# FCC RF Test Report

| | | |
|---|---|---|
| APPLICANT | : | Lenovo (Shanghai) Electronics Technology Co., Ltd. |
| EQUIPMENT | : | 802.11a/b/g/n/ac + BT 4.1 M.2 2230 Type Card |
| BRAND NAME | : | Lenovo |
| MODEL NAME | : | QCNFA344A |
| FCC ID | : | O57-QCNFA344AH |
| STANDARD | : | FCC Part 15 Subpart E §15.407 |
| CLASSIFICATION | : | (NII) Unlicensed National Information Infrastructure |

The product was installed into Notebook Computer (Brand Name: Lenovo, Model Name: Lenovo YOGA 920-13IKBXXXXXX, 80Y7XXXXXX, Lenovo YOGA 920-13IKB GlassXXXXXX, 80Y8XXXXXX, Lenovo YOGA 6 ProXXXXXX (The"X"in model name can be 0 to 9,A to Z,a to z,"-"or blank), Marketing Name: Lenovo YOGA 920) during test.

The product was received on Jun. 02, 2017 and testing was completed on Jul. 05, 2017. We, Sporton International (KunShan) INC., 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 (KunShan) INC., the test report shall not be reproduced except in full.

James Huang

Prepared by: James Huang / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

*Sporton International (KunShan) INC.*
*No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China*

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# REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FR760219E | Rev. 01 | Initial issue of report | Aug. 03, 2017 |
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# SUMMARY OF TEST RESULT

| Report Section | FCC Rule | Description | Limit | Result | Remark |
|---|---|---|---|---|---|
| 3.1 | 15.403(i) | 6dB, 26dB and 99% Occupied Bandwidth | > 500kHz | Pass | - |
| 3.2 | 15.407(a) | Maximum Conducted Output Power | ≤ 30 dBm | Pass | - |
| 3.3 | 15.407(a) | Power Spectral Density | ≤ 30 dBm/500kHz | Pass | - |
| 3.4 | 15.407(b) | Unwanted Emissions | 15.407(b)(4)(i) ≤ -17, -27 dBm/MHz &15.209(a) | Pass | Under limit 7.39 dB at 31.940 MHz |
| 3.5 | 15.207 | AC Conducted Emission | 15.207(a) | Pass | Under limit 12.07 dB at 4.361 MHz |
| 3.6 | 15.407(g) | Frequency Stability | Within Operation Band | Pass | - |
| 3.7 | 15.407(c) | Automatically Discontinue Transmission | Discontinue Transmission | Pass | - |
| 3.8 | 15.203 & 15.407(a) | Antenna Requirement | N/A | Pass | - |

# 1 General Description

## 1.1 Applicant

**Lenovo (Shanghai) Electronics Technology Co., Ltd.**
NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

## 1.2 Product Feature of Equipment Under Test

| Product Feature | |
|---|---|
| **Equipment** | 802.11a/b/g/n/ac + BT 4.1 M.2 2230 Type Card |
| **Brand Name** | Lenovo |
| **Model Name** | QCNFA344A |
| **FCC ID** | O57-QCNFA344AH |
| **EUT supports Radios application** | WLAN 2.4GHz 802.11b/g/n/ac HT20/HT40/VHT20/VHT40<br>WLAN 5GHz 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80<br>Bluetooth v3.0+EDR, Bluetooth v4.0 LE, Bluetooth v4.1 LE |
| **EUT Stage** | Identical Prototype |

| Host Product Feature | |
|---|---|
| **Equipment** | Notebook Computer |
| **Brand Name** | Lenovo |
| **Model Name** | Lenovo YOGA 920-13IKBXXXXXX, 80Y7XXXXXX, Lenovo YOGA 920-13IKB GlassXXXXXX, 80Y8XXXXXX, Lenovo YOGA 6 ProXXXXXX (The"X"in model name can be 0 to 9,A to Z,a to z,"-"or blank) |
| **Marketing Name** | Lenovo YOGA 920 |
| **Applicant** | **Lenovo (Shanghai) Electronics Technology Co., Ltd.**<br>NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, Shanghai, 200131 China |
| **Manufacturer** | **Lenovo PC HK Limited**<br>23/F, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay Hong Kong |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.3 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Standards-related Product Specification</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>5745 MHz ~ 5825 MHz</td></tr>
<tr><td>Maximum (Average) Output Power to antenna</td><td>802.11a : 17.45 dBm (0.0556 W<br>802.11n HT20 : 17.17 dBm (0.0521 W)<br>802.11n HT40 : 16.42 dBm (0.0439 W)<br>802.11ac VHT20 : 17.25 dBm (0.0531 W)<br>802.11ac VHT40 : 16.56 dBm (0.0453 W)<br>802.11ac VHT80 : 10.60 dBm (0.0115 W)</td></tr>
<tr><td>Antenna Type / Gain</td><td>Chain Port 1: PIFA Antenna with gain -0.26 dBi<br>Chain Port 2: PIFA Antenna with gain 2.07 dBi</td></tr>
<tr><td>Type of Modulation</td><td>802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)</td></tr>
<tr><td>Antenna Function Description</td><td><table>
<tr><th></th><th>Chain Port 1</th><th>Chain Port 2</th></tr>
<tr><td>802.11 a/n/ac SISO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 a/n/ac MIMO</td><td>V</td><td>V</td></tr>
</table></td></tr>
</table>

**Note:**

1. MIMO Chain Port 1+2 is a calculated result from sum of the power MIMO Chain Port 1 and MIMO Chain Port 2.
2. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing has assessed only 802.11ac VHT20 / VHT40 by referring to their maximum conducted power.

## 1.4 Modification of EUT

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

## 1.5 Testing Location

| | | | | |
|---|---|---|---|---|
| **Test Site** | Sporton International (KunShan) INC. | | | |
| **Test Site Location** | No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 | | | |
| **Test Site No.** | **Sporton Site No.** | | | **FCC Registration No.** |
| | TH01-KS | CO01-KS | 03CH03-KS | 306251 |

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

## 1.6 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 KDB 789033 D02 General UNII Test Procedures New Rules v01r04
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- 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. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

# 2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

## 2.1 Carrier Frequency and Channel

| Frequency Band | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|---|---|---|---|---|
| 5725-5850 MHz Band 4 (U-NII-3) | 149 | 5745 | 157 | 5785 |
| | 151* | 5755 | 159* | 5795 |
| | 153 | 5765 | 161 | 5805 |
| | 155# | 5775 | 165 | 5825 |

**Note:**

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "#" were 802.11ac VHT80.

## 2.2 Test Mode

**Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.**

**MIMO Antenna**

| Modulation | Data Rate |
|---|---|
| 802.11a | 6 Mbps |
| 802.11ac VHT20 | MCS0 |
| 802.11ac VHT40 | MCS0 |
| 802.11ac VHT80 | MCS0 |

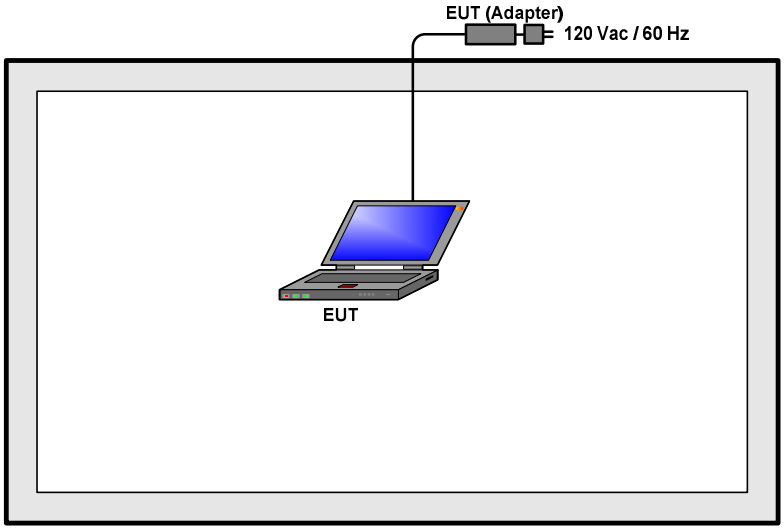
| Test Cases | |
|---|---|
| AC Conducted Emission | Mode 1 :Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 1 + USB Link with U Disk USB Port + Paly H Plane + Adapter 1 With Type C 1 + USB Link with Type C 2 for Sample 1<br>Mode 2 : Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 1 + USB Link with U Disk USB Port + MPEG4/Color Bar + Adapter 1 With Type C 1 + USB Link with Type C 2 for Sample 1<br>Mode 3 : **Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 2 + USB Link with U Disk USB Port + Adapter 2 With Type C 1 + USB Link with Type C 2 for Sample 2**<br>Mode 4 : Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 3 + USB Link with U Disk USB Port + Adapter 3 With Type C 1 + USB Link with Type C 2 for Sample 3<br>Mode 5 : Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 4 + USB Link with U Disk USB Port + Adapter 4 With Type C 1 + USB Link with Type C 2 for Sample 4<br>Mode 6 : Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 5 + USB Link with U Disk USB Port + Adapter 1 With Type C 1 + USB Link with Type C 2 for Sample 5 |
| **Remark:**<br>1. The worst case of conducted emission is mode 3; only the test data of it was reported.<br>2. Type C 1 is USB charging port, Type C 2 is USB link port. | |

| Ch. # | | Band IV：5725-5850 MHz | | |
|---|---|---|---|---|
| | | 802.11a | 802.11n HT20 | 802.11n HT40 |
| L | Low | 149 | 149 | 151 |
| M | Middle | 157 | 157 | - |
| H | High | 165 | 165 | 159 |

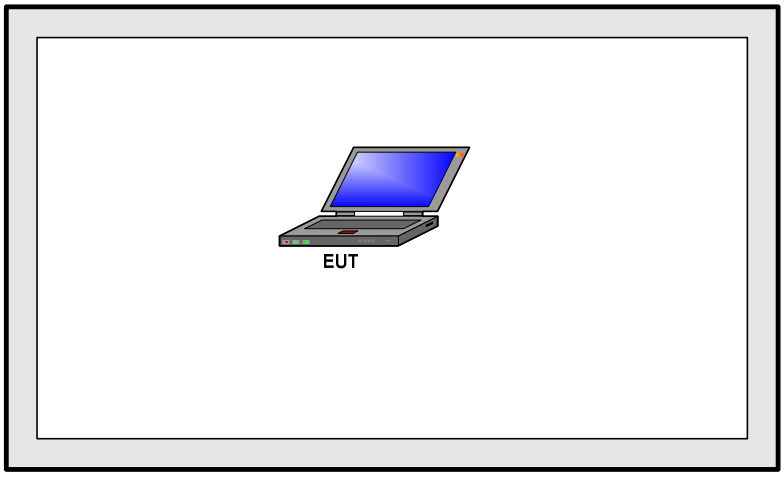
| Ch. # | | Band IV：5725-5850 MHz | | |
|---|---|---|---|---|
| | | 802.11ac VHT20 | 802.11ac VHT40 | 802.11ac VHT80 |
| L | Low | 149 | 151 | - |
| M | Middle | 157 | - | 155 |
| H | High | 165 | 159 | - |

## 2.3 Connection Diagram of Test System

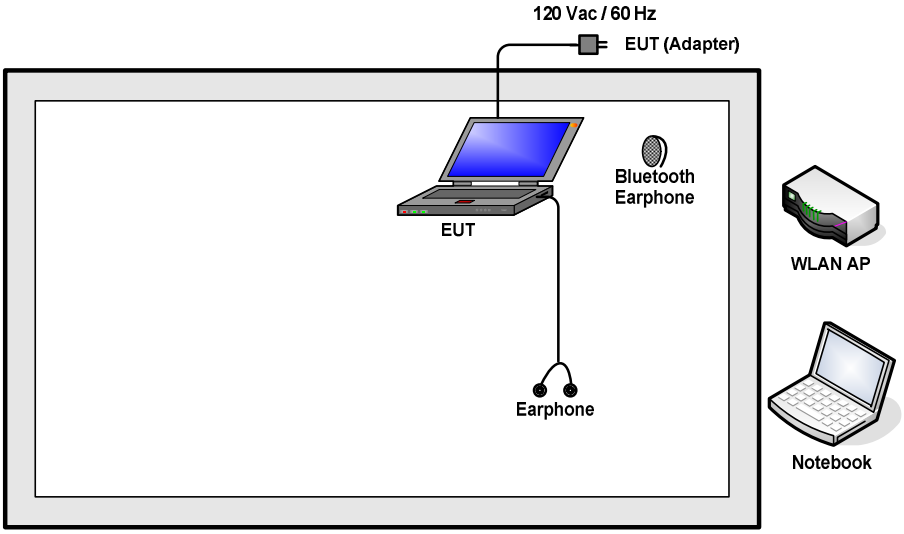
**<802.11a/ac VHT40/80 Tx Mode>**




**<802.11ac VHT20 Tx Mode>**



**<AC Conducted Emission Mode>**



## 2.4 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model Name | FCC ID | Data Cable | Power Cord |
|---|---|---|---|---|---|---|
| 1. | WLAN AP | D-Link | DIR-855 | KA2DIR855A2 | N/A | Unshielded, 1.8 m |
| 2. | Notebook | Lenovo | G480 | N/A | N/A | AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m |
| 3. | Bluetooth Earphone | Nokia | BH-102 | PYAHS-107W | N/A | N/A |

## 2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

## 2.6 Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss.

*Offset = RF cable loss.*

Following shows an offset computation example with cable loss 6.8 dB.

*Offset(dB) = RF cable loss(dB) + attenuator factor(dB).*

=6.8 (dB)

# 3 Test Result

## 3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

### 3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

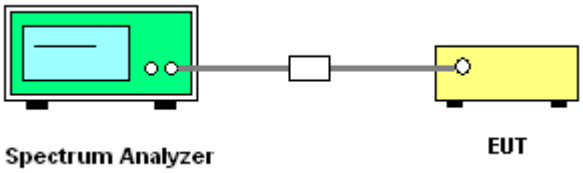
### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

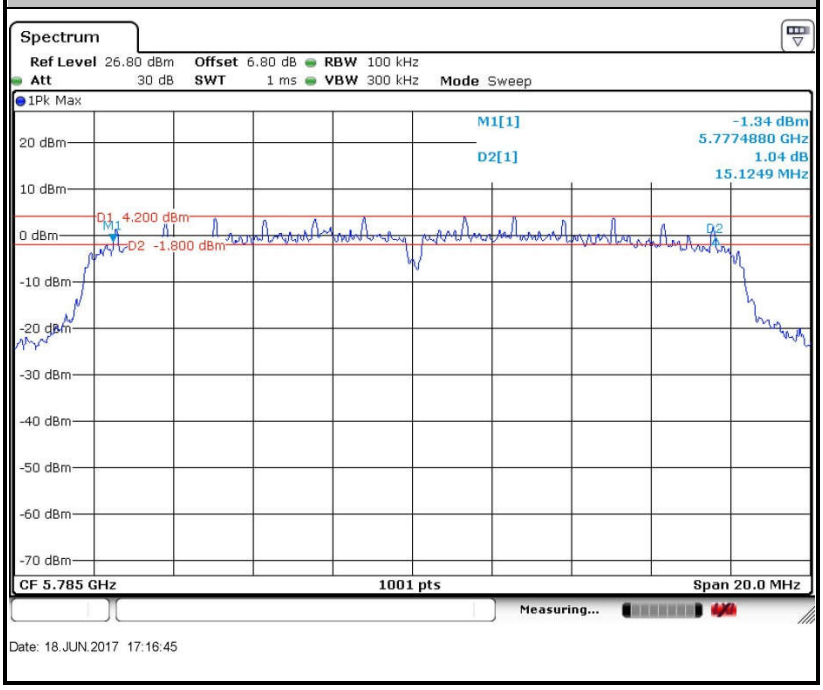
### 3.1.4 Test Setup



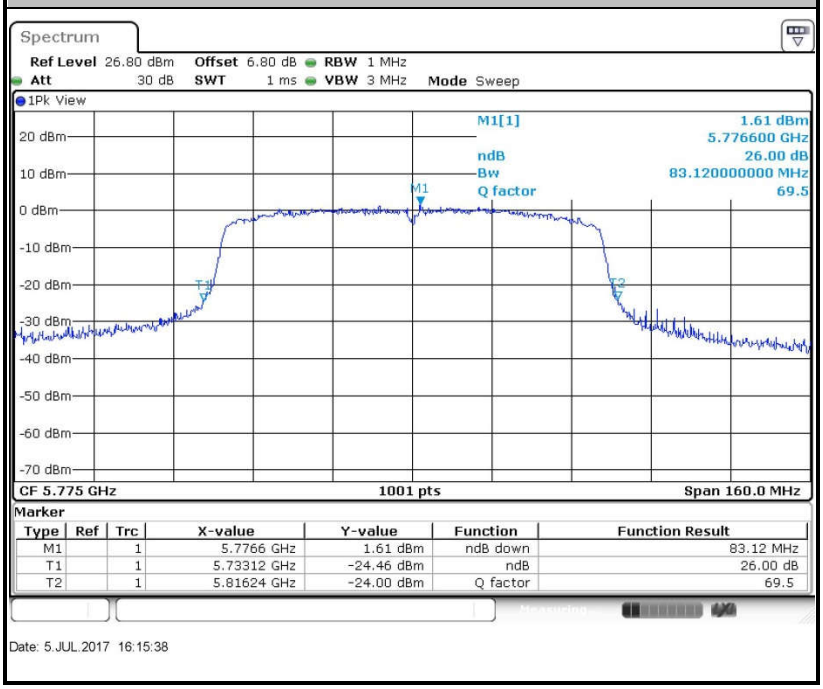
### 3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

