



FCC CO-LOCATION RADIO TEST REPORT

FCC ID : A4RGB7N6
Equipment : Phone
Model Name : GB7N6, GR1YH
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jun. 03, 2021 and testing was started from Jun. 11, 2021 and completed on Jul. 27, 2021. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

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



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Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---------------|---------------------|---------------------|--------------------|-------------------------------------|
| 3.1 | 15.407(b) | Unwanted Emissions | Pass | Under limit 1.58 dB at 5381.600 MHz |
| 3.2 | 15.203 15.407(a) | Antenna Requirement | Pass | - |

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

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

Reviewed by: William Chen
Report Producer: Cindy Liu



1 General Description

1.1 Product Feature of Equipment Under Test

| Product Feature | |
|---------------------------------|--|
| Equipment | Phone |
| Model Name | GB7N6, GR1YH |
| FCC ID | A4RGB7N6 |
| EUT supports Radios application | GSM/EGPRS/WCDM/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 |
| 15171FDF600099 | Radiated Spurious Emission |

1.2 Product Specification of Equipment Under Test

| Product Specification subjective to this standard | | | | | | | | | | |
|---|---|--------|--------|--------|--------------|---|---|-----------------------------------|---|---|
| Tx/Rx Channel Frequency Range | 2400 MHz ~ 2483.5 MHz 5180 MHz ~ 5240 MHz 5925 MHz ~ 6425 MHz | | | | | | | | | |
| Antenna Type / Gain | <p><Bluetooth> <Ant. 4> : ILA Antenna with gain -1.1 dBi <Ant. 3> : IFA Antenna with gain -1.4 dBi <2400 MHz ~ 2483.5 MHz> <Ant. 4>: ILA Antenna with gain -1.1 dBi <Ant. 3>: IFA Antenna with gain -1.4 dBi <5180 MHz ~ 5240 MHz> <Ant. 4>: ILA Antenna with gain -1.1 dBi <Ant. 3>: IFA Antenna with gain -2.6 dBi <5925 MHz ~ 6425 MHz> <Ant. 4>: ILA Antenna with gain -1.0 dBi <Ant. 3>: IFA Antenna with gain -0.1 dBi</p> | | | | | | | | | |
| Type of Modulation | Bluetooth BR (1Mbps) : GFSK Bluetooth LE : GFSK 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ax : OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM) | | | | | | | | | |
| Antenna Function for Transmitter | <table border="1"> <thead> <tr> <th></th> <th>Ant. 4</th> <th>Ant. 3</th> </tr> </thead> <tbody> <tr> <td>Bluetooth-LE</td> <td>V</td> <td>-</td> </tr> <tr> <td>802.11 g/ax/ Bluetooth MIMO</td> <td>V</td> <td>V</td> </tr> </tbody> </table> | | Ant. 4 | Ant. 3 | Bluetooth-LE | V | - | 802.11 g/ax/ Bluetooth MIMO | V | V |
| | Ant. 4 | Ant. 3 | | | | | | | | |
| Bluetooth-LE | V | - | | | | | | | | |
| 802.11 g/ax/ Bluetooth MIMO | V | V | | | | | | | | |

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

| | |
|---------------------------|--|
| Test Site | Sporton International Inc. Wensan Laboratory |
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855 |
| Test Site No. | Sporton Site No. 03CH16-HY |

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

FCC designation No.: TW3786

1.5 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

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



2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). The measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane as worst plane.

2.1 Carrier Frequency and Channel

| 2400-2483.5 MHz Bluetooth EDR | | 2400-2483.5 MHz Bluetooth – LE | |
|----------------------------------|-------------|-----------------------------------|-------------|
| Channel | Freq. (MHz) | Channel | Freq. (MHz) |
| 78 | 2480 | 39 | 2480 |

| 2400-2483.5 MHz 802.11g | | 5150-5350 MHz 802.11ax HE160 | | 5925-6425MHz 802.11ax HE160 | |
|----------------------------|-------------|---------------------------------|-------------|--------------------------------|-------------|
| Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
| 11 | 2462 | 50 | 5250 | 15 | 6025 |



2.2 Test Mode

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

<Co-Location>

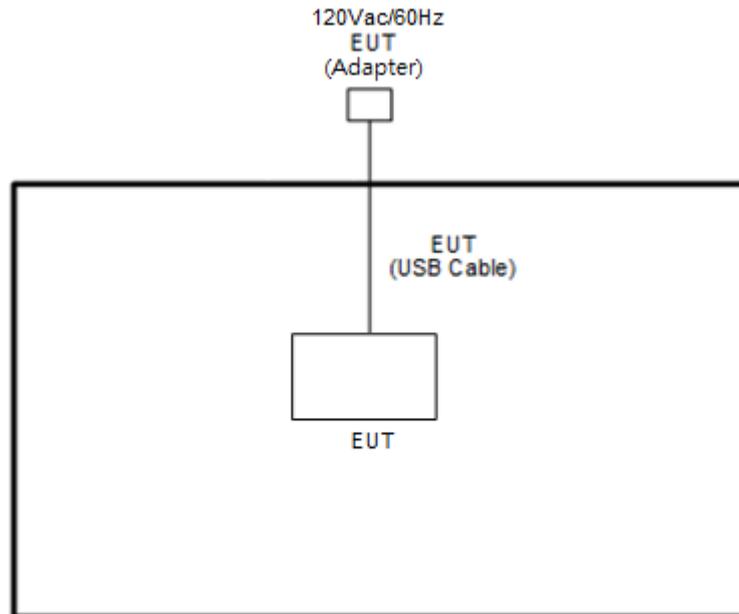
| Modulation | Data Rate |
|--|--------------|
| Bluetooth for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | 1Mbps + MCS0 |
| Bluetooth-LE for Ant. 4 + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | 1Mbps + MCS0 |
| WLAN 2.4GHz 802.11g for MIMO <Ant. 4+3> + WLAN 5GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | MCS0 + MCS0 |
| Bluetooth for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | 1Mbps + MCS0 |
| Bluetooth LE for Ant. 4 + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | 1Mbps + MCS0 |
| WLAN 2.4GHz 802.11g for MIMO <Ant. 4+3> + WLAN 6GHz 802.11ax HE160 for MIMO <Ant. 4 + 3> | MCS0 + MCS0 |

Remark:

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

2.3 Connection Diagram of Test System

<Co-Location Tx Mode>



2.4 EUT Operation Test Setup

The RF test items, utility “CMD V10.0.18362.267 and adb command V_1.0.36” 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.

<Limit of Unwanted Emissions>

(1) 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.

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

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

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

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.



- (3) 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

3.1.1 Measuring Instruments

See list of measuring equipment of this test report.

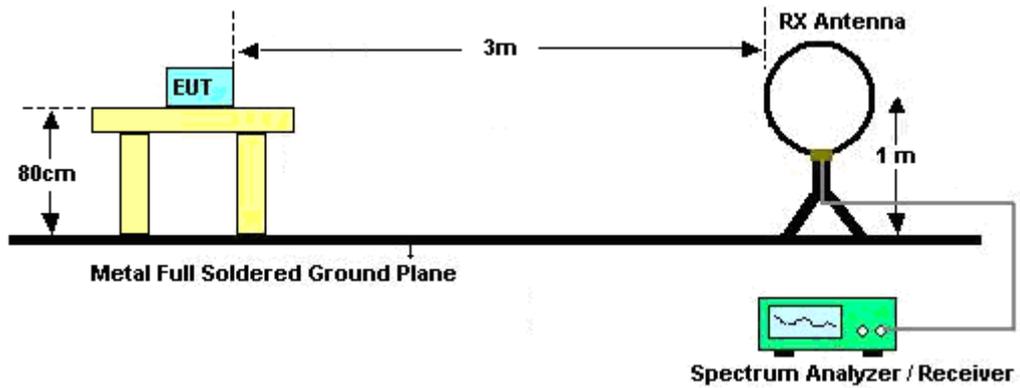


3.1.2 Test Procedures

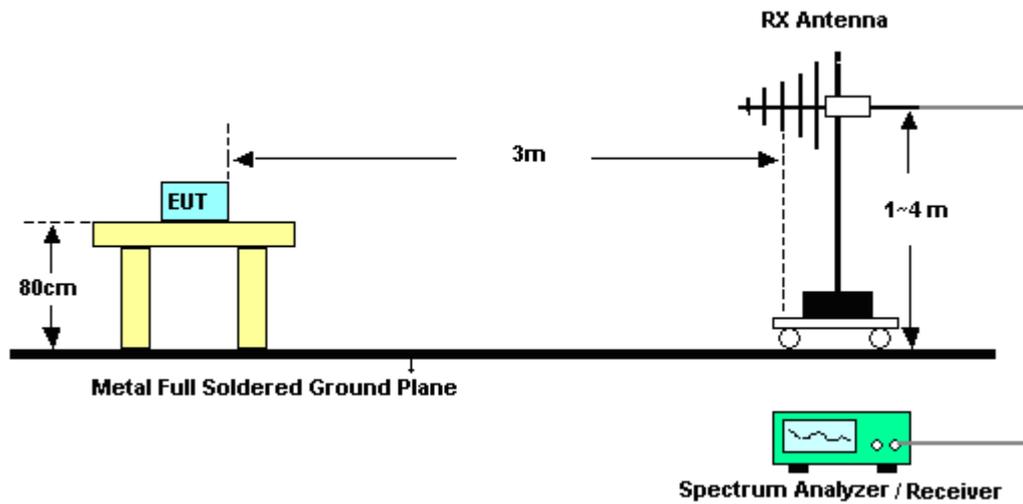
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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 was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was 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 was 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. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.1.3 Test Setup

