# FCC PART 15, SUBPART C
# ISEDC RSS-247, ISSUE 3, AUGUST 2023

## TEST REPORT

For

## ChargePoint, Inc.

253 E. Hacienda Ave,
Campbell, CA 95008, USA

**FCC ID: W38202102FC21**
**IC: 8854A-202112FC21**

| **Report Type:** | **Product Type:** |
|---|---|
| Class II Permissive Change Report | BT & Wi-Fi Module |

| | |
|---|---|
| **Prepared By:** | Michael Papa<br>RF Test Engineer |
| **Report Number:** | R2406251-247 |
| **Report Date:** | 2024-08-22 |
| **Reviewed By:** | Steven Lianto<br>EMC & RF Lead |

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ACCREDITED
CERTIFICATE #3297.02



* This test report may contain data and test methods that are not covered by BACL's scope of accreditation as of the test report date shown above. These items are marked within the test report text with an asterisk "*"

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# DOCUMENT REVISION HISTORY

| Revision Number | Report Number | Description of Revision | Date of Revision |
|---|---|---|---|
| 0 | R2406251-247 | Class II Permissive Change Report | 2024-08-22 |

# 1 General Description

## 1.1 Product Description for Equipment Under Test (EUT)

This test report is prepared on behalf of *ChargePoint, Inc.*, and their product BT & WiFi module with model: FC21, FCC ID: W38202102FC21, IC: 8854A-202112FC21. The module has Bluetooth and Wi-Fi (2.4GHz, 5GHz) capabilities and was installed into the host device with model CPH50. The "EUT" as referred to in this report is the host device charging station.

| | |
|---|---|
| **Module Model Number** | FC21 |
| **FCC ID** | W38202102FC21 |
| **IC** | 8854A-202112FC21 |
| **Host Device Model Number** | CPH50 |
| **Operating Frequency** | 2400 – 2485 MHz |
| **Modulation** | 802.11b/g/n20/n40 |
| **Channel Spacing** | 20 MHz, 40 MHz |
| **Antenna Gain** | 2.34 dBi |

## 1.2 Mechanical Description of EUT

The UUT measures approximately 28.8 cm (L) x 18.0 cm (W) x 12.0 (H) and weighs approximately 5.65 kg.

*The data gathered was from a production sample provided by ChargePoint, Inc. with S/N: 32-P10330-A3-02-2413C2B00136*

## 1.3 Objective

This report is prepared on behalf of *ChargePoint, Inc.* in accordance with Part 2, Subpart J, and Part 15, Subpart C of the Federal Communication Commission's rules and ISEDC RSS-247 Issue 3, August 2023.

The objective is to determine compliance with FCC Part 15.247 and ISEDC RSS-247 for Antenna Requirement, Radiated Spurious Emissions, and RF Exposure.

In order to determine compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the immunity should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing and/or I/O cable changes, etc.).

## 1.4 Related Submittal(s)/Grant(s)

FCC Part 15, Subpart E, Equipment Class: NII with FCC ID: W38202102FC21, IC: 8854A-202112FC21.

## 1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and FCC KDB 558074 D01 DTS Meas Guidance v05r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

## 1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

| Parameter | Measurement uncertainty |
|---|---|
| Occupied Channel Bandwidth | ±5% |
| RF output power, conducted | ±0.57 dB |
| Power Spectral Density, conducted | ±1.48 dB |
| Unwanted Emissions, conducted | ±1.57 dB |
| All emissions, radiated | ±4.0 dB |
| AC power line Conducted Emission | ±2.0 dB |
| Temperature | ±2ºC |
| Humidity | ±5% |
| DC and low frequency voltages | ±1.0% |
| Time | ±2% |
| Duty Cycle | ±3% |

## 1.7 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Industry Canada under Registration Numbers: 3062A-1, 3062A-2, and 3062A-3.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Appendix B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0027.

## 1.8 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

**A-** ***An independent, 3rd-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:2017 by A2LA (Test Laboratory Accreditation Certificate Number 3297.02),*** in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2017 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report..

BACL's ISO/IEC 17025:2017 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices, Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

**B-** ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.03)*** to certify

- For the USA (Federal Communications Commission):
  - 1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
  - 2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
  - 3- All Telephone Terminal Equipment within FCC Scope C.
- For the Canada (Industry Canada):
  - 1 All Scope 1-Licence-Exempt Radio Frequency Devices;
  - 2 All Scope 2-Licensed Personal Mobile Radio Services;
  - 3 All Scope 3-Licensed General Mobile & Fixed Radio Services;
  - 4 All Scope 4-Licensed Maritime & Aviation Radio Services;
  - 5 All Scope 5-Licensed Fixed Microwave Radio Services
  - 6 All Broadcasting Technical Standards (BETS) in the Category I Equipment Standards List.
- For Singapore (Info-Communications Development Authority (IDA)):
  - 1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2
  - 2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2
- For the Hong Kong Special Administrative Region:
  - 1 All Radio Equipment, per KHCA 10XX-series Specifications;
  - 2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
  - 3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.
- For Japan:
  - 1 MIC Telecommunication Business Law (Terminal Equipment):
    - All Scope A1 - Terminal Equipment for the Purpose of Calls;
    - All Scope A2 - Other Terminal Equipment
  - 2 Radio Law (Radio Equipment):
    - All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
    - All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
    - All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

**C-** ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.01)*** to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:

1 Electronics and Office Equipment:
- for Telephony (ver. 3.0)
- for Audio/Video (ver. 3.0)
- for Battery Charging Systems (ver. 1.1)
- for Set-top Boxes & Cable Boxes (ver. 4.1)
- for Televisions (ver. 6.1)
- for Computers (ver. 6.0)
- for Displays (ver. 6.0)
- for Imaging Equipment (ver. 2.0)
- for Computer Servers (ver. 2.0)

2 Commercial Food Service Equipment
- for Commercial Dishwashers (ver. 2.0)
- for Commercial Ice Machines (ver. 2.0)
- for Commercial Ovens (ver. 2.1)
- for Commercial Refrigerators and Freezers

3 Lighting Products
- For Decorative Light Strings (ver. 1.5)
- For Luminaires (including sub-components) and Lamps (ver. 1.2)
- For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
- For Integral LED Lamps (ver. 1.4)

4 Heating, Ventilation, and AC Products
- for Residential Ceiling Fans (ver. 3.0)
- for Residential Ventilating Fans (ver. 3.2)

5 Other
- For Water Coolers (ver. 3.0)

**D-** ***A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:***

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISED) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
  - BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
  - NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
  - EMC Directive 2014/30/EU US-EU EMC & Telecom MRA CAB (NB)
  - Radio Equipment (RE) Directive 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
  - Low Voltage Directive (LVD) 2014/35/EU
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA) APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Media Development Authority - IMDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter-
- USA:
  - ENERGY STAR Recognized Test Laboratory – US EPA
  - Telecommunications Certification Body (TCB) – US FCC;
  - Nationally Recognized Test Laboratory (NRTL) – US OSHA
- Vietnam: APEC Tel MRA -Phase I;

# 2 System Test Configuration

## 2.1 Justification

The EUT was configured for testing according to ANSI C63.10-2013 and FCC KDB 558074 D01 DTS Meas Guidance v05r02.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

## 2.2 EUT Exercise Software

The exercising software used during testing was “Tera Term”. The software is compliant with the standard requirements being tested against.

| Radio | Modulation | Channel | Frequency (MHz) | Power Setting | Measured Output Power (dBm) |
|---|---|---|---|---|---|
| 2.4 GHz Wi-Fi | 802.11b | Low | 2412 | 20 | 18.11 |
| | | Middle | 2437 | 20 | 17.43 |
| | | High | 2462 | 20 | 17.92 |
| | 802.11g | Low | 2412 | 14 | 17.10 |
| | | Middle | 2437 | 14 | 16.33 |
| | | High | 2462 | 14 | 16.69 |
| | 802.11n20 | Low | 2412 | 13 | 16.49 |
| | | High | 2462 | 13 | 16.33 |
| | 802.11n40 | Low | 2422 | 10 | 14.69 |
| | | High | 2452 | 10 | 15.08 |
| Bluetooth | BLE | Low | 2402 | Default | -2.99 |
| | | Middle | 2440 | Default | -2.13 |
| | | High | 2480 | Default | -3.09 |
| | DH5 | Low | 2402 | Default | 4.22 |
| | | Middle | 2440 | Default | 4.58 |
| | | High | 2480 | Default | 3.53 |
| | 2DH5 | Low | 2402 | Default | 5.21 |
| | | High | 2480 | Default | 4.39 |
| | 3DH5 | Low | 2402 | Default | 4.43 |
| | | High | 2480 | Default | 3.72 |

Data rates used:
802.11b: 1Mbps
802.11g: 6 Mbps
802.11n20: MCS0
802.11n40: MCS0

## 2.3 Duty Cycle Correction Factor

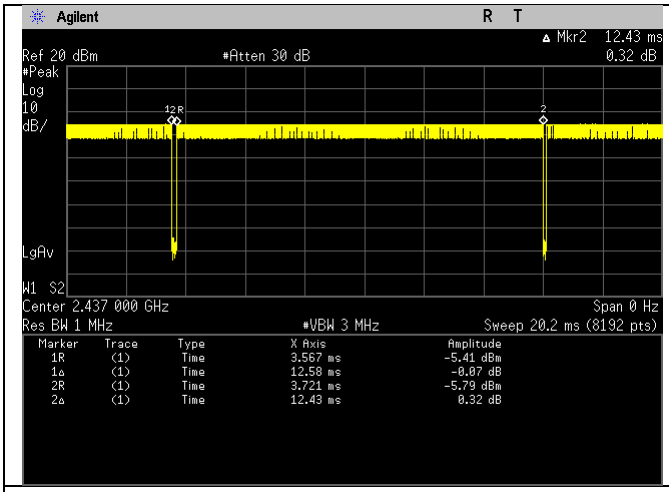
According to KDB 558074 D01 DTS Meas Guidance v05r02 section 6.0:

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.

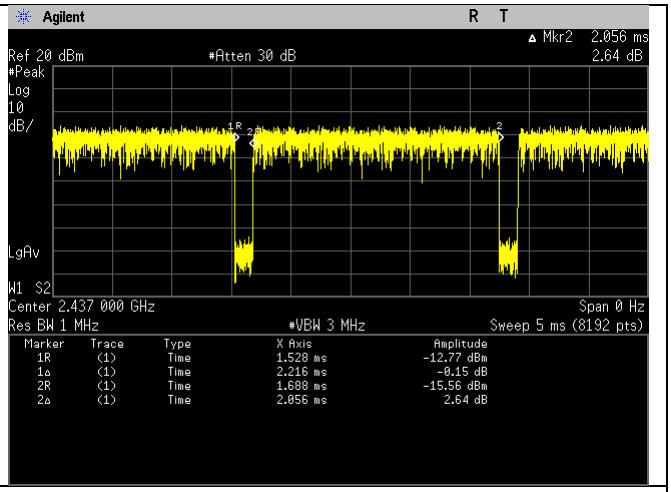
| Radio Mode | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) |
|---|---|---|---|---|
| 802.11b | 12.43 | 12.58 | 98.81 | 0.052 |
| 802.11g | 2.056 | 2.216 | 92.78 | 0.325 |
| 802.11n20 | 1.916 | 2.039 | 93.97 | 0.270 |
| 802.11n40 | 0.9409 | 1.091 | 86.24 | 0.643 |
| BLE | 0.4649 | 0.5606 | 65.00 | 1.871 |
| DH5 | 2.883 | 3.751 | 76.86 | 1.143 |
| 2DH5 | 2.887 | 3.75 | 86.99 | 0.605 |
| 3DH5 | 2.887 | 3.749 | 77.00 | 1.135 |

Note: Duty Cycle Correction Factor = 10*log(1/duty cycle)

Please refer to the following plots.




802.11b

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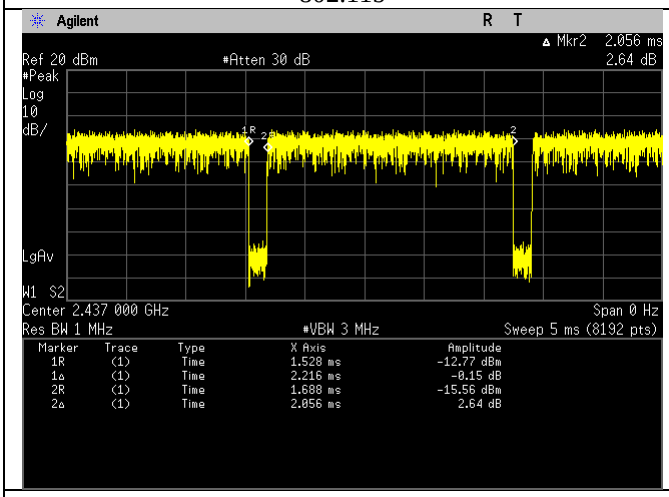
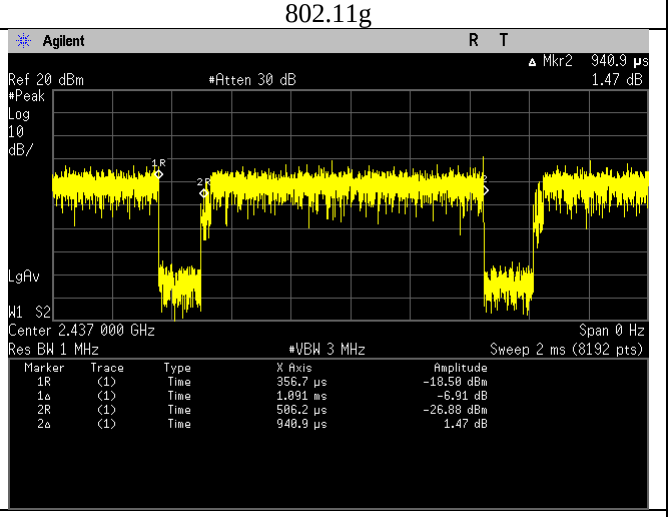
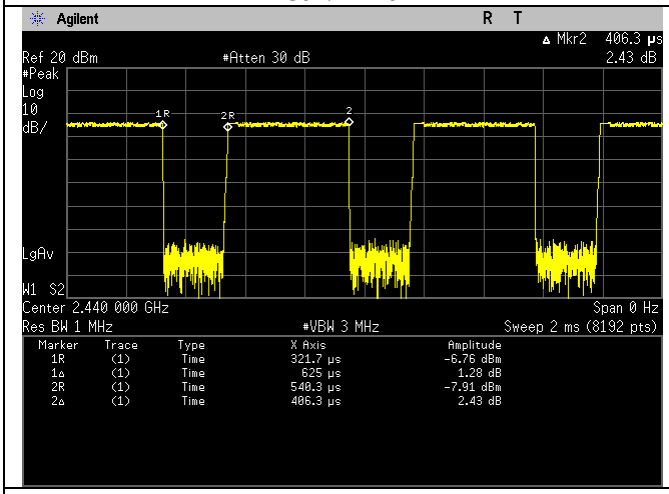


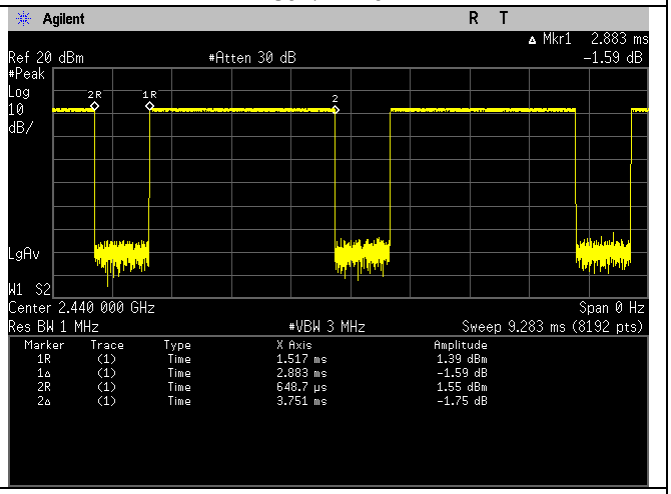

802.11n20



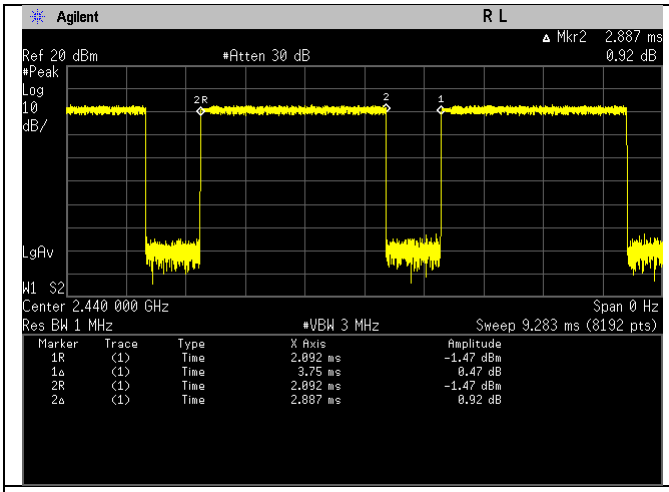

802.11n40



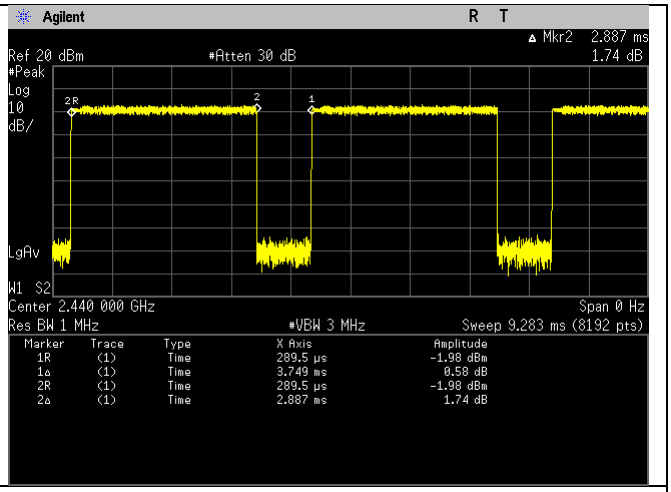

BLE




DH5


Agilent
R L
Mkr2 2.887 ms
Ref 20 dBm
#Atten 30 dB
0.92 dB
#Peak
Log
10
dB/
LgAv
W1 S2
Center 2.440 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 9.283 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1R (1) Time 2.092 ms -1.47 dBm
1Δ (1) Time 3.75 ms 0.47 dB
2R (1) Time 2.092 ms -1.47 dBm
2Δ (1) Time 2.887 ms 0.92 dB

2DH5


Agilent
R T
Mkr2 2.887 ms
Ref 20 dBm
#Atten 30 dB
1.74 dB
#Peak
Log
10
dB/
LgAv
W1 S2
Center 2.440 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 9.283 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1R (1) Time 289.5 µs -1.98 dBm
1Δ (1) Time 3.749 ms 0.58 dB
2R (1) Time 289.5 µs -1.98 dBm
2Δ (1) Time 2.887 ms 1.74 dB

3DH5

## 2.4 Equipment Modification

No modifications were made to the EUT during testing.

