# FCC Test Report

| | | |
|---|---|---|
| **FCC ID** | : | **SWX-UAPACIWP** |
| **Equipment** | : | **UniFi AC In-Wall Pro Wi-Fi Access Point** |
| **Model No.** | : | **UAP-AC-IW-PRO** |
| **Brand Name** | : | **UBIQUITI** |
| **Applicant** | : | **Ubiquiti Networks, Inc.** |
| **Address** | : | **685 Third Avenue, 27th Floor New York, New York 10017 USA** |
| **Standard** | : | **47 CFR FCC Part 15.407** |
| **Received Date** | : | **Jun. 01, 2017** |
| **Tested Date** | : | **Jun. 13 ~ Jun. 27, 2017** |

**We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.**

**Reviewed by:** **Approved by:**

**Along Chen / Assistant Manager** **Gary Chang / Manager**

Testing Laboratory 2732

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# Release Record

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FR761701AN | Rev. 01 | Initial issue | Jul. 04, 2017 |

# Summary of Test Results

| FCC Rules | Test Items | Measured | Result |
|---|---|---|---|
| 15.207 | Conducted Emissions | [dBuV]: 0.444MHz<br>42.51 (Margin -4.47dB) - AV | Pass |
| 15.407(b)<br>15.209 | Radiated Emissions | [dBuV/m at 3m]: 5150.00MHz<br>53.79 (Margin -0.21dB) - AV | Pass |
| 15.407(a) | Emission Bandwidth | Meet the requirement of limit | Pass |
| 15.407(e) | 6dB bandwidth | Meet the requirement of limit | Pass |
| 15.407(a) | RF Output Power | Max Power [dBm]:<br>5150-5250MHz: 24.09<br>5725-5850MHz: 23.74 | Pass |
| 15.407(a) | Peak Power Spectral Density | Meet the requirement of limit | Pass |
| 15.407(g) | Frequency Stability | Meet the requirement of limit | Pass |
| 15.203 | Antenna Requirement | Meet the requirement of limit | Pass |

# 1 General Description

## 1.1 Information

### 1.1.1 Specification of the Equipment under Test (EUT)

| RF General Information | | | | | |
|---|---|---|---|---|---|
| **Frequency Range (MHz)** | **IEEE Std. 802.11** | **Ch. Freq. (MHz)** | **Channel Number** | **Transmit Chains ($N_{TX}$)** | **Data Rate / MCS** |
| 5150-5250 | a | 5180-5240 | 36-48 [4] | 3 | 6-54 Mbps |
| 5150-5250 | n (HT20) | 5180-5240 | 36-48 [4] | 3 | MCS 0-23 |
| 5150-5250 | n (HT40) | 5190-5230 | 38-46 [2] | 3 | MCS 0-23 |
| 5150-5250 | ac (VHT20) | 5180-5240 | 36-48 [4] | 3 | MCS 0-9 |
| 5150-5250 | ac (VHT40) | 5190-5230 | 38-46 [2] | 3 | MCS 0-9 |
| 5150-5250 | ac (VHT80) | 5210 | 42 [1] | 3 | MCS 0-9 |
| Note 1: RF output power specifies that Maximum Conducted Output Power.<br>Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. | | | | | |

| RF General Information | | | | | |
|---|---|---|---|---|---|
| **Frequency Range (MHz)** | **IEEE Std. 802.11** | **Ch. Freq. (MHz)** | **Channel Number** | **Transmit Chains ($N_{TX}$)** | **Data Rate / MCS** |
| 5725-5850 | a | 5745-5825 | 149-165 [5] | 3 | 6-54 Mbps |
| 5725-5850 | n (HT20) | 5745-5825 | 149-165 [5] | 3 | MCS 0-23 |
| 5725-5850 | n (HT40) | 5755-5795 | 151-159 [2] | 3 | MCS 0-23 |
| 5725-5850 | ac (VHT20) | 5745-5825 | 149-165 [5] | 3 | MCS 0-9 |
| 5725-5850 | ac (VHT40) | 5755-5795 | 151-159 [2] | 3 | MCS 0-9 |
| 5725-5850 | ac (VHT80) | 5775 | 155 [1] | 3 | MCS 0-9 |
| Note 1: RF output power specifies that Maximum Conducted Output Power.<br>Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. | | | | | |

### 1.1.2 Antenna Details

| Ant. No. | Type | Gain (dBi) | Connector | Remark |
|---|---|---|---|---|
| 1 | internal antenna | 6.5 | I-Pex | --- |

### 1.1.3 Power Supply Type of Equipment under Test (EUT)

| | |
|---|---|
| **Power Supply Type** | 48Vdc from POE |

### 1.1.4 Accessories

N/A

### 1.1.5 Channel List

| For Frequency band 5150-5250 MHz | | | |
|---|---|---|---|
| 802.11 a / HT20 / VHT20 | | HT40 / VHT40 | |
| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
| 36 | 5180 | 38 | 5190 |
| 40 | 5200 | 46 | 5230 |
| 44 | 5220 | VHT80 | |
| 48 | 5240 | 42 | 5210 |

| For Frequency band 5725~5850 MHz | | | |
|---|---|---|---|
| 802.11 a / HT20 / VHT20 | | HT40 / VHT40 | |
| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
| 149 | 5745 | 151 | 5755 |
| 153 | 5765 | 159 | 5795 |
| 157 | 5785 | VHT80 | |
| 161 | 5805 | 155 | 5775 |
| 165 | 5825 | --- | --- |

### 1.1.6 Test Tool and Duty Cycle

| Test Tool | cart | | |
|---|---|---|---|
| Duty Cycle and Duty Factor | Mode | Duty cycle (%) | Duty factor (dB) |
| | 11a | 95.91% | 0.18 |
| | VHT20 | 95.68% | 0.19 |
| | VHT40 | 90.91% | 0.41 |
| | VHT80 | 84.21% | 0.75 |

### 1.1.7 Power Setting

| For Frequency band 5150-5250 MHz | | |
|---|---|---|
| **Modulation Mode** | **Test Frequency (MHz)** | **Power Set** |
| 11a | 5180 | 19.5 |
| 11a | 5200 | 20.5 |
| 11a | 5240 | 20.5 |
| HT20 | 5180 | 18 |
| HT20 | 5200 | 20.5 |
| HT20 | 5240 | 20.5 |
| HT40 | 5190 | 14.5 |
| HT40 | 5230 | 21 |
| VHT20 | 5180 | 18 |
| VHT20 | 5200 | 20.5 |
| VHT20 | 5240 | 20.5 |
| VHT40 | 5190 | 13.5 |
| VHT40 | 5230 | 21 |
| VHT80 | 5210 | 12.5 |

| For Frequency band 5725~5850 MHz | | |
|---|---|---|
| **Modulation Mode** | **Test Frequency (MHz)** | **Power Set** |
| 11a | 5745 | 19 |
| 11a | 5785 | 18 |
| 11a | 5825 | 18 |
| HT20 | 5745 | 19 |
| HT20 | 5785 | 18 |
| HT20 | 5825 | 18 |
| HT40 | 5755 | 20 |
| HT40 | 5795 | 20 |
| VHT20 | 5745 | 19 |
| VHT20 | 5785 | 18 |
| VHT20 | 5825 | 18 |
| VHT40 | 5755 | 20 |
| VHT40 | 5795 | 20 |
| VHT80 | 5775 | 18.50 |

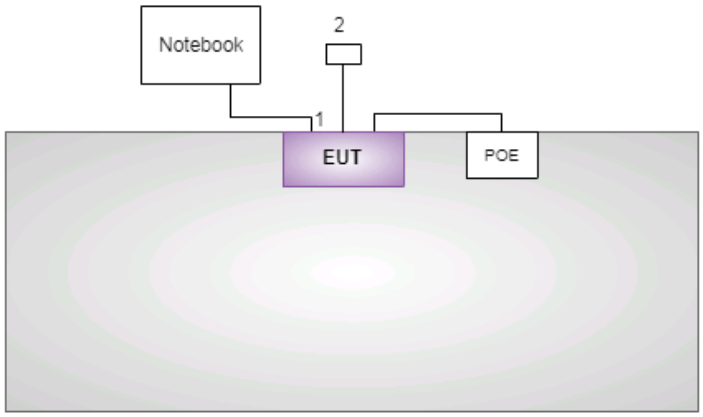
## 1.2 Local Support Equipment List

| Support Equipment List | | | | | |
|---|---|---|---|---|---|
| **No.** | **Equipment** | **Brand** | **Model** | **FCC ID** | **Signal cable / Length (m)** |
| 1 | Notebook | DELL | Latitude E6430 | DoC | RJ45, 10m non-shielded. |
| 2 | POE | UBIQUITI | GP-B480-050 | --- | ---- |

Note: No. 2 was provided by applicant..

## 1.3 Test Setup Chart

**Test Setup Diagram**




1. RJ45, 10m non-shielded
2. RJ45, 1m non-shielded with load

## 1.4 The Equipment List

| Test Item | Conducted Emission | | | | |
|---|---|---|---|---|---|
| Test Site | Conduction room 1 / (CO01-WS) | | | | |
| **Instrument** | **Manufacturer** | **Model No.** | **Serial No.** | **Calibration Date** | **Calibration Until** |
| Receiver | R&S | ESR3 | 101657 | Dec. 21, 2016 | Dec. 20, 2017 |
| LISN | SCHWARZBECK | Schwarzbeck 8127 | 8127-667 | Nov. 08, 2016 | Nov. 07, 2017 |
| RF Cable-CON | EMC | EMCCFD300-BM-BM-6000 | 50821 | Dec. 20, 2016 | Dec. 19, 2017 |
| Measurement Software | AUDIX | e3 | 6.120210k | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| Test Item | Radiated Emission | | | | |
|---|---|---|---|---|---|
| Test Site | 966 chamber1 / (03CH01-WS) | | | | |
| **Instrument** | **Manufacturer** | **Model No.** | **Serial No.** | **Calibration Date** | **Calibration Until** |
| Spectrum Analyzer | R&S | FSV40 | 101498 | Nov. 25, 2016 | Nov. 24, 2017 |
| Receiver | R&S | ESR3 | 101658 | Nov. 24, 2016 | Nov. 23, 2017 |
| Bilog Antenna | SCHWARZBECK | VULB9168 | VULB9168-522 | Aug. 04, 2016 | Aug. 03, 2017 |
| Horn Antenna 1G-18G | SCHWARZBECK | BBHA 9120 D | BBHA 9120 D 1096 | Dec. 21, 2016 | Dec. 20, 2017 |
| Horn Antenna 18G-40G | SCHWARZBECK | BBHA 9170 | BBHA 9170517 | Oct. 25, 2016 | Oct. 24, 2017 |
| Loop Antenna | R&S | HFH2-Z2 | 100330 | Nov. 10, 2016 | Nov. 09, 2017 |
| Loop Antenna Cable | KOAX KABEL | 101354-BW | 101354-BW | Dec. 09, 2016 | Dec. 08, 2017 |
| Preamplifier | EMC | EMC02325 | 980225 | Aug. 05, 2016 | Aug. 04, 2017 |
| Preamplifier | Agilent | 83017A | MY39501308 | Oct. 06, 2016 | Oct. 05, 2017 |
| Preamplifier | EMC | EMC184045B | 980192 | Aug. 24, 2016 | Aug. 23, 2017 |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16014/4 | Dec. 09, 2016 | Dec. 08, 2017 |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16019/4 | Dec. 09, 2016 | Dec. 08, 2017 |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16139/4 | Dec. 09, 2016 | Dec. 08, 2017 |
| LF cable 1M | EMC | EMCCFD400-NM-NM-1000 | 16052 | Dec. 09, 2016 | Dec. 08, 2017 |
| LF cable 3M | Woken | CFD400NL-LW | CFD400NL-001 | Dec. 09, 2016 | Dec. 08, 2017 |
| LF cable 10M | Woken | CFD400NL-LW | CFD400NL-002 | Dec. 09, 2016 | Dec. 08, 2017 |
| Measurement Software | AUDIX | e3 | 6.120210g | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| Test Item | RF Conducted | | | | |
|---|---|---|---|---|---|
| Test Site | (TH01-WS) | | | | |
| **Instrument** | **Manufacturer** | **Model No.** | **Serial No.** | **Calibration Date** | **Calibration Until** |
| Spectrum Analyzer | R&S | FSV40 | 101063 | Mar. 15, 2017 | Mar. 14, 2018 |
| Power Meter | Anritsu | ML2495A | 1241002 | Oct. 06, 2016 | Oct. 05, 2017 |
| Power Sensor | Anritsu | MA2411B | 1207366 | Oct. 06, 2016 | Oct. 05, 2017 |
| AC POWER SOURCE | APC | AFC-500W | F312060012 | Oct. 28, 2016 | Oct. 27, 2017 |
| Measurement Software | Sporton | Sporton_1 | 1.3.30 | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

## 1.5 Testing Applied Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.407
ANSI C63.10-2013
FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04
FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 412172 D01 Determining ERP and EIRP v01r01

## 1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

| **Measurement Uncertainty** | |
|---|---|
| **Parameters** | **Uncertainty** |
| Bandwidth | ±34.134 Hz |
| Conducted power | ±0.808 dB |
| Frequency error | ±34.134 Hz |
| Power density | ±0.463 dB |
| Conducted emission | ±2.670 dB |
| AC conducted emission | ±2.90 dB |
| Radiated emission ≤ 1GHz | ±3.66 dB |
| Radiated emission > 1GHz | ±5.63 dB |
| Time | ±0.1% |
| Temperature | ±0.6 °C |

# 2 Test Configuration

## 2.1 Testing Condition

| Test Item | Test Site | Ambient Condition | Tested By |
|---|---|---|---|
| AC Conduction | CO01-WS | 24°C / 55% | Alex Huang |
| Radiated Emissions | 03CH01-WS | 24°C / 64% | Vincent Yeh |
| RF Conducted | TH01-WS | 23°C / 65% | Brad Wu |

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

## 2.2 The Worst Test Modes and Channel Details

| For Frequency band 5150-5250 MHz | | | | |
|---|---|---|---|---|
| **Test item** | **Modulation Mode** | **Test Frequency (MHz)** | **Data Rate (Mbps) / MCS** | **Test Configuration** |
| Conducted Emissions | VHT20 | 5240 | MCS 0 | --- |
| Radiated Emissions ≤1GHz | VHT20 | 5240 | MCS 0 | --- |
| RF Output Power | 11a | 5180 / 5200 / 5240 | 6 Mbps | --- |
| | HT20 | 5180 / 5200 / 5240 | MCS 0 | |
| | HT40 | 5190 / 5230 | MCS 0 | |
| | VHT20 | 5180 / 5200 / 5240 | MCS 0 | |
| | VHT40 | 5190 / 5230 | MCS 0 | |
| | VHT80 | 5210 | MCS 0 | |
| Radiated Emissions >1GHz<br>Emission Bandwidth<br>Peak Power Spectral Density | 11a | 5180 / 5200 / 5240 | 6 Mbps | --- |
| | VHT20 | 5180 / 5200 / 5240 | MCS 0 | |
| | VHT40 | 5190 / 5230 | MCS 0 | |
| | VHT80 | 5210 | MCS 0 | |
| Frequency Stability | Un-modulation | 5200 | --- | --- |

**NOTE:**

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.

| For Frequency band 5725-5850 MHz | | | | |
|---|---|---|---|---|
| **Test item** | **Modulation Mode** | **Test Frequency (MHz)** | **Data Rate (Mbps) / MCS** | **Test Configuration** |
| Conducted Emissions | VHT40 | 5795 | MCS 0 | --- |
| Radiated Emissions ≤1GHz | VHT40 | 5795 | MCS 0 | --- |
| RF Output Power | 11a | 5745 / 5785 / 5825 | 6 Mbps | --- |
| | HT20 | 5745 / 5785 / 5825 | MCS 0 | |
| | HT40 | 5755 / 5795 | MCS 0 | |
| | VHT20 | 5745 / 5785 / 5825 | MCS 0 | |
| | VHT40 | 5755 / 5795 | MCS 0 | |
| | VHT80 | 5775 | MCS 0 | |
| Radiated Emissions >1GHz<br>Emission Bandwidth<br>6dB bandwidth<br>Peak Power Spectral Density | 11a | 5745 / 5785 / 5825 | 6 Mbps | --- |
| | VHT20 | 5745 / 5785 / 5825 | MCS 0 | |
| | VHT40 | 5755 / 5795 | MCS 0 | |
| | VHT80 | 5775 | MCS 0 | |
| Frequency Stability | Un-modulation | 5785 | --- | --- |

**NOTE:**

2. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.

# 3 Transmitter Test Results

## 3.1 Conducted Emissions

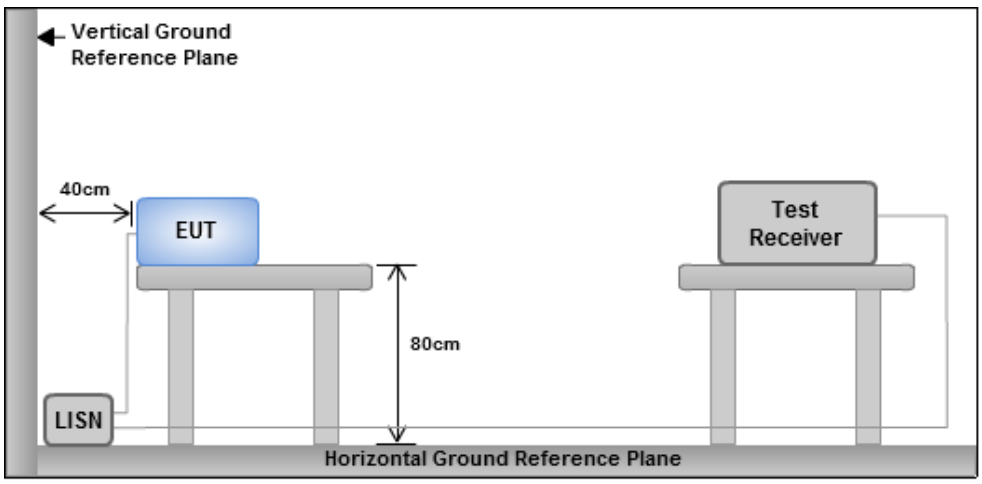
### 3.1.1 Limit of Conducted Emissions

| Conducted Emissions Limit | | |
|---|---|---|
| **Frequency Emission (MHz)** | **Quasi-Peak** | **Average** |
| 0.15-0.5 | 66 - 56 * | 56 - 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| Note 1: * Decreases with the logarithm of the frequency. | | |

### 3.1.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

### 3.1.3 Test Setup

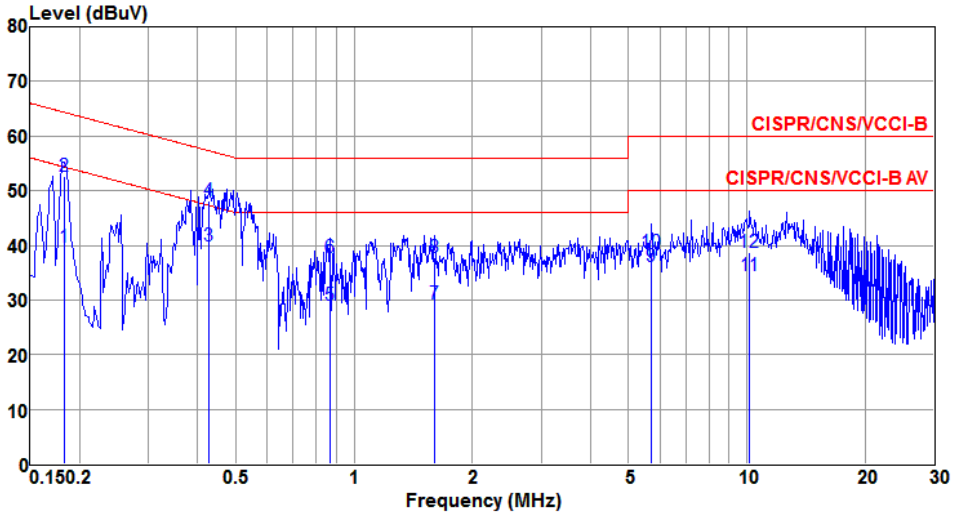



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

## 3.1.4 Test Result of Conducted Emissions

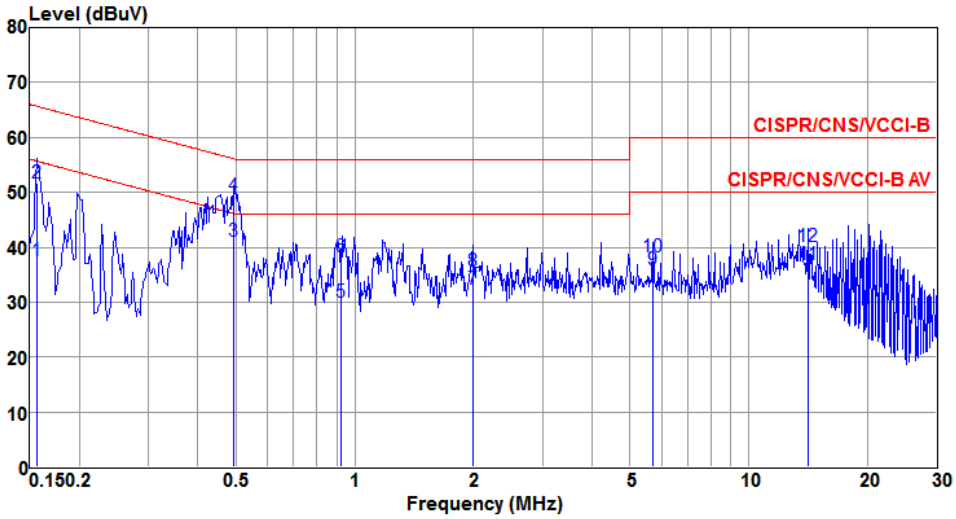
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Power Phase | Line | | |




| | Freq | Level | Limit Line | Over Limit | Read Level | LISN factor | cable loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dBuV | dB | dBuV | dB | dB | |
| 1 | 0.183 | 39.66 | 54.33 | -14.67 | 39.53 | 0.09 | 0.04 | Average |
| 2 | 0.183 | 52.68 | 64.33 | -11.65 | 52.55 | 0.09 | 0.04 | QP |
| 3@ | 0.428 | 39.99 | 47.29 | -7.30 | 39.89 | 0.06 | 0.04 | Average |
| 4 | 0.428 | 48.25 | 57.29 | -9.04 | 48.15 | 0.06 | 0.04 | QP |
| 5 | 0.871 | 29.08 | 46.00 | -16.92 | 28.97 | 0.07 | 0.04 | Average |
| 6 | 0.871 | 37.81 | 56.00 | -18.19 | 37.70 | 0.07 | 0.04 | QP |
| 7 | 1.602 | 29.25 | 46.00 | -16.75 | 29.10 | 0.11 | 0.04 | Average |
| 8 | 1.602 | 37.82 | 56.00 | -18.18 | 37.67 | 0.11 | 0.04 | QP |
| 9 | 5.712 | 36.08 | 50.00 | -13.92 | 35.72 | 0.18 | 0.18 | Average |
| 10 | 5.712 | 38.82 | 60.00 | -21.18 | 38.46 | 0.18 | 0.18 | QP |
| 11 | 10.179 | 34.46 | 50.00 | -15.54 | 34.04 | 0.20 | 0.22 | Average |
| 12 | 10.179 | 38.60 | 60.00 | -21.40 | 38.18 | 0.20 | 0.22 | QP |