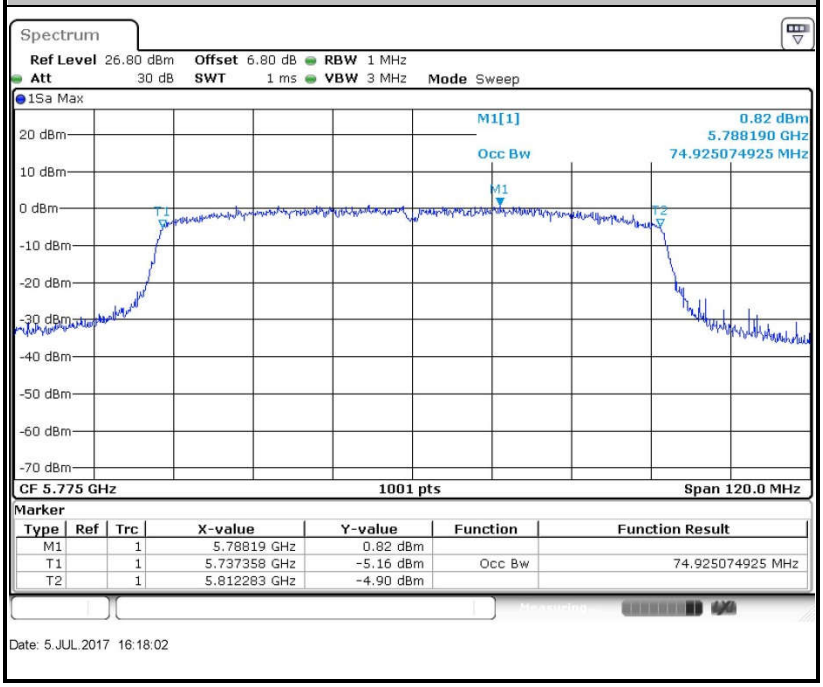
**Minimum 6dB Bandwidth**




**Maximum 26dB Bandwidth**



**Maximum 99% Occupied Bandwidth**




**Note:** The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

## 3.2 Maximum Conducted Output Power Measurement

### 3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

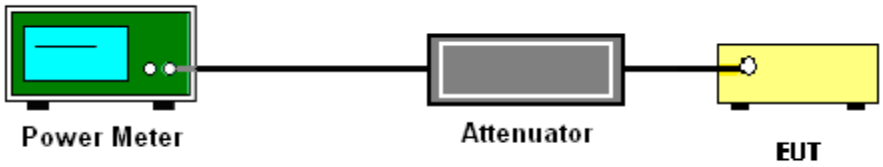
### 3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

### 3.2.4 Test Setup




### 3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

## 3.3 Power Spectral Density Measurement

### 3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section F) Maximum power spectral density.

**# Method SA-2 #**

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

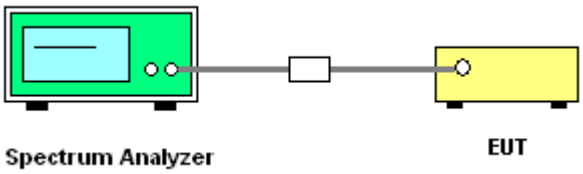
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(500kHz/RBW) to the test result.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

   Method (c): Measure and add 10 log($N_{ANT}$) dB.

   With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log($N_{ANT}$) dB is added to each spectrum value before comparing to the emission limit. The addition of 10 log($N_{ANT}$) dB serves to apportion the emission limit among the $N_{ANT}$ outputs so that each output is permitted to contribute no more than $1/N_{ANT}$ $^{th}$ of the PSD limit.

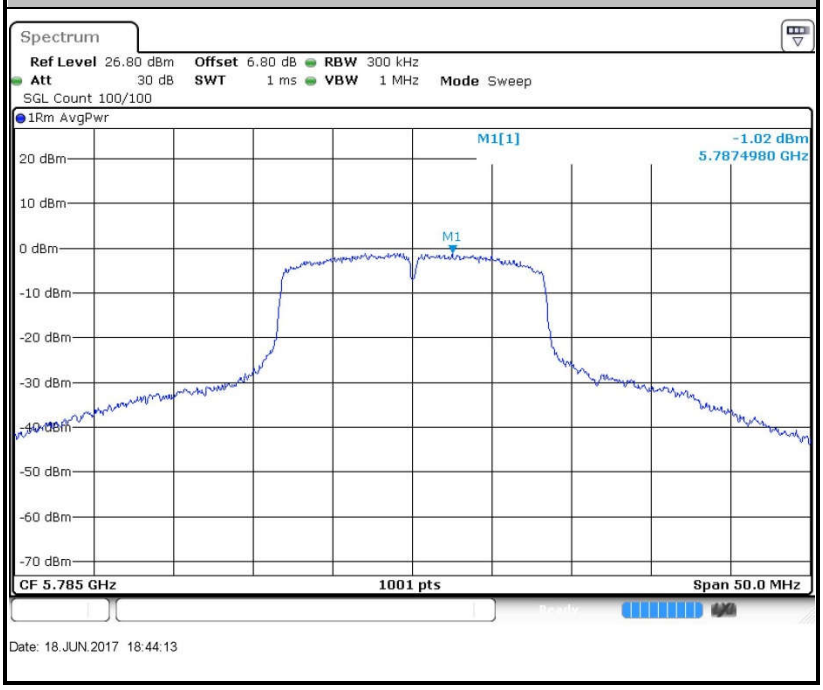
### 3.3.4 Test Setup



### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

**Worst Case Power Density (dBm/300kHz)**



## 3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

### 3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

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

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

| EIRP (dBm) | Field Strength at 3m (dBμV/m) |
|---|---|
| -17 | 78.3 |
| - 27 | 68.3 |

(3) KDB789033 D02 v01r04 G)2)c)

(i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits 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.[3]

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.[4]

**Note 3:** An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

**Note 4:** Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

### 3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

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

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

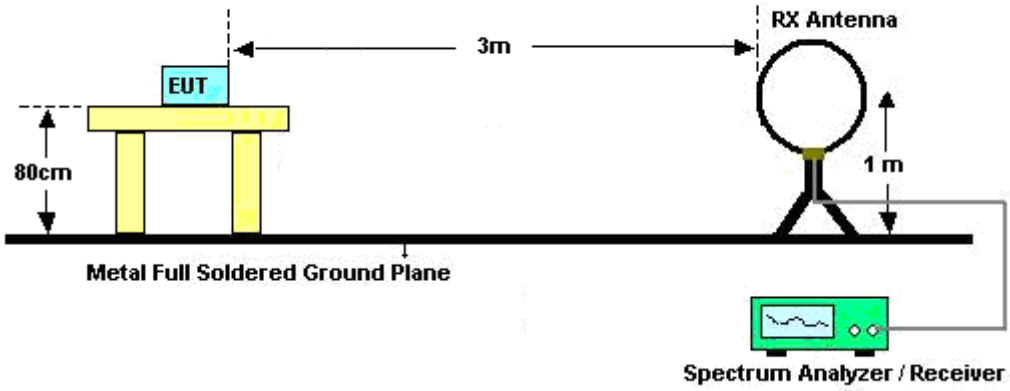
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

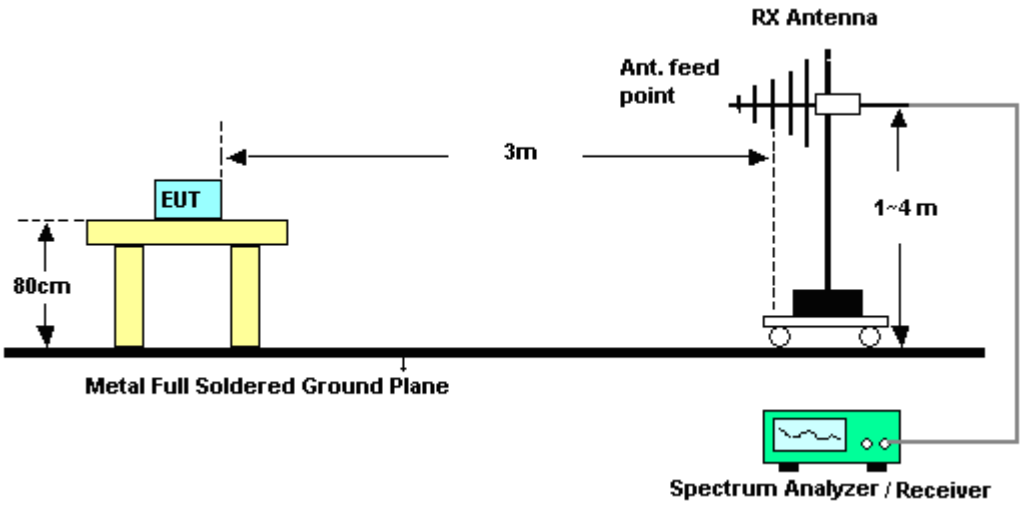
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

### 3.4.4 Test Setup

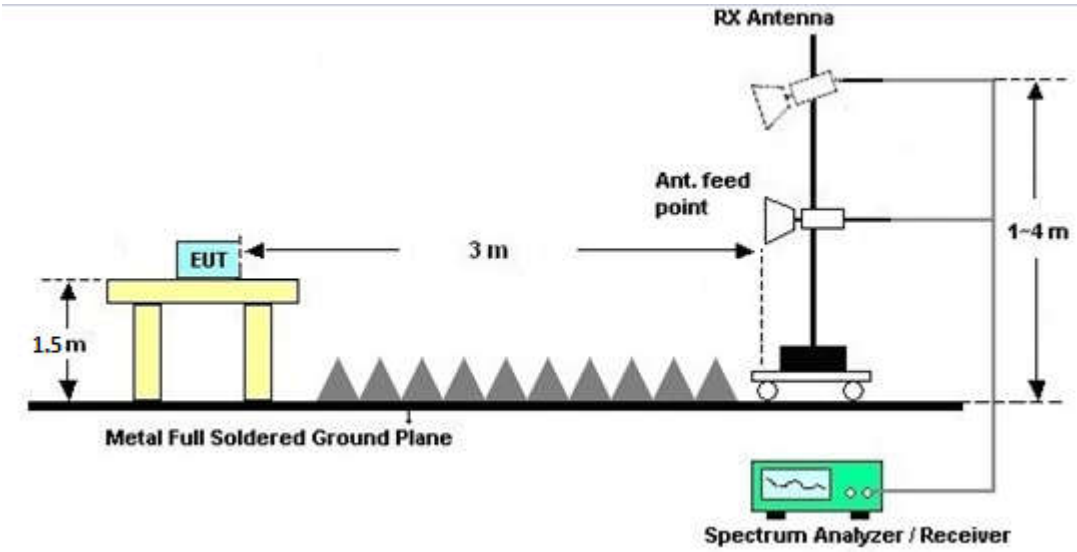
**For radiated emissions below 30MHz**



**For radiated emissions from 30MHz to 1GHz**




**For radiated emissions above 1GHz**



### 3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

### 3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

### 3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

## 3.5 AC Conducted Emission Measurement

### 3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of emission (MHz) | Conducted limit (dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

For terminal test result, the testing follows FCC KDB 174176.

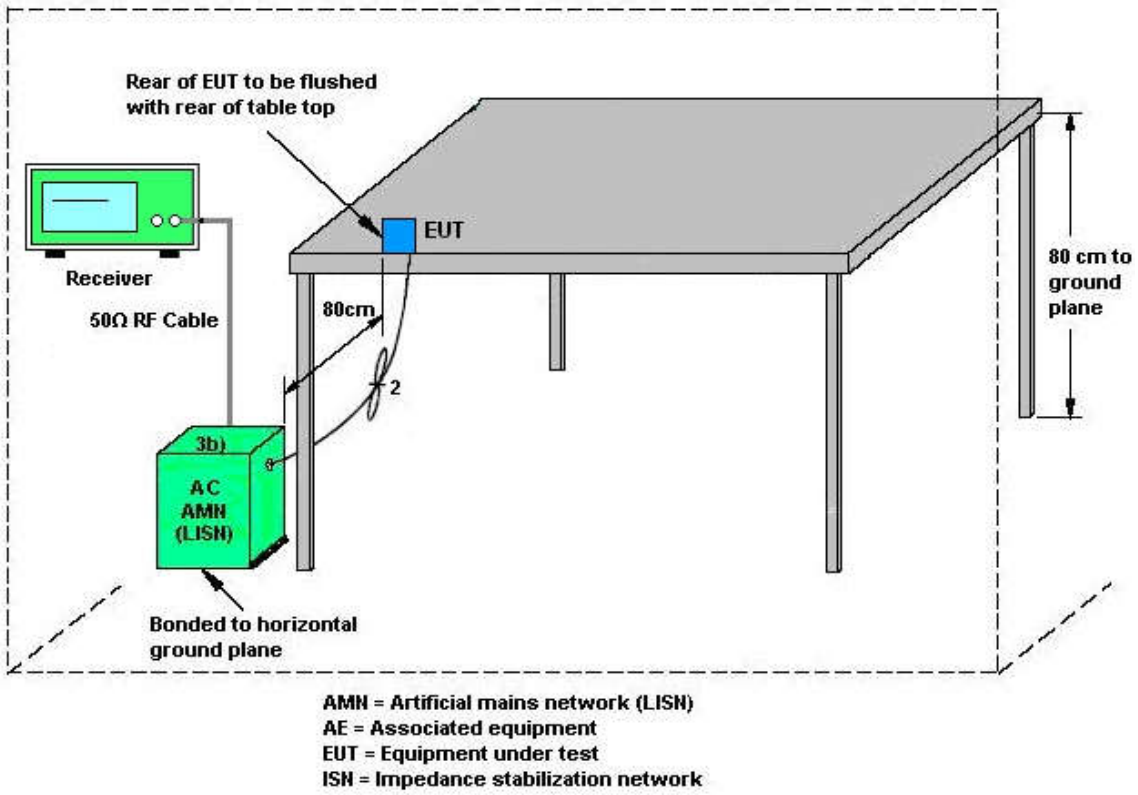
### 3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.5.3 Test Procedures

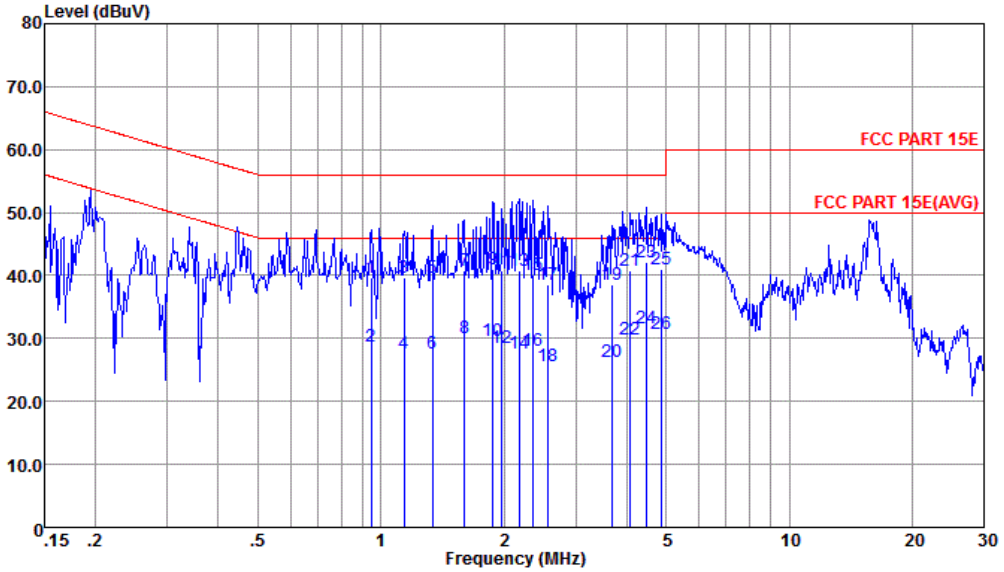
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.5.4 Test Setup



### 3.5.5 Test Result of AC Conducted Emission

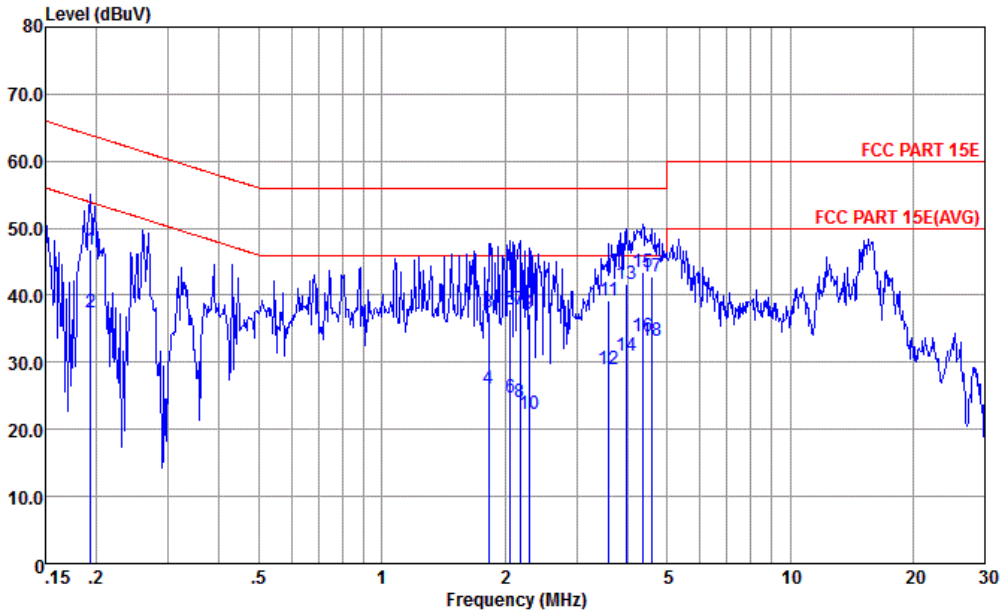
| | | | |
|---|---|---|---|
| **Test Mode :** | Mode 3 | **Temperature :** | 22~24℃ |
| **Test Engineer :** | Amos Zhang | **Relative Humidity :** | 42~46% |
| **Test Voltage :** | 120Vac / 60Hz | **Phase :** | Line |
| **Function Type :** | Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 2 + USB Link with U Disk USB Port + Adapter 2 With Type C 1 + USB Link with Type C 2 for Sample 2 | | |




