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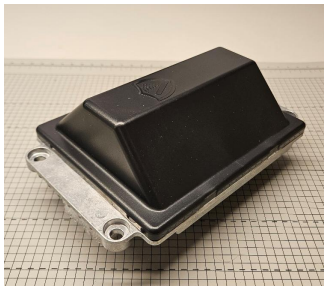
PRSTAL-WR2601USr2
Issued: **January 27, 2026**

Emissions Test Report

regarding

USA: CFR Title 47, Part 95 Subpart M (Emissions)
Canada: ISED RSS-251 version 2 (Emissions)

for



STAL79

Category: FMCW Radar

Judgments:
FCC Part 95M and ISED RSS-251v2 Compliant
Testing Completed: January 15, 2026

TESTING
NVLAP LAB CODE 200129-0

Prepared for:

Sensata / Preco Electronics

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John Nantz

Date of Issue: January 27, 2026

Revision History

Rev. No.	Date	Details	Revised By
r0	January 27, 2026	Initial Release.	J. Nantz
r1	February 13, 2026	Updated equipment list	J. Nantz
r2	February 16, 2026	Added signatures	J. Nantz

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1 Test Report Scope and Limitations

1.1 Laboratory Authorization

Test Facility description and attenuation characteristics are on file with the FCC Laboratory, Columbia, Maryland (FCC Reg. No: US5348 and US5356) and with ISED Canada, Ottawa, ON (File Ref. No: 3161A and 24249). Amber Helm Development L.C. holds accreditation under NVLAP Lab Code 200129-0.

1.2 Report Retention

For equipment verified to comply with the regulations herein, the manufacturer is obliged to retain this report with the product records for the life of the product, and no less than ten years. A copy of this Report will remain on file with this laboratory until February 2036.

1.3 Subcontracted Testing

This report does not contain data produced under subcontract.

1.4 Test Data

This test report contains data included within the laboratory's scope of accreditation. Any data in this report that is not covered under the laboratory's scope is clearly identified.

1.5 Limitation of Results

The test results contained in this report relate only to the item(s) tested. Any electrical or mechanical modification made to the test item subsequent to the test date shall invalidate the data presented in this report. Any electrical or mechanical modification made to the test item subsequent to this test date shall require reevaluation.

1.6 Copyright

1.7 Endorsements

This report shall not be used to claim product endorsement by any accrediting, regulatory, or governmental agency.

1.8 Test Location

The EUT was fully tested by **Amber Helm Development L.C.**, headquartered at 92723 Michigan Hwy-152, Sister Lakes, Michigan 49047 USA. Table 1.8.0 lists all sites employed herein. Specific test sites utilized are also listed in the test results sections of this report where needed.

Table 1.8.0 Test Site List.

Description	Location	Quality Num.
OATS (3 meter)	3615 E Grand River Rd., Williamston, Michigan 48895	OATSD

1.9 Traceability and Equipment Used

Pertinent test equipment used for measurements at this facility is listed in Table 1.9.0 . The quality system employed at Amber Helm Development L.C. has been established to ensure all equipment has a clearly identifiable classification, calibration expiry date, and that all calibrations are traceable to the SI through NIST, other recognized national laboratories, accepted fundamental or natural physical constants, ratio type of calibration, or by comparison to consensus standards. All equipment is evaluated on a cycle no greater than 12 months following laboratory validation procedures and is calibrated following manufacturer recommended intervals.

Table 1.9.0 Equipment List.

