

## COMPLIANCE WORLDWIDE INC. TEST REPORT 291-21

In Accordance with the Requirements of  
**FCC PART 15.247, SUBPART C**  
**Innovation, Science and Economic Development Canada**  
**RSS-247, ISSUE 2**

**Low Power License-Exempt Radio Communication Devices**  
**Intentional Radiators**

Issued to

**Nova Biomedical Corporation**  
**200 Prospect Street**  
**Waltham, MA 02454**

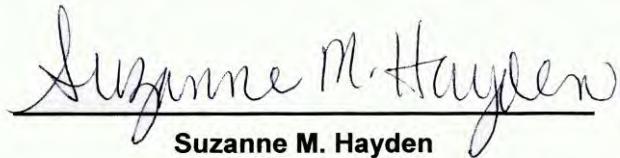
for the

**Creatinine eGFR Meter**  
**Max CREAT eGFR, Max Pro eGFR**  
**2.4 GHz Bluetooth Low Energy Radio**

**FCC ID: QYY-61721**  
**IC: 4562A-61721**

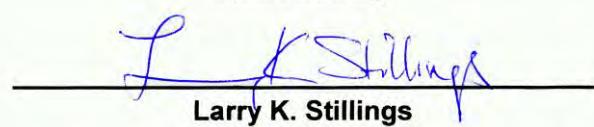
**Report Issued on January 31, 2022**

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## 1. Scope

This test report certifies that the Nova Biomedical Max CREAT eGFR, as tested, meets the FCC Part 15, Subpart C and ISED Canada RSS-247, Issue 2 requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

## 2. Product Details

<b>2.1. Manufacturer:</b>	Nova Biomedical Corporation
<b>2.2. Model Number:</b>	Max CREAT eGFR, Max pro eGFR
<b>2.3. Serial Number:</b>	276-9058-21136
<b>2.4. Description:</b>	The Nova Max Creatinine and eGFR Meter System is intended for in vitro diagnostic use for the quantitative measurement of creatinine in capillary whole blood obtained from the fingertip for screening of kidney health by calculating Estimated Glomerular Filtration Rate (eGFR).
<b>2.5. Power Source:</b>	DC 5 Volts via USB-C, Adapter Tech
<b>2.6. Hardware Revision:</b>	Rev 13
<b>2.7. Software Version:</b>	CPUS.0.4.2
<b>2.8. Modulation Type:</b>	GFSK
<b>2.9. Operating Frequency:</b>	2402 to 2480 MHz Nominal
<b>2.10. EMC Modifications:</b>	None

## 3. Product Configuration

### 3.1. Operational Characteristics & Software

#### Hardware Setup:

After power up the device is configured to transmit on the three advertising channels.

### 3.2. EUT Hardware

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Freq (Hz)	Description/Function
Nova Biomedical	Max CREAT eGFR	276-9058-21136	5	DC	eGFR Meter with BLE Radio

### 3.3. EUT Cables/Transducers

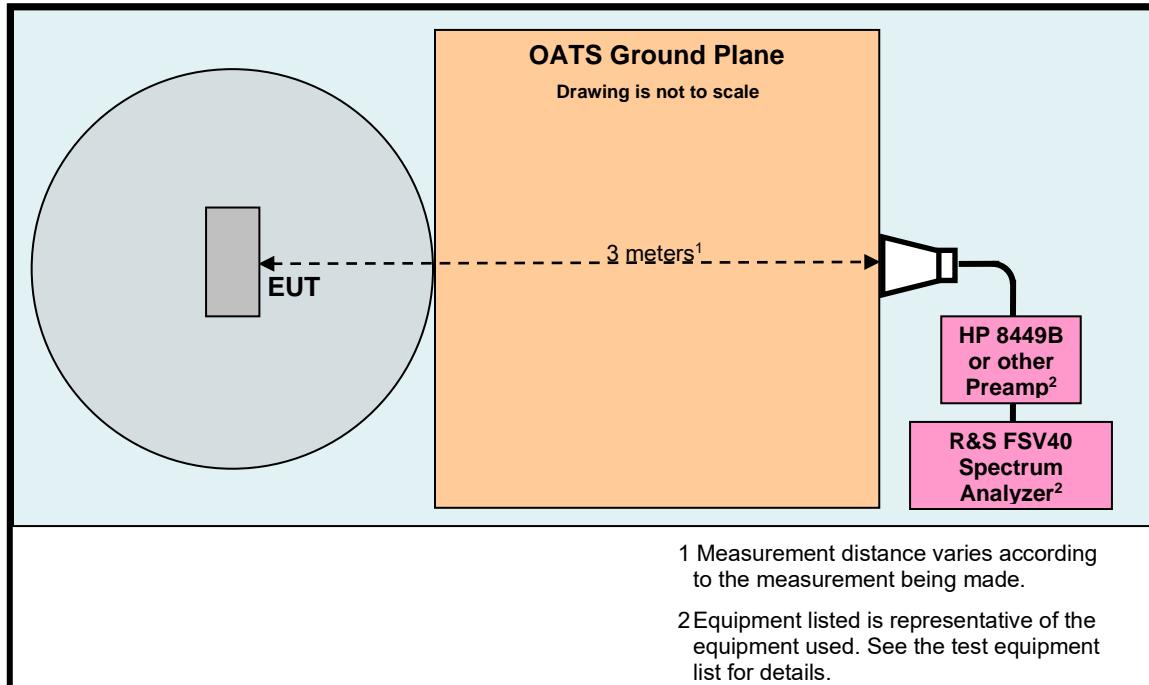
Cable Type	Length	Shield	From	To
USB-C	2M	Yes	EUT	To power supply for recharging

### 3.4. Support Equipment

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Freq (Hz)	Description/Function
Adapter Tech	ATM012T-W050VU	1904000005	120	60	Power Supply

### 3. Product Configuration (continued)

#### 3.5. Test Setup Diagram



#### 3.6. EUT Orientation Diagram

During all radiated emissions measurement testing, the product was mounted on a polystyrene form to facilitate rotating the device through three orthogonal axes, as required by ANSI C63.10, section 5.10.1, for a hand held or body worn device.

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## 4. Measurements Parameters

### 4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due	Interval
EMI Test Receiver, 9kHz - 7GHz <sup>1</sup>	Rohde & Schwarz	ESR7	101156	10/16/2022	2 Years
EMI Test Receiver, 10 Hz - 7GHz <sup>1</sup>	Rohde & Schwarz	ESR7	101770	7/23/2022	2 Years
Spectrum Analyzer, 2 Hz to 26.5 GHz <sup>2</sup>	Rohde & Schwarz	FSW26	102057	6/24/2023	2 Years
Spectrum Analyzer, 9 kHz to 40 GHz <sup>3</sup>	Rohde & Schwarz	FSV40	100899	8/12/2022	2 Years
Spectrum Analyzer 10 Hz – 40 GHz <sup>4</sup>	Rohde & Schwarz	FSVR40	100909	9/18/2022	2 Years
Loop Antenna 9 kHz - 30 MHz	EMCO	6512	9309-1139	1/28/2022	3 Years
Biconilog Antenna, 30 MHz - 2 GHz	Sunol Sciences	JB1	A050913	7/1/2023	2 Years
Dbl Ridged Guide Antenna 1- 18 GHz	ETS-Lindgren	3117	00143292	3/21/2022	3 Years
Dbl Ridged Guide Antenna 1- 18 GHz	ETS-Lindgren	3117	00227631	12/4/2022	3 Years
Preamplifier, 1 GHz to 26.5 GHz	Hewlett Packard	8449B	3008A01323	11/30/2023	2 Years
2.4 GHz Band Reject Filter	Micro-Tronics	BRM50702	150	3/23/2022	2 Years
Barometric Pressure/Humidity & Temp Datalogger	Extech Instruments	SD700	Q590483	10/14/2022	1 Year

<sup>1</sup> ESR7 Firmware revision: V3.48 SP3, Date installed: 09/30/2020

Previous V3.48 SP2, installed 07/23/2020.

<sup>2</sup> FSW26 Firmware revision: V4.71 SP1, Date installed: 11/16/2020

Previous V4.61, installed 08/11/2020.

<sup>3</sup> FSV40 Firmware revision: V2.30 SP4, Date installed: 05/04/2016

Previous V2.30 SP1, installed 10/22/2014.

<sup>4</sup> FSVR40 Firmware revision: V2.23 SP1, Date installed: 08/19/2016

Previous V2.23, installed 10/22/2014.

### 4.2. Measurement Software

Manufacturer	Software Description	Title or Model #	Rev.	Report Sections
Compliance Worldwide	Test Report Generation Software	Test Report Generator	1.0	7.9. Conducted Emissions

#### 4. Measurements Parameters

##### 4.3. Measurement & Equipment Setup

Test Dates:	8/12/2021, 8/13/2021, 12/8/2021, 1/18/2022 1/26/2022, 1/27/2022, 1/28/2022, 1/31/2022
Test Engineer:	Sean Defelice
Normal Site Temperature (15 - 35°C):	21.0
Relative Humidity (20 -75%RH):	31
Frequency Range:	30 kHz to 25 GHz
Measurement Distance:	3, 1.5, 1 and 0.3 Meters 200 Hz - 9 kHz to 150 kHz 9 kHz - 150 kHz to 30 MHz 120 kHz - 30 MHz to 1 GHz 1 MHz - Above 1 GHz
EMI Receiver IF Bandwidth:	$\geq 3 * \text{RBW}$ or $\text{IF(BW)}$
EMI Receiver Average Bandwidth:	Peak, QP - 9 kHz to 1 GHz
Detector Function:	Peak, Avg - Above 1 GHz Unless otherwise specified.

##### 4.4. Measurement Procedures

Test measurements were made in accordance FCC Part 15.247: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5850 MHz, and 24.0 - 24.25 GHz.

The measurement procedures in this report are in accordance with ANSI C63.10-2013: *American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices*. FCC OET Publication Number KDB 558074 D01 Meas Guidance v05r02, *Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section §15.247 of the rules*, dated April 2, 2019, was also referenced for the test procedures used to generate the data in this report. All references to FCC OET publication number 558074 refer to this version of the publication.

All radiated emissions measurements include correction factors for antenna, cables, preamp and attenuators, if used.

##### 4.5. Measurement Uncertainty

The following uncertainties are expressed for an expansion/coverage factor of K=2.

RF Frequency (out of band)	$\pm 1 \times 10^{-8}$
Radiated Emission of Transmitter to 100 GHz	$\pm 4.55$ dB
Radiated Emission of Receiver	$\pm 4.55$ dB
Temperature	$\pm 0.91^\circ$ C
Humidity	$\pm 5\%$

## 5. Choice of Equipment for Test Suits

### 5.1 Choice of Model

This test report is based on the one test sample supplied by the manufacturer. These units are reported by the manufacturer to be equivalent to the production units.

### 5.2 Presentation

The test samples were tested complete with all required ancillary equipment. Refer to Section 3 of this report for product equipment configuration.

### 5.3 Choice of Operating Frequencies

The EUT, as tested, operates on 40 channels, from channels 0 to 39 in the 2.4 GHz band.

In accordance with ANSI C63.10-2013, section 5.6, and FCC Part 15.31 (m), the choice of operating frequencies selected for the testing detailed in this report are as follows:

Channel	Frequency (MHz)						
37	2402	9	2422	18	2442	28	2462
0	2404	10	2424	19	2444	29	2464
1	2406	38	2426	20	2446	30	2466
2	2408	11	2428	21	2448	31	2468
3	2410	12	2430	22	2450	32	2470
4	2412	13	2432	23	2452	33	2472
5	2414	14	2434	24	2454	34	2474
6	2416	15	2436	25	2456	35	2476
7	2418	16	2438	26	2458	36	2478
8	2420	17	2440	27	2460	39	2480

## 5. Choice of Equipment for Test Suits (continued)

### 5.4 Mode of Operation

Modulation type : GFSK

Payload Pattern : PRB29

Payload Length : 37 bytes

For band edge measurements (section 7.6), the DTS bandwidth measurements were taken into consideration for the worst case examples.

## 6. Measurement Summary

Test Requirement	FCC Rule Reference	ISED RSS-247 Issue 2 Section	Test Report Section	Result
Antenna Requirement	15.203	RSS-GEN Issue 4 §6.8	7.1	Compliant
Minimum DTS Bandwidth	15.247 (a) (2)	5.2 a	7.2	Compliant
Maximum Peak Conducted Output Power	15.247 (b) (1)	5.4 d	7.3	Compliant
Operation with directional antenna gains greater than 6 dBi	15.247 (b) (4)	5.4 f	7.4	Compliant
Spurious Radiated Emissions	15.247 (d)	RSS-GEN Issue 4	7.5	Compliant
Spurious Radiated Emissions (> GHz) - Harmonic Measurements	15.247 (d)	RSS-GEN Issue 4		Compliant
Lower and Upper Band Edges	15.247 (d)	RSS-GEN Issue 4	7.6	Compliant
Emissions in Non-restricted Frequency Bands	15.247(e)	5.5	7.7	Compliant
Peak Power Spectral Density	15.247(e)	5.2 b	7.8	Compliant
AC Power Line Conducted Emissions	15.207	RSS-GEN Issue 4 §8.8	7.9	Compliant
Duty Cycle	15.207	RSS-GEN Issue 4 §9	7.10	Compliant
99% Bandwidth Measurements	15.207	RSS-GEN Issue 5	7.11	Compliant
Public Exposure to Radio Frequency Energy Levels	1.1307 (b) (1)	RSS-GEN Issue 4 §5.5 RSS 102	7.12	Compliant

## 7. Measurement Data

### 7.1. Antenna Requirement (15.203)

Requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

Results: The EUT utilizes a surface mount chip antenna which is not user replaceable.

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## 7. Measurement Data

### 7.2. Minimum DTS Bandwidth

Requirement: (15.247 (a) (2))

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Procedure: This test was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 8.1 Option 1, DTS (6 dB) Channel Bandwidth.

Results: The device under test meets the minimum 500 kHz DTS (6 dB) bandwidth requirement.

Channel	Frequency (MHz)	-6 dB Bandwidth (kHz)	Minimum -6 dB Bandwidth (kHz)	Result
37	2402	698.30	>500	Compliant
38	2426	698.30	>500	Compliant
39	2480	710.30	>500	Compliant

#### 7.2.1. Low Channel – 37, 2402 MHz



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## 7. Measurement Data

### 7.2. Minimum DTS Bandwidth (15.247 (a) (2)) (continued)

#### 7.2.2. Middle Channel – 38, 2426 MHz



#### 7.2.3. High Channel – 39, 2480 MHz



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## 7. Measurement Data (continued)

### 7.3. Maximum Peak Conducted Output Power

Requirement: (15.247 (b) (3))

The maximum peak conducted output power of the intentional radiator shall not exceed the following: For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt (+30 dBm).

Procedure: This test was performed in accordance with the procedure detailed in FCC OET publication number KDB 558074, Section 9.1.1.

Test Note: A spectrum analyzer resolution bandwidth of 1 MHz and a video bandwidth of 3 MHz were used to meet the requirements of FCC OET publication number 558074, Section 9.1.1 and the measured product DTS bandwidth. Field Strength was converted at 3 meters using 95.2

Results: The device under test meets the required maximum peak conducted output power level of 1 Watt (30 dBm).

Channel	Frequency	Maximum	Peak	Margin	Result
		Peak Radiated Output Power			
	(MHz)	(dBm)	(dBm)	(dB)	
37	2402	-11.92	30.00	-41.92	Compliant
38	2426	-11.29	30.00	-41.29	Compliant
39	2480	-12.08	30.00	-42.08	Compliant

#### 7.3.1. Low Channel – 37, 2402 MHz



## 7. Measurement Data

### 7.3. Maximum Peak Conducted Output Power (continued)

#### 7.3.2. Middle Channel – 38, 2426 MHz



#### 7.3.3. High Channel – 39, 2480 MHz



## 7. Measurement Data

### 7.4. Operation with directional antenna gains greater than 6 dBi (15.247 (b)(4))

Requirement: If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of FCC Part 15.247, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 2400 – 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 5725 – 5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Procedure: Not applicable for the device under test.

DUT Status: The EUT uses a surface mount chip antenna that has 0.5 dBi of gain.

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## 7. Measurement Data (continued)

### 7.5. Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

#### 7.5.1 Transmitter Spurious Radiated Emissions

Requirement: (15.209) The Emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range (MHz)	Distance (Meters)	Limit (dB $\mu$ V/m) <sup>1</sup>
0.009 to 0.490	3	128.5 to 93.8
0.490 to 1.705	3	73.8 to 63.0
1.705 to 30	3	69.5
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
>960	3	54.0

<sup>1</sup>Measurements in the 9 to 90 kHz, 110 to 490 kHz and above 1000 MHz ranges employ an average detector. Otherwise a quasi-peak detector is used.

Procedure: This test was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 12.0: Emissions in restricted frequency bands and FCC 47CFRPart 15.209: Radiated Emission Limits; General Requirements.

The test methods used to generate the data in this test report is in accordance with ANSI C63.10:2013, American National Standard for Testing Unlicensed Wireless Devices.

Test Notes: Measurements were made from the lowest oscillator frequency as stated by the manufacturer (32.768 kHz) to the 10<sup>th</sup> harmonic of the highest transmitter frequency or 40 GHz, whichever is lower.

Reference FCC Part 15.33(a) and FCC Part 15.33(a)(1).

Each of the test modes documented within the test report were evaluated and the worst case of each of the test modes is detailed in this section. A full set of measurement scans are presented in Appendix A of this test report.

Results: The Emissions from the DUT did not exceed the field strength levels specified in the above table.

Frequency Range	Worst-Case Measured Frequency	Field Strength	FCC Part 15.209 Limit	Margin	Reference	Receive Antenna Polarity
	(MHz)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	Appendix A	(H/V)
30 kHz - 150 kHz	0.03270	69.38	117.30	-47.92	Y Axis	Parallel
150 kHz - 30 MHz	0.15225	60.38	83.92	-23.54	X Axis	Gnd Parallel
30 MHz - 1000 MHz	750.00	31.49	46.00	-14.51	Z Axis	V
1000 MHz - 10000 MHz	7277.80	49.01	54.00	-4.99	X Axis	V
10000 MHz - 18000 MHz	17098.60	52.05	54.00	-1.95	Y Axis	H
18000 MHz - 25000 MHz	20.343	40.35	54.00	-13.65	Z Axis	H

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## 7. Measurement Data (continued)

### 7.5. Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

#### 7.5.2. Transmitter Spurious Radiated Emissions (Harmonic Meas.) Test Results

Worst case measurements of Harmonics that fall into the restricted bands.

##### 7.5.2.1. 2.4 GHz, BLE

Freq. (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)		Margin (dB $\mu$ V/m)		Antenna Polarity (H/V)	Result
	Peak <sup>1</sup>	Average <sup>1</sup>	Peak	Average	Peak	Average		
4804	48.60	36.20	74.00	54.00	-25.40	-17.80	H	Compliant
4852	47.95	35.61	74.00	54.00	-26.05	-18.39	H	Compliant
4960	48.42	35.98	74.00	54.00	-25.58	-18.02	V	Compliant
7278	55.08	38.14	74.00	54.00	-18.92	-15.86	H	Compliant
7440	57.36	38.70	74.00	54.00	-16.64	-15.30	H	Compliant
12010	59.08	46.33	74.00	54.00	-14.92	-7.67	H	Compliant
12130	57.98	46.05	74.00	54.00	-16.02	-7.95	H	Compliant
12400	57.56	45.57	74.00	54.00	-16.44	-8.43	H	Compliant
19216	58.63	46.85	74.00	54.00	-15.37	-7.15	H	Compliant
19408	59.99	47.70	74.00	54.00	-14.01	-6.30	H	Compliant
19840	58.93	46.94	74.00	54.00	-15.07	-7.06	V	Compliant
22320	61.68	48.52	74.00	54.00	-12.32	-5.48	H	Compliant

<sup>1</sup> All correction factors are stored in the spectrum analyzer and applied to this column entry.

## 7. Measurement Data (continued)

### 7.6. Band Edge and Out of Band Measurements

Requirement: 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Procedure: For the lower band edge, this measurement was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 11: Emissions in non-restricted frequency bands.

For the upper band edge, this measurement was performed as a typical restricted band radiated emissions measurement above 1 GHz. Peak and CISPR average detectors and a 1 MHz resolution and 3 MHz video bandwidth were utilized.

Test Note: The radiated band edge and worst case out of band measurements in this report represent the measurements made with the worst case receive antenna polarity and product orthogonal position. In addition, the DTS bandwidth measurements were taken into consideration for the worst case examples.

Results: The DUT met the 20 dB requirement at the lower band edge and the Part 15.209 requirements at the upper band edge.

#### 7.6.1. Lower Band Edge

Band Edge Frequency (MHz)	Lowest Transmitter Frequency (MHz)	Maximum PSD (100 kHz) (dB $\mu$ V/m)	Band Edge Delta to Max PSD (100 kHz) (dB $\mu$ V/m)	Minimum Required Delta (dB)	Result
2400	2402	82.78	37.12	-20	Compliant

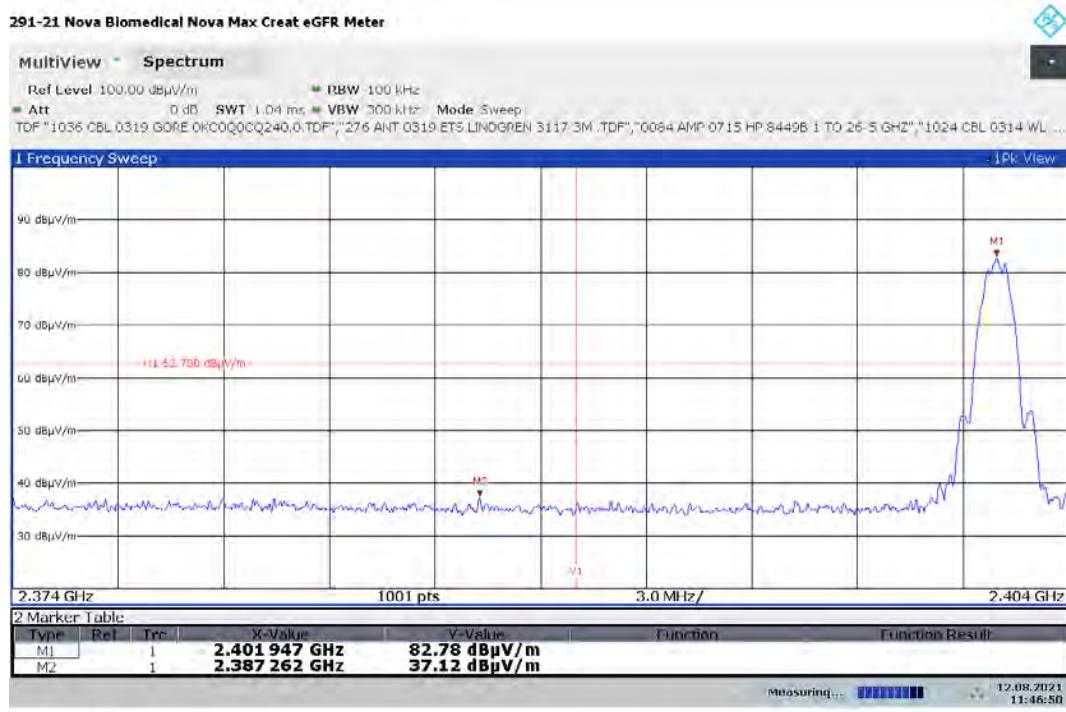
**Note:** Reference the plot on following page.