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

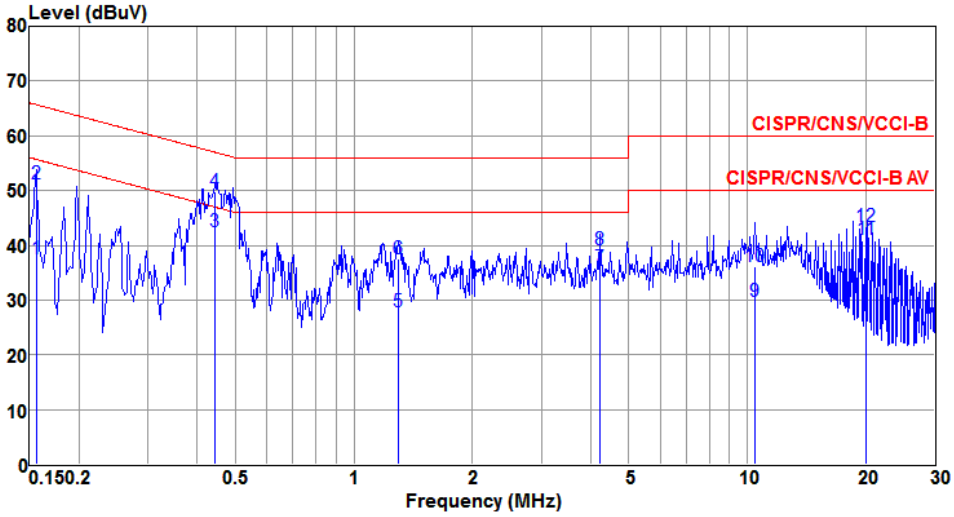
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Power Phase | Neutral | | |




| | Freq | Level | Limit Line | Over Limit | Read Level | LISN factor | cable loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dBuV | dB | dBuV | dB | dB | |
| 1 | 0.156 | 37.54 | 55.69 | -18.15 | 37.40 | 0.10 | 0.04 | Average |
| 2 | 0.156 | 51.59 | 65.69 | -14.10 | 51.45 | 0.10 | 0.04 | QP |
| 3@ | 0.491 | 41.15 | 46.14 | -4.99 | 40.99 | 0.12 | 0.04 | Average |
| 4 | 0.491 | 49.30 | 56.14 | -6.84 | 49.14 | 0.12 | 0.04 | QP |
| 5 | 0.922 | 29.88 | 46.00 | -16.12 | 29.75 | 0.09 | 0.04 | Average |
| 6 | 0.922 | 38.15 | 56.00 | -17.85 | 38.02 | 0.09 | 0.04 | QP |
| 7 | 1.991 | 32.38 | 46.00 | -13.62 | 32.18 | 0.16 | 0.04 | Average |
| 8 | 1.991 | 35.67 | 56.00 | -20.33 | 35.47 | 0.16 | 0.04 | QP |
| 9 | 5.711 | 35.86 | 50.00 | -14.14 | 35.47 | 0.21 | 0.18 | Average |
| 10 | 5.711 | 38.35 | 60.00 | -21.65 | 37.96 | 0.21 | 0.18 | QP |
| 11 | 14.156 | 36.78 | 50.00 | -13.22 | 36.19 | 0.36 | 0.23 | Average |
| 12 | 14.156 | 40.02 | 60.00 | -19.98 | 39.43 | 0.36 | 0.23 | QP |

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

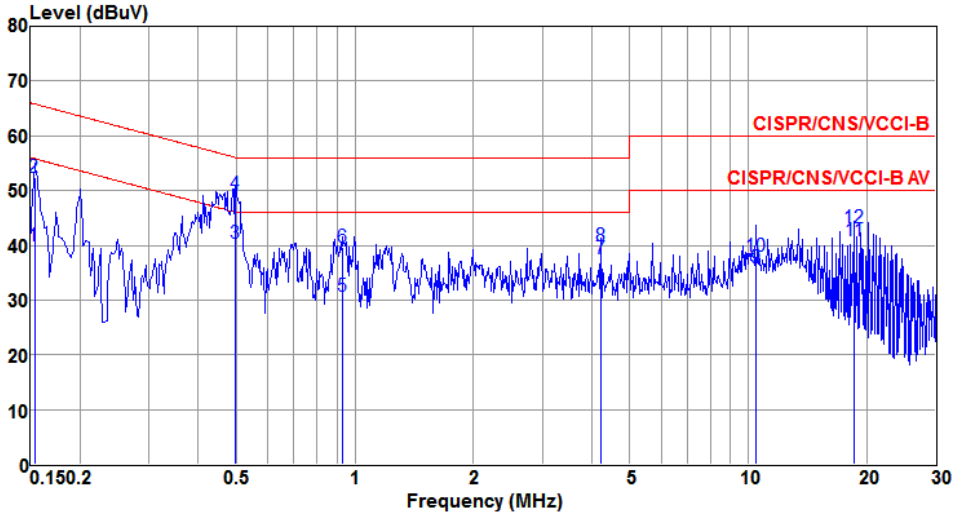
| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Power Phase | Line | | |




| | Freq | Level | Limit Line | Over Limit | Read Level | LISN factor | cable loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dBuV | dB | dBuV | dB | dB | |
| 1 | 0.156 | 37.55 | 55.69 | -18.14 | 37.44 | 0.07 | 0.04 | Average |
| 2 | 0.156 | 51.28 | 65.69 | -14.41 | 51.17 | 0.07 | 0.04 | QP |
| 3@ | 0.444 | 42.51 | 46.98 | -4.47 | 42.41 | 0.06 | 0.04 | Average |
| 4 | 0.444 | 49.74 | 56.98 | -7.24 | 49.64 | 0.06 | 0.04 | QP |
| 5 | 1.296 | 27.81 | 46.00 | -18.19 | 27.68 | 0.09 | 0.04 | Average |
| 6 | 1.296 | 37.44 | 56.00 | -18.56 | 37.31 | 0.09 | 0.04 | QP |
| 7 | 4.224 | 35.97 | 46.00 | -10.03 | 35.64 | 0.17 | 0.16 | Average |
| 8 | 4.224 | 39.13 | 56.00 | -16.87 | 38.80 | 0.17 | 0.16 | QP |
| 9 | 10.452 | 29.66 | 50.00 | -20.34 | 29.23 | 0.21 | 0.22 | Average |
| 10 | 10.452 | 36.03 | 60.00 | -23.97 | 35.60 | 0.21 | 0.22 | QP |
| 11 | 20.116 | 41.07 | 50.00 | -8.93 | 40.41 | 0.40 | 0.26 | Average |
| 12 | 20.116 | 43.41 | 60.00 | -16.59 | 42.75 | 0.40 | 0.26 | QP |

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Power Phase | Neutral | | |




| | Freq | Level | Limit Line | Over Limit | Read Level | LISN factor | cable loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dBuV | dB | dBuV | dB | dB | |
| 1 | 0.153 | 39.85 | 55.82 | -15.97 | 39.71 | 0.10 | 0.04 | Average |
| 2 | 0.153 | 52.43 | 65.82 | -13.39 | 52.29 | 0.10 | 0.04 | QP |
| 3@ | 0.497 | 40.42 | 46.05 | -5.63 | 40.26 | 0.12 | 0.04 | Average |
| 4 | 0.497 | 49.31 | 56.05 | -6.74 | 49.15 | 0.12 | 0.04 | QP |
| 5 | 0.928 | 30.67 | 46.00 | -15.33 | 30.54 | 0.09 | 0.04 | Average |
| 6 | 0.928 | 39.64 | 56.00 | -16.36 | 39.51 | 0.09 | 0.04 | QP |
| 7 | 4.223 | 37.49 | 46.00 | -8.51 | 37.18 | 0.15 | 0.16 | Average |
| 8 | 4.223 | 39.84 | 56.00 | -16.16 | 39.53 | 0.15 | 0.16 | QP |
| 9 | 10.427 | 35.88 | 50.00 | -14.12 | 35.34 | 0.32 | 0.22 | Average |
| 10 | 10.427 | 38.10 | 60.00 | -21.90 | 37.56 | 0.32 | 0.22 | QP |
| 11 | 18.627 | 40.85 | 50.00 | -9.15 | 40.20 | 0.40 | 0.25 | Average |
| 12 | 18.627 | 43.20 | 60.00 | -16.80 | 42.55 | 0.40 | 0.25 | QP |

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

## 3.2 Emission Bandwidth

### 3.2.1 Limit of Emission bandwidth

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### 3.2.2 Test Procedures

**26dB Bandwidth**

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW, Detector = Peak.
3. Trace mode = max hold.
4. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

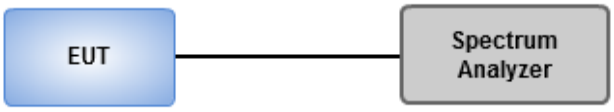
**Occupied Bandwidth**

1. Set RBW = 1 % to 5 % of the OBW
2. Set VBW ≥ 3 RBW
3. Sample detection and single sweep mode shall be used
4. Use the 99 % power bandwidth function of the instrument

**6dB Bandwidth**

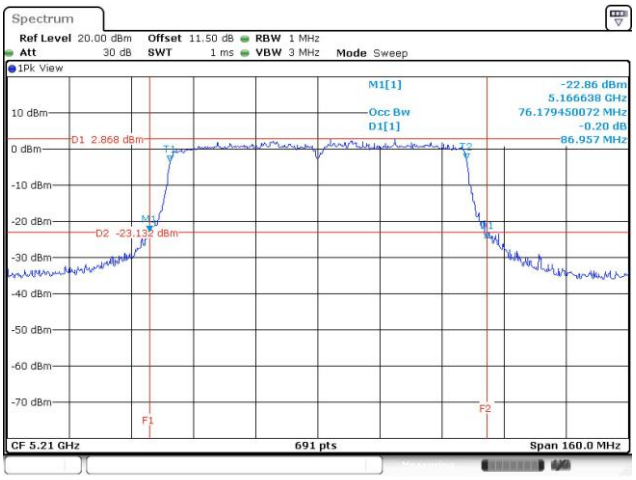
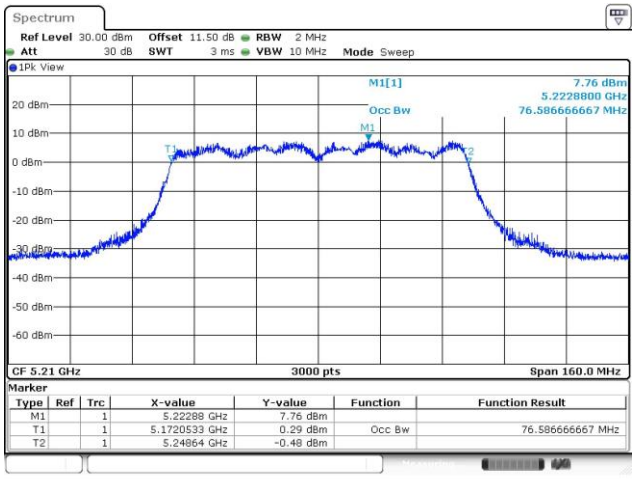
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak,Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

### 3.2.3 Test Setup

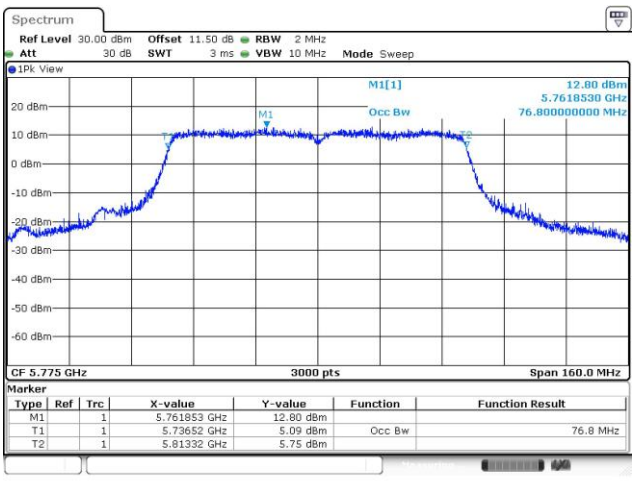
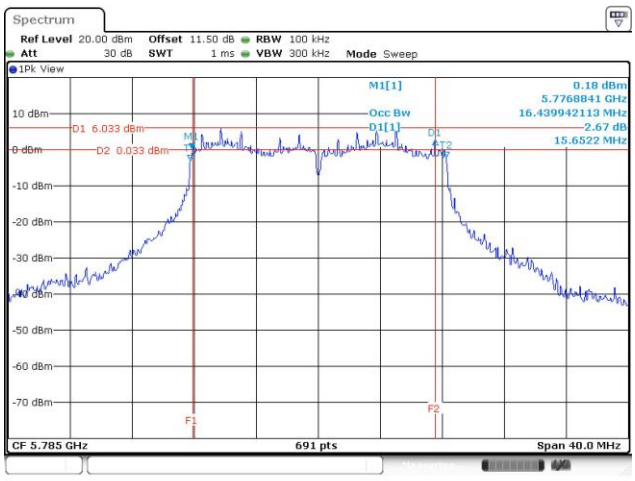


## 3.2.4 Test Result of Emission Bandwidth

| For Frequency band 5150-5250 MHz | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Emission Bandwidth | | | | | | | | | | |
| Mode | $N_{TX}$ | Freq. (MHz) | 26dB Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
| | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | Chain 0 | Chain 1 | Chain 2 | Chain 3 |
| 11a | 3 | 5180 | 26.78 | 24.06 | 23.94 | --- | 17.17 | 16.71 | 16.81 | --- |
| 11a | 3 | 5200 | 29.28 | 23.83 | 25.22 | --- | 17.44 | 16.80 | 16.91 | --- |
| 11a | 3 | 5240 | 24.81 | 23.36 | 24.46 | --- | 17.88 | 16.93 | 16.93 | --- |
| VHT20 | 3 | 5180 | 23.07 | 22.72 | 24.12 | --- | 18.13 | 17.81 | 17.99 | --- |
| VHT20 | 3 | 5200 | 27.19 | 24.46 | 27.94 | --- | 18.37 | 17.84 | 18.04 | --- |
| VHT20 | 3 | 5240 | 27.07 | 22.14 | 26.67 | --- | 18.33 | 18.29 | 18.08 | --- |
| VHT40 | 3 | 5190 | 44.99 | 43.48 | 46.03 | --- | 36.91 | 36.51 | 36.91 | --- |
| VHT40 | 3 | 5230 | 55.88 | 55.77 | 48.93 | --- | 37.25 | 37.17 | 37.12 | --- |
| VHT80 | 3 | 5210 | 86.26 | 85.57 | 86.96 | --- | 76.59 | 76.59 | 76.37 | --- |

| Worst Plot of 26dB Bandwidth | Worst Plot of 99% Bandwidth |
|---|---|
|  |  |

| For Frequency band 5725-5850 MHz | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emission Bandwidth | | | | | | | | | | | |
| Mode | $N_{TX}$ | Freq. (MHz) | OBW Bandwidth (MHz) | | | | 6dB Bandwidth (MHz) | | | | |
| | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | Chain 0 | Chain 1 | Chain 2 | Chain 3 | 6dB BW Limit (MHz) |
| 11a | 3 | 5745 | 16.89 | 16.88 | 16.81 | --- | 15.94 | 16.35 | 16.35 | --- | 0.5 |
| 11a | 3 | 5785 | 16.73 | 16.79 | 16.72 | --- | 15.65 | 16.29 | 16.35 | --- | 0.5 |
| 11a | 3 | 5825 | 16.84 | 16.80 | 16.76 | --- | 16.35 | 16.41 | 16.35 | --- | 0.5 |
| VHT20 | 3 | 5745 | 17.96 | 17.95 | 17.91 | --- | 17.28 | 17.57 | 17.51 | --- | 0.5 |
| VHT20 | 3 | 5785 | 17.84 | 17.93 | 17.89 | --- | 16.52 | 17.57 | 17.57 | --- | 0.5 |
| VHT20 | 3 | 5825 | 18.08 | 17.79 | 17.88 | --- | 17.33 | 17.57 | 17.57 | --- | 0.5 |
| VHT40 | 3 | 5755 | 37.04 | 37.33 | 37.09 | --- | 35.71 | 36.29 | 36.29 | --- | 0.5 |
| VHT40 | 3 | 5795 | 37.44 | 37.07 | 37.07 | --- | 35.25 | 35.36 | 35.36 | --- | 0.5 |
| VHT80 | 3 | 5775 | 76.80 | 76.80 | 76.43 | --- | 73.97 | 75.36 | 75.83 | --- | 0.5 |

| Worst Plots of 99% Bandwidth | Worst Plots of 6dB Bandwidth |
|---|---|
|  |  |

## 3.3 RF Output Power

### 3.3.1 Limit of RF Output Power

| Frequency band 5150-5250 MHz | | |
|---|---|---|
| **Operating Mode** | | **Limit** |
| ☐ | Outdoor access point | Conducted Power: 1 W<br>The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm) |
| ☒ | Indoor access point | Conducted Power: 1 W |
| ☐ | Fixed point-to-point access points | Conducted Power: 1 W |
| ☐ | Client devices | Conducted Power: 250 mW |

| **Frequency Band (MHz)** | | **Limit** |
|---|---|---|
| ☐ | 5250 ~ 5350 | 250mW or 11dBm+10 log B |
| ☐ | 5470 ~ 5725 | 250mW or 11dBm+10 log B |
| ☒ | 5725 ~ 5850 | 1 W |
| Note: “B” is the 26dB emission bandwidth in MHz. | | |

### 3.3.2 Test Procedures

☒ **Method PM-G ( Measurement using a gated RF average power meter )**

☒ Measurements may is performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