## 2.5 Local Support Equipment

| Manufacturer | Description | Model |
|---|---|---|
| Dell | Laptop | Latitude 5401 |

## 2.6 Remote Support Equipment

| Manufacturer | Description | Serial Number |
|---|---|---|
| ChargePoint, Inc. | CPH50-CPU-Test | 182660A02724 |

## 2.7 Power Supply and Line Filters

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| MeanWell | 48V 1.25A Wall Adapter Switching Power Supply | SGA60U46 | SGA60U48-P1J |

## 2.8 Interface Ports and Cabling

| Cable Description | Length (m) | From | To |
|---|---|---|---|
| USB-A to USB-Micro B | 1.5 | EUT | Laptop |

# 3 Summary of Test Results

| FCC & ISEDC Rules | Description of Test | Results |
|---|---|---|
| FCC §15.203<br>ISEDC RSS-Gen §6.8 | Antenna Requirements | Compliant |
| FCC §2.1091, §15.247(i)<br>ISEDC RSS-102 | RF Exposure | Compliant |
| FCC §2.1053, §15.35(b), §15.205, §15.209, §15.247(d)<br>ISEDC RSS-247 §5.5<br>ISEDC RSS-Gen §8.9, §8.10 | Radiated Spurious Emissions | Compliant |

*BACL is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report. Information provided by the customer, e.g., antenna gain, can affect the validity of results.*

# 4 FCC §15.203 & ISEDC RSS-Gen §6.8 – Antenna Requirements

## 4.1 Applicable Standards

According to FCC §15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.247 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to ISEDC RSS-Gen §6.8: Transmitter Antenna

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotopically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For license-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

## 4.2 Antenna Description

| External/Internal/ Integral | Part Number | Antenna Type | Frequency Range (MHz) | Maximum Antenna Gain (dBi) |
|---|---|---|---|---|
| Integral | Cpx40 | Stamped Metal | 2400-2484 | 2.34 |

# 5 FCC §2.1091, FCC §15.247(i) & ISEDC RSS-102 – RF Exposure

## 5.1 Applicable Standards

According to FCC §15.247(i), Radio frequency devices operating under the provisions of this part are subject to the radio frequency radiation exposure requirements specified in §§ 1.1307(b), 1.1310, 2.1091, and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements. Technical information showing the basis for this statement must be submitted to the Commission upon request.

According to FCC §2.1091 and §1.1310(e)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

**Limits for General Population/Uncontrolled Exposure**

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density ($mW/cm^2$) | Averaging Time (minutes) |
|---|---|---|---|---|
| **Limits for General Population/Uncontrolled Exposure** | | | | |
| 0.3-1.34 | 614 | 1.63 | * (100) | 30 |
| 1.34-30 | 824/f | 2.19/f | * ($180/f^2$) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | / | / | f/1500 | 30 |
| 1500-100,000 | / | / | 1.0 | 30 |

f = frequency in MHz
* = Plane-wave equivalent power density

According to ISEDC RSS-102 Issue 6 Section 6.6: Field reference level exposure exemption limits

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f0.5W4.49/f0.5W$ (adjusted for tune-up tolerance), where $f$ is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31\times10-2f0.6834W1.31\times10-2f0.6834W$ (adjusted for tune-up tolerance), where $f$ is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

## 5.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

## 5.3 MPE Result

*Note: The Maximum power measurements were referenced from the test report: R2108A0712-M1 by TA Technology (Shanghai) Co., LTD, issued on 2021-09-07.*
*Note: 2.4GHz and 5 GHz Wi-Fi simultaneous transmission cannot be enabled by this device.*

| Band | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum EIRP (dBm) | Maximum EIRP (mW) | Power Density at 20cm (mW/cm^2) | Limit (mW/cm^2) |
|---|---|---|---|---|---|---|
| BT | 2.34 | 15 | 17.34 | 54.2 | 0.011 | 1.0 |
| 2.4 GHz Wi-Fi | 2.34 | 19 | 21.34 | 136.1 | 0.027 | 1.0 |

**Worst Case Sum of Ratios:**

**2.4 GHz Wi-Fi + BT: 0.027/1.0 + 0.011/1.0 = 0.038 < 1**

For this device, a separation distance of 20 cm complies with the Simultaneous transmission limit of ≤ 1.0.

## 5.4 IC Exemption

**2.4 GHz Wi-Fi:**

The EIRP of this device is 21.34 dBm (136.1 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834)=2.68W. Therefore, the RF exposure evaluation is exempt.

**BT:**

The EIRP of this device is 17.34 dBm (54.2 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834)=2.71W. Therefore, the RF exposure evaluation is exempt.

**Worst Case Sum of Ratios:**

**2.4 GHz Wi-Fi + BT: 0.1361/2.68 + 0.0542/2.71 = 0.0707 < 1**

# 6 FCC §15.35(b), §15.205, §15.209, §15.247(d) & ISEDC RSS-247 §5.5, RSS-Gen §8.9, §8.10 – Spurious Radiated Emissions

## 6.1 Applicable Standards

As per FCC §15.35(b): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 – 0.110<br>0.495 – 0.505<br>2.1735 – 2.1905<br>4.125 – 4.128<br>4.17725 – 4.17775<br>4.20725 – 4.20775<br>6.215 – 6.218<br>6.26775 – 6.26825<br>6.31175 – 6.31225<br>8.291 – 8.294<br>8.362 – 8.366<br>8.37625 – 8.38675<br>8.41425 – 8.41475<br>12.29 – 12.293<br>12.51975 – 12.52025<br>12.57675 – 12.57725<br>13.36 – 13.41 | 16.42 – 16.423<br>16.69475 – 16.69525<br>25.5 – 25.67<br>37.5 – 38.25<br>73 – 74.6<br>74.8 – 75.2<br>108 – 121.94<br>123 – 138<br>149.9 – 150.05<br>156.52475 – 156.52525<br>156.7 – 156.9<br>162.0125 –167.17<br>167.72 – 173.2<br>240 – 285<br>322 – 335.4<br>399.9 – 410<br>608 – 614 | 960 – 1240<br>1300 – 1427<br>1435 – 1626.5<br>1645.5 – 1646.5<br>1660 – 1710<br>1718.8 – 1722.2<br>2200 – 2300<br>2310 – 2390<br>2483.5 – 2500<br>2690 – 2900<br>3260 – 3267<br>3.332 – 3.339<br>3 3458 – 3 358<br>3.600 – 4.400 | 4. 5 – 5. 15<br>5. 35 – 5. 46<br>7.25 – 7.75<br>8.025 – 8.5<br>9.0 – 9.2<br>9.3 – 9.5<br>10.6 – 12.7<br>13.25 – 13.4<br>14.47 – 14.5<br>15.35 – 16.2<br>17.7 – 21.4<br>22.01 – 23.12<br>23.6 – 24.0<br>31.2 – 31.8<br>36.43 – 36.5<br>Above 38.6 |

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

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

*** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

As per FCC §15.247 (d),

in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

As per ISEDC RSS-247 §5.5,

in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

As per ISEDC RSS-Gen §8.9,

Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

**Table 5 – General field strength limits at frequencies above 30 MHz**

| Frequency (MHz) | Field Strength (µV/m at 3 m) |
|---|---|
| 30 – 88 | 100 |
| 88 – 216 | 150 |
| 216 – 960 | 200 |
| Above 960 | 500 |

**Table 6 – General field strength limits at frequencies below 30 MHz**

| Frequency | Magnetic Field Strength (µA/m) | Measurement Distance (m) |
|---|---|---|
| 9 – 490 kHz[Note 1] | 6.37/F (F in kHz) | 300 |
| 490 – 1705 kHz | 63.7/F (F in kHz) | 30 |
| 1.705 – 30 MHz | 0.08 | 30 |

*Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.*

As per ISEDC RSS-Gen §8.10(c),

Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

**Table 7 – Restricted frequency bands[Note 1]**

| MHz | MHz | GHz |
|---|---|---|
| 0.090 – 0.110 | 149.9 – 150.05 | 9.0 – 9.2 |
| 0.495 – 0.505 | 156.52475 – 156.52525 | 9.3 – 9.5 |
| 2.1735 – 2.1905 | 156.7 – 156.9 | 10.6 – 12.7 |
| 3.020 – 3.026 | 162.0125 –167.17 | 13.25 – 13.4 |
| 4.125 – 4.128 | 167.72 – 173.2 | 14.47 – 14.5 |
| 4.17725 – 4.17775 | 240 – 285 | 15.35 – 16.2 |
| 4.20725 – 4.20775 | 322 – 335.4 | 17.7 – 21.4 |
| 5.677 – 5.683 | 399.9 – 410 | 22.01 – 23.12 |
| 6.215 – 6.218 | 608 – 614 | 23.6 – 24.0 |
| 6.26775 – 6.26825 | 960 – 1427 | 31.2 – 31.8 |
| 6.31175 – 6.31225 | 1435 – 1626.5 | 36.43 – 36.5 |
| 8.291 – 8.294 | 1645.5 – 1646.5 | Above 38.6 |
| 8.362 – 8.366 | 1660 – 1710 | |
| 8.37625 – 8.38675 | 1718.8 – 1722.2 | |
| 8.41425 – 8.41475 | 2200 – 2300 | |
| 12.29 – 12.293 | 2310 – 2390 | |
| 12.51975 – 12.52025 | 2483.5 – 2500 | |
| 12.57675 – 12.57725 | 2655 – 2900 | |
| 13.36 – 13.41 | 3260 – 3267 | |
| 16.42 – 16.423 | 3332 – 3339 | |
| 16.69475 – 16.69525 | 3345.8 – 3358 | |
| 16.80425 – 16.80475 | 3500 – 4400 | |
| 25.5 – 25.67 | 4500 – 5150 | |
| 37.5 – 38.25 | 5350 – 5460 | |
| 73 – 74.6 | 7250 – 7750 | |
| 74.8 – 75.2 | 8025 – 8500 | |
| 108 – 138 | | |

*Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.*

## 6.2 Test Setup

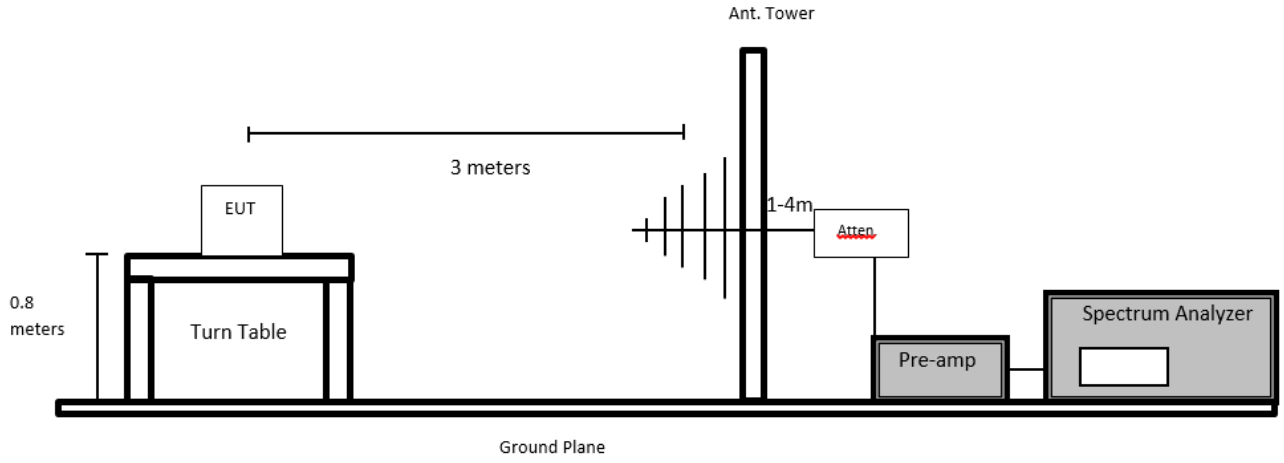
The radiated emissions tests were performed in the 5-meter chamber, using the setup in accordance with ANSI C63.10-2013. The specification used was the FCC §15.247 and ISEDC RSS-247 limits.

The spacing between the peripherals was 10 centimeters.

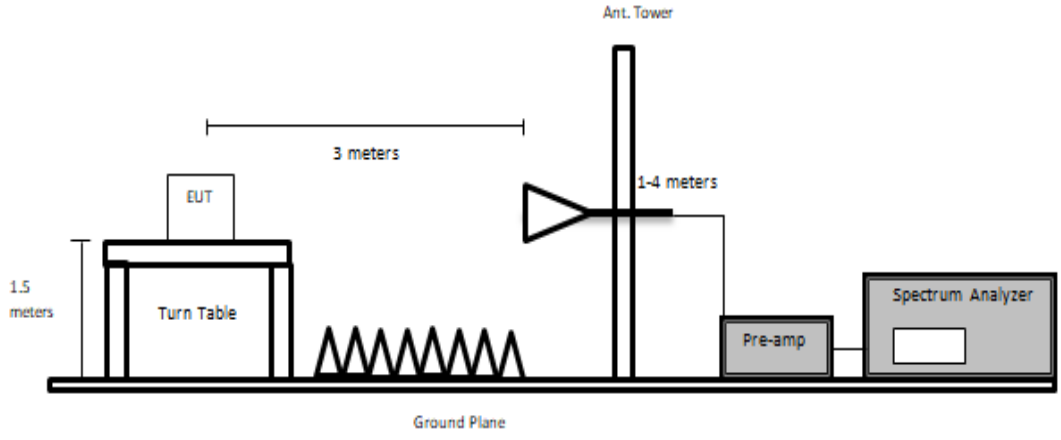
External I/O cables were draped along the edge of the test table and bundled when necessary.

## 6.3 Test Setup Diagrams

**Below 1 GHz**




**Above 1 GHz**



## 6.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT was set 3 meter away from the testing antenna, which was varied from 1-4 meters, and the EUT was placed on a turntable, which was 0.8 meters and 1.5 meters above the ground plane for below and above 1000 MHz measurements, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna's polarity should be changed between horizontal and vertical.

The spectrum analyzer or receiver was set as:

**Below 1000 MHz:**

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

**Above 1000 MHz:**

(1) Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
(2) Average: RBW = 1MHz / VBW = 10Hz or 1/T / Sweep = Auto

## 6.5 Corrected Amplitude and Margin Calculation

For emissions below 1 GHz,

The Corrected Amplitude (CA) is calculated by adding the Correction Factor to the S.A. Reading. The basic equation is as follows:

CA = S.A. Reading + Correction Factor

For example, a corrected amplitude of 40.3 dBuV/m = S.A. Reading (32.5 dBuV) + Correction Factor (7.8 dB/m)

The Correction Factor is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) together. This calculation is done in the measurement software, and reported in the test result section. The basic equation is as follows:

Correction Factor = AF + CL + Atten – Ga

The "Margin" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

For emission above 1 GHz,

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "Margin" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

## 6.6 Test Equipment List and Details

| BACL No. | Manufacturer | Description | Model No. | Serial No. | Calibration Date | Calibration Interval |
|---|---|---|---|---|---|---|
| 310 | Rhode & Schwarz | EMI Test Receiver | ESCI 1166.5950.03 | 100338 | 2024-05-29 | 1 year |
| 424 | Agilent | Spectrum Analyzer | E4440A | US45303156 | 2024-03-06 | 1 year |
| 327 | Sunol Science Corp | System Controller | SC110V | 122303-1 | N/R | N/A |
| 1075 | Sunol Sciences | Boresight Tower | TLT3 | 050119-7 | N/R | N/A |
| 1388 | Sunol Sciences | Flush Mount Turntable | FM | 112005-2 | N/R | N/A |
| 316 | Sonoma Instruments | Preamplifier 10 kHz - 2.5 GHz | 317 | 260406 | 2024-02-27 | 6 months |
| 1449 | BACL | Preamplifier 0.1-18 GHz | BACL1313-A100M18G | 4052472 | 2024-07-11 | 6 months |
| 1451 | BACL | Preamplifier 18-40 GHz | BACL-1313-A1840 | 4052432 | 2024-07-10 | 6 months |
| 321 | Sunol Sciences | Biconilog Antenna | JB3 | A020106-2; 1504 | 2023-12-18 | 2 years |
| 1192 | ETS Lindgren | Horn Antenna | 3117 | 00218973 | 2022-09-29 | 2 years |
| 91 | ETS Lindgren | Horn Antenna | ARH-4223-02 | 10555-02 | 2024-03-14 | 2 years |
| 1186 | Pasternack | Coaxial Cable, RG214 | PE3062-1050CM | N/A | 2024-04-09 | 6 months |
| 1248 | Pasternack | RG214 COAX Cable | PE3062 | - | 2024-04-04 | 6 months |
| 1249 | Time Microwave | LMR-400 Cable Dc-3 GHz | AE13684 | 2k80612-5 6fts | 2024-04-09 | 6 months |
| 1355 | Megaphase | 2.92 mm 236in RF Cable DC to 40GHz | GC12-K1K1-236-H | 1 GVT4 20554701 001 | 2024-02-27 | 1 year |
| 1356 | Pasternack | N 28ft RF Cable | RG213 | 062421 | 2024-07-02 | 6 months |
| 1329 | Pasternack | 2.92 mm short coaxial cable | PE360-12 | NA | 2024-07-10 | 6 months |
| - | - | RF Cable (x2) | - | - | Each Time[1] | Each Time[1] |
| 1245 | - | 6dB Atennuator | PE7390-6 | 01182018A | 2022-11-22 | 2 year |
| 1246 | HP | RF Limiter | 11867A | 01734 | 2024-04-09 | 1 year |
| 672 | Micro -Tronics | 2.4-2.6 GHz Notch Filter | BRM50701 | 160 | 2024-03-06 | 1 year |

