

Radio Testing of the  
St. Jude Medical  
Implantable Cardioverter Defibrillator Device  
Model: Avant™, Neutrino™ NxT, Gallant™ and  
Entrant™

In accordance with FCC Part 15 Subpart C  
§15.247 and IC RSS-247 Issue 3 August 2023

St. Jude Medical  
15900 Valley View Court  
Sylmar, CA 91342 USA



America

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## COMMERCIAL-IN-CONFIDENCE

Date: July 2024  
Document Number: 72198928A | Version Number: 02

| RESPONSIBLE FOR      | NAME                  | DATE          | SIGNATURE                                                                             |
|----------------------|-----------------------|---------------|---------------------------------------------------------------------------------------|
| Authorized Signatory | Ferdinand S. Custodio | July 31, 2024 |  |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

### EXECUTIVE SUMMARY

A sample of this product was tested and found to be in compliance with FCC Part 15 Subpart C §15.247 and IC RSS-247 Issue 3 August 2023 Radiated Spurious Emissions requirements.



A2LA Cert. No. 2955.13

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|                           |                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REPORT ON</b>          | Radio Testing of the<br>St. Jude Medical<br>Model: Avant™, Neutrino™ NxT, Gallant™ and Entrant™<br>(Implantable Cardioverter Defibrillator Device)                                    |
| <b>TEST REPORT NUMBER</b> | 72198928A                                                                                                                                                                             |
| <b>TEST REPORT DATE</b>   | July 2024                                                                                                                                                                             |
| <b>PREPARED FOR</b>       | St. Jude Medical<br>15900 Valley View Court<br>Sylmar, CA 91342 USA                                                                                                                   |
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| <b>APPROVED BY</b>        | <u>Ferdinand S. Custodio</u><br><b>Name</b><br>Authorized Signatory<br>Title: Senior EMC Test Engineer / Wireless Team Lead                                                           |
| <b>DATED</b>              | <u>July 31, 2024</u>                                                                                                                                                                  |



## Revision History

| 72198928A<br>St. Jude Medical<br>Model: Avant™, Neutrino™ NxT, Gallant™ and Entrant™ Implantable Cardioverter Defibrillator Device |              |                 |                                          |                |                       |
|------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|------------------------------------------|----------------|-----------------------|
| DATE                                                                                                                               | OLD REVISION | NEW REVISION    | REASON                                   | PAGES AFFECTED | APPROVED BY           |
| 07/19/2024                                                                                                                         | —            | Initial Release |                                          |                | Ferdinand S. Custodio |
| 07/31/2024                                                                                                                         | —            | 02              | Updated company name to St. Jude Medical | 1,3,5,9,14     | Ferdinand S. Custodio |
|                                                                                                                                    |              |                 |                                          |                |                       |
|                                                                                                                                    |              |                 |                                          |                |                       |
|                                                                                                                                    |              |                 |                                          |                |                       |



## CONTENTS

| Section                                               | Page No   |
|-------------------------------------------------------|-----------|
| <b>REPORT SUMMARY.....</b>                            | <b>5</b>  |
| 1.2 Brief Summary Of Results .....                    | 7         |
| 1.3 Product Information .....                         | 8         |
| 1.4 EUT Test Configuration .....                      | 10        |
| 1.5 Deviations From The Standard.....                 | 12        |
| 1.6 Modification Record .....                         | 12        |
| 1.7 Test Methodology .....                            | 12        |
| 1.8 Test Facility Location .....                      | 12        |
| 1.9 Test Facility Registration .....                  | 12        |
| <b>TEST DETAILS.....</b>                              | <b>14</b> |
| 2.1 Peak Output Power.....                            | 15        |
| 2.2 Band-Edge Compliance.....                         | 20        |
| 2.3 Radiated Spurious Emissions.....                  | 30        |
| <b>TEST EQUIPMENT USED.....</b>                       | <b>69</b> |
| 3.1 Test Equipment Used .....                         | 70        |
| 3.2 Measurement Uncertainty .....                     | 71        |
| <b>DIAGRAM OF TEST SETUP .....</b>                    | <b>73</b> |
| 4.1 Test Setup Diagram .....                          | 74        |
| <b>ACCREDITATION, DISCLAIMERS AND COPYRIGHT .....</b> | <b>76</b> |
| 5.1 Accreditation, Disclaimers And Copyright .....    | 77        |



## SECTION 1

### REPORT SUMMARY

Radio Testing of the  
St. Jude Medical  
Avant™, Neutrino™ NxT, Gallant™ and Entrant™ Implantable Cardioverter Defibrillator Device



## 1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Avant™, Neutrino™ NxT, Gallant™ and Entrant™ Implantable Cardioverter Defibrillator Device to the requirements of FCC Part 15 Subpart C §15.247 and IC RSS-247 Issue 3 August 2023.

|                               |                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Objective                     | To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out. The EUT is already certified. The Grantee is seeking Class II Permissive Change due to updated antenna used. All other RF functionalities remained the same.                                                                         |
| Manufacturer                  | St. Jude Medical                                                                                                                                                                                                                                                                                                                                                                           |
| EUT                           | Implantable Cardioverter Defibrillator Device                                                                                                                                                                                                                                                                                                                                              |
| Model Number                  | CDHFA500B and CDHFA500D (representative sample verified)                                                                                                                                                                                                                                                                                                                                   |
| Model Name                    | Avant™, Neutrino™ NxT, Gallant™ and Entrant™                                                                                                                                                                                                                                                                                                                                               |
| FCC ID                        | RIAICDRFNGQ                                                                                                                                                                                                                                                                                                                                                                                |
| IC Number                     | 7067A-ICDRF                                                                                                                                                                                                                                                                                                                                                                                |
| FCC Classification            | Low power Communications Device Transmitter (DTS)                                                                                                                                                                                                                                                                                                                                          |
| Serial Number(s)              | <b>Radiated Samples</b> - 210007976 (CDHFA500B), 210007980 (CDHFA500D),<br><b>Conducted Samples</b> – NGQ SN02, NGQ SN04                                                                                                                                                                                                                                                                   |
| Number of Samples Tested      | 4                                                                                                                                                                                                                                                                                                                                                                                          |
| Test Specification/Issue/Date | <ul style="list-style-type: none"><li>• FCC Part 15 Subpart C §15.247 (October 1, 2023).</li><li>• RSS-247–Digital Transmission Systems (DTS), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices (Issue 3, August 2023).</li><li>• RSS-Gen - General Requirements for Compliance of Radio Apparatus (Issue 6, Amendment 15 February 2023).</li></ul> |
| Start of Test                 | June 03, 2024                                                                                                                                                                                                                                                                                                                                                                              |
| Finish of Test                | June 21, 2024                                                                                                                                                                                                                                                                                                                                                                              |
| Name of Engineer(s)           | Joe Salvador<br>Ferdinand Custodio                                                                                                                                                                                                                                                                                                                                                         |
| Related Document(s)           | <ul style="list-style-type: none"><li>• ANSI C63.10-2013. American National Standard of Procedures for Compliance testing of Unlicensed Wireless Devices.</li></ul>                                                                                                                                                                                                                        |



- OTA\_DTM\_Hex\_Command.xlsx
- Supporting documents for Class II Permissive Change application are separate exhibits.



## 1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC Part 15 Subpart C §15.247 and IC RSS-247 Issue 3 August 2023 with cross-reference to the corresponding IC RSS standard are shown below.

| Section | §15.247 Spec Clause | RSS                 | Test Description                                      | Result    | Comments /Base Standard |
|---------|---------------------|---------------------|-------------------------------------------------------|-----------|-------------------------|
| 2.1     | §15.247(b)(3)       | RSS-247 5.4(d)      | Peak Output Power                                     | Compliant |                         |
| -       | §15.207(a)          | RSS-Gen 8.8         | Conducted Emissions                                   | N/A       |                         |
| -       | -                   | RSS-Gen 6.7         | 99% Emission Bandwidth                                | N/A       |                         |
| -       | §15.247(a)(2)       | RSS-247 5.2(a)      | Minimum 6 dB RF Bandwidth                             | N/A       |                         |
| -       | §15.247(d)          | RSS-247 5.5         | Out-of-Band Emissions - Conducted                     | N/A       |                         |
| 2.2     | §15.247(d)          | RSS-247 5.5         | Band-edge Compliance                                  | Compliant |                         |
| 2.3     | §15.247(d)          | RSS-247 5.5         | Radiated Spurious Emissions                           | Compliant |                         |
| -       | -                   | RSS-Gen 7.3 and 7.4 | Receiver Spurious Emissions                           | N/A*      |                         |
| -       | §15.247(e)          | RSS-247 5.2(b)      | Power Spectral Density for Digitally Modulated Device | N/A       |                         |

N/A Not performed per test plan. The Grantee is seeking Class II Permissive Change for updated antenna used. RF characteristics up to the antenna port as declared by the Grantee remained identical justifying not repeating all original RF conducted measurements.

N/A\* Not required as per RSS-Gen 5.3 The EUT does not fall into any category defined as Receiver under RSS-Gen.



### 1.3 PRODUCT INFORMATION

#### 1.3.1 Technical Description

The Equipment Under Test (EUT) are Avant™, Neutrino™ NxT, Gallant™ and Entrant™ Implantable Cardioverter Defibrillator Device. The EUT are battery-powered device placed under the skin that monitors the heart rate. Special wires connect the EUT to the heart. If an abnormal heart rhythm is detected, the EUT will deliver either pacing therapy if the heart rate is too slow or an electric shock if the heart rate is chaotic or beating too fast. The BLE function of the EUT is verified in this test report.

The Gallant and Entrant series have the same hardware as Avant. The only difference is the firmware for therapy. So, RF functionality is identical. The Neutrino series are the Japanese name and models for Avant and Gallant. Therefore, same exact hardware and firmware as Avant and Gallant. Gallant series models were provided as representative of all other models for evaluation.

Variant models are listed below:

| Product Family | Certified Models |           |           |           |           |           | New Models  |             |
|----------------|------------------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|
|                | VR               | DR        | HF        | DF1 VR    | DF1 DR    | DF1 HF    | Bipolar DF1 | Bipolar DF4 |
| Avant™         | CDVRA700Q        | CDDRA700Q | CDHFA700Q | CDVRA700T | CDDRA700T | CDHFA700T | CDHFA700B   | CDHFA700D   |
| Neutrino™ NxT  | CDVRA800Q        | CDDRA800Q | CDHFA800Q | CDVRA800T | CDDRA800T | CDHFA800T | CDHFA800B   | CDHFA800D   |
| Gallant™       | CDVRA500Q        | CDDRA500Q | CDHFA500Q | CDVRA500T | CDDRA500T | CDHFA500T | CDHFA500B   | CDHFA500D   |
| Neutrino™ NxT  | CDVRA600Q        | CDDRA600Q | CDHFA600Q | CDVRA600T | CDDRA600T | CDHFA600T | CDHFA600B   | CDHFA600D   |
| Entrant™       | CDVRA300Q        | CDDRA300Q | CDHFA300Q | CDVRA300T | CDDRA300T | CDHFA300T | CDHFA300B   | CDHFA300D   |

#### 1.3.2 EUT General Description

|                    |                                                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Description    | Implantable Cardioverter Defibrillator Device                                                                                                          |
| Model Name         | Avant™, Neutrino™ NxT, Gallant™ and Entrant™                                                                                                           |
| Model Numbers      | CDHFA500B and CDHFA500D                                                                                                                                |
| Rated Voltage      | Internal battery (3.0VDC)                                                                                                                              |
| Mode Verified      | Bluetooth LE                                                                                                                                           |
| Capability         | Bluetooth LE                                                                                                                                           |
| Primary Unit (EUT) | <input type="checkbox"/> Production<br><input checked="" type="checkbox"/> Pre-Production<br><input type="checkbox"/> Engineering (same as Production) |



Manufacturer Declared Temperature Range 20°C to 37°C

Antenna Type Integral Wire Monopole Antenna

Manufacturer St. Jude Medical

Antenna Model N/A

Peak Antenna Gain

| Device    | Peak Antenna Gain(dBi) |
|-----------|------------------------|
| CDHFA500B | -15.61                 |
| CDHFA500D | -15.04                 |

### 1.3.3 Maximum Conducted Output Power

| Bluetooth Low Energy (LE)                                                                                        | Frequency Range (MHz) | Measured RMS Power (dBm) |
|------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|
| <br>Conducted Sample NGQ SN04  | 2402-2480             | 2.27                     |
| <br>Conducted Sample NGQ SN02 | 2402-2480             | 2.38                     |



## 1.4 EUT TEST CONFIGURATION

### 1.4.1 Test Configuration Description

| Test Configuration | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default            | <p>The EUT is configured with test software loaded instead of the standard product software. The test software allows for the EUT's Bluetooth radio to be controlled by an external device (eg. Apple iPod Touch). The iPod Touch can configure the EUT for transmit modes covering Low, Mid, and High channels. The manufacturer provided guidance how to program the EUT (OTA_DTM_Hex_Command.xlsx) with power setting set to 6dBm CW.</p> <p>During radiated testing, the EUT must reside in a phantom cylinder filled with tissue simulating liquid to simulate the human body. Due to the physical dimensions of the cylinder including size and weight, some test requirements cannot be practically performed such as the actual height requirement of the EUT in reference to the floor.</p> |

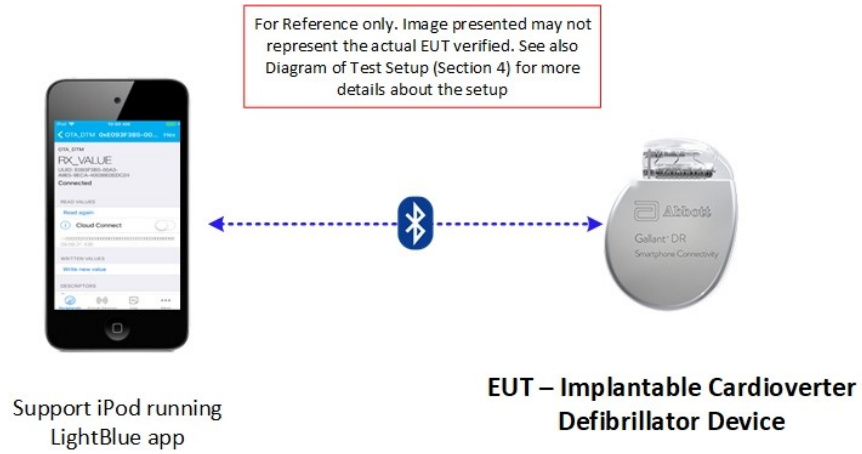
### 1.4.2 EUT Exercise Software

For the RF testing, test firmware is used to control the RF parameters (CW, channels, power, duration, etc.). The support iPod Touch is running LightBlue app V4.1.1.

### 1.4.3 Support Equipment and I/O cables

| Manufacturer | Equipment/Cable | Description                         |
|--------------|-----------------|-------------------------------------|
| Apple        | iPod Touch      | Model MKH62LL/A<br>S/N CCQS92H3GGK6 |

#### 1.4.4 Simplified Test Configuration Diagram





## 1.5 DEVIATIONS FROM THE STANDARD

EUT is a mobile device requiring verification on all three axes. However, since the EUT will be inside a torso simulator simulating placement inside a human body, only two configurations are possible to verify: Front (worse case – the front side/logo of the EUT is facing and is 2cm from the cylinder/simulator wall) and Flipped (the back side of the EUT is facing and is 2cm from the cylinder/simulator wall). These are the only positions possible while maintaining the required separation distance between the EUT and the simulator wall.

## 1.6 MODIFICATION RECORD

| Description of Modification     | Modification Fitted By | Date Modification Fitted |
|---------------------------------|------------------------|--------------------------|
| Serial Number: No modifications |                        |                          |
| N/A                             | -                      | -                        |

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

## 1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

For conducted and radiated emissions, the equipment under test (EUT) was configured to measure its highest possible emission level. This level was based on the maximized cable configuration from exploratory testing per ANSI C63.10-2013. The test modes were adapted according to the Operating Instructions provided by the manufacturer/client.

## 1.8 TEST FACILITY LOCATION

### 1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: (858) 678-1400 FAX: (858) 546-0364

### 1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

16936 Via Del Campo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: (858) 678-1400 FAX: (858) 546-0364.

## 1.9 TEST FACILITY REGISTRATION

### 1.9.1 FCC – Designation No.: US1146

TÜV SÜD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Designation is US1146.



**1.9.2 Innovation, Science and Economic Development Canada (ISED) Registration No.: 3067A-1 & 22806-1**

The 10m Semi-anechoic chamber of TÜV SÜD America Inc. (San Diego Rancho Bernardo) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 3067A-1.

The 3m Semi-anechoic chamber of TÜV SÜD America Inc. (San Diego Mira Mesa) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 22806-1.

**1.9.3 BSMI – Laboratory Code: SL2-IN-E-028R (US0102)**

TÜV Product Service Inc. (San Diego) is a recognized EMC testing laboratory by the BSMI under the MRA (Mutual Recognition Arrangement) with the United States. Accreditation includes CNS 13438 up to 6GHz.

**1.9.4 NCC (National Communications Commission - US0102)**

TÜV SÜD America Inc. (San Diego) is listed as a Foreign Recognized Telecommunication Equipment Testing Laboratory and is accredited to ISO/IEC 17025 (A2LA Certificate No.2955.13) which under APEC TEL MRA Phase 1 was designated as a Conformity Assessment Body competent to perform testing of equipment subject to the Technical Regulations covered under its scope of accreditation including RTTE01, PLMN01 and PLMN08 for TTE type of testing and LP0002 for Low-Power RF Device type of testing.

**1.9.5 VCCI – Registration No. A-0412 and A-0413**

TÜV SÜD America Inc. (San Diego) is a VCCI registered measurement facility which includes radiated field strength measurement, radiated field strength measurement above 1GHz, mains port interference measurement and telecommunication port interference measurement.

**1.9.6 RRA – Identification No. US0102**

TÜV SÜD America Inc. (San Diego) is National Radio Research Agency (RRA) recognized laboratory under Phase I of the APEC Tel MRA.

**1.9.7 OFCA – U.S. Identification No. US0102**

TÜV SÜD America Inc. (San Diego) is recognized by Office of the Communications Authority (OFCA) under Appendix B, Phase I of the APEC Tel MRA.



## SECTION 2

### TEST DETAILS

Radio Testing of the  
St. Jude Medical  
Avant™, Neutrino™ NxT, Gallant™ and Entrant™ Implantable Cardioverter Defibrillator Device



## **2.1 PEAK OUTPUT POWER**

### **2.1.1 Specification Reference**

FCC 47 CFR Part 15, Clause 15.247(b)(3)  
RSS-247, Clause 5.4 (d)

### **2.1.2 Standard Applicable**

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands, the maximum peak conducted output shall not exceed 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

### **2.1.3 Equipment Under Test and Modification State**

Serial No: NGQ SN02, NGQ SN04/ Conducted Test Configuration

### **2.1.4 Date of Test/Initial of test personnel who performed the test**

June 13, 2024 / JS

### **2.1.5 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.1.6 Environmental Conditions (Mira Mesa Facility)**

|                     |           |
|---------------------|-----------|
| Ambient Temperature | 24.6 °C   |
| Relative Humidity   | 52.9 %    |
| ATM Pressure        | 100.1 kPa |

### **2.1.7 Additional Observations**

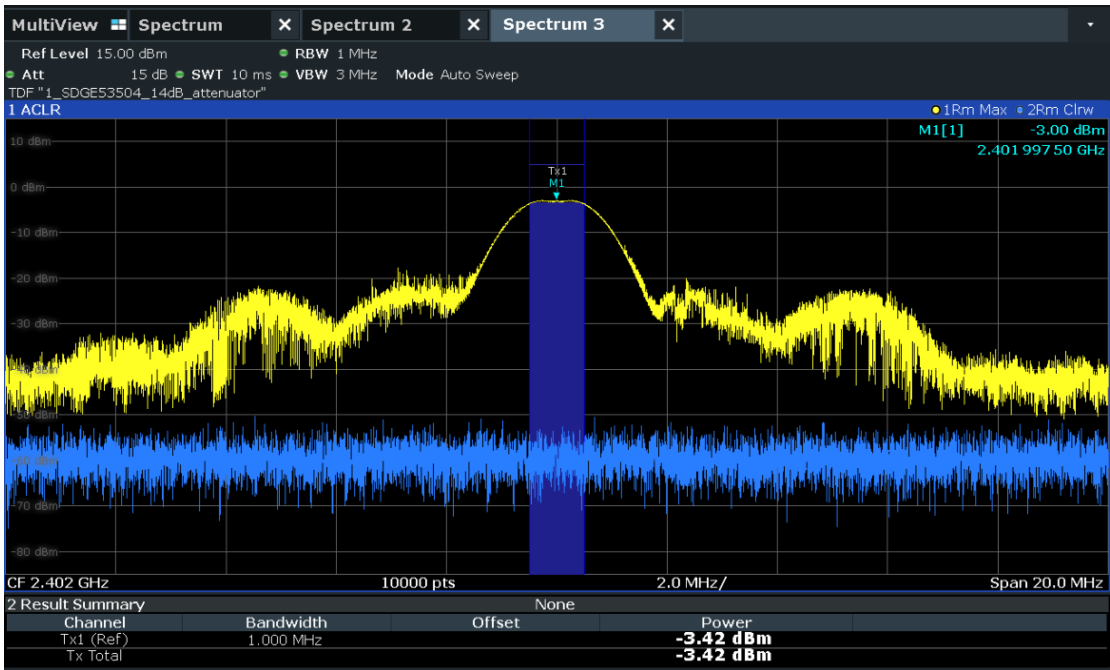
- This is a conducted test through the EUT antenna port.
- Test were performed on Low, Middle and High channels.
- This test was performed in normal conditions.



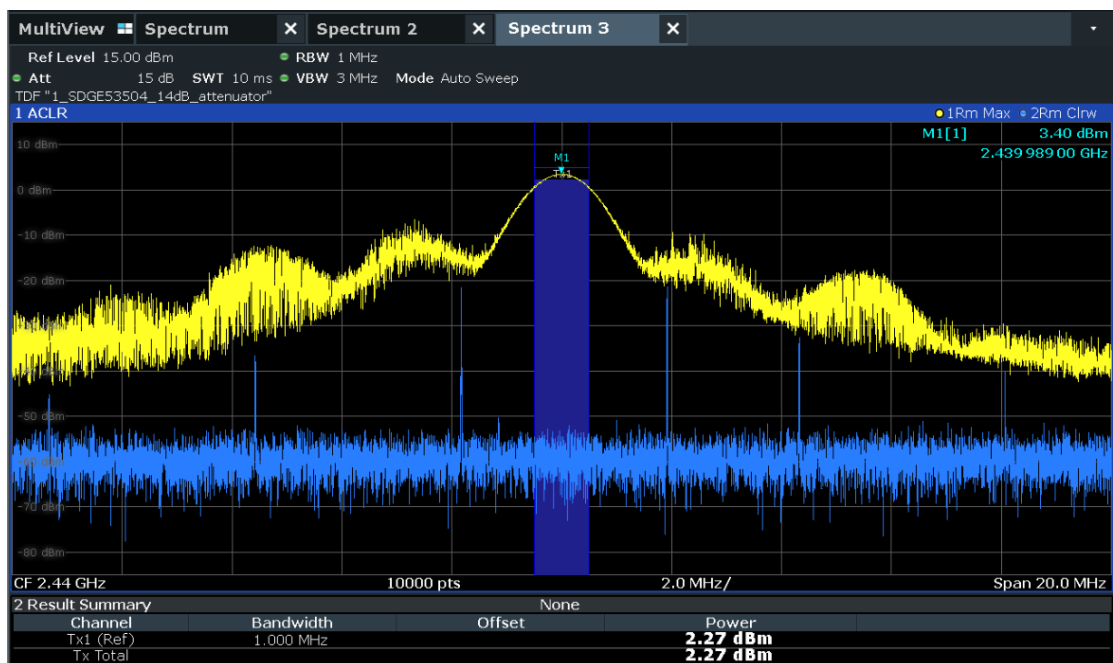
2.1.8 Test Results for Conducted Samples

| Bluetooth Low Energy (LE)                                                                                      | Low channel (2402 MHz) | Mid channel (2440 MHz) | High channel (2480 MHz) | Limit Max (dBm) | Result |
|----------------------------------------------------------------------------------------------------------------|------------------------|------------------------|-------------------------|-----------------|--------|
| <br>Conducted Sample NGQ SN04 | -3.42 dBm              | 2.27 dBm               | 1.80 dBm                | 30.0            | Pass   |
| <br>Conducted Sample NGQ SN02 | -3.23 dBm              | 2.38 dBm               | 2.02 dBm                | 30.0            | Pass   |