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## 7. Measurement Data (continued)

### 7.6. Band Edge and Out of Band Measurements (continued)

#### Lower Band Edge



#### 7.6.2. Upper Band Edge and Worst Case Out of Band

#### Upper Band Edge

Band Edge Frequency	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)		Margin (dB)		Result
	(MHz)	Peak	Average	Peak	Average	Peak	Average
2483.5	46.55	32.24	74	54	-27.45	-21.76	Compliant

Notes: 1. Reference the plot on following page.  
 2. Worst case out of band is detailed in the upper restricted band measurement.

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## 7. Measurement Data (continued)

### 7.6. Band Edge and Out of Band Measurements (continued)

#### Upper Band Edge and Worst Case Out of Band


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#### 7.6.3. Lower Restricted Band, 2.310 MHz to 2390 MHz

Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)		Margin (dB)		Result
	Peak	Average	Peak	Average	Peak	Average	
2376.134	46.96	32.79	74	54	-27.04	-21.21	Compliant

#### 7.6.4. Upper Restricted Band, 2483.5 MHz to 2500 MHz

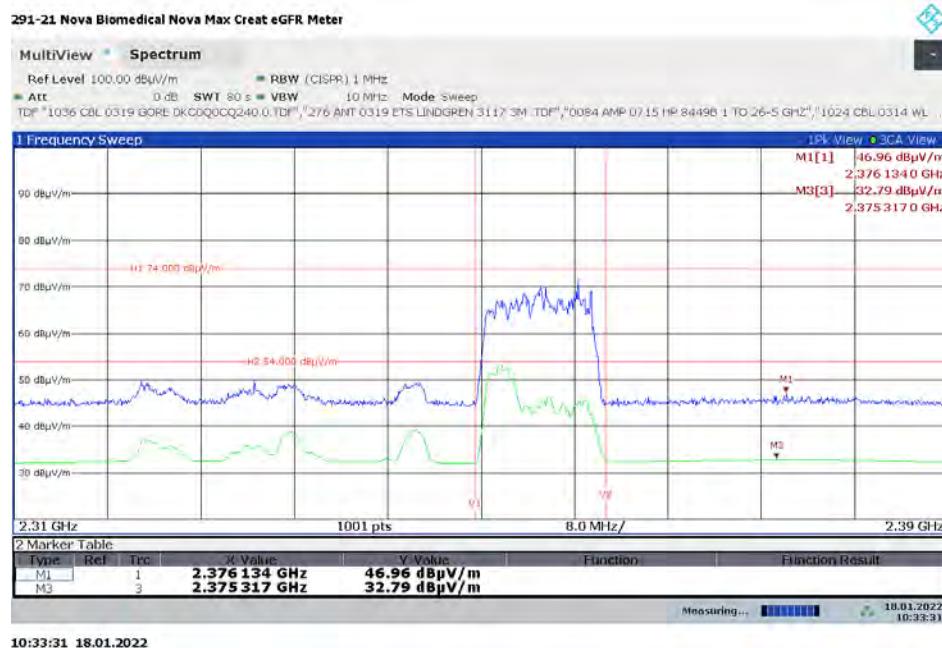
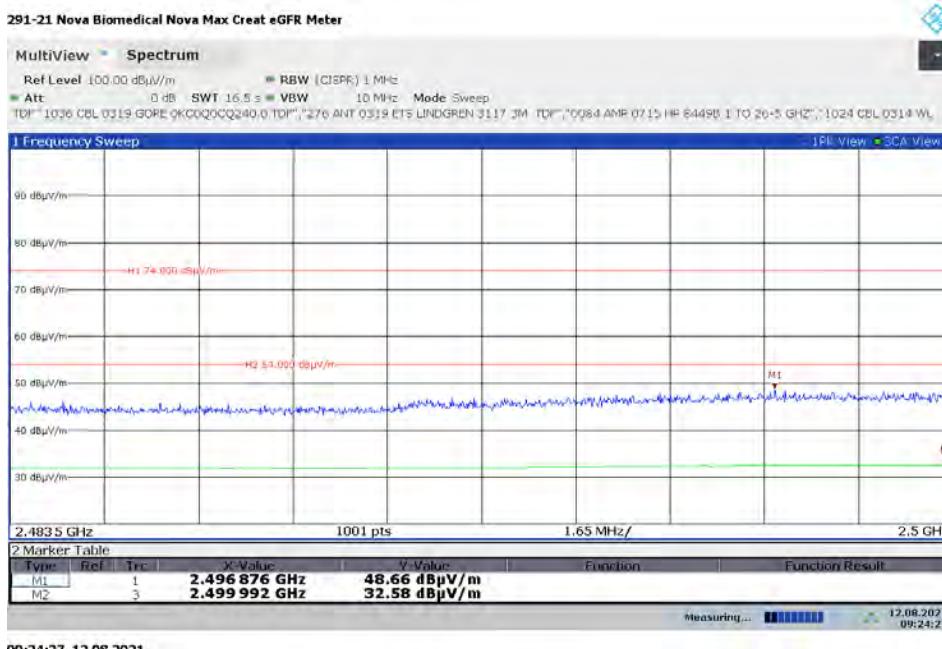
Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)		Margin (dB)		Result
2496.876	46.55	32.24	74	54	-27.45	-21.76	Compliant

**Note:** Plots are on the following page. Some ambient in plot of lower restricted band due to new AWS-3 services in the area.

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## 7. Measurement Data (continued)

### 7.6. Band Edge and Out of Band Measurements (continued)

**Lower Restricted Band, 2310 MHz to 2390 MHz**

**Upper Restricted Band, 2483.5 MHz to 2500 MHz**


## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands

Requirement: 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Notes: Peak in-band measurements were taken at the time the DTS (-6 dB) bandwidth measurements were made. These values were used as the reference levels for the following measurements. Refer to section 7.2 of this report for these values.

Results: The DUT met the 20 dB requirement emission level delta requirement in the non restricted frequency bands.

#### Emissions in Non-restricted Frequency Bands

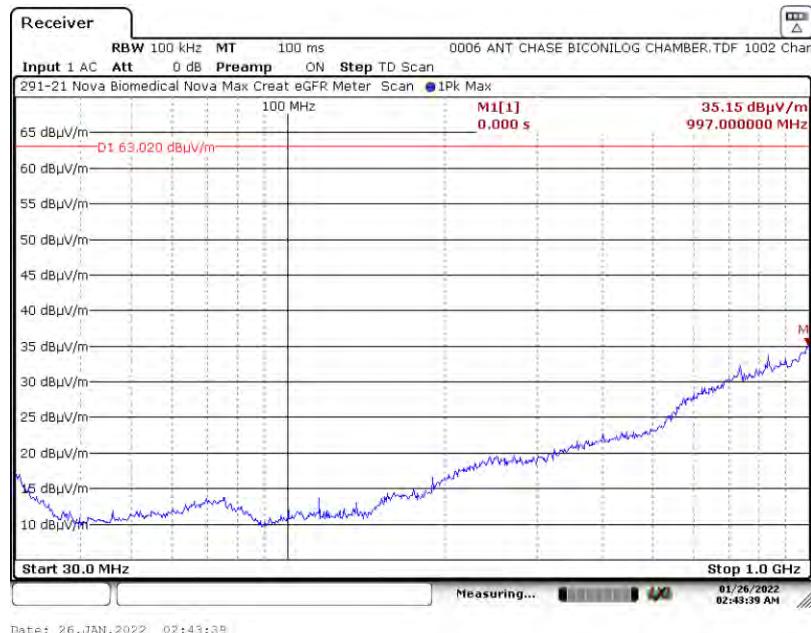
Maximum PSD (100 kHz) In-Band <sup>1</sup> (dB $\mu$ V/m)	Worst Case Out-of-Band Frequency (MHz)	Maximum PSD (100 kHz) Out-of-Band (dB $\mu$ V/m)	Delta to Maximum PSD (dB)	Minimum Required Delta	Result
83.02	7439.792	46.10	-36.92	-20 dB	Compliant

**Test Number: 291-21**
**Issue Date: 1/27/2022**

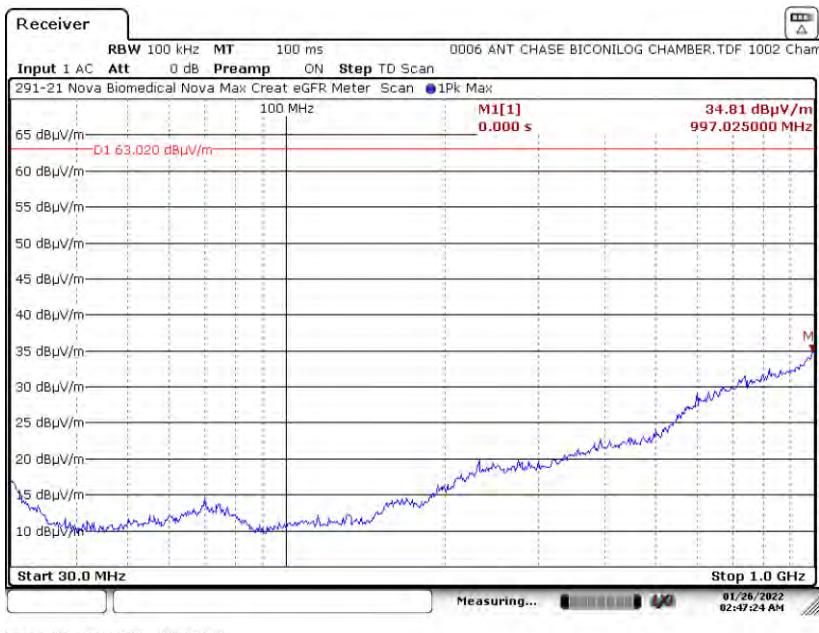
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.1. 30 MHz to 1 GHz – X Axis Horizontal All Three Channels



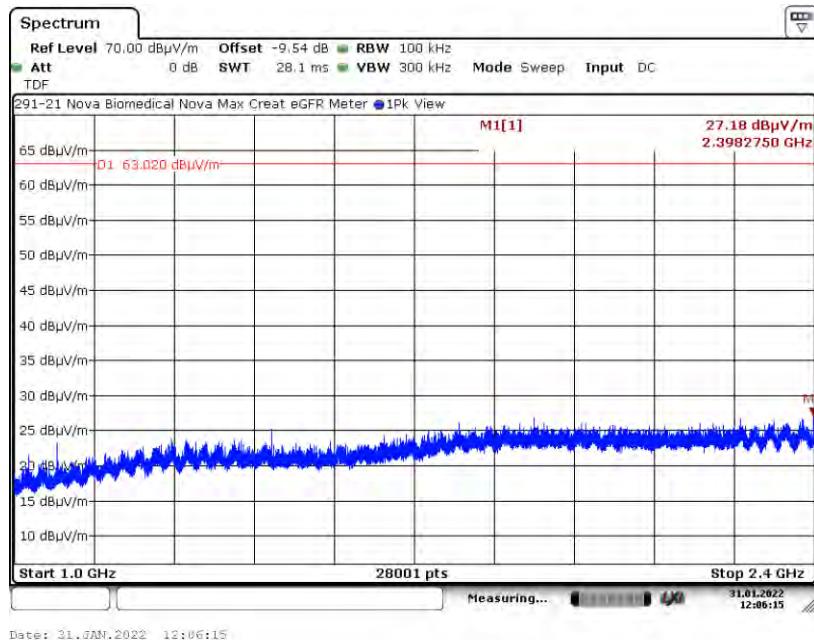
#### 7.7.2. 30 MHz to 1 GHz – X Axis Vertical All Three Channels



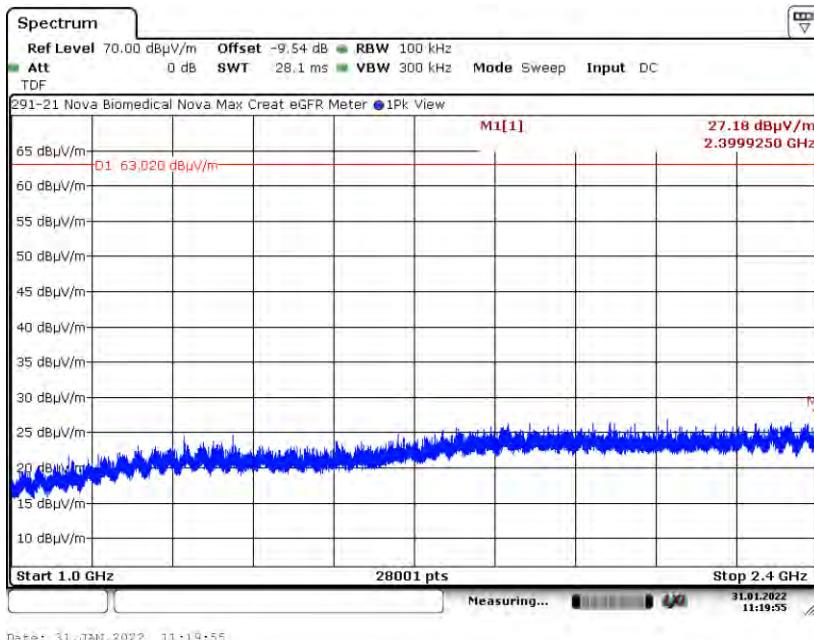
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.3. 1 GHz to 2.4 GHz – X Axis Horizontal All Three Channels



#### 7.7.4. 1 GHz to 2.4 GHz – X Axis Vertical All Three Channels

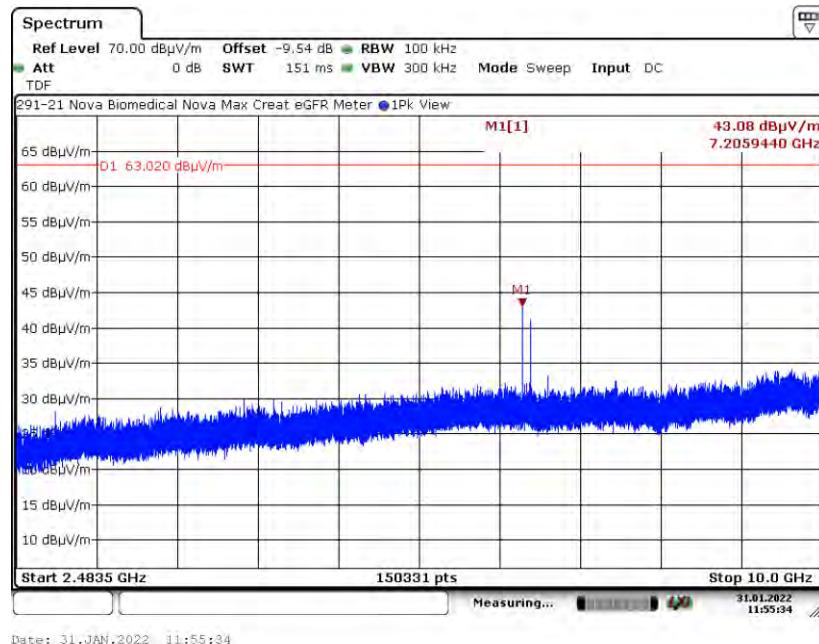


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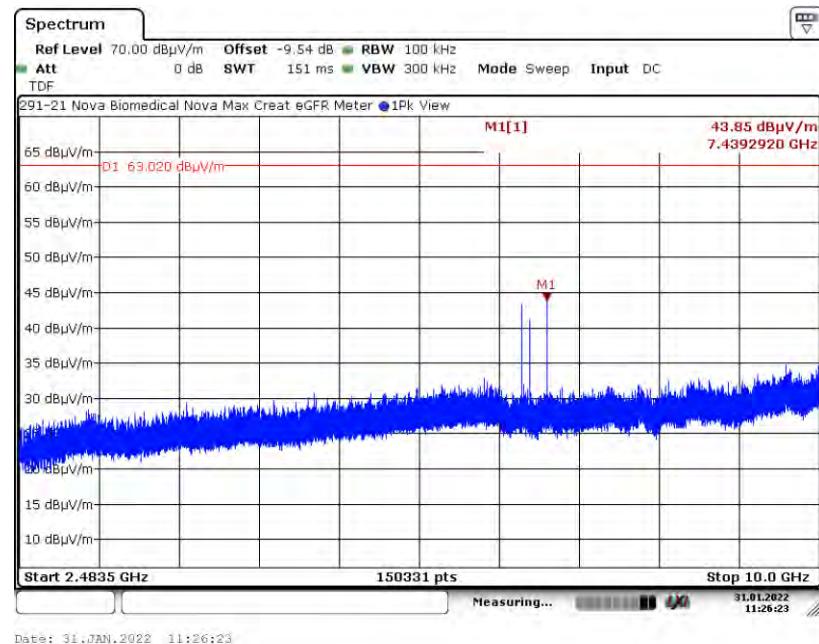
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.5. 2.4835 GHz to 10 GHz – X Axis Horizontal All Three Channels



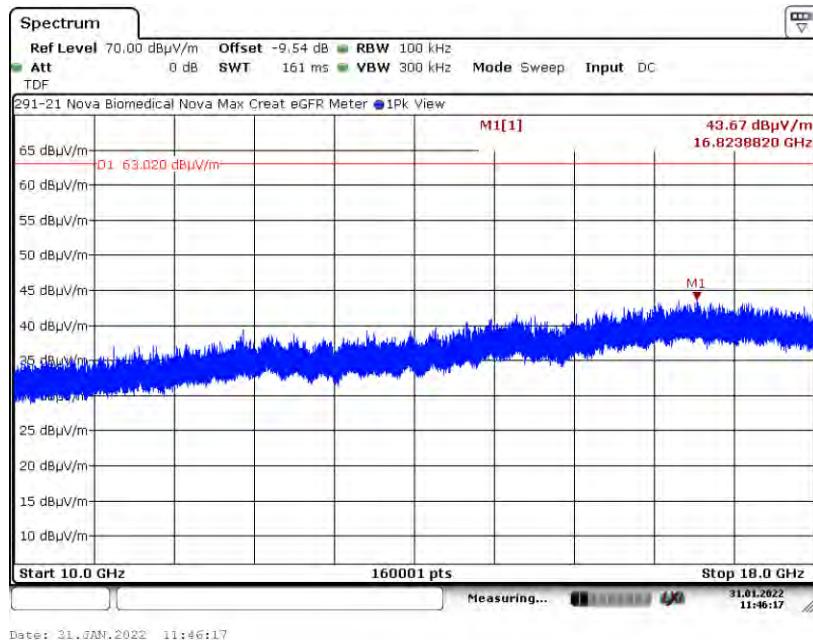
#### 7.7.6. 2.4835 GHz to 10 GHz – X Axis Vertical All Three Channels



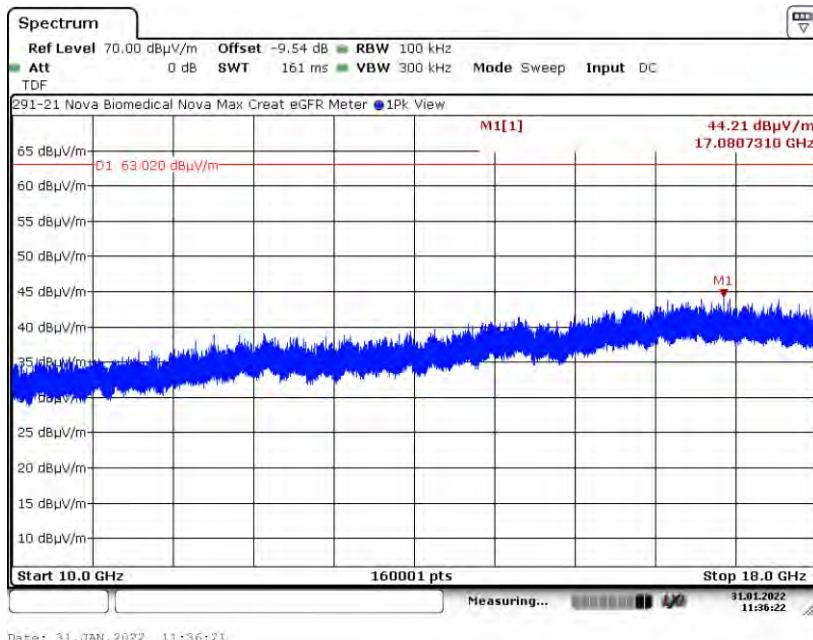
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.7. 10 GHz to 18 GHz – X Axis Horizontal All Three Channels



#### 7.7.8. 10 GHz to 18 GHz – X Axis Vertical All Three Channels

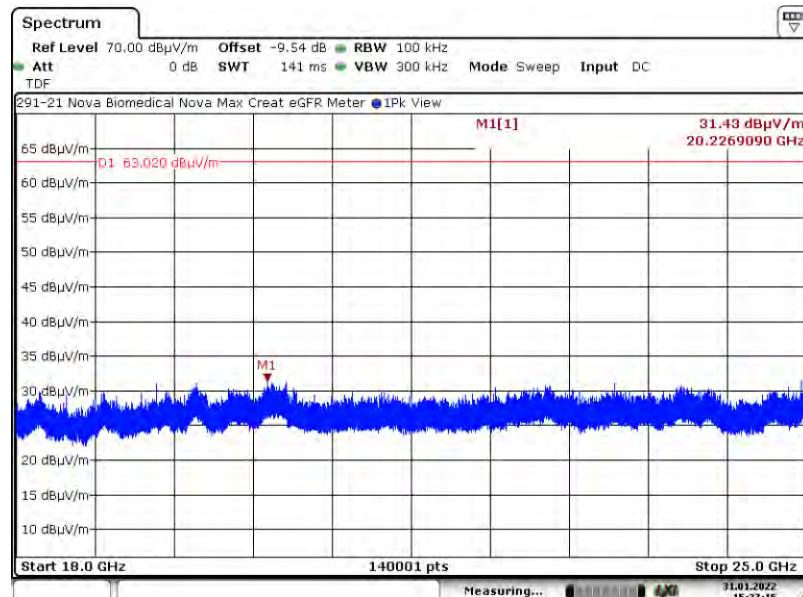


**Test Number: 291-21**
**Issue Date: 1/27/2022**

## 7. Measurement Data (continued)

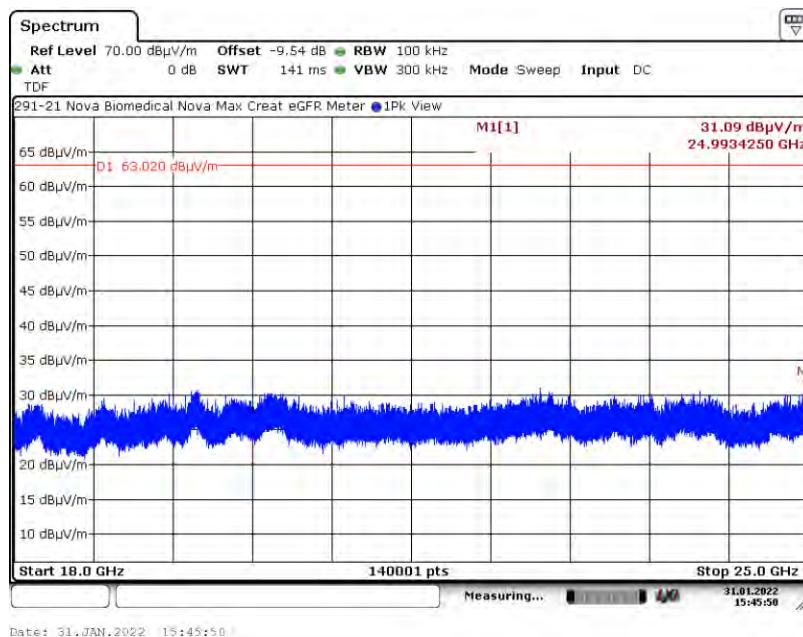
### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.9. 18 GHz to 25 GHz – X Axis Horizontal All Three Channels



