

## COMPLIANCE WORLDWIDE INC. TEST REPORT 242-22

In Accordance with the Requirements of  
FCC TITLE 47 CFR Part 15.519, Subpart F  
Technical Requirements for Handheld UWB Systems  
Class II Permissive Change

ISED RSS-220, Issue 1 (March 2009) + Amendment 1 (July 2018)  
Devices Using Ultra-Wideband (UWB) Technology

Issued to

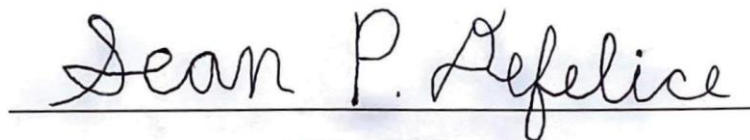
**Wiser Systems, Inc.**  
819 W Hargett St  
Raleigh, NC 27603  
(919) 551-5566

For the  
**Handheld Tag**  
Models: TAGV1.2, TAGV1.2W

**FCC ID: 2AGZM-B01017**  
**IC: 25948-B01017**

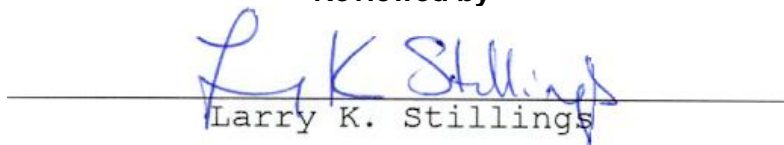
Report Issued on December 22, 2022

Tested by



Sean P. Defelice

Reviewed by



This test report shall not be reproduced, except in full, without written permission from Compliance Worldwide, Inc.

## Table of Contents

1. Scope.....	3
2. Product Details .....	3
2.1. Manufacturer .....	3
2.2. Model Number.....	3
2.3. Serial Number .....	3
2.4. Description .....	3
2.5. Power Source.....	3
2.6. Hardware Revision.....	3
2.7. Software Revision .....	3
2.8. Modulation Type.....	3
2.9. Operating Frequency .....	3
2.10. EMC Modifications .....	3
3. Product Configuration.....	3
3.1. Operational Characteristics & Software .....	3
3.2. EUT Hardware .....	3
3.3. EUT Cables/Transducers.....	3
3.4. Support Equipment .....	3
3.5. Test Setup.....	4
3.6. EUT Orientation Diagram.....	4
4. Measurements Parameters .....	5
4.1. Measurement Equipment Used to Perform Test .....	5
4.2. Measurement & Equipment Setup .....	6
4.3. Measurement Procedure .....	6
4.4. Measurement Uncertainty.....	6
5. Measurement Summary .....	7
6. Measurement Data .....	8
6.1. Antenna Requirement .....	8
6.2. Operational Requirements .....	9
6.3. UWB Bandwidth .....	11
6.4. Radiated Emissions below 960 MHz .....	17
6.5. Radiated Emissions above 960 MHz .....	55
6.6. Radiated Emissions in the GPS Bands.....	84
6.7. RMS Emissions of UWB Transmission.....	103
6.8. Peak Emissions in a 50 MHz Bandwidth .....	110
6.9. Conducted Emissions Test Setup.....	117
6.10. 99% Emission Bandwidth .....	118
7. Test Site Description .....	122
8. Test Images .....	123
8.1. Spurious and Harmonic Emissions - 30 kHz to 1 GHz Front.....	123
8.2. Spurious and Harmonic Emissions - 30 kHz to 30 MHz Rear .....	124
8.3. Spurious and Harmonic Emissions - 30 MHz to 1 GHz Rear .....	125
8.4. Spurious and Harmonic Emissions - 1 to 18 GHz Front.....	126
8.5. Spurious and Harmonic Emissions - 1 to 18 GHz Rear.....	127
8.6. Spurious and Harmonic Emissions - 18 to 40 GHz Side .....	128

## 1. Scope

This test report certifies that the Wiser Systems Handheld Tag as tested, meets the FCC Part 15, Subpart F and ISSED RSS-220 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

- 2.1. Manufacturer:** Wiser Systems, Inc.
- 2.2. Model Numbers:** TAGV1.2, TAGV1.2W
- 2.3. Serial Numbers:** 8004
- 2.4. Description:** RRLT Locator System leverages new advances in Ultra-Wideband technology to deliver low cost/high accuracy, real-time localization.
- 2.5. Power Source:** 3.0 VDC (CR2032 Lithium)
- 2.6. Hardware Revision:** N/A
- 2.7. Software Revision:** N/A
- 2.8. Modulation Type:** Pulse Modulation, Frequency Hopping
- 2.9. Operating Frequencies:** 4 GHz Center Frequency Nominal (Channel 2 – 500 MHz BW),  
4 GHz Center Frequency Nominal (Channel 4 – 900 MHz BW),  
6.5 GHz Center Frequency Nominal (Channel 5 – 500 MHz BW)
- 2.10. EMC Modifications:** None

## 3. Product Configuration

### 3.1 Operational Characteristics & Software

#### Hardware Setup:

Connect the Wiser USB Dongle to a laptop computer via USB. Place a battery into the handheld tag.

Using the software tool configure the USB dongle to control the tag to transmit on Channels 2, 4 or 5 (16M or 64M PRF) using a data rates of 6.8 Mbps. The devices also support a data rate of 110 kbps.

### 3.2. EUT Hardware

Manufacturer	Model/Part # / Options	Serial Number	Input Volts	Freq (Hz)	Description/Function
Wiser Systems	TAGV1.2	8004	3.0	DC	Handheld Tag

### 3.3. EUT Cables/Transducers

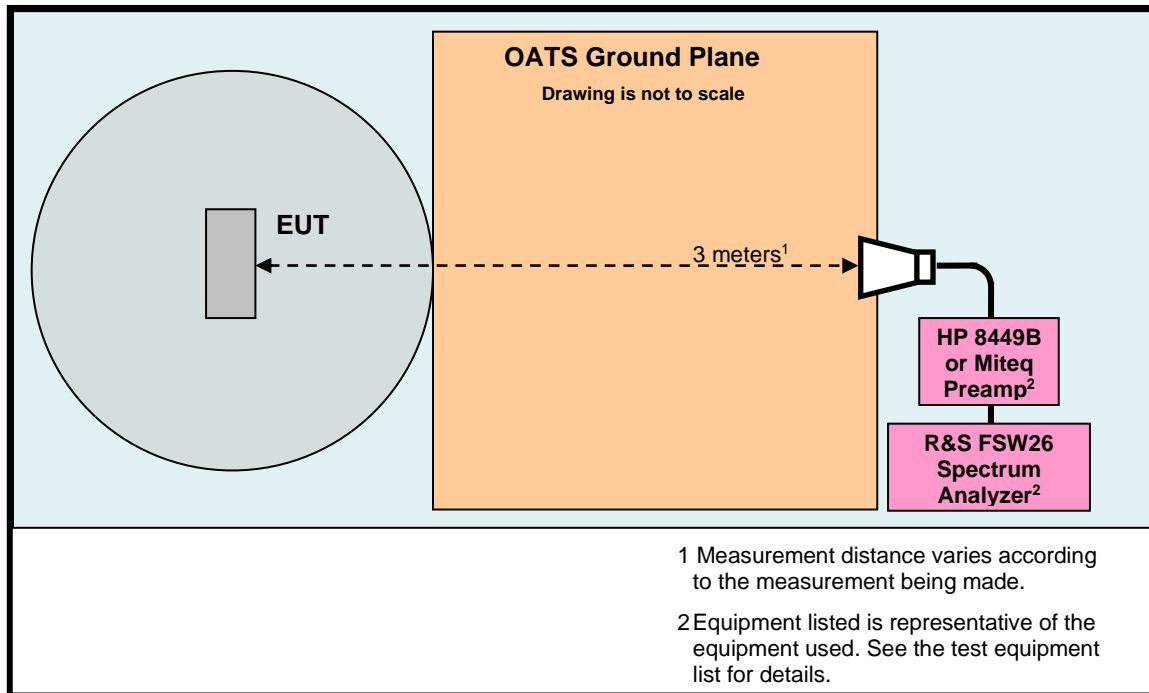
Cable Type	Length	Shield	From	To
None				

### 3.4. Support Equipment

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Freq (Hz)	Description/Function
Wiser Systems	USB Dongle	n/a	5.0	DC	For setting up the DUT operation.
Dell	XPS 13 – L321X	41647808737	120	60	For controlling the USB Dongle

### 3. Product Configuration (cont.)

#### 3.5. Test Setup Diagram



#### 3.6. EUT Orientation Diagram

In addition, the measurements were performed with the device in three orthogonal positions in accordance with ANSI C63.10-2013, sections 5.10.1, 6.3.1, Figure 8 and Annex H. The three orthogonal axes were defined as follows:



X-Axis

X Axis Sideways on Edge  
Y Axis On Edge on Table  
Z Axis Flat on the Table



Y-Axis

Clip of unit is facing the antenna at 0°  
Top/Face of unit is facing the antenna at 0°  
Clip of unit is facing the antenna at 0°



Z-Axis

#### 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	10/25/2023	2 Year
EMI Test Receiver, 10 Hz - 7GHz <sup>1</sup>	Rohde & Schwarz	ESR7	101770	7/23/2023	2 Year
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	8/12/2023	3 Years
Spectrum Analyzer 10 Hz – 40 GHz <sup>4</sup>	Rohde & Schwarz	FSVR40	100909	9/18/2023	3 Years
Loop Antenna 9 kHz - 30 MHz	EMCO	6512	9309-1139	4/14/2025	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	5/11/2024	2 Years
Dbl Ridged Guide Antenna 1- 18 GHz	ETS-Lindgren	3117	00227631	4/21/2024	2 Years
Preamplifier 100 MHz to 7 GHz	Miteq	AFS3-00100200-10-15P-4	988773	3/31/2023	1 Year
Preamplifier 100 MHz to 18 GHz	Miteq	AMF-7D-00101800-30-10P	1953081	3/31/2023	1 Year
Preamplifier 2 to 12 GHz	JCA	JCA48-4111B1	7087S	3/31/2023	1 Year
Preamplifier, 1 GHz to 26.5 GHz	Hewlett Packard	8449B	3008A01323	11/30/2023	2 Years
Preamplifier 18 to 40 GHz	Miteq	JSD42-21004200-40-5P	649199/649219	3/31/2023	1 Year
Horn Antenna 18 to 40 GHz	Com Power	AH-840	101032	1/25/2024	2 Years
High Pass Filter 8 to 18 GHz	Micro-Tronics	HPM50107	G036	3/30/2023	1 Year
High Pass Filter 6.4 to 18 GHz	Micro-Tronics	HPM50112	14	3/30/2023	1 Year
Low Pass Filter DC to 2700 MHz	Mini-Circuits	NLP-2950+	15542	11/21/2023	1 Year
10 dB Attenuator	Pasternack	PE7004-10	ID473	12/19/2023	1 Year
Barometric Pressure/Humidity & Temp Datalogger	Extech Instruments	SD700	Q590483	10/14/2023	2 Years

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

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

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

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

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

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

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

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

#### 4. Measurements Parameters (continued)

##### 4.2. Measurement & Equipment Setup

Test Dates:	7/12/2022, 7/13/2022, 7/14/2022, 7/15/2022, 7/20/2022, 7/21/2022, 7/22/2022, 7/25/2022, 7/26/2022, 7/27/2022, 8/22/2022, 8/25/2022,
Test Engineers:	Sean Defelice
Normal Site Temperature (15 – 35°C):	21.6
Relative Humidity (20 -75%RH):	35
Frequency Range:	30 kHz to 40 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	200 Hz – 30 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 Avg Bandwidth:	>= 3 * RBW
Detector Function:	Peak, Quasi-Peak & Average

##### 4.3. Measurement Procedure

Test measurements were made in accordance FCC Parts 15.209 Subpart C, 15.519 Subpart F and ISSED RSS-220 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.

##### 4.4. 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. Measurements Summary

Test Requirement	FCC Rule Requirement	ISED Rule Requirement	Test Report Section	Result	Comment
Antenna Requirement	15.203	RSS-220 5.1 (b)	6.1	Compliant	
Operational Requirements	15.519 (a) (1)	RSS-220	6.2	Compliant	
UWB Bandwidth	15.503 (a) (d) 15.519 (b)	RSS-220 2 RSS-220 5.1	6.3	Compliant	
Radiated Emissions below 960 MHz	15.209	RSS-220 3.4	6.4	Compliant	
Radiated Emissions above 960 MHz	15.519 (c) 15.521 (d)		6.5	Compliant	
Radiated Emissions in GPS Bands	15.519 (d)	RSS-220 5.3.1 (e)	6.6	Compliant	
RMS Emissions of UWB Transmission in a 1 MHz Bandwidth	15.519 (c) 15.521 (d)	RSS-220 5.3.1 (d)	6.7	Compliant	
Peak Emissions in a 50 MHz Bandwidth	15.519 (e) 15.521 (g)	RSS-220 5.3.1 (g)	6.8	Compliant	
Conducted Emissions	15.207	RSS-GEN	6.9	N/A	EUT is Battery Powered
99% Emission Bandwidth	N/A	RSS-GEN	6.10	Compliant	

## 6. Measurement Data

### 6.1. Antenna Requirement (15.203, RSS-220 5.1(b))

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

Result: The antenna utilized by the device under test is a pcb chip type.



**6. Measurement Data (continued)**

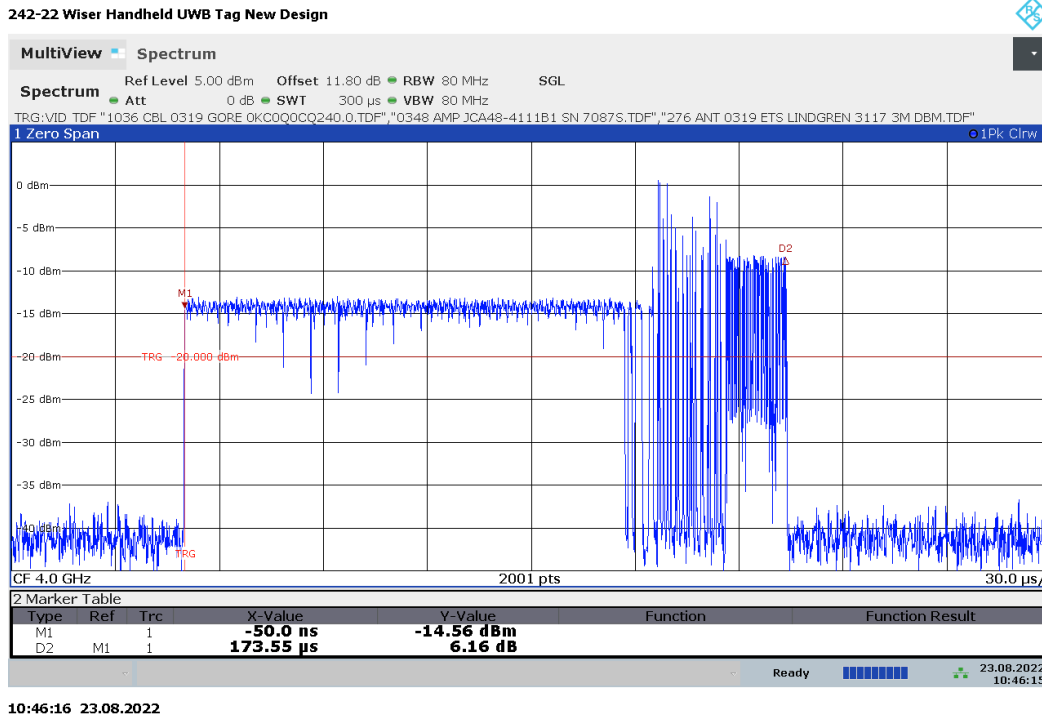
**6.2. Operational Requirements of the Device under Test (15.519 (a) (1))**

Requirement: UWB device operating under the provisions of this section must be hand held, i.e., they are relatively small device that are primarily hand held while being operated and do not employ a fixed infrastructure. UWB devices operating under the provisions of this section may operate indoors or outdoors.

A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

Result: Compliant, the EUT transmits a 0.173 mS burst of location information every 11.513 seconds to an associated receiver.