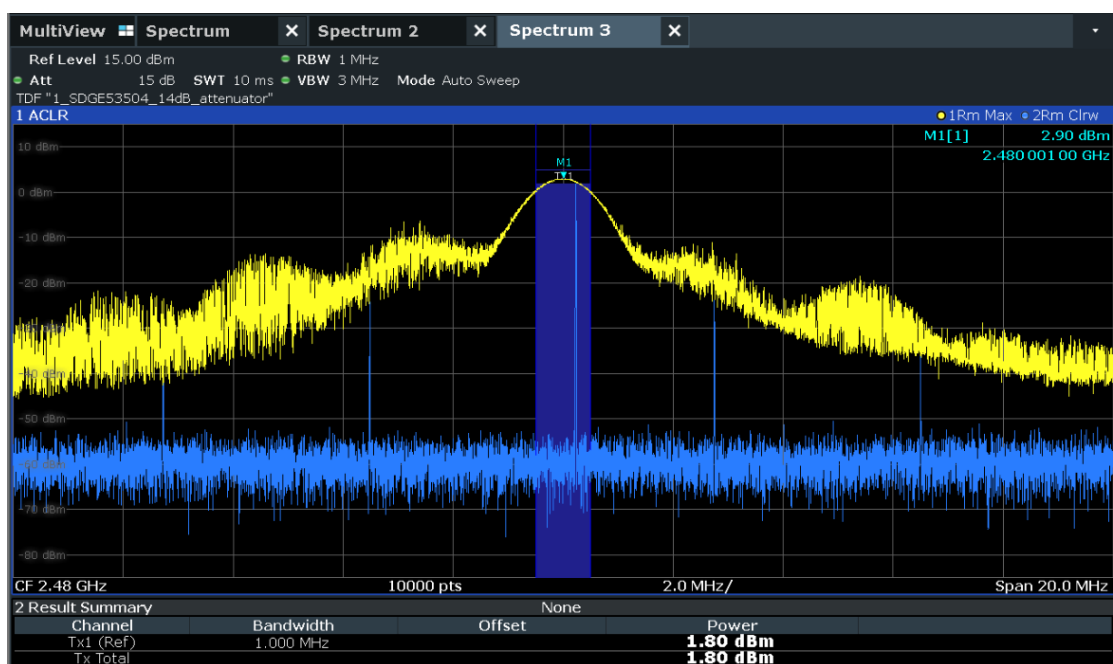
2.1.9 Test Plots



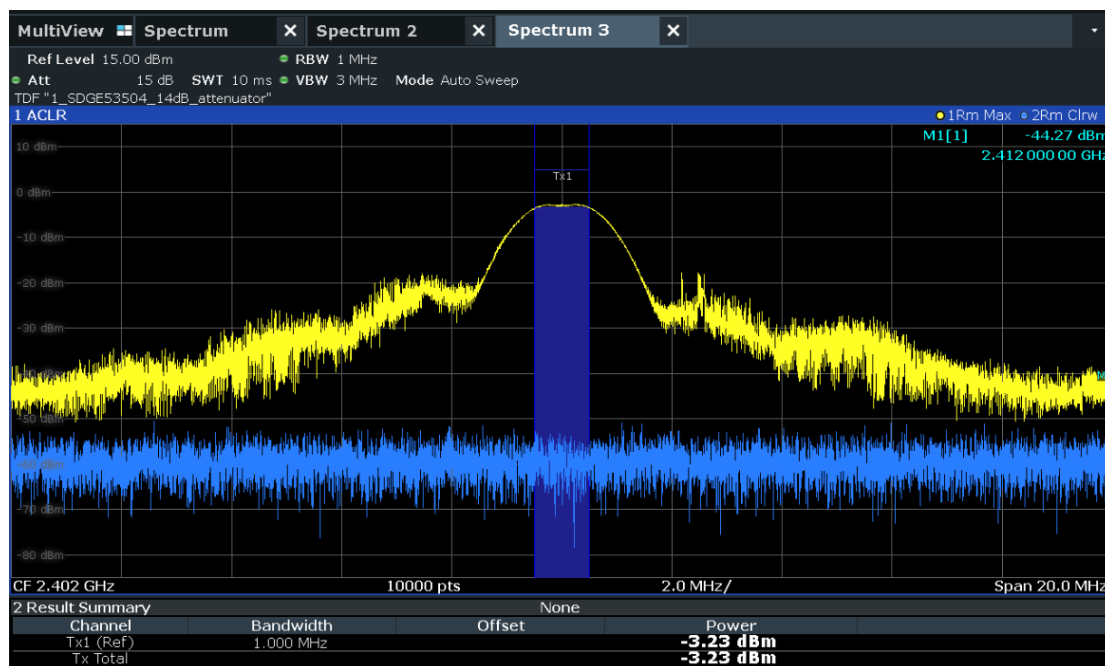
NGQ SN04 Low Channel



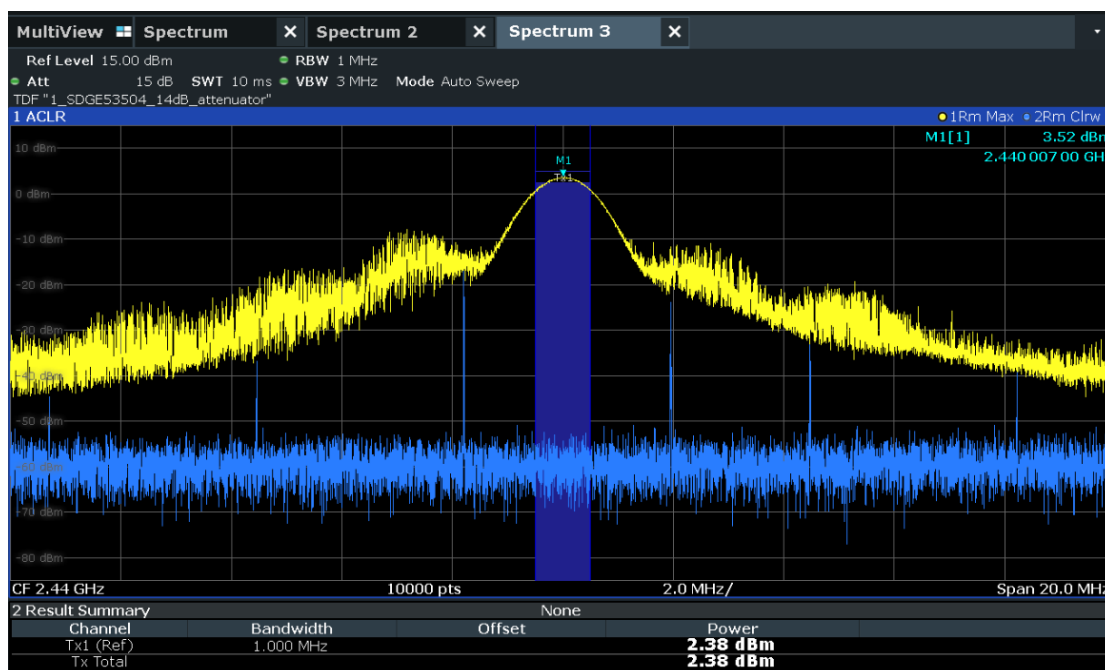
NGQ SN04 Mid Channel



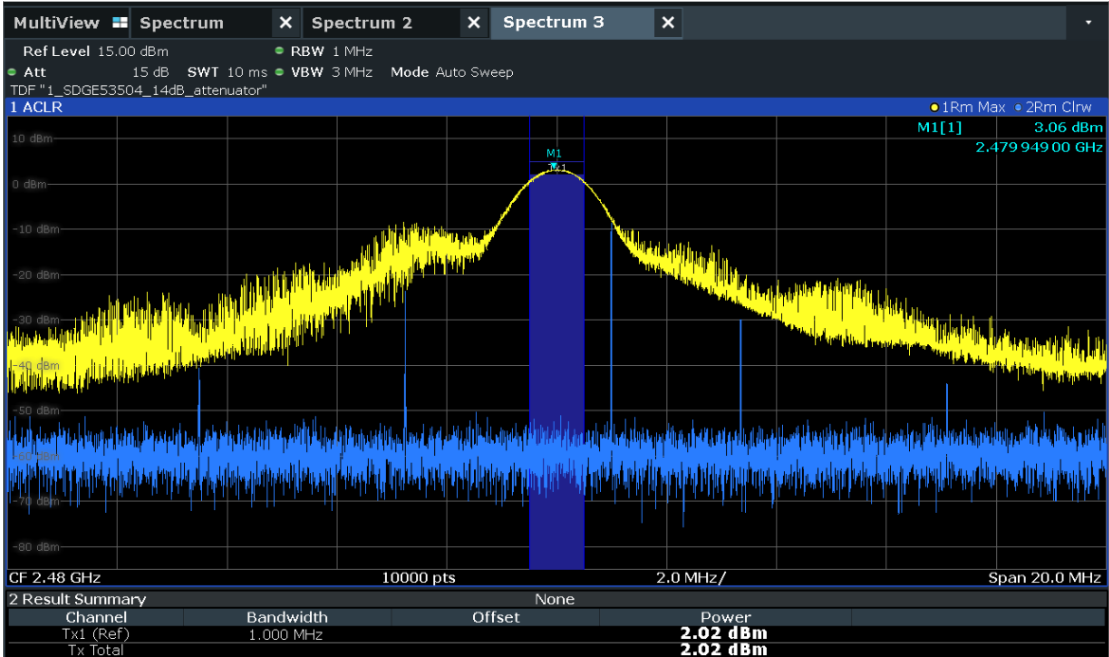
NGQ SN04 High Channel



NGQ SN02 Low Channel



NGQ SN02 Mid Channel



NGQ SN02 High Channel



## 2.2 BAND-EDGE COMPLIANCE

### 2.2.1 Specification Reference

FCC 47 CFR Part 15, Clause 15.247(d)  
FCC 47 CFR Part 15, Clause 15.205  
RSS-247, Clause 5.5

### 2.2.1 Standard Applicable

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)).

### 2.2.2 Equipment Under Test and Modification State

Serial No: 210007976, 210007980 / Default Radiated Test Configuration

### 2.2.3 Date of Test/Initial of test personnel who performed the test

June 03 to 09, 2023 / JS

### 2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.2.5 Environmental Conditions (Mira Mesa Facility)

|                     |          |
|---------------------|----------|
| Ambient Temperature | 28.6 °C  |
| Relative Humidity   | 42.1 %   |
| ATM Pressure        | 99.5 kPa |

### 2.2.6 Additional Observations

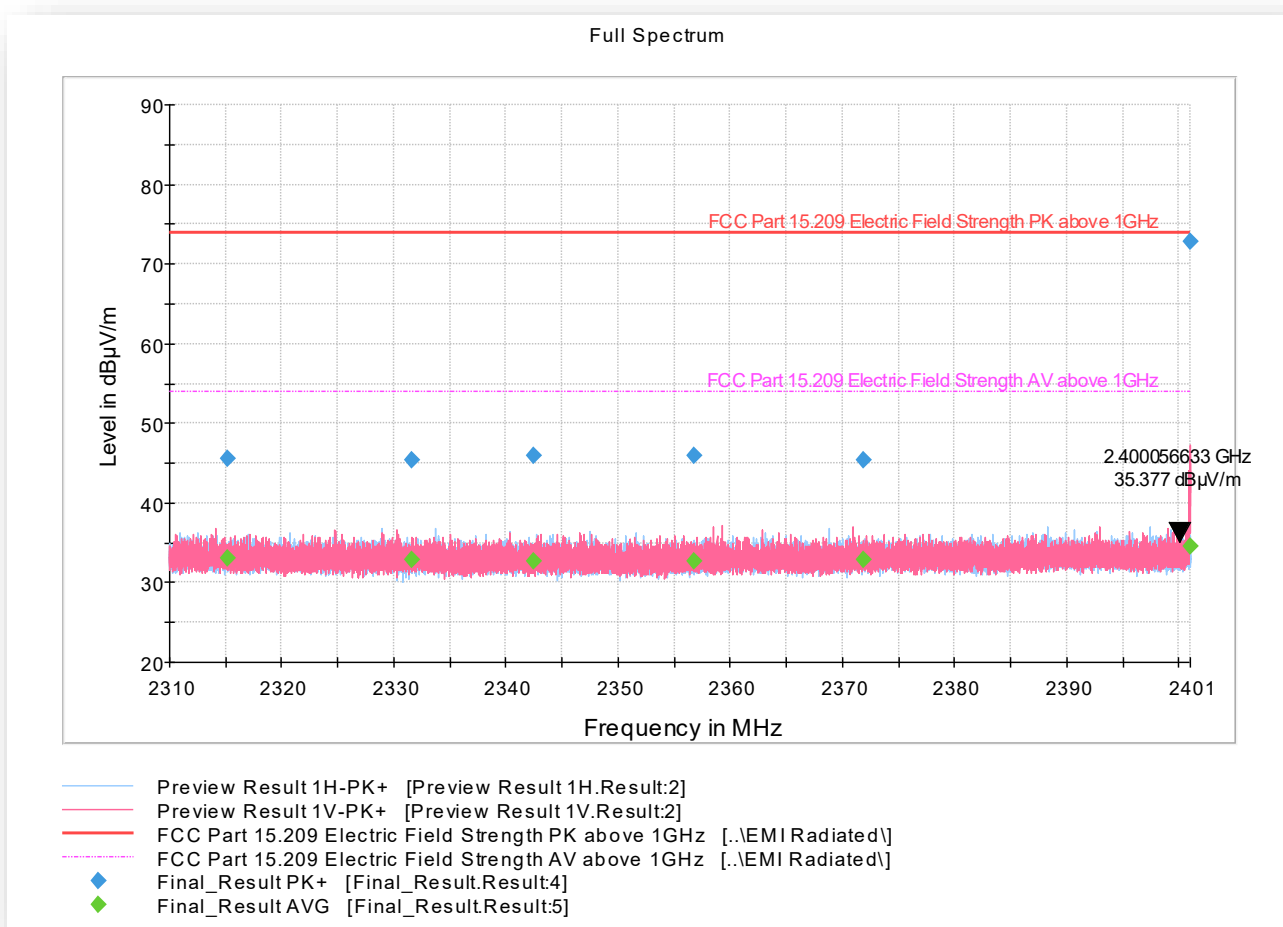
- This is a radiated test. The spectrum was searched from 2310MHz to 2400MHz for Lower Band Edge and 2483.5MHz to 2500MHz for Upper Band Edge verifications. This ensures coverage of immediate restricted bands.
- There are no emissions found that do not comply to the restricted bands defined in FCC Part 15 Subpart C, 15.205 or Part 15.247(d).
- Only Low and High Channels are presented as required.
- Measurement was done using EMC32 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.2.7 for sample computation.



### 2.2.7 Sample Computation (Radiated Emission)

|                                                             |                       |      |      |
|-------------------------------------------------------------|-----------------------|------|------|
| Measuring equipment raw measurement (db $\mu$ V) @ 30 MHz   |                       |      | -0.8 |
| Correction Factor (dB/m)                                    | Asset# 1066 (cable)   | 18.1 | 12.6 |
|                                                             | Asset# 1172 (cable)   | 0.3  |      |
|                                                             | Asset# 1175(cable)    | 0.3  |      |
|                                                             | Asset# 1002 (antenna) | 17.2 |      |
| Reported QuasiPeak Final Measurement (db $\mu$ V/m) @ 30MHz |                       |      | 11.8 |

## 2.2.8 Test Results for Lower Band Edge (500B)



## Peak Data

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2315.20000      | 45.60            | 73.90          | 28.30       | 1000.0          | 1000.000        | 283.0       | V   | 250.0         | 4            |
| 2331.59473      | 45.48            | 73.90          | 28.42       | 1000.0          | 1000.000        | 353.0       | H   | 93.0          | 4            |
| 2342.49086      | 45.90            | 73.90          | 28.00       | 1000.0          | 1000.000        | 186.0       | H   | 12.0          | 4            |
| 2356.69773      | 45.90            | 73.90          | 28.00       | 1000.0          | 1000.000        | 203.0       | V   | 52.0          | 4            |
| 2371.91540      | 45.39            | 73.90          | 28.51       | 1000.0          | 1000.000        | 123.0       | V   | 121.0         | 4            |
| 2401.00000      | 72.75            | 73.90          | 1.15        | 1000.0          | 1000.000        | 192.0       | V   | 54.0          | 4            |

**Test Notes:** Marker at 2400 MHz (Low edge, not in restricted band) measures attenuation greater than 30 dB based on the fundamental measurement of Section 2.3.18 of this test report. EUT complies.

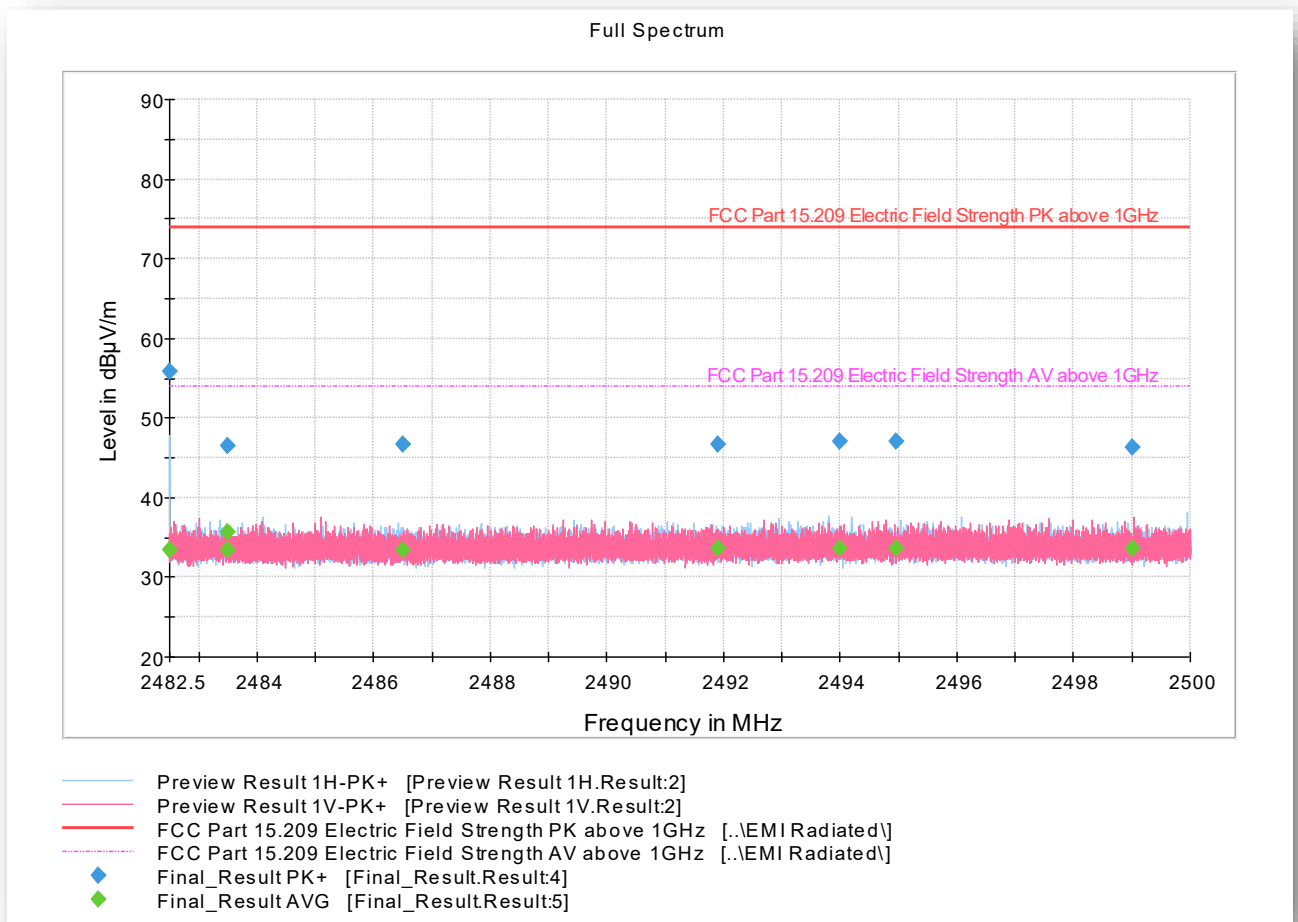


## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2315.20000      | 32.98            | 53.90          | 20.92       | 1000.0          | 1000.000        | 283.0       | V   | 250.0         | 4            |
| 2331.59473      | 32.87            | 53.90          | 21.03       | 1000.0          | 1000.000        | 353.0       | H   | 93.0          | 4            |
| 2342.49086      | 32.76            | 53.90          | 21.14       | 1000.0          | 1000.000        | 186.0       | H   | 12.0          | 4            |
| 2356.69773      | 32.67            | 53.90          | 21.23       | 1000.0          | 1000.000        | 203.0       | V   | 52.0          | 4            |
| 2371.91540      | 32.82            | 53.90          | 21.08       | 1000.0          | 1000.000        | 123.0       | V   | 121.0         | 4            |
| 2401.00000      | 34.54            | 53.90          | 19.36       | 1000.0          | 1000.000        | 192.0       | V   | 54.0          | 4            |

**Test Notes:** Limits used for band edge verifications (not in restricted bands) are based on fundamental measurement of Section 2.3.18 of this test report.

## 2.2.9 Test Results for Upper Band Edge (500B)



## Peak Data

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2482.50000      | 55.85            | 73.90          | 18.05       | 1000.0          | 1000.000        | 172.0       | H   | 55.0          | 4            |
| 2483.50000      | 46.45            | 73.90          | 27.45       | 1000.0          | 1000.000        | 328.0       | H   | 90.0          | 4            |
| 2486.50000      | 46.72            | 73.90          | 27.18       | 1000.0          | 1000.000        | 363.0       | V   | 274.0         | 4            |
| 2491.90000      | 46.65            | 73.90          | 27.25       | 1000.0          | 1000.000        | 363.0       | H   | 139.0         | 4            |
| 2493.98766      | 47.05            | 73.90          | 26.85       | 1000.0          | 1000.000        | 107.0       | H   | 251.0         | 4            |
| 2494.95216      | 47.04            | 73.90          | 26.86       | 1000.0          | 1000.000        | 203.0       | H   | 135.0         | 4            |
| 2499.00000      | 46.35            | 73.90          | 27.55       | 1000.0          | 1000.000        | 363.0       | H   | 239.0         | 4            |

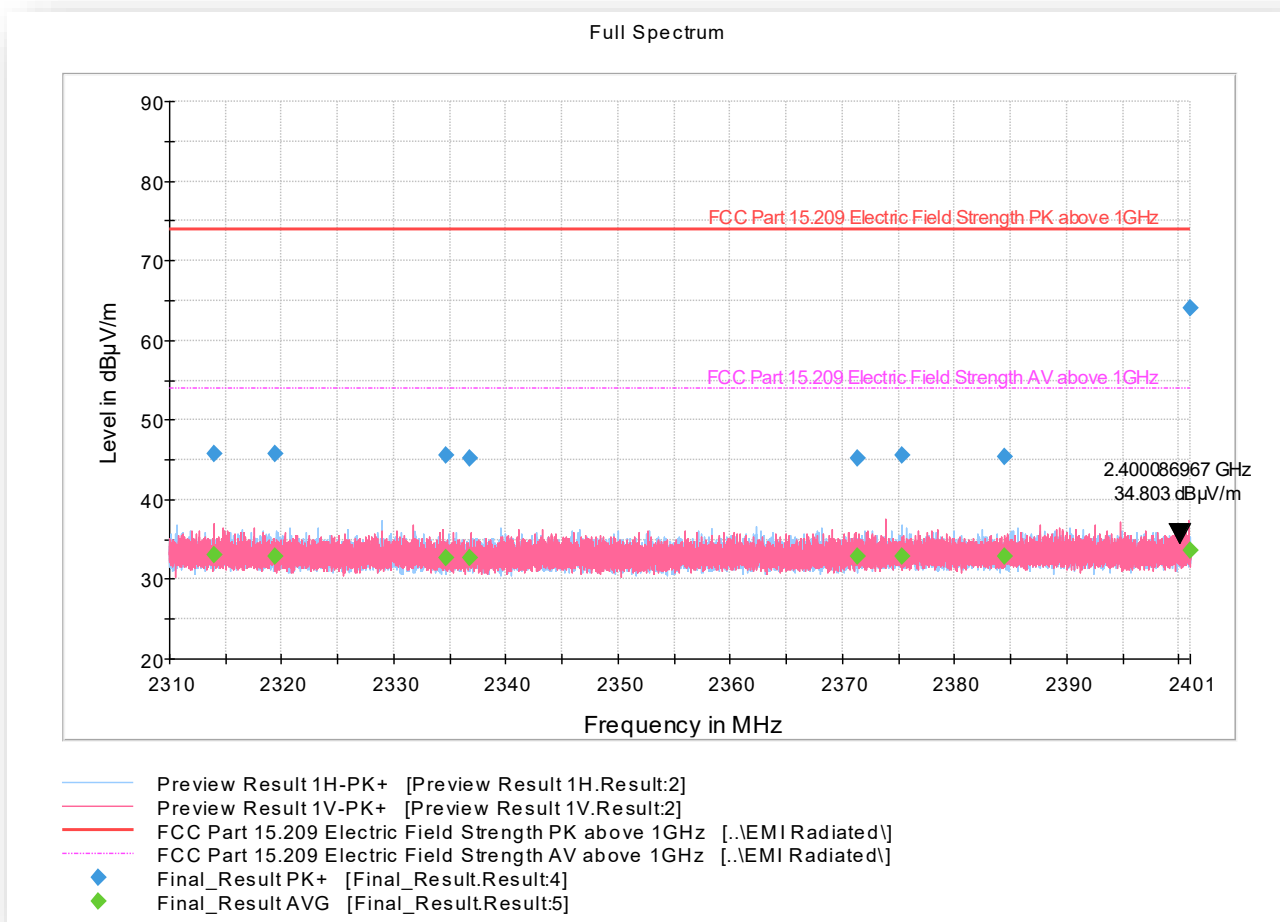


## 2.2.10 Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2482.50000      | 33.51            | 53.90          | 20.39       | 1000.0          | 1000.000        | 172.0       | H   | 55.0          | 4            |
| 2483.50000      | 35.66            | 53.90          | 20.44       | 1000.0          | 1000.000        | 328.0       | H   | 90.0          | 4            |
| 2486.50000      | 33.37            | 53.90          | 20.53       | 1000.0          | 1000.000        | 363.0       | V   | 274.0         | 4            |
| 2491.90000      | 33.60            | 53.90          | 20.30       | 1000.0          | 1000.000        | 363.0       | H   | 139.0         | 4            |
| 2493.98766      | 33.66            | 53.90          | 20.24       | 1000.0          | 1000.000        | 107.0       | H   | 251.0         | 4            |
| 2494.95216      | 33.66            | 53.90          | 20.24       | 1000.0          | 1000.000        | 203.0       | H   | 135.0         | 4            |
| 2499.00000      | 33.58            | 53.90          | 20.32       | 1000.0          | 1000.000        | 363.0       | H   | 239.0         | 4            |

**Test Notes:** All emissions observed complies with §15.205(c) limits (upper band edge is within a restricted band).

## 2.2.11 Test Results for Lower Band Edge (500D)



## Peak Data

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2314.00000      | 45.75            | 73.90          | 28.15       | 1000.0          | 1000.000        | 246.0       | V   | 140.0         | 4            |
| 2319.40000      | 45.67            | 73.90          | 28.23       | 1000.0          | 1000.000        | 256.0       | V   | 142.0         | 4            |
| 2334.69160      | 45.64            | 73.90          | 28.26       | 1000.0          | 1000.000        | 103.0       | H   | 37.0          | 4            |
| 2336.69706      | 45.23            | 73.90          | 28.67       | 1000.0          | 1000.000        | 314.0       | H   | 50.0          | 4            |
| 2371.28556      | 45.26            | 73.90          | 28.64       | 1000.0          | 1000.000        | 328.0       | H   | 24.0          | 4            |
| 2375.29413      | 45.62            | 73.90          | 28.28       | 1000.0          | 1000.000        | 327.0       | V   | 170.0         | 4            |
| 2384.49413      | 45.45            | 73.90          | 28.45       | 1000.0          | 1000.000        | 312.0       | V   | 132.0         | 4            |
| 2401.00000      | 64.00            | 73.90          | 9.90        | 1000.0          | 1000.000        | 335.0       | V   | 187.0         | 4            |

**Test Notes:** Marker at 2400 MHz (Low edge, not in restricted band) measures attenuation greater than 30 dB based on the fundamental measurement of Section 2.3.31 of this test report. EUT complies.

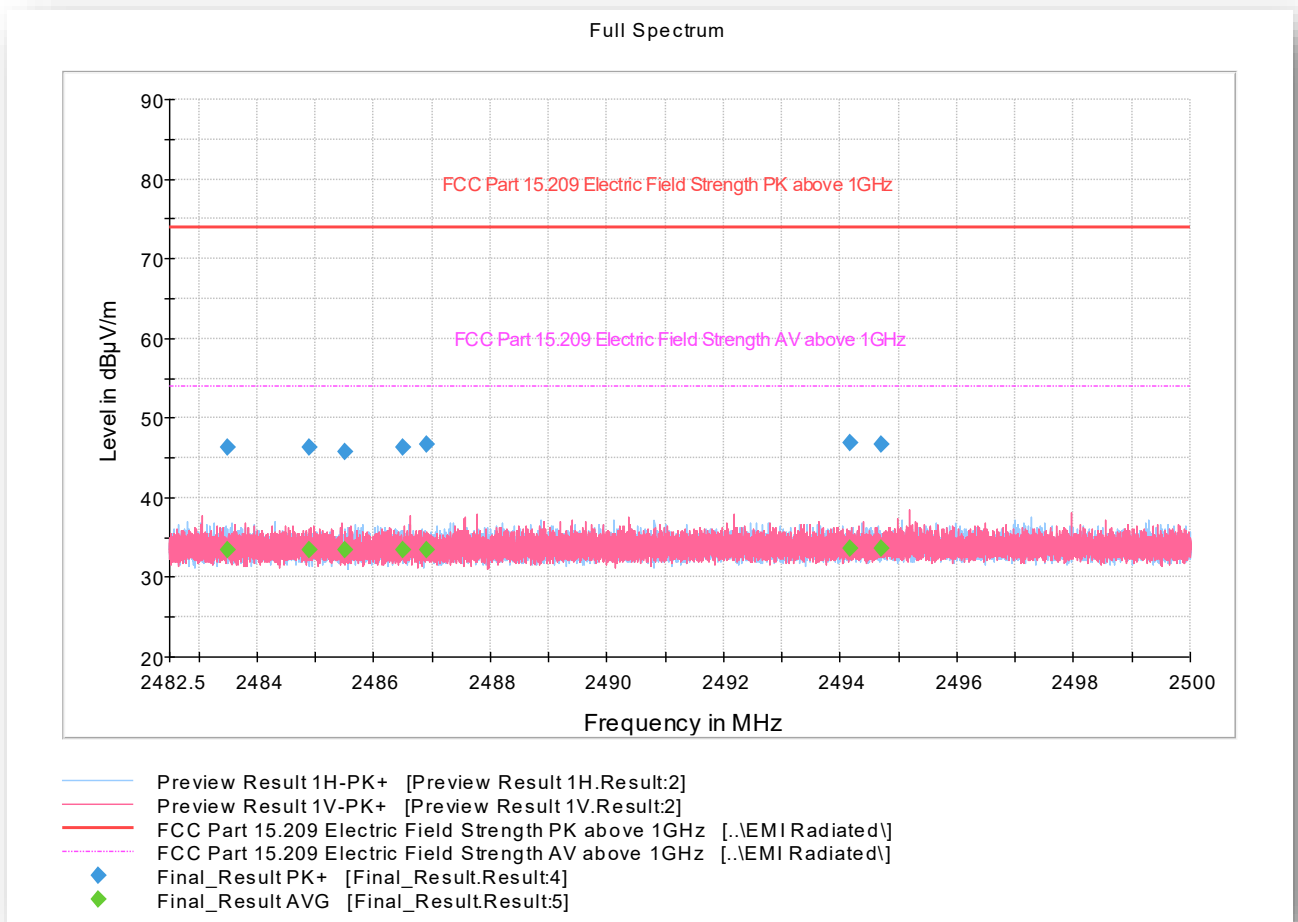


## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2314.00000      | 32.99            | 53.90          | 20.91       | 1000.0          | 1000.000        | 246.0       | V   | 140.0         | 4            |
| 2319.40000      | 32.83            | 53.90          | 21.07       | 1000.0          | 1000.000        | 256.0       | V   | 142.0         | 4            |
| 2334.69160      | 32.73            | 53.90          | 21.17       | 1000.0          | 1000.000        | 103.0       | H   | 37.0          | 4            |
| 2336.69706      | 32.69            | 53.90          | 21.21       | 1000.0          | 1000.000        | 314.0       | H   | 50.0          | 4            |
| 2371.28556      | 32.81            | 53.90          | 21.09       | 1000.0          | 1000.000        | 328.0       | H   | 24.0          | 4            |
| 2375.29413      | 32.93            | 53.90          | 20.97       | 1000.0          | 1000.000        | 327.0       | V   | 170.0         | 4            |
| 2384.49413      | 32.89            | 53.90          | 21.01       | 1000.0          | 1000.000        | 312.0       | V   | 132.0         | 4            |
| 2401.00000      | 33.65            | 53.90          | 20.25       | 1000.0          | 1000.000        | 335.0       | V   | 187.0         | 4            |

**Test Notes:** Limits used for band edge verifications (not in restricted bands) are based on fundamental measurement of Section 2.3.31 of this test report.

