FCC CO-LOCATION RADIO TEST REPORT

FCC ID	**:**	**A4RGE2AE**
Equipment	**:**	**Phone**
Applicant	**:**	**Google LLC** **1600 Amphitheatre Parkway,** **Mountain View, California, 94043 USA**
Standard	**:**	**FCC Part 15 Subpart E §15.407**

The product was received on Mar. 30, 2022 and testing was performed from Apr. 13, 2022 to May 18, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of 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	Issued Date
FR1O2919-05G	01	Initial issue of report	May 27, 2022
FR1O2919-05G	02	1. Add remark in section 2.2 2. Revise Table of Contents, antenna type 3. Revise the description of the three orthogonal axis 4. Revise Antenna Function for Transmitter 5. Remove model name	Jun. 07, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(b)	Unwanted Emissions	Pass	2.27 dB under the limit at 5350.240 MHz
3.2	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results. 2. The measurement uncertainty please refer to this report "Uncertainty of Evaluation".
Comments and Explanations:
The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: William Chen

Report Producer: Cindy Liu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Phone
FCC ID	A4RGE2AE
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS/WPC/WPT/UWB WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE

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

EUT Information List	
S/N	Performed Test Item
22271FDH30001G	Radiated Spurious Emission

1.2 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Product Specification subjective to this standard</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>2402 MHz ~ 2480 MHz
2412 MHz ~ 2472 MHz
5180 MHz ~ 5240 MHz
6875 MHz ~ 7125 MHz</td></tr>
<tr><td>Antenna Type / Gain</td><td><Bluetooth>
<Ant. 4> : ILA Antenna with gain -1.6 dBi
<Ant. 3> : IFA Antenna with gain -0.4 dBi
<2412 MHz ~ 2472 MHz>
<Ant. 4>: ILA Antenna with gain -1.6 dBi
<Ant. 3>: IFA Antenna with gain -0.4 dBi
<5180 MHz ~ 5240 MHz>
<Ant. 4>: ILA Antenna with gain -2.6 dBi
<Ant. 8>: ILA Antenna with gain -4.0 dBi
<6875 MHz ~ 7125 MHz>
<Ant. 4>: ILA Antenna with gain -1.4 dBi
<Ant. 8>: ILA Antenna with gain -3.5 dBi</td></tr>
<tr><td>Type of Modulation</td><td>Bluetooth BR (1Mbps) : GFSK
Bluetooth LE: GFSK
802.11ax : OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)</td></tr>
<tr><td>Antenna Function for Transmitter</td><td>
<table>
<tr><th></th><th>Ant. 4</th><th>Ant. 3</th></tr>
<tr><td>Bluetooth-LE</td><td>V</td><td></td></tr>
<tr><td>Bluetooth
802.11 ax
MIMO</td><td>V</td><td>V</td></tr>
</table>
<table>
<tr><th></th><th>Ant. 4</th><th>Ant. 8</th></tr>
<tr><td>802.11 ax
MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Remark:

1. MIMO Ant. 4+3 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 3.
2. MIMO Ant. 4+8 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 8.
3. The above EUT's information was 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 (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH16-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 987594 D02 U-NII 6 GHz EMC Measurement v01
- 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 accessory (Adapter or Earphone), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane with Adapter as worst plane.

2.1 Carrier Frequency and Channel

2402-2480 MHz Bluetooth EDR		2402-2480 MHz Bluetooth – LE for 1Mbps	
Channel	**Freq. (MHz)**	**Channel**	**Freq. (MHz)**
78	2480	39	2480

2412-2472 MHz 802.11ax HE20		5150-5250MHz 802.11ax HE160	
Channel	**Freq. (MHz)**	**Channel**	**Freq. (MHz)**
13	2472	50	5250

6875-7125 MHz 802.11ax HE160	
Channel	**Freq. (MHz)**
207	6985

2.2 Test Mode

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

<Co-Location>

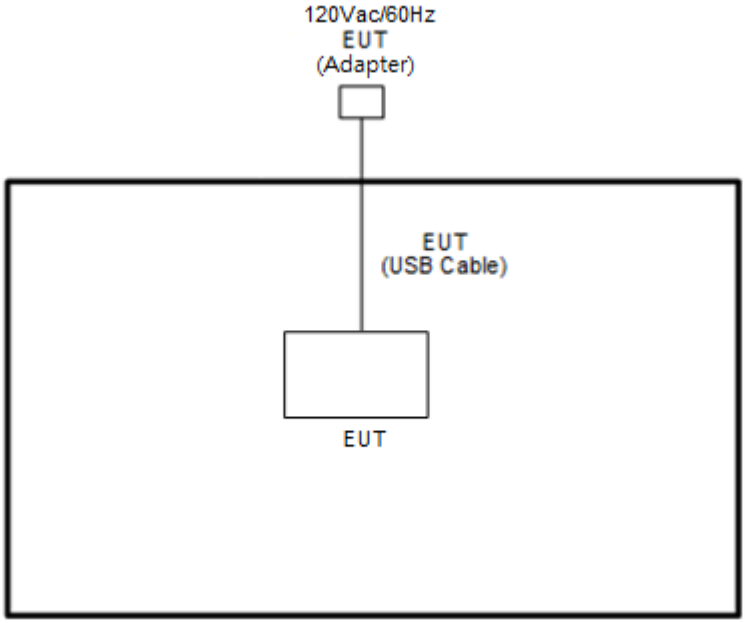
Test Mode	Modulation	Data Rate
Mode 1	Bluetooth for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4+8>	1Mbps + MCS0
Mode 2	Bluetooth-LE for Ant. 4 + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4+8>	1Mbps + MCS0
Mode 3	WLAN 2.4GHz 802.11ax HE20 for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4+8>	1Mbps + MCS0
Mode 4	Bluetooth for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+8>	1Mbps + MCS0
Mode 5	Bluetooth LE for Ant. 4 + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+8>	1Mbps + MCS0
Mode 6	WLAN 2.4GHz 802.11ax HE20 for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+8>	MCS0 + MCS0

Remark:

1. For Radiated Test Cases, the tests were performed with Adapter 2 and USB Cable 1.
2. During the preliminary test, both charging modes (Adapter mode and WPT Charging mode) were verified. It is determined that the adaptor mode is the worst case for official test.

2.3 Connection Diagram of Test System

<Co-Location Tx Mode>



2.4 EUT Operation Test Setup

The RF test items, utility “CMD V10.1.18362.1256” 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 fallen 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.

(4) For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz.

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27 (RMS)	68.3
- 7 (Peak)	88.3

According 987594 D02 U-NII 6GHz EMC Measurement v01 section G:

Unwanted emissions outside of restricted bands are measured with a RMS detector.

In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

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 1000MHz
   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

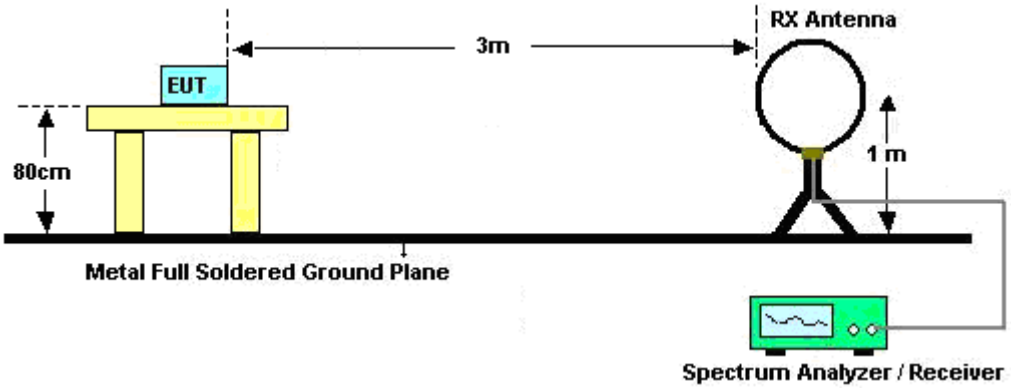
   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

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

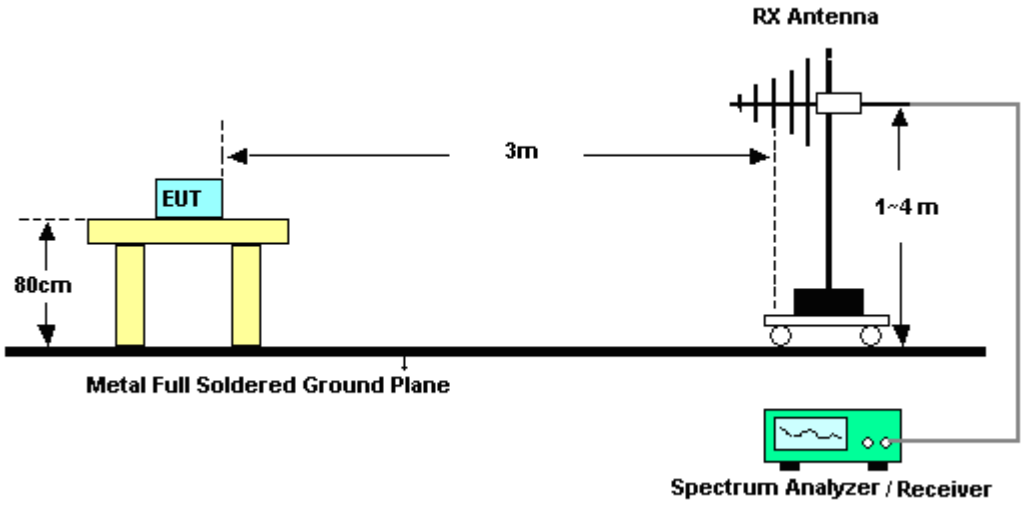
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit 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