Date: 31.JAN.2022 15:37:14

#### 7.7.10. 18 GHz to 25 GHz – X Axis Vertical All Three Channels



Date: 31.JAN.2022 15:45:50

Test Number: 291-21

Issue Date: 1/27/2022

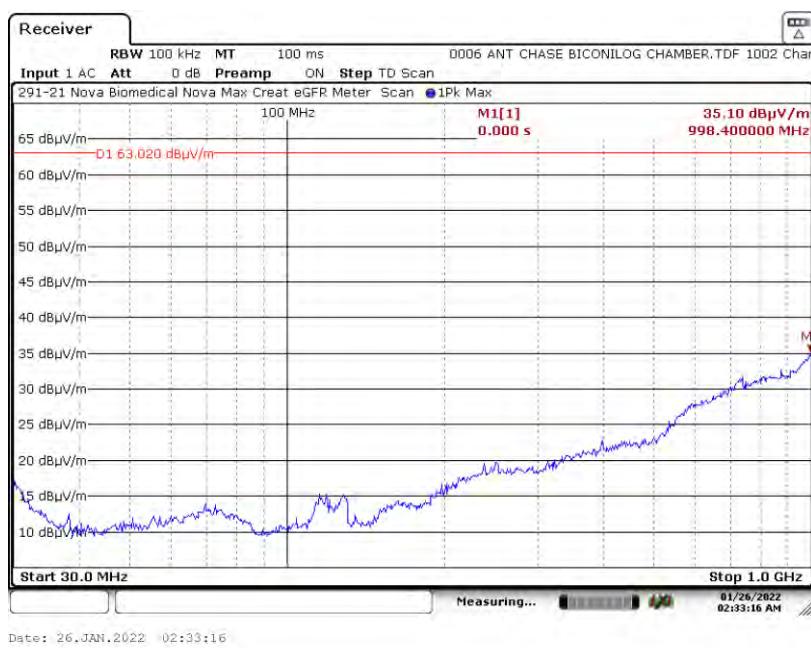
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.11. 30 MHz to 1 GHz – Y Axis Horizontal All Three Channels



#### 7.7.12. 30 MHz to 1 GHz – Y Axis Vertical All Three Channels

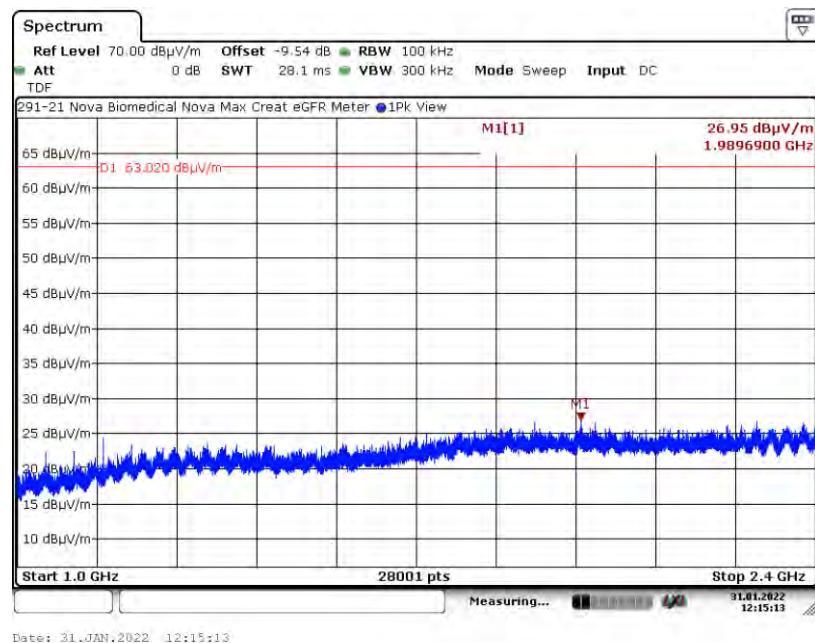


**Test Number: 291-21**
**Issue Date: 1/27/2022**

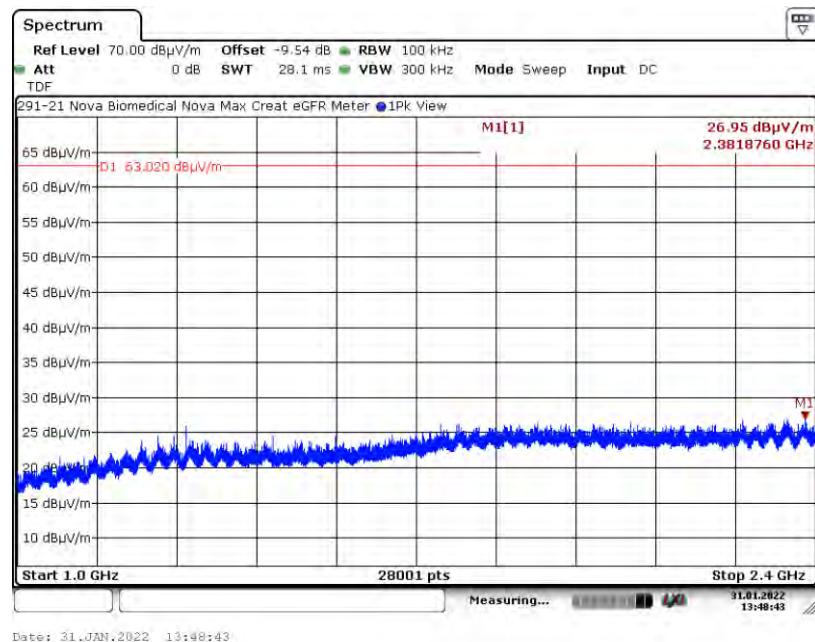
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.13. 1 GHz to 2.4 GHz – Y Axis Horizontal All Three Channels



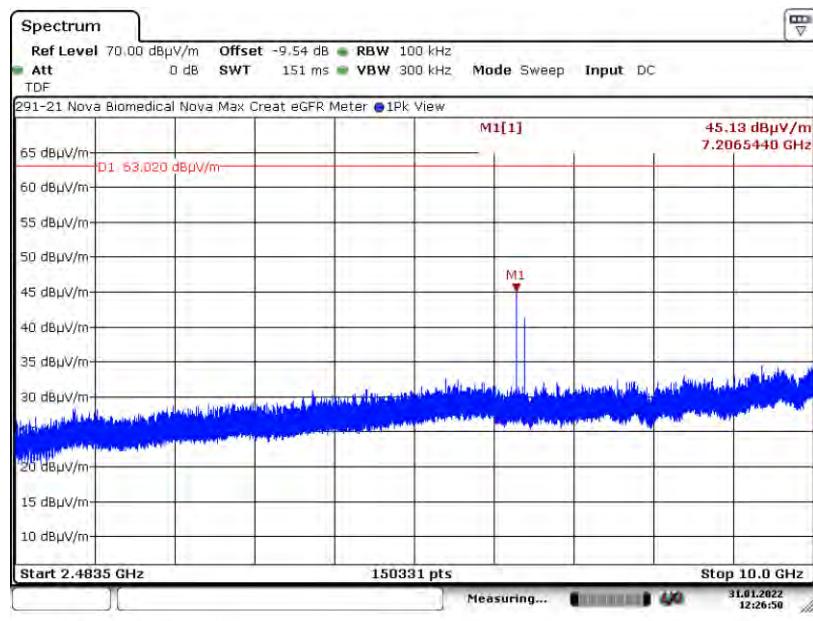
#### 7.7.14. 1 GHz to 2.4 GHz – Y Axis Vertical All Three Channels



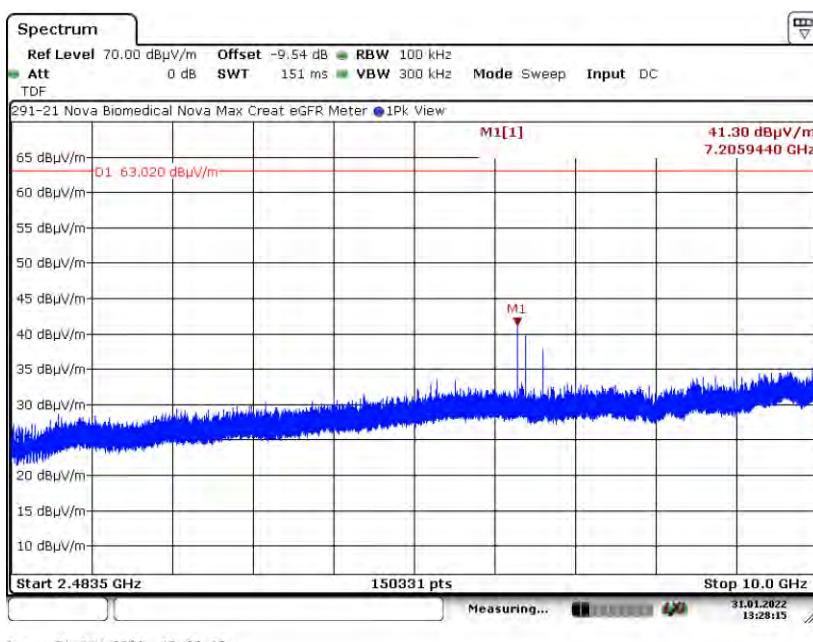
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.15. 2.4835 GHz to 10 GHz – Y Axis Horizontal All Three Channels



#### 7.7.16. 2.4835 GHz to 10 GHz – Y Axis Vertical All Three Channels



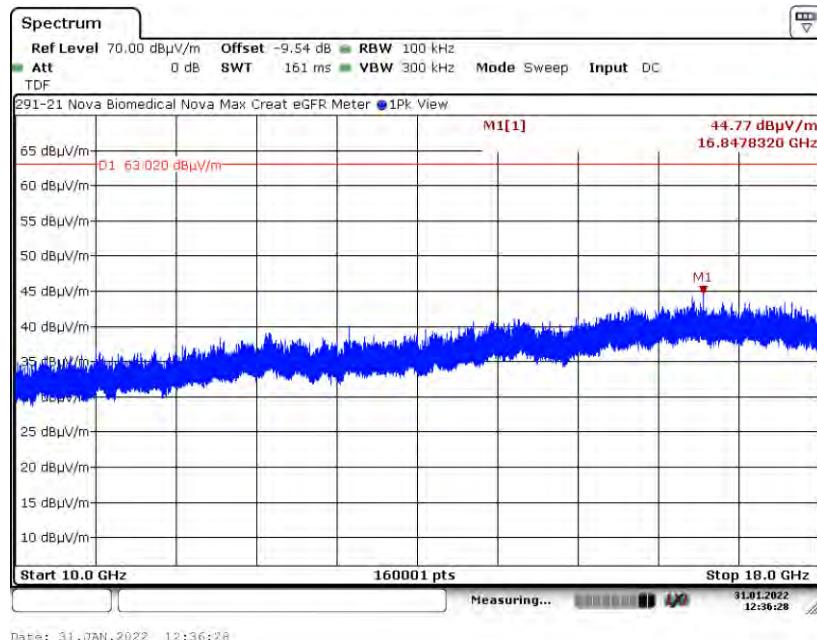
Test Number: 291-21

Issue Date: 1/27/2022

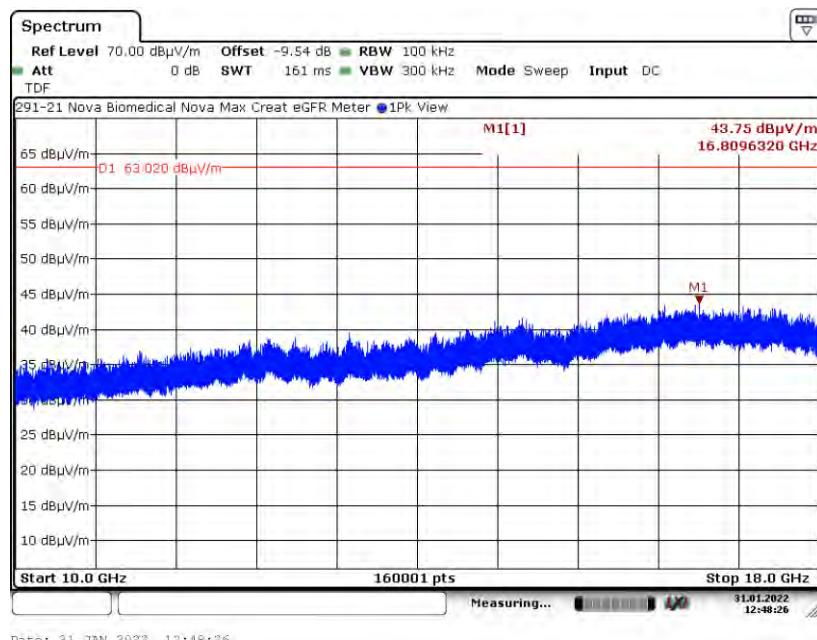
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.17. 10 GHz to 18 GHz – Y Axis Horizontal All Three Channels



#### 7.7.18. 10 GHz to 18 GHz – Y Axis Vertical All Three Channels

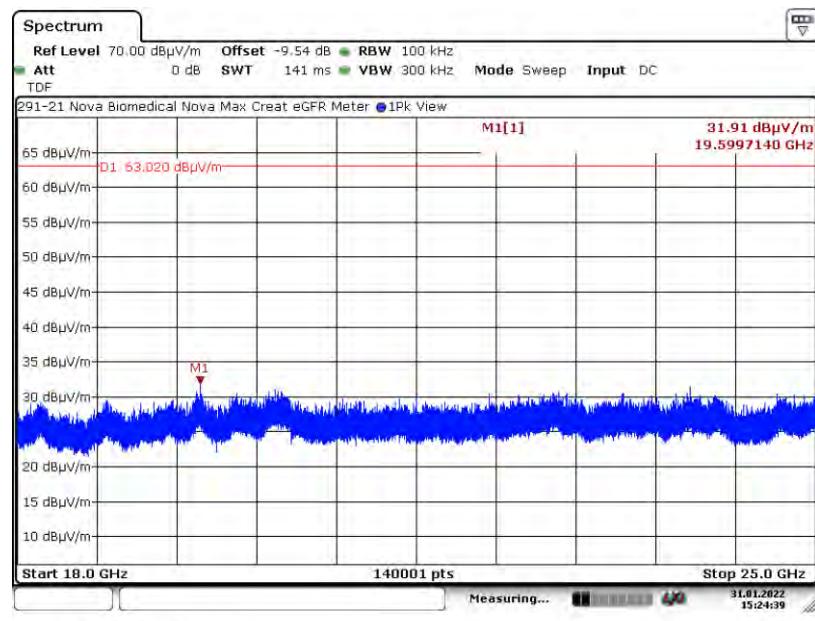


**Test Number: 291-21**
**Issue Date: 1/27/2022**

## 7. Measurement Data (continued)

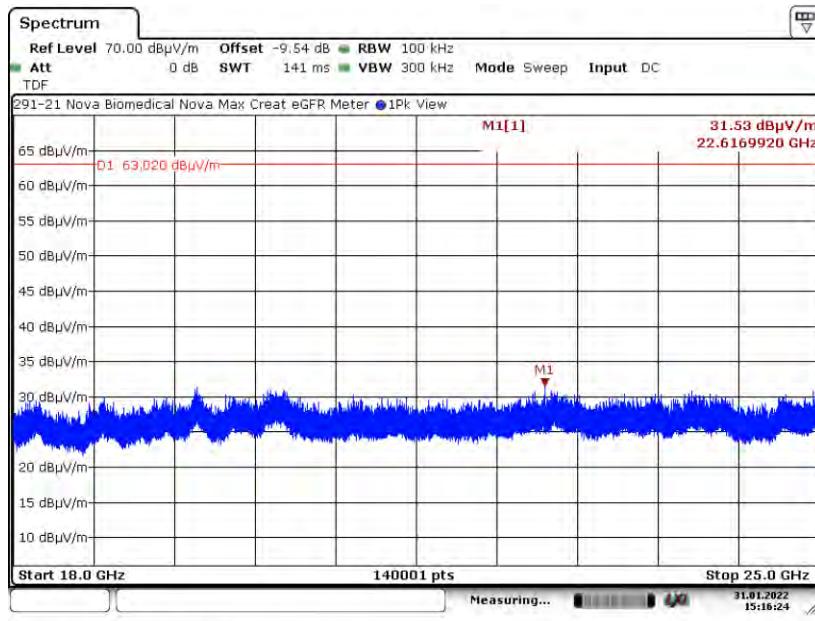
### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.19. 18 GHz to 25 GHz – Y Axis Horizontal All Three Channels



Date: 31.JAN.2022 15:24:39

#### 7.7.20. 18 GHz to 25 GHz – Y Axis Vertical All Three Channels



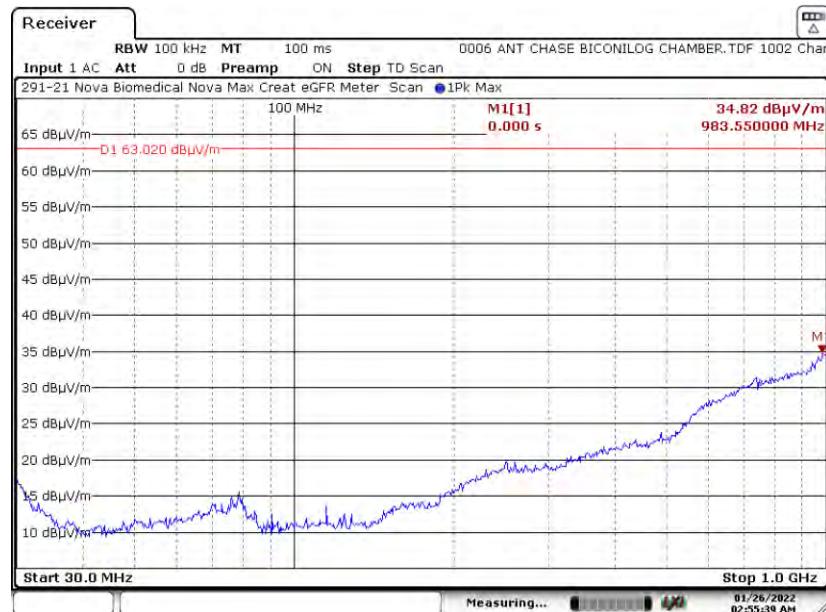
Date: 31.JAN.2022 15:16:24

**Test Number: 291-21**
**Issue Date: 1/27/2022**

## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.21. 30 MHz to 1 GHz – Z Axis Horizontal All Three Channels



Date: 26.JAN.2022 02:55:39 Measuring... 01/26/2022 02:55:39 AM

#### 7.7.22. 30 MHz to 1 GHz – Z Axis Vertical All Three Channels

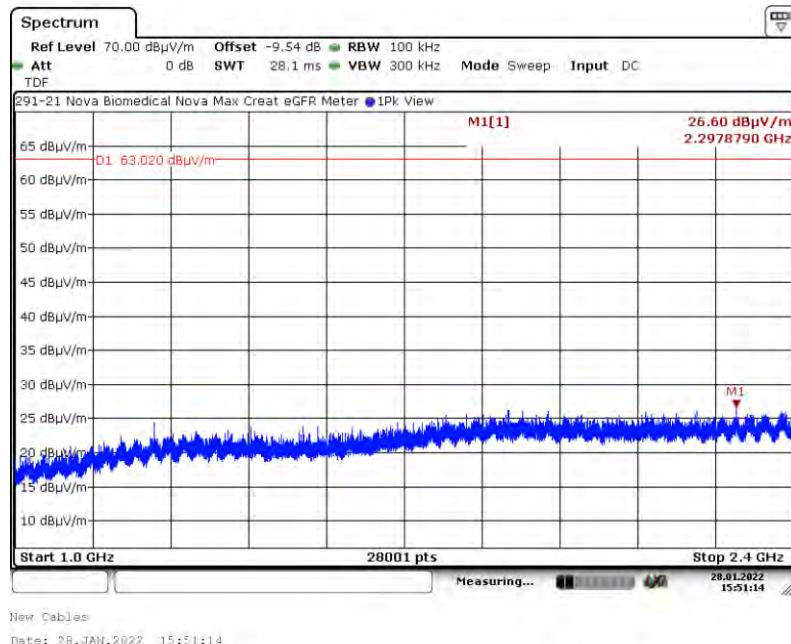


Date: 26.JAN.2022 02:52:34 Measuring... 01/26/2022 02:52:33 AM

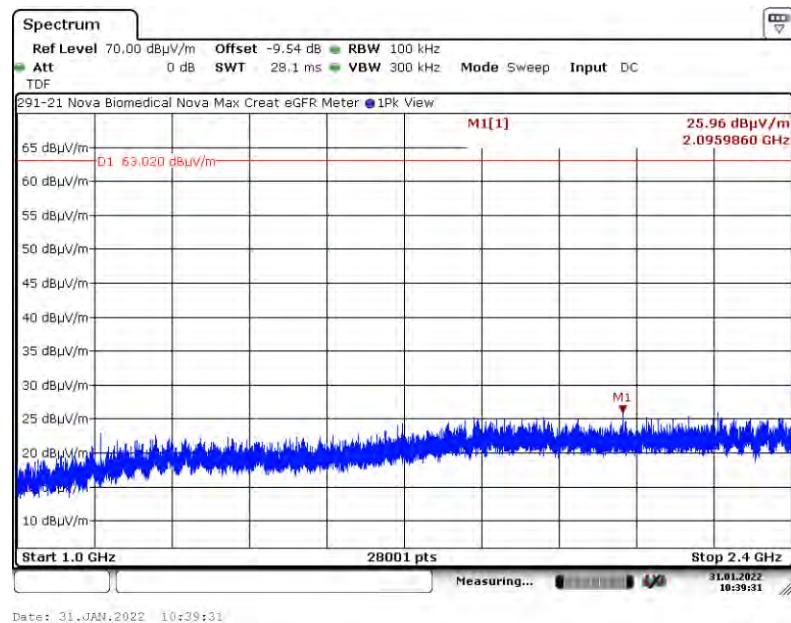
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.23. 1 GHz to 2.4 GHz – Z Axis Horizontal All Three Channels