Site : CO01-KS
Condition : FCC PART 15E LISN-L-161017-060103 LINE

| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.948 | 39.64 | -16.36 | 56.00 | 29.19 | 0.26 | 10.19 | QP |
| 2 | 0.948 | 28.74 | -17.26 | 46.00 | 18.29 | 0.26 | 10.19 | Average |
| 3 | 1.141 | 39.64 | -16.36 | 56.00 | 29.20 | 0.25 | 10.19 | QP |
| 4 | 1.141 | 27.64 | -18.36 | 46.00 | 17.20 | 0.25 | 10.19 | Average |
| 5 | 1.338 | 39.73 | -16.27 | 56.00 | 29.30 | 0.24 | 10.19 | QP |
| 6 | 1.338 | 27.63 | -18.37 | 46.00 | 17.20 | 0.24 | 10.19 | Average |
| 7 | 1.602 | 40.71 | -15.29 | 56.00 | 30.29 | 0.23 | 10.19 | QP |
| 8 | 1.602 | 30.01 | -15.99 | 46.00 | 19.59 | 0.23 | 10.19 | Average |
| 9 | 1.878 | 41.00 | -15.00 | 56.00 | 30.60 | 0.21 | 10.19 | QP |
| 10 | 1.878 | 29.60 | -16.40 | 46.00 | 19.20 | 0.21 | 10.19 | Average |
| 11 | 1.980 | 40.70 | -15.30 | 56.00 | 30.30 | 0.21 | 10.19 | QP |
| 12 | 1.980 | 28.50 | -17.50 | 46.00 | 18.10 | 0.21 | 10.19 | Average |
| 13 | 2.178 | 40.70 | -15.30 | 56.00 | 30.30 | 0.21 | 10.19 | QP |
| 14 | 2.178 | 27.60 | -18.40 | 46.00 | 17.20 | 0.21 | 10.19 | Average |
| 15 | 2.358 | 40.21 | -15.79 | 56.00 | 29.80 | 0.21 | 10.20 | QP |
| 16 | 2.358 | 28.01 | -17.99 | 46.00 | 17.60 | 0.21 | 10.20 | Average |
| 17 | 2.554 | 38.62 | -17.38 | 56.00 | 28.20 | 0.21 | 10.21 | QP |
| 18 | 2.554 | 25.62 | -20.38 | 46.00 | 15.20 | 0.21 | 10.21 | Average |
| 19 | 3.681 | 38.64 | -17.36 | 56.00 | 28.20 | 0.21 | 10.23 | QP |
| 20 | 3.681 | 26.34 | -19.66 | 46.00 | 15.90 | 0.21 | 10.23 | Average |
| 21 | 4.092 | 40.75 | -15.25 | 56.00 | 30.30 | 0.21 | 10.24 | QP |
| 22 | 4.092 | 29.95 | -16.05 | 46.00 | 19.50 | 0.21 | 10.24 | Average |
| 23 * | 4.454 | 42.05 | -13.95 | 56.00 | 31.60 | 0.21 | 10.24 | QP |
| 24 | 4.454 | 31.55 | -14.45 | 46.00 | 21.10 | 0.21 | 10.24 | Average |
| 25 | 4.874 | 41.05 | -14.95 | 56.00 | 30.60 | 0.21 | 10.24 | QP |
| 26 | 4.874 | 30.65 | -15.35 | 46.00 | 20.20 | 0.21 | 10.24 | Average |

| | | | |
|---|---|---|---|
| **Test Mode :** | Mode 3 | **Temperature :** | 22~24℃ |
| **Test Engineer :** | Amos Zhang | **Relative Humidity :** | 42~46% |
| **Test Voltage :** | 120Vac / 60Hz | **Phase :** | Neutral |
| **Function Type :** | Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery 2 + USB Link with U Disk USB Port + Adapter 2 With Type C 1 + USB Link with Type C 2 for Sample 2 | | |




Site : CO01-KS
Condition : FCC PART 15E LISN-N-161017-060103 NEUTRAL

| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.193 | 46.87 | -17.02 | 63.89 | 36.20 | 0.33 | 10.34 | QP |
| 2 | 0.193 | 37.47 | -16.42 | 53.89 | 26.80 | 0.33 | 10.34 | Average |
| 3 | 1.829 | 37.40 | -18.60 | 56.00 | 26.80 | 0.41 | 10.19 | QP |
| 4 | 1.829 | 26.10 | -19.90 | 46.00 | 15.50 | 0.41 | 10.19 | Average |
| 5 | 2.066 | 37.90 | -18.10 | 56.00 | 27.30 | 0.41 | 10.19 | QP |
| 6 | 2.066 | 24.70 | -21.30 | 46.00 | 14.10 | 0.41 | 10.19 | Average |
| 7 | 2.178 | 37.80 | -18.20 | 56.00 | 27.20 | 0.41 | 10.19 | QP |
| 8 | 2.178 | 24.10 | -21.90 | 46.00 | 13.50 | 0.41 | 10.19 | Average |
| 9 | 2.297 | 37.20 | -18.80 | 56.00 | 26.59 | 0.41 | 10.20 | QP |
| 10 | 2.297 | 22.20 | -23.80 | 46.00 | 11.59 | 0.41 | 10.20 | Average |
| 11 | 3.603 | 39.12 | -16.88 | 56.00 | 28.50 | 0.39 | 10.23 | QP |
| 12 | 3.603 | 28.92 | -17.08 | 46.00 | 18.30 | 0.39 | 10.23 | Average |
| 13 | 3.964 | 41.73 | -14.27 | 56.00 | 31.10 | 0.39 | 10.24 | QP |
| 14 | 3.964 | 30.93 | -15.07 | 46.00 | 20.30 | 0.39 | 10.24 | Average |
| 15 | 4.361 | 43.53 | -12.47 | 56.00 | 32.91 | 0.38 | 10.24 | QP |
| 16 * | 4.361 | 33.93 | -12.07 | 46.00 | 23.31 | 0.38 | 10.24 | Average |
| 17 | 4.574 | 42.83 | -13.17 | 56.00 | 32.21 | 0.38 | 10.24 | QP |
| 18 | 4.574 | 33.23 | -12.77 | 46.00 | 22.61 | 0.38 | 10.24 | Average |

## 3.6 Frequency Stability Measurement

### 3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

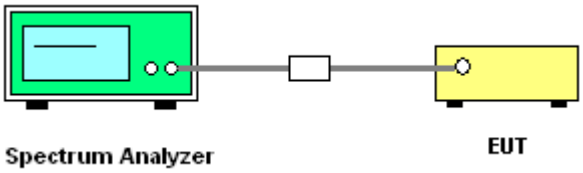
### 3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

### 3.6.4 Test Setup




### 3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.

## 3.7 Automatically Discontinue Transmission

### 3.7.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

### 3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.7.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

## 3.8 Antenna Requirements

### 3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

### 3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = $G_{ANT}$ + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log($N_{ANT}/N_{SS}$=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with $G_{ANT}$ set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain $G_{ANT}$ is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

| | Ant 1 (dBi) | Ant 2 (dBi) | DG for Power (dBi) | DG for PSD (dBi) | Power Limit Reduction (dB) | PSD Limit Reduction (dB) |
|---|---|---|---|---|---|---|
| Band IV | -0.26 | 2.07 | 2.07 | 3.99 | 0.00 | 0.00 |

*Power limit reduction = Composite gain – 6dBi, ( min = 0 )*

*PSD limit reduction = Composite gain + PSD Array gain – 6dBi, ( min = 0 )*

# 4 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| Spectrum Analyzer | R&S | FSV40 | 101040 | 10Hz~40GHz | Aug. 09, 2016 | Jun. 18, 2017~ Jul. 05, 2017 | Aug. 08, 2017 | Conducted (TH01-KS) |
| Power Meter | Anritsu | ML2495A | 1005002 | 50MHz Bandwidth | Jan. 19, 2017 | Jun. 18, 2017~ Jul. 05, 2017 | Jan. 18, 2018 | Conducted (TH01-KS) |
| Pulse Power Senor | Anritsu | MA2411B | 0917070 | 300MHz~40GHz | Jan. 19, 2017 | Jun. 18, 2017~ Jul. 05, 2017 | Jan. 18, 2018 | Conducted (TH01-KS) |
| Thermal Chamber | Hongzhan | LP-150U | HZ014011440 | -40~+150°C 20%~95%RH | Apr.18, 2017 | Jun. 18, 2017~ Jul. 05, 2017 | Apr. 17, 2018 | Conducted (TH01-KS) |
| EMI Test Receiver | R&S | ESR7 | 101403 | 9kHz~7GHz; Max 30dBm | Aug. 09, 2016 | Jun. 15, 2017 | Aug. 08, 2017 | Radiation (03CH03-KS) |
| EXA Spectrum Analyzer | Keysight | N9010A | MY55150244 | 10Hz~44GHz | Apr. 18, 2017 | Jun. 15, 2017 | Apr. 17, 2018 | Radiation (03CH03-KS) |
| Loop Antenna | R&S | HFH2-Z2 | 100321 | 9kHz~30MHz | Nov. 23, 2016 | Jun. 15, 2017 | Nov. 22, 2017 | Radiation (03CH03-KS) |
| Bilog Antenna | TeseQ | CBL6112D | 35406 | 25MHz~2GHz | Apr. 22, 2017 | Jun. 15, 2017 | Apr. 21, 2018 | Radiation (03CH03-KS) |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-1356 | 1GHz~18GHz | Apr. 22, 2017 | Jun. 15, 2017 | Apr. 21, 2018 | Radiation (03CH03-KS) |
| SHF-EHF Horn | com-power | AH-840 | 101070 | 18GHz ~40GHz | Oct. 19, 2016 | Jun. 15, 2017 | Oct. 18, 2017 | Radiation (03CH03-KS) |
| Amplifier | com-power | PA-103A | 161069 | 1MHz ~1000MHz / 32 dB | Apr. 18, 2017 | Jun. 15, 2017 | Apr. 17, 2018 | Radiation (03CH03-KS) |
| High Gain Amplifier | MITEQ | AMF-7D-00101 800-30-10P | 2025788 | 1GHz~18GHz | Apr. 18, 2017 | Jun. 15, 2017 | Apr. 17, 2018 | Radiation (03CH03-KS) |
| Amplifier | Agilent | 8449B | 3008A02370 | 1GHz~26.5GHz | Oct. 13, 2016 | Jun. 15, 2017 | Oct. 12, 2017 | Radiation (03CH03-KS) |
| Amplifier | MITEQ | TTA1840-35-H G | 1887435 | 18GHz~40GHz | Oct. 13, 2016 | Jun. 15, 2017 | Oct. 12, 2017 | Radiation (03CH03-KS) |
| AC Power Source | Chroma | 61601 | F104090004 | N/A | NCR | Jun. 15, 2017 | NCR | Radiation (03CH03-KS) |
| Turn Table | ChamPro | EM 1000-T | 060762-T | 0~360 degree | NCR | Jun. 15, 2017 | NCR | Radiation (03CH03-KS) |
| Antenna Mast | ChamPro | EM 1000-A | 060762-A | 1 m~4 m | NCR | Jun. 15, 2017 | NCR | Radiation (03CH03-KS) |
| EMI Receiver | R&S | ESCI7 | 100768 | 9kHz~7GHz | Apr. 20, 2017 | Jul. 04, 2017 | Apr. 19, 2018 | Conduction (CO01-KS) |
| AC LISN | MessTec | AN3016 | 060103 | 9kHz~30MHz | Oct. 13, 2016 | Jul. 04, 2017 | Oct. 12, 2017 | Conduction (CO01-KS) |
| AC LISN (for auxiliary equipment) | MessTec | AN3016 | 060105 | 9kHz~30MHz | Oct. 13, 2016 | Jul. 04, 2017 | Oct. 12, 2017 | Conduction (CO01-KS) |
| AC Power Source | Chroma | 61602 | ABP00000081 1 | AC 0V~300V, 45Hz~1000Hz | Oct. 13, 2016 | Jul. 04, 2017 | Oct. 12, 2017 | Conduction (CO01-KS) |

# 5 Uncertainty of Evaluation

**Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)**

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 2.3dB |

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

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 4.6dB |

**Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)**

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 4.5dB |

**Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)**

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

# Appendix A. Conducted Test Results

Report Number : FR760219E

| | | | | |
|---|---|---|---|---|
| Test Engineer: | Ocean Pei | Temperature: | 21~25 | °C |
| Test Date: | Jun. 18, 2017~Jul. 05, 2017 | Relative Humidity: | 51~54 | % |

## ***TEST RESULTS DATA***
## ***6dB and 26dB EBW and 99% OBW***

| Band IV | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | 99% Bandwidth (MHz) | | 26dB Bandwidth (MHz) | | 6 dB Bandwidth (MHz) | | 6 dB Bandwidth Min. Limit (MHz) | | Pass/Fail |
| | | | | | Ant 1 | Ant 2 | Ant 1 | Ant 2 | Ant 1 | Ant 2 | Ant 1 | Ant 2 | |
| 11a | 6Mbps | 2 | 149 | 5745 | 16.83 | 17.18 | 20.73 | 22.83 | 15.32 | 15.15 | 0.5 | | Pass |
| 11a | 6Mbps | 2 | 157 | 5785 | 16.93 | 17.23 | 21.53 | 21.98 | 15.12 | 15.13 | 0.5 | | Pass |
| 11a | 6Mbps | 2 | 165 | 5825 | 16.88 | 17.03 | 20.93 | 20.88 | 15.32 | 15.17 | 0.5 | | Pass |
| VHT20 | MCS0 | 2 | 149 | 5745 | 18.38 | 17.88 | 22.58 | 21.68 | 15.90 | 15.15 | 0.5 | | Pass |
| VHT20 | MCS0 | 2 | 157 | 5785 | 17.93 | 17.98 | 22.83 | 22.83 | 15.17 | 15.15 | 0.5 | | Pass |
| VHT20 | MCS0 | 2 | 165 | 5825 | 17.83 | 18.43 | 21.83 | 26.62 | 15.13 | 15.13 | 0.5 | | Pass |
| VHT40 | MCS0 | 2 | 151 | 5755 | 36.16 | 35.96 | 42.62 | 41.90 | 35.09 | 35.09 | 0.5 | | Pass |
| VHT40 | MCS0 | 2 | 159 | 5795 | 36.16 | 36.16 | 42.71 | 41.63 | 35.09 | 35.09 | 0.5 | | Pass |
| VHT80 | MCS0 | 2 | 155 | 5775 | 74.93 | 74.81 | 83.12 | 82.00 | 75.05 | 75.05 | 0.5 | | Pass |

Report Number : FR760219E

## ***TEST RESULTS DATA***
## ***Average Power Table***

| Band IV | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Duty Factor (dB) | | Average Conducted Power (dBm) | | | FCC Conducted Power Limit (dBm) | | DG (dBi) | | | Pass/Fail |
| | | | | | Ant 1 | Ant 2 | Ant 1 | Ant 2 | SUM | Ant 1 | Ant 2 | Ant 1 | Ant 2 | | |
| 11a | 6Mbps | 2 | 149 | 5745 | 0.24 | 0.23 | 12.76 | 13.31 | 16.06 | 30.00 | | 2.07 | | | Pass |
| 11a | 6Mbps | 2 | 157 | 5785 | 0.24 | 0.23 | 14.40 | 14.36 | 17.39 | 30.00 | | 2.07 | | | Pass |
| 11a | 6Mbps | 2 | 165 | 5825 | 0.24 | 0.23 | 14.43 | 14.44 | 17.45 | 30.00 | | 2.07 | | | Pass |
| HT20 | MCS0 | 2 | 149 | 5745 | 0.26 | 0.25 | 11.68 | 12.13 | 14.92 | 30.00 | | 2.07 | | | Pass |
| HT20 | MCS0 | 2 | 157 | 5785 | 0.26 | 0.25 | 13.99 | 13.93 | 16.97 | 30.00 | | 2.07 | | | Pass |
| HT20 | MCS0 | 2 | 165 | 5825 | 0.26 | 0.25 | 14.07 | 14.24 | 17.17 | 30.00 | | 2.07 | | | Pass |
| HT40 | MCS0 | 2 | 151 | 5755 | 0.42 | 0.43 | 8.63 | 9.28 | 11.98 | 30.00 | | 2.07 | | | Pass |
| HT40 | MCS0 | 2 | 159 | 5795 | 0.42 | 0.43 | 13.48 | 13.34 | 16.42 | 30.00 | | 2.07 | | | Pass |
| VHT20 | MCS0 | 2 | 149 | 5745 | 0.25 | 0.28 | 11.70 | 12.20 | 14.97 | 30.00 | | 2.07 | | | Pass |
| VHT20 | MCS0 | 2 | 157 | 5785 | 0.25 | 0.28 | 14.10 | 14.23 | 17.18 | 30.00 | | 2.07 | | | Pass |
| VHT20 | MCS0 | 2 | 165 | 5825 | 0.25 | 0.28 | 14.10 | 14.36 | 17.25 | 30.00 | | 2.07 | | | Pass |
| VHT40 | MCS0 | 2 | 151 | 5755 | 0.42 | 0.46 | 8.66 | 9.31 | 12.01 | 30.00 | | 2.07 | | | Pass |
| VHT40 | MCS0 | 2 | 159 | 5795 | 0.42 | 0.46 | 13.68 | 13.41 | 16.56 | 30.00 | | 2.07 | | | Pass |
| VHT80 | MCS0 | 2 | 155 | 5775 | 0.58 | 0.59 | 7.13 | 8.01 | 10.60 | 30.00 | | 2.07 | | | Pass |

