



# FCC CO-LOCATION RADIO TEST REPORT

**FCC ID** : A4RGVU6C  
**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. 17, 2022 and testing was performed from Mar. 31, 2022 to May 03, 2022. We, Sporton International Inc. EMC & Wireless Communications 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

**Sporton International Inc. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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### History of this test report

Report No.	Version	Description	Issued Date
FR102843-06G	01	Initial issue of report	Jun. 10, 2022



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(b)	Unwanted Emissions	Pass	2.92 dB under the limit at 5350.250 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: Vivian Hsu**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Phone
FCC ID	A4RGVU6C
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS/WPC/WPT 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
22281FDH20003J	Radiated Spurious Emission

## 1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard			
<b>Tx/Rx Channel Frequency Range</b>	2402 MHz ~ 2480 MHz 2412 MHz ~ 2472 MHz 5260 MHz ~ 5320 MHz 6875 MHz ~ 7125 MHz		
<b>Antenna Type / Gain</b>	<b>&lt;Bluetooth&gt;</b> <b>&lt;Ant. 4&gt;</b> : IFA Antenna with gain 1.6 dBi <b>&lt;Ant. 3&gt;</b> : Loop Antenna with gain -1.5 dBi <b>&lt;2412 MHz ~ 2472 MHz&gt;</b> <b>Ant. 4&gt;</b> : IFA Antenna with gain 1.6 dBi <b>&lt;Ant. 3&gt;</b> : Loop Antenna with gain -1.5 dBi <b>&lt;5260 MHz ~ 5320 MHz&gt;</b> <b>&lt;Ant. 4&gt;</b> : IFA Antenna with gain -3.9 dBi <b>&lt;Ant. 3&gt;</b> : Loop Antenna with gain -2.2 dBi <b>&lt;6875 MHz ~ 7125 MHz&gt;</b> <b>&lt;Ant. 4&gt;</b> : IFA Antenna with gain -3.6 dBi <b>&lt;Ant. 3&gt;</b> : Loop Antenna with gain -2.4 dBi		
<b>Type of Modulation</b>	Bluetooth EDR (3Mbps) : 8-DPSK Bluetooth LE: GFSK 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ax : OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)		
<b>Antenna Function for Transmitter</b>		<b>Ant. 4</b>	<b>Ant. 3</b>
	Bluetooth MIMO	√	√
	Bluetooth-LE MIMO	√	√
	802.11 g/ax MIMO	√	√

**Remark:**

1. MIMO Ant. 4+3 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 3.
2. 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

<b>Test Site</b>	Sporton International Inc. EMC & Wireless Communications Laboratory
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sporton Site No.</b> 03CH07-HY

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

FCC designation No.: TW1190

### 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 802.11g		5250-5350MHz 802.11ax HE40	
Channel	Freq. (MHz)	Channel	Freq. (MHz)
01	2412	62	5310

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>

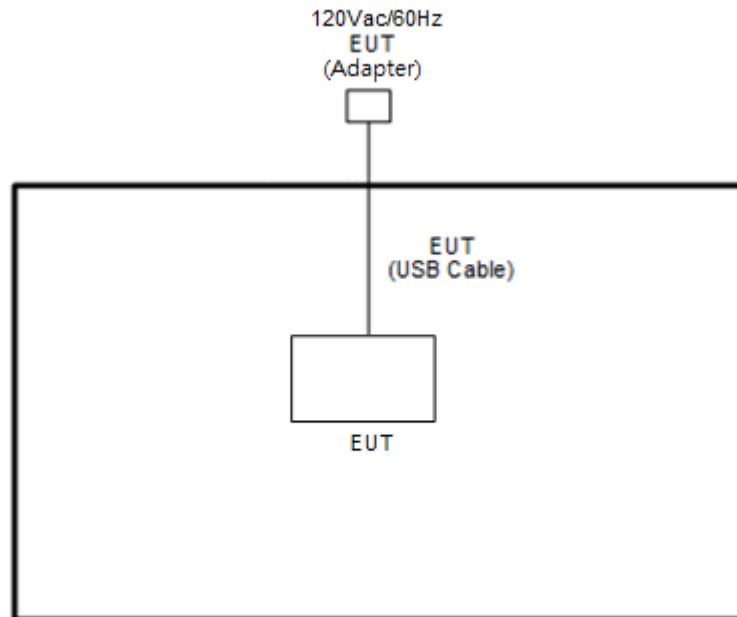
Test Mode	Modulation	Data Rate
Mode 1	Bluetooth for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE40 for MIMO <Ant. 4+3>	3Mbps + MCS0
Mode 2	Bluetooth - LE for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE40 for MIMO <Ant. 4+3>	1Mbps + MCS0
Mode 3	WLAN 2.4GHz 802.11g for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE40 for MIMO <Ant. 4+3>	6 Mbps + MCS0
Mode 4	Bluetooth for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+3>	3Mbps + MCS0
Mode 5	Bluetooth - LE for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+3>	1Mbps + MCS0
Mode 6	WLAN 2.4GHz 802.11g for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4+3>	6 Mbps + 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 WPC Charging mode) were verified. It is determined that the adapter 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 v10.0.19041.1415" 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.

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

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.
- (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.

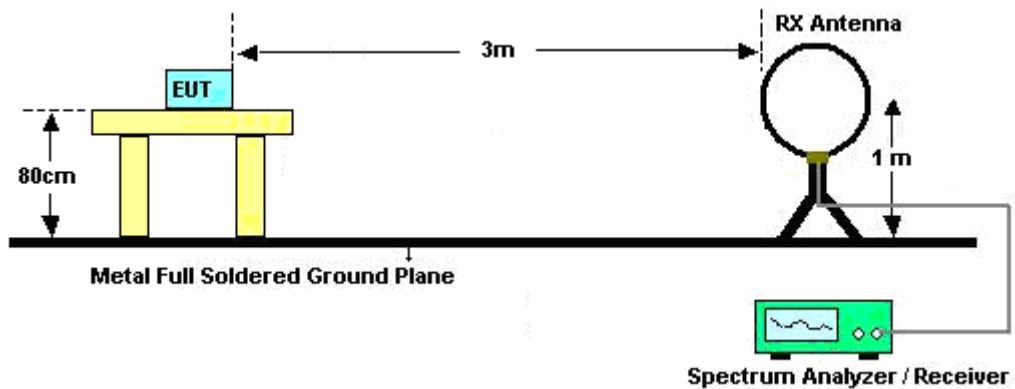
### 3.1.3 Test Procedures

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  $\geq$  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  $\geq$  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.

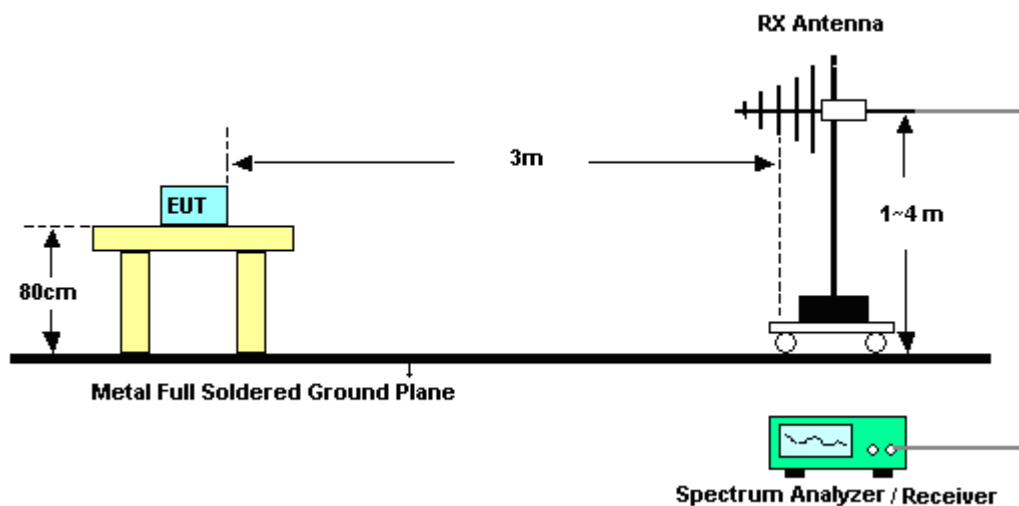
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit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

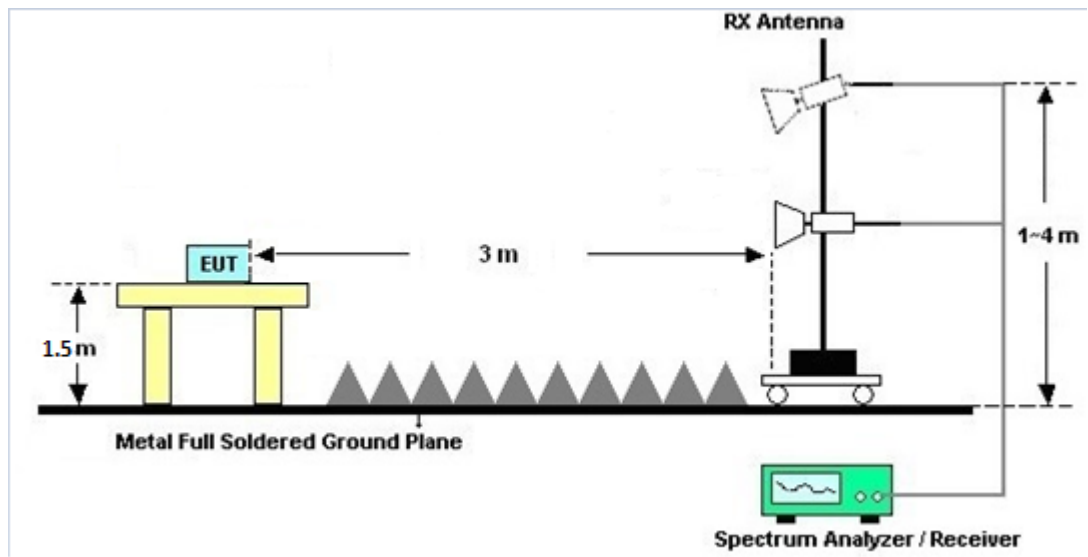
For radiated emissions below 30MHz



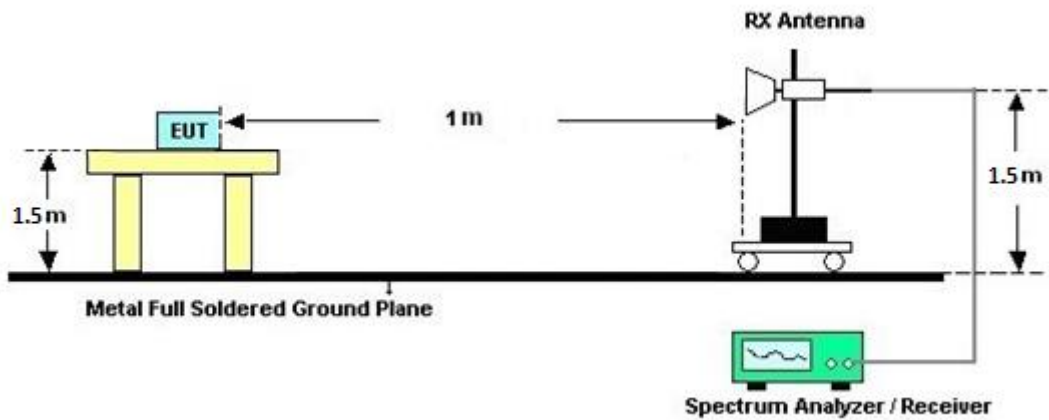
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