#### 7.7.24. 1 GHz to 2.4 GHz – Z Axis Vertical All Three Channels

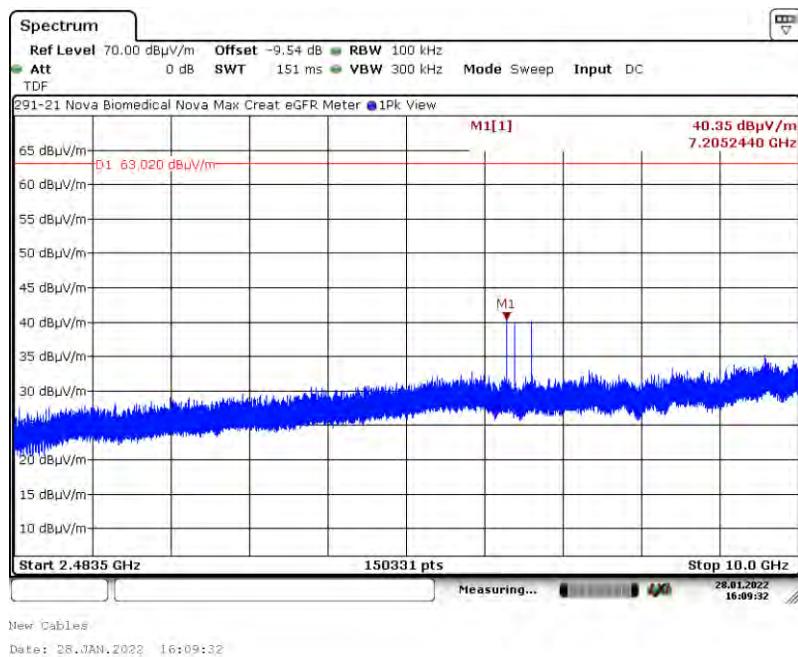


**Test Number: 291-21**
**Issue Date: 1/27/2022**

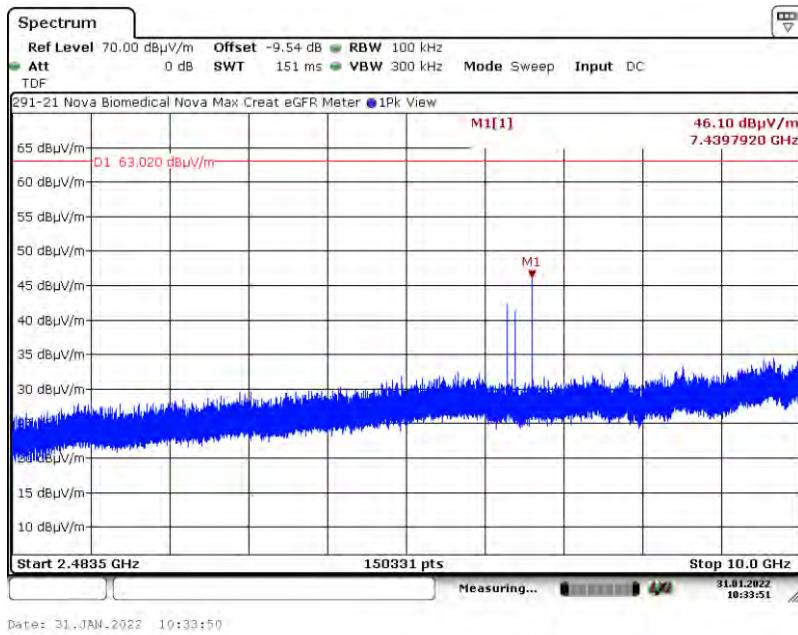
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.25. 2.4835 GHz to 10 GHz – Z Axis Horizontal All Three Channels



#### 7.7.26. 2.4835 GHz to 10 GHz – Z Axis Vertical All Three Channels

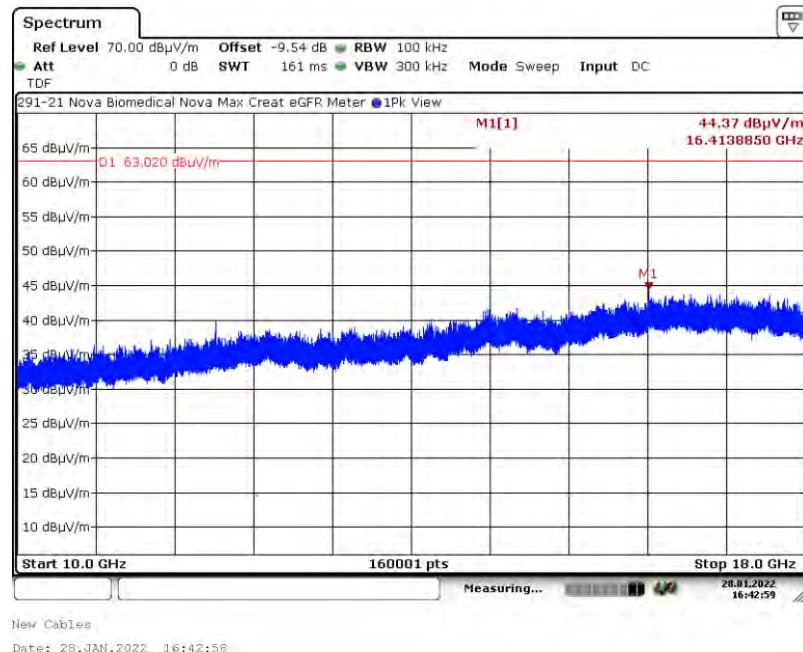


**Test Number: 291-21**
**Issue Date: 1/27/2022**

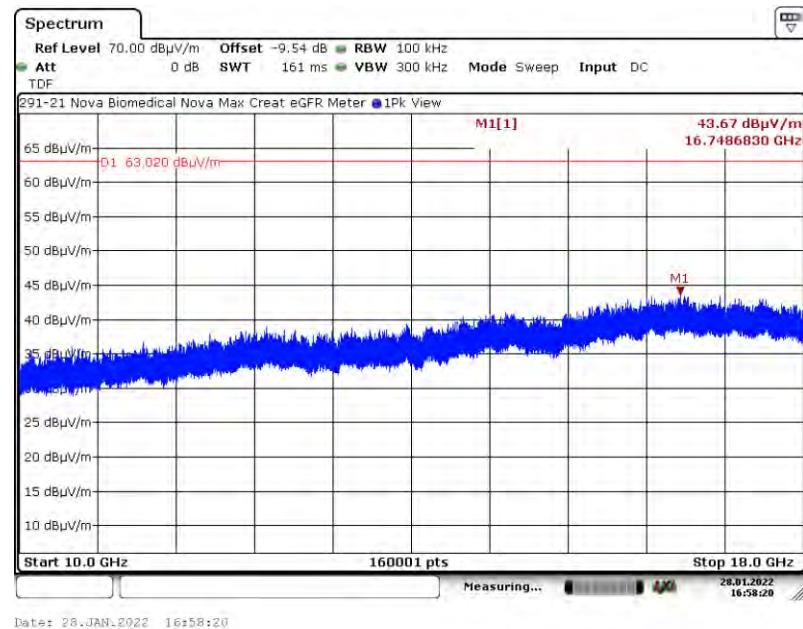
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.27. 10 GHz to 18 GHz – Z Axis Horizontal All Three Channels



#### 7.7.28. 10 GHz to 18 GHz – Z Axis Vertical All Three Channels

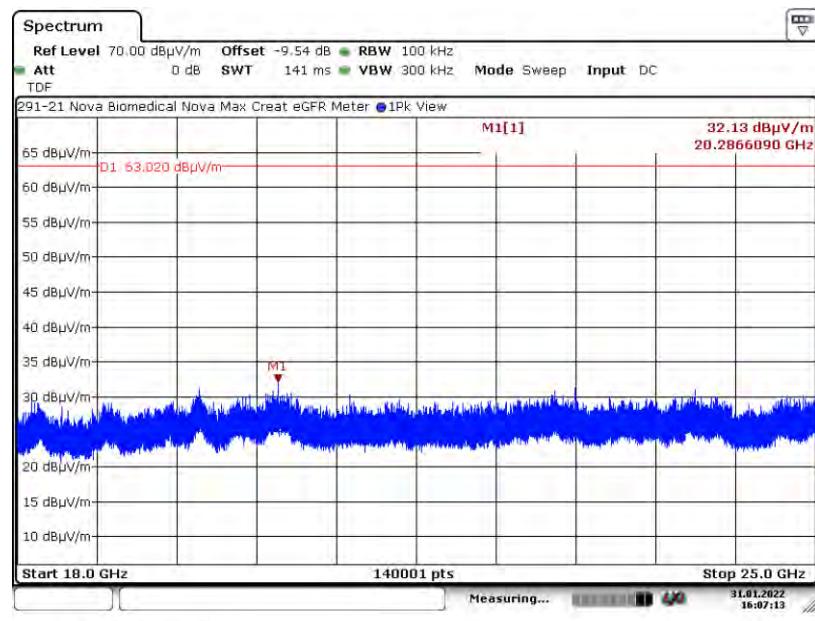


**Test Number: 291-21**
**Issue Date: 1/27/2022**

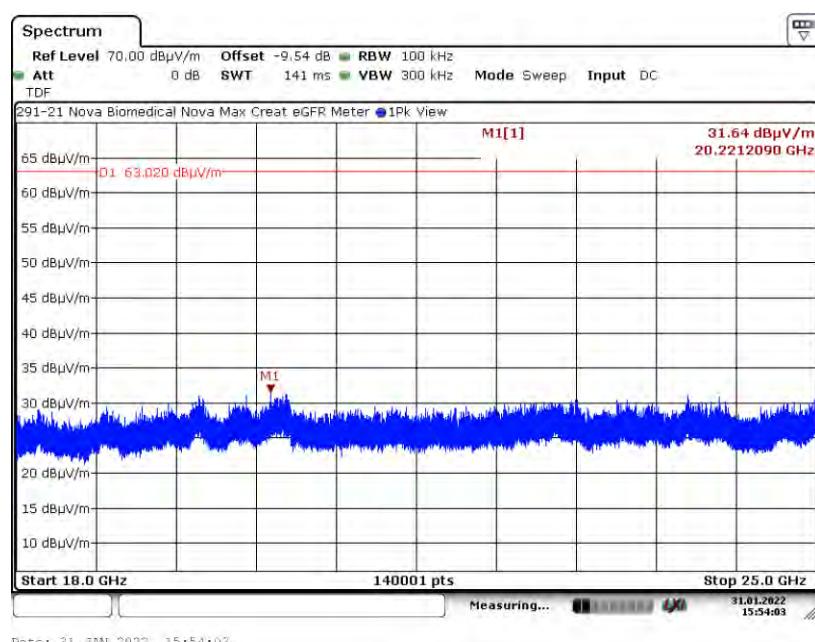
## 7. Measurement Data (continued)

### 7.7. Emissions in Non-restricted Frequency Bands (continued)

#### 7.7.29. 18 GHz to 25 GHz – Z Axis Horizontal All Three Channels



#### 7.7.30. 18 GHz to 25 GHz – Z Axis Vertical All Three Channels



## 7. Measurement Data (continued)

### 7.8. Peak Power Spectral Density (15.247(e))

**Requirement:** For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of FCC Part 15.247. The same method of determining the conducted output power shall be used to determine the power spectral density.

**Procedure:** FCC OET publication number 558074, Section 10.2: Method PKPSD (peak PSD). FCC OET 662911 was referenced to determine the procedure for measuring in-band power spectral density of transmitters with multiple outputs in the same band.

**Test Notes:** The 8 dBm was converted to a field strength limit at 3 Meters using 95.2

**Results:** The DUT met the required power spectral density limit at the tested frequencies.

#### Measurement Results in 2400 MHz to 2483.5 MHz Band

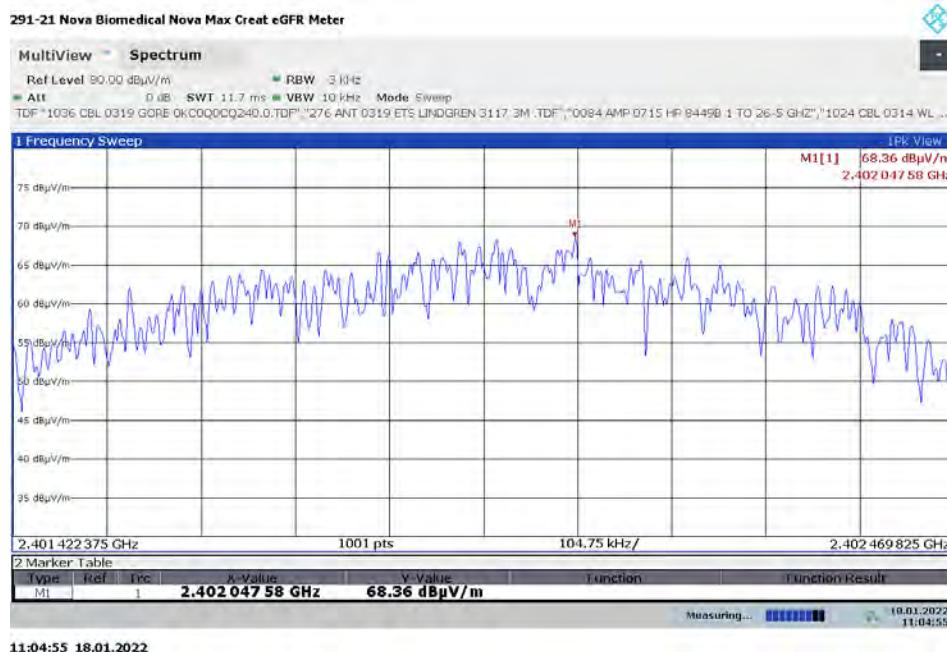
Channel	Frequency	Maximum PSD Frequency	Maximum Power Spectral Density	Limit	Margin	Result
	(MHz)	(MHz)	(dB $\mu$ V/m)			
37	2402	2402.04758	68.36	103.2	-34.84	Compliant
38	2426	2425.91697	69.52	103.2	-33.68	Compliant
39	2480	2480.11698	69.39	103.2	-33.81	Compliant

**Test Number: 291-21**
**Issue Date: 1/27/2022**

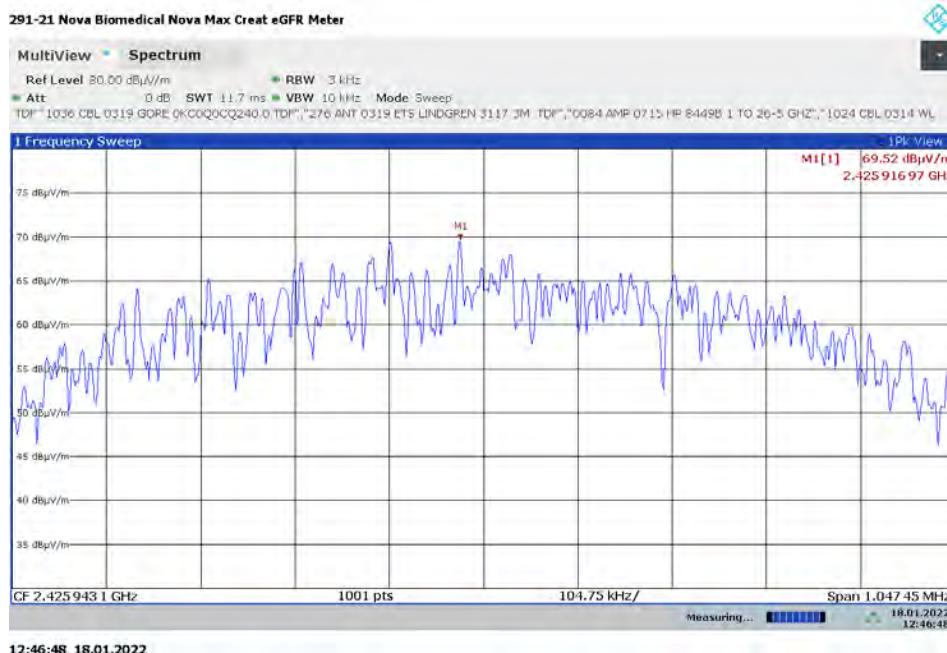
## 7. Measurement Data (continued)

### 7.8. Peak Power Spectral Density (15.247(e)) (continued)

#### 7.8.1. Low Channel – 37, 2402 MHz



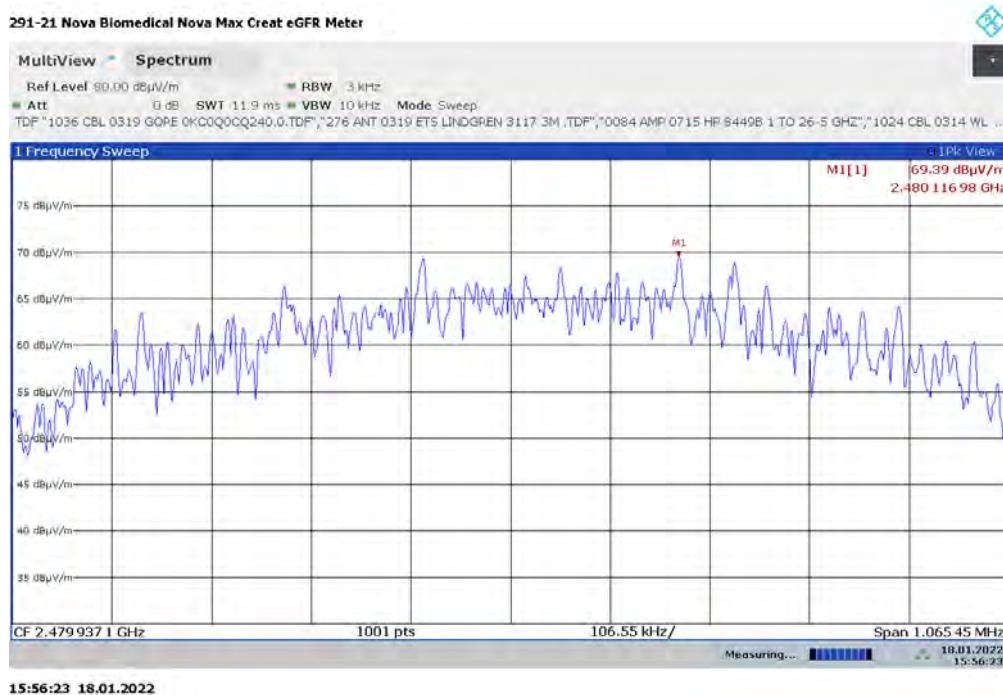
#### 7.8.2. Middle Channel – 38, 2426 MHz



## 7. Measurement Data

### 7.8. Peak Power Spectral Density (15.247(e)) (continued)

#### 7.8.3. High Channel – 39, 2480 MHz



## 7. Measurement Data (continued)

### 7.9. Conducted Emissions Test Setup

#### 7.9.1. Regulatory Limit: FCC Part 15, Class B

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-Peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

\* Decreases with the logarithm of the frequency.

#### 7.9.2. Measurement Equipment and Software Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
LISN	EMCO	3825/2	9109-1860	1/4/2023
EMI Test Receiver	Rohde & Schwarz	ESR7	101156	10/16/2022
Manufacturer	Software Description	Title/Model #	Rev.	
Compliance Worldwide	Test Report Generation Software	Test Report Generator	1.0	

#### 7.9.3. Measurement & Equipment Setup

Test Date:	08/12/2021
Test Engineer:	Sean Defelice
Site Temperature (°C):	24
Relative Humidity (%RH):	25
Frequency Range:	0.15 MHz to 30 MHz
EMI Receiver IF Bandwidth:	9 kHz
EMI Receiver Avg Bandwidth:	≥ 3 * RBW or IF(BW)
Detector Functions:	Peak, Quasi-Peak. & Average
Measurement Uncertainty	± 3.56 dB

#### 7.9.4. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2009, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Sample Calculation: Final Result = Measurement Value + LISN Factor + Cable Loss.

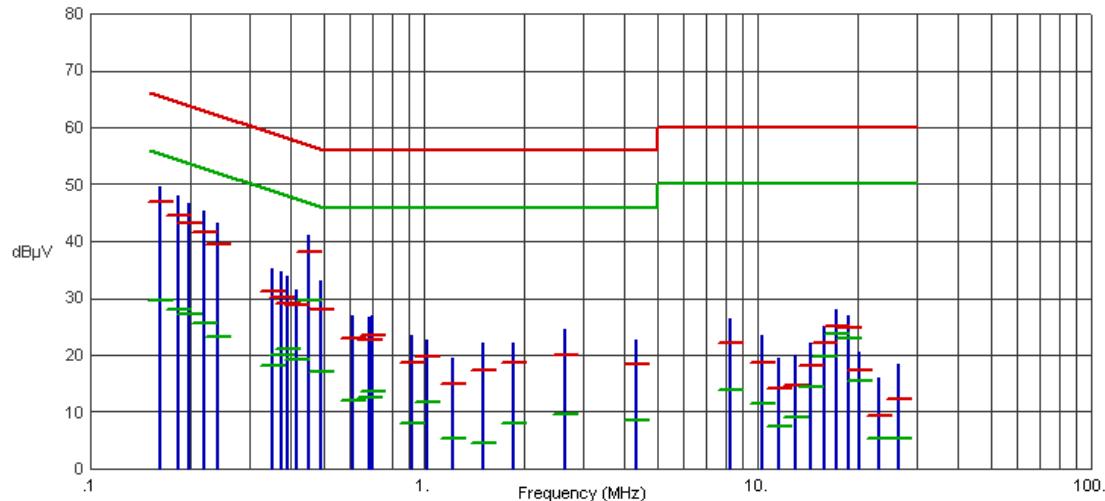
**Note:** All correction factors are loaded into the measurement instrument prior to testing to determine the final result.

## 8. Conducted Emissions Test Results

### 7.9.5. 120 Volts, 60 Hz Phase

Test No.: 292-21, 120 Volts, 60 Hz Phase

EN55011, Group 1, Class B

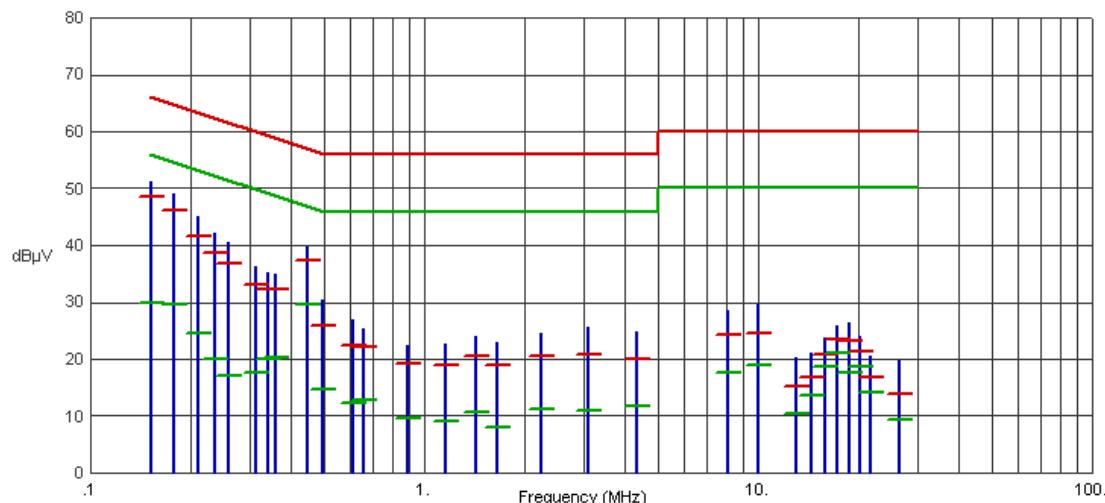


Frequency (MHz)	Pk Amp (dB $\mu$ V)	QP Amp (dB $\mu$ V)	QP Limit (dB $\mu$ V)	QP Margin (dB)	Avg Amp (dB $\mu$ V)	Avg Limit (dB $\mu$ V)	Avg Margin (dB)	Comments
.1613	49.71	46.82	65.40	-18.58	29.48	55.40	-25.92	
.1838	48.00	44.59	64.31	-19.72	28.02	54.31	-26.29	
.1973	46.61	43.33	63.72	-20.39	27.32	53.72	-26.40	
.2198	45.45	41.55	62.83	-21.28	25.71	52.83	-27.12	
.2400	43.26	39.42	62.10	-22.68	23.09	52.10	-29.01	
.3525	35.22	31.23	58.90	-27.67	18.11	48.90	-30.79	
.3728	34.60	30.10	58.44	-28.34	20.05	48.44	-28.39	
.3908	33.82	29.08	58.05	-28.97	21.00	48.05	-27.05	
.4155	31.54	28.67	57.54	-28.87	19.25	47.54	-28.29	
.4515	41.10	38.13	56.85	-18.72	29.61	46.85	-17.24	
.4898	33.01	28.03	56.17	-28.14	16.95	46.17	-29.22	
.6113	26.94	22.83	56.00	-33.17	12.13	46.00	-33.87	
.6833	26.79	22.54	56.00	-33.46	12.65	46.00	-33.35	
.7013	26.82	23.34	56.00	-32.66	13.71	46.00	-32.29	
.9195	23.51	18.59	56.00	-37.41	8.02	46.00	-37.98	
1.0208	22.78	19.62	56.00	-36.38	11.82	46.00	-34.18	
1.2188	19.59	14.97	56.00	-41.03	5.38	46.00	-40.62	
1.5113	22.09	17.43	56.00	-38.57	4.44	46.00	-41.56	
1.8465	22.10	18.68	56.00	-37.32	8.04	46.00	-37.96	
2.6498	24.51	19.94	56.00	-36.06	9.59	46.00	-36.41	
4.3305	22.78	18.48	56.00	-37.52	8.46	46.00	-37.54	
8.2680	26.31	22.21	60.00	-37.79	13.84	50.00	-36.16	
10.2975	23.43	18.66	60.00	-41.34	11.37	50.00	-38.63	
11.5328	19.43	14.12	60.00	-45.88	7.38	50.00	-42.62	
12.9750	20.09	14.79	60.00	-45.21	9.07	50.00	-40.93	
14.4150	22.03	18.06	60.00	-41.94	14.49	50.00	-35.51	
15.8573	25.11	22.13	60.00	-37.87	19.77	50.00	-30.23	
17.2995	28.00	25.08	60.00	-34.92	23.76	50.00	-26.24	
18.7395	26.94	24.74	60.00	-35.26	22.80	50.00	-27.20	
20.1818	20.66	17.40	60.00	-42.60	15.51	50.00	-34.49	
23.0663	16.10	9.33	60.00	-50.67	5.45	50.00	-44.55	
26.4885	18.40	12.16	60.00	-47.84	5.42	50.00	-44.58	