### 3.3.3 Test Setup

### 3.3.4 Test Result of Maximum Conducted Output Power

| For Frequency band 5150-5250 MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | $N_{TX}$ | Freq. (MHz) | Conducted Power (dBm) | | | | Total Power (mW) | Total Power (dBm) | Limit (dBm) |
| | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | | | |
| 11a | 3 | 5180 | 18.13 | 18.89 | 18.62 | --- | 215.237 | 23.33 | 29.50 |
| 11a | 3 | 5200 | 19.3 | 19.1 | 19.08 | --- | 247.306 | 23.93 | 29.50 |
| 11a | 3 | 5240 | 19.32 | 19.03 | 18.72 | --- | 239.963 | 23.80 | 29.50 |
| HT20 | 3 | 5180 | 17.12 | 16.61 | 17.91 | --- | 159.139 | 22.02 | 29.50 |
| HT20 | 3 | 5200 | 18.92 | 19.21 | 18.75 | --- | 236.341 | 23.74 | 29.50 |
| HT20 | 3 | 5240 | 19.02 | 19.83 | 18.75 | --- | 250.950 | 24.00 | 29.50 |
| HT40 | 3 | 5190 | 12.76 | 12.21 | 13.04 | --- | 55.651 | 17.45 | 29.50 |
| HT40 | 3 | 5230 | 18.91 | 19.48 | 19.11 | --- | 247.990 | 23.94 | 29.50 |
| VHT20 | 3 | 5180 | 17.23 | 16.69 | 17.96 | --- | 162.028 | 22.10 | 29.50 |
| VHT20 | 3 | 5200 | 19.05 | 19.32 | 18.92 | --- | 243.842 | 23.87 | 29.50 |
| VHT20 | 3 | 5240 | 19.13 | 19.91 | 18.86 | --- | 256.709 | **24.09** | 29.50 |
| VHT40 | 3 | 5190 | 11.96 | 11.26 | 12.28 | --- | 45.974 | 16.63 | 29.50 |
| VHT40 | 3 | 5230 | 19.05 | 19.61 | 19.23 | --- | 255.517 | 24.07 | 29.50 |
| VHT80 | 3 | 5210 | 11.03 | 11.01 | 11.23 | --- | 38.569 | 15.86 | 29.50 |

Note: Antenna gain is 6.5dBi > 6dBi, Limit shall be reduced to 30dBm – ( 6.5 dBi – 6dBi )=29.5 dBm

| For Frequency band 5725-5850 MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | $N_{TX}$ | Freq. (MHz) | Conducted Power (dBm) | | | | Total Power (mW) | Total Power (dBm) | Limit (dBm) |
| | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | | | |
| 11a | 3 | 5745 | 19.52 | 18.17 | 18.11 | --- | 219.865 | 23.42 | 29.50 |
| 11a | 3 | 5785 | 17.82 | 17.18 | 16.79 | --- | 160.527 | 22.06 | 29.50 |
| 11a | 3 | 5825 | 18.83 | 17.08 | 17.05 | --- | 178.133 | 22.51 | 29.50 |
| HT20 | 3 | 5745 | 19.85 | 18.02 | 17.91 | --- | 221.794 | 23.46 | 29.50 |
| HT20 | 3 | 5785 | 17.68 | 17.12 | 16.81 | --- | 158.110 | 21.99 | 29.50 |
| HT20 | 3 | 5825 | 18.72 | 17.02 | 17.04 | --- | 175.406 | 22.44 | 29.50 |
| HT40 | 3 | 5755 | 18.91 | 18.56 | 18.52 | --- | 220.704 | 23.44 | 29.50 |
| HT40 | 3 | 5795 | 19.71 | 18.62 | 18.03 | --- | 229.852 | 23.61 | 29.50 |
| VHT20 | 3 | 5745 | 20.02 | 18.15 | 18.02 | --- | 229.162 | 23.60 | 29.50 |
| VHT20 | 3 | 5785 | 17.81 | 17.26 | 16.92 | --- | 162.810 | 22.12 | 29.50 |
| VHT20 | 3 | 5825 | 18.85 | 17.15 | 17.12 | --- | 180.139 | 22.56 | 29.50 |
| VHT40 | 3 | 5755 | 19.02 | 18.71 | 18.67 | --- | 227.722 | 23.57 | 29.50 |
| VHT40 | 3 | 5795 | 19.83 | 18.71 | 18.19 | --- | 236.381 | **23.74** | 29.50 |
| VHT80 | 3 | 5775 | 17.95 | 17.06 | 16.83 | --- | 161.384 | 22.08 | 29.50 |

Note: Antenna gain is 6.5dBi > 6dBi, Limit shall be reduced to 30dBm – ( 6.5 dBi – 6dBi )=29.5 dBm

## 3.4 Peak Power Spectral Density

### 3.4.1 Limit of Peak Power Spectral Density

| Frequency band 5150-5250 MHz | | |
|---|---|---|
| **Operating Mode** | | **Limit** |
| ☐ | Outdoor access point | 17 dBm / MHz |
| ☒ | Indoor access point | 17 dBm / MHz |
| ☐ | Fixed point-to-point access points | 17 dBm / MHz |
| ☐ | Client devices | 11 dBm / MHz |

| **Frequency Band (MHz)** | | **Limit** |
|---|---|---|
| ☐ | 5250 ~ 5350 | 11 dBm / MHz |
| ☐ | 5470 ~ 5725 | 11 dBm / MHz |
| ☒ | 5725 ~ 5850 | 30 dBm / 500 kHz |

### 3.4.2 Test Procedures

**For 5150 ~ 5250 MHz**

☐ Method SA-1

1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

☒ Method SA-2 Alternative

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add 10 log(1/x), where x is the duty cycle.

**For 5725 ~ 5850 MHz**

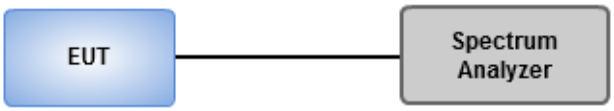
☐ Method SA-1

1. Set RBW = 500 kHz, VBW = 2 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

☒ Method SA-2 Alternative

1. Set RBW = 500 kHz, VBW = 2 MHz, Detector = RMS.
2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add 10 log(1/x), where x is the duty cycle.

### 3.4.3 Test Setup

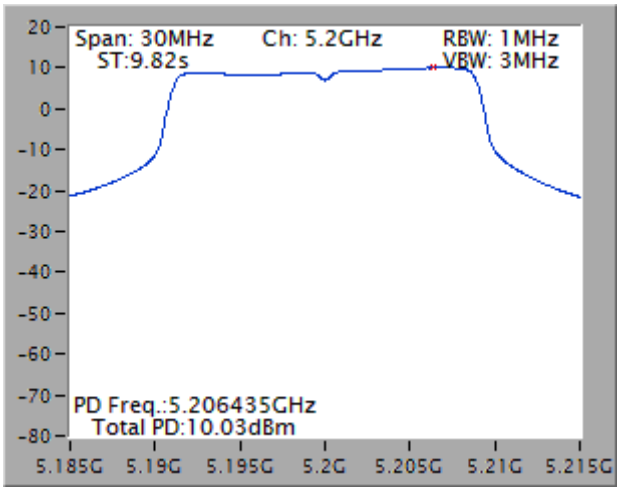


### 3.4.4 Test Result of Peak Power Spectral Density

| For Frequency band 5150-5250 MHz | | | | | | |
|---|---|---|---|---|---|---|
| Condition | | | Peak Power Spectral Density (dBm/MHz) | | | |
| Modulation Mode | $N_{TX}$ | Freq. (MHz) | PPSD w/o D.F (dBm/MHz) | Duty Factor (dB) | PPSD with D.F (dBm/MHz) | PPSD Limit (dBm/MHz) |
| 11a | 3 | 5180 | 9.03 | 0.18 | 9.21 | 11.73 |
| 11a | 3 | 5200 | 9.59 | 0.18 | 9.77 | 11.73 |
| 11a | 3 | 5240 | 9.89 | 0.18 | 10.07 | 11.73 |
| VHT20 | 3 | 5180 | 8.60 | 0.19 | 8.79 | 11.73 |
| VHT20 | 3 | 5200 | 10.03 | 0.19 | 10.22 | 11.73 |
| VHT20 | 3 | 5240 | 9.39 | 0.19 | 9.58 | 11.73 |
| VHT40 | 3 | 5190 | 0.69 | 0.41 | 1.10 | 11.73 |
| VHT40 | 3 | 5230 | 6.19 | 0.41 | 6.60 | 11.73 |
| VHT80 | 3 | 5210 | -3.77 | 0.75 | -3.02 | 11.73 |

**Note:**
1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = 6.5+10* log(3/1) = 11.27 dBi > 6 dBi.
   Limit shall be reduced to 17 dBm – (11.27dBi – 6 dBi) = 11.73 dBm.

**Worst Plot**

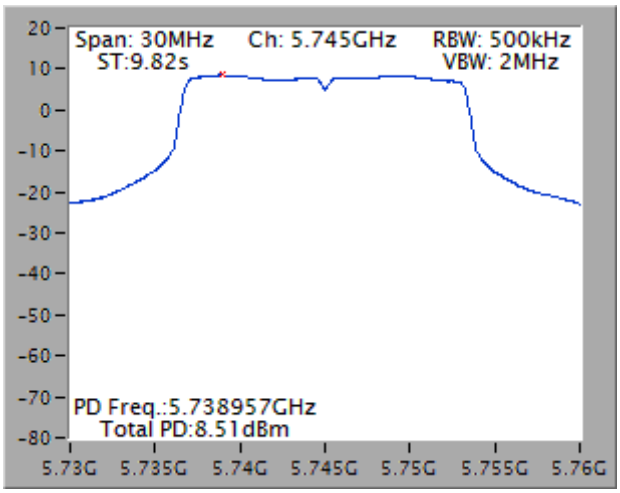



Note: The plot without duty factor.

| For Frequency band 5725-5850 MHz | | | | | | |
|---|---|---|---|---|---|---|
| Condition | | | Peak Power Spectral Density (dBm/500kHz) | | | |
| Modulation Mode | $N_{TX}$ | Freq. (MHz) | PPSD w/o D.F (dBm/500kHz) | Duty Factor (dB) | PPSD with D.F (dBm/500kHz) | PPSD Limit (dBm/500kHz) |
| 11a | 3 | 5745 | 8.51 | 0.18 | 8.69 | 24.73 |
| 11a | 3 | 5785 | 6.72 | 0.18 | 6.90 | 24.73 |
| 11a | 3 | 5825 | 7.54 | 0.18 | 7.72 | 24.73 |
| VHT20 | 3 | 5745 | 7.62 | 0.19 | 7.81 | 24.73 |
| VHT20 | 3 | 5785 | 5.95 | 0.19 | 6.14 | 24.73 |
| VHT20 | 3 | 5825 | 7.28 | 0.19 | 7.47 | 24.73 |
| VHT40 | 3 | 5755 | 5.17 | 0.41 | 5.58 | 24.73 |
| VHT40 | 3 | 5795 | 5.06 | 0.41 | 5.47 | 24.73 |
| VHT80 | 3 | 5775 | -0.02 | 0.75 | 0.73 | 24.73 |

**Note:**
1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain =6.5+10* log(3/1) = 11.27 dBi > 6 dBi.
   Limit shall be reduced to 30 dBm – (11.27dBi – 6 dBi) = 24.73 dBm.

**Worst Plot**




Note: The plot without duty factor.

# 3.5 Transmitter Radiated and Band Edge Emissions

## 3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

| Restricted Band Emissions Limit | | | |
|---|---|---|---|
| **Frequency Range (MHz)** | **Field Strength (uV/m)** | **Field Strength (dBuV/m)** | **Measure Distance (m)** |
| 0.009~0.490 | 2400/F(kHz) | 48.5 - 13.8 | 300 |
| 0.490~1.705 | 24000/F(kHz) | 33.8 - 23 | 30 |
| 1.705~30.0 | 30 | 29 | 30 |
| 30~88 | 100 | 40 | 3 |
| 88~216 | 150 | 43.5 | 3 |
| 216~960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

**Note 1:**
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
**Note 2:**
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

| Un-restricted band emissions above 1GHz Limit | | |
|---|---|---|
| **Operating Band** | **Limit** | |
| 5.15 - 5.25 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m] | |
| 5.725 - 5.850 GHz | ☒ | 15.407(b)(4)(i)<br>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. |
| | ☐ | 15.407(b)(4)(ii) ,compliance with the emission limits in § 15.247(d)<br>Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition,radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see § 15.205(c)) |
| Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). | | |

### 3.5.2 Test Procedures

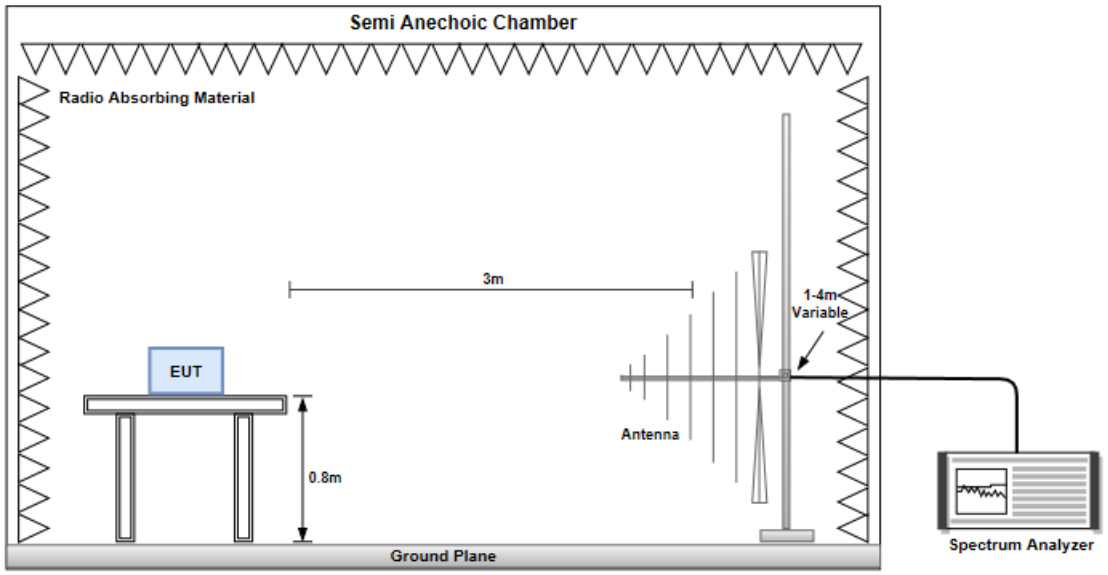
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

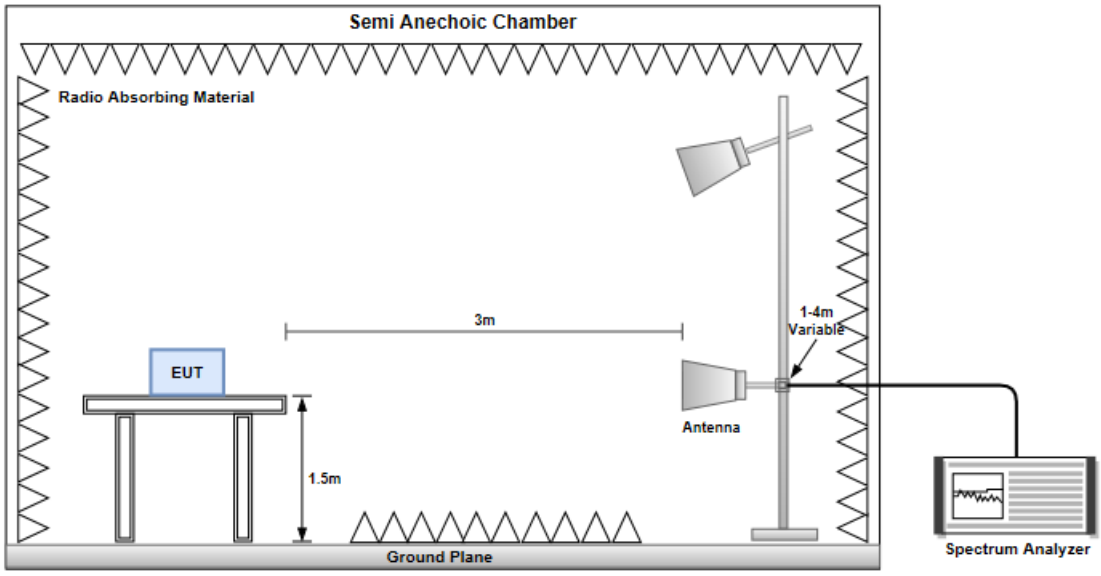
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

### 3.5.3 Test Setup

**Radiated Emissions below 1 GHz**

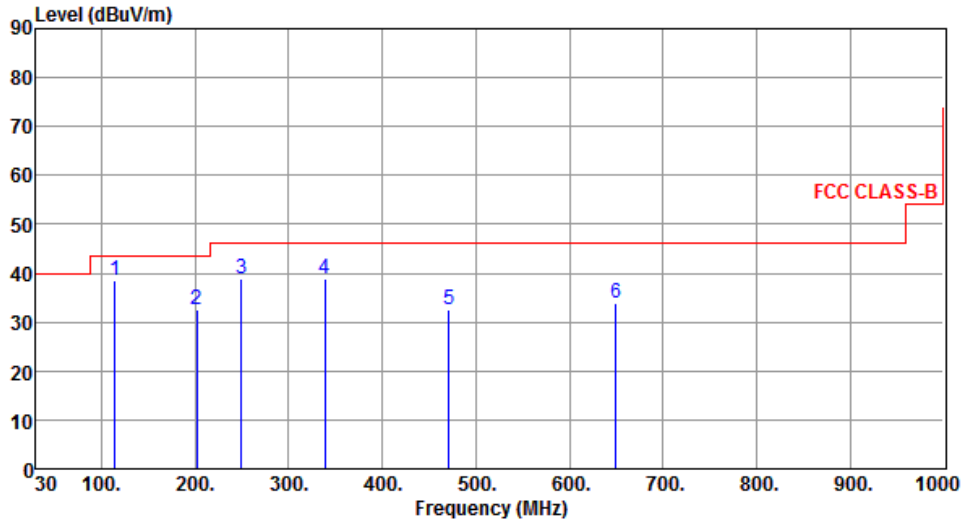



**Radiated Emissions above 1 GHz**



## 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

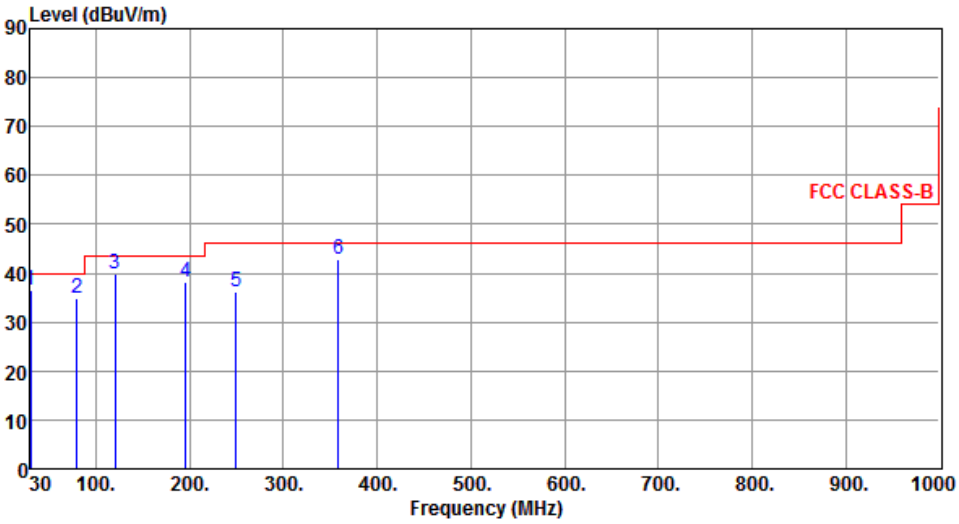
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 114.39 | 38.63 | 43.50 | -4.87 | 49.34 | -10.71 | Peak | --- | --- |
| 2 | 201.69 | 32.56 | 43.50 | -10.94 | 43.62 | -11.06 | Peak | --- | --- |
| 3 | 249.22 | 38.83 | 46.00 | -7.17 | 48.06 | -9.23 | Peak | --- | --- |
| 4 | 338.34 | 38.96 | 46.00 | -7.04 | 45.51 | -6.55 | QP | 100 | 222 |
| 5 | 471.35 | 32.59 | 46.00 | -13.41 | 35.94 | -3.35 | Peak | --- | --- |
| 6 | 649.83 | 33.81 | 46.00 | -12.19 | 33.85 | -0.04 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

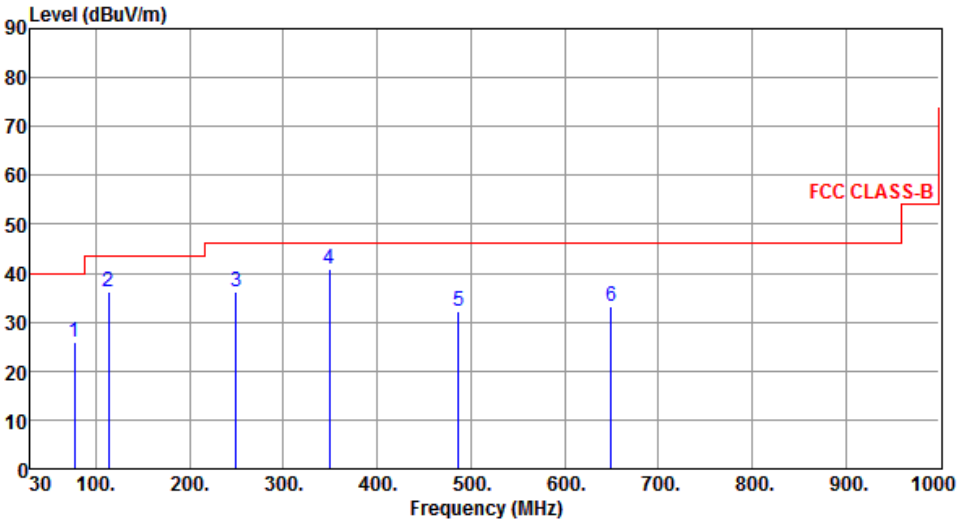
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.45 | 36.45 | 40.00 | -3.55 | 45.30 | -8.85 | Peak | --- | --- |
| 2 | 79.47 | 34.85 | 40.00 | -5.15 | 47.31 | -12.46 | Peak | --- | --- |
| 3 | 120.21 | 39.80 | 43.50 | -3.70 | 49.93 | -10.13 | Peak | --- | --- |
| 4 | 195.87 | 38.12 | 43.50 | -5.38 | 49.17 | -11.05 | Peak | --- | --- |
| 5 | 249.22 | 36.10 | 46.00 | -9.90 | 45.33 | -9.23 | Peak | --- | --- |
| 6 | 358.83 | 42.86 | 46.00 | -3.14 | 48.89 | -6.03 | QP | 116 | 148 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