*Note[1]: cables, attenuators and notch filters included in the test set-up were checked each time before testing.*

***Statement of Traceability: BACL Corp.*** *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

## 6.7 Test Environmental Conditions

| | |
|---|---|
| **Temperature:** | 21 to 22ºC |
| **Relative Humidity:** | 42 to 47% |
| **ATM Pressure:** | 101.7 kPa |

*The testing was performed by Libass Thiaw from 2024-08-01 to 2024-08-05 in 5m chamber 3.*

## 6.8 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.209, 15.247 and ISEDC RSS-247 standards' radiated emissions limits, and had the worst margin of:

| **Worst Case – Mode: Transmitting** | | | |
|---|---|---|---|
| **Margin (dB)** | **Frequency (MHz)** | **Polarization (Horizontal/Vertical)** | **Configuration** |
| -0.04 | 49.885 | Vertical | 802.11b, 2412 MHz |

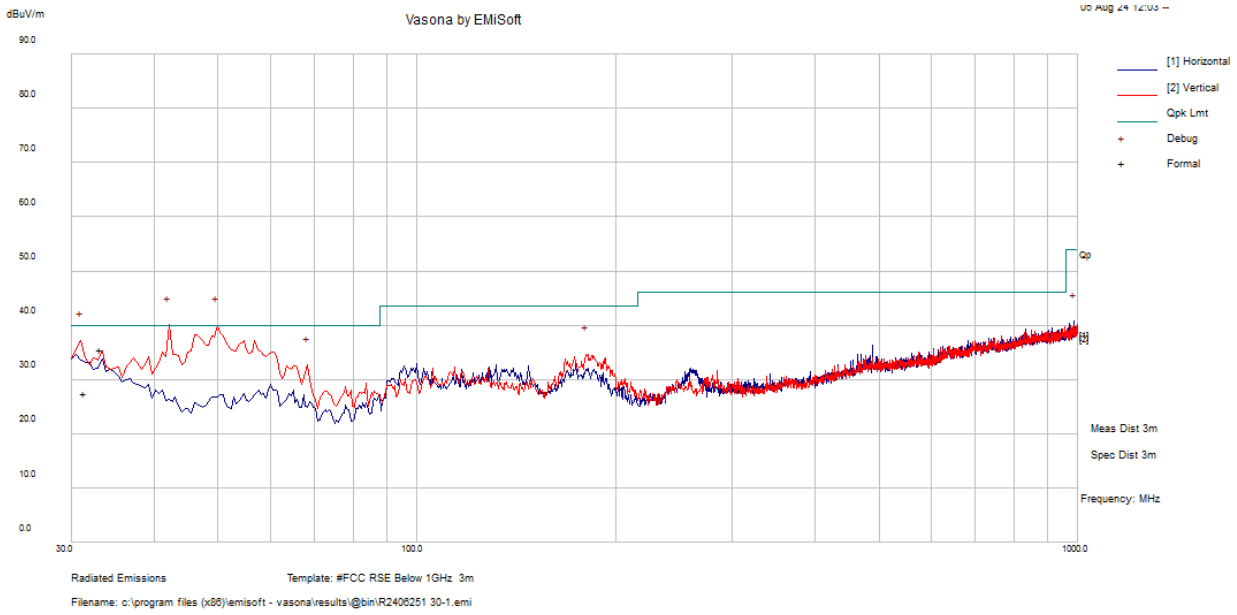
Please refer to the tables and plots in the next section for detailed test results.

## 6.9 Radiated Emissions Test Results

***Note 1:*** *For radiated band edge measurements, please refer to Annex A*
***Note 2:*** *The EUT is not transmitting at below 30 MHz, thus 9 kHz to 30 MHz was not evaluated for Spurious Emissions.*
***Note 3:*** *As per ANSI C63.10 Clause 5.6.2.2, 802.11b, 802.11g, BLE, and DH5 were determined to be the worst-case modes per modulation family and was used for the following testing.*

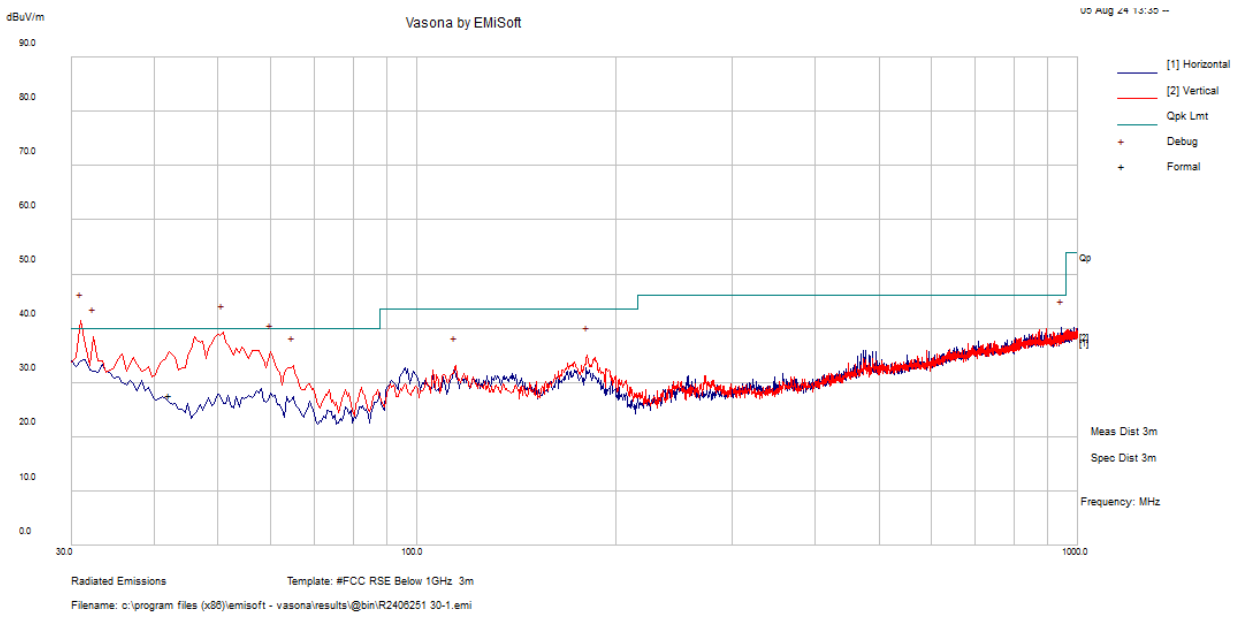
### 1) 30 MHz – 1 GHz, Measured at 3 meters

**802.11b, 2412 MHz + 2DH5, 2402MHz**



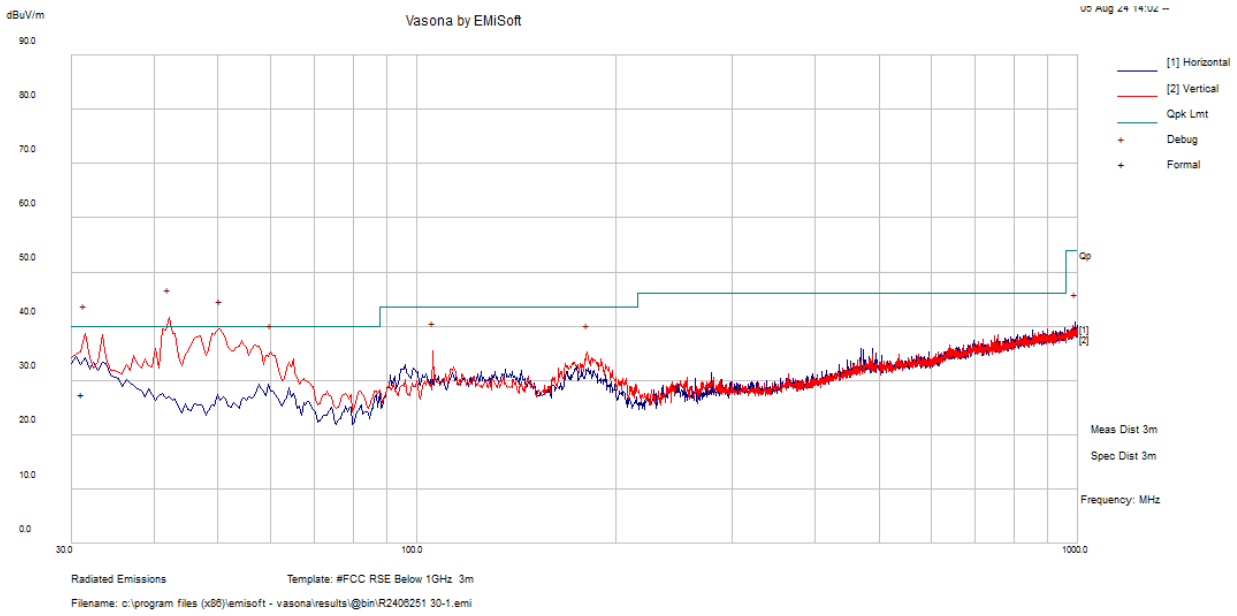

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 42.31175 | 36.83 | -9.27 | 27.56 | 169 | V | 173 | 40 | -12.44 | QP |
| 49.885 | 53.47 | -13.51 | 39.96 | 100 | V | 0 | 40 | -0.04 | Peak |
| 30.97 | 38.73 | -1.54 | 37.19 | 200 | V | 0 | 40 | -2.81 | Peak |
| 68.315 | 45.71 | -13.11 | 32.6 | 100 | V | 0 | 40 | -7.4 | Peak |
| 180.35 | 43.96 | -9.3 | 34.66 | 100 | V | 0 | 43.5 | -8.84 | Peak |
| 986.42 | 35.17 | 5.51 | 40.68 | 300 | H | 0 | 54 | -13.32 | Peak |

**802.11b, 2437 MHz +**



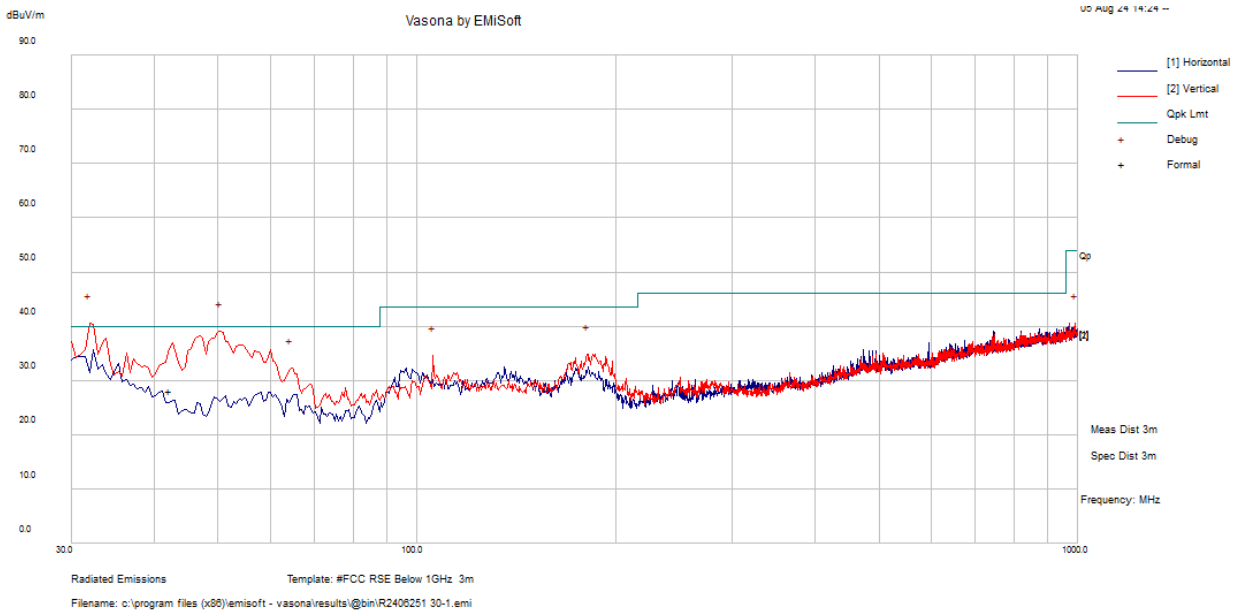

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 31.18725 | 29.11 | -1.72 | 27.39 | 286 | V | 229 | 40 | -12.61 | QP |
| 50.855 | 52.91 | -13.68 | 39.23 | 100 | V | 0 | 40 | -0.77 | Peak |
| 32.425 | 41.12 | -2.64 | 38.48 | 200 | V | 0 | 40 | -1.52 | Peak |
| 60.07 | 49.33 | -13.74 | 35.59 | 100 | V | 0 | 40 | -4.41 | Peak |
| 945.68 | 35.29 | 4.78 | 40.07 | 300 | H | 0 | 46 | -5.93 | Peak |
| 64.92 | 46.49 | -13.32 | 33.17 | 100 | V | 0 | 40 | -6.83 | Peak |

**802.11b, 2462 MHz**



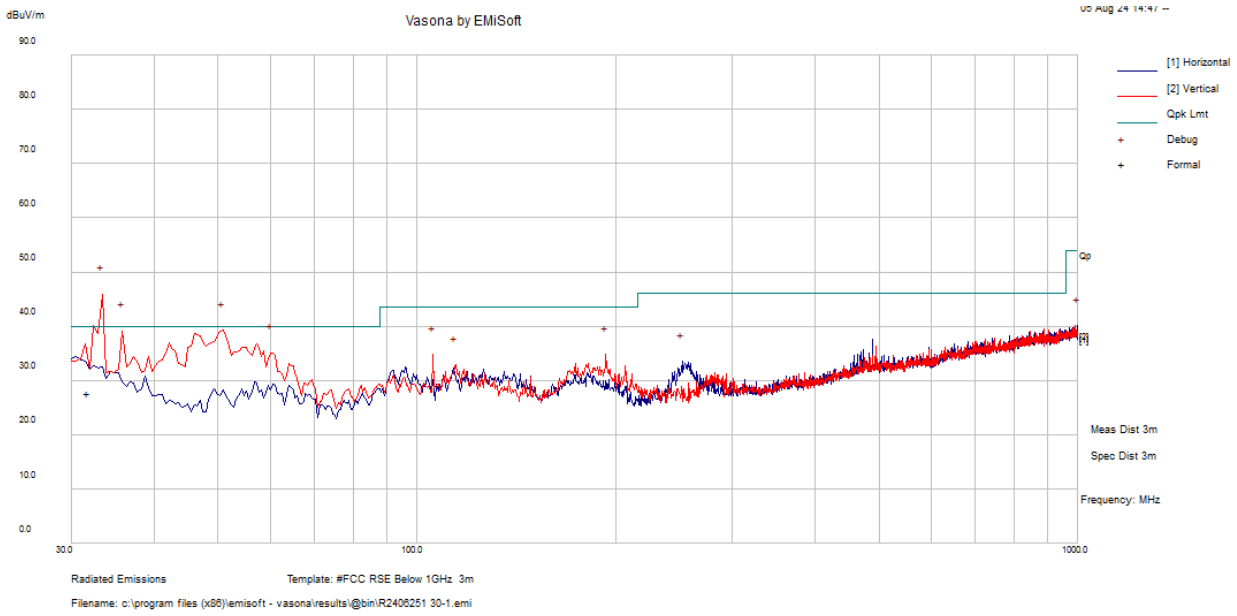

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 42.32675 | 37.39 | -9.28 | 28.11 | 164 | V | 62 | 40 | -11.89 | QP |
| 50.37 | 53.16 | -13.6 | 39.56 | 100 | V | 0 | 40 | -0.44 | Peak |
| 31.455 | 40.6 | -1.93 | 38.67 | 300 | V | 0 | 40 | -1.33 | Peak |
| 60.07 | 48.93 | -13.74 | 35.19 | 100 | V | 0 | 40 | -4.81 | Peak |
| 105.66 | 44.24 | -8.7 | 35.54 | 200 | V | 0 | 43.5 | -7.96 | Peak |
| 180.835 | 44.51 | -9.31 | 35.2 | 100 | V | 0 | 43.5 | -8.3 | Peak |