**Test Number: 291-21**
**Issue Date: 1/27/2022**

## 8. Conducted Emissions Test Results (continued)

### 7.9.6. 120 Volts, 60 Hz Neutral

**Test No.: 292-21, 120 Volts, 60 Hz Neutral**
**EN55011, Group 1, Class B**


Frequency (MHz)	Pk Amp (dB $\mu$ V)	QP Amp (dB $\mu$ V)	QP Limit (dB $\mu$ V)	QP Margin (dB)	Avg Amp (dB $\mu$ V)	Avg Limit (dB $\mu$ V)	Avg Margin (dB)	Comments
.1523	51.25	48.65	65.87	-17.22	29.99	55.87	-25.88	
.1770	49.08	46.04	64.63	-18.59	29.52	54.63	-25.11	
.2108	45.07	41.51	63.17	-21.66	24.54	53.17	-28.63	
.2355	42.11	38.64	62.25	-23.61	19.94	52.25	-32.31	
.2580	40.54	36.74	61.50	-24.76	16.95	51.50	-34.55	
.3143	36.18	32.97	59.86	-26.89	17.55	49.86	-32.31	
.3390	35.11	32.29	59.23	-26.94	19.99	49.23	-29.24	
.3593	35.06	32.22	58.74	-26.52	20.34	48.74	-28.40	
.4470	39.72	37.26	56.93	-19.67	29.68	46.93	-17.25	
.4965	30.27	25.81	56.06	-30.25	14.64	46.06	-31.42	
.6090	26.90	22.33	56.00	-33.67	12.31	46.00	-33.69	
.6608	25.26	22.18	56.00	-33.82	12.75	46.00	-33.25	
.8880	22.29	19.08	56.00	-36.92	9.49	46.00	-36.51	
1.1558	22.71	18.96	56.00	-37.04	8.99	46.00	-37.01	
1.4303	23.89	20.41	56.00	-35.59	10.64	46.00	-35.36	
1.6575	22.99	18.99	56.00	-37.01	8.07	46.00	-37.93	
2.2470	24.47	20.65	56.00	-35.35	11.11	46.00	-34.89	
3.0840	25.66	20.82	56.00	-35.18	11.04	46.00	-34.96	
4.3283	24.75	20.02	56.00	-35.98	11.68	46.00	-34.32	
8.1263	28.55	24.16	60.00	-35.84	17.55	50.00	-32.45	
9.9983	29.48	24.66	60.00	-35.34	18.81	50.00	-31.19	
12.9728	20.28	15.18	60.00	-44.82	10.28	50.00	-39.72	
14.4128	20.99	16.75	60.00	-43.25	13.72	50.00	-36.28	
15.8573	23.69	20.92	60.00	-39.08	18.58	50.00	-31.42	
17.2995	25.75	23.35	60.00	-36.65	20.95	50.00	-29.05	
18.7373	26.45	23.14	60.00	-36.86	17.56	50.00	-32.44	
20.1818	24.11	21.23	60.00	-38.77	18.62	50.00	-31.38	
21.6218	20.47	16.67	60.00	-43.33	14.15	50.00	-35.85	
26.4863	19.61	13.91	60.00	-46.09	9.27	50.00	-40.73	

## 7. Measurement Data (continued)

### 7.10. Duty Cycle

Requirement: (FCC OET publication number 558074)

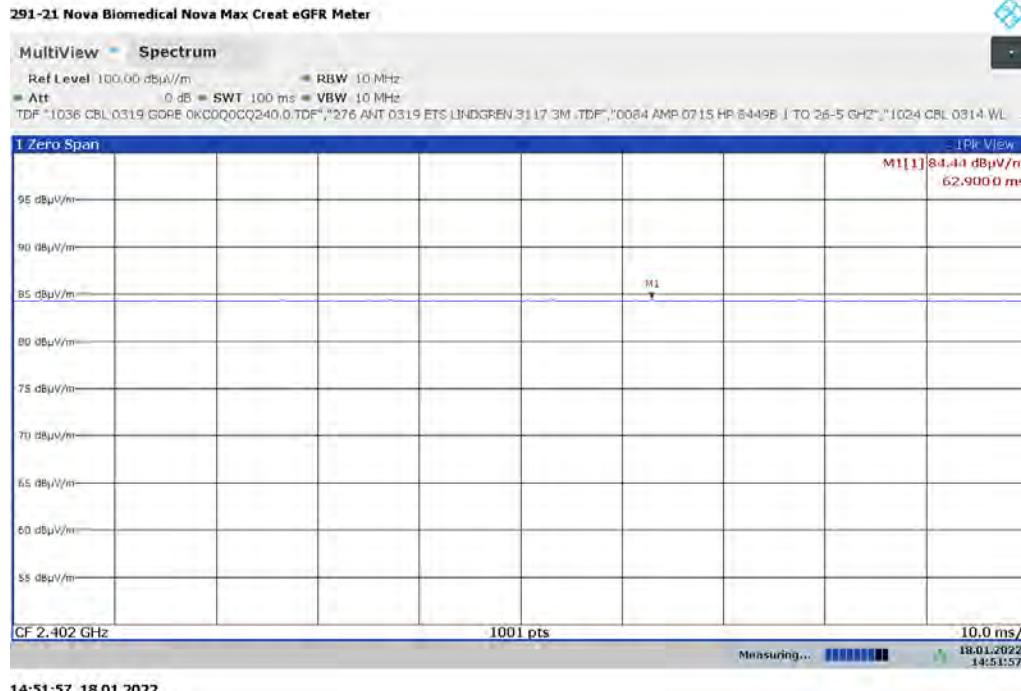
Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%).

Procedure: Duty cycle measurements were made according to the procedure detailed ANSI C63.10-2013, Section 11.6(b)

Results: Duty cycle measurements are listed in the following table.

Channel	Frequency	Time High	Time per Period	Duty Cycle				
				(MHz)	(mS)	(mS)	(Numeric)	(%)
37	2402	100.000	100.000	1.00000	100.00			
38	2426	100.000	100.000	1.00000	100.00			
39	2480	100.000	100.000	1.00000	100.00			

#### 7.10.1. Low Channel – 37, 2402 MHz

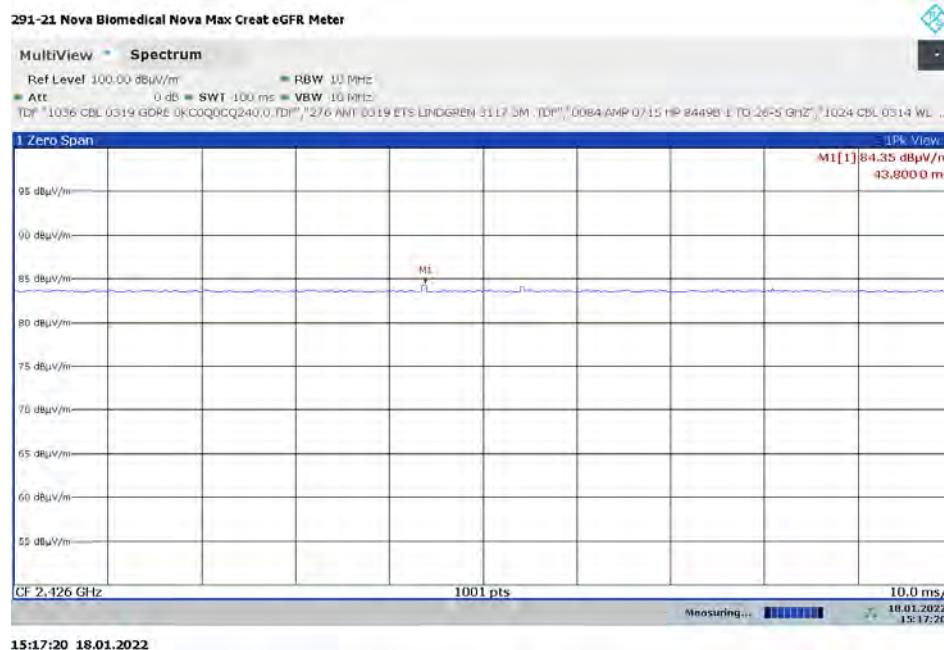


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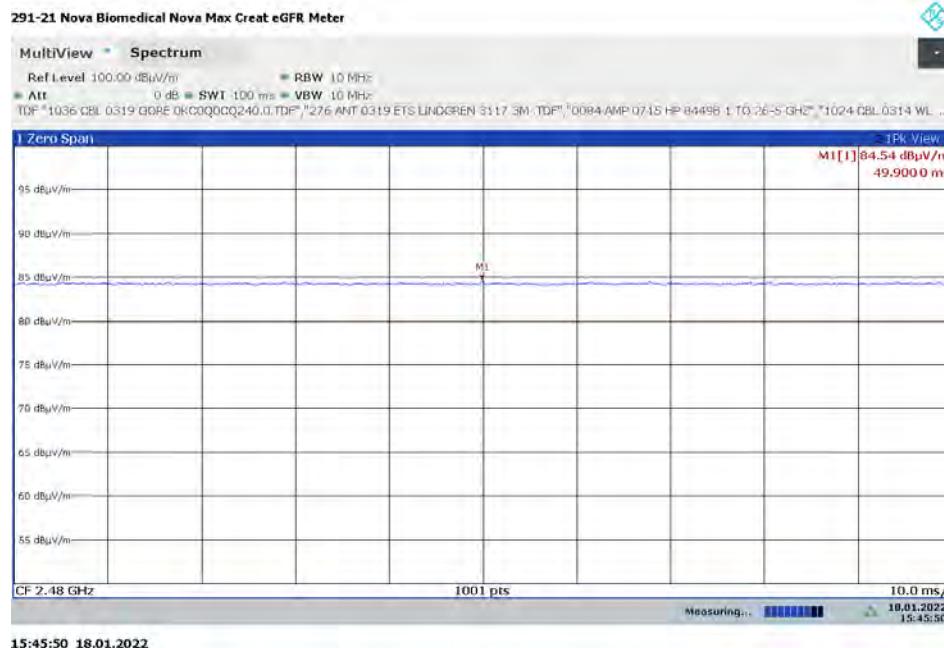
## 7. Measurement Data (continued)

### 7.10. Duty Cycle (continued)

#### 7.10.2. Middle Channel – 38, 2426 MHz



#### 7.10.3. High Channel – 39, 2480 MHz



## 7. Measurement Data

### 7.11. Occupied Bandwidth (99% Emission Bandwidth) (ISED Canada RSS-GEN Issue 5)

Requirement: ISED Canada RSS-GEN Issue 5

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

Procedure This test was performed in accordance with the procedure detailed in ISED Canada RSS-GEN Issue 5, section 6.7.

Test Note: This test was performed utilizing the automated 99% bandwidth function of the spectrum analyzer.

Conclusion: Compliant, for informational purposes.

#### Measurement Results - 99% Bandwidth

Channel	Channel Frequency (MHz)	99% Power Bandwidth (MHz)
Low	2402	1.065
Middle	2426	1.072
High	2480	1.069

#### 7.11.1. 99% Emissions Bandwidth, Low Channel



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## 7. Measurement Data

### 7.11. Occupied Bandwidth (99% Emission Bandwidth) (ISED Canada RSS-GEN Issue 5)

#### 7.11.2. 99% Emissions Bandwidth, Middle Channel



#### 7.11.3. 99% Emissions Bandwidth, High Channel



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## 7. Measurement Data (continued)

### 7.12. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN, ISSUE 4 5.5, RSS 102)

#### 7.12.1. 15.247(i) (1.1307 (b)(1) Requirements

Requirement: Portable devices are subject to radio frequency radiation exposure requirements.

For a 1-g head or body SAR, the test exclusion result must be  $\leq 3.0$ .

For a 10-g extremity SAR, the test exclusion result must be  $\leq 7.5$ .

Test Notes: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by the following formula:

$$\text{SAR Test Exclusion} = \frac{P_{\text{MAX}}}{d_{\text{MIN}}} \times \sqrt{f_{(\text{GHz})}} \quad (1)$$

$P_{\text{MAX}}$  mW Maximum power of channel, including tune-up tolerance

$d_{\text{MIN}}$  mm Minimum test separation distance, mm ( $\leq 50$  mm)

$f_{(\text{GHz})}$  GHz  $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz ( $>100$  MHz and  $<6$  GHz)

(1) FCC OET 447498 - Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

Results: Compliant - The device under test meets the exclusion requirement detailed in FCC OET 447498.

Channel:	37	38	39	
<b>Input<sup>1</sup>:</b>	$P_{\text{MAX}}$	0.064	0.074	0.062
	$d_{\text{MIN}}^2$	5.00	5.00	5.00
	$f_{(\text{GHz})}$	2.402	2.426	2.480
<b>Test Exclusion:</b>	0.02	0.02	0.02	
<b>Limit Exemption:</b>	3.0	3.0	3.0	
<b>Measurement Result:</b>	Compliant	Compliant	Compliant	

<sup>1</sup> Taken from column 3 of the table in Section 7.3 of this test report.

<sup>2</sup> When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to KDB 447498, 4.1 f) is applied to determine SAR test exclusion.

## 7. Measurement Data (continued)

### 7.12. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN, ISSUE 4 5.5, RSS 102) (continued)

#### 7.12.2. RSS-102 Issue 5 Requirements

Requirement: SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1. Portable devices are subject to radio frequency radiation exposure requirements.

Test Notes: The limit was taken from Table 1 of RSS-102 Issue 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5.

Results: Compliant

Bluetooth Radio				
Frequency	Separation Distance	Maximum Power	RSS-102 Limit	Result
MHz	mm	mW	mW	
2402	≤5	0.06	10.65	Compliant
2426	≤5	0.07	10.33	Compliant
2480	≤5	0.06	9.86	Compliant