**3.1.5 Test Results of Radiated 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
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35419 & 03	30MHz~1GHz	Apr. 24, 2022	Apr. 28, 2022~ May 03, 2022	Apr. 23, 2023	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35419 & 03	30MHz~1GHz	Apr. 28, 2021	Mar. 31, 2022~ Apr. 26, 2022	Apr. 27, 2022	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Mar. 31, 2022~ May 03, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Mar. 31, 2022~ May 03, 2022	Jan. 06, 2023	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 22, 2021	Mar. 31, 2022~ Apr. 20, 2022	Apr. 21, 2022	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 21, 2022	Apr. 21, 2022~ May 03, 2022	Apr. 20, 2023	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 04, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 04, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 23, 2021	Mar. 31, 2022~ May 03, 2022	Jul. 22, 2022	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2021	Mar. 31, 2022~ May 03, 2022	Jul. 21, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 17, 2021	Mar. 31, 2022~ May 03, 2022	Sep. 16, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2857/2	9KHz ~ 40GHz	Sep. 06, 2021	Mar. 31, 2022~ May 03, 2022	Sep. 05, 2022	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB1148	N/A	Oct. 25, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 24, 2022	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Mar. 31, 2022~ May 03, 2022	Nov. 29, 2022	Radiation (03CH07-HY)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1 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% ( $U = 2Uc(y)$ )	4.0 dB
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## Appendix A. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	20.0~26.7°C
		Relative Humidity :	49.0~61.1%

### 2.4GHz 2400~2483.5MHz

#### BT\_Tx\_CH78\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BT	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BT CH78 2480MHz	*	2480	109.2	-	-	104.02	32.04	8.59	35.45	295	143	P	H	
	*	2480	84.44	-	-	-	-	-	-	-	-	A	H	
		2483.52	44.26	-29.74	74	39.05	32.07	8.59	35.45	295	143	P	H	
		2483.52	19.5	-34.5	54	-	-	-	-	-	-	A	H	
													H	
														H
	*	2480	106.76	-	-	101.58	32.04	8.59	35.45	400	60	P	V	
	*	2480	82	-	-	-	-	-	-	-	-	-	A	V
		2483.6	44.07	-29.93	74	38.86	32.07	8.59	35.45	400	60	P	V	
		2483.6	19.31	-34.69	54	-	-	-	-	-	-	A	V	
														V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 2 - 5250-5350 MHz

802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ax HE40 Full CH62 5310MHz		5130.2	49.84	-24.16	74	39.21	34.1	11.82	35.29	100	99	P	H
		5143.5	40.86	-13.14	54	30.21	34.1	11.84	35.29	100	99	A	H
	*	5310	104.92	-	-	93.56	34.6	11.96	35.2	100	99	P	H
	*	5310	95.03	-	-	83.67	34.6	11.96	35.2	100	99	A	H
		5354.5	57.61	-16.39	74	46.2	34.61	11.98	35.18	100	99	P	H
		5350.25	51.08	-2.92	54	39.68	34.6	11.98	35.18	100	99	A	H
		5136.15	49.85	-24.15	74	39.21	34.1	11.83	35.29	301	95	P	V
		5131.95	40.89	-13.11	54	30.26	34.1	11.82	35.29	301	95	A	V
	*	5310	103.09	-	-	91.73	34.6	11.96	35.2	301	95	P	V
	*	5310	94.07	-	-	82.71	34.6	11.96	35.2	301	95	A	V
		5351.75	61.9	-12.1	74	50.5	34.6	11.98	35.18	301	95	P	V
		5350.75	50.97	-3.03	54	39.57	34.6	11.98	35.18	301	95	A	V
	Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



2.4GHz 2400~2483.5MHz + Band 2 - 5250-5350 MHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>

(Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
BT CH78 2480MHz + 802.11ax HE40 Full CH62 5310MHz		4960	46.39	-27.61	74	57.36	34.1	13.64	58.71	-	-	P	H
		4960	21.63	-32.37	54	-	-	-	-	-	-	A	H
		7440	40.67	-33.33	74	46.99	35.82	15.45	57.59	-	-	P	H
		7440	15.91	-38.09	54	-	-	-	-	-	-	A	H
		10620	44.43	-29.57	74	46.87	37.5	18.63	58.57	-	-	P	H
		13336	47.98	-26.02	74	45.76	39.13	21.03	57.94	-	-	P	H
		14491	47.93	-26.07	74	43.91	39.58	21.96	57.52	-	-	P	H
		15930	47.96	-26.04	74	40.29	40.93	22.84	56.1	-	-	P	H
		17758	50.75	-23.25	74	40.03	41.56	24.32	55.16	-	-	P	H
		17758	41.56	-12.44	54	30.84	41.56	24.32	55.16	-	-	A	H
		4960	45.12	-28.88	74	56.09	34.1	13.64	58.71	-	-	P	V
		4960	20.36	-33.64	54	-	-	-	-	-	-	A	V
		7440	42.12	-31.88	74	48.44	35.82	15.45	57.59	-	-	P	V
		7440	17.36	-36.64	54	-	-	-	-	-	-	A	V
		10620	44.26	-29.74	74	46.7	37.5	18.63	58.57	-	-	P	V
		13399	47.97	-26.03	74	45.83	39	21.09	57.95	-	-	P	V
		14491	47.9	-26.1	74	43.88	39.58	21.96	57.52	-	-	P	V
		15930	47	-27	74	39.33	40.93	22.84	56.1	-	-	P	V
	17824	52.05	-21.95	74	41.26	41.55	24.37	55.13	-	-	P	V	
	17824	41.9	-12.1	54	31.11	41.55	24.37	55.13	-	-	A	V	
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>												



Emission below 1GHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (LF @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BT CH78 2480MHz + 802.11ax HE40 Full CH62 5310MHz		66.72	28.57	-11.43	40	45.28	11.93	1.39	30.03	-	-	P	H	
		186.06	32.43	-11.07	43.5	45.02	14.81	2.45	29.85	-	-	P	H	
		231.69	34.97	-11.03	46	45.84	16.31	2.6	29.78	-	-	P	H	
		406.4	31.7	-14.3	46	35.87	22.01	3.56	29.74	-	-	P	H	
		781.6	33.62	-12.38	46	30.21	27.79	4.94	29.32	-	-	P	H	
		956.6	33.65	-12.35	46	26.08	30.63	5.57	28.63	-	-	P	H	
														H
														H
														H
														H
			30	32.51	-7.49	40	37.04	24.57	1.01	30.11	-	-	P	V
			52.68	32.38	-7.62	40	48.13	13.09	1.19	30.03	-	-	P	V
			233.04	33.27	-12.73	46	44.03	16.41	2.61	29.78	-	-	P	V
			777.4	32.79	-13.21	46	29.43	27.78	4.91	29.33	-	-	P	V
			852.3	32.22	-13.78	46	27.4	28.72	5.15	29.05	-	-	P	V
			946.8	33.69	-12.31	46	26.77	30.04	5.54	28.66	-	-	P	V
														V
														V
													V	
													V	
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>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.</li> </ol>													



2.4GHz 2400~2483.5MHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BLE	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
BLE (1M) CH39 2480MHz	*	2480	111.5	-	-	96.31	32.04	18.6	35.45	333	144	P	H
	*	2480	109.36	-	-	94.17	32.04	18.6	35.45	333	144	A	H
		2495.48	54.14	-19.86	74	38.82	32.16	18.62	35.46	333	144	P	H
		2484.4	45.05	-8.95	54	29.81	32.08	18.61	35.45	333	144	A	H
	*	2480	106.98	-	-	91.79	32.04	18.6	35.45	400	66	P	V
	*	2480	105.75	-	-	90.56	32.04	18.6	35.45	400	66	A	V
		2487.52	53.58	-20.42	74	38.33	32.1	18.6	35.45	400	66	P	V
		2498.28	44.87	-9.13	54	29.51	32.19	18.63	35.46	400	66	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 - 5250-5350 MHz

802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ax HE40 Full CH62 5310MHz		5147.7	49.22	-24.78	74	38.56	34.1	11.84	35.28	100	99	P	H
		5139.65	40.79	-13.21	54	30.15	34.1	11.83	35.29	100	99	A	H
	*	5310	104.39	-	-	93.03	34.6	11.96	35.2	100	99	P	H
	*	5310	94.53	-	-	83.17	34.6	11.96	35.2	100	99	A	H
		5361	60.4	-13.6	74	48.97	34.62	11.99	35.18	100	99	P	H
		5350	50.49	-3.51	54	39.09	34.6	11.98	35.18	100	99	A	H
		5078.75	49.19	-24.81	74	38.68	34.06	11.76	35.31	301	95	P	V
		5115.85	41.01	-12.99	54	30.41	34.1	11.8	35.3	301	95	A	V
	*	5310	103.28	-	-	91.92	34.6	11.96	35.2	301	95	P	V
	*	5310	94.25	-	-	82.89	34.6	11.96	35.2	301	95	A	V
		5353.5	58.41	-15.59	74	47	34.61	11.98	35.18	301	95	P	V
		5350	50.84	-3.16	54	39.44	34.6	11.98	35.18	301	95	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





2.4GHz 2400~2483.5MHz + Band 2 - 5250-5350 MHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BLE (1M) CH39 2480MHz + 802.11ax HE40 Full CH62 5310MHz		4960	47.08	-26.92	74	58.05	34.1	13.64	58.71	-	-	P	H	
		7440	42.91	-31.09	74	49.23	35.82	15.45	57.59	-	-	P	H	
		10620	44.34	-29.66	74	46.78	37.5	18.63	58.57	-	-	P	H	
		13391	48.35	-25.65	74	46.19	39.02	21.08	57.94	-	-	P	H	
		14480	47.82	-26.18	74	43.83	39.56	21.96	57.53	-	-	P	H	
		15930	47	-27	74	39.33	40.93	22.84	56.1	-	-	P	H	
		17912	51.74	-22.26	74	40.97	41.41	24.45	55.09	-	-	P	H	
		17912	41.44	-12.56	54	30.67	41.41	24.45	55.09	-	-	A	H	
														H
														H
			4960	44.48	-29.52	74	55.45	34.1	13.64	58.71	-	-	P	V
			7440	41.38	-32.62	74	47.7	35.82	15.45	57.59	-	-	P	V
			10620	44.74	-29.26	74	47.18	37.5	18.63	58.57	-	-	P	V
			13358	47.23	-26.77	74	45.04	39.08	21.05	57.94	-	-	P	V
			14491	47.94	-26.06	74	43.92	39.58	21.96	57.52	-	-	P	V
			15930	47.26	-26.74	74	39.59	40.93	22.84	56.1	-	-	P	V
			17769	51.6	-22.4	74	40.86	41.57	24.33	55.16	-	-	P	V
			17769	41.64	-12.36	54	30.9	41.57	24.33	55.16	-	-	A	V
														V
														V
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



Emission below 1GHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>  
(LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.	
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BLE (1M) CH39 2480MHz + 802.11ax HE40 Full CH62 5310MHz		95.88	32.36	-11.14	43.5	45.21	15.39	1.74	29.98	-	-	P	H	
		142.32	32.92	-10.58	43.5	43.48	17.27	2.06	29.89	-	-	P	H	
		194.7	33.41	-10.09	43.5	45.88	14.88	2.49	29.84	-	-	P	H	
		799.8	32.58	-13.42	46	29.07	27.74	5.02	29.25	-	-	P	H	
		871.9	31.9	-14.1	46	26.81	28.77	5.27	28.95	-	-	P	H	
		952.4	36.23	-9.77	46	28.88	30.43	5.56	28.64	-	-	P	H	
													H	
													H	
													H	
													H	
			30	31.75	-8.25	40	36.28	24.57	1.01	30.11	-	-	P	V
			57	33.63	-6.37	40	50.22	12.17	1.27	30.03	-	-	P	V
			145.56	34.44	-9.06	43.5	44.98	17.25	2.09	29.88	-	-	P	V
			779.5	31.75	-14.25	46	28.39	27.76	4.92	29.32	-	-	P	V
			857.2	34.15	-11.85	46	29.18	28.82	5.17	29.02	-	-	P	V
			951	33.94	-12.06	46	26.68	30.36	5.55	28.65	-	-	P	V
													V	
													V	
												V		
												V		
<b>Remark</b>	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 and emission level has at least 6dB margin against limit or emission is noise floor only.													



