

**Radio Test Report
(Radiated Spurious Emissions Only)**

For

WiFi module: WP-WIFI6-B

Supports

2.4 GHz / 5 GHz 802.11 a/ac/ax/b/g/n Wi-Fi radio

In

Host systems: IR1821-K9, IR1831-K9, IR1833-K9, IR1835-K9

FCC ID: LDKWPWIFI6

5150-5250 MHz

Against the following Specifications:

47 CFR 15.205

47 CFR 15.209


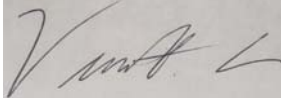



47 CFR 15.407



Cisco Systems

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San Jose, CA 95134

| | |
|---|---|
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| Approved By: Title: Compliance Manager |  Howard Ji |
| Version: | 1.0 |

This report replaces any previously entered test report under EDCS –21673975. This test report has been electronically authorized and archived using the CISCO Engineering Document Control system. Test Report Template EDCS# 1526148

This test report has been electronically authorized and archived using the CISCO Engineering Document Control system.

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Section 1: Overview

1.1 Test Summary

The samples were assessed against the tests detailed in section 3 under the requirements of the following specifications:

| Specifications |
|---|
| 47 CFR 15.205 47 CFR 15.209 47 CFR 15.407 |

Section 2: Assessment Information

2.1 General

This report contains an assessment of an apparatus against Radio Standards based upon tests carried out on the samples submitted. The testing was performed by and for the use of Cisco systems Inc:

With regard to this assessment, the following points should be noted:

- a) The results contained in this report relate only to the items tested and were obtained in the period between the date of the initial assessment and the date of issue of the report. Manufactured products will not necessarily give identical results due to production and measurement tolerances.
- b) The apparatus was set up and exercised using the configuration and modes of operation defined in this report only.
- c) Where relevant, the apparatus was only assessed using the susceptibility criteria defined in this report and the Test Assessment Plan (TAP).
- d) All testing was performed under the following environmental conditions:
Temperature 15°C to 35°C (59°F to 95°F)
Atmospheric Pressure 860mbar to 1060mbar (25.4" to 31.3")
Humidity 10% to 75*%
- e) All DC testing was performed at one or more of the following supply voltages:
12VDC (The supply voltage range supports 12V-36VDC)

2.2 Units of Measurement

The units of measurements defined in the appendices are reported in specific terms, which are test dependent. Where radiated measurements are concerned these are defined at a particular distance. Basic voltage measurements are defined in units of [dBuV]

As an example, the basic calculation for all measurements is as follows:

$$\text{Emission level [dBuV]} = \text{Indicated voltage level [dBuV]} + \text{Cable Loss [dB]} + \text{Other correction factors [dB]}$$

The combinations of correction factors are dependent upon the exact test configurations [see test equipment lists for further details] and may include:-

Antenna Factors, Pre Amplifier Gain, LISN Loss, Pulse Limiter Loss and Filter Insertion Loss..

Note: to convert the results from dBuV/m to uV/m use the following formula:-

$$\text{Level in uV/m} = \text{Common Antilogarithm } [(X \text{ dBuV/m})/20] = Y \text{ uV/m}$$

Measurement Uncertainty Values

| | |
|-----------------------------------|----------------------------|
| voltage and power measurements | ± 2 dB |
| conducted EIRP measurements | ± 1.4 dB |
| radiated measurements | ± 3.2 dB |
| frequency measurements | ± 2.4 10 ⁻⁷ |
| temperature measurements | $\pm 0.54^\circ$. |
| humidity measurements | $\pm 2.3\%$ |
| DC and low frequency measurements | $\pm 2.5\%$. |

Where relevant measurement uncertainty levels have been estimated for tests performed on the apparatus. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Radiated emissions (expanded uncertainty, confidence interval 95%)

| | |
|--------------------|------------|
| 30 MHz - 300 MHz | +/- 3.8 dB |
| 300 MHz - 1000 MHz | +/- 4.3 dB |
| 1 GHz - 10 GHz | +/- 4.0 dB |
| 10 GHz - 18GHz | +/- 8.2 dB |
| 18GHz - 26.5GHz | +/- 4.1 dB |
| 26.5GHz - 40GHz | +/- 3.9 dB |

Conducted emissions (expanded uncertainty, confidence interval 95%)

| | |
|----------------|-------------|
| 30 MHz – 40GHz | +/- 0.38 dB |
|----------------|-------------|

A product is considered to comply with a requirement if the nominal measured value is below the limit line. The product is considered to not be in compliance in case the nominal measured value is above the limit line.

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2.3 Date of testing (initial sample receipt date to last date of testing)

30-March-2021 to 09-April-2021

2.4 Report Issue Date

Cisco uses an electronic system to issue, store and control the revision of test reports. This system is called the Engineering Document Control System (EDCS). The actual report issue date is embedded into the original file on EDCS. Any copies of this report, either electronic or paper, that are not on EDCS must be considered uncontrolled

2.5 Testing facilities

This assessment was performed by:

Testing Laboratory

Cisco Systems, Inc.
425 West Tasman Drive (Building 7)
San Jose, CA 95134
USA

Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134
USA

Registration Numbers for Industry Canada

| Cisco System Site | Address | Site Identifier |
|--------------------------|--|------------------------|
| Building P, 10m Chamber | 125 West Tasman Dr San Jose, CA 95134 | Company #: 2461N-2 |
| Building P, 5m Chamber | 125 West Tasman Dr San Jose, CA 95134 | Company #: 2461N-1 |
| Building 7, 5m Chamber | 425 E. Tasman Drive San Jose, California 95134 United States | Company #: 2461N-3 |

Test Engineers

Farida Rahmanzai, Vincent Chiu, Danh Le

2.6 Equipment Assessed (EUT)**Radio Module:** WP-WIFI6-B**Host System:** IR1835-K9

2.7 EUT Description

WP-WIFI6 is Wifi 802.11ax Wi-Fi 6 access point module for industrial IoT routing and gateway platforms which is a field replaceable Wifi interface module designed for IR1800 series platform. It includes a 2x2 MIMO 802.11ax 2.4 GHz radio and a 2x2 MIMO 802.11ax 5 GHz radio

IR1835-K9 is the next generation of IR829, based on IOS XE, with advanced features such as modular WiFi, modular Cellular/WAN, CAN Bus, Dead Reckoning etc.

The product has the following interfaces:

4 GE LAN Ports

1 GE WAN / 1 Fiber Port (Alternate to GE Copper port)

1 RS-232 Serial

1 RS232/RS485

1 Type-A USB for Storage

1 GPS Slot1.6 EUT Description

1 WIFI Slot

1 mSATA Slot

2 Cellular PIM Slots [Main Aux and GPS (Only on Sierra Wireless Modules)]

Alarm Port

Micro-USB

DC Power input (DC Min/Max 9-32)

WiFi module Model/PID Differences

The WP-WIFI6 Access Point module is designed for use in many countries with varying regulatory requirements. The WP-WIFI6-A and WP-WIFI6-B, both have the same identical components, electronics

circuitries, PCB layout and enclosure. The WP-WIFI6-A module is configured with the Canada country code and the WP-WIFI6-B module is configured with US country code. The US and Canada country codes are configured according to the test results demonstrated compliance in the RF conducted emissions FCC/RSS test reports. The difference between the 2 PIDs (WP-WIFI6-A and WP-WIFI6-B) is the UNII-1 (5150MHz – 5250MHz) band is not supported in the WP-WIFI6-A PID.

Host system Model/PID differences

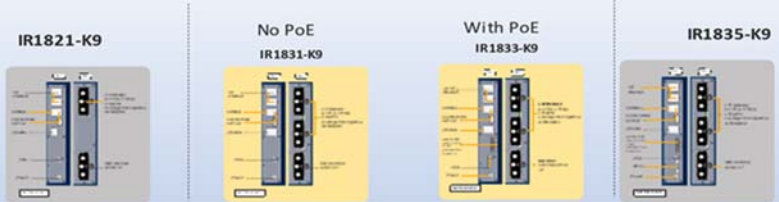
IR1821-K9

IR1831-K9

IR1833-K9

IR1835-K9 ----- System Tested

The following host models are in the same IR18xx family. IR1835-K9 is the highly populated host model out of all 4 models and selected model for testing. The radio WP-WiFi6-E module in these host has the same identical components, electronics circuitries and PCB layout. Below table summarizes the differences between all four host models.



| | IR1821-K9 | IR1831-K9 | IR1833-K9 | IR1835-K9 |
|---------------------|-----------|-----------|-----------|------------------|
| Processor | 600MHz | 600MHz | 600MHz | 1200MHz |
| Memory | 4GB | 4GB | 4GB | 8GB |
| Single LTE Slots | ✓ | X | X | X |
| Dual LTE Slot | X | ✓ | ✓ | ✓ |
| WiFi (FRU) | ✓ | ✓ | ✓ | ✓ |
| PoE | X | X | ✓ | ✓ |
| mSATA (FRU) | X | X | ✓ | ✓ |
| Dedicated GPS (FRU) | X | X | ✓ | ✓ |
| GPIO | X | X | X | ✓ |
| Serial Interface | RS232 (1) | RS232 (2) | RS232 (2) | RS232, RS232/485 |

Antenna Specification

The following antennas are supported by this product series.
The data included in this report represent the worst-case data for all antennas.

| Frequency | Part Number | Antenna Type | Peak Antenna Gain (dBi) | >30 degree 5 GHz Antenna Gain (dBi) |
|------------------|--------------------|--------------------------------------|-------------------------|-------------------------------------|
| 2.4/5 GHz | W-ANTM2050D-RPSMA= | Omnidirectional swivel stick dipole | 2 / 4 | 0 |
| | W-ANTM2-O-2-RPSMA | Omnidirectional | 4 / 4 | 0 |
| | ANT-7-5G4WL2G1-O= | 7-in-1 vehicle mount omnidirectional | 8 / 8 | 3 |
| | 5G-ANTM-O-4-B= | 9-in-1 vehicle mount omnidirectional | 8 / 8 | 3 |

Section 3: Result Summary**3.1 Results Summary Table****Radiated Emissions (General requirements)**

| Basic Standard | Technical Requirements / Details | Result |
|---|--|---------------|
| FCC 15.205 FCC 15.209 FCC 15.407 (b) (6) | TX Spurious Emissions: Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the field strength limits table in this section. | Pass |
| RSS-Gen | RX Spurious Emissions: Spurious emissions from the receivers shall not exceed the radiated limits of receiver spurious emissions shown in RSS-Gen section 8.9 & 8.10 | Pass |
| 15.207 RSS-Gen | AC conducted Emissions: U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207 & RSS-Gen | Pass |

Section 4: Sample Details

Note: Each sample was evaluated to ensure that its condition was suitable to be used as a test sample prior to the commencement of testing. Please also refer to the “Justification for worst Case test Configuration” section of this report for further details on the selection of EUT samples.