## 8. Test Setup Photographs

### 8.1. Spurious Radiated Emissions, 30 kHz to 1 GHz – Front



## **8. Test Setup Photographs**

### **8.2. Spurious Radiated Emissions, 30 kHz to 30 MHz – Rear**



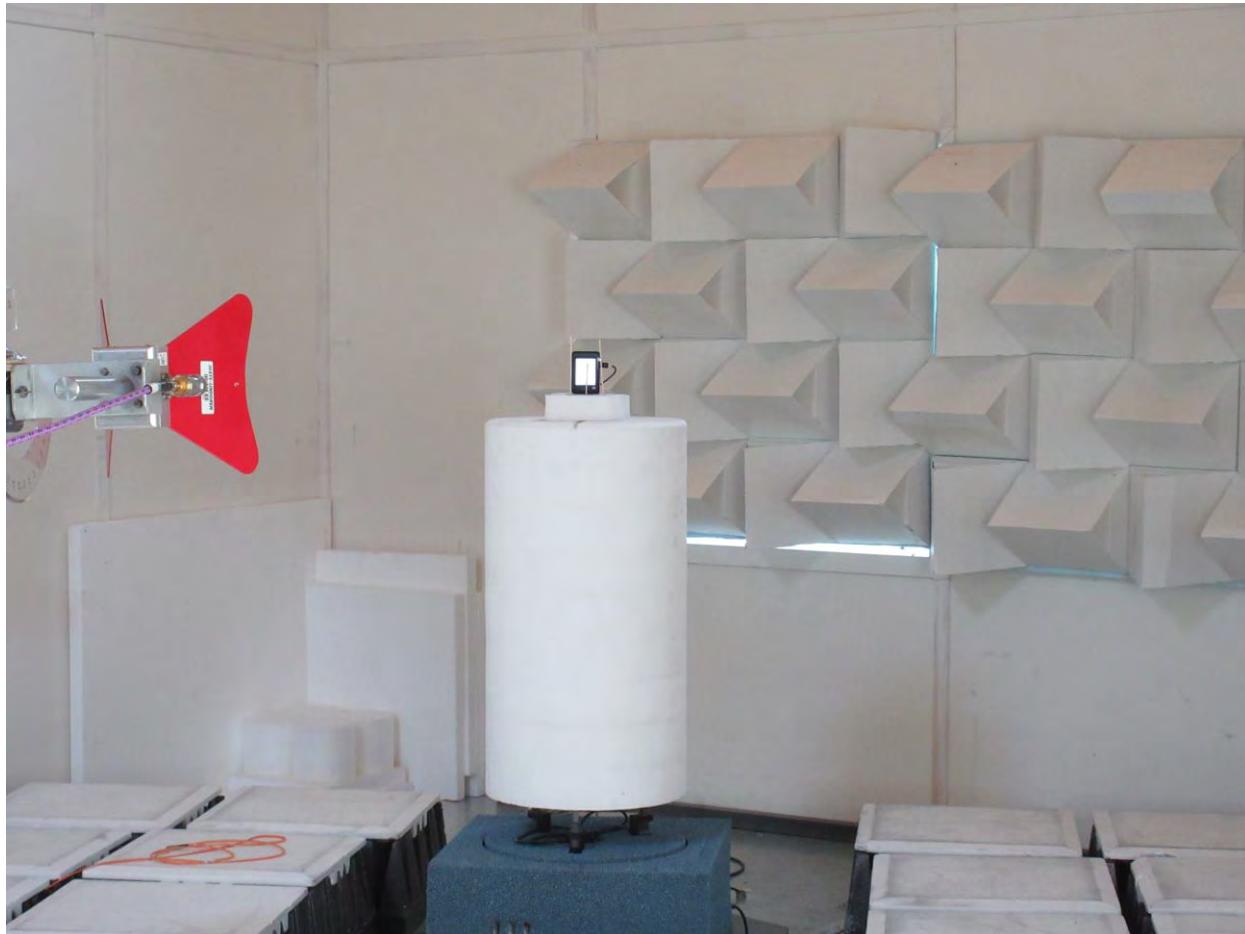
## 8. Test Setup Photographs

### 8.3. Spurious Radiated Emissions, 30 MHz to 1 GHz – Rear



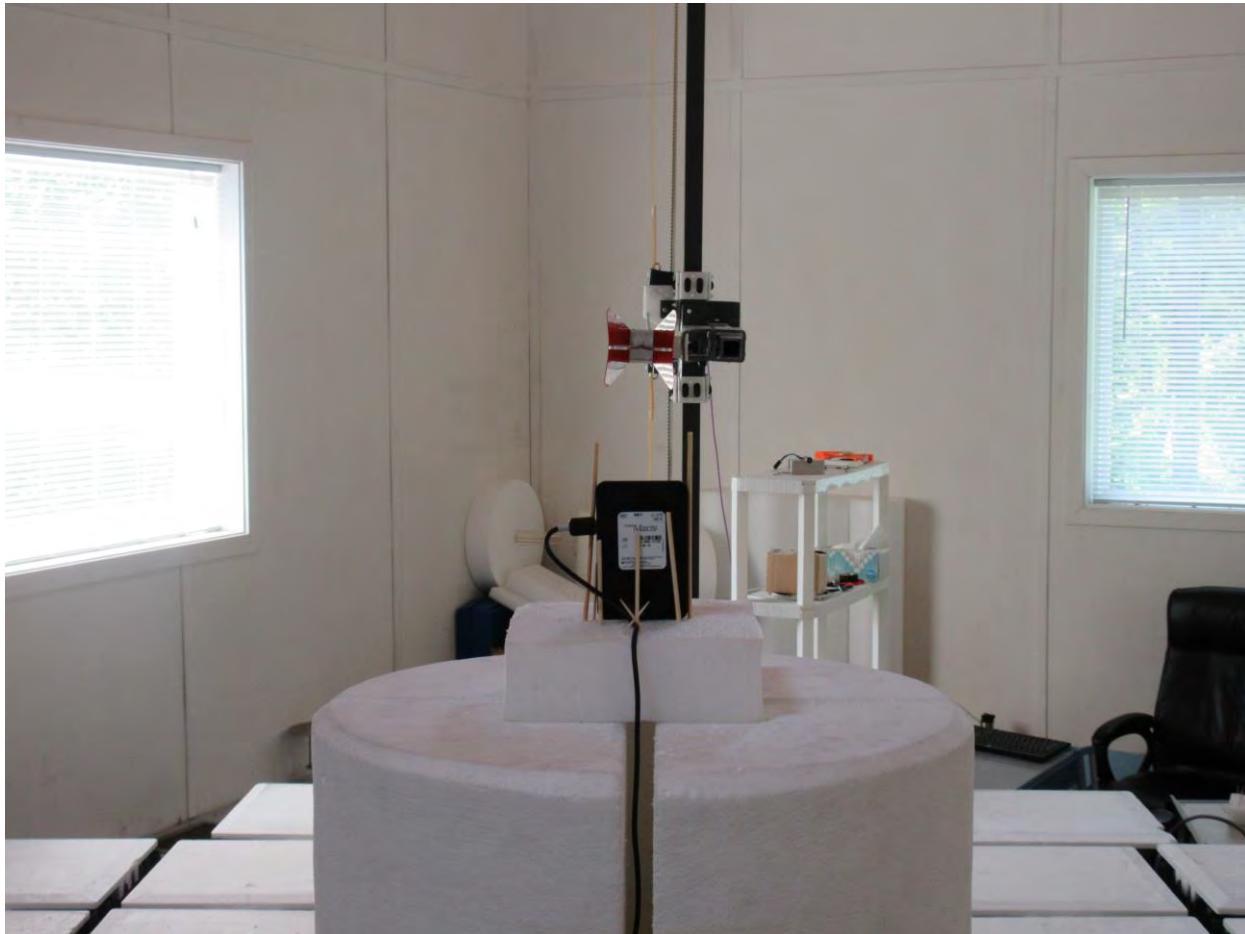
## 8. Test Setup Photographs

### 8.4. Radiated Emissions above 1 GHz – Front



## 8. Test Setup Photographs

### 8.5. Radiated Emissions 1 to 18 GHz – Rear



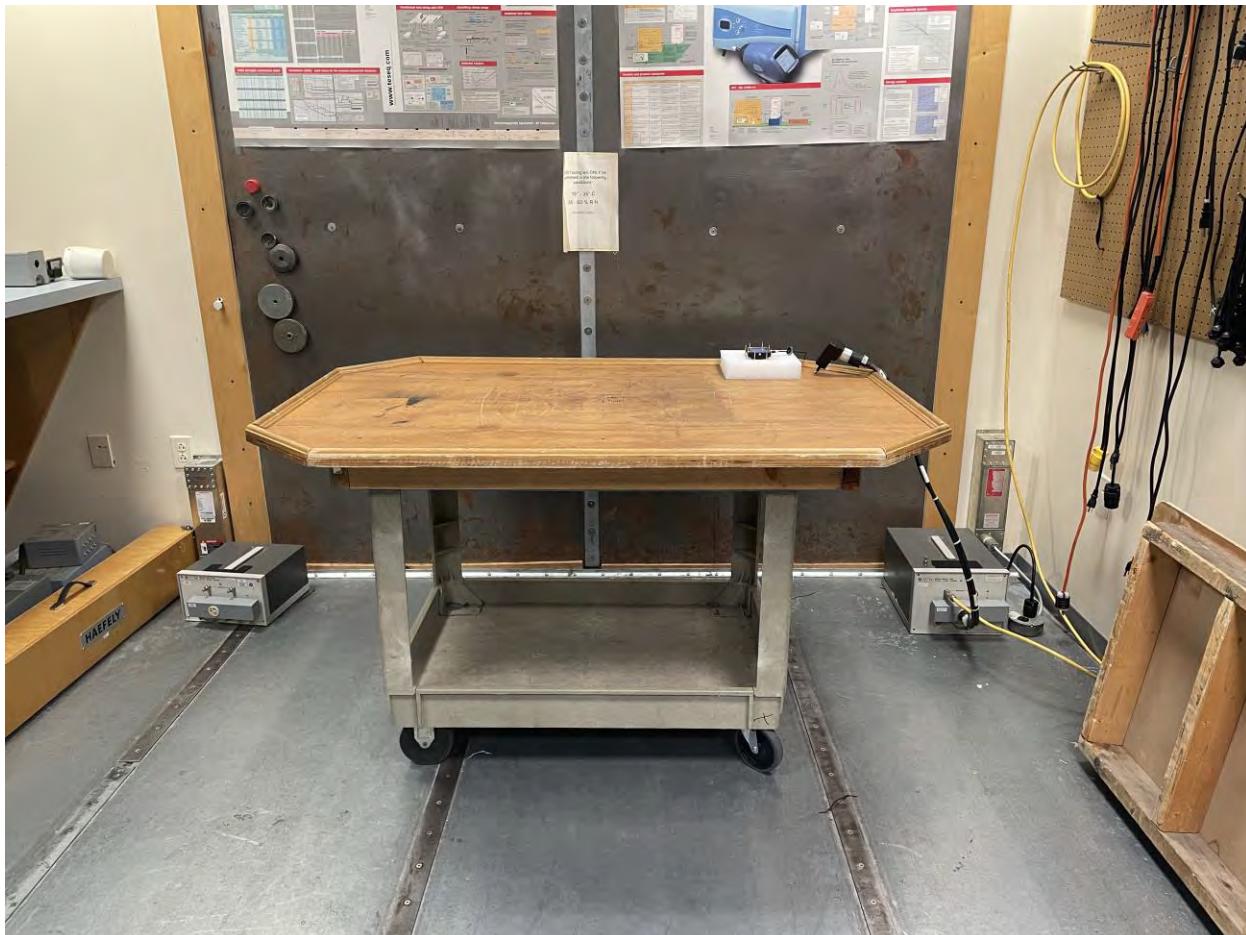
## 8. Test Setup Photographs

### 8.6. Radiated Emissions 18 to 40 GHz – Rear



## 8. Test Setup Photographs

### 8.7. Power Line Conducted Emissions – Front



## 8. Test Setup Photographs

### 8.8. Power Line Conducted Emissions – Rear





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## 9. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with the Federal Communications Commission (FCC) and Industry Canada standards. Through our American Association for Laboratory Accreditation (A2LA) ISO Guide 17025 Accreditation our test sites are designated with the FCC (designation number **US1091**), Industry Canada (file number **IC 3023A-1**) and VCCI (Member number 3168) under registration number A-0274.

Compliance Worldwide is also designated as a Phase 1 CAB under APEC-MRA (US0132) for Australia/New Zealand AS/NZS CISPR 32, Chinese-Taipei (Taiwan) BSMI CNS 13438 and Korea (RRA) KN 11, KN 13, KN 14-1, KN 22, KN 32, KN 61000-6-3, KN 61000-6-4.

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane. A second conducted emissions site is also located in the basement of the OATS site with a 2.3 x 2.5 meter ground plane and a 2.4 x 2.4 meter vertical wall.

The radiated emissions test site for measurements above 1GHz is a 3 Meter open area test site (OATS) with a 3.6 by 3.6 meter anechoic absorber floor patch to achieve a quasi-free space measurement environment per ANSI C63.4/C63.10 and CISPR 16-1-4 standards.

The sites are designed to test products or systems 1.5 meters W x 1.5 meters L x 2.0 meters H, floor standing or table top.

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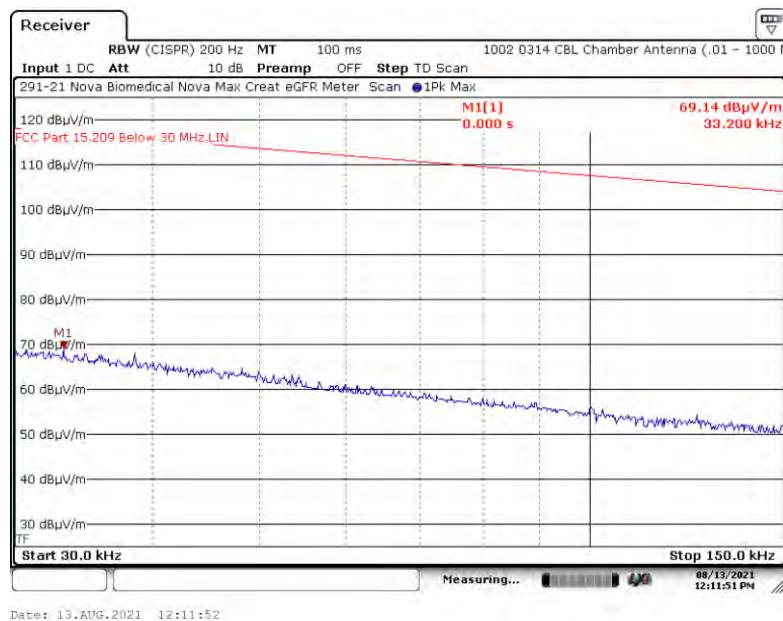
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

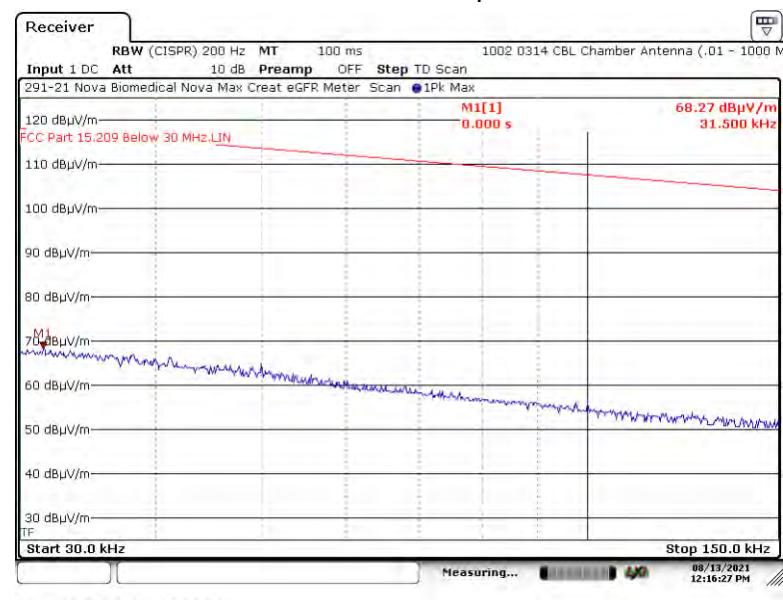
#### A1.1. All Three Channels

##### A1.1.1. Orthogonal Position: X-Axis

###### A1.1.1.1. Measurement Results: Parallel Antenna



###### A1.1.1.2. Measurement Results: Perpendicular Antenna



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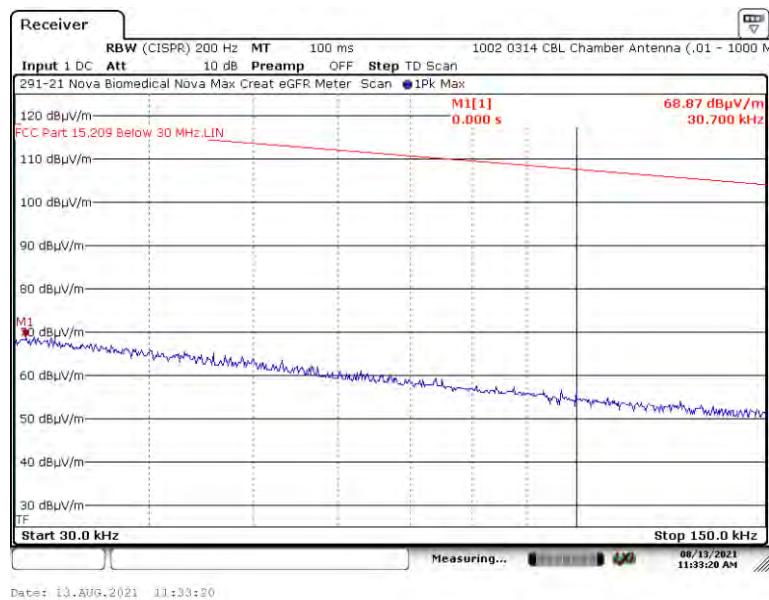
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

#### A1.1. All Three Channels

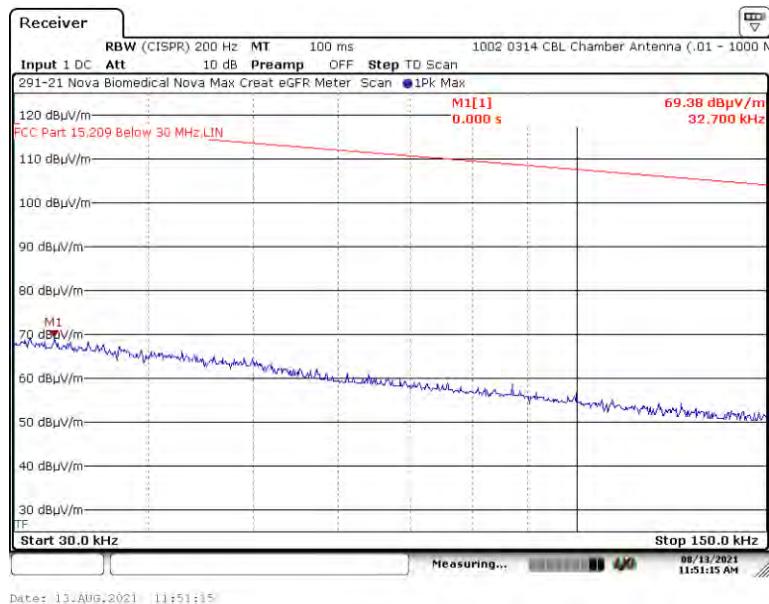
##### A1.1.1. Orthogonal Position: X-Axis

###### A1.1.1.3. Measurement Results: Ground Parallel Antenna



##### A1.1.2. Orthogonal Position: Y-Axis

###### A1.1.2.1. Measurement Results: Parallel Antenna



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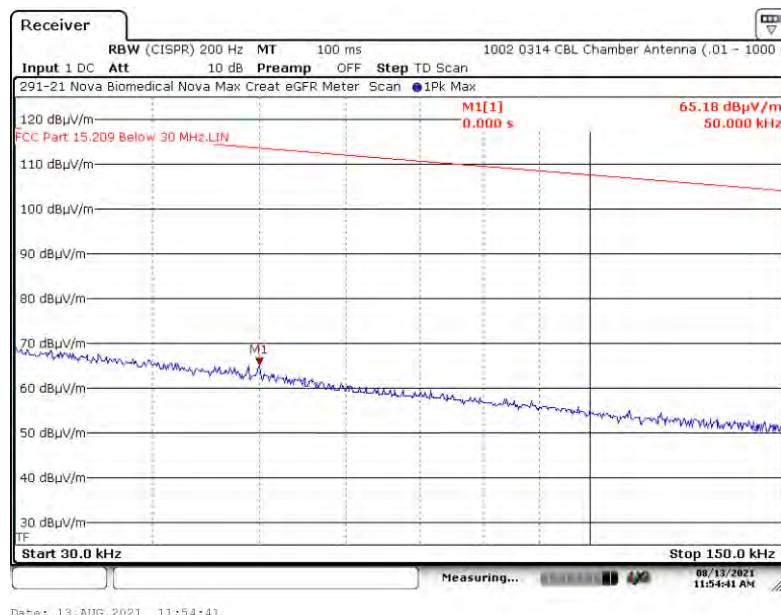
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

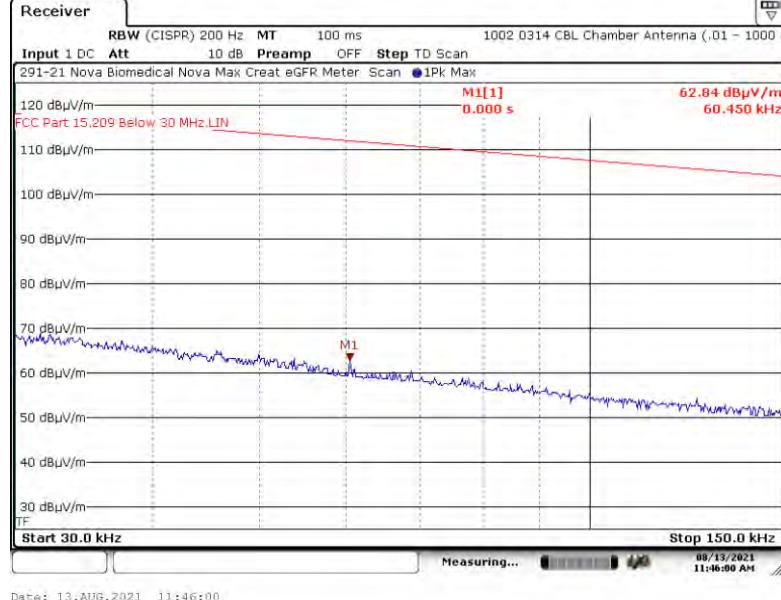
#### A1.1. All Three Channels

##### A1.1.2. Orthogonal Position: Y-Axis

###### A1.1.2.2. Measurement Results: Perpendicular Antenna



###### A1.1.2.3. Measurement Results: Ground Parallel Antenna



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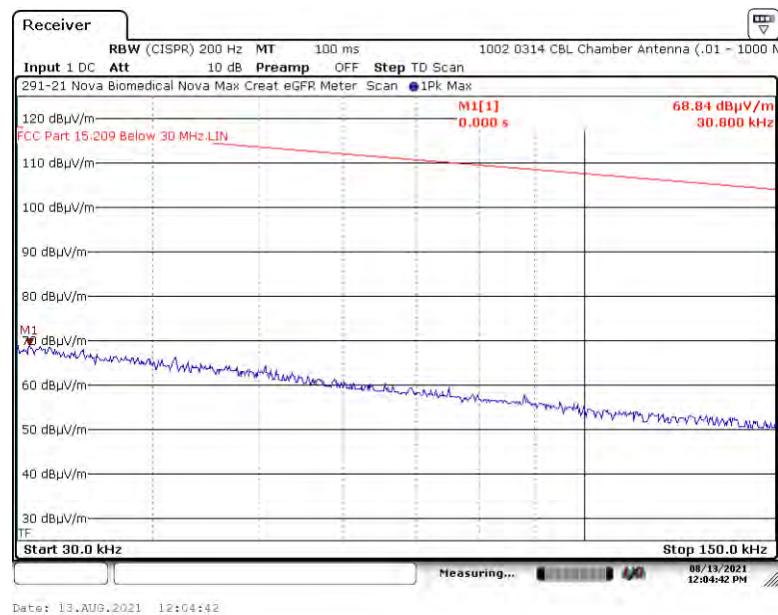
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

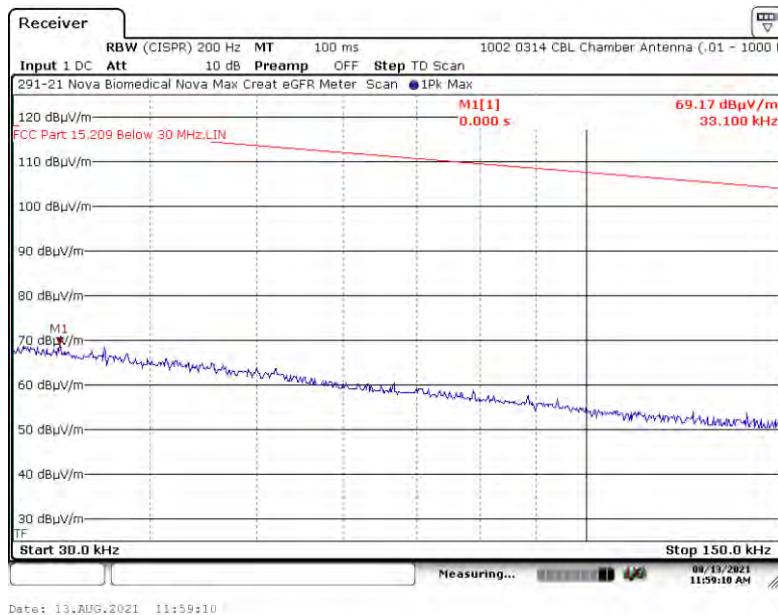
#### A1.1. All Three Channels

##### A1.1.3. Orthogonal Position: Z-Axis

###### A1.1.3.1. Measurement Results: Parallel Antenna



###### A1.1.3.2. Measurement Results: Perpendicular Antenna



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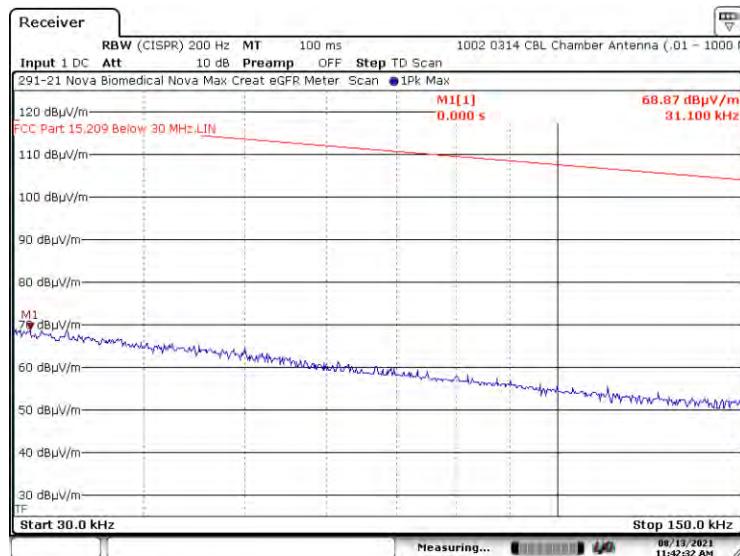
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

#### A1.1. All Three Channels

##### A1.1.3. Orthogonal Position: Z-Axis

###### A1.1.3.3. Measurement Results: Ground Parallel Antenna



Date: 08.AUG.2021 11:42:31

**Test Number: 291-21**
**Issue Date: 1/27/2022**

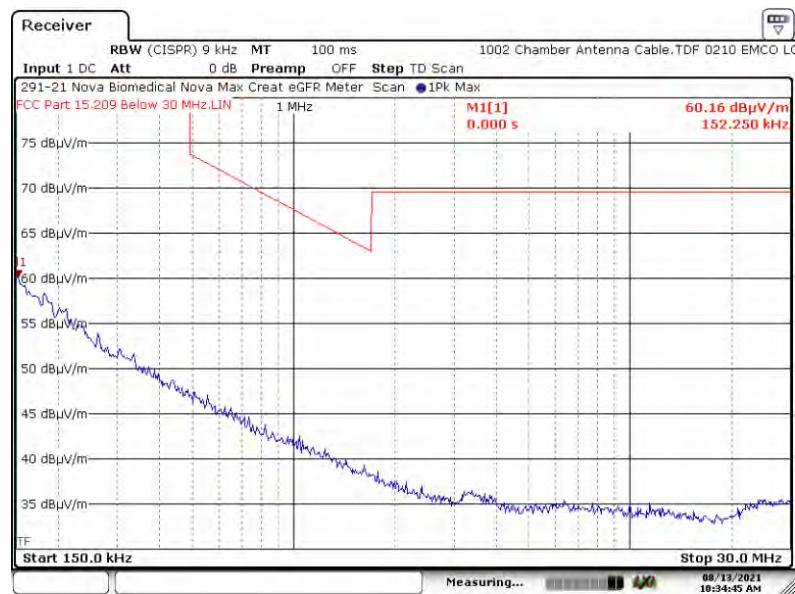
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A2. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

#### A2.1. All Three Channels

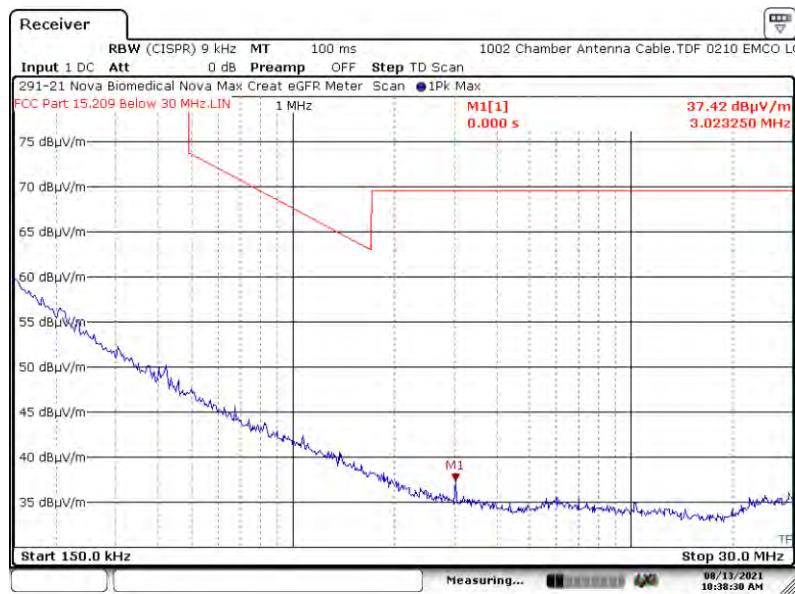
##### A2.1.1. Orthogonal Position: X-Axis

###### A2.1.1.1. Measurement Results: Parallel Antenna



Date: 13.AUG.2021 10:34:46

###### A2.1.1.2. Measurement Results: Perpendicular Antenna



Date: 13.AUG.2021 10:38:30

**Test Number: 291-21**
**Issue Date: 1/27/2022**

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A1. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