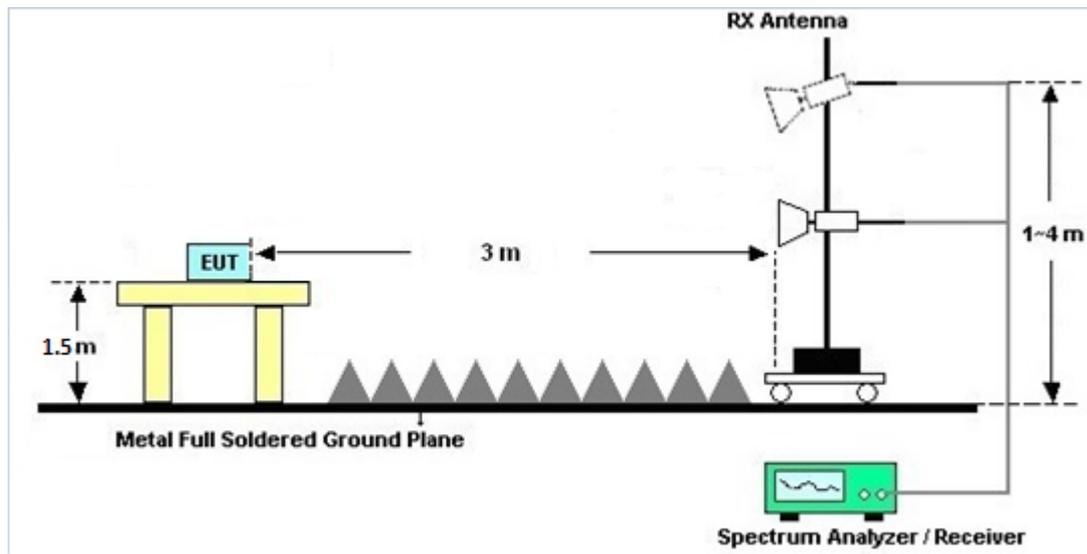
For radiated emissions below 30MHz



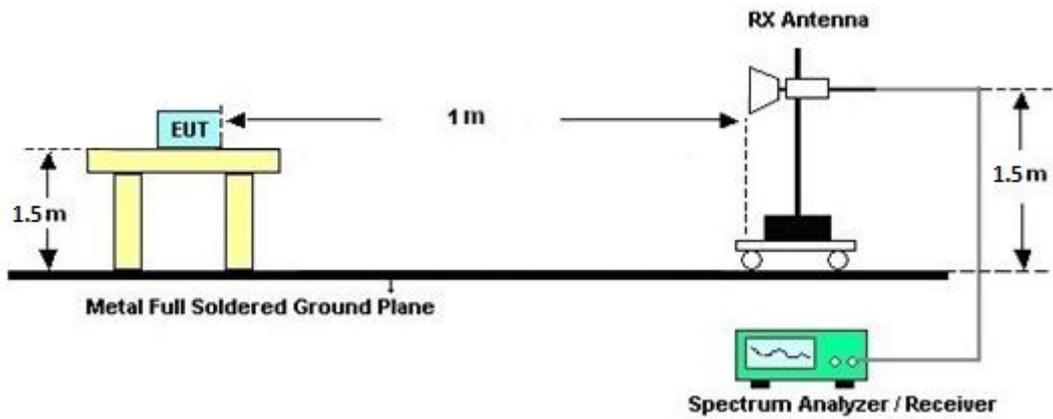
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





3.1.4 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.

3.1.5 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A and B.

3.1.6 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix A and B.



3.2 Antenna Requirements

3.2.1 Standard Applicable

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

If directional gain of transmitting antennas is greater than 6dBi, the power and the peak power spectral density shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

<WLAN 6GHz>

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

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

| Instrument | Brand Name | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|-------------------------|-------------------|-----------------------------------|----------------------|----------------------------------|------------------|---------------------------------|---------------|--------------------------|
| Loop Antenna | Rohde & Schwarz | HFH2-Z2 | 100315 | 9 kHz~30 MHz | Jan. 04, 2021 | Jun.11.,2021~ Jul. 27.,2021 | Jan. 03, 2022 | Radiation (03CH16-HY) |
| Bilog Antenna | TESEQ | CBL 6111D & 00802N1D01N -06 | 47020 & 06 | 30MHz to 1GHz | Oct. 11, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Oct. 10, 2021 | Radiation (03CH16-HY) |
| Horn Antenna | SCHWARZBE CK | BBHA 9120 D | 9120D-152 2 | 1G~18GHz | Sep. 29, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Sep. 28, 2021 | Radiation (03CH16-HY) |
| SHF-EHF Horn Antenna | SCHWARZBE CK | BBHA 9170 | 00993 | 18GHz ~40GHz | Nov. 19, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Nov. 18, 2021 | Radiation (03CH16-HY) |
| Amplifier | SONOMA | 310N | 371607 | 9kHz~1GHz | Sep. 30, 2020 | Jun. 11, 2021~ Jul. 04, 2021 | Sep. 29, 2021 | Radiation (03CH16-HY) |
| Amplifier | EMCI | EMC051845SE | 980729 | 1-18GHz | Jul. 10, 2020 | Jun. 11, 2021~ Jul. 08, 2021 | Jul. 09, 2021 | Radiation (03CH16-HY) |
| Amplifier | EMCI | EMC051845SE | 980729 | 1-18GHz | Jul. 09, 2021 | Jul. 09, 2021~ Jul. 27, 2021 | Jul. 08, 2022 | Radiation (03CH16-HY) |
| Preamplifier | Jet-Power | JPA0118-55-30 3 | 171000180 0054001 | 1-18GHz | Sep. 04, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Sep. 03, 2021 | Radiation (03CH16-HY) |
| Preamplifier | Keysight | 83017A | MY532702 64 | 1GHz~26.5GHz | Dec. 10, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Dec. 09, 2021 | Radiation (03CH16-HY) |
| Preamplifier | EMEC | EM18G40G | 060715 | 18GHz~40GHz | Dec. 11, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Dec. 10, 2021 | Radiation (03CH16-HY) |
| EMI Test Receiver | Keysight | N9038A(MXE) | MY572901 11 | 3Hz~26.5GHz | Dec. 11, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Dec. 10, 2021 | Radiation (03CH16-HY) |
| EMI Test Receiver | Keysight | N9010B | MY602405 20 | 3Hz ~40GHz | Dec. 02, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Dec. 01, 2021 | Radiation (03CH16-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 104 | MY11680/ 4PE | NA | Aug. 29, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Aug. 28, 2021 | Radiation (03CH16-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 104 | MY11688/ 4PE | NA | Aug. 29, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Aug. 28, 2021 | Radiation (03CH16-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | EC-A5-300 -5757 | NA | Aug. 29, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Aug. 28, 2021 | Radiation (03CH16-HY) |
| Hygrometer | TECPEL | DTM-303B | TP200881 | QA-3-031 | Oct. 22, 2020 | Jun. 11, 2021~ Jul. 27, 2021 | Oct. 21, 2021 | Radiation (03CH16-HY) |
| Software | Audix | E3 6.2009-8-24 | RK-001136 | N/A | N/A | Jun. 11, 2021~ Jul. 27, 2021 | N/A | Radiation (03CH16-HY) |
| Controller | ChainTek | 3000-1 | N/A | Control Turn table & Ant Mast | N/A | Jun. 11, 2021~ Jul. 27, 2021 | N/A | Radiation (03CH16-HY) |
| Antenna Mast | ChainTek | MBS-520-1 | N/A | 1m~4m | N/A | Jun. 11, 2021~ Jul. 27, 2021 | N/A | Radiation (03CH16-HY) |
| Turn Table | ChainTek | T-200-S-1 | N/A | 0~360 Degree | N/A | Jun. 11, 2021~ Jul. 27, 2021 | N/A | Radiation (03CH16-HY) |



5 Uncertainty of Evaluation

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

| | |
|---|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 5.3 dB |
|---|--------|

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

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

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

| | |
|---|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 4.7 dB |
|---|--------|



Appendix A. Radiated Spurious Emission

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

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

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| BT Ant. | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|------------------------|------|----------------------|---------------------|----------------------|--------------------------|------------------------|----------------------------|---------------------|-------------------------|-------------------|----------------------|----------------------|-----------------|---|
| BT CH 78 2480MHz | * | 2480 | 109.41 | - | - | 103.53 | 27.4 | 8.74 | 30.26 | 113 | 226 | P | H | |
| | * | 2480 | 84.65 | - | - | - | - | - | - | - | - | P | H | |
| | | 2483.88 | 47.62 | -26.38 | 74 | 41.73 | 27.4 | 8.74 | 30.25 | 113 | 226 | P | H | |
| | | 2483.88 | 22.86 | -31.14 | 54 | - | - | - | - | - | - | A | H | |
| | | | | | | | | | | | | P | H | |
| | | | | | | | | | | | | A | H | |
| | * | 2480 | 106.66 | - | - | 100.78 | 27.4 | 8.74 | 30.26 | 393 | 124 | P | V | |
| | * | 2480 | 81.9 | - | - | - | - | - | - | - | - | - | P | V |
| | | 2492.88 | 47.11 | -26.89 | 74 | 41.2 | 27.4 | 8.76 | 30.25 | 393 | 124 | P | V | |
| | | 2492.88 | 22.35 | -31.65 | 54 | - | - | - | - | - | - | A | V | |
| | | | | | | | | | | | | P | V | |
| | | | | | | | | | | | | A | V | |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|--------------------------------------|---|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 802.11ax HE160 CH50 5250MHz | | 5145.34 | 58.77 | -15.23 | 74 | 43.6 | 31.8 | 13.04 | 29.67 | 264 | 58 | P | H |
| | | 5141.44 | 46.34 | -7.66 | 54 | 31.17 | 31.8 | 13.04 | 29.67 | 264 | 58 | A | H |
| | * | 5250 | 101.43 | - | - | 86.62 | 31.3 | 13.2 | 29.69 | 264 | 58 | P | H |
| | * | 5250 | 91.93 | - | - | 77.12 | 31.3 | 13.2 | 29.69 | 264 | 58 | A | H |
| | | 5381.04 | 60.42 | -13.58 | 74 | 45.47 | 31.22 | 13.44 | 29.71 | 264 | 58 | P | H |
| | | 5372.36 | 51.3 | -2.7 | 54 | 36.4 | 31.19 | 13.42 | 29.71 | 264 | 58 | A | H |
| | | 5144.3 | 57.83 | -16.17 | 74 | 42.66 | 31.8 | 13.04 | 29.67 | 386 | 115 | P | V |
| | | 5132.34 | 46.08 | -7.92 | 54 | 30.92 | 31.8 | 13.03 | 29.67 | 386 | 115 | A | V |
| | * | 5250 | 99.73 | - | - | 84.92 | 31.3 | 13.2 | 29.69 | 386 | 115 | P | V |
| | * | 5250 | 90.24 | - | - | 75.43 | 31.3 | 13.2 | 29.69 | 386 | 115 | A | V |
| | | 5398.68 | 58.16 | -15.84 | 74 | 43.11 | 31.29 | 13.47 | 29.71 | 386 | 115 | P | V |
| | | 5388.04 | 51.24 | -2.76 | 54 | 36.25 | 31.25 | 13.45 | 29.71 | 386 | 115 | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. | |
|--|---------------|---|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|---|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| BT CH 78 2480MHz + 802.11ax HE160 CH 50 5250MHz | | 4960 | 55.77 | -18.23 | 74 | 39.47 | 31.34 | 14.6 | 29.64 | 100 | 0 | P | H | |
| | | 4960 | 31.01 | -22.99 | 54 | - | - | - | - | - | - | A | H | |
| | | 7440 | 46.38 | -27.62 | 74 | 51.22 | 36.4 | 16.75 | 57.99 | 100 | 0 | P | H | |
| | | 7440 | 21.62 | -32.38 | 54 | - | - | - | - | - | - | A | H | |
| | | 10500 | 49.12 | -19.08 | 68.2 | 51.94 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | H | |
| | | 15750 | 45.42 | -28.58 | 74 | 44.89 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | H | |
| | | | | | | | | | | | | | | H |
| | | 4960 | 55.29 | -18.71 | 74 | 38.99 | 31.34 | 14.6 | 29.64 | 100 | 0 | P | V | |
| | | 4960 | 30.53 | -23.47 | 54 | - | - | - | - | - | - | - | A | V |
| | | 7440 | 46.28 | -27.72 | 74 | 51.12 | 36.4 | 16.75 | 57.99 | 100 | 0 | P | V | |
| | | 7440 | 21.52 | -32.48 | 54 | - | - | - | - | - | - | - | A | V |
| | | 10500 | 48.7 | -19.5 | 68.2 | 51.52 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | V | |
| | | 15750 | 46.02 | -27.98 | 74 | 45.49 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | V | |
| | Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