**6.2.1 Plot of Transmission CH2 16M PRF On-Time**

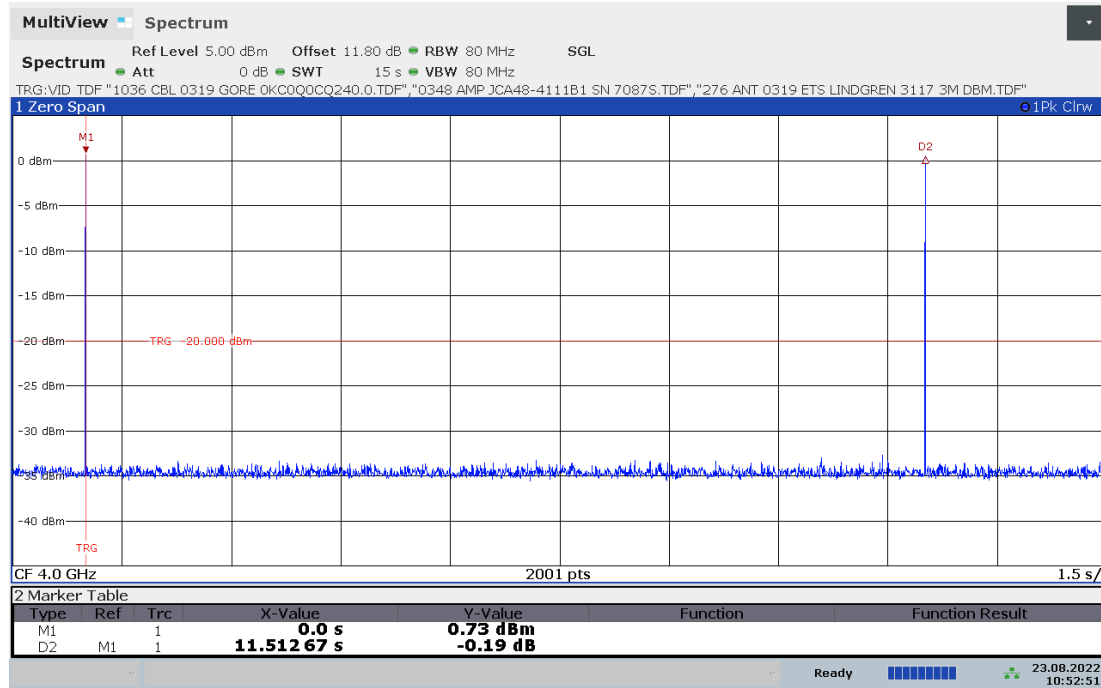


## 6. Measurement Data (continued)

### 6.2. Operational Requirements of the Device under Test (15.519 (a) (1))

#### 6.2.2 Plot of Transmission Period – CH2 16M PRF

242-22 Wiser Handheld UWB Tag New Design



10:52:51 23.08.2022

**6. Measurement Data (continued)**

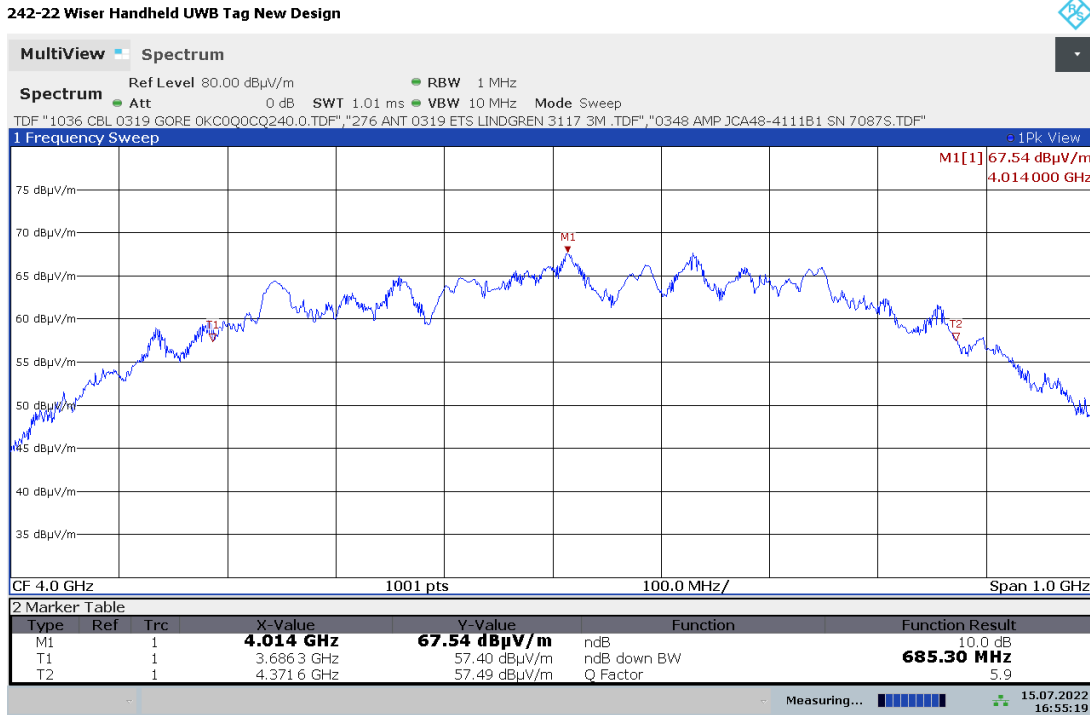
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b))**

Requirement: The UWB bandwidth of a device operating under the provisions of this section shall be contained between 3,100 MHz and 10,600 MHz and at any point in time and has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

**6.3.1. Measurement Data – Values in GHz**

		<b>CH2 16M</b>
$f_M$	The highest emission peak	4.0140
$f_L$	10 dB below the highest peak	3.8683
$f_H$	10 dB above the highest peak	4.3716
$f_C$	Calculated: $(f_H + f_L) / 2$	4.1200
Bandwidth	Calculated: $(f_H - f_L)$	0.5033
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.1222

**6.3.2. Measurement Plot of 10 dB frequencies (Channel 2, 16M PRF, 6.8 Mbps)**



16:55:19 15.07.2022

**6. Measurement Data (continued)**

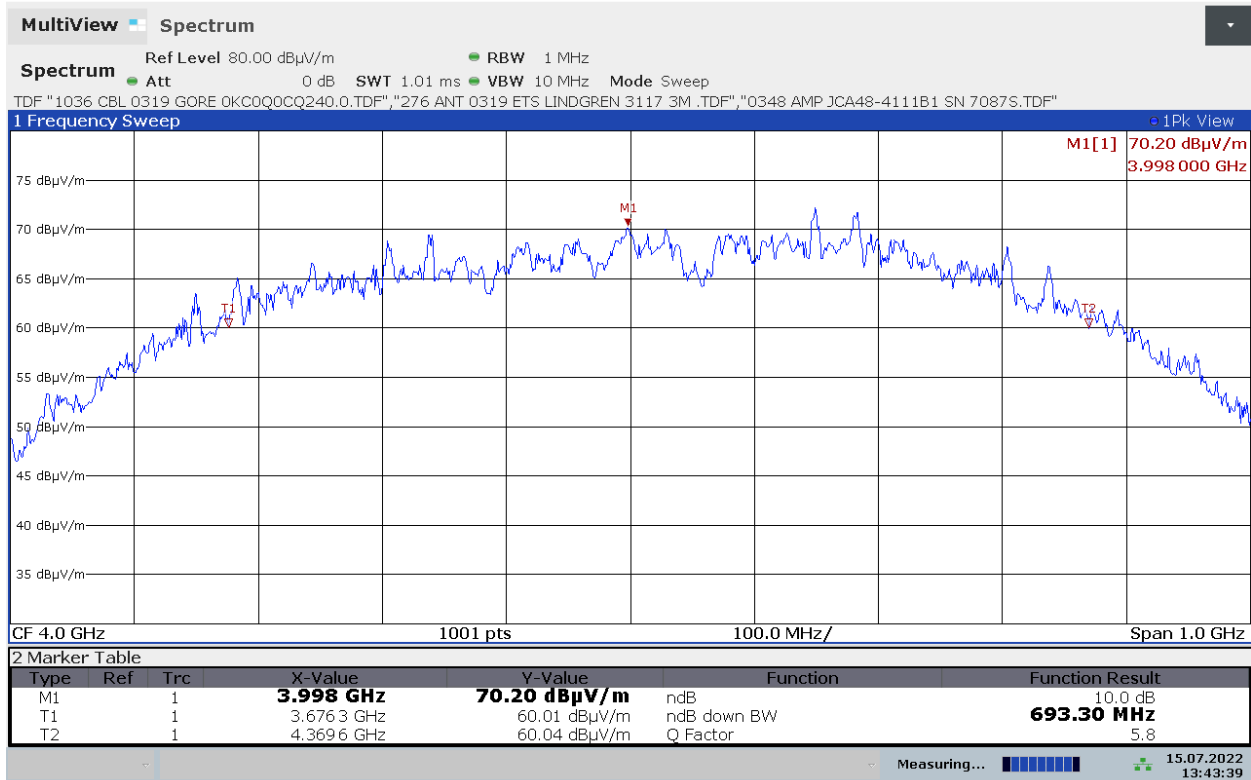
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b) continued)**

**6.3.3. Measurement Data – Values in GHz**

		<b>CH2 64M</b>
$f_M$	The highest emission peak	3.9980
$f_L$	10 dB below the highest peak	3.6763
$f_H$	10 dB above the highest peak	4.3696
$f_C$	Calculated: $(f_H + f_L) / 2$	4.0230
Bandwidth	Calculated: $(f_H - f_L)$	0.6933
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.1723

**6.3.4. Measurement Plot of 10 dB frequencies (Channel 2, 64M PRF, 6.8Mbps)**

242-22 Wisser Handheld UWB Tag New Design



13:43:40 15.07.2022

**6. Measurement Data (continued)**

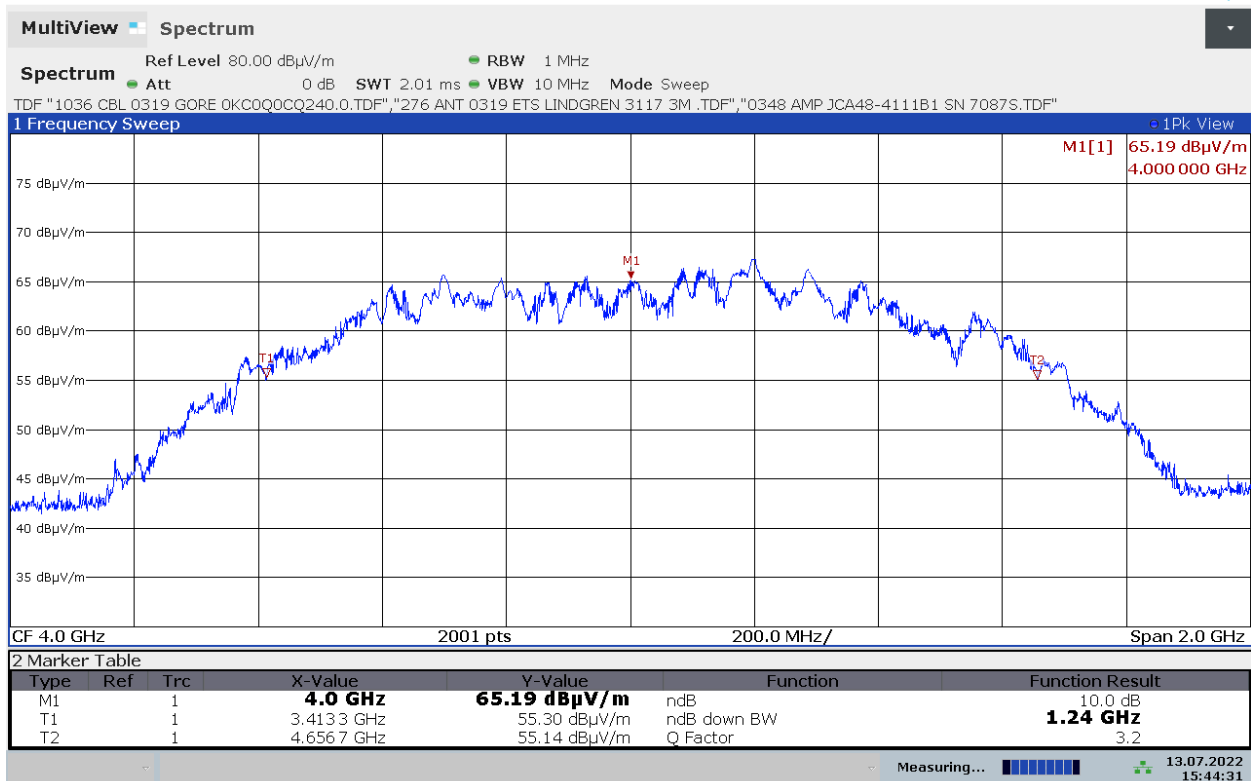
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b) continued)**

**6.3.5. Measurement Data – Values in GHz**

		<b>CH4 16M</b>
$f_M$	The highest emission peak	4.0000
$f_L$	10 dB below the highest peak	3.4133
$f_H$	10 dB above the highest peak	4.6567
$f_C$	Calculated: $(f_H + f_L) / 2$	4.0350
Bandwidth	Calculated: $(f_H - f_L)$	1.2434
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.3082

**6.3.6. Measurement Plot of 10 dB frequencies (Channel 4, 16M PRF, 6.8 Mbps)**

242-22 Wisser Handheld UWB Tag New Design



15:44:32 13.07.2022

**6. Measurement Data (continued)**

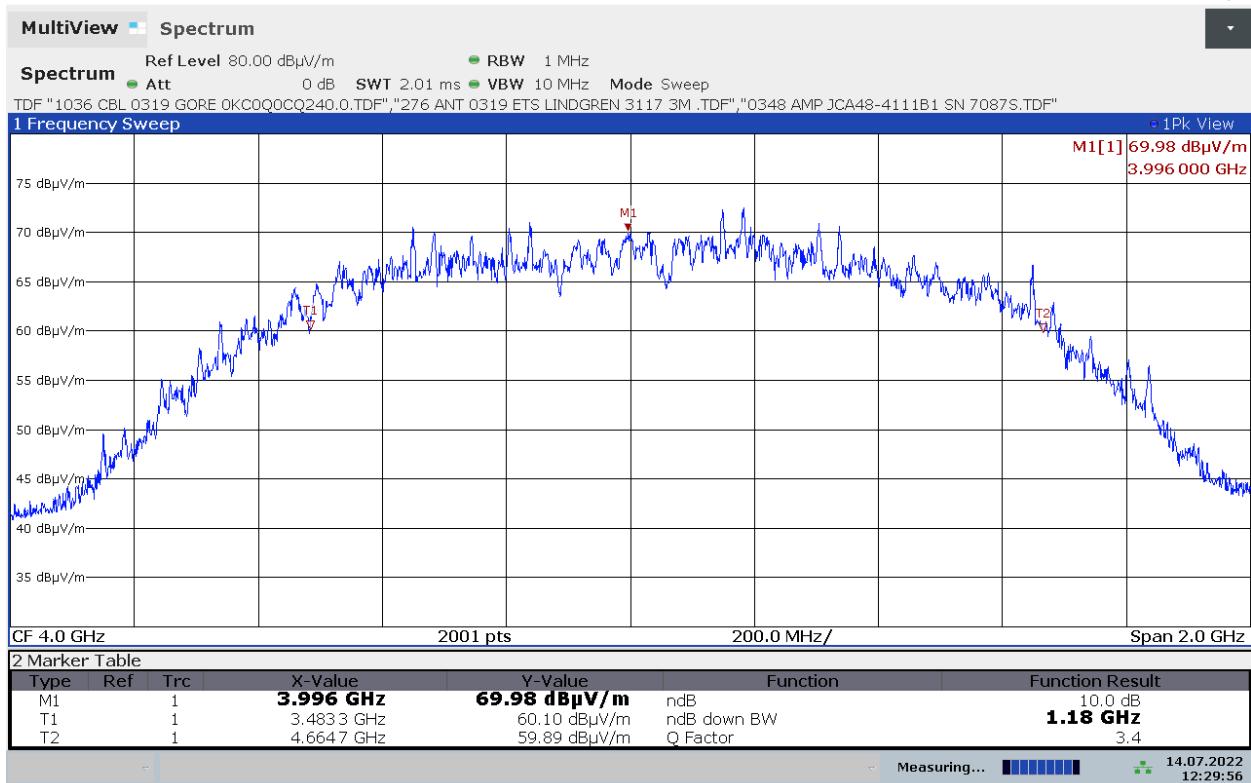
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b) continued)**

**6.3.7. Measurement Data – Values in GHz**

		<b>CH4 64M</b>
$f_M$	The highest emission peak	3.9960
$f_L$	10 dB below the highest peak	3.4833
$f_H$	10 dB above the highest peak	4.6647
$f_C$	Calculated: $(f_H + f_L) / 2$	4.0740
Bandwidth	Calculated: $(f_H - f_L)$	1.1814
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.2900

**6.3.8. Measurement Plot of 10 dB frequencies (Channel 4, 64M PRF, 6.8 Mbps)**

242-22 Wiser Handheld UWB Tag New Design



12:29:57 14.07.2022

**6. Measurement Data (continued)**

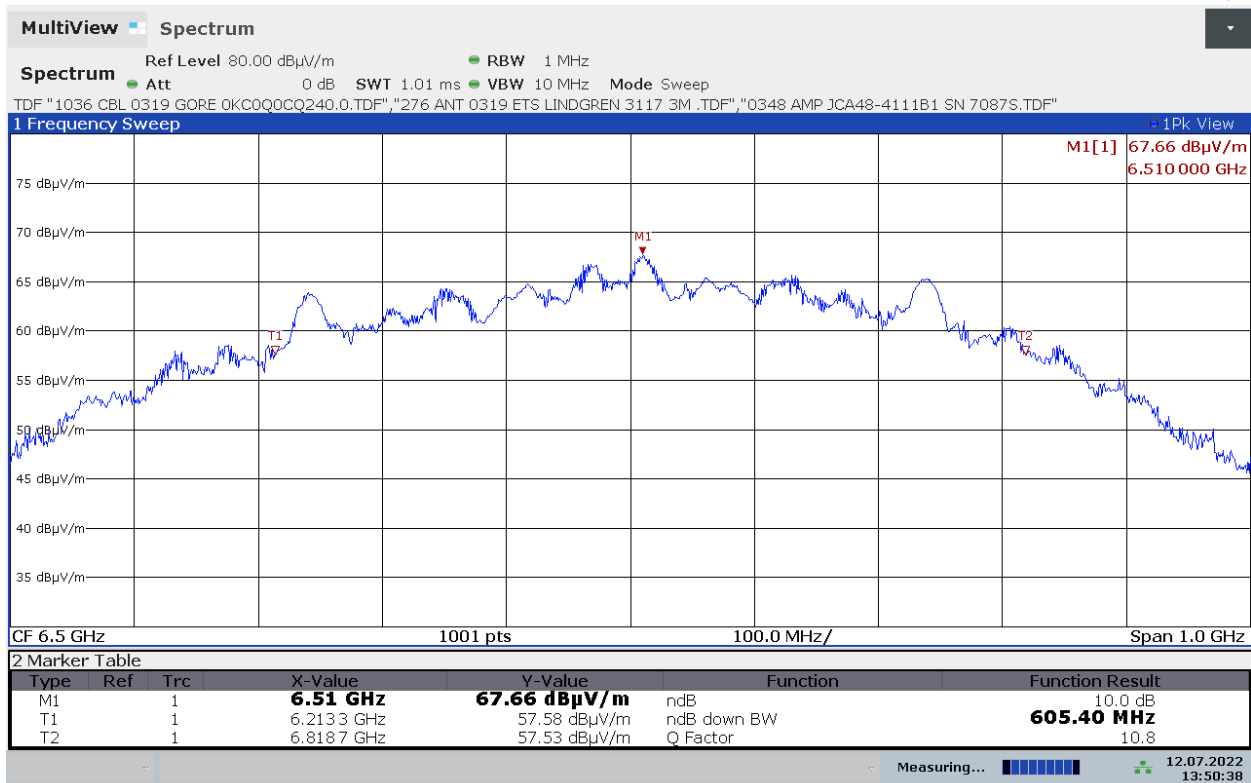
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b) continued)**