#### A2.1. All Three Channels

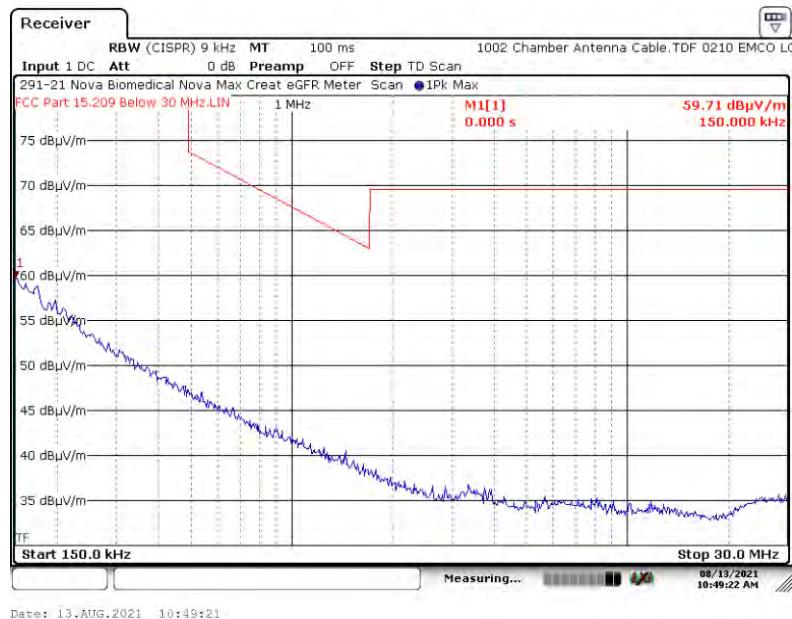
##### A2.1.1. Orthogonal Position: X-Axis

###### A2.1.1.3. Measurement Results: Ground Parallel Antenna



##### A2.1.2. Orthogonal Position: Y-Axis

###### A2.1.2.1. Measurement Results: Parallel Antenna



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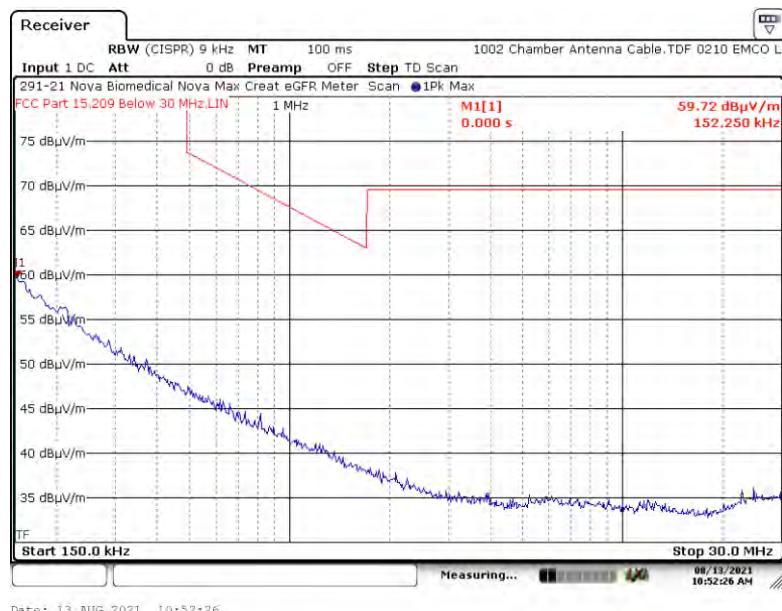
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A2. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

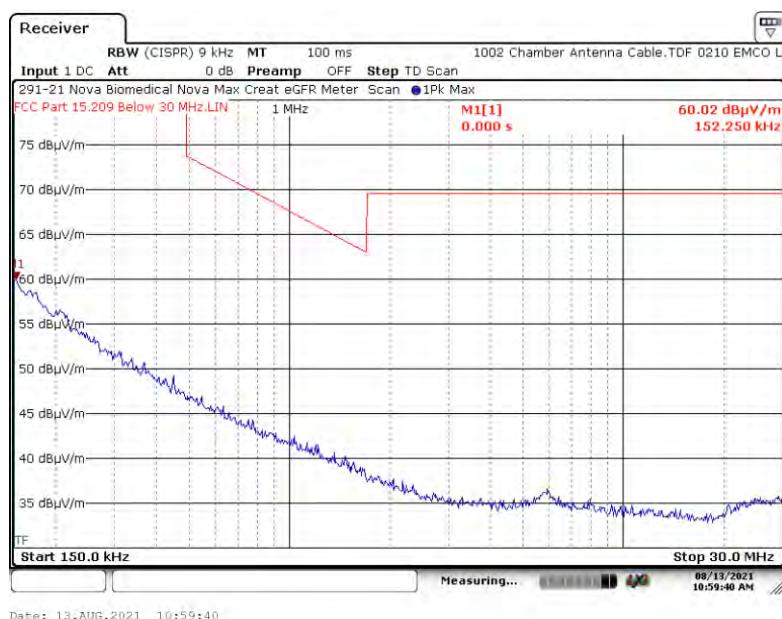
#### A2.1. All Three Channels

##### A2.1.2. Orthogonal Position: Y-Axis

###### A2.1.2.2. Measurement Results: Perpendicular Antenna



###### A2.1.2.3. Measurement Results: Ground Parallel Antenna



**Test Number: 291-21**
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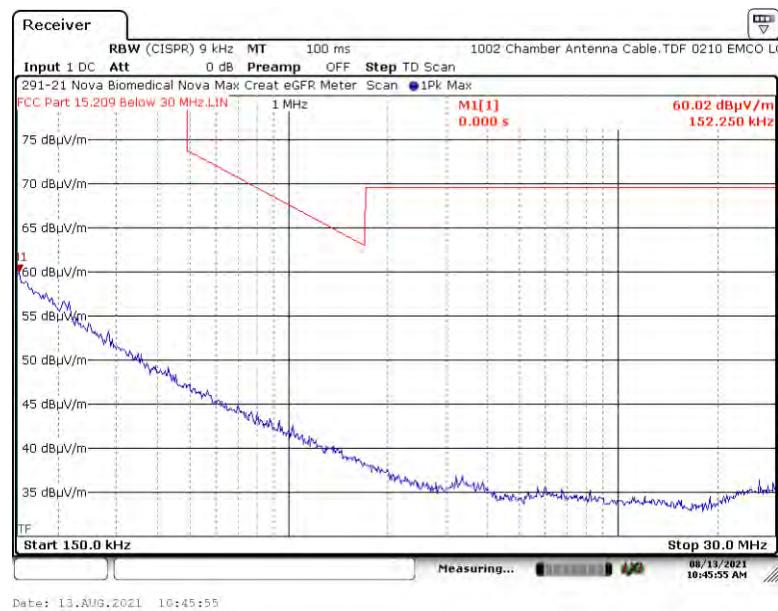
## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A2. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

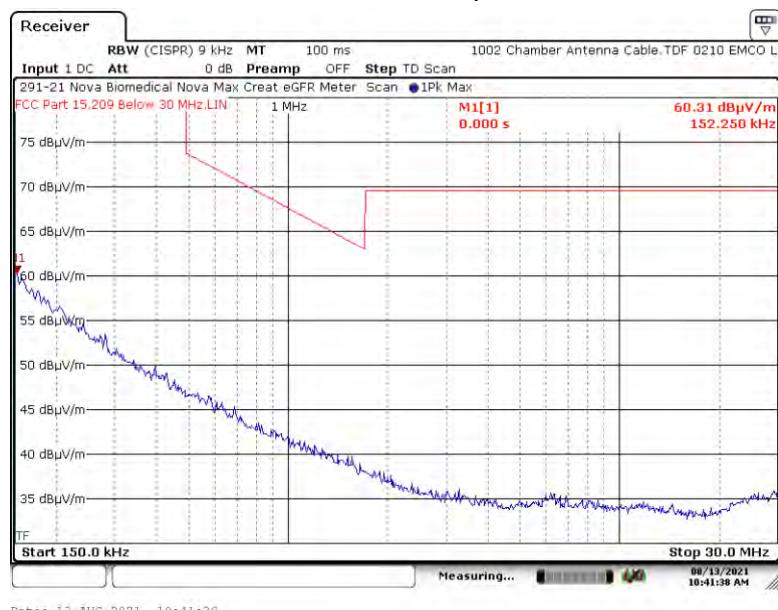
#### A2.1. All Three Channels

##### A2.1.3. Orthogonal Position: Z-Axis

###### A2.1.3.1. Measurement Results: Parallel Antenna



###### A2.1.3.2. Measurement Results: Perpendicular Antenna



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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A2. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

#### A2.1. All Three Channels

##### A2.1.3. Orthogonal Position: Z-Axis

###### A2.1.3.3. Measurement Results: Ground Parallel Antenna



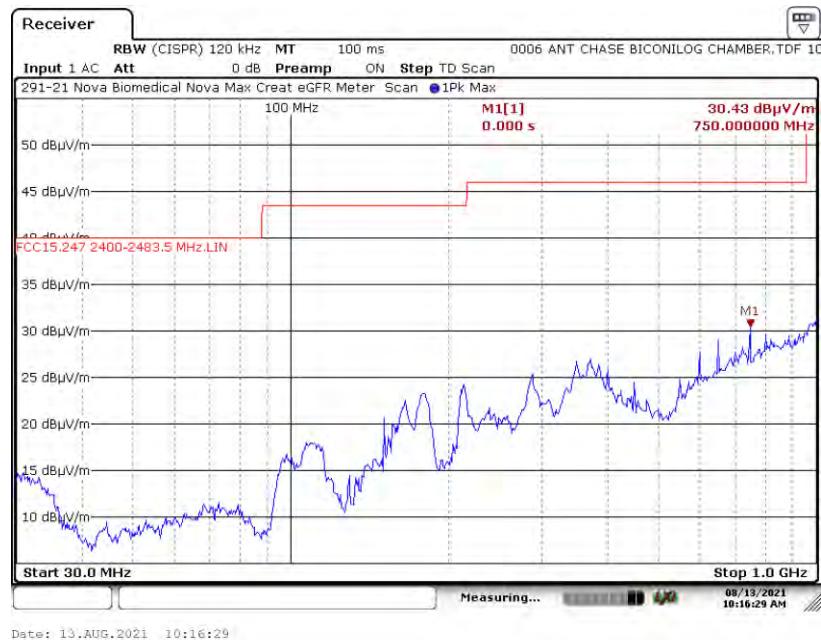
**Test Number: 291-21**
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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A3. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

#### A3.1. All Three Channels

##### A3.1.1. Measurement Results: X-Axis, Horizontal Antenna



##### A3.1.2. Measurement Results: X-Axis, Vertical Antenna



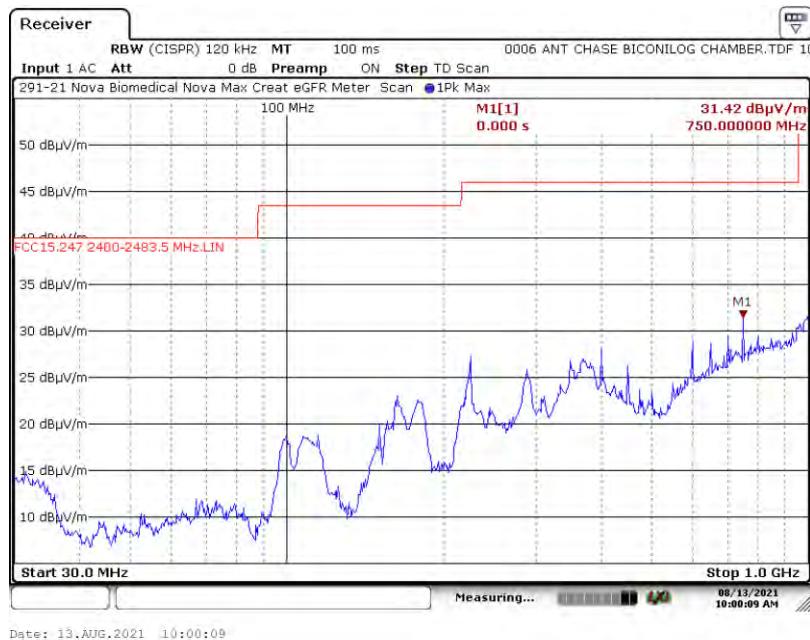
**Test Number: 291-21**
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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A3. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

#### A3.1. All Three Channels

##### A3.1.3. Measurement Results: Y-Axis, Horizontal Antenna



##### A3.1.4. Measurement Results: Y-Axis, Vertical Antenna



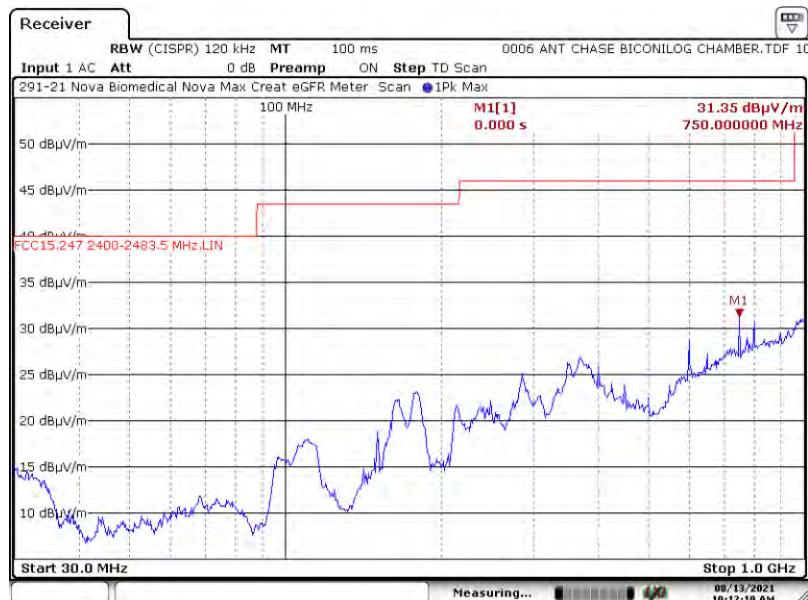
**Test Number: 291-21**
**Issue Date: 1/27/2022**

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A3. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

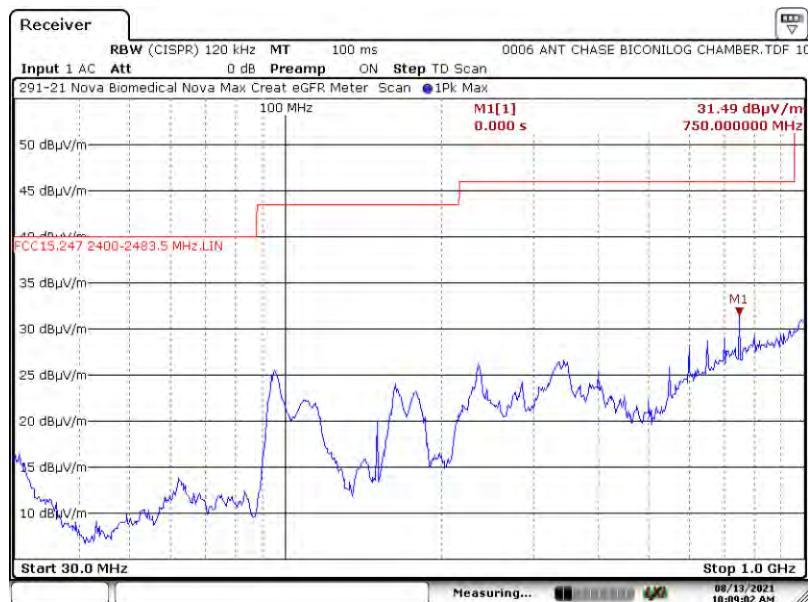
#### A3.1. All Three Channels

##### A3.1.5. Measurement Results: Z-Axis, Horizontal Antenna



Date: 13.AUG.2021 10:12:19

##### A3.1.6. Measurement Results: Z-Axis, Vertical Antenna



Date: 13.AUG.2021 10:09:02

Test Number: 291-21

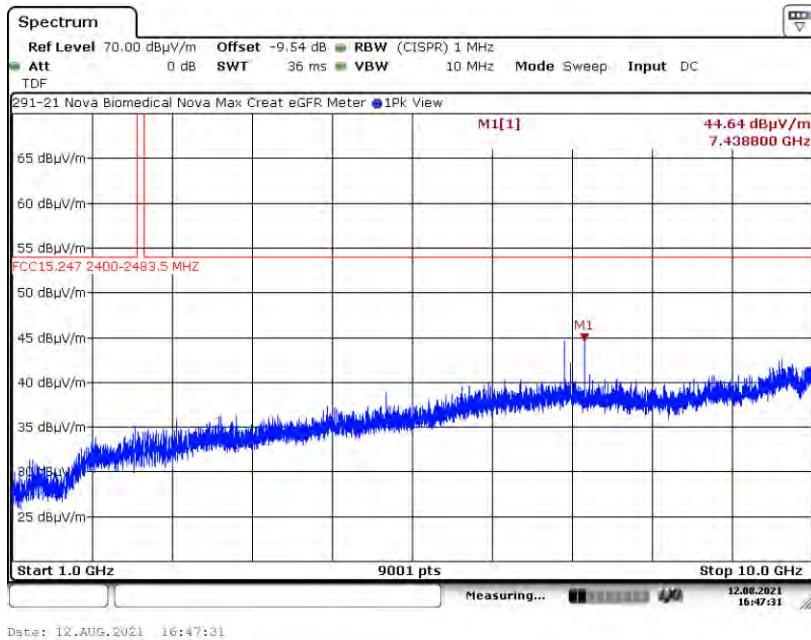
Issue Date: 1/27/2022

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

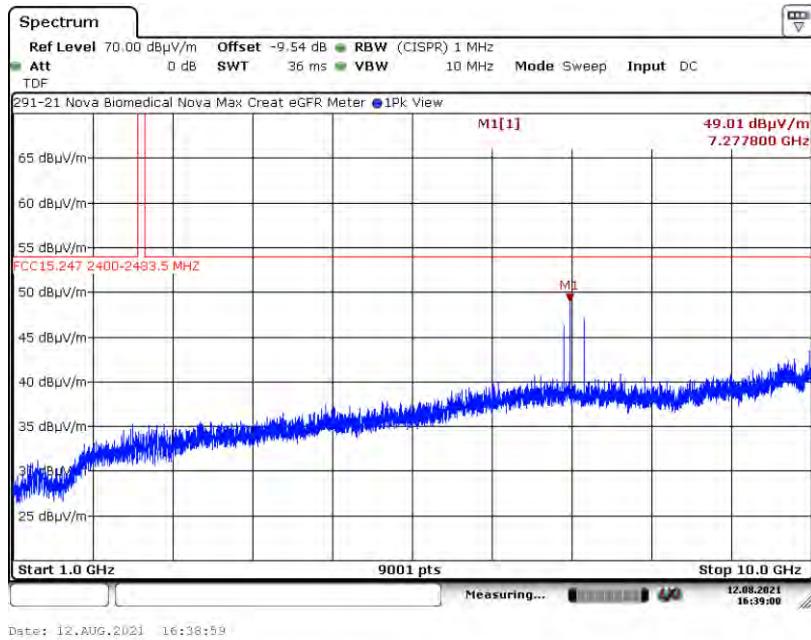
### A4. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

#### A4.1. All Three Channels

##### A4.1.1. Measurement Results: X-Axis, Horizontal Antenna



##### A4.1.2. Measurement Results: X-Axis, Vertical Antenna



Test Number: 291-21

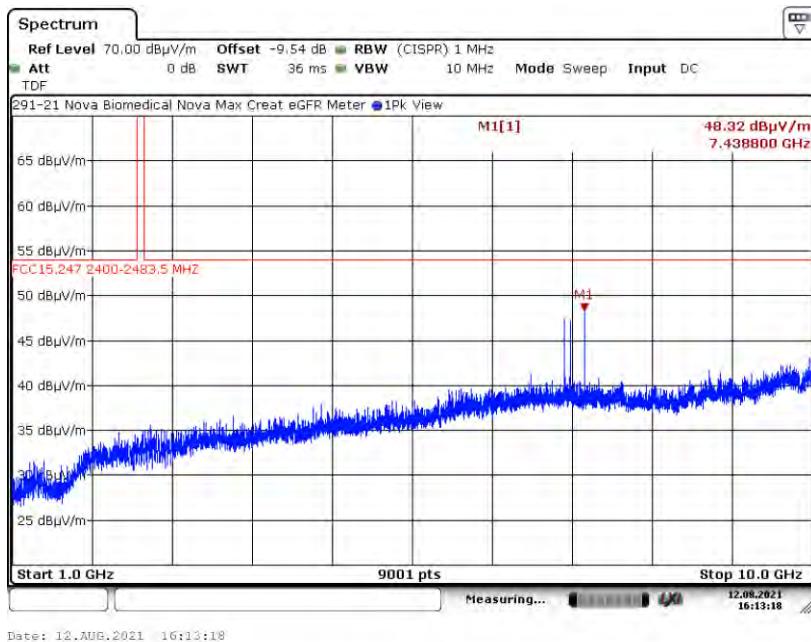
Issue Date: 1/27/2022

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

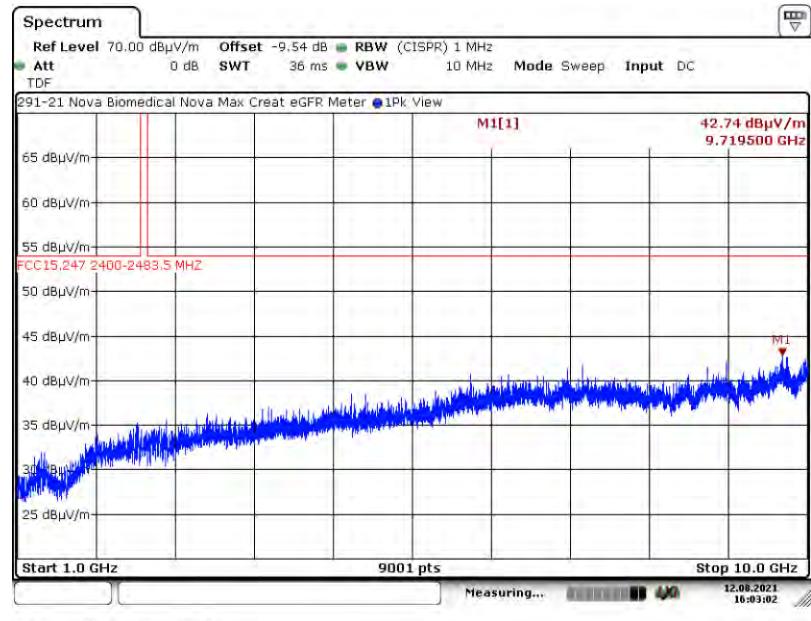
### A4. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

#### A4.1. All Three Channels

##### A4.1.3. Measurement Results: Y-Axis, Horizontal Antenna



##### A4.1.4. Measurement Results: Y-Axis, Vertical Antenna



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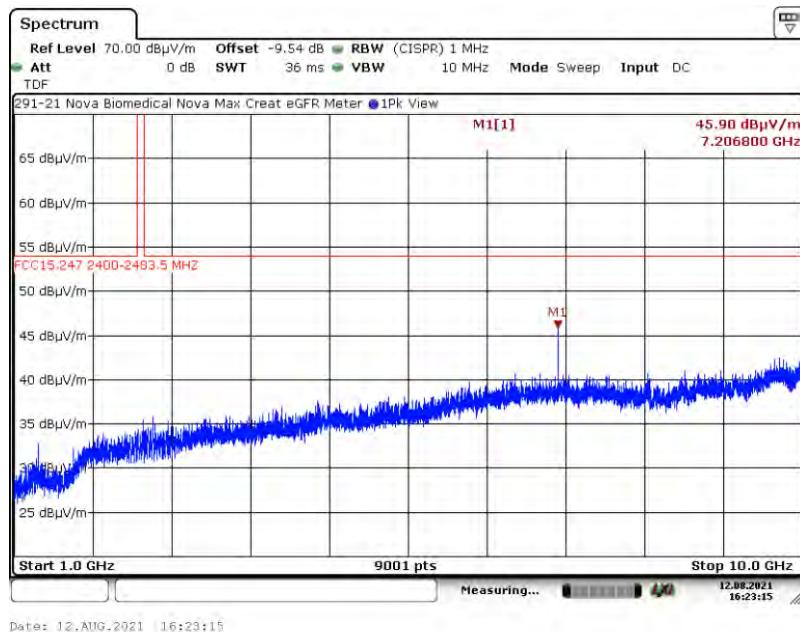
Issue Date: 1/27/2022

