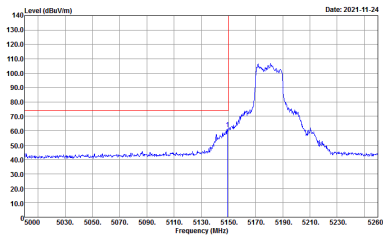
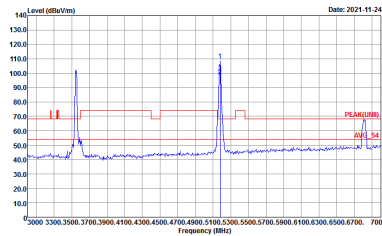
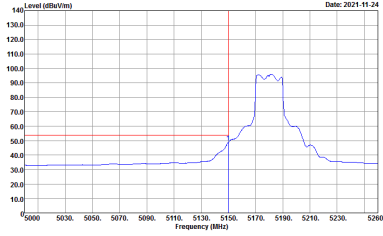
WLAN 802.11ax HE20 Tx_CH36 + BLE 2Mbps_Tx_CH39 + 5G NR n77 Link

Band 1 - 5150~5250MHz

WIFI 802.11axHE20 Full (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
4+5	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL :RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK(UMB) 3m 91200_1620_20211025 HORIZONTAL :RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL :RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	Left blank



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
4+5	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_T4 3m 9120d_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK(FUNDE) 3m 9120d_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AVG_BE_54 3m 9120d_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank

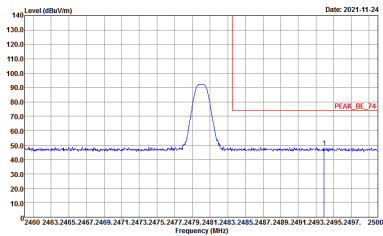
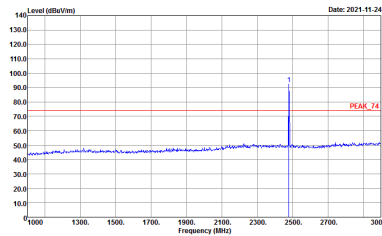
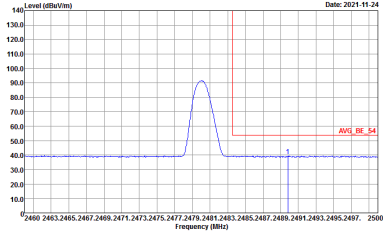
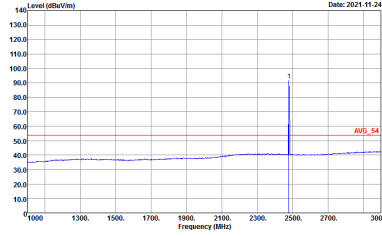


2.4GHz 2400~2483.5MHz

BLE 2Mbps (Band Edge @ 3m)

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH39 2480MHz	
5	Horizontal	Fundamental
Peak	<p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH15-HY Condition : AVG_BE_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	<p>Site : 03CH15-HY Condition : AVG_54 3m 91200_1620_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>



BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH39 2480MHz	
5	Vertical	Fundamental
Peak	 <p>Site : 03CH15-HY Condition : PEAK_BE_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : PEAK_74 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH15-HY Condition : AV6_BE_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH15-HY Condition : AV6_54 3m 91200_1620_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>



WLAN 802.11ax HE20 Tx_CH36 + BLE 2Mbps_Tx_CH39 + 5G NR n77 Link
(Harmonic @ 3m)

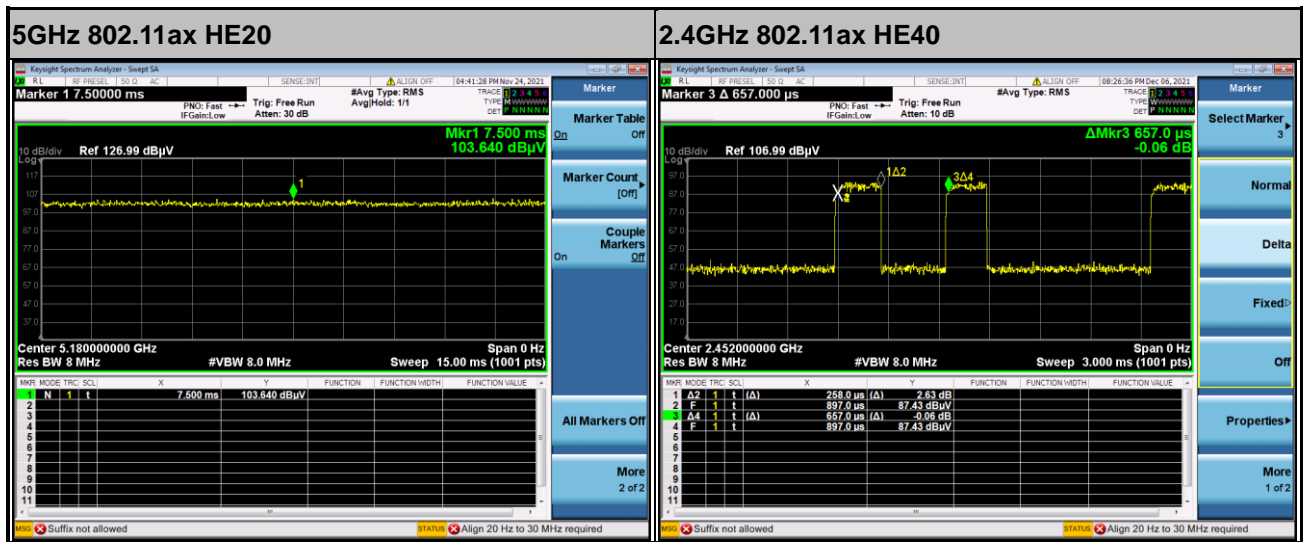
ANT	802.11ax HE20_Tx_CH36 + BLE_Tx_CH39+ 5GNR N77 Link	
4+5	Horizontal	Vertical
<p>Peak Avg.</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_1620_20211025 HORIZONTAL Detector : Peak</p>	<p>Site : 03CH15-HY Condition : PEAK(UNIT) 3m 91200_1620_20211025 VERTICAL Detector : Peak</p>