4.1 Sample Details

| Sample Number | Equipment Details | Serial Number | CISCO Part Number |
|---------------|--|--|-------------------------|
| S01 | WP-WiFi6-B Dual Band Radio in IR1835 Host system with 5GHz Wi-Fi radio actives | Module: FOC24490FG7 Host: FCW2443P0DH | Module: 68-103267-01 13 |
| S02 | External Patch antenna (8 dBi Gain) | ----- | 5G-ANTM-O-4-B= |

Note: The host system is powered by 12VDC. The host supply voltage range supports 12V-36VDC.

4.2 System Details

| System # | Description | Samples |
|----------|--|----------|
| 1 | WP-WiFi6-B Dual Band Radio in IR1835 Host system with 5GHz Wi-Fi radio actives + ext. PS + ext. 8 dBi patch ant. | S01, S02 |

4.3 Mode of Operation / Modulation / Data Rate Details

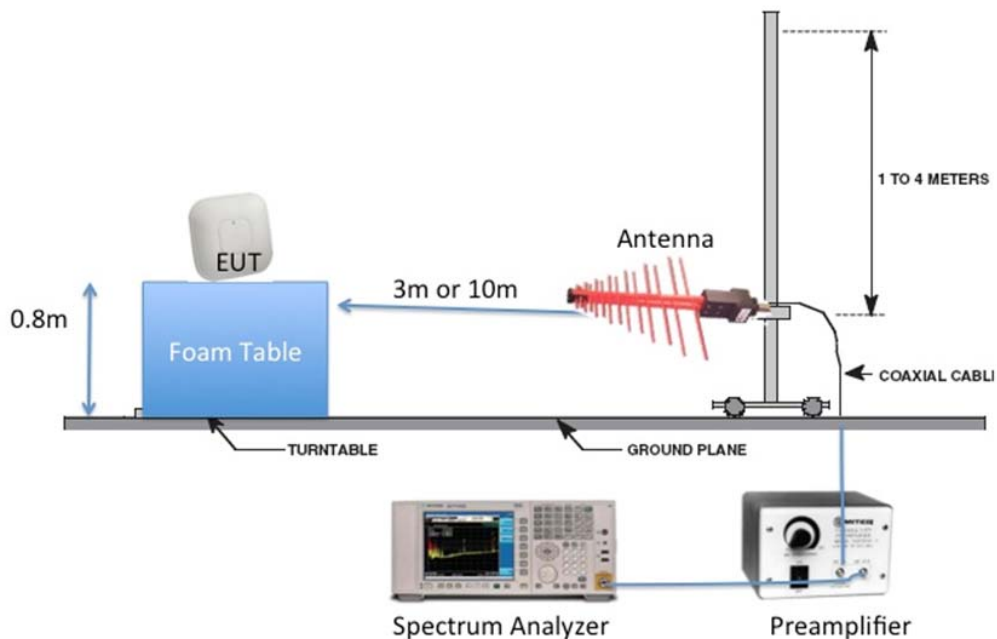
| Mode (Radio band support, # of active antenna) | Wi-Fi Mode | Modulation | Data Rate |
|--|------------------|------------|-----------|
| Transmit (dual antenna) | 802.11HE20(5GHz) | MIMO-OFDMA | M0h1 |
| Receive (dual antenna) | 802.11HE20(5GHz) | MIMO-OFDMA | M0h1 |

Note: All testing was performed at 19dBm per antenna port which is maximum supported power level. The testing at maximum supported power will cover all other power levels and other supported modes

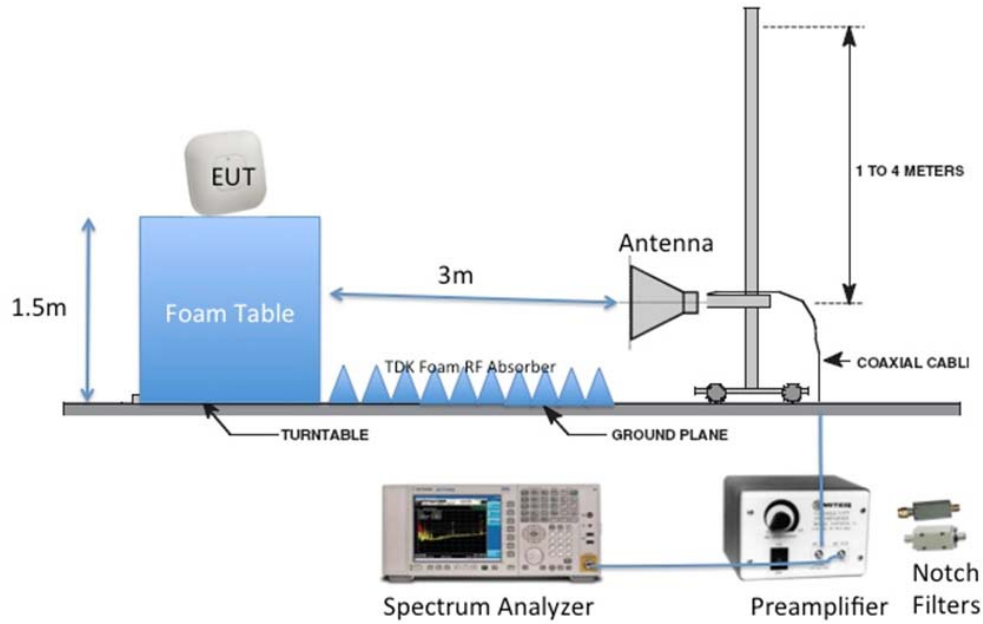
Appendix A: Radiated Spurious Emission

A.1: Setup Diagram

Radiated Emission Setup Diagram-Below 1G
(Preamp used is optional)



Radiated Emission Setup Diagram-Above 1G



A.2: Radiated Spurious Emissions Test Requirements & Limits

Emissions on frequency or frequencies which are outside the necessary bandwidth and level of which may be reduced without effecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions.

Restricted bands Limits

15.407 (b) (7) The provisions of 15.205 apply to intentional radiators operating under this section

15.205 (b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.

| Restricted Bands for FCC | | | |
|--------------------------|---------------------|---------------|-------------|
| MHz | MHz | MHz | GHz |
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | Above 38.6 |
| 13.36-13.41 | | | |

Non-Restricted Bands Limits

Below 1 GHz

FCC 15.209

The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the table specified in the table in FCC§15.209(a).

FCC15.407

(b) (6) Unwanted emissions below 1GHz must comply with general field strength limits set forth in §15.209.

| General Field Strength Limits Table | | | |
|-------------------------------------|---------------------------|-----------------------------|-------------------------------|
| Frequency (MHz) | Field strength (uV/meter) | Field strength (dBuV/meter) | Measurement distance (meters) |
| 30-88 | 100** | 40 Qp | 3 |
| 88-216 | 150** | 43.5 Qp | 3 |
| 216-960 | 200** | 46 Qp | 3 |
| Above 960 | 500 | 54 Av / 74 Pk | 3 |

Above 1 GHz

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

A.2.1: Limit Conversion (power to field strength)

The field strength limit in dB μ V can be converted from power (logarithmic) by using the field strength (linear) approach formula as follows:

$$V/m = \frac{\sqrt{30 \times P_t \times g_t}}{d}$$

where: **P_t** = transmitter output power in watts,
g_t = numeric gain of the transmitting antenna (unit less),
E = electric field strength in V/m,
d = measurement distance in meters (m).

From the equation above, unit conversion from log => linear with a known power limit of -27 dBm.

(1) Conversion from dBm to Watt

$$\text{dBm to Watts } W = 10^{((\text{dBm} - 30)/10)}$$

$$\begin{aligned} P(W) &= 10^{(-27 - 30) / 10} \\ &= 10^{-5.7} \\ &= 1.995 \times 10^{-6} \end{aligned}$$

(2) Convert from Watt to field strength

a. Convert from Watt to V/m @ 3m distance

$$\begin{aligned} V/m &= \frac{\sqrt{30 \times P_t \times g_t}}{3} \\ &= \frac{\sqrt{30 \times 0.000001995 \times 1}}{3} \\ &= \mathbf{0.00257} \end{aligned}$$

b. Convert field strength to power density (V/m to dB μ V/m)

$$\begin{aligned} \text{dB}\mu\text{V/m} &= 20 \log(V/m) + 120 \\ &= \mathbf{68.2} \end{aligned}$$

A.2.2: Test Procedure

Ref. ANSI C63.10-2013 section 6.5 & 6.6, Cisp16-1-1

ANSI C63.10: 2013 section 4.1.4 / section 12.7.5 (Quasi-Peak), section 12.7.6 (peak), section 12.7.7.3 (average)

| Test parameters |
|---|
| (i) Span = Entire frequency range or segment if necessary. (ii) Reference Level = 80 dBuV (iii) RBW = 100 kHz (less than or equal to 1 GHz); 1 MHz (above 1 GHz) (iv) VBW \geq 3 x RBW (v) Detector = Peak & Quasi-Peak (frequency range 30 MHz to 1 GHz); Peak & Average (frequency range above 1 GHz); Change VBW to 10 Hz for average measurement (vi) Sweep Time = Couple |

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

30MHz – 18GHz,

Save plots: Peak plot (Vertical and Horizontal) @3m

Above 18 GHz,

Save plots: Peak plot (Vertical and Horizontal) @1m

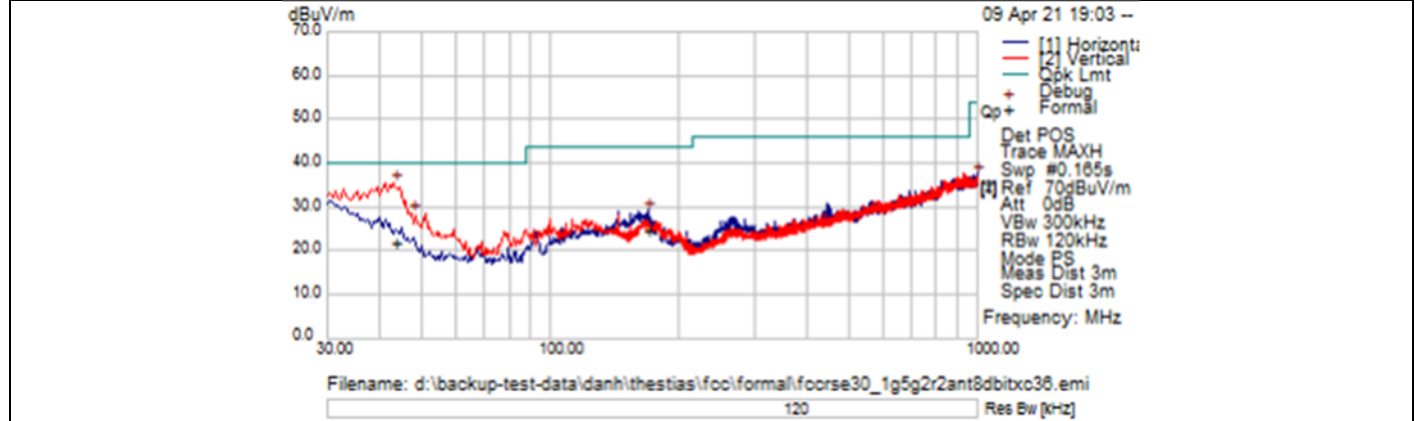
Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands.