## 2.2.12 Test Results for Upper Band Edge (500D)



## Peak Data

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2483.50000      | 46.24            | 73.90          | 27.66       | 1000.0          | 1000.000        | 169.0       | V   | 276.0         | 4            |
| 2484.90000      | 46.29            | 73.90          | 27.61       | 1000.0          | 1000.000        | 365.0       | V   | 216.0         | 4            |
| 2485.50000      | 45.83            | 73.90          | 28.07       | 1000.0          | 1000.000        | 238.0       | H   | 190.0         | 4            |
| 2486.50000      | 46.38            | 73.90          | 27.52       | 1000.0          | 1000.000        | 250.0       | V   | 172.0         | 4            |
| 2486.90000      | 46.78            | 73.90          | 27.12       | 1000.0          | 1000.000        | 316.0       | V   | 200.0         | 4            |
| 2494.16825      | 46.92            | 73.90          | 26.98       | 1000.0          | 1000.000        | 363.0       | V   | 334.0         | 4            |
| 2494.70000      | 46.65            | 73.90          | 27.25       | 1000.0          | 1000.000        | 107.0       | V   | 287.0         | 4            |



### Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2483.50000      | 33.39            | 53.90          | 20.51       | 1000.0          | 1000.000        | 169.0       | V   | 276.0         | 4            |
| 2484.90000      | 33.38            | 53.90          | 20.52       | 1000.0          | 1000.000        | 365.0       | V   | 216.0         | 4            |
| 2485.50000      | 33.37            | 53.90          | 20.53       | 1000.0          | 1000.000        | 238.0       | H   | 190.0         | 4            |
| 2486.50000      | 33.36            | 53.90          | 20.54       | 1000.0          | 1000.000        | 250.0       | V   | 172.0         | 4            |
| 2486.90000      | 33.37            | 53.90          | 20.53       | 1000.0          | 1000.000        | 316.0       | V   | 200.0         | 4            |
| 2494.16825      | 33.65            | 53.90          | 20.25       | 1000.0          | 1000.000        | 363.0       | V   | 334.0         | 4            |
| 2494.70000      | 33.65            | 53.90          | 20.25       | 1000.0          | 1000.000        | 107.0       | V   | 287.0         | 4            |

**Test Notes:** All emissions observed complies with §15.205(c) limits (upper band edge is within a restricted band).



## **2.3 RADIATED SPURIOUS EMISSIONS**

### **2.3.1 Specification Reference**

FCC 47 CFR Part 15, Clause 15.247(d)  
RSS-247, Clause 5.5

### **2.3.2 Standard Applicable**

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)).

### **2.3.3 Equipment Under Test and Modification State**

Serial No: 210007976, 210007980 / Default Test Configuration

### **2.3.4 Date of Test/Initial of test personnel who performed the test**

June 03 to 09, 2023 / JS

### **2.3.5 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.3.6 Environmental Conditions (Mira Mesa Facility)**

|                     |          |
|---------------------|----------|
| Ambient Temperature | 28.6 °C  |
| Relative Humidity   | 42.1 %   |
| ATM Pressure        | 99.5 kPa |

### **2.3.7 Additional Observations**

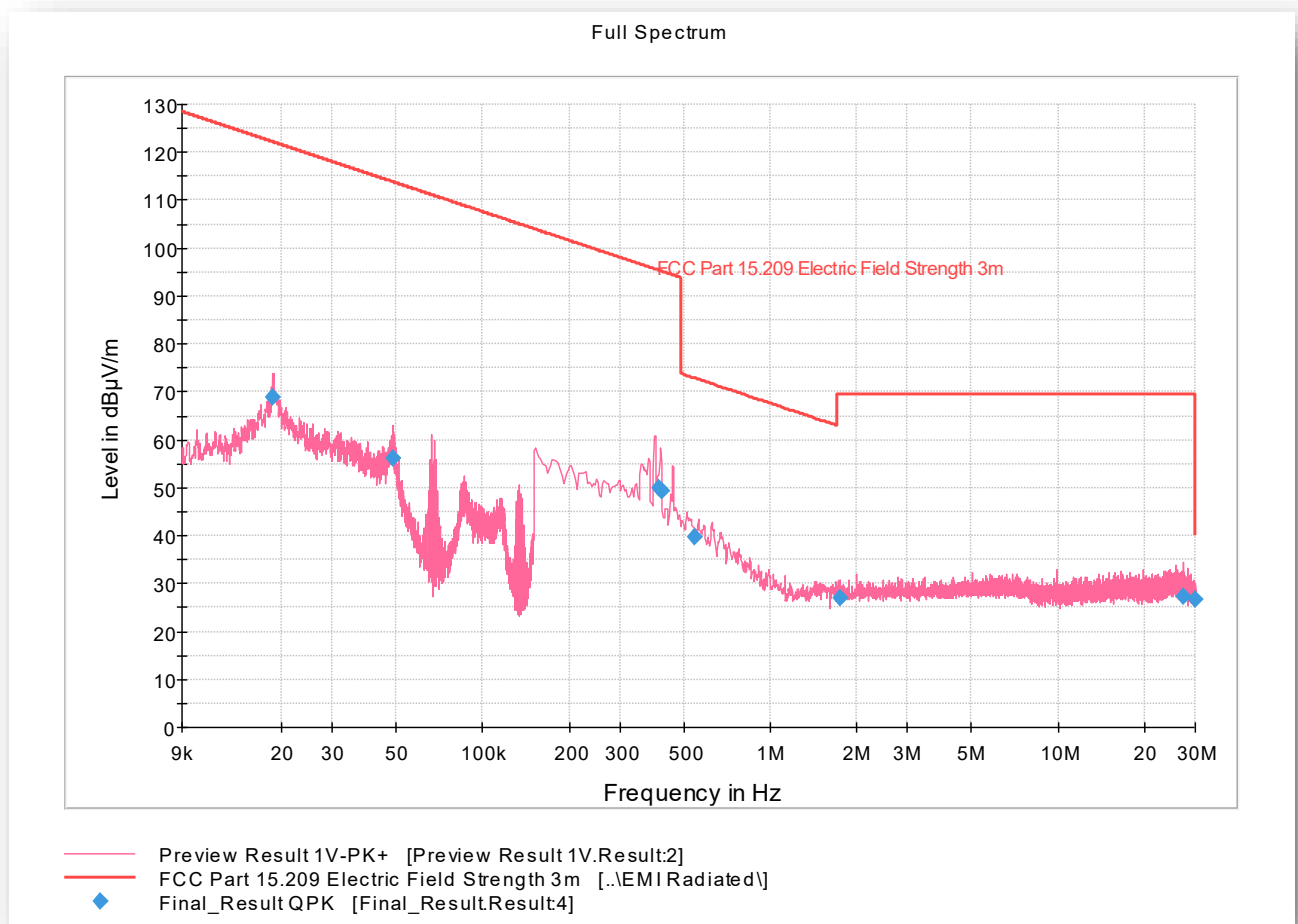
- This is a radiated test. The spectrum was searched from 9kHz to the 10<sup>th</sup> harmonic.
- There are no emissions found that do not comply to the restricted bands defined in FCC Part 15 Subpart C, 15.205 or Part 15.247(d).
- Only the worst case BLE Channel and axis presented per model.
- Measurement was done using EMC32 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.3.8 for sample computation.
- The EUT was tested in a liquid cylinder.
- The EUT was removed from the liquid cylinder only for a EIRP measurement to verify the SAR exposure to the consumer.



### 2.3.8 Sample Computation (Radiated Emission)

|                                                       |                       |      |      |
|-------------------------------------------------------|-----------------------|------|------|
| Measuring equipment raw measurement (dBμV) @ 30 MHz   |                       |      | -0.8 |
| Correction Factor (dB/m)                              | Asset# 1066 (cable)   | 18.1 | 12.6 |
|                                                       | Asset# 1172 (cable)   | 0.3  |      |
|                                                       | Asset# 1175(cable)    | 0.3  |      |
|                                                       | Asset# 1002 (antenna) | 17.2 |      |
| Reported QuasiPeak Final Measurement (dBμV/m) @ 30MHz |                       |      | 11.8 |

### 2.3.9 Test Results for 9kHz to 30MHz (500B) High Channel

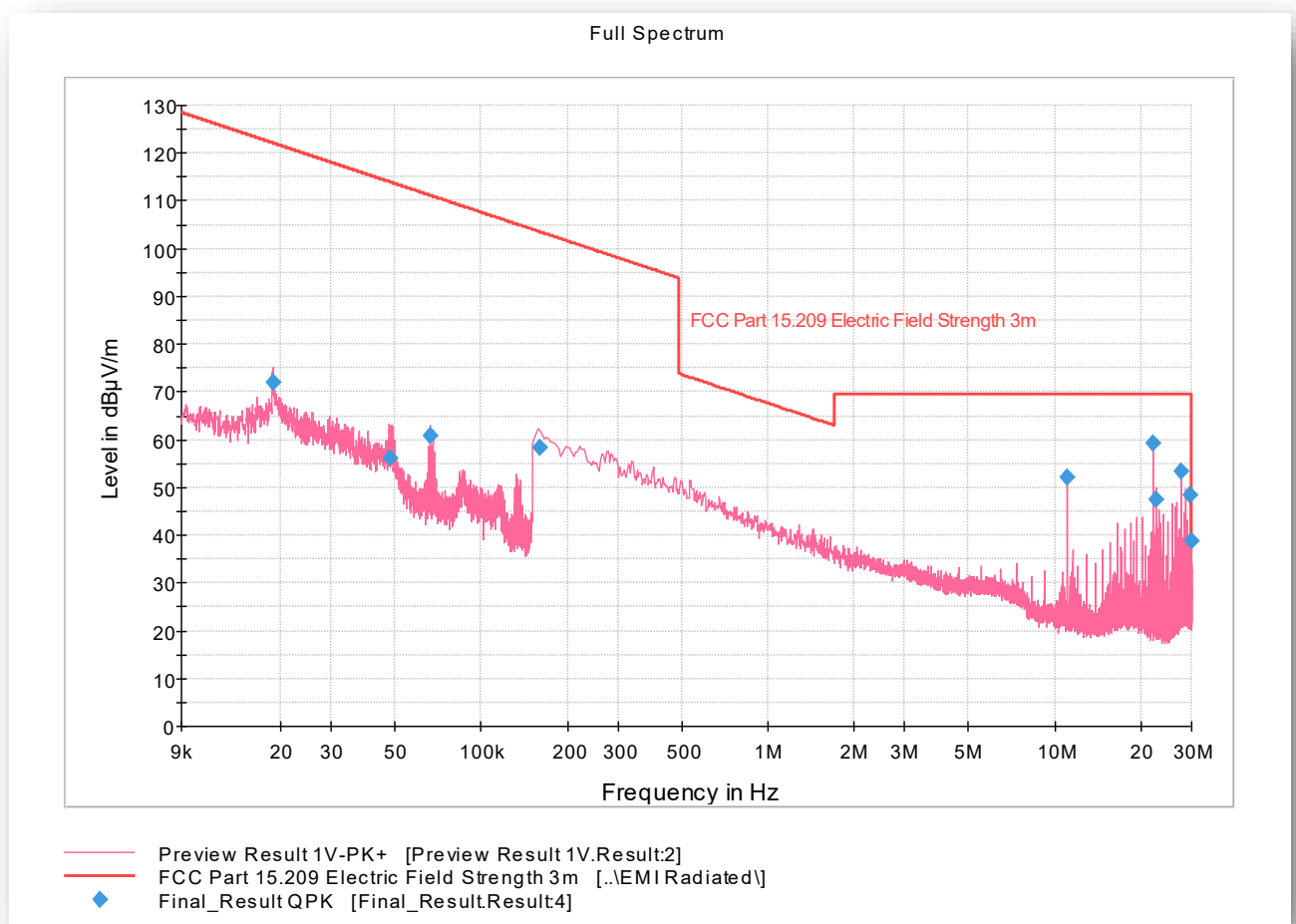


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018676        | 68.82              | 122.17         | 53.35       | 1000.           | 0.200           | 400.0       | H   | 254.0         | 22           |
| 0.048832        | 56.07              | 113.83         | 57.76       | 1000.           | 0.200           | 400.0       | H   | 230.0         | 20           |
| 0.408270        | 49.95              | 95.39          | 45.43       | 1000.           | 9.000           | 400.0       | H   | 245.0         | 19           |
| 0.420685        | 49.40              | 95.12          | 45.72       | 1000.           | 9.000           | 400.0       | H   | 11.0          | 19           |
| 0.542100        | 39.71              | 72.92          | 33.21       | 1000.           | 9.000           | 400.0       | H   | 305.0         | 20           |
| 1.747474        | 26.97              | 69.50          | 42.53       | 1000.           | 9.000           | 400.0       | H   | 204.0         | 20           |
| 27.160844       | 27.38              | 69.50          | 42.12       | 1000.           | 9.000           | 400.0       | H   | 62.0          | 25           |
| 29.998310       | 26.77              | 69.50          | 42.73       | 1000.           | 9.000           | 400.0       | H   | 292.0         | 25           |

**Test Notes:** Loop antenna HFH2-Z2335 utilized for this test.

### 2.3.10 Test Results for 9kHz to 30MHz (500B) Mid Channel

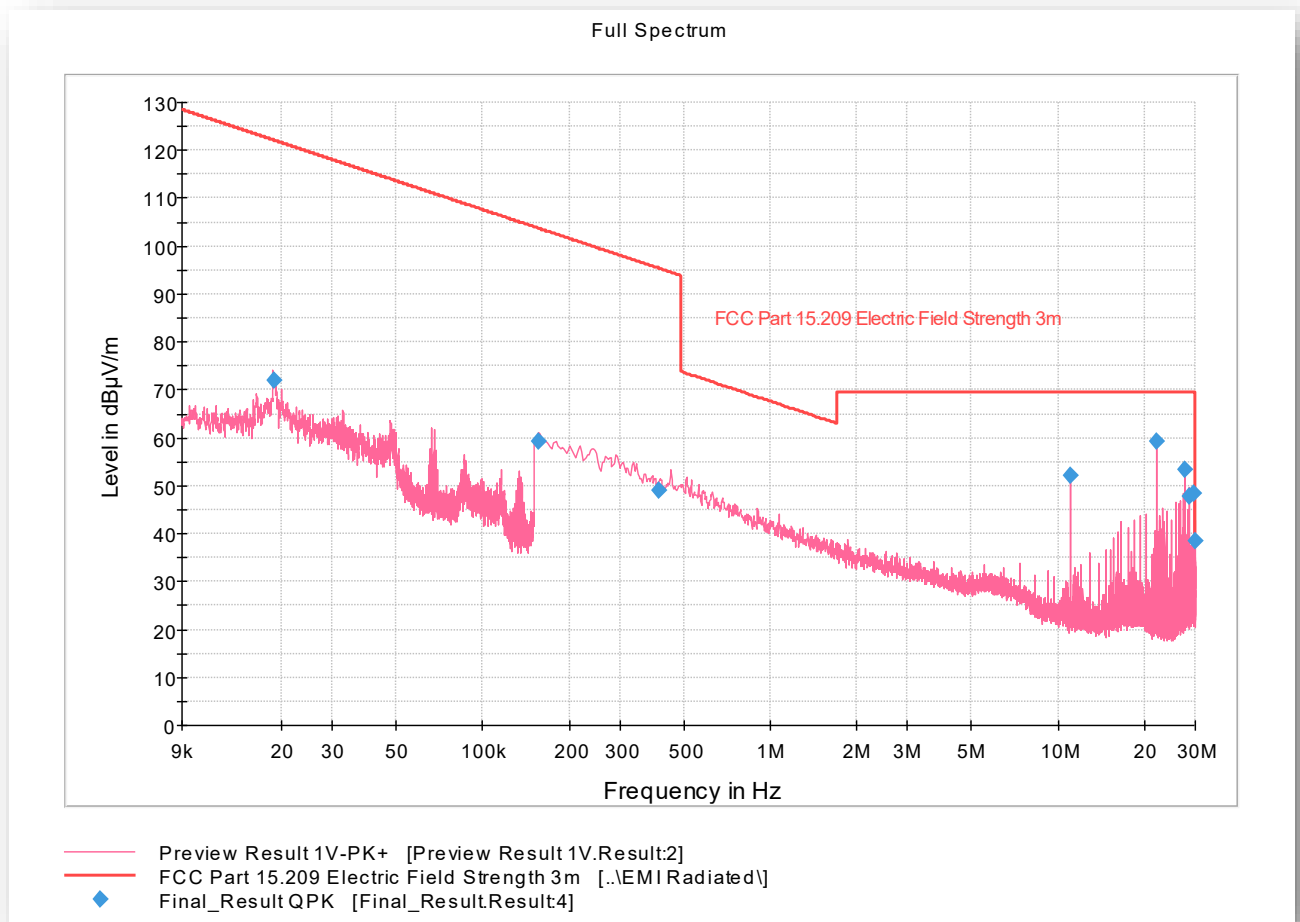


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018789        | 72.09              | 122.12         | 50.03       | 1000.           | 0.200           | 400.0       | H   | 326.0         | 15           |
| 0.047950        | 56.29              | 113.98         | 57.69       | 1000.           | 0.200           | 400.0       | H   | 229.0         | 14           |
| 0.066603        | 60.77              | 111.13         | 50.36       | 1000.           | 0.200           | 400.0       | H   | 157.0         | 14           |
| 0.159500        | 58.18              | 103.55         | 45.37       | 1000.           | 9.000           | 400.0       | H   | 16.0          | 14           |
| 11.059874       | 52.07              | 69.50          | 17.43       | 1000.           | 9.000           | 400.0       | H   | 26.0          | 15           |
| 22.119997       | 59.23              | 69.50          | 10.27       | 1000.           | 9.000           | 400.0       | H   | 186.0         | 14           |
| 22.581369       | 47.45              | 69.50          | 22.05       | 1000.           | 9.000           | 400.0       | H   | 335.0         | 14           |
| 27.650536       | 53.52              | 69.50          | 15.98       | 1000.           | 9.000           | 400.0       | H   | 107.0         | 13           |
| 29.493068       | 48.46              | 69.50          | 21.04       | 1000.           | 9.000           | 400.0       | H   | 153.0         | 13           |
| 29.954225       | 38.86              | 69.50          | 30.64       | 1000.           | 9.000           | 400.0       | H   | 74.0          | 13           |

**Test Notes:** Loop antenna AL-130R utilized for this test.

### 2.3.11 Test Results for 9kHz to 30MHz (500B) Low Channel

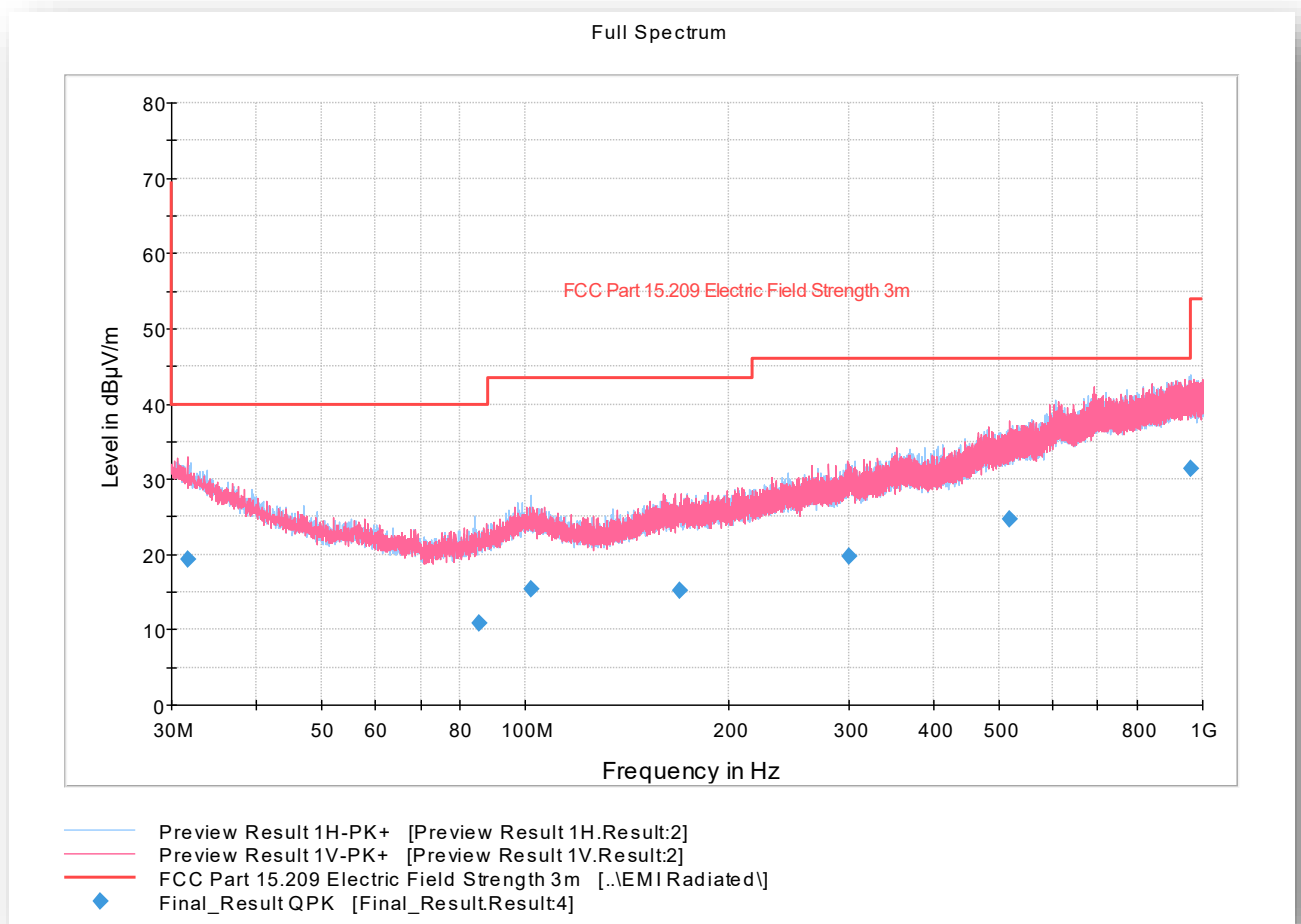


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018770        | 71.86              | 122.13         | 50.26       | 1000.           | 0.200           | 400.0       | H   | 255.0         | 15           |
| 0.155500        | 59.26              | 103.77         | 44.50       | 1000.           | 9.000           | 400.0       | H   | 262.0         | 14           |
| 0.408000        | 49.00              | 95.39          | 46.39       | 1000.           | 9.000           | 400.0       | H   | 6.0           | 14           |
| 11.059874       | 52.13              | 69.50          | 17.37       | 1000.           | 9.000           | 400.0       | H   | 262.0         | 15           |
| 22.119997       | 59.27              | 69.50          | 10.23       | 1000.           | 9.000           | 400.0       | H   | 56.0          | 14           |
| 27.650536       | 53.52              | 69.50          | 15.98       | 1000.           | 9.000           | 400.0       | H   | 48.0          | 13           |
| 28.572309       | 47.90              | 69.50          | 21.60       | 1000.           | 9.000           | 400.0       | H   | 262.0         | 13           |
| 29.494068       | 48.54              | 69.50          | 20.96       | 1000.           | 9.000           | 400.0       | H   | 76.0          | 13           |
| 29.953230       | 38.46              | 69.50          | 31.04       | 1000.           | 9.000           | 400.0       | H   | 215.0         | 13           |

**Test Notes:** Loop antenna AL-130R utilized for this test.

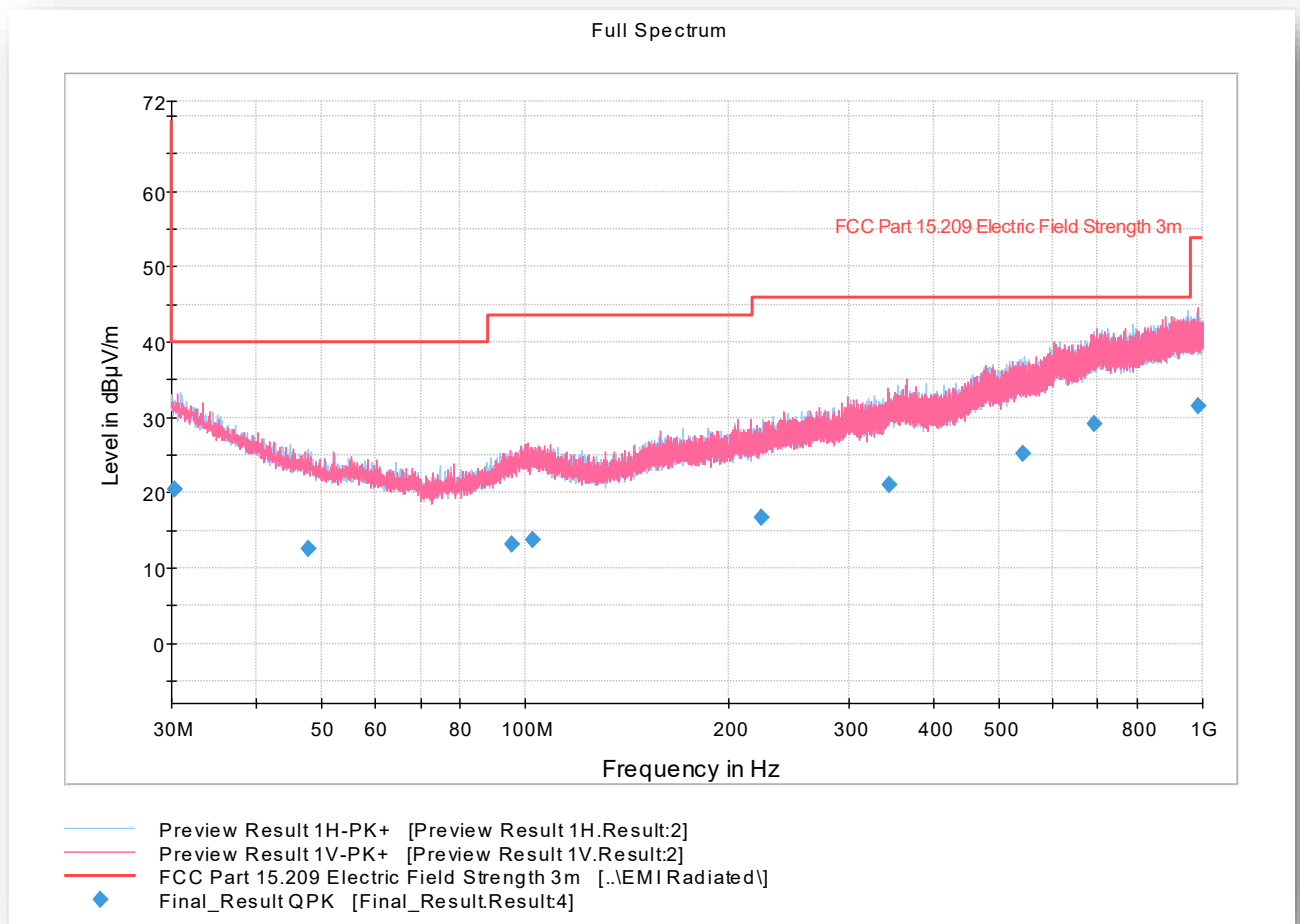
### 2.3.12 Test Results for 30MHz to 1GHz (500B) High Channel



### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 31.729000       | 19.35              | 40.00          | 20.65       | 1000.           | 120.000         | 352.0       | V   | 214.0         | 22           |
| 85.183000       | 10.84              | 40.00          | 29.16       | 1000.           | 120.000         | 366.0       | H   | -3.0          | 14           |
| 102.10333       | 15.49              | 43.50          | 28.01       | 1000.           | 120.000         | 205.0       | H   | 220.0         | 16           |
| 169.14033       | 15.21              | 43.50          | 28.29       | 1000.           | 120.000         | 125.0       | V   | 278.0         | 17           |
| 300.15533       | 19.68              | 46.00          | 26.32       | 1000.           | 120.000         | 365.0       | V   | -18.0         | 21           |
| 518.78900       | 24.72              | 46.00          | 21.28       | 1000.           | 120.000         | 280.0       | V   | 96.0          | 26           |
| 958.16566       | 31.31              | 46.00          | 14.69       | 1000.           | 120.000         | 285.0       | H   | -2.0          | 31           |

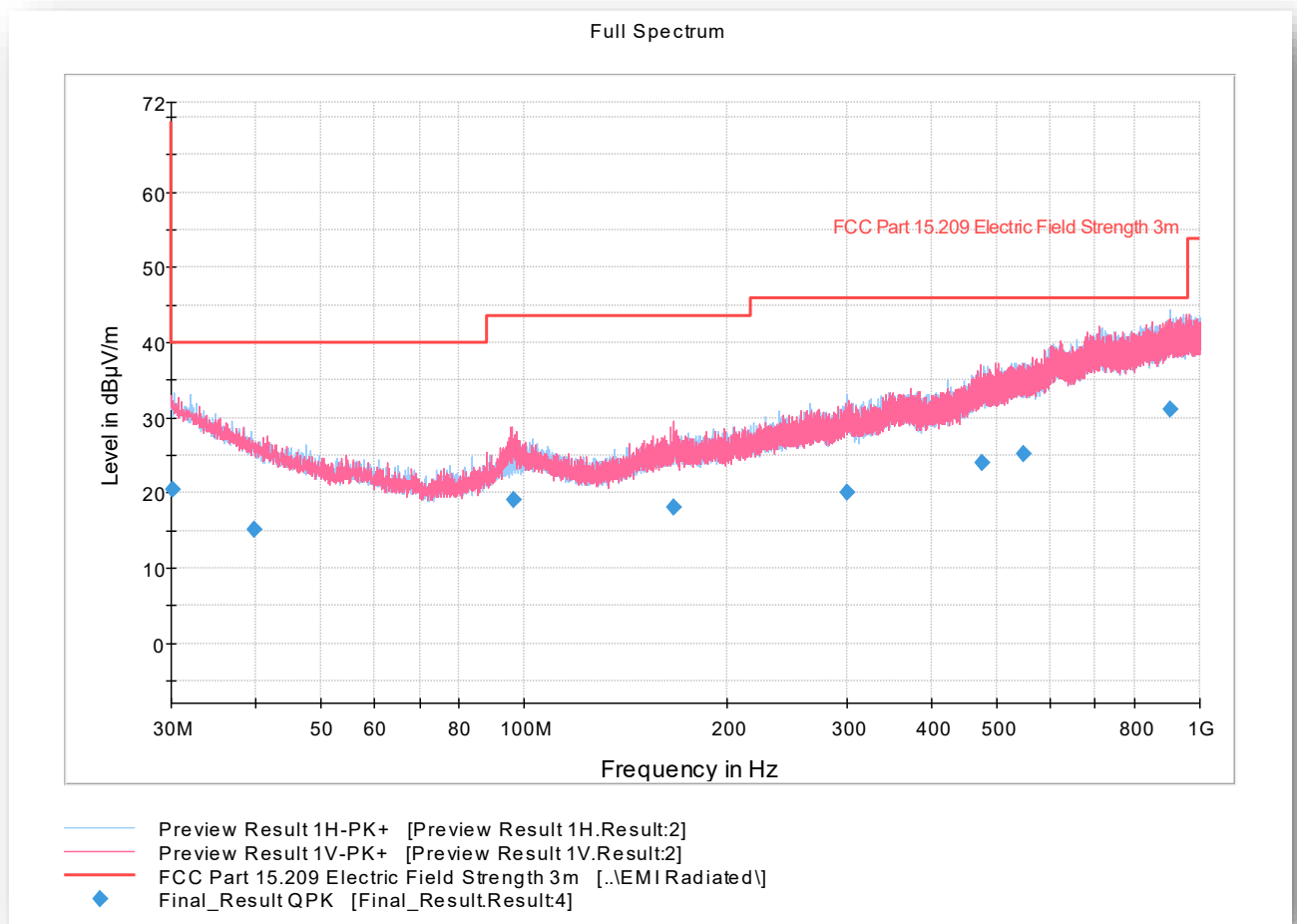
### 2.3.13 Test Results for 30MHz to 1GHz (500B) Mid Channel



### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 30.320000       | 20.49              | 40.00          | 19.51       | 1000.           | 120.000         | 114.0       | H   | 328.0         | 22           |
| 47.654000       | 12.56              | 40.00          | 27.44       | 1000.           | 120.000         | 400.0       | H   | 84.0          | 15           |
| 95.317667       | 13.09              | 43.50          | 30.41       | 1000.           | 120.000         | 325.0       | V   | 113.0         | 15           |
| 102.21933       | 13.80              | 43.50          | 29.70       | 1000.           | 120.000         | 116.0       | V   | 305.0         | 16           |
| 223.52333       | 16.72              | 46.00          | 29.28       | 1000.           | 120.000         | 380.0       | H   | 237.0         | 18           |
| 343.76000       | 20.96              | 46.00          | 25.04       | 1000.           | 120.000         | 285.0       | H   | 15.0          | 22           |
| 543.90166       | 25.22              | 46.00          | 20.78       | 1000.           | 120.000         | 365.0       | H   | 0.0           | 26           |
| 692.83666       | 29.06              | 46.00          | 16.94       | 1000.           | 120.000         | 183.0       | H   | 307.0         | 29           |
| 984.77933       | 31.47              | 53.90          | 22.43       | 1000.           | 120.000         | 189.0       | V   | 33.0          | 31           |

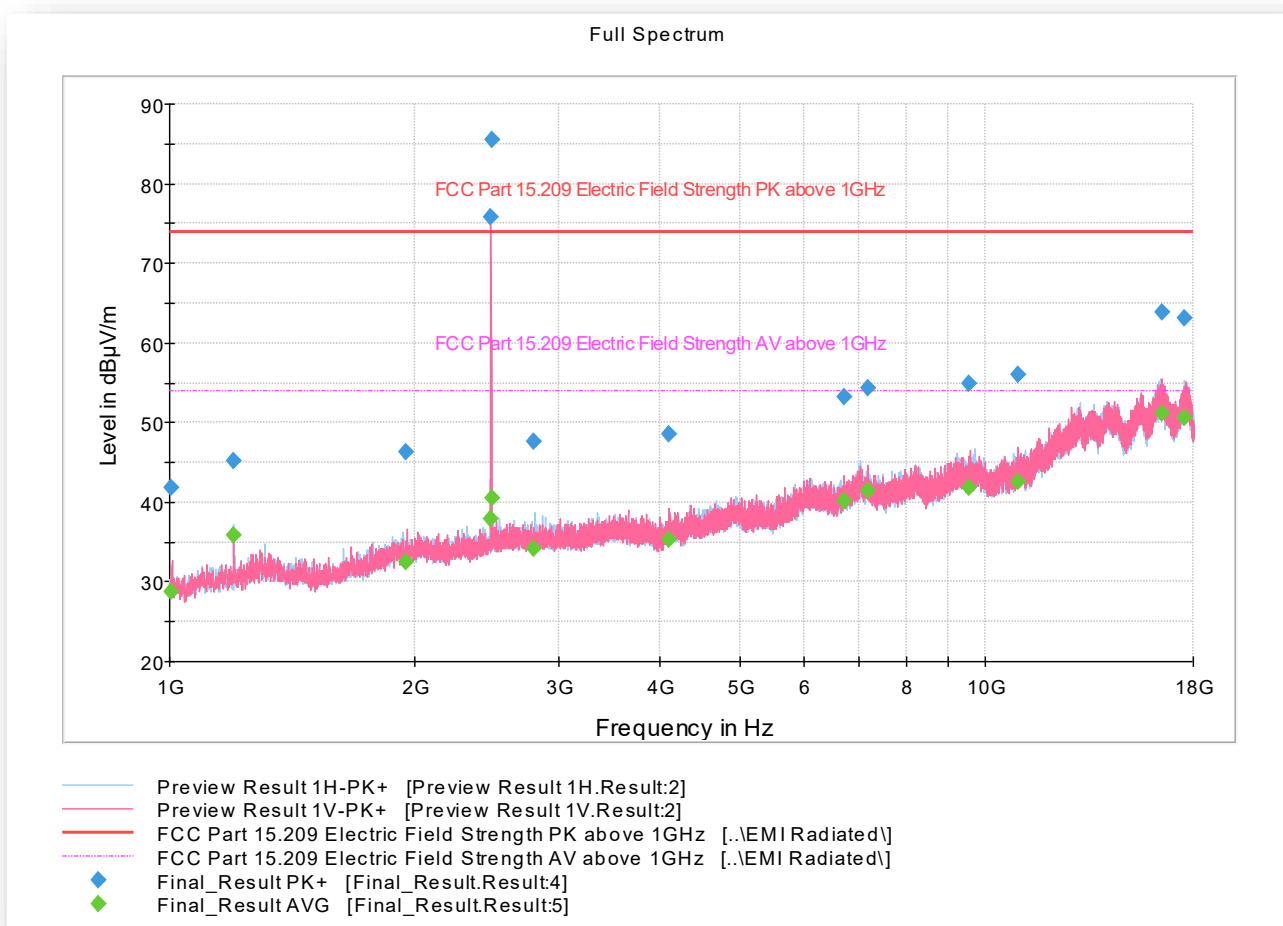
### 2.3.14 Test Results for 30MHz to 1GHz (500B) Low Channel



### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 30.200000       | 20.50              | 40.00          | 19.50       | 1000.           | 120.000         | 205.0       | H   | 147.0         | 22           |
| 39.813667       | 15.06              | 40.00          | 24.94       | 1000.           | 120.000         | 191.0       | V   | 56.0          | 17           |
| 96.204333       | 19.15              | 43.50          | 24.35       | 1000.           | 120.000         | 100.0       | V   | 205.0         | 16           |
| 166.25266       | 18.12              | 43.50          | 25.38       | 1000.           | 120.000         | 354.0       | V   | -9.0          | 17           |
| 300.84700       | 20.01              | 46.00          | 25.99       | 1000.           | 120.000         | 361.0       | H   | 152.0         | 22           |
| 476.69166       | 23.97              | 46.00          | 22.03       | 1000.           | 120.000         | 125.0       | V   | 83.0          | 25           |
| 547.56966       | 25.11              | 46.00          | 20.89       | 1000.           | 120.000         | 125.0       | V   | 278.0         | 26           |
| 904.50700       | 31.13              | 46.00          | 14.87       | 1000.           | 120.000         | 365.0       | H   | 172.0         | 31           |

### 2.3.15 Test Results for 1GHz to 18GHz (500B) High Channel



### Peak Data

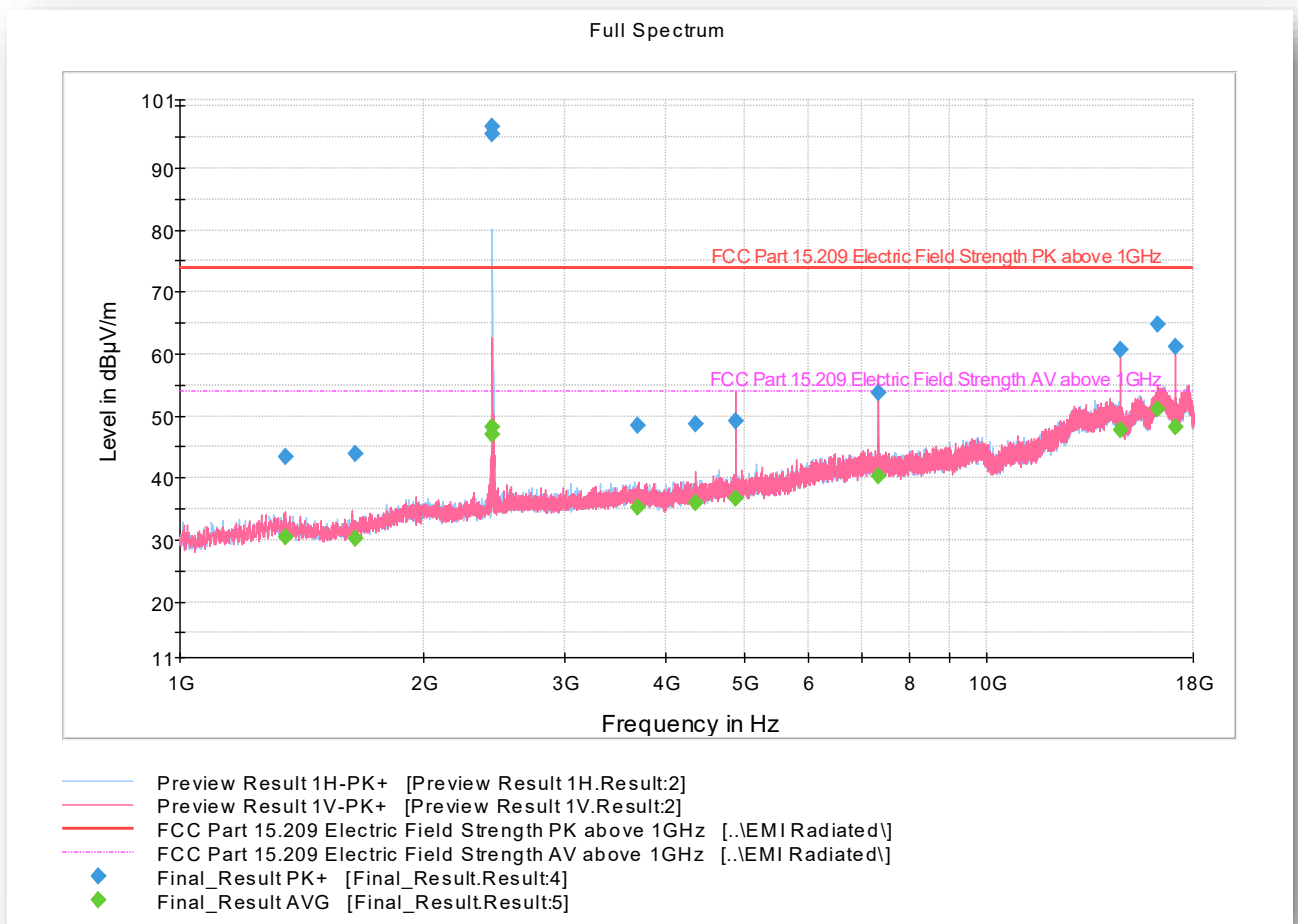
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1004.60000      | 41.80            | 73.90          | 32.10       | 1000.0          | 1000.000        | 317.0       | H   | 31.0          | -2           |
| 1200.06666      | 45.16            | 73.90          | 28.74       | 1000.0          | 1000.000        | 182.0       | H   | 128.0         | -1           |
| 1948.50000      | 46.24            | 73.90          | 27.66       | 1000.0          | 1000.000        | 365.0       | V   | 99.0          | 4            |
| 2479.76666      | 75.88            | 73.90          | -1.98       | 1000.0          | 1000.000        | 103.0       | V   | 112.0         | 4            |
| 2480.06666      | 85.53            | 73.90          | -11.63      | 1000.0          | 1000.000        | 247.0       | V   | 50.0          | 4            |
| 2797.80000      | 47.71            | 73.90          | 26.19       | 1000.0          | 1000.000        | 153.0       | H   | 266.0         | 5            |
| 4097.23333      | 48.65            | 73.90          | 25.25       | 1000.0          | 1000.000        | 249.0       | V   | 41.0          | 7            |
| 6719.16666      | 53.16            | 73.90          | 20.74       | 1000.0          | 1000.000        | 187.0       | V   | 29.0          | 10           |
| 7179.50000      | 54.35            | 73.90          | 19.55       | 1000.0          | 1000.000        | 283.0       | V   | 243.0         | 10           |
| 9535.73333      | 54.87            | 73.90          | 19.03       | 1000.0          | 1000.000        | 186.0       | V   | 288.0         | 12           |
| 10959.9333      | 55.95            | 73.90          | 17.95       | 1000.0          | 1000.000        | 253.0       | V   | 162.0         | 15           |
| 16491.4333      | 63.81            | 73.90          | 10.09       | 1000.0          | 1000.000        | 246.0       | V   | 1.0           | 21           |
| 17566.0333      | 63.12            | 73.90          | 10.78       | 1000.0          | 1000.000        | 329.0       | H   | 294.0         | 23           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1004.60000      | 28.79            | 53.90          | 25.11       | 1000.0          | 1000.000        | 317.0       | H   | 31.0          | -2           |
| 1200.06666      | 35.86            | 53.90          | 18.04       | 1000.0          | 1000.000        | 182.0       | H   | 128.0         | -1           |
| 1948.50000      | 32.54            | 53.90          | 21.36       | 1000.0          | 1000.000        | 365.0       | V   | 99.0          | 4            |
| 2479.76666      | 37.84            | 53.90          | 16.06       | 1000.0          | 1000.000        | 103.0       | V   | 112.0         | 4            |
| 2480.06666      | 40.54            | 53.90          | 13.36       | 1000.0          | 1000.000        | 247.0       | V   | 50.0          | 4            |
| 2797.80000      | 34.13            | 53.90          | 19.77       | 1000.0          | 1000.000        | 153.0       | H   | 266.0         | 5            |
| 4097.23333      | 35.40            | 53.90          | 18.50       | 1000.0          | 1000.000        | 249.0       | V   | 41.0          | 7            |
| 6719.16666      | 40.23            | 53.90          | 13.67       | 1000.0          | 1000.000        | 187.0       | V   | 29.0          | 10           |
| 7179.50000      | 41.42            | 53.90          | 12.48       | 1000.0          | 1000.000        | 283.0       | V   | 243.0         | 10           |
| 9535.73333      | 41.88            | 53.90          | 12.02       | 1000.0          | 1000.000        | 186.0       | V   | 288.0         | 12           |
| 10959.9333      | 42.58            | 53.90          | 11.32       | 1000.0          | 1000.000        | 253.0       | V   | 162.0         | 15           |
| 16491.4333      | 51.18            | 53.90          | 2.72        | 1000.0          | 1000.000        | 246.0       | V   | 1.0           | 21           |
| 17566.0333      | 50.63            | 53.90          | 3.27        | 1000.0          | 1000.000        | 329.0       | H   | 294.0         | 23           |

### 2.3.16 Test Results for 1GHz to 18GHz (500B) Mid Channel



### Peak Data

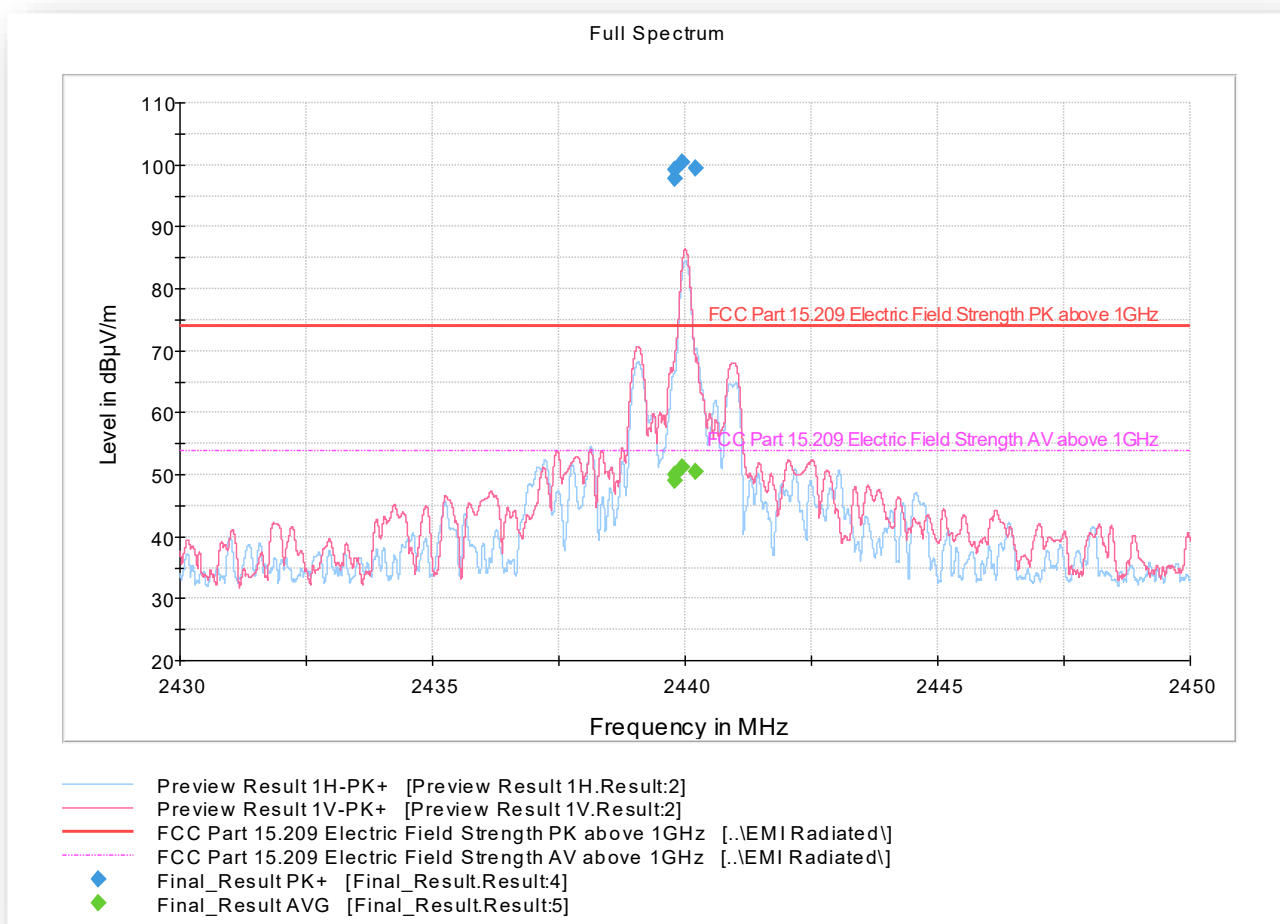
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1348.66666      | 43.37            | 73.90          | 30.53       | 1000.0          | 1000.000        | 365.0       | V   | 233.0         | 1            |
| 1652.20000      | 43.85            | 73.90          | 30.05       | 1000.0          | 1000.000        | 363.0       | H   | 317.0         | 1            |
| 2440.10000      | 95.54            | 73.90          | -21.64      | 1000.0          | 1000.000        | 339.0       | H   | 60.0          | 4            |
| 2440.13333      | 96.76            | 73.90          | -22.86      | 1000.0          | 1000.000        | 260.0       | H   | 176.0         | 4            |
| 3696.56666      | 48.53            | 73.90          | 25.37       | 1000.0          | 1000.000        | 233.0       | V   | 32.0          | 6            |
| 4359.10000      | 48.70            | 73.90          | 25.20       | 1000.0          | 1000.000        | 337.0       | H   | 91.0          | 7            |
| 4884.96666      | 49.26            | 73.90          | 24.64       | 1000.0          | 1000.000        | 199.0       | V   | 258.0         | 7            |
| 7323.83333      | 53.75            | 73.90          | 20.15       | 1000.0          | 1000.000        | 359.0       | V   | 240.0         | 11           |
| 14640.0333      | 60.73            | 73.90          | 13.17       | 1000.0          | 1000.000        | 154.0       | V   | 4.0           | 18           |
| 16259.4333      | 64.75            | 73.90          | 9.15        | 1000.0          | 1000.000        | 363.0       | V   | 145.0         | 20           |
| 17076.9000      | 61.11            | 73.90          | 12.79       | 1000.0          | 1000.000        | 203.0       | V   | 50.0          | 21           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1348.66666      | 30.49            | 53.90          | 23.41       | 1000.0          | 1000.000        | 365.0       | V   | 233.0         | 1            |
| 1652.20000      | 30.26            | 53.90          | 23.64       | 1000.0          | 1000.000        | 363.0       | H   | 317.0         | 1            |
| 2440.10000      | 47.10            | 53.90          | 6.80        | 1000.0          | 1000.000        | 339.0       | H   | 60.0          | 4            |
| 2440.13333      | 51.24            | 53.90          | 2.66        | 1000.0          | 1000.000        | 260.0       | H   | 176.0         | 4            |
| 3696.56666      | 35.22            | 53.90          | 18.68       | 1000.0          | 1000.000        | 233.0       | V   | 32.0          | 6            |
| 4359.10000      | 35.92            | 53.90          | 17.99       | 1000.0          | 1000.000        | 337.0       | H   | 91.0          | 7            |
| 4884.96666      | 36.72            | 53.90          | 17.18       | 1000.0          | 1000.000        | 199.0       | V   | 258.0         | 7            |
| 7323.83333      | 40.35            | 53.90          | 13.55       | 1000.0          | 1000.000        | 359.0       | V   | 240.0         | 11           |
| 14640.0333      | 47.75            | 53.90          | 6.15        | 1000.0          | 1000.000        | 154.0       | V   | 4.0           | 18           |
| 16259.4333      | 51.06            | 53.90          | 2.84        | 1000.0          | 1000.000        | 363.0       | V   | 145.0         | 20           |
| 17076.9000      | 48.31            | 53.90          | 5.59        | 1000.0          | 1000.000        | 203.0       | V   | 50.0          | 21           |

### 2.3.17 Test Results for EIRP 500B Mid Channel for RF Exposure calculation (EUT verified standalone TLe5c.24@2450- Fat Liquid)

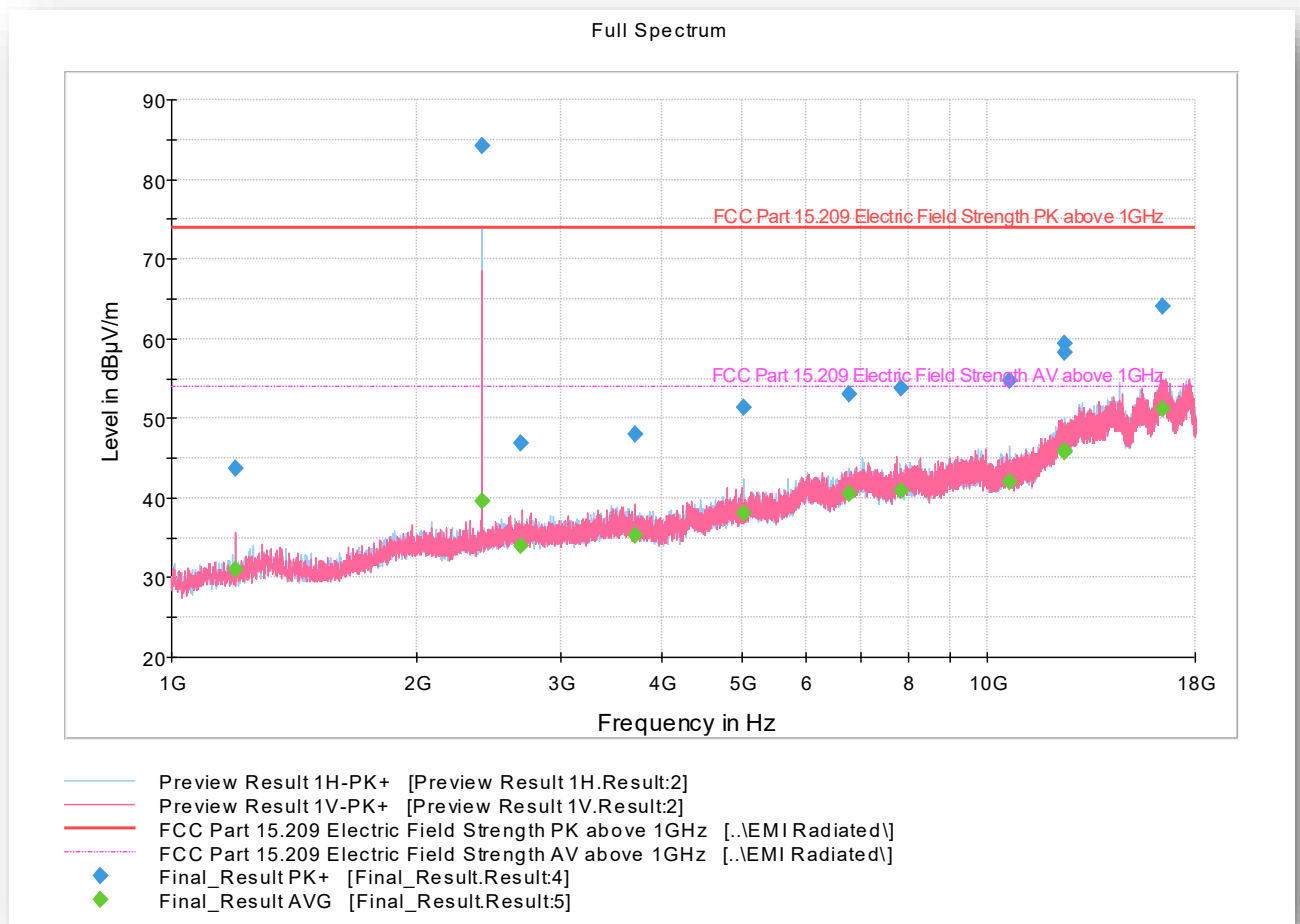


### Average Data

| Frequency (MHz) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 2439.80000      | 48.98            | 53.90          | 4.92        | 1000.0          | 1000.000        | 180.0       | V   | 50.0          | 4            |
| 2439.80533      | 50.12            | 53.90          | 3.78        | 1000.0          | 1000.000        | 154.0       | V   | 50.0          | 4            |
| 2439.95266      | 51.22            | 53.90          | 2.68        | 1000.0          | 1000.000        | 172.0       | V   | 50.0          | 4            |
| 2440.20000      | 50.53            | 53.90          | 3.37        | 1000.0          | 1000.000        | 171.0       | V   | 52.0          | 4            |

**Test Notes:** Additional EIRP measurement of worse case channel was verified with the EUT outside of the liquid and cylinder to reflect the RF Exposure to the patient. Only Average Data was utilized for SAR Exclusion.