Description	Manufacturer/Model	SN	Quality Num.	Cal/Ver By / Date Due
Spectrum Analyzer	R & S / FPL1007	101598	RSFPL1007	RS / Apr-2026
Spectrum Analyzer	R & S / FSW67	103233	RSFSW67	RS / Nov-2026
BNC-BNC Coax	WRTL / RG58/U	001	CAB001-BLACK	AHD / Mar-2026
6dB Attenuator	Pasternack / PE7087-6	1	ATTEN01	AHD / On-Use
Harmonic Mixer	VDI / SAX 108	A30316	MIX60TO9001	AHD / On-use
Harmonic Mixer	Hewlett Packard / 11970W	2521A00179	MIX70TO11001	AHD / On-use
Harmonic Mixer	Pacific mmWave / GMA	26	MIX110TO23001	PMP / On-use
Biconical	EMCO / 93110B	9802-3039	BICEMCO01	Keysight / Aug-2027
Log Periodic Antenna	EMCO / 3146	9305-3614	LOGEMCO01	Keysight / Aug-2027
Quad Ridge Horn	Singer / A6100	C35200	HQR1TO18S01	Keysight / Oct-2028
K-Band Horn	JEF / NRL Std.	001	HRNK01	AHD / On Use
Ka-Band Horn	JEF / NRL Std.	001	HRNKA001	AHD / On-Use
U-Band Horn	Cust. Micro. / HO19R	-	HRNU01	Cust.M. / On-Use
E-Band Horn	Flann / 26240-25-1030B	250901	HRNE01	Flann / On-Use
W-Band Horn	Cust. Micro. / HO10R	-	HRNW01	Cust.M. / On-Use
D/G-Band Horn	Cust. Micro. / HO5R	-	HRNG01	Cust.M. / On-Use

2 Test Specifications and Procedures

2.1 Test Specification and General Procedures

The goal of Sensata / Preco Electronics is to demonstrate that the Equipment Under Test (EUT) complies with the Rules and/or Directives below. Detailed in this report are the results of testing the Sensata / Preco Electronics STAL79 for compliance to:

Country/Region/Manu.	**Rules or Directive**	**Referenced Section(s)**
United States	Code of Federal Regulations	CFR Title 47, Part 95 Subpart M
Canada	ISED Canada	ISED RSS-251 version 2

It has been determined that the equipment under test is subject to the rules and directives above at the date of this testing. In conjunction with these rules and directives, the following specifications and procedures are followed herein to demonstrate compliance (in whole or in part) with these regulations.

ANSI C63.4:2014	"Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
ANSI C63.10:2020+C1:2023	"American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
ANSI C63.10a:2024	"Errata to American National Standard for Procedures for Compliance Testing of Unlicensed Wireless Devices"
ANSI C63.26:2015	"American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services"
KDB 653005 D01 v01r02	"Equipment Authorization Guidance for 76-81 GHz Radar Devices "
WR-ITP0102RA	"AHD Internal Document - Radiated Emissions Test Method"
WR-ITP0101LC	"AHD Internal Document - Conducted Emissions Test Method"

3 Configuration and Identification of the Equipment Under Test

3.1 Description and Declarations

The EUT is an vehicular blindspot radar. The EUT is approximately 18 x 12 x 5 cm in dimension, and is depicted in Figure 3.1.0 . It is powered by 9 to 30 VDC vehicle power system. In use, this device is permanently affixed onto the side of a motor vehicle. Table 3.1.0 outlines provider declared EUT specifications.