Note: The data displayed on the plots detailed in the graphical test results section were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements.



A.2.3: Tx Radiated Spurious Emissions Graphical Data Results

| | |
|---|---|
| Subtest Date: | 09-April-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 30MHz - 1GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 36 (5180 MHz) |

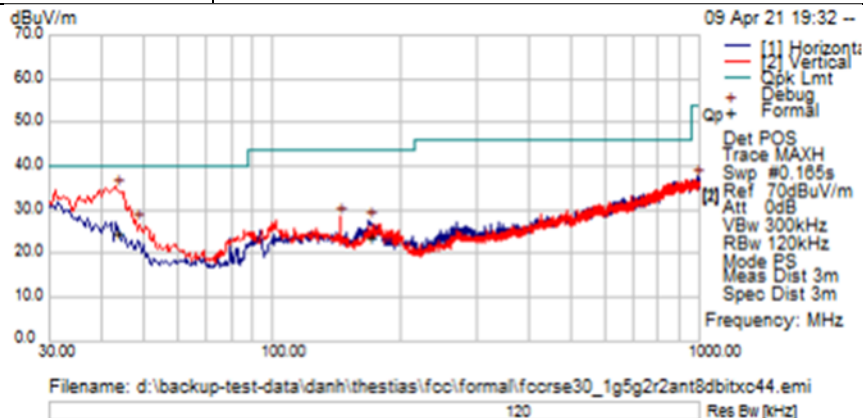


TX Spurious Emissions from 30MHz-1GHz – Ch36 (5180 MHz)

| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|----------|
| 42.98625 | 9.6 | 0.66 | 11.61 | 21.87 | Quasi-Pk | V | 165 | 0 | 40 | -18.13 | Pass | |
| 169.48375 | 11.35 | 1.33 | 12 | 24.68 | Quasi-Pk | H | 204 | 113 | 43.5 | -18.82 | Pass | |



| | |
|---|---|
| Subtest Date: | 09-April-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 30MHz - 1GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 44 (5220 MHz) |

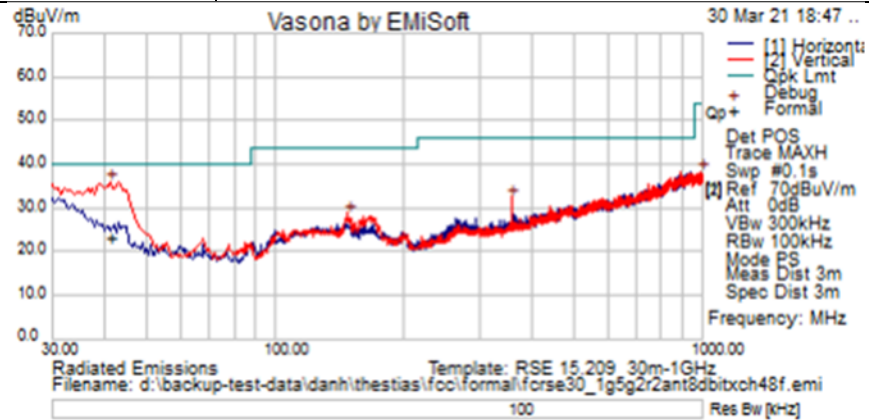


TX Spurious Emissions from 30MHz-1GHz – Ch44 (5220 MHz)

| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|----------|
| 43.05575 | 12.3 | 0.66 | 11.57 | 24.53 | Quasi-Pk | V | 319 | 226 | 40 | -15.47 | Pass | |
| 168.91675 | 10.27 | 1.33 | 12.02 | 23.61 | Quasi-Pk | H | 238 | 109 | 43.5 | -19.89 | Pass | |



| | |
|---|---|
| Subtest Date: | 30-Mar-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 30MHz - 1GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 48 (5240 MHz) |

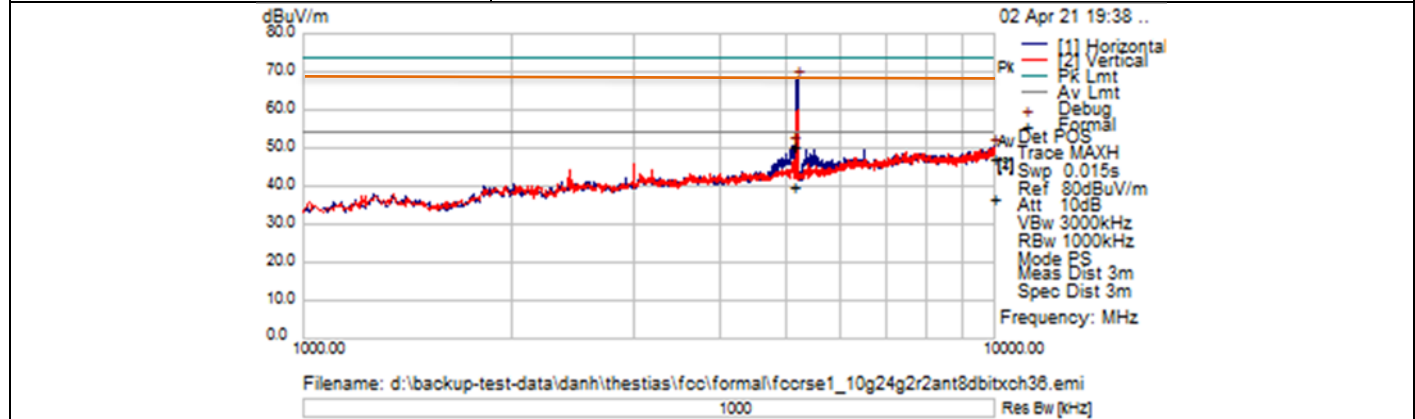


TX Spurious Emissions from 30MHz-1GHz – Ch48 (5240 MHz)

| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|----------|
| 40.987 | 9.61 | 0.65 | 13.11 | 23.37 | Quasi-Pk | V | 220 | 365 | 40 | -16.63 | Pass | |

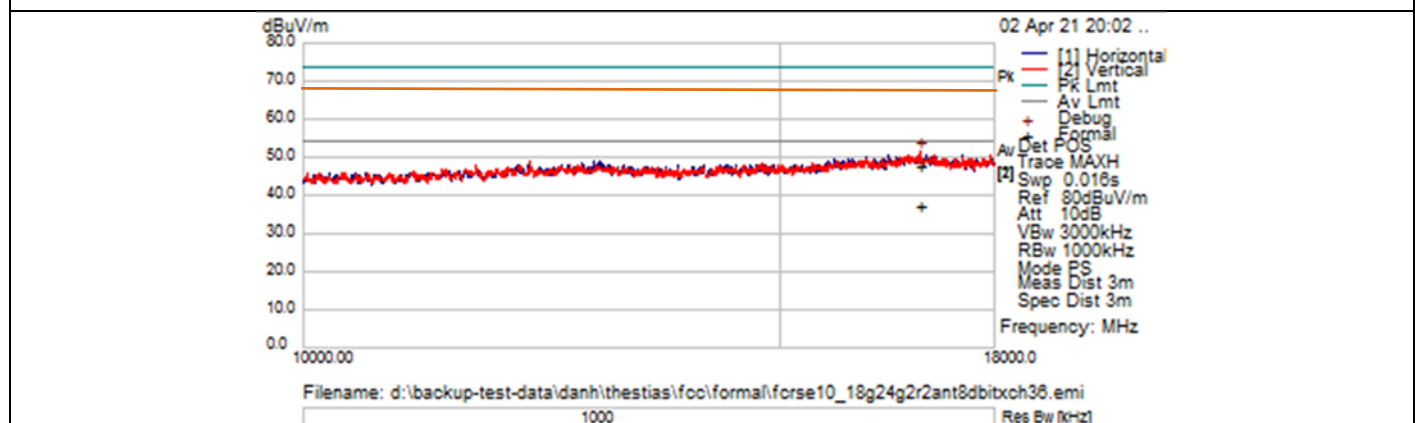


| | |
|---|---|
| Subtest Date: | 02-April-2021 to 08-April-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 1GHz - 40GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 36 (5180 MHz) |

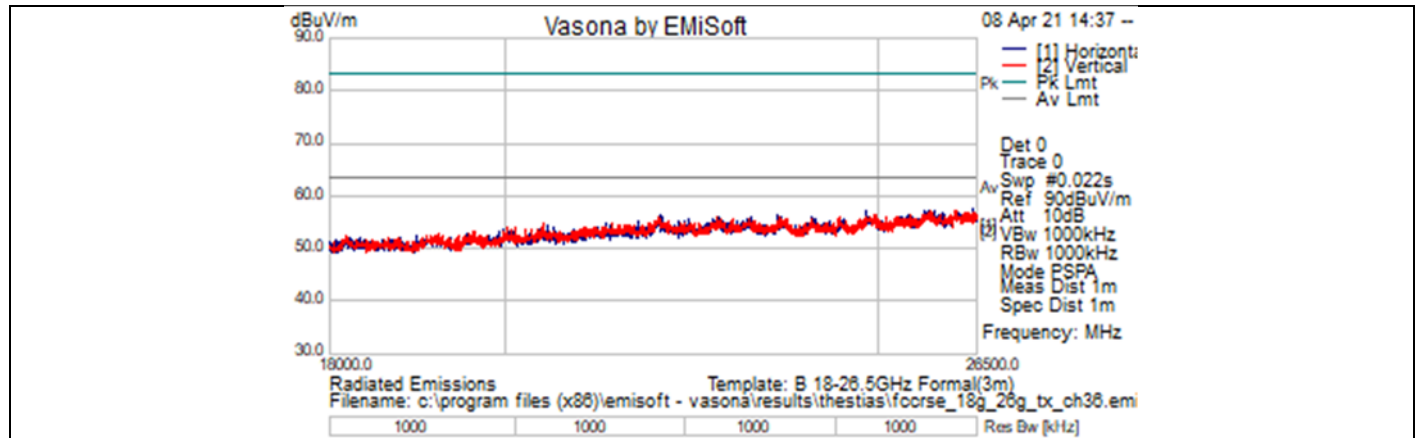


TX Spurious Emissions from 1GHz-10GHz – Ch36 (5180 MHz)