### 2.3.18 Test Results for 1GHz to 18GHz (500B) Low Channel



### Peak Data

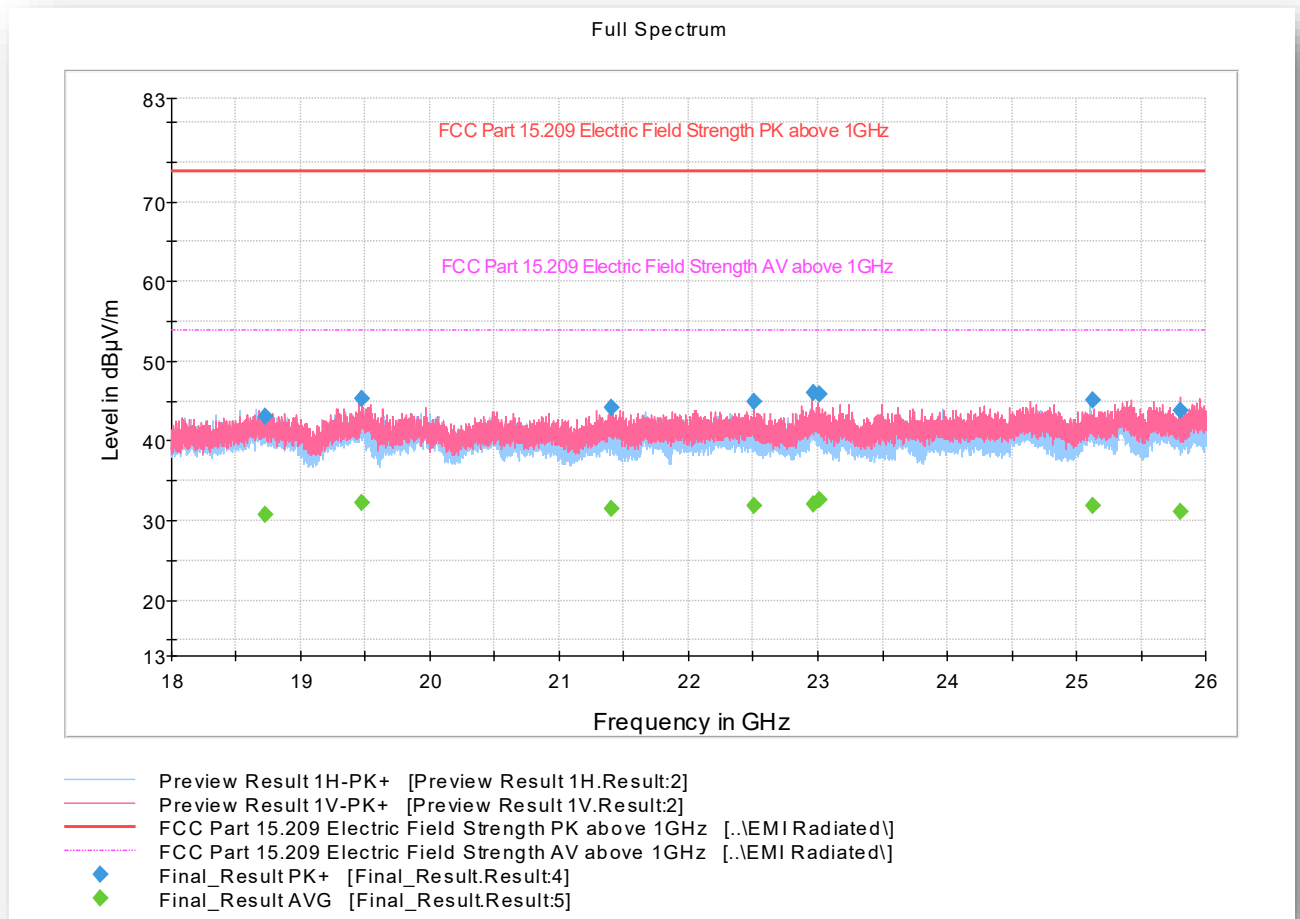
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 43.70            | 73.90          | 30.20       | 1000.0          | 1000.000        | 197.0       | V   | 161.0         | -1           |
| 2402.13333      | 84.16            | 73.90          | -10.26      | 1000.0          | 1000.000        | 326.0       | H   | 4.0           | 4            |
| 2681.66666      | 46.91            | 73.90          | 26.99       | 1000.0          | 1000.000        | 348.0       | V   | 153.0         | 5            |
| 3696.83333      | 48.07            | 73.90          | 25.83       | 1000.0          | 1000.000        | 152.0       | V   | 112.0         | 6            |
| 5035.60000      | 51.36            | 73.90          | 22.54       | 1000.0          | 1000.000        | 283.0       | H   | 210.0         | 8            |
| 6762.50000      | 52.97            | 73.90          | 20.93       | 1000.0          | 1000.000        | 365.0       | H   | 340.0         | 10           |
| 7833.50000      | 53.75            | 73.90          | 20.15       | 1000.0          | 1000.000        | 102.0       | H   | 303.0         | 13           |
| 10657.2666      | 54.77            | 73.90          | 19.13       | 1000.0          | 1000.000        | 154.0       | H   | 284.0         | 15           |
| 12455.0666      | 58.28            | 73.90          | 15.62       | 1000.0          | 1000.000        | 363.0       | H   | 54.0          | 17           |
| 12457.8666      | 59.32            | 73.90          | 14.58       | 1000.0          | 1000.000        | 328.0       | H   | 52.0          | 17           |
| 16425.7333      | 64.11            | 73.90          | 9.79        | 1000.0          | 1000.000        | 264.0       | H   | 88.0          | 21           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 31.00            | 53.90          | 22.90       | 1000.0          | 1000.000        | 197.0       | V   | 161.0         | -1           |
| 2402.13333      | 39.51            | 53.90          | 14.39       | 1000.0          | 1000.000        | 326.0       | H   | 4.0           | 4            |
| 2681.66666      | 33.91            | 53.90          | 19.99       | 1000.0          | 1000.000        | 348.0       | V   | 153.0         | 5            |
| 3696.83333      | 35.22            | 53.90          | 18.68       | 1000.0          | 1000.000        | 152.0       | V   | 112.0         | 6            |
| 5035.60000      | 38.02            | 53.90          | 15.88       | 1000.0          | 1000.000        | 283.0       | H   | 210.0         | 8            |
| 6762.50000      | 40.54            | 53.90          | 13.36       | 1000.0          | 1000.000        | 365.0       | H   | 340.0         | 10           |
| 7833.50000      | 40.90            | 53.90          | 13.00       | 1000.0          | 1000.000        | 102.0       | H   | 303.0         | 13           |
| 10657.2666      | 42.06            | 53.90          | 11.84       | 1000.0          | 1000.000        | 154.0       | H   | 284.0         | 15           |
| 12455.0666      | 45.70            | 53.90          | 8.20        | 1000.0          | 1000.000        | 363.0       | H   | 54.0          | 17           |
| 12457.8666      | 45.93            | 53.90          | 7.97        | 1000.0          | 1000.000        | 328.0       | H   | 52.0          | 17           |
| 16425.7333      | 51.20            | 53.90          | 2.70        | 1000.0          | 1000.000        | 264.0       | H   | 88.0          | 21           |

### 2.3.20 Test Results for 18GHz to 26GHz (500B) High Channel



### Peak Data

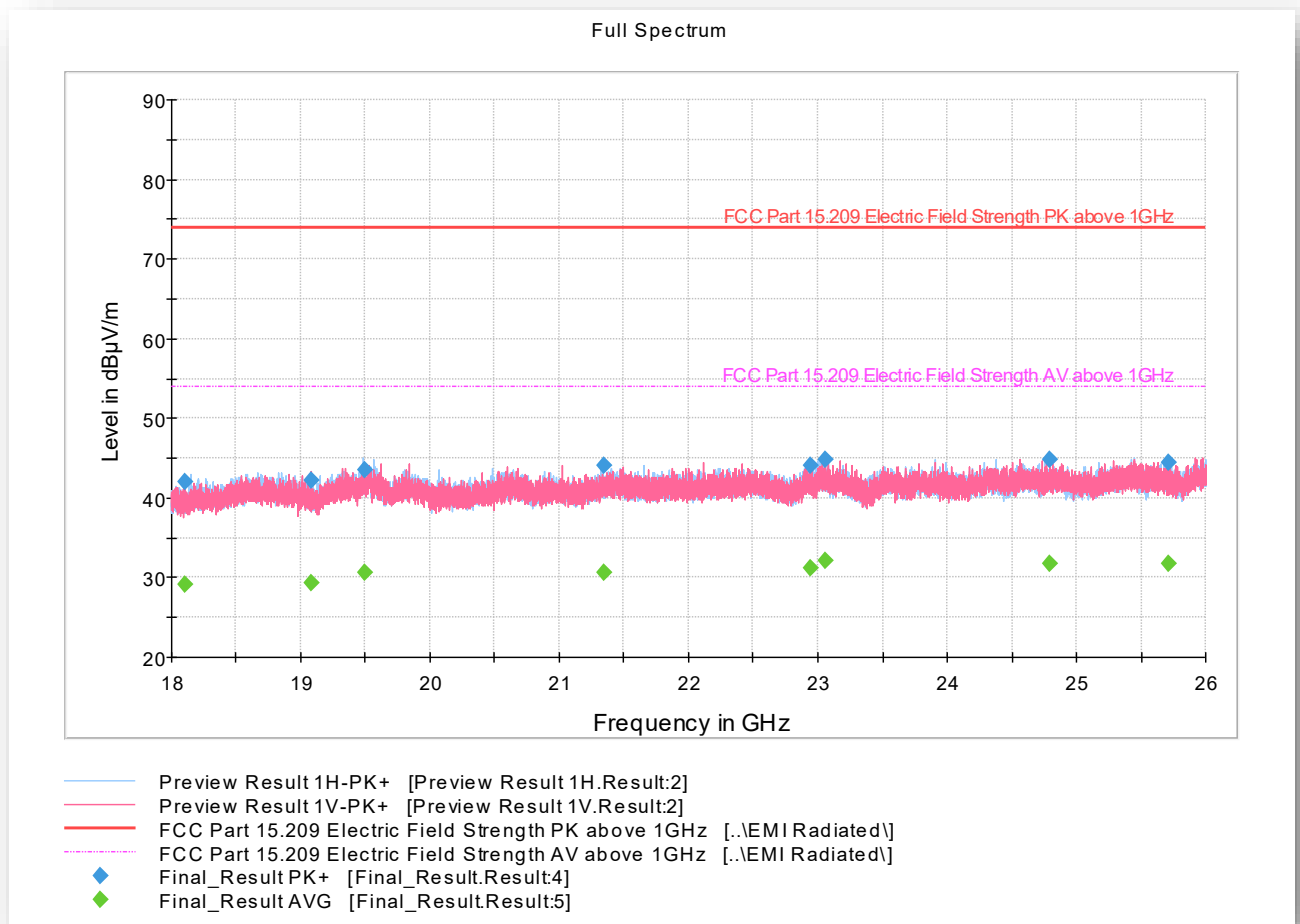
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18722.3705      | 43.11            | 73.90          | 30.79       | 1000.0          | 1000.000        | 213.0       | H   | 143.0         | -5           |
| 19476.9745      | 45.25            | 73.90          | 28.65       | 1000.0          | 1000.000        | 163.0       | V   | 18.0          | -5           |
| 21402.7175      | 44.18            | 73.90          | 29.72       | 1000.0          | 1000.000        | 212.0       | V   | 252.0         | -4           |
| 22504.9540      | 44.99            | 73.90          | 28.91       | 1000.0          | 1000.000        | 151.0       | V   | 151.0         | -3           |
| 22960.3105      | 46.06            | 73.90          | 27.84       | 1000.0          | 1000.000        | 163.0       | V   | 16.0          | -3           |
| 23009.1070      | 45.77            | 73.90          | 28.13       | 1000.0          | 1000.000        | 155.0       | V   | 138.0         | -3           |
| 25121.3230      | 45.02            | 73.90          | 28.88       | 1000.0          | 1000.000        | 187.0       | H   | 44.0          | -2           |
| 25808.3910      | 43.85            | 73.90          | 30.05       | 1000.0          | 1000.000        | 141.0       | V   | 76.0          | -2           |



### Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18722.3705      | 30.73            | 53.90          | 23.17       | 1000.0          | 1000.000        | 213.0       | H   | 143.0         | -5           |
| 19476.9745      | 32.14            | 53.90          | 21.76       | 1000.0          | 1000.000        | 163.0       | V   | 18.0          | -5           |
| 21402.7175      | 31.43            | 53.90          | 22.47       | 1000.0          | 1000.000        | 212.0       | V   | 252.0         | -4           |
| 22504.9540      | 31.77            | 53.90          | 22.13       | 1000.0          | 1000.000        | 151.0       | V   | 151.0         | -3           |
| 22960.3105      | 32.11            | 53.90          | 21.79       | 1000.0          | 1000.000        | 163.0       | V   | 16.0          | -3           |
| 23009.1070      | 32.54            | 53.90          | 21.36       | 1000.0          | 1000.000        | 155.0       | V   | 138.0         | -3           |
| 25121.3230      | 31.77            | 53.90          | 22.13       | 1000.0          | 1000.000        | 187.0       | H   | 44.0          | -2           |
| 25808.3910      | 31.13            | 53.90          | 22.77       | 1000.0          | 1000.000        | 141.0       | V   | 76.0          | -2           |

### 2.3.21 Test Results for 18GHz to 26GHz (500B) Mid Channel



### Peak Data

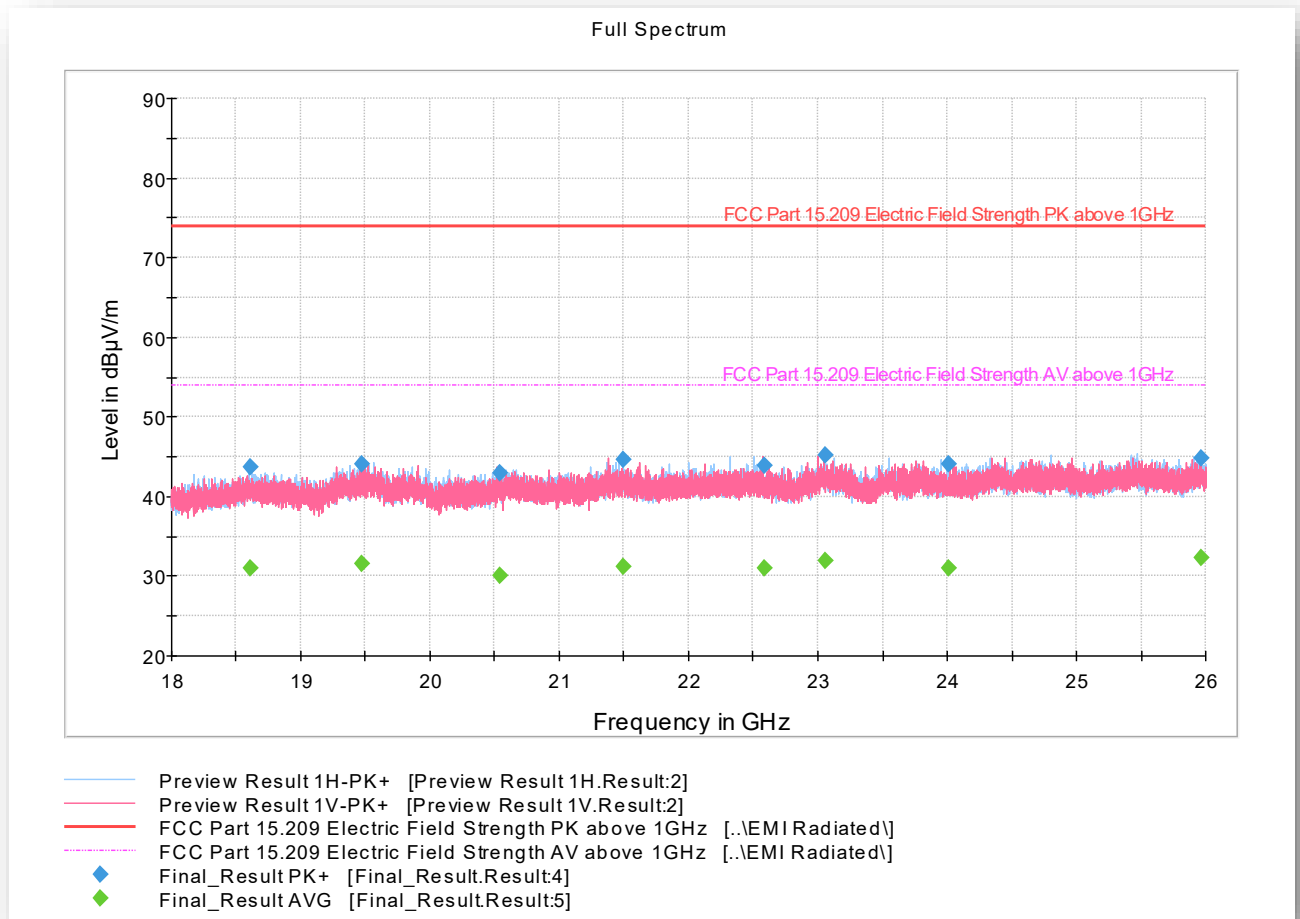
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18104.6205      | 41.96            | 73.90          | 31.94       | 1000.0          | 1000.000        | 213.0       | H   | 147.0         | -5           |
| 19078.7855      | 42.22            | 73.90          | 31.68       | 1000.0          | 1000.000        | 138.0       | V   | 216.0         | -6           |
| 19489.4020      | 43.60            | 73.90          | 30.30       | 1000.0          | 1000.000        | 138.0       | H   | 63.0          | -5           |
| 21347.7275      | 43.99            | 73.90          | 29.91       | 1000.0          | 1000.000        | 158.0       | H   | 45.0          | -4           |
| 22941.2805      | 44.01            | 73.90          | 29.89       | 1000.0          | 1000.000        | 213.0       | V   | 272.0         | -3           |
| 23055.4765      | 44.92            | 73.90          | 28.98       | 1000.0          | 1000.000        | 162.0       | V   | 81.0          | -3           |
| 24797.4970      | 44.81            | 73.90          | 29.09       | 1000.0          | 1000.000        | 139.0       | H   | 320.0         | -2           |
| 25709.1970      | 44.43            | 73.90          | 29.47       | 1000.0          | 1000.000        | 138.0       | H   | 216.0         | -1           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18104.6205      | 29.07            | 53.90          | 24.83       | 1000.0          | 1000.000        | 213.0       | H   | 147.0         | -5           |
| 19078.7855      | 29.31            | 53.90          | 24.59       | 1000.0          | 1000.000        | 138.0       | V   | 216.0         | -6           |
| 19489.4020      | 30.72            | 53.90          | 23.18       | 1000.0          | 1000.000        | 138.0       | H   | 63.0          | -5           |
| 21347.7275      | 30.70            | 53.90          | 23.20       | 1000.0          | 1000.000        | 158.0       | H   | 45.0          | -4           |
| 22941.2805      | 31.19            | 53.90          | 22.71       | 1000.0          | 1000.000        | 213.0       | V   | 272.0         | -3           |
| 23055.4765      | 32.19            | 53.90          | 21.71       | 1000.0          | 1000.000        | 162.0       | V   | 81.0          | -3           |
| 24797.4970      | 31.80            | 53.90          | 22.10       | 1000.0          | 1000.000        | 139.0       | H   | 320.0         | -2           |
| 25709.1970      | 31.82            | 53.90          | 22.08       | 1000.0          | 1000.000        | 138.0       | H   | 216.0         | -1           |

### 2.3.22 Test Results for 18GHz to 26GHz (500B) Low Channel



### Peak Data

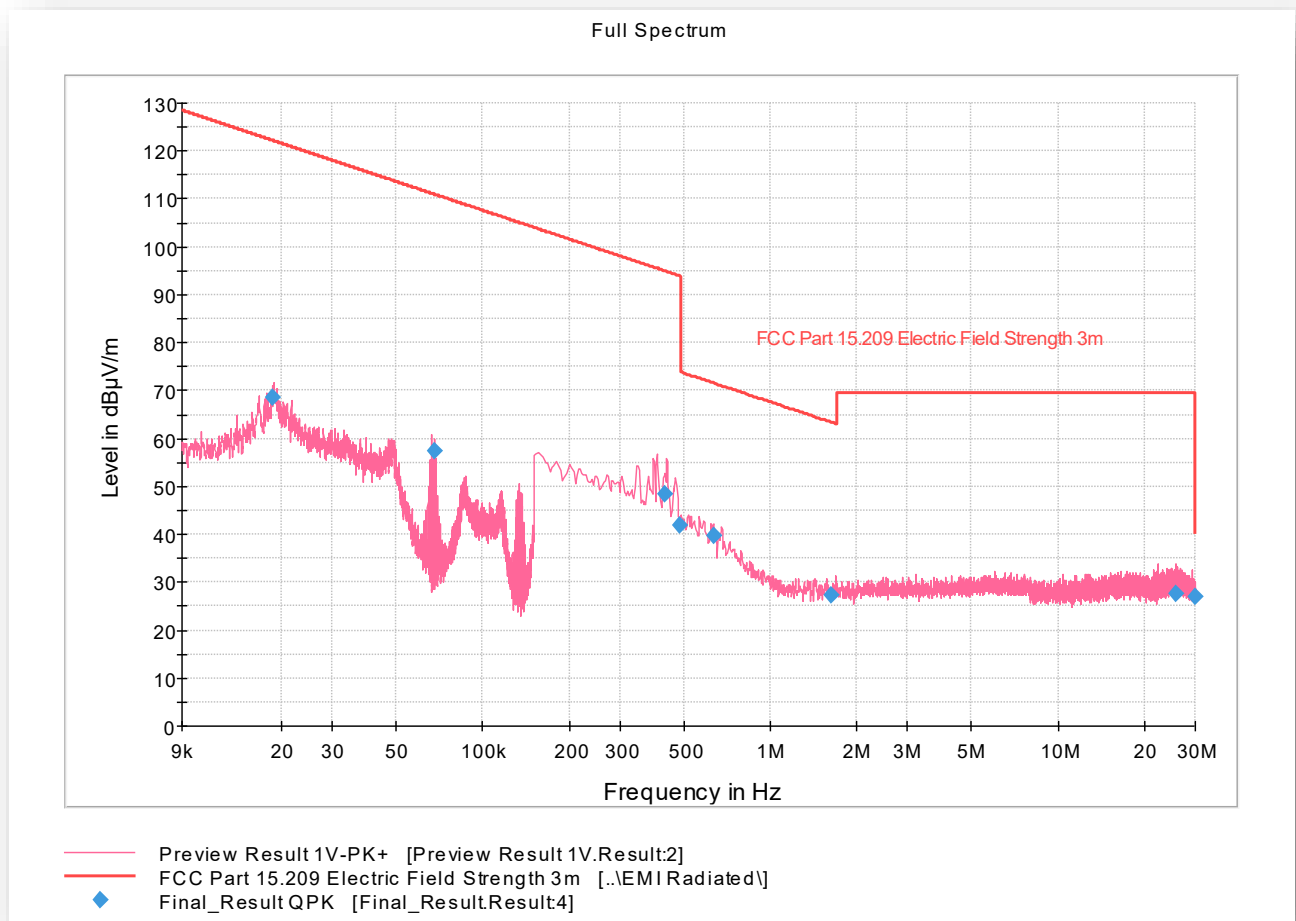
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18603.8950      | 43.72            | 73.90          | 30.18       | 1000.0          | 1000.000        | 137.0       | H   | 299.0         | -4           |
| 19474.4435      | 44.03            | 73.90          | 29.87       | 1000.0          | 1000.000        | 162.0       | H   | 60.0          | -5           |
| 20535.7915      | 43.00            | 73.90          | 30.90       | 1000.0          | 1000.000        | 213.0       | V   | 265.0         | -5           |
| 21491.3630      | 44.64            | 73.90          | 29.26       | 1000.0          | 1000.000        | 162.0       | H   | 202.0         | -4           |
| 22586.6220      | 43.92            | 73.90          | 29.98       | 1000.0          | 1000.000        | 154.0       | V   | 73.0          | -3           |
| 23056.0885      | 45.19            | 73.90          | 28.71       | 1000.0          | 1000.000        | 143.0       | V   | 348.0         | -3           |
| 24008.5635      | 43.99            | 73.90          | 29.91       | 1000.0          | 1000.000        | 162.0       | H   | 332.0         | -3           |
| 25966.5310      | 44.92            | 73.90          | 28.98       | 1000.0          | 1000.000        | 145.0       | V   | 346.0         | -2           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18603.8950      | 31.10            | 53.90          | 22.80       | 1000.0          | 1000.000        | 137.0       | H   | 299.0         | -4           |
| 19474.4435      | 31.53            | 53.90          | 22.37       | 1000.0          | 1000.000        | 162.0       | H   | 60.0          | -5           |
| 20535.7915      | 30.00            | 53.90          | 23.90       | 1000.0          | 1000.000        | 213.0       | V   | 265.0         | -5           |
| 21491.3630      | 31.16            | 53.90          | 22.74       | 1000.0          | 1000.000        | 162.0       | H   | 202.0         | -4           |
| 22586.6220      | 31.03            | 53.90          | 22.87       | 1000.0          | 1000.000        | 154.0       | V   | 73.0          | -3           |
| 23056.0885      | 31.95            | 53.90          | 21.95       | 1000.0          | 1000.000        | 143.0       | V   | 348.0         | -3           |
| 24008.5635      | 30.97            | 53.90          | 22.93       | 1000.0          | 1000.000        | 162.0       | H   | 332.0         | -3           |
| 25966.5310      | 32.31            | 53.90          | 21.59       | 1000.0          | 1000.000        | 145.0       | V   | 346.0         | -2           |