2.4GHz 2400~2483.5MHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz		2389.59	60.29	-13.71	74	45.85	31.4	18.45	35.41	131	153	P	H	
		2389.8	50.15	-3.85	54	35.72	31.4	18.45	35.42	131	153	A	H	
	*	2412	111.47	-	-	96.89	31.5	18.5	35.42	131	153	P	H	
	*	2412	104.29	-	-	89.71	31.5	18.5	35.42	131	153	A	H	
			2389.905	58.66	-15.34	74	44.23	31.4	18.45	35.42	400	53	P	V
			2390	50.35	-3.65	54	35.92	31.4	18.45	35.42	400	53	A	V
	*		2412	109.85	-	-	95.27	31.5	18.5	35.42	400	53	P	V
	*		2412	102.93	-	-	88.35	31.5	18.5	35.42	400	53	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 2 - 5250-5350 MHz**

**802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
<b>802.11ax HE40 Full CH62 5310MHz</b>		5047.25	48.54	-25.46	74	38.14	34.01	11.72	35.33	100	87	P	H
		5110.6	40.87	-13.13	54	30.27	34.1	11.8	35.3	100	87	A	H
	*	5310	102.47	-	-	91.11	34.6	11.96	35.2	100	87	P	H
	*	5310	94.17	-	-	82.81	34.6	11.96	35.2	100	87	A	H
		5355.5	58.5	-15.5	74	47.08	34.61	11.99	35.18	100	87	P	H
		5350	47.68	-6.32	54	36.28	34.6	11.98	35.18	100	87	A	H
		5117.25	49.03	-24.97	74	38.43	34.1	11.8	35.3	319	96	P	V
		5148.75	40.93	-13.07	54	30.27	34.1	11.84	35.28	319	96	A	V
	*	5310	102.99	-	-	91.63	34.6	11.96	35.2	319	96	P	V
	*	5310	93.46	-	-	82.1	34.6	11.96	35.2	319	96	A	V
		5352.25	60.54	-13.46	74	49.14	34.6	11.98	35.18	319	96	P	V
		5350.25	46.64	-7.36	54	35.24	34.6	11.98	35.18	319	96	A	V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz + Band 2 - 5250-5350 MHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>

(Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.	
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz + 802.11ax HE40 Full CH62 5310MHz		4824	40.18	-33.82	74	51.94	34.05	13.15	58.96	-	-	P	H	
		10620	44.76	-29.24	74	47.2	37.5	18.63	58.57	-	-	P	H	
		13380	47.64	-26.36	74	45.47	39.04	21.07	57.94	-	-	P	H	
		14491	47.89	-26.11	74	43.87	39.58	21.96	57.52	-	-	P	H	
		15930	46.93	-27.07	74	39.26	40.93	22.84	56.1	-	-	P	H	
		17736	51.22	-22.78	74	40.54	41.54	24.31	55.17	-	-	P	H	
		17736	41.53	-12.47	54	30.85	41.54	24.31	55.17	-	-	A	H	
														H
														H
														H
			4824	40.75	-33.25	74	52.51	34.05	13.15	58.96	-	-	P	V
			10620	44.76	-29.24	74	47.2	37.5	18.63	58.57	-	-	P	V
			13347	47.47	-26.53	74	45.26	39.11	21.04	57.94	-	-	P	V
			14491	47.5	-26.5	74	43.48	39.58	21.96	57.52	-	-	P	V
			15930	47.1	-26.9	74	39.43	40.93	22.84	56.1	-	-	P	V
			17824	51.37	-22.63	74	40.58	41.55	24.37	55.13	-	-	P	V
			17824	41.37	-12.63	54	30.58	41.55	24.37	55.13	-	-	A	V
														V
														V
														V
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



Emission below 1GHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>  
(LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz + 802.11ax HE40 Full CH62 5310MHz		30	21.38	-18.62	40	25.91	24.57	1.01	30.11	-	-	P	H	
		94.26	30.8	-12.7	43.5	43.82	15.25	1.72	29.99	-	-	P	H	
		173.91	27.62	-15.88	43.5	39.72	15.38	2.38	29.86	-	-	P	H	
		806.8	30.42	-15.58	46	26.95	27.65	5.04	29.22	-	-	P	H	
		878.2	33.63	-12.37	46	28.48	28.75	5.32	28.92	-	-	P	H	
		952.4	34.28	-11.72	46	26.93	30.43	5.56	28.64	-	-	P	H	
													H	
													H	
													H	
													H	
			30	32.6	-7.4	40	37.13	24.57	1.01	30.11	-	-	P	V
			83.19	26.46	-13.54	40	41.1	13.76	1.64	30.04	-	-	P	V
			174.72	28.64	-14.86	43.5	40.82	15.3	2.38	29.86	-	-	P	V
			773.2	30.3	-15.7	46	26.97	27.78	4.9	29.35	-	-	P	V
			887.3	32.16	-13.84	46	26.99	28.66	5.38	28.87	-	-	P	V
			952.4	33.02	-12.98	46	25.67	30.43	5.56	28.64	-	-	P	V
													V	
													V	
												V		
												V		
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>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.</li> </ol>													



2.4GHz 2400~2483.5MHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BT CH78 2480MHz	*	2480	108.31	-	-	103.13	32.04	8.59	35.45	295	143	P	H	
	*	2480	83.55	-	-	-	-	-	-	-	-	A	H	
		2485.72	45.15	-28.85	74	39.91	32.09	8.6	35.45	295	143	P	H	
		2485.72	20.39	-33.61	54	-	-	-	-	-	-	A	H	
													H	
													H	
	*	2480	106.49	-	-	101.31	32.04	8.59	35.45	400	60	P	V	
	*	2480	81.73	-	-	-	-	-	-	-	-	-	A	V
		2498.56	44.36	-29.64	74	39	32.19	8.63	35.46	400	60	P	V	
		2498.56	19.6	-34.4	54	-	-	-	-	-	-	A	V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_ MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ax HE160 Full CH207 6985MHz	*	6985	93.52	-	-	79.41	35.9	13.64	35.43	100	320	P	H
	*	6985	85.66	-	-	71.55	35.9	13.64	35.43	100	320	A	H
		7132.2	61.73	-26.47	88.2	47.89	35.47	13.81	35.44	100	320	P	H
		7136.68	52.04	-16.16	68.2	38.22	35.45	13.81	35.44	100	320	A	H
													H
													H
	*	6985	94.83	-	-	80.72	35.9	13.64	35.43	315	20	P	V
	*	6985	86.49	-	-	72.38	35.9	13.64	35.43	315	20	A	V
		7126.44	61.39	-26.81	88.2	47.54	35.49	13.8	35.44	315	20	P	V
		7136.68	52.18	-16.02	68.2	38.36	35.45	13.81	35.44	315	20	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





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

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>

(Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
BT CH78 2480MHz + 802.11ax HE160 Full CH207 6985MHz		4960	47.22	-26.78	74	59.15	34.1	12.68	58.71	-	-	P	H
		4960	22.46	-31.54	54	-	-	-	-	-	-	A	H
		7440	41.34	-32.66	74	47.25	35.82	15.86	57.59	-	-	P	H
		7440	16.58	-37.42	54	-	-	-	-	-	-	A	H
		13970	45.78	-42.42	88.2	43.59	38.8	21.09	57.7	-	-	P	H
		14488	47.09	-26.91	74	43.64	39.58	21.39	57.52	-	-	P	H
		16072	49.16	-24.84	74	41.75	41.14	22.31	56.04	-	-	P	H
		16072	38.62	-15.38	54	31.21	41.14	22.31	56.04	-	-	A	H
		17768	51.11	-22.89	74	41.18	41.57	23.52	55.16	-	-	P	H
		17768	40.87	-13.13	54	30.94	41.57	23.52	55.16	-	-	A	H
		20955	35.93	-38.07	74	50.65	37.82	7.46	60	-	-	P	H
		4960	45.75	-28.25	74	57.68	34.1	12.68	58.71	-	-	P	V
		4960	20.99	-33.01	54	-	-	-	-	-	-	A	V
		7440	41.38	-32.62	74	47.29	35.82	15.86	57.59	-	-	P	V
		7440	16.62	-37.38	54	-	-	-	-	-	-	A	V
		13970	46.2	-42	88.2	44.01	38.8	21.09	57.7	-	-	P	V
		14496	47.6	-26.4	74	44.13	39.59	21.4	57.52	-	-	P	V
		16136	48.54	-25.46	74	41.06	41.2	22.36	56.08	-	-	P	V
		16136	38.54	-15.46	54	31.06	41.2	22.36	56.08	-	-	A	V
		17808	50.91	-23.09	74	40.92	41.58	23.55	55.14	-	-	P	V
	17808	40.85	-13.15	54	30.86	41.58	23.55	55.14	-	-	A	V	
	20955	35.55	-38.45	74	50.27	37.82	7.46	60	-	-	P	V	
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>												



Emission below 1GHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Simultaneously		( MHz )	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BT CH78 2480MHz + 802.11ax HE160 Full CH207 6985MHz		30.54	21.76	-18.24	40	26.7	24.17	1	30.11	-	-	P	H	
		94.53	29.86	-13.64	43.5	42.87	15.25	1.73	29.99	-	-	P	H	
		175.26	26.18	-17.32	43.5	38.4	15.25	2.39	29.86	-	-	P	H	
		855.1	31.86	-14.14	46	26.91	28.82	5.16	29.03	-	-	P	H	
		943.3	33.07	-12.93	46	26.37	29.84	5.53	28.67	-	-	P	H	
		958	33.09	-12.91	46	25.43	30.71	5.58	28.63	-	-	P	H	
														H
														H
														H
														H
			30	30.61	-9.39	40	35.14	24.57	1.01	30.11	-	-	P	V
			91.02	26.09	-17.41	43.5	39.69	14.73	1.7	30.03	-	-	P	V
			175.26	24.31	-19.19	43.5	36.53	15.25	2.39	29.86	-	-	P	V
			848.1	31.75	-14.25	46	27.07	28.62	5.13	29.07	-	-	P	V
			899.9	33	-13	46	27.75	28.6	5.46	28.81	-	-	P	V
			949.6	33.13	-12.87	46	25.94	30.29	5.55	28.65	-	-	P	V
														V
														V
														V
														V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>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.</li> </ol>													