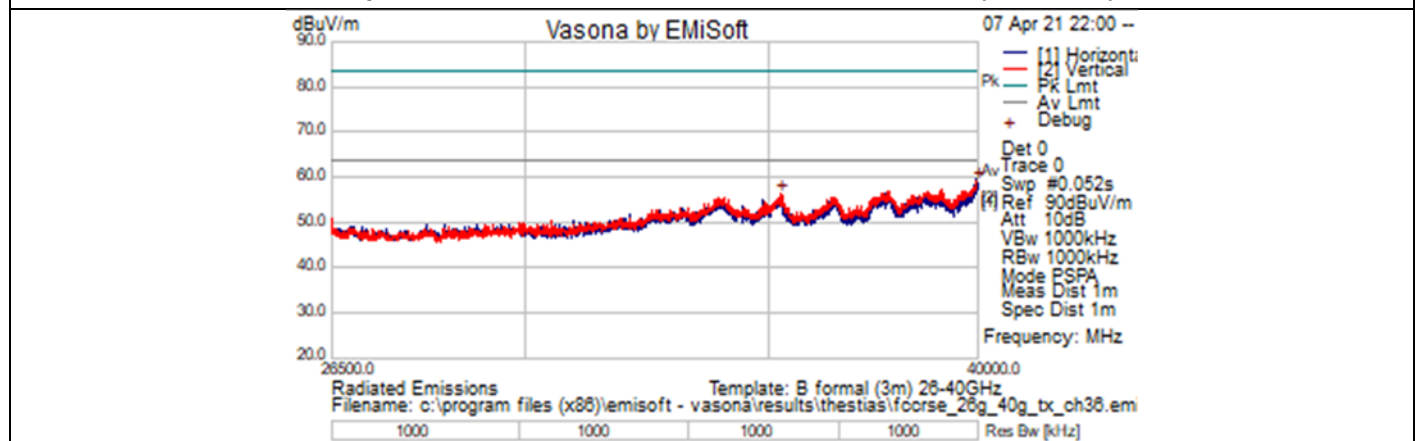
| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|-------------|
| 5185 | 65.28 | 8.61 | -5.68 | 68.21 | Peak | H | 250 | 296 | ----- | ----- | Ignored | Fundamental |
| 5111.875 | 37.36 | 8.53 | -5.84 | 40.04 | Average | H | 243 | 293 | 54 | -13.96 | Pass | |
| 5111.875 | 47.98 | 8.53 | -5.84 | 50.67 | Peak | H | 243 | 293 | 74 | -23.33 | Pass | |
| 9988.750001 | 26.29 | 12.53 | -2.16 | 36.66 | Average | V | 192 | 365 | 54 | -17.34 | Pass | |
| 9988.750001 | 36.69 | 12.53 | -2.16 | 47.06 | Peak Max | V | 192 | 365 | 74 | -26.94 | Pass | |



TX Spurious Emissions from 10GHz-18GHz – Ch36 (5180 MHz)



TX Spurious Emissions from 18GHz-26.5GHz – Ch36 (5180 MHz)

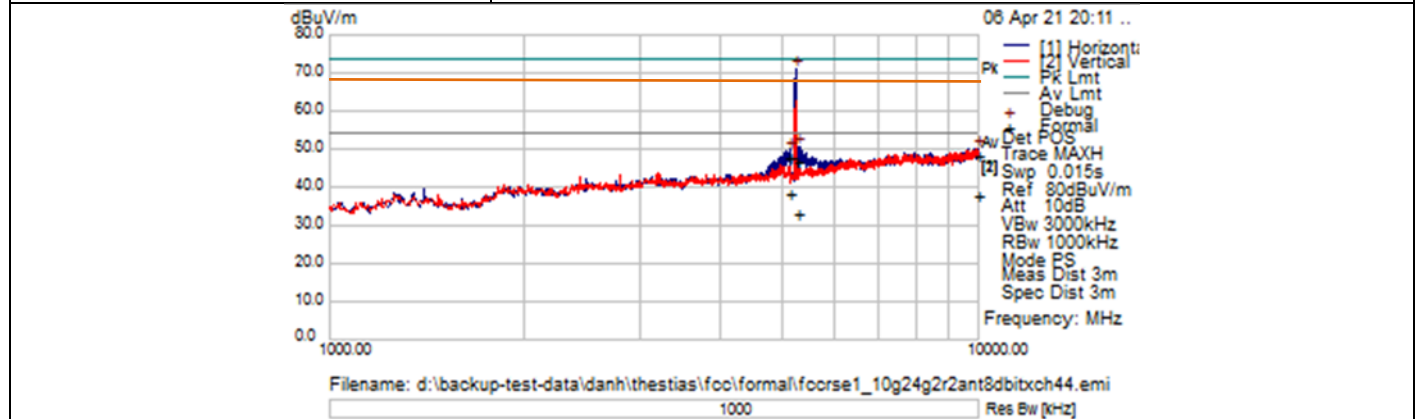


TX Spurious Emissions from 26.5GHz-40GHz – Ch36 (5180 MHz)

Note: No measurable emissions found from 10GHz - 40GHz.

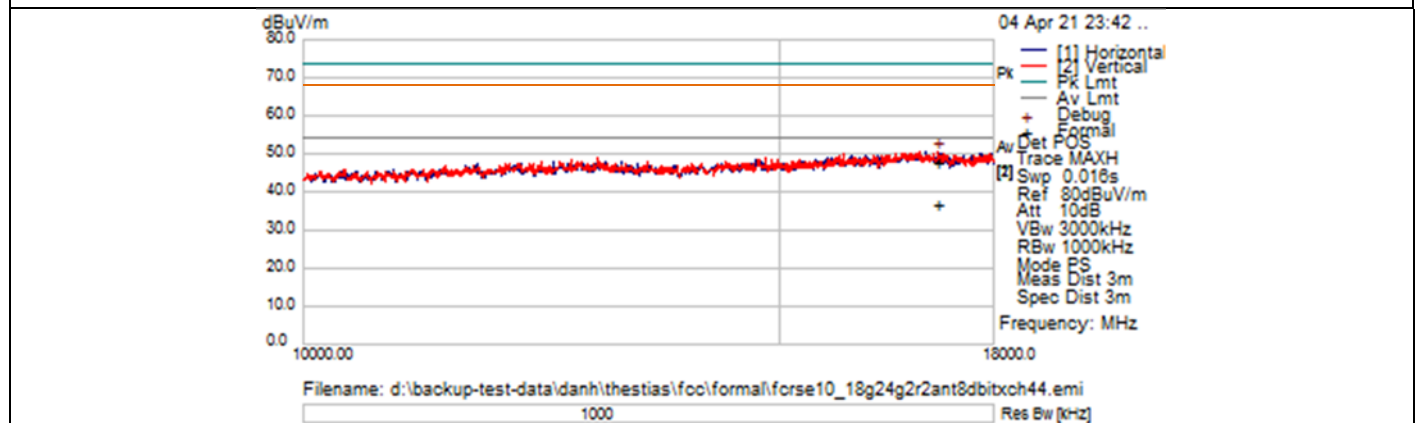


| | |
|---|---|
| Subtest Date: | 04-April-2021 to 08-April-2021 |
| Engineer | Vincent Chiu, Farida Rahmanzai, Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 1GHz - 40GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 44 (5220 MHz) |

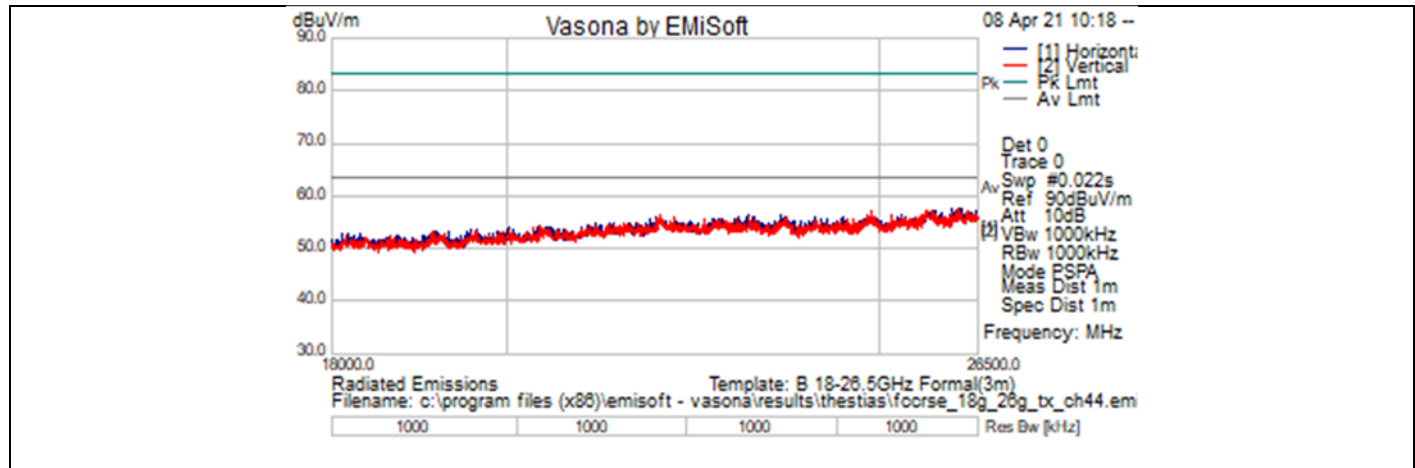


TX Spurious Emissions from 1GHz-10GHz – Ch44 (5220 MHz)

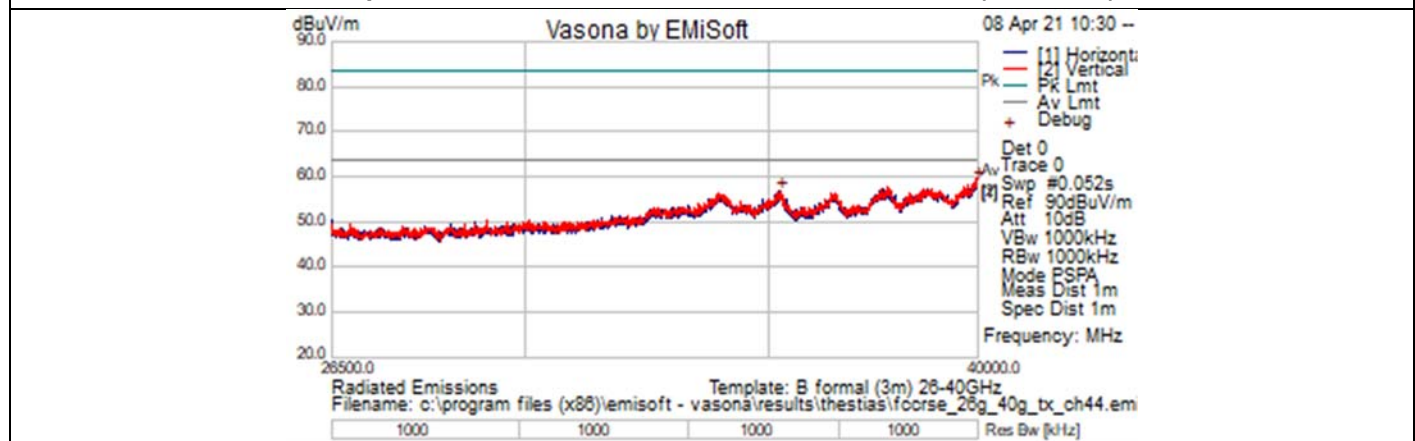
| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|-------------|
| 5224.375 | 67.99 | 8.62 | -5.57 | 71.05 | Peak | H | 250 | 294 | ----- | ----- | Ignored | Fundamental |
| 5123.125 | 35.46 | 8.54 | -5.88 | 38.13 | Average | H | 127 | 295 | 54 | -15.87 | Pass | |
| 5123.125 | 45.3 | 8.54 | -5.88 | 47.97 | Peak | H | 127 | 295 | 74 | -26.03 | Pass | |
| 5269.375 | 29.79 | 8.66 | -5.59 | 32.86 | Average | H | 305 | 291 | 54 | -21.14 | Pass | |
| 5269.375 | 43.73 | 8.66 | -5.59 | 46.81 | Peak | H | 305 | 291 | 74 | -27.19 | Pass | |
| 9960.625 | 27.18 | 12.48 | -2.11 | 37.55 | Average | V | 342 | 159 | 54 | -16.45 | Pass | |
| 9960.625 | 37.74 | 12.48 | -2.11 | 48.1 | Peak | H | 192 | 365 | 74 | -25.9 | Pass | |



