

COMPLIANCE WORLDWIDE INC. TEST REPORT 116-25R1

In Accordance with the Requirements of
ISED RSS-220, Issue 1 (March 2009) + Amendment 1 (July 2018)
Devices Using Ultra-Wideband (UWB) Technology

Issued to

Qorvo, Inc.
Decawave Limited
Adelaide Chambers, Peter Street
Dublin, Ireland D08 T6YA

For the

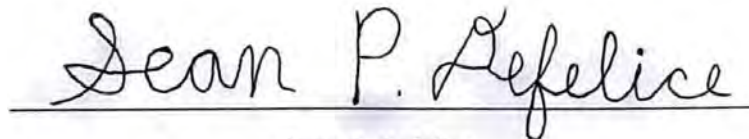
Model: DWM3001C

IC: 23794-DWM3001

**Tested on February 7th, 10th, 20th, 21st, June 18th, 19th, July 11th, 18th, 23rd,
August 13th, 14th, 2025**

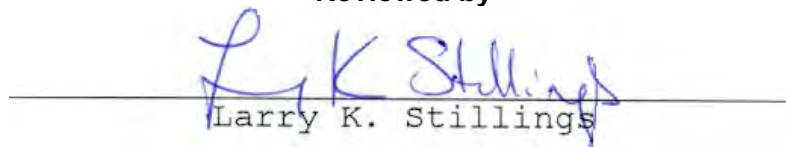
Report Issued on July 24, 2025
Revised Report issued on August 15, 2025

Tested by



Sean P. Defelice

Reviewed by



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1. Scope

This test report certifies that the Qorvo Decawave Limited DWM3001C as tested, was evaluated against the 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. Measurement Uncertainty will not be applied to any of the measurement / testing results in this test report to determine pass/fail criteria per the Decision Rule as defined in ISO/IEC Guide 17025-2017 Clause 3.7. Revision R1 corrects the rule parts in Section 6.3 and updates the data in Section 6.5 for the fundamental operating frequency.

2. Product Details

- 2.1. Manufacturer:** Qorvo, Inc.
2.2. Model Numbers: DWM3001C
2.3. Serial Numbers: 2227402CA5
2.4. Description: The Qorvo® DWM3001C is a fully integrated UWB transceiver module based on the Qorvo DW3110 IC. Integration of the DW3110 IC, nRF52833 MCU, planar UWB antenna, accelerometer, power management and crystal simplifies the design cycle.
2.5. Power Source: USB 5 VDC
2.6. Hardware Revision: N/A
2.7. Software Revision: N/A
2.8. Modulation Type: Pulse Modulation, Frequency Hopping
2.9. Operating Frequencies: 6.5 GHz Center Frequency Nominal (Channel 5 – 500 MHz BW), 8 GHz Center Frequency Nominal (Channel 9 – 500 MHz BW)
2.10. EMC Modifications: None

3. Product Configuration

3.1 Operational Characteristics & Software

Hardware Setup:

Connect the Evaluation board to a remotely located laptop computer via USB.

Using the software tool configure the Evaluation board to transmit on Channel 5 or 9.

3.2. EUT Hardware

Manufacturer	Model/Part # / Options	Serial Number	Input Volts	Freq (Hz)	Description/Function
Qorvo / Decawave	DWM3001C	2227402CA5	5	VDC	UWB Module

3.3. EUT Cables/Transducers

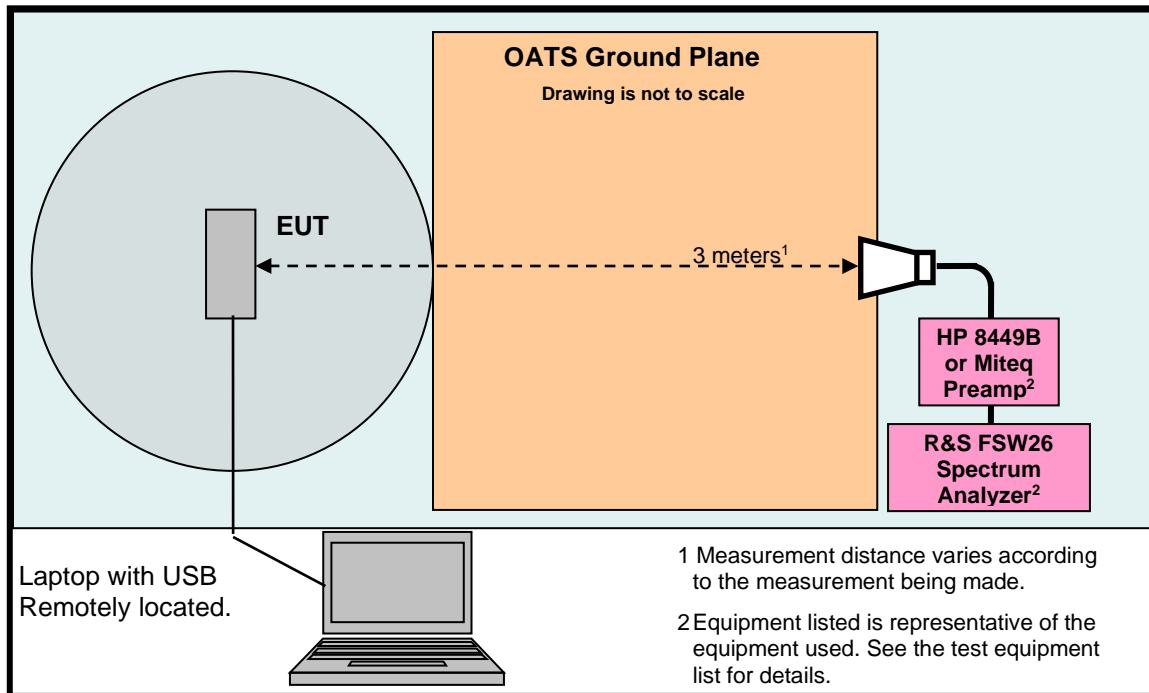
Cable Type	Length	Shield	From	To
USB	15M	Yes	EUT	Laptop for Configuration

3.4. Support Equipment

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Freq (Hz)	Description/Function
Lenovo	ThinkPad T440P	PB-031DX9	120	60	For controlling the board

3. Product Configuration (cont.)

3.5. Test Setup Diagram



4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due	Interval
EMI Test Receiver, 9 kHz – 7 GHz ¹	Rohde & Schwarz	ESR7	101156	10/25/2025	4 Years
EMI Test Receiver, 10 Hz – 7 GHz ¹	Rohde & Schwarz	ESR7	101770	7/23/2026	2 Years
EMI Test Receiver, 9 kHz – 26.5 GHz ¹	Rohde & Schwarz	ESR26	101693	6/26/2026	3 Years
Spectrum Analyzer, 2 Hz to 26.5 GHz ²	Rohde & Schwarz	FSW26	102057	7/19/2026	2 Years
Spectrum Analyzer, 9 kHz to 40 GHz ³	Rohde & Schwarz	FSV40	100899	6/27/2026	2 Years
Spectrum Analyzer 10 Hz – 40 GHz ⁴	Rohde & Schwarz	FSVR40	100909	9/18/2025	5 Years
Loop Antenna 9 kHz - 30 MHz	EMCO	6512	9309-1139	4/14/2026	4 Years
Biconilog Antenna, 30 MHz - 2 GHz	Sunol Sciences	JB1	A050913	7/1/2026	5 Years
Dbl Ridged Guide Antenna 1 - 18 GHz	ETS-Lindgren	3117	00143292	5/11/2026	4 Years
Dbl Ridged Guide Antenna 1 - 18 GHz	ETS-Lindgren	3117	00227631	4/21/2026	4 Years
Preamplifier 100 MHz to 7 GHz	Miteq	AFS3-00100200-10-15P-4	988773	9/28/2025	2 Years
Preamplifier 100 MHz to 18 GHz	Miteq	AMF-7D-00101800-30-10P	1953081	9/27/2025	2 Years
Preamplifier 2 to 12 GHz	JCA	JCA48-4111B1	7087S	9/28/2025	2 Years
Preamplifier 18 to 40 GHz	Miteq	JSD42-21004200-40-5P	649199/649219	9/27/2025	2 Years
Horn Antenna 18 to 40 GHz	Com Power	AH-840	101032	1/25/2026	4 Years
High Pass Filter 7.2 to 18 GHz	Micro-Tronics	HPM50107	G036	2/27/2026	2 Years
Passband Filter 12 to 18.5 GHz	Wavecom	F2620A	16	2/27/2026	2 Years
Barometric Pressure/Humidity & Temp Datalogger	Extech Instruments	SD700	Q590483	4/4/2026	2 Years

¹ ESR7/26 Firmware revision: V3.48 SP3, Date installed: 09/30/2020

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

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

⁴ 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:	2/7/2025, 2/10/2025, 2/20/2025, 2/21/2025, 6/18/2025, 6/19/2025, 7/11/2025, 7/18/2025, 7/23/2025, 8/13/2025, 8/14/2025
Test Engineers:	Sean Defelice
Normal Site Temperature (15 – 35°C):	24
Relative Humidity (20 – 75%RH):	40
Frequency Range:	30 MHz to 40 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz - 30 MHz to 1 GHz 1 MHz - Above 1 GHz
EMI Receiver Avg Bandwidth:	$\geq 3 \times \text{RBW}$
Detector Function:	Peak, Quasi-Peak & Average
Antenna Height:	1 to 4 meters
Measurement Uncertainty 30 to 200 MHz:	$\pm 4.76 \text{ dB (H)}, \pm 4.88 \text{ dB (V)}$
Measurement Uncertainty 200 to 1 GHz:	$\pm 5.01 \text{ dB (H)}, \pm 5.00 \text{ dB (V)}$
Measurement Uncertainty 1 to 6 GHz:	$\pm 5.17 \text{ dB}$
Measurement Uncertainty 6 to 18 GHz:	$\pm 5.48 \text{ dB}$
Measurement Uncertainty 18 to 40 GHz:	$\pm 5.49 \text{ dB}$

4.3. Measurement Procedure

Test measurements were made in accordance with ISED RSS-220 and RSS-GEN 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.

During all radiated emissions measurement testing, the product was rotated through three orthogonal axis, as required by ANSI C63.10:2013, section 5.10.1, for a portable or small device.

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	$\pm 4.55 \text{ dB}$
Radiated Emission of Receiver	$\pm 4.55 \text{ dB}$
Temperature	$\pm 0.91^\circ \text{ C}$
Humidity	$\pm 5\%$

5. Measurements Summary

Test Requirement	ISED Rule Requirement	Test Report Section	Comment
Antenna Requirement	RSS-220 5.1 (b)	6.1	
Operational Requirements	RSS-220 5.3.1 (b)	6.2	
UWB Bandwidth	RSS-220 2 RSS-220 5.1	6.3	
Radiated Emissions below 960 MHz	RSS-220 5.3.1 (c), 3.4	6.4	
Radiated Emissions above 960 MHz	RSS-220 5.3.1 (d)	6.5	
Radiated Emissions in GPS Bands	RSS-220 5.3.1 (e)	6.6	
RMS Emissions of UWB Transmission in a 1 MHz Bandwidth	RSS-220 5.3.1 (d)	6.7	
Peak Emissions in a 50 MHz Bandwidth	RSS-220 5.3.1 (g)	6.8	

6. Measurement Data

6.1. Antenna Requirement (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 surface mount PCB type.

6. Measurement Data (continued)

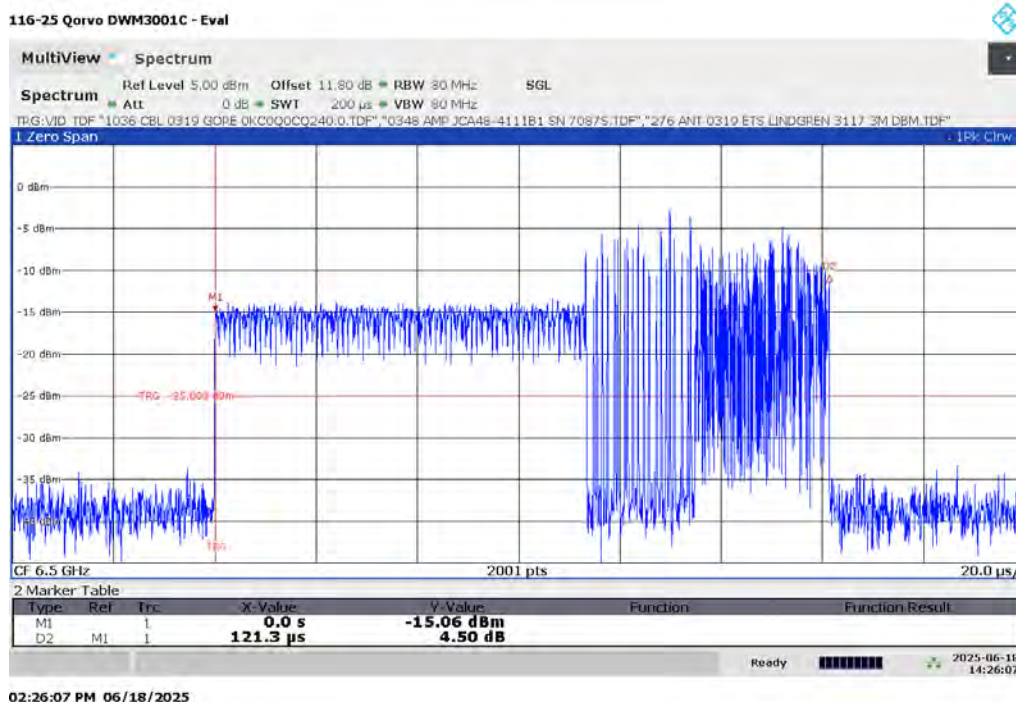
6.2. Operational Requirements of the Device under Test (RSS-220 5.3.1 (b))

Requirement: A 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:

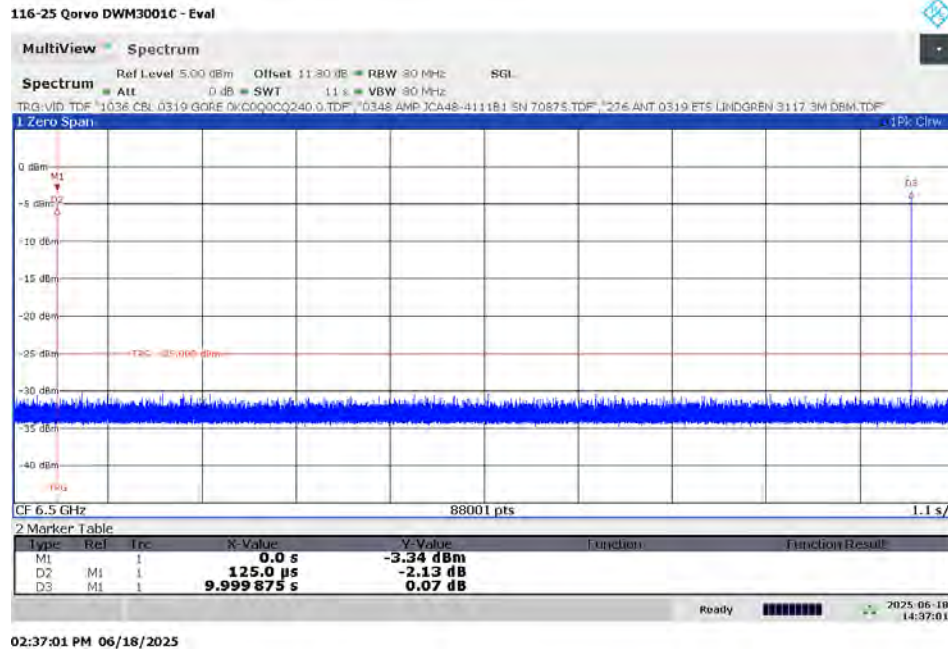
6.2.1 Plot of Transmission On-Time Channel 5



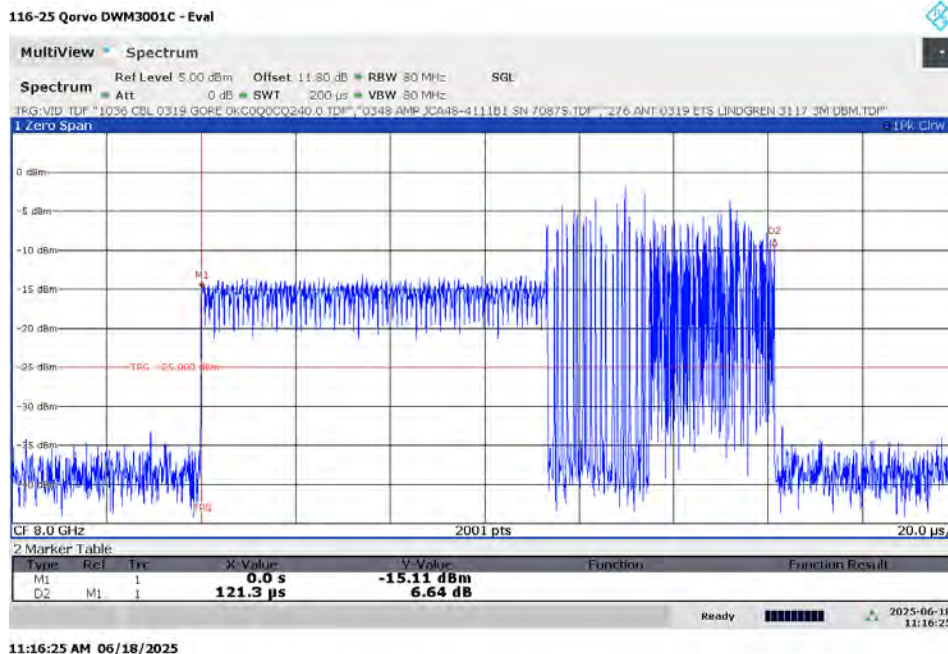
6. Measurement Data (continued)

6.2. Operational Requirements of the Device under Test (RSS-220 5.3.1 (b))

6.2.2 Plot of Transmission Period – Channel 5



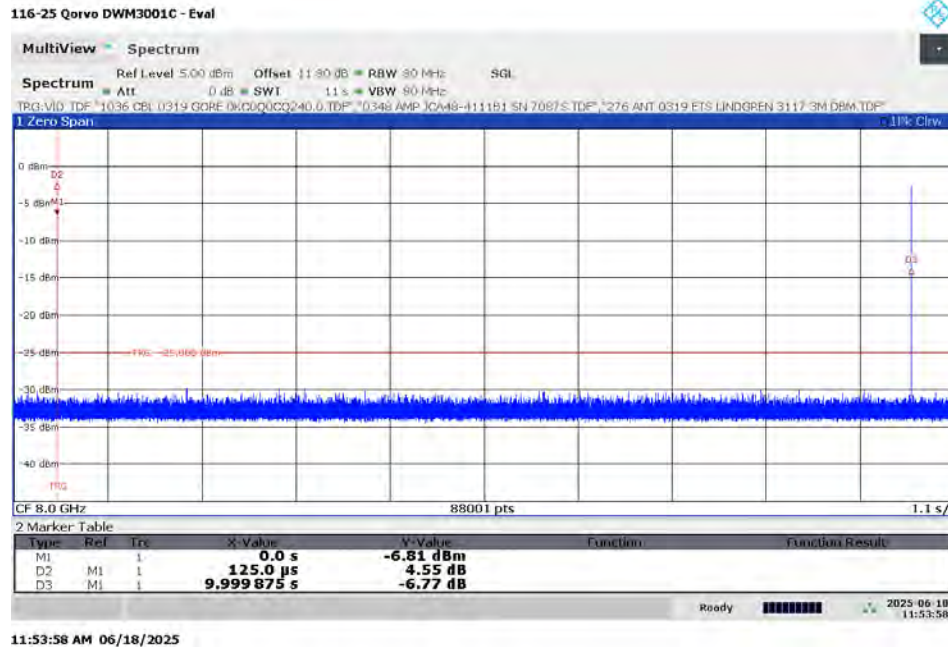
6.2.3 Plot of Transmission On-Time Channel 9



6. Measurement Data (continued)

6.2. Operational Requirements of the Device under Test (RSS-220 5.3.1 (b))

6.2.4 Plot of Transmission Period – Channel 9



11:53:58 AM 06/18/2025

6. Measurement Data (continued)

6.3. UWB Bandwidth (RSS-220 2, RSS-220 5.1)

Requirement: A UWB device is an intentional radiator that has either a -10 dB bandwidth of at least 500 MHz or a -10 dB fractional bandwidth² greater than 0.2.

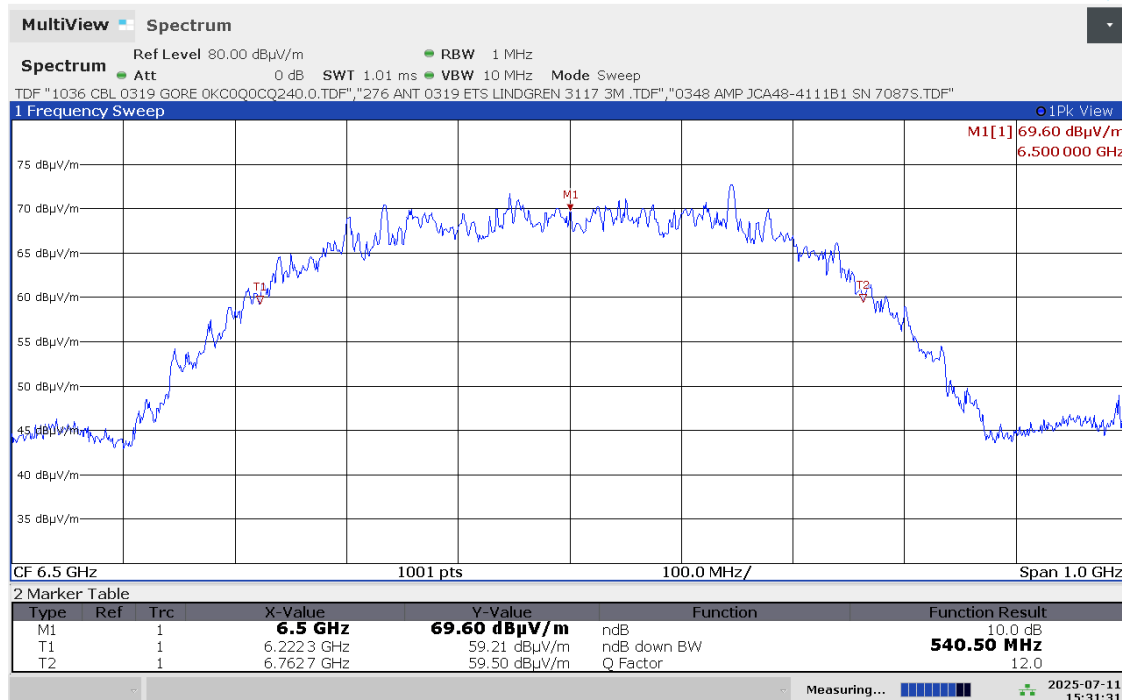
The -10 dB bandwidth of the device shall be totally contained in the band 3.1-10.6 GHz.

6.3.1. Measurement Data – Values in GHz – Channel 5

f_M	The highest emission peak	6.500
f_L	10 dB below the highest peak	6.2223
f_H	10 dB above the highest peak	6.7627
f_C	Calculated: $(f_H + f_L) / 2$	6.4925
Bandwidth	Calculated: $(f_H - f_L)$	0.5404
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.0832

6.3.2. Measurement Plot of 10 dB frequencies – Channel 5

116-25 Qorvo DWM3001C - Eval



03:31:31 PM 07/11/2025

6. Measurement Data (continued)

6.3. UWB Bandwidth (RSS-220 2, RSS-220 5.1)

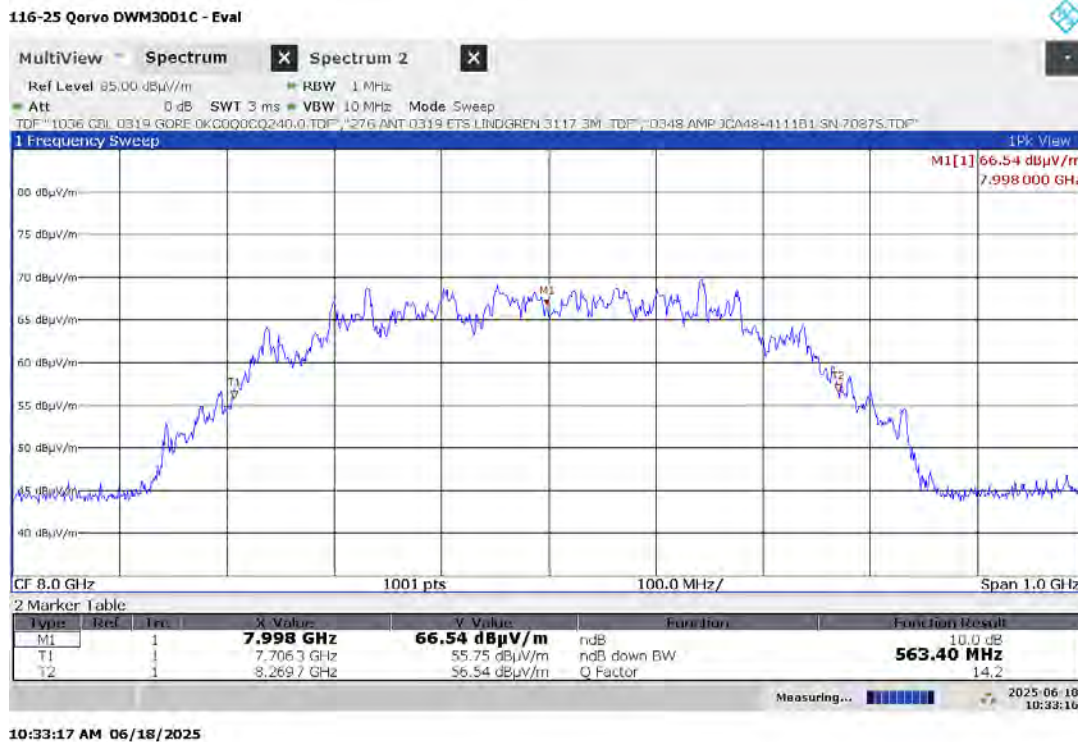
Requirement: A UWB device is an intentional radiator that has either a -10 dB bandwidth of at least 500 MHz or a -10 dB fractional bandwidth² greater than 0.2.