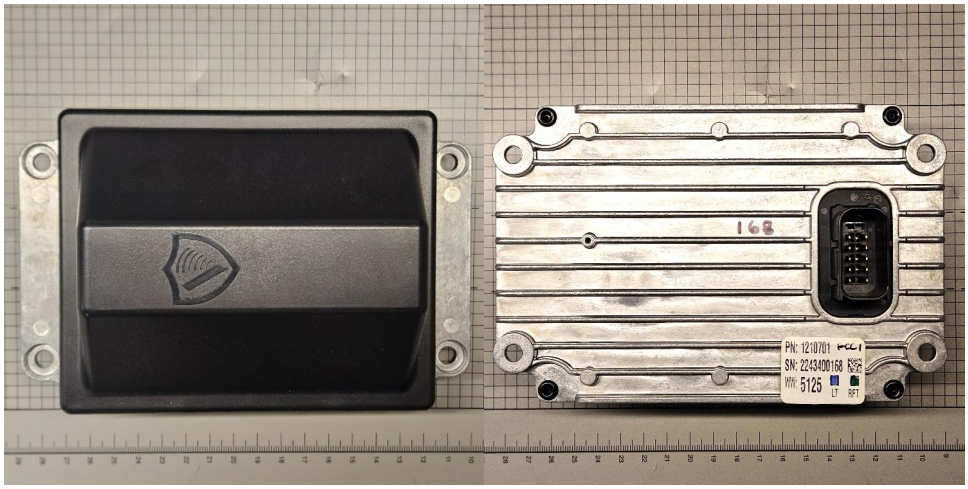

Figure 3.1.0 Photos of EUT.

Table 3.1.0 EUT Declarations.

General Declarations	
Equipment Type:	FMCW Radar
Country of Origin:	Not Declared
Nominal Supply:	9 to 30 VDC
Oper. Temp Range:	$-40°$C to $+85°$C
Frequency Range:	78.5 to 79.5 GHz
Antenna Dimension:	6cm
Antenna Type:	integral patch arrays
Antenna Gain:	TX123: 25.7 dBi, TX2: 16.1 dBi
Number of Channels:	1
Channel Spacing:	Not Applicable
Alignment Range:	Not Declared
Type of Modulation:	FMCW
United States	
FCC ID Number:	OXZSTAL79
Classification:	VRD
Canada	
IC Number:	20379-PVSTAL79
Classification:	Other

3.1.1 EUT Configuration

The EUT is configured for testing as depicted in Figure 3.1.1 .

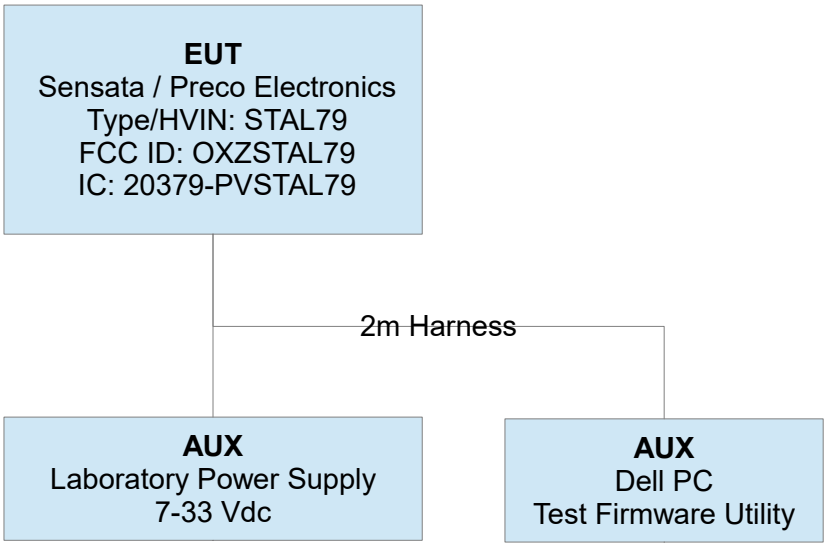

Figure 3.1.1 EUT Test Configuration Diagram.

3.1.2 Modes of Operation

The EUT employs one chirp bandwidth, an 800 MHz Chirp. The radar transmits alternating chirps on its FRONT antenna array (FRONT SIDE) and on its REAR antenna array (REAR SIDE). The EUT also employs two antenna array modes for each antenna: TX123 (all three antenna feeds are employed) and TX2 (only antenna feed 2 is employed). Emissions in all modes are tested and reported herein.

3.1.3 Variants

There is only a single variant of the EUT, as tested.

3.1.4 Test Samples

Two samples were provided for testing along with a PC and CAN interface to enable test modes. Sample SN:FCC3 was fully tested and sample SN:FCC4 was taken apart for photos. Antenna test data was collected by the manufacturer.