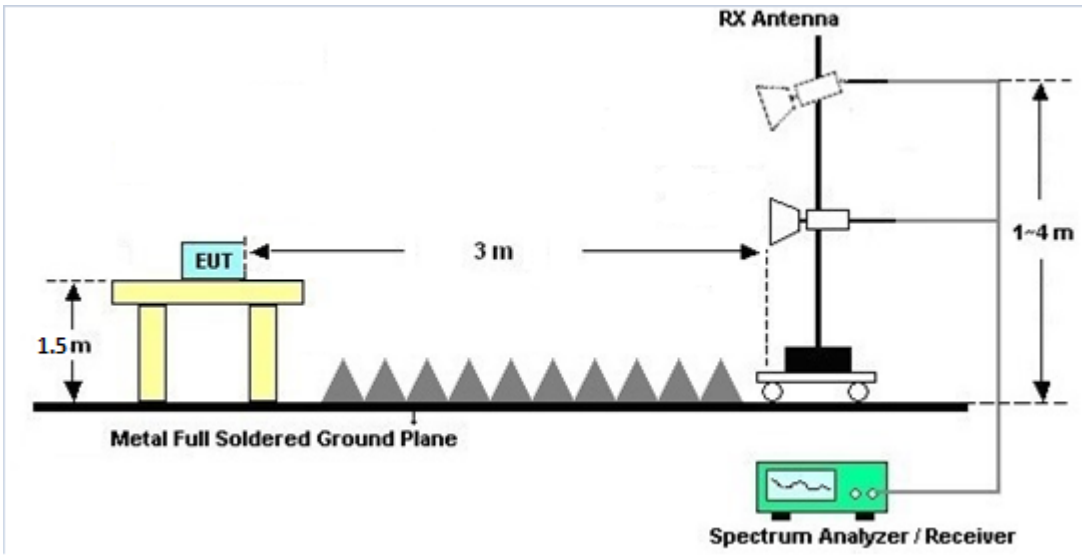
For radiated emissions below 30MHz



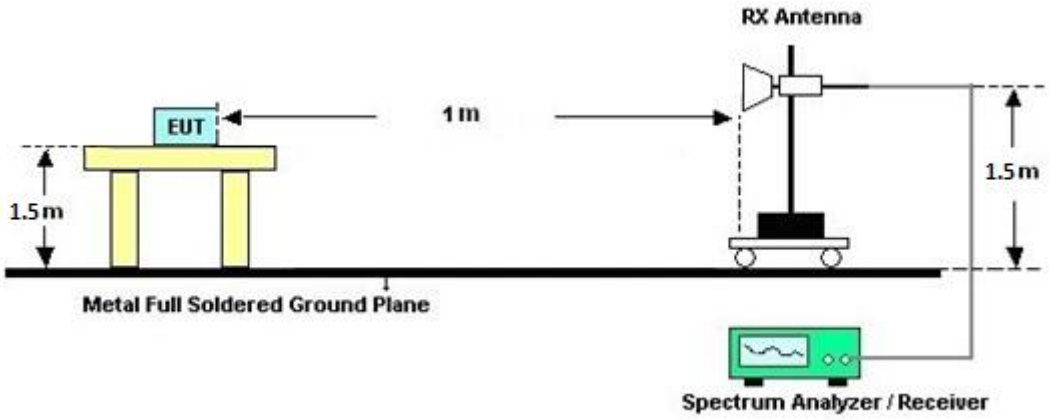
For radiated emissions from 30MHz to 1GHz



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 started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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

<Bluetooth, Bluetooth-LE, WLAN 2.4GHz and WLAN 5GHz>

If directional gain of transmitting antennas is greater than 6dBi, the power and the peak power spectral density shall be reduced by the same level in dB comparing to gain minus 6dBi. 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.

<WLAN 6GHz>

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
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Apr. 13, 2022~ May 18, 2022	Sep. 06, 2022	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N -06	47020 & 06	30MHz to 1GHz	Oct. 09, 2021	Apr. 13, 2022~ May 18, 2022	Oct. 08, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1G~18GHz	Aug. 04, 2021	Apr. 13, 2022~ May 18, 2022	Aug. 03, 2022	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz ~40GHz	Nov. 30, 2021	Apr. 13, 2022~ May 18, 2022	Nov. 29, 2022	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Jul. 05, 2021	Apr. 13, 2022~ May 18, 2022	Jul. 04, 2022	Radiation (03CH16-HY)
Amplifier	EMCI	EMC051845SE	980729	1-18GHz	Jul. 09, 2021	Apr. 13, 2022~ May 18, 2022	Jul. 08, 2022	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Apr. 13, 2022~ May 18, 2022	Jun. 21, 2022	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2021	Apr. 13, 2022~ May 18, 2022	Dec. 08, 2022	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A	MY59053012	3Hz~26.5GHz	Nov. 18, 2021	Apr. 13, 2022~ May 18, 2022	Nov. 17, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4PE	NA	Aug. 28, 2021	Apr. 13, 2022~ May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4PE	NA	Aug. 28, 2021	Apr. 13, 2022~ May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5 757	NA	Aug. 28, 2021	Apr. 13, 2022~ May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Apr. 13, 2022~ May 18, 2022	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Apr. 13, 2022~ May 18, 2022	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Apr. 13, 2022~ May 18, 2022	N/A	Radiation (03CH16-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))	**5.8 dB**

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.8 dB**

Appendix A. Radiated Spurious Emission

Test Engineer :	Karl Hou and Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~60%

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

Ant. 4+3_BT_Tx_Ch78 (Band Edge @ 3m)

BT Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH 78 2480MHz	*	2480	109.09	-	-	103.28	27.4	8.46	30.05	137	341	P	H
	*	2480	84.33	-	-	-	-	-	-	-	-	A	H
		2487.52	47.23	-26.77	74	41.39	27.4	8.48	30.04	137	341	P	H
		2487.52	22.47	-31.53	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	108.7	-	-	102.89	27.4	8.46	30.05	396	111	P	V
	*	2480	83.94	-	-	-	-	-	-	-	-	A	V
		2483.8	48.33	-25.67	74	42.5	27.4	8.47	30.04	396	111	P	V
		2483.8	23.57	-30.43	54	-	-	-	-	-	-	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 50 5250MHz		5142.48	63.55	-10.45	74	49.17	31.82	12.02	29.46	100	117	P	H
		5141.96	48.36	-5.64	54	33.98	31.82	12.02	29.46	100	117	A	H
	*	5250	98.63	-	-	84.54	31.3	12.28	29.49	100	117	P	H
	*	5250	88.21	-	-	74.12	31.3	12.28	29.49	100	117	A	H
		5392.52	64.94	-9.06	74	50.26	31.46	12.76	29.54	100	117	P	H
		5350.24	51.73	-2.27	54	37.43	31.2	12.62	29.52	100	117	A	H
		5142.74	57.21	-16.79	74	42.84	31.81	12.02	29.46	100	156	P	V
		5140.66	43.55	-10.45	54	29.17	31.82	12.02	29.46	100	156	A	V
	*	5250	93.89	-	-	79.8	31.3	12.28	29.49	100	156	P	V
	*	5250	83.8	-	-	69.71	31.3	12.28	29.49	100	156	A	V
		5376.56	56.21	-17.79	74	41.67	31.36	12.71	29.53	100	156	P	V
		5377.4	45.18	-8.82	54	30.64	31.36	12.71	29.53	100	156	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz + 802.11ax HE160 Full CH 50 5250MHz		4960	58	-16	74	41.06	33.02	13.33	29.41	-	-	P	H
		4960	33.24	-20.76	54	-	-	-	-	-	-	A	H
		7440	46.03	-27.97	74	49.03	36.22	16.45	55.67	-	-	P	H
		7440	21.27	-32.73	54	-	-	-	-	-	-	A	H
		10500	48.23	-19.97	68.2	46.19	38.6	18.93	55.49	-	-	P	H
		11323	48.78	-25.22	74	45.55	39.2	19.16	55.13	-	-	P	H
		11323	38.69	-15.31	54	35.46	39.2	19.16	55.13	-	-	A	H
		14491	48.62	-25.38	74	40.8	40.4	21.75	54.33	-	-	P	H
		14491	42.48	-11.52	54	34.66	40.4	21.75	54.33	-	-	A	H
		15750	46.73	-27.27	74	41.22	37.7	22.81	55	-	-	P	H
		17967	53.92	-20.08	74	42.3	42.74	25.46	56.58	-	-	P	H
		17967	43.27	-10.73	54	31.65	42.74	25.46	56.58	-	-	A	H
		4960	57.05	-16.95	74	40.11	33.02	13.33	29.41	-	-	P	V
		4960	32.29	-21.71	54	-	-	-	-	-	-	A	V
		7440	46.05	-27.95	74	49.05	36.22	16.45	55.67	-	-	P	V
		7440	21.29	-32.71	54	-	-	-	-	-	-	A	V
		10500	48.46	-19.74	68.2	46.42	38.6	18.93	55.49	-	-	P	V
		12126	49.09	-24.91	74	45.28	38.97	19.58	54.74	-	-	P	V
		12126	39.37	-14.63	54	35.56	38.97	19.58	54.74	-	-	A	V
		14491	48.57	-25.43	74	40.75	40.4	21.75	54.33	-	-	P	V
		14491	42.31	-11.69	54	34.49	40.4	21.75	54.33	-	-	A	V
		15750	48.02	-25.98	74	42.51	37.7	22.81	55	-	-	P	V
		17967	54.07	-19.93	74	42.45	42.74	25.46	56.58	-	-	P	V
		17967	42.81	-11.19	54	31.19	42.74	25.46	56.58	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission below 1GHz

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (LF)

WIFI	Note	Frequency	Level	Over	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)
BT CH 78 2480MHz + 802.11ax HE160 Full CH 50 5250MHz		95.96	29.62	-13.88	43.5	44.75	15.41	1.77	32.31	-	-	P	H
		158.04	24.65	-18.85	43.5	37.84	16.76	2.3	32.25	-	-	P	H
		486.87	26.37	-19.63	46	31.01	23.8	3.93	32.37	-	-	P	H
		571.26	27.41	-18.59	46	29.81	25.88	4.2	32.48	-	-	P	H
		787.57	33.17	-12.83	46	32.51	28.03	4.9	32.27	-	-	P	H
		932.1	33.57	-12.43	46	29.6	29.89	5.4	31.32	-	-	P	H
													H
													H
													H
													H
													H
													H
		34.85	27.56	-12.44	40	36.68	22.27	0.92	32.31	-	-	P	V
		181.32	26.76	-16.74	43.5	41.53	15.01	2.44	32.22	-	-	P	V
		348.16	21.73	-24.27	46	30.21	20.49	3.26	32.23	-	-	P	V
		644.01	28.13	-17.87	46	29.9	26.29	4.44	32.5	-	-	P	V
		784.66	33.48	-12.52	46	32.85	28.02	4.89	32.28	-	-	P	V
		925.31	33.58	-12.42	46	30	29.57	5.38	31.37	-	-	P	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.
3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