The -10 dB bandwidth of the device shall be totally contained in the band 3.1-10.6 GHz.

6.3.3. Measurement Data – Values in GHz – Channel 9

f_M	The highest emission peak	7.998
f_L	10 dB below the highest peak	7.7063
f_H	10 dB above the highest peak	8.2697
f_C	Calculated: $(f_H + f_L) / 2$	7.9880
Bandwidth	Calculated: $(f_H - f_L)$	0.5634
Fractional BW	Calculated: $2 * (f_H - f_L) / (f_H + f_L)$	0.0705

6.3.4. Measurement Plot of 10 dB frequencies – Channel 9



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions below 960 MHz (RSS-220 5.3.1 (c))

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 3.4.

Radiated Emissions Field Strength Limits at 3 Meters (RSS-220 Section 3.4)

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/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:	≥ 3 * RBW or IF(BW)
Detector Function:	Peak, Quasi-Peak & CISPR Average

Sample Calculation: Final Result (dBμV/m) = Measurement Value (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) – Pre-amplifier Gain (dB) Internal or External.

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

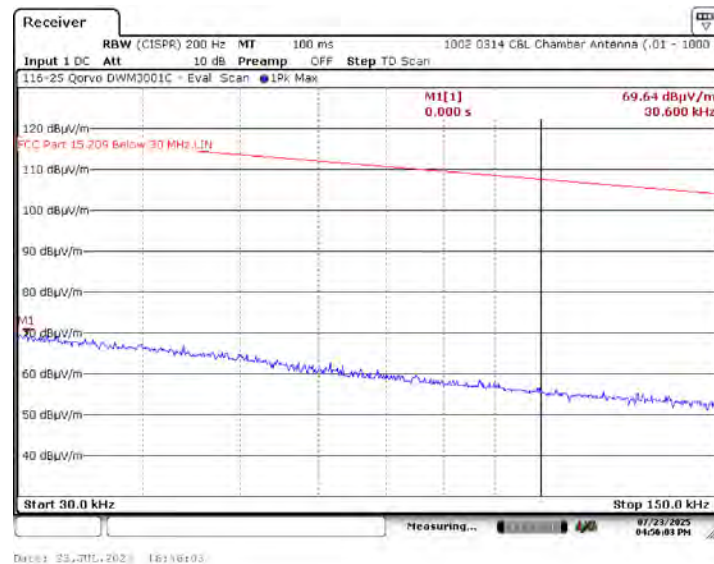
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

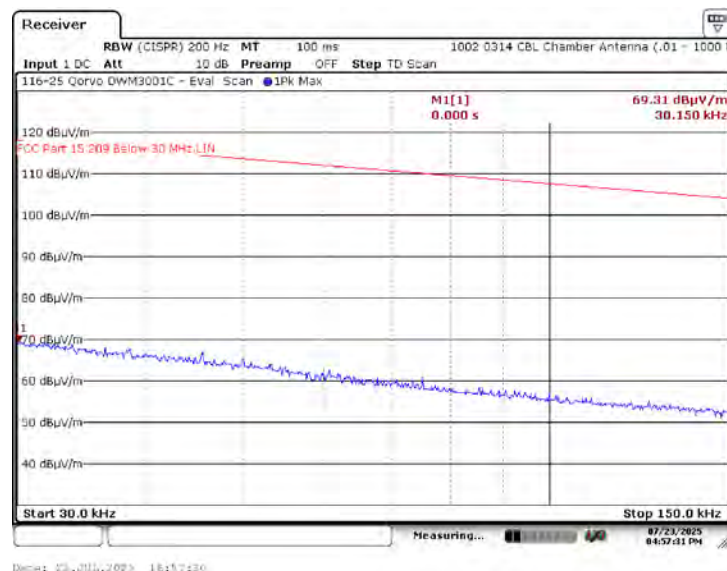
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 5 – X-Axis



6.4.1.2 Perpendicular – 30 to 150 kHz – Channel 5 – X-Axis



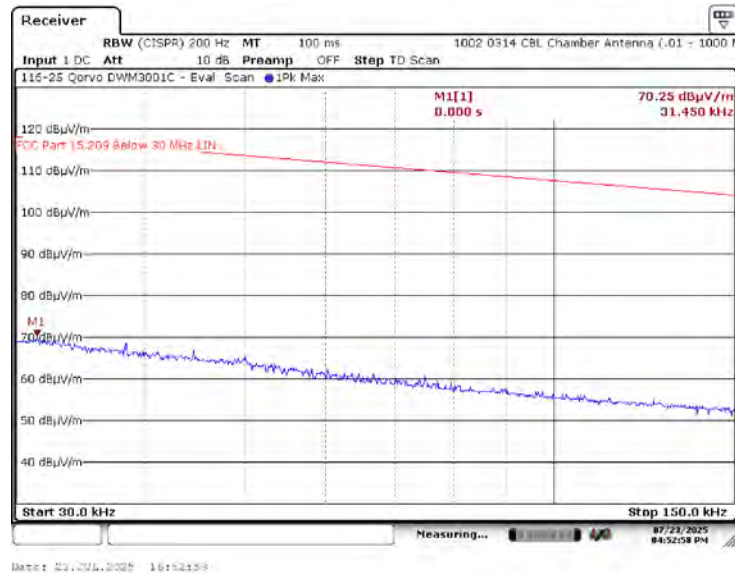
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

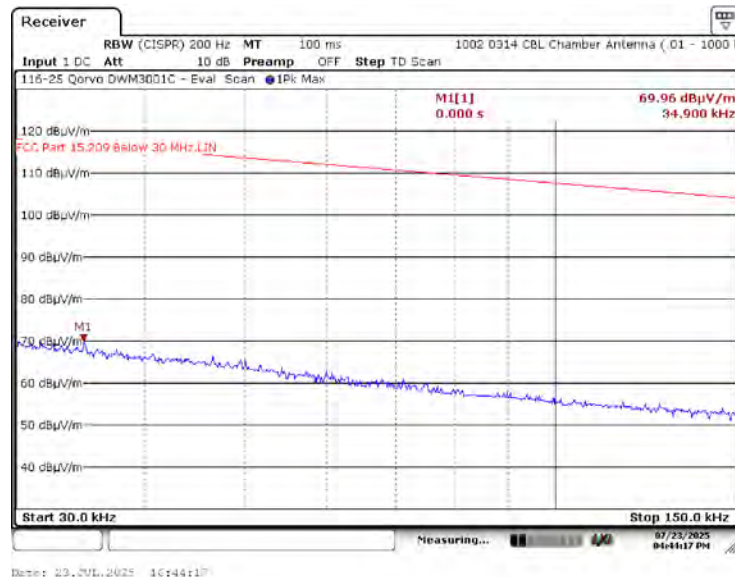
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 5 – X-Axis



6.4.1.4 Parallel – 30 to 150 kHz – Channel 5 – Y-Axis



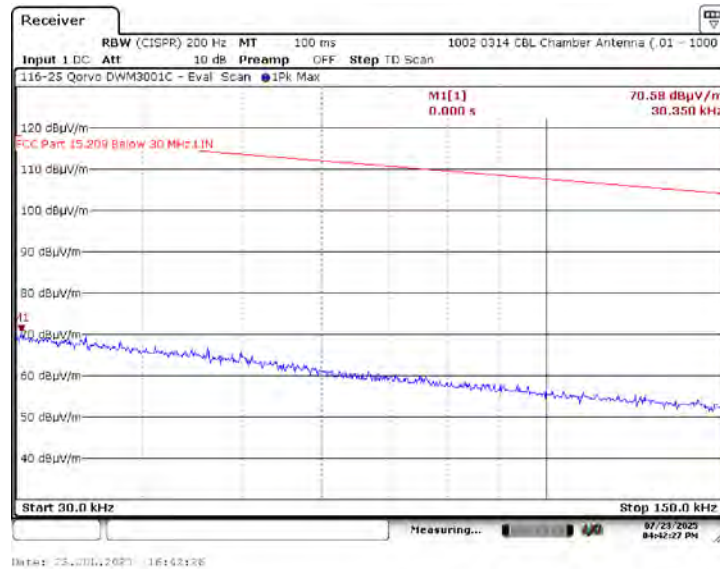
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

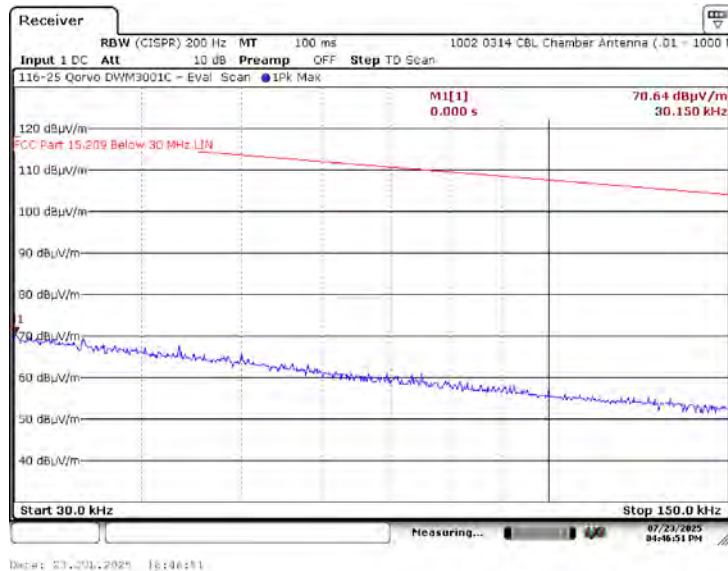
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 5 – Y-Axis



6.4.1.6 Ground Parallel – 30 to 150 kHz – Channel 5 – Y-Axis



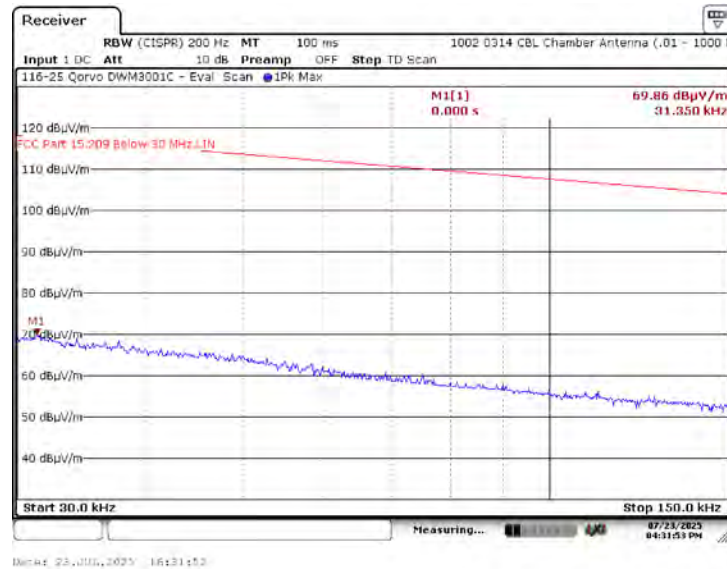
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

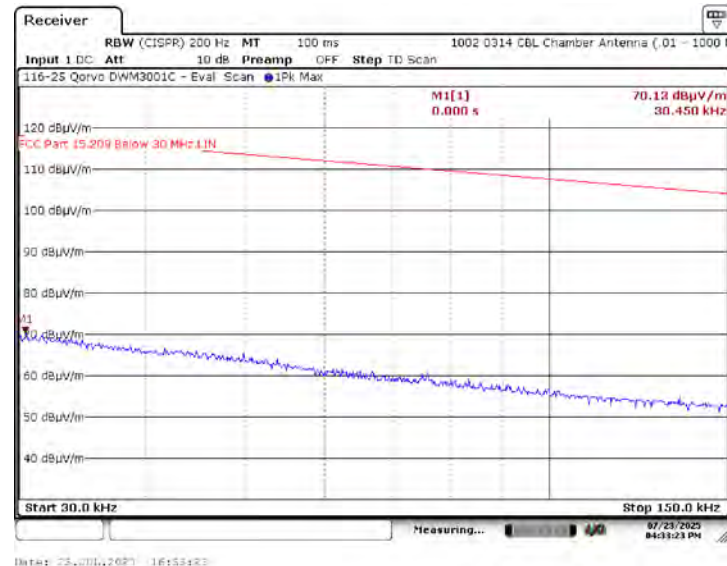
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 5 – Z-Axis



6.4.1.8 Perpendicular – 30 to 150 kHz – Channel 5 – Z-Axis



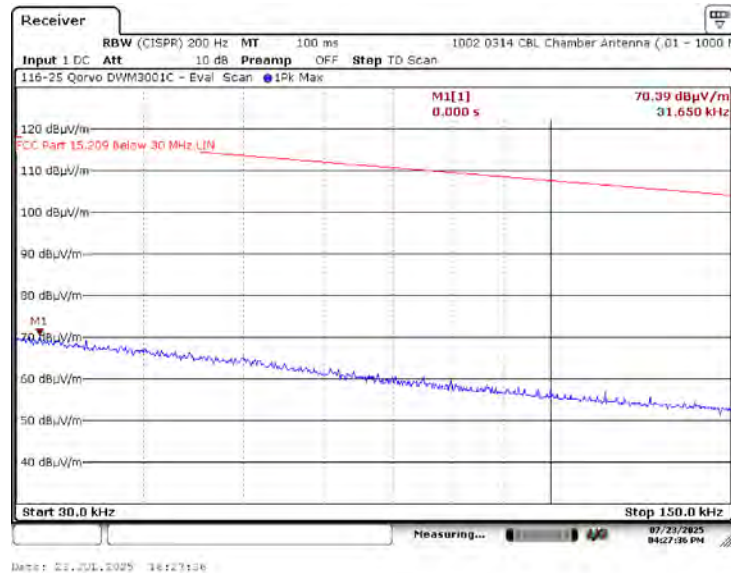
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

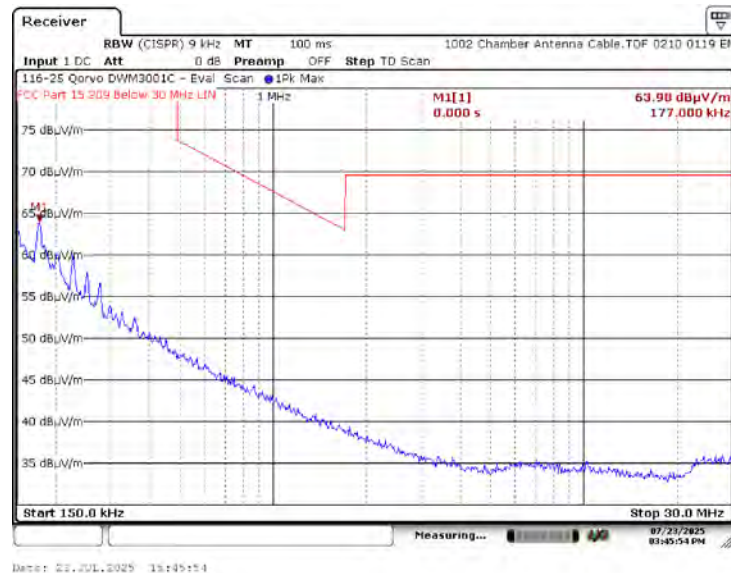
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 5 – Z-Axis



6.4.1.10 Parallel – 150 kHz to 30 MHz – Channel 5 – X-Axis



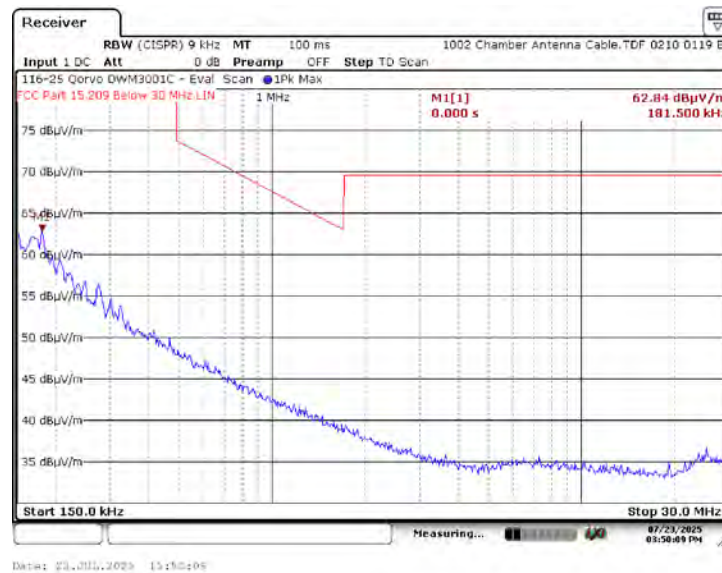
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), 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 – 150 kHz to 30 MHz – Channel 5 – X-Axis



6.4.1.12 Ground Parallel – 150 kHz to 30 MHz – Channel 5 – X-Axis



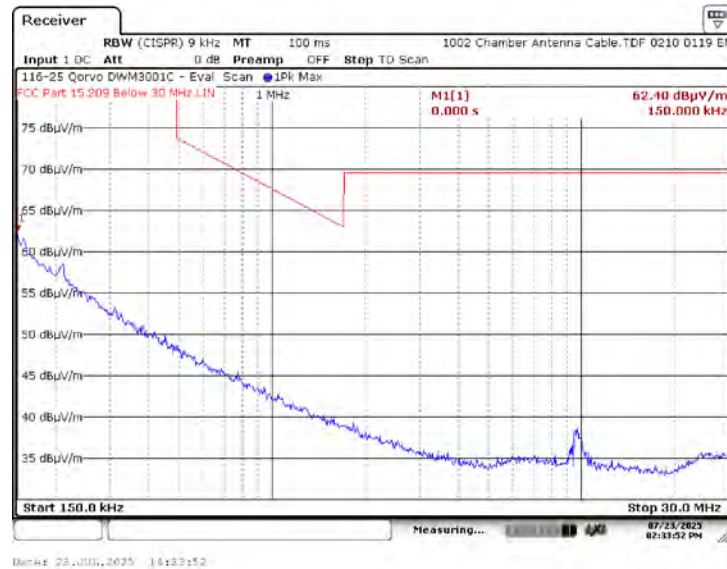
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), 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 – 150 kHz to 30 MHz – Channel 5 – Y-Axis



6.4.1.14 Perpendicular – 150 kHz to 30 MHz – Channel 5 – Y-Axis



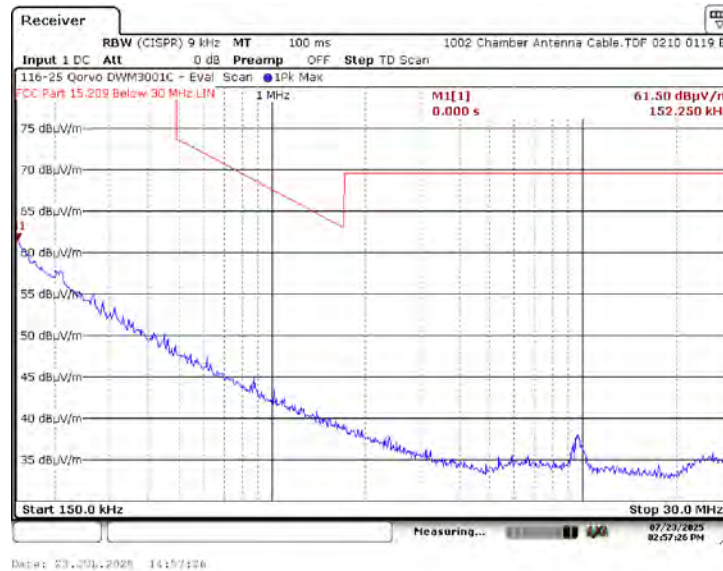
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), 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 – 150 kHz to 30 MHz – Channel 5 – Y-Axis



6.4.1.16 Parallel – 150 kHz to 30 MHz – Channel 5 – Z-Axis



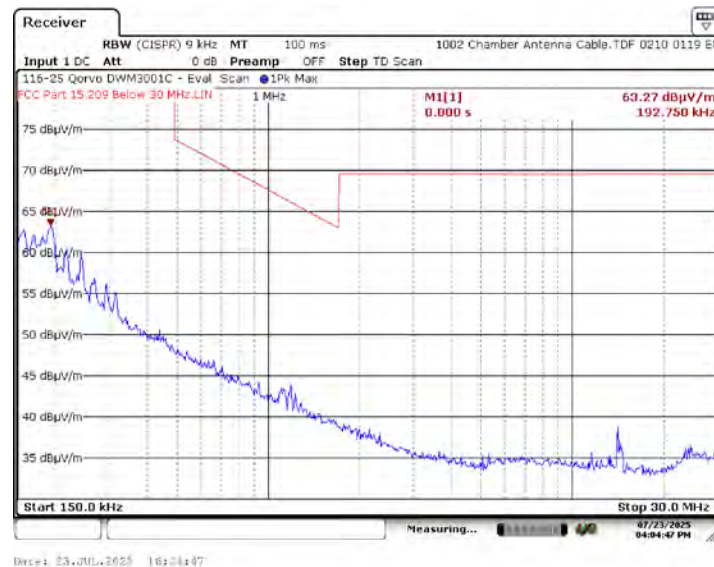
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

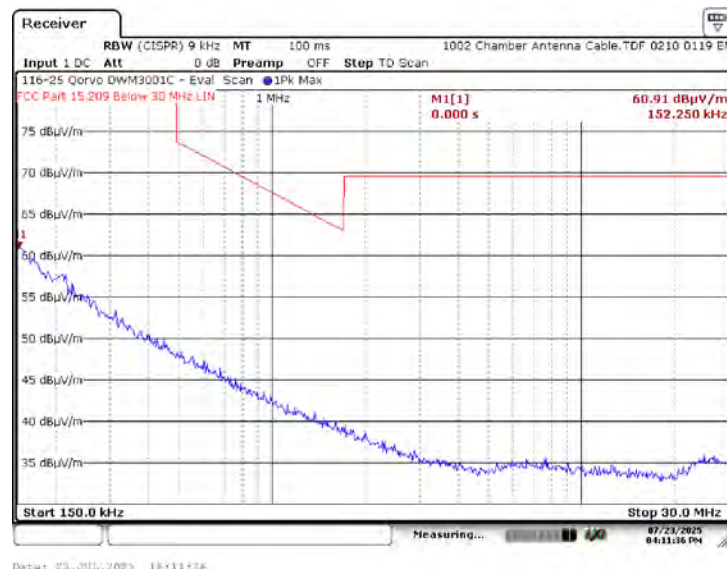
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 150 kHz to 30 MHz – Channel 5 – Z-Axis



6.4.1.18 Ground Parallel – 150 kHz to 30 MHz – Channel 5 – Z-Axis



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

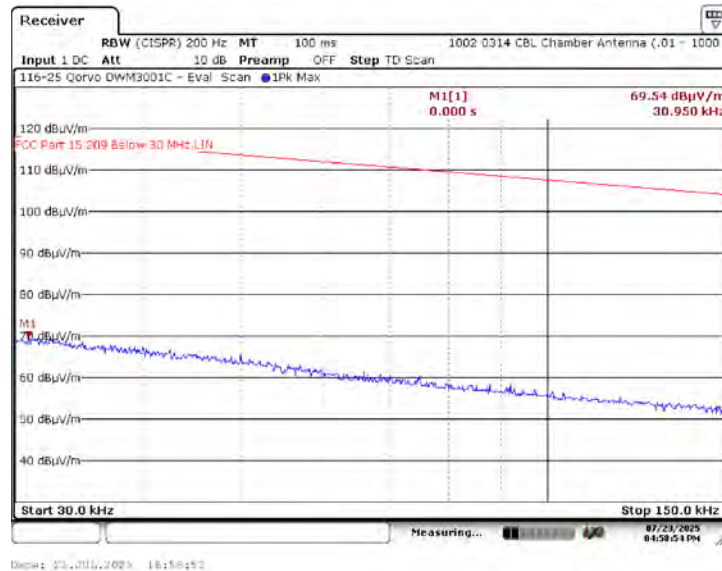
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 9 – X-Axis