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

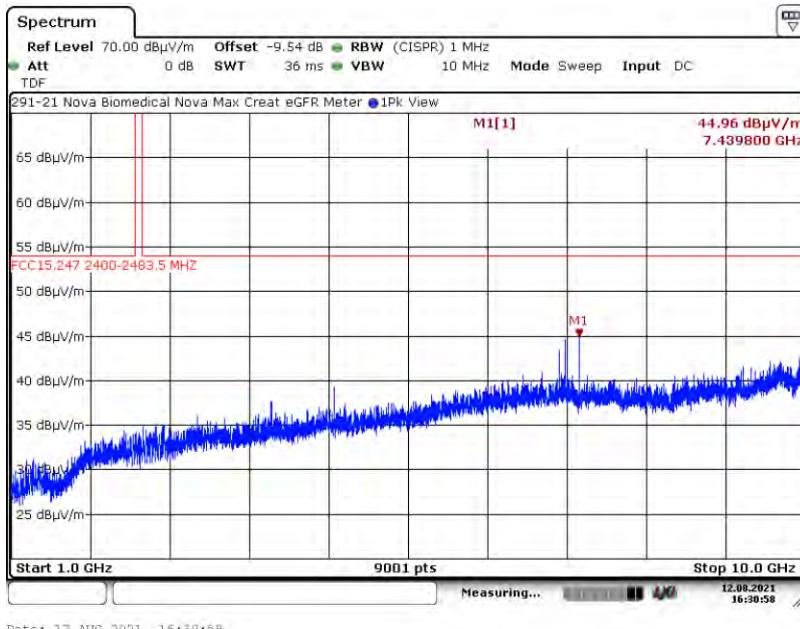
### A4. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

#### A4.1. All Three Channels

##### A4.1.5. Measurement Results: Z-Axis, Horizontal Antenna



##### A4.1.6. Measurement Results: Z-Axis, Vertical Antenna



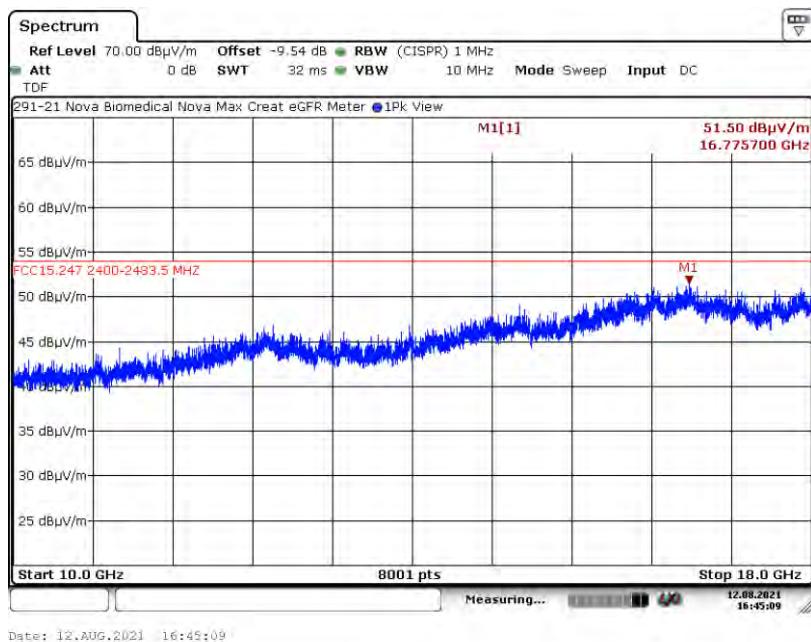
**Test Number: 291-21**
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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

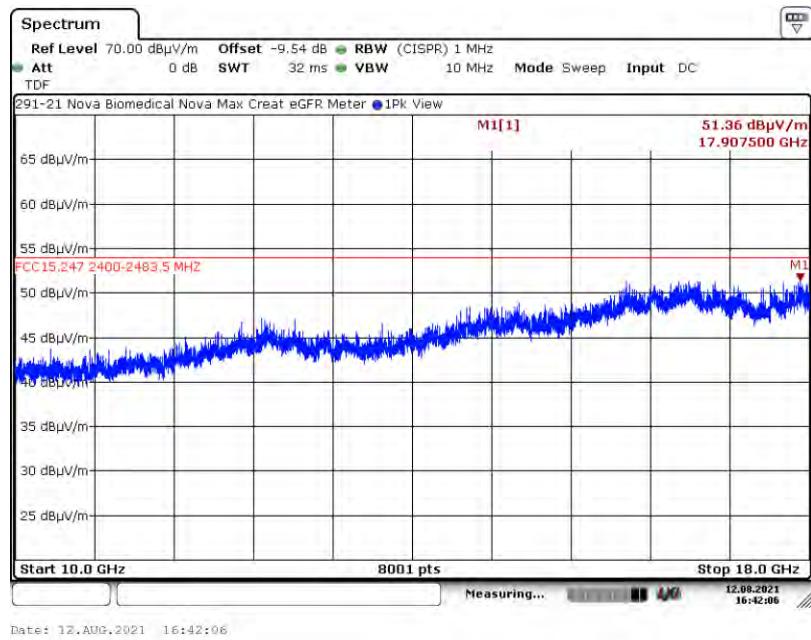
### A5. Spurious Radiated Emissions (10 GHz – 18 GHz) Test Results

#### A5.1. All Three Channels

##### A5.1.1. Measurement Results: X-Axis, Horizontal Antenna



##### A5.1.2. Measurement Results: X-Axis, Vertical Antenna



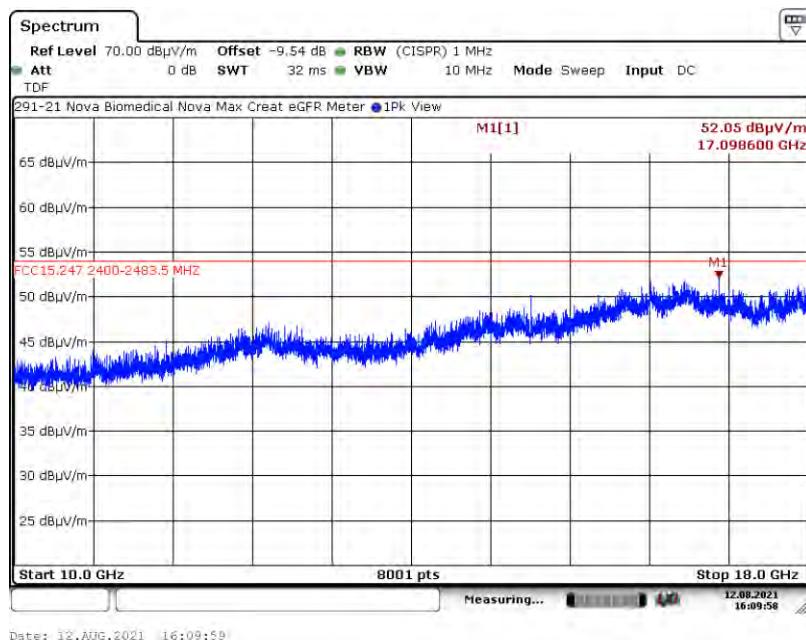
**Test Number: 291-21**
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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

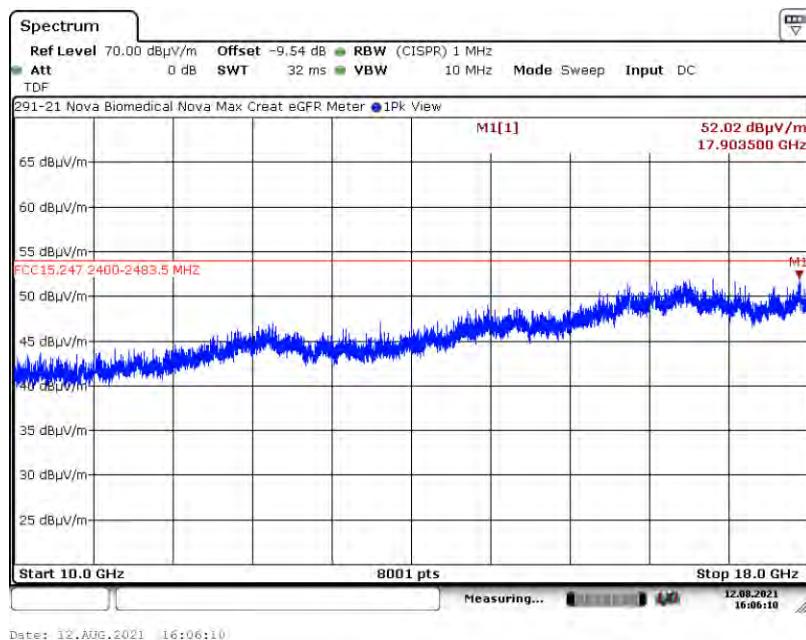
### A5. Spurious Radiated Emissions (10 GHz – 18 GHz) Test Results

#### A5.1. All Three Channels

##### A5.1.3. Measurement Results: Y-Axis, Horizontal Antenna



##### A5.1.4. Measurement Results: Y-Axis, Vertical Antenna



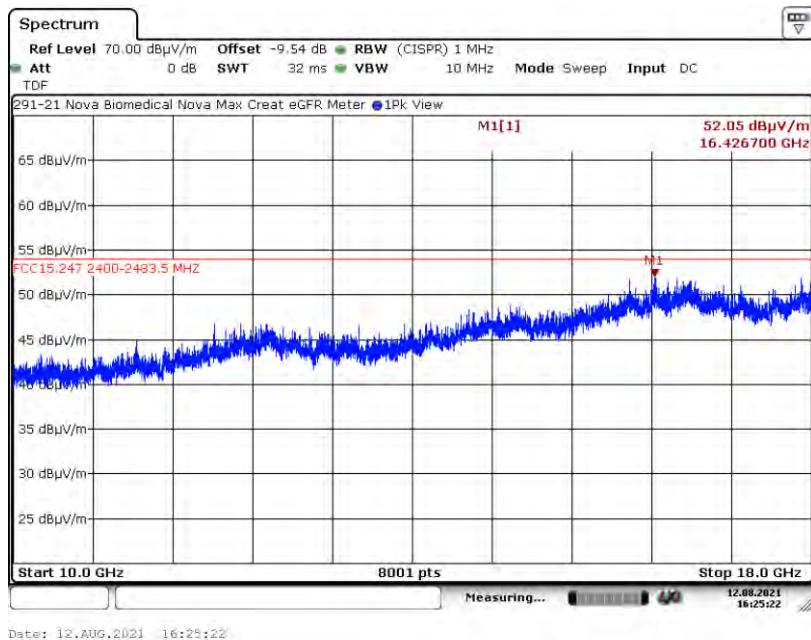
**Test Number: 291-21**
**Issue Date: 1/27/2022**

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

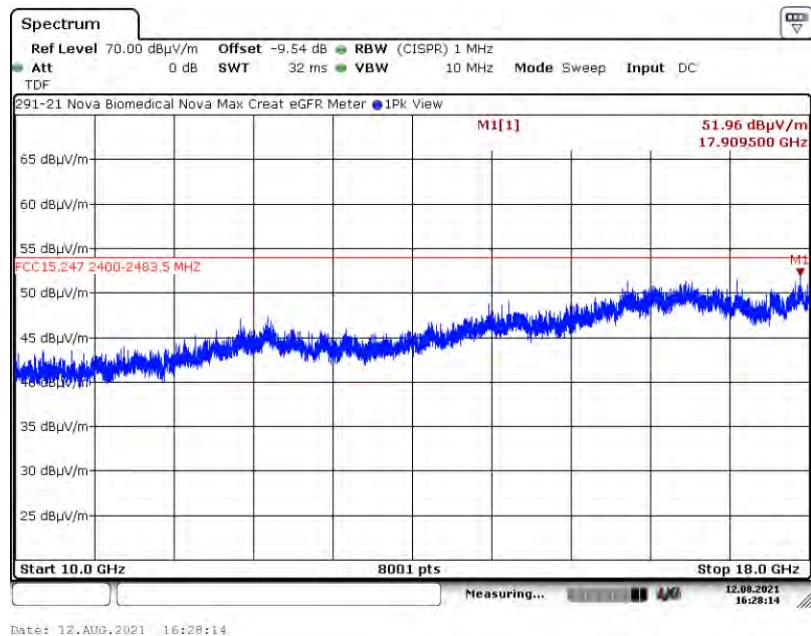
### A5. Spurious Radiated Emissions (10 GHz – 18 GHz) Test Results

#### A5.1. All Three Channels

##### A5.1.5. Measurement Results: Z-Axis, Horizontal Antenna



##### A5.1.6. Measurement Results: Z-Axis, Vertical Antenna



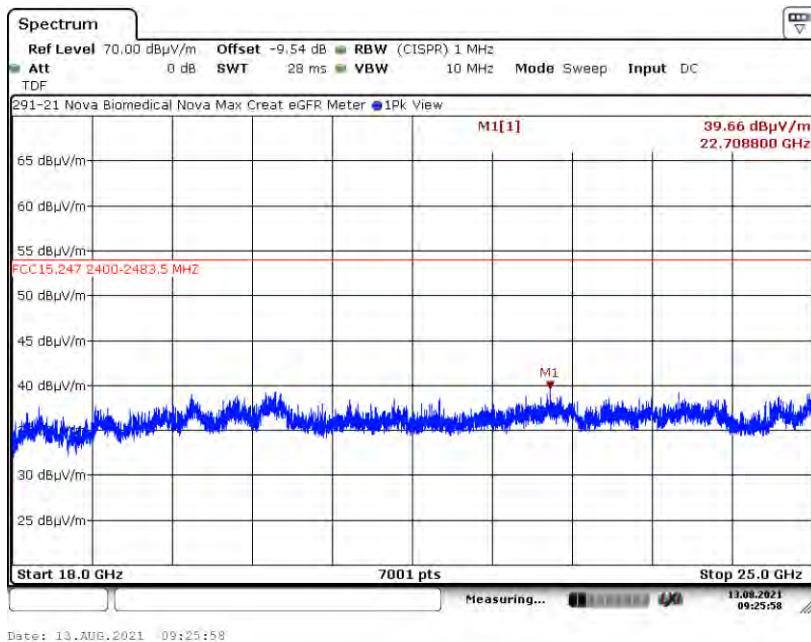
**Test Number: 291-21**
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## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

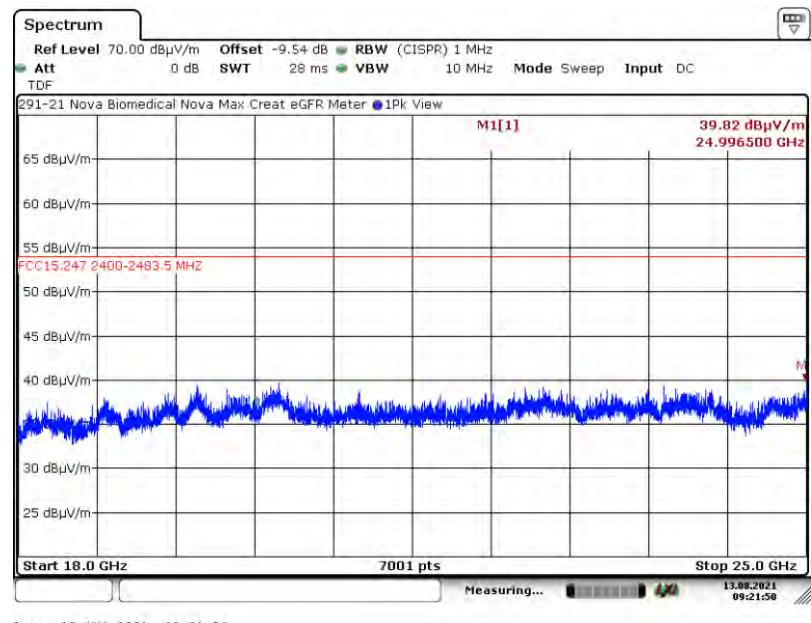
### A6. Spurious Radiated Emissions (18 GHz – 25 GHz) Test Results

#### A6.1. All Three Channels

##### A6.1.1. Measurement Results: X-Axis, Horizontal Antenna



##### A6.1.2. Measurement Results: X-Axis, Vertical Antenna



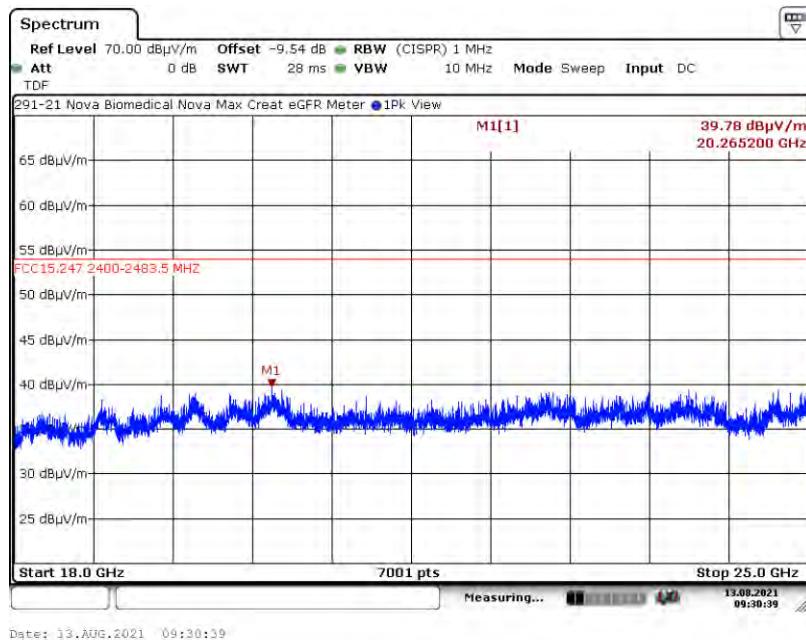
**Test Number: 291-21**
**Issue Date: 1/27/2022**

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

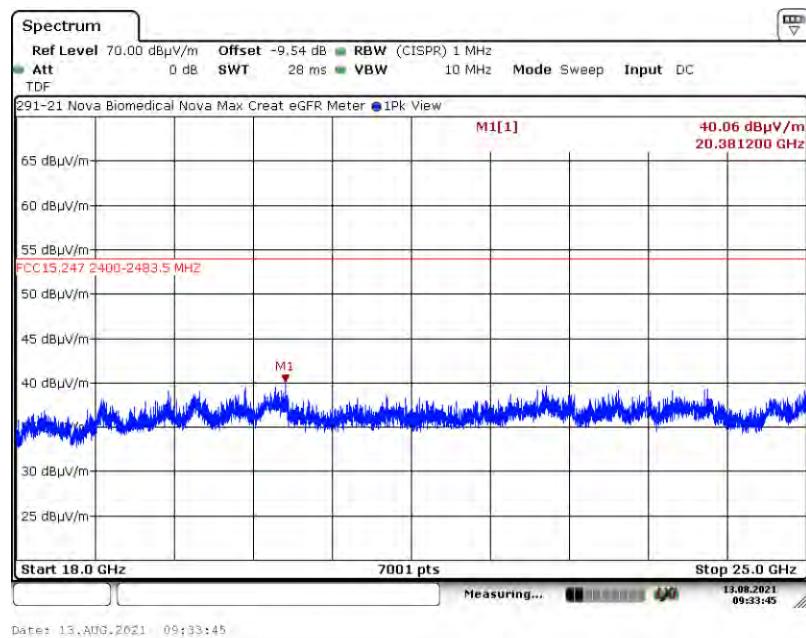
### A6. Spurious Radiated Emissions (18 GHz – 25 GHz) Test Results

#### A6.1. All Three Channels

##### A6.1.3. Measurement Results: Y-Axis, Horizontal Antenna



##### A6.1.4. Measurement Results: Y-Axis, Vertical Antenna



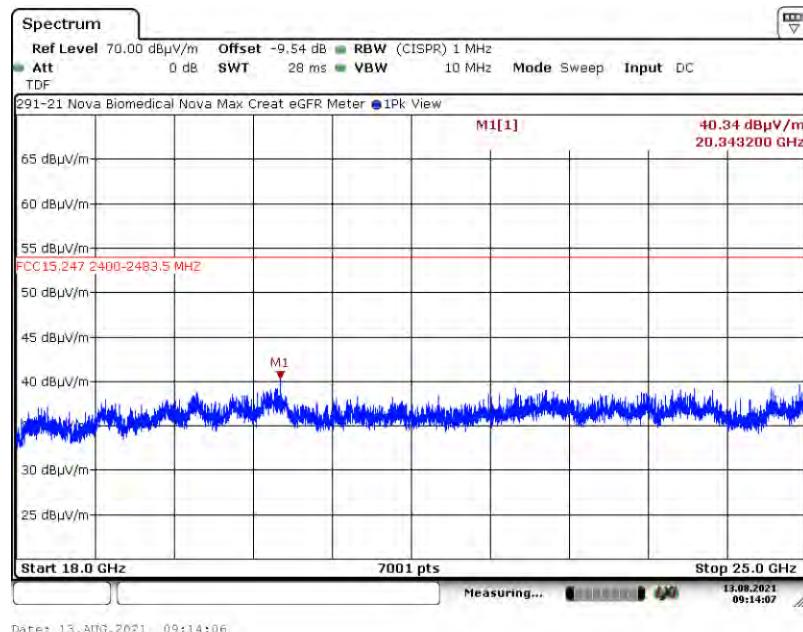
**Test Number: 291-21**
**Issue Date: 1/27/2022**

## Appendix A - Transmitter Spurious Radiated Emissions (30 kHz to 25 GHz)

### A6. Spurious Radiated Emissions (18 GHz – 25 GHz) Test Results

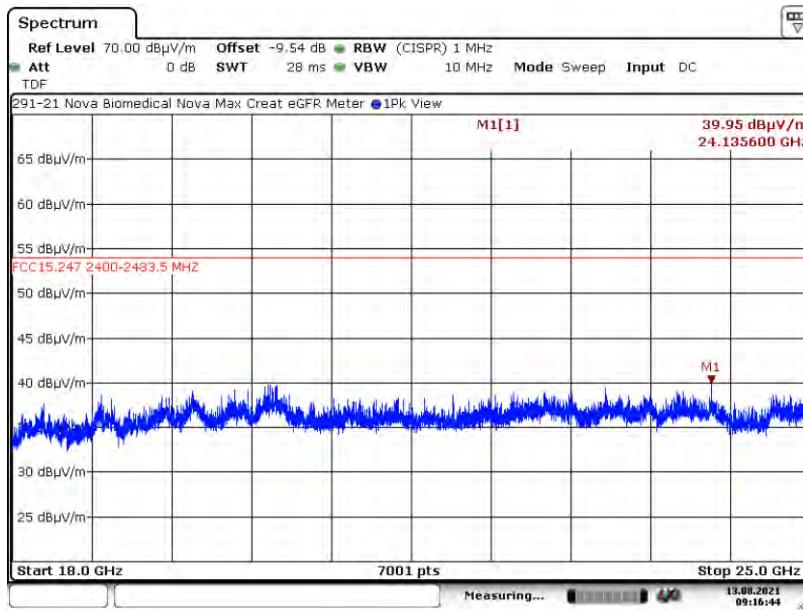
#### A6.1. All Three Channels

##### A6.1.5. Measurement Results: Z-Axis, Horizontal Antenna



Date: 13.AUG.2021 09:14:06

##### A6.1.6. Measurement Results: Z-Axis, Vertical Antenna



Date: 13.AUG.2021 09:16:43