**6.3.9. Measurement Data – Values in GHz**

		<b>CH5 16M</b>
$f_M$	The highest emission peak	6.5100
$f_L$	10 dB below the highest peak	6.2133
$f_H$	10 dB above the highest peak	6.8187
$f_C$	Calculated: $(f_H + f_L) / 2$	6.5160
Bandwidth	Calculated: $(f_H - f_L)$	0.6054
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.0929

**6.3.10. Measurement Plot of 10 dB frequencies (Channel 5, 16M PRF, 6.8 Mbps)**

242-22 Wisser Handheld UWB Tag New Design



13:50:38 12.07.2022

**6. Measurement Data (continued)**

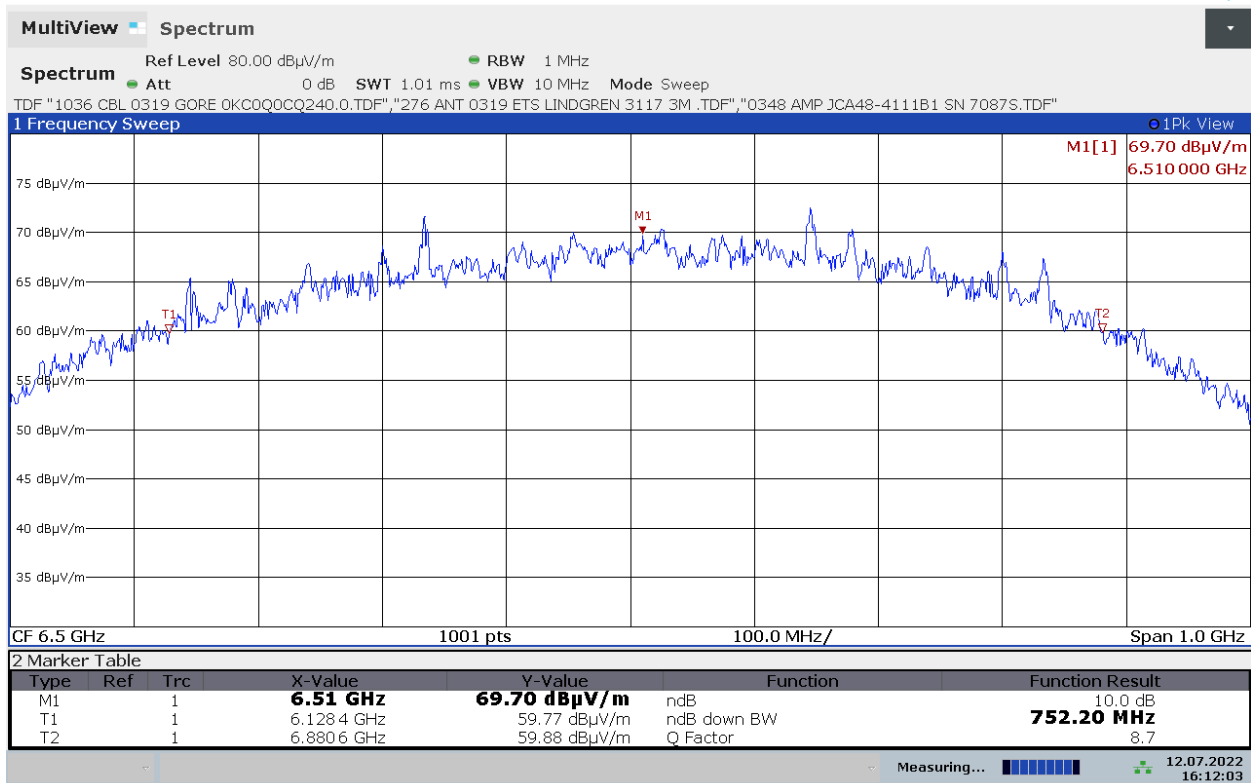
**6.3. UWB Bandwidth (15.503 (a) (d), 15.519 (b) continued)**

**6.3.11. Measurement Data – Values in GHz**

		<b>CH5 64M</b>
$f_M$	The highest emission peak	6.5100
$f_L$	10 dB below the highest peak	6.1284
$f_H$	10 dB above the highest peak	6.8806
$f_C$	Calculated: $(f_H + f_L) / 2$	6.5045
Bandwidth	Calculated: $(f_H - f_L)$	0.7522
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.1156

**6.3.12. Measurement Plot of 10 dB frequencies (Channel 5, 64M PRF, 6.8 Mbps)**

242-22 Wiser Handheld UWB Tag New Design



16:12:03 12.07.2022



## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions below 960 MHz (15.519 (c), 15.209)

Requirement: The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in Section 15.209.

#### Radiated Emissions Field Strength Limits at 3 Meters (Section 15.209, RSS-220)

Frequency (MHz)	Field Strength ( $\mu\text{V}/\text{m}$ )	Field Strength ( $\text{dB}\mu\text{V}/\text{m}$ )
0.009 to 0.490	2,400/F (F in kHz)	128.5 to 93.8
0.490 to 1.705	24,000/F (F in kHz)	73.8 to 63
1.705 - 30	30	69.5
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46

Test Notes: Refer to Section 4.1 for the test equipment used.

Frequency Range:	30 kHz to 960 MHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	200 Hz – 30 kHz to 150 kHz 9 kHz – 150 kHz to 30 MHz 120 kHz - 30 MHz to 960 MHz
EMI Receiver Avg Bandwidth:	$\geq 3 * \text{RBW}$ or $\text{IF}(\text{BW})$
Detector Function:	Peak, Quasi-Peak & CISPR Average

Sample Calculation: Final Result ( $\text{dB}\mu\text{V}/\text{m}$ ) = Measurement Value ( $\text{dB}\mu\text{V}$ ) + Antenna Factor ( $\text{dB}/\text{m}$ ) + Cable Loss ( $\text{dB}$ ) – Pre-amplifier Gain ( $\text{dB}$ ) Internal or External.

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

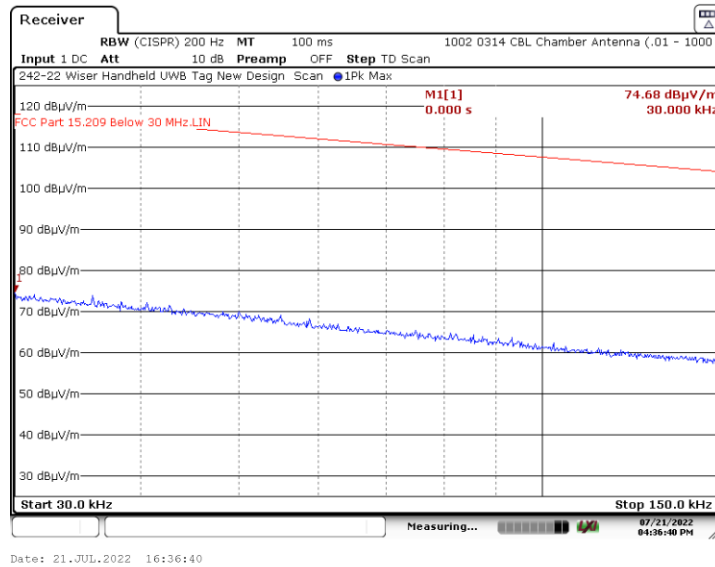
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

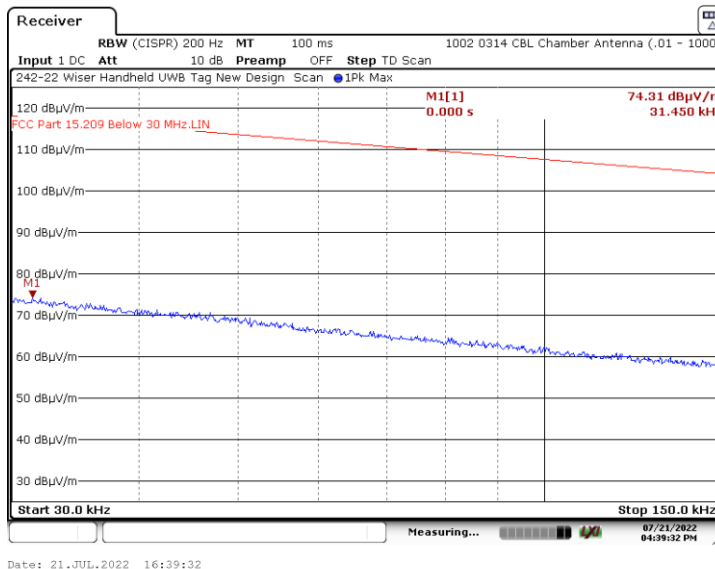
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.1 Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH2 16M



6.4.1.2 Perpendicular Measurement Antenna – 30 to 150 kHz – X Axis CH2 16M



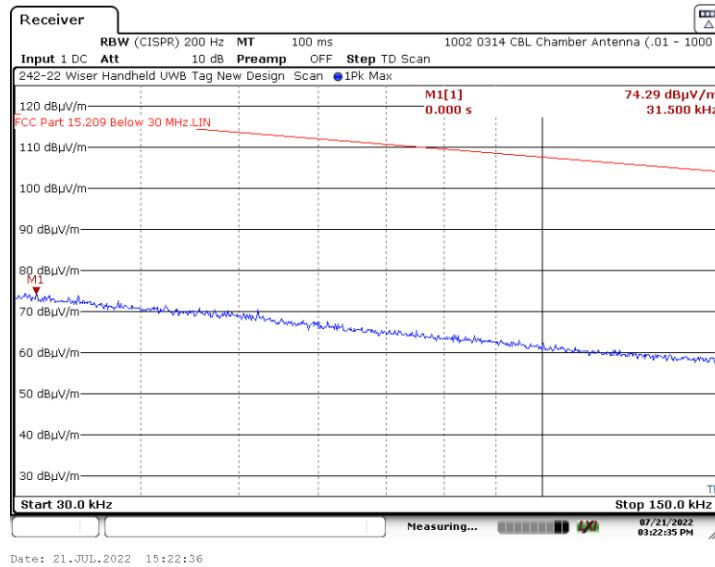
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

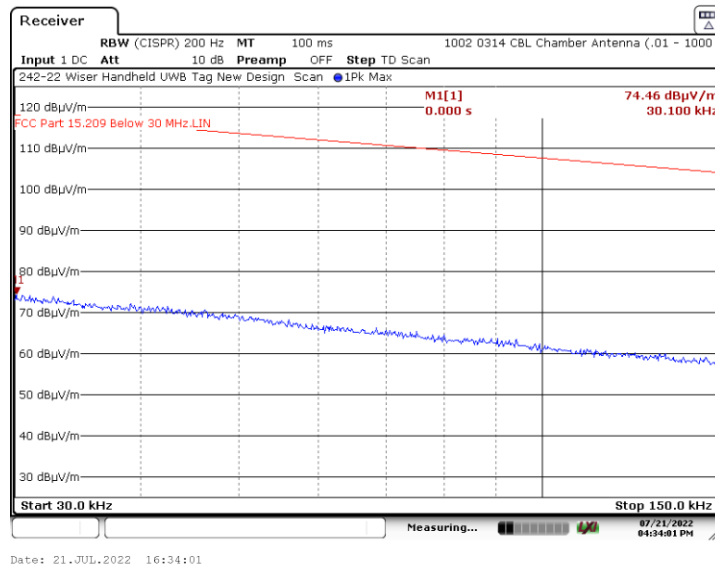
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.3 Ground Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH2 16M**



**6.4.1.4 Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH2 16M**



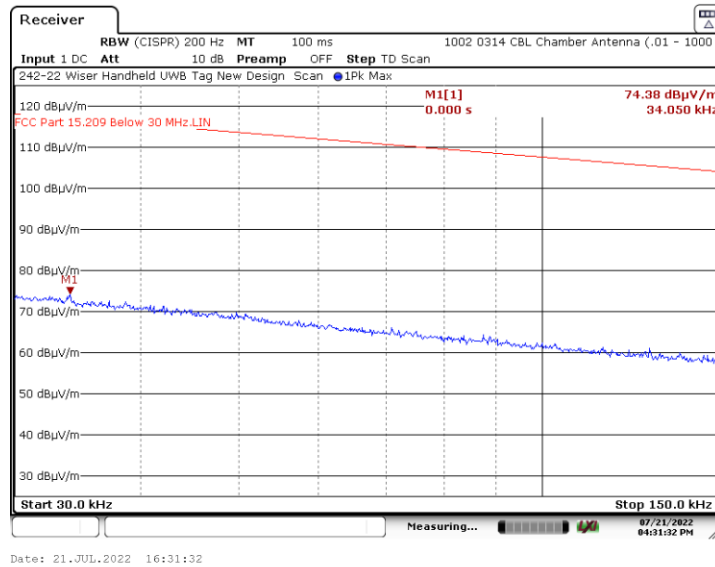
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

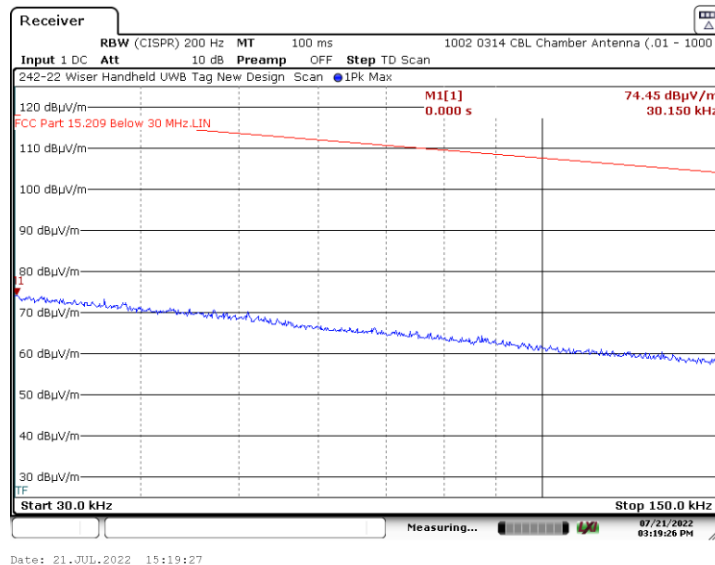
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.5 Perpendicular Measurement Antenna – 30 to 150 kHz – Y Axis CH2 16M**



**6.4.1.6 Ground Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH2 16M**



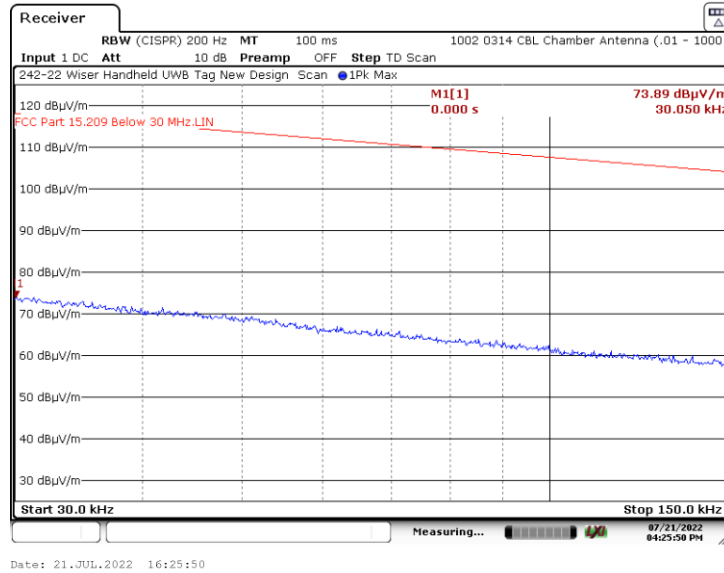
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

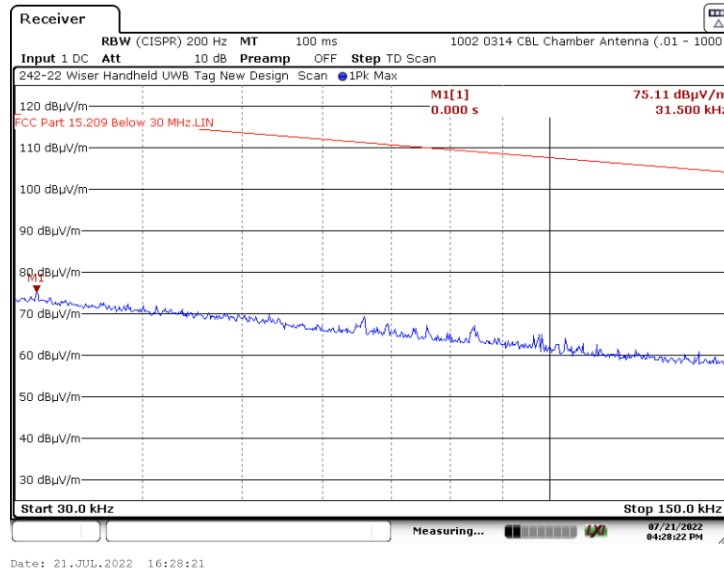
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.7 Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH2 16M