6.4.1.20 Perpendicular – 30 to 150 kHz – Channel 9 – X-Axis



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

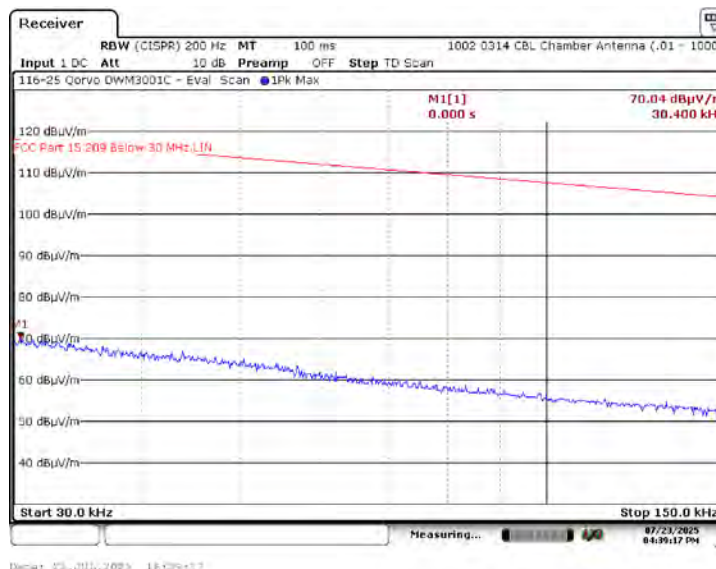
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 9 – X-Axis



6.4.1.22 Parallel – 30 to 150 kHz – Channel 9 – Y-Axis



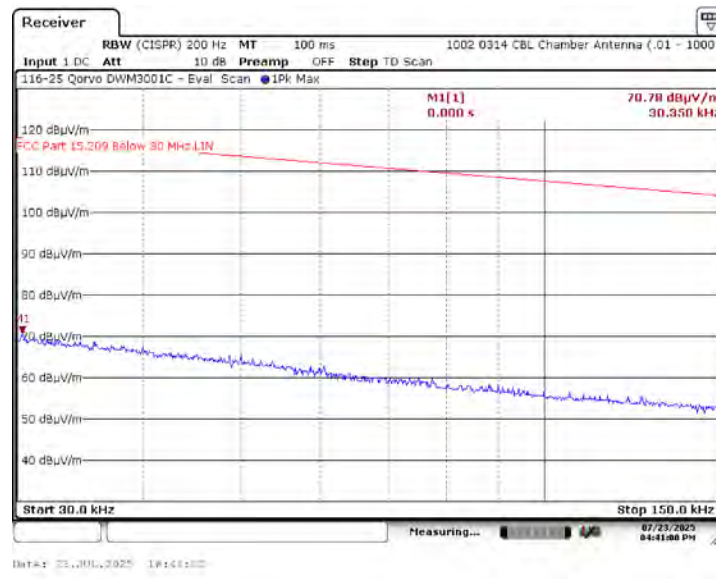
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

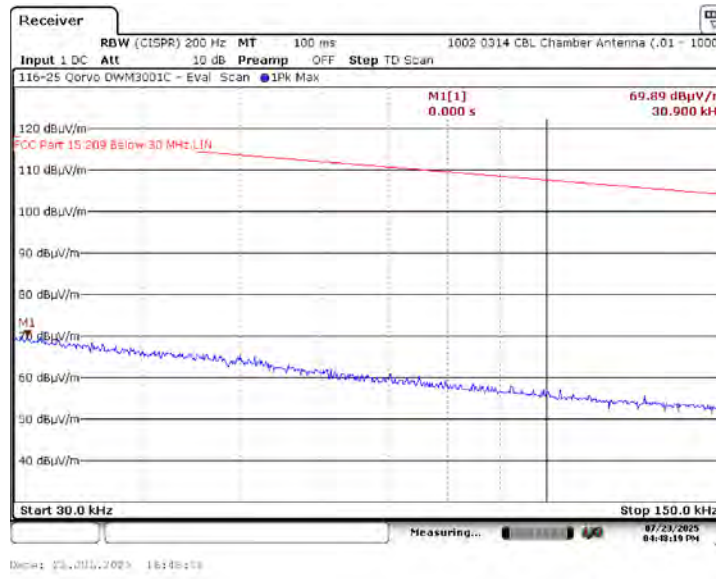
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 9 – Y-Axis



6.4.1.24 Ground Parallel – 30 to 150 kHz – Channel 9 – Y-Axis



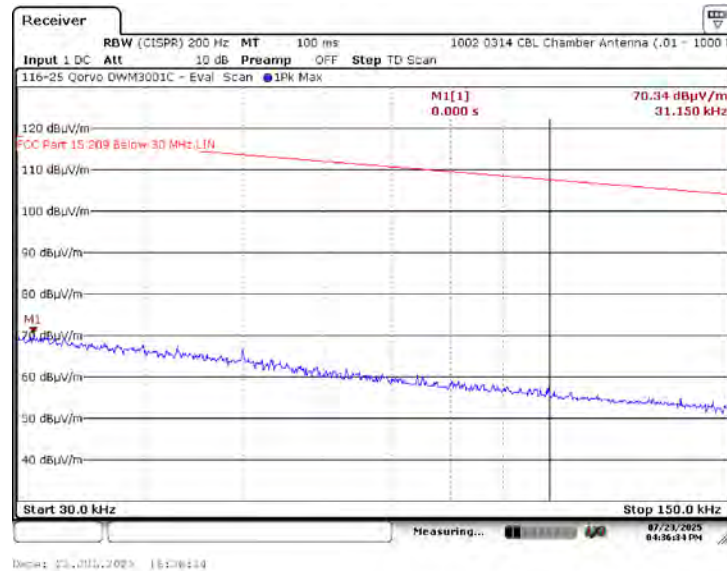
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

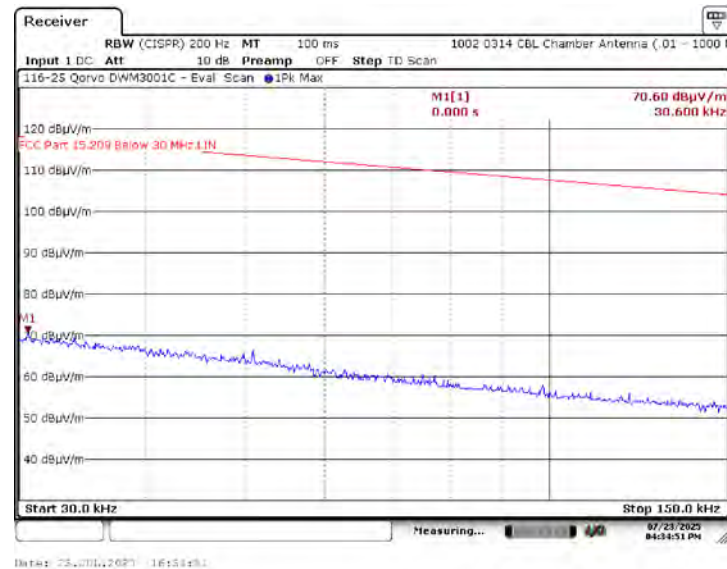
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 9 – Z-Axis



6.4.1.26 Perpendicular – 30 to 150 kHz – Channel 9 – Z-Axis



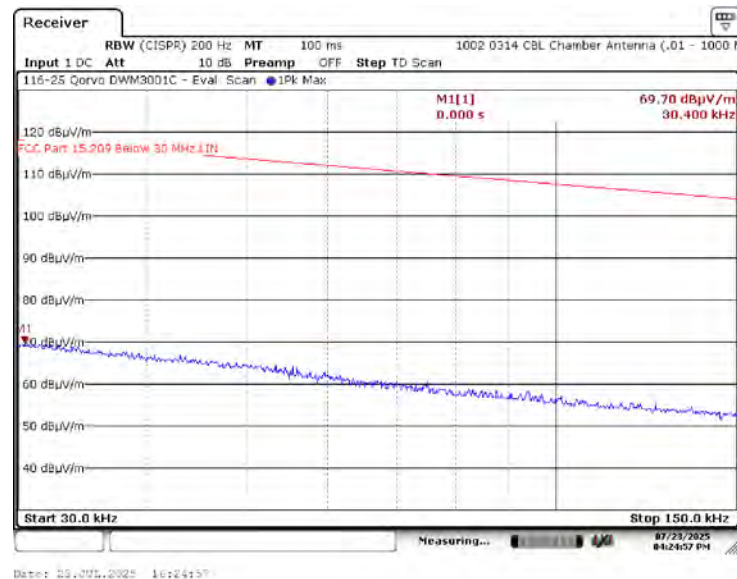
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

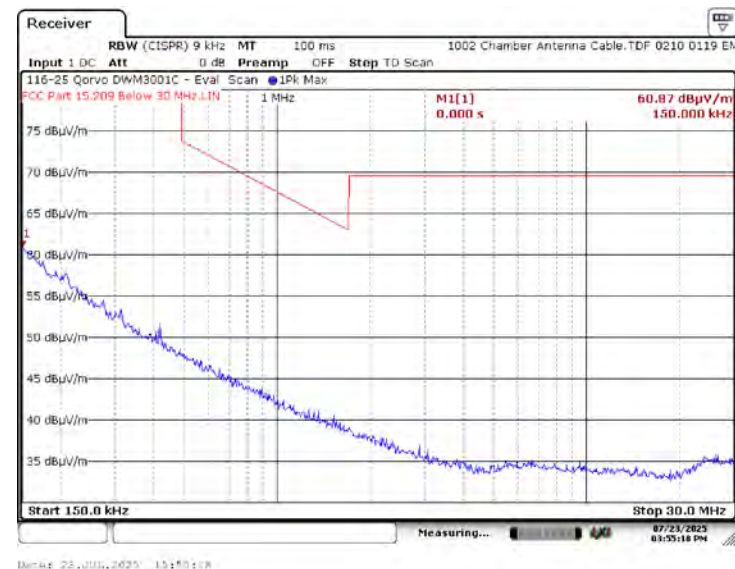
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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 – 30 to 150 kHz – Channel 9 – Z-Axis



6.4.1.28 Parallel – 150 kHz to 30 MHz – Channel 9 – X-Axis



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), 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.

6.4.1.29 Perpendicular – 150 kHz to 30 MHz – Channel 9 – X-Axis



6.4.1.30 Ground Parallel – 150 kHz to 30 MHz – Channel 9 – X-Axis



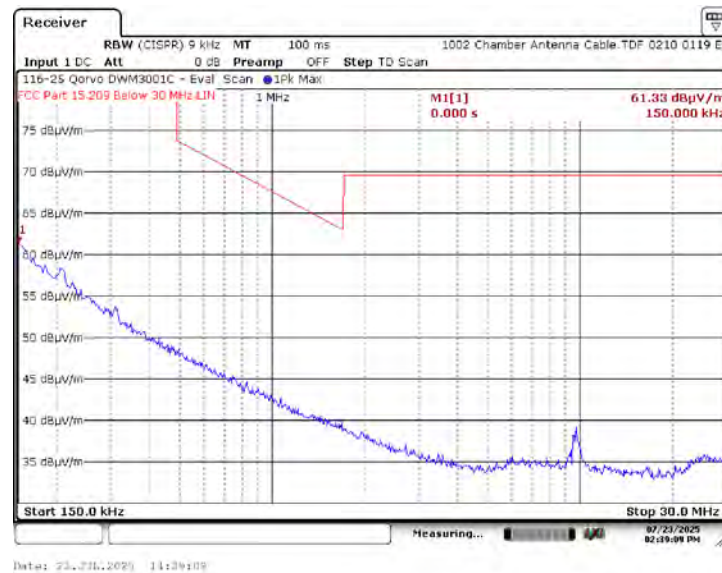
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), 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.

6.4.1.31 Parallel – 150 kHz to 30 MHz – Channel 9 – Y-Axis



6.4.1.32 Perpendicular – 150 kHz to 30 MHz – Channel 9 – Y-Axis



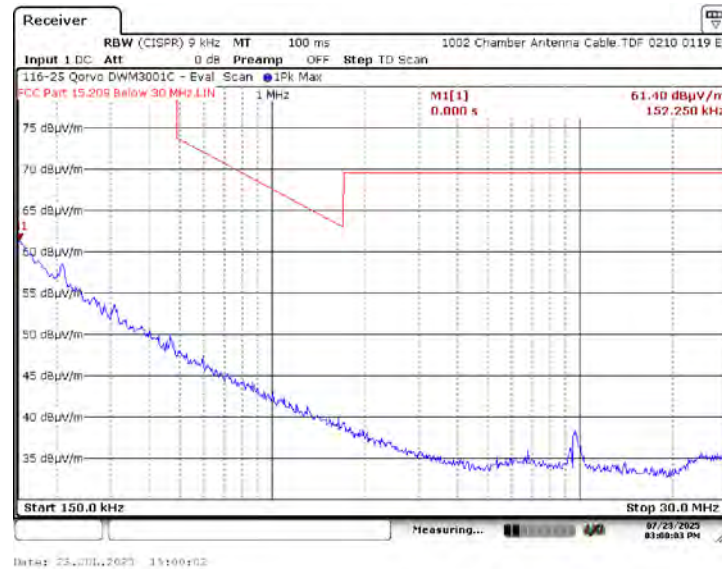
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

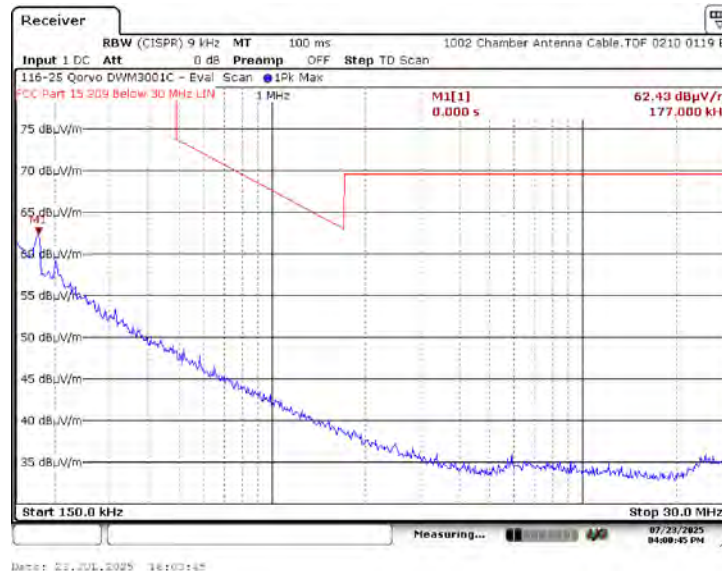
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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

6.4.1.33 Ground Parallel – 150 kHz to 30 MHz – Channel 9 – Y-Axis



6.4.1.34 Parallel – 150 kHz to 30 MHz – Channel 9 – Z-Axis



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

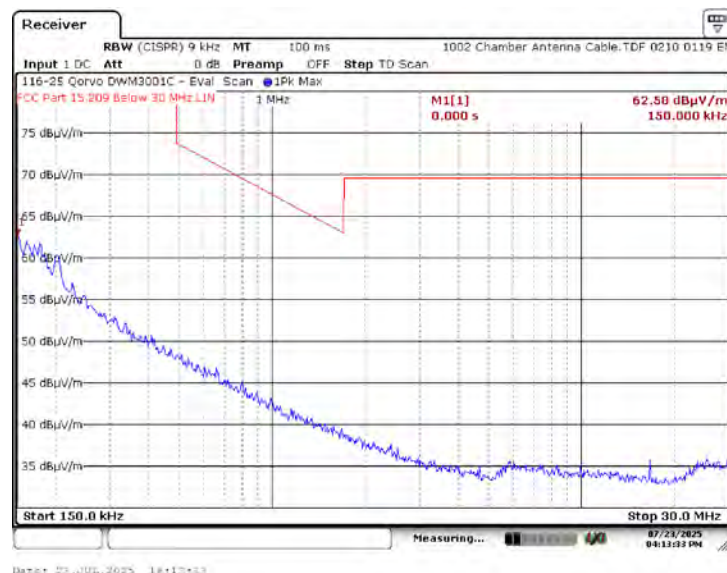
6.4.1. 30 kHz to 960 MHz, measured at 3 Meters

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

6.4.1.35 Perpendicular – 150 kHz to 30 MHz – Channel 9 – Z-Axis



6.4.1.36 Ground Parallel – 150 kHz to 30 MHz – Channel 9 – Z-Axis



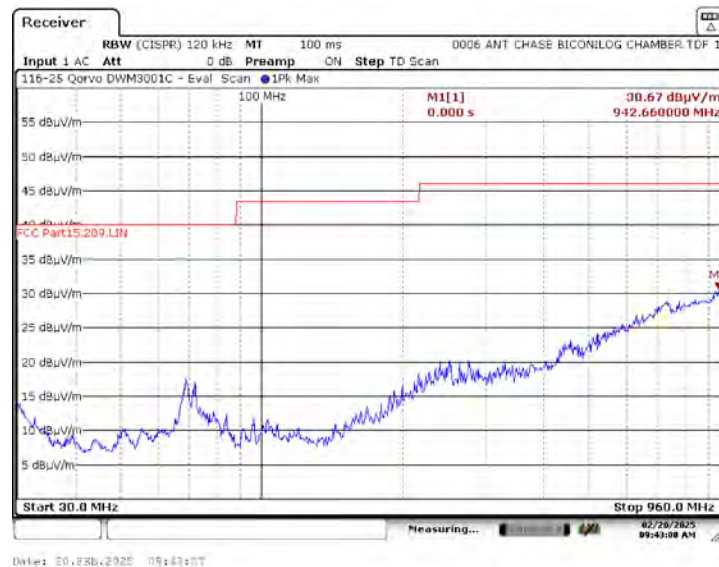
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

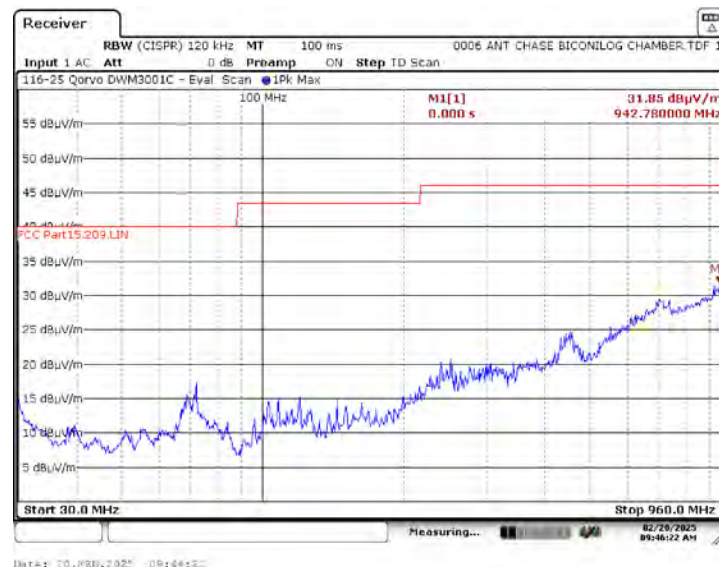
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.37 Horizontal Polarity – 30 to 960 MHz – Channel 5, X-Axis



6.4.1.38 Vertical Polarity – 30 to 960 MHz – Channel 5, X-Axis



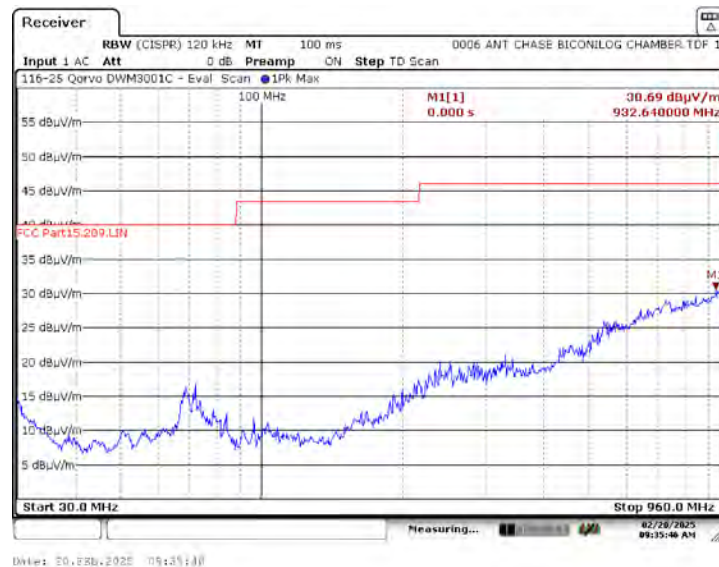
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

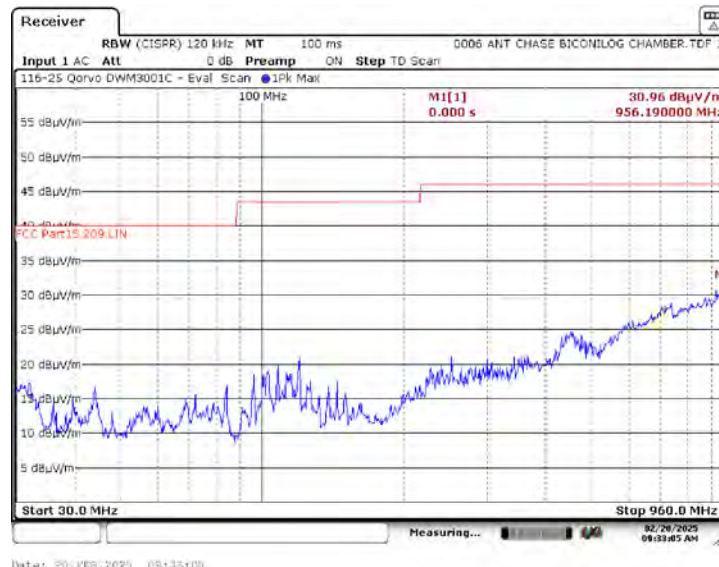
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.39 Horizontal Polarity – 30 to 960 MHz – Channel 5, Y-Axis



6.4.1.40 Vertical Polarity – 30 to 960 MHz – Channel 5, Y-Axis



6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

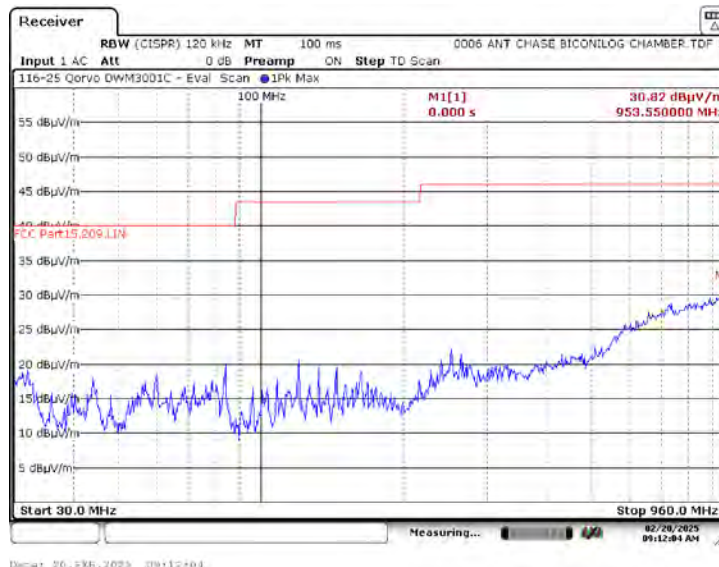
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.41 Horizontal Polarity – 30 to 960 MHz – Channel 5, Z-Axis



6.4.1.42 Vertical Polarity – 30 to 960 MHz – Channel 5, Z-Axis



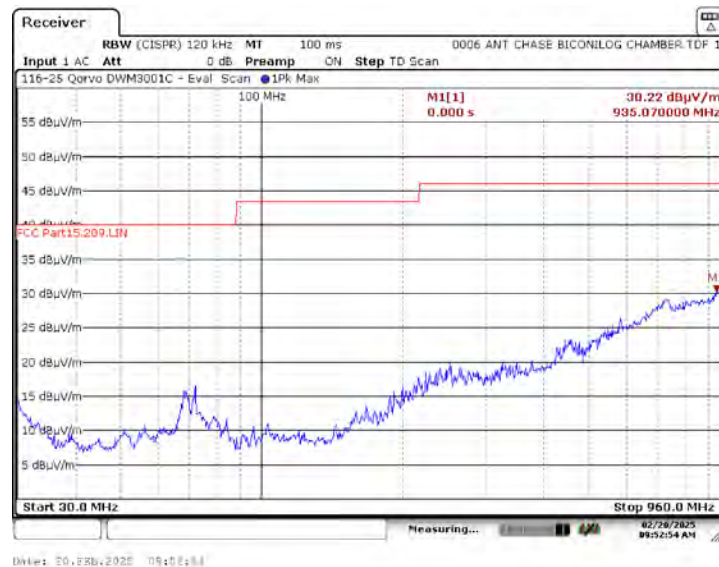
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