2.4GHz 2400~2483.5MHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BLE	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
BLE (1M) CH39 2480MHz	*	2480	109.62	-	-	94.43	32.04	18.6	35.45	333	144	P	H
	*	2480	108.51	-	-	93.32	32.04	18.6	35.45	333	144	A	H
		2496.84	53.76	-20.24	74	38.43	32.17	18.62	35.46	333	144	P	H
		2483.72	44.96	-9.04	54	29.74	32.07	18.6	35.45	333	144	A	H
	*	2480	106.66	-	-	91.47	32.04	18.6	35.45	400	66	P	V
	*	2480	105.81	-	-	90.62	32.04	18.6	35.45	400	66	A	V
		2492	54.32	-19.68	74	39.03	32.14	18.61	35.46	400	66	P	V
		2497.12	44.81	-9.19	54	29.47	32.18	18.62	35.46	400	66	A	V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ax HE160 Full CH207 6985MHz	*	6985	93.55	-	-	79.44	35.9	13.64	35.43	100	320	P	H
	*	6985	85.43	-	-	71.32	35.9	13.64	35.43	100	320	A	H
		7134.12	61.56	-26.64	88.2	47.73	35.46	13.81	35.44	100	320	P	H
		7136.68	52.38	-15.82	68.2	38.56	35.45	13.81	35.44	100	320	A	H
													H
													H
	*	6985	94.96	-	-	80.85	35.9	13.64	35.43	315	20	P	V
	*	6985	86.52	-	-	72.41	35.9	13.64	35.43	315	20	A	V
		7136.36	61.91	-26.29	88.2	48.09	35.45	13.81	35.44	315	20	P	V
		7136.68	52.03	-16.17	68.2	38.21	35.45	13.81	35.44	315	20	A	V
													V
													V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



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

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BLE (1M) CH39 2480MHz + 802.11ax HE160 Full CH207 6985MHz		4960	47.25	-26.75	74	59.18	34.1	12.68	58.71	-	-	P	H	
		7440	40.79	-33.21	74	46.7	35.82	15.86	57.59	-	-	P	H	
		13970	46.09	-42.11	88.2	43.9	38.8	21.09	57.7	-	-	P	H	
		14488	47.37	-26.63	74	43.92	39.58	21.39	57.52	-	-	P	H	
		16056	49.29	-24.71	74	41.92	41.11	22.29	56.03	-	-	P	H	
		16056	38.73	-15.27	54	31.36	41.11	22.29	56.03	-	-	A	H	
		17760	51.27	-22.73	74	41.36	41.56	23.51	55.16	-	-	P	H	
		17760	40.97	-13.03	54	31.06	41.56	23.51	55.16	-	-	A	H	
		20955	36.79	-37.21	74	51.51	37.82	7.46	60	-	-	P	H	
														H
			4960	46.58	-27.42	74	58.51	34.1	12.68	58.71	-	-	P	V
			7440	42.01	-31.99	74	47.92	35.82	15.86	57.59	-	-	P	V
			13970	45.8	-42.4	88.2	43.61	38.8	21.09	57.7	-	-	P	V
			14496	47.61	-26.39	74	44.14	39.59	21.4	57.52	-	-	P	V
			16152	49.29	-24.71	74	41.81	41.2	22.37	56.09	-	-	P	V
			16152	38.7	-15.3	54	31.22	41.2	22.37	56.09	-	-	A	V
			17816	50.9	-23.1	74	40.9	41.57	23.56	55.13	-	-	P	V
			17816	40.9	-13.1	54	30.9	41.57	23.56	55.13	-	-	A	V
			20955	36.31	-37.69	74	51.03	37.82	7.46	60			P	V
														V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



Emission below 1GHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Simultaneously		( MHz )	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
BLE (1M) CH39 2480MHz + 802.11ax HE160 Full CH207 6985MHz		30	22.21	-17.79	40	26.74	24.57	1.01	30.11	-	-	P	H	
		96.96	30.51	-12.99	43.5	43.17	15.57	1.75	29.98	-	-	P	H	
		176.61	26.49	-17.01	43.5	38.79	15.16	2.4	29.86	-	-	P	H	
		874	32.18	-13.82	46	27.04	28.8	5.28	28.94	-	-	P	H	
		913.2	32.27	-13.73	46	26.77	28.79	5.48	28.77	-	-	P	H	
		958	33.74	-12.26	46	26.08	30.71	5.58	28.63	-	-	P	H	
														H
														H
														H
														H
			30	31.32	-8.68	40	35.85	24.57	1.01	30.11	-	-	P	V
			34.59	30.27	-9.73	40	37.15	22.24	0.96	30.08	-	-	P	V
			92.64	26.06	-17.44	43.5	39.29	15.07	1.71	30.01	-	-	P	V
			842.5	31.25	-14.75	46	26.72	28.51	5.11	29.09	-	-	P	V
			883.1	32.1	-13.9	46	26.98	28.67	5.34	28.89	-	-	P	V
			959.4	33.17	-12.83	46	25.41	30.8	5.58	28.62	-	-	P	V
														V
														V
														V
														V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>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.</li> </ol>													



2.4GHz 2400~2483.5MHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz		2389.8	60.71	-13.29	74	46.28	31.4	18.45	35.42	130	153	P	H	
		2389.8	50.76	-3.24	54	36.33	31.4	18.45	35.42	130	153	A	H	
	*	2412	112.7	-	-	98.12	31.5	18.5	35.42	130	153	P	H	
	*	2412	103.97	-	-	89.39	31.5	18.5	35.42	130	153	A	H	
			2389.905	60.12	-13.88	74	45.69	31.4	18.45	35.42	399	52	P	V
			2390	50.42	-3.58	54	35.99	31.4	18.45	35.42	399	52	A	V
	*		2412	109.79	-	-	95.21	31.5	18.5	35.42	399	52	P	V
	*		2412	103.8	-	-	89.22	31.5	18.5	35.42	399	52	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_ MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ax HE160 Full CH207 6985MHz	*	6985	92.74	-	-	78.63	35.9	13.64	35.43	100	332	P	H
	*	6985	84.73	-	-	70.62	35.9	13.64	35.43	100	332	A	H
		7222.44	60.29	-27.91	88.2	46.38	35.44	13.92	35.45	100	332	P	H
		7222.44	50.56	-17.64	68.2	36.65	35.44	13.92	35.45	100	332	A	H
													H
													H
	*	6985	94.64	-	-	80.53	35.9	13.64	35.43	338	138	P	V
	*	6985	86.51	-	-	72.4	35.9	13.64	35.43	338	138	A	V
		7133.8	61.44	-26.76	88.2	47.61	35.46	13.81	35.44	338	138	P	V
		7136.68	50.92	-17.28	68.2	37.1	35.45	13.81	35.44	338	138	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





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

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
Simultaneously		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz + 802.11ax HE160 Full CH207 6985MHz		4824	41.06	-32.94	74	53.56	34.05	12.41	58.96	-	-	P	H	
		13970	46.99	-41.21	88.2	44.8	38.8	21.09	57.7	-	-	P	H	
		14488	47.17	-26.83	74	43.72	39.58	21.39	57.52	-	-	P	H	
		16144	48.91	-25.09	74	41.43	41.2	22.36	56.08	-	-	P	H	
		16144	38.89	-15.11	54	31.41	41.2	22.36	56.08	-	-	A	H	
		17784	50.82	-23.18	74	40.86	41.58	23.53	55.15	-	-	P	H	
		17784	41	-13	54	31.04	41.58	23.53	55.15	-	-	A	H	
		20955	37.06	-36.94	74	51.78	37.82	7.46	60	-	-	P	H	
														H
														H
			4824	40.82	-33.18	74	53.32	34.05	12.41	58.96	-	-	P	V
			13970	46.96	-41.24	88.2	44.77	38.8	21.09	57.7	-	-	P	V
			14488	46.69	-27.31	74	43.24	39.58	21.39	57.52	-	-	P	V
			16080	48.53	-25.47	74	41.1	41.16	22.31	56.04	-	-	P	V
			16080	38.22	-15.78	54	30.79	41.16	22.31	56.04	-	-	A	V
			17760	51.43	-22.57	74	41.52	41.56	23.51	55.16	-	-	P	V
			17760	41.17	-12.83	54	31.26	41.56	23.51	55.16	-	-	A	V
			20955	35.29	-38.71	74	50.01	37.82	7.46	60	-	-	P	V
														V
														V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



Emission below 1GHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(LF @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Simultaneously		( MHz )	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)	
802.11g CH01 2412MHz + 802.11ax HE160 Full CH207 6985MHz		30	22.45	-17.55	40	26.98	24.57	1.01	30.11	-	-	P	H	
		95.07	30.82	-12.68	43.5	43.8	15.27	1.73	29.98	-	-	P	H	
		175.53	27.57	-15.93	43.5	39.82	15.22	2.39	29.86	-	-	P	H	
		813.1	30.13	-15.87	46	26.77	27.52	5.04	29.2	-	-	P	H	
		881	32.98	-13.02	46	27.84	28.7	5.34	28.9	-	-	P	H	
		953.8	34.21	-11.79	46	26.8	30.49	5.56	28.64	-	-	P	H	
													H	
													H	
													H	
													H	
			30	32.23	-7.77	40	36.76	24.57	1.01	30.11	-	-	P	V
			63.75	24.93	-15.07	40	41.82	11.78	1.36	30.03	-	-	P	V
			93.18	26.9	-16.6	43.5	40.01	15.17	1.72	30	-	-	P	V
			848.1	32.11	-13.89	46	27.43	28.62	5.13	29.07	-	-	P	V
			915.3	32.75	-13.25	46	27.15	28.87	5.49	28.76	-	-	P	V
			951	34	-12	46	26.74	30.36	5.55	28.65	-	-	P	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>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.</li> </ol>													



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>



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

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

**For Peak Limit @ 2390MHz:**

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

**For Average Limit @ 2390MHz:**

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

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



## Appendix B. Radiated Spurious Emission Plots

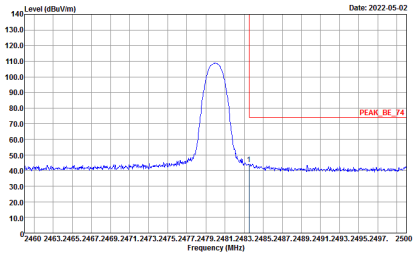
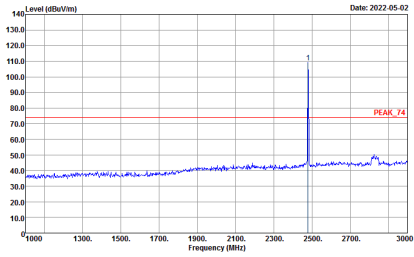
Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	20.0~26.7°C
		Relative Humidity :	49.0~61.1%

### Note symbol

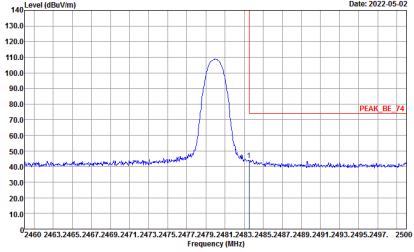
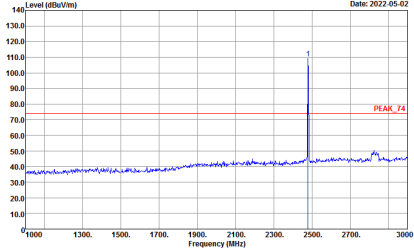
-L	Low channel location
-R	High channel location



2.4GHz 2400~2483.5MHz  
BT\_Tx\_CH78\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWTAuto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWTAuto</p>