3.1.5 Functional Exerciser

Normal operating EUT functionality was verified prior to testing by observation of the emissions spectrum.

3.1.6 Modifications Made

There were no modifications made to the EUT by this laboratory.

3.1.7 Production Intent

The EUT appears to be a production ready sample.

3.1.8 Declared Exemptions and Additional Product Notes

The EUT is permanently installed in a transportation vehicle. As such, digital emissions are exempt from US and Canadian digital emissions regulations (per FCC 15.103(a) and IC correspondence on ICES-003). In the mm-wave band, narrow pulses arise as the FMCW signal chirps past the receiver tuned frequency. To avoid amplitude measurement error due to Pulse Desensitization, we measure peak emissions only when the radar is either placed into CW mode or when the signal "Dwells" at a single frequency for an extended period of time.

4 Emissions

4.1 General Test Procedures

4.1.1 Radiated Test Setup and Procedures

Radiated electromagnetic emissions from the EUT are first pre-scanned in our screen room. Spectrum and modulation characteristics of all emissions are recorded. Instrumentation, including spectrum analyzers and other test equipment as detailed in Section 1.8 are employed. After pre-scan, emission measurements are made on the test site of record. If the EUT connects to auxiliary equipment and is table or floor standing, the configurations prescribed in relevant test standards are followed. Alternatively, a layout closest to normal use (as declared by the provider) is employed if the resulting emissions appear to be worst-case in such a configuration. See Figure 4.1.1 . All intentionally radiating elements that are not fixed-mounted in use are placed on the test table lying flat, on their side, and on their end (3-axes) and the resulting worst case emissions are recorded. If the EUT is fixed-mounted in use, measurements are made with the device oriented in the manner consistent with installation and then emissions are recorded. If the EUT exhibits spurious emissions due to internal receiver circuitry, such emissions are measured with an appropriate carrier signal applied.

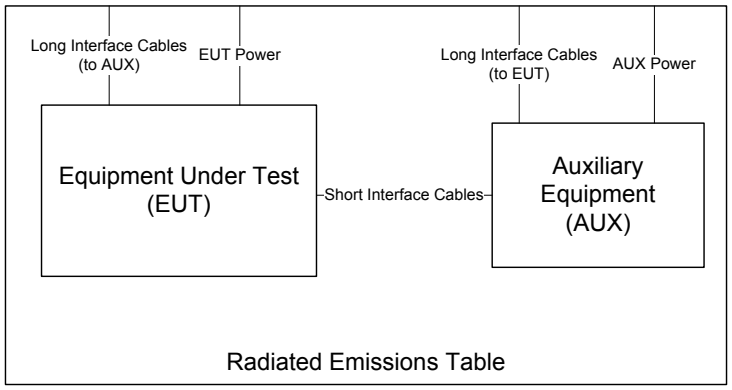

Figure 4.1.1 Radiated Emissions Diagram of the EUT.

For devices with intentional emissions below 30 MHz, a shielded loop antenna and/or E-field and H-Field broadband probes are used depending on the regulation. Shielded loops are placed at a 1 meter receive height at the desired measurement distance. For exposure in this band, 10cm diameter single-axis broadband probes meeting the requirements of ISED RSS-102.NS.MEAS are employed. Measurements are repeated and summed over three axes, and the entire frequency range is measured with and without the EUT transmitting.

Emissions between 30 MHz and 1 GHz are measured using calibrated broadband antennas. For both horizontal and vertical polarizations, the test antenna is raised and lowered from 1 to 4 m in height until a maximum emission level is detected. The EUT is then rotated through 360^o in azimuth until the highest emission is detected. The test antenna is then raised and lowered one last time from 1 to 4 m and the worst case value is recorded. Emissions above 1 GHz are characterized using standard gain or broadband ridge-horn antennas on our OATS with a 4×5 m rectangle of ECCOSORB absorber covering the OATS ground screen and a 1.5m table height. Care is taken to ensure that test receiver resolution and video bandwidths meet the regulatory requirements, and that the emission bandwidth of the EUT is not reduced. Photographs of the test setup employed are depicted in Figure 4.1.1 .