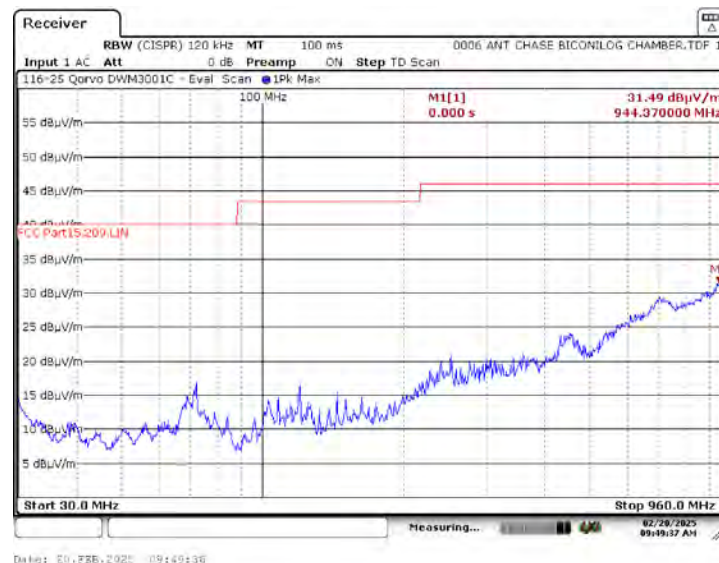
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.43 Horizontal Polarity – 30 to 960 MHz – Channel 9, X-Axis



6.4.1.44 Vertical Polarity – 30 to 960 MHz – Channel 9, X-Axis



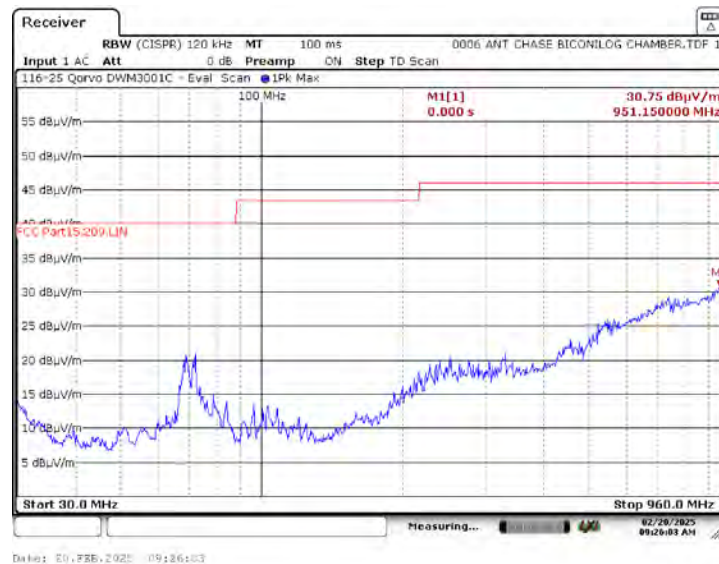
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

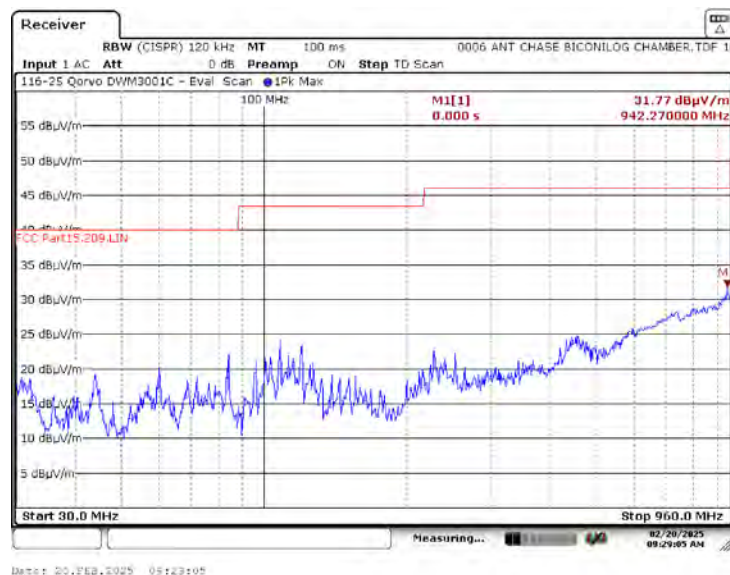
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.45 Horizontal Polarity – 30 to 960 MHz – Channel 9, Y-Axis



6.4.1.46 Vertical Polarity – 30 to 960 MHz – Channel 9, Y-Axis



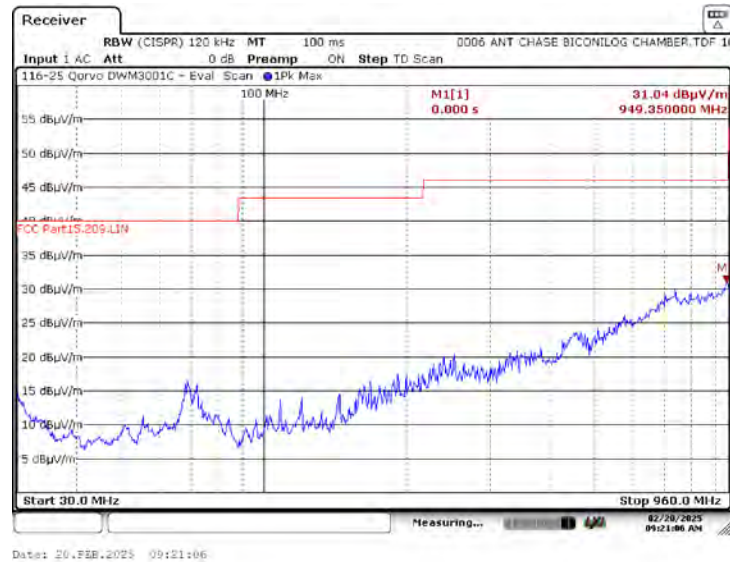
6. Measurement Data (continued)

6.4. Spurious Radiated Emissions (RSS-220 5.3.1 (c), continued)

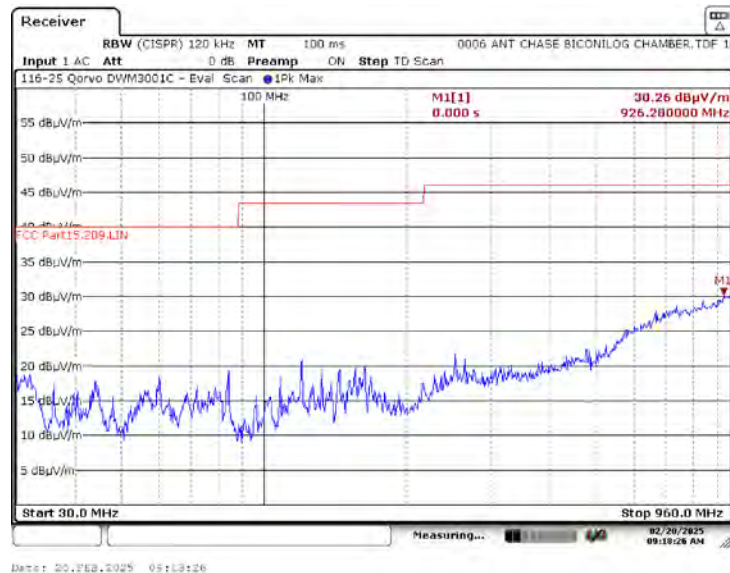
6.4.1. 30 MHz to 960 MHz, measured at 3 Meters

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

6.4.1.47 Horizontal Polarity – 30 to 960 MHz – Channel 9, Z-Axis



6.4.1.48 Vertical Polarity – 30 to 960 MHz – Channel 9, Z-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions above 960 MHz (RSS-220 5.3.1 (d)))

Requirement: The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz: The RMS average measurement is based on the use of a spectrum analyzer with a resolution bandwidth of 1 MHz, an RMS detector, and a 1 millisecond or less averaging time.

Emissions from digital circuitry (used only to enable the operation of the UWB transmitter and that does not control additional functions or capabilities) shall comply with the average and peak power limits applicable to the UWB transmitter. If it can be clearly demonstrated that an emission from a UWB transmitter is due solely to emissions from digital circuitry contained within the transmitter, and that the emission is not intended to be radiated from the transmitter's antenna, the limits for emissions from digital circuitry prescribed in RSS-Gen apply to that emission rather than the UWB limits.

The EIRP in terms of dBm, can be converted to a field strength, in dB μ V/m at 3 Meters by adding 95.2.

Frequency (MHz)	EIRP (dBm)	EIRP at 3 Meters (dBμV/m)
960 - 1610	-75.3	19.9
1610 - 4750	-70.0	25.2
4750 - 10600	-41.3	53.9
Above 10600	-61.3	33.9

Frequency Range:	960 MHz to 40 GHz
Measurement Distance:	1 Meter and 0.3 Meter
EMI Receiver IF Bandwidth:	1 MHz
EMI Receiver Avg Bandwidth	10 MHz
Detector Function:	RMS 1 mS Average as defined in Annex A (2)

6. Measurement Data (continued)

6.5. Spurious Radiated Emissions above 960 MHz (RSS-220 5.3.1 (d)))

Notes: Measurements made from 960 MHz to 18 GHz were made in a semi-anechoic chamber at 1 Meter using a -9.54 dB distance offset was programmed into the spectrum analyzer.

Low Frequency noise in the 960 to 1610 MHz range is digital noise radiating off of the support board / usb interface and not intended to radiate out of the devices antenna demonstrated by using a 2nd board that provides an SMA connector and using a 50 ohm termination.

Measurements made from 8 to 18 GHz were done with the aid of a High Pass Filter before the low noise amplifier.

The narrowband signal at 12.979 GHz shown in plots 6.5.13 to 6.5.18 is present with the transmitter turned off and therefore is subject to the limits of RSS-Gen per RSS-220 Section 4 (m).

Measurements made from 18 to 40 GHz were done at 0.3 meters and a -20.00 dB distance offset was programmed into the spectrum analyzer.

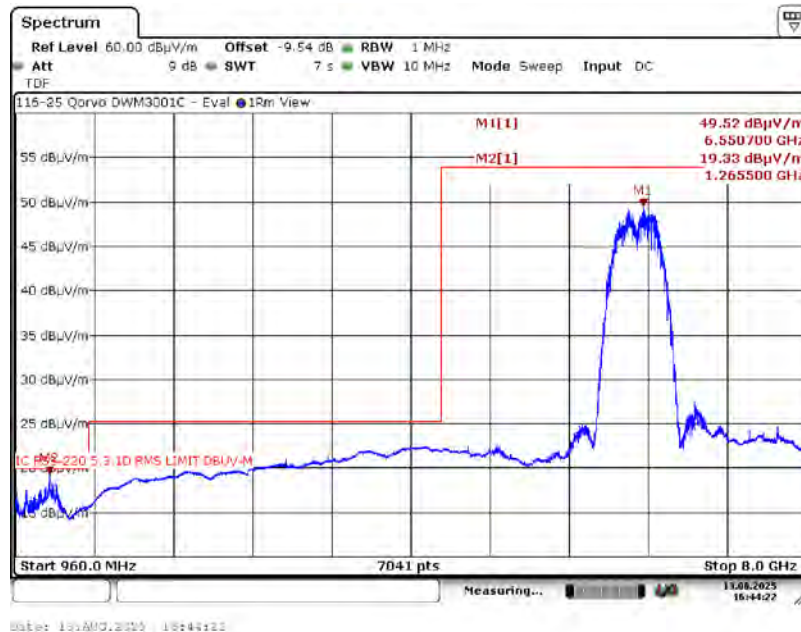
Sample Calculation: Final Result (dB μ V/m) = Measurement Value (dB μ V) + Antenna Factor (dB/m) + Cable Loss (dB) – Pre-amplifier Gain (dB) Internal or External.

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

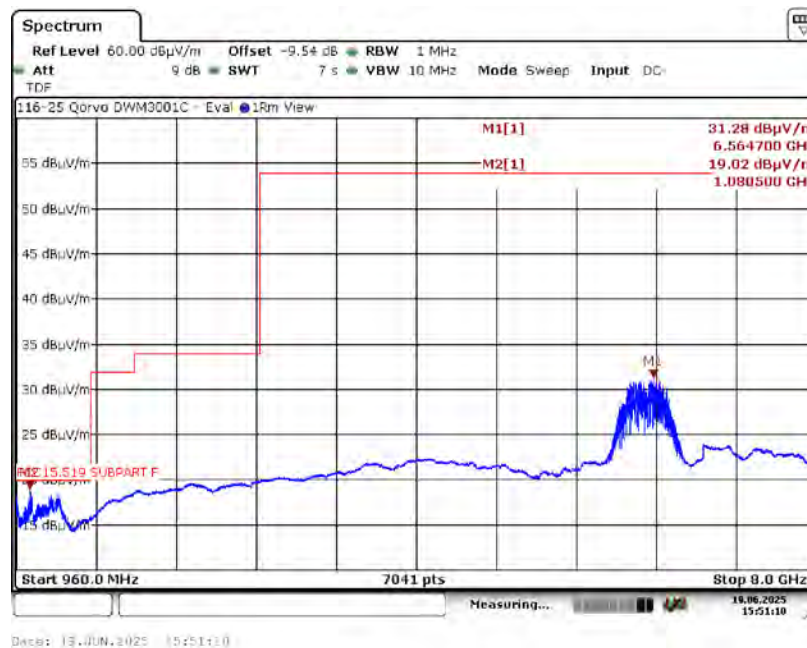
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d)) continued)

6.5.1. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, X-Axis



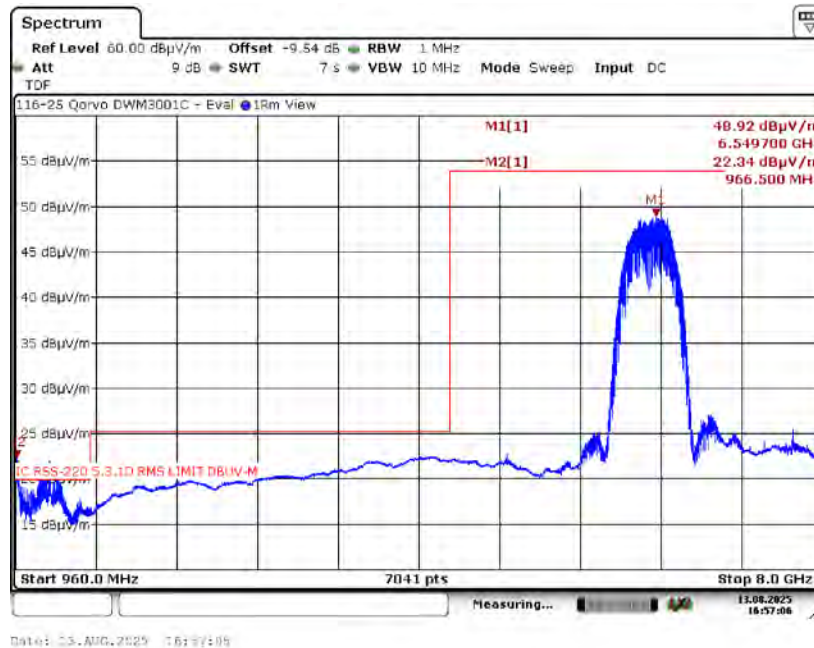
6.5.2. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, X-Axis – SMA Term



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d)) continued)

6.5.3. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, X-Axis



6.5.4. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, X-Axis – SMA Term



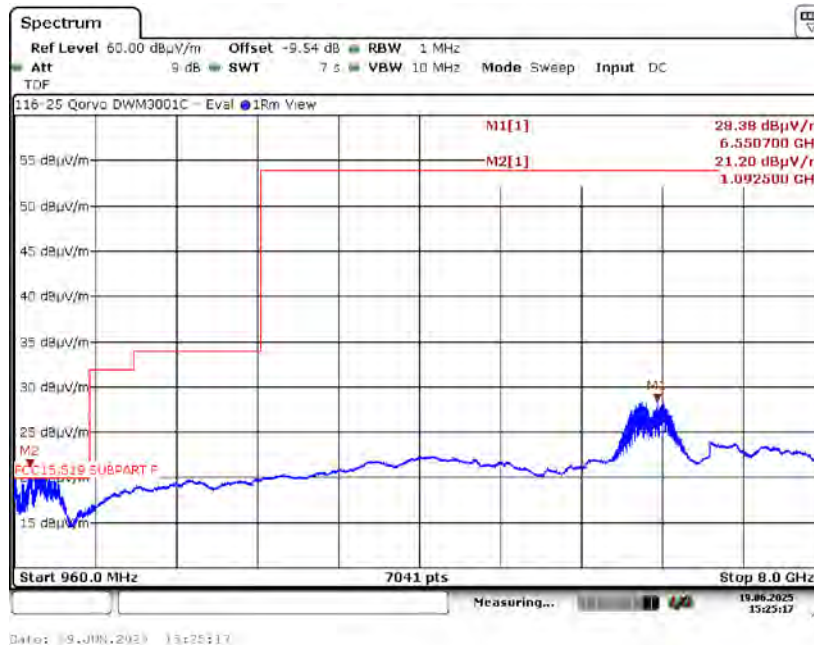
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.5. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, Y-Axis



6.5.6. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, Y-Axis – SMA Term



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.7. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, Y-Axis



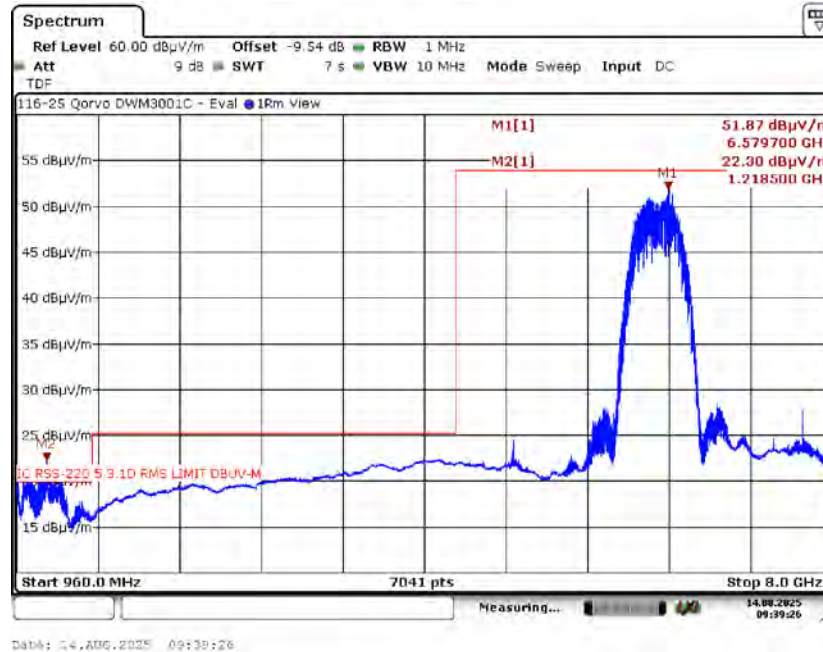
6.5.8. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, Y-Axis – SMA Term



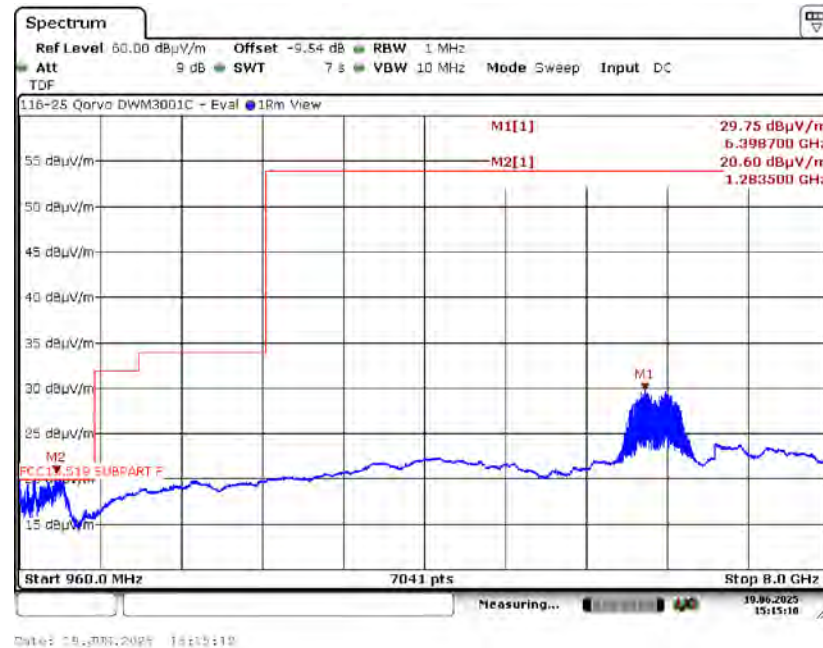
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.9. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, Z-Axis



6.5.10. 960 MHz to 8 GHz Horizontal at 1 Meter – Channel 5, Z-Axis – SMA Term



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.11. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, Z-Axis



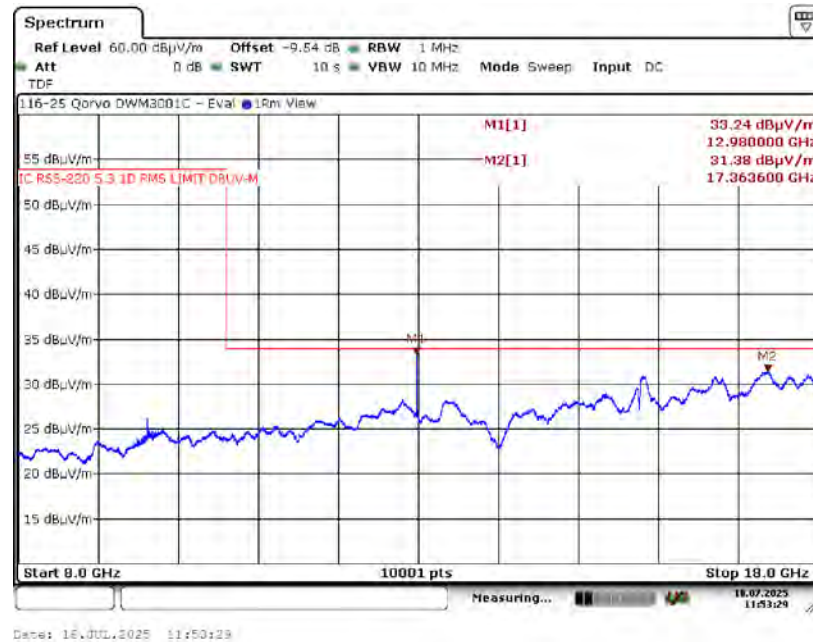
6.5.12. 960 MHz to 8 GHz Vertical at 1 Meter – Channel 5, Z-Axis – SMA term



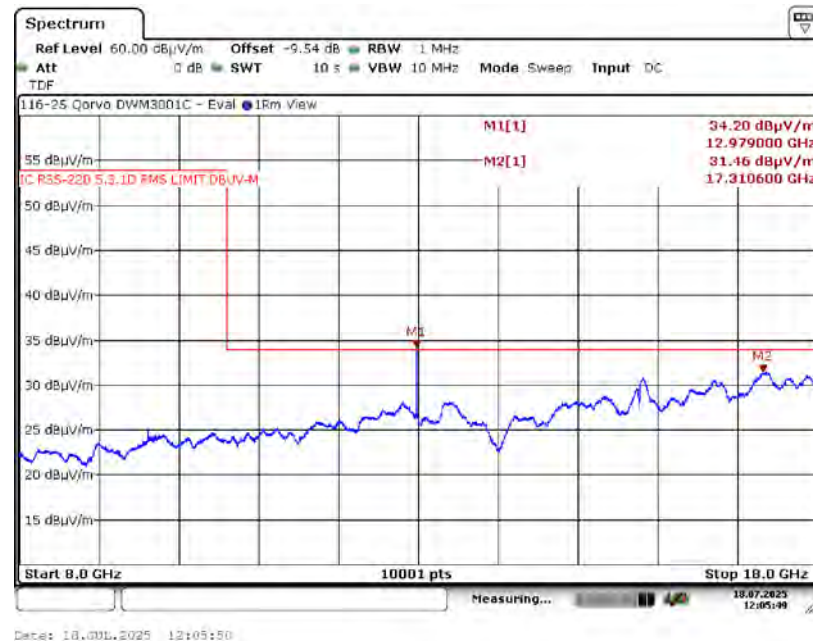
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.15. 8 to 18 GHz Horizontal at 1 Meter – Channel 5, Y-Axis