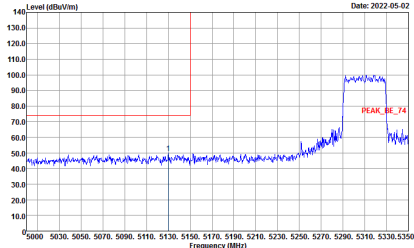
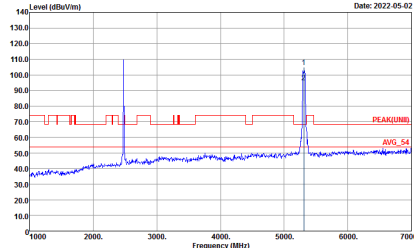
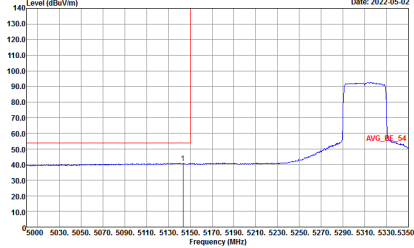


ANT	BT CH78 2480MHz	
4+3	Vertical	Fundamental
Peak	 <p data-bbox="459 674 718 705">Date: 2022-05-02 Site : 03CH07-HY Condition : PEAK_BE_78 ANT_00070962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p data-bbox="970 674 1228 705">Date: 2022-05-02 Site : 03CH07-HY Condition : PEAK_78 9m HF_ANT_00070962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



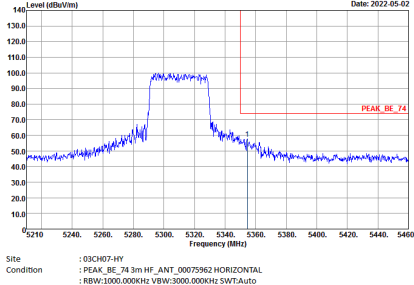
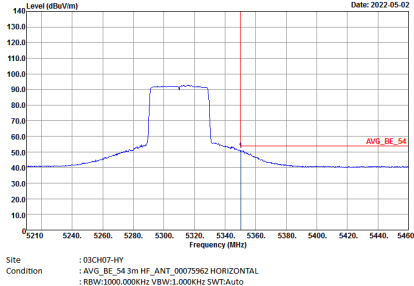
Band 2 - 5250-5350 MHz

802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH07-HY Condition : PEAK(LIN) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	<p><b>Left blank</b></p>





ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_78 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p style="text-align: right;">Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK(UNB)_3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>



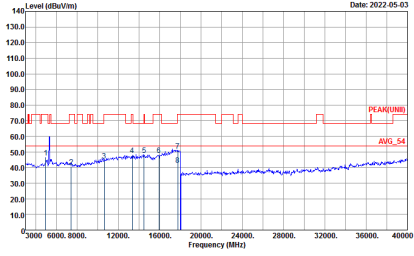
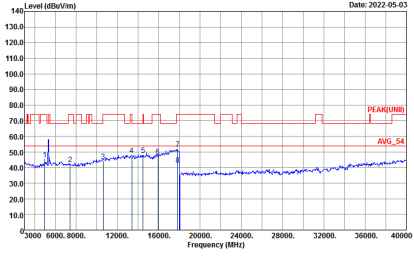
ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	<p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>
<p style="text-align: center;"><b>Avg.</b></p>	<p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>



2.4GHz 2400~2483.5MHz + Band 2 - 5250-5350 MHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>

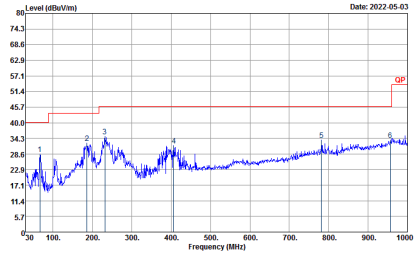
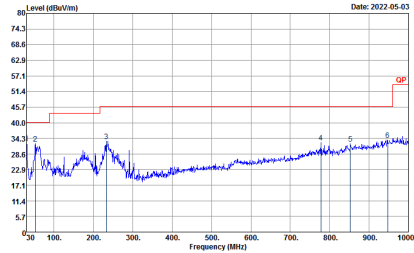
(Harmonic @ 3m)

ANT	BT CH78 2480MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 HORIZONTAL Detector : Peak</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 VERTICAL Detector : Peak</p>



Emission below 1GHz

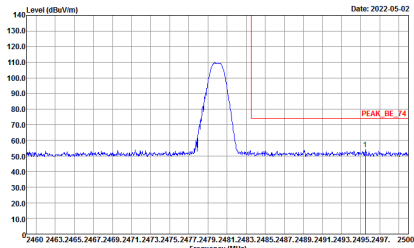
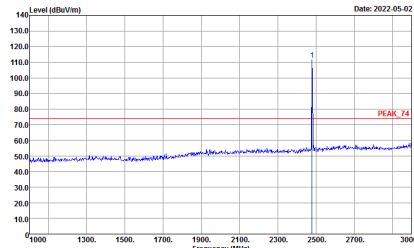
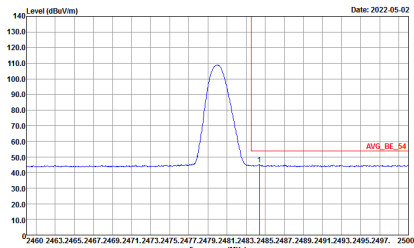
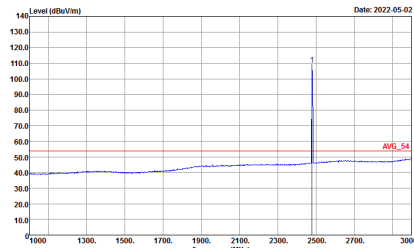
BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (LF)

ANT	BT CH78 2480MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>QP / Peak</b></p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak</p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak</p>

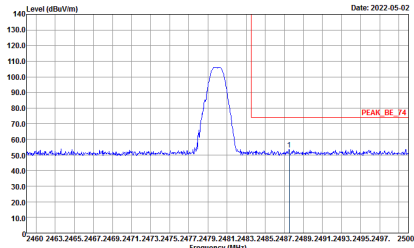
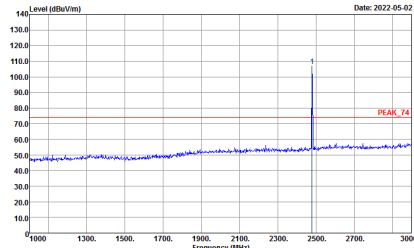
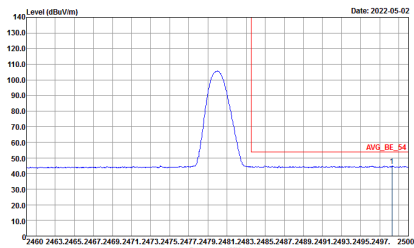
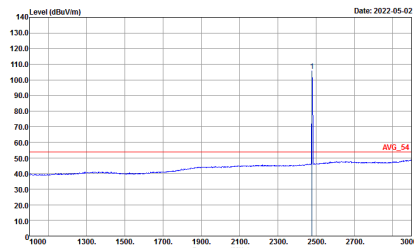


2.4GHz 2400~2483.5MHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE (1M) CH39 2480MHz	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot showing a peak at approximately 2478 MHz. The peak level is marked as PEAK_BE_74. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 140 dBuV/m.</p> <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 2480 MHz. The peak level is marked as PEAK_74. The x-axis ranges from 1900 to 3000 MHz, and the y-axis ranges from 0 to 140 dBuV/m.</p> <p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<p><b>Avg.</b></p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot showing an average level across the band. A red line indicates the average level, marked as AVG_BE_84. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 140 dBuV/m.</p> <p>Site : 03CH07-HY Condition : AVG_BE_84 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot showing an average level across the band. A red line indicates the average level, marked as AVG_84. The x-axis ranges from 1900 to 3000 MHz, and the y-axis ranges from 0 to 140 dBuV/m.</p> <p>Site : 03CH07-HY Condition : AVG_84 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>

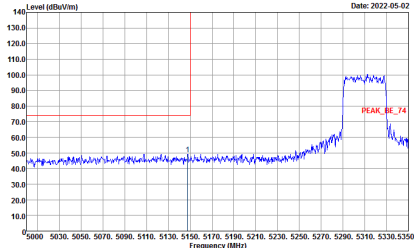
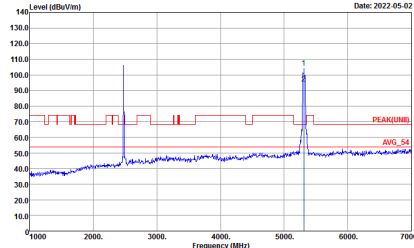
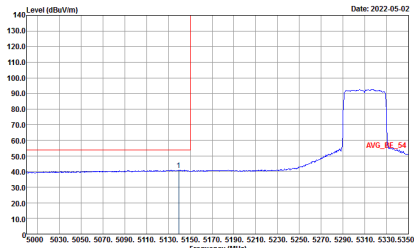


ANT	BLE (1M) CH39 2480MHz	
4+3	Vertical	Fundamental
Peak	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>PEAK_BE_74</p> <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>PEAK_74</p> <p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>AVG_BE_54</p> <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>AVG_54</p> <p>Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>



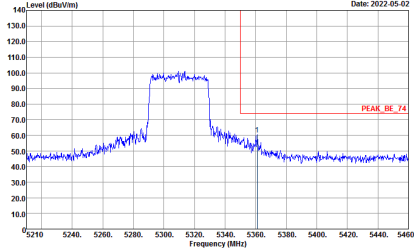
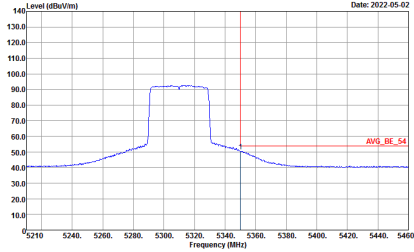
Band 2 - 5250-5350 MHz

802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)

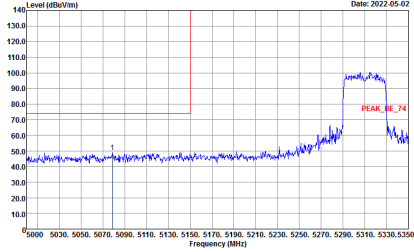
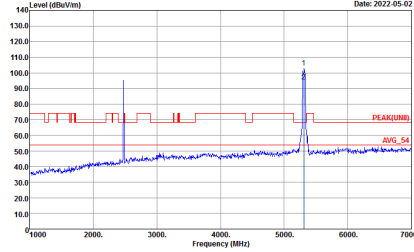
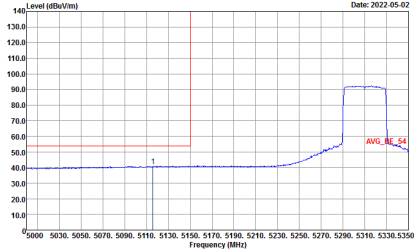
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH07-HY Condition : PEAK(LIN) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	<p><b>Left blank</b></p>



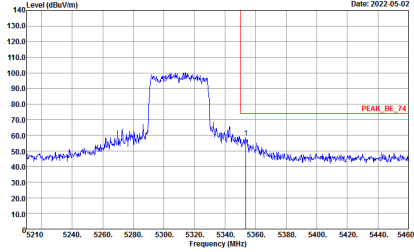
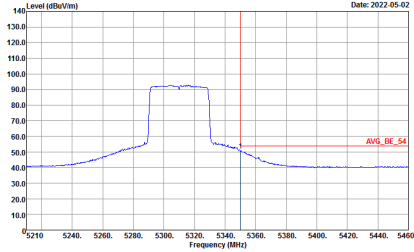


ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Horizontal	Fundamental
Peak	 <p data-bbox="454 672 718 705">Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p data-bbox="454 1350 718 1384">Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	Left blank



ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE_78 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH07-HY Condition : PEAK(UMB)_3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>

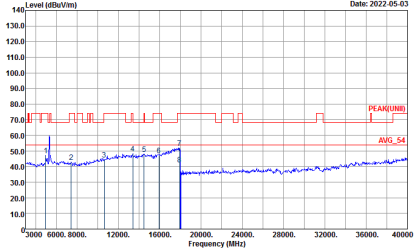
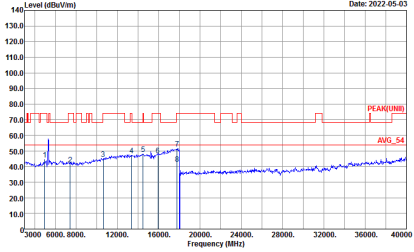


ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>



2.4GHz 2400~2483.5MHz + Band 2 - 5250-5350 MHz

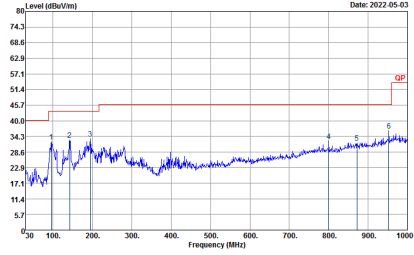
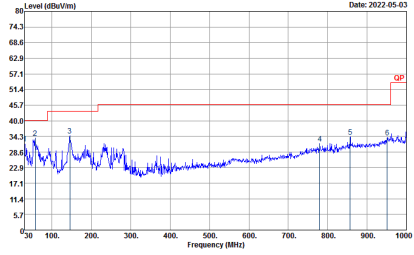
Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

ANT	BLE (1M) CH39 2480MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>Peak</b> <b>Avg.</b></p>	 <p style="font-size: small;">Date: 2022-05-03 Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 HORIZONTAL Detector : Peak</p>	 <p style="font-size: small;">Date: 2022-05-03 Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 VERTICAL Detector : Peak</p>



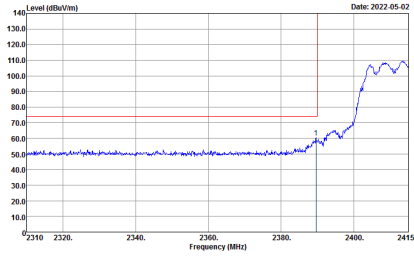
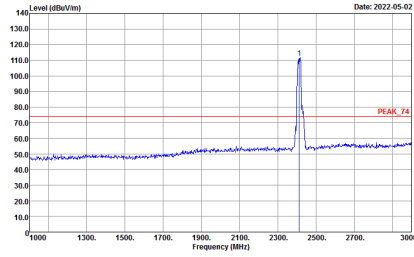
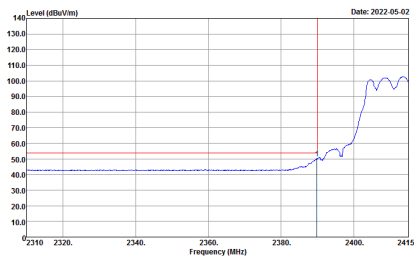
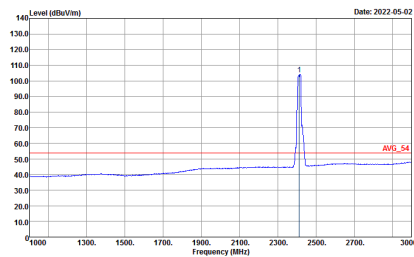
Emission below 1GHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> +  
802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (LF)

ANT	BLE (1M) CH39 2480MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>QP / Peak</b></p>	 <p style="font-size: small;">             Date: 2022-05-03              Site : 03CH07-HY              Condition : QP 3m LF-ANT-35419(6) HORIZONTAL              Detector : Peak           </p>	 <p style="font-size: small;">             Date: 2022-05-03              Site : 03CH07-HY              Condition : QP 3m LF-ANT-35419(6) VERTICAL              Detector : Peak           </p>



**2.4GHz 2400~2483.5MHz**  
**802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> (Band Edge @ 3m)**

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
4+3	Horizontal	Fundamental
<b>Peak</b>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWTAuto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWTAuto</p>
<b>Avg.</b>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:1.000KHz SWTAuto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:1.000KHz SWTAuto</p>



ANT	802.11g CH01 2412MHz	
4+3	Vertical	Fundamental
Peak	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_78 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_74 5m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : AVG_BE_S4 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : AVG_S4 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>



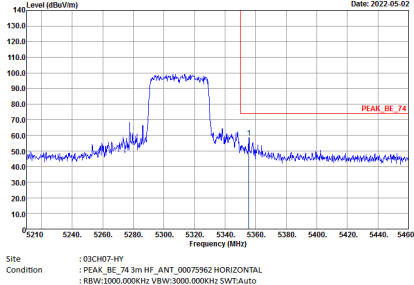
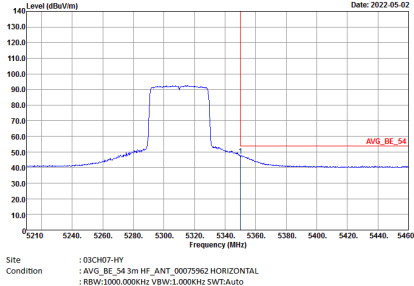
Band 2 - 5250-5350 MHz

802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (Band Edge @ 3m)

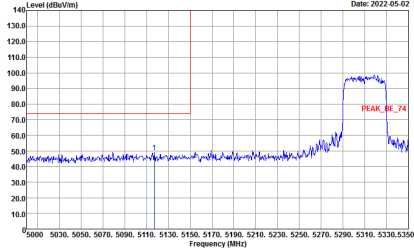
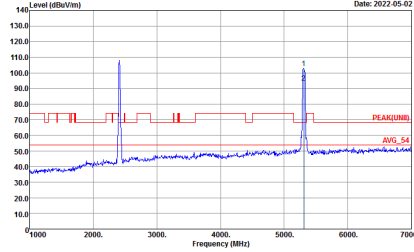
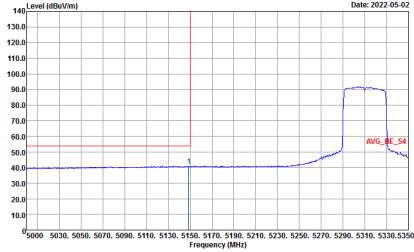
WIFI	5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Horizontal	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	<p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(LIN) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	<p>Site : 03CH07-HY Condition : AVG_BE_S4 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>



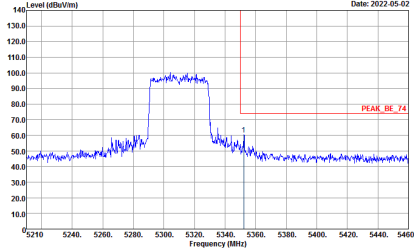
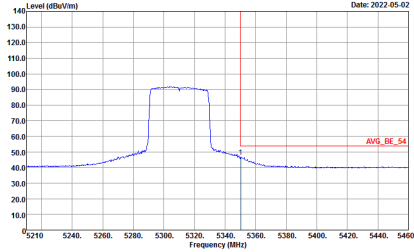


ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



ANT	802.11ax HE40 Full CH62 5310MHz - L	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK_BE_78 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK(UM)_3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>



ANT	802.11ax HE40 Full CH62 5310MHz - R	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p style="text-align: center;">Left blank</p>



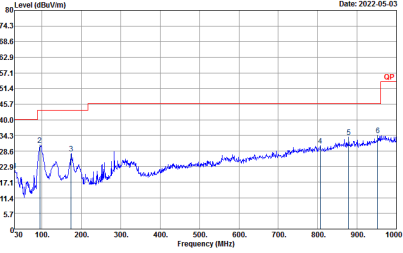
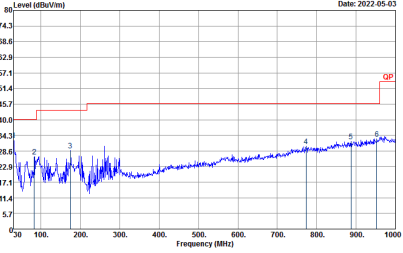
802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

ANT	802.11g CH01 2412MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 HORIZONTAL Detector : Peak</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 1m SHF-EHF_9170251 VERTICAL Detector : Peak</p>



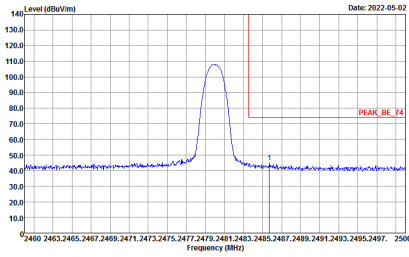
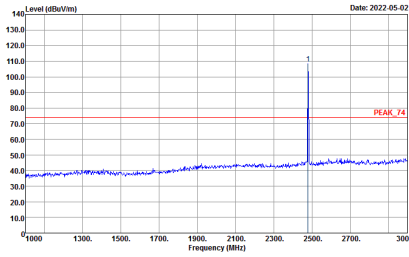
Emission below 1GHz

802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE40 Full\_Tx\_CH62\_MIMO <Ant. 4+3> (LF)

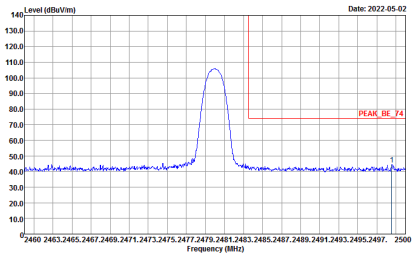
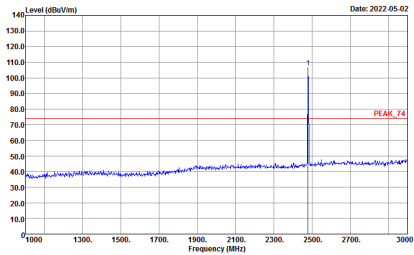
ANT	802.11g CH01 2412MHz + 802.11ax HE40 Full CH62 5310MHz	
Simultaneously	Horizontal	Vertical
QP / Peak	 <p data-bbox="459 741 678 779">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak</p>	 <p data-bbox="975 741 1193 779">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak</p>



2.4GHz 2400~2483.5MHz  
BT\_Tx\_CH78\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>



ANT	BT CH78 2480MHz	
Simultaneously	Vertical	Fundamental
Peak	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_78 9m HF_ANT_00070962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_78 9m HF_ANT_00070962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>



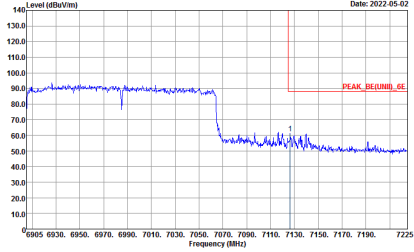
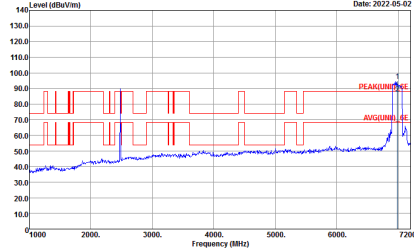
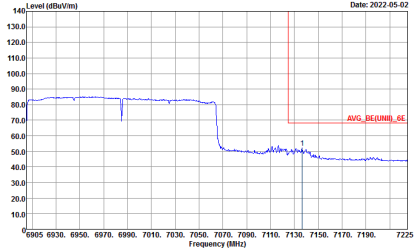
Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	6875-7125 MHz Band Edge @ 3m	
Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Horizontal	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">PEAK_BE(LIN)_6E</p> <p>Site : 03CH07-HY Condition : PEAK_BE(LIN)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">PEAK(LIN)_6E</p> <p>Site : 03CH07-HY Condition : PEAK(LIN)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">AVG_BE(LIN)_6E</p> <p>Site : 03CH07-HY Condition : AVG_BE(LIN)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>