TX Spurious Emissions from 10GHz-18GHz – Ch44 (5220 MHz)



TX Spurious Emissions from 18GHz-26.5GHz – Ch44 (5220 MHz)

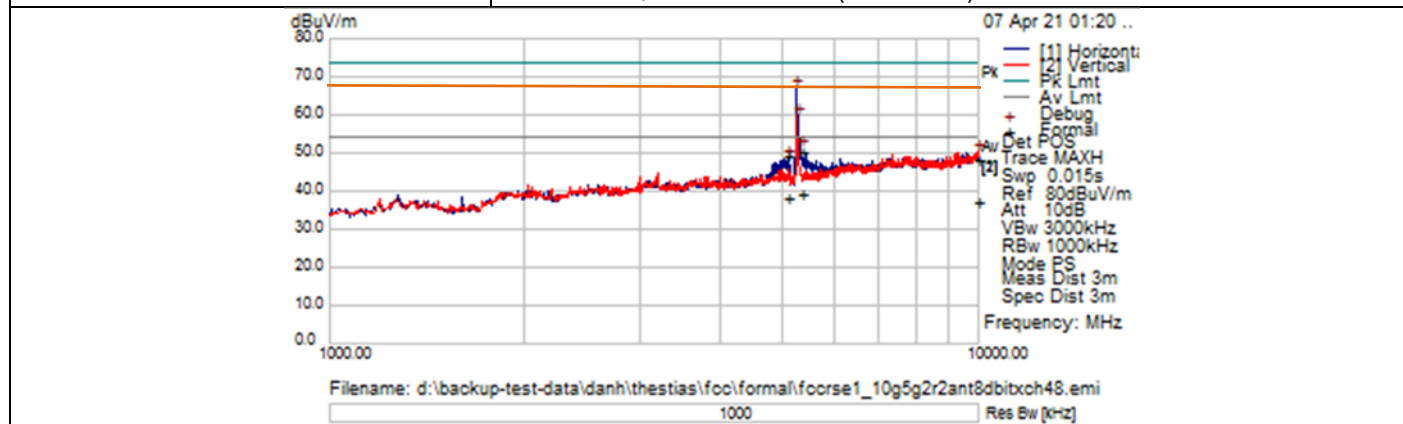


TX Spurious Emissions from 26.5GHz-40GHz – Ch44 (5220 MHz)

Note: No measurable emissions found from 10GHz - 40GHz.

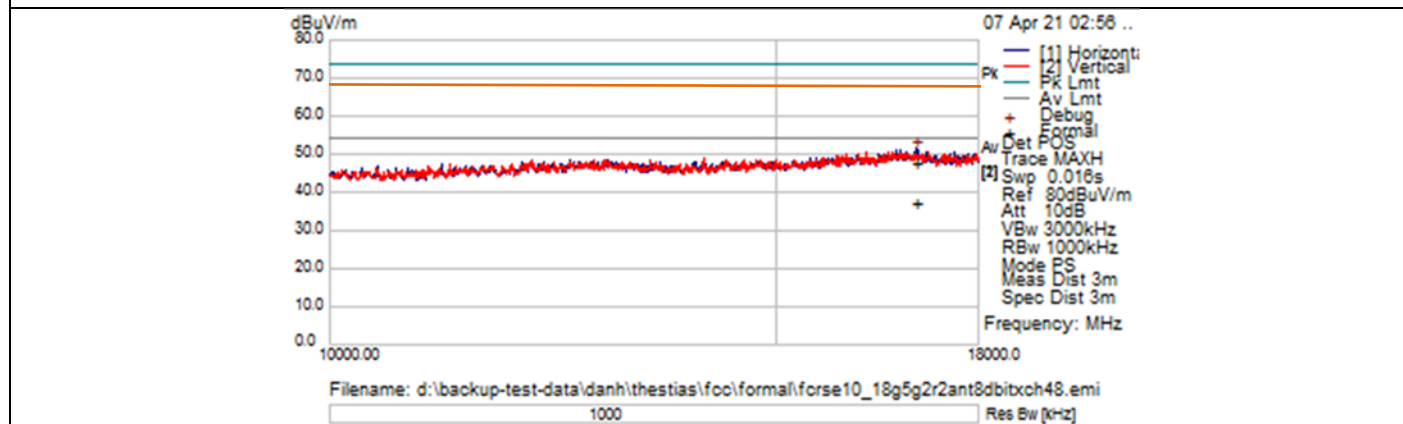


| | |
|---|---|
| Subtest Date: | 07-April-2021 to 08-April-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Transmitter Spurious Emissions |
| Frequency Range | 1GHz - 40GHz |
| Comments on the above Test Results | 802.11HE20, Tx Channel 48 (5240 MHz) |

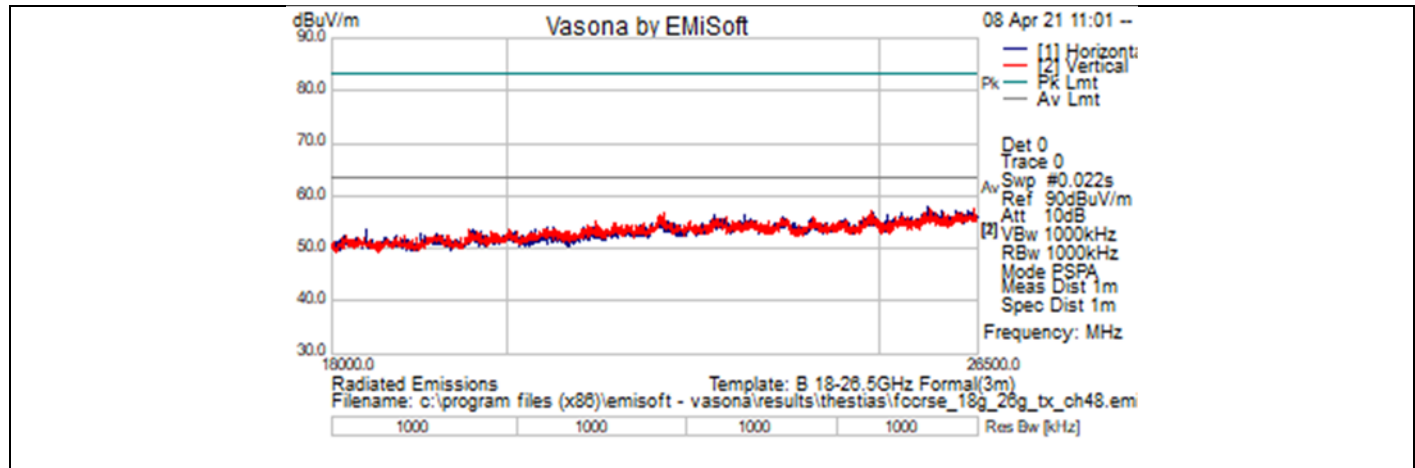


TX Spurious Emissions from 1GHz-10GHz – Ch48 (5240 MHz)

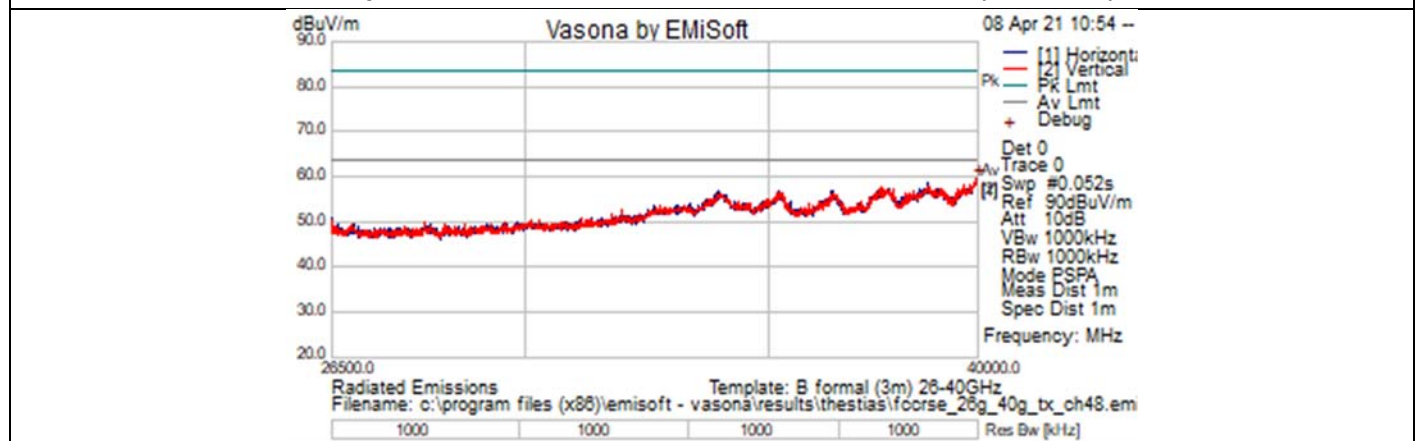
| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|----------|----------|-------------|-----------|--------------|-------------|---------------------|-------------|
| 5230 | 64.27 | 8.62 | -5.61 | 67.29 | Peak | H | 250 | 296 | ----- | ----- | Ignored | Fundamental |
| 5095 | 35.76 | 8.51 | -5.82 | 38.45 | Average | H | 240 | 293 | 54 | -15.55 | Pass | |
| 5095 | 46.52 | 8.51 | -5.82 | 49.21 | Peak | H | 240 | 293 | 74 | -24.79 | Pass | |
| 5320 | 36.13 | 8.73 | -5.59 | 39.27 | Average | H | 216 | 300 | 54 | -14.73 | Pass | |
| 5320 | 47.29 | 8.73 | -5.59 | 50.43 | Peak | H | 216 | 300 | 74 | -23.57 | Pass | |
| 9971.875 | 26.99 | 12.48 | -2.12 | 37.35 | Average | V | 113 | 11 | 54 | -16.65 | Pass | |
| 9971.875 | 38.03 | 12.48 | -2.12 | 48.39 | Peak | H | 317 | 29 | 74 | -25.61 | Pass | |



TX Spurious Emissions from 10GHz-18GHz – Ch48 (5240 MHz)



TX Spurious Emissions from 18GHz-26.5GHz – Ch48 (5240 MHz)



TX Spurious Emissions from 26.5GHz-40GHz – Ch48 (5240 MHz)

Note: No measurable emissions found from 10GHz - 40GHz.