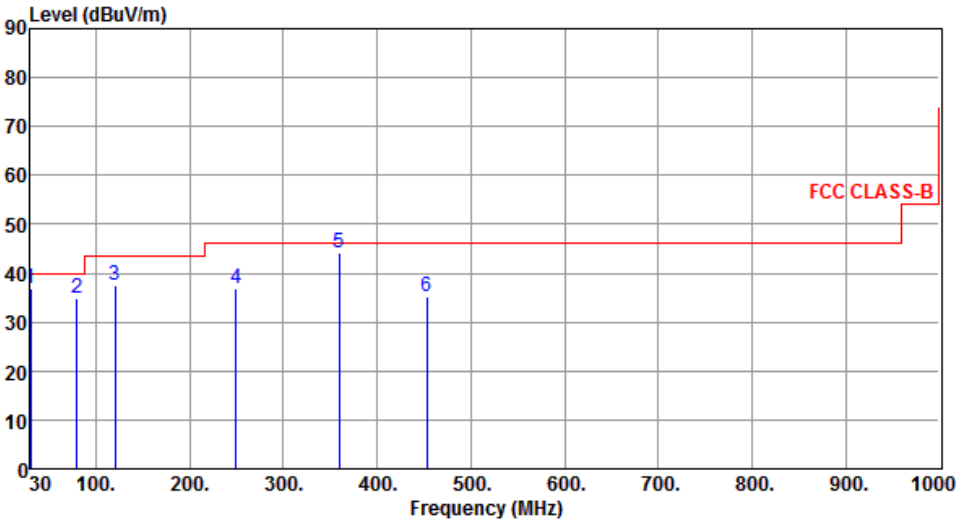
| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 77.53 | 25.88 | 40.00 | -14.12 | 37.98 | -12.10 | Peak | --- | --- |
| 2 | 113.42 | 36.32 | 43.50 | -7.18 | 47.13 | -10.81 | Peak | --- | --- |
| 3 | 249.22 | 36.12 | 46.00 | -9.88 | 45.35 | -9.23 | Peak | --- | --- |
| 4 | 348.91 | 40.93 | 46.00 | -5.07 | 47.20 | -6.27 | QP | 105 | 234 |
| 5 | 486.87 | 32.14 | 46.00 | -13.86 | 35.20 | -3.06 | Peak | --- | --- |
| 6 | 649.83 | 33.16 | 46.00 | -12.84 | 33.20 | -0.04 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Polarization | Vertical | | |

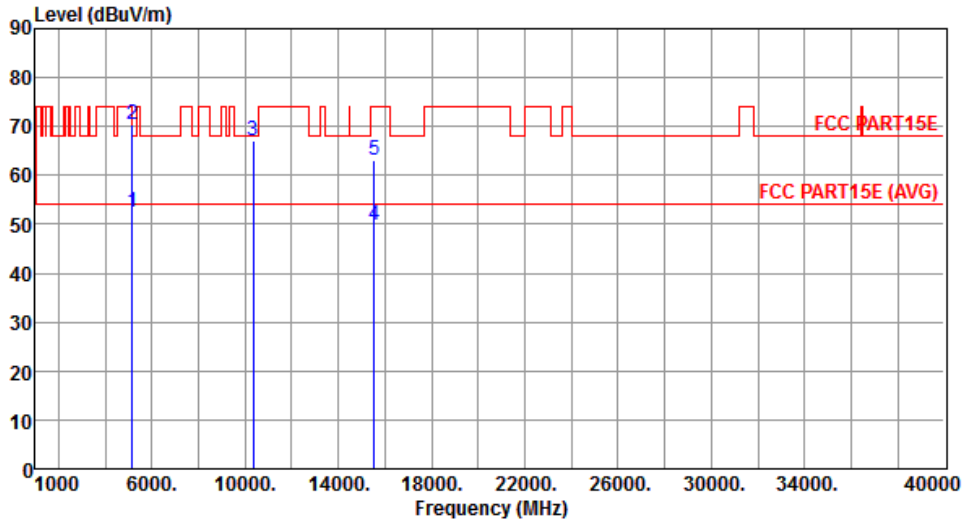



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.00 | 36.93 | 40.00 | -3.07 | 45.81 | -8.88 | Peak | --- | --- |
| 2 | 79.47 | 34.82 | 40.00 | -5.18 | 47.28 | -12.46 | Peak | --- | --- |
| 3 | 120.21 | 37.45 | 43.50 | -6.05 | 47.58 | -10.13 | Peak | --- | --- |
| 4 | 249.22 | 36.71 | 46.00 | -9.29 | 45.94 | -9.23 | Peak | --- | --- |
| 5 | 359.38 | 44.09 | 46.00 | -1.91 | 50.09 | -6.00 | QP | 138 | 159 |
| 6 | 452.92 | 35.25 | 46.00 | -10.75 | 38.93 | -3.68 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

## 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a

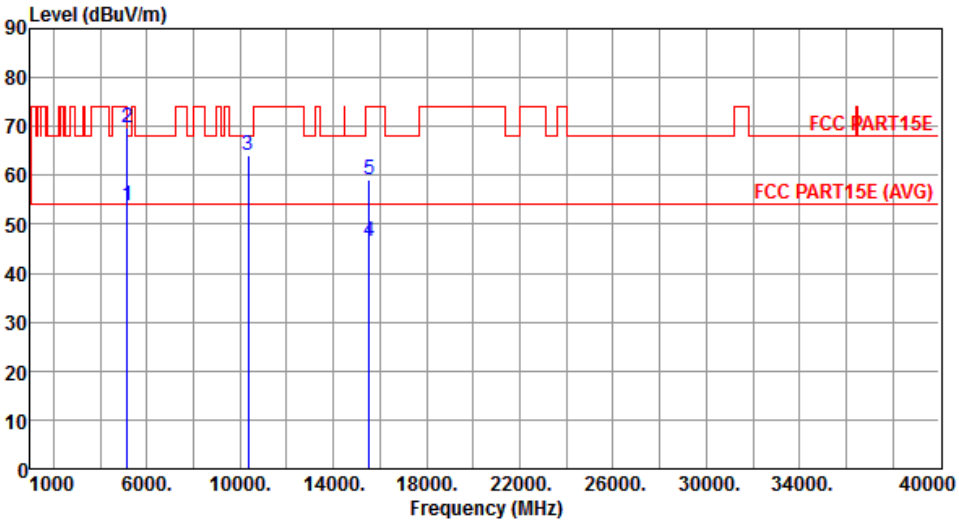
| Modulation | 11a | Test Freq. (MHz) | 5180 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 52.54 | 54.00 | -1.46 | 48.06 | 4.48 | Average | 173 | 325 |
| 2 | 5150.00 | 70.47 | 74.00 | -3.53 | 65.99 | 4.48 | Peak | 173 | 325 |
| 3 | 10360.00 | 67.03 | 68.20 | -1.17 | 53.25 | 13.78 | Peak | 168 | 325 |
| 4 | 15540.00 | 49.91 | 54.00 | -4.09 | 35.52 | 14.39 | Average | 137 | 321 |
| 5 | 15540.00 | 63.03 | 74.00 | -10.97 | 48.64 | 14.39 | Peak | 137 | 321 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

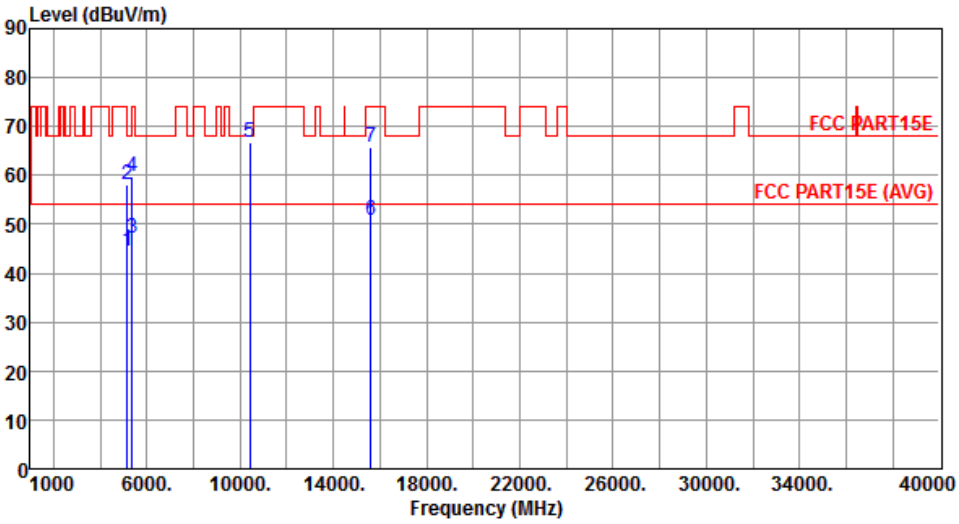
| | | | |
|---|---|---|---|
| **Modulation** | 11a | **Test Freq. (MHz)** | 5180 |
| **Polarization** | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 53.70 | 54.00 | -0.30 | 49.22 | 4.48 | Average | 224 | 105 |
| 2 | 5150.00 | 69.63 | 74.00 | -4.37 | 65.15 | 4.48 | Peak | 224 | 105 |
| 3 | 10360.00 | 63.99 | 68.20 | -4.21 | 50.21 | 13.78 | Peak | 217 | 9 |
| 4 | 15540.00 | 46.57 | 54.00 | -7.43 | 32.18 | 14.39 | Average | 142 | 348 |
| 5 | 15540.00 | 59.13 | 74.00 | -14.87 | 44.74 | 14.39 | Peak | 142 | 348 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

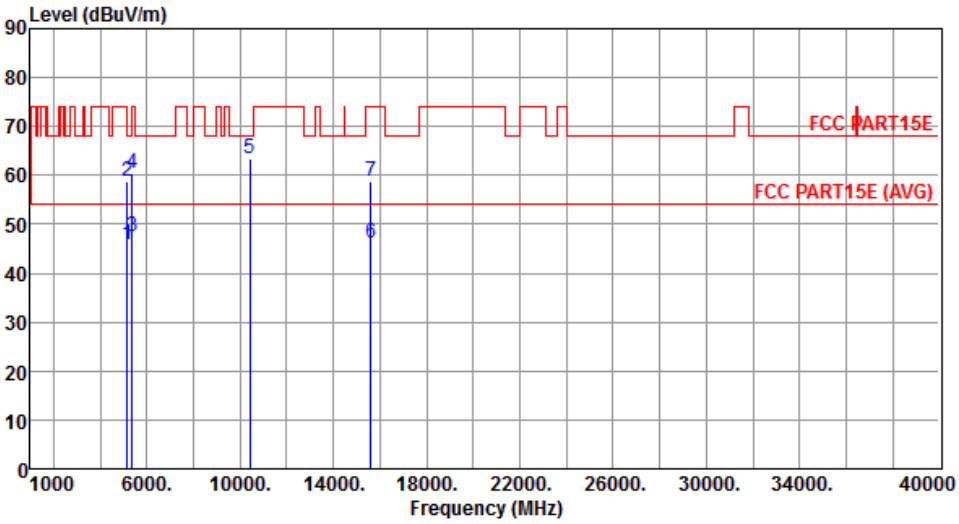
| Modulation | 11a | Test Freq. (MHz) | 5200 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 44.45 | 54.00 | -9.55 | 39.97 | 4.48 | Average | 100 | 41 |
| 2 | 5150.00 | 58.09 | 74.00 | -15.91 | 53.61 | 4.48 | Peak | 100 | 41 |
| 3 | 5350.00 | 47.06 | 54.00 | -6.94 | 42.32 | 4.74 | Average | 100 | 41 |
| 4 | 5350.00 | 59.70 | 74.00 | -14.30 | 54.96 | 4.74 | Peak | 100 | 41 |
| 5 | 10400.00 | 66.79 | 68.20 | -1.41 | 52.94 | 13.85 | Peak | 147 | 26 |
| 6 | 15600.00 | 50.80 | 54.00 | -3.20 | 36.50 | 14.30 | Average | 100 | 321 |
| 7 | 15600.00 | 65.62 | 74.00 | -8.38 | 51.32 | 14.30 | Peak | 100 | 321 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

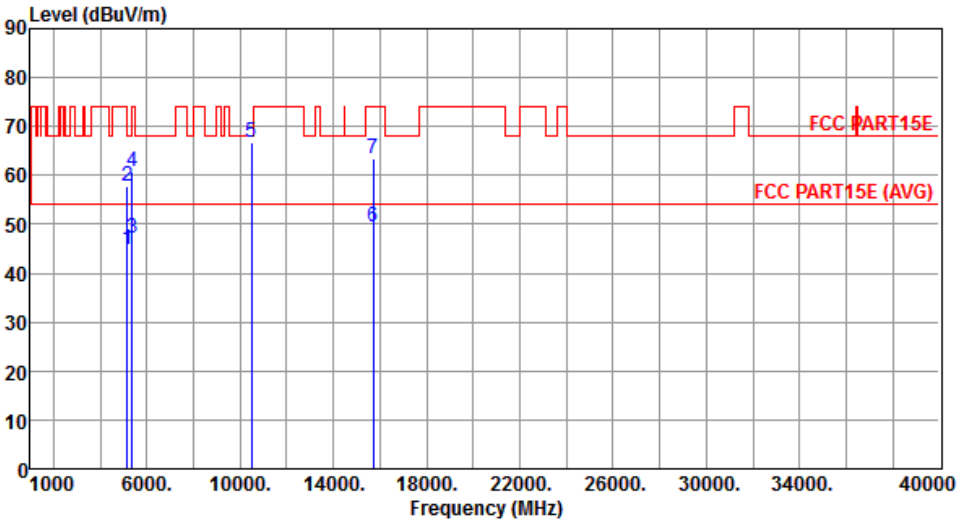
| Modulation | 11a | Test Freq. (MHz) | 5200 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 45.73 | 54.00 | -8.27 | 41.25 | 4.48 | Average | 224 | 93 |
| 2 | 5150.00 | 58.85 | 74.00 | -15.15 | 54.37 | 4.48 | Peak | 224 | 93 |
| 3 | 5350.00 | 47.64 | 54.00 | -6.36 | 42.90 | 4.74 | Average | 224 | 93 |
| 4 | 5350.00 | 60.31 | 74.00 | -13.69 | 55.57 | 4.74 | Peak | 224 | 93 |
| 5 | 10400.00 | 63.45 | 68.20 | -4.75 | 49.60 | 13.85 | Peak | 204 | 6 |
| 6 | 15600.00 | 46.12 | 54.00 | -7.88 | 31.82 | 14.30 | Average | 100 | 352 |
| 7 | 15600.00 | 58.78 | 74.00 | -15.22 | 44.48 | 14.30 | Peak | 100 | 352 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

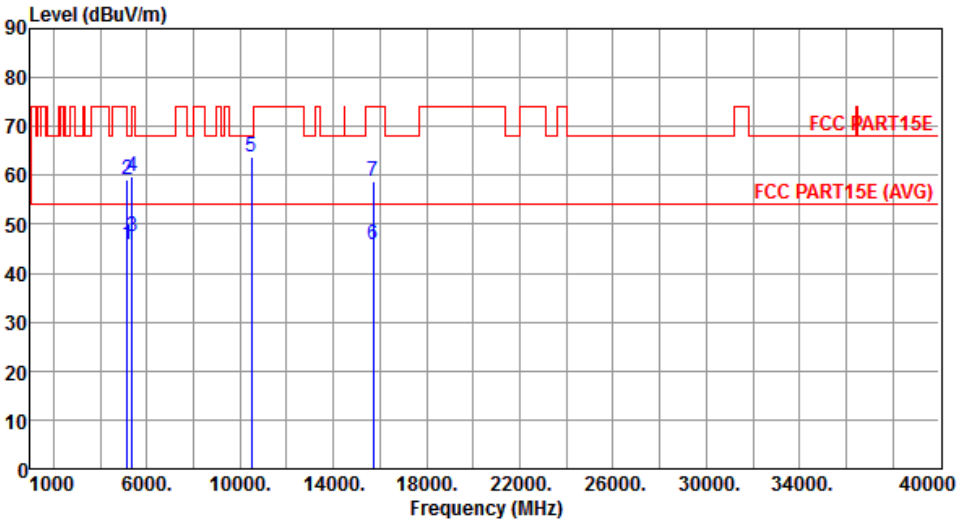
| Modulation | 11a | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 44.83 | 54.00 | -9.17 | 40.35 | 4.48 | Average | 182 | 325 |
| 2 | 5150.00 | 57.88 | 74.00 | -16.12 | 53.40 | 4.48 | Peak | 182 | 325 |
| 3 | 5350.00 | 47.25 | 54.00 | -6.75 | 42.51 | 4.74 | Average | 182 | 325 |
| 4 | 5350.00 | 60.68 | 74.00 | -13.32 | 55.94 | 4.74 | Peak | 182 | 325 |
| 5 | 10480.00 | 66.65 | 68.20 | -1.55 | 52.70 | 13.95 | Peak | 161 | 314 |
| 6 | 15720.00 | 49.34 | 54.00 | -4.66 | 35.23 | 14.11 | Average | 131 | 312 |
| 7 | 15720.00 | 63.40 | 74.00 | -10.60 | 49.29 | 14.11 | Peak | 131 | 312 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

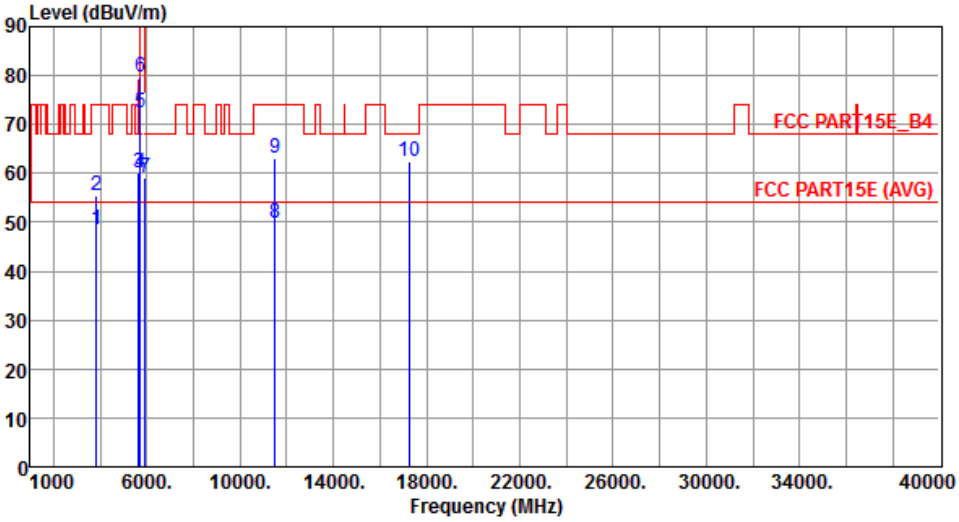
| Modulation | 11a | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 45.70 | 54.00 | -8.30 | 41.22 | 4.48 | Average | 226 | 107 |
| 2 | 5150.00 | 59.03 | 74.00 | -14.97 | 54.55 | 4.48 | Peak | 226 | 107 |
| 3 | 5350.00 | 47.33 | 54.00 | -6.67 | 42.59 | 4.74 | Average | 226 | 107 |
| 4 | 5350.00 | 59.78 | 74.00 | -14.22 | 55.04 | 4.74 | Peak | 226 | 107 |
| 5 | 10480.00 | 63.84 | 68.20 | -4.36 | 49.89 | 13.95 | Peak | 205 | 9 |
| 6 | 15720.00 | 45.99 | 54.00 | -8.01 | 31.88 | 14.11 | Average | 148 | 339 |
| 7 | 15720.00 | 58.87 | 74.00 | -15.13 | 44.76 | 14.11 | Peak | 148 | 339 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