6.5.16. 8 to 18 GHz Vertical at 1 Meter – Channel 5, Y-Axis



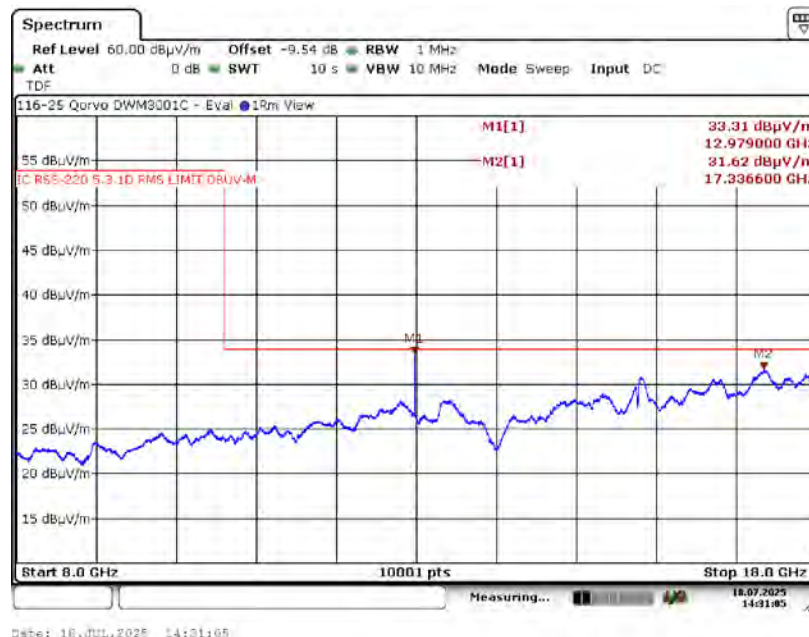
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.17. 8 to 18 GHz Horizontal at 1 Meter – Channel 5, Z-Axis



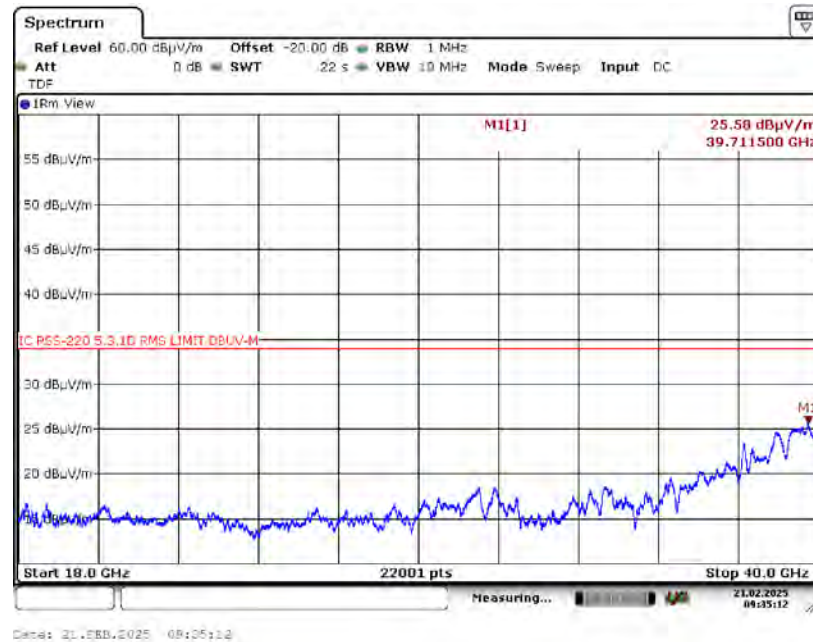
6.5.18. 8 to 18 GHz Vertical at 1 Meter – Channel 5, Z-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.19. 18 to 40 GHz Horizontal at 0.3 Meter – Channel 5, X-Axis



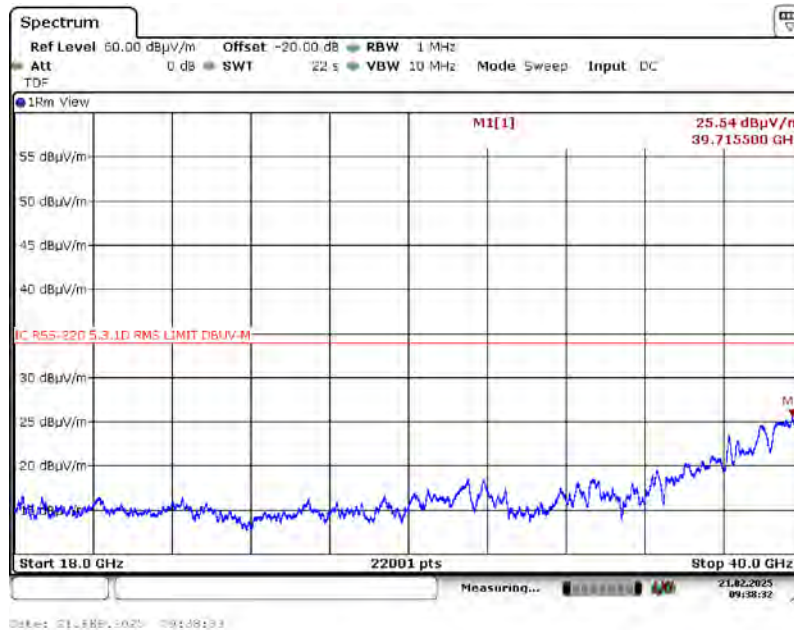
6.5.20. 18 to 40 GHz Vertical at 0.3 Meter – Channel 5, X-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.21. 18 to 40 GHz Vertical at 0.3 Meter – Channel 5, Y-Axis



6.5.22. 18 to 40 GHz Vertical at 0.3 Meter – Channel 5, Y-Axis



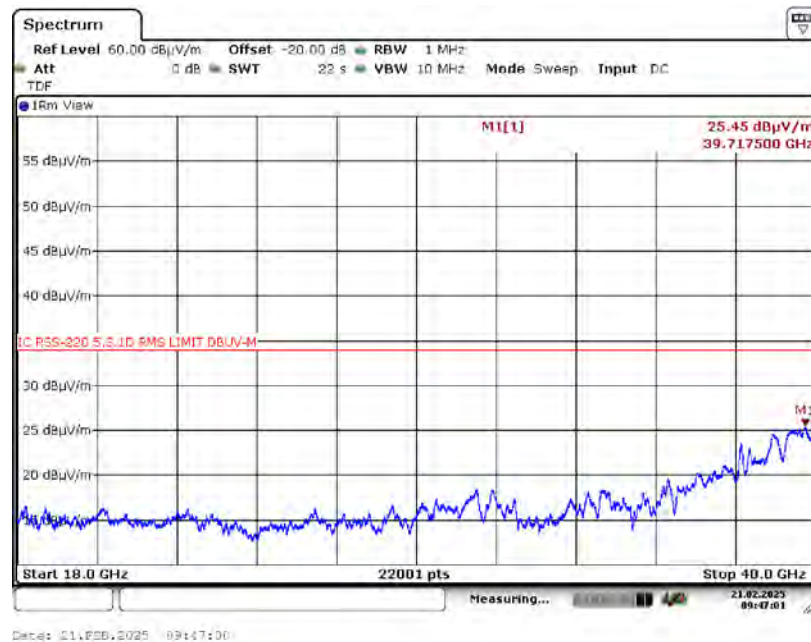
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.23. 18 to 40 GHz Vertical at 0.3 Meter – Channel 5, Z-Axis



6.5.24. 18 to 40 GHz Vertical at 0.3 Meter – Channel 5, Z-Axis



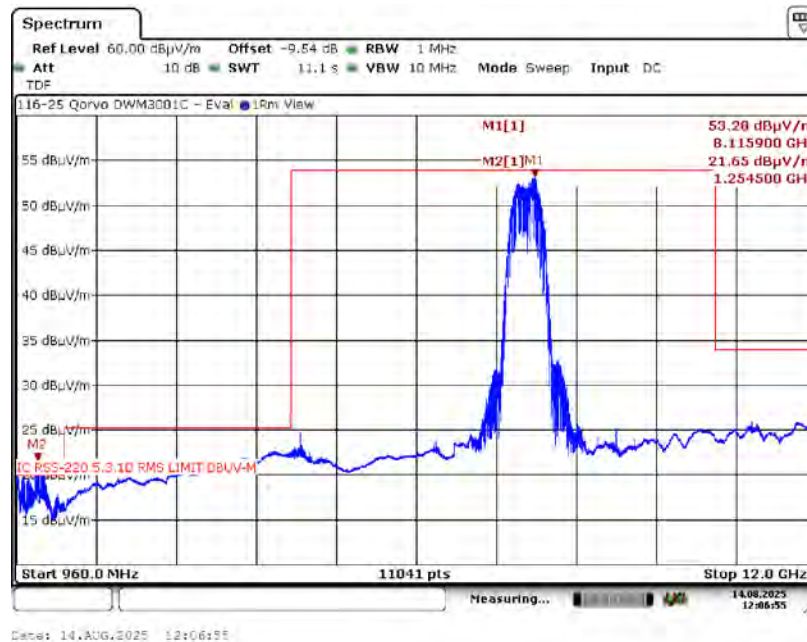
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.25. 960 MHz to 12 GHz Horizontal at 1 Meter – Channel 9, X-Axis



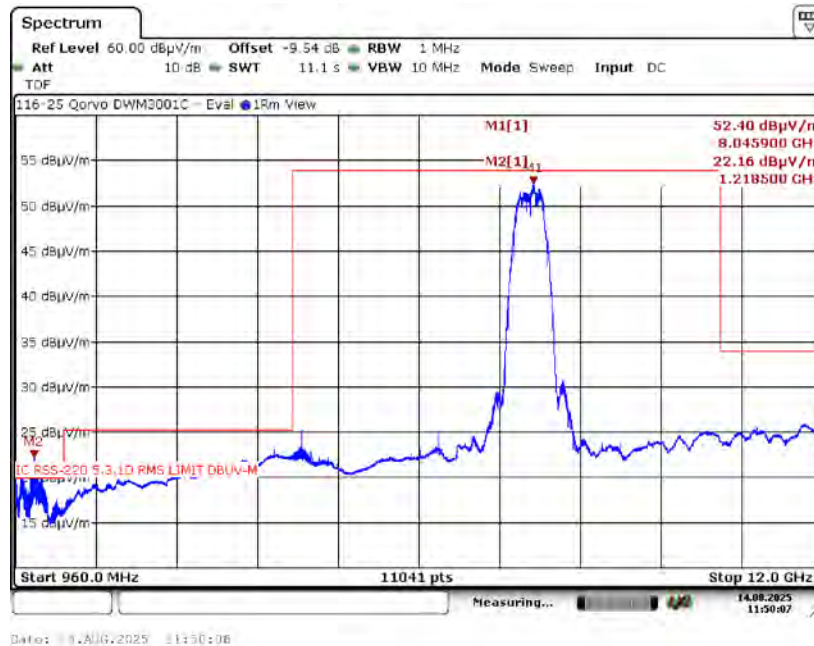
6.5.26. 960 MHz to 12 GHz Vertical at 1 Meter – Channel 9, X-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.27. 960 MHz to 12 GHz Horizontal at 1 Meter – Channel 9, Y-Axis



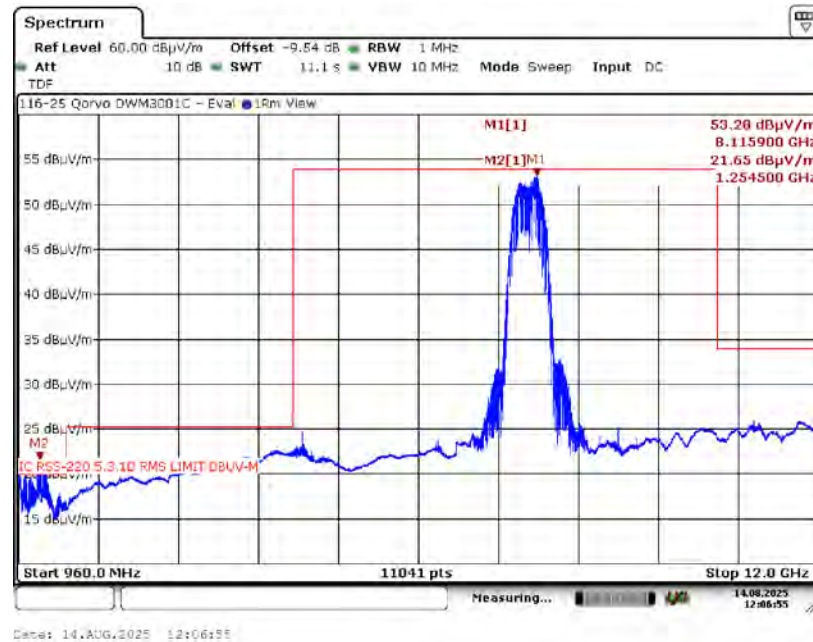
6.5.28. 960 MHz to 12 GHz Vertical at 1 Meter – Channel 9, Y-Axis



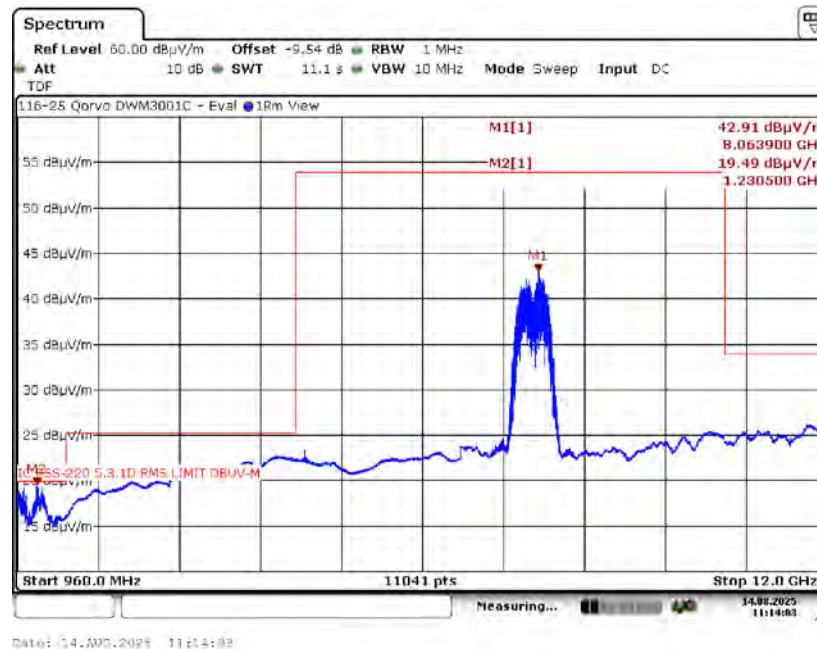
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.29. 960 MHz to 12 GHz Horizontal at 1 Meter – Channel 9, Z-Axis



6.5.30. 960 MHz to 12 GHz Vertical at 1 Meter – Channel 9, Z-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.31. 12 to 18 GHz Horizontal at 1 Meter – Channel 9, X-Axis



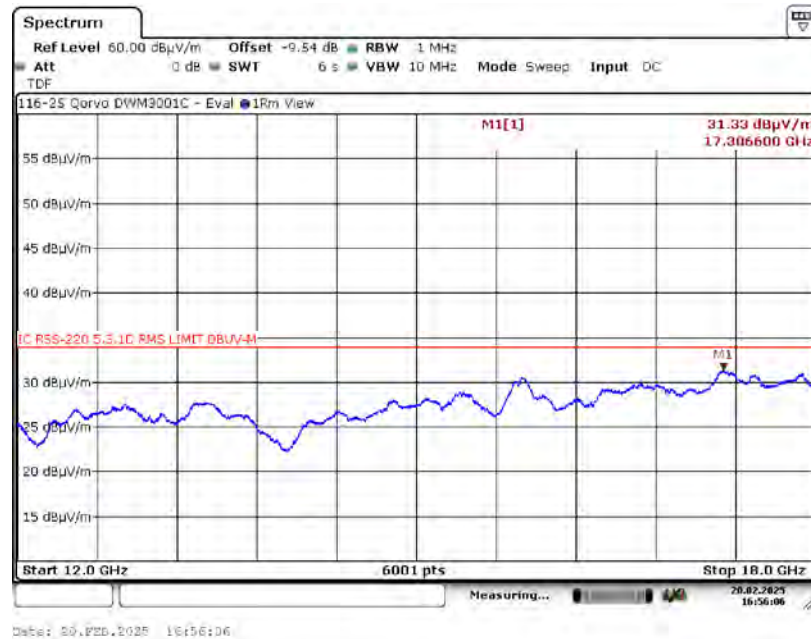
6.5.32. 12 to 18 GHz Vertical at 1 Meter – Channel 9, X-Axis



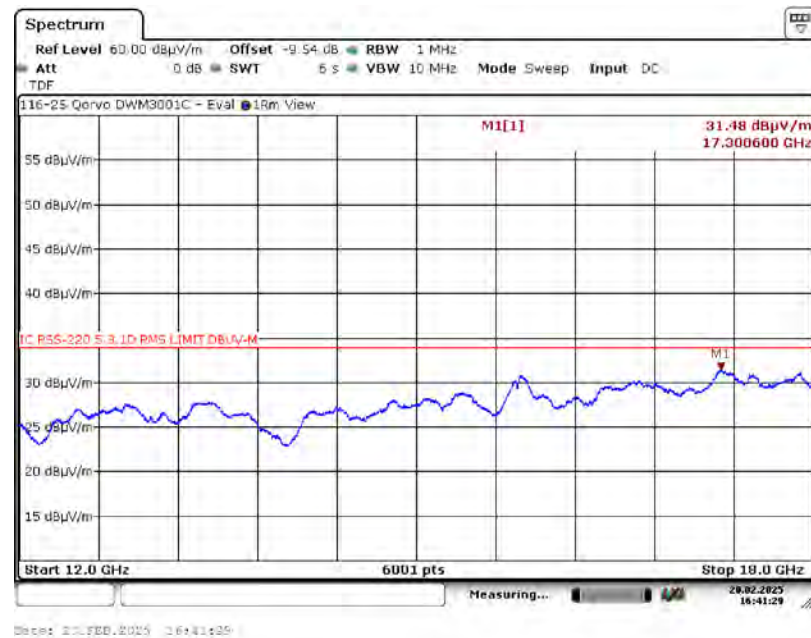
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (RSS-220 5.3.1 (d) continued)

6.5.33. 12 to 18 GHz Horizontal at 1 Meter – Channel 9, Y-Axis



6.5.34. 12 to 18 GHz Vertical at 1 Meter – Channel 9, Y-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (15.519 (c) continued)

6.5.37. 18 to 40 GHz Horizontal at 0.3 Meter – Channel 9, X-Axis



6.5.38. 18 to 40 GHz Vertical at 0.3 Meter – Channel 9, X-Axis



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (15.519 (c) continued)

6.5.39. 18 to 40 GHz Horizontal at 0.3 Meter – Channel 9, Y-Axis



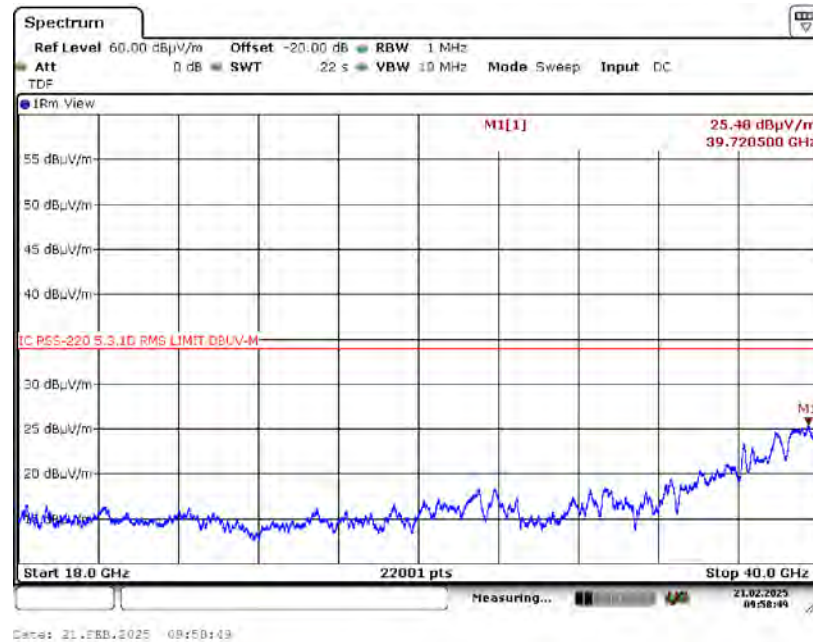
6.5.40. 18 to 40 GHz Vertical at 0.3 Meter – Channel 9, Y-Axis



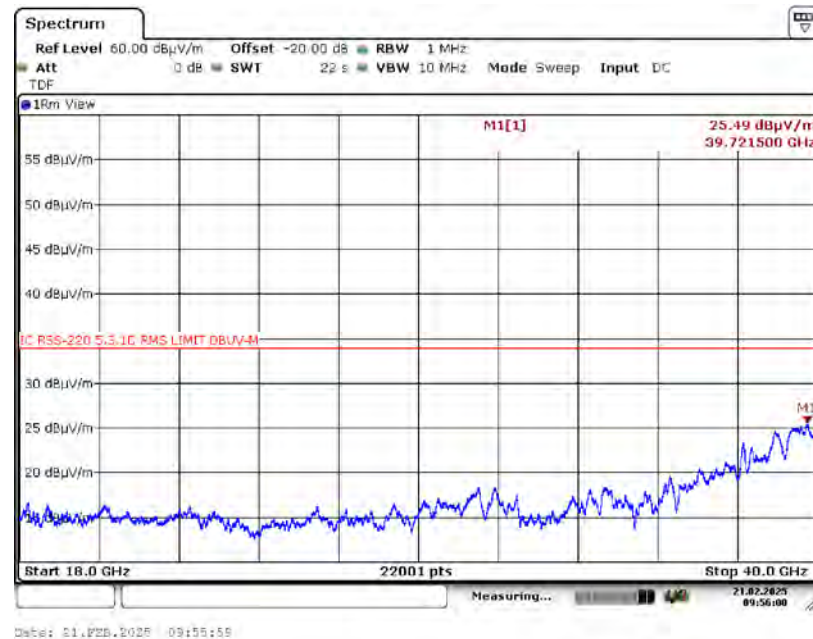
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (15.519 (c) continued)

6.5.41. 18 to 40 GHz Horizontal at 0.3 Meter – Channel 9, Z-Axis



6.5.42. 18 to 40 GHz Vertical at 0.3 Meter – Channel 9, Z-Axis



6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e))

Requirement: In addition to the radiated emission limits specified in the table in paragraph (d) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

Frequency (MHz)	EIRP (dBm)	EIRP at 3 Meters (dBμV/m)
1164 - 1240	-85.3	9.9
1559 - 1610	-85.3	9.9

6.6.1. Measurement & Equipment Setup

EMI Receiver IF Bandwidth: 1 kHz
EMI Receiver Avg Bandwidth: 10 kHz
Detector Functions: RMS Average, 1mS / point

6.6.2. 1164 to 1240 MHz & 1559 to 1610 MHz

There were no broadband emissions related to the UWB transmitter. Measurements were made at 1.0 Meter with a -9.54 dB distance correction factor. The -85.3 dBm limit was converted to a field strength limit of 9.9 dBuV/m using a factor of 95.2.

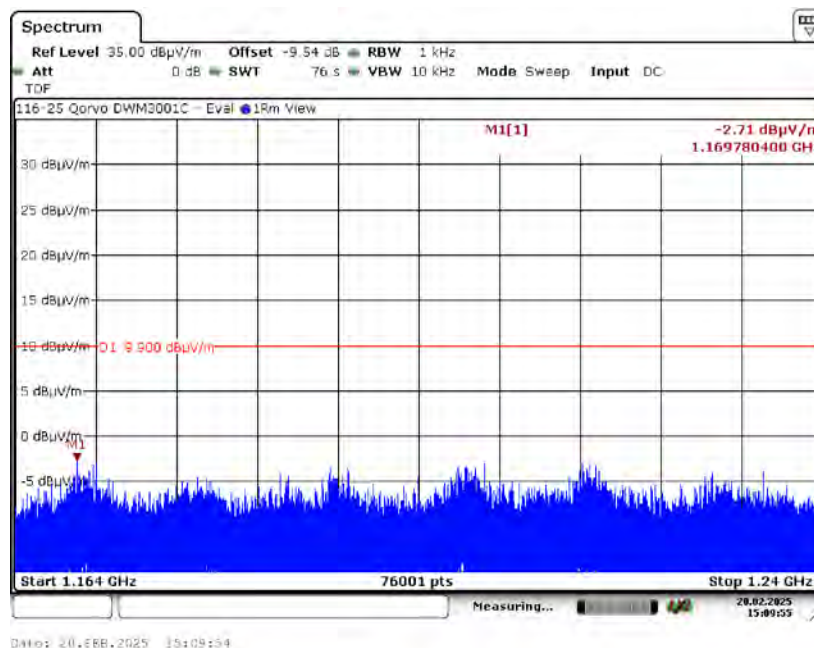
Sample Calculation: Final Result (dBμV/m) = Measurement Value (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) – Pre-amplifier Gain (dB) Internal or External.