Report Number : FR760219E

## ***TEST RESULTS DATA***
## ***Power Spectral Density***

| Band IV | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Duty Factor (dB) | | 10log (500kHz /RBW) Factor (dB) | | Average Power Density (dBm/500kHz) | | | Average PSD Limit (dBm/500kHz) | | DG (dBi) | | Pass /Fail |
| | | | | | Ant 1 | Ant 2 | Ant 1 | Ant 2 | Ant 1 | Ant 2 | SUM | Ant 1 | Ant 2 | Ant 1 | Ant 2 | |
| 11a | 6Mbps | 2 | 149 | 5745 | 0.24 | 0.23 | 2.22 | | | | 4.38 | 30.00 | | 3.99 | | Pass |
| 11a | 6Mbps | 2 | 157 | 5785 | 0.24 | 0.23 | 2.22 | | | | 4.44 | 30.00 | | 3.99 | | Pass |
| 11a | 6Mbps | 2 | 165 | 5825 | 0.24 | 0.23 | 2.22 | | | | 4.02 | 30.00 | | 3.99 | | Pass |
| VHT20 | MCS0 | 2 | 149 | 5745 | 0.25 | 0.28 | 2.22 | | | | 3.38 | 30.00 | | 3.99 | | Pass |
| VHT20 | MCS0 | 2 | 157 | 5785 | 0.25 | 0.28 | 2.22 | | | | 4.10 | 30.00 | | 3.99 | | Pass |
| VHT20 | MCS0 | 2 | 165 | 5825 | 0.25 | 0.28 | 2.22 | | | | 4.00 | 30.00 | | 3.99 | | Pass |
| VHT40 | MCS0 | 2 | 151 | 5755 | 0.42 | 0.46 | 2.22 | | | | -2.08 | 30.00 | | 3.99 | | Pass |
| VHT40 | MCS0 | 2 | 159 | 5795 | 0.42 | 0.46 | 2.22 | | | | 0.18 | 30.00 | | 3.99 | | Pass |
| VHT80 | MCS0 | 2 | 155 | 5775 | 0.58 | 0.59 | 2.22 | | | | -6.65 | 30.00 | | 3.99 | | Pass |

Report Number : FR760219E

## ***TEST RESULTS DATA***
## ***Frequency Stability***

| Band IV | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Center Frequency (MHz) | Frequency Deviation (MHz) | Frequency Stablility (ppm) | Temperature (°C) | Voltage (V) | Note |
| 11a | 6Mbps | 1 | 149 | 5745 | 5745.125 | 0.125 | 21.76 | 50 | 120 | |
| 11a | 6Mbps | 1 | 149 | 5745 | 5744.950 | -0.050 | -8.70 | -30 | 120 | |
| 11a | 6Mbps | 1 | 149 | 5745 | 5745.075 | 0.075 | 13.05 | 20 | 132 | |
| 11a | 6Mbps | 1 | 149 | 5745 | 5745.050 | 0.050 | 8.70 | 20 | 108 | |
| 11a | 6Mbps | 1 | 149 | 5745 | 5745.025 | 0.025 | 4.35 | 20 | 120 | |

# Appendix B. Radiated Spurious Emission

### Band 4 - 5725~5850MHz

### WIFI 802.11a (Band Edge @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11a CH 149 5745MHz | | 5634.4 | 45.98 | -22.32 | 68.3 | 43.41 | 30.7 | 8.16 | 36.29 | 300 | 153 | P | H |
| | | 5694.4 | 54.02 | -47.15 | 101.17 | 50.99 | 31.07 | 8.25 | 36.29 | 300 | 153 | P | H |
| | | 5716 | 68.62 | -41.16 | 109.78 | 65.43 | 31.19 | 8.28 | 36.28 | 300 | 153 | P | H |
| | | 5723.6 | 72.19 | -46.92 | 119.11 | 68.84 | 31.32 | 8.31 | 36.28 | 300 | 153 | P | H |
| | * | 5740 | 107.42 | --- | --- | 103.92 | 31.44 | 8.34 | 36.28 | 300 | 153 | P | H |
| | * | 5740 | 100.89 | --- | --- | 97.39 | 31.44 | 8.34 | 36.28 | 300 | 153 | A | H |
| | | 5636 | 45.62 | -22.68 | 68.3 | 43.05 | 30.7 | 8.16 | 36.29 | 300 | 291 | P | V |
| | | 5698.4 | 50.37 | -53.75 | 104.12 | 47.34 | 31.07 | 8.25 | 36.29 | 300 | 291 | P | V |
| | | 5716.4 | 62.39 | -47.5 | 109.89 | 59.2 | 31.19 | 8.28 | 36.28 | 300 | 291 | P | V |
| | | 5722.8 | 69.25 | -48.03 | 117.28 | 65.9 | 31.32 | 8.31 | 36.28 | 300 | 291 | P | V |
| | * | 5746 | 105.08 | --- | --- | 101.58 | 31.44 | 8.34 | 36.28 | 300 | 291 | P | V |
| | * | 5746 | 96.76 | --- | --- | 93.26 | 31.44 | 8.34 | 36.28 | 300 | 291 | A | V |

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11a CH 157 5785MHz | | 5628.4 | 44.68 | -23.62 | 68.3 | 42.13 | 30.72 | 8.13 | 36.3 | 300 | 158 | P | H |
| | | 5688.8 | 45.14 | -51.9 | 97.04 | 42.11 | 31.07 | 8.25 | 36.29 | 300 | 158 | P | H |
| | | 5716.4 | 46.87 | -63.02 | 109.89 | 43.68 | 31.19 | 8.28 | 36.28 | 300 | 158 | P | H |
| | | 5722 | 47.25 | -68.21 | 115.46 | 43.9 | 31.32 | 8.31 | 36.28 | 300 | 158 | P | H |
| | * | 5786 | 109.23 | --- | --- | 105.27 | 31.81 | 8.43 | 36.28 | 300 | 158 | P | H |
| | * | 5786 | 102.49 | --- | --- | 98.53 | 31.81 | 8.43 | 36.28 | 300 | 158 | A | H |
| | | 5850.8 | 47.91 | -72.57 | 120.48 | 43.51 | 32.18 | 8.49 | 36.27 | 300 | 158 | P | H |
| | | 5856.8 | 47.22 | -63.18 | 110.4 | 42.68 | 32.3 | 8.51 | 36.27 | 300 | 158 | P | H |
| | | 5881.2 | 49.04 | -51.65 | 100.69 | 44.44 | 32.35 | 8.53 | 36.28 | 300 | 158 | P | H |
| | | 5964.8 | 45.62 | -22.68 | 68.3 | 40.7 | 32.62 | 8.63 | 36.33 | 300 | 158 | P | H |
| | | 5610.8 | 45.29 | -23.01 | 68.3 | 42.77 | 30.73 | 8.1 | 36.31 | 302 | 292 | P | V |
| | | 5678.4 | 45.56 | -43.8 | 89.36 | 42.68 | 30.95 | 8.22 | 36.29 | 302 | 292 | P | V |
| | | 5720 | 46.84 | -64.06 | 110.9 | 43.49 | 31.32 | 8.31 | 36.28 | 302 | 292 | P | V |
| | | 5724 | 45.85 | -74.17 | 120.02 | 42.5 | 31.32 | 8.31 | 36.28 | 302 | 292 | P | V |
| | * | 5782 | 106.95 | --- | --- | 103.15 | 31.68 | 8.4 | 36.28 | 302 | 292 | P | V |
| | * | 5782 | 99.71 | --- | --- | 95.91 | 31.68 | 8.4 | 36.28 | 302 | 292 | A | V |
| | | 5850.4 | 45.08 | -76.31 | 121.39 | 40.68 | 32.18 | 8.49 | 36.27 | 302 | 292 | P | V |
| | | 5858 | 47.62 | -62.44 | 110.06 | 43.08 | 32.3 | 8.51 | 36.27 | 302 | 292 | P | V |
| | | 5919.2 | 46.26 | -26.32 | 72.58 | 41.53 | 32.46 | 8.57 | 36.3 | 302 | 292 | P | V |
| | | 5974 | 45.9 | -22.4 | 68.3 | 40.92 | 32.67 | 8.65 | 36.34 | 302 | 292 | P | V |

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11a CH 165 5825MHz | * | 5822 | 108.51 | --- | --- | 104.26 | 32.05 | 8.47 | 36.27 | 300 | 153 | P | H |
| | * | 5822 | 101.55 | --- | --- | 97.3 | 32.05 | 8.47 | 36.27 | 300 | 153 | A | H |
| | | 5850 | 58.95 | -63.35 | 122.3 | 54.55 | 32.18 | 8.49 | 36.27 | 300 | 153 | P | H |
| | | 5859.2 | 63.54 | -46.18 | 109.72 | 59 | 32.3 | 8.51 | 36.27 | 300 | 153 | P | H |
| | | 5876.01 | 49.43 | -55.12 | 104.55 | 44.83 | 32.35 | 8.53 | 36.28 | 300 | 153 | P | H |
| | | 5989.2 | 47.19 | -21.11 | 68.3 | 42.21 | 32.67 | 8.65 | 36.34 | 300 | 153 | P | H |
| | * | 5824 | 104.72 | --- | --- | 100.47 | 32.05 | 8.47 | 36.27 | 300 | 65 | P | V |
| | * | 5824 | 97.42 | --- | --- | 93.17 | 32.05 | 8.47 | 36.27 | 300 | 65 | A | V |
| | | 5851.2 | 51.87 | -67.69 | 119.56 | 47.47 | 32.18 | 8.49 | 36.27 | 300 | 65 | P | V |
| | | 5856.8 | 60.88 | -49.52 | 110.4 | 56.34 | 32.3 | 8.51 | 36.27 | 300 | 65 | P | V |
| | | 5882.4 | 48.52 | -51.28 | 99.8 | 43.92 | 32.35 | 8.53 | 36.28 | 300 | 65 | P | V |
| | | 5925.2 | 47.13 | -21.17 | 68.3 | 42.34 | 32.51 | 8.59 | 36.31 | 300 | 65 | P | V |
| Remark | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Band 4 5725~5850MHz

## WIFI 802.11a (Harmonic @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11a CH 149 5745MHz | | 11490 | 41.14 | -32.86 | 74 | 55.34 | 38.58 | 12.57 | 65.35 | 100 | 360 | P | H |
| | | 11490 | 44.02 | -29.98 | 74 | 58.22 | 38.58 | 12.57 | 65.35 | 100 | 360 | P | V |
| 802.11a CH 157 5785MHz | | 11570 | 40.45 | -33.55 | 74 | 54.83 | 38.43 | 12.63 | 65.44 | 100 | 360 | P | H |
| | | 11570 | 44.27 | -29.73 | 74 | 58.65 | 38.43 | 12.63 | 65.44 | 100 | 360 | P | V |
| 802.11a CH 165 5825MHz | | 11650 | 41.64 | -32.36 | 74 | 56.24 | 38.27 | 12.67 | 65.54 | 100 | 360 | P | H |
| | | 11650 | 42.84 | -31.16 | 74 | 57.44 | 38.27 | 12.67 | 65.54 | 100 | 360 | P | V |
| Remark | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Band 4 5725~5850MHz

## WIFI 802.11ac VHT20 (Band Edge @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT20 CH 149 5745MHz | | 5649.2 | 46.54 | -21.76 | 68.3 | 43.97 | 30.7 | 8.16 | 36.29 | 100 | 157 | P | H |
| | | 5700 | 51.4 | -53.9 | 105.3 | 48.37 | 31.07 | 8.25 | 36.29 | 100 | 157 | P | H |
| | | 5720 | 58.3 | -52.6 | 110.9 | 54.95 | 31.32 | 8.31 | 36.28 | 100 | 157 | P | H |
| | | 5724.8 | 68.56 | -53.28 | 121.84 | 65.21 | 31.32 | 8.31 | 36.28 | 100 | 157 | P | H |
| | * | 5746 | 106.97 | --- | --- | 103.47 | 31.44 | 8.34 | 36.28 | 100 | 157 | P | H |
| | * | 5746 | 100.18 | --- | --- | 96.68 | 31.44 | 8.34 | 36.28 | 100 | 157 | A | H |
| | | 5641.2 | 45.93 | -22.37 | 68.3 | 43.36 | 30.7 | 8.16 | 36.29 | 304 | 286 | P | V |
| | | 5697.2 | 51.97 | -51.27 | 103.24 | 48.94 | 31.07 | 8.25 | 36.29 | 304 | 286 | P | V |
| | | 5720 | 58.95 | -51.95 | 110.9 | 55.6 | 31.32 | 8.31 | 36.28 | 304 | 286 | P | V |
| | | 5723.2 | 66.9 | -51.3 | 118.2 | 63.55 | 31.32 | 8.31 | 36.28 | 304 | 286 | P | V |
| | * | 5748 | 106.12 | --- | --- | 102.62 | 31.44 | 8.34 | 36.28 | 304 | 286 | P | V |
| | * | 5748 | 97.61 | --- | --- | 94.11 | 31.44 | 8.34 | 36.28 | 304 | 286 | A | V |

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT20 CH 157 5785MHz | | 5642.8 | 45.86 | -22.44 | 68.3 | 43.29 | 30.7 | 8.16 | 36.29 | 100 | 155 | P | H |
| | | 5666.4 | 47.18 | -33.29 | 80.47 | 44.46 | 30.82 | 8.19 | 36.29 | 100 | 155 | P | H |
| | | 5719.2 | 47.75 | -62.93 | 110.68 | 44.4 | 31.32 | 8.31 | 36.28 | 100 | 155 | P | H |
| | | 5721.6 | 47.6 | -66.95 | 114.55 | 44.25 | 31.32 | 8.31 | 36.28 | 100 | 155 | P | H |
| | * | 5784 | 108.92 | --- | --- | 105.12 | 31.68 | 8.4 | 36.28 | 100 | 155 | P | H |
| | * | 5784 | 102.05 | --- | --- | 98.25 | 31.68 | 8.4 | 36.28 | 100 | 155 | A | H |
| | | 5852 | 47.89 | -69.85 | 117.74 | 43.49 | 32.18 | 8.49 | 36.27 | 100 | 155 | P | H |
| | | 5860.4 | 47.08 | -62.31 | 109.39 | 42.54 | 32.3 | 8.51 | 36.27 | 100 | 155 | P | H |
| | | 5890.4 | 47.35 | -46.52 | 93.87 | 42.68 | 32.41 | 8.55 | 36.29 | 100 | 155 | P | H |
| | | 5984.8 | 47.7 | -20.6 | 68.3 | 42.72 | 32.67 | 8.65 | 36.34 | 100 | 155 | P | H |
| | | 5635.2 | 44.92 | -23.38 | 68.3 | 42.35 | 30.7 | 8.16 | 36.29 | 300 | 294 | P | V |
| | | 5654.8 | 45.99 | -25.88 | 71.87 | 43.27 | 30.82 | 8.19 | 36.29 | 300 | 294 | P | V |
| | | 5718.8 | 47.02 | -63.54 | 110.56 | 43.67 | 31.32 | 8.31 | 36.28 | 300 | 294 | P | V |
| | | 5723.2 | 46.92 | -71.28 | 118.2 | 43.57 | 31.32 | 8.31 | 36.28 | 300 | 294 | P | V |
| | * | 5786 | 107.83 | --- | --- | 103.87 | 31.81 | 8.43 | 36.28 | 300 | 294 | P | V |
| | * | 5786 | 100.53 | --- | --- | 96.57 | 31.81 | 8.43 | 36.28 | 300 | 294 | A | V |
| | | 5852 | 46.89 | -70.85 | 117.74 | 42.49 | 32.18 | 8.49 | 36.27 | 300 | 294 | P | V |
| | | 5864.8 | 47.57 | -60.58 | 108.15 | 43.03 | 32.3 | 8.51 | 36.27 | 300 | 294 | P | V |
| | | 5880.8 | 46.67 | -54.32 | 100.99 | 42.07 | 32.35 | 8.53 | 36.28 | 300 | 294 | P | V |
| | | 5986 | 47.27 | -21.03 | 68.3 | 42.29 | 32.67 | 8.65 | 36.34 | 300 | 294 | P | V |

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT20 CH 165 5825MHz | * | 5824 | 109.28 | --- | --- | 105.03 | 32.05 | 8.47 | 36.27 | 100 | 157 | P | H |
| | * | 5824 | 101.91 | --- | --- | 97.66 | 32.05 | 8.47 | 36.27 | 100 | 157 | A | H |
| | | 5852.4 | 62.13 | -54.7 | 116.83 | 57.73 | 32.18 | 8.49 | 36.27 | 100 | 157 | P | H |
| | | 5857.6 | 56.34 | -53.83 | 110.17 | 51.8 | 32.3 | 8.51 | 36.27 | 100 | 157 | P | H |
| | | 5881.2 | 55.02 | -45.67 | 100.69 | 50.42 | 32.35 | 8.53 | 36.28 | 100 | 157 | P | H |
| | | 5946.8 | 46.93 | -21.37 | 68.3 | 42.07 | 32.57 | 8.61 | 36.32 | 100 | 157 | P | H |
| | * | 5824 | 107.62 | --- | --- | 103.37 | 32.05 | 8.47 | 36.27 | 301 | 290 | P | V |
| | * | 5824 | 99.95 | --- | --- | 95.7 | 32.05 | 8.47 | 36.27 | 301 | 290 | A | V |
| | | 5850 | 59.11 | -63.19 | 122.3 | 54.71 | 32.18 | 8.49 | 36.27 | 301 | 290 | P | V |
| | | 5855.2 | 52.54 | -58.3 | 110.84 | 48 | 32.3 | 8.51 | 36.27 | 301 | 290 | P | V |
| | | 5878.8 | 49.3 | -53.18 | 102.48 | 44.7 | 32.35 | 8.53 | 36.28 | 301 | 290 | P | V |
| | | 5932.8 | 48.2 | -20.1 | 68.3 | 43.41 | 32.51 | 8.59 | 36.31 | 301 | 290 | P | V |
| **Remark** | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Band 4 5725~5850MHz