A.3: Receiver Spurious Emissions

RSS-Gen

Receivers are required to comply with the limits of spurious emissions as set out in this section. Receiver emission measurements are to be performed as per the normative test method referenced in Section 3.

For emissions at frequencies below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. At frequencies above 1 GHz, measurements shall be performed using a linear average detector with a minimum resolution bandwidth of 1 MHz

Ref. RSS-Gen sec 8.9 & 8.10

Ref. ANSI C63.10: 2013 Section 12.7.6 (Peak), Section 12.7.7.2 (Method AD), and Section 6.6

| Radiated Spurious Emissions | |
|---|---|
| Test parameters | |
| Peak Span = 1-18GHz /18GHz-26.5GHz/26.5GHz-40GHz RBW = 1 MHz VBW ≥ 3 MHz Sweep = Auto couple Detector = Peak Trace = Max Hold. | Average Span = 1-18GHz /18GHz-26.5GHz/26.5GHz-40GHz RBW = 1 MHz VBW ≥ 3 MHz Sweep = Auto couple Detector = RMS Power Averaging |

Maximize Turntable (find worst case table angle), Maximize Antenna (find worst case height)

- Save 2 plots: 1) Average Plot (Vertical and Horizontal), Limit= 54dBuV/m @3m
 2) Peak plot (Vertical and Horizontal), Limit = 74dBuV/m @3m

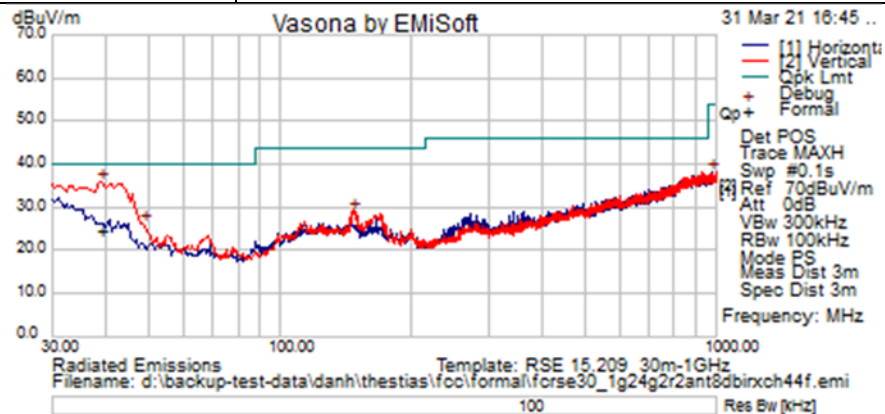
Radiated emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals. Terminate the access Point RF ports with 50-ohm loads.

This report represents the worst-case data for all supported operating modes and antennas.



A.3.1: Rx Radiated Spurious Emissions Graphical Data Results

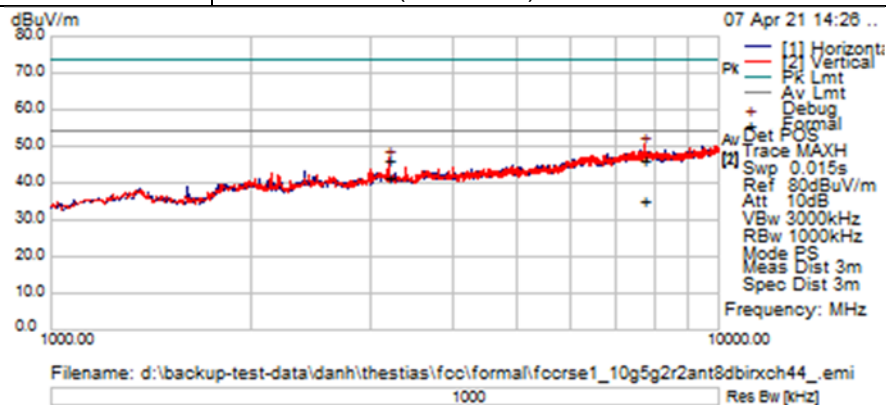
| | |
|---|---|
| Subtest Date: | 31-Mar-2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Receiver Spurious Emissions |
| Frequency Range | 30MHz - 1GHz |
| Comments on the above Test Results | Rx Channel 44 (5220 MHz) |



Rx Spurious Emissions from 30MHz-1GHz – Ch44 (5220 MHz)

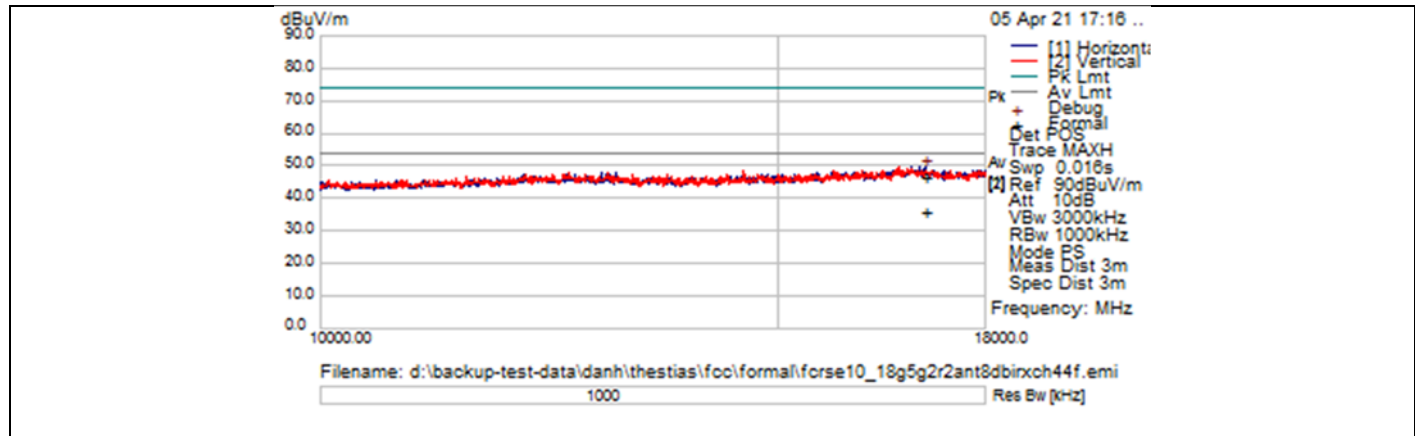
| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|-------------|----------|-------------|-----------|--------------|-------------|---------------------|----------|
| 38.703 | 9.37 | 0.63 | 14.78 | 24.78 | Quasi Max | V | 315 | 143 | 40 | -15.22 | Pass | |
| 48.43 | 17.1 | 0.7 | 8.53 | 26.32 | Peak [Scan] | V | 350 | 0 | 40 | -13.68 | Pass | |
| 147.37 | 15.43 | 1.24 | 12.53 | 29.2 | Peak [Scan] | V | 100 | 0 | 43.5 | -14.3 | Pass | |
| 978.66 | 11.87 | 3.18 | 23.13 | 38.18 | Peak [Scan] | H | 100 | 0 | 54 | -15.82 | Pass | |

| | |
|---|---|
| Subtest Date: | 05-April-2021 – 08 th April 2021 |
| Engineer | Vincent Chiu Farida Rahmanzai Danh Le |
| Lab Information | Building 7, 5m Anechoic |
| Subtest Title | Receiver Spurious Emissions |
| Frequency Range | 1GHz - 40GHz |
| Comments on the above Test Results | Rx Channel 44 (5220 MHz) |

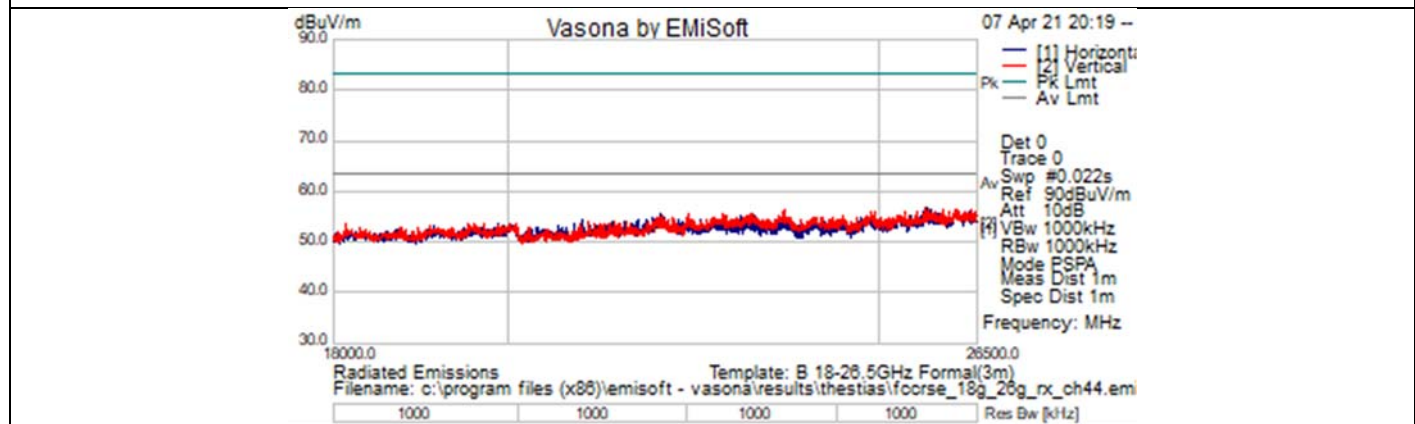


Rx Spurious Emissions from 1GHz-10GHz – Ch44 (5220 MHz)

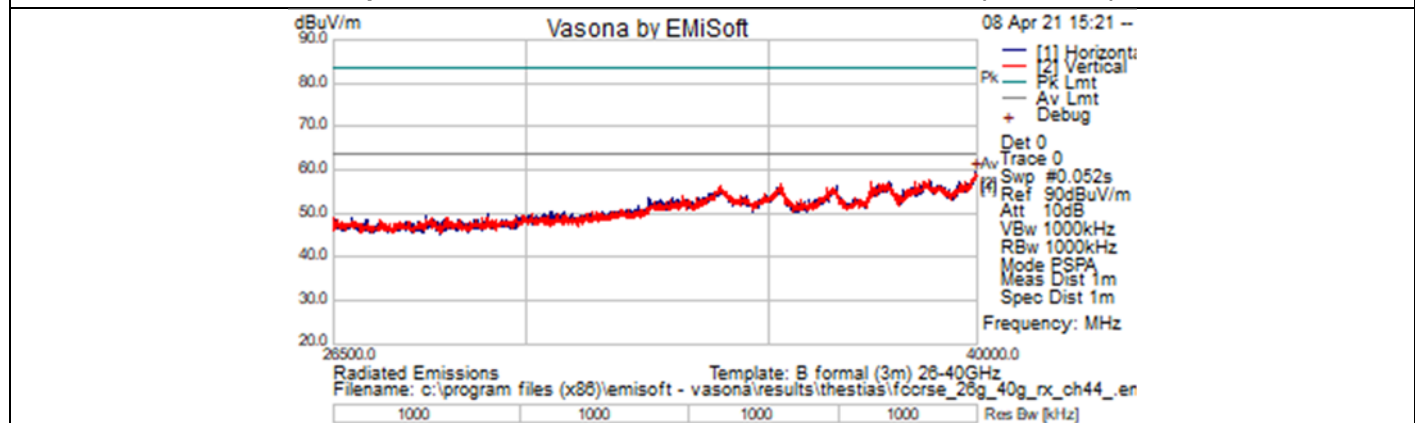
| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | AF (dB) | Level (dBuV) | Detector | Polarity | Height (cm) | Azt (Deg) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|---------|--------------|-------------|----------|-------------|-----------|--------------|-------------|---------------------|----------|
| 7734.75 | 39.05 | 10.92 | -3.7 | 46.27 | Peak Max | H | 206 | 0 | 74 | -27.73 | Pass | |
| 3200.16 | 46.46 | 6.55 | -6.65 | 46.36 | Peak Max | V | 190 | 30 | 74 | -27.64 | Pass | |
| 7734.75 | 27.92 | 10.92 | -3.7 | 35.15 | Average Max | V | 150 | 342 | 54 | -18.85 | Pass | |
| 3200.16 | 41.6 | 6.55 | -6.65 | 41.49 | Average Max | V | 190 | 30 | 54 | -12.51 | Pass | |