**802.11g, 2412 MHz**



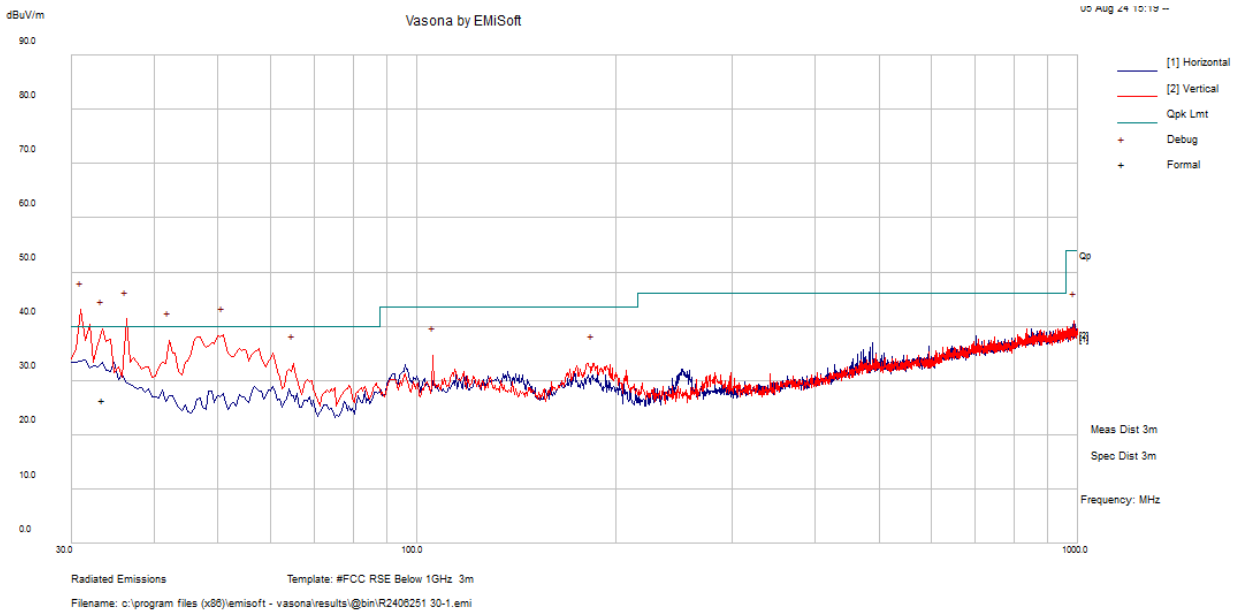

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 31.781 | 29.76 | -2.19 | 27.57 | 135 | V | 156 | 40 | -12.43 | QP |
| 50.37 | 52.72 | -13.6 | 39.12 | 100 | V | 0 | 40 | -0.88 | Peak |
| 64.435 | 45.58 | -13.35 | 32.23 | 100 | V | 0 | 40 | -7.77 | Peak |
| 181.32 | 44.17 | -9.31 | 34.86 | 100 | V | 0 | 43.5 | -8.64 | Peak |
| 105.66 | 43.33 | -8.7 | 34.63 | 200 | V | 0 | 43.5 | -8.87 | Peak |
| 991.755 | 34.99 | 5.63 | 40.62 | 300 | V | 0 | 54 | -13.38 | Peak |

**802.11g, 2437 MHz**



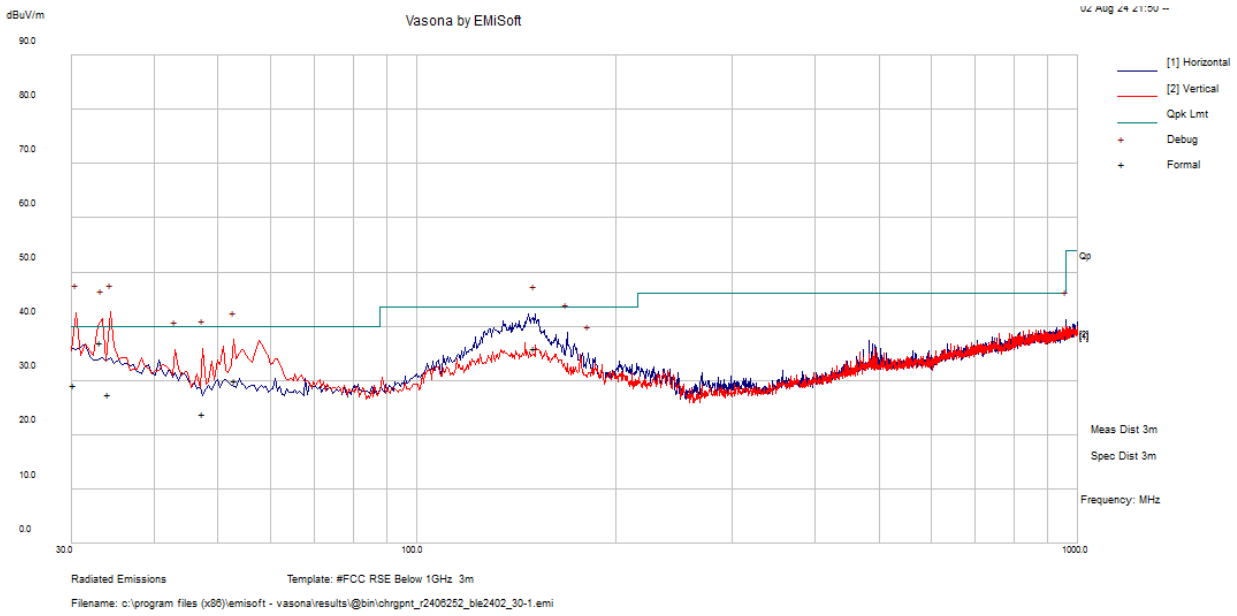

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 33.4495 | 29.63 | -3.31 | 26.32 | 215 | V | 174 | 40 | -13.68 | QP |
| 50.855 | 52.85 | -13.67 | 39.18 | 100 | V | 0 | 40 | -0.82 | Peak |
| 35.82 | 43.8 | -4.76 | 39.04 | 200 | V | 0 | 40 | -0.96 | Peak |
| 60.07 | 48.82 | -13.74 | 35.08 | 100 | V | 0 | 40 | -4.92 | Peak |
| 105.66 | 43.46 | -8.7 | 34.76 | 200 | V | 0 | 43.5 | -8.74 | Peak |
| 192.96 | 43.34 | -8.61 | 34.73 | 100 | V | 0 | 43.5 | -8.77 | Peak |

**802.11g, 2462 MHz**



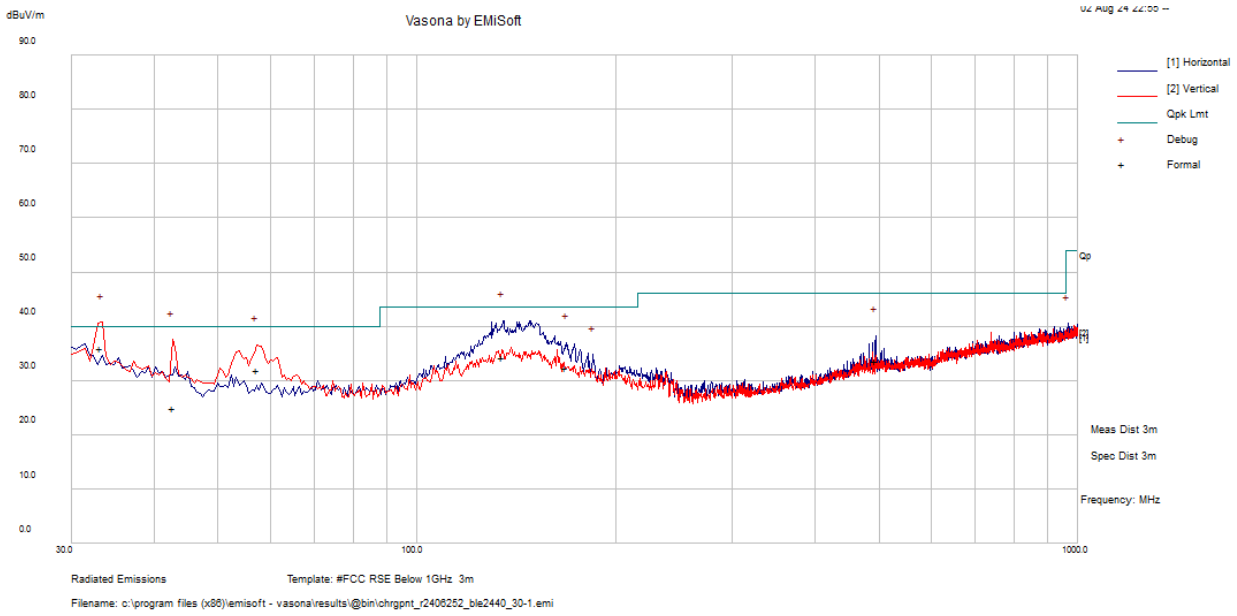

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 30.72225 | 29.06 | -1.35 | 27.71 | 265 | V | 90 | 40 | -12.29 | QP |
| 36.3415 | 32.66 | -5.11 | 27.55 | 106 | V | 265 | 40 | -12.45 | QP |
| 33.395 | 42.84 | -3.28 | 39.56 | 200 | V | 0 | 40 | -0.44 | Peak |
| 50.855 | 52.06 | -13.68 | 38.38 | 100 | V | 0 | 40 | -1.62 | Peak |
| 42.125 | 46.5 | -9.14 | 37.36 | 200 | V | 0 | 40 | -2.64 | Peak |
| 64.92 | 46.53 | -13.32 | 33.21 | 100 | V | 0 | 40 | -6.79 | Peak |

**BLE, 2402 MHz**



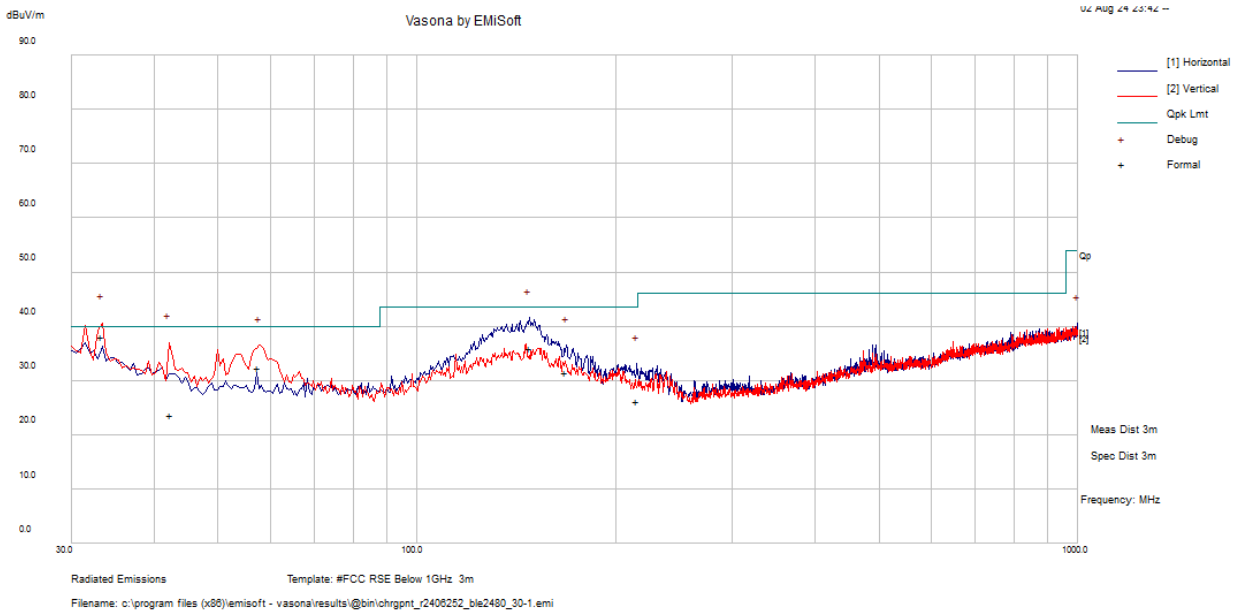

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 34.17975 | 31.23 | -3.74 | 27.49 | 223 | V | 157 | 40 | -12.51 | QP |
| 30.297 | 30.09 | -1.02 | 29.07 | 184 | V | 152 | 40 | -10.93 | QP |
| 33.21225 | 40.07 | -3.16 | 36.91 | 299 | V | 28 | 40 | -3.09 | QP |
| 150.904 | 43.98 | -8.07 | 35.91 | 197 | H | 323 | 43.5 | -7.59 | QP |
| 53.01725 | 43.97 | -13.96 | 30.01 | 107 | V | 324 | 40 | -9.99 | QP |
| 47.52425 | 36.22 | -12.43 | 23.79 | 150 | V | 7 | 40 | -16.21 | QP |

**BLE, 2440 MHz**



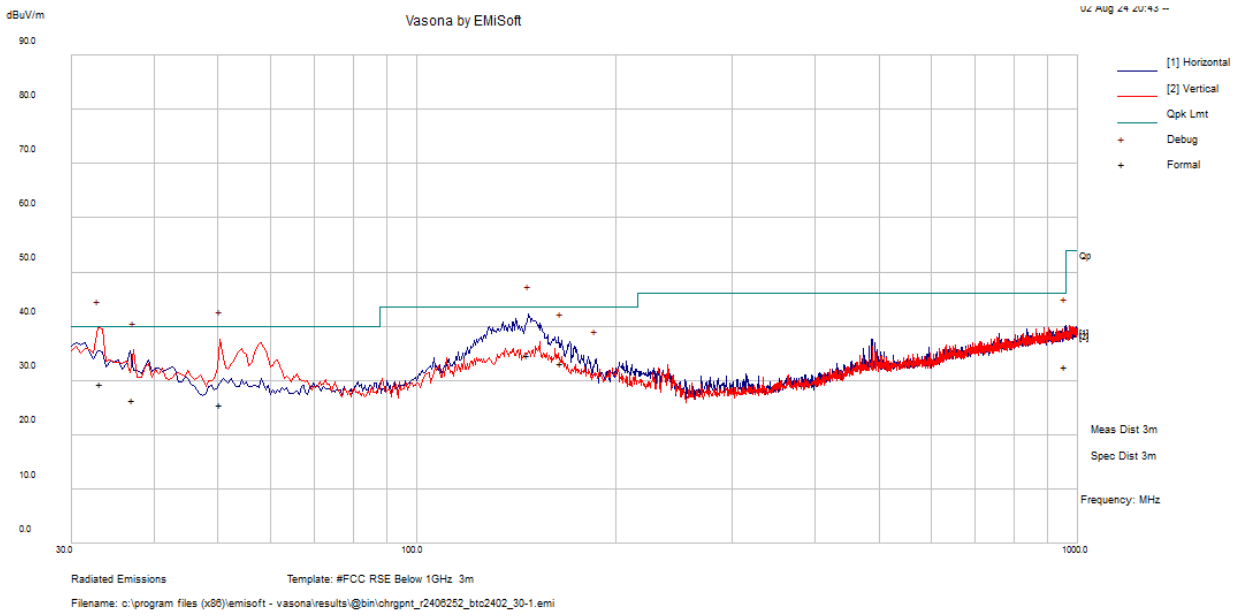

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 33.26925 | 39.14 | -3.2 | 35.94 | 299 | V | 102 | 40 | -4.06 | QP |
| 134.5343 | 41.26 | -7.04 | 34.22 | 282 | H | 167 | 43.5 | -9.28 | QP |
| 42.692 | 34.34 | -9.54 | 24.8 | 270 | V | 333 | 40 | -15.2 | QP |
| 57.40275 | 45.92 | -13.93 | 31.99 | 132 | V | 344 | 40 | -8.01 | QP |
| 168.0468 | 40.9 | -8.67 | 32.23 | 180 | H | 71 | 43.5 | -11.27 | QP |
| 493.986 | 35.07 | -1.36 | 33.71 | 199 | H | 284 | 46 | -12.29 | QP |

**BLE, 2480 MHz**



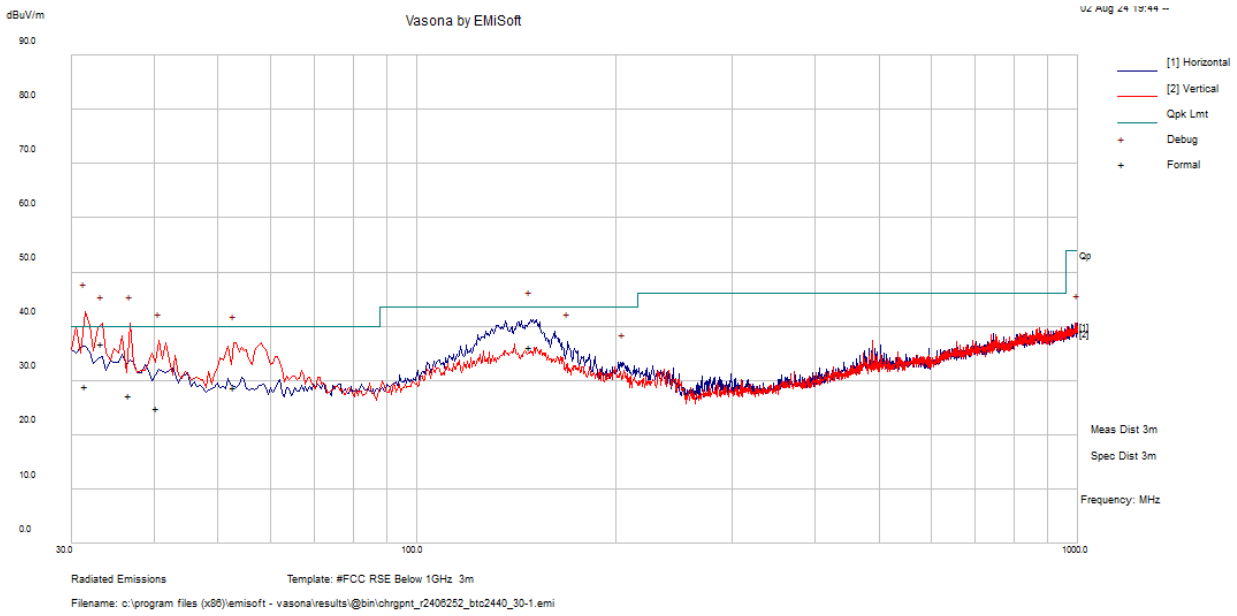

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 33.31725 | 41.33 | -3.22 | 38.11 | 295 | V | 186 | 40 | -1.89 | QP |
| 147.9803 | 43.84 | -7.97 | 35.87 | 199 | H | 215 | 43.5 | -7.63 | QP |
| 42.36225 | 32.85 | -9.31 | 23.54 | 159 | V | 258 | 40 | -16.46 | QP |
| 57.4315 | 46.3 | -13.93 | 32.37 | 105 | V | 337 | 40 | -7.63 | QP |
| 168.0945 | 40.06 | -8.67 | 31.39 | 235 | H | 97 | 43.5 | -12.11 | QP |
| 215.4013 | 35.94 | -9.81 | 26.13 | 111 | H | 280 | 43.5 | -17.37 | QP |