## WIFI 802.11ac VHT20 (Harmonic @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT20 CH 149 5745MHz | | 11490 | 43.39 | -30.61 | 74 | 57.59 | 38.58 | 12.57 | 65.35 | 300 | 360 | P | H |
| | | 11490 | 42.63 | -31.37 | 74 | 56.83 | 38.58 | 12.57 | 65.35 | 100 | 360 | P | V |
| 802.11ac VHT20 CH 157 5785MHz | | 11570 | 42.78 | -31.22 | 74 | 57.16 | 38.43 | 12.63 | 65.44 | 300 | 0 | P | H |
| | | 11570 | 43.76 | -30.24 | 74 | 58.14 | 38.43 | 12.63 | 65.44 | 100 | 360 | P | V |
| 802.11ac VHT20 CH 165 5825MHz | | 11650 | 41.87 | -32.13 | 74 | 56.47 | 38.27 | 12.67 | 65.54 | 100 | 0 | P | H |
| | | 11650 | 44.87 | -29.13 | 74 | 59.47 | 38.27 | 12.67 | 65.54 | 300 | 0 | P | V |
| Remark | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Band 4 5725~5850MHz

## WIFI 802.11ac VHT40 (Band Edge @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT40 CH 151 5755MHz | | 5638.8 | 54.41 | -13.89 | 68.3 | 51.84 | 30.7 | 8.16 | 36.29 | 100 | 153 | P | H |
| | | 5699.2 | 61.15 | -43.56 | 104.71 | 58.12 | 31.07 | 8.25 | 36.29 | 100 | 153 | P | H |
| | | 5719.2 | 72.28 | -38.4 | 110.68 | 68.93 | 31.32 | 8.31 | 36.28 | 100 | 153 | P | H |
| | | 5724.8 | 75.77 | -46.07 | 121.84 | 72.42 | 31.32 | 8.31 | 36.28 | 100 | 153 | P | H |
| | * | 5764 | 105.83 | --- | --- | 102.18 | 31.56 | 8.37 | 36.28 | 100 | 153 | P | H |
| | * | 5764 | 98.89 | --- | --- | 95.24 | 31.56 | 8.37 | 36.28 | 100 | 153 | A | H |
| | | 5850.8 | 47.23 | -73.25 | 120.48 | 42.83 | 32.18 | 8.49 | 36.27 | 100 | 153 | P | H |
| | | 5865.6 | 48.77 | -59.16 | 107.93 | 44.23 | 32.3 | 8.51 | 36.27 | 100 | 153 | P | H |
| | | 5876 | 57.87 | -46.69 | 104.56 | 53.27 | 32.35 | 8.53 | 36.28 | 100 | 153 | P | H |
| | | 5946.4 | 51.19 | -17.11 | 68.3 | 46.33 | 32.57 | 8.61 | 36.32 | 100 | 153 | P | H |
| | | 5648.8 | 56.22 | -12.08 | 68.3 | 53.65 | 30.7 | 8.16 | 36.29 | 300 | 288 | P | V |
| | | 5685.2 | 57.32 | -37.06 | 94.38 | 54.29 | 31.07 | 8.25 | 36.29 | 300 | 288 | P | V |
| | | 5719.6 | 71.23 | -39.56 | 110.79 | 67.88 | 31.32 | 8.31 | 36.28 | 300 | 288 | P | V |
| | | 5721.6 | 72.43 | -42.12 | 114.55 | 69.08 | 31.32 | 8.31 | 36.28 | 300 | 288 | P | V |
| | * | 5744 | 104.16 | --- | --- | 100.66 | 31.44 | 8.34 | 36.28 | 300 | 288 | P | V |
| | * | 5744 | 97.17 | --- | --- | 93.67 | 31.44 | 8.34 | 36.28 | 300 | 288 | A | V |
| | | 5854 | 46.78 | -66.4 | 113.18 | 42.24 | 32.3 | 8.51 | 36.27 | 300 | 288 | P | V |
| | | 5862.8 | 46.86 | -61.85 | 108.71 | 42.32 | 32.3 | 8.51 | 36.27 | 300 | 288 | P | V |
| | | 5882.4 | 48.66 | -51.14 | 99.8 | 44.06 | 32.35 | 8.53 | 36.28 | 300 | 288 | P | V |
| | | 5947.6 | 48.67 | -19.63 | 68.3 | 43.81 | 32.57 | 8.61 | 36.32 | 300 | 288 | P | V |

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT40 CH 159 5795MHz | | 5606.4 | 45.05 | -23.25 | 68.3 | 42.53 | 30.73 | 8.1 | 36.31 | 100 | 159 | P | H |
| | | 5660.4 | 55.41 | -20.61 | 76.02 | 52.69 | 30.82 | 8.19 | 36.29 | 100 | 159 | P | H |
| | | 5719.6 | 58.3 | -52.49 | 110.79 | 54.95 | 31.32 | 8.31 | 36.28 | 100 | 159 | P | H |
| | | 5720.8 | 60.29 | -52.43 | 112.72 | 56.94 | 31.32 | 8.31 | 36.28 | 100 | 159 | P | H |
| | * | 5796 | 105.97 | --- | --- | 102.01 | 31.81 | 8.43 | 36.28 | 100 | 159 | P | H |
| | * | 5796 | 98.27 | --- | --- | 94.31 | 31.81 | 8.43 | 36.28 | 100 | 159 | A | H |
| | | 5850.8 | 55.75 | -64.73 | 120.48 | 51.35 | 32.18 | 8.49 | 36.27 | 100 | 159 | P | H |
| | | 5870.4 | 58.45 | -48.14 | 106.59 | 53.91 | 32.3 | 8.51 | 36.27 | 100 | 159 | P | H |
| | | 5877.6 | 50.18 | -53.19 | 103.37 | 45.58 | 32.35 | 8.53 | 36.28 | 100 | 159 | P | H |
| | | 5975.6 | 51.68 | -16.62 | 68.3 | 46.7 | 32.67 | 8.65 | 36.34 | 100 | 159 | P | H |
| | | 5616.8 | 49.11 | -19.19 | 68.3 | 46.56 | 30.72 | 8.13 | 36.3 | 300 | 292 | P | V |
| | | 5672.8 | 47.96 | -37.25 | 85.21 | 45.08 | 30.95 | 8.22 | 36.29 | 300 | 292 | P | V |
| | | 5717.2 | 54.91 | -55.21 | 110.12 | 51.72 | 31.19 | 8.28 | 36.28 | 300 | 292 | P | V |
| | | 5722 | 56.65 | -58.81 | 115.46 | 53.3 | 31.32 | 8.31 | 36.28 | 300 | 292 | P | V |
| | * | 5792 | 103.83 | --- | --- | 99.87 | 31.81 | 8.43 | 36.28 | 300 | 292 | P | V |
| | * | 5792 | 96.93 | --- | --- | 92.97 | 31.81 | 8.43 | 36.28 | 300 | 292 | A | V |
| | | 5850 | 56.82 | -65.48 | 122.3 | 52.42 | 32.18 | 8.49 | 36.27 | 300 | 292 | P | V |
| | | 5861.6 | 60.07 | -48.98 | 109.05 | 55.53 | 32.3 | 8.51 | 36.27 | 300 | 292 | P | V |
| | | 5900.8 | 53.11 | -33.06 | 86.17 | 48.44 | 32.41 | 8.55 | 36.29 | 300 | 292 | P | V |
| | | 5935.2 | 48.82 | -19.48 | 68.3 | 44.03 | 32.51 | 8.59 | 36.31 | 300 | 292 | P | V |

**Remark**

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

## Band 4 5725~5850MHz

## WIFI 802.11ac VHT40 (Harmonic @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT40 CH 151 5755MHz | | 11510 | 42.88 | -31.12 | 74 | 57.04 | 38.6 | 12.58 | 65.34 | 100 | 360 | P | H |
| | | 11510 | 43.38 | -30.62 | 74 | 57.54 | 38.6 | 12.58 | 65.34 | 100 | 360 | P | V |
| 802.11ac VHT40 CH 159 5795MHz | | 11590 | 42.77 | -31.23 | 74 | 57.21 | 38.39 | 12.64 | 65.47 | 100 | 360 | P | H |
| | | 11590 | 42.25 | -31.75 | 74 | 56.69 | 38.39 | 12.64 | 65.47 | 100 | 360 | P | V |
| Remark | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Band 4 5725~5850MHz

## WIFI 802.11ac VHT80 (Band Edge @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT80 CH 155 5775MHz | | 5611.2 | 54.46 | -13.84 | 68.3 | 51.94 | 30.73 | 8.1 | 36.31 | 100 | 154 | P | H |
| | | 5696.4 | 68.62 | -34.03 | 102.65 | 65.59 | 31.07 | 8.25 | 36.29 | 100 | 154 | P | H |
| | | 5715.2 | 70.73 | -38.83 | 109.56 | 67.54 | 31.19 | 8.28 | 36.28 | 100 | 154 | P | H |
| | | 5724 | 71.73 | -48.29 | 120.02 | 68.38 | 31.32 | 8.31 | 36.28 | 100 | 154 | P | H |
| | * | 5772 | 102.5 | --- | --- | 98.7 | 31.68 | 8.4 | 36.28 | 100 | 154 | P | H |
| | * | 5772 | 95.33 | --- | --- | 91.53 | 31.68 | 8.4 | 36.28 | 100 | 154 | A | H |
| | | 5851.2 | 63.92 | -55.64 | 119.56 | 59.52 | 32.18 | 8.49 | 36.27 | 100 | 154 | P | H |
| | | 5863.2 | 61.57 | -47.03 | 108.6 | 57.03 | 32.3 | 8.51 | 36.27 | 100 | 154 | P | H |
| | | 5874.8 | 57.16 | -48.2 | 105.36 | 52.56 | 32.35 | 8.53 | 36.28 | 100 | 154 | P | H |
| | | 5956 | 52.18 | -16.12 | 68.3 | 47.26 | 32.62 | 8.63 | 36.33 | 100 | 154 | P | H |
| | | 5646.4 | 55.55 | -12.75 | 68.3 | 52.98 | 30.7 | 8.16 | 36.29 | 300 | 293 | P | V |
| | | 5696 | 64.23 | -38.12 | 102.35 | 61.2 | 31.07 | 8.25 | 36.29 | 300 | 293 | P | V |
| | | 5716.4 | 66.7 | -43.19 | 109.89 | 63.51 | 31.19 | 8.28 | 36.28 | 300 | 293 | P | V |
| | | 5724.4 | 69.41 | -51.52 | 120.93 | 66.06 | 31.32 | 8.31 | 36.28 | 300 | 293 | P | V |
| | * | 5772 | 100.14 | --- | --- | 96.34 | 31.68 | 8.4 | 36.28 | 300 | 293 | P | V |
| | * | 5772 | 93.18 | --- | --- | 89.38 | 31.68 | 8.4 | 36.28 | 300 | 293 | A | V |
| | | 5850.8 | 62.27 | -58.21 | 120.48 | 57.87 | 32.18 | 8.49 | 36.27 | 300 | 293 | P | V |
| | | 5861.6 | 59.54 | -49.51 | 109.05 | 55 | 32.3 | 8.51 | 36.27 | 300 | 293 | P | V |
| | | 5876.8 | 56.49 | -47.47 | 103.96 | 51.89 | 32.35 | 8.53 | 36.28 | 300 | 293 | P | V |
| | | 5926 | 52.52 | -15.78 | 68.3 | 47.73 | 32.51 | 8.59 | 36.31 | 300 | 293 | P | V |

**Remark**

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

## Band 4 5725~5850MHz

### WIFI 802.11ac VHT80 (Harmonic @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level ( dBμV ) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT80 CH 155 5775MHz | | 11550 | 43.17 | -30.83 | 74 | 57.49 | 38.48 | 12.62 | 65.42 | 300 | 360 | P | H |
| | | 11550 | 42.36 | -31.64 | 74 | 56.68 | 38.48 | 12.62 | 65.42 | 100 | 0 | P | V |
| Remark | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

## Emission below 1GHz

### WIFI 802.11ac VHT40 (LF @ 3m)

| WIFI Ant. 1+2 | Note | Frequency ( MHz ) | Level ( dBμV/m ) | Over Limit ( dB ) | Limit Line ( dBμV/m ) | Read Level (dBμV) | Antenna Factor ( dB/m ) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos ( cm ) | Table Pos ( deg ) | Peak Avg. (P/A) | Pol. (H/V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 802.11ac VHT40 LF | | 32.91 | 28.87 | -11.13 | 40 | 34.3 | 26.18 | 0.69 | 32.3 | - | - | P | H |
| | | 153.19 | 30.88 | -12.62 | 43.5 | 43.88 | 17.78 | 1.5 | 32.28 | - | - | P | H |
| | | 211.39 | 34.14 | -9.36 | 43.5 | 48.53 | 16.1 | 1.73 | 32.22 | 100 | 230 | P | H |
| | | 312.27 | 28.26 | -17.74 | 46 | 38.57 | 19.59 | 2.18 | 32.08 | - | - | P | H |
| | | 559.62 | 28.72 | -17.28 | 46 | 32.77 | 24.74 | 2.96 | 31.75 | - | - | P | H |
| | | 788.54 | 30.14 | -15.86 | 46 | 30.43 | 27.76 | 3.56 | 31.61 | - | - | P | H |
| | | 31.94 | 32.61 | -7.39 | 40 | 37.7 | 26.52 | 0.68 | 32.29 | 100 | 20 | P | V |
| | | 45.52 | 30.48 | -9.52 | 40 | 42.96 | 18.9 | 0.83 | 32.21 | - | - | P | V |
| | | 62.98 | 27.57 | -12.43 | 40 | 45.68 | 13.18 | 0.95 | 32.24 | - | - | P | V |
| | | 97.9 | 34.32 | -9.18 | 43.5 | 46.64 | 18.74 | 1.2 | 32.26 | - | - | P | V |
| | | 323.91 | 26.89 | -19.11 | 46 | 36.63 | 20.13 | 2.21 | 32.08 | - | - | P | V |
| | | 559.62 | 29.52 | -16.48 | 46 | 33.57 | 24.74 | 2.96 | 31.75 | - | - | P | V |
| Remark | 1. No other spurious found.<br>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. |
| ! | Test result is **over limit** line. |
| P/A | **P**eak or **A**verage |
| H/V | **H**orizontal or **V**ertical |

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

| WIFI | Note | Frequency | Level | Over | Limit | Read | Antenna | Cable | Preamp | Ant | Table | Peak | Pol. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant. | | | | Limit | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| 1+2 | | ( MHz ) | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11b CH 01 2412MHz | | 2390 | 55.45 | -18.55 | 74 | 54.51 | 32.22 | 4.58 | 35.86 | 103 | 308 | P | H |
| | | 2390 | 43.54 | -10.46 | 54 | 42.6 | 32.22 | 4.58 | 35.86 | 103 | 308 | A | H |

1. Level(dBμV/m) =

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

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable 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) + Cable 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)

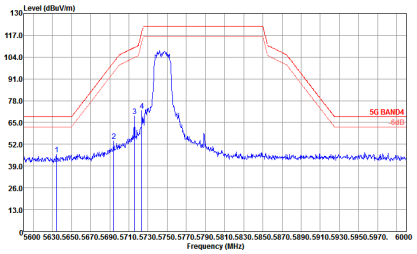
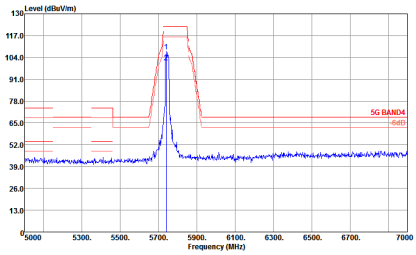
= -10.46(dB)

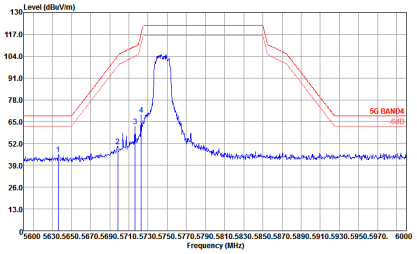
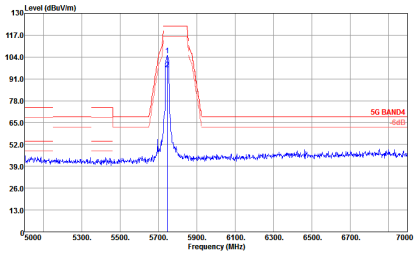
**Both peak and average measured complies with the limit line, so test result is “PASS”.**

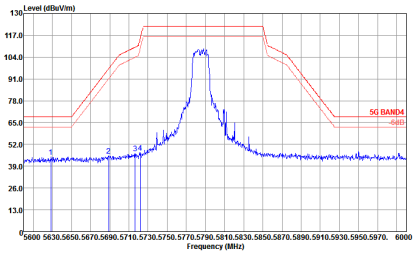
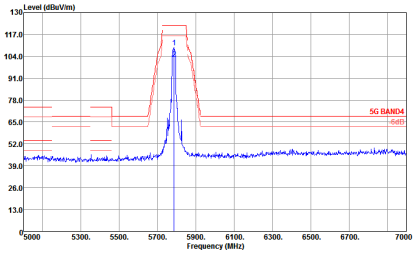
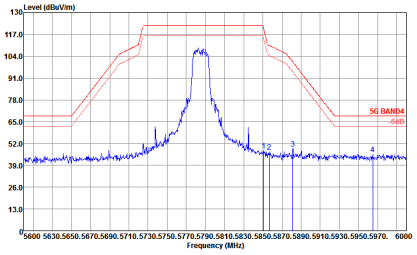
# Appendix C. Radiated Spurious Emission Plots