### 2.3.23 Test Results for 9kHz to 30MHz (500D) High Channel

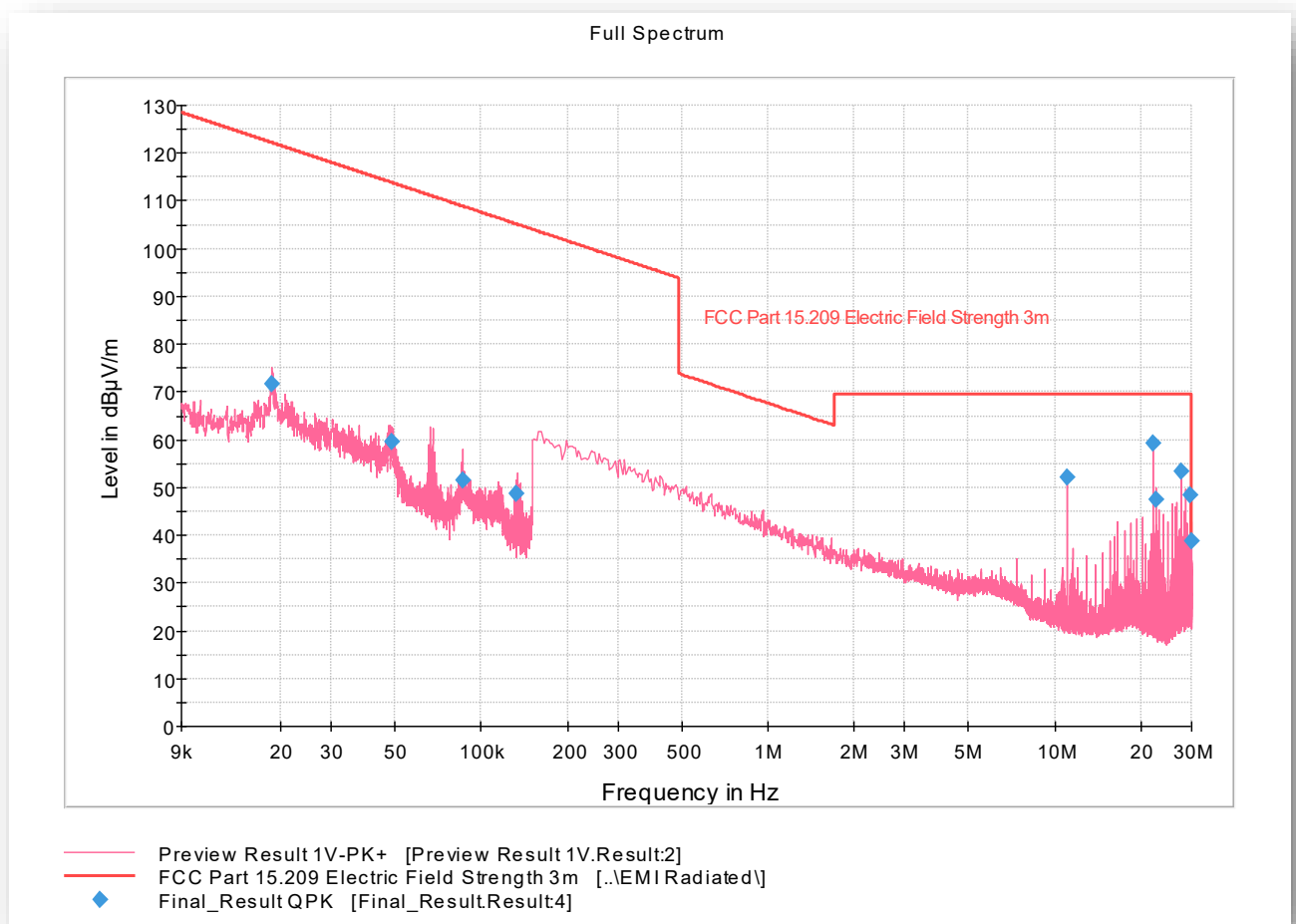


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018685        | 68.69              | 122.17         | 53.48       | 1000.           | 0.200           | 400.0       | H   | 16.0          | 22           |
| 0.067635        | 57.44              | 111.00         | 53.56       | 1000.           | 0.200           | 400.0       | H   | 185.0         | 20           |
| 0.430655        | 48.50              | 94.92          | 46.42       | 1000.           | 9.000           | 400.0       | H   | 270.0         | 19           |
| 0.485400        | 41.82              | 93.88          | 52.06       | 1000.           | 9.000           | 400.0       | H   | 61.0          | 20           |
| 0.634845        | 39.58              | 71.55          | 31.97       | 1000.           | 9.000           | 400.0       | H   | 336.0         | 20           |
| 1.626154        | 27.29              | 63.37          | 36.08       | 1000.           | 9.000           | 400.0       | H   | 224.0         | 20           |
| 25.615412       | 27.61              | 69.50          | 41.89       | 1000.           | 9.000           | 400.0       | H   | 54.0          | 25           |
| 29.956150       | 26.87              | 69.50          | 42.63       | 1000.           | 9.000           | 400.0       | H   | 29.0          | 25           |

**Test Notes:** Loop antenna HFH2-Z2335 utilized for this test.

### 2.3.24 Test Results for 9kHz to 30MHz (500D) Mid Channel

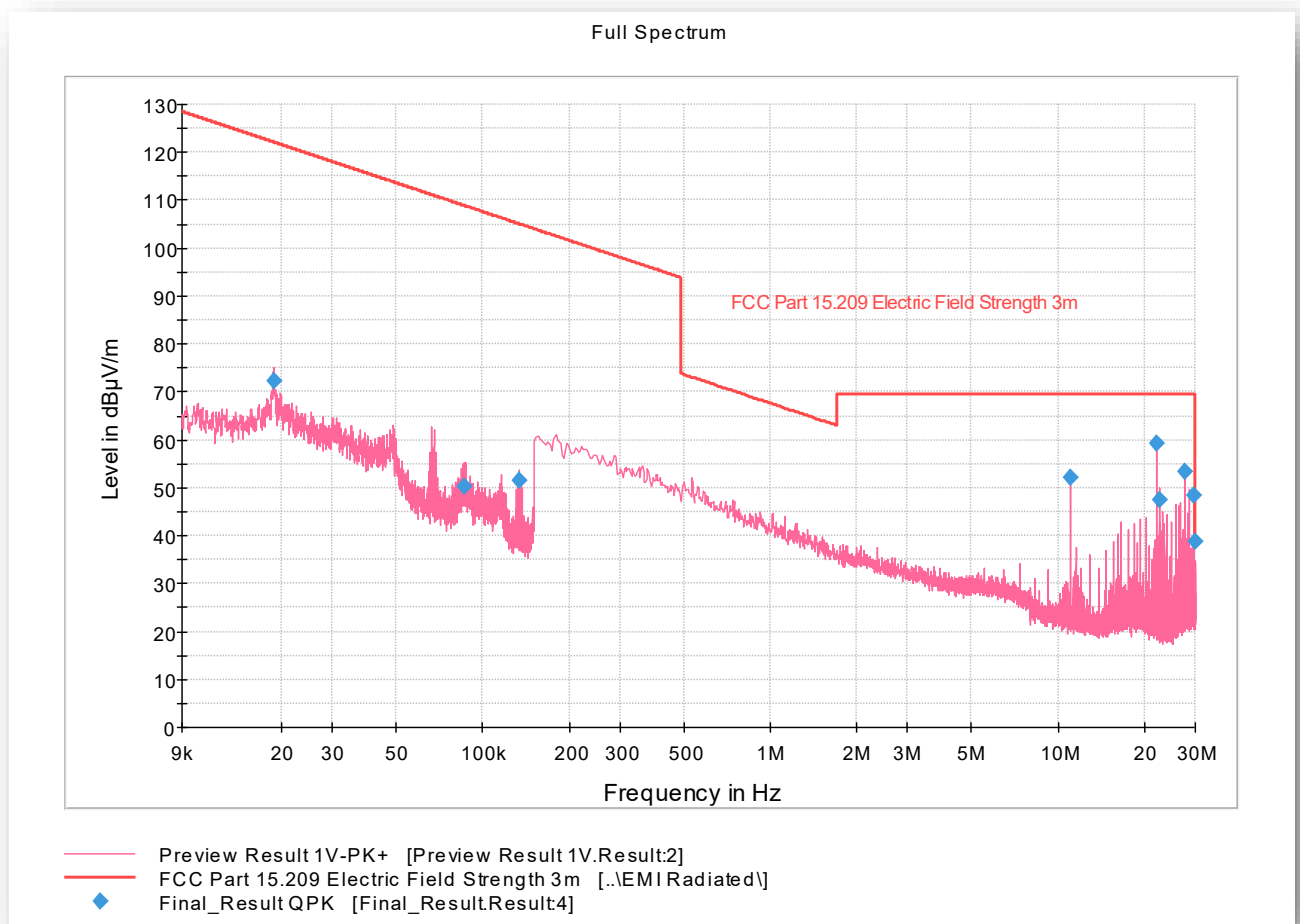


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018681        | 71.75              | 122.17         | 50.42       | 1000.           | 0.200           | 400.0       | H   | 132.0         | 15           |
| 0.048932        | 59.68              | 113.81         | 54.13       | 1000.           | 0.200           | 400.0       | H   | 16.0          | 14           |
| 0.086443        | 51.38              | 108.87         | 57.48       | 1000.           | 0.200           | 400.0       | H   | 301.0         | 14           |
| 0.132171        | 48.76              | 105.18         | 56.41       | 1000.           | 0.200           | 400.0       | H   | 14.0          | 14           |
| 11.059874       | 52.04              | 69.50          | 17.46       | 1000.           | 9.000           | 400.0       | H   | 65.0          | 15           |
| 22.119997       | 59.22              | 69.50          | 10.28       | 1000.           | 9.000           | 400.0       | H   | 294.0         | 14           |
| 22.581369       | 47.44              | 69.50          | 22.06       | 1000.           | 9.000           | 400.0       | H   | 93.0          | 14           |
| 27.650536       | 53.51              | 69.50          | 15.99       | 1000.           | 9.000           | 400.0       | H   | 288.0         | 13           |
| 29.494068       | 48.50              | 69.50          | 21.00       | 1000.           | 9.000           | 400.0       | H   | 49.0          | 13           |
| 29.954230       | 38.81              | 69.50          | 30.69       | 1000.           | 9.000           | 400.0       | H   | 72.0          | 13           |

**Test Notes:** Loop antenna AL-130R utilized for this test.

### 2.3.25 Test Results for 9kHz to 30MHz (500D) Low Channel

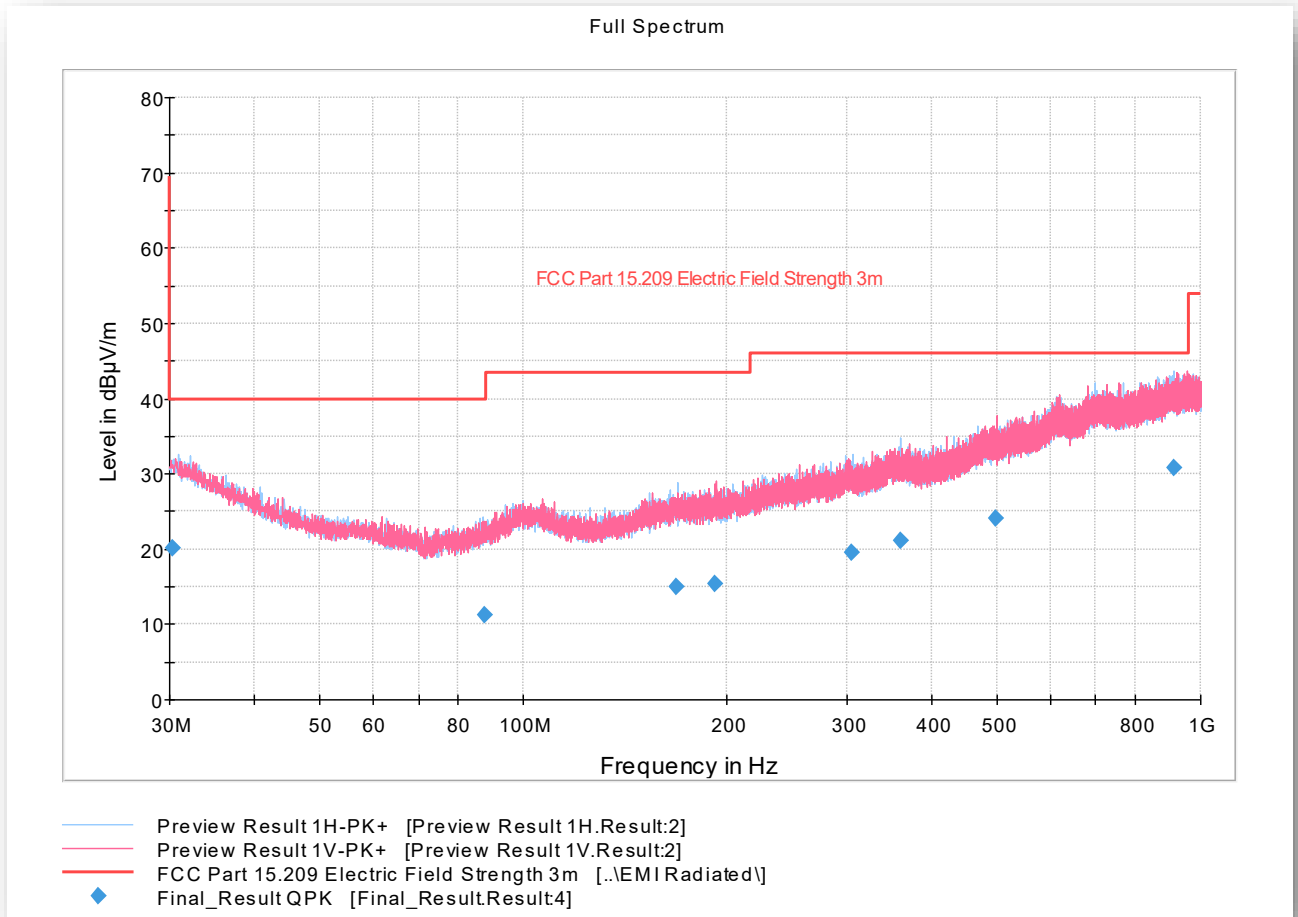


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 0.018751        | 72.26              | 122.14         | 49.88       | 1000.           | 0.200           | 400.0       | H   | 278.0         | 15           |
| 0.086317        | 50.11              | 108.88         | 58.77       | 1000.           | 0.200           | 400.0       | H   | 326.0         | 14           |
| 0.134290        | 51.40              | 105.04         | 53.64       | 1000.           | 0.200           | 400.0       | H   | 254.0         | 14           |
| 11.059874       | 52.05              | 69.50          | 17.45       | 1000.           | 9.000           | 400.0       | H   | 204.0         | 15           |
| 22.119997       | 59.22              | 69.50          | 10.28       | 1000.           | 9.000           | 400.0       | H   | 32.0          | 14           |
| 22.581369       | 47.44              | 69.50          | 22.06       | 1000.           | 9.000           | 400.0       | H   | 65.0          | 14           |
| 27.650536       | 53.51              | 69.50          | 15.99       | 1000.           | 9.000           | 400.0       | H   | 125.0         | 13           |
| 29.494068       | 48.51              | 69.50          | 20.99       | 1000.           | 9.000           | 400.0       | H   | 278.0         | 13           |
| 29.955225       | 38.75              | 69.50          | 30.75       | 1000.           | 9.000           | 400.0       | H   | 310.0         | 13           |

**Test Notes:** Loop antenna AL-130R utilized for this test.

### 2.3.26 Test Results for 30MHz to 1GHz (500D) High Channel

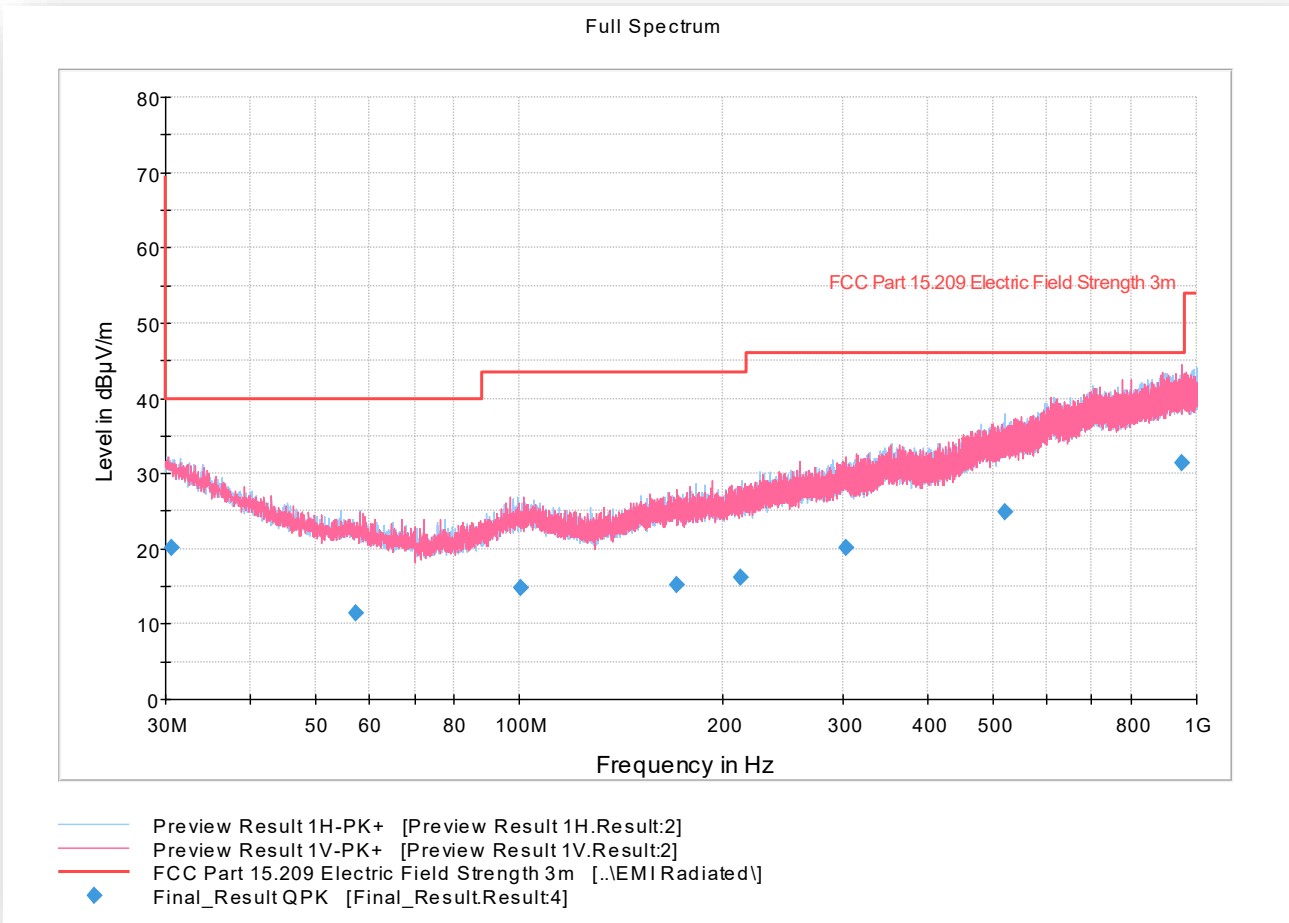


### Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 30.360000       | 20.21              | 40.00          | 19.79       | 1000.           | 120.000         | 276.0       | H   | 296.0         | 22           |
| 87.607000       | 11.32              | 40.00          | 28.68       | 1000.           | 120.000         | 256.0       | H   | -20.0         | 14           |
| 167.82833       | 14.92              | 43.50          | 28.58       | 1000.           | 120.000         | 388.0       | H   | 12.0          | 17           |
| 191.92100       | 15.48              | 43.50          | 28.02       | 1000.           | 120.000         | 365.0       | V   | 304.0         | 17           |
| 305.32400       | 19.65              | 46.00          | 26.35       | 1000.           | 120.000         | 341.0       | H   | 293.0         | 21           |
| 359.90200       | 21.06              | 46.00          | 24.94       | 1000.           | 120.000         | 114.0       | H   | 2.0           | 23           |
| 498.94633       | 24.03              | 46.00          | 21.97       | 1000.           | 120.000         | 192.0       | V   | 90.0          | 25           |
| 915.19566       | 30.85              | 46.00          | 15.16       | 1000.           | 120.000         | 365.0       | H   | 16.0          | 31           |



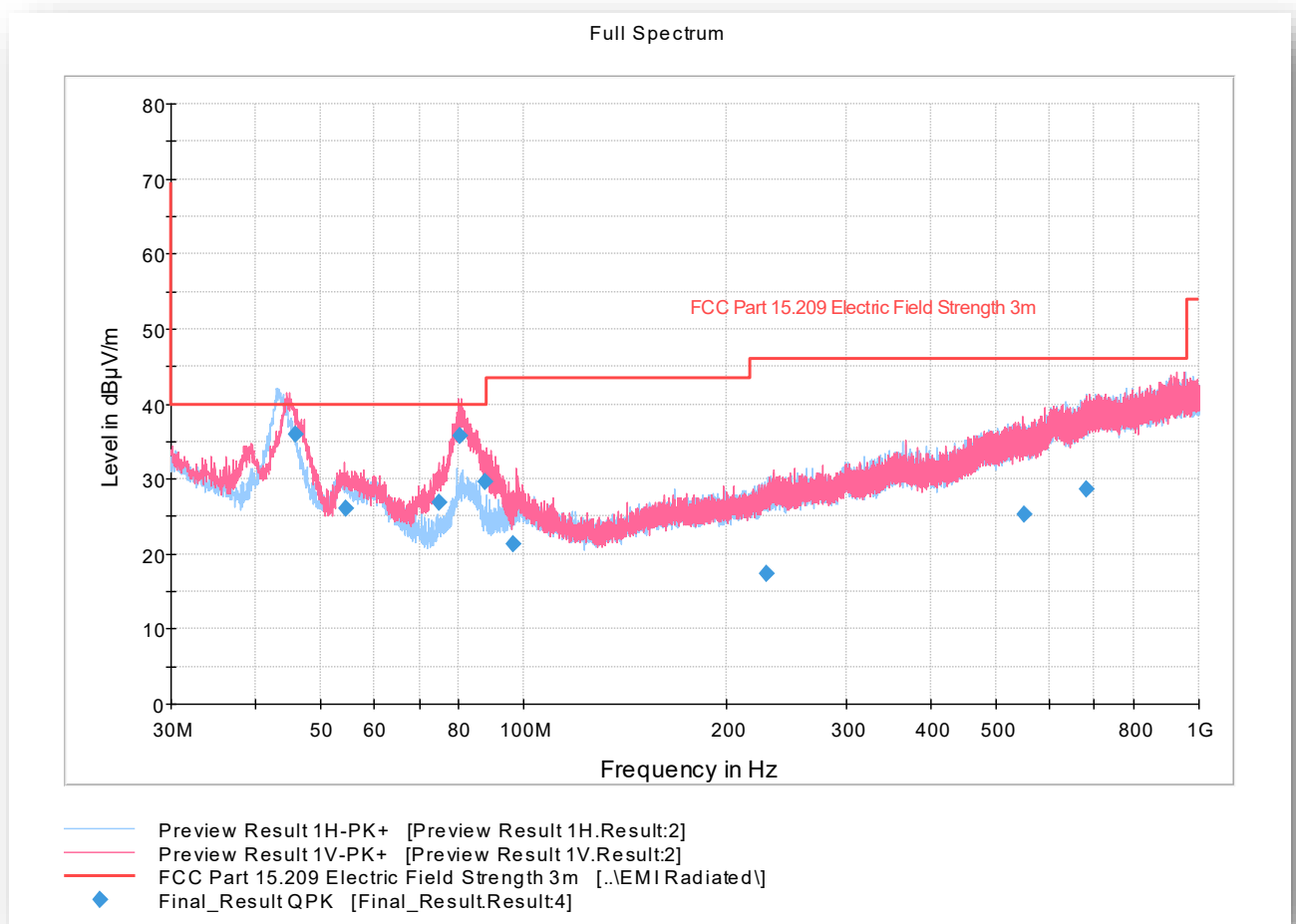
2.3.27Test Results for 30MHz to 1GHz (500D) Mid Channel



Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 30.680000       | 20.21              | 40.00          | 19.79       | 1000.           | 120.000         | 175.0       | V   | 200.0         | 22           |
| 57.362333       | 11.52              | 40.00          | 28.48       | 1000.           | 120.000         | 311.0       | H   | 5.0           | 14           |
| 100.23800       | 14.79              | 43.50          | 28.71       | 1000.           | 120.000         | 226.0       | V   | 338.0         | 16           |
| 170.97166       | 15.22              | 43.50          | 28.28       | 1000.           | 120.000         | 391.0       | V   | 337.0         | 17           |
| 212.43733       | 16.11              | 43.50          | 27.39       | 1000.           | 120.000         | 255.0       | H   | 7.0           | 18           |
| 303.52966       | 20.10              | 46.00          | 25.90       | 1000.           | 120.000         | 369.0       | V   | 344.0         | 22           |
| 521.72900       | 24.88              | 46.00          | 21.12       | 1000.           | 120.000         | 149.0       | H   | 205.0         | 26           |
| 952.99933       | 31.44              | 46.00          | 14.56       | 1000.           | 120.000         | 368.0       | V   | -11.0         | 31           |

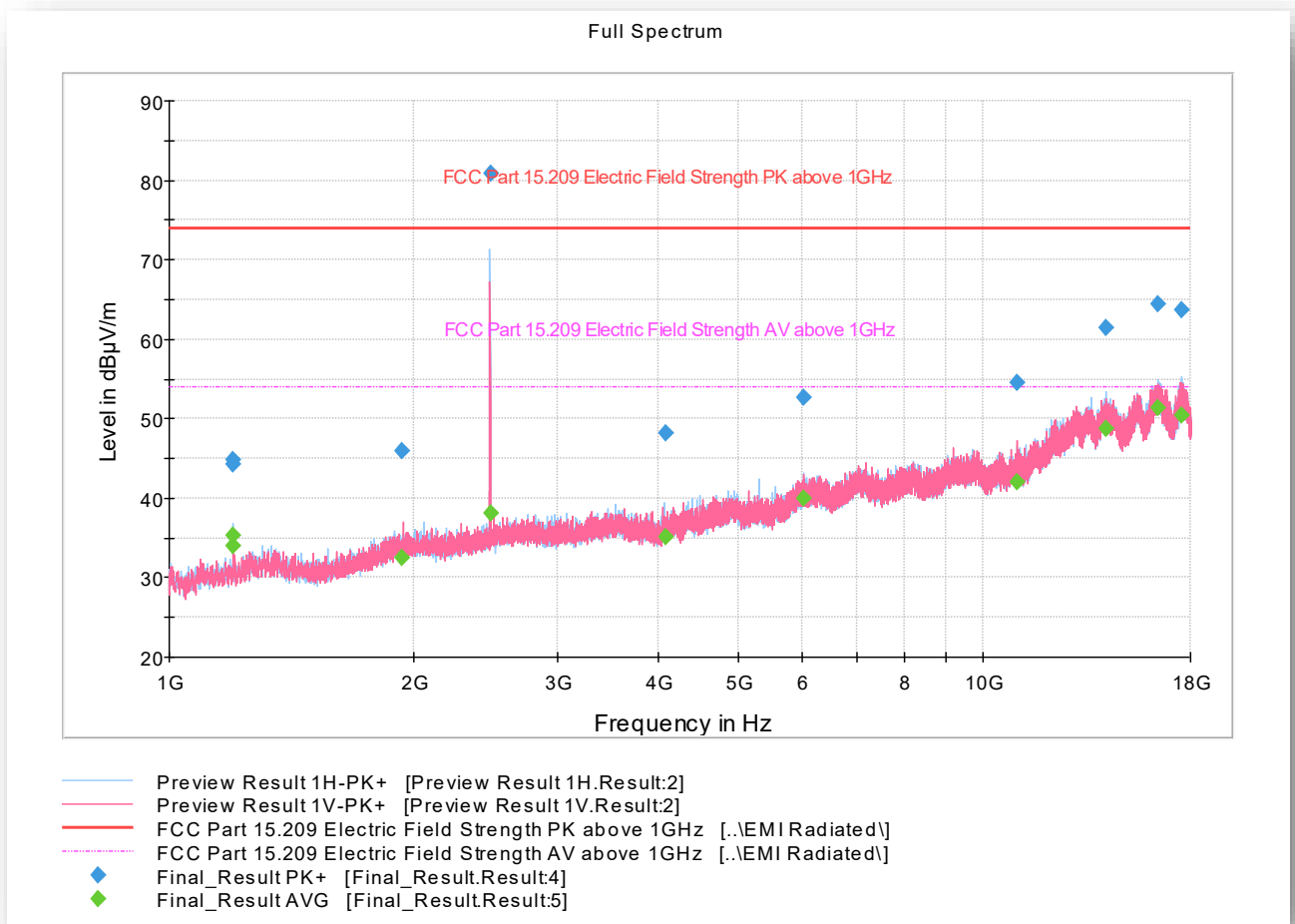
## 2.3.28 Test Results for 30MHz to 1GHz (500D) Low Channel