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

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| BLE | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|-------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| BLE CH 39 2480MHz | * | 2480 | 108 | - | - | 92.2 | 27.4 | 8.74 | 30.26 | 105 | 240 | P | H |
| | * | 2480 | 105.98 | - | - | 90.18 | 27.4 | 8.74 | 30.26 | 105 | 240 | P | H |
| | | 2499.92 | 56.54 | -17.46 | 74 | 40.7 | 27.4 | 8.77 | 30.25 | 105 | 240 | P | H |
| | | 2483.56 | 46 | -8 | 54 | 30.19 | 27.4 | 8.74 | 30.25 | 105 | 240 | A | H |
| | | | | | | | | | | | | P | H |
| | | | | | | | | | | | | A | H |
| | * | 2480 | 101.71 | - | - | 85.91 | 27.4 | 8.74 | 30.26 | 344 | 63 | P | V |
| | * | 2480 | 99.11 | - | - | 83.31 | 27.4 | 8.74 | 30.26 | 344 | 63 | P | V |
| | | 2499.6 | 56.74 | -17.26 | 74 | 40.9 | 27.4 | 8.77 | 30.25 | 344 | 63 | P | V |
| | | 2489.12 | 45.84 | -8.16 | 54 | 30.02 | 27.4 | 8.75 | 30.25 | 344 | 63 | A | V |
| | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | A | V |



Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|--------------------------------------|---|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 802.11ax HE160 CH50 5250MHz | | 5148.98 | 62.26 | -11.74 | 74 | 47.08 | 31.8 | 13.05 | 29.67 | 264 | 58 | P | H |
| | | 5132.6 | 47.4 | -6.6 | 54 | 32.24 | 31.8 | 13.03 | 29.67 | 264 | 58 | A | H |
| | * | 5250 | 102.58 | - | - | 87.77 | 31.3 | 13.2 | 29.69 | 264 | 58 | P | H |
| | * | 5250 | 96.56 | - | - | 81.75 | 31.3 | 13.2 | 29.69 | 264 | 58 | A | H |
| | | 5388.32 | 62.66 | -11.34 | 74 | 47.67 | 31.25 | 13.45 | 29.71 | 264 | 58 | P | H |
| | | 5381.6 | 52.42 | -1.58 | 54 | 37.46 | 31.23 | 13.44 | 29.71 | 264 | 58 | A | H |
| | | 5144.3 | 60.62 | -13.38 | 74 | 45.45 | 31.8 | 13.04 | 29.67 | 400 | 116 | P | V |
| | | 5143.52 | 45.87 | -8.13 | 54 | 30.7 | 31.8 | 13.04 | 29.67 | 400 | 116 | A | V |
| | * | 5250 | 100.54 | - | - | 85.73 | 31.3 | 13.2 | 29.69 | 400 | 116 | P | V |
| | * | 5250 | 90.92 | - | - | 76.11 | 31.3 | 13.2 | 29.69 | 400 | 116 | A | V |
| | | 5383 | 60.27 | -13.73 | 74 | 45.31 | 31.23 | 13.44 | 29.71 | 400 | 116 | P | V |
| | | 5388.04 | 50.2 | -3.8 | 54 | 35.21 | 31.25 | 13.45 | 29.71 | 400 | 116 | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|---|---------------|---|------------------|-------------------|-----------------------|-------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|---|
| BLE CH 39 2480MHz + 802.11ax HE160 CH50 5250MHz | | 4960 | 56.81 | -17.19 | 74 | 40.51 | 31.34 | 14.6 | 29.64 | 100 | 301 | P | H | |
| | | 4960 | 48 | -6 | 54 | 31.7 | 31.34 | 14.6 | 29.64 | 100 | 301 | A | H | |
| | | 7440 | 46.64 | -27.36 | 74 | 51.48 | 36.4 | 16.75 | 57.99 | 100 | 0 | P | H | |
| | | 10500 | 48.86 | -19.34 | 68.2 | 51.68 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | H | |
| | | 15750 | 45.66 | -28.34 | 74 | 45.13 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | H | |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | 4960 | 54.9 | -19.1 | 74 | 38.6 | 31.34 | 14.6 | 29.64 | 350 | 169 | P | V |
| | | | 4960 | 46.91 | -7.09 | 54 | 30.61 | 31.34 | 14.6 | 29.64 | 350 | 169 | A | V |
| | | | 7440 | 46.16 | -27.84 | 74 | 51 | 36.4 | 16.75 | 57.99 | 100 | 0 | P | V |
| | | | 10500 | 48.53 | -19.67 | 68.2 | 51.35 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | V |
| | | | 15750 | 45.52 | -28.48 | 74 | 44.99 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | V |
| | | | | | | | | | | | | | | V |
| | Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



Emission above 18GHz

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (SHF @ 1m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|--|--|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| BLE CH 39 2480MHz + 802.11ax HE160 CH50 5250MHz | | 19104 | 36.95 | -37.05 | 74 | 57.11 | 38.58 | -3.66 | 55.08 | 150 | 0 | P | H |
| | | 35898 | 44.77 | -23.43 | 68.2 | 60.07 | 44.56 | -1.16 | 58.7 | 150 | 0 | P | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
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| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | 22816 | 38.22 | -35.78 | 74 | 56.71 | 38.97 | -3.21 | 54.25 | 150 | 0 | P |
| | | 37158 | 45.21 | -22.99 | 68.2 | 60.92 | 43.23 | -1.13 | 57.81 | 150 | 0 | P | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
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| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| Remark | 1. No other spurious found. 2. All results are PASS against limit line. | | | | | | | | | | | | |



Emission below 1GHz

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (LF)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. | |
|--|--|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|---|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| BLE CH 39 2480MHz + 802.11ax HE160 CH50 5250MHz | | 63.95 | 18.95 | -21.05 | 40 | 38.11 | 11.94 | 1.17 | 32.27 | - | - | P | H | |
| | | 100.81 | 23.55 | -19.95 | 43.5 | 38.13 | 16.16 | 1.56 | 32.3 | - | - | P | H | |
| | | 130.88 | 25.57 | -17.93 | 43.5 | 38.41 | 17.62 | 1.81 | 32.27 | - | - | P | H | |
| | | 205.57 | 21.55 | -21.95 | 43.5 | 36.21 | 15.23 | 2.37 | 32.26 | - | - | P | H | |
| | | 260.86 | 19.15 | -26.85 | 46 | 28.68 | 19.99 | 2.73 | 32.25 | - | - | P | H | |
| | | 730.34 | 30.69 | -15.31 | 46 | 30.62 | 27.78 | 4.65 | 32.36 | 100 | 0 | P | H | |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | 50.37 | 31.02 | -8.98 | 40 | 48.15 | 14.2 | 0.97 | 32.3 | 100 | 0 | P | V |
| | | | 97.9 | 32.71 | -10.79 | 43.5 | 47.61 | 15.88 | 1.52 | 32.3 | - | - | P | V |
| | | | 129.91 | 25.27 | -18.23 | 43.5 | 38.22 | 17.52 | 1.8 | 32.27 | - | - | P | V |
| | | | 188.11 | 21.37 | -22.13 | 43.5 | 36.33 | 15.03 | 2.25 | 32.24 | - | - | P | V |
| | | | 260.86 | 19.65 | -26.35 | 46 | 29.18 | 19.99 | 2.73 | 32.25 | - | - | P | V |
| | | | 735.19 | 30.93 | -15.07 | 46 | 30.66 | 27.96 | 4.66 | 32.35 | - | - | P | V |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| Remark | 3. No other spurious found. 4. All results are PASS against limit line. | | | | | | | | | | | | | |