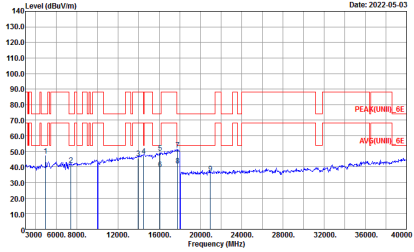
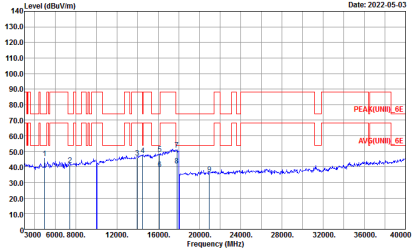
Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : AVG_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>



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

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>

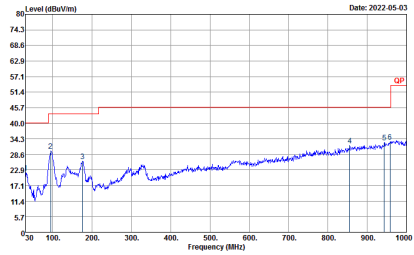
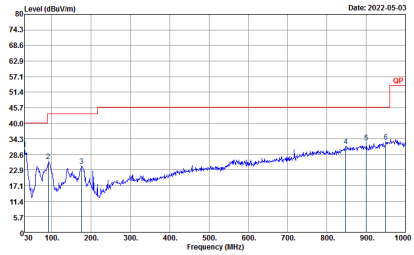
(Harmonic @ 3m)

ANT	BT CH78 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	 <p>Site : 03CH07-HY            Condition : PEAK(UNII)_SE 1m SHF-EHF_9170251 HORIZONTAL            Detector : Peak</p>	 <p>Site : 03CH07-HY            Condition : PEAK(UNII)_SE 1m SHF-EHF_9170251 VERTICAL            Detector : Peak</p>



Emission below 1GHz

BT\_Tx\_CH78\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(LF)

ANT	BT CH78 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>QP / Peak</b></p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35415(6) HORIZONTAL Detector : Peak</p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35415(6) VERTICAL Detector : Peak</p>



2.4GHz 2400~2483.5MHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> (Band Edge @ 3m)

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE (1M) CH39 2480MHz	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	<p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<p><b>Avg.</b></p>	<p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>	<p>Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p>

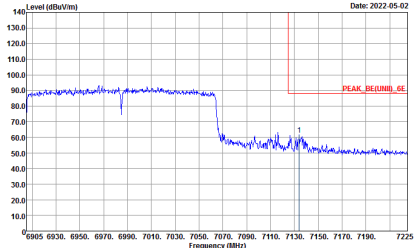
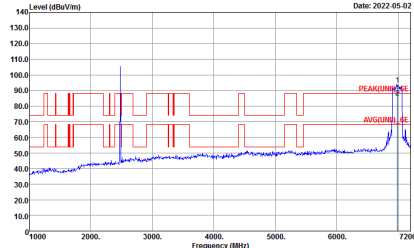
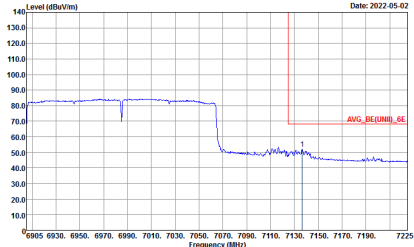


ANT	BLE (1M) CH39 2480MHz	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">PEAK_BE_74</p> <p>Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">PEAK_74</p> <p>Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">AVG_BE_54</p> <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p style="text-align: right;">Date: 2022-05-02</p> <p style="text-align: right;">AVG_54</p> <p>Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>

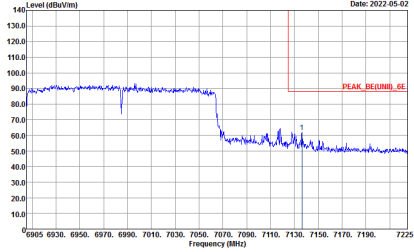
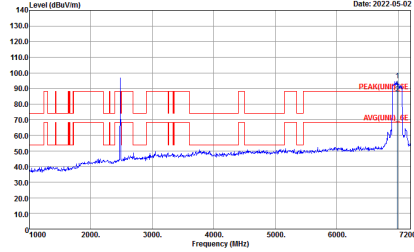
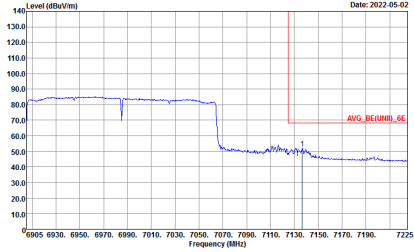


Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	6875-7125 MHz Band Edge @ 3m	
Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>Site : 03CH07-HY Condition : PEAK_BE(LNII)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>Site : 03CH07-HY Condition : PEAK(LNII)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p><b>Avg.</b></p>	 <p>Date: 2022-05-02</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>Site : 03CH07-HY Condition : AVG_BE(LNII)_6E 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p><b>Left blank</b></p>

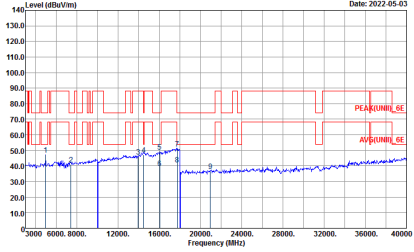
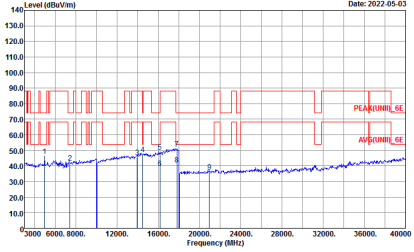


Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Vertical	Fundamental
Peak	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : -PEAK_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : -PEAK[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : -AVG_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



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

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

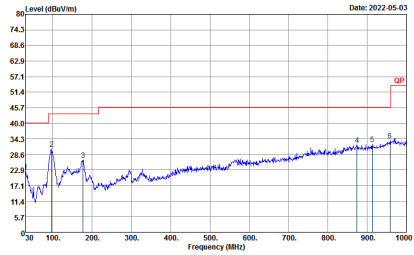
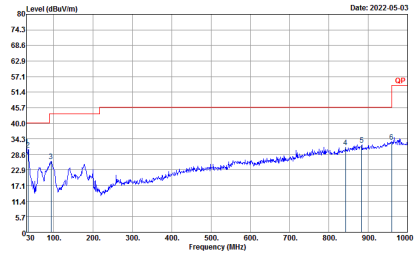
ANT	BLE (1M) CH39 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>Peak</b> <b>Avg.</b></p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : PEAK(LINII)_6E 1m SHF-EHF_9170251 HORIZONTAL Detector : Peak</p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : PEAK(LINII)_6E 1m SHF-EHF_9170251 VERTICAL Detector : Peak</p>





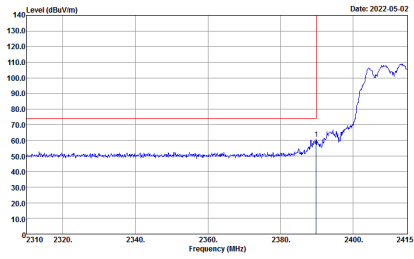
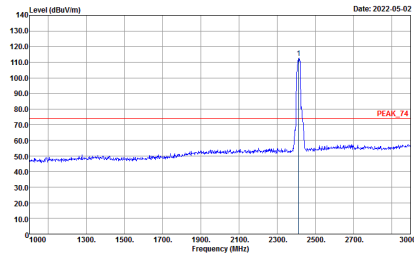
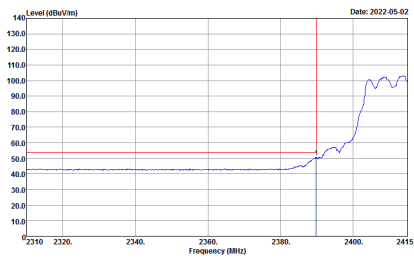
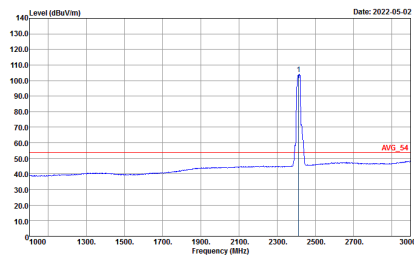
Emission below 1GHz

Bluetooth - LE\_1Mbps\_CH39\_MIMO <Ant. 4+3> +  
802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (LF)

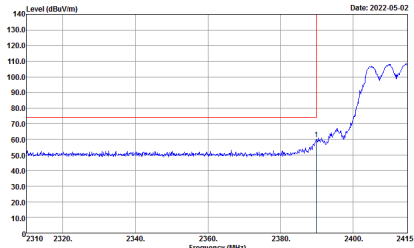
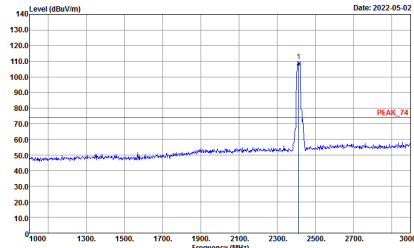
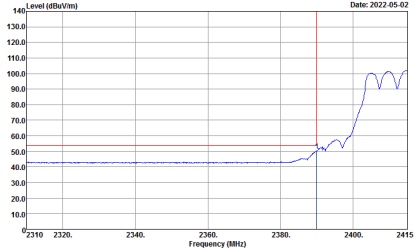
ANT	BLE (1M) CH39 2480MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
<b>QP / Peak</b>	 <p data-bbox="459 792 678 831">Site : 03CH07-HY Condition : QP 3m LF-ANT-35415(6) HORIZONTAL Detector : Peak</p>	 <p data-bbox="973 792 1192 831">Site : 03CH07-HY Condition : QP 3m LF-ANT-35415(6) VERTICAL Detector : Peak</p>



**2.4GHz 2400~2483.5MHz**  
**802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> (Band Edge @ 3m)**

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
4+3	Horizontal	Fundamental
<b>Peak</b>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<b>Avg.</b>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	 <p>Date: 2022-05-02</p> <p>Site : 03CH07-HY            Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>



ANT	802.11g CH01 2412MHz	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Vertical Peak. The y-axis ranges from 0 to 140 dBuV/m, and the x-axis ranges from 2310 to 2415 MHz. A red horizontal line is at approximately 75 dBuV/m. A blue line shows the spectrum with a sharp peak at 2412 MHz. A red vertical line is at 2412 MHz. Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE_78 3m HF_ANT_00075962 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 0 to 140 dBuV/m, and the x-axis ranges from 1900 to 3000 MHz. A red horizontal line is at approximately 75 dBuV/m. A blue line shows the spectrum with a sharp peak at 2412 MHz. A red vertical line is at 2412 MHz. Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_74 5m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
	<p style="text-align: center;"><b>Avg.</b></p>	 <p>Level (dBuV/m) vs Frequency (MHz) plot for Vertical Avg. The y-axis ranges from 0 to 140 dBuV/m, and the x-axis ranges from 2310 to 2415 MHz. A red horizontal line is at approximately 50 dBuV/m. A blue line shows the spectrum with a peak at 2412 MHz. A red vertical line is at 2412 MHz. Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>