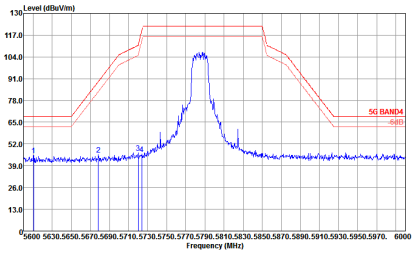
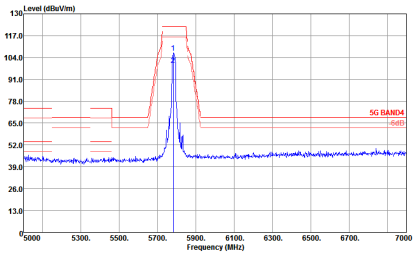
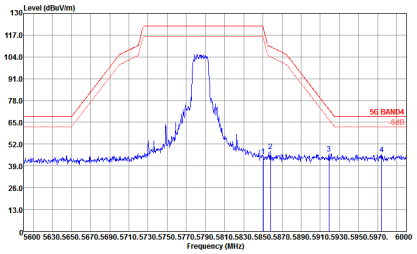
## Band 4 - 5725~5850MHz

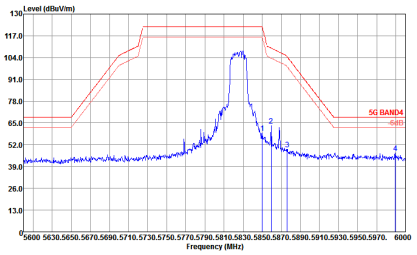
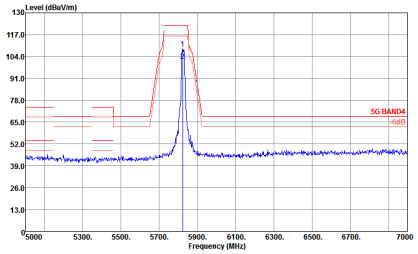
## WIFI 802.11a (Band Edge @ 3m)

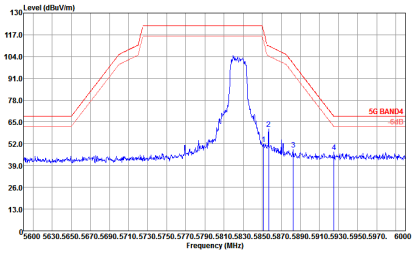
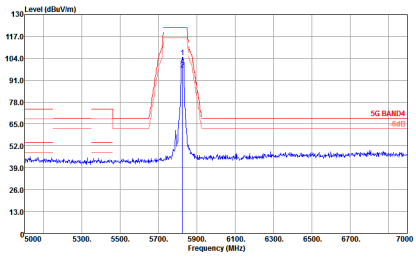
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH149 5745MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5634.40 45.98 -22.32 68.30 43.41 30.70 8.16 36.29 300 153 Peak HORIZONT<br>2 5694.40 54.02 -47.15 101.17 50.99 31.07 8.25 36.29 300 153 Peak HORIZONT<br>3 5716.00 68.62 -41.16 109.78 65.43 31.19 8.28 36.28 300 153 Peak HORIZONT<br>4 5723.60 72.19 -46.92 119.11 68.84 31.32 8.31 36.28 300 153 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5740.00 107.42 -14.88 122.30 103.92 31.44 8.34 36.28 300 153 Peak HORIZONT<br>2 5740.00 100.89 ------ ------ 97.39 31.44 8.34 36.28 300 153 Average HORIZONT |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH149 5745MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5636.00 45.62 -22.68 68.30 43.05 30.70 8.16 36.29 300 291 Peak VERTICAL<br>2 5698.40 50.37 -53.75 104.12 47.34 31.07 8.25 36.29 300 291 Peak VERTICAL<br>3 5716.40 62.39 -47.50 109.89 59.20 31.19 8.28 36.28 300 291 Peak VERTICAL<br>4 5722.80 69.25 -48.03 117.28 65.90 31.32 8.31 36.28 300 291 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5746.00 105.08 -17.22 122.30 101.58 31.44 8.34 36.28 300 291 Peak VERTICAL<br>2 5746.00 96.76 ------ ------ 93.26 31.44 8.34 36.28 300 291 Average VERTICAL |

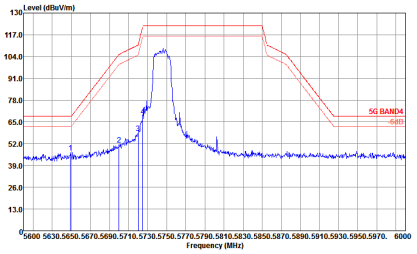
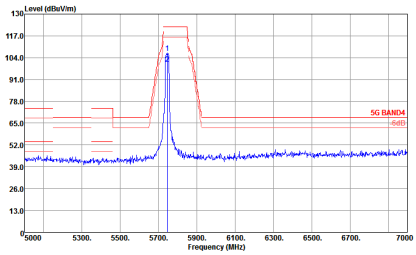
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH157 5785MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5628.40 44.68 -23.62 68.30 42.13 30.72 8.13 36.30 300 158 Peak HORIZONT<br>2 5688.80 45.14 -51.90 97.04 42.11 31.07 8.25 36.29 300 158 Peak HORIZONT<br>3 5716.40 46.87 -63.02 109.89 43.68 31.19 8.28 36.28 300 158 Peak HORIZONT<br>4 5722.00 47.25 -68.21 115.46 43.90 31.32 8.31 36.28 300 158 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5786.00 109.23 -13.07 122.30 105.27 31.81 8.43 36.28 300 158 Peak HORIZONT<br>2 5786.00 102.49 ------ ------ 98.53 31.81 8.43 36.28 300 158 Average HORIZONT |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.00 47.91 -72.57 120.48 43.51 32.18 8.49 36.27 300 158 Peak HORIZONT<br>2 5856.00 47.22 -63.18 110.40 42.68 32.30 8.51 36.27 300 158 Peak HORIZONT<br>3 5881.20 49.04 -51.65 100.69 44.44 32.35 8.53 36.28 300 158 Peak HORIZONT<br>4 5964.80 45.62 -22.68 68.30 40.70 32.62 8.63 36.33 300 158 Peak HORIZONT | |

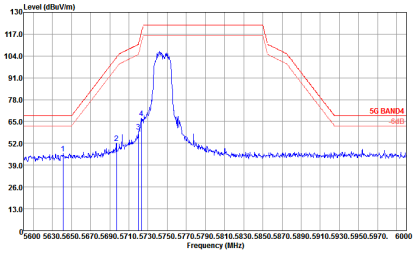
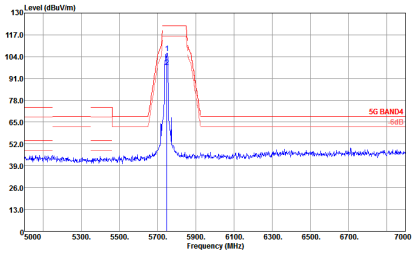
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH157 5785MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5610.00 45.29 -23.01 68.30 42.77 30.73 8.10 36.31 302 292 Peak VERTICAL<br>2 5678.40 45.56 -43.80 89.36 42.68 30.95 8.22 36.29 302 292 Peak VERTICAL<br>3 5720.00 46.84 -64.06 110.90 43.49 31.32 8.31 36.28 302 292 Peak VERTICAL<br>4 5724.00 45.85 -74.17 120.02 42.50 31.32 8.31 36.28 302 292 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5782.00 106.95 -15.35 122.30 103.15 31.68 8.40 36.28 302 292 Peak VERTICAL<br>2 5782.00 99.71 ------ ------ 95.91 31.68 8.40 36.28 302 292 Average VERTICAL |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.40 45.08 -76.31 121.39 40.68 32.18 8.49 36.27 302 292 Peak VERTICAL<br>2 5858.00 47.62 -62.44 110.06 43.08 32.30 8.51 36.27 302 292 Peak VERTICAL<br>3 5919.20 46.26 -26.32 72.58 41.53 32.46 8.57 36.30 302 292 Peak VERTICAL<br>4 5974.00 45.90 -22.40 68.30 40.92 32.67 8.65 36.34 302 292 Peak VERTICAL | |

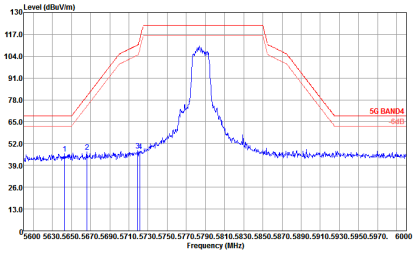
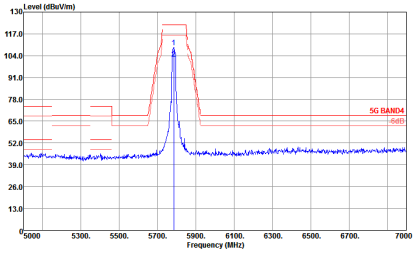
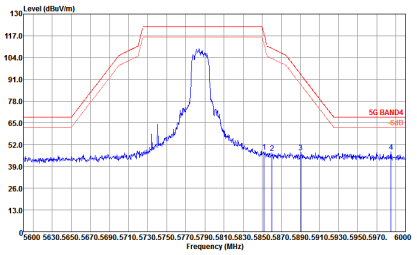
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH165 5825MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.00 58.95 -63.35 122.30 54.55 32.18 8.49 36.27 300 153 Peak HORIZONT<br>2 5859.20 63.54 -46.18 109.72 59.00 32.30 8.51 36.27 300 153 Peak HORIZONT<br>3 5876.01 49.43 -55.12 104.55 44.83 32.35 8.53 36.28 300 153 Peak HORIZONT<br>4 5989.28 47.19 -21.11 68.30 42.21 32.67 8.65 36.34 300 153 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5822.00 108.51 -13.79 122.30 104.26 32.05 8.47 36.27 300 153 Peak HORIZONT<br>2 5822.00 101.55 ------ ------ 97.30 32.05 8.47 36.27 300 153 Average HORIZONT |

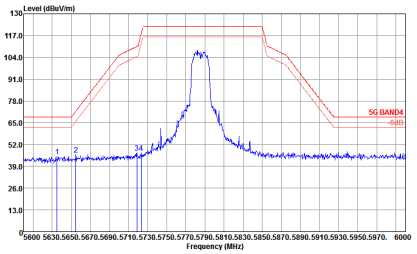
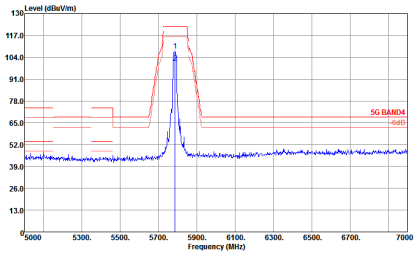
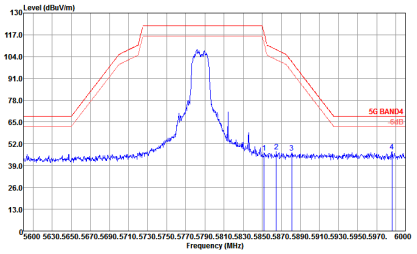
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11a CH165 5825MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5851.20 51.87 -67.69 119.56 47.47 32.18 8.49 36.27 300 65 Peak VERTICAL<br>2 5856.80 60.88 -49.52 110.40 56.34 32.30 8.51 36.27 300 65 Peak VERTICAL<br>3 5882.40 48.52 -51.28 99.80 43.92 32.35 8.53 36.28 300 65 Peak VERTICAL<br>4 5925.20 47.13 -21.17 68.30 42.34 32.51 8.59 36.31 300 65 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5824.00 104.72 -17.58 122.30 100.47 32.05 8.47 36.27 300 65 Peak VERTICAL<br>2 5824.00 97.42 ------ ------ 93.17 32.05 8.47 36.27 300 65 Average VERTICAL |

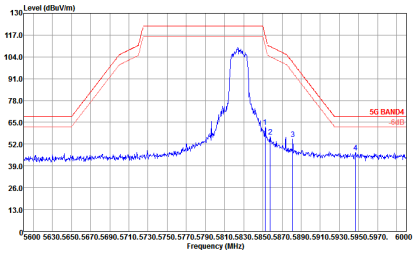
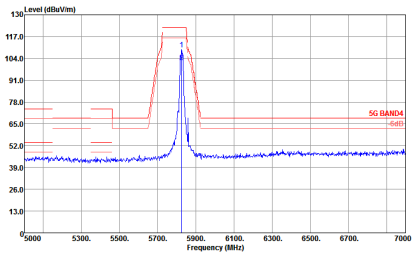
## Band 4 5725~5850MHz
## WIFI 802.11ac VHT20 (Band Edge @ 3m)

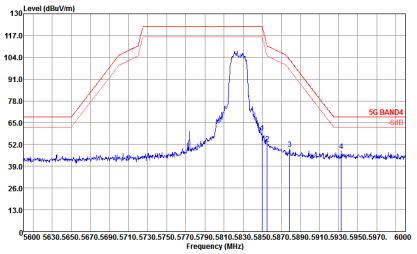
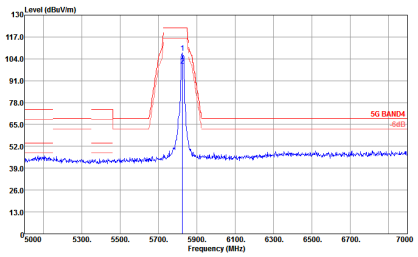
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH149 5745MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br><br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5649.20 46.54 -21.76 68.30 43.97 30.70 8.16 36.29 100 157 Peak HORIZONT<br>2 5700.00 51.40 -53.90 105.30 48.37 31.07 8.25 36.29 100 157 Peak HORIZONT<br>3 5720.00 58.30 -52.60 110.90 54.95 31.32 8.31 36.28 100 157 Peak HORIZONT<br>4 5724.80 68.56 -53.28 121.84 65.21 31.52 8.31 36.28 100 157 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br><br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5746.00 106.97 -15.33 122.30 103.47 31.44 8.34 36.28 100 157 Peak HORIZONT<br>2 5746.00 100.18 ------ ------ 96.68 31.44 8.34 36.28 100 157 Average HORIZONT |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH149 5745MHz | |
| 1+2 | Vertical | Fundamental |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5641.20 45.93 -22.37 68.30 43.36 30.70 8.16 36.29 304 286 Peak VERTICAL<br>2 5697.20 51.97 -51.27 103.24 48.94 31.07 8.25 36.29 304 286 Peak VERTICAL<br>3 5720.00 58.95 -51.05 110.00 55.60 31.32 8.31 36.28 304 286 Peak VERTICAL<br>4 5723.20 66.90 -51.30 118.20 63.55 31.32 8.31 36.28 304 286 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5748.00 106.12 -16.18 122.30 102.62 31.44 8.34 36.28 304 286 Peak VERTICAL<br>2 5748.00 97.61 ------ ------ 94.11 31.44 8.34 36.28 304 286 Average VERTICAL |

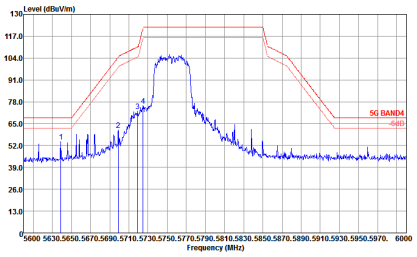
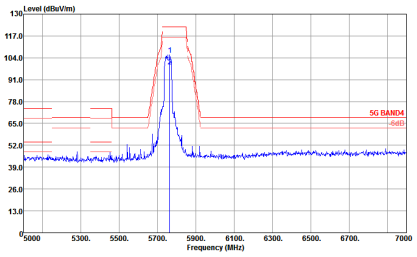
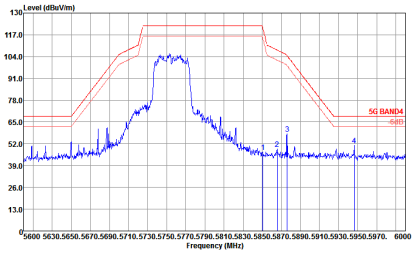
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH157 5785MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5642.80 45.86 -22.44 68.30 43.29 30.70 8.16 36.29 100 155 Peak HORIZONT<br>2 5666.40 47.18 -33.29 80.47 44.46 30.82 8.19 36.29 100 155 Peak HORIZONT<br>3 5719.20 47.75 -62.93 110.68 44.40 31.32 8.31 36.28 100 155 Peak HORIZONT<br>4 5721.60 47.60 -66.95 114.55 44.25 31.32 8.31 36.28 100 155 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5784.00 108.92 -13.38 122.30 105.12 31.68 8.40 36.28 100 155 Peak HORIZONT<br>2 5784.00 102.05 ------ ------ 98.25 31.68 8.40 36.28 100 155 Average HORIZONT |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5852.00 47.80 -69.85 117.74 43.49 32.18 8.49 36.27 100 155 Peak HORIZONT<br>2 5860.40 47.08 -62.31 109.39 42.54 32.30 8.51 36.27 100 155 Peak HORIZONT<br>3 5890.40 47.35 -46.52 93.87 42.68 32.41 8.55 36.29 100 155 Peak HORIZONT<br>4 5984.80 47.70 -20.60 68.30 42.72 32.67 8.65 36.34 100 155 Peak HORIZONT | |