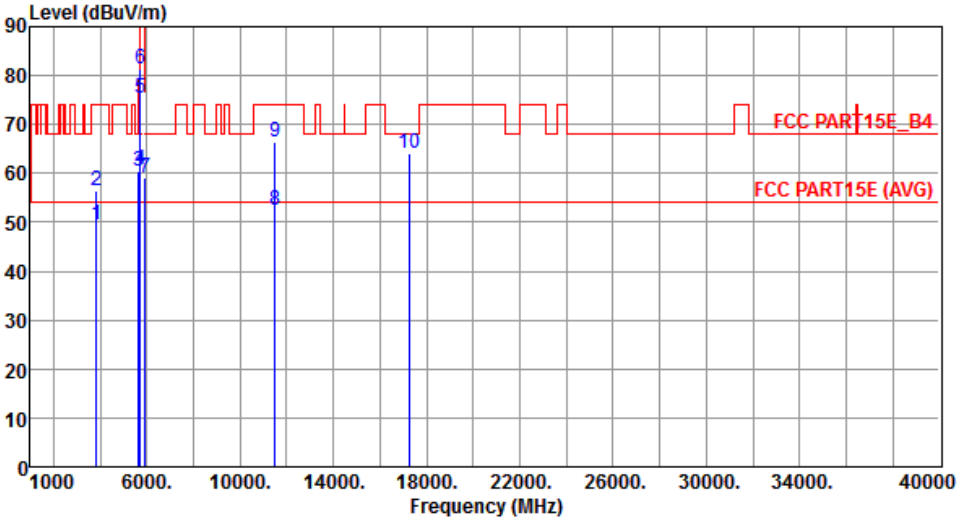
| Modulation | 11a | Test Freq. (MHz) | 5745 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3830.00 | 48.62 | 54.00 | -5.38 | 47.90 | 0.72 | Average | 273 | 34 |
| 2 | 3830.00 | 55.56 | 74.00 | -18.44 | 54.84 | 0.72 | Peak | 273 | 34 |
| 3 | 5650.00 | 60.14 | 68.20 | -8.06 | 54.95 | 5.19 | Peak | 149 | 17 |
| 4 | 5700.00 | 60.13 | 105.20 | -45.07 | 54.85 | 5.28 | Peak | 149 | 17 |
| 5 | 5720.00 | 72.24 | 110.80 | -38.56 | 66.93 | 5.31 | Peak | 149 | 17 |
| 6 | 5725.00 | 79.58 | 122.20 | -42.62 | 74.26 | 5.32 | Peak | 149 | 17 |
| 7 | 5925.00 | 58.98 | 68.20 | -9.22 | 53.34 | 5.64 | Peak | 149 | 17 |
| 8 | 11490.00 | 49.84 | 54.00 | -4.16 | 35.02 | 14.82 | Average | 124 | 356 |
| 9 | 11490.00 | 63.22 | 74.00 | -10.78 | 48.40 | 14.82 | Peak | 124 | 356 |
| 10 | 17235.00 | 62.44 | 68.20 | -5.76 | 44.73 | 17.71 | Peak | 115 | 284 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

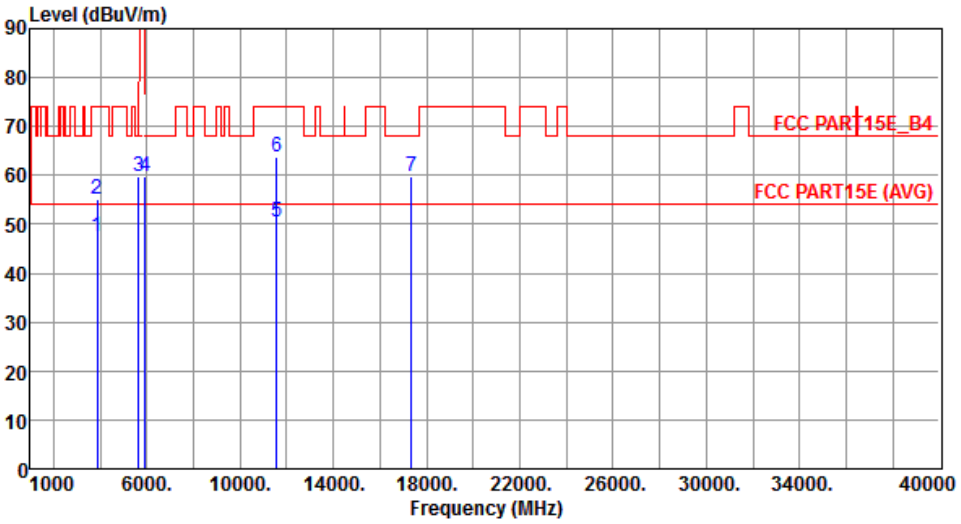
| Modulation | 11a | Test Freq. (MHz) | 5745 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3830.00 | 49.47 | 54.00 | -4.53 | 48.75 | 0.72 | Average | 110 | 31 |
| 2 | 3830.00 | 56.38 | 74.00 | -17.62 | 55.66 | 0.72 | Peak | 110 | 31 |
| 3 | 5650.00 | 60.34 | 68.20 | -7.86 | 55.15 | 5.19 | Peak | 258 | 49 |
| 4 | 5700.00 | 60.83 | 105.20 | -44.37 | 55.55 | 5.28 | Peak | 258 | 49 |
| 5 | 5720.00 | 75.32 | 110.80 | -35.48 | 70.01 | 5.31 | Peak | 258 | 49 |
| 6 | 5725.00 | 81.24 | 122.20 | -40.96 | 75.92 | 5.32 | Peak | 258 | 49 |
| 7 | 5925.00 | 59.08 | 68.20 | -9.12 | 53.44 | 5.64 | Peak | 258 | 49 |
| 8 | 11490.00 | 52.44 | 54.00 | -1.56 | 37.62 | 14.82 | Average | 281 | 359 |
| 9 | 11490.00 | 66.54 | 74.00 | -7.46 | 51.72 | 14.82 | Peak | 281 | 359 |
| 10 | 17235.00 | 64.14 | 68.20 | -4.06 | 46.43 | 17.71 | Peak | 100 | 203 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

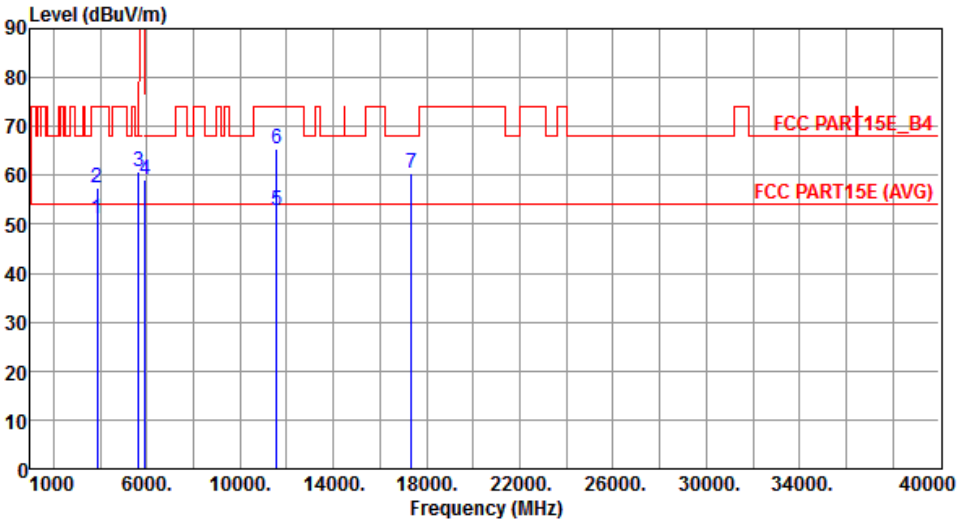
| Modulation | 11a | Test Freq. (MHz) | 5785 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3856.00 | 47.59 | 54.00 | -6.41 | 46.79 | 0.80 | Average | 254 | 16 |
| 2 | 3856.00 | 55.15 | 74.00 | -18.85 | 54.35 | 0.80 | Peak | 254 | 16 |
| 3 | 5650.00 | 59.71 | 68.20 | -8.49 | 54.52 | 5.19 | Peak | 168 | 21 |
| 4 | 5925.00 | 59.73 | 68.20 | -8.47 | 54.09 | 5.64 | Peak | 168 | 21 |
| 5 | 11570.00 | 50.39 | 54.00 | -3.61 | 35.75 | 14.64 | Average | 131 | 16 |
| 6 | 11570.00 | 63.76 | 74.00 | -10.24 | 49.12 | 14.64 | Peak | 131 | 16 |
| 7 | 17355.00 | 59.75 | 68.20 | -8.45 | 41.74 | 18.01 | Peak | 100 | 193 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

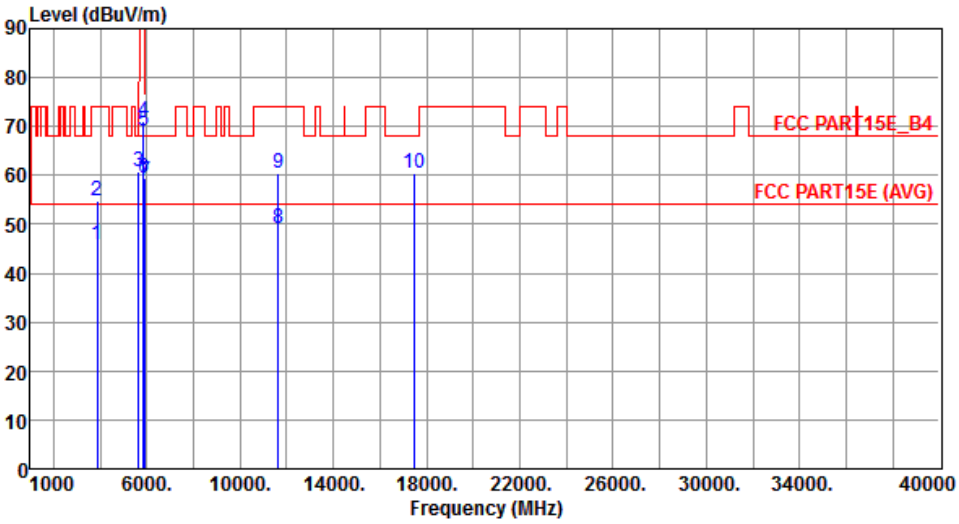
| Modulation | 11a | Test Freq. (MHz) | 5785 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3856.00 | 51.11 | 54.00 | -2.89 | 50.31 | 0.80 | Average | 147 | 26 |
| 2 | 3856.00 | 57.39 | 74.00 | -16.61 | 56.59 | 0.80 | Peak | 147 | 26 |
| 3 | 5650.00 | 60.89 | 68.20 | -7.31 | 55.70 | 5.19 | Peak | 228 | 43 |
| 4 | 5925.00 | 59.02 | 68.20 | -9.18 | 53.38 | 5.64 | Peak | 228 | 43 |
| 5 | 11570.00 | 52.85 | 54.00 | -1.15 | 38.21 | 14.64 | Average | 299 | 353 |
| 6 | 11570.00 | 65.57 | 74.00 | -8.43 | 50.93 | 14.64 | Peak | 299 | 353 |
| 7 | 17355.00 | 60.28 | 68.20 | -7.92 | 42.27 | 18.01 | Peak | 100 | 231 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

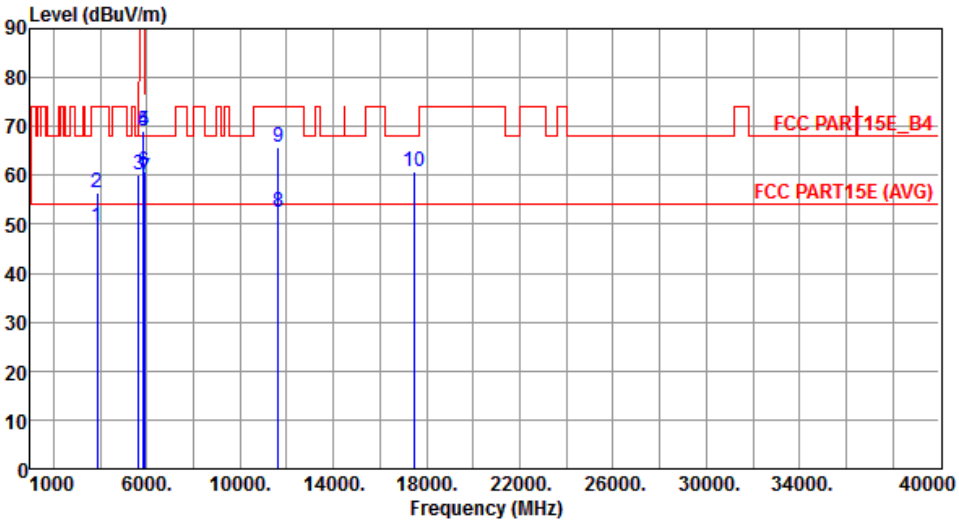
| Modulation | 11a | Test Freq. (MHz) | 5825 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3883.00 | 45.93 | 54.00 | -8.07 | 45.04 | 0.89 | Average | 264 | 36 |
| 2 | 3883.00 | 54.65 | 74.00 | -19.35 | 53.76 | 0.89 | Peak | 264 | 36 |
| 3 | 5650.00 | 60.80 | 68.20 | -7.40 | 55.61 | 5.19 | Peak | 145 | 19 |
| 4 | 5850.00 | 71.11 | 122.20 | -51.09 | 65.59 | 5.52 | Peak | 145 | 19 |
| 5 | 5855.00 | 69.01 | 110.80 | -41.79 | 63.48 | 5.53 | Peak | 145 | 19 |
| 6 | 5875.00 | 59.61 | 105.20 | -45.59 | 54.05 | 5.56 | Peak | 145 | 19 |
| 7 | 5925.00 | 58.89 | 68.20 | -9.31 | 53.25 | 5.64 | Peak | 145 | 19 |
| 8 | 11650.00 | 49.10 | 54.00 | -4.90 | 34.66 | 14.44 | Average | 124 | 8 |
| 9 | 11650.00 | 60.56 | 74.00 | -13.44 | 46.12 | 14.44 | Peak | 124 | 8 |
| 10 | 17475.00 | 60.53 | 68.20 | -7.67 | 42.24 | 18.29 | Peak | 100 | 232 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

| Modulation | 11a | Test Freq. (MHz) | 5825 |
|---|---|---|---|
| Polarization | Vertical | | |

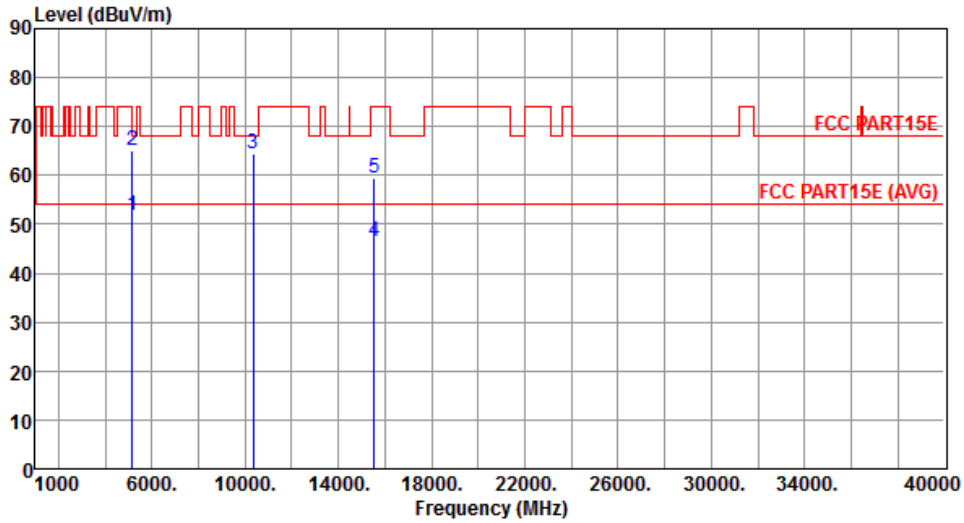



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3883.00 | 49.37 | 54.00 | -4.63 | 48.48 | 0.89 | Average | 100 | 25 |
| 2 | 3883.00 | 56.29 | 74.00 | -17.71 | 55.40 | 0.89 | Peak | 100 | 25 |
| 3 | 5650.00 | 59.97 | 68.20 | -8.23 | 54.78 | 5.19 | Peak | 264 | 29 |
| 4 | 5850.00 | 68.92 | 122.20 | -53.28 | 63.40 | 5.52 | Peak | 264 | 29 |
| 5 | 5855.00 | 68.96 | 110.80 | -41.84 | 63.43 | 5.53 | Peak | 264 | 29 |
| 6 | 5875.00 | 60.75 | 105.20 | -44.45 | 55.19 | 5.56 | Peak | 264 | 29 |
| 7 | 5925.00 | 59.32 | 68.20 | -8.88 | 53.68 | 5.64 | Peak | 264 | 29 |
| 8 | 11650.00 | 52.49 | 54.00 | -1.51 | 38.05 | 14.44 | Average | 274 | 0 |
| 9 | 11650.00 | 65.70 | 74.00 | -8.30 | 51.26 | 14.44 | Peak | 274 | 0 |
| 10 | 17475.00 | 60.70 | 68.20 | -7.50 | 42.41 | 18.29 | Peak | 100 | 211 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20

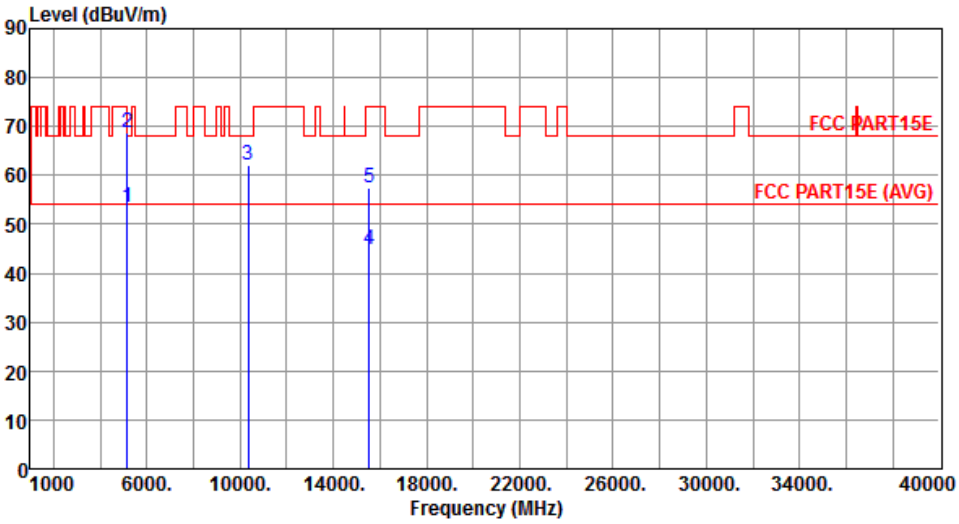
| Modulation | VHT20 | Test Freq. (MHz) | 5180 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 51.80 | 54.00 | -2.20 | 47.32 | 4.48 | Average | 168 | 330 |
| 2 | 5150.00 | 65.22 | 74.00 | -8.78 | 60.74 | 4.48 | Peak | 168 | 330 |
| 3 | 10360.00 | 64.59 | 68.20 | -3.61 | 50.81 | 13.78 | Peak | 166 | 309 |
| 4 | 15540.00 | 46.65 | 54.00 | -7.35 | 32.26 | 14.39 | Average | 128 | 323 |
| 5 | 15540.00 | 59.51 | 74.00 | -14.49 | 45.12 | 14.39 | Peak | 128 | 323 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

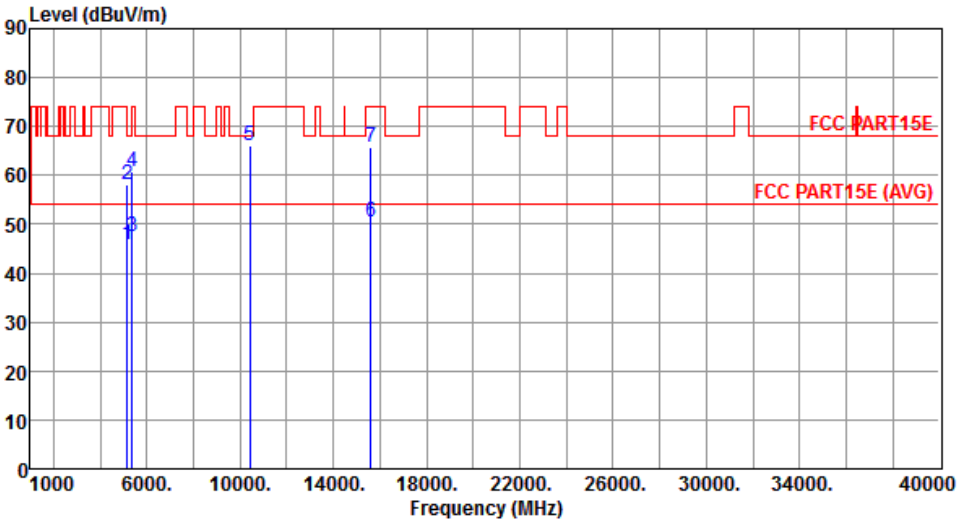
| Modulation | VHT20 | Test Freq. (MHz) | 5180 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 53.63 | 54.00 | -0.37 | 49.15 | 4.48 | Average | 220 | 110 |
| 2 | 5150.00 | 68.87 | 74.00 | -5.13 | 64.39 | 4.48 | Peak | 220 | 110 |
| 3 | 10360.00 | 62.17 | 68.20 | -6.03 | 48.39 | 13.78 | Peak | 216 | 12 |
| 4 | 15540.00 | 44.73 | 54.00 | -9.27 | 30.34 | 14.39 | Average | 130 | 316 |
| 5 | 15540.00 | 57.42 | 74.00 | -16.58 | 43.03 | 14.39 | Peak | 130 | 316 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