Ant. 4_BLE_Tx_Ch39 (Band Edge @ 3m)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	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)
BLE CH 39 2480MHz	*	2480	111.35	-	-	95.62	27.4	18.38	30.05	100	140	P	H
	*	2480	110.7	-	-	94.97	27.4	18.38	30.05	100	140	A	H
		2484.36	56.41	-17.59	74	40.66	27.4	18.39	30.04	100	140	P	H
		2484.68	47.18	-6.82	54	31.43	27.4	18.39	30.04	100	140	A	H
													H
													H
	*	2480	109.71	-	-	93.98	27.4	18.38	30.05	400	75	P	V
	*	2480	108.76	-	-	93.03	27.4	18.38	30.05	400	75	A	V
		2495.28	56.15	-17.85	74	40.38	27.4	18.41	30.04	400	75	P	V
		2497.6	46.94	-7.06	54	31.16	27.4	18.42	30.04	400	75	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 50 5250MHz		5137.28	62.43	-11.57	74	48.04	31.83	12.01	29.45	100	117	P	H
		5148.2	47.87	-6.13	54	33.5	31.8	12.03	29.46	100	117	A	H
	*	5250	98.01	-	-	83.92	31.3	12.28	29.49	100	117	P	H
	*	5250	88.08	-	-	73.99	31.3	12.28	29.49	100	117	A	H
		5382.16	64.73	-9.27	74	50.14	31.39	12.73	29.53	100	117	P	H
		5351.36	51.31	-2.69	54	37	31.21	12.62	29.52	100	117	A	H
		5081.38	53.8	-20.2	74	39.48	31.83	11.93	29.44	100	156	P	V
		5142.22	43.45	-10.55	54	29.07	31.82	12.02	29.46	100	156	A	V
	*	5250	94.33	-	-	80.17	31.33	12.33	29.5	100	156	P	V
	*	5250	83.92	-	-	69.76	31.33	12.33	29.5	100	156	A	V
		5392.24	58.77	-15.23	74	44.1	31.45	12.76	29.54	100	156	P	V
		5382.44	45.48	-8.52	54	30.89	31.39	12.73	29.53	100	156	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4_BLE_Tx_Ch39 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 39 2480MHz + 802.11ax HE160 Full CH 50 5250MHz		4960	56.53	-17.47	74	39.59	33.02	13.33	29.41	154	130	P	H
		4960	45.67	-8.33	54	28.73	33.02	13.33	29.41	154	130	A	H
		7440	46.05	-27.95	74	49.05	36.22	16.45	55.67	-	-	P	H
		10500	47.34	-20.86	68.2	45.3	38.6	18.93	55.49	-	-	P	H
		11477	48.58	-25.42	74	45.48	38.89	19.23	55.02	-	-	P	H
		11477	38.59	-15.41	54	35.49	38.89	19.23	55.02	-	-	A	H
		14491	48.28	-25.72	74	40.46	40.4	21.75	54.33	-	-	P	H
		14491	42.26	-11.74	54	34.44	40.4	21.75	54.33	-	-	A	H
		15750	46.74	-27.26	74	41.23	37.7	22.81	55	-	-	P	H
		17956	53.65	-20.35	74	42.11	42.65	25.46	56.57	-	-	P	H
		17956	43.03	-10.97	54	31.49	42.65	25.46	56.57	-	-	A	H
		4960	56.71	-17.29	74	39.77	33.02	13.33	29.41	100	170	P	V
		4960	45.65	-8.35	54	28.71	33.02	13.33	29.41	100	170	A	V
		7440	46.25	-27.75	74	49.25	36.22	16.45	55.67	-	-	P	V
		10500	47.14	-21.06	68.2	45.1	38.6	18.93	55.49	-	-	P	V
		11400	48.67	-25.33	74	45.35	39.2	19.19	55.07	-	-	P	V
		11400	39.01	-14.99	54	35.69	39.2	19.19	55.07	-	-	A	V
		14491	49.83	-24.17	74	42.01	40.4	21.75	54.33	-	-	P	V
		14491	42.4	-11.6	54	34.58	40.4	21.75	54.33	-	-	A	V
		15750	46.51	-27.49	74	41	37.7	22.81	55	-	-	P	V
		17967	53.53	-20.47	74	41.91	42.74	25.46	56.58	-	-	P	V
		17967	42.84	-11.16	54	31.22	42.74	25.46	56.58	-	-	A	V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
4. The emission level close to 18GHz is checked that the average emission level is noise floor only.

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

Ant. 4+3_11ax HE20 Full_Tx_Ch13 (Band Edge @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	2472	104.76	-	-	89.04	27.4	18.37	30.05	106	99	P	H
	*	2472	95.89	-	-	80.17	27.4	18.37	30.05	106	99	A	H
		2484.96	58.09	-15.91	74	42.34	27.4	18.39	30.04	106	99	P	H
		2483.56	48.02	-5.98	54	32.27	27.4	18.39	30.04	106	99	A	H
802.11ax													H
HE20 Full													H
CH 13	*	2472	103.17	-	-	87.45	27.4	18.37	30.05	400	61	P	V
2472MHz	*	2472	93.85	-	-	78.13	27.4	18.37	30.05	400	61	A	V
		2484.84	57.73	-16.27	74	41.98	27.4	18.39	30.04	400	61	P	V
		2483.56	46.88	-7.12	54	31.13	27.4	18.39	30.04	400	61	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 50 5250MHz		5142.22	64.18	-9.82	74	49.8	31.82	12.02	29.46	100	118	P	H
		5149.76	49.23	-4.77	54	34.86	31.8	12.03	29.46	100	118	A	H
	*	5250	99.09	-	-	85	31.3	12.28	29.49	100	118	P	H
	*	5250	88.34	-	-	74.25	31.3	12.28	29.49	100	118	A	H
		5392.8	65.28	-8.72	74	50.59	31.46	12.77	29.54	100	118	P	H
		5350	51.56	-2.44	54	37.26	31.2	12.62	29.52	100	118	A	H
		5147.16	57.21	-16.79	74	42.83	31.81	12.03	29.46	100	165	P	V
		5141.7	44.34	-9.66	54	29.96	31.82	12.02	29.46	100	165	A	V
	*	5250	93.99	-	-	79.9	31.3	12.28	29.49	100	165	P	V
	*	5250	83.95	-	-	69.86	31.3	12.28	29.49	100	165	A	V
		5406.24	58.14	-15.86	74	43.37	31.52	12.79	29.54	100	165	P	V
		5382.72	46.08	-7.92	54	31.48	31.4	12.73	29.53	100	165	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 13 2472MHz + 802.11ax HE160 Full CH 50 5250MHz		4944	58.29	-15.71	74	41.4	32.96	13.34	29.41	100	23	P	H
		4944	45.22	-8.78	54	28.33	32.96	13.34	29.41	100	23	A	H
		7416	46.23	-27.77	74	49.09	36.27	16.54	55.67	-	-	P	H
		10500	47.5	-20.7	68.2	45.46	38.6	18.93	55.49	-	-	P	H
		12027	48.49	-25.51	74	45.04	38.78	19.48	54.81	-	-	P	H
		12027	38.87	-15.13	54	35.42	38.78	19.48	54.81	-	-	A	H
		14491	48.46	-25.54	74	40.64	40.4	21.75	54.33	-	-	P	H
		14491	42.51	-11.49	54	34.69	40.4	21.75	54.33	-	-	A	H
		15750	48.14	-25.86	74	42.63	37.7	22.81	55	-	-	P	H
		17967	53.38	-20.62	74	41.76	42.74	25.46	56.58	-	-	P	H
		17967	42.96	-11.04	54	31.34	42.74	25.46	56.58	-	-	A	H
		4944	56.67	-17.33	74	39.78	32.96	13.34	29.41	100	158	P	V
		4944	45.29	-8.71	54	28.4	32.96	13.34	29.41	100	158	A	V
		7416	46.32	-27.68	74	49.18	36.27	16.54	55.67	-	-	P	V
		10500	47.54	-20.66	68.2	45.5	38.6	18.93	55.49	-	-	P	V
		11213	48.64	-25.36	74	45.71	39.03	19.11	55.21	-	-	P	V
		11213	38.75	-15.25	54	35.82	39.03	19.11	55.21	-	-	A	V
		14491	48.78	-25.22	74	40.96	40.4	21.75	54.33	-	-	P	V
		14491	42.6	-11.4	54	34.78	40.4	21.75	54.33	-	-	A	V
		15750	46.95	-27.05	74	41.44	37.7	22.81	55	-	-	P	V
		17956	53.82	-20.18	74	42.28	42.65	25.46	56.57	-	-	P	V
		17956	43.2	-10.8	54	31.66	42.65	25.46	56.57	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

Ant. 4+3_BT_Tx_Ch78 (Band Edge @ 3m)

BT Ant. 4+3	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz	*	2480	104.94	-	-	98.75	27.78	8.46	30.05	100	323	P	H
	*	2480	80.18	-	-	-	-	-	-	-	-	A	H
		2484.16	47.7	-26.3	74	41.47	27.8	8.47	30.04	100	323	P	H
		2484.16	22.94	-31.06	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	108.56	-	-	102.37	27.78	8.46	30.05	400	125	P	V
	*	2480	83.8	-	-	-	-	-	-	-	-	A	V
		2483.68	48.38	-25.62	74	42.15	27.8	8.47	30.04	400	125	P	V
		2483.68	23.62	-30.38	54	-	-	-	-	-	-	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	6985	98.11	-	-	77.32	35.8	15.04	30.05	100	255	P	H
	*	6985	87.9	-	-	67.11	35.8	15.04	30.05	100	255	A	H
802.11ax		7129.64	61.55	-26.65	88.2	40.29	36.48	14.87	30.09	100	255	P	H
HE160 Full		7134.12	50.53	-17.67	68.2	29.25	36.5	14.87	30.09	100	255	A	H
CH 207	*	6985	98.71	-	-	77.92	35.8	15.04	30.05	100	306	P	V
6985MHz	*	6985	88.04	-	-	67.25	35.8	15.04	30.05	100	306	A	V
		7153.32	60.32	-27.88	88.2	39	36.59	14.83	30.1	100	306	P	V
		7140.84	50.61	-17.59	68.2	29.3	36.55	14.85	30.09	100	306	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz + 802.11ax HE160 Full CH 207 6985MHz		4960	38.94	-35.06	74	48.08	33.02	13.28	55.44	-	-	P	H
		4960	14.18	-39.82	54	-	-	-	-	-	-	A	H
		7440	44.18	-29.82	74	46.27	36.22	17.36	55.67	-	-	P	H
		7440	19.42	-34.58	54	-	-	-	-	-	-	A	H
		10928	48.17	-25.83	74	45.99	38.83	18.74	55.39	-	-	P	H
		10928	37.84	-16.16	54	35.66	38.83	18.74	55.39	-	-	A	H
		13970	47.78	-40.42	88.2	40.3	40.38	21.27	54.17	-	-	P	H
		14488	48.71	-25.29	74	40.87	40.4	21.77	54.33	-	-	P	H
		14488	42.55	-11.45	54	34.71	40.4	21.77	54.33	-	-	A	H
		17960	53.17	-20.83	74	42.1	42.68	24.96	56.57	-	-	P	H
		17960	42.55	-11.45	54	31.48	42.68	24.96	56.57	-	-	A	H
		20955	34.82	-39.18	74	54.94	37.96	-3.36	54.72	-	-	P	H
		4960	39.07	-34.93	74	48.21	33.02	13.28	55.44	-	-	P	V
		4960	14.31	-39.69	54	-	-	-	-	-	-	A	V
		7440	44.47	-29.53	74	46.56	36.22	17.36	55.67	-	-	P	V
		7440	19.71	-34.29	54	-	-	-	-	-	-	A	V
		11408	48.76	-25.24	74	45.58	39.17	19.08	55.07	-	-	P	V
		11408	38.88	-15.12	54	35.7	39.17	19.08	55.07	-	-	A	V
		13970	48.59	-39.61	88.2	41.11	40.38	21.27	54.17	-	-	P	V
		14488	49.09	-24.91	74	41.25	40.4	21.77	54.33	-	-	P	V
		14488	39.72	-14.28	54	31.88	40.4	21.77	54.33	-	-	A	V
		17992	52.9	-21.1	74	41.58	42.94	24.97	56.59	-	-	P	V
		17992	42.78	-11.22	54	31.46	42.94	24.97	56.59	-	-	A	V
		20955	35.1	-38.9	74	55.22	37.96	-3.36	54.72	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