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

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|----------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 802.11g CH 11 2462MHz | * | 2462 | 114.7 | - | - | 98.94 | 27.4 | 18.62 | 30.26 | 100 | 290 | P | H |
| | * | 2462 | 106.8 | - | - | 91.04 | 27.4 | 18.62 | 30.26 | 100 | 290 | P | H |
| | | 2483.52 | 60.21 | -13.79 | 74 | 44.4 | 27.4 | 18.66 | 30.25 | 100 | 290 | P | H |
| | | 2483.56 | 50.23 | -3.77 | 54 | 34.42 | 27.4 | 18.66 | 30.25 | 100 | 290 | A | H |
| | | | | | | | | | | | | P | H |
| | | | | | | | | | | | | A | H |
| | * | 2462 | 109.33 | - | - | 93.57 | 27.4 | 18.62 | 30.26 | 400 | 124 | P | V |
| | * | 2462 | 101.64 | - | - | 85.88 | 27.4 | 18.62 | 30.26 | 400 | 124 | P | V |
| | | 2497.8 | 57.18 | -16.82 | 74 | 41.34 | 27.4 | 18.69 | 30.25 | 400 | 124 | P | V |
| | | 2483.76 | 47.2 | -6.8 | 54 | 31.39 | 27.4 | 18.66 | 30.25 | 400 | 124 | A | V |
| | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | A | V |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|--------------------------------------|---|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 802.11ax HE160 CH50 5250MHz | | 5147.68 | 60.22 | -13.78 | 74 | 45.05 | 31.8 | 13.04 | 29.67 | 268 | 61 | P | H |
| | | 5141.44 | 46.65 | -7.35 | 54 | 31.48 | 31.8 | 13.04 | 29.67 | 268 | 61 | A | H |
| | * | 5250 | 102.56 | - | - | 87.75 | 31.3 | 13.2 | 29.69 | 268 | 61 | P | H |
| | * | 5250 | 91.85 | - | - | 77.04 | 31.3 | 13.2 | 29.69 | 268 | 61 | A | H |
| | | 5388.32 | 61.43 | -12.57 | 74 | 46.44 | 31.25 | 13.45 | 29.71 | 268 | 61 | P | H |
| | | 5381.32 | 51.93 | -2.07 | 54 | 36.97 | 31.23 | 13.44 | 29.71 | 268 | 61 | A | H |
| | | 5143.78 | 58.17 | -15.83 | 74 | 43 | 31.8 | 13.04 | 29.67 | 383 | 110 | P | V |
| | | 5142.22 | 46.16 | -7.84 | 54 | 30.99 | 31.8 | 13.04 | 29.67 | 383 | 110 | A | V |
| | * | 5250 | 99.68 | - | - | 84.87 | 31.3 | 13.2 | 29.69 | 383 | 110 | P | V |
| | * | 5250 | 90.01 | - | - | 75.2 | 31.3 | 13.2 | 29.69 | 383 | 110 | A | V |
| | | 5386.36 | 60.43 | -13.57 | 74 | 45.44 | 31.25 | 13.45 | 29.71 | 383 | 110 | P | V |
| | | 5381.32 | 51.1 | -2.9 | 54 | 36.14 | 31.23 | 13.44 | 29.71 | 383 | 110 | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|---|---|-------------------|------------------|-------------------|-----------------------|-------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|---|
| 802.11g CH 11 2462MHz + 802.11ax HE160 CH50 5250MHz | | 4874 | 54.44 | -19.56 | 74 | 38.36 | 31.15 | 14.56 | 29.63 | 100 | 0 | P | H | |
| | | 4874 | 43.52 | -10.48 | 54 | 27.44 | 31.15 | 14.56 | 29.63 | 100 | 0 | A | H | |
| | | 7386 | 45.09 | -28.91 | 74 | 49.91 | 36.43 | 16.73 | 57.98 | 100 | 0 | P | H | |
| | | 10500 | 48.5 | -19.7 | 68.2 | 51.32 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | H | |
| | | 15750 | 46.27 | -27.73 | 74 | 45.74 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | H | |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | 4874 | 54.88 | -19.12 | 74 | 38.8 | 31.15 | 14.56 | 29.63 | 100 | 0 | P | V |
| | | | 4874 | 43.44 | -10.56 | 54 | 27.36 | 31.15 | 14.56 | 29.63 | 100 | 0 | A | V |
| | | | 7386 | 46.25 | -27.75 | 74 | 51.07 | 36.43 | 16.73 | 57.98 | 100 | 0 | P | V |
| | | | 10500 | 48.58 | -19.62 | 68.2 | 51.4 | 39.8 | 19.48 | 62.1 | 100 | 0 | P | V |
| | | | 15750 | 45.45 | -28.55 | 74 | 44.92 | 37.35 | 23.38 | 60.2 | 100 | 0 | P | 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 5 - 5925~6425MHz

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| BT | Note | Frequency | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol. | |
|------------------------|------|-----------|------------|------------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|---------|---|
| | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| BT CH 78 2480MHz | * | 2480 | 109.4 | - | - | 103.52 | 27.4 | 8.74 | 30.26 | 112 | 226 | P | H | |
| | * | 2480 | 84.64 | - | - | - | - | - | - | - | - | P | H | |
| | | 2483.88 | 47.97 | -26.03 | 74 | 42.08 | 27.4 | 8.74 | 30.25 | 112 | 226 | P | H | |
| | | 2483.88 | 23.21 | -30.79 | 54 | - | - | - | - | - | - | A | H | |
| | | | | | | | | | | | | P | H | |
| | | | | | | | | | | | | A | H | |
| | * | 2480 | 106.35 | - | - | 100.47 | 27.4 | 8.74 | 30.26 | 388 | 137 | P | V | |
| | * | 2480 | 81.59 | - | - | - | - | - | - | - | - | - | P | V |
| | | 2487.92 | 47.67 | -26.33 | 74 | 41.77 | 27.4 | 8.75 | 30.25 | 388 | 137 | P | V | |
| | | 2487.92 | 22.91 | -31.09 | 54 | - | - | - | - | - | - | A | V | |
| | | | | | | | | | | | | P | V | |
| | | | | | | | | | | | | A | V | |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|---------------------------------------|---|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|---|
| 802.11ax HE160 CH 15 6025MHz | | 5916.84 | 75.96 | -12.24 | 88.2 | 59.81 | 32.23 | 13.81 | 29.89 | 100 | 60 | P | H | |
| | | 5916.52 | 65.14 | -3.06 | 68.2 | 48.99 | 32.23 | 13.81 | 29.89 | 100 | 60 | A | H | |
| | * | 6025 | 104.02 | - | - | 87.73 | 32.35 | 13.87 | 29.93 | 100 | 60 | P | H | |
| | * | 6025 | 94.76 | - | - | 78.47 | 32.35 | 13.87 | 29.93 | 100 | 60 | A | H | |
| | | | | | | | | | | | | P | H | |
| | | | | | | | | | | | | | A | H |
| | | | 5873.64 | 75.68 | -12.52 | 88.2 | 59.59 | 32.15 | 13.81 | 29.87 | 377 | 118 | P | V |
| | | | 5907.56 | 64.6 | -3.6 | 68.2 | 48.45 | 32.22 | 13.81 | 29.88 | 377 | 118 | A | V |
| | * | | 6025 | 103.28 | - | - | 86.99 | 32.35 | 13.87 | 29.93 | 377 | 118 | P | V |
| | * | | 6025 | 94.6 | - | - | 78.31 | 32.35 | 13.87 | 29.93 | 377 | 118 | A | V |
| | | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | | |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|-------------------|------------------|-------------------|-----------------------|---------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|
| BT CH 78 2480MHz + 802.11ax HE160 CH 15 6025MHz | | 4960 | 44.3 | -29.7 | 74 | 56.62 | 31.34 | 14.36 | 58.02 | 100 | 0 | P | H |
| | | 4960 | 19.54 | -34.46 | 54 | - | - | - | - | - | - | A | H |
| | | 7440 | 46.91 | -27.09 | 74 | 50.95 | 36.4 | 17.55 | 57.99 | 100 | 0 | P | H |
| | | 7440 | 22.15 | -31.85 | 54 | - | - | - | - | - | - | A | H |
| | | 12050 | 48 | -26 | 74 | 50.01 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | H |
| | | 17968 | 59.18 | -14.82 | 74 | 42.11 | 48.63 | 25.28 | 56.84 | 100 | 0 | P | H |
| | | 17968 | 47.93 | -6.07 | 54 | 30.86 | 48.63 | 25.28 | 56.84 | 100 | 0 | A | H |
| | | 18075 | 37.08 | -36.92 | 74 | 58.67 | 37.96 | -3.72 | 55.83 | 100 | 0 | P | H |
| | | 4960 | 43.36 | -30.64 | 74 | 55.68 | 31.34 | 14.36 | 58.02 | 100 | 0 | P | V |
| | | 4960 | 18.6 | -35.4 | 54 | - | - | - | - | - | - | A | V |
| | | 7440 | 46.81 | -27.19 | 74 | 50.85 | 36.4 | 17.55 | 57.99 | 100 | 0 | P | V |
| | | 7440 | 22.05 | -31.95 | 54 | - | - | - | - | - | - | A | V |
| | | 12050 | 47.84 | -26.16 | 74 | 49.85 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | V |
| | | 17968 | 58.93 | -15.07 | 74 | 41.86 | 48.63 | 25.28 | 56.84 | 100 | 0 | P | V |
| | | 17968 | 47.56 | -6.44 | 54 | 30.49 | 48.63 | 25.28 | 56.84 | 100 | 0 | A | V |
| | 18075 | 43.39 | -30.61 | 74 | 65 | 37.96 | -3.72 | 55.85 | 100 | 0 | P | V | |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



2.4GHz 2400~2483.5MHz + Band 5 - 5925~6425MHz

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| BLE | Note | Frequency (MHz) | Level (dBµV/m) | Over Limit (dB) | Limit Line (dBµV/m) | Read Level (dBµV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|-------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| BLE CH 39 2480MHz | * | 2480 | 109.1 | - | - | 93.3 | 27.4 | 18.66 | 30.26 | 106 | 235 | P | H |
| | * | 2480 | 107.54 | - | - | 91.74 | 27.4 | 18.66 | 30.26 | 106 | 235 | P | H |
| | | 2490.16 | 56.77 | -17.23 | 74 | 40.94 | 27.4 | 18.68 | 30.25 | 106 | 235 | P | H |
| | | 2483.56 | 46.25 | -7.75 | 54 | 30.44 | 27.4 | 18.66 | 30.25 | 106 | 235 | A | H |
| | | | | | | | | | | | | P | H |
| | | | | | | | | | | | | A | H |
| | * | 2480 | 102.16 | - | - | 86.36 | 27.4 | 18.66 | 30.26 | 356 | 79 | P | V |
| | * | 2480 | 100.61 | - | - | 84.81 | 27.4 | 18.66 | 30.26 | 356 | 79 | P | V |
| | | 2493.88 | 57.03 | -16.97 | 74 | 41.2 | 27.4 | 18.68 | 30.25 | 356 | 79 | P | V |
| | | 2484.08 | 45.65 | -8.35 | 54 | 29.84 | 27.4 | 18.66 | 30.25 | 356 | 79 | A | V |
| | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | A | V |



Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. | |
|---------------------------------------|---|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|---|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | | |
| Simultaneously | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| 802.11ax HE160 CH 15 6025MHz | | 5873.64 | 73.13 | -15.07 | 88.2 | 57.04 | 32.15 | 13.81 | 29.87 | 301 | 64 | P | H | |
| | | 5916.52 | 63.05 | -5.15 | 68.2 | 46.9 | 32.23 | 13.81 | 29.89 | 301 | 64 | A | H | |
| | * | 6025 | 103.39 | - | - | 87.1 | 32.35 | 13.87 | 29.93 | 301 | 64 | P | H | |
| | * | 6025 | 93.35 | - | - | 77.06 | 32.35 | 13.87 | 29.93 | 301 | 64 | A | H | |
| | | | | | | | | | | | | | P | H |
| | | | | | | | | | | | | | A | H |
| | | | 5907.88 | 74 | -14.2 | 88.2 | 57.85 | 32.22 | 13.81 | 29.88 | 396 | 117 | P | V |
| | | | 5907.56 | 62.49 | -5.71 | 68.2 | 46.34 | 32.22 | 13.81 | 29.88 | 396 | 117 | A | V |
| | * | | 6025 | 105.32 | - | - | 89.03 | 32.35 | 13.87 | 29.93 | 396 | 117 | P | V |
| | * | | 6025 | 94.61 | - | - | 78.32 | 32.35 | 13.87 | 29.93 | 396 | 117 | A | V |
| | | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | | |



Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|--|---|-------------------|------------------|-------------------|-----------------------|-------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|---|
| BLE CH 39 2480MHz + 802.11ax HE160 CH 15 6025MHz | | 4960 | 47.09 | -26.91 | 74 | 59.41 | 31.34 | 14.36 | 58.02 | 100 | 0 | P | H | |
| | | 7440 | 47.2 | -26.8 | 74 | 51.24 | 36.4 | 17.55 | 57.99 | 100 | 0 | P | H | |
| | | 12050 | 47.26 | -26.74 | 74 | 49.27 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | H | |
| | | 17976 | 58.72 | -15.28 | 74 | 41.46 | 48.8 | 25.29 | 56.83 | 100 | 0 | P | H | |
| | | 17976 | 47.87 | -6.13 | 54 | 30.61 | 48.8 | 25.29 | 56.83 | 100 | 0 | A | H | |
| | | 18075 | 36.16 | -37.84 | 74 | 57.75 | 37.96 | -3.72 | 55.83 | 100 | 0 | P | | |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | 4960 | 45.43 | -28.57 | 74 | 57.75 | 31.34 | 14.36 | 58.02 | 100 | 0 | P | V |
| | | | 7440 | 46.94 | -27.06 | 74 | 50.98 | 36.4 | 17.55 | 57.99 | 100 | 0 | P | V |
| | | | 12050 | 47.55 | -26.45 | 74 | 49.56 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | V |
| | | | 17968 | 58.1 | -15.9 | 74 | 41.03 | 48.63 | 25.28 | 56.84 | 100 | 0 | P | V |
| | | | 17968 | 47.94 | -6.06 | 54 | 30.87 | 48.63 | 25.28 | 56.84 | 100 | 0 | A | V |
| | | | 18075 | 44.08 | -29.92 | 74 | 65.67 | 37.96 | -3.72 | 55.83 | 100 | 0 | P | 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 5 - 5925~6425MHz

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax_HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|--------------------------|------|-------------------|------------------|-------------------|-----------------------|---------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|
| 802.11g CH 11 2462MHz | * | 2462 | 113.55 | - | - | 97.79 | 27.4 | 18.62 | 30.26 | 100 | 304 | P | H |
| | * | 2462 | 106.38 | - | - | 90.62 | 27.4 | 18.62 | 30.26 | 100 | 304 | P | H |
| | | 2484 | 62.42 | -11.58 | 74 | 46.61 | 27.4 | 18.66 | 30.25 | 100 | 304 | P | H |
| | | 2483.52 | 51.69 | -2.31 | 54 | 35.88 | 27.4 | 18.66 | 30.25 | 100 | 304 | A | H |
| | | | | | | | | | | | | P | H |
| | | | | | | | | | | | | A | H |
| | * | 2462 | 108.37 | - | - | 92.61 | 27.4 | 18.62 | 30.26 | 400 | 121 | P | V |
| | * | 2462 | 100.09 | - | - | 84.33 | 27.4 | 18.62 | 30.26 | 400 | 121 | P | V |
| | | 2491.88 | 57.09 | -16.91 | 74 | 41.26 | 27.4 | 18.68 | 30.25 | 400 | 121 | P | V |
| | | 2483.68 | 47.25 | -6.75 | 54 | 31.44 | 27.4 | 18.66 | 30.25 | 400 | 121 | A | V |
| | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | A | V |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|------------------------------|---|-------------------|------------------|-------------------|-----------------------|---------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|---|
| 802.11ax HE160 CH 15 6025MHz | | 5916.84 | 77.5 | -10.7 | 88.2 | 61.35 | 32.23 | 13.81 | 29.89 | 297 | 66 | P | H | |
| | | 5907.56 | 65.62 | -2.58 | 68.2 | 49.47 | 32.22 | 13.81 | 29.88 | 297 | 66 | A | H | |
| | * | 6025 | - | - | 88.2 | 87.01 | 32.35 | 13.87 | 29.93 | 297 | 66 | P | H | |
| | * | 6025 | - | - | 68.2 | 77.15 | 32.35 | 13.87 | 29.93 | 297 | 66 | A | H | |
| | | | | | | | | | | | | P | H | |
| | | | | | | | | | | | | | A | H |
| | | | 5879.72 | 75.49 | -12.71 | 88.2 | 59.39 | 32.16 | 13.81 | 29.87 | 397 | 116 | P | V |
| | | | 5907.88 | 65.58 | -2.62 | 68.2 | 49.43 | 32.22 | 13.81 | 29.88 | 397 | 116 | A | V |
| | * | | 6025 | - | - | 88.2 | 86.1 | 32.35 | 13.87 | 29.93 | 397 | 116 | P | V |
| | * | | 6025 | - | - | 68.2 | 77.49 | 32.35 | 13.87 | 29.93 | 397 | 116 | A | V |
| | | | | | | | | | | | | | P | V |
| | | | | | | | | | | | | | A | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | | |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| WIFI Ant. Simultaneously | Note | Frequency (MHz) | Level (dBμV/m) | Over Limit (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) | |
|--|--------|---|------------------|-------------------|-----------------------|-------------------|-------------------------|------------------|----------------------|----------------|-------------------|-----------------|------------|---|
| 802.11g CH 11 2462MHz + 802.11ax HE160 CH 15 6025MHz | | 4924 | 44.83 | -29.17 | 74 | 57.31 | 31.2 | 14.35 | 58.03 | 100 | 0 | P | H | |
| | | 7386 | 46.76 | -27.24 | 74 | 50.82 | 36.43 | 17.49 | 57.98 | 100 | 0 | P | H | |
| | | 12050 | 47.51 | -26.49 | 74 | 49.52 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | H | |
| | | 17968 | 58.32 | -15.68 | 74 | 41.25 | 48.63 | 25.28 | 56.84 | 100 | 0 | P | H | |
| | | 17968 | 47.75 | -6.25 | 54 | 30.68 | 48.63 | 25.28 | 56.84 | 100 | 0 | A | H | |
| | | 18075 | 35.68 | -38.32 | 74 | 57.27 | 37.96 | -3.72 | 55.83 | 100 | 0 | P | H | |
| | | | | | | | | | | | | | | H |
| | | | 4924 | 44.43 | -29.57 | 74 | 56.91 | 31.2 | 14.35 | 58.03 | 100 | 0 | P | V |
| | | | 7386 | 46.49 | -27.51 | 74 | 50.55 | 36.43 | 17.49 | 57.98 | 100 | 0 | P | V |
| | | | 12050 | 47.32 | -26.68 | 74 | 49.33 | 38.85 | 20.06 | 60.92 | 100 | 0 | P | V |
| | | | 17976 | 58.24 | -15.76 | 74 | 40.98 | 48.8 | 25.29 | 56.83 | 100 | 0 | P | V |
| | | | 17976 | 47.91 | -6.09 | 54 | 30.65 | 48.8 | 25.29 | 56.83 | 100 | 0 | A | V |
| | | | 18075 | 41.06 | -32.94 | 74 | 62.65 | 37.96 | -3.72 | 55.83 | 100 | 0 | P | V |
| | Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |



Emission below 1GHz

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (LF)

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. | |
|--|--|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|---|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | | |
| Simultaneously | | (MHz) | (dBµV/m) | (dB) | (dBµV/m) | (dBµV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| 802.11g CH 11 2462MHz + 802.11ax HE160 CH 15 6025MHz | | 64.92 | 18.12 | -21.88 | 40 | 37.29 | 11.92 | 1.18 | 32.27 | - | - | P | H | |
| | | 98.87 | 31.96 | -11.54 | 43.5 | 46.76 | 15.96 | 1.54 | 32.3 | 100 | 0 | P | H | |
| | | 128.94 | 25.94 | -17.56 | 43.5 | 38.94 | 17.48 | 1.79 | 32.27 | - | - | P | H | |
| | | 210.42 | 28.68 | -14.82 | 43.5 | 43.35 | 15.19 | 2.4 | 32.26 | - | - | P | H | |
| | | 331.67 | 23.09 | -22.91 | 46 | 32.34 | 19.94 | 3.06 | 32.25 | - | - | P | H | |
| | | 714.82 | 30.66 | -15.34 | 46 | 31.47 | 26.95 | 4.62 | 32.38 | - | - | P | H | |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | | H |
| | | | 48.43 | 29.28 | -10.72 | 40 | 45.71 | 14.93 | 0.94 | 32.3 | - | - | P | V |
| | | | 66.86 | 28.41 | -11.59 | 40 | 47.32 | 12.17 | 1.2 | 32.28 | - | - | P | V |
| | | | 97.9 | 33.79 | -9.71 | 43.5 | 48.69 | 15.88 | 1.52 | 32.3 | 100 | 0 | P | V |
| | | | 166.77 | 20.88 | -22.62 | 43.5 | 35.01 | 16.02 | 2.09 | 32.24 | - | - | P | V |
| | | | 211.39 | 20.56 | -22.94 | 43.5 | 35.22 | 15.19 | 2.41 | 32.26 | - | - | P | V |
| | | | 746.83 | 31.92 | -14.08 | 46 | 31.44 | 28.13 | 4.69 | 32.34 | - | - | P | V |
| | | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| | | | | | | | | | | | | | V | |
| Remark | 1. No other spurious found. 2. All results are PASS against limit line. | | | | | | | | | | | | | |



Note symbol

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



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

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Path | Preamp | 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. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

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

For Average Limit @ 2390MHz:

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

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



Appendix B. Radiated Spurious Emission Plots

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

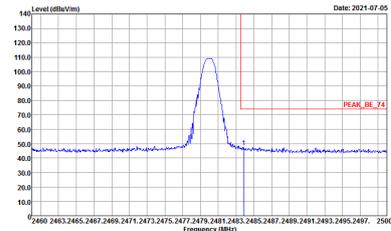
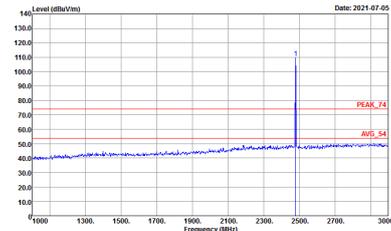
Note symbol

| | |
|----|-----------------------|
| -L | Low channel location |
| -R | High channel location |