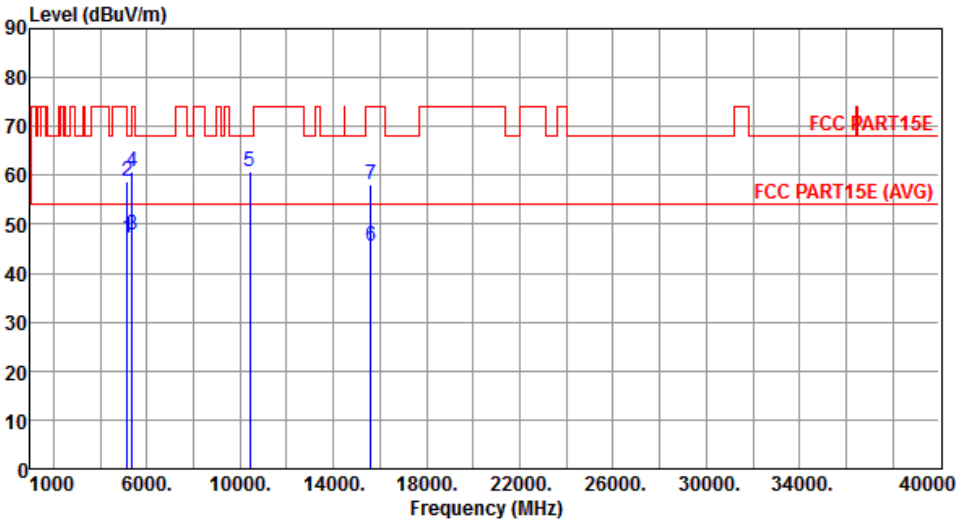
| | | | |
|---|---|---|---|
| **Modulation** | VHT20 | **Test Freq. (MHz)** | 5200 |
| **Polarization** | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 45.86 | 54.00 | -8.14 | 41.38 | 4.48 | Average | 100 | 39 |
| 2 | 5150.00 | 58.26 | 74.00 | -15.74 | 53.78 | 4.48 | Peak | 100 | 39 |
| 3 | 5350.00 | 47.60 | 54.00 | -6.40 | 42.86 | 4.74 | Average | 100 | 39 |
| 4 | 5350.00 | 60.61 | 74.00 | -13.39 | 55.87 | 4.74 | Peak | 100 | 39 |
| 5 | 10400.00 | 66.20 | 68.20 | -2.00 | 52.35 | 13.85 | Peak | 161 | 1 |
| 6 | 15600.00 | 50.52 | 54.00 | -3.48 | 36.22 | 14.30 | Average | 131 | 321 |
| 7 | 15600.00 | 65.71 | 74.00 | -8.29 | 51.41 | 14.30 | Peak | 131 | 321 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

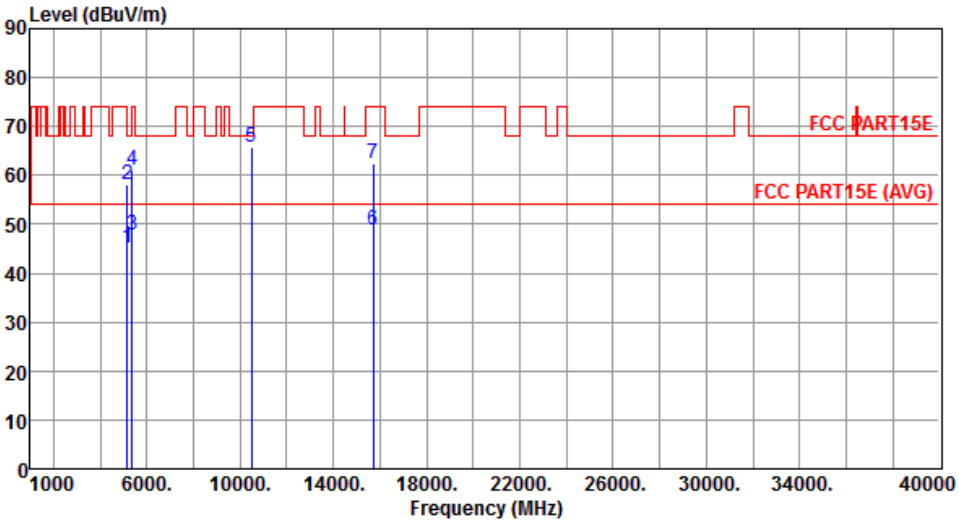
| Modulation | VHT20 | Test Freq. (MHz) | 5200 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 47.00 | 54.00 | -7.00 | 42.52 | 4.48 | Average | 241 | 68 |
| 2 | 5150.00 | 58.74 | 74.00 | -15.26 | 54.26 | 4.48 | Peak | 241 | 68 |
| 3 | 5350.00 | 47.79 | 54.00 | -6.21 | 43.05 | 4.74 | Average | 241 | 68 |
| 4 | 5350.00 | 60.71 | 74.00 | -13.29 | 55.97 | 4.74 | Peak | 241 | 68 |
| 5 | 10400.00 | 60.86 | 68.20 | -7.34 | 47.01 | 13.85 | Peak | 346 | 8 |
| 6 | 15600.00 | 45.64 | 54.00 | -8.36 | 31.34 | 14.30 | Average | 100 | 357 |
| 7 | 15600.00 | 58.00 | 74.00 | -16.00 | 43.70 | 14.30 | Peak | 100 | 357 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

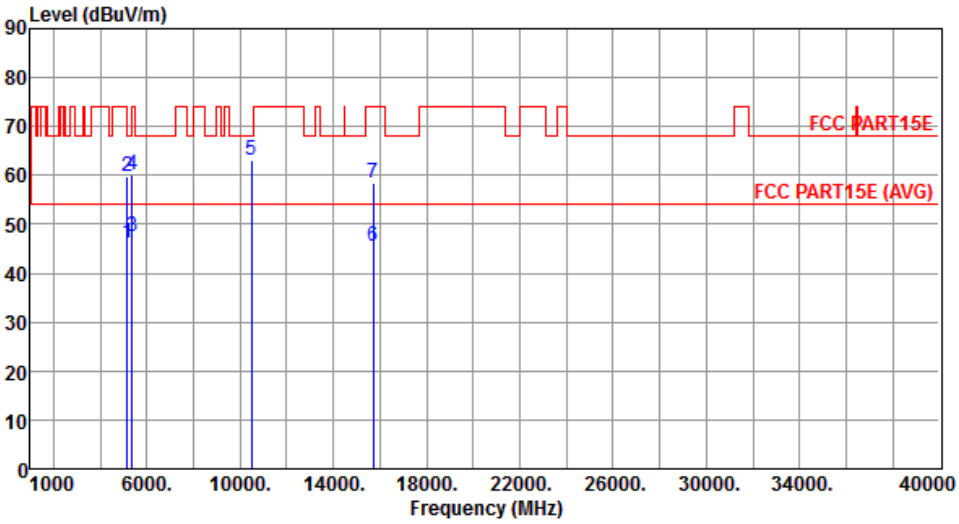
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 45.11 | 54.00 | -8.89 | 40.63 | 4.48 | Average | 189 | 325 |
| 2 | 5150.00 | 58.24 | 74.00 | -15.76 | 53.76 | 4.48 | Peak | 189 | 325 |
| 3 | 5350.00 | 47.72 | 54.00 | -6.28 | 42.98 | 4.74 | Average | 189 | 325 |
| 4 | 5350.00 | 61.12 | 74.00 | -12.88 | 56.38 | 4.74 | Peak | 189 | 325 |
| 5 | 10480.00 | 65.81 | 68.20 | -2.39 | 51.86 | 13.95 | Peak | 157 | 311 |
| 6 | 15720.00 | 48.75 | 54.00 | -5.25 | 34.64 | 14.11 | Average | 135 | 308 |
| 7 | 15720.00 | 62.45 | 74.00 | -11.55 | 48.34 | 14.11 | Peak | 135 | 308 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

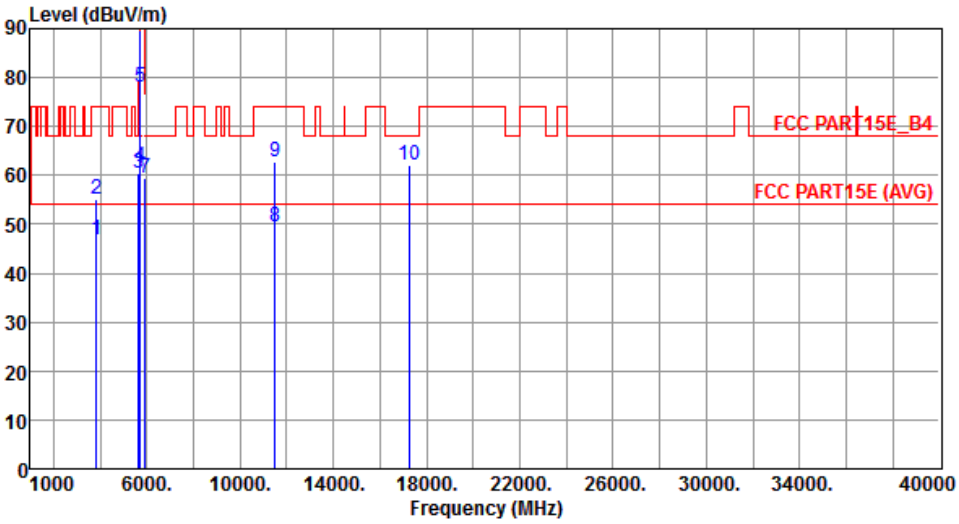
| Modulation | VHT20 | Test Freq. (MHz) | 5240 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 46.18 | 54.00 | -7.82 | 41.70 | 4.48 | Average | 219 | 113 |
| 2 | 5150.00 | 59.67 | 74.00 | -14.33 | 55.19 | 4.48 | Peak | 219 | 113 |
| 3 | 5350.00 | 47.55 | 54.00 | -6.45 | 42.81 | 4.74 | Average | 145 | 341 |
| 4 | 5350.00 | 60.17 | 74.00 | -13.83 | 55.43 | 4.74 | Peak | 145 | 341 |
| 5 | 10480.00 | 63.15 | 68.20 | -5.05 | 49.20 | 13.95 | Peak | 206 | 11 |
| 6 | 15720.00 | 45.49 | 54.00 | -8.51 | 31.38 | 14.11 | Average | 145 | 341 |
| 7 | 15720.00 | 58.32 | 74.00 | -15.68 | 44.21 | 14.11 | Peak | 145 | 341 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

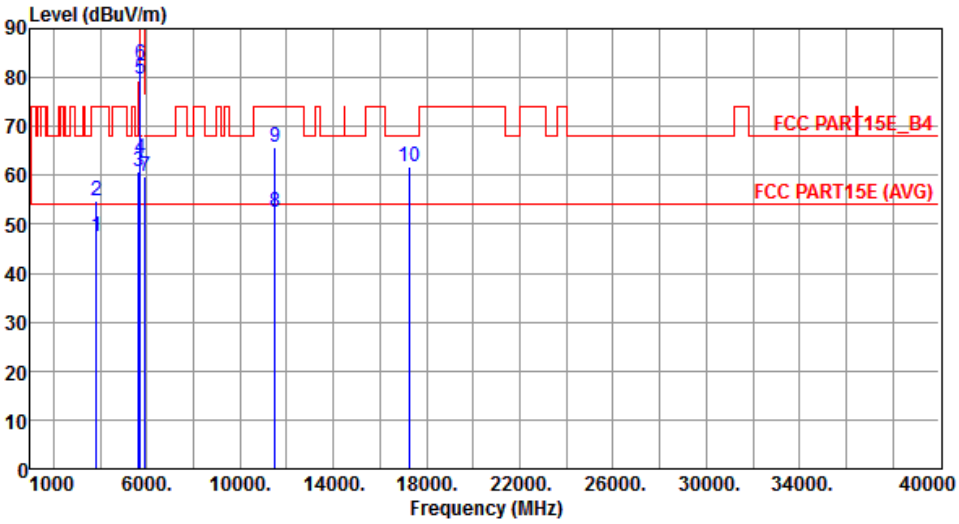
| Modulation | VHT20 | Test Freq. (MHz) | 5745 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3830.00 | 46.93 | 54.00 | -7.07 | 46.21 | 0.72 | Average | 375 | 19 |
| 2 | 3830.00 | 55.00 | 74.00 | -19.00 | 54.28 | 0.72 | Peak | 375 | 19 |
| 3 | 5650.00 | 60.28 | 68.20 | -7.92 | 55.09 | 5.19 | Peak | 141 | 20 |
| 4 | 5700.00 | 61.80 | 105.20 | -43.40 | 56.52 | 5.28 | Peak | 141 | 20 |
| 5 | 5720.00 | 77.99 | 110.80 | -32.81 | 72.68 | 5.31 | Peak | 141 | 20 |
| 6 | 5725.00 | 89.73 | 122.20 | -32.47 | 84.41 | 5.32 | Peak | 141 | 20 |
| 7 | 5925.00 | 59.34 | 68.20 | -8.86 | 53.70 | 5.64 | Peak | 141 | 20 |
| 8 | 11490.00 | 49.42 | 54.00 | -4.58 | 34.60 | 14.82 | Average | 130 | 359 |
| 9 | 11490.00 | 62.70 | 74.00 | -11.30 | 47.88 | 14.82 | Peak | 130 | 359 |
| 10 | 17235.00 | 62.12 | 68.20 | -6.08 | 44.41 | 17.71 | Peak | 108 | 280 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

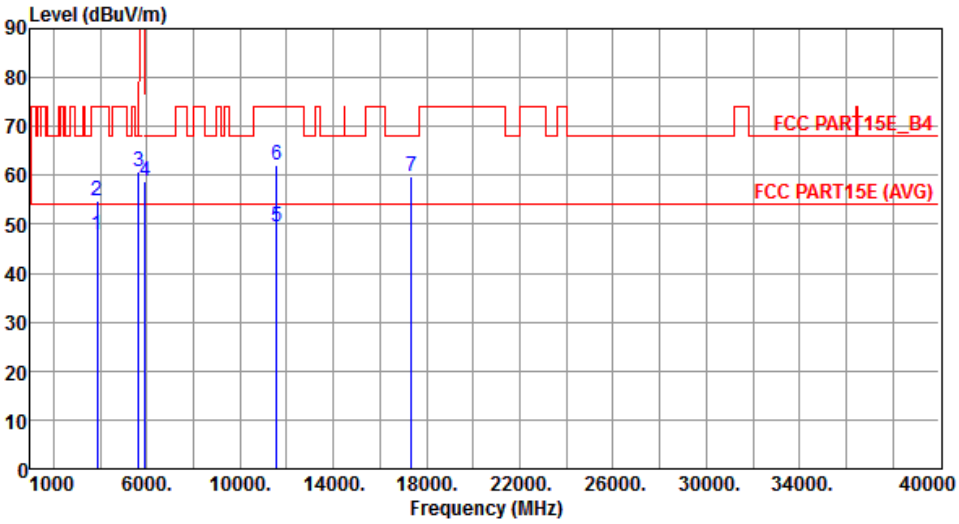
| Modulation | VHT20 | Test Freq. (MHz) | 5745 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3830.00 | 47.33 | 54.00 | -6.67 | 46.61 | 0.72 | Average | 100 | 34 |
| 2 | 3830.00 | 54.79 | 74.00 | -19.21 | 54.07 | 0.72 | Peak | 100 | 34 |
| 3 | 5650.00 | 60.74 | 68.20 | -7.46 | 55.55 | 5.19 | Peak | 315 | 27 |
| 4 | 5700.00 | 63.51 | 105.20 | -41.69 | 58.23 | 5.28 | Peak | 315 | 27 |
| 5 | 5720.00 | 79.66 | 110.80 | -31.14 | 74.35 | 5.31 | Peak | 315 | 27 |
| 6 | 5725.00 | 82.72 | 122.20 | -39.48 | 77.40 | 5.32 | Peak | 315 | 27 |
| 7 | 5925.00 | 59.91 | 68.20 | -8.29 | 54.27 | 5.64 | Peak | 315 | 27 |
| 8 | 11490.00 | 52.40 | 54.00 | -1.60 | 37.58 | 14.82 | Average | 240 | 358 |
| 9 | 11490.00 | 65.87 | 74.00 | -8.13 | 51.05 | 14.82 | Peak | 240 | 358 |
| 10 | 17235.00 | 61.78 | 68.20 | -6.42 | 44.07 | 17.71 | Peak | 100 | 200 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

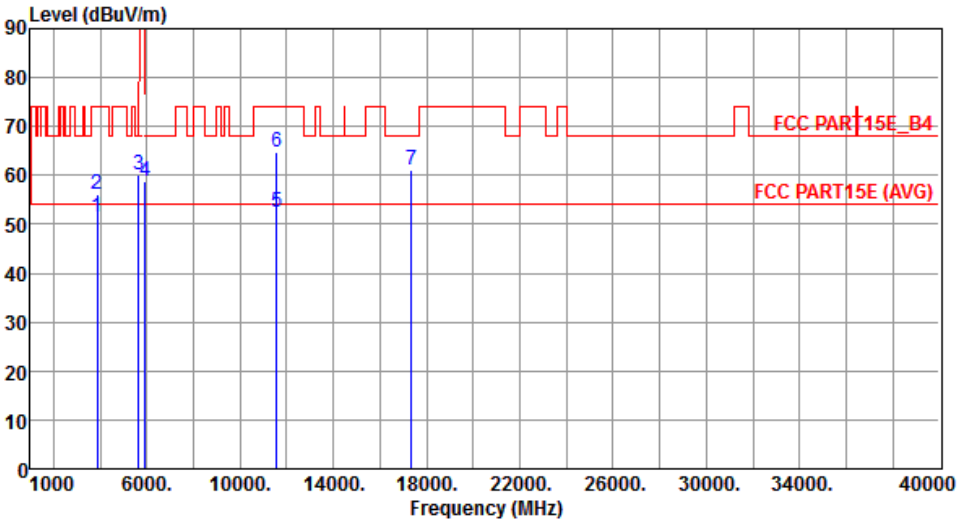
| | | | |
|---|---|---|---|
| **Modulation** | VHT20 | **Test Freq. (MHz)** | 5785 |
| **Polarization** | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3856.00 | 47.83 | 54.00 | -6.17 | 47.03 | 0.80 | Average | 253 | 15 |
| 2 | 3856.00 | 54.86 | 74.00 | -19.14 | 54.06 | 0.80 | Peak | 253 | 15 |
| 3 | 5650.00 | 60.79 | 68.20 | -7.41 | 55.60 | 5.19 | Peak | 100 | 30 |
| 4 | 5925.00 | 58.68 | 68.20 | -9.52 | 53.04 | 5.64 | Peak | 100 | 30 |
| 5 | 11570.00 | 49.39 | 54.00 | -4.61 | 34.75 | 14.64 | Average | 125 | 12 |
| 6 | 11570.00 | 62.06 | 74.00 | -11.94 | 47.42 | 14.64 | Peak | 125 | 12 |
| 7 | 17355.00 | 59.64 | 68.20 | -8.56 | 41.63 | 18.01 | Peak | 100 | 264 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

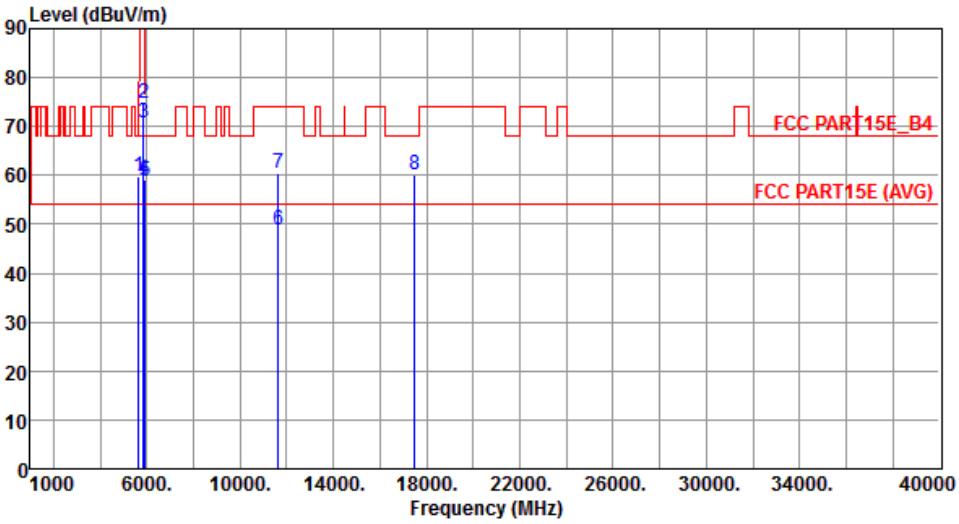
| Modulation | VHT20 | Test Freq. (MHz) | 5785 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3856.00 | 51.47 | 54.00 | -2.53 | 50.67 | 0.80 | Average | 105 | 25 |
| 2 | 3856.00 | 56.02 | 74.00 | -17.98 | 55.22 | 0.80 | Peak | 105 | 25 |
| 3 | 5650.00 | 60.25 | 68.20 | -7.95 | 55.06 | 5.19 | Peak | 100 | 338 |
| 4 | 5925.00 | 58.89 | 68.20 | -9.31 | 53.25 | 5.64 | Peak | 100 | 338 |
| 5 | 11570.00 | 52.40 | 54.00 | -1.60 | 37.76 | 14.64 | Average | 273 | 355 |
| 6 | 11570.00 | 64.89 | 74.00 | -9.11 | 50.25 | 14.64 | Peak | 273 | 355 |
| 7 | 17355.00 | 61.08 | 68.20 | -7.12 | 43.07 | 18.01 | Peak | 100 | 149 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