6.4.1.8 Perpendicular Measurement Antenna – 30 to 150 kHz – Z Axis CH2 16M



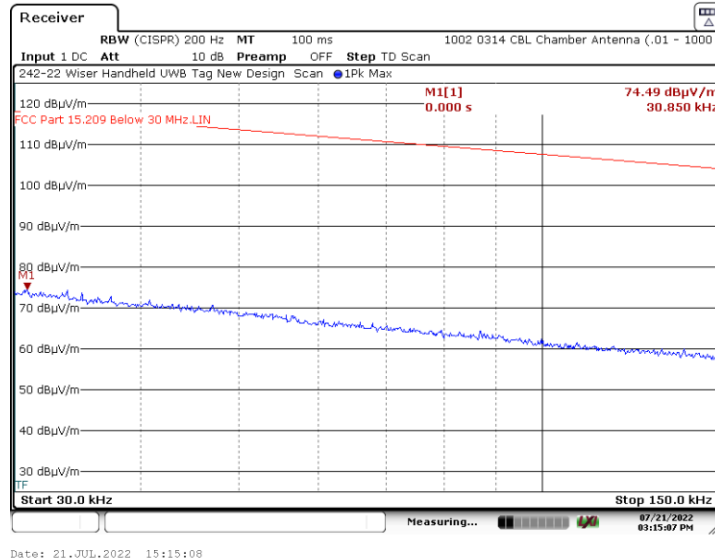
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

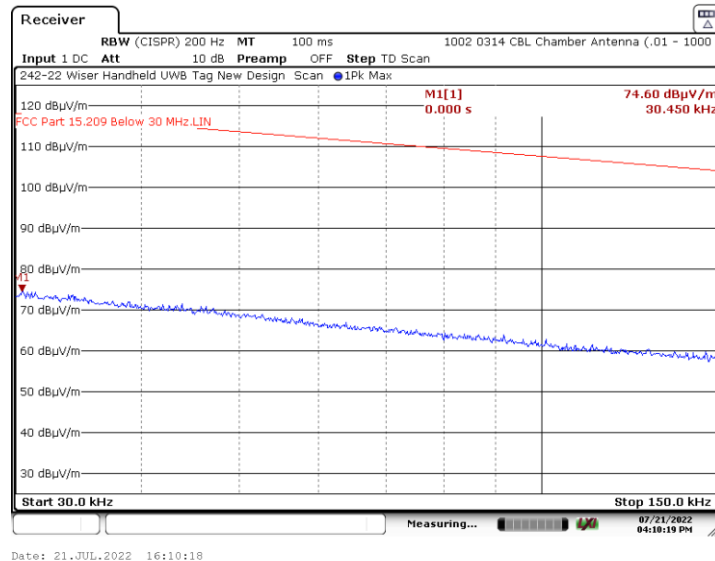
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.9 Ground Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH2 16M**



**6.4.1.10 Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH4 16M**



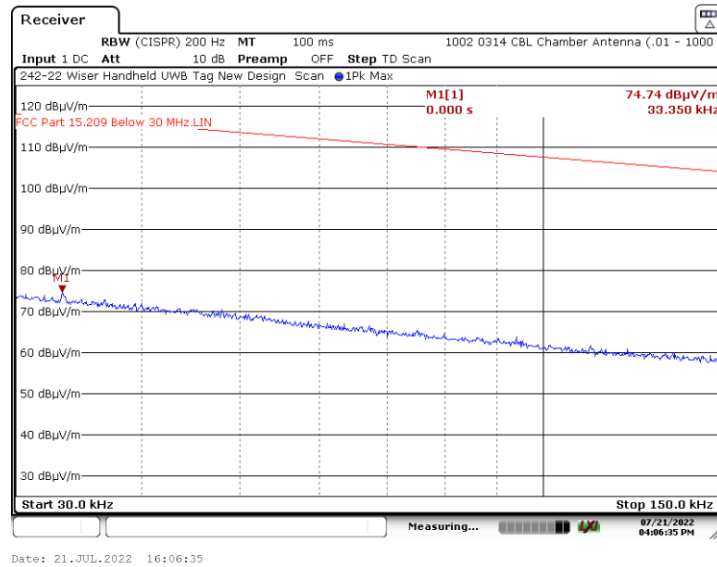
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

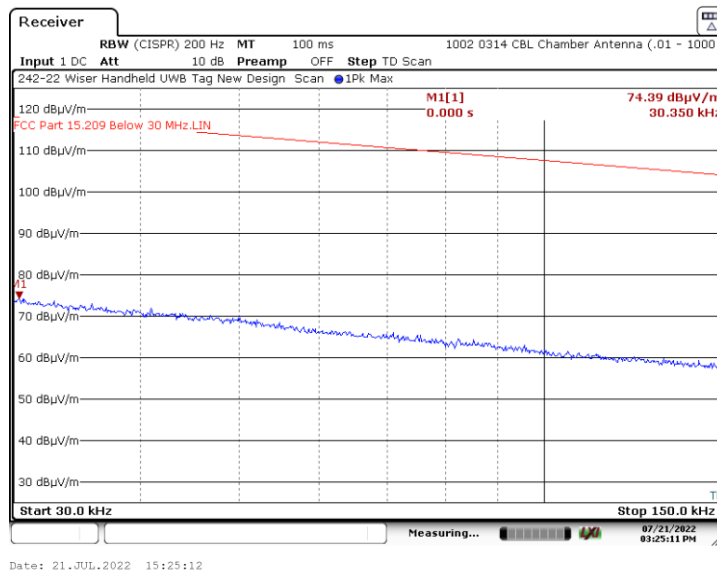
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.11 Perpendicular Measurement Antenna – 30 to 150 kHz – X Axis CH4 16M



#### 6.4.1.12 Ground Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH4 16M



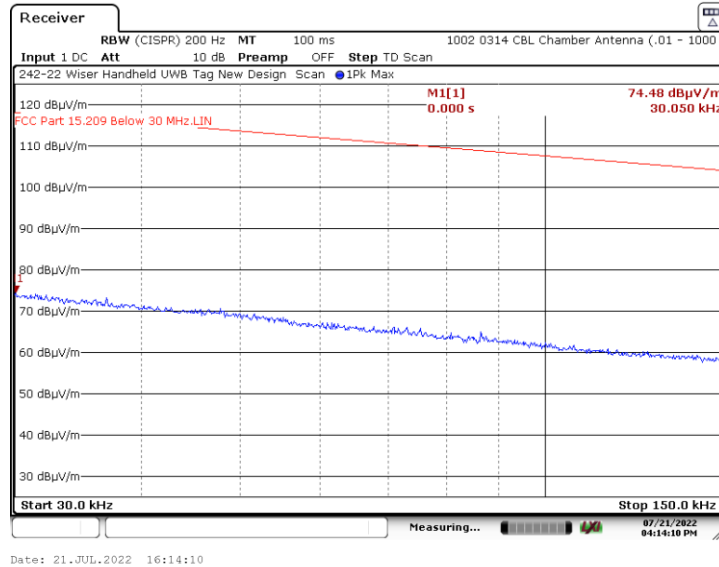
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209, continued)

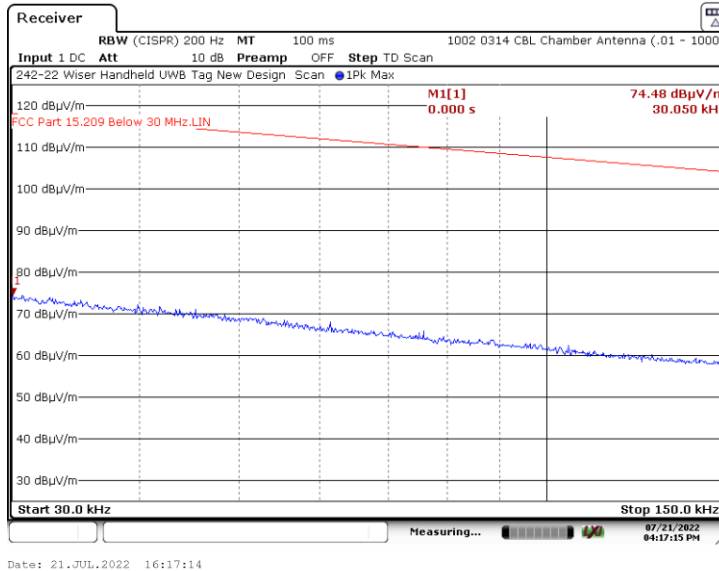
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.13 Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH4 16M



#### 6.4.1.14 Perpendicular Measurement Antenna – 30 to 150 kHz – Y Axis CH4 16M





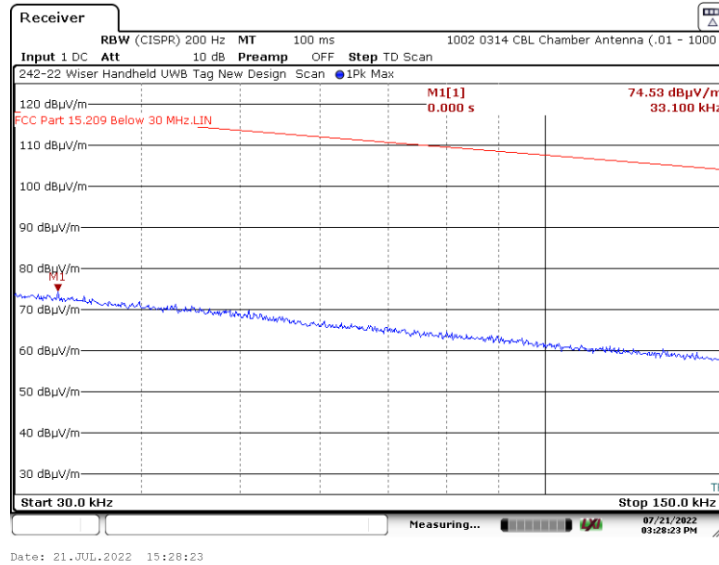
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209, continued)

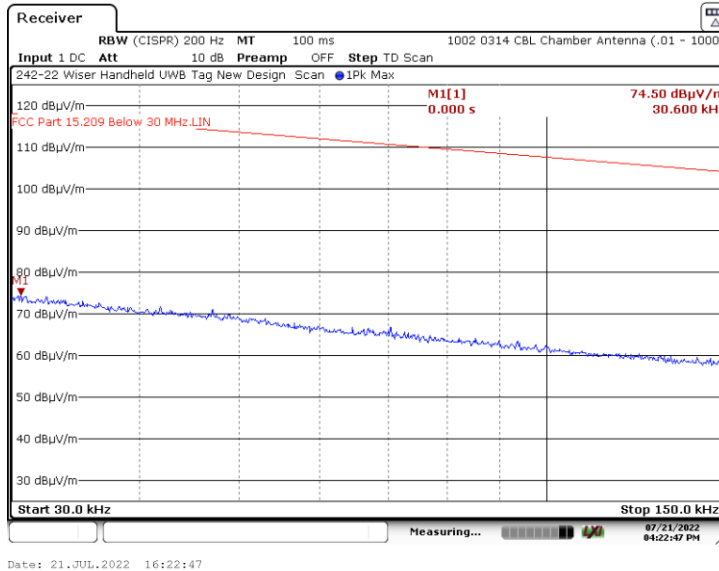
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.15 Ground Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH4 16M



#### 6.4.1.16 Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH4 16M



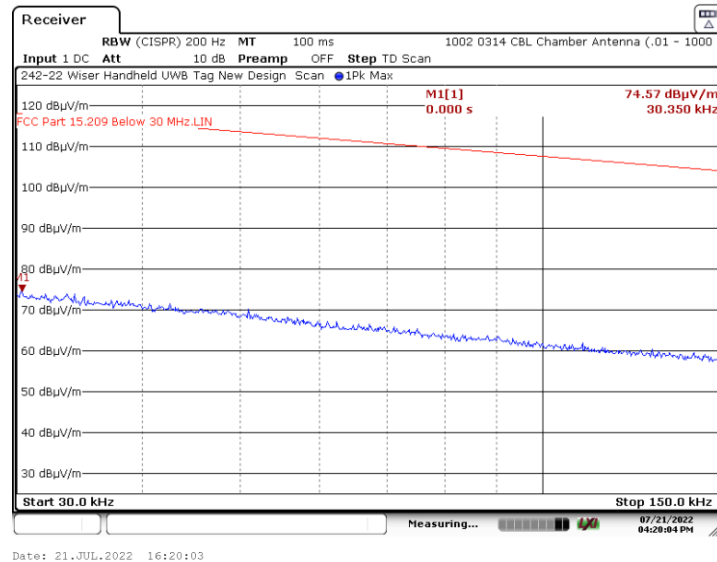
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

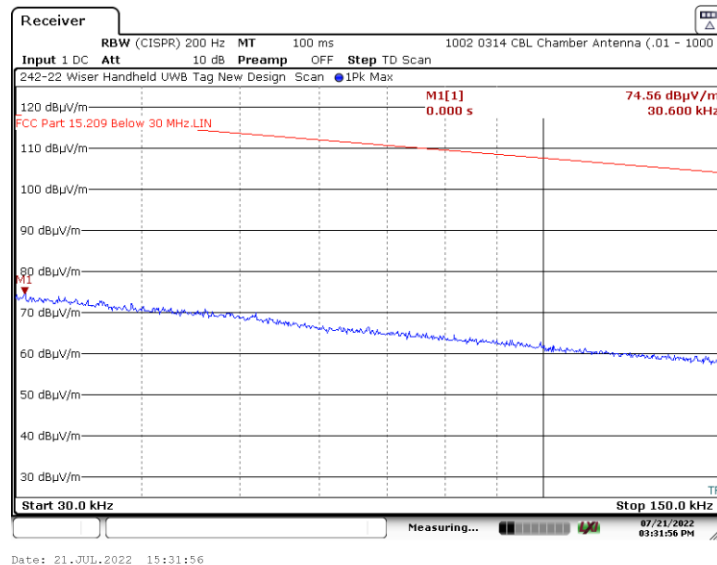
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.17 Perpendicular Measurement Antenna – 30 to 150 kHz – Z Axis CH4 16M



#### 6.4.1.18 Ground Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH4 16M



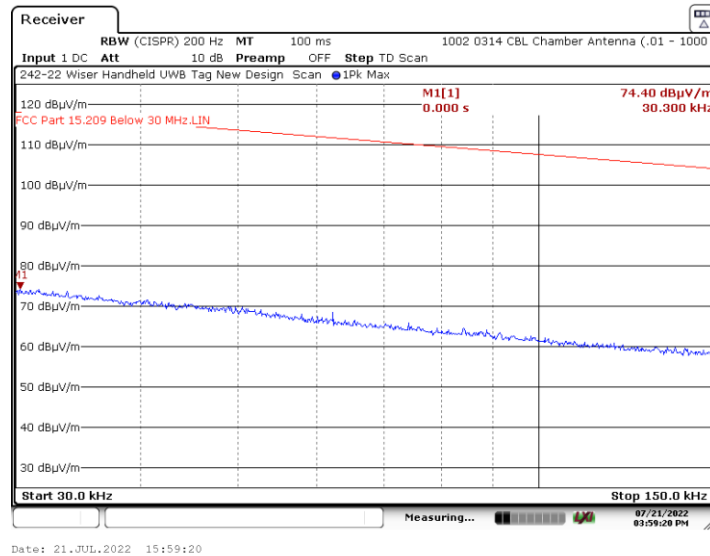
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

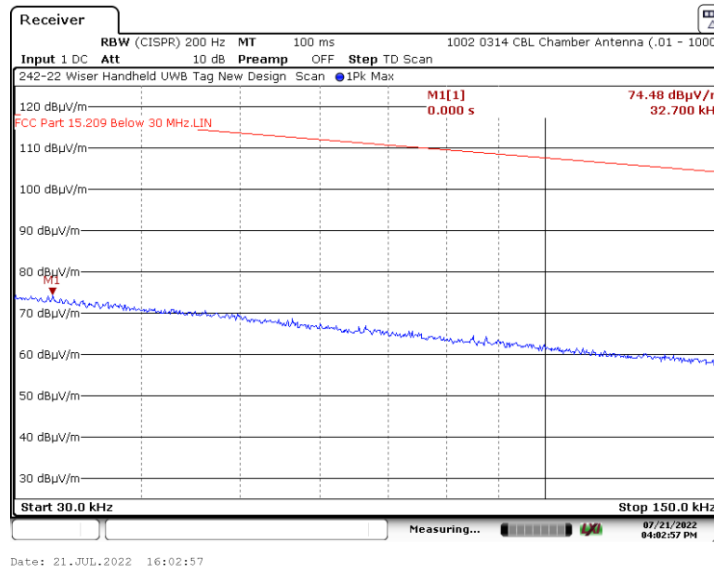
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.19 Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH5 16M**