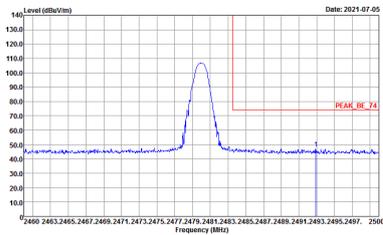
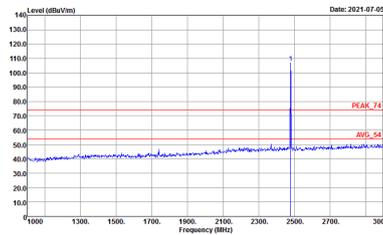


2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| | | |
|------|--|--|
| BT | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
| ANT | BT CH78 2480MHz | |
| 4+3 | Horizontal | Fundamental |
| Peak |  <p>Date: 2021-07-05</p> <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Date: 2021-07-05</p> <p>Site Condition : 03CH16-HY : PEAK_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |



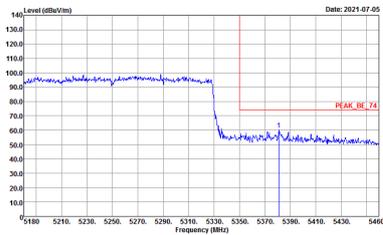
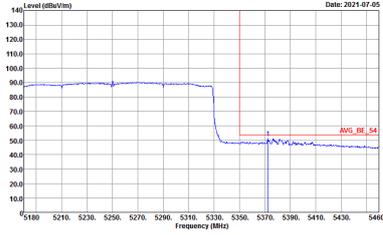
| | | |
|------|--|--|
| BT | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
| ANT | BT CH78 2480MHz | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |



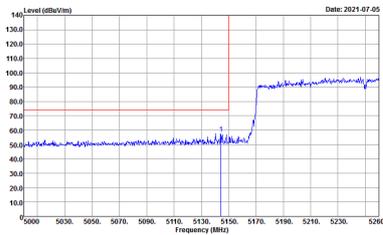
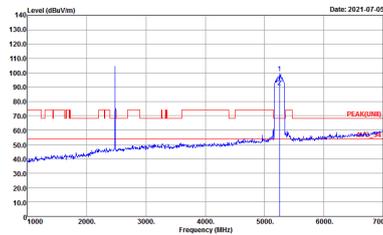
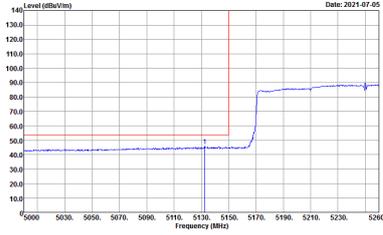
Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK(UNIT) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|--------------------|---|-------------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Horizontal | Fundamental |
| <p>Peak</p> |  <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> | <p>Left blank</p> |
| <p>Avg.</p> |  <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> | <p>Left blank</p> |



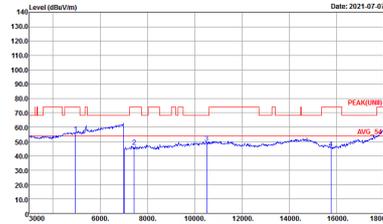
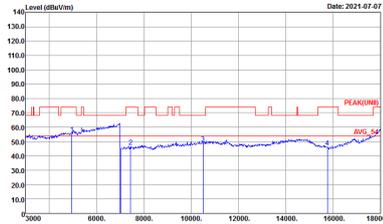
| | | |
|------|---|--|
| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|--------------------|--|-------------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Vertical | Fundamental |
| <p>Peak</p> | <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |
| <p>Avg.</p> | <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| | | |
|----------------------|--|---|
| BT +WIFI | 2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz Harmonic @ 3m | |
| ANT | BT CH78 2480MHz + 802.11ax HE160 CH50 5250MHz | |
| Simultaneously | Horizontal | Vertical |
| <p>Peak Avg.</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNI) 3m 9120D_1522 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNI) 3m 9120D_1522 VERTICAL Detector : Peak</p> |



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

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| BLE | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|---|
| ANT | BLE_CH39 2480MHz | |
| 4 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : AVG_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p> |



| BLE | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|---|
| ANT | BLE_CH39 2480MHz | |
| 4 | Vertical | Fundamental |
| Peak | <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg | <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> | <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> |



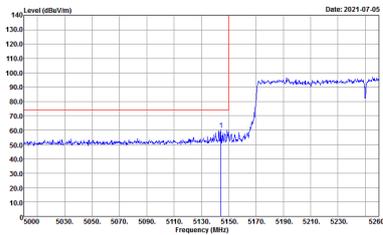
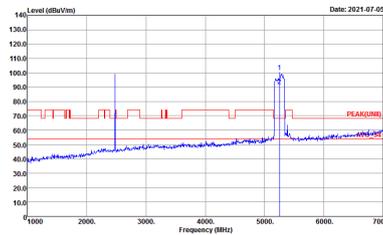
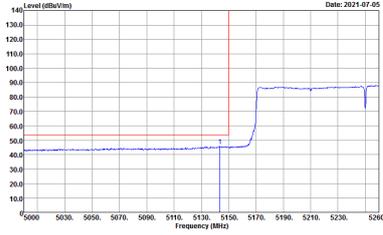
Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HV : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HV : PEAK(UNIT) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HV : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p> | Left blank |

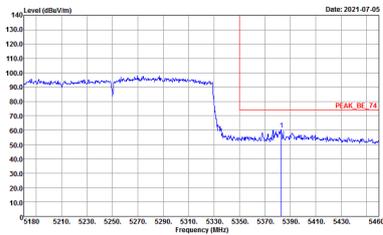
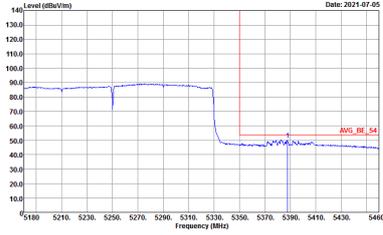


| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|--|-------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |
| Avg. | <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|---|--|
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|--------------------|---|-------------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Vertical | Fundamental |
| <p>Peak</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |
| <p>Avg.</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |



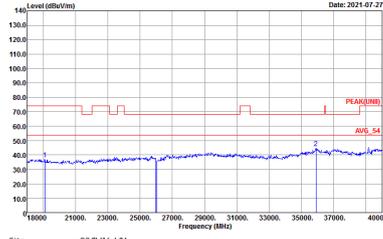
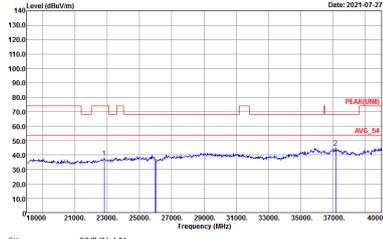
Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| | | |
|-----------------------|---|---|
| BLE + WIFI | 2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz Harmonic @ 3m | |
| ANT | BLE_CH39 2480MHz + 802.11ax HE160 CH50 5250MHz | |
| Simultaneously | Horizontal | Vertical |
| Peak Avg. | <p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 9120D_1522 HORIZONTAL Detector : Peak</p> | <p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 9120D_1522 VERTICAL Detector : Peak</p> |



Emission above 18GHz

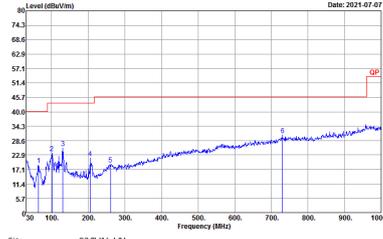
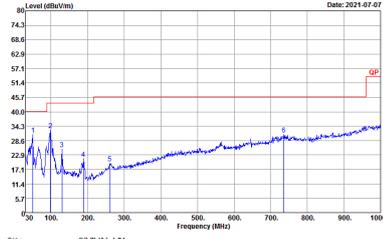
Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (SHF)

| | | |
|------------------------------|---|--|
| <p>BLE + WIFI</p> | <p>2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz</p> | |
| <p>ANT</p> | <p>BLE_CH39 2480MHz + 802.11ax HE160 CH50 5250MHz</p> | |
| <p>Simultaneously</p> | <p>Horizontal</p> | <p>Vertical</p> |
| <p>Peak Avg.</p> |  <p>Site : 03CH16-HY Condition : PEAR[UNII] 1m SHF ANT_9170_00993 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : PEAR[UNII] 1m SHF ANT_9170_00993 VERTICAL Detector : Peak</p> |



Emission below 1GHz

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch50 (LF)

| | | |
|-----------------------|---|--|
| <p>BLE + WIFI</p> | <p>2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz LF</p> | |
| <p>ANT</p> | <p>BLE_CH39 2480MHz + 802.11ax HE160 CH50 5250MHz</p> | |
| <p>Simultaneously</p> | <p>Horizontal</p> | <p>Vertical</p> |
| <p>QP / Peak</p> |  <p>Site : 03CH16-HY Condition : QP 3m 8TLOG_47020606 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : QP 3m 8TLOG_47020606 VERTICAL Detector : Peak</p> |

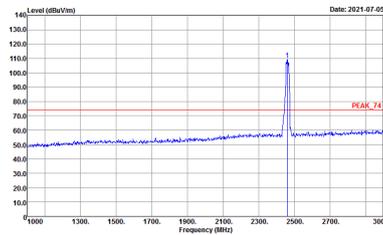
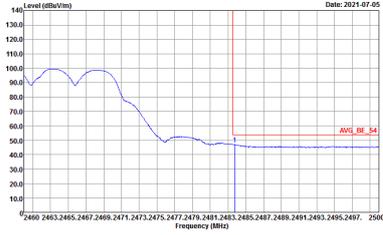
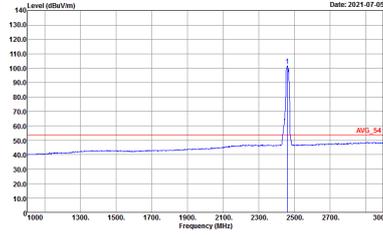


2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|---|
| ANT | 11g_CH11 2462MHz | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : AVG_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> |



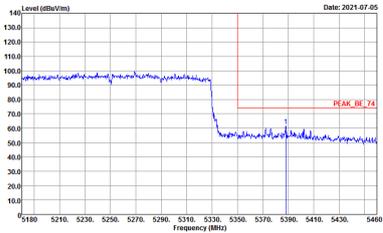
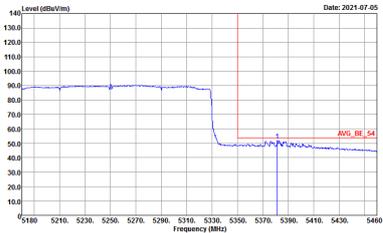
| | | |
|------|--|--|
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
| ANT | 11g_CH11 2462MHz | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> |  <p>Date: 2021-07-05</p> <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p> |