## Quasi Peak Data

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 45.753667       | 35.94              | 40.00          | 4.06        | 1000.           | 120.000         | 100.0       | V   | 158.0         | 15           |
| 54.337667       | 26.01              | 40.00          | 13.99       | 1000.           | 120.000         | 114.0       | V   | 32.0          | 14           |
| 74.682333       | 26.92              | 40.00          | 13.08       | 1000.           | 120.000         | 108.0       | V   | 303.0         | 13           |
| 80.204333       | 35.75              | 40.00          | 4.25        | 1000.           | 120.000         | 109.0       | V   | 3.0           | 13           |
| 87.720000       | 29.67              | 40.00          | 10.33       | 1000.           | 120.000         | 125.0       | V   | 154.0         | 14           |
| 96.598000       | 21.25              | 43.50          | 22.25       | 1000.           | 120.000         | 125.0       | V   | 82.0          | 16           |
| 229.24733       | 17.45              | 46.00          | 28.55       | 1000.           | 120.000         | 162.0       | H   | 258.0         | 19           |
| 550.22666       | 25.26              | 46.00          | 20.74       | 1000.           | 120.000         | 186.0       | V   | 127.0         | 26           |
| 680.31866       | 28.63              | 46.00          | 17.37       | 1000.           | 120.000         | 181.0       | H   | 2.0           | 28           |

### 2.3.29 Test Results for 1GHz to 18GHz (500D) High Channel



### Peak Data

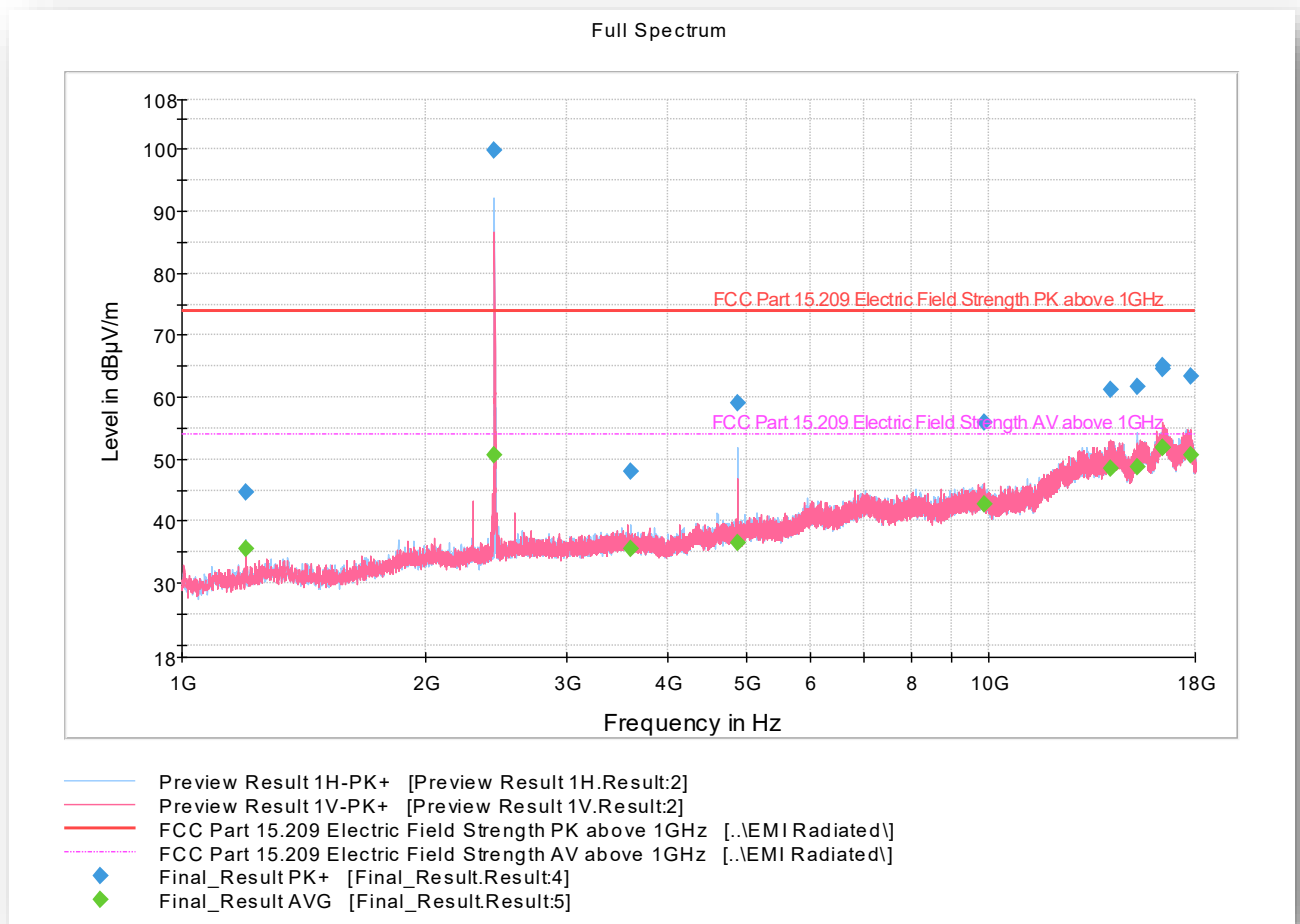
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1199.66666      | 44.21            | 73.90          | 29.69       | 1000.0          | 1000.000        | 187.0       | H   | 197.0         | -1           |
| 1200.06666      | 44.82            | 73.90          | 29.08       | 1000.0          | 1000.000        | 198.0       | H   | 187.0         | -1           |
| 1934.43333      | 46.03            | 73.90          | 27.87       | 1000.0          | 1000.000        | 123.0       | V   | 26.0          | 4            |
| 2480.16666      | 80.78            | 73.90          | -6.88       | 1000.0          | 1000.000        | 337.0       | H   | 301.0         | 4            |
| 4070.26666      | 48.17            | 73.90          | 25.73       | 1000.0          | 1000.000        | 261.0       | H   | 46.0          | 6            |
| 6019.06666      | 52.76            | 73.90          | 21.14       | 1000.0          | 1000.000        | 334.0       | H   | 35.0          | 9            |
| 11034.9666      | 54.57            | 73.90          | 19.33       | 1000.0          | 1000.000        | 365.0       | V   | 77.0          | 15           |
| 14160.1000      | 61.50            | 73.90          | 12.40       | 1000.0          | 1000.000        | 338.0       | H   | 152.0         | 18           |
| 16391.6333      | 64.41            | 73.90          | 9.49        | 1000.0          | 1000.000        | 167.0       | H   | 92.0          | 21           |
| 17583.9666      | 63.64            | 73.90          | 10.26       | 1000.0          | 1000.000        | 123.0       | H   | 208.0         | 23           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1199.66666      | 34.03            | 53.90          | 19.87       | 1000.0          | 1000.000        | 187.0       | H   | 197.0         | -1           |
| 1200.06666      | 35.23            | 53.90          | 18.67       | 1000.0          | 1000.000        | 198.0       | H   | 187.0         | -1           |
| 1934.43333      | 32.54            | 53.90          | 21.36       | 1000.0          | 1000.000        | 123.0       | V   | 26.0          | 4            |
| 2480.16666      | 38.09            | 53.90          | 15.81       | 1000.0          | 1000.000        | 337.0       | H   | 301.0         | 4            |
| 4070.26666      | 35.15            | 53.90          | 18.75       | 1000.0          | 1000.000        | 261.0       | H   | 46.0          | 6            |
| 6019.06666      | 40.06            | 53.90          | 13.84       | 1000.0          | 1000.000        | 334.0       | H   | 35.0          | 9            |
| 11034.9666      | 42.07            | 53.90          | 11.83       | 1000.0          | 1000.000        | 365.0       | V   | 77.0          | 15           |
| 14160.1000      | 48.74            | 53.90          | 5.16        | 1000.0          | 1000.000        | 338.0       | H   | 152.0         | 18           |
| 16391.6333      | 51.42            | 53.90          | 2.48        | 1000.0          | 1000.000        | 167.0       | H   | 92.0          | 21           |
| 17583.9666      | 50.40            | 53.90          | 3.50        | 1000.0          | 1000.000        | 123.0       | H   | 208.0         | 23           |

### 2.3.30 Test Results for 1GHz to 18GHz (500D) Mid Channel



### Peak Data

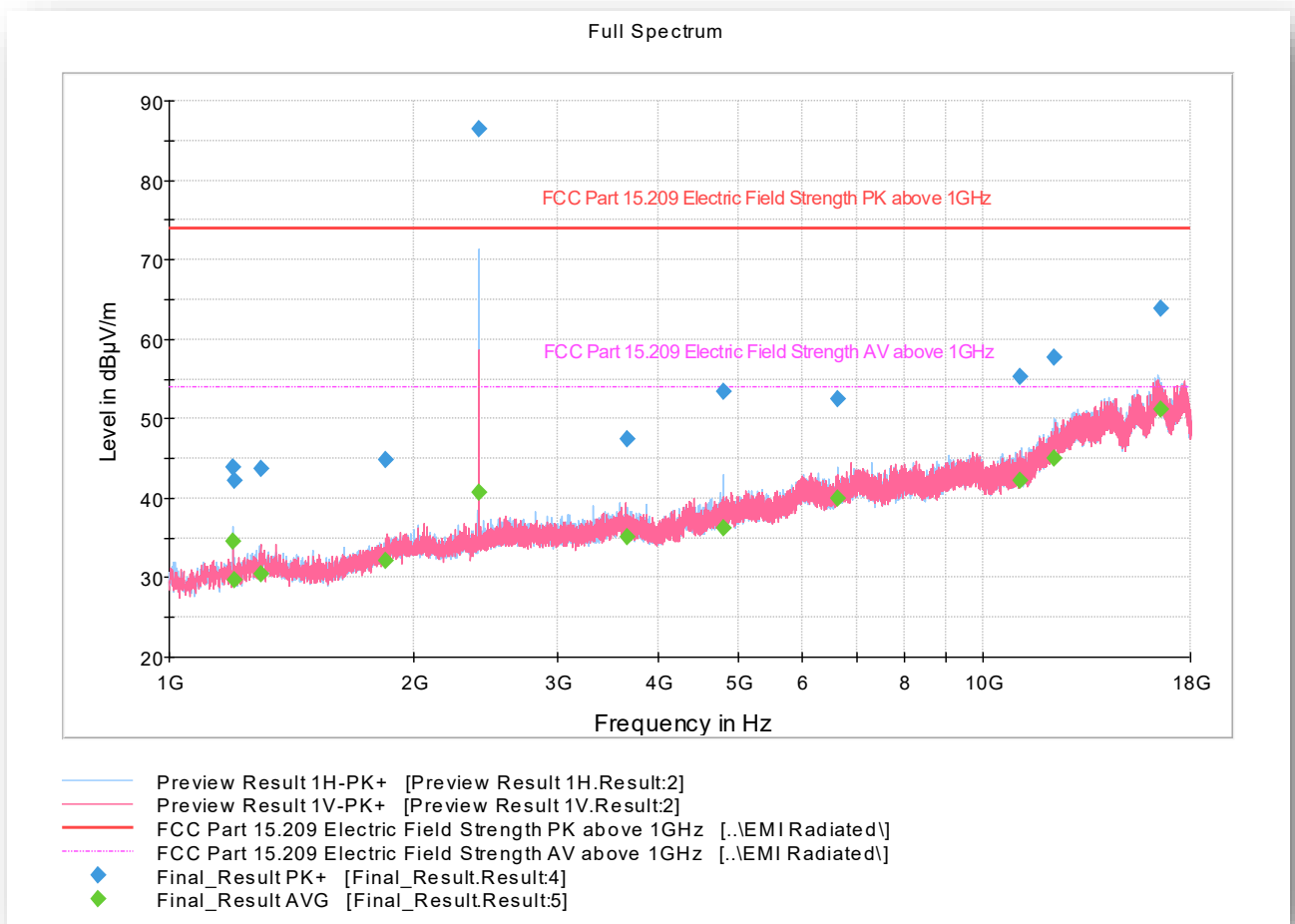
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 44.56            | 73.90          | 29.34       | 1000.0          | 1000.000        | 316.0       | H   | 258.0         | -1           |
| 2440.10000      | 99.90            | 73.90          | -26.00      | 1000.0          | 1000.000        | 343.0       | H   | 26.0          | 4            |
| 3603.33333      | 48.09            | 73.90          | 25.81       | 1000.0          | 1000.000        | 333.0       | H   | 38.0          | 6            |
| 4879.76666      | 58.95            | 73.90          | 14.95       | 1000.0          | 1000.000        | 365.0       | H   | 303.0         | 7            |
| 9861.40000      | 55.97            | 73.90          | 17.93       | 1000.0          | 1000.000        | 158.0       | V   | 183.0         | 13           |
| 14133.9666      | 61.11            | 73.90          | 12.79       | 1000.0          | 1000.000        | 365.0       | V   | 322.0         | 18           |
| 15284.8000      | 61.69            | 73.90          | 12.21       | 1000.0          | 1000.000        | 346.0       | H   | 252.0         | 18           |
| 16382.9333      | 64.59            | 73.90          | 9.31        | 1000.0          | 1000.000        | 318.0       | V   | 13.0          | 21           |
| 16386.9333      | 64.98            | 73.90          | 8.92        | 1000.0          | 1000.000        | 365.0       | V   | 37.0          | 21           |
| 17754.0666      | 63.48            | 73.90          | 10.42       | 1000.0          | 1000.000        | 232.0       | V   | 5.0           | 24           |



### Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 35.43            | 53.90          | 18.47       | 1000.0          | 1000.000        | 316.0       | H   | 258.0         | -1           |
| 2440.10000      | 50.73            | 53.90          | 3.17        | 1000.0          | 1000.000        | 343.0       | H   | 26.0          | 4            |
| 3603.33333      | 35.53            | 53.90          | 18.37       | 1000.0          | 1000.000        | 333.0       | H   | 38.0          | 6            |
| 4879.76666      | 36.57            | 53.90          | 17.33       | 1000.0          | 1000.000        | 365.0       | H   | 303.0         | 7            |
| 9861.40000      | 42.66            | 53.90          | 11.24       | 1000.0          | 1000.000        | 158.0       | V   | 183.0         | 13           |
| 14133.9666      | 48.46            | 53.90          | 5.44        | 1000.0          | 1000.000        | 365.0       | V   | 322.0         | 18           |
| 15284.8000      | 48.82            | 53.90          | 5.08        | 1000.0          | 1000.000        | 346.0       | H   | 252.0         | 18           |
| 16382.9333      | 51.80            | 53.90          | 2.10        | 1000.0          | 1000.000        | 318.0       | V   | 13.0          | 21           |
| 16386.9333      | 51.77            | 53.90          | 2.13        | 1000.0          | 1000.000        | 365.0       | V   | 37.0          | 21           |
| 17754.0666      | 50.70            | 53.90          | 3.20        | 1000.0          | 1000.000        | 232.0       | V   | 5.0           | 24           |

### 2.3.31 Test Results for 1GHz to 18GHz (500D) Low Channel



### Peak Data

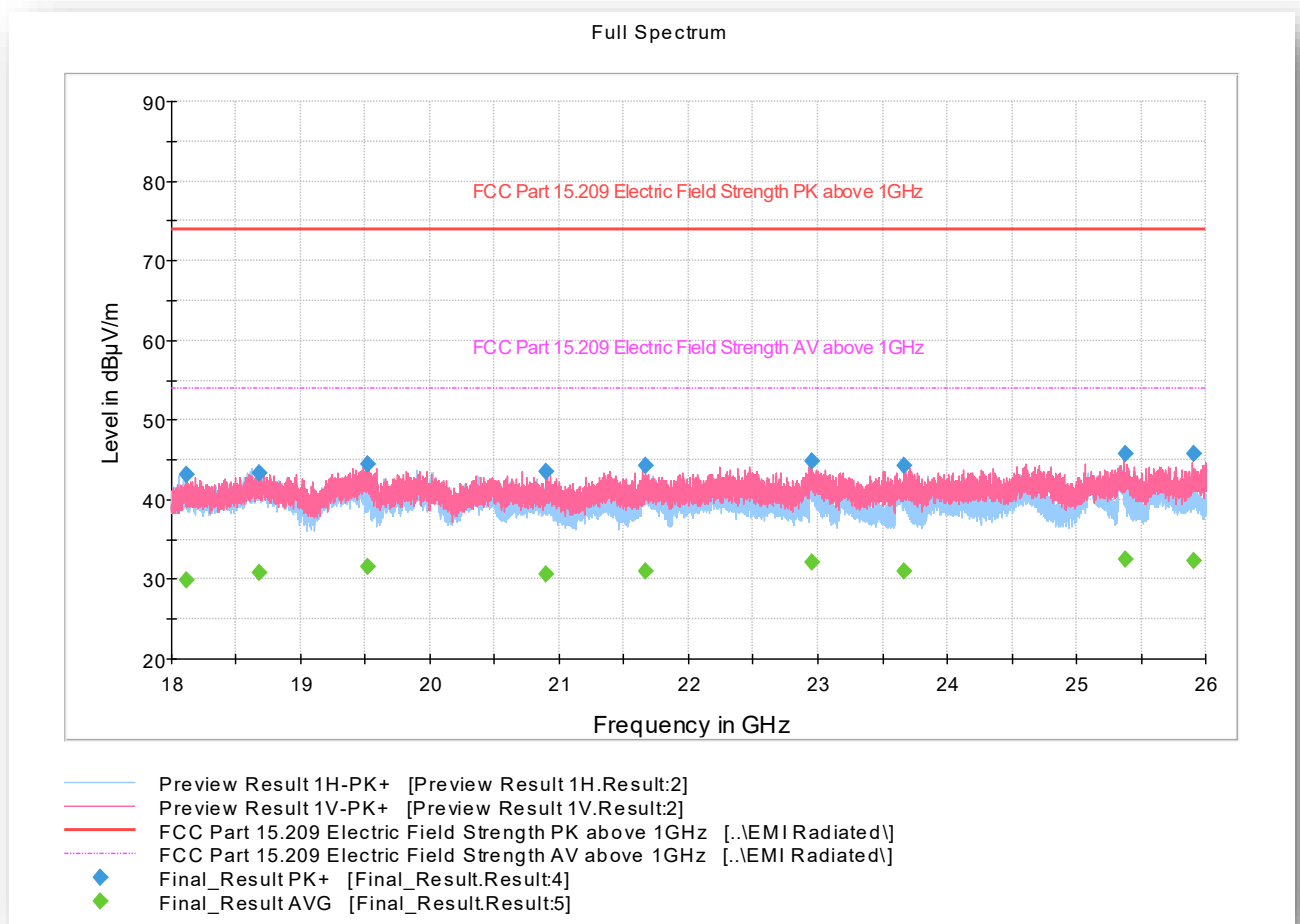
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 43.87            | 73.90          | 30.03       | 1000.0          | 1000.000        | 203.0       | H   | 309.0         | -1           |
| 1204.46666      | 42.27            | 73.90          | 31.63       | 1000.0          | 1000.000        | 170.0       | H   | 324.0         | -1           |
| 1294.93333      | 43.72            | 73.90          | 30.18       | 1000.0          | 1000.000        | 121.0       | V   | 287.0         | 1            |
| 1848.36666      | 44.88            | 73.90          | 29.02       | 1000.0          | 1000.000        | 363.0       | V   | 265.0         | 3            |
| 2402.13333      | 86.53            | 73.90          | -12.63      | 1000.0          | 1000.000        | 365.0       | H   | 240.0         | 4            |
| 3657.13333      | 47.47            | 73.90          | 26.43       | 1000.0          | 1000.000        | 365.0       | V   | 71.0          | 6            |
| 4803.83333      | 53.33            | 73.90          | 20.57       | 1000.0          | 1000.000        | 199.0       | H   | 26.0          | 7            |
| 6643.30000      | 52.57            | 73.90          | 21.33       | 1000.0          | 1000.000        | 252.0       | H   | 28.0          | 10           |
| 11108.2333      | 55.25            | 73.90          | 18.65       | 1000.0          | 1000.000        | 254.0       | V   | 144.0         | 16           |
| 12258.1666      | 57.80            | 73.90          | 16.10       | 1000.0          | 1000.000        | 121.0       | H   | 77.0          | 18           |
| 16522.0333      | 63.84            | 73.90          | 10.06       | 1000.0          | 1000.000        | 152.0       | H   | 49.0          | 21           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 1200.06666      | 34.64            | 53.90          | 19.26       | 1000.0          | 1000.000        | 203.0       | H   | 309.0         | -1           |
| 1204.46666      | 29.65            | 53.90          | 24.25       | 1000.0          | 1000.000        | 170.0       | H   | 324.0         | -1           |
| 1294.93333      | 30.54            | 53.90          | 23.36       | 1000.0          | 1000.000        | 121.0       | V   | 287.0         | 1            |
| 1848.36666      | 32.15            | 53.90          | 21.75       | 1000.0          | 1000.000        | 363.0       | V   | 265.0         | 3            |
| 2402.13333      | 40.69            | 53.90          | 13.21       | 1000.0          | 1000.000        | 365.0       | H   | 240.0         | 4            |
| 3657.13333      | 35.14            | 53.90          | 18.76       | 1000.0          | 1000.000        | 365.0       | V   | 71.0          | 6            |
| 4803.83333      | 36.29            | 53.90          | 17.61       | 1000.0          | 1000.000        | 199.0       | H   | 26.0          | 7            |
| 6643.30000      | 39.92            | 53.90          | 13.98       | 1000.0          | 1000.000        | 252.0       | H   | 28.0          | 10           |
| 11108.2333      | 42.17            | 53.90          | 11.73       | 1000.0          | 1000.000        | 254.0       | V   | 144.0         | 16           |
| 12258.1666      | 45.09            | 53.90          | 8.81        | 1000.0          | 1000.000        | 121.0       | H   | 77.0          | 18           |
| 16522.0333      | 51.18            | 53.90          | 2.72        | 1000.0          | 1000.000        | 152.0       | H   | 49.0          | 21           |

### 2.3.32 Test Results for 18GHz to 26GHz (500D) High Channel



### Peak Data

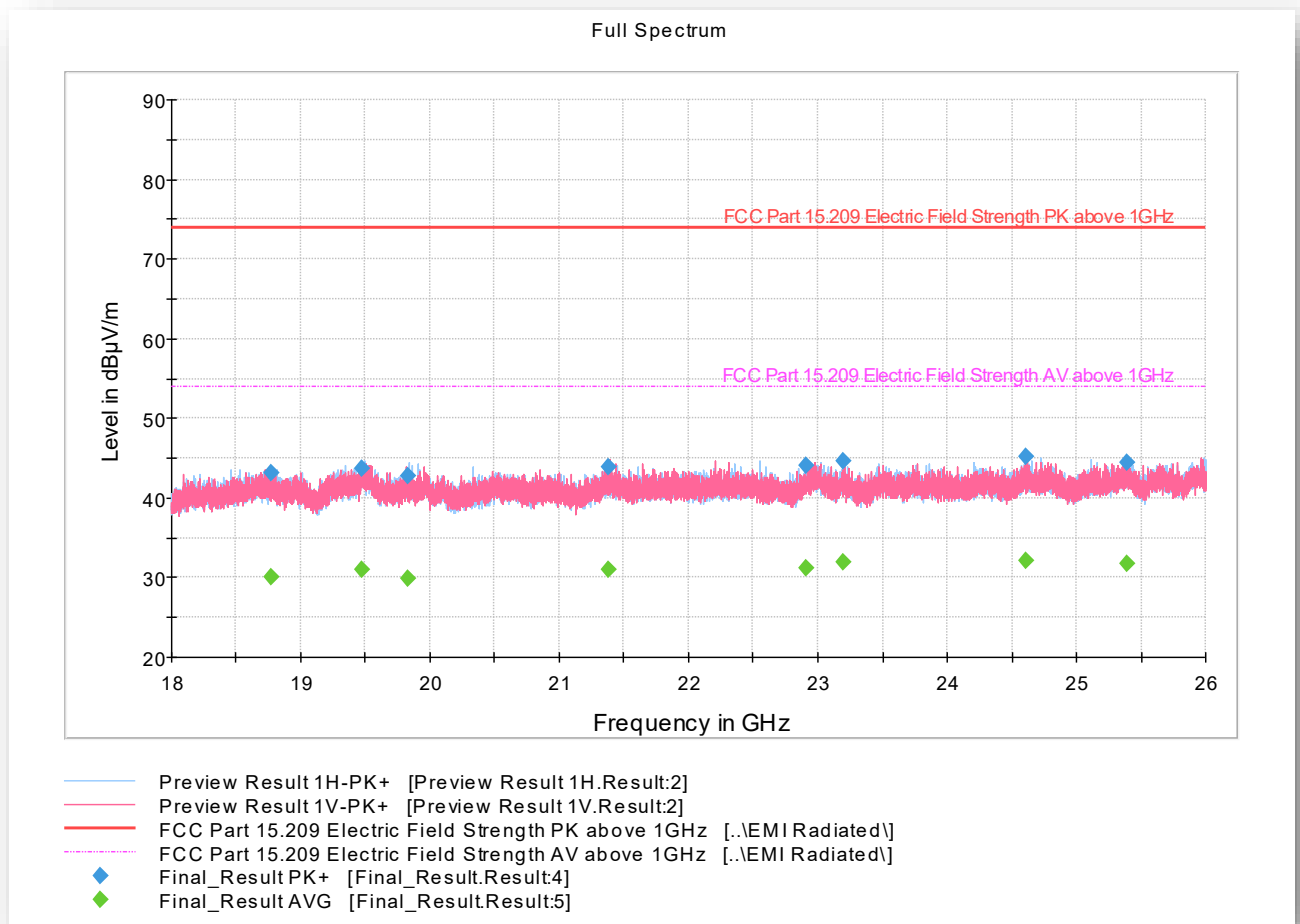
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18111.4570      | 43.11            | 73.90          | 30.79       | 1000.0          | 1000.000        | 138.0       | V   | 13.0          | -5           |
| 18676.2390      | 43.32            | 73.90          | 30.58       | 1000.0          | 1000.000        | 187.0       | V   | 174.0         | -5           |
| 19518.8335      | 44.52            | 73.90          | 29.38       | 1000.0          | 1000.000        | 163.0       | V   | 27.0          | -5           |
| 20895.6915      | 43.44            | 73.90          | 30.46       | 1000.0          | 1000.000        | 137.0       | V   | 188.0         | -5           |
| 21663.3600      | 44.36            | 73.90          | 29.54       | 1000.0          | 1000.000        | 139.0       | V   | 203.0         | -4           |
| 22955.9690      | 44.75            | 73.90          | 29.15       | 1000.0          | 1000.000        | 162.0       | V   | 268.0         | -3           |
| 23671.9945      | 44.19            | 73.90          | 29.71       | 1000.0          | 1000.000        | 212.0       | V   | 241.0         | -2           |
| 25382.3180      | 45.74            | 73.90          | 28.16       | 1000.0          | 1000.000        | 150.0       | V   | 38.0          | -1           |
| 25902.9880      | 45.68            | 73.90          | 28.22       | 1000.0          | 1000.000        | 142.0       | V   | 85.0          | -2           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18111.4570      | 29.84            | 53.90          | 24.06       | 1000.0          | 1000.000        | 138.0       | V   | 13.0          | -5           |
| 18676.2390      | 30.81            | 53.90          | 23.09       | 1000.0          | 1000.000        | 187.0       | V   | 174.0         | -5           |
| 19518.8335      | 31.64            | 53.90          | 22.26       | 1000.0          | 1000.000        | 163.0       | V   | 27.0          | -5           |
| 20895.6915      | 30.56            | 53.90          | 23.34       | 1000.0          | 1000.000        | 137.0       | V   | 188.0         | -5           |
| 21663.3600      | 31.07            | 53.90          | 22.83       | 1000.0          | 1000.000        | 139.0       | V   | 203.0         | -4           |
| 22955.9690      | 32.15            | 53.90          | 21.75       | 1000.0          | 1000.000        | 162.0       | V   | 268.0         | -3           |
| 23671.9945      | 31.04            | 53.90          | 22.86       | 1000.0          | 1000.000        | 212.0       | V   | 241.0         | -2           |
| 25382.3180      | 32.55            | 53.90          | 21.35       | 1000.0          | 1000.000        | 150.0       | V   | 38.0          | -1           |
| 25902.9880      | 32.38            | 53.90          | 21.52       | 1000.0          | 1000.000        | 142.0       | V   | 85.0          | -2           |