**6.4.1.20 Perpendicular Measurement Antenna – 30 to 150 kHz – X Axis CH5 16M**



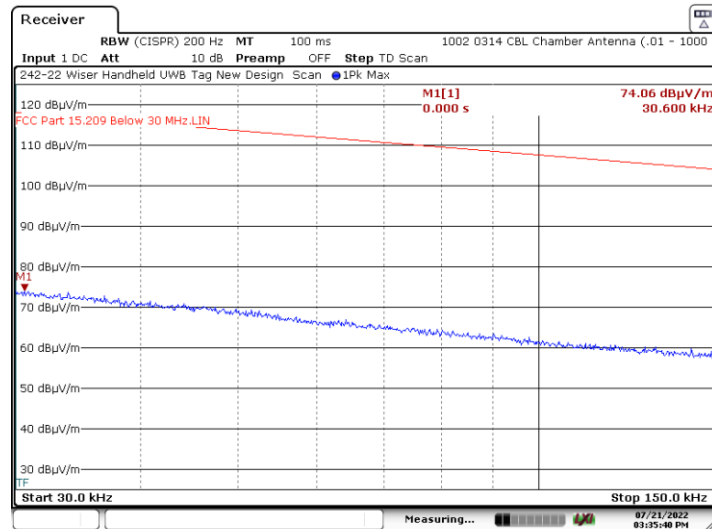
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209, continued)

#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

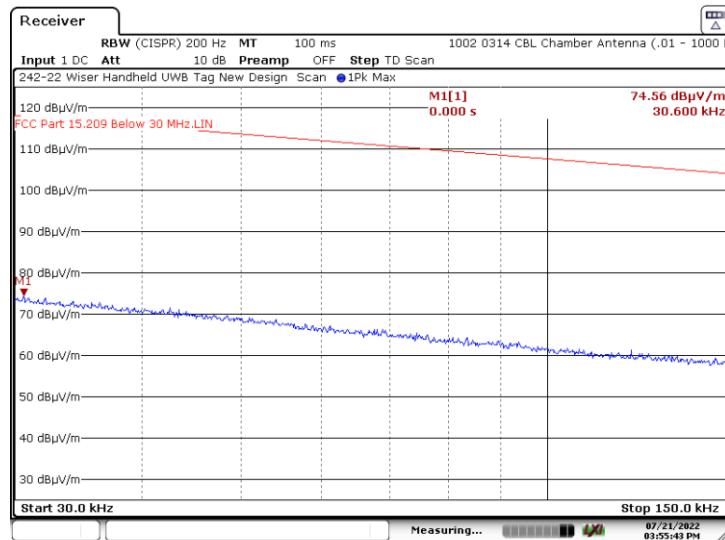
The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.21 Ground Parallel Measurement Antenna – 30 to 150 kHz – X Axis CH5 16M



Date: 21.JUL.2022 15:35:40

#### 6.4.1.22 Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH5 16M



Date: 21.JUL.2022 15:55:43

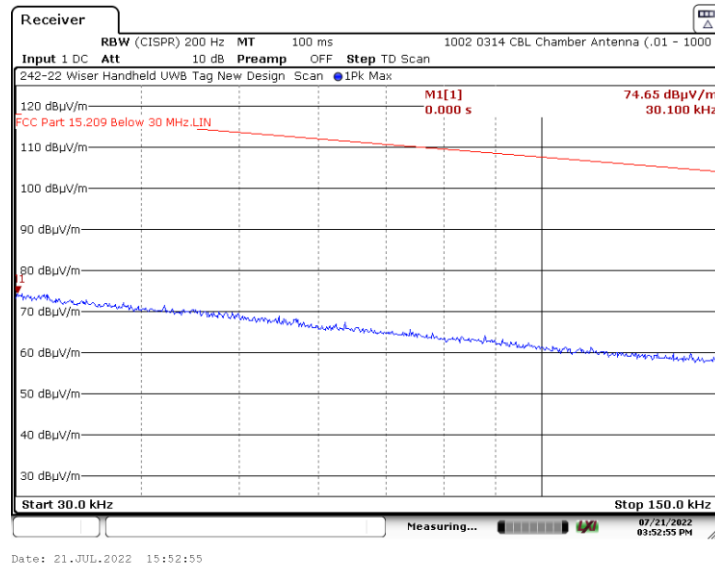
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209, continued)**

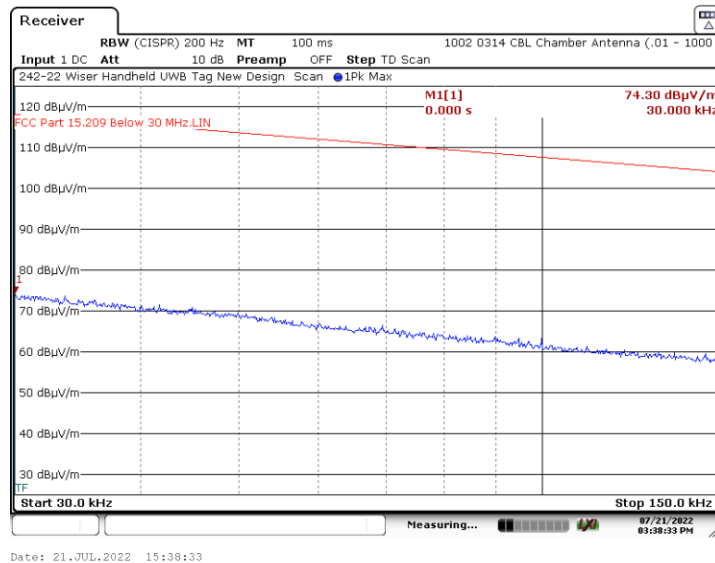
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.23 Perpendicular Measurement Antenna – 30 to 150 kHz – Y Axis CH5 16M



6.4.1.24 Ground Parallel Measurement Antenna – 30 to 150 kHz – Y Axis CH5 16M



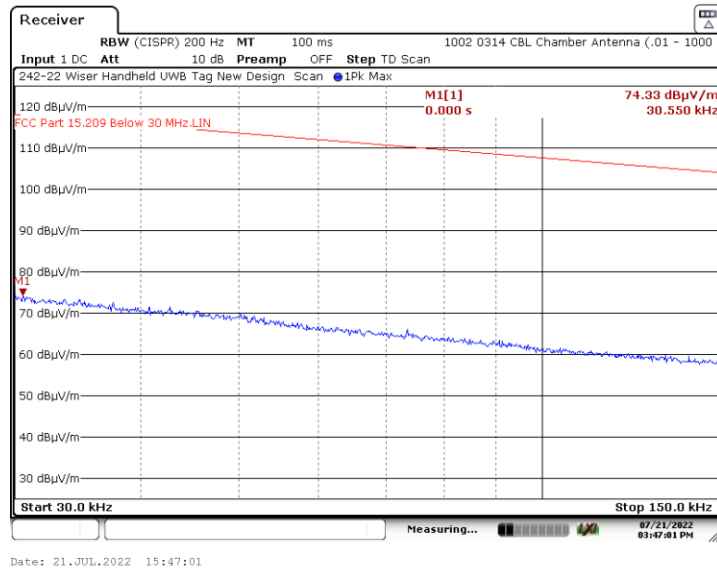
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209, continued)

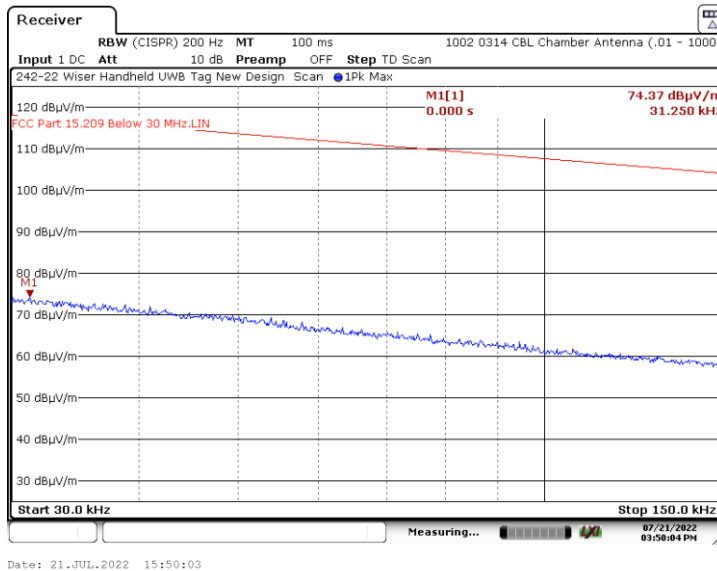
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.25 Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH5 16M



#### 6.4.1.26 Perpendicular Measurement Antenna – 30 to 150 kHz – Z Axis CH5 16M



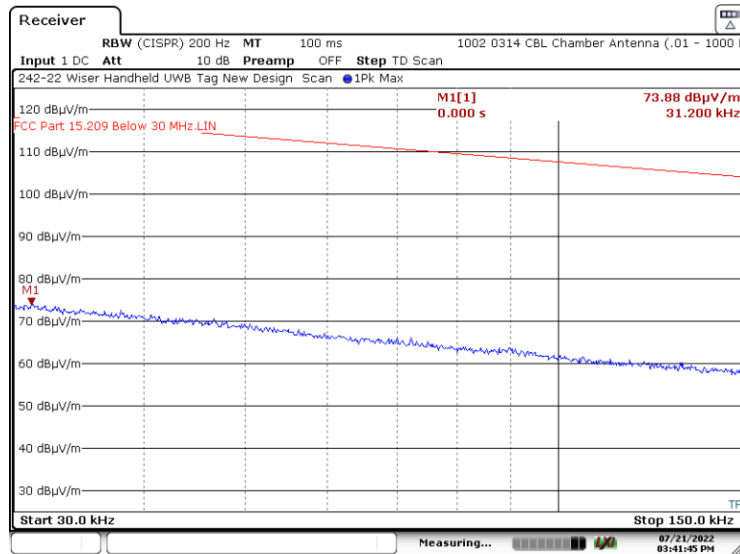
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209, continued)

#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.27 Ground Parallel Measurement Antenna – 30 to 150 kHz – Z Axis CH5 16M



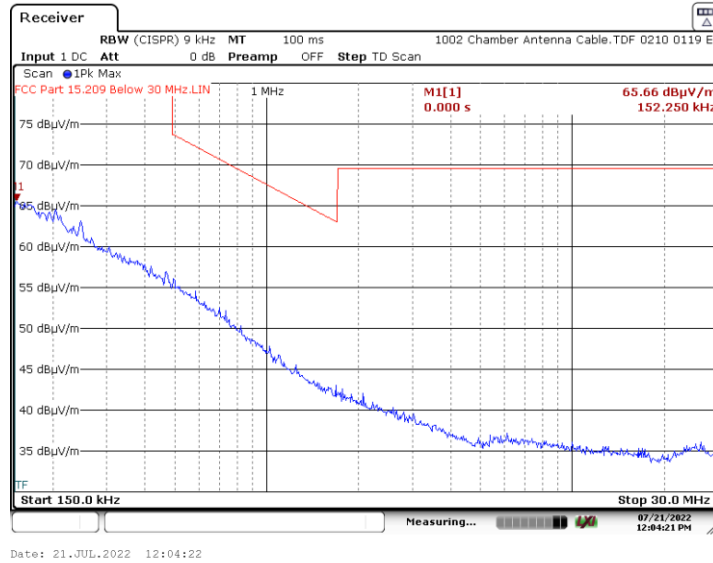
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

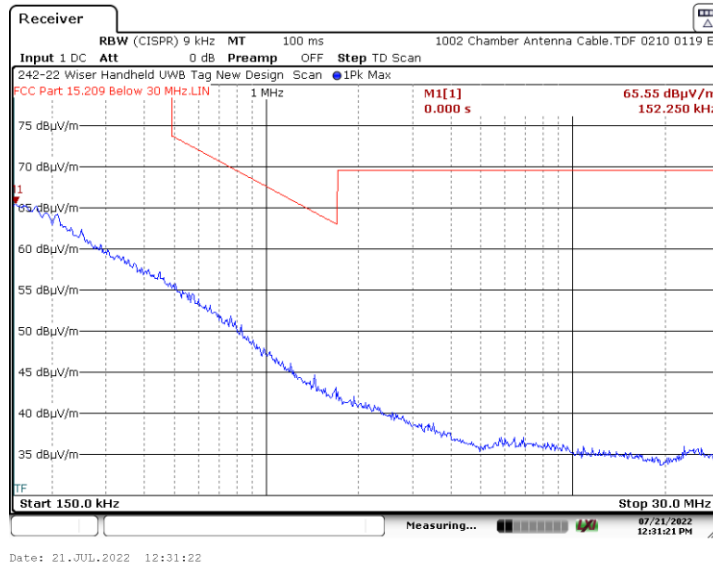
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.28 Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH2 16M



6.4.1.29 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – X Axis CH2 16M





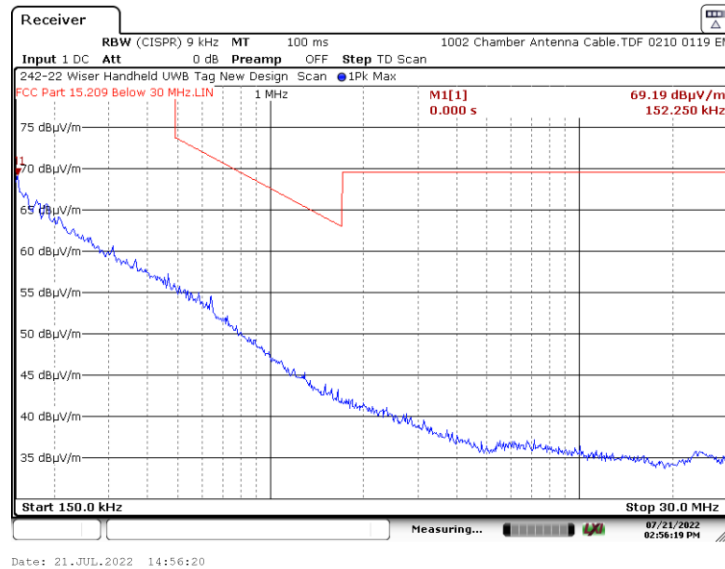
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.30 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH2 16M



#### 6.4.1.31 Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH2 16M



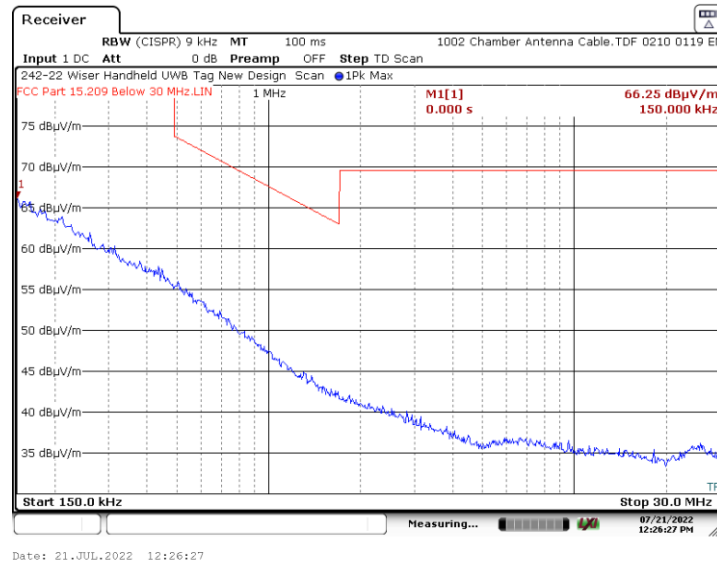
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

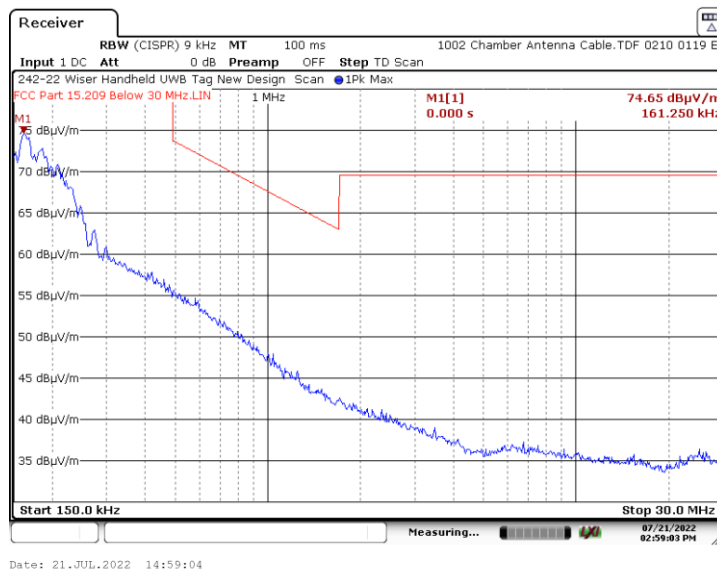
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.32 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH2 16M



#### 6.4.1.33 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH2 16M



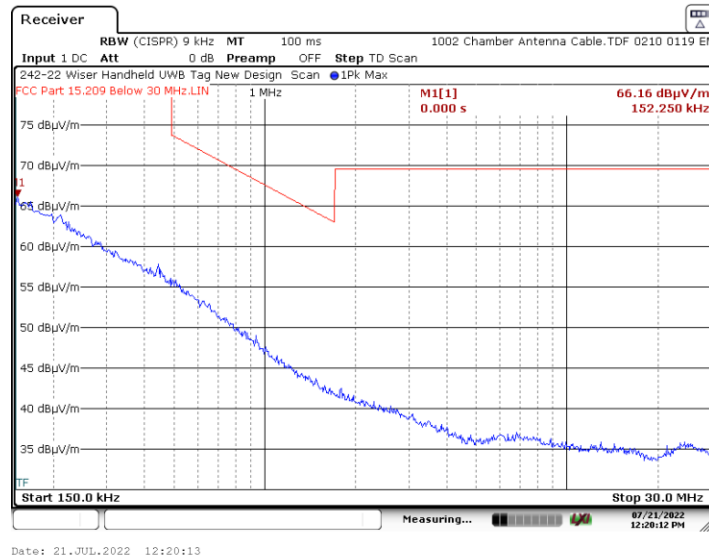
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