Ant. 4_BLE_Tx_Ch39 (Band Edge @ 3m)

BT 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)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 39 2480MHz	*	2480	112.47	-	-	96.36	27.78	18.38	30.05	115	107	P	H
	*	2480	111.85	-	-	95.74	27.78	18.38	30.05	115	107	A	H
		2483.72	62.76	-11.24	74	46.61	27.8	18.39	30.04	115	107	P	H
		2483.6	47.75	-6.25	54	31.6	27.8	18.39	30.04	115	107	A	H
													H
													H
	*	2480	110.69	-	-	94.58	27.78	18.38	30.05	400	77	P	V
	*	2480	110.01	-	-	93.9	27.78	18.38	30.05	400	77	A	V
		2491.32	57.47	-16.53	74	41.26	27.85	18.4	30.04	400	77	P	V
		2486.24	46.98	-7.02	54	30.8	27.82	18.4	30.04	400	77	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 207 6985MHz	*	6985	98.55	-	-	77.76	35.8	15.04	30.05	100	255	P	H
	*	6985	88.4	-	-	67.61	35.8	15.04	30.05	100	255	A	H
		7157.8	60.47	-27.73	88.2	39.17	36.58	14.82	30.1	100	255	P	H
		7137	50.68	-17.52	68.2	29.39	36.52	14.86	30.09	100	255	A	H
	*	6985	98.57	-	-	77.78	35.8	15.04	30.05	100	306	P	V
	*	6985	88.07	-	-	67.28	35.8	15.04	30.05	100	306	A	V
		7134.12	60.16	-28.04	88.2	38.88	36.5	14.87	30.09	100	306	P	V
		7144.68	50.48	-17.72	68.2	29.15	36.57	14.85	30.09	100	306	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4_BLE_Tx_Ch39 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 39 2480MHz + 802.11ax HE160 Full CH 207 6985MHz		4960	37.49	-36.51	74	46.63	33.02	13.28	55.44	-	-	P	H
		7440	44.06	-29.94	74	46.15	36.22	17.36	55.67	-	-	P	H
		12096	48.44	-25.56	74	44.6	38.99	19.61	54.76	-	-	P	H
		12096	39.32	-14.68	54	35.48	38.99	19.61	54.76	-	-	A	H
		13970	49.12	-39.08	88.2	41.64	40.38	21.27	54.17	-	-	P	H
		14488	47.99	-26.01	74	40.15	40.4	21.77	54.33	-	-	P	H
		14488	42.37	-11.63	54	34.53	40.4	21.77	54.33	-	-	A	H
		17928	52.57	-21.43	74	41.75	42.42	24.95	56.55	-	-	P	H
		17928	42.59	-11.41	54	31.77	42.42	24.95	56.55	-	-	A	H
		20955	35.15	-38.85	74	55.27	37.96	-3.36	54.72	-	-	P	H
		4960	38.87	-35.13	74	48.01	33.02	13.28	55.44	-	-	P	V
		7440	44.55	-29.45	74	46.64	36.22	17.36	55.67	-	-	P	V
		11048	47.94	-26.06	74	45.55	38.9	18.82	55.33	-	-	P	V
		11048	37.95	-16.05	54	35.56	38.9	18.82	55.33	-	-	A	V
		13970	47.84	-40.36	88.2	40.36	40.38	21.27	54.17	-	-	P	V
		14488	48.77	-25.23	74	40.93	40.4	21.77	54.33	-	-	P	V
		14488	42.49	-11.51	54	34.65	40.4	21.77	54.33	-	-	A	V
		17928	53.42	-20.58	74	42.6	42.42	24.95	56.55	-	-	P	V
		17928	42.31	-11.69	54	31.49	42.42	24.95	56.55	-	-	A	V
		20955	36.46	-37.54	74	56.58	37.96	-3.36	54.72	-	-	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

Ant. 4+3_11ax HE20 Full_Tx_Ch13 (Band Edge @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	2472	105.36	-	-	89.31	27.73	18.37	30.05	110	95	P	H
	*	2472	96.11	-	-	80.06	27.73	18.37	30.05	110	95	A	H
		2485.52	57.77	-16.23	74	41.61	27.81	18.39	30.04	110	95	P	H
		2483.52	48.11	-5.89	54	31.96	27.8	18.39	30.04	110	95	A	H
802.11ax													H
HE20 Full													H
CH 13	*	2472	103.44	-	-	87.39	27.73	18.37	30.05	400	79	P	V
2472MHz	*	2472	94.04	-	-	77.99	27.73	18.37	30.05	400	79	A	V
		2488.64	57.21	-16.79	74	41.02	27.83	18.4	30.04	400	79	P	V
		2483.52	47.15	-6.85	54	31	27.8	18.39	30.04	400	79	A	V
													V
													V

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI Ant. 4+8	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	6985	96.5	-	-	75.71	35.8	15.04	30.05	100	254	P	H
	*	6985	85.99	-	-	65.2	35.8	15.04	30.05	100	254	A	H
802.11ax		7219.24	60.17	-28.03	88.2	38.8	36.65	14.84	30.12	100	254	P	H
HE160 Full		7146.6	49.9	-18.3	68.2	28.57	36.58	14.84	30.09	100	254	A	H
CH 207	*	6985	95.15	-	-	74.36	35.8	15.04	30.05	100	306	P	V
6985MHz	*	6985	85.64	-	-	64.85	35.8	15.04	30.05	100	306	A	V
		7193.64	60.52	-27.68	88.2	39.36	36.51	14.76	30.11	100	306	P	V
		7145.96	50.72	-17.48	68.2	29.39	36.58	14.84	30.09	100	306	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

WIFI Ant. Simultaneously	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 13 2472MHz + 802.11ax HE160 Full CH 207 6985MHz		4944	37.23	-36.77	74	46.41	32.96	13.28	55.42	-	-	P	H
		7416	44.48	-29.52	74	46.49	36.27	17.39	55.67	-	-	P	H
		12256	48.49	-25.51	74	44.53	38.84	19.76	54.64	-	-	P	H
		12256	39.63	-14.37	54	35.67	38.84	19.76	54.64	-	-	A	H
		13970	48.28	-39.92	88.2	40.8	40.38	21.27	54.17	-	-	P	H
		14488	49.04	-24.96	74	41.2	40.4	21.77	54.33	-	-	P	H
		14488	42.65	-11.35	54	34.81	40.4	21.77	54.33	-	-	A	H
		17928	53.17	-20.83	74	42.35	42.42	24.95	56.55	-	-	P	H
		17928	42.37	-11.63	54	31.55	42.42	24.95	56.55	-	-	A	H
		20955	35.35	-38.65	74	55.47	37.96	-3.36	54.72	-	-	P	H
		4944	37.77	-36.23	74	46.95	32.96	13.28	55.42	-	-	P	V
		7416	44.55	-29.45	74	46.56	36.27	17.39	55.67	-	-	P	V
		11448	48.18	-25.82	74	45.1	39.01	19.11	55.04	-	-	P	V
		11448	38.97	-15.03	54	35.89	39.01	19.11	55.04	-	-	A	V
		13970	48.5	-39.7	88.2	41.02	40.38	21.27	54.17	-	-	P	V
		14488	49.14	-24.86	74	41.3	40.4	21.77	54.33	-	-	P	V
		14488	42.49	-11.51	54	34.65	40.4	21.77	54.33	-	-	A	V
		17928	53.6	-20.4	74	42.78	42.42	24.95	56.55	-	-	P	V
		17928	42.41	-11.59	54	31.59	42.42	24.95	56.55	-	-	A	V
		20955	35.24	-38.76	74	55.36	37.96	-3.36	54.72	-	-	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission below 1GHz

Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (LF)

WIFI	Note	Frequency	Level	Over	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)
802.11ax HE20 Full CH 13 2472MHz + 802.11ax HE160 Full CH 207 6985MHz		30.97	21.54	-18.46	40	28.98	24.05	0.83	32.32	-	-	P	H
		95.96	27.42	-16.08	43.5	42.55	15.41	1.77	32.31	-	-	P	H
		190.05	22.16	-21.34	43.5	37.06	14.84	2.5	32.24	-	-	P	H
		549.92	26.97	-19.03	46	30.05	25.23	4.09	32.4	-	-	P	H
		750.71	31.36	-14.64	46	30.86	28.08	4.76	32.34	-	-	P	H
		943.74	34.61	-11.39	46	30.07	30.34	5.44	31.24	-	-	P	H
													H
													H
													H
													H
													H
													H
		34.85	25.49	-14.51	40	34.61	22.27	0.92	32.31	-	-	P	V
		95.96	25.24	-18.26	43.5	40.37	15.41	1.77	32.31	-	-	P	V
		180.35	26.77	-16.73	43.5	41.51	15.05	2.43	32.22	-	-	P	V
		693.48	29.26	-16.74	46	30.72	26.36	4.58	32.4	-	-	P	V
		839.95	33.82	-12.18	46	31.76	28.97	5.1	32.01	-	-	P	V
		954.41	35.59	-10.41	46	30.61	30.67	5.47	31.16	-	-	P	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.
3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(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. 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