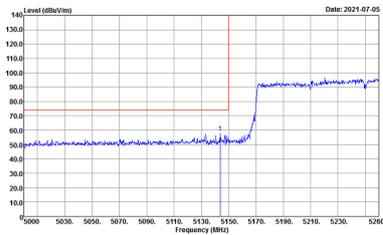
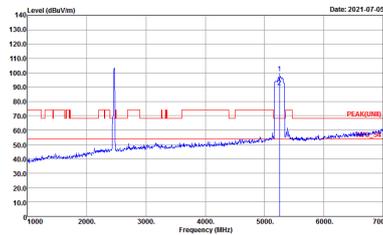
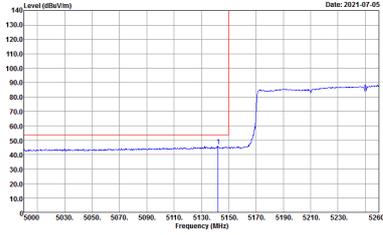
Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Band Edge @ 3m)

| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK(UNIT) 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|--------------------|---|-------------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Horizontal | Fundamental |
| <p>Peak</p> |  <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |
| <p>Avg.</p> |  <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Left blank</p> |



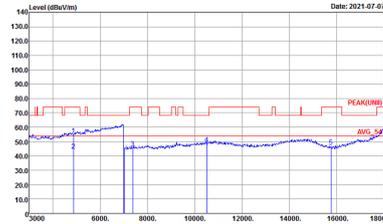
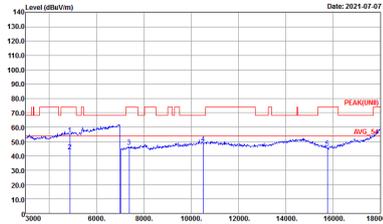
| | | |
|------|---|---|
| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
| ANT | 802.11ax HE160 CH50 5250MHz - L | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH16-HY Condition : PEAK(FUN1) 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m | |
|------|--|-------------|
| ANT | 802.11ax HE160 CH50 5250MHz - R | |
| 4+3 | Vertical | Fundamental |
| Peak | <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |
| Avg. | <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch50 (Harmonic @ 3m)

| | | |
|----------------------|---|--|
| WIFI | 2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz Harmonic @ 3m | |
| ANT | 11g_CH11 2462MHz + 802.11ax HE160 CH50 5250MHz | |
| Simultaneously | Horizontal | Vertical |
| <p>Peak Avg.</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 9120D_1522 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 9120D_1522 VERTICAL Detector : Peak</p> |



2.4GHz 2400~2483.5MHz + Band 5 - 5925~6425MHz

Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| | | |
|------|---|--|
| BT | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
| ANT | BT CH78 2480MHz | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-44Y : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-44Y : PEAK_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |



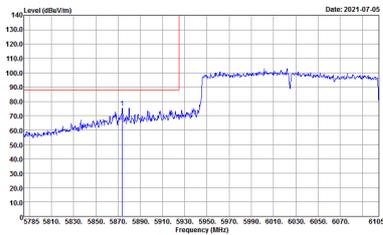
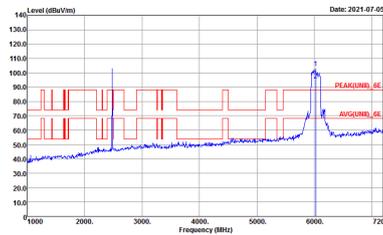
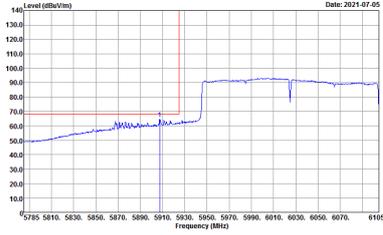
| | | |
|------|--|---|
| BT | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
| ANT | BT CH78 2480MHz | |
| 4+3 | Vertical | Fundamental |
| Peak | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK_SC_74 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
|------|--|---|
| ANT | 802.11ax HE160 CH15 6025MHz | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE(UNIT)_6E 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK(UNIT)_6E 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_BE(UNIT)_6E 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p> | Left blank |



| | | |
|------|---|--|
| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
| ANT | 802.11ax HE160 CH15 6025MHz - L | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Site : 03CH16-HY Condition : -PEAK_BE(UNIT)_6E 3m 91200_1522 VERTICAL :RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH16-HY Condition : -PEAK(UNIT)_6E 3m 91200_1522 VERTICAL :RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH16-HY Condition : -AVG_BE(UNIT)_6E 3m 91200_1522 VERTICAL :RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



Ant. 4+3_BT_Tx_Ch78 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| | | |
|-----------------------|--|-----------------|
| <p>BT + WIFI</p> | <p>2.4GHz 2400~2483.5MHz + Band 5 5925~6425MHz Harmonic @ 3m</p> | |
| <p>ANT</p> | <p>BT CH78 2480MHz + 802.11ax HE160 CH15 6025MHz</p> | |
| <p>Simultaneously</p> | <p>Horizontal</p> | <p>Vertical</p> |
| <p>Peak Avg.</p> | | |



2.4GHz 2400~2483.5MHz + Band 5 - 5925~6425MHz

Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| BLE | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|---|
| ANT | BLE_CH39 2480MHz | |
| 4 | Horizontal | Fundamental |
| Peak | <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> | <p>Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p> | <p>Site : 03CH16-HY Condition : AVG_54 3m 9120D_1522 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p> |



| BLE | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|---|
| ANT | BLE_CH39 2480MHz | |
| 4 | Vertical | Fundamental |
| Peak | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : AV6_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : AV6_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> |



Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
|------|--|---|
| ANT | 802.11ax HE160 CH15 6025MHz- L | |
| 4+3 | Horizontal | Fundamental |
| Peak | <p>Site Condition : 03CH16-HY : PEAK_BE(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site Condition : 03CH16-HY : PEAK(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site Condition : 03CH16-HY : AVG_SEC(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p> | Left blank |



| | | |
|------|--|---|
| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
| ANT | 802.11ax HE160 CH15 6025MHz- L | |
| 4+3 | Vertical | Fundamental |
| Peak | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK_BE(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : PEAK(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Date: 2021-07-06</p> <p>Site : 03CH16-HY Condition : AV6_BE(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



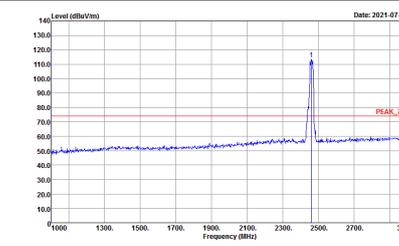
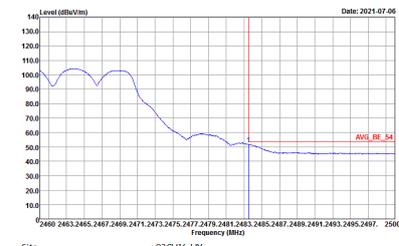
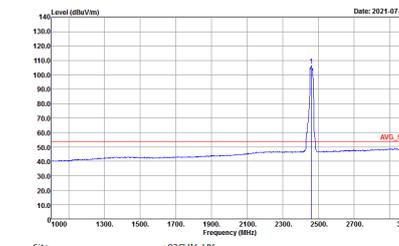
Ant. 4_BLE_Tx_Ch39 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| | | |
|-----------------------|--|-----------------|
| <p>BT + WIFI</p> | <p>2.4GHz 2400~2483.5MHz + Band 5 5925~6425MHz Harmonic @ 3m</p> | |
| <p>ANT</p> | <p>BLE_CH39 2480MHz + 802.11ax HE160 CH15 6025MHz</p> | |
| <p>Simultaneously</p> | <p>Horizontal</p> | <p>Vertical</p> |
| <p>Peak Avg.</p> | | |

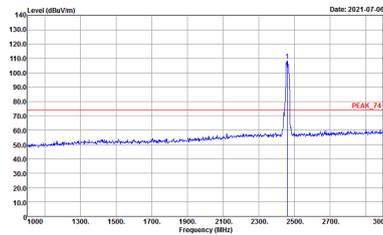
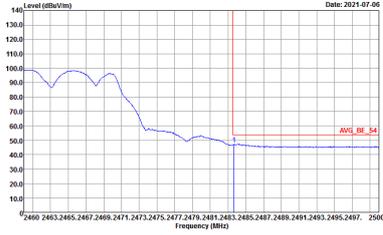
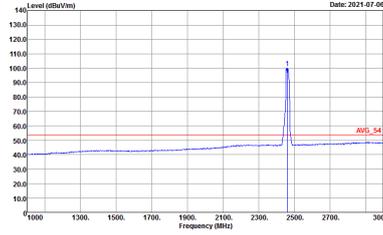


2.4GHz 2400~2483.5MHz + Band 5 - 5925~6425MHz

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax_HE160_Tx_Ch15 (Band Edge @ 3m)

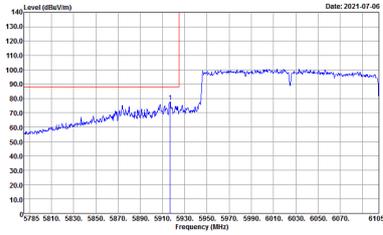
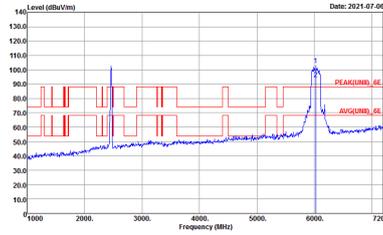
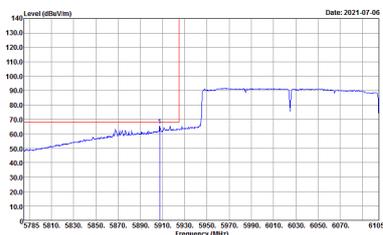
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11g CH11 2462MHz | |
| 4+3 | Horizontal | Fundamental |
| Peak |  <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site Condition : 03CH16-HY : PEAK_74 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site Condition : 03CH16-HY : AV6_BE_54 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> |  <p>Site Condition : 03CH16-HY : AV6_54 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> |