**DH5, 2402 MHz**



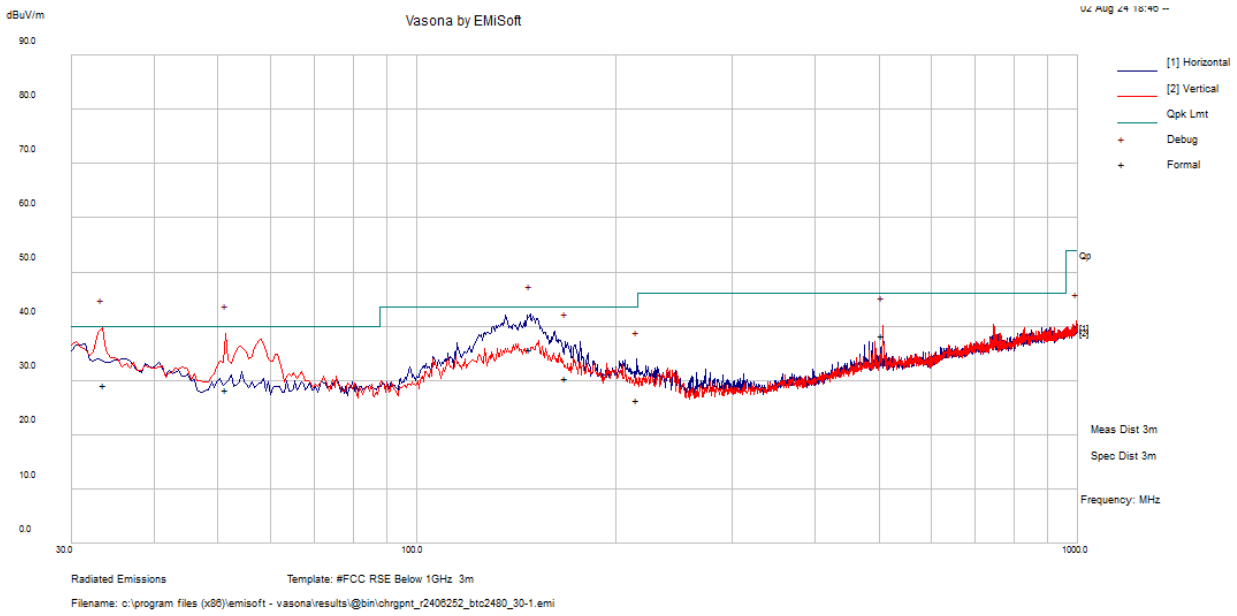

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 33.15925 | 32.42 | -3.13 | 29.29 | 118 | V | 309 | 40 | -10.71 | QP |
| 147.2553 | 42.69 | -7.97 | 34.72 | 266 | H | 179 | 43.5 | -8.78 | QP |
| 50.48625 | 39.21 | -13.62 | 25.59 | 139 | V | 103 | 40 | -14.41 | QP |
| 37.15525 | 31.94 | -5.66 | 26.28 | 101 | V | 177 | 40 | -13.72 | QP |
| 958.254 | 27.57 | 4.95 | 32.52 | 152 | H | 76 | 46 | -13.48 | QP |
| 165.1988 | 41.71 | -8.48 | 33.23 | 173 | H | 74 | 43.5 | -10.27 | QP |

**DH5, 2440 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 31.53725 | 30.87 | -2 | 28.87 | 277 | V | 137 | 40 | -11.13 | QP |
| 33.28275 | 40.04 | -3.2 | 36.84 | 294 | V | 140 | 40 | -3.16 | QP |
| 36.73825 | 32.65 | -5.38 | 27.27 | 115 | V | 300 | 40 | -12.73 | QP |
| 148.4408 | 44.11 | -7.98 | 36.13 | 186 | H | 7 | 43.5 | -7.37 | QP |
| 40.48125 | 32.92 | -8.03 | 24.89 | 139 | V | 28 | 40 | -15.11 | QP |
| 52.77925 | 42.74 | -13.93 | 28.81 | 114 | V | 326 | 40 | -11.19 | QP |

**DH5, 2480 MHz**



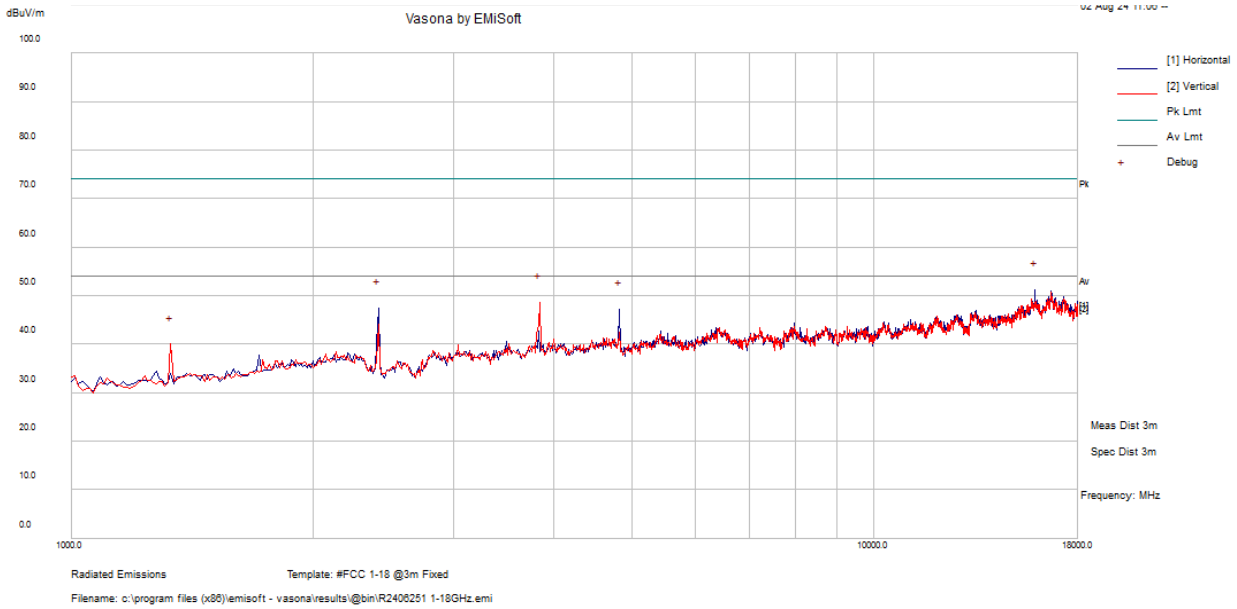

| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 33.56875 | 32.5 | -3.37 | 29.13 | 281 | V | 327 | 40 | -10.87 | QP |
| 148.1283 | 43.8 | -7.98 | 35.82 | 181 | H | 7 | 43.5 | -7.68 | QP |
| 51.47775 | 41.97 | -13.77 | 28.2 | 112 | V | 352 | 40 | -11.8 | QP |
| 506.337 | 39.41 | -1.23 | 38.18 | 182 | V | 314 | 46 | -7.82 | QP |
| 167.931 | 39 | -8.66 | 30.34 | 147 | H | 61 | 43.5 | -13.16 | QP |
| 215.3593 | 36.13 | -9.81 | 26.32 | 219 | H | 290 | 43.5 | -17.18 | QP |

| FCC/IC Limits for 1 GHz to 26.5 GHz | | | | |
|---|---|---|---|---|
| **Applicability** | **(dBm)** | **(uV/m at 3meters)** | **(dBuV/m at 3meters)** | **(dBuV/m at 1meter)** |
| Restricted Band Average Limit | - | 500 | 54[2] | 63.54[3] |
| Restricted Band Peak Limit[1] | - | - | 74 | 83.54 |

*Note 1: Restricted Band Peak Limit is defined to be 20dB higher than Average Limit.*
*Note 2: Above 1GHz limit calculation:*
*dBuV/m = 20*log(V/m) + 120 = 20*log((500 [uV/m]/1000000)) + 120 = 54 [dBuV/m]*
*Note 3: Limits at 1 meter are determined by applying a Distance correction factor accounts for extrapolation from 1 meter to 3 meters. Formula used is as follows: 20*log (3 meters / 1 meter) = 9.54 (According to ANSI C63.10-2013 Section 9.4). Extrapolation calculation from 3m to 1m distance:*
*54 [dBuV/m at 3m] + 9.54 [dB] = 63.54 [dBuV/m at 1m]*
*Note 4: Ports terminated for radiated measurements.*

## 2) 1 GHz – 18 GHz, Measured at 3 meters

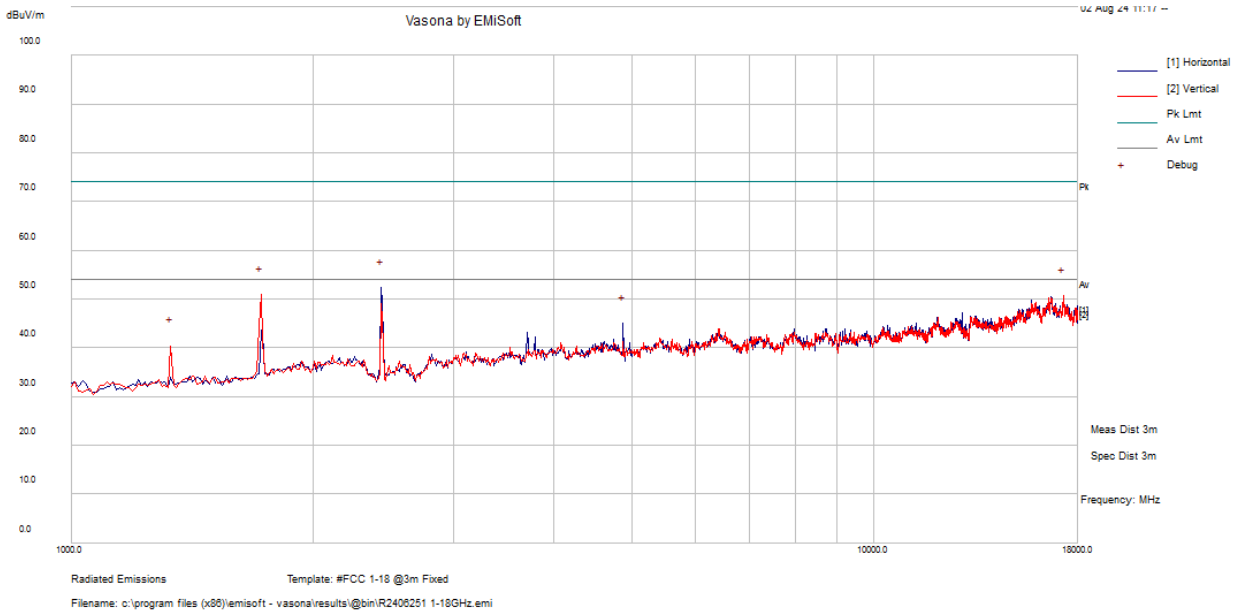
**802.11b, 2412 MHz + 2DH5, 2402MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 15917.5 | 41.86 | 9.37 | 51.23 | 100 | H | 0 | 54 | -2.77 | Peak |
| 3836.875 | 54.18 | -5.59 | 48.59 | 100 | V | 0 | 54 | -5.41 | Peak |
| 2413.125 | 54.72 | -7.3 | 47.42 | 200 | H | 0 | 54 | -6.58 | Peak |
| 4825 | 51.82 | -4.6 | 47.22 | 100 | H | 0 | 54 | -6.78 | Peak |
| 1329.375 | 51.65 | -11.66 | 39.99 | 100 | V | 0 | 54 | -14.01 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

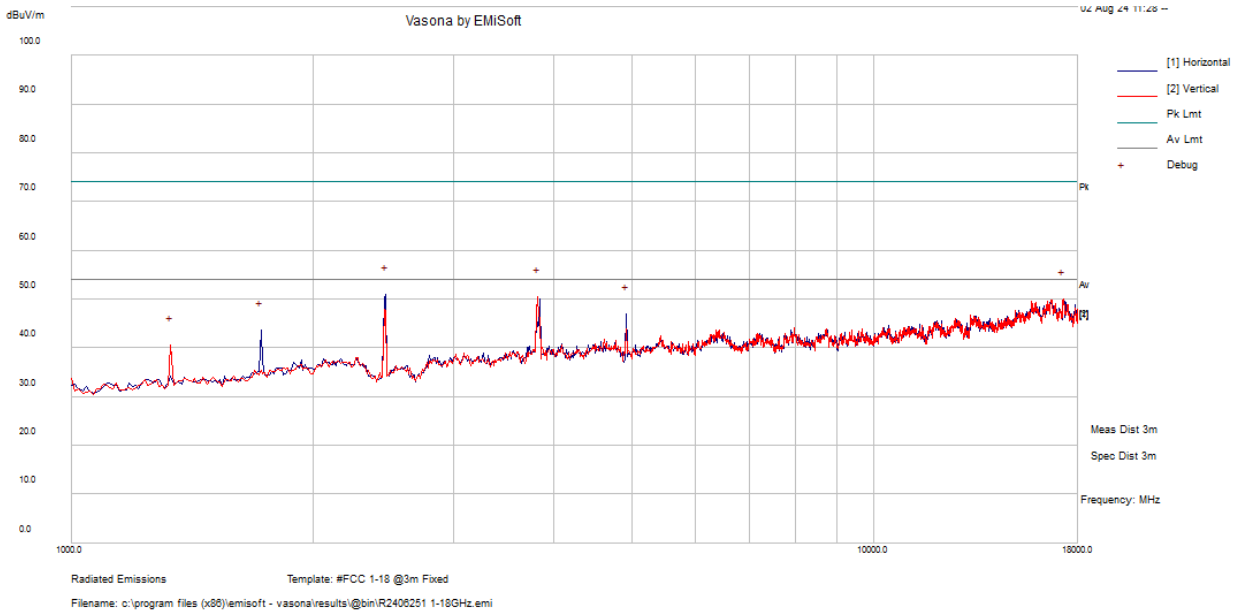
**802.11b, 2437 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 2434.375 | 59.48 | -7.19 | 52.29 | 100 | H | 0 | 54 | -1.71 | Peak |
| 1722.5 | 60.8 | -9.9 | 50.9 | 300 | V | 0 | 54 | -3.1 | Peak |
| 17266.88 | 41.09 | 9.58 | 50.67 | 100 | V | 0 | 54 | -3.33 | Peak |
| 4878.125 | 49.77 | -4.81 | 44.96 | 100 | H | 0 | 54 | -9.04 | Peak |
| 1329.375 | 52.02 | -11.67 | 40.35 | 100 | V | 0 | 54 | -13.65 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

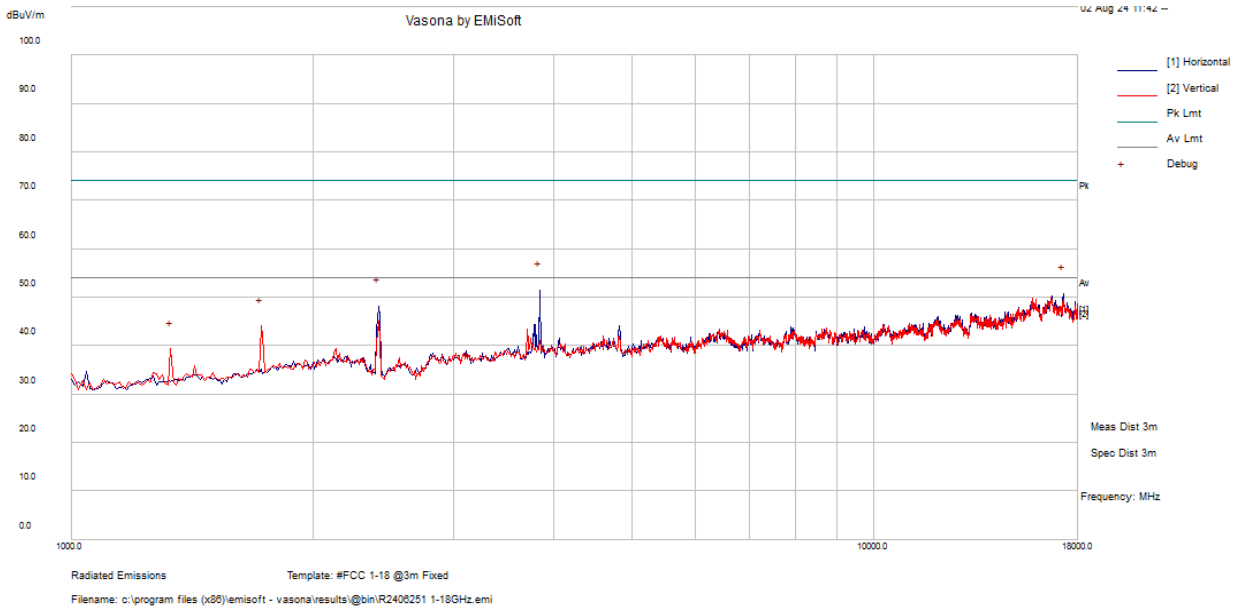
**802.11b, 2462 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 2466.25 | 57.91 | -6.89 | 51.02 | 200 | H | 0 | 54 | -2.98 | Peak |
| 3815.625 | 56.09 | -5.6 | 50.49 | 200 | V | 0 | 54 | -3.51 | Peak |
| 17256.25 | 40.28 | 9.82 | 50.1 | 100 | V | 0 | 54 | -3.9 | Peak |
| 4920.625 | 51.9 | -4.93 | 46.97 | 100 | H | 0 | 54 | -7.03 | Peak |
| 1722.5 | 53.54 | -9.9 | 43.64 | 100 | H | 0 | 54 | -10.36 | Peak |
| 1329.375 | 52.2 | -11.66 | 40.54 | 100 | V | 0 | 54 | -13.46 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