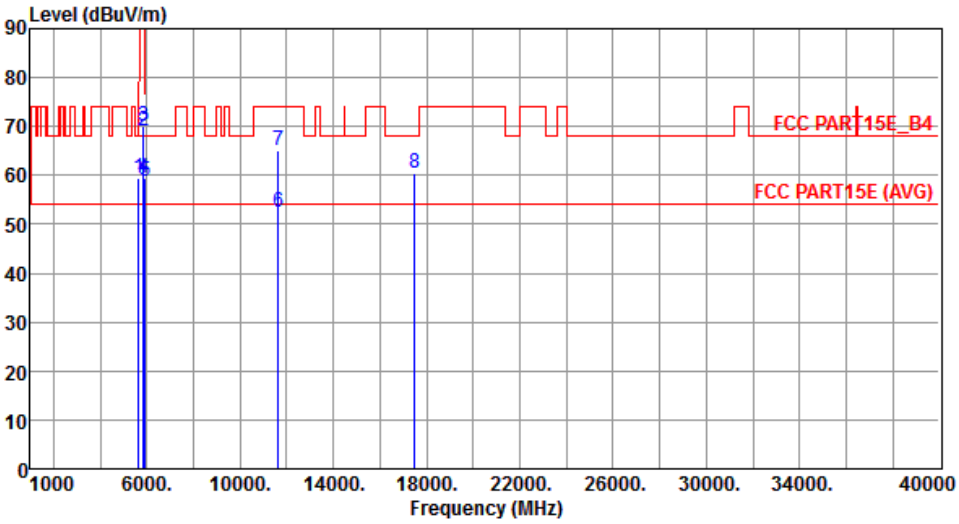
| Modulation | VHT20 | Test Freq. (MHz) | 5825 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5650.00 | 59.79 | 68.20 | -8.41 | 54.60 | 5.19 | Peak | 136 | 19 |
| 2 | 5850.00 | 74.87 | 122.20 | -47.33 | 69.35 | 5.52 | Peak | 136 | 19 |
| 3 | 5855.00 | 70.60 | 110.80 | -40.20 | 65.07 | 5.53 | Peak | 136 | 19 |
| 4 | 5875.00 | 59.11 | 105.20 | -46.09 | 53.55 | 5.56 | Peak | 136 | 19 |
| 5 | 5925.00 | 58.90 | 68.20 | -9.30 | 53.26 | 5.64 | Peak | 136 | 19 |
| 6 | 11650.00 | 48.96 | 54.00 | -5.04 | 34.52 | 14.44 | Average | 122 | 11 |
| 7 | 11650.00 | 60.46 | 74.00 | -13.54 | 46.02 | 14.44 | Peak | 122 | 11 |
| 8 | 17475.00 | 60.15 | 68.20 | -8.05 | 41.86 | 18.29 | Peak | 100 | 225 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

| Modulation | VHT20 | Test Freq. (MHz) | 5825 |
|---|---|---|---|
| Polarization | Vertical | | |

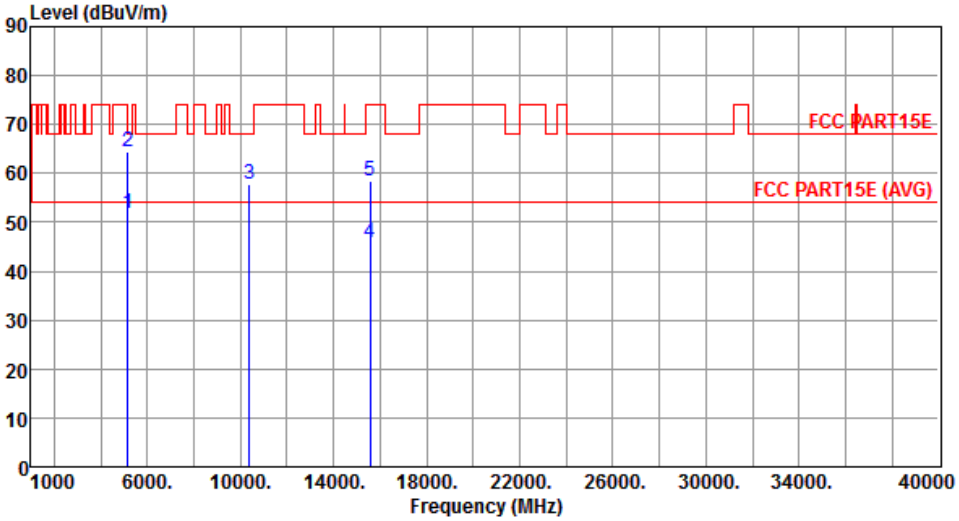



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5650.00 | 59.52 | 68.20 | -8.68 | 54.33 | 5.19 | Peak | 223 | 51 |
| 2 | 5850.00 | 69.09 | 122.20 | -53.11 | 63.57 | 5.52 | Peak | 223 | 51 |
| 3 | 5855.00 | 70.16 | 110.80 | -40.64 | 64.63 | 5.53 | Peak | 223 | 51 |
| 4 | 5875.00 | 59.61 | 105.20 | -45.59 | 54.05 | 5.56 | Peak | 223 | 51 |
| 5 | 5925.00 | 58.67 | 68.20 | -9.53 | 53.03 | 5.64 | Peak | 223 | 51 |
| 6 | 11650.00 | 52.45 | 54.00 | -1.55 | 38.01 | 14.44 | Average | 275 | 0 |
| 7 | 11650.00 | 65.26 | 74.00 | -8.74 | 50.82 | 14.44 | Peak | 275 | 0 |
| 8 | 17475.00 | 60.58 | 68.20 | -7.62 | 42.29 | 18.29 | Peak | 100 | 220 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40

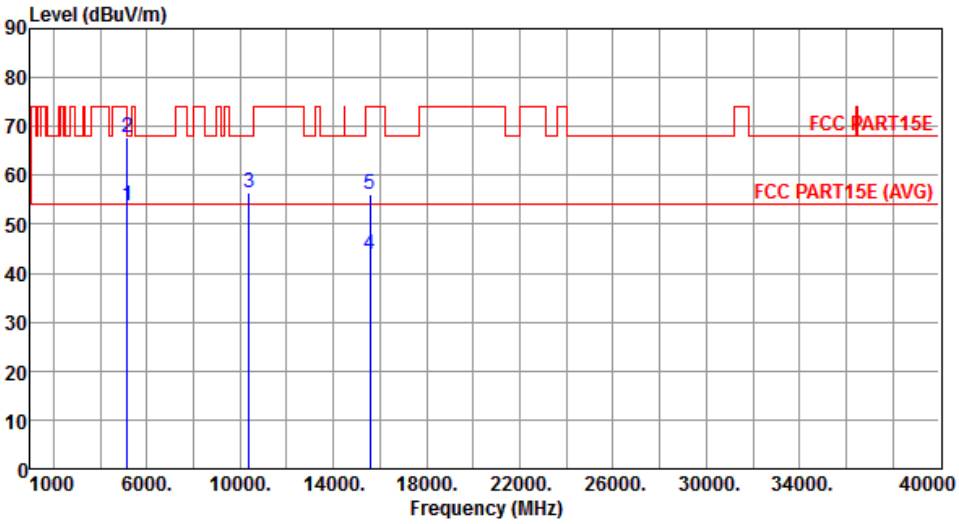
| Modulation | VHT40 | Test Freq. (MHz) | 5190 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 51.85 | 54.00 | -2.15 | 47.37 | 4.48 | Average | 100 | 41 |
| 2 | 5150.00 | 64.53 | 74.00 | -9.47 | 60.05 | 4.48 | Peak | 100 | 41 |
| 3 | 10380.00 | 57.65 | 68.20 | -10.55 | 43.83 | 13.82 | Peak | 159 | 338 |
| 4 | 15570.00 | 45.98 | 54.00 | -8.02 | 31.64 | 14.34 | Average | 100 | 162 |
| 5 | 15570.00 | 58.39 | 74.00 | -15.61 | 44.05 | 14.34 | Peak | 100 | 162 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

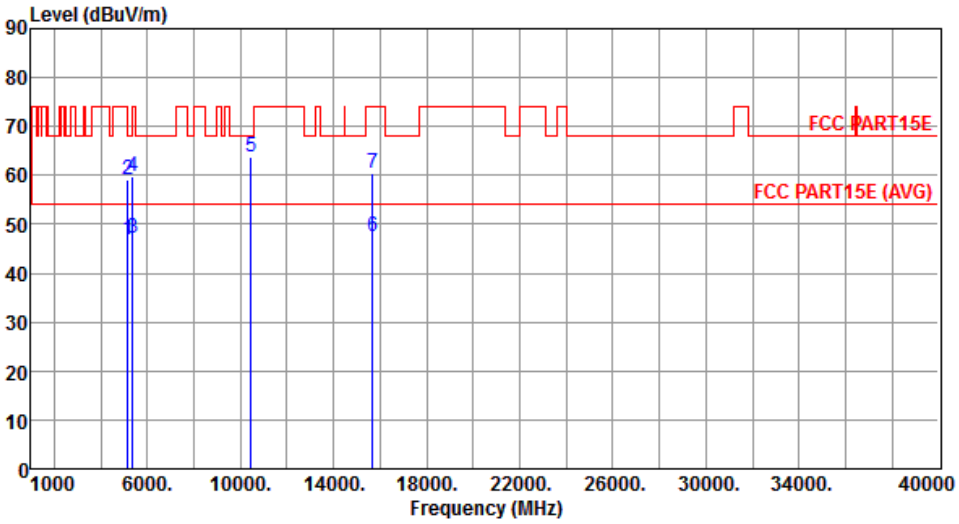
| Modulation | VHT40 | Test Freq. (MHz) | 5190 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 53.75 | 54.00 | -0.25 | 49.27 | 4.48 | Average | 100 | 43 |
| 2 | 5150.00 | 67.70 | 74.00 | -6.30 | 63.22 | 4.48 | Peak | 100 | 43 |
| 3 | 10380.00 | 56.53 | 68.20 | -11.67 | 42.71 | 13.82 | Peak | 341 | 357 |
| 4 | 15570.00 | 43.86 | 54.00 | -10.14 | 29.52 | 14.34 | Average | 100 | 194 |
| 5 | 15570.00 | 56.02 | 74.00 | -17.98 | 41.68 | 14.34 | Peak | 100 | 194 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

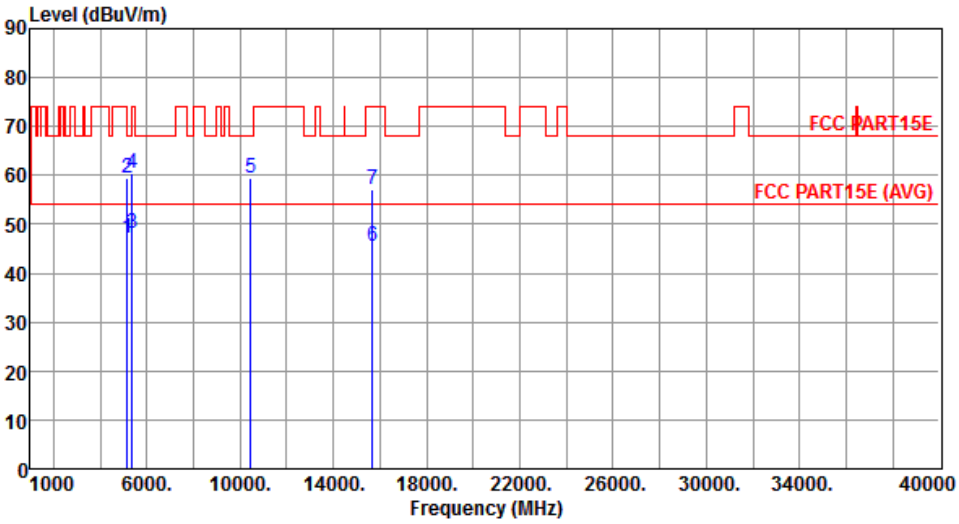
| Modulation | VHT40 | Test Freq. (MHz) | 5230 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 46.84 | 54.00 | -7.16 | 42.36 | 4.48 | Average | 100 | 36 |
| 2 | 5150.00 | 59.21 | 74.00 | -14.79 | 54.73 | 4.48 | Peak | 100 | 36 |
| 3 | 5350.00 | 47.13 | 54.00 | -6.87 | 42.39 | 4.74 | Average | 100 | 36 |
| 4 | 5350.00 | 59.70 | 74.00 | -14.30 | 54.96 | 4.74 | Peak | 100 | 36 |
| 5 | 10460.00 | 63.78 | 68.20 | -4.42 | 49.85 | 13.93 | Peak | 170 | 354 |
| 6 | 15690.00 | 47.35 | 54.00 | -6.65 | 33.20 | 14.15 | Average | 137 | 322 |
| 7 | 15690.00 | 60.46 | 74.00 | -13.54 | 46.31 | 14.15 | Peak | 137 | 322 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

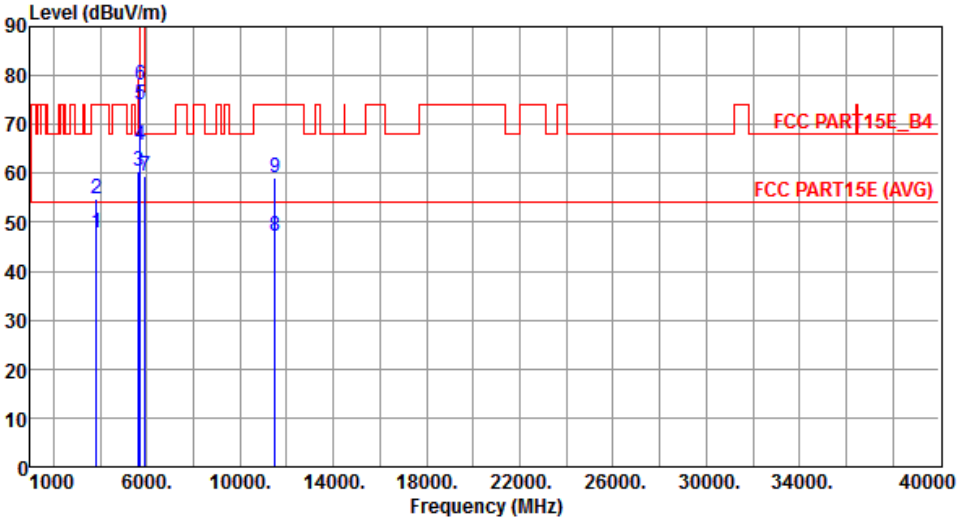
| Modulation | VHT40 | Test Freq. (MHz) | 5230 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 47.07 | 54.00 | -6.93 | 42.59 | 4.48 | Average | 226 | 77 |
| 2 | 5150.00 | 59.54 | 74.00 | -14.46 | 55.06 | 4.48 | Peak | 226 | 77 |
| 3 | 5350.00 | 48.21 | 54.00 | -5.79 | 43.47 | 4.74 | Average | 226 | 77 |
| 4 | 5350.00 | 60.55 | 74.00 | -13.45 | 55.81 | 4.74 | Peak | 226 | 77 |
| 5 | 10460.00 | 59.31 | 68.20 | -8.89 | 45.38 | 13.93 | Peak | 343 | 359 |
| 6 | 15690.00 | 45.38 | 54.00 | -8.62 | 31.23 | 14.15 | Average | 100 | 2 |
| 7 | 15690.00 | 57.01 | 74.00 | -16.99 | 42.86 | 14.15 | Peak | 100 | 2 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

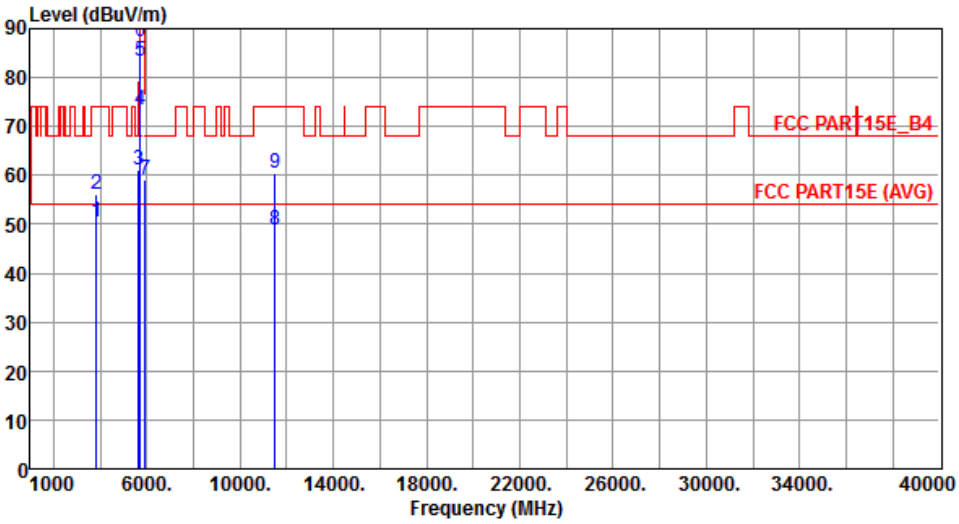
| Modulation | VHT40 | Test Freq. (MHz) | 5755 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3836.00 | 47.70 | 54.00 | -6.30 | 46.96 | 0.74 | Average | 256 | 14 |
| 2 | 3836.00 | 54.75 | 74.00 | -19.25 | 54.01 | 0.74 | Peak | 256 | 14 |
| 3 | 5650.00 | 60.46 | 68.20 | -7.74 | 55.27 | 5.19 | Peak | 100 | 30 |
| 4 | 5700.00 | 65.76 | 105.20 | -39.44 | 60.48 | 5.28 | Peak | 100 | 30 |
| 5 | 5720.00 | 74.16 | 110.80 | -36.64 | 68.85 | 5.31 | Peak | 100 | 30 |
| 6 | 5725.00 | 78.00 | 122.20 | -44.20 | 72.68 | 5.32 | Peak | 100 | 30 |
| 7 | 5925.00 | 59.49 | 68.20 | -8.71 | 53.85 | 5.64 | Peak | 100 | 30 |
| 8 | 11510.00 | 47.27 | 54.00 | -6.73 | 32.47 | 14.80 | Average | 100 | 358 |
| 9 | 11510.00 | 59.09 | 74.00 | -14.91 | 44.29 | 14.80 | Peak | 100 | 358 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

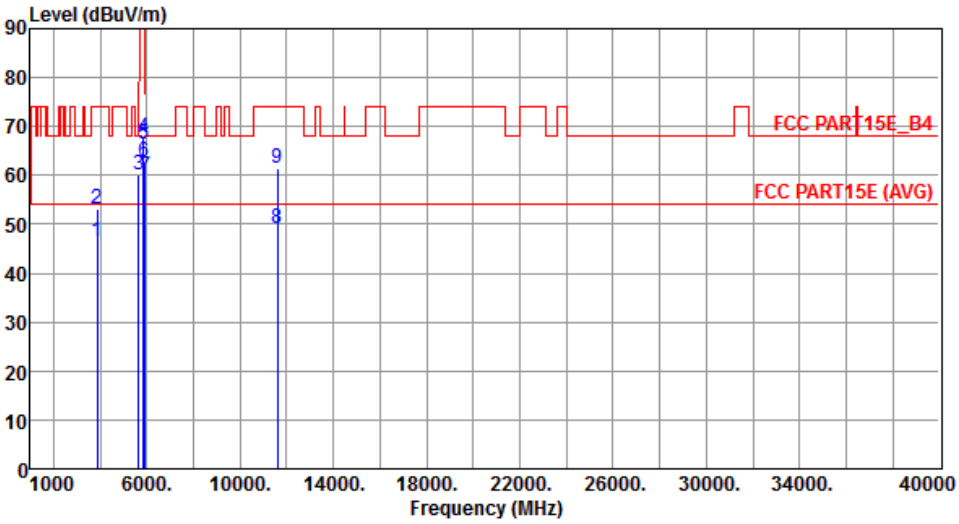
| Modulation | VHT40 | Test Freq. (MHz) | 5755 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3836.00 | 50.58 | 54.00 | -3.42 | 49.84 | 0.74 | Average | 150 | 18 |
| 2 | 3836.00 | 56.19 | 74.00 | -17.81 | 55.45 | 0.74 | Peak | 150 | 18 |
| 3 | 5650.00 | 61.26 | 68.20 | -6.94 | 56.07 | 5.19 | Peak | 357 | 28 |
| 4 | 5700.00 | 73.43 | 105.20 | -31.77 | 68.15 | 5.28 | Peak | 357 | 28 |
| 5 | 5720.00 | 83.32 | 110.80 | -27.48 | 78.01 | 5.31 | Peak | 357 | 28 |
| 6 | 5725.00 | 87.23 | 122.20 | -34.97 | 81.91 | 5.32 | Peak | 357 | 28 |
| 7 | 5925.00 | 59.28 | 68.20 | -8.92 | 53.64 | 5.64 | Peak | 357 | 28 |
| 8 | 11510.00 | 48.74 | 54.00 | -5.26 | 33.94 | 14.80 | Average | 288 | 359 |
| 9 | 11510.00 | 60.32 | 74.00 | -13.68 | 45.52 | 14.80 | Peak | 288 | 359 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