Where regulations allow for direct measurement of field strength, power values (dBm) measured on the test receiver / analyzer are converted to dBμV/m at the regulatory distance, using

$$E_{dist} = 107 + P_R + K_A - K_G + K_E - C_F$$

where P_R is the power recorded on spectrum analyzer, in dBm, K_A is the test antenna factor in dB/m, K_G is the combined pre-amplifier gain and cable loss in dB, K_E is duty correction factor (when applicable) in dB, and C_F is a distance conversion (employed only if limits are specified at alternate distance) in dB. This field strength value is then compared with the regulatory limit. If effective isotropic radiated power (EIRP) is computed, it is computed as

$$EIRP(dBm) = E_{3m}(dB\mu V/m) - 95.2.$$

When presenting data at each frequency, the highest measured emission under all possible EUT orientations (3-axes) is reported.

Where regulations call for substitution method measurements, the EUT is replaced by a substitution antenna if field strength measurements indicate the emission is close to the regulatory limit. This antenna is co-polarized with the test antenna and tuned (when necessary) to the emission frequency, after which the test antenna height is again optimized. The substitution antenna's signal level is adjusted such that its emission is equal to the level measured from the EUT. The signal level applied to the substitution antenna is then recorded. Effective isotropic radiated power (EIRP) and effective radiated power (ERP) in dBm are formulated from

$$EIRP = P_T - G_A = ERP + 2.16, \tag{1}$$

where P_T is the power applied to substitution antenna in dBm, including correction for cable loss, and G_A is the substitution antenna gain, in dBi.

When microwave measurements are made at a range different than the regulatory distance or made at close-range to improve receiver sensitivity, the reading is corrected back to the regulatory distance. This is done using a 20 dB/decade field behavior as dictated by the test procedures. When measurements are made in the near-field, the near-field/far-field boundary (N/F) is reported. It is computed as

$$N/F = 2D^2/\lambda$$

where D is the maximum dimension of the transmitter or receive antenna, and λ is the wavelength at the measurement frequency. Typically for high frequency measurements the receive antenna is connected to test receiver / analyzer through an external mixer. In this case, cable loss, IF amplifier gain, and mixer conversion losses are corrected for in the data table, or directly in the analyzer.