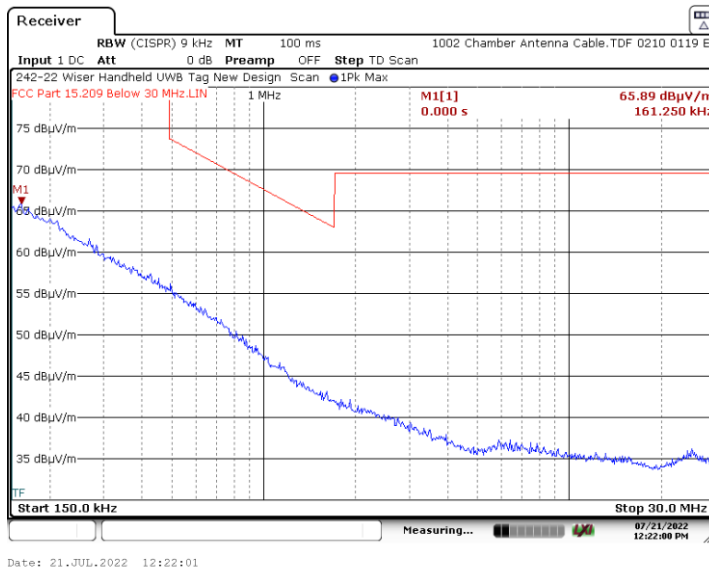
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.34 Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH2 16M



#### 6.4.1.35 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH2 16M



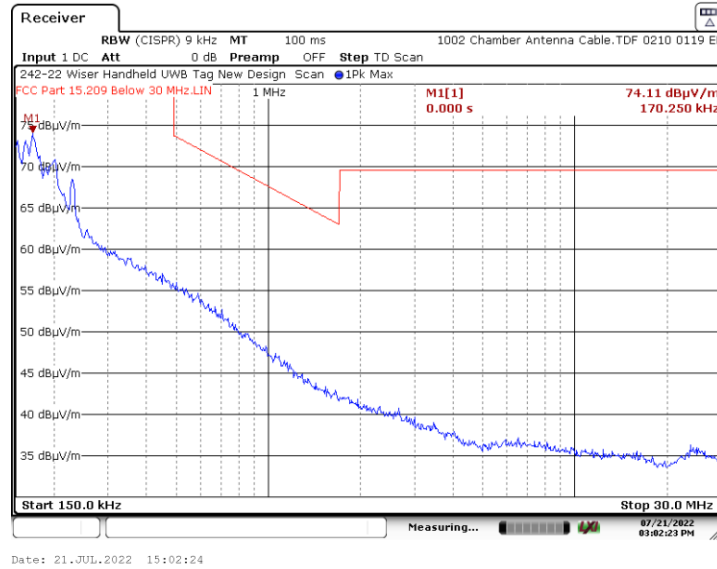
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

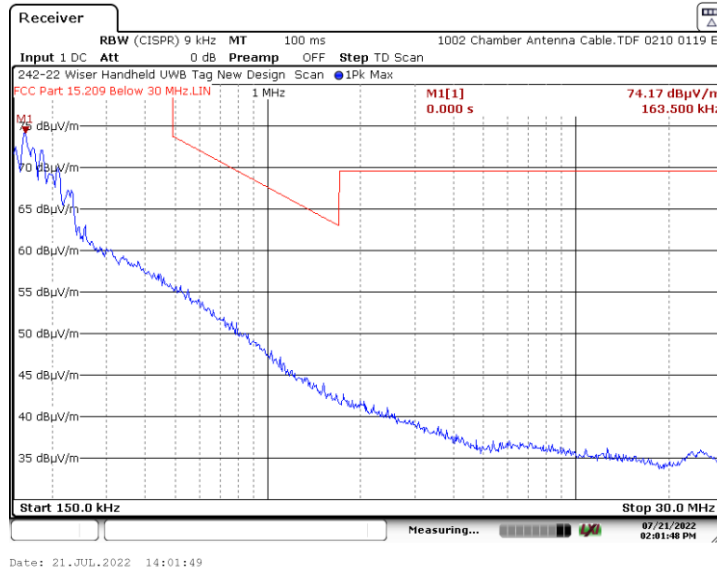
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.36 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH2 16M



#### 6.4.1.37 Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH4 16M



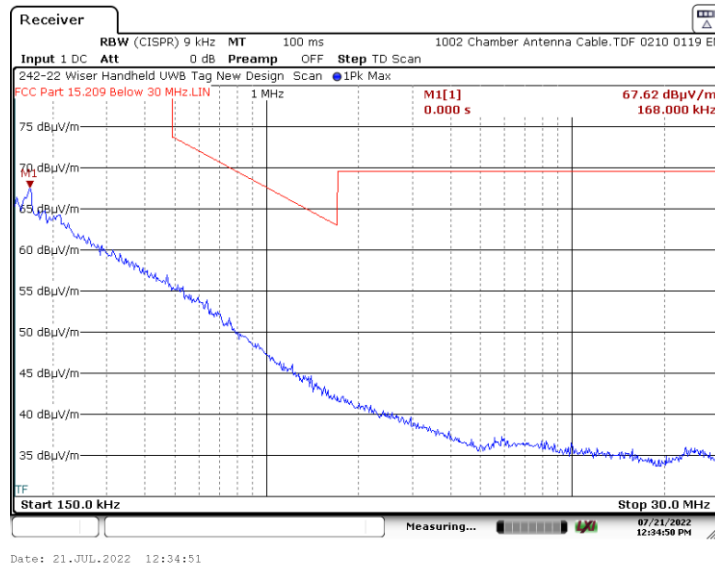
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

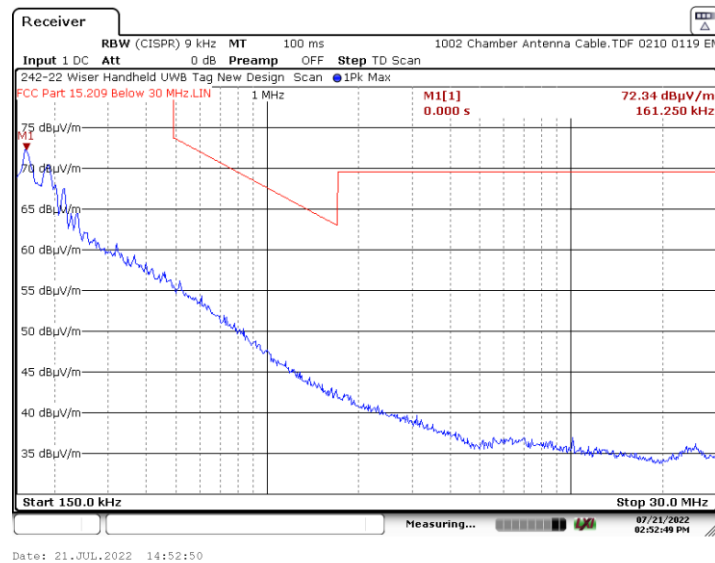
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.38 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – X Axis CH4 16M



#### 6.4.1.39 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH4 16M



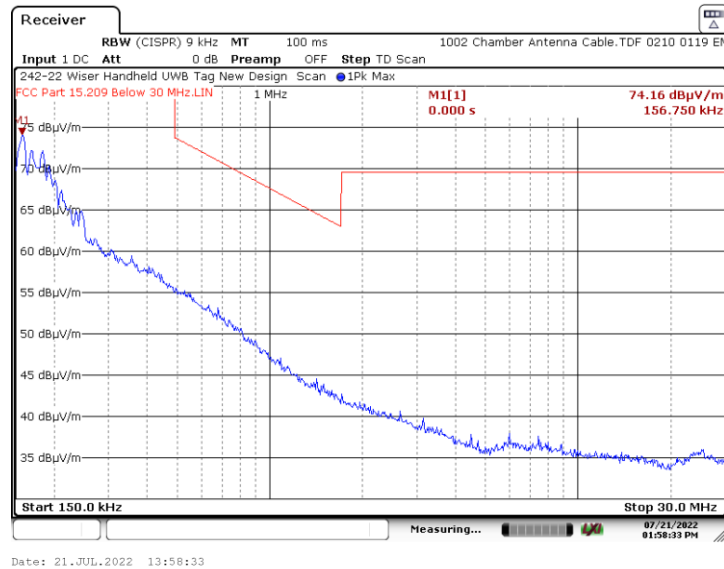
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

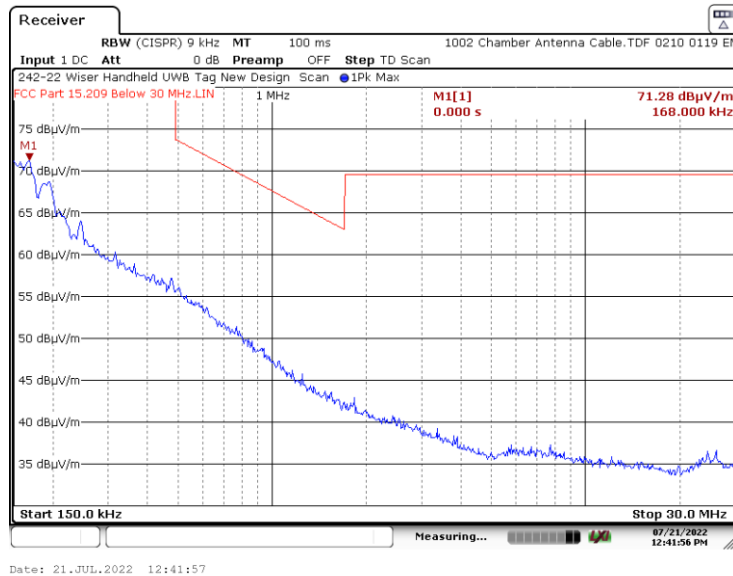
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.40 Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH4 16M



#### 6.4.1.41 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH4 16M



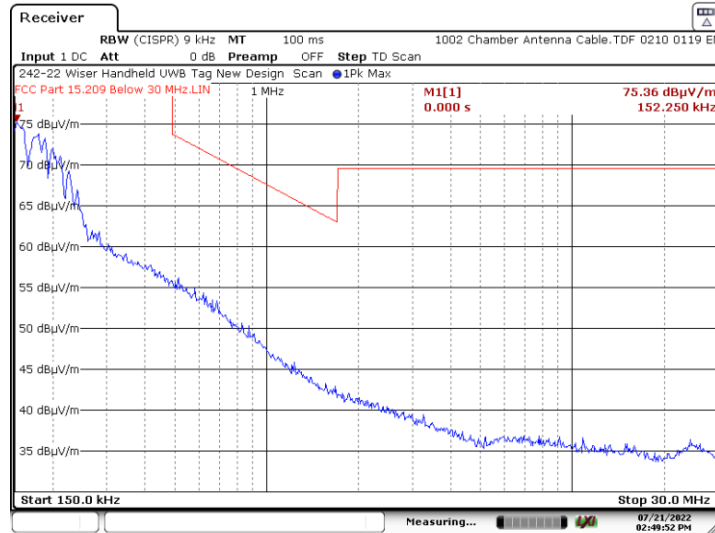
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

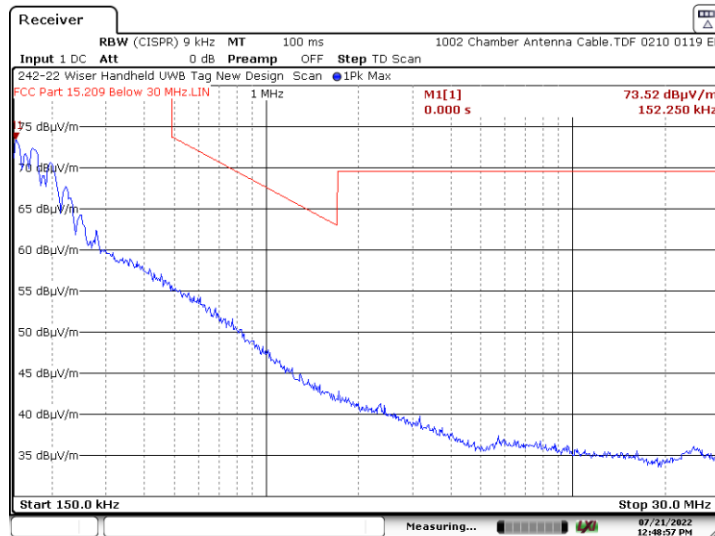
The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.42 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH4 16M



Date: 21.JUL.2022 14:49:53

#### 6.4.1.43 Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH4 16M



Date: 21.JUL.2022 12:48:57



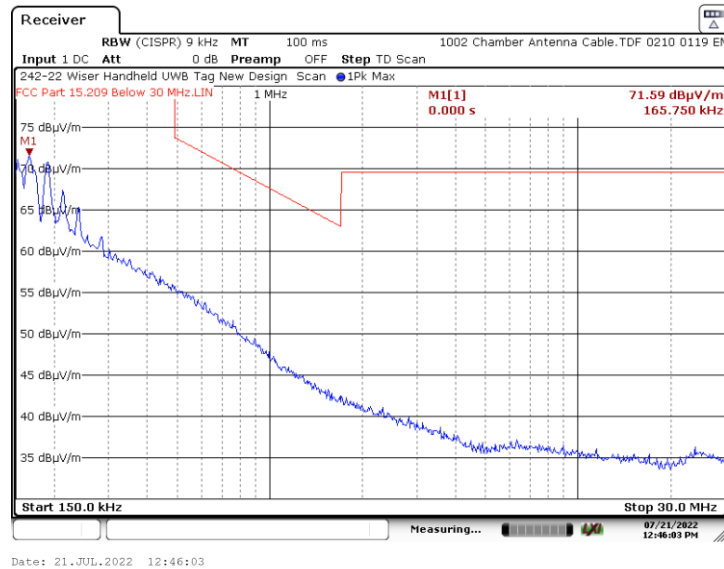
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

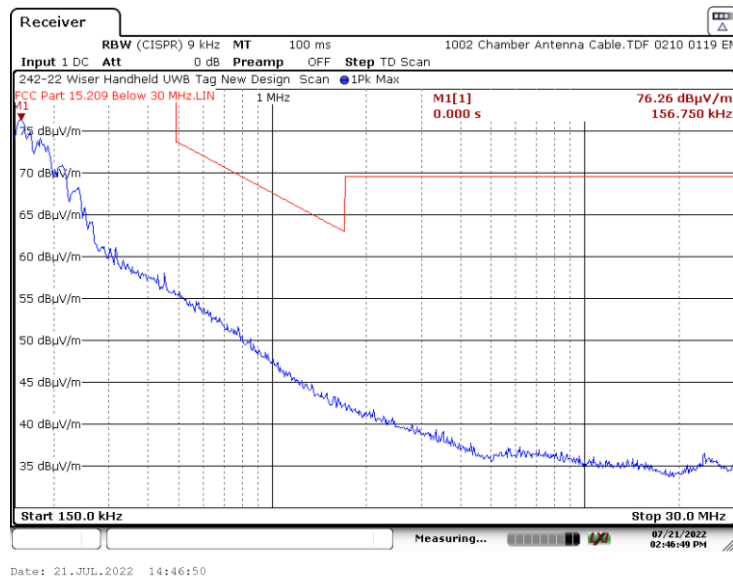
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.44 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH4 16M



#### 6.4.1.45 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH4 16M





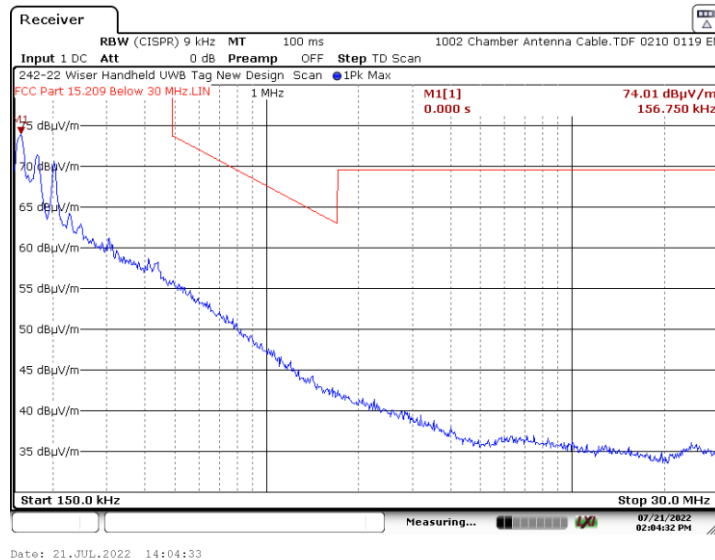
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

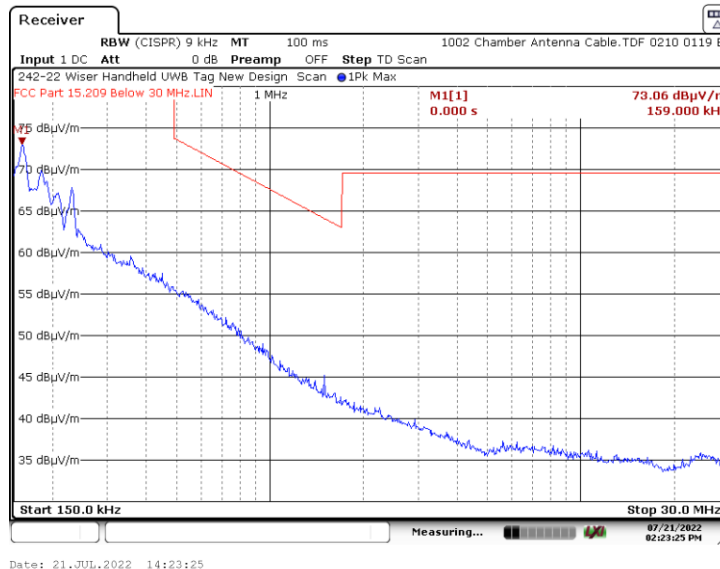
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.46 Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH5 16M