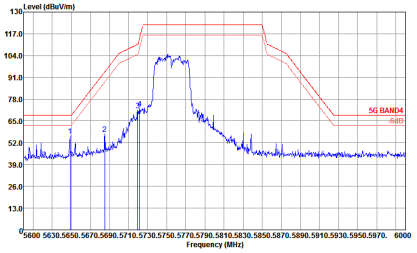
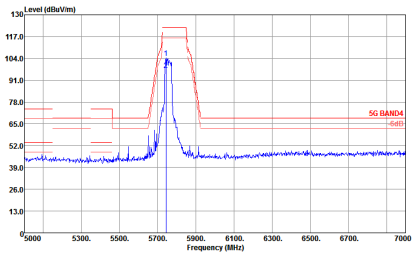
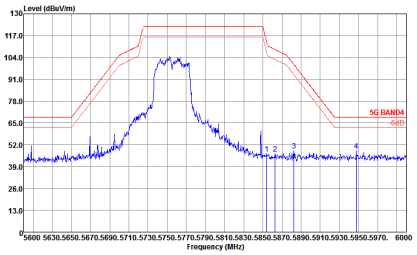
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH157 5785MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5635.20 44.92 -23.38 68.30 42.35 30.70 8.16 36.29 300 294 Peak VERTICAL<br>2 5654.80 45.99 -25.88 71.87 43.27 30.82 8.19 36.29 300 294 Peak VERTICAL<br>3 5718.80 47.02 -63.54 110.56 43.67 31.32 8.31 36.28 300 294 Peak VERTICAL<br>4 5723.20 46.92 -71.28 118.20 43.57 31.32 8.31 36.28 300 294 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5786.00 107.83 -14.47 122.30 103.87 31.81 8.43 36.28 300 294 Peak VERTICAL<br>2 5786.00 100.53 ------ ------ 96.57 31.81 8.43 36.28 300 294 Average VERTICAL |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5852.00 46.89 -70.85 117.74 42.49 32.18 8.49 36.27 300 294 Peak VERTICAL<br>2 5864.80 47.57 -60.58 108.15 43.03 32.30 8.51 36.27 300 294 Peak VERTICAL<br>3 5880.80 46.67 -54.32 100.99 42.87 32.35 8.53 36.28 300 294 Peak VERTICAL<br>4 5986.00 47.27 -21.03 68.30 42.29 32.67 8.65 36.34 300 294 Peak VERTICAL | |

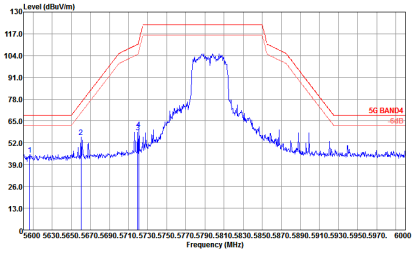
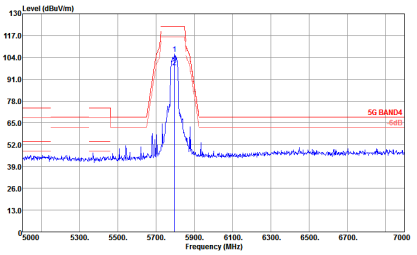
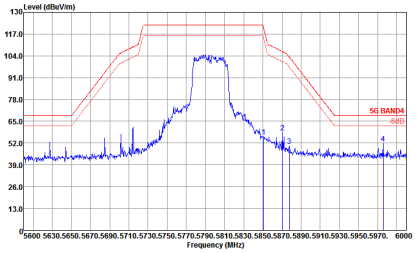
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH165 5825MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5852.40 62.13 -54.70 116.83 57.73 32.18 8.49 36.27 100 157 Peak HORIZONT<br>2 5857.60 56.34 -53.83 110.17 51.80 32.30 8.51 36.27 100 157 Peak HORIZONT<br>3 5881.20 55.02 -45.67 100.69 50.42 32.35 8.53 36.28 100 157 Peak HORIZONT<br>4 5946.80 46.93 -21.37 68.30 42.07 32.57 8.61 36.32 100 157 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5824.00 109.28 -13.02 122.30 105.03 32.05 8.47 36.27 100 157 Peak HORIZONT<br>2 5824.00 101.91 ------ ------ 97.66 32.05 8.47 36.27 100 157 Average HORIZONT |

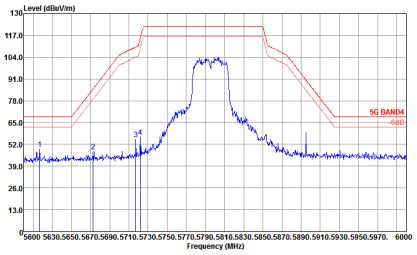
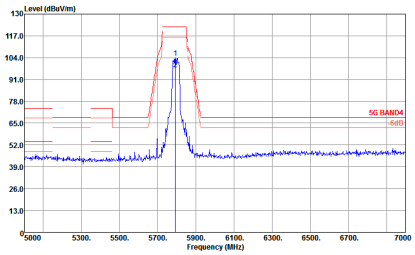
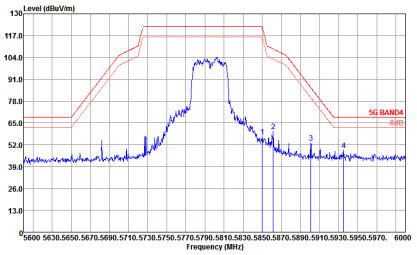
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH165 5825MHz | |
| 1+2 | Vertical | Fundamental |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.00 59.11 -63.19 122.30 54.71 32.18 8.49 36.27 301 290 Peak VERTICAL<br>2 5855.20 52.54 -58.30 110.84 48.00 32.30 8.51 36.27 301 290 Peak VERTICAL<br>3 5878.80 49.30 -53.18 102.48 44.70 32.35 8.53 36.28 301 290 Peak VERTICAL<br>4 5932.80 46.20 -20.10 66.30 43.41 32.51 8.59 36.31 301 290 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5824.00 107.62 -14.68 122.30 103.37 32.05 8.47 36.27 301 290 Peak VERTICAL<br>2 5824.00 99.95 ------ ------ 95.70 32.05 8.47 36.27 301 290 Average VERTICAL |

## Band 4 5725~5850MHz
## WIFI 802.11ac VHT40 (Band Edge @ 3m)

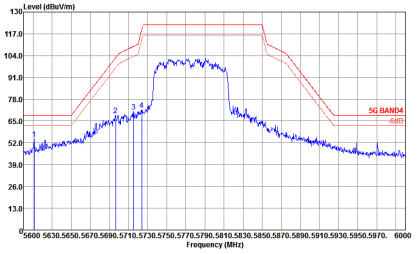
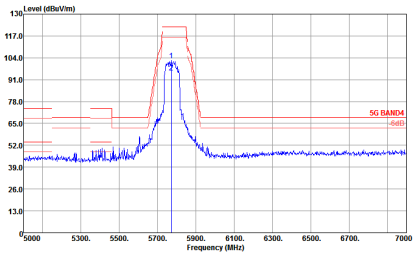
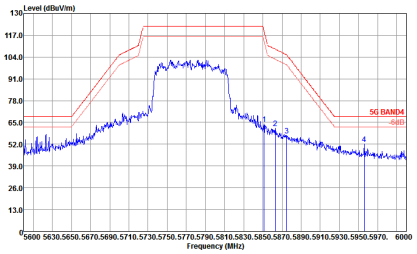
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH151 5755MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5638.80 54.41 -13.89 68.30 51.84 30.70 8.16 36.29 100 153 Peak HORIZONT<br>2 5699.20 61.15 -43.56 104.71 58.12 31.07 8.25 36.29 100 153 Peak HORIZONT<br>3 5719.20 72.28 -38.40 110.68 68.93 31.32 8.31 36.28 100 153 Peak HORIZONT<br>4 5724.80 75.77 -46.07 121.84 72.42 31.32 8.31 36.28 100 153 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5764.00 105.83 -16.47 122.30 102.18 31.56 8.37 36.28 100 153 Peak HORIZONT<br>2 5764.00 98.89 ------ ------ 95.24 31.56 8.37 36.28 100 153 Average HORIZONT |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.80 47.23 -73.25 120.48 42.83 32.18 8.49 36.27 100 153 Peak HORIZONT<br>2 5865.60 48.77 -59.16 107.93 44.23 32.30 8.51 36.27 100 153 Peak HORIZONT<br>3 5876.00 57.87 -46.69 104.56 53.27 32.35 8.53 36.28 100 153 Peak HORIZONT<br>4 5946.40 51.19 -17.11 68.30 46.33 32.57 8.61 36.32 100 153 Peak HORIZONT | |

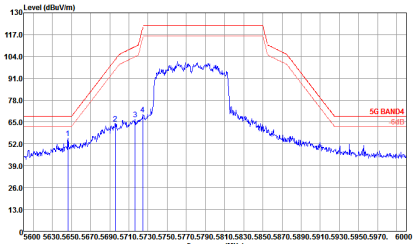
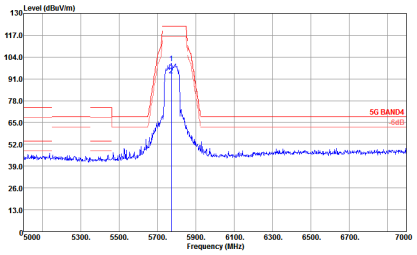
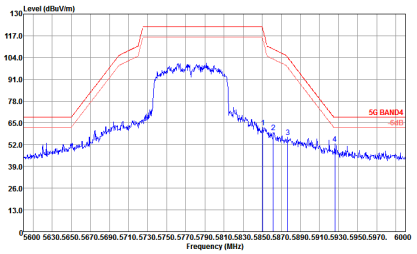
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH151 5755MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5648.80 56.22 -12.08 68.30 53.65 30.70 8.16 36.29 300 288 Peak VERTICAL<br>2 5685.20 57.32 -37.06 94.38 54.29 31.07 8.25 36.29 300 288 Peak VERTICAL<br>3 5719.60 71.23 -39.56 110.79 67.88 31.32 8.31 36.28 300 288 Peak VERTICAL<br>4 5721.60 72.43 -42.12 114.55 69.08 31.32 8.31 36.28 300 288 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5744.00 104.16 -18.14 122.30 100.66 31.44 8.34 36.28 300 288 Peak VERTICAL<br>2 5744.00 97.17 ------ ------ 93.67 31.44 8.34 36.28 300 288 Average VERTICAL |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5854.00 46.78 -66.40 113.18 42.24 32.30 8.51 36.27 300 288 Peak VERTICAL<br>2 5862.80 46.86 -61.85 108.71 42.32 32.30 8.51 36.27 300 288 Peak VERTICAL<br>3 5882.40 48.66 -51.14 99.80 44.06 32.35 8.53 36.28 300 288 Peak VERTICAL<br>4 5947.60 48.67 -19.63 68.30 43.81 32.57 8.61 36.32 300 288 Peak VERTICAL | |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH159 5795MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5606.40 45.05 -23.25 68.30 42.53 30.73 8.10 36.31 100 159 Peak HORIZONT<br>2 5660.40 55.41 -20.61 76.02 52.69 30.82 8.19 36.29 100 159 Peak HORIZONT<br>3 5719.60 58.30 -52.49 110.79 54.95 31.32 8.31 36.28 100 159 Peak HORIZONT<br>4 5720.80 60.29 -52.43 112.72 56.94 31.32 8.31 36.28 100 159 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5796.00 105.97 -16.33 122.30 102.01 31.81 8.43 36.28 100 159 Peak HORIZONT<br>2 5796.00 98.27 ------ ------ 94.31 31.81 8.43 36.28 100 159 Average HORIZONT |
| |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Over Limit ReadAntenna Cable Preamp A/Pos T/Pos<br>Freq Level Limit Line Level Factor Loss Factor Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.80 55.75 -64.73 120.48 51.35 32.18 8.49 36.27 100 159 Peak HORIZONT<br>2 5870.40 58.45 -48.14 106.59 53.91 32.30 8.51 36.27 100 159 Peak HORIZONT<br>3 5877.60 50.18 -53.19 103.37 45.58 32.35 8.53 36.28 100 159 Peak HORIZONT<br>4 5975.60 51.68 -16.62 68.30 46.70 32.67 8.65 36.34 100 159 Peak HORIZONT | |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH159 5795MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5616.80 49.11 -19.19 68.30 46.56 30.72 8.13 36.30 300 292 Peak VERTICAL<br>2 5672.80 47.96 -37.25 85.21 45.00 30.95 8.22 36.29 300 292 Peak VERTICAL<br>3 5717.20 54.91 -55.21 110.12 51.72 31.19 8.28 36.28 300 292 Peak VERTICAL<br>4 5722.00 56.65 -58.81 115.46 53.30 31.32 8.31 36.28 300 292 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5792.00 103.83 -18.47 122.30 99.87 31.81 8.43 36.28 300 292 Peak VERTICAL<br>2 5792.00 96.93 ------ ------ 92.97 31.81 8.43 36.28 300 292 Average VERTICAL |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.00 56.82 -65.48 122.30 52.42 32.18 8.49 36.27 300 292 Peak VERTICAL<br>2 5861.60 60.07 -48.98 109.05 55.53 32.30 8.51 36.27 300 292 Peak VERTICAL<br>3 5900.80 53.11 -33.06 86.17 48.44 32.41 8.55 36.29 300 292 Peak VERTICAL<br>4 5935.20 48.82 -19.48 68.30 44.03 32.51 8.59 36.31 300 292 Peak VERTICAL | |

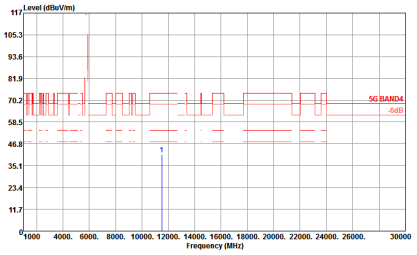
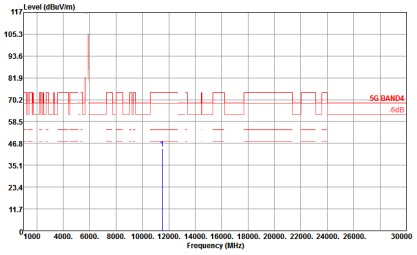
## Band 4 5725~5850MHz
## WIFI 802.11ac VHT80 (Band Edge @ 3m)

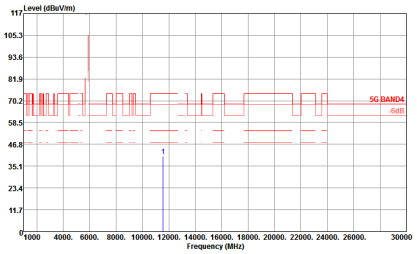
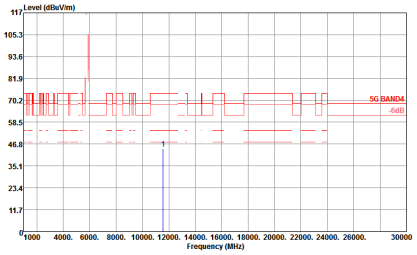
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT80 CH155 5775MHz | |
| 1+2 | Horizontal | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5611.20 54.46 -13.84 68.30 51.94 30.73 8.10 36.31 100 154 Peak HORIZONT<br>2 5696.40 68.62 -34.03 102.65 65.59 31.07 8.25 36.29 100 154 Peak HORIZONT<br>3 5715.20 70.73 -38.03 109.56 67.54 31.19 8.28 36.28 100 154 Peak HORIZONT<br>4 5724.00 71.73 -48.29 120.02 68.38 31.32 8.31 36.28 100 154 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5772.00 102.50 -19.80 122.30 98.70 31.68 8.40 36.28 100 154 Peak HORIZONT<br>2 5772.00 95.33 ------ ------ 91.53 31.68 8.40 36.28 100 154 Average HORIZONT |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5851.20 63.92 -55.64 119.56 59.52 32.18 8.49 36.27 100 154 Peak HORIZONT<br>2 5863.20 61.57 -47.03 108.60 57.03 32.30 8.51 36.27 100 154 Peak HORIZONT<br>3 5874.80 57.16 -48.20 105.36 52.56 32.35 8.53 36.28 100 154 Peak HORIZONT<br>4 5956.00 52.18 -16.12 68.30 47.26 32.62 8.63 36.33 100 154 Peak HORIZONT | |

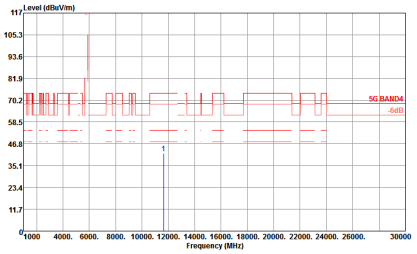
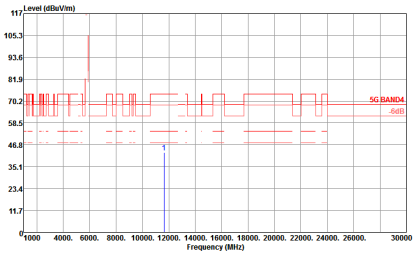
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT80 CH155 5775MHz | |
| 1+2 | Vertical | Fundamental |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos Remark T/Pos Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5646.40 55.55 -12.75 68.30 52.98 30.70 8.16 36.29 300 293 Peak VERTICAL<br>2 5696.00 64.23 -38.12 102.35 61.20 31.07 8.25 36.29 300 293 Peak VERTICAL<br>3 5716.40 66.70 -43.19 109.89 63.51 31.19 8.28 36.28 300 293 Peak VERTICAL<br>4 5724.40 69.41 -51.52 120.93 66.06 31.32 8.31 36.28 300 293 Peak VERTICAL |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos Remark T/Pos Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5772.00 100.14 -22.16 122.30 96.34 31.68 8.40 36.28 300 293 Peak VERTICAL<br>2 5772.00 93.18 ------ ------ 89.38 31.68 8.40 36.28 300 293 Average VERTICAL |
| Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos Remark T/Pos Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 5850.80 62.27 -58.21 120.48 57.87 32.18 8.49 36.27 300 293 Peak VERTICAL<br>2 5861.60 59.54 -49.51 109.05 55.00 32.30 8.51 36.27 300 293 Peak VERTICAL<br>3 5876.80 56.49 -47.47 103.96 51.89 32.35 8.53 36.28 300 293 Peak VERTICAL<br>4 5926.00 52.52 -15.78 68.30 47.73 32.51 8.59 36.31 300 293 Peak VERTICAL | |