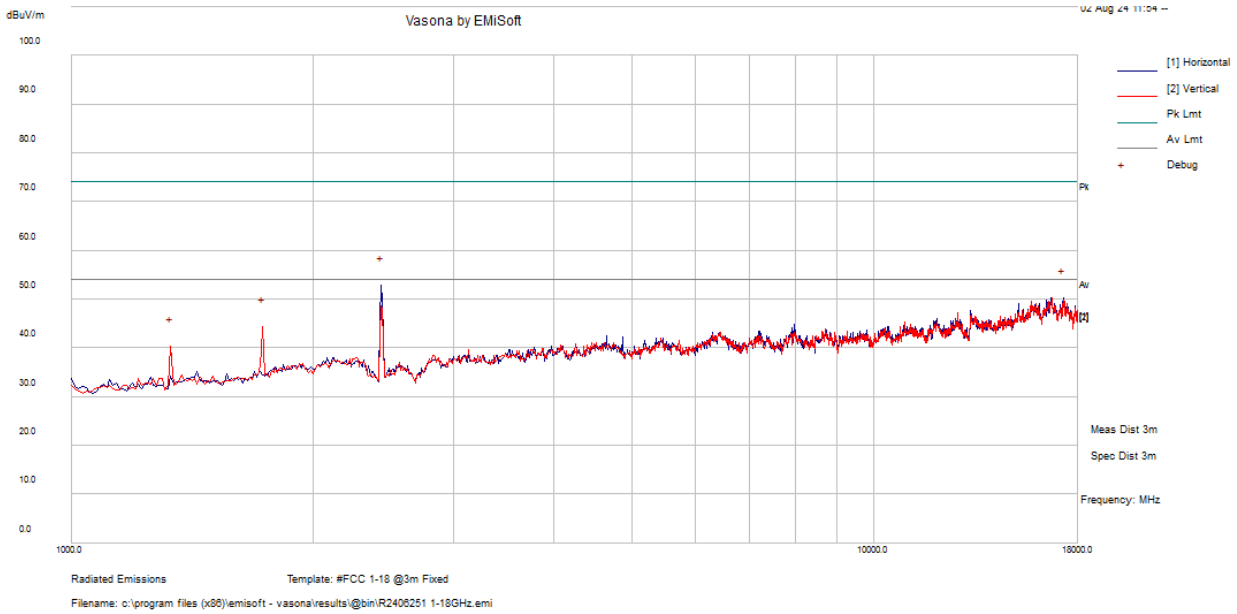
**802.11g, 2412 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 3836.875 | 57.03 | -5.59 | 51.44 | 200 | H | 0 | 54 | -2.56 | Peak |
| 17256.25 | 40.88 | 9.82 | 50.7 | 200 | H | 0 | 54 | -3.3 | Peak |
| 2413.125 | 55.51 | -7.31 | 48.2 | 100 | H | 0 | 54 | -5.8 | Peak |
| 1722.5 | 53.97 | -9.9 | 44.07 | 300 | V | 0 | 54 | -9.93 | Peak |
| 1329.375 | 50.99 | -11.67 | 39.32 | 100 | V | 0 | 54 | -14.68 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

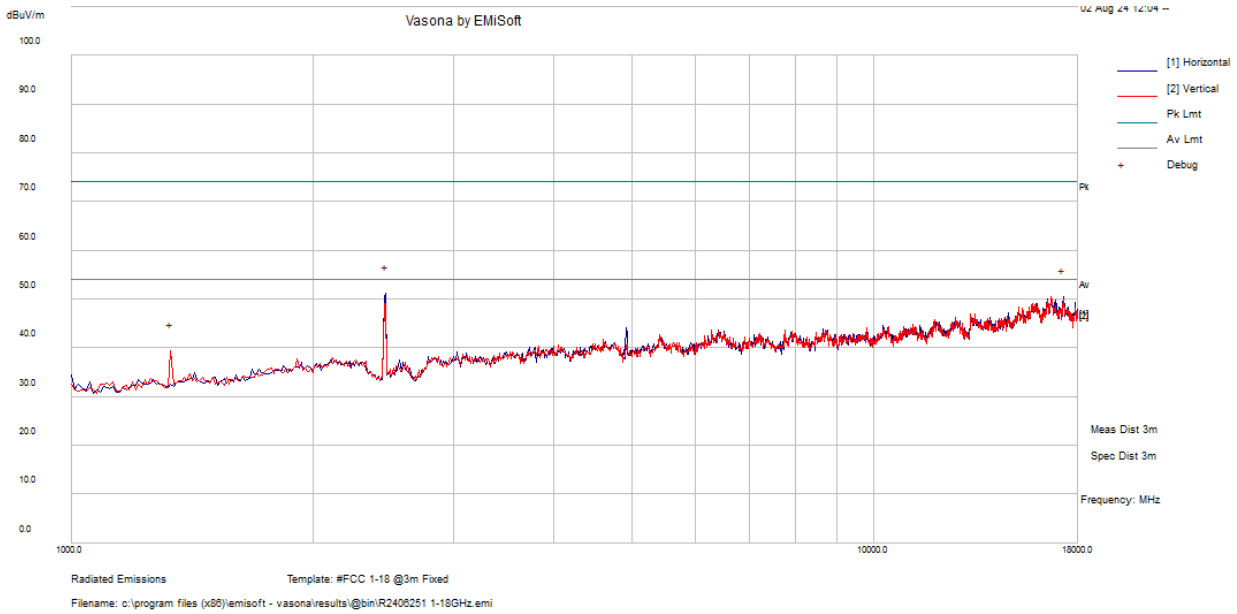
**802.11g, 2437 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 2434.375 | 60.05 | -7.19 | 52.86 | 100 | H | 0 | 54 | -1.14 | Peak |
| 17256.25 | 40.51 | 9.83 | 50.34 | 200 | H | 0 | 54 | -3.66 | Peak |
| 1733.125 | 54.14 | -9.81 | 44.33 | 200 | V | 0 | 54 | -9.67 | Peak |
| 1329.375 | 52 | -11.66 | 40.34 | 100 | V | 0 | 54 | -13.66 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

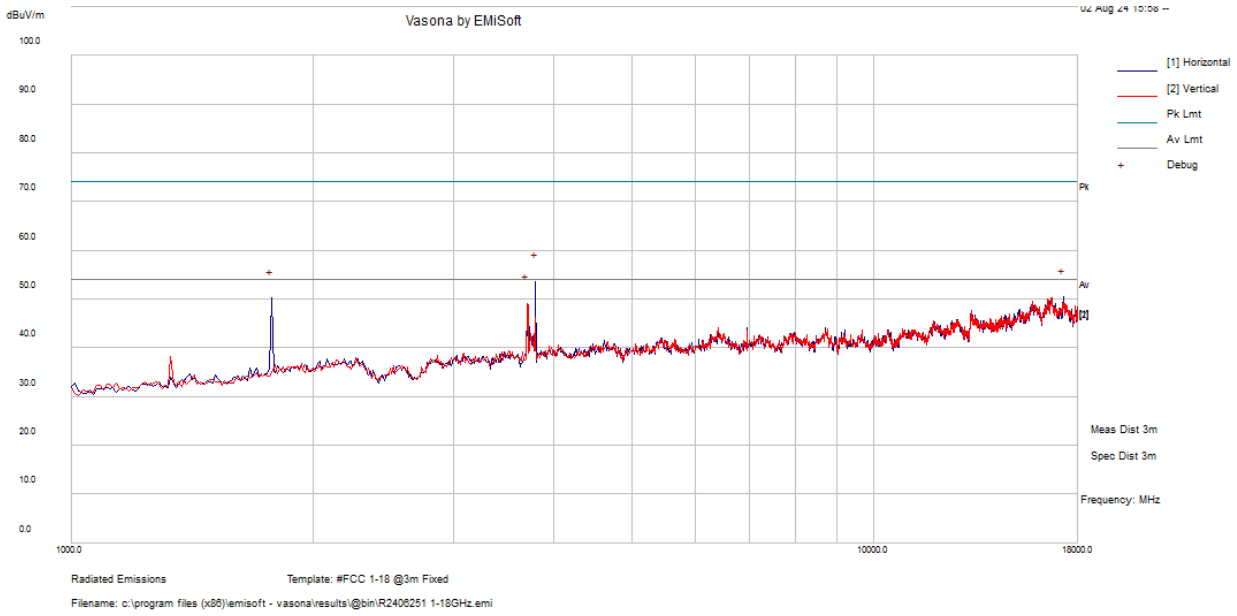
**802.11g, 2462 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 2466.25 | 58.04 | -6.89 | 51.15 | 200 | H | 0 | 54 | -2.85 | Peak |
| 17256.25 | 40.61 | 9.83 | 50.44 | 100 | H | 0 | 54 | -3.56 | Peak |
| 1329.375 | 50.99 | -11.66 | 39.33 | 200 | V | 0 | 54 | -14.67 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

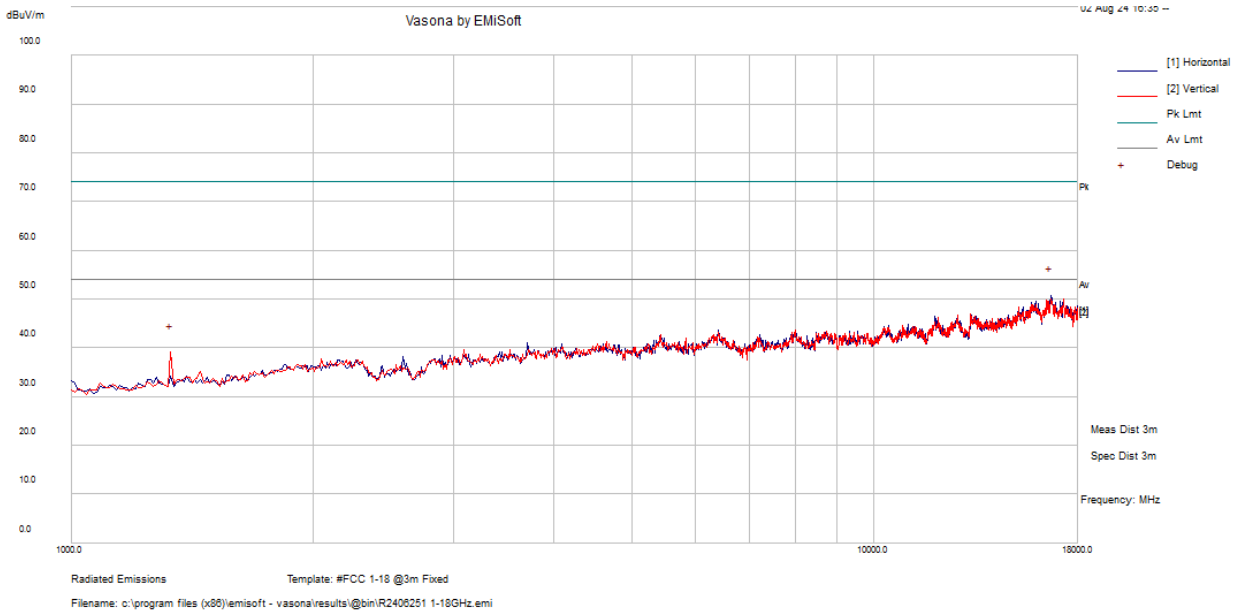
**BLE, 2402 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 3794.375 | 59.16 | -5.62 | 53.54 | 200 | H | 0 | 54 | -0.47 | Peak |
| 17256.25 | 40.57 | 9.82 | 50.39 | 200 | H | 0 | 54 | -3.61 | Peak |
| 1775.625 | 59.68 | -9.51 | 50.17 | 100 | H | 0 | 54 | -3.83 | Peak |
| 3698.75 | 55.07 | -5.93 | 49.14 | 100 | V | 0 | 54 | -4.86 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

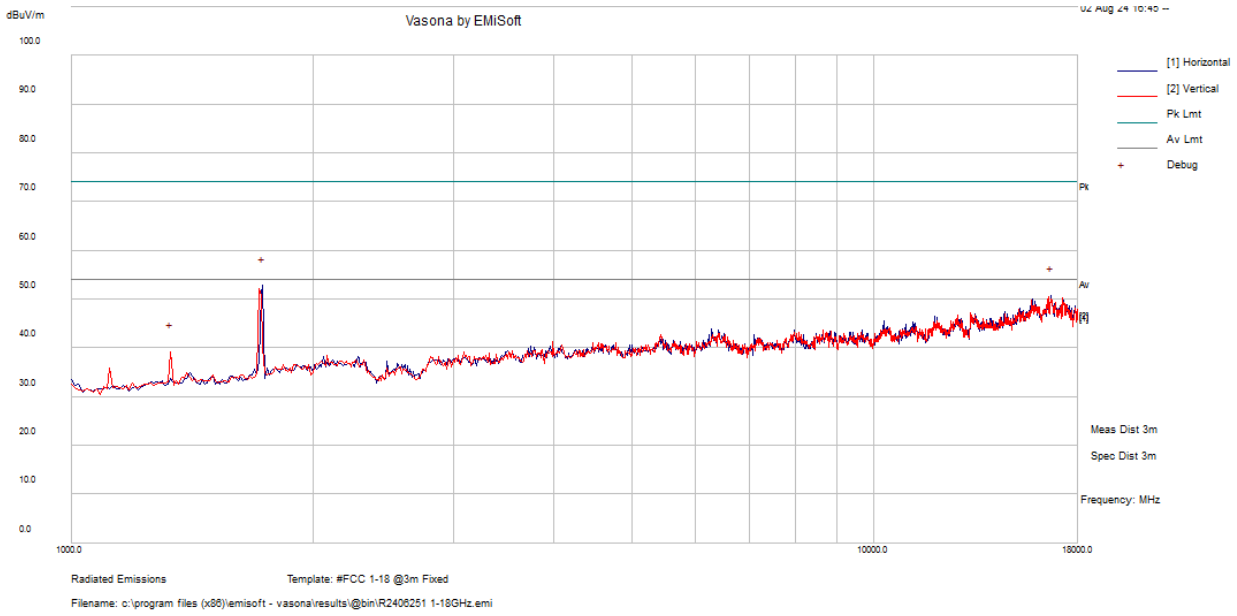
**BLE, 2440 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 16650.63 | 40.79 | 9.9 | 50.69 | 100 | H | 0 | 54 | -3.31 | Peak |
| 1329.375 | 50.76 | -11.66 | 39.1 | 100 | V | 0 | 54 | -14.9 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18GHz passed the average limits.*

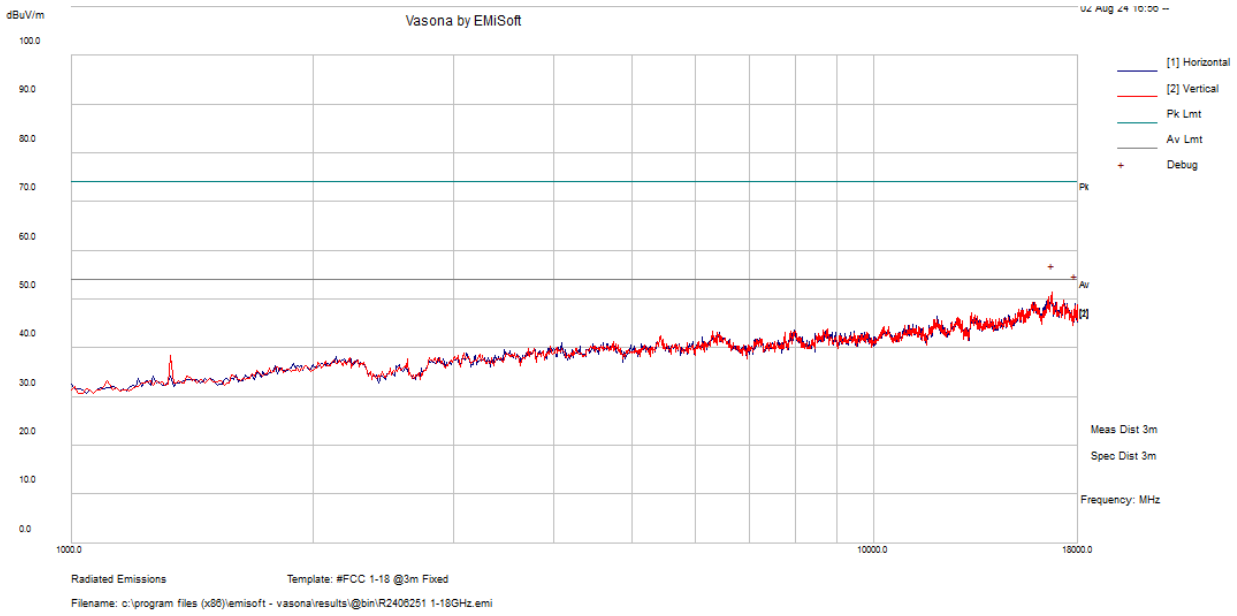
**BLE, 2480 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 1733.125 | 62.59 | -9.81 | 52.78 | 200 | H | 0 | 54 | -1.22 | Peak |
| 16661.25 | 40.79 | 9.92 | 50.71 | 200 | H | 0 | 54 | -3.29 | Peak |
| 1329.375 | 50.88 | -11.66 | 39.22 | 100 | V | 0 | 54 | -14.78 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

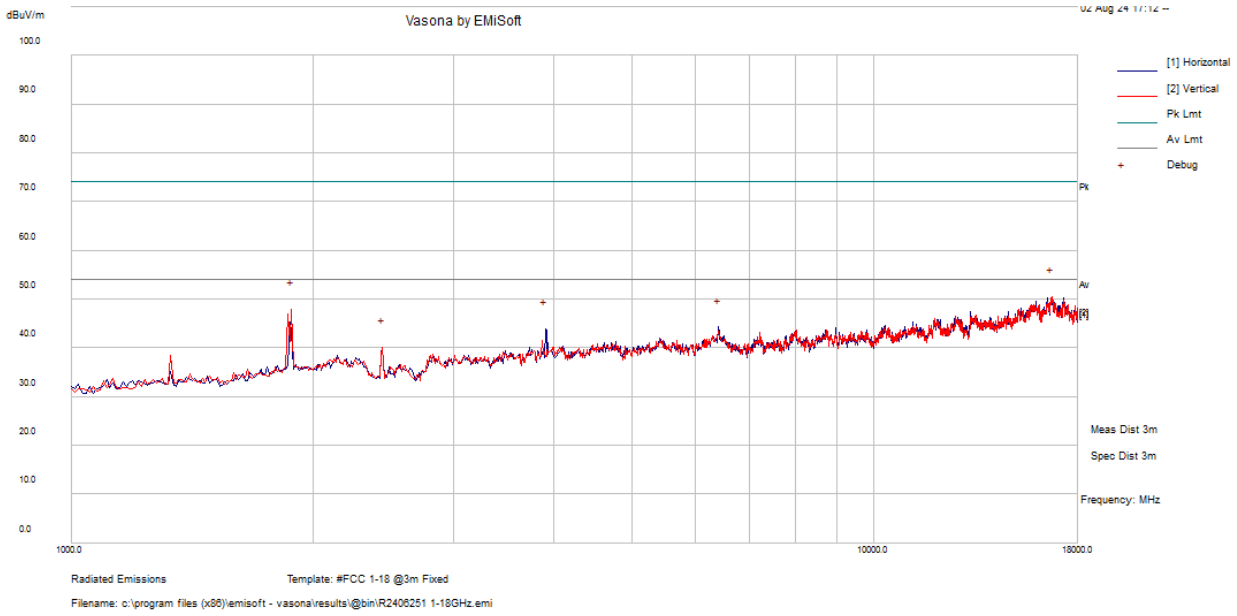
**DH5, 2402 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 16714.38 | 41.78 | 9.57 | 51.35 | 300 | V | 0 | 54 | -2.65 | Peak |
| 17861.88 | 40.57 | 8.56 | 49.13 | 200 | H | 0 | 54 | -4.87 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