#### 6.4.1.47 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – X Axis CH5 16M



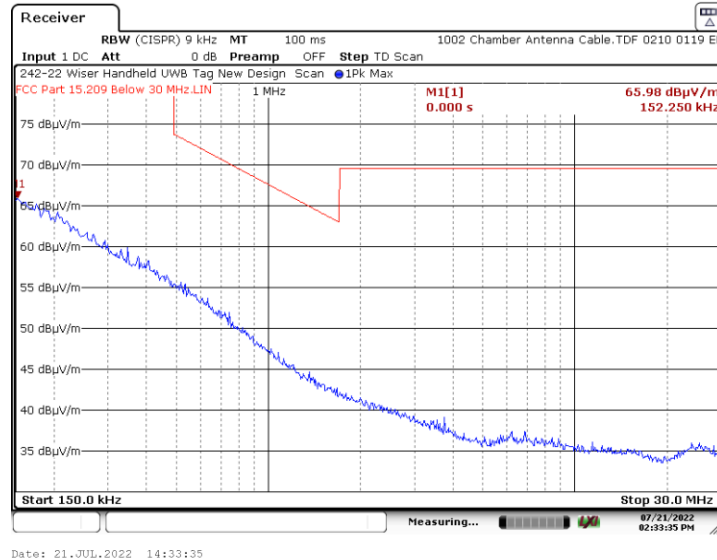
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

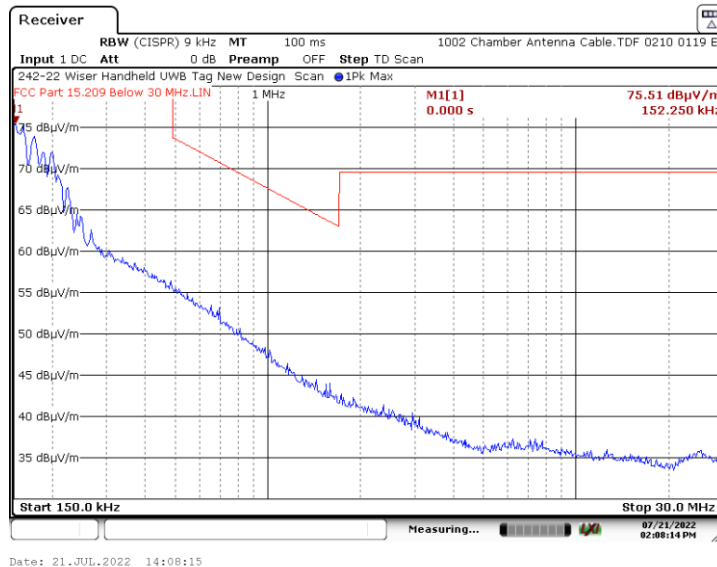
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.48 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – X Axis CH5 16M



#### 6.4.1.49 Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH5 16M



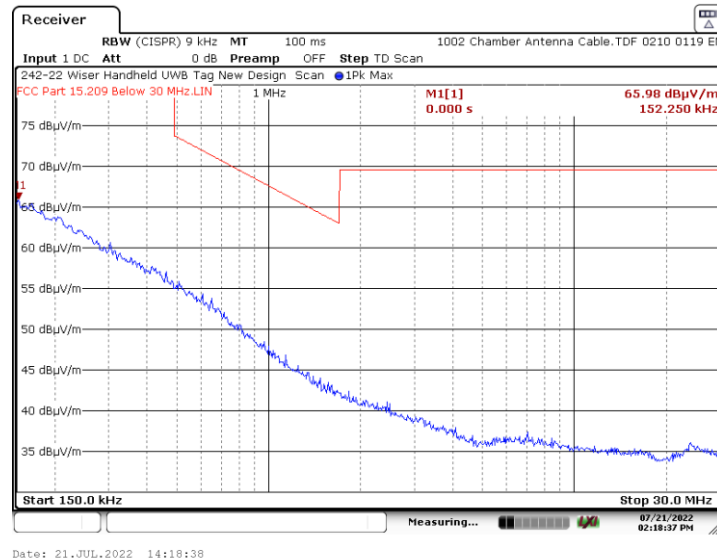
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

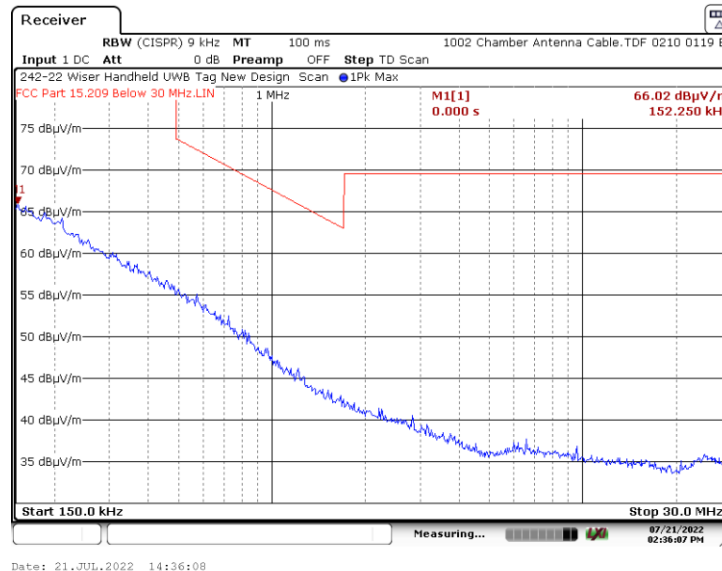
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.50 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH5 16M



#### 6.4.1.51 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Y Axis CH5 16M



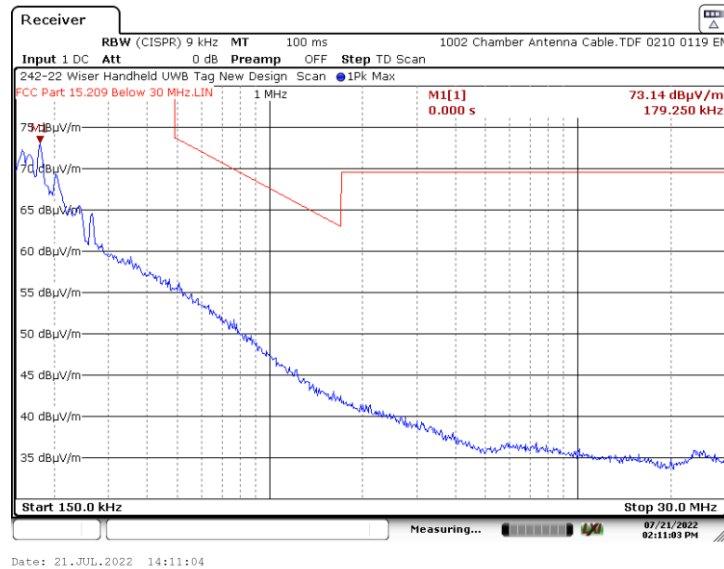
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

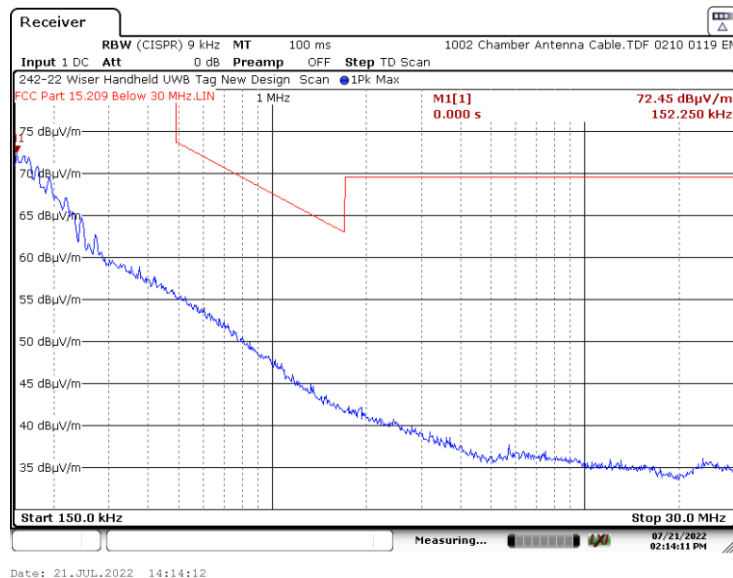
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.52 Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH5 16M



#### 6.4.1.53 Perpendicular Measurement Antenna – 150 kHz to 30 MHz – X Axis CH5 16M



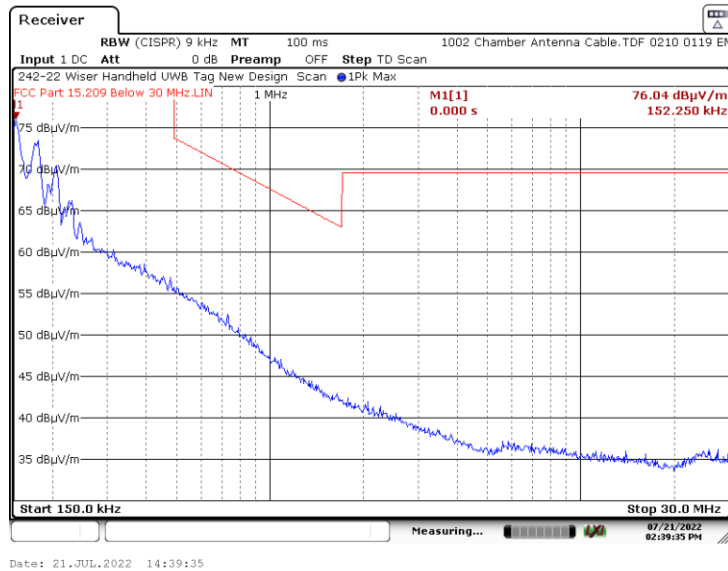
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.54 Ground Parallel Measurement Antenna – 150 kHz to 30 MHz – Z Axis CH5 16M



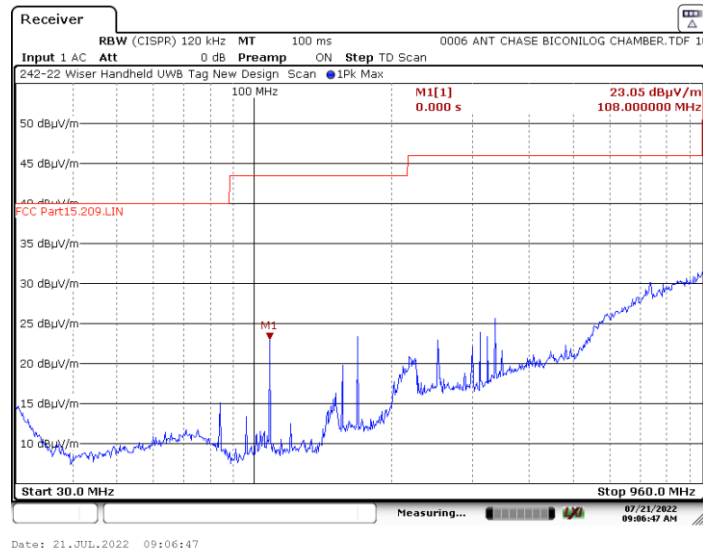
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

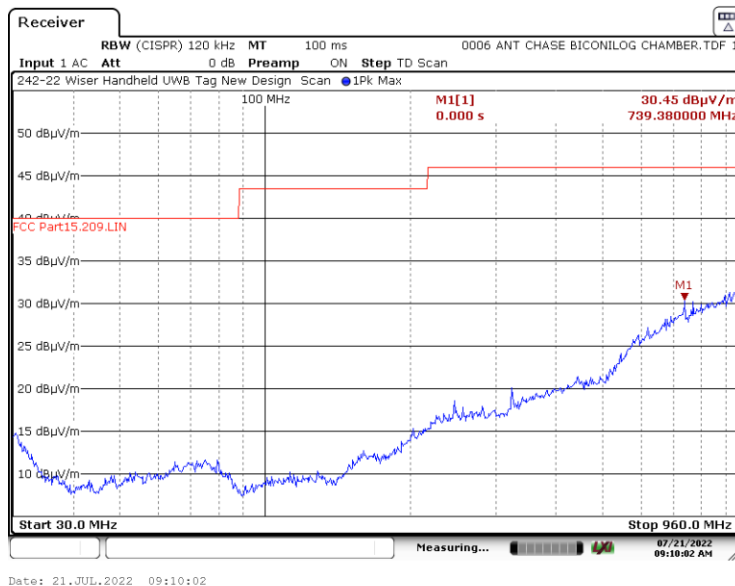
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.55 Horizontal Polarity – 30 to 960 MHz – X Axis CH2 16M



#### 6.4.1.56 Vertical Polarity – 30 to 960 MHz – X Axis CH2 16M



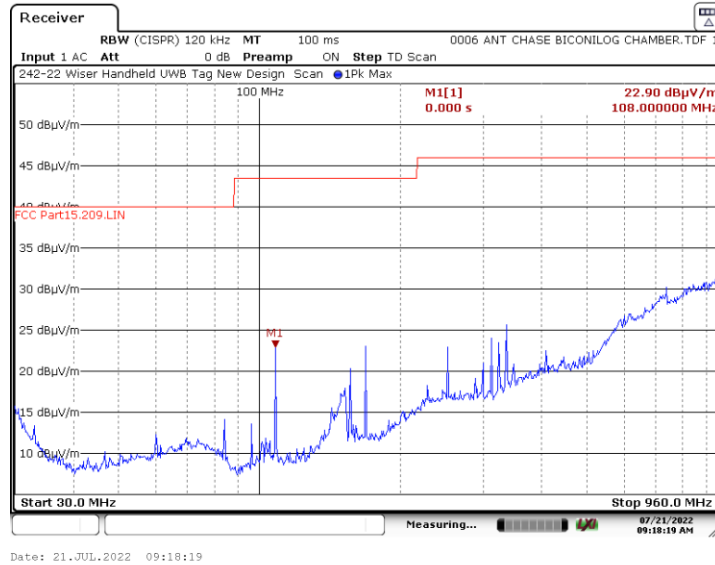
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

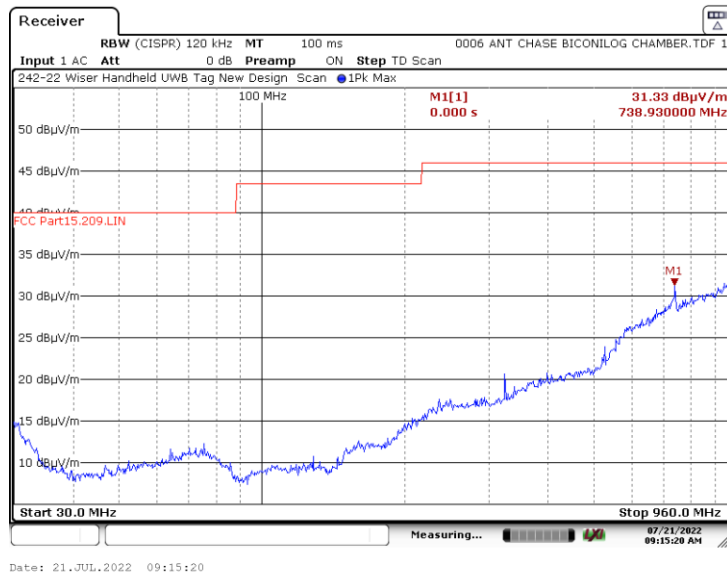
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.57 Horizontal Polarity – 30 to 960 MHz – Y Axis CH2 16M



6.4.1.58 Vertical Polarity – 30 to 960 MHz – Y Axis CH2 16M





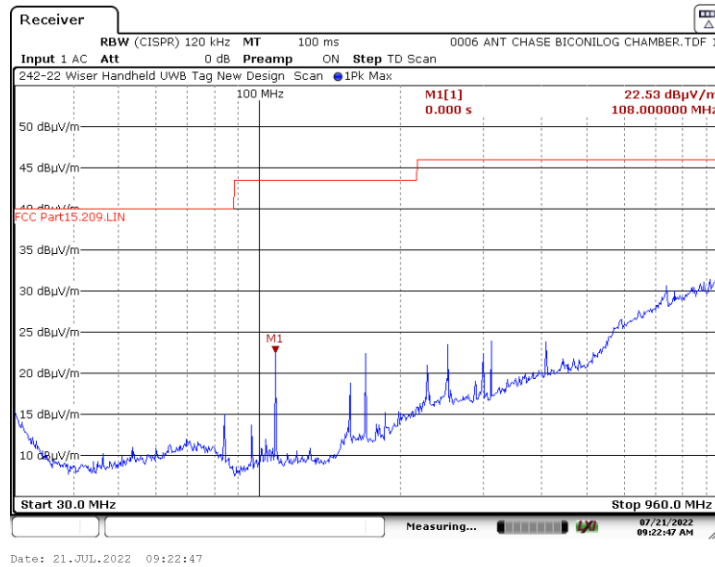
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