Rx Spurious Emissions from 10GHz-18GHz – Ch44 (5220 MHz)



Rx Spurious Emissions from 18GHz-26.5GHz – Ch44 (5220 MHz)



Rx Spurious Emissions from 26.5GHz-40GHz – Ch44 (5220 MHz)

Note: No measurable emissions found from 10GHz - 40GHz

A.4 AC Conducted Emissions

FCC 15.207 (a) & RSS-Gen 8.8 Except when the requirements applicable to a given device state otherwise, for any radio apparatus equipped to operate from the public utility AC power supply, either directly or indirectly (such as with a battery charger), the radio frequency voltage of emissions conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table in these sections. The more stringent limit applies at the frequency range boundaries.

Measurement Procedure

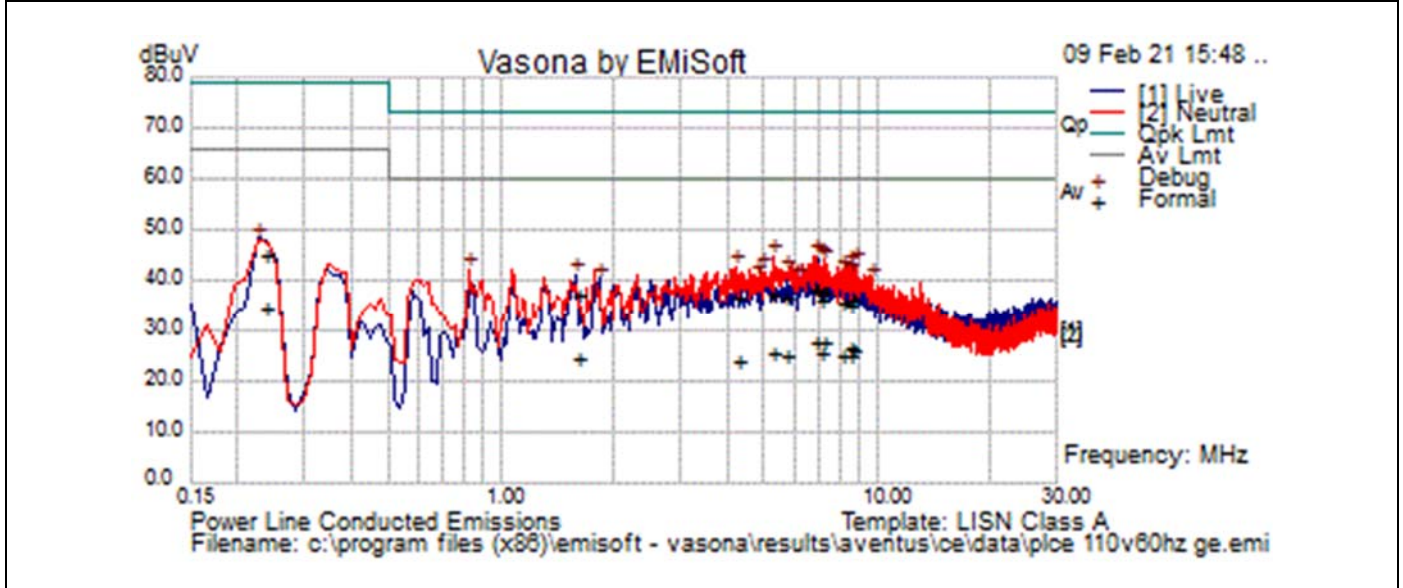
Accordance with ANSI C63.10:2013 section 6.2

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

| | |
|-----------------------|----------------------|
| Span: | 150 KHz – 30 MHz |
| Attenuation: | 10 dB |
| Sweep Time: | Coupled |
| Resolution Bandwidth: | 9 KHz |
| Video Bandwidth: | 30 KHz |
| Detector: | Quasi-Peak / Average |

A.4.1: AC Line conducted emissions results

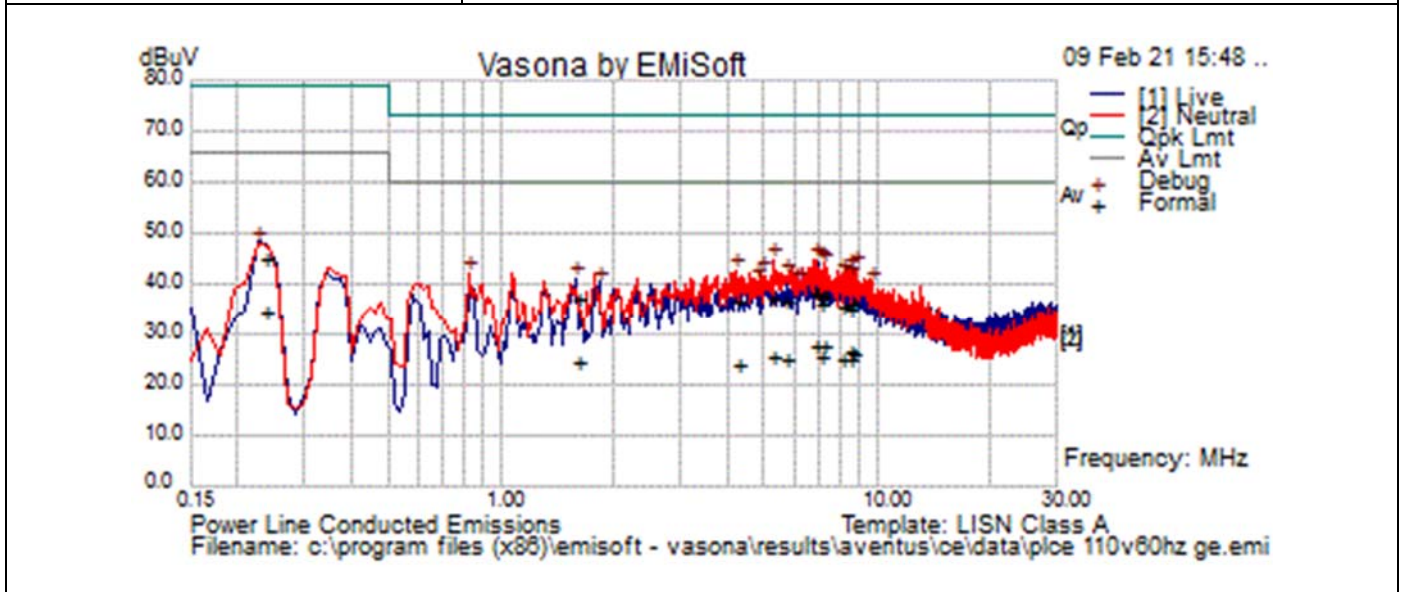
| | |
|---|----------------------------------|
| Subtest Date: | 09 Feb 21 |
| Engineer | Chakravarthy Sulva |
| Lab Information | Building P, formal immunity room |
| Subtest Title | Conducted Emissions |
| Frequency Range | 150 kHz - 30 MHz |
| Comments on the above Test Results | 2.4GHz/5GHz |



AC Conducted Emissions Test Result Tables for 2.4GHz/5GHz

| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | Factors (dB) | Level (dBuV) | Detector | Lines (Live/Neutral) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|--------------|--------------|------------|----------------------|--------------|-------------|---------------------|-------------|
| 0.236 | 14.1 | 20.6 | 0 | 34.7 | Average | Live | 52.35 | -17.65 | Pass | 2.4GHz/5GHz |
| 6.83 | 7.5 | 20.1 | 0 | 27.6 | Average | Neutral | 50 | -22.4 | Pass | 2.4GHz/5GHz |
| 7.236 | 7.4 | 20.1 | 0 | 27.5 | Average | Neutral | 50 | -22.5 | Pass | 2.4GHz/5GHz |
| 8.449 | 6.5 | 20.1 | 0.1 | 26.8 | Average | Neutral | 50 | -23.2 | Pass | 2.4GHz/5GHz |
| 8.676 | 6.1 | 20.2 | 0.1 | 26.4 | Average | Neutral | 50 | -23.6 | Pass | 2.4GHz/5GHz |
| 0.236 | 24.3 | 20.6 | 0 | 45 | Quasi Peak | Live | 62.35 | -17.35 | Pass | 2.4GHz/5GHz |
| 5.285 | 5.6 | 20.1 | 0.1 | 25.7 | Average | Neutral | 50 | -24.3 | Pass | 2.4GHz/5GHz |
| 6.83 | 18.4 | 20.1 | 0 | 38.6 | Quasi Peak | Neutral | 60 | -21.4 | Pass | 2.4GHz/5GHz |
| 7.04 | 5.3 | 20.1 | 0.1 | 25.5 | Average | Live | 50 | -24.5 | Pass | 2.4GHz/5GHz |
| 8.425 | 5 | 20.1 | 0.1 | 25.2 | Average | Live | 50 | -24.8 | Pass | 2.4GHz/5GHz |
| 5.755 | 4.9 | 20.1 | 0 | 25 | Average | Live | 50 | -25 | Pass | 2.4GHz/5GHz |
| 7.236 | 17.8 | 20.1 | 0 | 37.9 | Quasi Peak | Neutral | 60 | -22.1 | Pass | 2.4GHz/5GHz |
| 8.091 | 4.6 | 20.1 | 0.1 | 24.9 | Average | Live | 50 | -25.1 | Pass | 2.4GHz/5GHz |
| 1.586 | 4.3 | 20 | 0 | 24.3 | Average | Live | 46 | -21.7 | Pass | 2.4GHz/5GHz |
| 4.235 | 4.2 | 20 | 0 | 24.3 | Average | Neutral | 46 | -21.7 | Pass | 2.4GHz/5GHz |
| 5.285 | 16.9 | 20.1 | 0.1 | 37 | Quasi Peak | Neutral | 60 | -23 | Pass | 2.4GHz/5GHz |