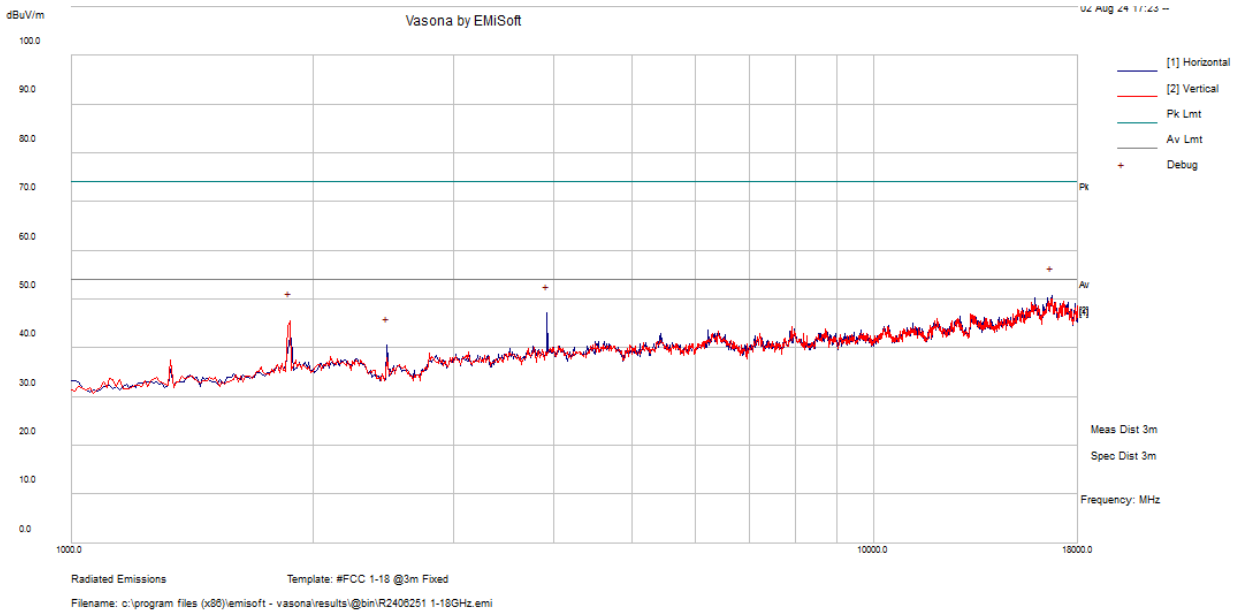
**DH5, 2440 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 16703.75 | 40.63 | 9.9 | 50.53 | 300 | V | 0 | 54 | -3.47 | Peak |
| 1881.875 | 56.37 | -8.48 | 47.89 | 300 | V | 0 | 54 | -6.11 | Peak |
| 6418.75 | 46.4 | -2.1 | 44.3 | 300 | H | 0 | 54 | -9.7 | Peak |
| 3900.625 | 49.72 | -5.83 | 43.89 | 200 | H | 0 | 54 | -10.11 | Peak |
| 2445 | 47.13 | -7.03 | 40.1 | 100 | H | 0 | 54 | -13.9 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

**DH5, 2480 MHz**

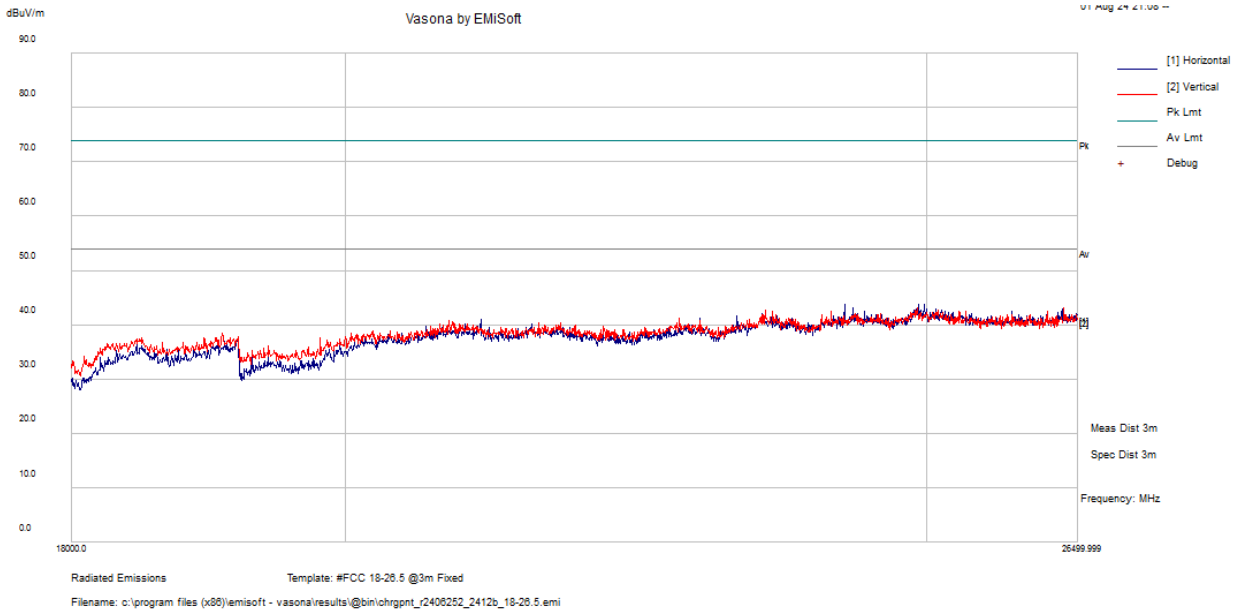



| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 16693.13 | 40.7 | 10 | 50.7 | 100 | H | 0 | 54 | -3.3 | Peak |
| 3921.875 | 52.9 | -5.81 | 47.09 | 200 | H | 0 | 54 | -6.91 | Peak |
| 1871.25 | 54.08 | -8.46 | 45.62 | 300 | V | 0 | 54 | -8.38 | Peak |
| 2476.875 | 47.38 | -6.85 | 40.53 | 100 | H | 0 | 54 | -13.47 | Peak |

*Note: The plot above shows that all peak emissions from 1 to 18 GHz passed the average limits.*

### 3) 18 GHz – 26.5 GHz, Measured at 3 meters

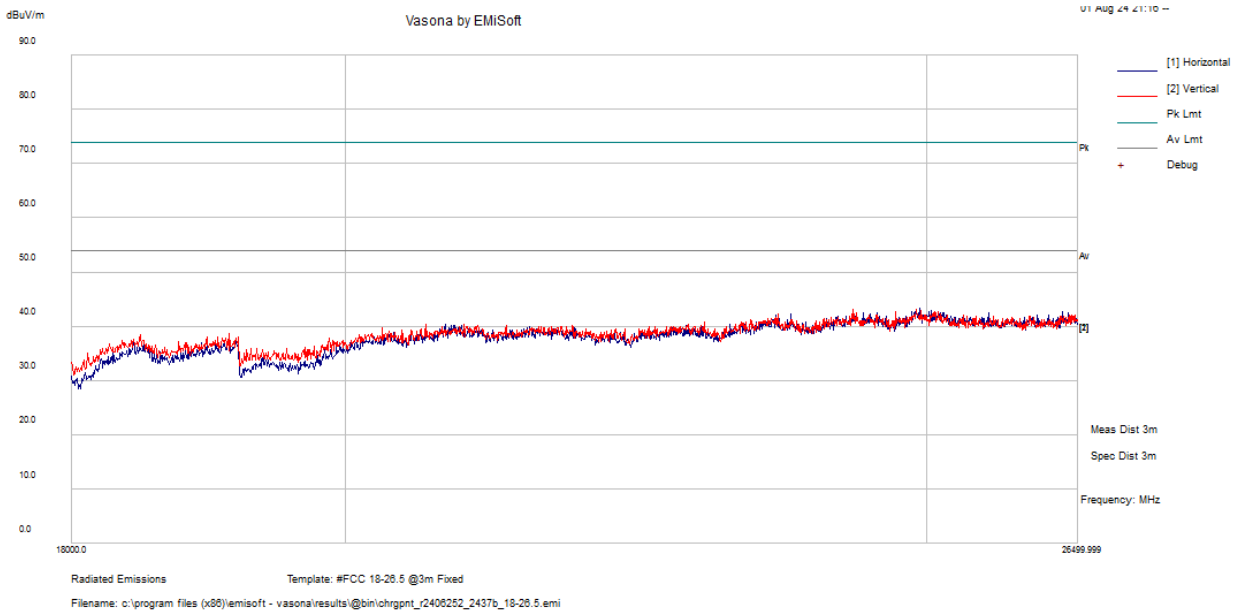
**802.11b, 2412 MHz + 2DH5, 2402MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 24226.32 | 53.4 | -9.65 | 43.75 | 198 | V | 8 | 54 | -10.25 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

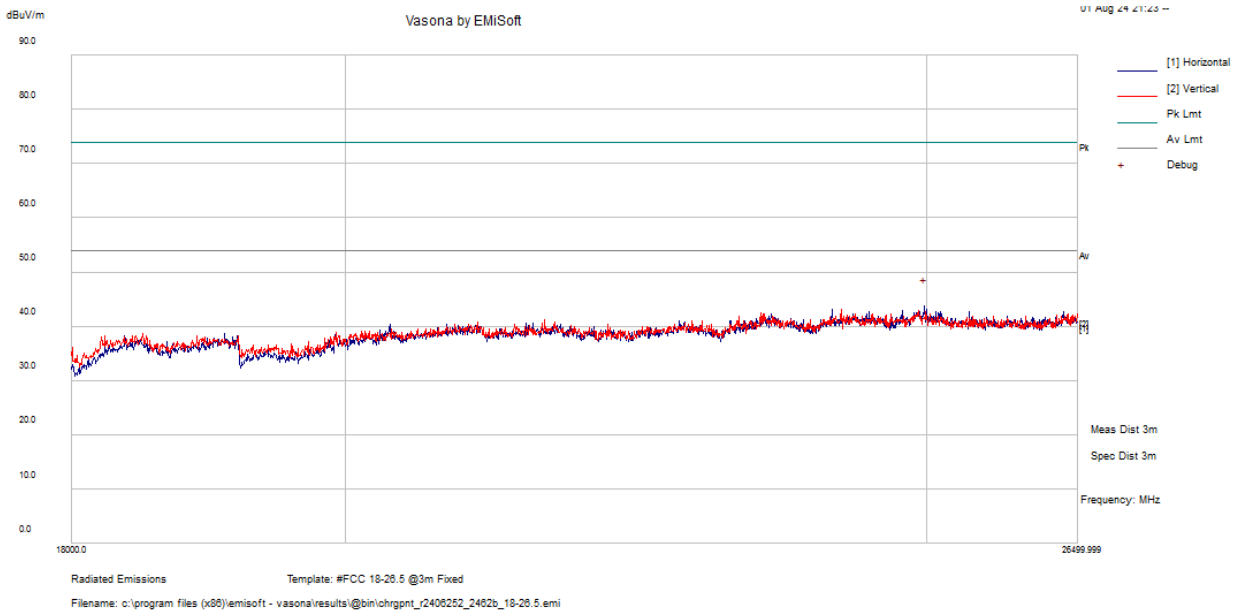
**802.11b, 2437 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 24958.01 | 50.7 | -9.28 | 41.42 | 198 | V | 7 | 54 | -12.58 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

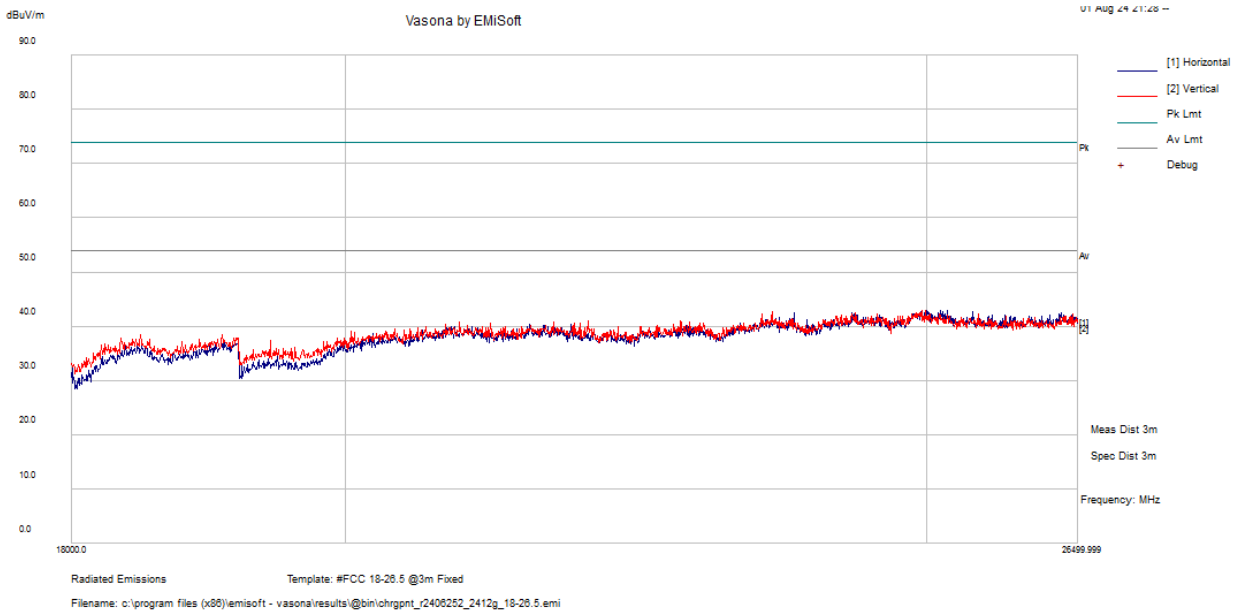
**802.11b, 2462 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 24985.77 | 52.98 | -9.39 | 43.59 | 198 | V | 7 | 54 | -10.41 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

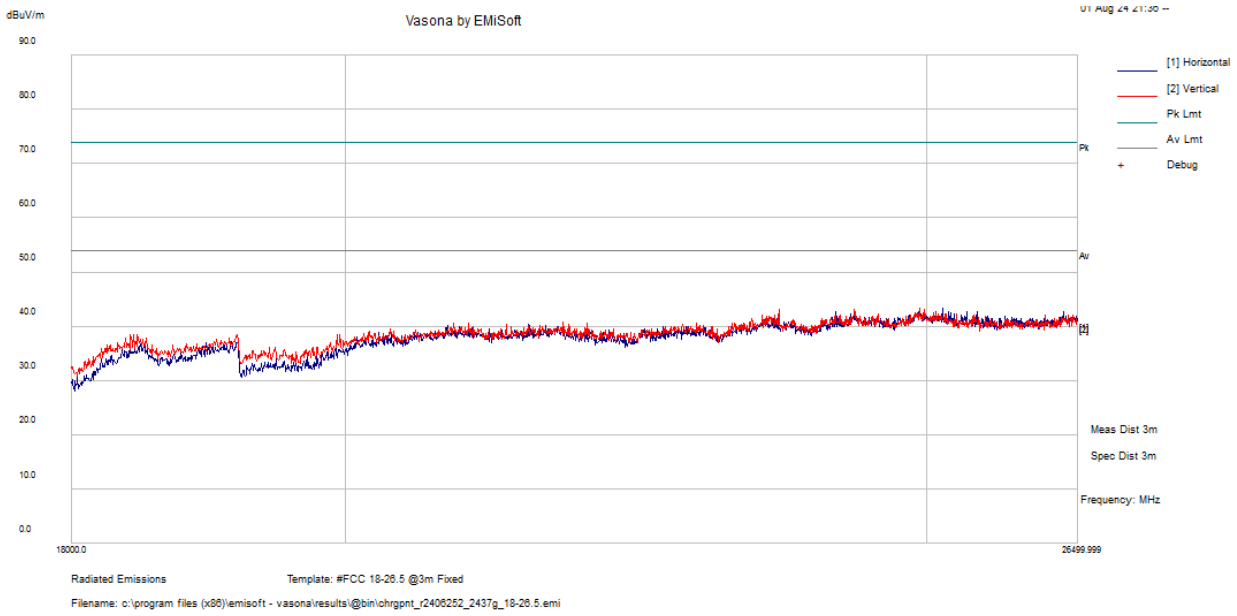
**802.11g, 2412 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 25001.49 | 51.56 | -9.44 | 42.12 | 198 | V | 7 | 54 | -11.88 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