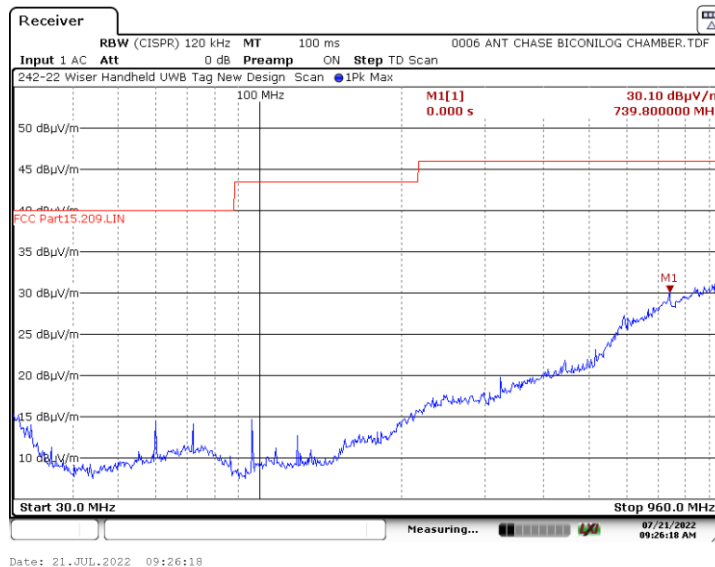
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.59 Horizontal Polarity – 30 to 960 MHz – Z Axis CH2 16M**



**6.4.1.60 Vertical Polarity – 30 to 960 MHz – Z Axis CH2 16M**





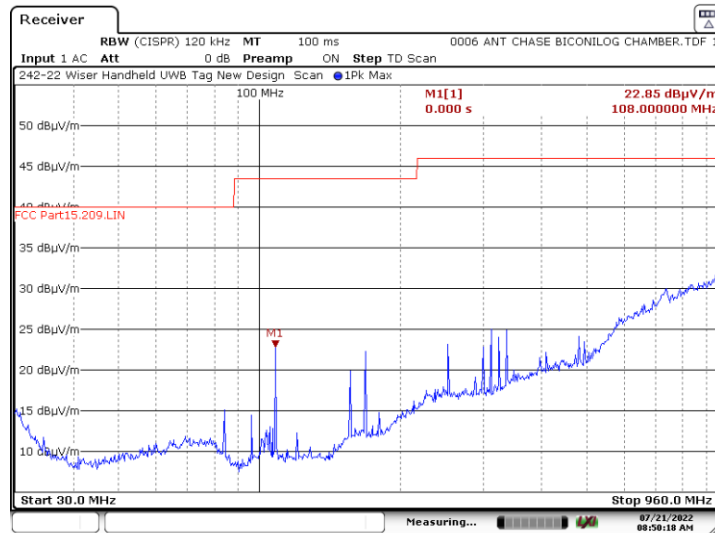
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

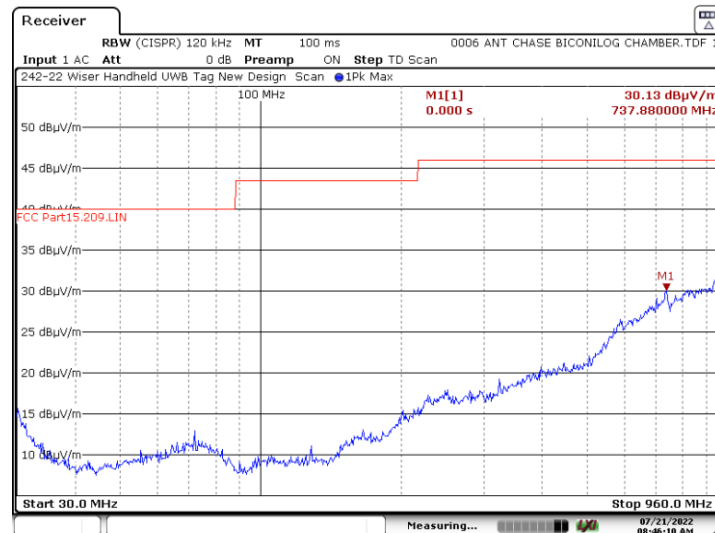
**6.4.1. 30 kHz to 960 MHz, measured at 3 Meters**

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

**6.4.1.61 Horizontal Polarity – 30 to 960 MHz – X Axis CH4 16M**



**6.4.1.62 Vertical Polarity – 30 to 960 MHz – X Axis CH4 16M**



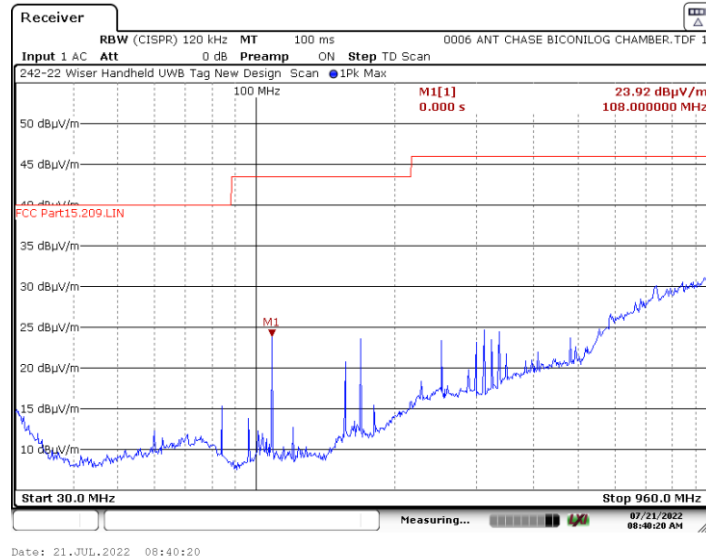
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

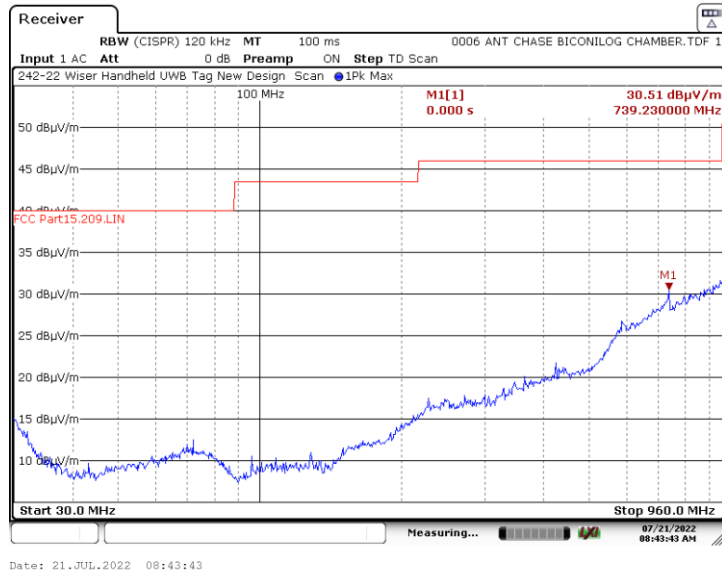
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.63 Horizontal Polarity – 30 to 960 MHz – Y Axis CH4 16M



#### 6.4.1.64 Vertical Polarity – 30 to 960 MHz – Y Axis CH4 16M



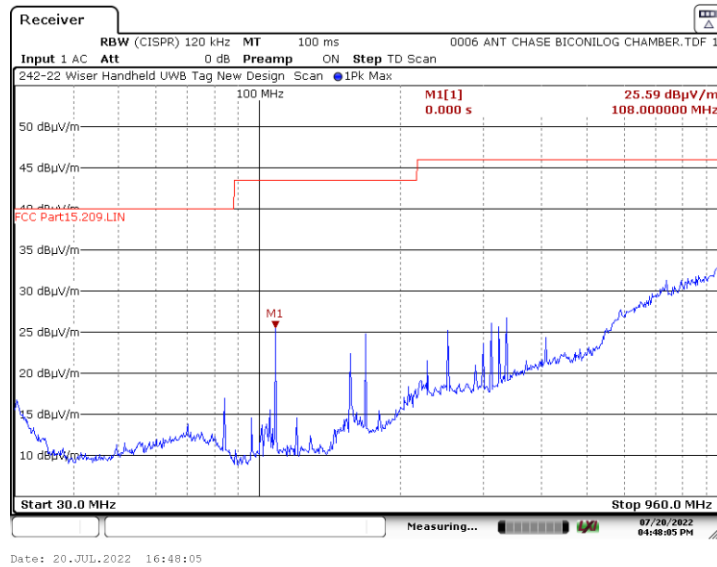
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

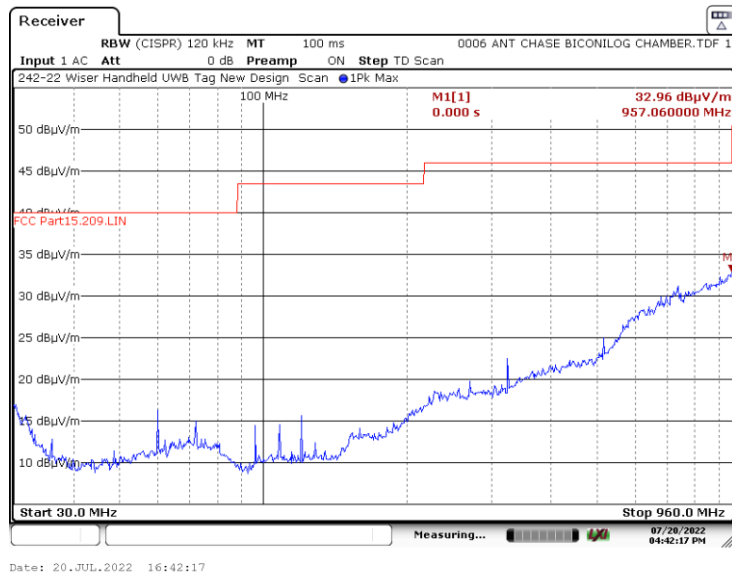
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.65 Horizontal Polarity – 30 to 960 MHz – Z Axis CH4 16M



6.4.1.66 Vertical Polarity – 30 to 960 MHz – Z Axis CH4 16M



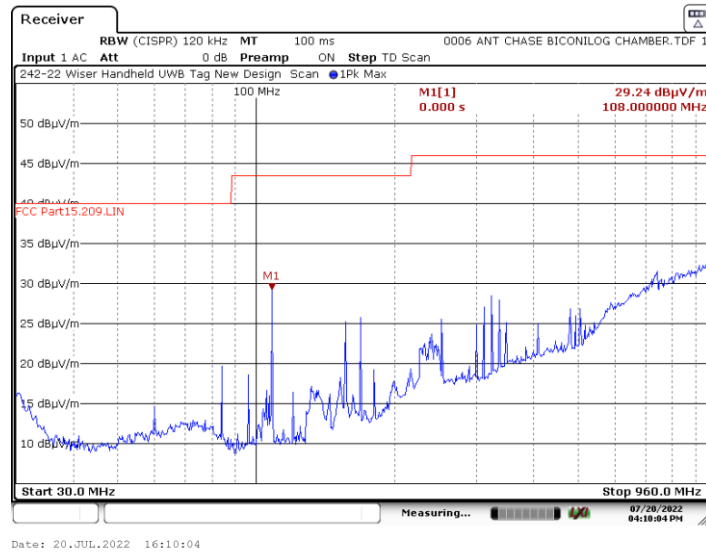
## 6. Measurement Data (continued)

### 6.4. Spurious Radiated Emissions (15.209 continued)

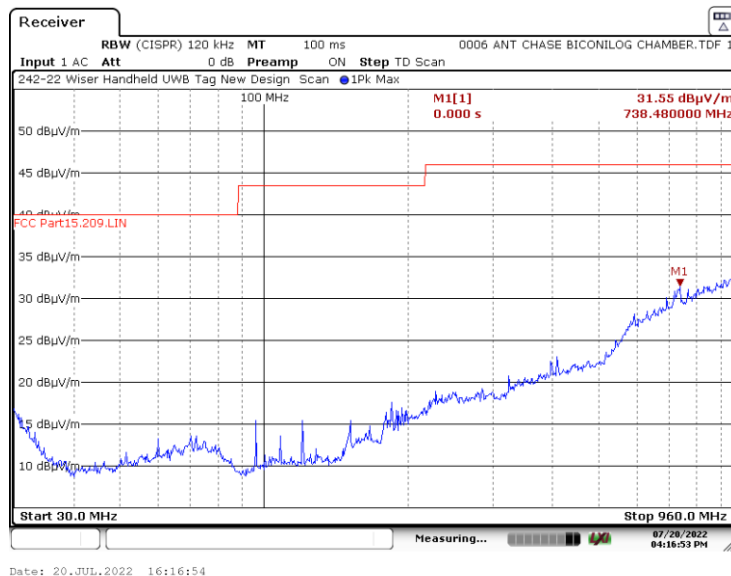
#### 6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

#### 6.4.1.67 Horizontal Polarity – 30 to 960 MHz – X Axis CH5 16M



#### 6.4.1.68 Vertical Polarity – 30 to 960 MHz – X Axis CH5 16M



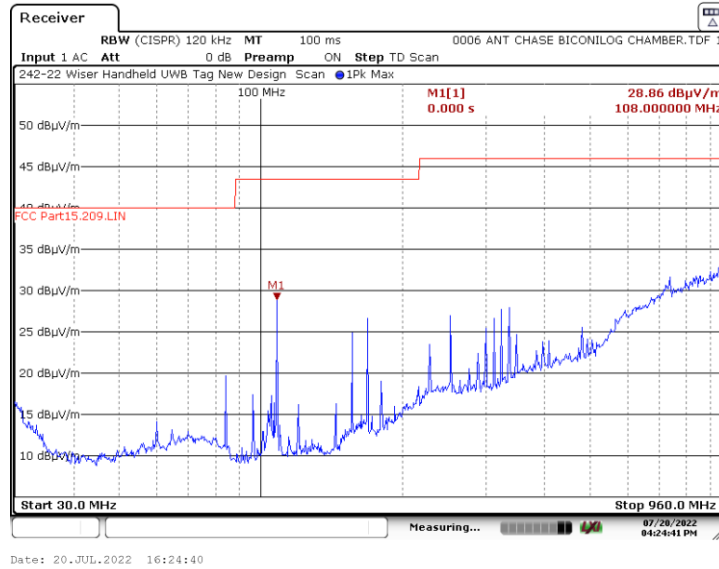
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

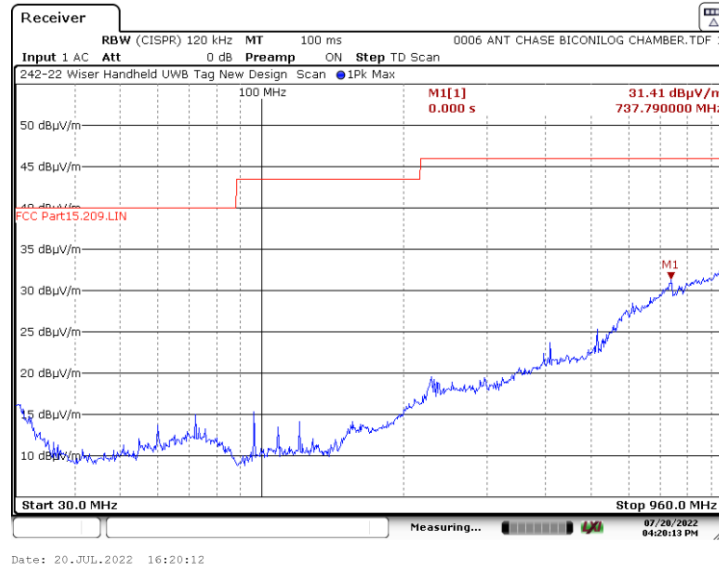
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.69 Horizontal Polarity – 30 to 960 MHz – Y Axis CH5 16M



6.4.1.70 Vertical Polarity – 30 to 960 MHz – Y Axis CH5 16M



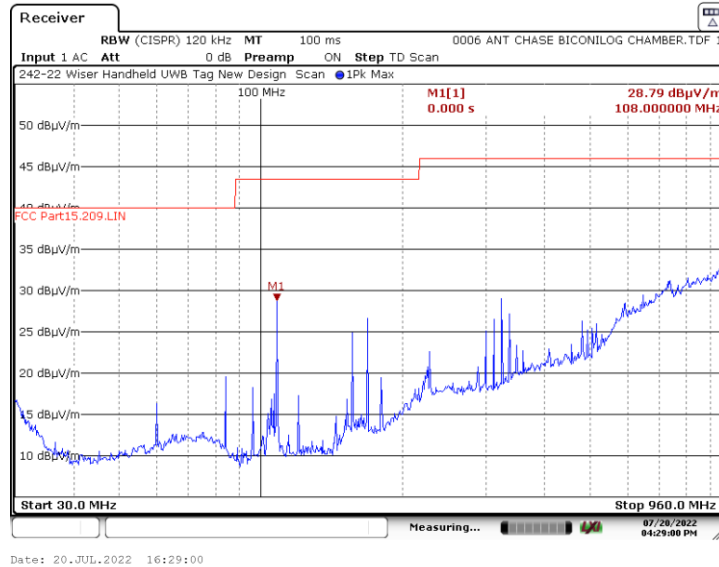
**6. Measurement Data (continued)**

**6.4. Spurious Radiated Emissions (15.209 continued)**

6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

The device was prescreened in our 3 Meter Semi-Anechoic Chamber. There were no measurable emissions below 960 MHz on our 3 Meter OATS.

6.4.1.71 Horizontal Polarity – 30 to 960 MHz – Z Axis CH5 16M



6.4.1.72 Vertical Polarity – 30 to 960 MHz – Z Axis CH5 16M