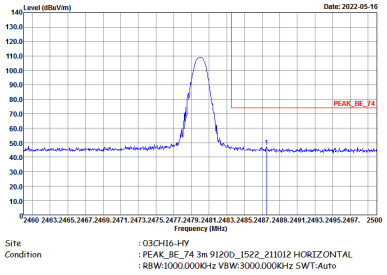
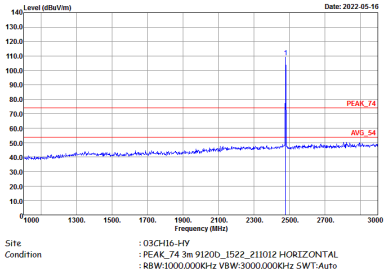
Test Engineer :	Karl Hou and Andy Yang	**Temperature :**	20~25°C
		Relative Humidity :	50~60%

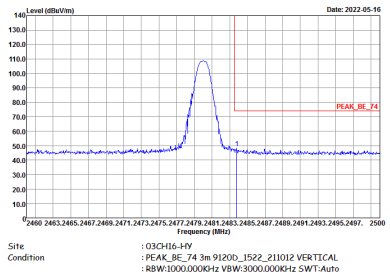
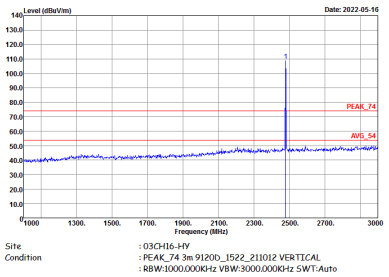
Note symbol

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

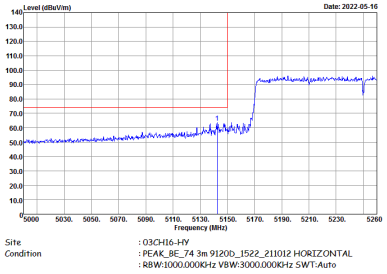
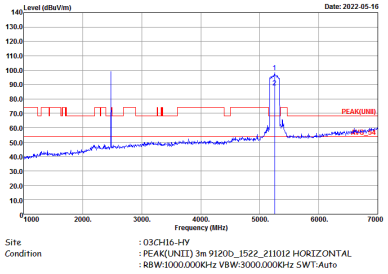
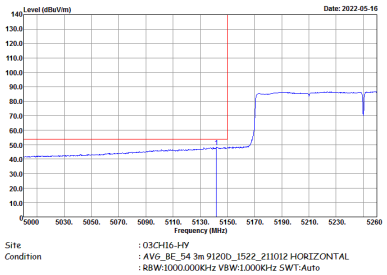
2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

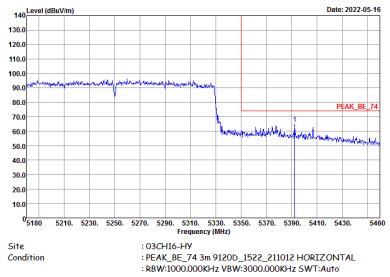
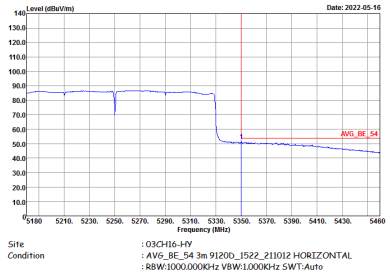
Ant. 4+3_BT_Tx_Ch78 (Band Edge @ 3m)

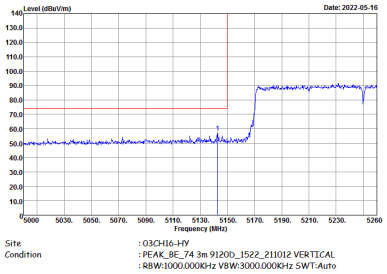
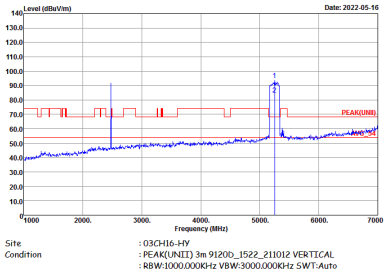
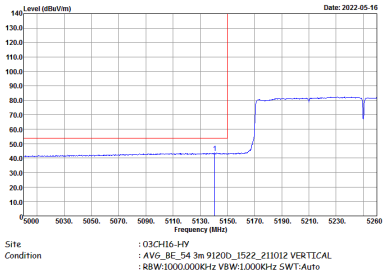
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak		

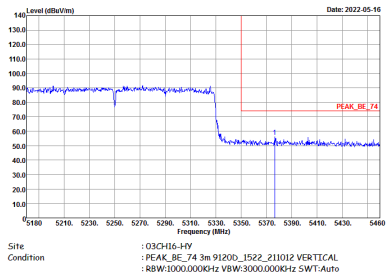
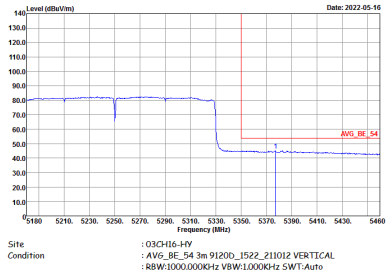
ANT	BT CH78 2480MHz	
4+3	Vertical	Fundamental
Peak		

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

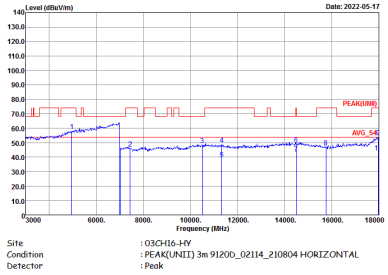
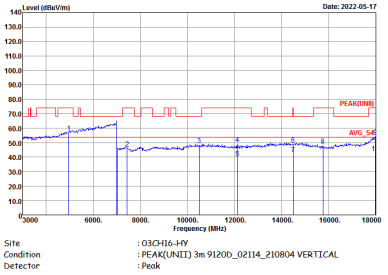
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		
Avg.		Left blank

ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

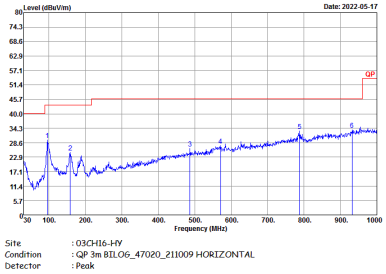
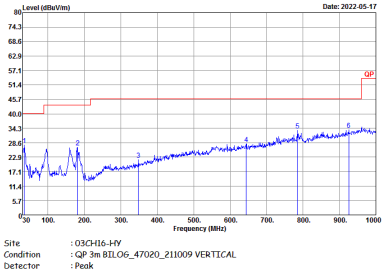
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3m)

ANT	BT CH78 2480MHz + 802.11ax HE160 Full CH50 5250MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

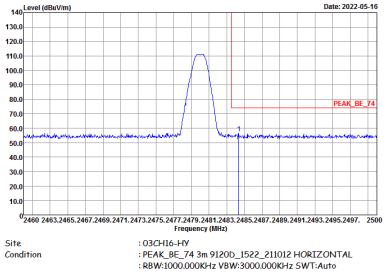
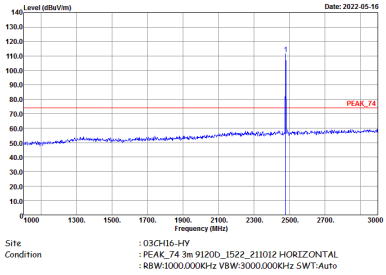
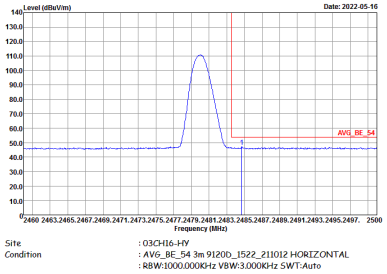
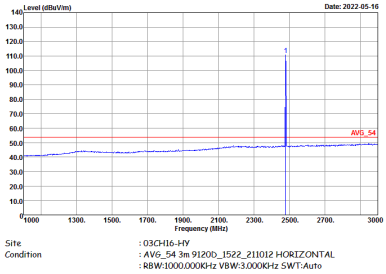
Emission below 1GHz

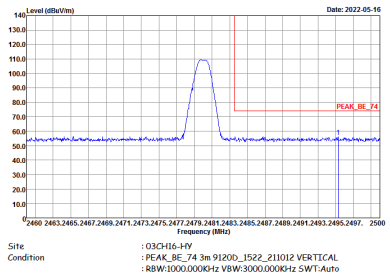
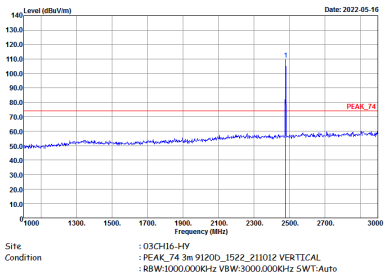
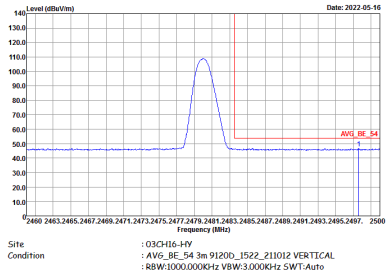
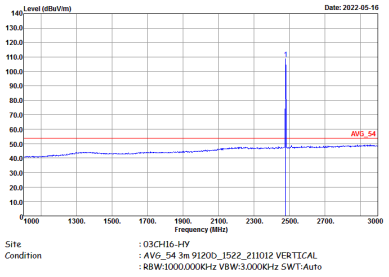
Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (LF)

ANT	BT CH78 2480MHz + 802.11ax HE160 Full CH50 5250MHz	
Simultaneously	Horizontal	Vertical
QP / Peak		

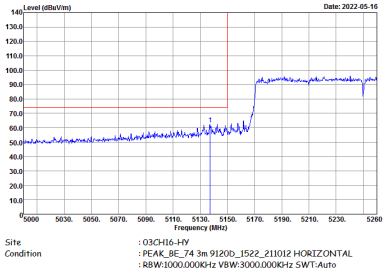
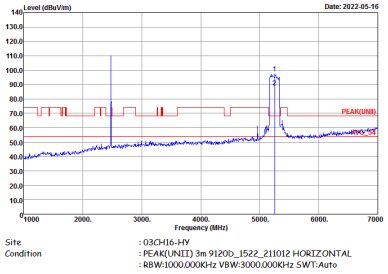
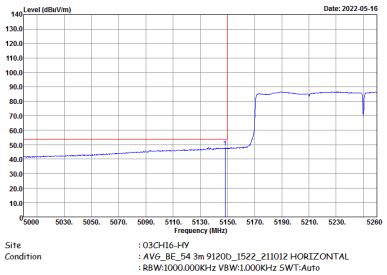
2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