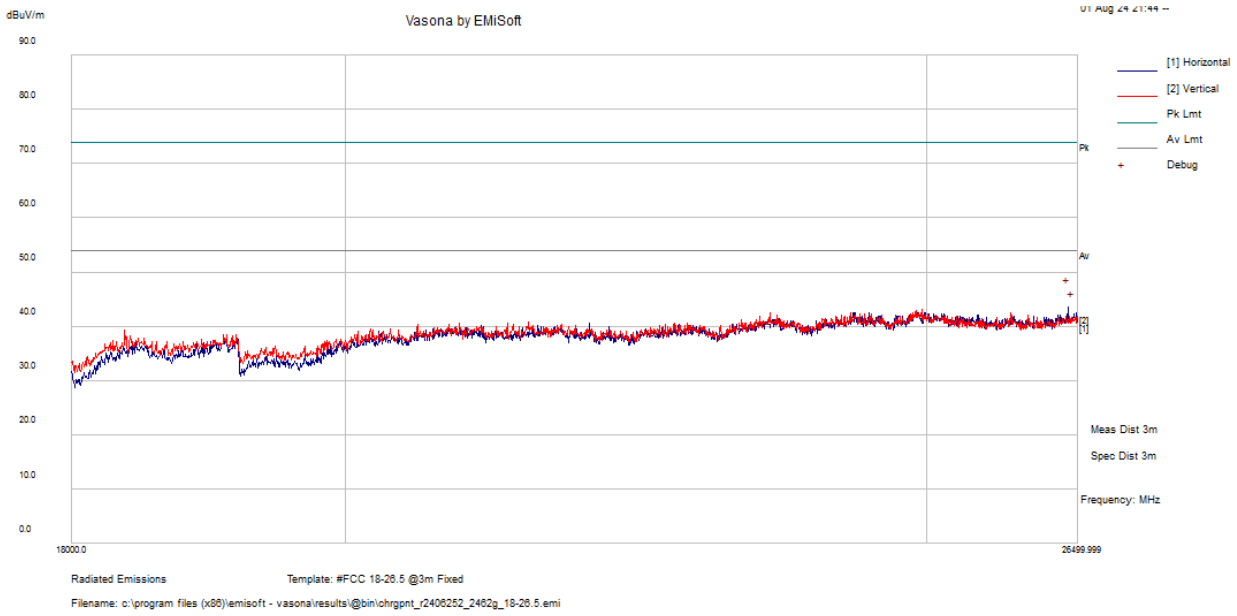
**802.11g, 2437 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 24936.91 | 51.87 | -9.2 | 42.67 | 198 | V | 8 | 54 | -11.33 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

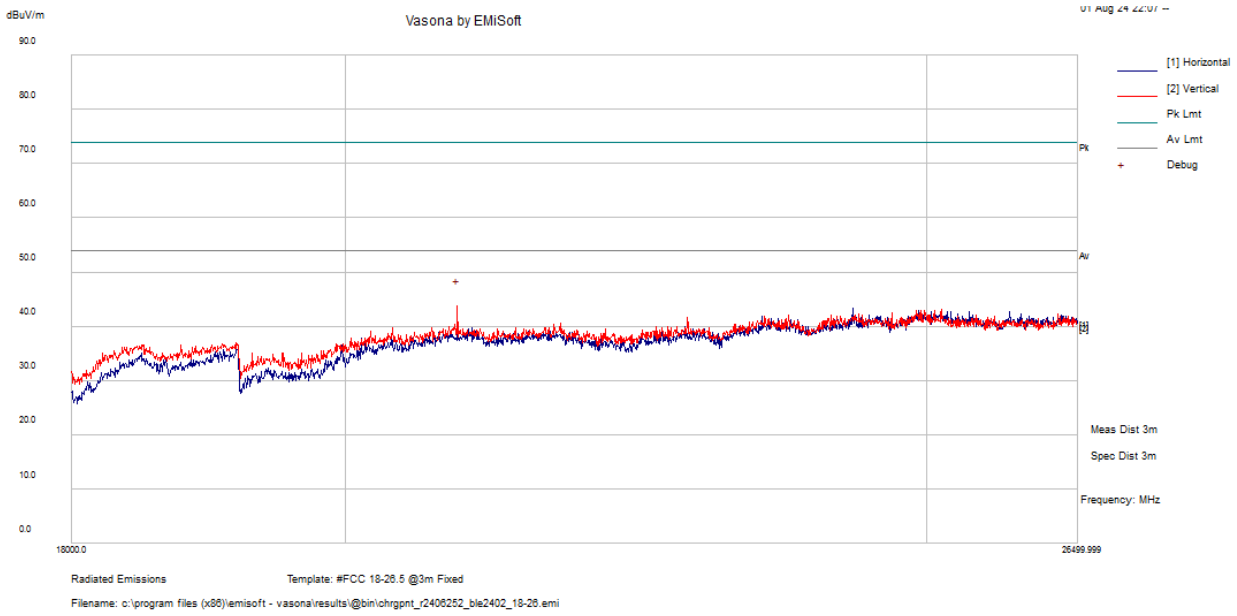
**802.11g, 2462 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 26399.23 | 51.76 | -8.25 | 43.51 | 198 | V | 7 | 54 | -10.49 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

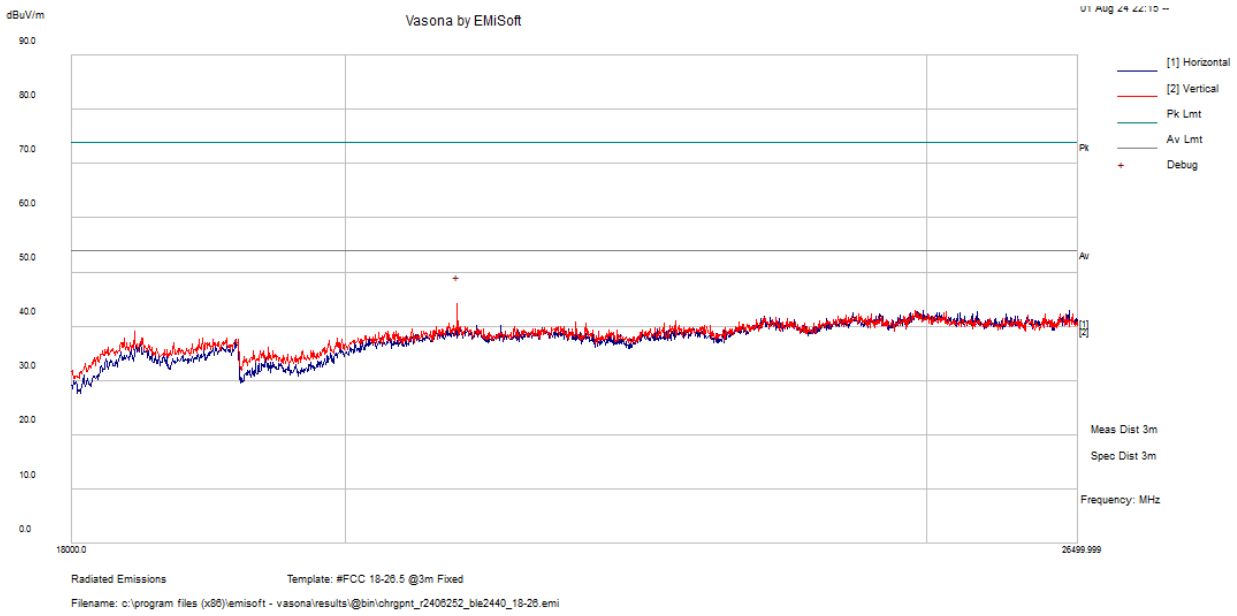
**BLE, 2402 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 20879.76 | 55.43 | -12.1 | 43.33 | 198 | V | 7 | 54 | -10.67 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

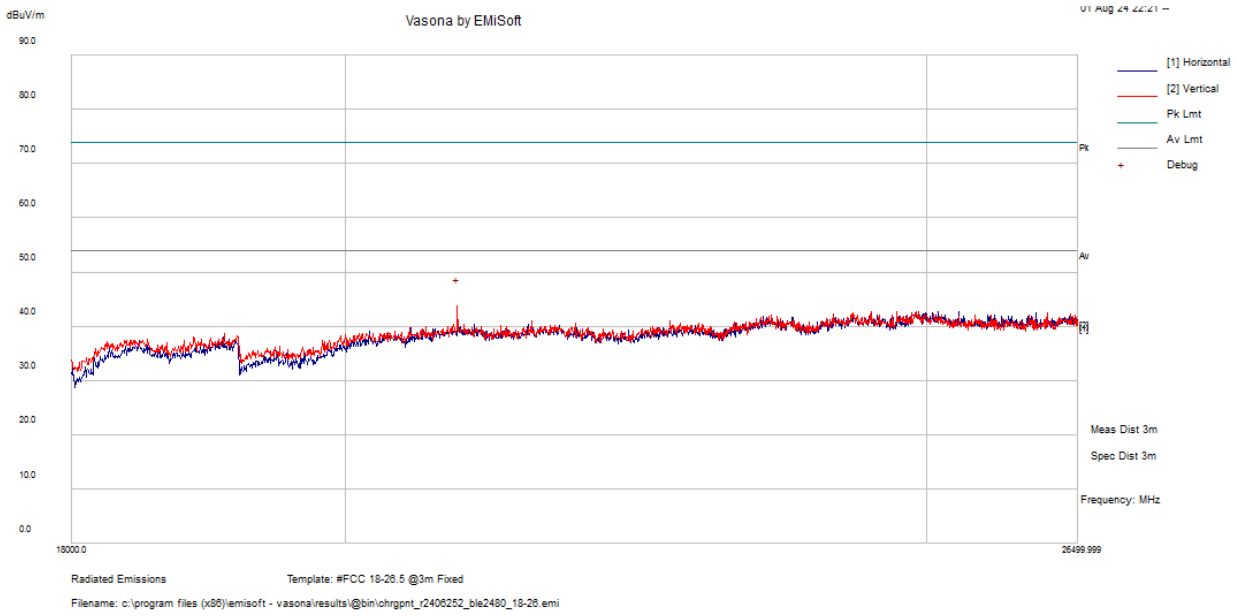
**BLE, 2440 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 20879.38 | 56.21 | -12.1 | 44.11 | 200 | V | 0 | 54 | -9.89 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

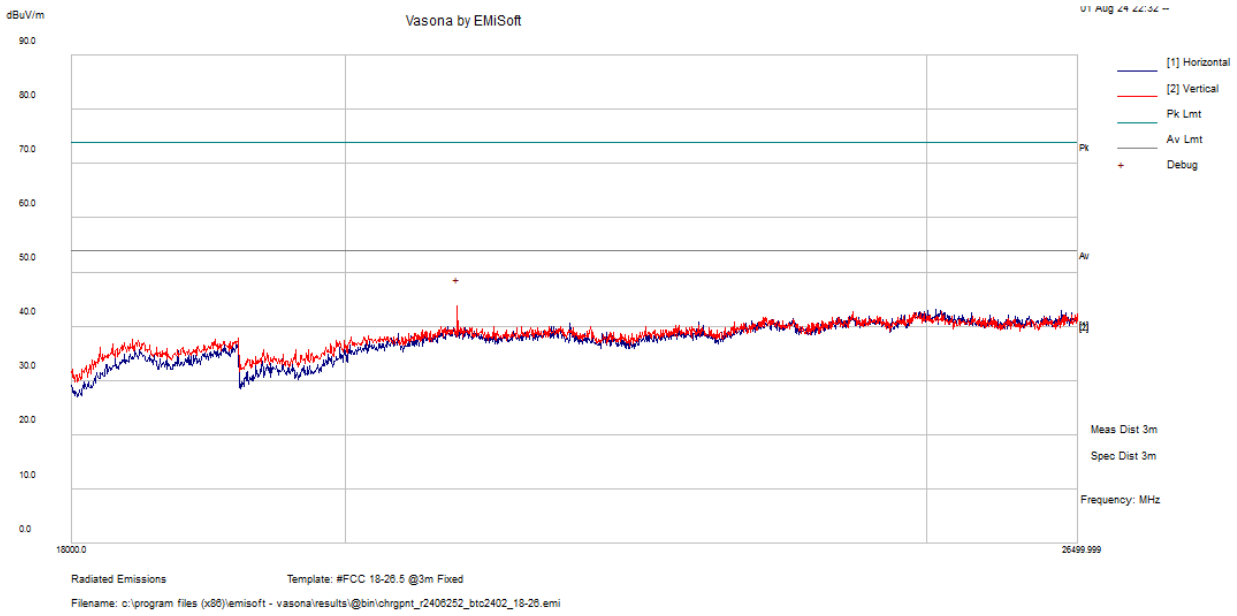
**BLE, 2480 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 20879.02 | 55.65 | -12.1 | 43.55 | 198 | V | 7 | 54 | -10.45 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

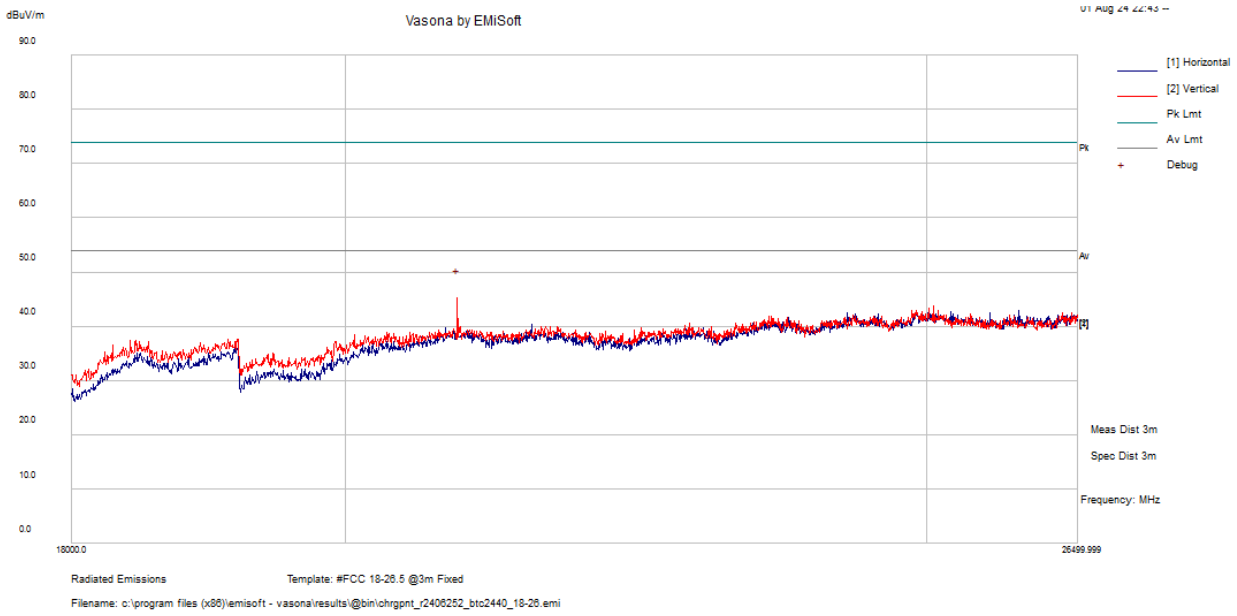
**DH5, 2402 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 20879.5 | 55.8 | -12.1 | 43.7 | 198 | V | 7 | 54 | -10.3 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

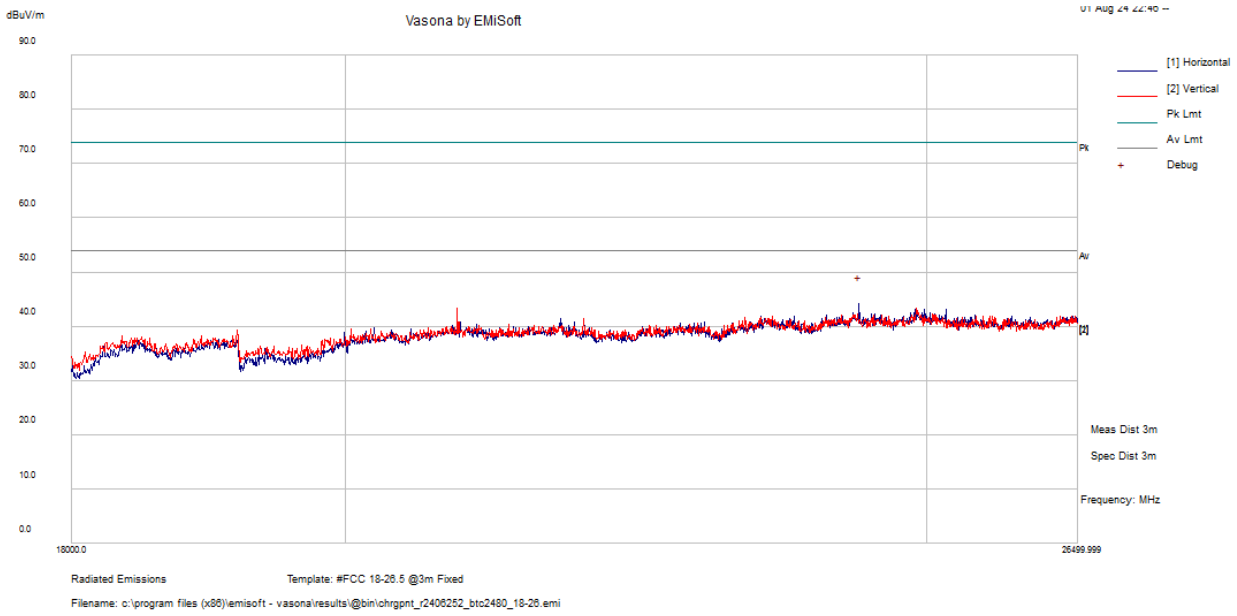
**DH5, 2440 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 20879.38 | 57.38 | -12.1 | 45.28 | 200 | V | 0 | 54 | -8.72 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

**DH5, 2480 MHz**




| Frequency (MHz) | S.A. Reading (dBuV) | Correction Factor (dB/m) | Corrected Amplitude (dBµV/m) | Antenna Height (cm) | Antenna Polarity (H/V) | Turntable Azimuth (degrees) | Limit (dBµV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|---|---|
| 24364.37 | 53.77 | -9.65 | 44.12 | 200 | H | 0 | 54 | -9.89 | Peak |

*Note: The plot above shows that there were no emissions above the noise floor at 18-26.5 GHz frequency range.*

# 7 Annex A – Band Edge Measurements

Please refer to the attachment.

# 8 Appendix A (Normative) – EUT Test Setup Photographs

Please refer to the attachment.

# 9 Appendix B (Normative) – EUT External Photographs

Please refer to the attachment.

# 10 Appendix C (Normative) – EUT Internal Photographs

Please refer to the attachment.

# 11 Appendix D (Normative) – A2LA Electrical Testing Certificate

Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIACE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets A2LA R222 - Specific Requirements EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system *(refer to joint ISO-ILAC-IAF Communiqué dated April 2017)*.

Presented this 21st day of December 2022.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2024

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*

Please follow the web link below for a full ISO 17025 scope.

https://www.a2la.org/scopepdf/3297-02.pdf

**--- END OF REPORT ---**