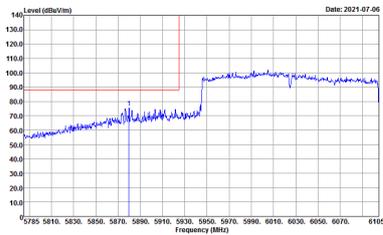
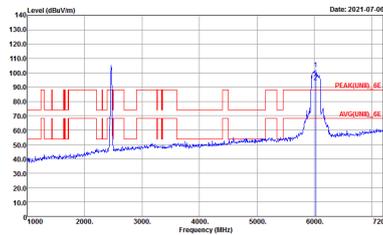
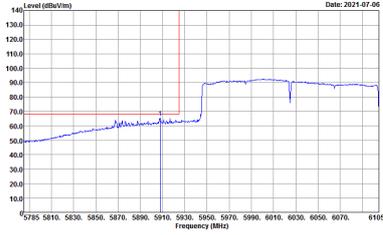
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11g CH11 2462MHz | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-HY : PEAK_BE_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-HY : PEAK_74 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg |  <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-HY : AVG_BE_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> |  <p>Date: 2021-07-06</p> <p>Site Condition : 03CH16-HY : AVG_54 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p> |



Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (Band Edge @ 3m)

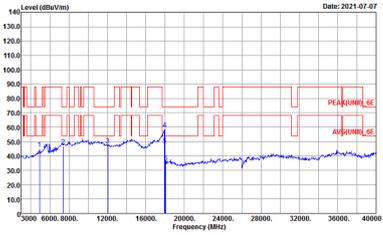
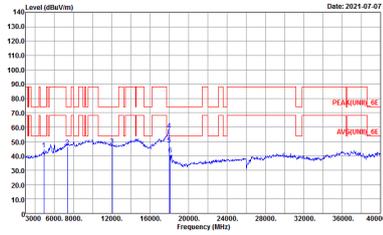
| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
|------|--|--|
| ANT | 802.11ax HE160 CH15 6025MHz- L | |
| 4+3 | Horizontal | Fundamental |
| Peak |  <p>Site Condition : 03CH16-HY : PEAK_BE(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site Condition : 03CH16-HY : PEAK(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site Condition : 03CH16-HY : AVG_SEC(UNIT)_AE 3m 91200_1522 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



| | | |
|------|---|--|
| WIFI | Band 5 5925~6425MHz Band Edge @ 3m | |
| ANT | 802.11ax HE160 CH15 6025MHz- L | |
| 4+3 | Vertical | Fundamental |
| Peak |  <p>Site : 03CH16-HY Condition : PEAK_BE(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH16-HY Condition : AV6_BE(UNIT)_AE 3m 91200_1522 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank |



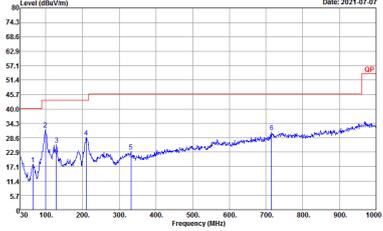
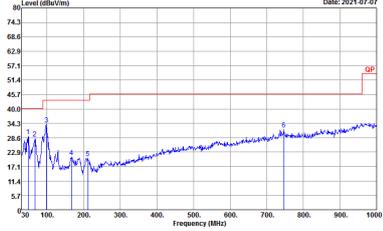
Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (Harmonic @ 3m)

| | | |
|----------------------|--|---|
| WIFI | 2.4GHz 2400~2483.5MHz + Band 5 5925~6425MHz Harmonic @ 3m | |
| ANT | 802.11g CH11 2462MHz + 802.11ax HE160 CH15 6025MHz | |
| Simultaneously | Horizontal | Vertical |
| <p>Peak Avg.</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNIT)_6E 1m SHF ANT_9170_00993 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : PEAK(UNIT)_6E 1m SHF ANT_9170_00993 VERTICAL Detector : Peak</p> |



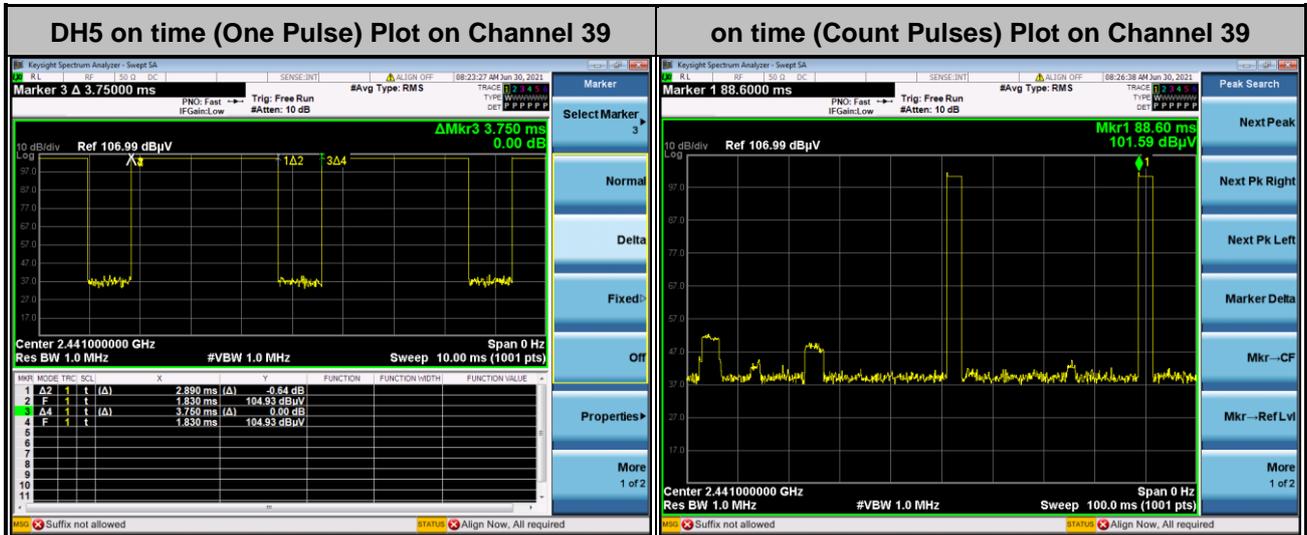
Emission below 1GHz

Ant. 4+3_11g_Tx_Ch11 + Ant. 4+3_11ax HE160_Tx_Ch15 (LF)

| | | |
|----------------|---|--|
| WIFI | 2.4GHz 2400~2483.5MHz + Band 5 5925~6425MHz LF | |
| ANT | 802.11g CH11 2462MHz + 802.11ax HE160 CH15 6025MHz | |
| Simultaneously | Horizontal | Vertical |
| QP / Peak |  <p>Site : 03CH16-HY Condition : QP 3m BILO6_47020&06 HORIZONTAL Detector : Peak</p> |  <p>Site : 03CH16-HY Condition : QP 3m BILO6_47020&06 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. DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

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

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

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

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:

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

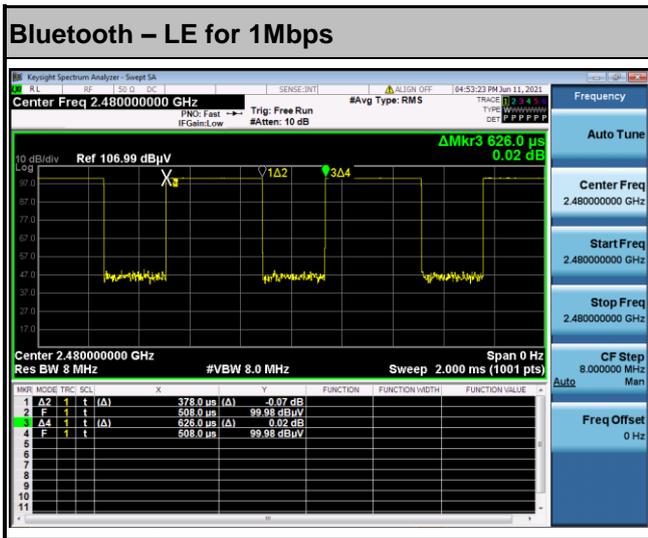
Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

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

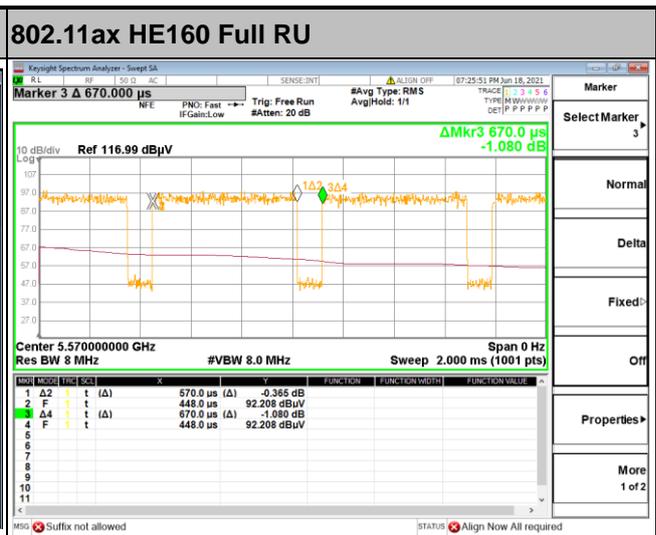
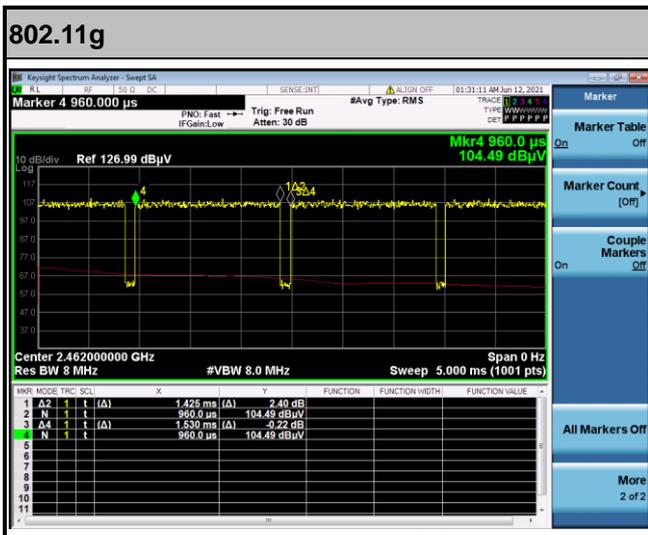


| Antenna | Band | Duty Cycle(%) | T(us) | 1/T(kHz) | VBW Setting |
|---------|-----------------------------|---------------|-------|----------|-------------|
| 4 | Bluetooth – LE for 1Mbps | 60.38 | 378 | 2.65 | 3kHz |
| 4+3 | 802.11g | 93.14 | 0.70 | 1kHz | |
| 4+3 | 5GHz 802.11ax HE160 Full RU | 85.07 | 570 | 1.75 | 3kHz |

<Ant. 4>



MIMO <Ant. 4+3>



—THE END—