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

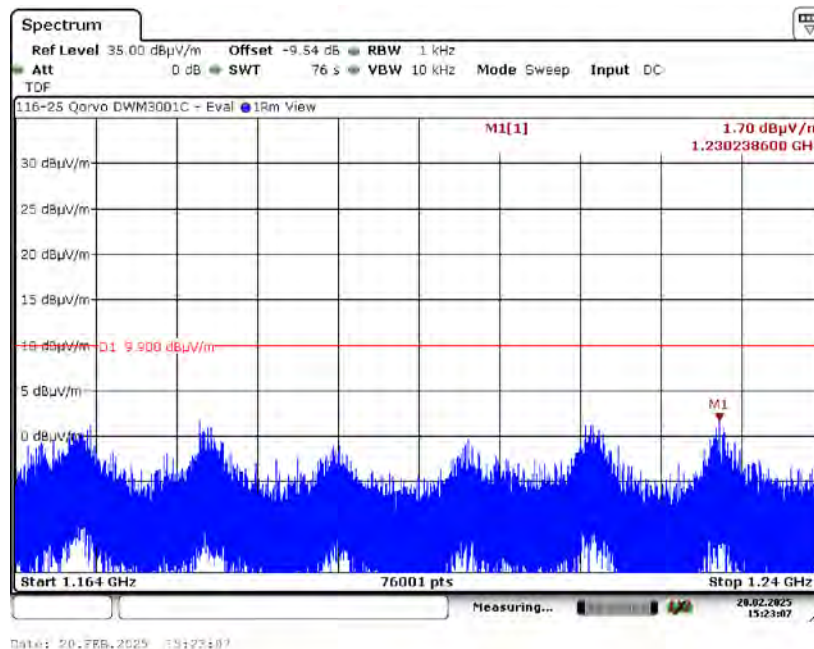
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (5.3.1 (e) continued)

6.6.3.1 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 5, X-Axis



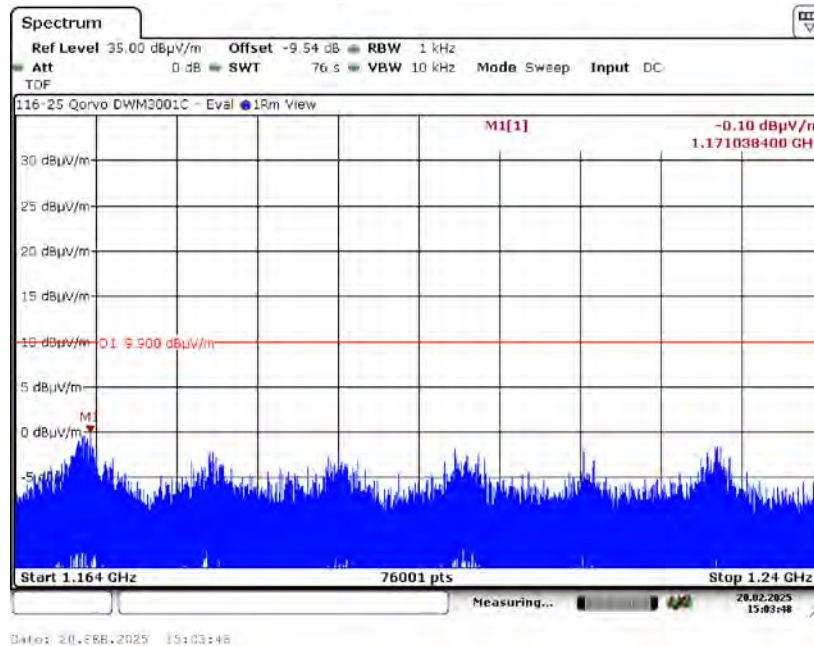
6.6.3.2 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 5, X-Axis



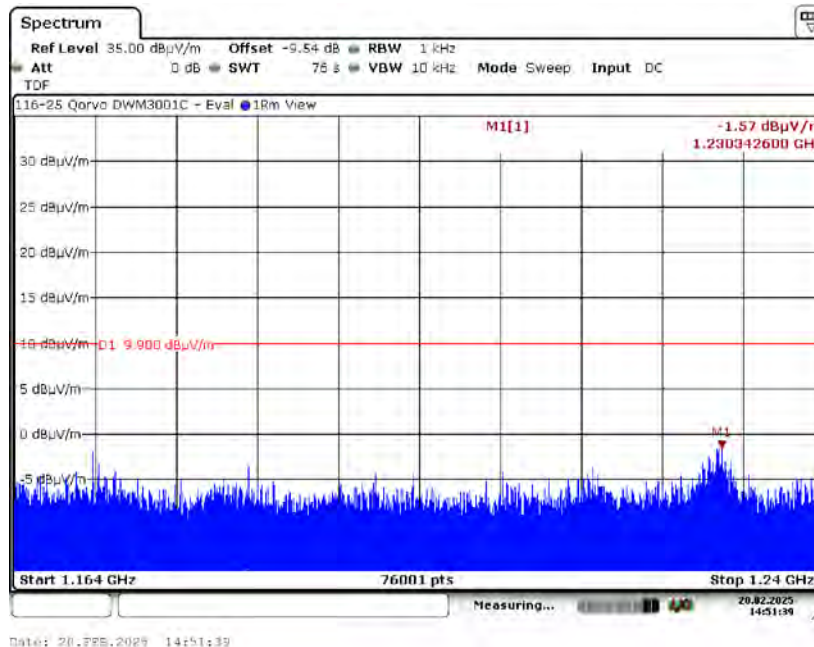
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.3 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 5, Y-Axis



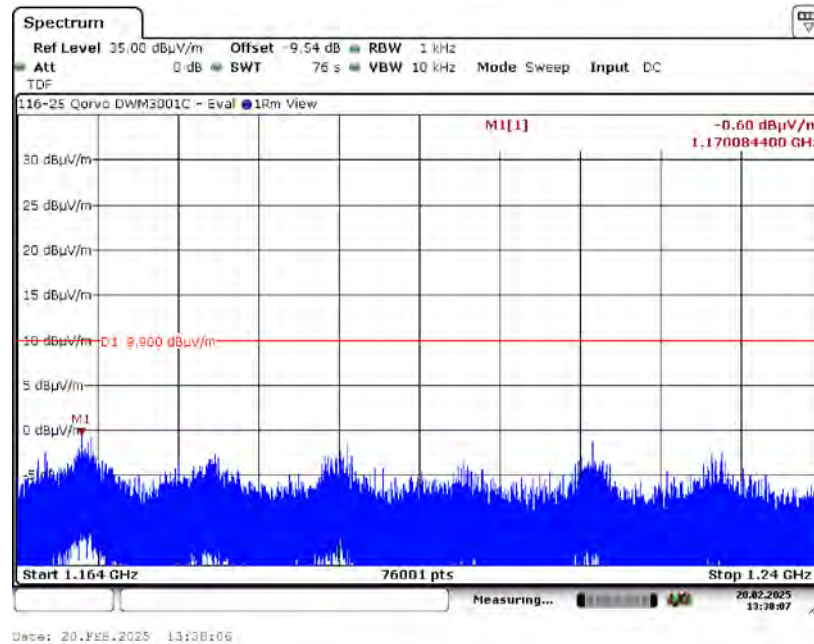
6.6.3.4 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 5, Y-Axis



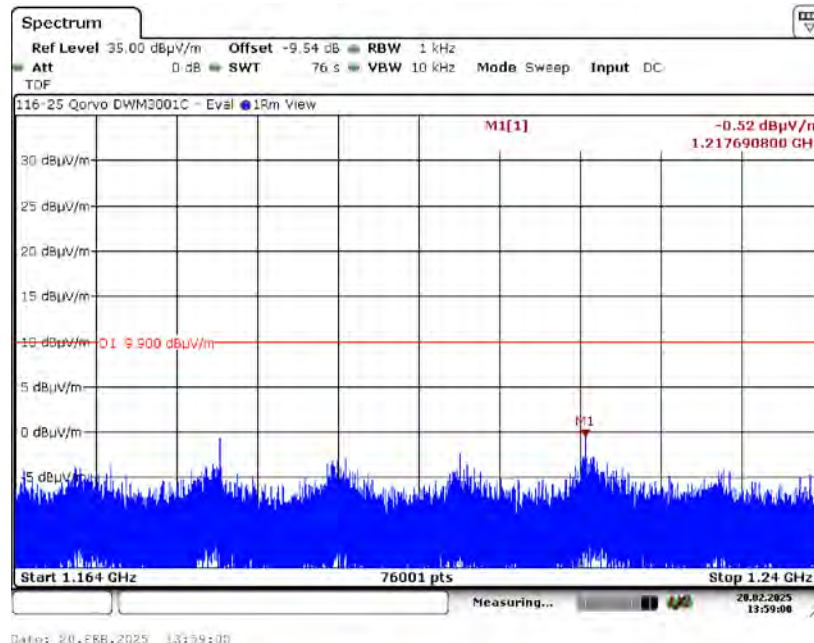
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.5 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 5, Z-Axis



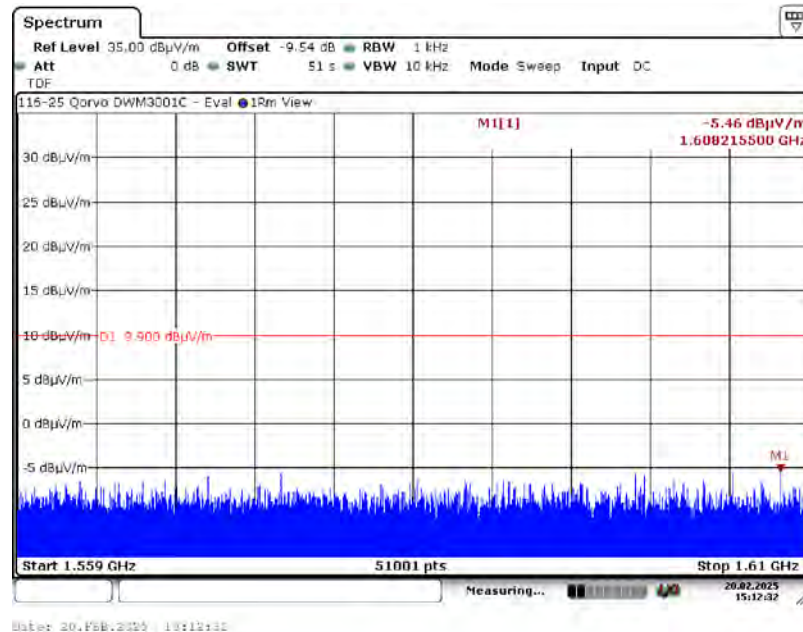
6.6.3.6 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 5, Z-Axis



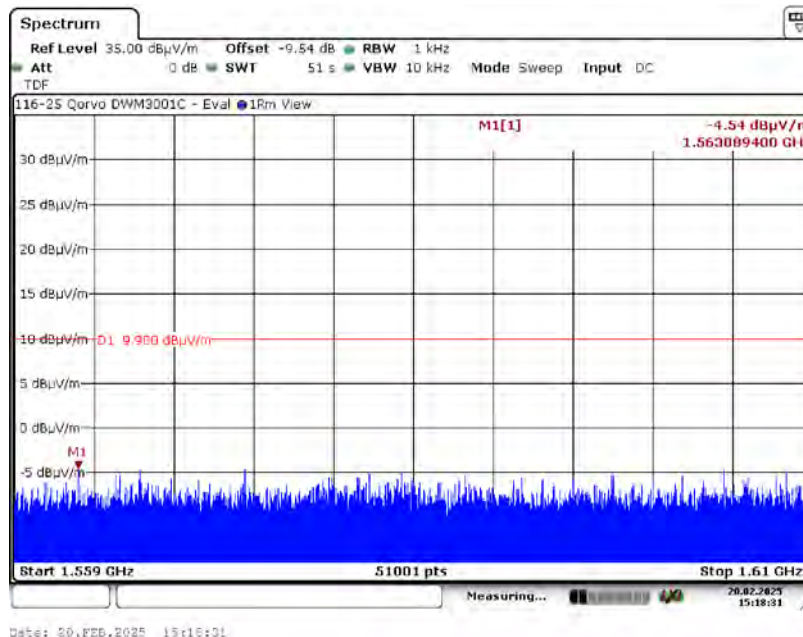
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.7 Horizontal Measurement Polarity 1559 to 1610 MHz – Channel 5, X-Axis



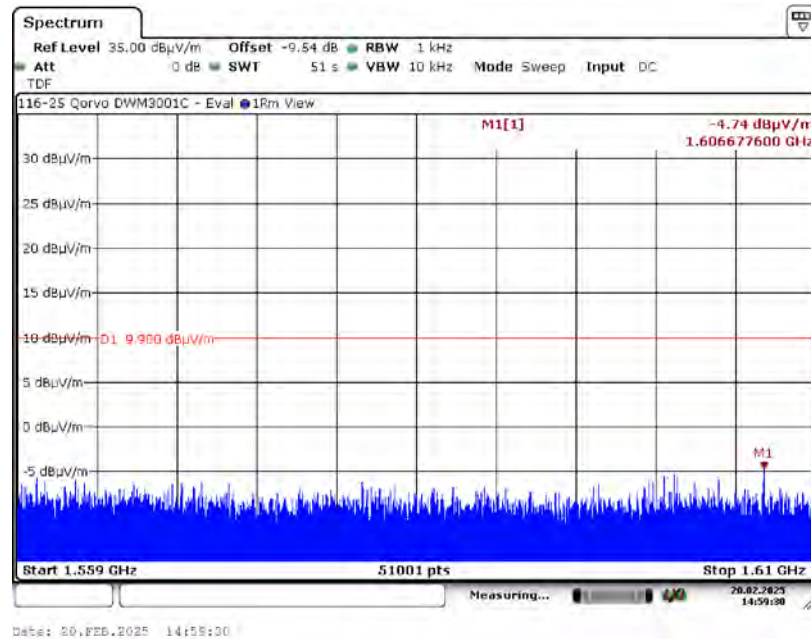
6.6.3.8 Vertical Measurement Polarity 1559 to 1610 MHz – Channel 5, X-Axis



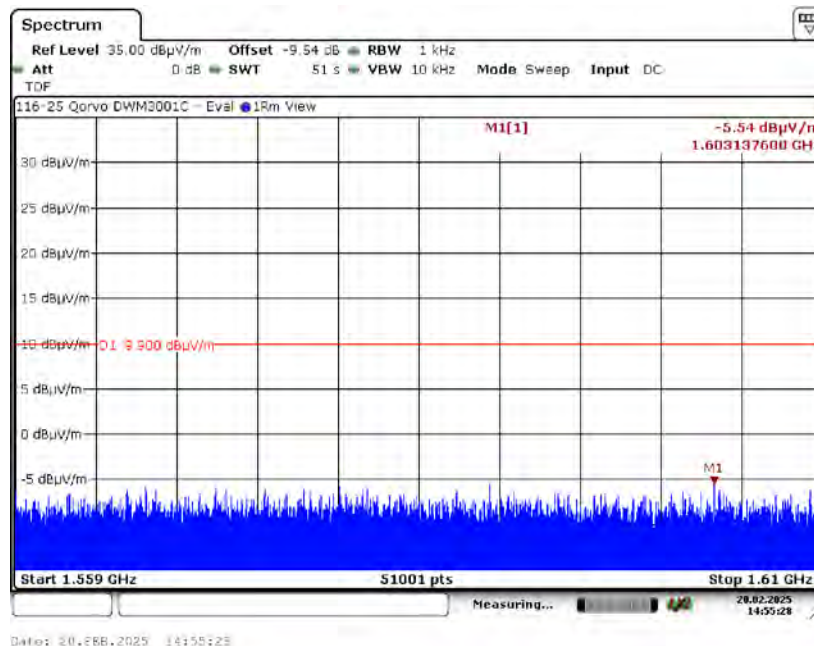
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.9 Horizontal Measurement Polarity 1559 to 1610 MHz – Channel 5, Y-Axis



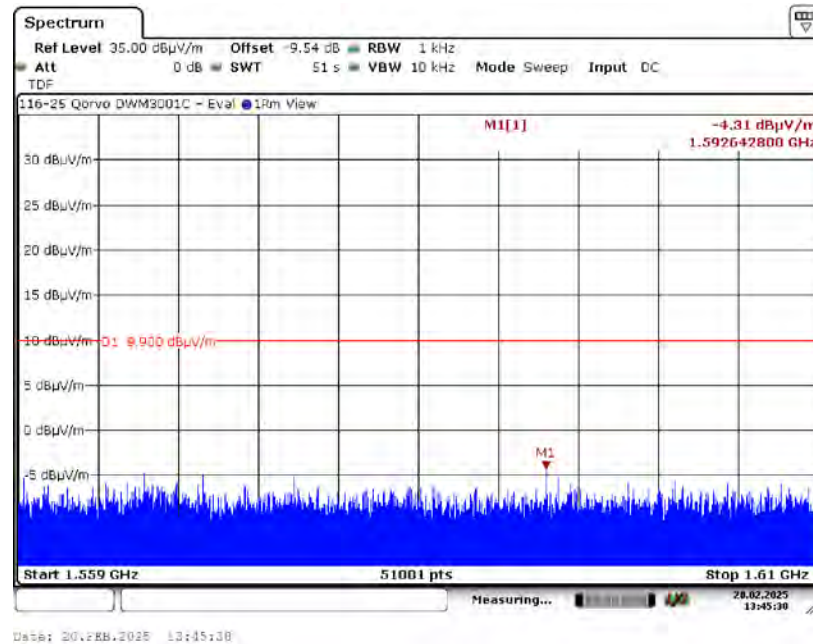
6.6.3.10 Vertical Measurement Polarity 1559 to 1610 MHz – Channel 5, Y-Axis



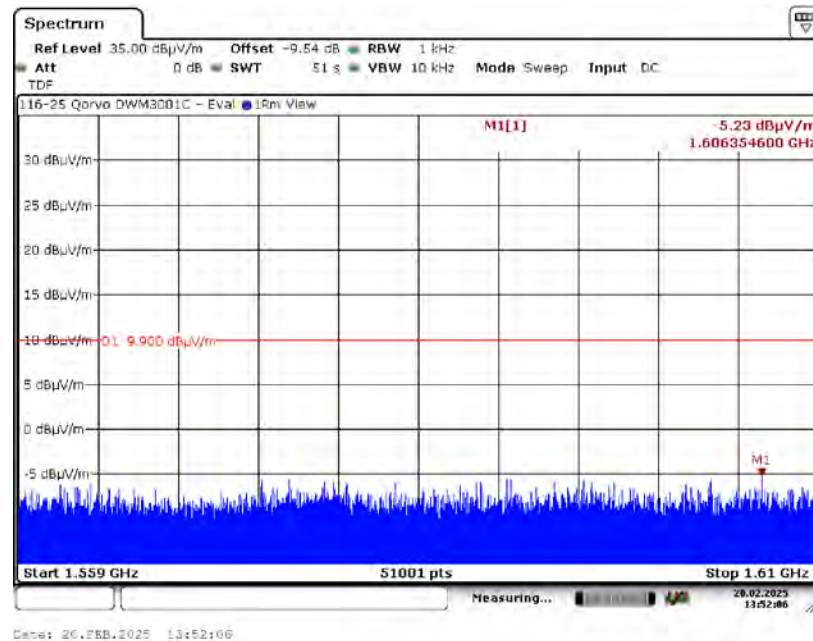
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.11 Horizontal Measurement Polarity 1559 to 1610 MHz – Channel 5, Z-Axis



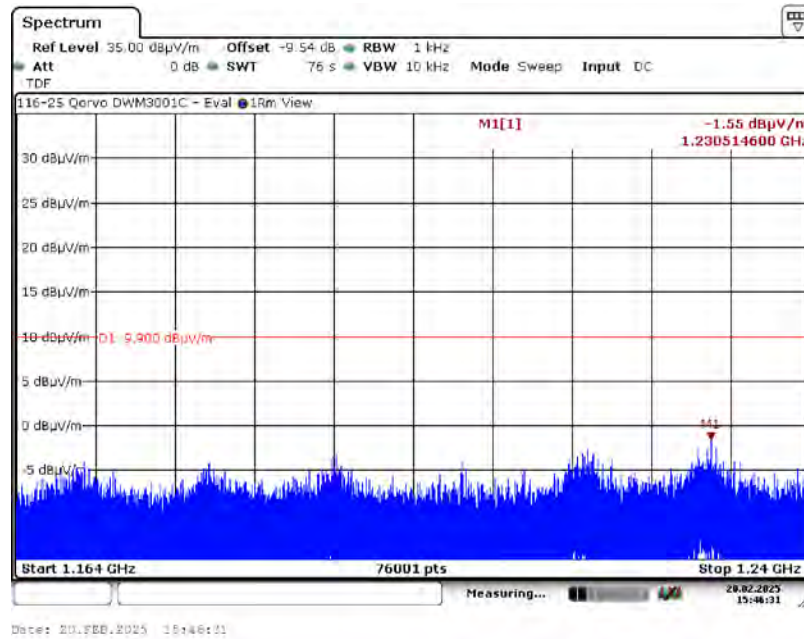
6.6.3.12 Vertical Measurement Polarity 1559 to 1610 MHz – Channel 5, Z-Axis



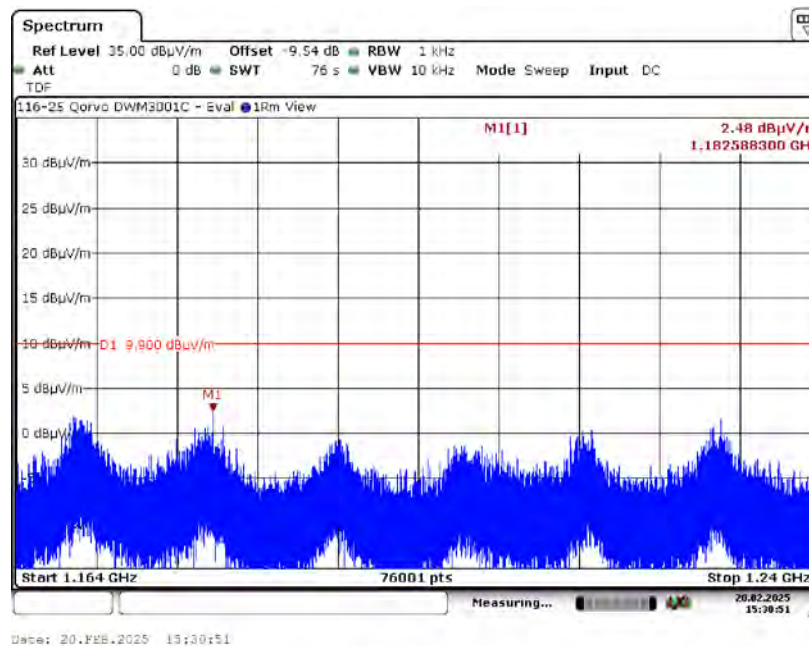
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.13 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 9, X-Axis



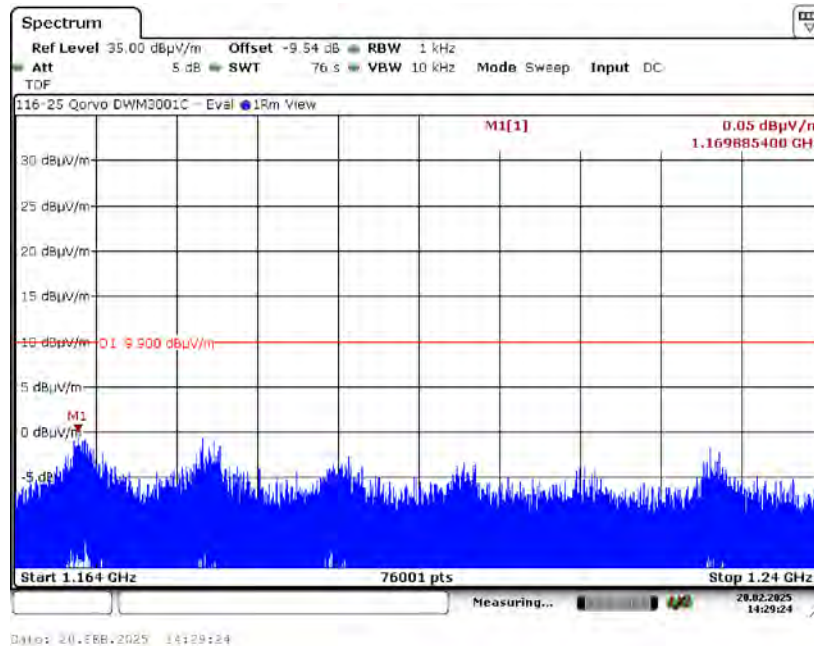
6.6.3.14 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 9, X-Axis



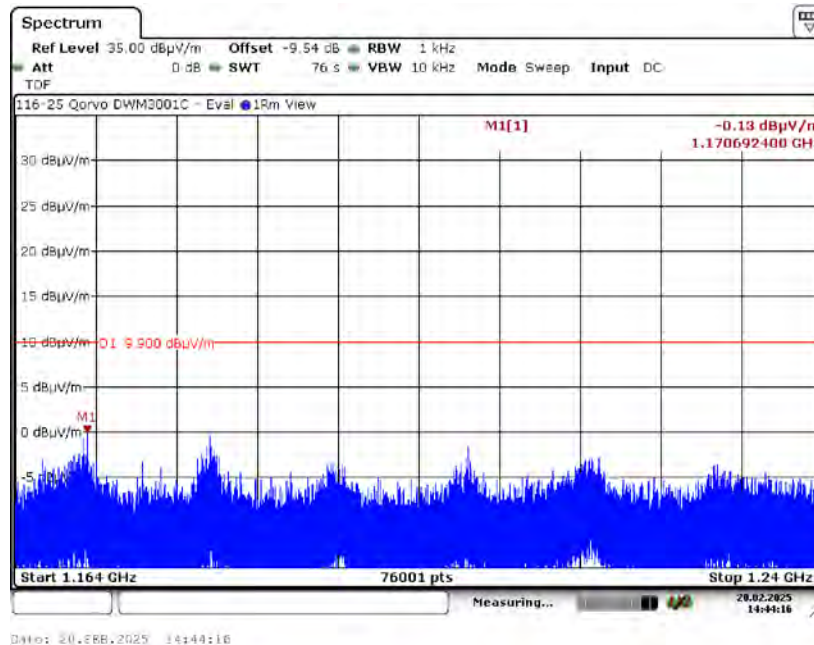
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.15 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 9, Y-Axis