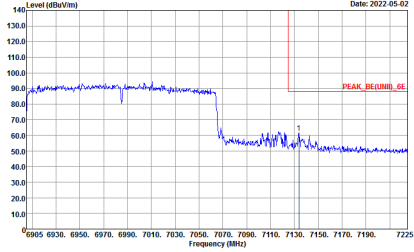
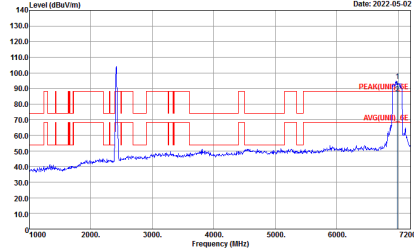
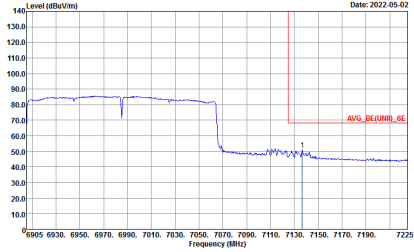


Band 8 - 6875-7125 MHz

802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (Band Edge @ 3m)

WIFI	6875-7125 MHz Band Edge @ 3m	
Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK_BE(LNII)_6E 3m HF ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : PEAK(LNII)_6E 3m HF ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p><b>Avg.</b></p>	<p>Date: 2022-05-02</p> <p>Site : 03CH07-HY Condition : AVG_BE(LNII)_6E 3m HF ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p><b>Left blank</b></p>

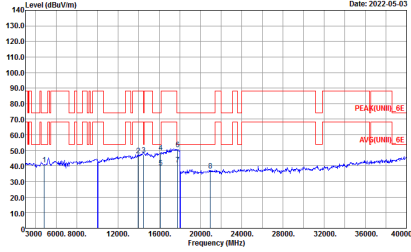
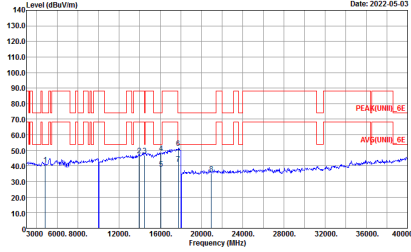


Ant.	802.11ax HE160 Full CH207 6985MHz	
4+3	Vertical	Fundamental
<p style="text-align: center;"><b>Peak</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : PEAK[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<p style="text-align: center;"><b>Avg.</b></p>	 <p style="font-size: small;">Date: 2022-05-02</p> <p style="font-size: x-small;">Site : 03CH07-HY Condition : AVG_BE[UNII]_6E 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p style="text-align: center;"><b>Left blank</b></p>



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

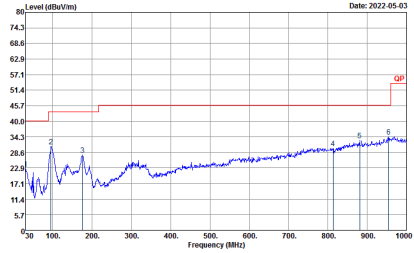
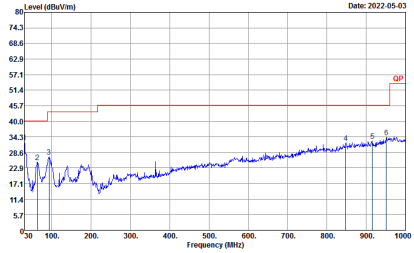
802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3>  
(Harmonic @ 3m)

ANT	802.11g CH01 2412MHz + 802.11ax HE160 Full CH207 6985MHz	
Simultaneously	Horizontal	Vertical
<p><b>Peak</b> <b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : PEAK(LIN)_6E 1m SHF-EHF_9170251 HORIZONTAL Detector : Peak</p>	 <p>Site : 03CH07-HY Condition : PEAK(LIN)_6E 1m SHF-EHF_9170251 VERTICAL Detector : Peak</p>



Emission below 1GHz

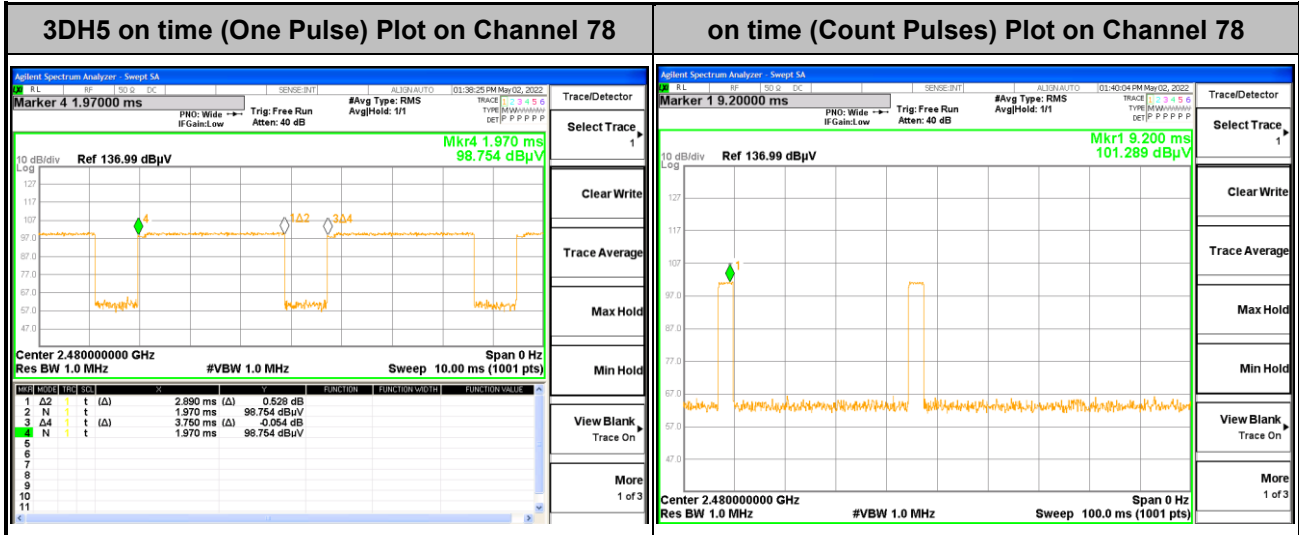
802.11g\_Tx\_CH01\_MIMO <Ant. 4+3> + 802.11ax HE160 Full\_Tx\_CH207\_MIMO <Ant. 4+3> (LF)

ANT	11g Ch01 + 11AX(HE160)_Ch207	
Simultaneously	Horizontal	Vertical
<p style="text-align: center;"><b>QP / Peak</b></p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) HORIZONTAL Detector : Peak</p>	 <p style="font-size: small;">Site : 03CH07-HY Condition : QP 3m LF-ANT-35419(6) VERTICAL Detector : Peak</p>



# Appendix C. Duty Cycle Plots

MIMO <Ant. 4+3>



**Note:**

1. Worst case Duty cycle = on time/100 milliseconds =  $2 * 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor =  $20 * \log(\text{Duty cycle}) = -24.76 \text{ dB}$
3. **3DH5** 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

$$2.89 \text{ ms} \times 20 \text{ channels} = 57.8 \text{ ms}$$

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.  $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

Thus, the maximum possible ON time:

$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

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

$$20 \times \log(5.78 \text{ ms}/100 \text{ ms}) = -24.76 \text{ dB}$$

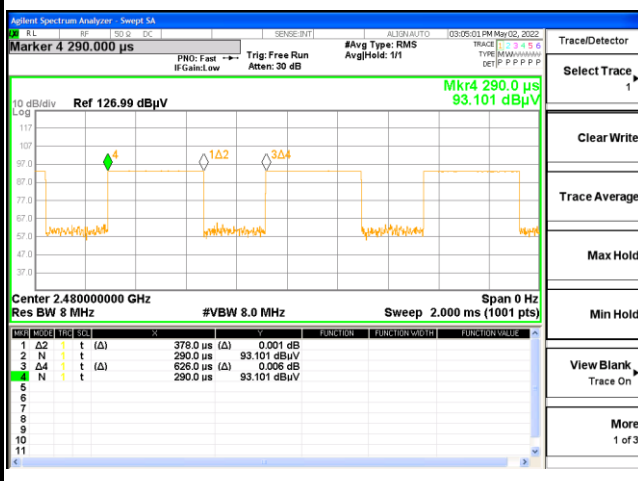




Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting											
4+3	Bluetooth – LE for 1Mbps	60.38	378	2.65	3kHz											
4+3	2.4GHz 802.11g	93.46	0.70	1kHz	4+3	5GHz 802.11ax HE40 Full RU	92.36	1233	0.81	1kHz	4+3	6GHz 802.11ax HE160 Full RU	85.07	570	1.75	3kHz
4+3	5GHz 802.11ax HE40 Full RU	92.36	1233	0.81	1kHz											
4+3	6GHz 802.11ax HE160 Full RU	85.07	570	1.75	3kHz											

MIMO <Ant. 4+3>

Bluetooth – LE for 1Mbps

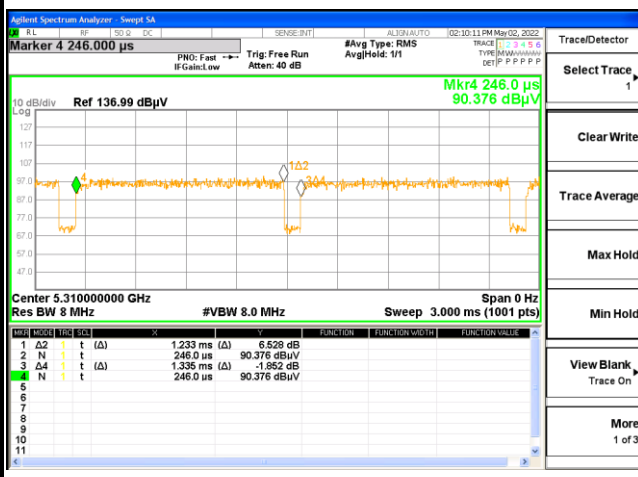


2.4GHz 802.11g



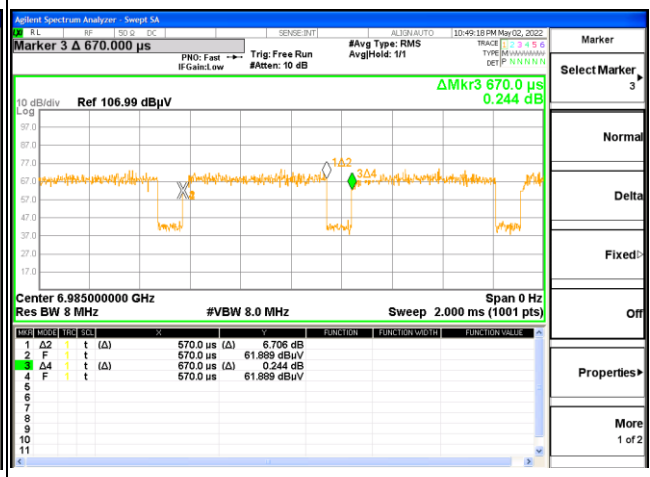
MIMO <Ant. 4+3>

5GHz 802.11ax HE40 Full RU



MIMO <Ant. 4+8>

6GHz 802.11ax HE160 Full RU



—THE END—