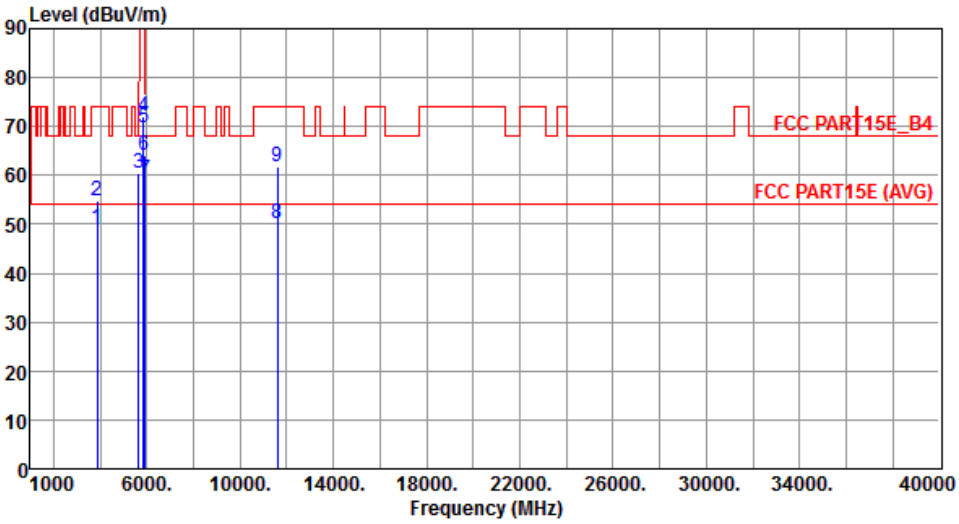
| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3859.00 | 46.53 | 54.00 | -7.47 | 45.73 | 0.80 | Average | 253 | 11 |
| 2 | 3859.00 | 53.30 | 74.00 | -20.70 | 52.50 | 0.80 | Peak | 253 | 11 |
| 3 | 5650.00 | 60.27 | 68.20 | -7.93 | 55.08 | 5.19 | Peak | 100 | 32 |
| 4 | 5850.00 | 67.67 | 122.20 | -54.53 | 62.15 | 5.52 | Peak | 100 | 32 |
| 5 | 5855.00 | 66.36 | 110.80 | -44.44 | 60.83 | 5.53 | Peak | 100 | 32 |
| 6 | 5875.00 | 62.93 | 105.20 | -42.27 | 57.37 | 5.56 | Peak | 100 | 32 |
| 7 | 5925.00 | 59.79 | 68.20 | -8.41 | 54.15 | 5.64 | Peak | 100 | 32 |
| 8 | 11590.00 | 49.16 | 54.00 | -4.84 | 34.57 | 14.59 | Average | 100 | 356 |
| 9 | 11590.00 | 61.54 | 74.00 | -12.46 | 46.95 | 14.59 | Peak | 100 | 356 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

| Modulation | VHT40 | Test Freq. (MHz) | 5795 |
|---|---|---|---|
| Polarization | Vertical | | |

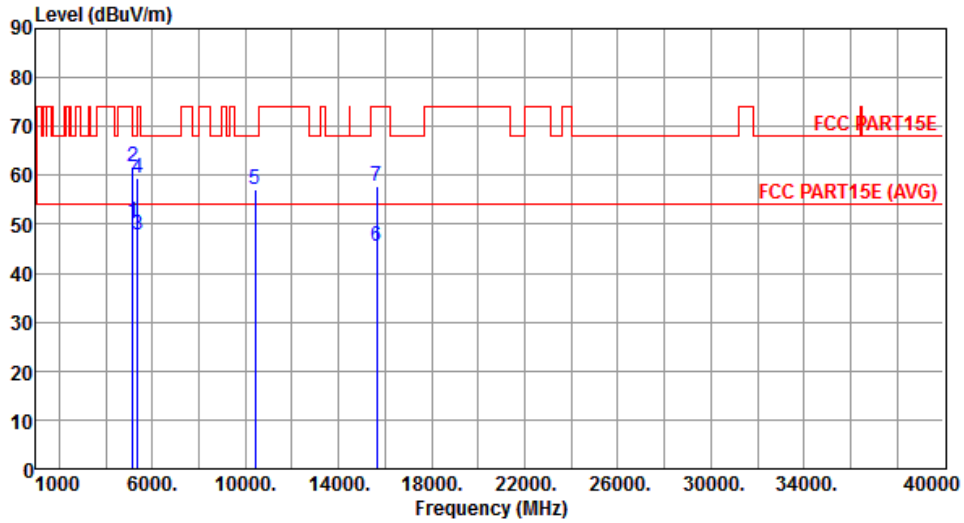



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3859.00 | 49.28 | 54.00 | -4.72 | 48.48 | 0.80 | Average | 113 | 20 |
| 2 | 3859.00 | 54.81 | 74.00 | -19.19 | 54.01 | 0.80 | Peak | 113 | 20 |
| 3 | 5650.00 | 60.45 | 68.20 | -7.75 | 55.26 | 5.19 | Peak | 228 | 50 |
| 4 | 5850.00 | 72.08 | 122.20 | -50.12 | 66.56 | 5.52 | Peak | 228 | 50 |
| 5 | 5855.00 | 69.72 | 110.80 | -41.08 | 64.19 | 5.53 | Peak | 228 | 50 |
| 6 | 5875.00 | 63.95 | 105.20 | -41.25 | 58.39 | 5.56 | Peak | 228 | 50 |
| 7 | 5925.00 | 59.01 | 68.20 | -9.19 | 53.37 | 5.64 | Peak | 228 | 50 |
| 8 | 11590.00 | 50.25 | 54.00 | -3.75 | 35.66 | 14.59 | Average | 266 | 358 |
| 9 | 11590.00 | 61.65 | 74.00 | -12.35 | 47.06 | 14.59 | Peak | 266 | 358 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

## 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80

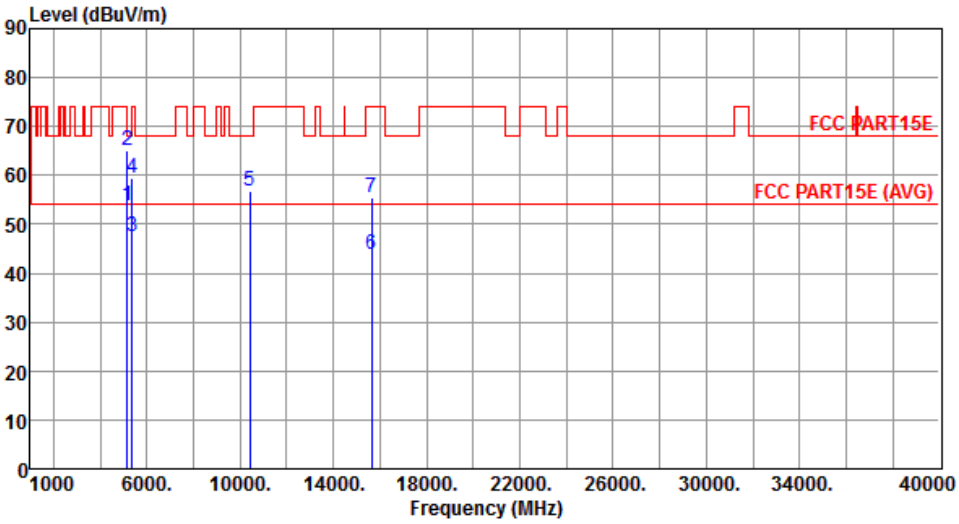
| Modulation | VHT80 | Test Freq. (MHz) | 5210 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 50.63 | 54.00 | -3.37 | 46.15 | 4.48 | Average | 100 | 30 |
| 2 | 5150.00 | 61.89 | 74.00 | -12.11 | 57.41 | 4.48 | Peak | 100 | 30 |
| 3 | 5350.00 | 47.70 | 54.00 | -6.30 | 42.96 | 4.74 | Average | 100 | 30 |
| 4 | 5350.00 | 59.60 | 74.00 | -14.40 | 54.86 | 4.74 | Peak | 100 | 30 |
| 5 | 10420.00 | 57.00 | 68.20 | -11.20 | 43.13 | 13.87 | Peak | 150 | 332 |
| 6 | 15630.00 | 45.63 | 54.00 | -8.37 | 31.38 | 14.25 | Average | 100 | 163 |
| 7 | 15630.00 | 57.66 | 74.00 | -16.34 | 43.41 | 14.25 | Peak | 100 | 163 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

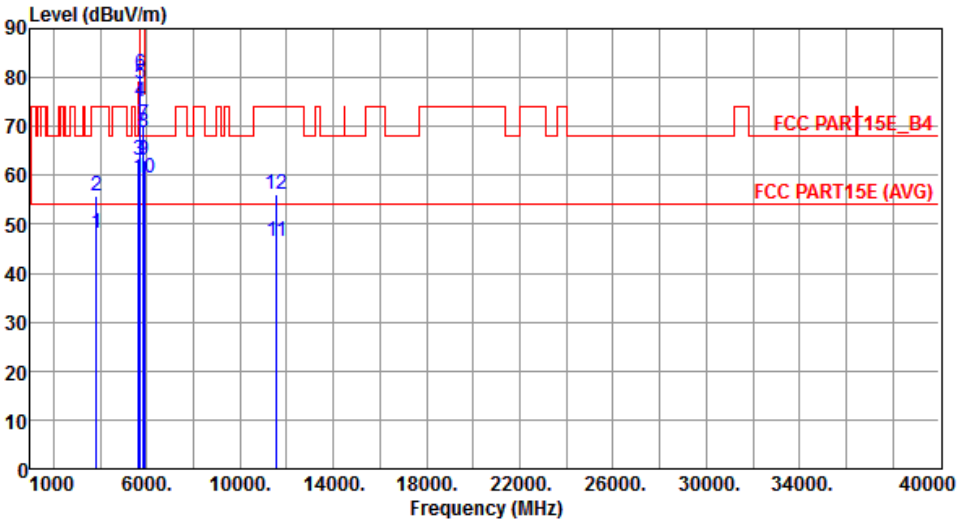
| Modulation | VHT80 | Test Freq. (MHz) | 5210 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.00 | 53.79 | 54.00 | -0.21 | 49.31 | 4.48 | Average | 205 | 140 |
| 2 | 5150.00 | 65.23 | 74.00 | -8.77 | 60.75 | 4.48 | Peak | 205 | 140 |
| 3 | 5350.00 | 47.55 | 54.00 | -6.45 | 42.81 | 4.74 | Average | 205 | 140 |
| 4 | 5350.00 | 59.34 | 74.00 | -14.66 | 54.60 | 4.74 | Peak | 205 | 140 |
| 5 | 10420.00 | 56.83 | 68.20 | -11.37 | 42.96 | 13.87 | Peak | 331 | 350 |
| 6 | 15630.00 | 43.81 | 54.00 | -10.19 | 29.56 | 14.25 | Average | 100 | 225 |
| 7 | 15630.00 | 55.63 | 74.00 | -18.37 | 41.38 | 14.25 | Peak | 100 | 225 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

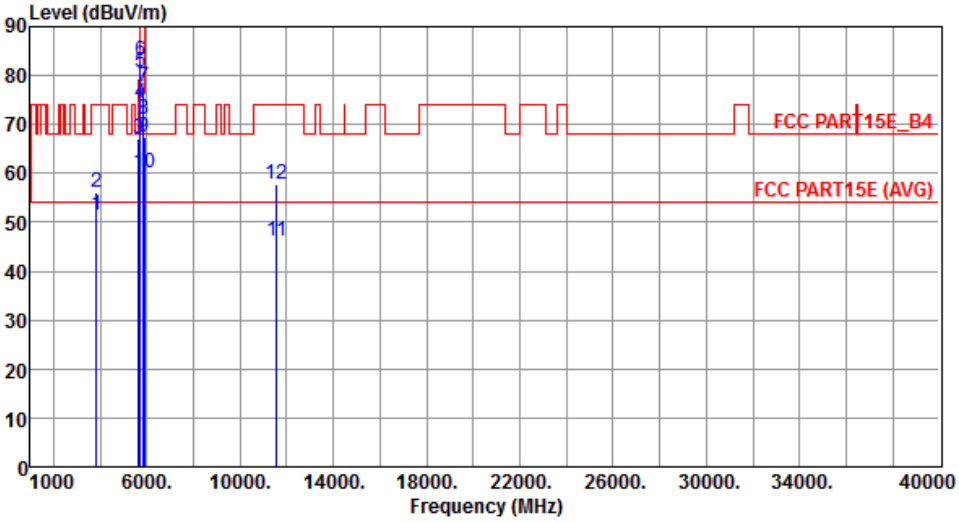
| Modulation | VHT80 | Test Freq. (MHz) | 5775 |
|---|---|---|---|
| Polarization | Horizontal | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3850.00 | 48.25 | 54.00 | -5.75 | 47.47 | 0.78 | Average | 252 | 29 |
| 2 | 3850.00 | 55.72 | 74.00 | -18.28 | 54.94 | 0.78 | Peak | 252 | 29 |
| 3 | 5650.00 | 63.01 | 68.20 | -5.19 | 57.82 | 5.19 | Peak | 100 | 29 |
| 4 | 5700.00 | 75.19 | 105.20 | -30.01 | 69.91 | 5.28 | Peak | 100 | 29 |
| 5 | 5720.00 | 78.79 | 110.80 | -32.01 | 73.48 | 5.31 | Peak | 100 | 29 |
| 6 | 5725.00 | 80.61 | 122.20 | -41.59 | 75.29 | 5.32 | Peak | 100 | 29 |
| 7 | 5850.00 | 70.47 | 122.20 | -51.73 | 64.95 | 5.52 | Peak | 100 | 29 |
| 8 | 5855.00 | 68.68 | 110.80 | -42.12 | 63.15 | 5.53 | Peak | 100 | 29 |
| 9 | 5875.00 | 63.10 | 105.20 | -42.10 | 57.54 | 5.56 | Peak | 100 | 29 |
| 10 | 5925.00 | 59.38 | 68.20 | -8.82 | 53.74 | 5.64 | Peak | 100 | 29 |
| 11 | 11550.00 | 46.57 | 54.00 | -7.43 | 31.88 | 14.69 | Average | 100 | 263 |
| 12 | 11550.00 | 56.04 | 74.00 | -17.96 | 41.35 | 14.69 | Peak | 100 | 263 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

| Modulation | VHT80 | Test Freq. (MHz) | 5775 |
|---|---|---|---|
| Polarization | Vertical | | |




| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3850.00 | 51.34 | 54.00 | -2.66 | 50.56 | 0.78 | Average | 149 | 27 |
| 2 | 3850.00 | 56.14 | 74.00 | -17.86 | 55.36 | 0.78 | Peak | 149 | 27 |
| 3 | 5650.00 | 66.93 | 68.20 | -1.27 | 61.74 | 5.19 | Peak | 372 | 25 |
| 4 | 5700.00 | 74.56 | 105.20 | -30.64 | 69.28 | 5.28 | Peak | 372 | 25 |
| 5 | 5720.00 | 80.71 | 110.80 | -30.09 | 75.40 | 5.31 | Peak | 372 | 25 |
| 6 | 5725.00 | 83.04 | 122.20 | -39.16 | 77.72 | 5.32 | Peak | 372 | 25 |
| 7 | 5850.00 | 77.76 | 122.20 | -44.44 | 72.24 | 5.52 | Peak | 372 | 25 |
| 8 | 5855.00 | 71.23 | 110.80 | -39.57 | 65.70 | 5.53 | Peak | 372 | 25 |
| 9 | 5875.00 | 67.36 | 105.20 | -37.84 | 61.80 | 5.56 | Peak | 372 | 25 |
| 10 | 5925.00 | 60.25 | 68.20 | -7.95 | 54.61 | 5.64 | Peak | 372 | 25 |
| 11 | 11550.00 | 46.29 | 54.00 | -7.71 | 31.60 | 14.69 | Average | 100 | 143 |
| 12 | 11550.00 | 57.75 | 74.00 | -16.25 | 43.06 | 14.69 | Peak | 100 | 143 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

# 3.6 Frequency Stability

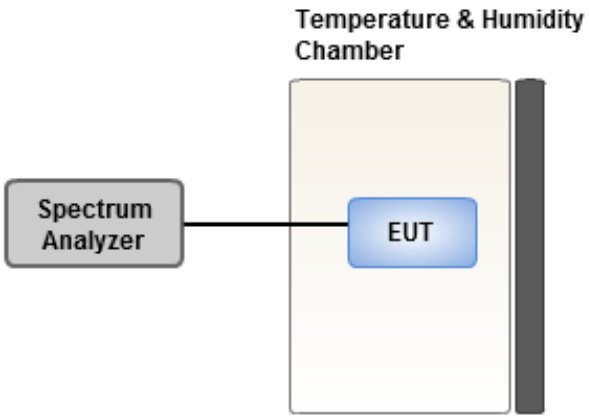
## 3.6.1 Limit of Frequency Stability

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 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.
3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
4. When temperature is stabled, measure the frequency stability.
5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.

## 3.6.3 Test Setup



### 3.6.4 Test Result of Frequency Stability

| Frequency: 5200 MHz | Frequency Drift (ppm) | | | |
|---|---|---|---|---|
| Temperature (°C) | 0 minute | 2 minutes | 5 minutes | 10 minutes |
| T20°CVmax | 11.13 | 11.59 | 11.70 | 11.67 |
| T20°CVmin | 10.98 | 11.85 | 10.91 | 11.72 |
| T50°CVnom | 10.77 | 11.02 | 10.91 | 11.06 |
| T40°CVnom | 10.74 | 10.35 | 11.07 | 11.27 |
| T30°CVnom | 11.63 | 11.67 | 11.22 | 11.30 |
| T20°CVnom | 10.03 | 10.14 | 10.66 | 9.60 |
| T10°CVnom | 11.28 | 10.96 | 11.52 | 11.98 |
| T0°CVnom | 9.14 | 9.61 | 9.42 | 9.17 |
| T-10°CVnom | 9.45 | 9.87 | 9.89 | 9.95 |
| T-20°CVnom | 10.56 | 11.12 | 10.22 | 10.34 |
| T-30°CVnom | 9.20 | 9.53 | 9.38 | 9.91 |
| Vnom [Vac]: 120 | | Vmax [Vac]: 138 | | Vmin [Vac]: 102 |
| Tnom [°C]: 20 | | Tmax [°C]: 50 | | Tmin [°C]: -30 |

| Frequency: 5785 MHz | Frequency Drift (ppm) | | | |
|---|---|---|---|---|
| Temperature (°C) | 0 minute | 2 minutes | 5 minutes | 10 minutes |
| T20°CVmax | 11.93 | 12.00 | 11.85 | 10.42 |
| T20°CVmin | 11.47 | 11.73 | 11.95 | 10.52 |
| T50°CVnom | 11.58 | 11.21 | 12.04 | 11.47 |
| T40°CVnom | 10.68 | 10.93 | 10.99 | 10.48 |
| T30°CVnom | 11.29 | 11.51 | 11.54 | 11.13 |
| T20°CVnom | 10.52 | 11.07 | 10.70 | 10.89 |
| T10°CVnom | 11.28 | 11.89 | 11.69 | 11.51 |
| T0°CVnom | 8.16 | 8.14 | 8.26 | 8.21 |
| T-10°CVnom | 8.59 | 8.67 | 9.15 | 8.85 |
| T-20°CVnom | 9.18 | 8.91 | 9.40 | 9.18 |
| T-30°CVnom | 7.35 | 7.48 | 7.45 | 7.24 |
| Vnom [Vac]: 120 | | Vmax [Vac]: 138 | | Vmin [Vac]: 102 |
| Tnom [°C]: 20 | | Tmax [°C]: 50 | | Tmin [°C]: -30 |

# 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

| **Linkou** | **Kwei Shan** | **Kwei Shan Site II** |
|---|---|---|
| Tel: 886-2-2601-1640 | Tel: 886-3-271-8666 | Tel: 886-3-271-8640 |
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If you have any suggestion, please feel free to contact us as below information.

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