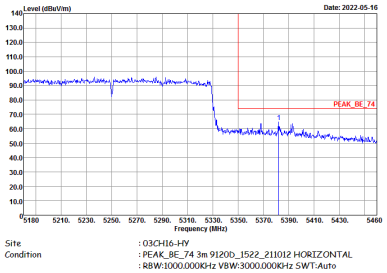
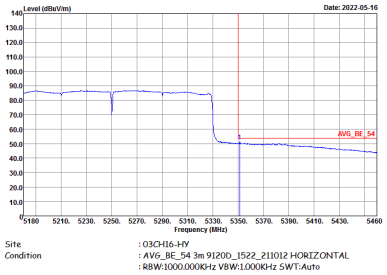
Ant. 4_BLE_Tx_Ch39 (Band Edge @ 3m)

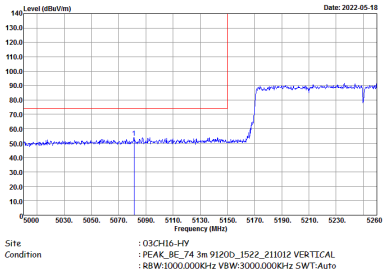
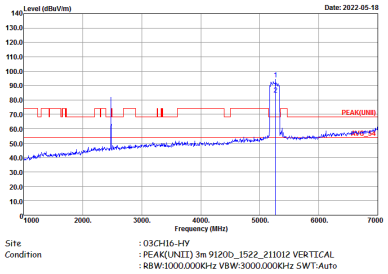
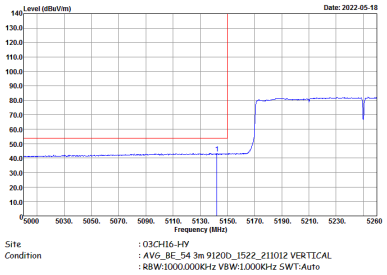
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE_CH39 2480MHz	
4	Horizontal	Fundamental
Peak		
Avg.		

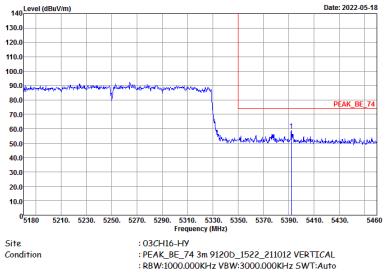
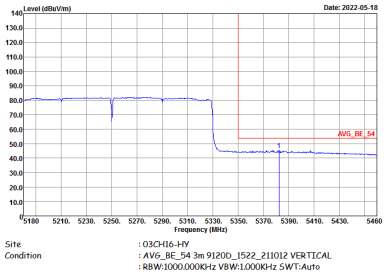
ANT	BLE_CH39 2480MHz	
4	Vertical	Fundamental
Peak		
Avg.		

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

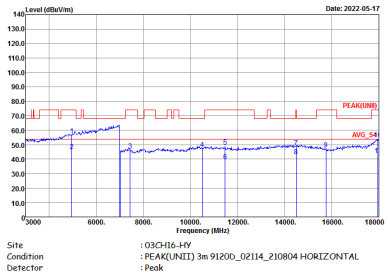
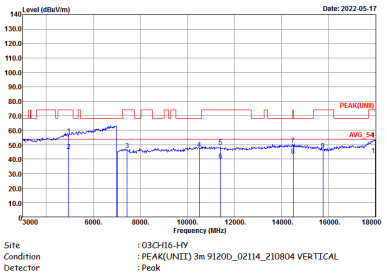
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

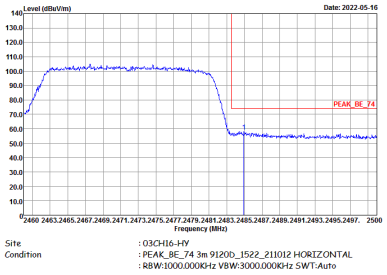
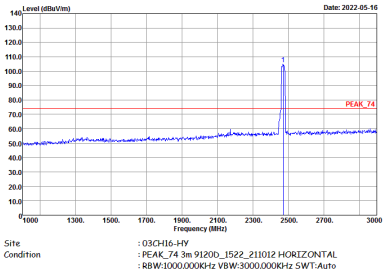
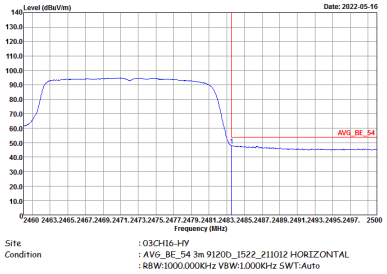
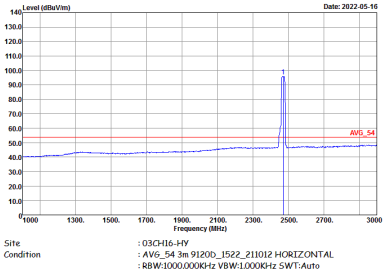
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

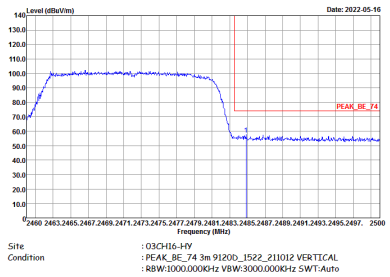
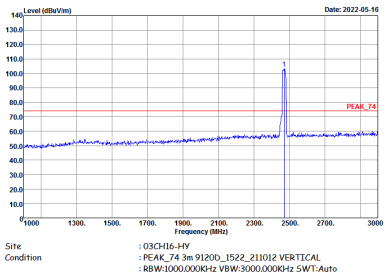
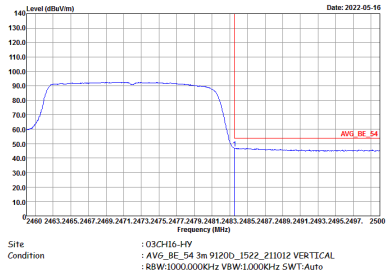
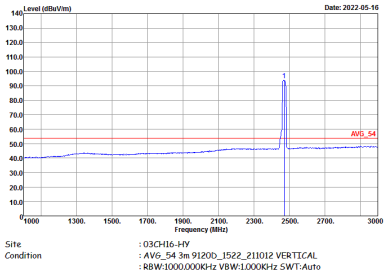
Ant. 4_BLE_Tx_Ch39 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3 m)

ANT	BLE_CH39 2480MHz + 802.11ax HE160 Full CH50 5250MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

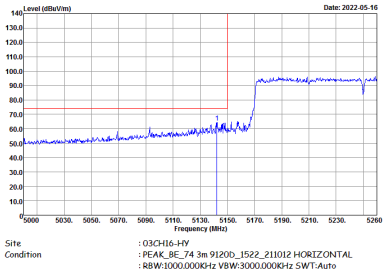
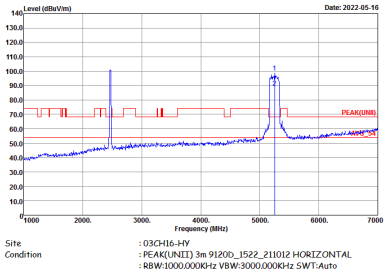
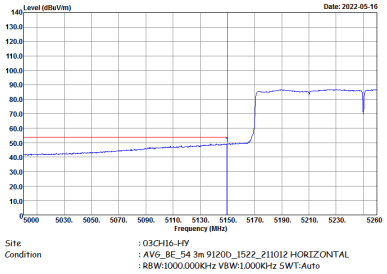
2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

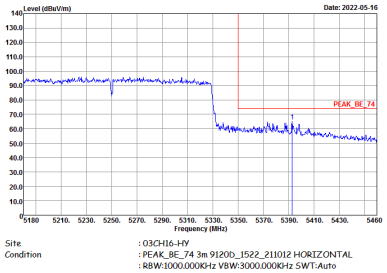
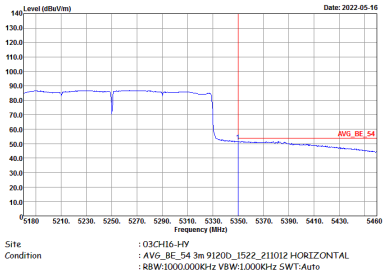
Ant. 4+3_11ax HE20 Full_Tx_Ch13 (Band Edge @ 3m)

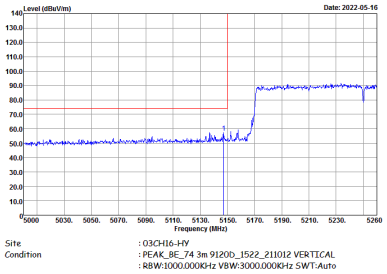
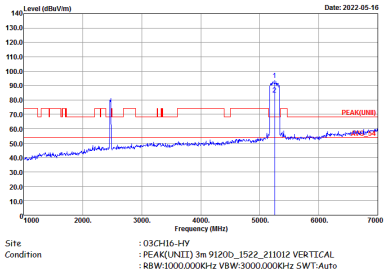
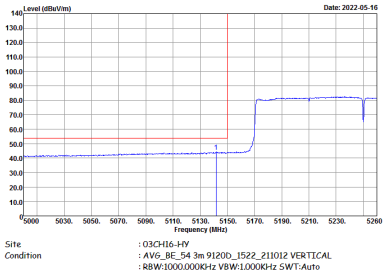
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH13 2472MHz	
4+3	Horizontal	Fundamental
Peak		
Avg.		

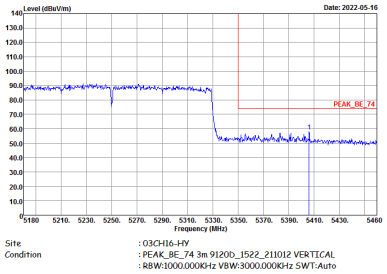
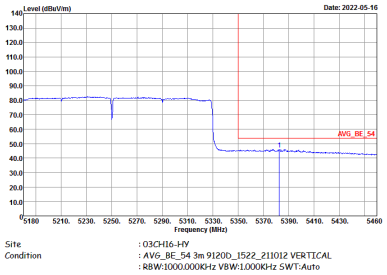
ANT	802.11ax HE20 Full CH13 2472MHz	
4+3	Vertical	Fundamental
Peak		
Avg.		

Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Band Edge @ 3m)

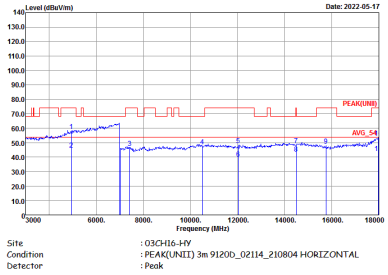
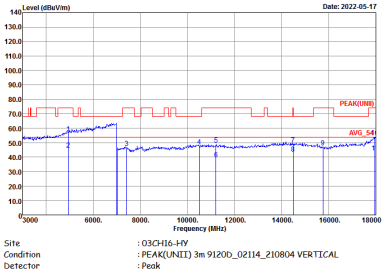
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

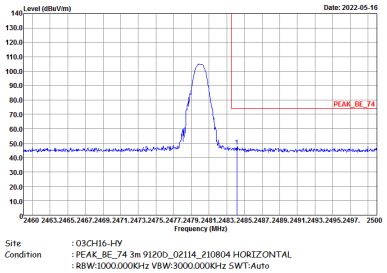
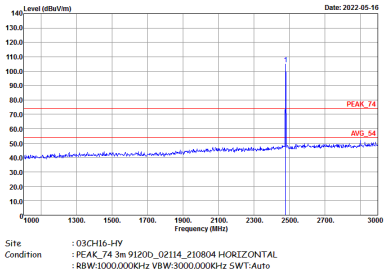
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH50 5250MHz	
4+8	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

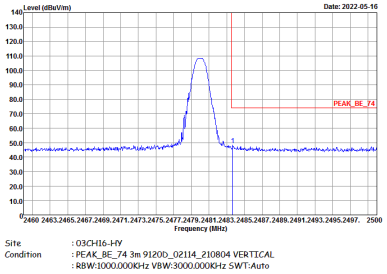
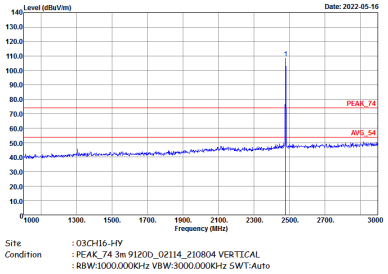
Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch50 (Harmonic @ 3 m)

ANT	802.11ax HE20 Full CH13 2472MHz + 802.11ax HE160 Full CH50 5250MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

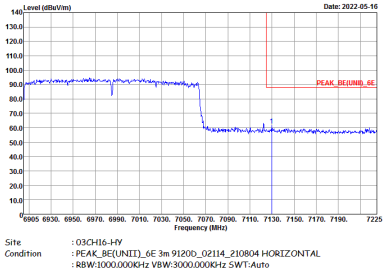
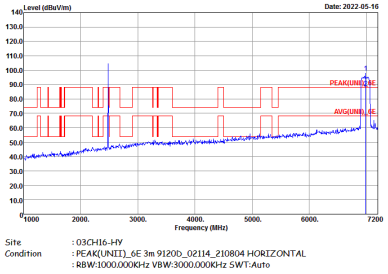
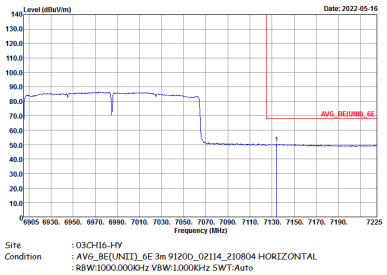
2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

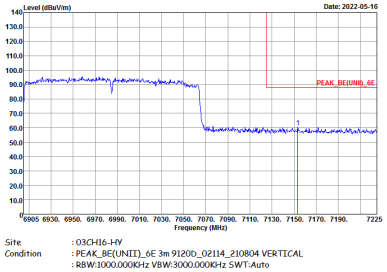
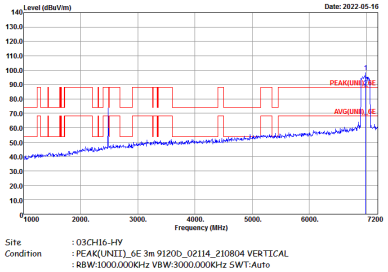
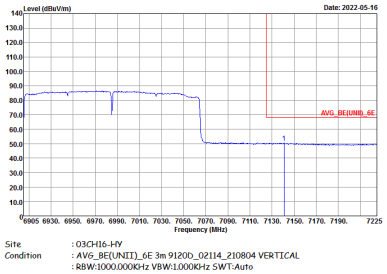
Ant. 4+3_BT_Tx_Ch78 (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak		

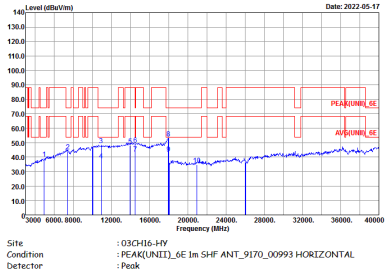
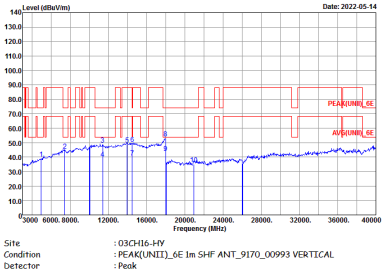
ANT	BT CH78 2480MHz	
4+3	Vertical	Fundamental
Peak		

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Horizontal	Fundamental
Peak		
Avg.		Left blank

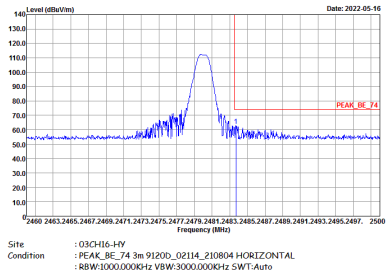
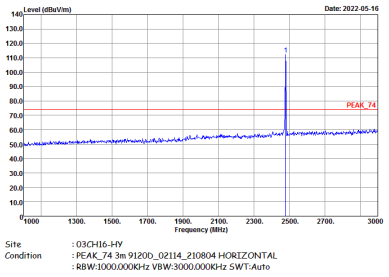
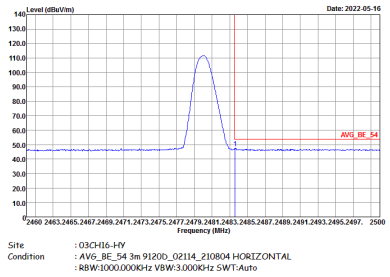
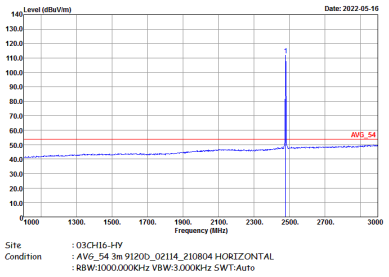
WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

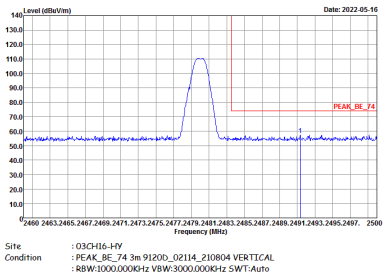
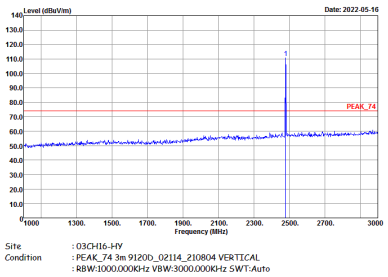
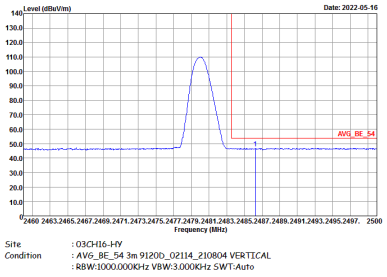
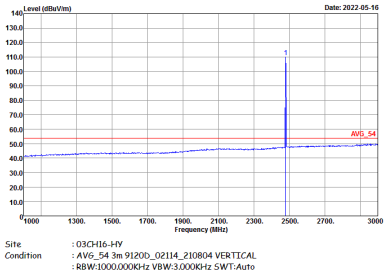
Ant. 4+3_BT_Tx_Ch78 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

ANT	BT CH78 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

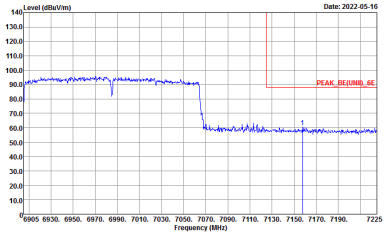
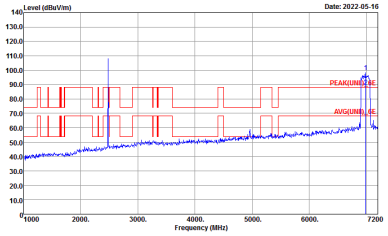
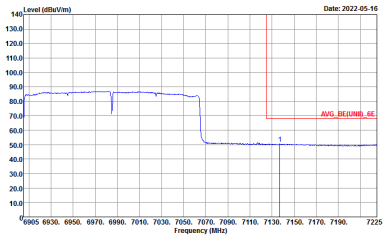
2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

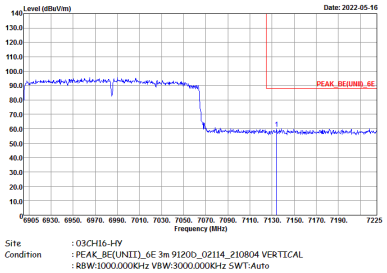
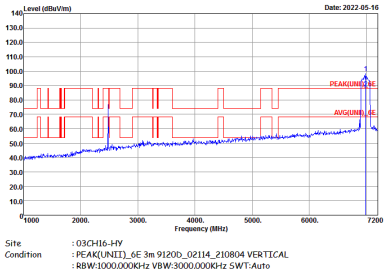
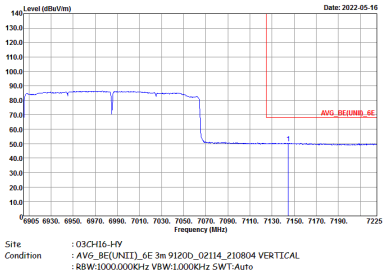
Ant. 4_BLE_Tx_Ch39 (Band Edge @ 3m)

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE_CH39 2480MHz	
4	Horizontal	Fundamental
Peak		
Avg.		