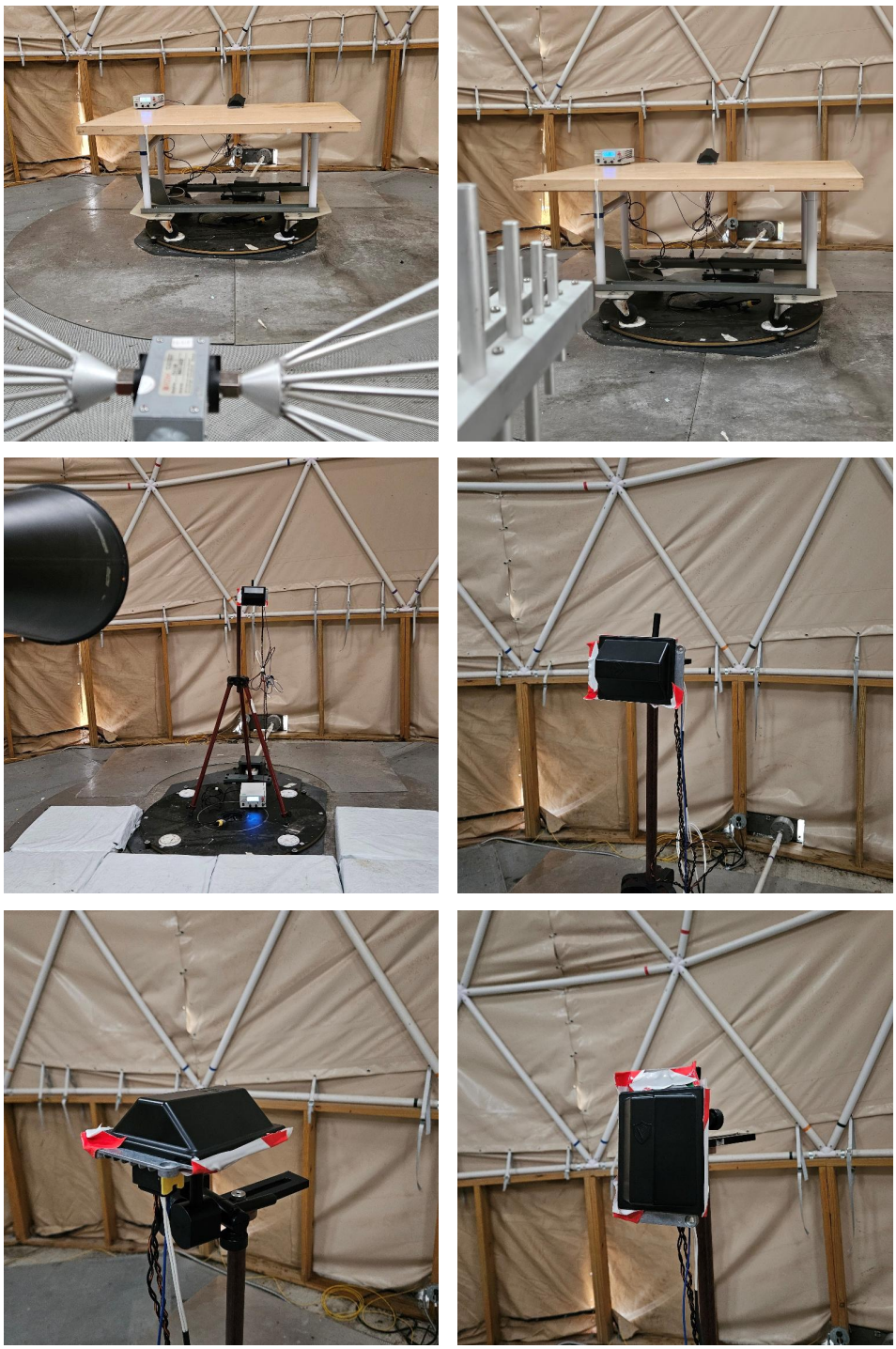

Figure 4.1.1 Radiated Emissions Test Setup Photograph(s).

4.1.2 Power Supply Variation

Tests at extreme supply voltages are made if required by the procedures specified in the test standard, and results of this testing are detailed in this report.

4.2 Intentional Emissions

4.2.1 Fundamental Emission Pulsed Operation

The details and results of testing the EUT for pulsed operation are summarized in Table 4.2.1 . Plots showing the measurements made to obtain these values are provided in Figure 4.2.1 .

Table 4.2.1 Pulsed Emission Characteristics (Duty Cycle).

EUT: PRECO STAL79
Test Date(s): 01/12/26
Test Engineer: J. Nantz
Meas. Distance: 3 m

EUT Modes: **a1** 800 MHZ CHIRP
a2
a3
a4

FMCW Chirp Details – Exposure Duty Cycle

R0	Transmit Mode	Voltage Voltage	Freq GHz	Receiver Bandwidth RBW MHz	Receiver Bandwidth VBW MHz	Total Cycle Time ms	FMCW On-Time ms	BPSK Ant Duty dB	Exposure Duty Factor dB	FMCW Period ms	CHIRP BW MHz	Dwell/MHz/Chirp ms	Chirps / On-Time #	Max On-Time per Chirp-MHz ms
R1	a1	24.0	78.950	10.000	10.000	60.1	4.58	0.0	**-11.2**	0.036	800.0	0.00004	128	0.006
R2														
R3														
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14