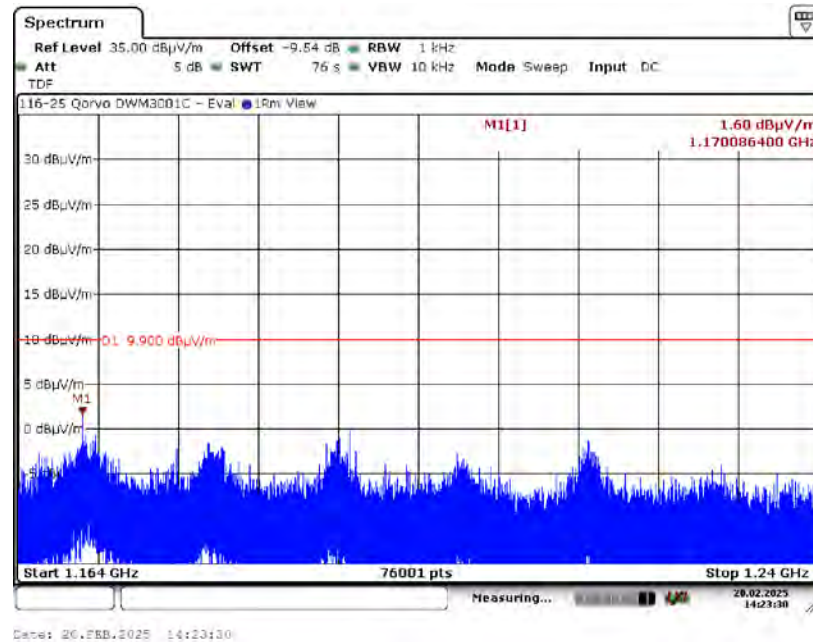
6.6.3.16 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 9, Y-Axis



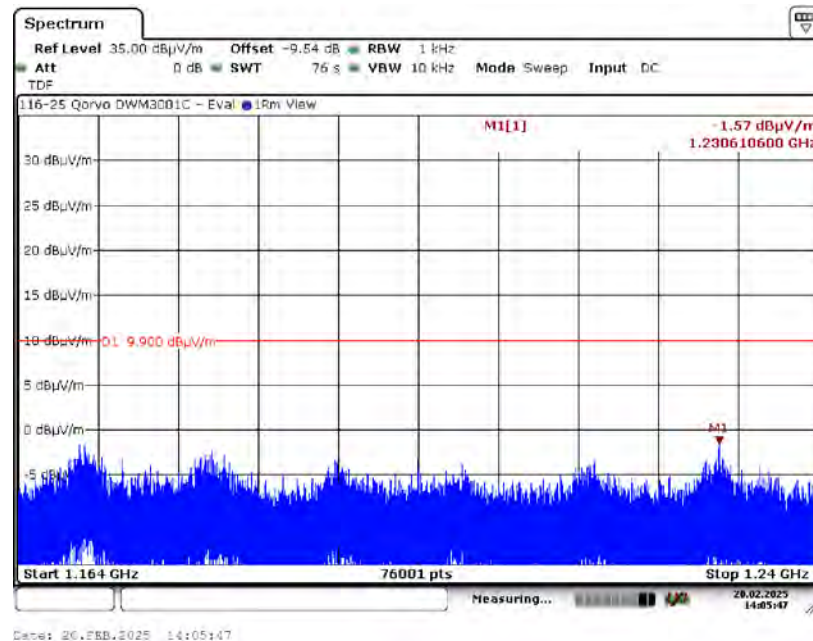
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.17 Horizontal Measurement Polarity 1164 to 1240 MHz – Channel 9, Z-Axis



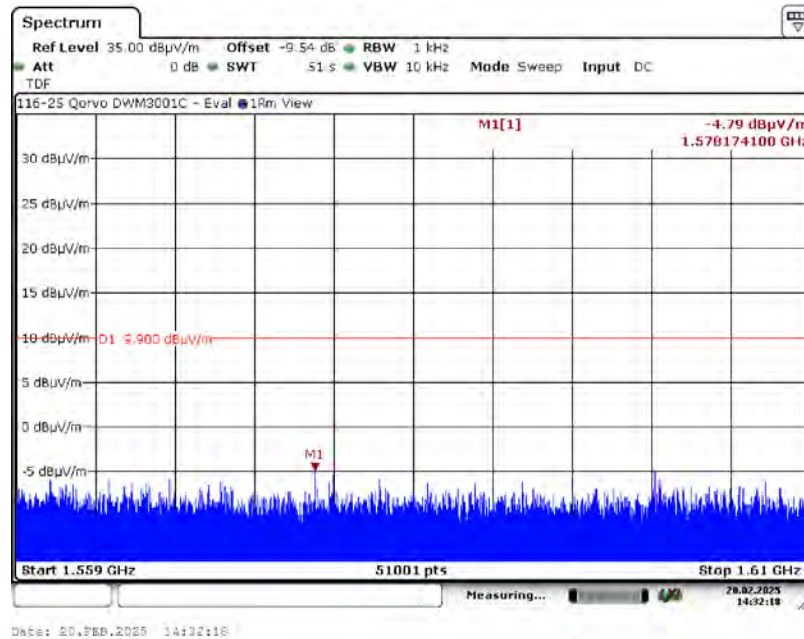
6.6.3.18 Vertical Measurement Polarity 1164 to 1240 MHz – Channel 9, Z-Axis



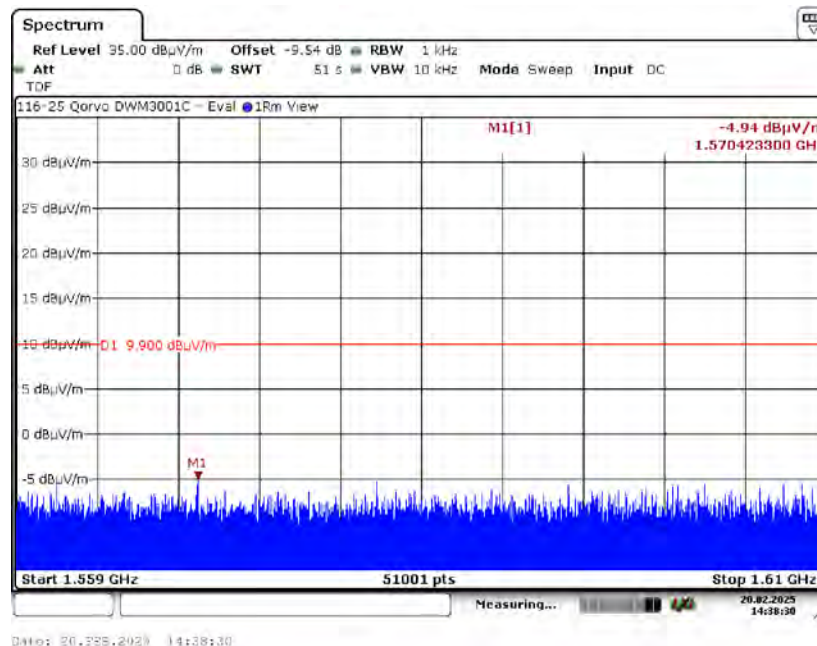
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.21 Horizontal Measurement Polarity 1559 to 1610 MHz – Channel 9, Y-Axis



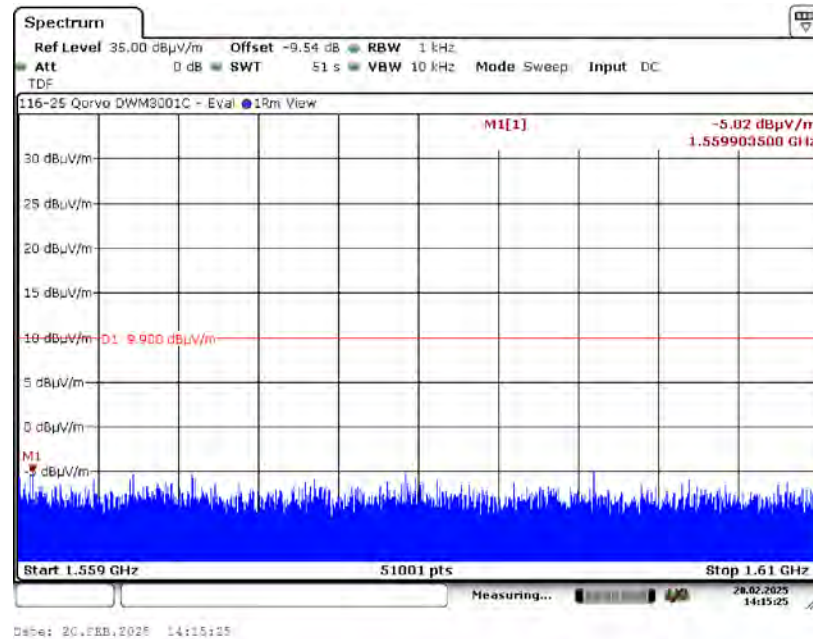
6.6.3.22 Vertical Measurement Polarity 1559 to 1610 MHz – Channel 9, Y-Axis



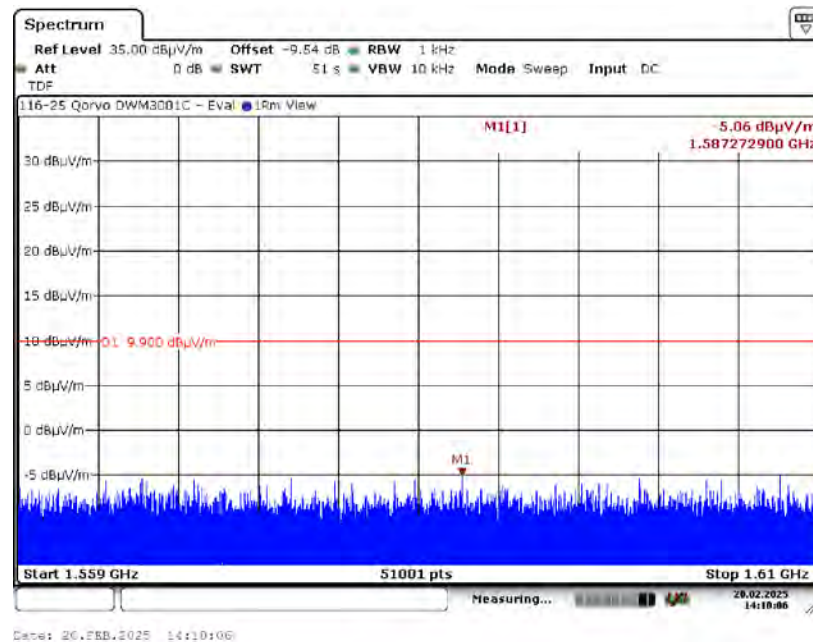
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions in GPS Bands (RSS-220 5.3.1 (e) continued)

6.6.3.23 Horizontal Measurement Polarity 1559 to 1610 MHz – Channel 9, Z-Axis



6.6.3.24 Vertical Measurement Polarity 1559 to 1610 MHz – Channel 9, Z-Axis



6. Measurement Data (continued)

6.7. Radiated Emissions of UWB Transmission (RSS-220 5.3.1 (d))

Requirement: The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

The RMS average measurement is based on the use of a spectrum analyzer with a resolution bandwidth of 1 MHz, an RMS detector, and a 1 millisecond or less averaging time.

The EIRP in terms of dBm, can be converted to a field strength, in dB μ V/m at 3 Meters by adding 95.2.

ISED

Frequency (MHz)	EIRP (dBm)	EIRP at 3 Meters (dBμV/m)
4750 – 10,600	-41.3	53.9

Frequency Range:	6 to 7 GHz, 7.5 to 8.5 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	1 MHz
EMI Receiver Avg Bandwidth	10 MHz
Detector Function:	RMS 1 mS Average as defined in Annex A (2)

6. Measurement Data (continued)

6.7. Spurious Radiated Emissions (RSS-220 5.3.1 (d))

6.7.1. Plot of RMS Power at 3 Meters – Channel 5

Frequency (GHz)	Amplitude ¹	Limit	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	(dBμV/m)	(dBμV/m)	(dB)	H/V	cm	Deg	
6.548	52.73	53.90	-1.17	V	215	230	Compliant

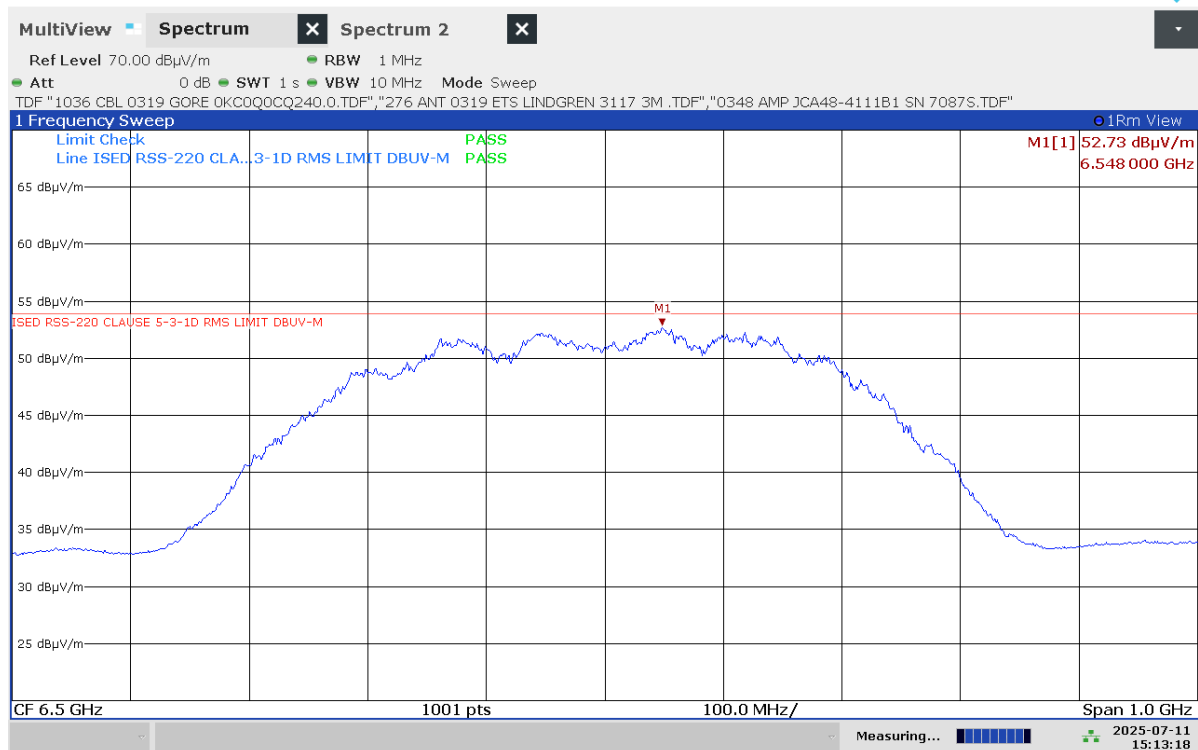
Notes: ¹ Antenna Factor (AF), Cable Factor (CF) and External Preamplifier Gain (PAG) have been entered into the analyzer as transducer factors.

Equation (22) from ANSI C63.10-2013, $EIRP = E_{meas} + 20 \log(d_{meas}) - 104.7$; $d_{meas} = 3$

$EIRP (dBm) = E_{meas} (dBμV/m) - 95.2$

Frequency (GHz)	Amplitude ¹ (dBm)	Limit (dBm)	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	EIRP	EIRP	(dB)	H/V	cm	Deg	
6.548	-42.47	-41.30	-1.17	V	215	230	Compliant

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6. Measurement Data (continued)

6.7. Spurious Radiated Emissions (RSS-220 5.3.1 (d))

6.7.2. Plot of RMS Power at 3 Meters – Channel 9

Frequency (GHz)	Amplitude ¹	Limit	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	(dBμV/m)	(dBμV/m)	(dB)	H/V	cm	Deg	
8.033	52.53	53.90	-1.37	V	134	179	Compliant

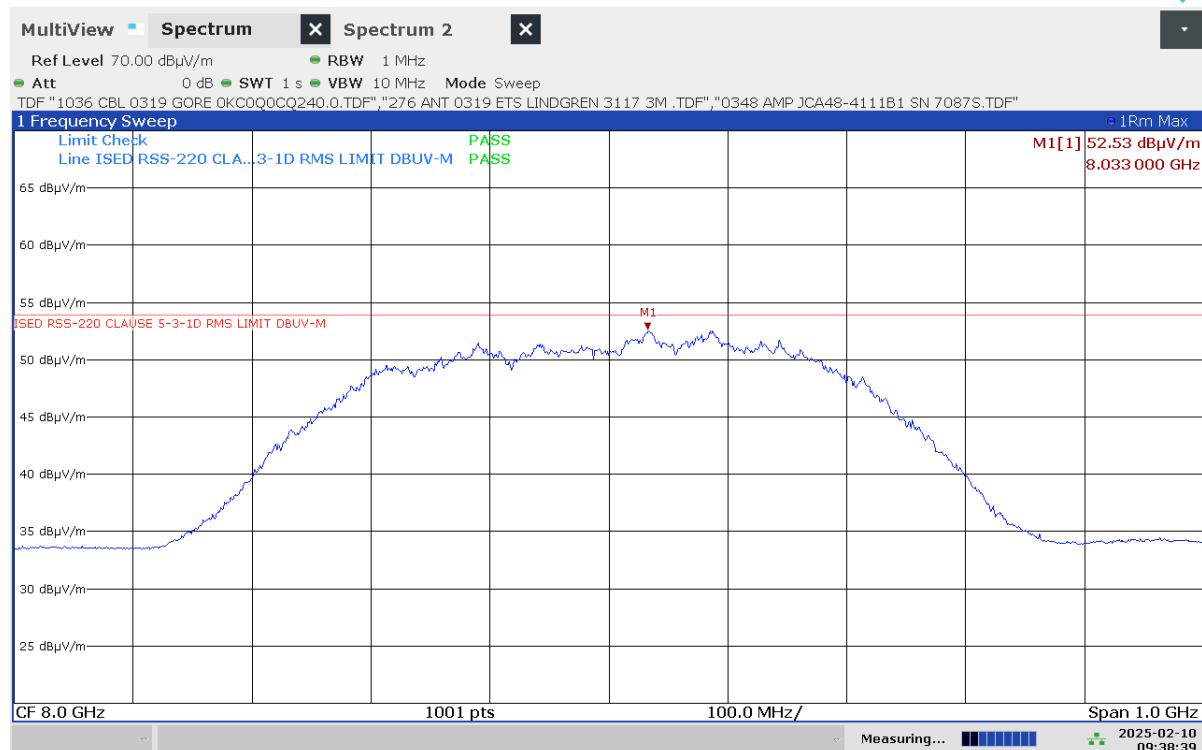
Notes: ¹ Antenna Factor (AF), Cable Factor (CF) and External Preamplifier Gain (PAG) have been entered into the analyzer as transducer factors.

Equation (22) from ANSI C63.10-2013, $EIRP = E_{meas} + 20 \log(d_{meas}) - 104.7$; $d_{meas} = 3$

$EIRP (dBm) = E_{meas} (dBμV/m) - 95.2$

Frequency (GHz)	Amplitude ¹ (dBm)	Limit (dBm)	Margin (dB)	Ant Polarity	Ant Height	Turntable Azimuth	Result
	EIRP	EIRP	(dB)	H/V	cm	Deg	
8.033	-42.67	-41.30	-1.37	V	134	179	Compliant

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6. Measurement Data (continued)

6.8. Peak Emissions in a 50 MHz Bandwidth (RSS-220 5.3.1 (g))

Requirement: There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs, f_M . That limit is 0 dBm EIRP.

The EIRP in terms of dBm, can be converted to a field strength, in dB μ V/m at 3 Meters by adding 95.2. As used in this subpart, EIRP refers to the highest signal strength measured in any direction and at any frequency from the UWB device.

ISED

Frequency (MHz)	EIRP (dBm)	EIRP at 3 Meters (dBμV/m)
4750 – 10,600	0	95.2

Frequency Range:	6 to 7 GHz, 7.5 to 8.5 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	50 MHz
EMI Receiver Avg Bandwidth	80 MHz
Detector Function:	Peak, Max Held

6. Measurement Data (continued)

6.8. Peak Emissions in a 50 MHz Bandwidth (RSS-220 5.3.1 (g) continued)

6.8.1 Plot of Peak Power at 3 Meters – Channel 5

Frequency (GHz)	Amplitude ¹	Limit	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	(dBμV/m)	(dBμV/m)	(dB)	H/V	cm	Deg	
6.488	94.91	95.20	-0.29	V	215	230	Compliant

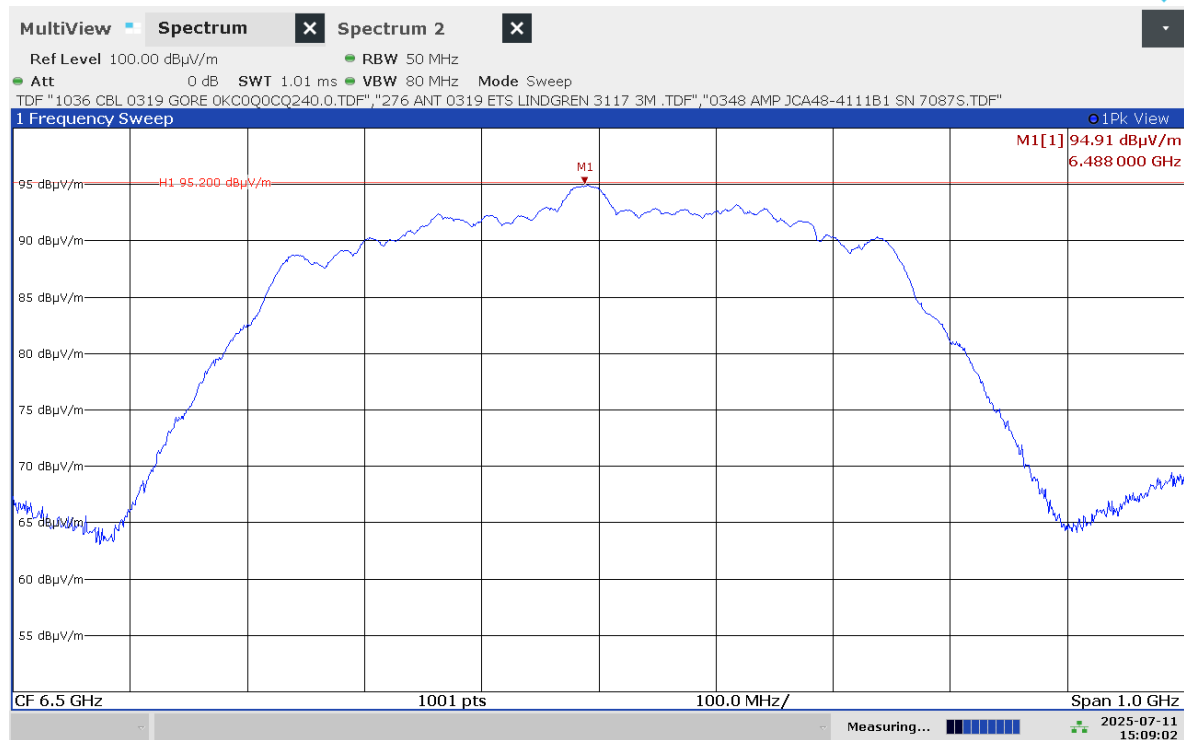
Notes: ¹ Antenna Factor (AF), Cable Factor (CF) and External Preamplifier Gain (PAG) have been entered into the analyzer as transducer factors.