### 2.3.33 Test Results for 18GHz to 26GHz (500D) Mid Channel



### Peak Data

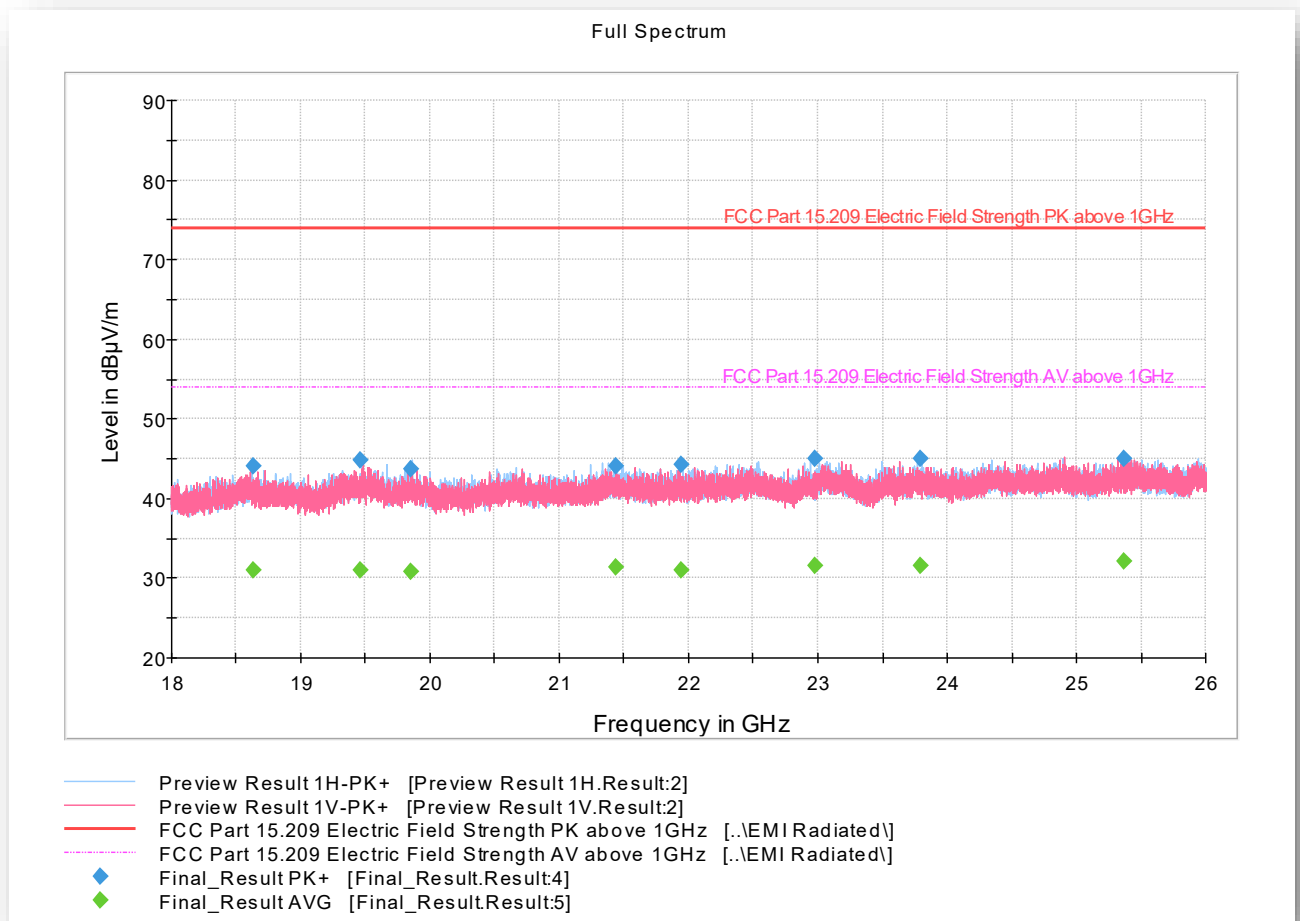
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18767.6225      | 43.09            | 73.90          | 30.81       | 1000.0          | 1000.000        | 213.0       | H   | 172.0         | -5           |
| 19473.7670      | 43.74            | 73.90          | 30.16       | 1000.0          | 1000.000        | 213.0       | H   | 257.0         | -5           |
| 19827.9790      | 42.80            | 73.90          | 31.10       | 1000.0          | 1000.000        | 162.0       | H   | 238.0         | -5           |
| 21384.8235      | 43.96            | 73.90          | 29.94       | 1000.0          | 1000.000        | 203.0       | V   | 283.0         | -4           |
| 22905.6580      | 44.01            | 73.90          | 29.89       | 1000.0          | 1000.000        | 193.0       | H   | 289.0         | -3           |
| 23199.1205      | 44.72            | 73.90          | 29.18       | 1000.0          | 1000.000        | 162.0       | H   | 320.0         | -3           |
| 24614.2780      | 45.22            | 73.90          | 28.68       | 1000.0          | 1000.000        | 162.0       | V   | 259.0         | -2           |
| 25385.1620      | 44.47            | 73.90          | 29.43       | 1000.0          | 1000.000        | 213.0       | H   | 46.0          | -1           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18767.6225      | 30.03            | 53.90          | 23.87       | 1000.0          | 1000.000        | 213.0       | H   | 172.0         | -5           |
| 19473.7670      | 31.10            | 53.90          | 22.80       | 1000.0          | 1000.000        | 213.0       | H   | 257.0         | -5           |
| 19827.9790      | 29.95            | 53.90          | 23.95       | 1000.0          | 1000.000        | 162.0       | H   | 238.0         | -5           |
| 21384.8235      | 31.08            | 53.90          | 22.82       | 1000.0          | 1000.000        | 203.0       | V   | 283.0         | -4           |
| 22905.6580      | 31.18            | 53.90          | 22.72       | 1000.0          | 1000.000        | 193.0       | H   | 289.0         | -3           |
| 23199.1205      | 31.86            | 53.90          | 22.04       | 1000.0          | 1000.000        | 162.0       | H   | 320.0         | -3           |
| 24614.2780      | 32.17            | 53.90          | 21.73       | 1000.0          | 1000.000        | 162.0       | V   | 259.0         | -2           |
| 25385.1620      | 31.85            | 53.90          | 22.05       | 1000.0          | 1000.000        | 213.0       | H   | 46.0          | -1           |

### 2.3.34 Test Results for 18GHz to 26GHz (500D) Low Channel



### Peak Data

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18629.5700      | 44.17            | 73.90          | 29.73       | 1000.0          | 1000.000        | 138.0       | H   | 146.0         | -4           |
| 19464.7880      | 44.86            | 73.90          | 29.04       | 1000.0          | 1000.000        | 138.0       | H   | 290.0         | -5           |
| 19853.0840      | 43.76            | 73.90          | 30.14       | 1000.0          | 1000.000        | 162.0       | H   | 208.0         | -5           |
| 21437.5480      | 44.16            | 73.90          | 29.74       | 1000.0          | 1000.000        | 192.0       | H   | 189.0         | -4           |
| 21942.6630      | 44.23            | 73.90          | 29.67       | 1000.0          | 1000.000        | 198.0       | H   | 234.0         | -4           |
| 22976.1335      | 45.01            | 73.90          | 28.89       | 1000.0          | 1000.000        | 162.0       | H   | 252.0         | -3           |
| 23795.8985      | 44.97            | 73.90          | 28.93       | 1000.0          | 1000.000        | 138.0       | H   | 78.0          | -2           |
| 25365.8245      | 45.00            | 73.90          | 28.90       | 1000.0          | 1000.000        | 189.0       | V   | 347.0         | -1           |



## Average Data

| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 18629.5700      | 31.04            | 53.90          | 22.86       | 1000.0          | 1000.000        | 138.0       | H   | 146.0         | -4           |
| 19464.7880      | 31.03            | 53.90          | 22.87       | 1000.0          | 1000.000        | 138.0       | H   | 290.0         | -5           |
| 19853.0840      | 30.86            | 53.90          | 23.04       | 1000.0          | 1000.000        | 162.0       | H   | 208.0         | -5           |
| 21437.5480      | 31.41            | 53.90          | 22.49       | 1000.0          | 1000.000        | 192.0       | H   | 189.0         | -4           |
| 21942.6630      | 30.97            | 53.90          | 22.93       | 1000.0          | 1000.000        | 198.0       | H   | 234.0         | -4           |
| 22976.1335      | 31.53            | 53.90          | 22.37       | 1000.0          | 1000.000        | 162.0       | H   | 252.0         | -3           |
| 23795.8985      | 31.50            | 53.90          | 22.40       | 1000.0          | 1000.000        | 138.0       | H   | 78.0          | -2           |
| 25365.8245      | 32.19            | 53.90          | 21.71       | 1000.0          | 1000.000        | 189.0       | V   | 347.0         | -1           |



## **SECTION 3**

### **TEST EQUIPMENT USED**



### 3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

| ID Number<br>(SDGE/SDRB) | Test Equipment                        | Type                   | Serial<br>Number   | Manufacturer          | Cal Date | Cal Due<br>Date |
|--------------------------|---------------------------------------|------------------------|--------------------|-----------------------|----------|-----------------|
| <b>Radiated Emission</b> |                                       |                        |                    |                       |          |                 |
| 07640                    | Loop Antenna                          | AL-130R                | 121086             | Com-Power Corp.       | 06/23/22 | 08/08/24        |
| 6628                     | Loop Antenna                          | HFH2-<br>Z2335.4711.52 | FNr.800.458/2<br>5 | Rohde & Schwarz       | 06/23/22 | 06/23/24        |
| 1033                     | BiConiLog Antenna                     | 3142C                  | 00044556           | ETS Lindgren          | 12/01/23 | 12/01/25        |
| 51235                    | RF Pre-Amp (9kHz to<br>1GHz)          | 310                    | 412802             | Sonoma                | 08/21/23 | 08/21/24        |
| 7575                     | 1-18GHz DRG Horn                      | 3117                   | 155511             | ETS Lindgren          | 08/08/21 | 08/08/24        |
| 8628                     | Pre Amplifier                         | QLJ-01182835-JO        | 8986002            | Quinstar              | 02/19/24 | 02/19/25        |
| 1049                     | EMI Test Receiver                     | ESU40                  | 100133             | Rhone & Schwarz       | 08/23/23 | 08/23/24        |
| 40815                    | 18GHz to 40GHz Low<br>Noise Amplifier | SLKka-30-6             | 19D18              | Spacek Labs           | 09/06/23 | 09/06/24        |
| 9001                     | 18-26 GHz Antenna                     | HO42S                  | 101                | Custom Microwave, Inc | 10/26/23 | 10/26/25        |
| <b>Miscellaneous</b>     |                                       |                        |                    |                       |          |                 |
| 7619                     | Barometer/<br>Temperature/Humidity    | iBTHX-W                | 15250268           | Omega                 | 05/27/24 | 05/27/25        |
| 43003                    | True RMS Multimeter                   | 85 III                 | 69880143           | Fluke                 | 10/02/23 | 10/02/24        |
|                          | Test Software                         | EMC32                  | V10.50.40          | Rhode & Schwarz       | N/A      |                 |

### 3.2 Measurement Uncertainty

Calculation of Measurement Uncertainty per CISPR 16-4-2:2011 with Corr. 1

#### 3.2.1 Radiated Measurements (9kHz to 30MHz)

|                               | Input Quantity (Contribution) $X_i$ | Value   | Prob. Dist. | Divisor | $u_i(x)$ | $u_i(x)^2$ |
|-------------------------------|-------------------------------------|---------|-------------|---------|----------|------------|
| 1                             | Receiver reading                    | 0.10 dB | Normal, k=1 | 1.000   | 0.10     | 0.01       |
| 2                             | Attenuation: antenna-receiver       | 0.20 dB | Normal, k=2 | 2.000   | 0.10     | 0.01       |
| 3                             | Antenna factor AF                   | 0.44 dB | Normal, k=2 | 2.000   | 0.22     | 0.05       |
| 4                             | Receiver sinewave accuracy          | 0.15 dB | Normal, k=2 | 2.000   | 0.08     | 0.01       |
| 5                             | Receiver pulse amplitude            | 1.50 dB | Rectangular | 1.732   | 0.87     | 0.75       |
| 6                             | Receiver pulse repetition rate      | 1.50 dB | Rectangular | 1.732   | 0.87     | 0.75       |
| 7                             | Noise floor proximity               | 0.50 dB | Rectangular | 1.732   | 0.29     | 0.08       |
| 8                             | Mismatch: antenna-receiver          | 0.95 dB | U-shaped    | 1.414   | 0.67     | 0.45       |
| 9                             | AF frequency interpolation          | 0.30 dB | Rectangular | 1.732   | 0.17     | 0.03       |
| 10                            | AF height deviations                | 0.10 dB | Rectangular | 1.732   | 0.06     | 0.00       |
| 11                            | Directivity difference at 3 m       | 3.12 dB | Rectangular | 1.732   | 1.80     | 3.24       |
| 12                            | Phase center location at 3 m        | 1.00 dB | Rectangular | 1.732   | 0.58     | 0.33       |
| 13                            | Cross-polarization                  | 0.90 dB | Rectangular | 1.732   | 0.52     | 0.27       |
| 14                            | Balance                             | 0.00 dB | Rectangular | 1.732   | 0.00     | 0.00       |
| 15                            | Site imperfections                  | 0.00 dB | Triangular  | 2.449   | 0.00     | 0.00       |
| 16                            | Separation distance at 3 m          | 0.30 dB | Rectangular | 1.732   | 0.17     | 0.03       |
| 17                            | Effect of setup table material      | 0.00 dB | Rectangular | 1.732   | 0.00     | 0.00       |
| 18                            | Table height at 3 m                 | 0.10 dB | Normal, k=2 | 2.000   | 0.05     | 0.00       |
| 19                            | Near-field effects                  | 0.00 dB | Triangular  | 2.449   | 0.00     | 0.00       |
| 20                            | Effect of ambient noise on OATS     | 0.00 dB |             |         |          | 0.00       |
|                               |                                     |         |             |         |          |            |
| Combined standard uncertainty |                                     |         | Normal      | 2.45    | dB       |            |
| Expanded uncertainty          |                                     |         | Normal, k=2 | 4.91    | dB       |            |

#### 3.2.2 Radiated Measurements (30MHz to 1GHz)

|    | Input Quantity (Contribution) $X_i$ | Value   | Prob. Dist. | Divisor | $u_i(x)$ | $u_i(x)^2$ |
|----|-------------------------------------|---------|-------------|---------|----------|------------|
| 1  | Receiver reading                    | 0.10 dB | Normal, k=1 | 1.000   | 0.10     | 0.01       |
| 2  | Attenuation: antenna-receiver       | 0.20 dB | Normal, k=2 | 2.000   | 0.10     | 0.01       |
| 3  | Antenna factor AF                   | 0.58 dB | Normal, k=2 | 2.000   | 0.29     | 0.08       |
| 4  | Receiver sinewave accuracy          | 0.15 dB | Normal, k=2 | 2.000   | 0.08     | 0.01       |
| 5  | Receiver pulse amplitude            | 1.50 dB | Rectangular | 1.732   | 0.87     | 0.75       |
| 6  | Receiver pulse repetition rate      | 1.50 dB | Rectangular | 1.732   | 0.87     | 0.75       |
| 7  | Noise floor proximity               | 0.50 dB | Rectangular | 1.732   | 0.29     | 0.08       |
| 8  | Mismatch: antenna-receiver          | 0.95 dB | U-shaped    | 1.414   | 0.67     | 0.45       |
| 9  | AF frequency interpolation          | 0.30 dB | Rectangular | 1.732   | 0.17     | 0.03       |
| 10 | AF height deviations                | 0.10 dB | Rectangular | 1.732   | 0.06     | 0.00       |
| 11 | Directivity difference at 3 m       | 3.12 dB | Rectangular | 1.732   | 1.80     | 3.24       |

|                               |                                 |         |             |             |         |      |
|-------------------------------|---------------------------------|---------|-------------|-------------|---------|------|
| 12                            | Phase center location at 3 m    | 1.00 dB | Rectangular | 1.732       | 0.58    | 0.33 |
| 13                            | Cross-polarization              | 0.90 dB | Rectangular | 1.732       | 0.52    | 0.27 |
| 14                            | Balance                         | 0.00 dB | Rectangular | 1.732       | 0.00    | 0.00 |
| 15                            | Site imperfections              | 3.99 dB | Triangular  | 2.449       | 1.63    | 2.65 |
| 16                            | Separation distance at 3 m      | 0.30 dB | Rectangular | 1.732       | 0.17    | 0.03 |
| 17                            | Effect of setup table material  | 0.57 dB | Rectangular | 1.732       | 0.33    | 0.11 |
| 18                            | Table height at 3 m             | 0.10 dB | Normal, k=2 | 2.000       | 0.05    | 0.00 |
| 19                            | Near-field effects              | 0.00 dB | Triangular  | 2.449       | 0.00    | 0.00 |
| 20                            | Effect of ambient noise on OATS | 0.00 dB |             |             |         | 0.00 |
|                               |                                 |         |             |             |         |      |
| Combined standard uncertainty |                                 |         |             | Normal      | 2.97 dB |      |
| Expanded uncertainty          |                                 |         |             | Normal, k=2 | 5.94 dB |      |

### 3.2.3 Radiated Emission Measurements (1GHz to 18GHz)

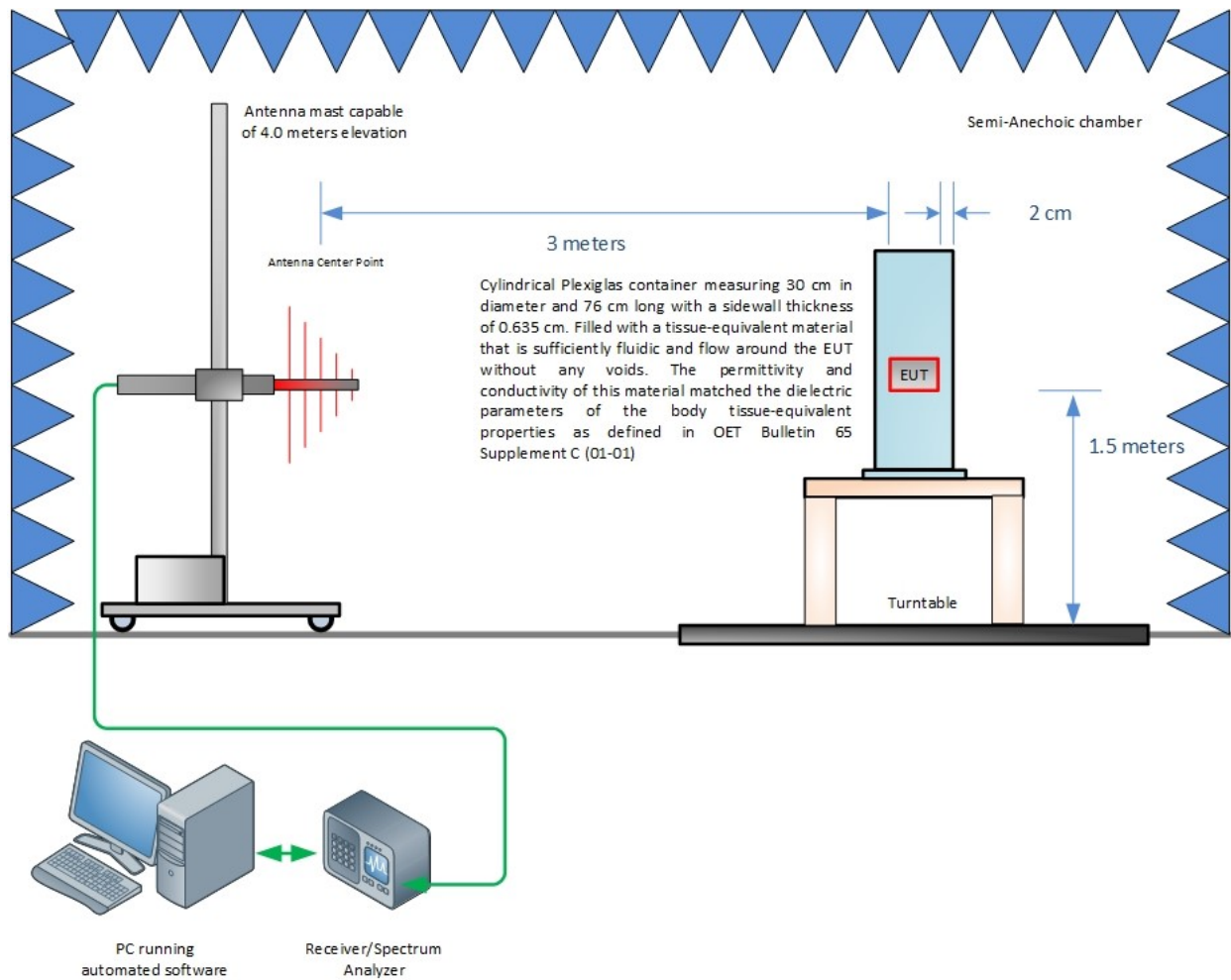
|                               | Input Quantity (Contribution) $X_i$ | Value   | Prob. Dist. | Divisor     | $u_i(x)$ | $u_i(x)^2$ |
|-------------------------------|-------------------------------------|---------|-------------|-------------|----------|------------|
| 1                             | Receiver reading                    | 0.10 dB | Normal, k=1 | 1.000       | 0.10     | 0.01       |
| 2                             | Attenuation: antenna-receiver       | 0.20 dB | Normal, k=2 | 2.000       | 0.10     | 0.01       |
| 3                             | Antenna factor AF                   | 0.75 dB | Normal, k=2 | 2.000       | 0.38     | 0.14       |
| 4                             | Receiver sinewave accuracy          | 0.45 dB | Normal, k=2 | 2.000       | 0.23     | 0.05       |
| 5                             | Receiver pulse amplitude            | 1.50 dB | Rectangular | 1.732       | 0.87     | 0.75       |
| 6                             | Receiver pulse repetition rate      | 1.50 dB | Rectangular | 1.732       | 0.87     | 0.75       |
| 7                             | Noise floor proximity               | 0.50 dB | Rectangular | 1.732       | 0.29     | 0.08       |
| 8                             | Mismatch: antenna-receiver          | 0.95 dB | U-shaped    | 1.414       | 0.67     | 0.45       |
| 9                             | AF frequency interpolation          | 0.30 dB | Rectangular | 1.732       | 0.17     | 0.03       |
| 10                            | AF height deviations                | 0.10 dB | Rectangular | 1.732       | 0.06     | 0.00       |
| 11                            | Directivity difference at 3 m       | 3.12 dB | Rectangular | 1.732       | 1.80     | 3.24       |
| 12                            | Phase center location at 3 m        | 1.00 dB | Rectangular | 1.732       | 0.58     | 0.33       |
| 13                            | Cross-polarisation                  | 0.90 dB | Rectangular | 1.732       | 0.52     | 0.27       |
| 14                            | Balance                             | 0.00 dB | Rectangular | 1.732       | 0.00     | 0.00       |
| 15                            | Site imperfections                  | 3.25 dB | Triangular  | 2.449       | 1.33     | 1.76       |
| 16                            | Separation distance at 3 m          | 0.30 dB | Rectangular | 1.732       | 0.17     | 0.03       |
| 17                            | Effect of setup table material      | 0.77 dB | Rectangular | 1.732       | 0.44     | 0.20       |
| 18                            | Table height at 3 m                 | 0.10 dB | Normal, k=2 | 2.000       | 0.05     | 0.00       |
| 19                            | Near-field effects                  | 0.00 dB | Triangular  | 2.449       | 0.00     | 0.00       |
| 20                            | Effect of ambient noise on OATS     | 0.00 dB |             |             |          | 0.00       |
|                               |                                     |         |             |             |          |            |
| Combined standard uncertainty |                                     |         |             | Normal      | 2.85 dB  |            |
| Expanded uncertainty          |                                     |         |             | Normal, k=2 | 5.70 dB  |            |



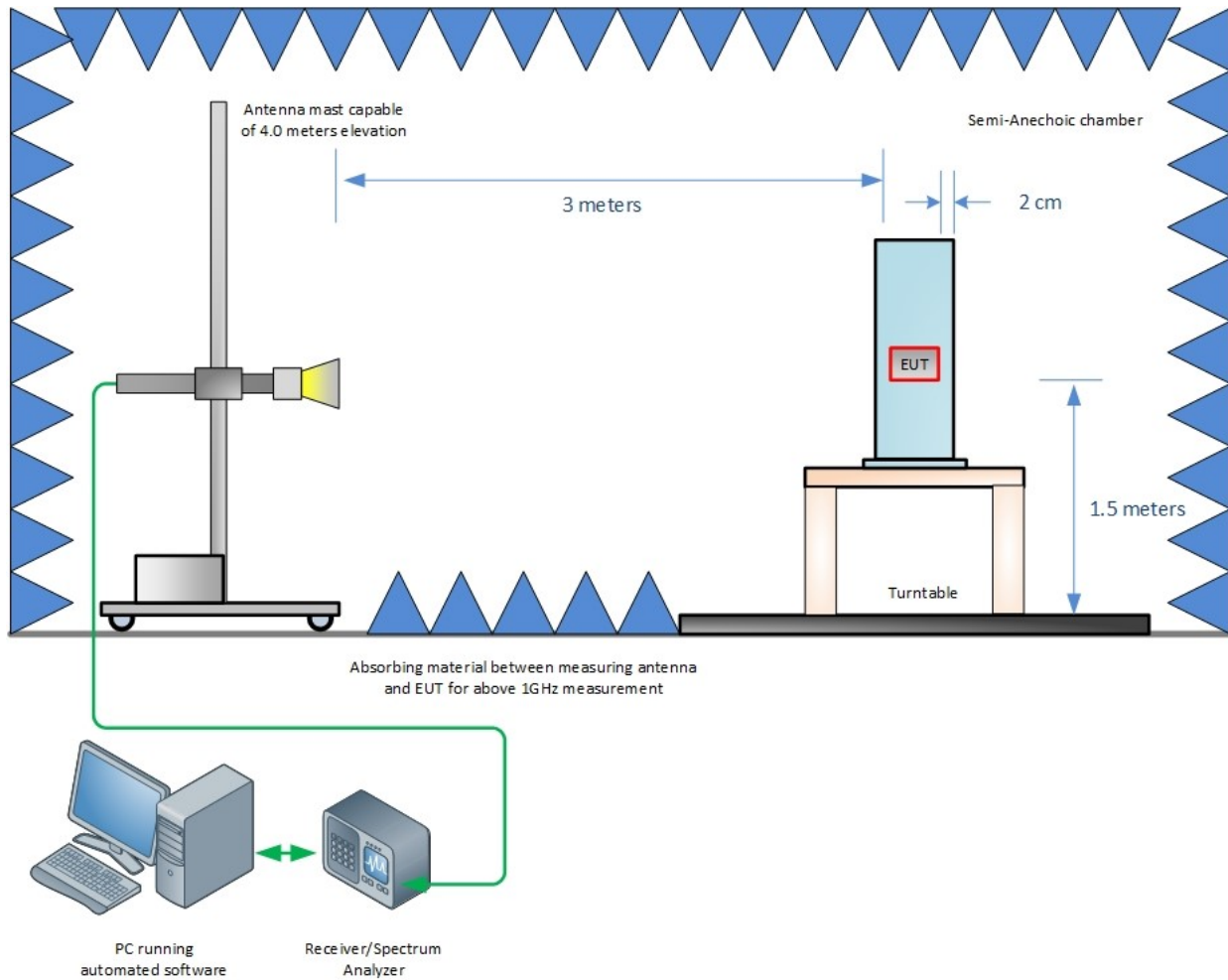
## SECTION 4

### DIAGRAM OF TEST SETUP

#### 4.1 Test Setup Diagram



**Radiated Emission Test Setup (Below 1GHz)**



**Radiated Emission Test Setup (Above 1GHz)**



## **SECTION 5**

### **ACCREDITATION, DISCLAIMERS AND COPYRIGHT**



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