(ROW)	(COLUMN)	NOTES
R0	C3	Worst-case frequency selected at center of operating band.
R0	C7	Exposure Duty Correction = 10*Log(Total On-Time/Total Cycle-Time) + BPSK Antenna Duty
R0	C8	BPSK Duty Cycle applies for array interleaving (where applicable)
		Dwell / MHz / Chirp is the CW time spent in any given 1MHz window within the channel during a single chirp = FMCW Period / CHIRP BW,
R0	C12	CHIRP BW is taken as the smaller of declared and measured.
R0	C13	Chirps / On-Time = FMCW On-Time / FMCW Period
R0	C14	Max On-Time / Cycle = Chirps / On-Time x Dwell / MHz / Chirp, Total on time in a 1 MHz band per Chirp Cycle
R1	all	Chirp modulation for Tx123 and Tx2 modes is identical, only the transmit antenna array is changed.

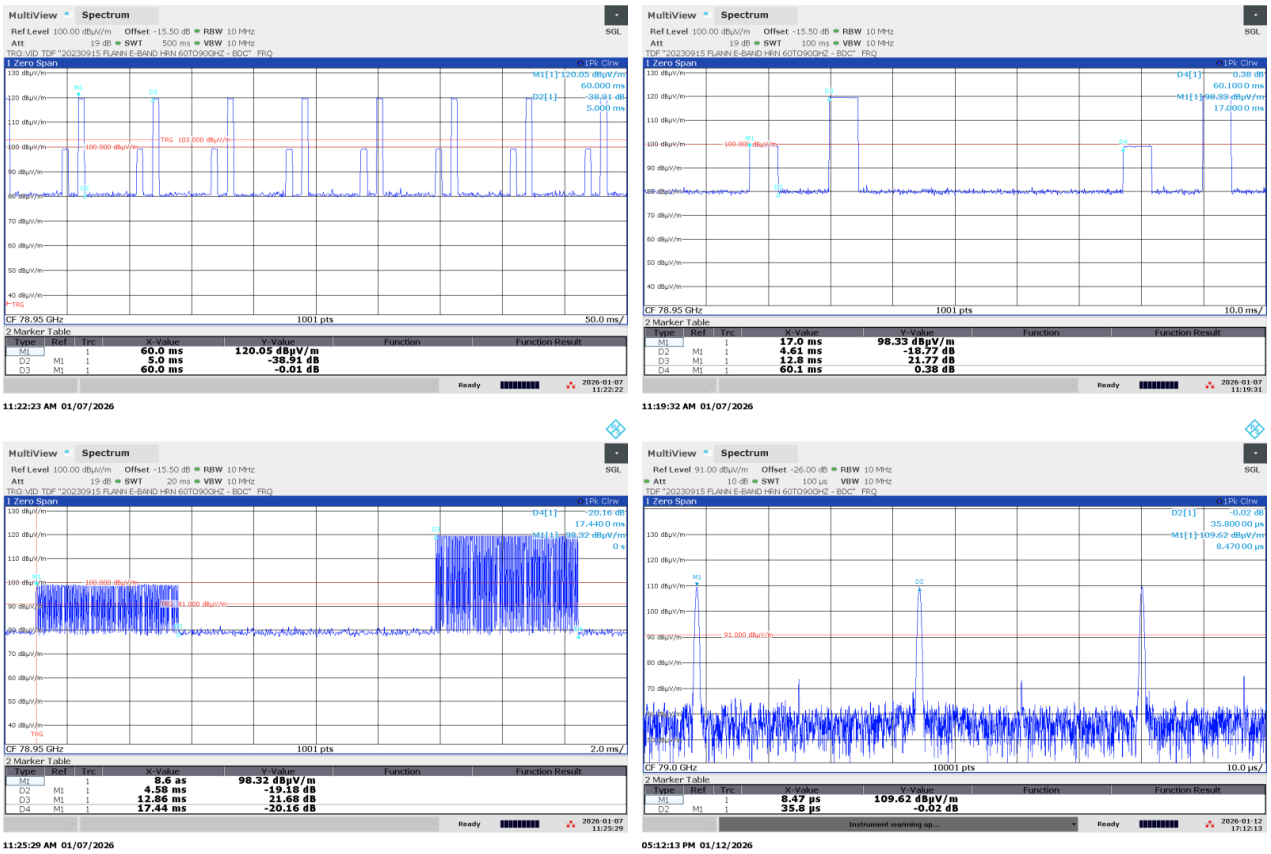

Figure 4.2.1 Example Pulsed Emission Characteristics (Duty Cycle).

4.2.2 Fundamental Emission Bandwidth

Emission bandwidth (EBW) of the EUT is measured with the device placed in the worst case test mode. Radiated emissions are recorded following the test procedures listed in Section 2.1. The 99% EBW is measured as the max-held peak-detected signal when the IF bandwidth is greater than or equal to 1% of the receiver span. The results of EBW testing are summarized in Table 4.2.2 . Plots showing measurements employed to obtain the emission bandwidth reported are provided in Figure 4.2.2 .

Table 4.2.2 Intentional Emission Bandwidth.

Det	**IF Bandwidth**	**Video Bandwidth**	**EUT:**	PRECO STAL79
Pk	10 MHz	10 MHz	**Test Date(s):**	1/12/2026