| | |
|---|----------------------------------|
| Subtest Date: | 09 Feb 21 |
| Engineer | Chakravarthy Sulva |
| Lab Information | Building P, formal immunity room |
| Subtest Title | Conducted Emissions |
| Frequency Range | 150 kHz - 30 MHz |
| Comments on the above Test Results | 2.4GHz/5GHz |



| Frequency (MHz) | Raw (dBuV) | Cab Loss (dB) | Factors (dB) | Level (dBuV) | Detector | Lines (Live/Neutral) | Limit (dBuV) | Margin (dB) | Results Pass / Fail | Comments |
|-----------------|------------|---------------|--------------|--------------|------------|----------------------|--------------|-------------|---------------------|-------------|
| 1.586 | 17 | 20 | 0 | 37 | Quasi Peak | Live | 56 | -19 | Pass | 2.4GHz/5GHz |
| 4.235 | 16.7 | 20 | 0 | 36.8 | Quasi Peak | Neutral | 56 | -19.2 | Pass | 2.4GHz/5GHz |
| 5.755 | 16.4 | 20.1 | 0 | 36.5 | Quasi Peak | Live | 60 | -23.5 | Pass | 2.4GHz/5GHz |
| 7.04 | 16.1 | 20.1 | 0.1 | 36.3 | Quasi Peak | Live | 60 | -23.7 | Pass | 2.4GHz/5GHz |
| 8.449 | 16.1 | 20.1 | 0.1 | 36.3 | Quasi Peak | Neutral | 60 | -23.7 | Pass | 2.4GHz/5GHz |
| 8.676 | 15.7 | 20.2 | 0.1 | 35.9 | Quasi Peak | Neutral | 60 | -24.1 | Pass | 2.4GHz/5GHz |
| 8.091 | 15.4 | 20.1 | 0.1 | 35.6 | Quasi Peak | Live | 60 | -24.4 | Pass | 2.4GHz/5GHz |
| 8.425 | 15 | 20.1 | 0.1 | 35.2 | Quasi Peak | Live | 60 | -24.8 | Pass | 2.4GHz/5GHz |

Appendix B: List of Test Equipment Used to perform the test

| Equip# | Manufacturer | Model | Description | Last Cal | Next Due |
|--|---------------------------|---------------------------------------|---|-------------|--------------|
| Test Equipment used for Radiated Emissions 30MHz to 1GHz | | | | | |
| CIS44908 | ROHDE & SCHWARZ | ESCI | EMI Test Receiver | 12-Dec-2020 | 12-Dec-2021 |
| CIS30654 | SUNOL SCIENCES | JB1 | Combination Antenna, 30MHz-2GHz | 14-Jul-2020 | 14-Jul-2021 |
| CIS47311 | HUBER + SUHNER | Sucoflex 106PA | RF Type N Antenna Cable 18 GHz 8.5m | 30-Sep-2019 | 30-June-2021 |
| CIS25640 | MICRO-COAX | UFB311A-0-2720- 520520 | Coaxial Cable, 272.0 in. to 18GHz | 30-Sep-2019 | 30-June-2021 |
| CIS25660 | MICRO-COAX | UFB311A-1-0840- 504504 | Coaxial Cable, 84.0 in. to 18GHz | 30-Sep-2019 | 30-June-2021 |
| CIS08113 | CISCO | NSA CAL | NSA Chamber | 27-Mar-2021 | 27-Mar-2022 |
| Test Equipment used for Radiated Emissions 1GHz to 18GHz | | | | | |
| CIS24905 | Keysight (Agilent/HP) | E4440A | Spectrum Analyzer 3Hz-26.5GHz | 21-Oct-2020 | 21-Oct-2021 |
| CIS34741 | ETS Lindgren | 3117 | Double Ridged Guide Horn Antenna | 01-Oct-2020 | 01-Oct-2021 |
| CIS39124 | CISCO | TH0118 | Mast Mount Preamplicifier Array, 1-18GHz | 21-Jan-2020 | 21-Jul-2021 |
| CIS47311 | HUBER + SUHNER | Sucoflex 106PA | RF Type N Antenna Cable 18 GHz 8.5m | 30-Sep-2019 | 30-June-2021 |
| CIS25640 | MICRO-COAX | UFB311A-0-2720- 520520 | Coaxial Cable, 272.0 in. to 18GHz | 30-Sep-2019 | 30-June-2021 |
| CIS25660 | MICRO-COAX | UFB311A-1-0840- 504504 | Coaxial Cable, 84.0 in. to 18GHz | 30-Sep-2019 | 30-June-2021 |
| CIS54402 | HUBER + SUHNER | Sucoflex 102 | K Type 40 GHz Cable | 10-Feb-2021 | 10-Feb-2022 |
| CIS8113 | CISCO | NSA CAL | NSA Chamber | 27-Mar-2021 | 27-Mar-2022 |
| CIS43024 | CISCO | Above 1GHz Site Ca | 1GHz Cispr Site Verification | 03-Oct-2020 | 03-Oct-2021 |
| CIS56056 | Wainwright Instruments | WRCJV 8-5100-5150-5250 -5300-4+ | SMA Band Reject Filter. 5.100GHz to 5.300GHz | 30-Apr-2020 | 30-Apr-2021 |
| Test Equipment used for Radiated Emissions 18GHz to 26GHz | | | | | |
| CIS08113 | CISCO | NSA CAL | NSA Chamber | 27-Mar-2021 | 27-Mar-2022 |
| CIS03671 0 | Cisco | 1840 | 18-40GHz EMI Test Head/Verification Fixture | 17-Sep-2020 | 17-Sep-2021 |
| CIS19630 | Rohde & Schwarz | ESI 40(ESIB 40) | EMI RECEIVER TEST 20Hz-40GHz | 28-Jan-2021 | 28-Jan-2022 |

| Equip# | Manufacturer | Model | Description | Last Cal | Next Due |
|---|-------------------------------|-------------------------|--|------------|------------|
| Test Equipment used for AC line conducted emissions 150kHz-30MHz | | | | | |
| 008496 | Fischer Custom Communications | FCC-450B-2.4-N | Instrumentation Limiter | 12/15/2020 | 12/15/2021 |
| 007704 | Fischer Custom Communications | FCC-LISN-50/250-50-2-01 | LISN | 12/7/2020 | 12/7/2021 |
| 018963 | York | CNE V | Comparison Noise Emitter,30-1GHz | NA | NA |
| 019207 | TTE | H785-150K-50-21378 | High Pass Filter 150kHz | 1/25/2021 | 1/25/2022 |
| 020913 | Fischer Custom Communications | FCC-LISN-PA-NEMA-5-15 | AC Adapter | 12/7/2020 | 12/7/2021 |
| 037229 | Coleman | RG-223 | 25ft BNC cable | 2/26/2020 | 2/26/2021 |
| 044021 | Fischer Custom Communications | FCC-801-M2-32A | Power Line Coupling Decoupling Network | 3/9/2020 | 3/9/2021 |
| 046718 | Bird | 5-T-MB | 5W 50 Ohm BNC Termination 4GHz | 3/15/2019 | 3/15/2021 |
| 049479 | Coleman | RG223 | BNC 2ft Cable | 3/4/2020 | 3/4/2021 |
| 004729 | Fluke | 77 III | Digital Multimeter | 5/19/2020 | 5/19/2021 |
| 058245 | COMET | T7611-4 | Humidity Temperature Probe | 12/26/2020 | 12/26/2021 |
| 058276 | ROHDE & SCHWARZ | ESR3 | EMI Receiver | 6/25/2020 | 6/25/2021 |

Appendix C: Photographs of Test Setups

See FCC/RSS RSE Test Setup document – EDCS-21686217

Appendix D: Abbreviation Key and Definitions

The following table defines abbreviations used within this test report.

| Abbreviation | Description | Abbreviation | Description |
|--------------|--|--------------|------------------------------------|
| EMC | Electro Magnetic Compatibility | °F | Degrees Fahrenheit |
| EMI | Electro Magnetic Interference | °C | Degrees Celsius |
| EUT | Equipment Under Test | Temp | Temperature |
| ITE | Information Technology Equipment | S/N | Serial Number |
| TAP | Test Assessment Schedule | Qty | Quantity |
| ESD | Electro Static Discharge | emf | Electromotive force |
| EFT | Electric Fast Transient | RMS | Root mean square |
| EDCS | Engineering Document Control System | Qp | Quasi Peak |
| Config | Configuration | Av | Average |
| CIS# | Cisco Number (unique identification number for Cisco test equipment) | Pk | Peak |
| Cal | Calibration | kHz | Kilohertz (1x10 ³) |
| EN | European Norm | MHz | MegaHertz (1x10 ⁶) |
| IEC | International Electro technical Commission | GHz | Gigahertz (1x10 ⁹) |
| CISPR | International Special Committee on Radio Interference | H | Horizontal |
| CDN | Coupling/Decoupling Network | V | Vertical |
| LISN | Line Impedance Stabilization Network | dB | decibel |
| PE | Protective Earth | V | Volt |
| GND | Ground | kV | Kilovolt (1x10 ³) |
| L1 | Line 1 | μV | Microvolt (1x10 ⁻⁶) |
| L2 | Line2 | A | Amp |
| L3 | Line 3 | μA | Micro Amp (1x10 ⁻⁶) |
| DC | Direct Current | mS | Milli Second (1x10 ⁻³) |
| RAW | Uncorrected measurement value, as indicated by the measuring device | μS | Micro Second (1x10 ⁻⁶) |
| RF | Radio Frequency | μS | Micro Second (1x10 ⁻⁶) |
| SLCE | Signal Line Conducted Emissions | m | Meter |
| Meas dist | Measurement distance | Spec dist | Specification distance |
| N/A or NA | Not Applicable | SL | Signal Line (or Telecom Line) |
| P | Power Line | L | Live Line |
| N | Neutral Line | R | Return |
| S | Supply | AC | Alternating Current |

Appendix E: Software Used to Perform Testing

EMlsoft Vasona, version 6.024

Appendix F: Test Procedures

Measurements were made in accordance with

- KDB 789033 - D02 General UNII Test Procedures New Rules v02r01
- KDB 662911 - MIMO
- ANSI C63.4 2014 Unintentional Radiators
- ANSI C63.10 2013 Intentional Radiators

Test procedures are summarized below:

| | |
|------------------------------|----------------|
| FCC 5GHz Test Procedures | EDCS # 1445048 |
| FCC 5GHz RSE Test Procedures | EDCS # 1511600 |

Appendix G: Scope of Accreditation (A2LA certificate number 1178-01)

The scope of accreditation of Cisco Systems, Inc. can be found on the A2LA web page at:

<http://www.a2la.org/scopepdf/1178-01.pdf>

Appendix H: Test Assessment Plan

Compliance Test Plan (Excel) EDCS#21669684
Target Power Tables EDCS#19467753

Appendix I: Worst Case Justification

All 3 orientations (Z, Y, Z) of the EUT were assessed by performing pre-scan.
The X orientation was determined to be the worst-case orientation.