## Band 4 - 5725~5850MHz

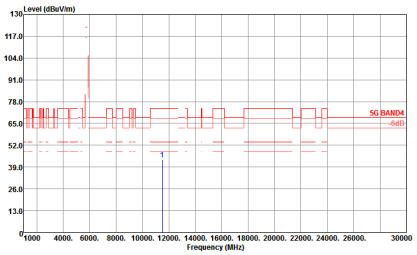
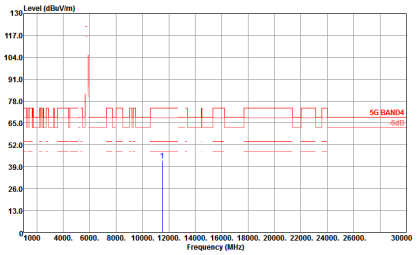
## WIFI 802.11a (Harmonic @ 3m)

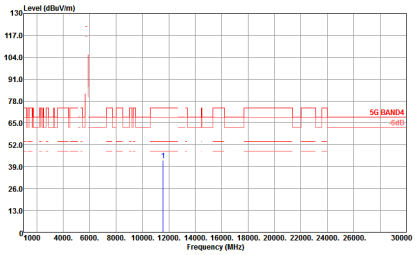
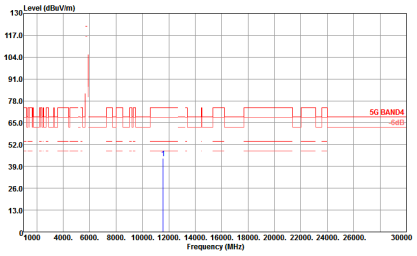
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11a CH149 5745MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11490.00 41.14 -32.86 74.00 55.34 38.58 12.57 65.35 100 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 30<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11490.00 44.02 -29.98 74.00 58.22 38.58 12.57 65.35 100 360 Peak VERTICAL |

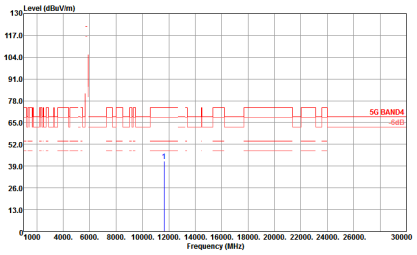
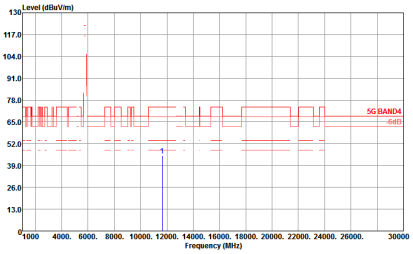
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11a CH157 5785MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11570.00 40.45 -33.55 74.00 54.83 38.43 12.63 65.44 100 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 31<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit ReadAntenna Level Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11570.00 44.27 -29.73 74.00 58.65 38.43 12.63 65.44 100 360 Peak VERTICAL |

| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11a CH165 5825MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11650.00 41.64 -32.36 74.00 56.24 38.27 12.67 65.54 100 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 32<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11650.00 42.84 -31.16 74.00 57.44 38.27 12.67 65.54 100 360 Peak VERTICAL |

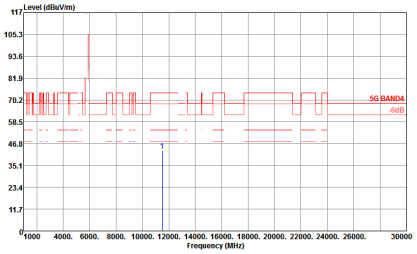
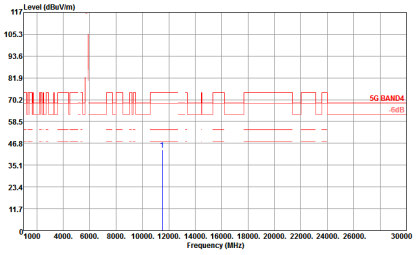
## Band 4 5725~5850MHz
## WIFI 802.11ac VHT20 (Harmonic @ 3m)

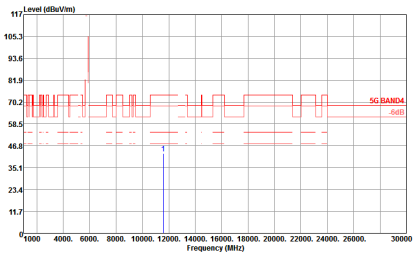
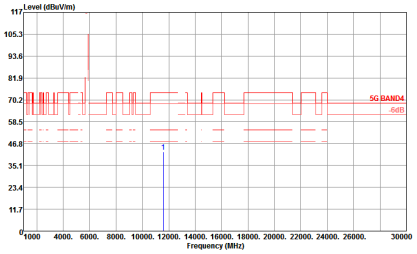
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH149 5745MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11490.00 43.39 -30.61 74.00 57.59 38.58 12.57 65.35 300 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 33<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 12.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11490.00 42.63 -31.37 74.00 56.83 38.58 12.57 65.35 100 360 Peak VERTICAL |

| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH157 5785MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Cable Loss Preamp Factor Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11570.00 42.78 -31.22 74.00 57.16 38.43 12.63 65.44 300 0 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 34<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Cable Loss Preamp Factor Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11570.00 43.76 -30.24 74.00 58.14 38.43 12.63 65.44 100 360 Peak VERTICAL |

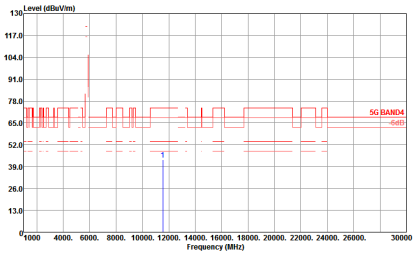
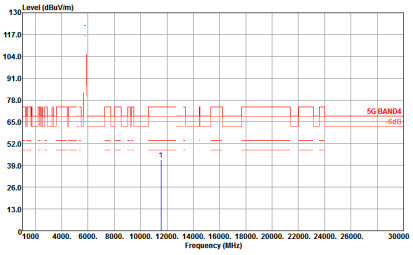
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT20 CH165 5825MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11650.00 41.87 -32.13 74.00 56.47 38.27 12.67 65.54 100 0 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 35<br>Plane : Pad+X<br>: Single-directivity<br>IMEI : #4<br>Powersettig : 13.5<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11650.00 44.87 -29.13 74.00 59.47 38.27 12.67 65.54 300 0 Peak VERTICAL |

## Band 4 5725~5850MHz
## WIFI 802.11ac VHT40 (Harmonic @ 3m)

| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH151 5755MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11510.00 42.88 -31.12 74.00 57.04 38.60 12.58 65.34 100 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11510.00 43.38 -30.62 74.00 57.54 38.60 12.58 65.34 100 360 Peak VERTICAL |

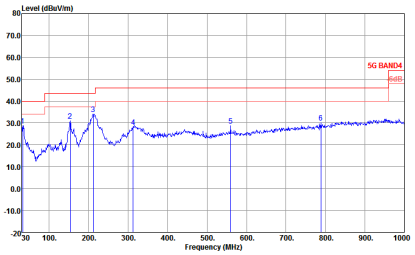
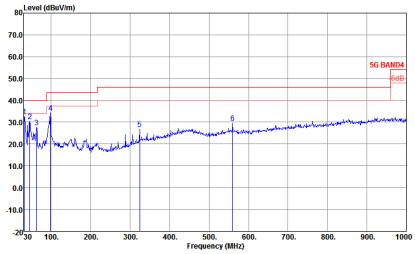
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT40 CH159 5795MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11590.00 42.77 -31.23 74.00 57.21 38.39 12.64 65.47 100 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 37<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11590.00 42.25 -31.75 74.00 56.69 38.39 12.64 65.47 100 360 Peak VERTICAL |

## Band 4 5725~5850MHz
## WIFI 802.11ac VHT80 (Harmonic @ 3m)

| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|---|---|---|
| ANT | 802.11ac VHT80 CH155 5775MHz | |
| 1+2 | Horizontal | Vertical |
| Peak<br>Avg. |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11550.00 43.17 -30.83 74.00 57.49 38.48 12.62 65.42 300 360 Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m HF ANT-201704-9120D VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 38<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 11550.00 42.36 -31.64 74.00 56.68 38.48 12.62 65.42 100 0 Peak VERTICAL |

## Emission below 1GHz

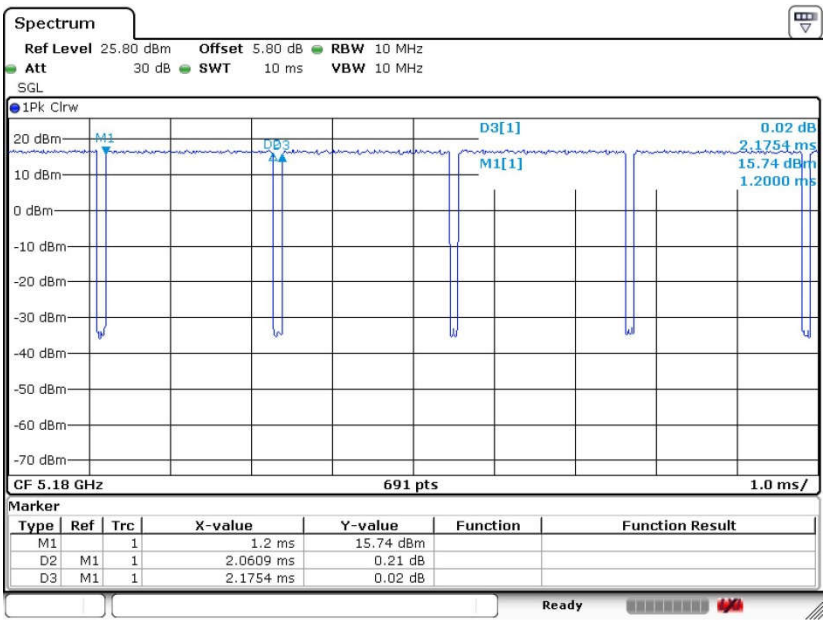
## 5GHz WIFI 802.11ac VHT40 (LF)

| WIFI | 5GHz 5725~5850MHz | |
|---|---|---|
| ANT | 802.11ac VHT40 LF | |
| 1+2 | Horizontal | Vertical |
| QP / Peak |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m LF ANT 6DB HORIZONTAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 32.91 28.87 -11.13 40.00 34.30 26.18 0.69 32.30 --- --- Peak HORIZONT<br>2 153.19 30.88 -12.62 43.50 43.88 17.78 1.50 32.28 --- --- Peak HORIZONT<br>3 211.39 34.14 -9.36 43.50 48.53 16.10 1.73 32.22 100 230 Peak HORIZONT<br>4 312.27 28.26 -17.74 46.00 38.57 19.59 2.18 32.08 --- --- Peak HORIZONT<br>5 559.62 28.72 -17.28 46.00 32.77 24.74 2.96 31.75 --- --- Peak HORIZONT<br>6 788.54 30.14 -15.86 46.00 30.43 27.76 3.56 31.61 --- --- Peak HORIZONT |  <br>Site : 03CH03-KS<br>Condition : 5G BAND4 3m LF ANT 6DB VERTICAL<br>: SWT:Auto<br>Project : (FR) 760219<br>Mode : 36<br>Plane : Pad+X<br>: Full-directivity<br>IMEI : #4<br>Powersettig : 13<br>Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark Pol/Phas<br>MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg<br>1 31.94 32.61 -7.39 40.00 37.70 26.52 0.68 32.29 100 20 Peak VERTICAL<br>2 45.52 30.48 -9.52 40.00 42.96 18.90 0.83 32.21 --- --- Peak VERTICAL<br>3 62.98 27.57 -12.43 40.00 45.68 13.18 0.95 32.24 --- --- Peak VERTICAL<br>4 97.90 34.32 -9.18 43.50 46.64 18.74 1.20 32.26 --- --- Peak VERTICAL<br>5 323.91 26.89 -19.11 46.00 36.63 20.13 2.21 32.08 --- --- Peak VERTICAL<br>6 559.62 29.52 -16.48 46.00 33.57 24.74 2.96 31.75 --- --- Peak VERTICAL |

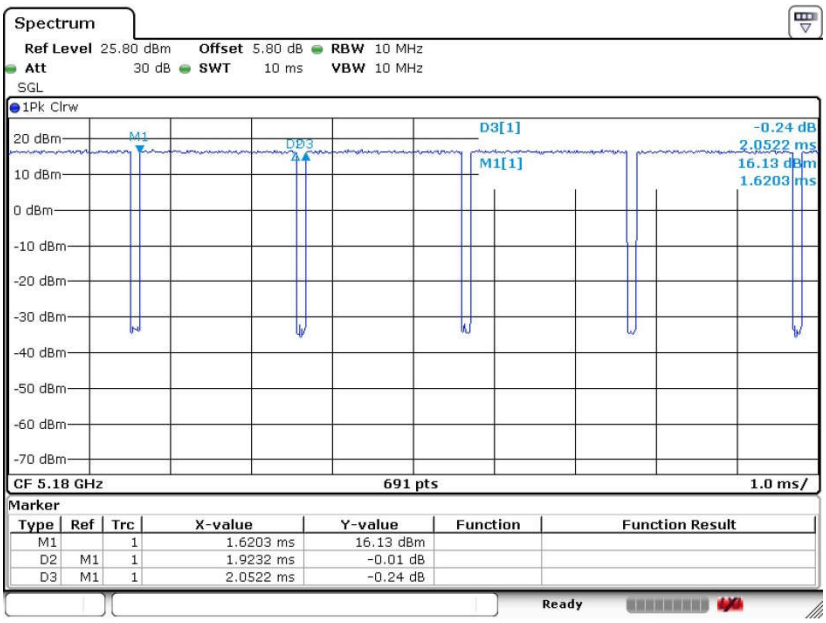
# Appendix D. Duty Cycle Plots

| Antenna | Band | Duty Cycle(%) | T(ms) | 1/T(kHz) | VBW Setting |
|---|---|---|---|---|---|
| 1+2 | 802.11a | 94.74 | 2.061 | 0.485 | 1kHz |
| 1+2 | 802.11ac VHT20 | 93.71 | 1.923 | 0.520 | 1kHz |
| 1+2 | 802.11ac VHT40 | 89.95 | 0.959 | 1.042 | 3kHz |
| 1+2 | 802.11ac VHT80 | 87.59 | 0.736 | 1.358 | 3kHz |

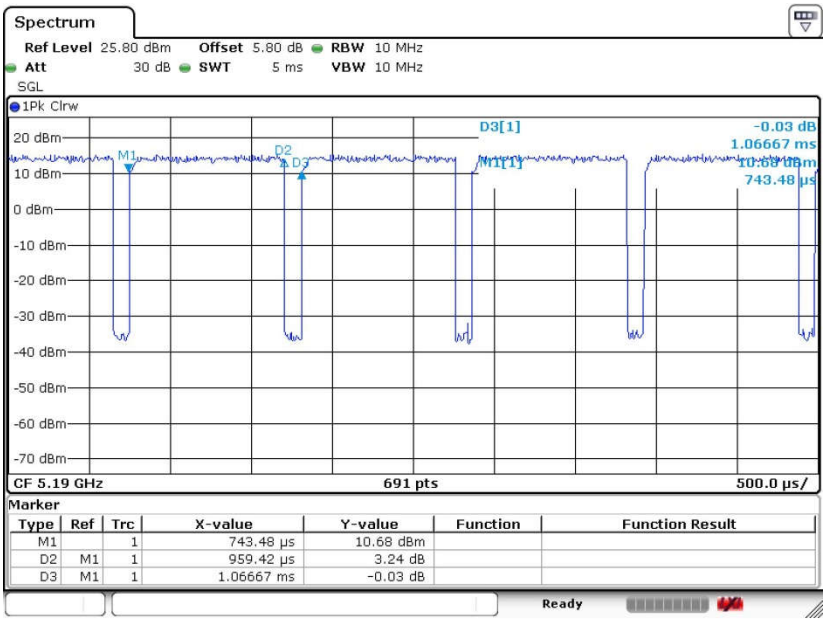
**802.11a**

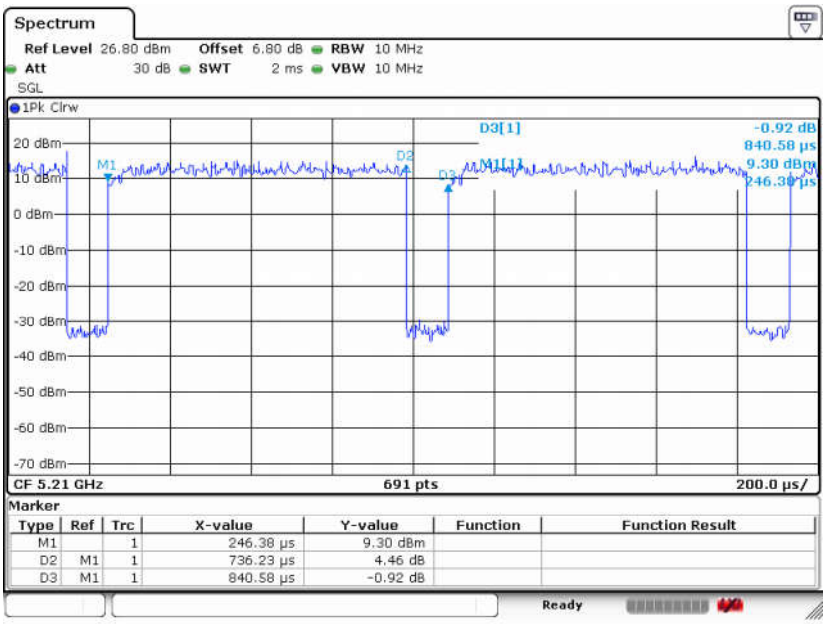



**802.11ac VHT20**



### 802.11ac VHT40




### 802.11ac VHT80