Equation (22) from ANSI C63.10-2013, $EIRP = E_{meas} + 20 \log(d_{meas}) - 104.7$; $d_{meas} = 3$

$EIRP (dBm) = E_{meas} (dBμV/m) - 95.2$

Frequency (GHz)	Amplitude ¹ (dBm)	Limit (dBm)	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	EIRP	EIRP	(dB)	H/V	cm	Deg	
6.488	-0.29	0.00	-0.29	V	215	225	Compliant

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6. Measurement Data (continued)

6.8. Peak Emissions in a 50 MHz Bandwidth (RSS-220 5.3.1 (g) continued)

6.8.2 Plot of Peak Power at 3 Meters – Channel 9

Frequency (GHz)	Amplitude ¹	Limit	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	(dBμV/m)	(dBμV/m)	(dB)	H/V	cm	Deg	
7.988	94.95	95.20	-0.25	V	134	179	Compliant

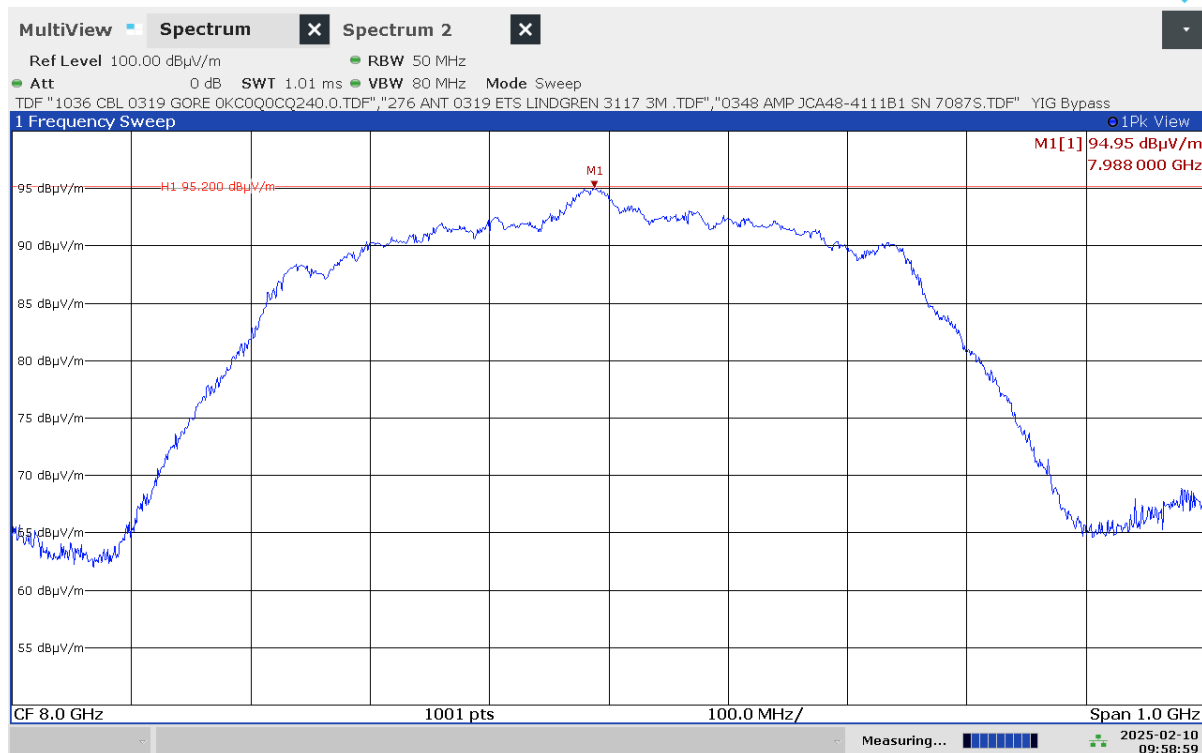
Notes: ¹ Antenna Factor (AF), Cable Factor (CF) and External Preamplifier Gain (PAG) have been entered into the analyzer as transducer factors.

Equation (22) from ANSI C63.10-2013, $EIRP = E_{meas} + 20 \log(d_{meas}) - 104.7$; $d_{meas} = 3$

$EIRP (dBm) = E_{meas} (dBμV/m) - 95.2$

Frequency (GHz)	Amplitude ¹ (dBm)	Limit (dBm)	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
	EIRP	EIRP	(dB)	H/V	cm	Deg	
7.988	-0.25	0.00	-0.25	V	134	179	Compliant

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6. Measurement Data (continued)

6.9. 99% Emission Bandwidth (RSS-GEN 6.7)

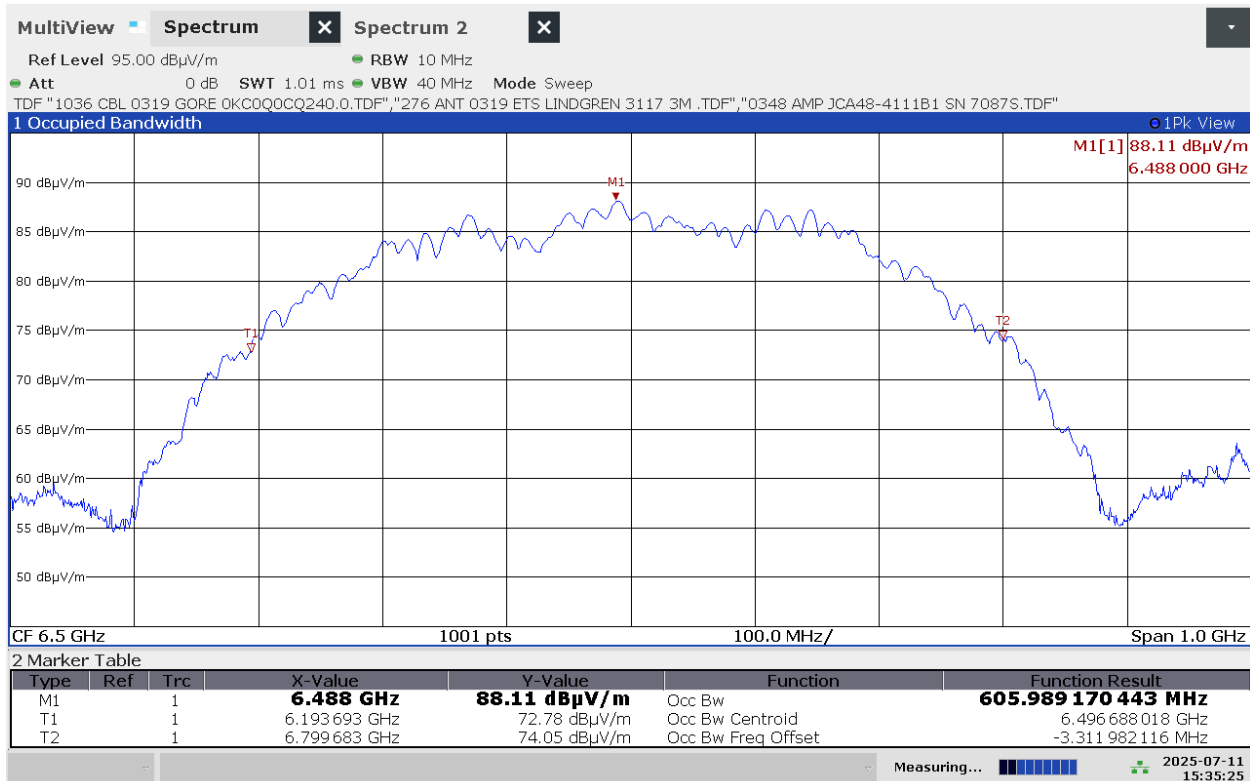
Requirement: The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs RSS-Gen, Section 6.7.

Test Note: The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

6.9.1 Plot of 99% Emission Bandwidth, Channel 5, 605,989 MHz

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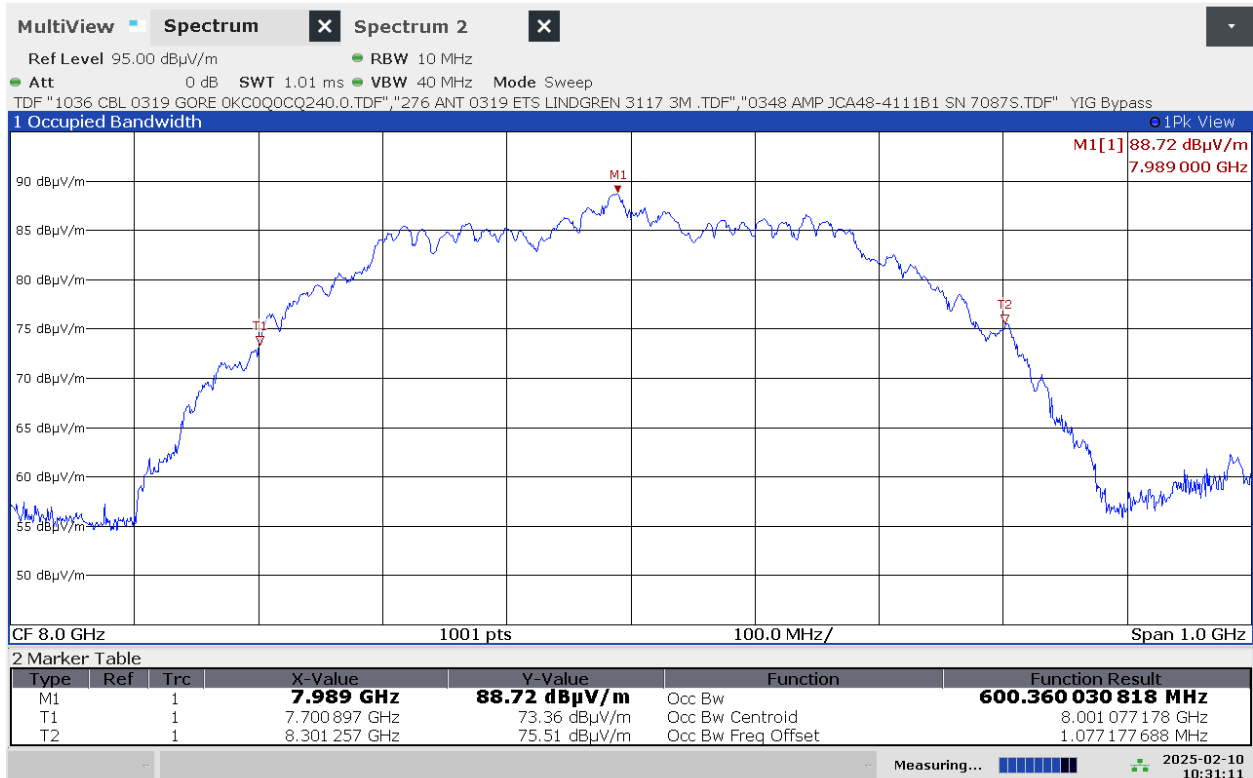
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6. Measurement Data (continued)

6.9. 99% Emission Bandwidth (RSS-GEN 6.7) continued

6.9.2 Plot of 99% Emission Bandwidth, Channel 9, 600,360 MHz

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7. 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**) and Industry Canada (file number **IC 3023A-1**).

Compliance Worldwide is also designated as a Phase 1 CAB under APEC-MRA (US0132) for Australia/New Zealand AS/NZS CISPR 11, AS/NZS CISPR 14-1, AS/NZS CISPR 15, AS/NZS CISPR 32, Chinese-Taipei (Taiwan) BSMI CNS 15936 and Korea (RRA) KS C 9811, KS C 9814-1, KS C 9815, KS C 9832, KS C 9610-6-3 & KS C 9610-6-4.

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.

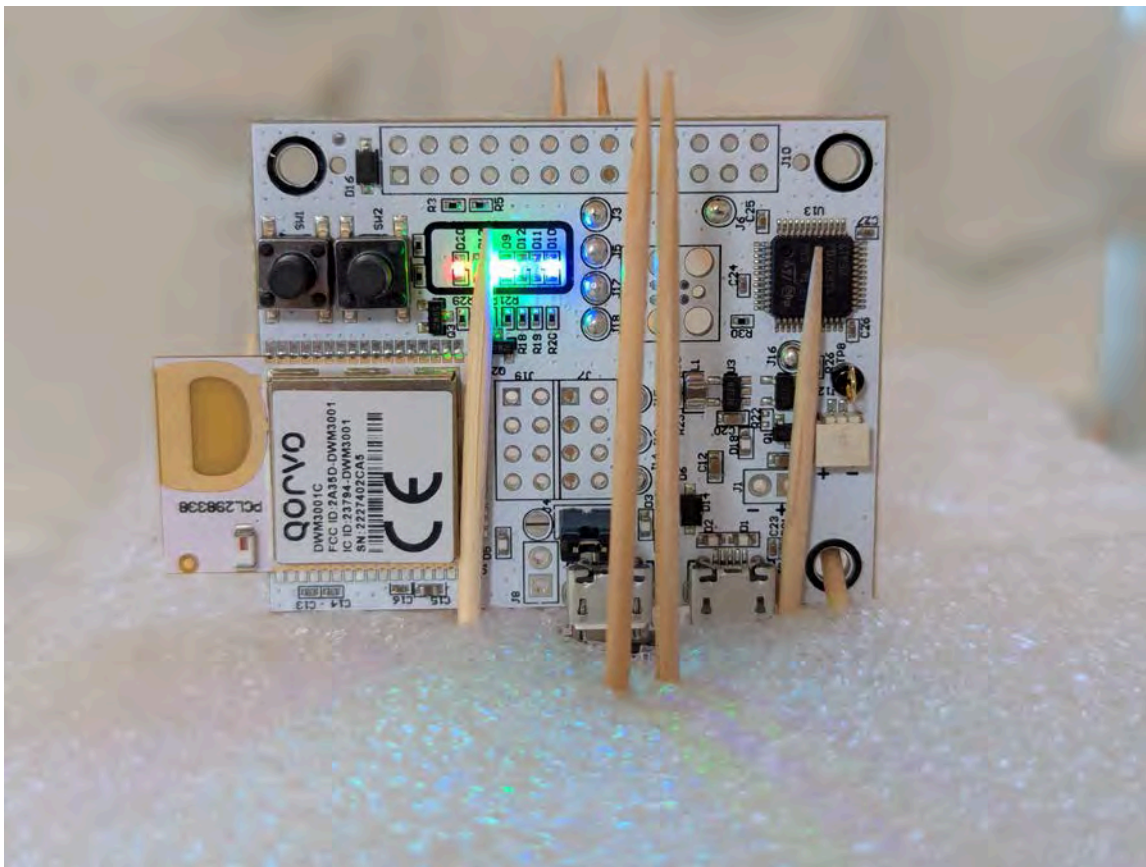
The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane. A second conducted emissions site is also located in the basement of the OATS site with a 2.3 x 2.5-meter ground plane and a 2.4 x 2.4-meter vertical wall.

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 tabletop.

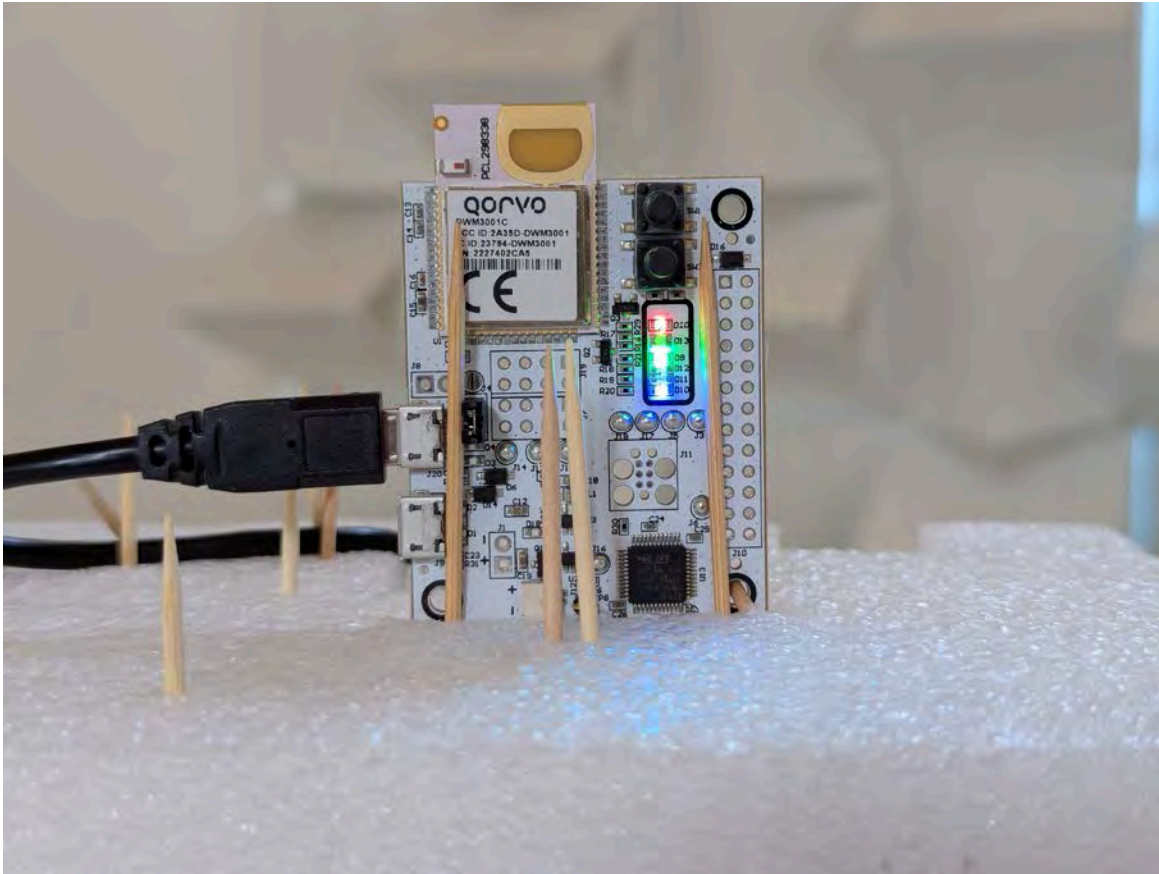
8. Test Images

8.1. Spurious and Harmonic Emissions – X-Axis



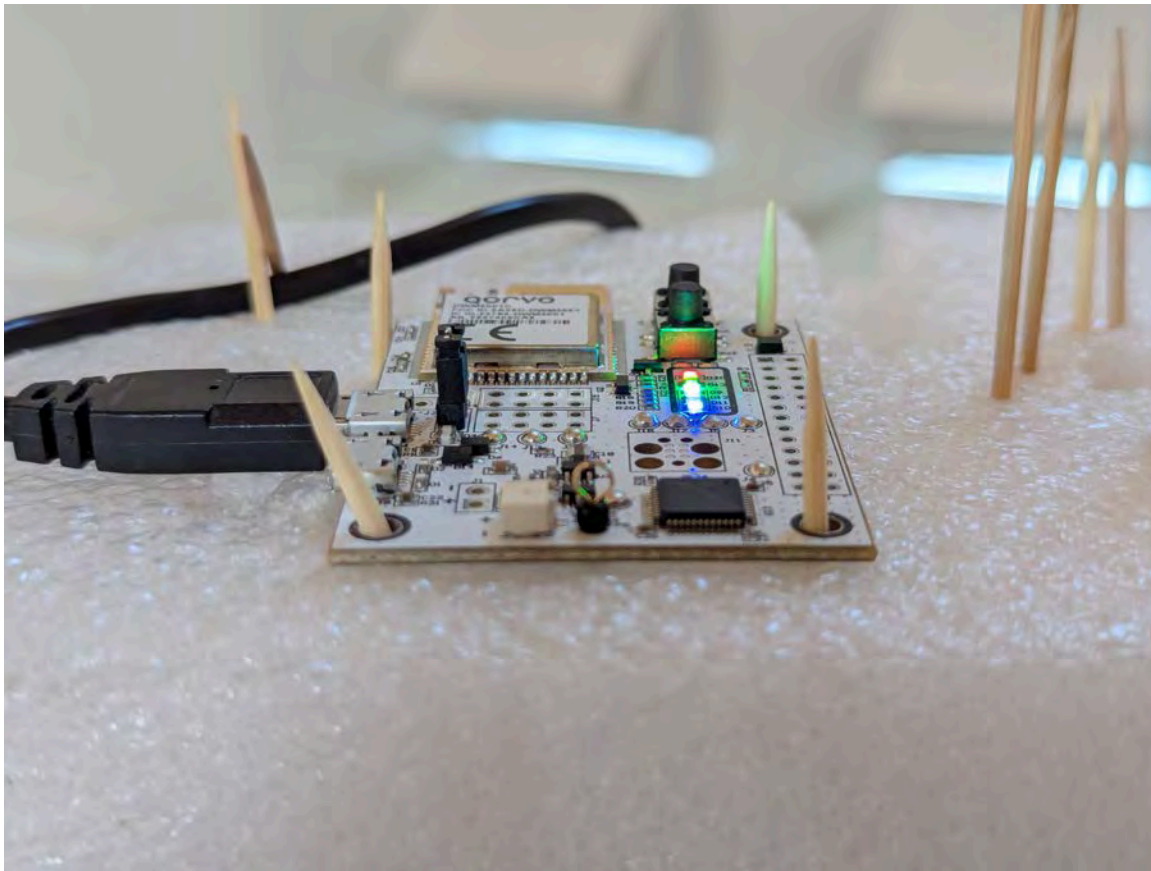
8. Test Images

8.2. Spurious and Harmonic Emissions – Y-Axis



8. Test Images

8.3. Spurious and Harmonic Emissions – Z-Axis



8. Test Images

8.4. Spurious and Harmonic Emissions – 30 kHz to 30 MHz Front



8. Test Images

8.5. Spurious and Harmonic Emissions – 30 kHz to 30 MHz Rear



8. Test Images

8.6. Spurious and Harmonic Emissions – 30 MHz to 1 GHz Front



8. Test Images

8.7. Spurious and Harmonic Emissions – 30 MHz to 1 GHz Front



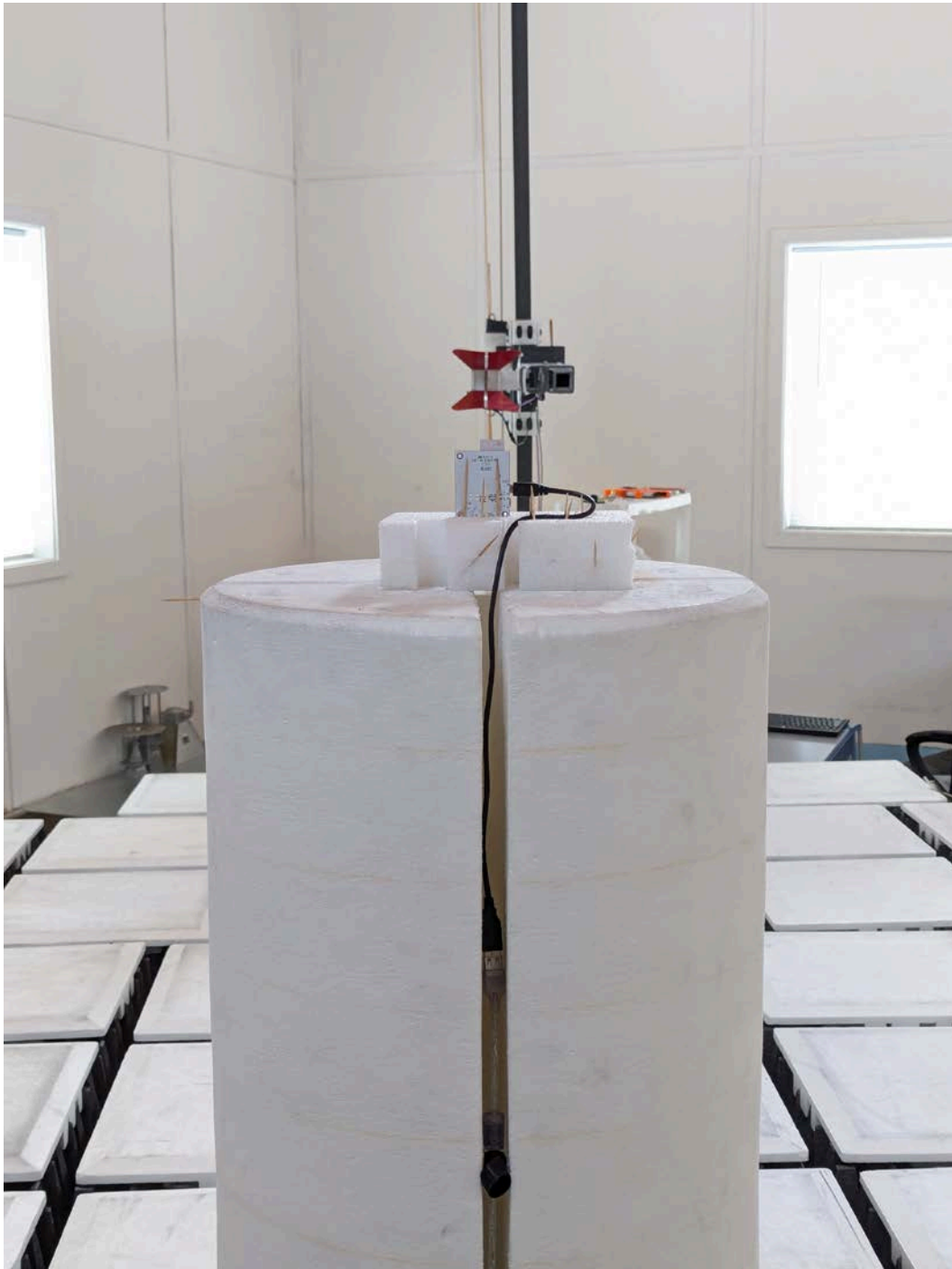
8. Test Images

8.8. Spurious and Harmonic Emissions – 1 to 18 GHz Front



8. Test Images

8.9. Spurious and Harmonic Emissions – 1 to 18 GHz Rear



8. Test Images

8.10. Spurious and Harmonic Emissions – 18 to 40 GHz Side View