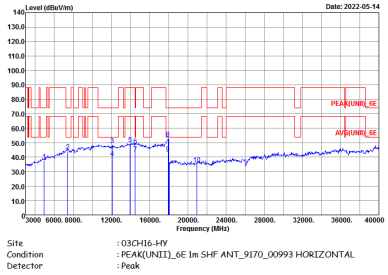
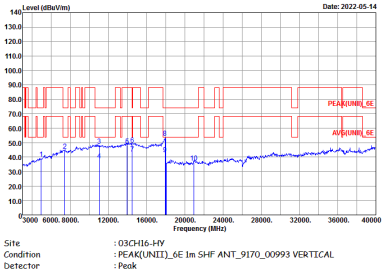
ANT	BLE_CH39 2480MHz	
4	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(UNII)_6E 3m 9120D_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNII)_6E 3m 9120D_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE(UNII)_6E 3m 9120D_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	Left blank

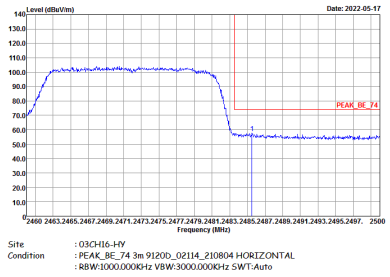
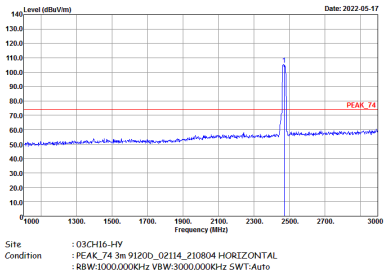
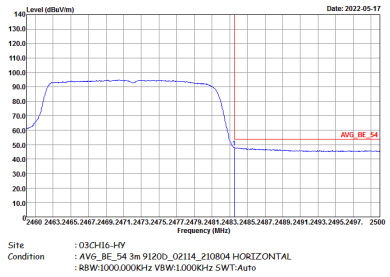
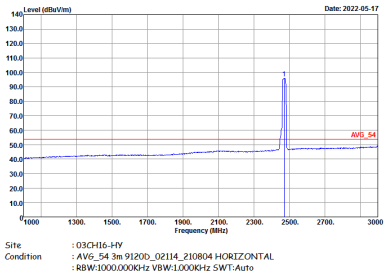
WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

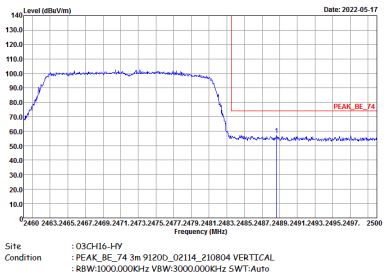
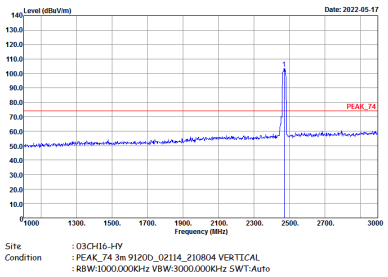
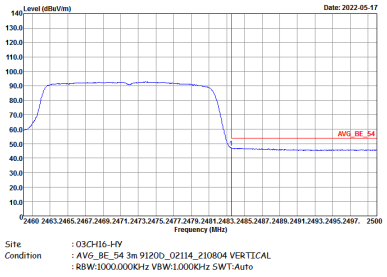
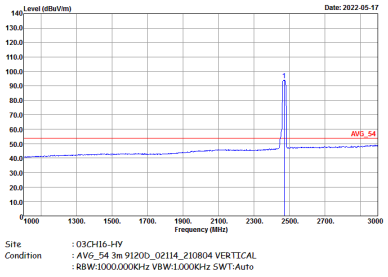
Ant. 4_BLE_Tx_Ch39 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

ANT	BLE_CH39 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

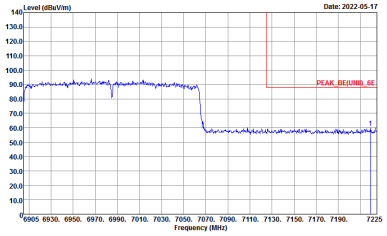
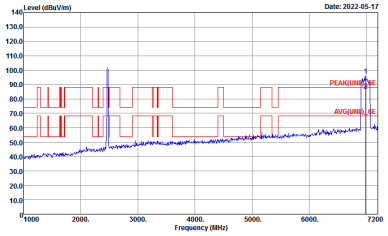
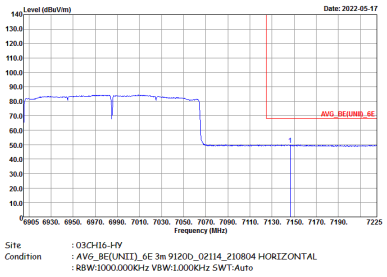
2.4GHz 2400~2483.5MHz + Band 8 - 6875~7125MHz

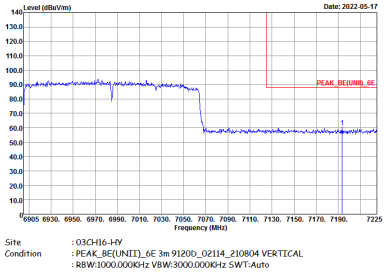
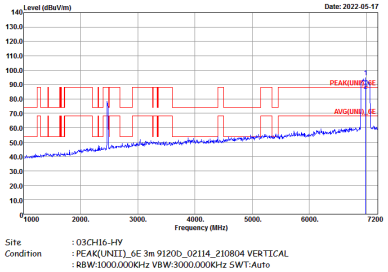
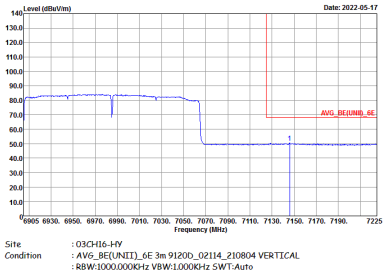
Ant. 4+3_11ax HE20 Full_Tx_Ch13 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH13 2472MHz	
4+3	Horizontal	Fundamental
Peak		
Avg.		

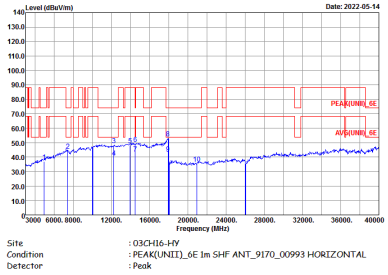
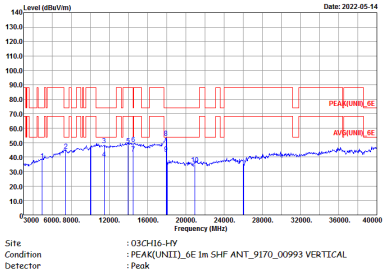
ANT	802.11ax HE20 Full CH13 2472MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 9120D_02114_210804 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto

Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Band Edge @ 3m)

WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Horizontal	Fundamental
Peak		
Avg.		Left blank

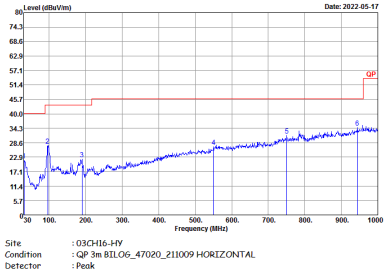
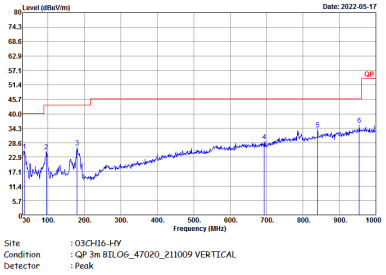
WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH207 6985MHz	
4+8	Vertical	Fundamental
Peak		
Avg.		Left blank

Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (Harmonic @ 3 m)

ANT	802.11ax HE20 Full CH13 2472MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
Peak Avg.		

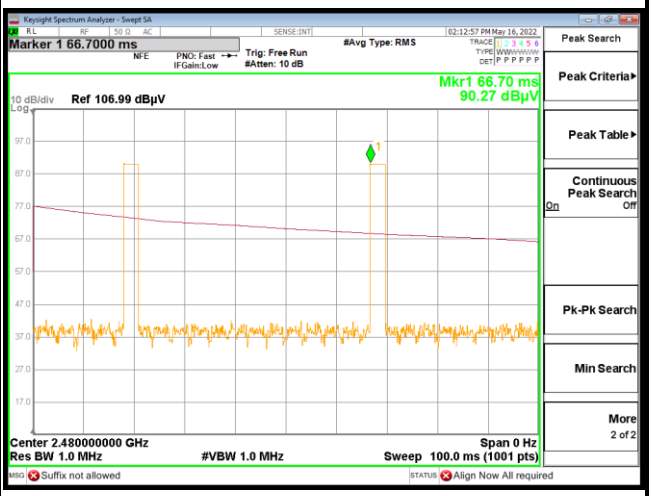
Emission below 1GHz

Ant. 4+3_11ax HE20 Full_Tx_Ch13 + Ant. 4+8_11ax HE160 Full_Tx_Ch207 (LF)

ANT	802.11ax HE20 Full CH13 2472MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
QP / Peak		

Appendix C. Duty Cycle Plots

MIMO <Ant. 4+3>

DH5 on time (One Pulse) Plot on Channel 78	on time (Count Pulses) Plot on Channel 78
	

Note:

1. Worst case Duty cycle = on time/100 milliseconds = 2 * 2.89 / 100 = 5.78 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -24.76 dB
3. DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

2.89 ms x 20 channels = 57.8 ms

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. [100 ms / 57.8 ms] = 2 hops

Thus, the maximum possible ON time:

2.89 ms x 2 = 5.78 ms

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

20 x log(5.78 ms/100 ms) = -24.76 dB

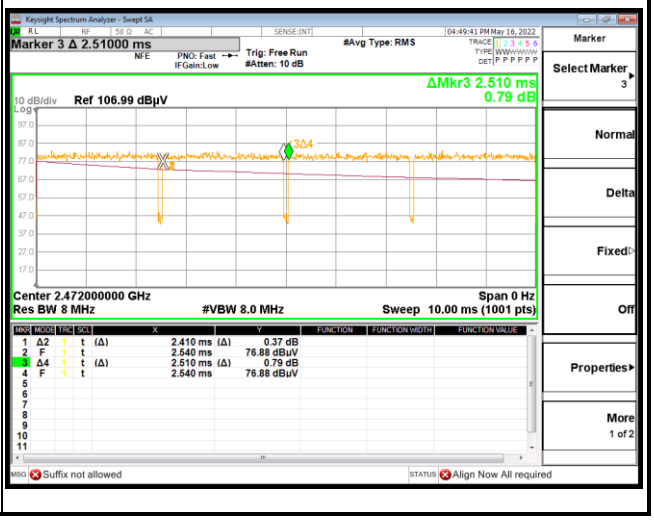
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
4	Bluetooth – LE for 1Mbps	60.58	378	2.65	3kHz
4+3	2.4GHz 802.11ax HE20 Full RU	96.02	2410	0.41	1kHz
4+8	5GHz 802.11ax HE160 Full RU	92.45	1225	0.82	1kHz

<Ant. 4>

Bluetooth – LE for 1Mbps

MIMO <Ant. 4+3>

2.4GHz 802.11ax HE20 Full RU



MIMO <Ant. 4+8>

5GHz 802.11ax HE160 Full RU

———THE END———