Appendix E. Duty Cycle Plots

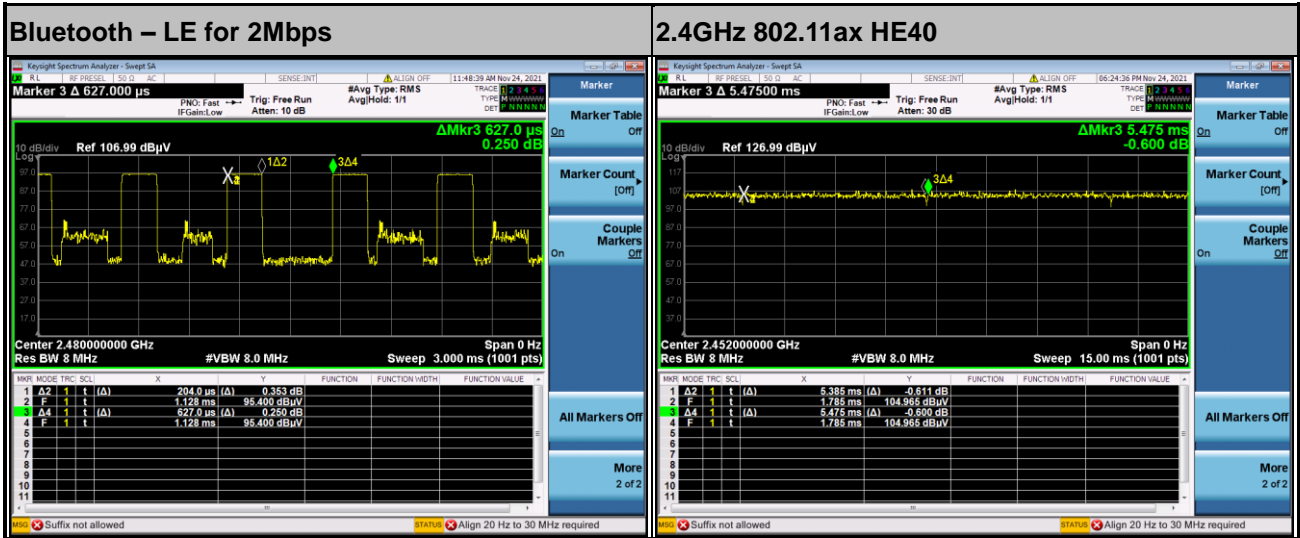
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
4	5GHz 802.11ax HE20 Full RU	100.00	-	-	10Hz
4	2.4GHz 802.11ax HE40 Full RU	39.27	258	3.88	10kHz
5	Bluetooth – LE for 2Mbps	32.54	204	4.90	10kHz
5	2.4GHz 802.11ax HE40 Full RU	100.00	-	-	10Hz
4+5	5GHz 802.11ax HE20 Full RU	100.00	-	-	10Hz

<Ant. 4>

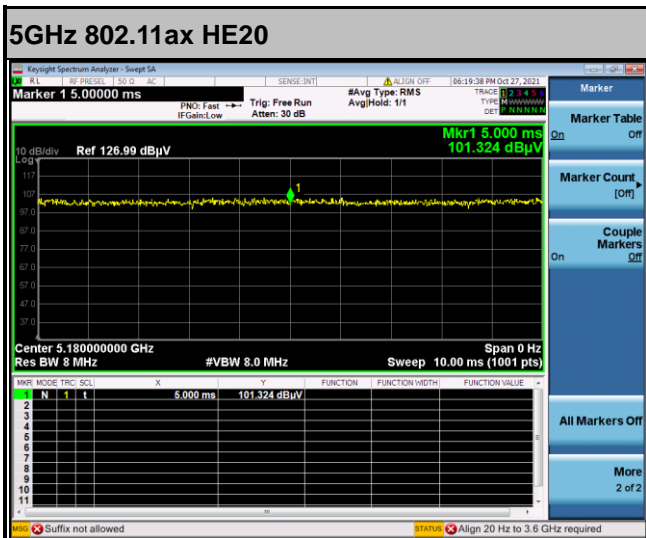




<Ant. 5>



MIMO <Ant. 4+5>



—THE END—