			Test Engineer:	J. Nantz

EUT Modes: **a1** 800 MHZ CHIRP
a2
a3
a4

Occupied Bandwidth										
R0	Transmit Mode	Temperature (C)	Voltage (V)	fL (MHz)	fL Limit (MHz)	fH (MHz)	fH Limit (MHz)	99% OBW (MHz)	Stability (ppm)	Notes/Pass/Fail
R1	**a1**	85.0	33.0	78468.9	77000.0	79437.1	81000.0	968.2	-8.3	
R2		85.0	7.6	78468.9	77000.0	79437.2	81000.0	968.2	-7.9	
R3		80.0	24.0	78469.0	76000.0	79437.2	81000.0	968.2	-7.7	
R4		70.0	24.0	78469.0	76000.0	79437.2	81000.0	968.2	-7.6	
R5		60.0	24.0	78469.0	76000.0	79437.2	81000.0	968.2	-7.6	
R6		50.0	24.0	78469.0	76000.0	79437.2	81000.0	968.2	-7.5	
R7		40.0	24.0	78469.1	76000.0	79437.3	81000.0	968.2	-6.4	
R8		30.0	24.0	78469.3	76000.0	79437.5	81000.0	968.2	-3.1	
R9		20.0	24.0	78469.6	76000.0	79437.8	81000.0	968.2	0.0	
R10		10.0	24.0	78469.3	76000.0	79438.3	81000.0	969.0	-3.1	
R11		0.0	24.0	78469.6	76000.0	79438.5	81000.0	968.9	0.0	
R12		-10.0	24.0	78470.1	76000.0	79438.6	81000.0	968.5	6.6	
R13		-20.0	24.0	78470.2	76000.0	79438.5	81000.0	968.3	8.8	
R14		-30.0	24.0	78470.4	76000.0	79438.4	81000.0	968.0	10.4	
R15		-40.0	33.0	78470.3	76000.0	79438.4	81000.0	968.1	9.4	
R16		-40.0	7.6	78470.2	76000.0	79438.3	81000.0	968.0	8.3	
R33			**fL_{MIN}**	**78468.9**	**fH_{MAX}**	**79438.6**	**OBW_{MAX}**	**969.0**		Pass
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10

(ROW)	(COLUMN)	NOTES
R0	C4, C6	Computed via CW mode frequency shift and nominal OBW measurements.
R0	All	Chirp modulation for Tx123 and Tx2 modes is identical, only the transmit antenna array is changed.

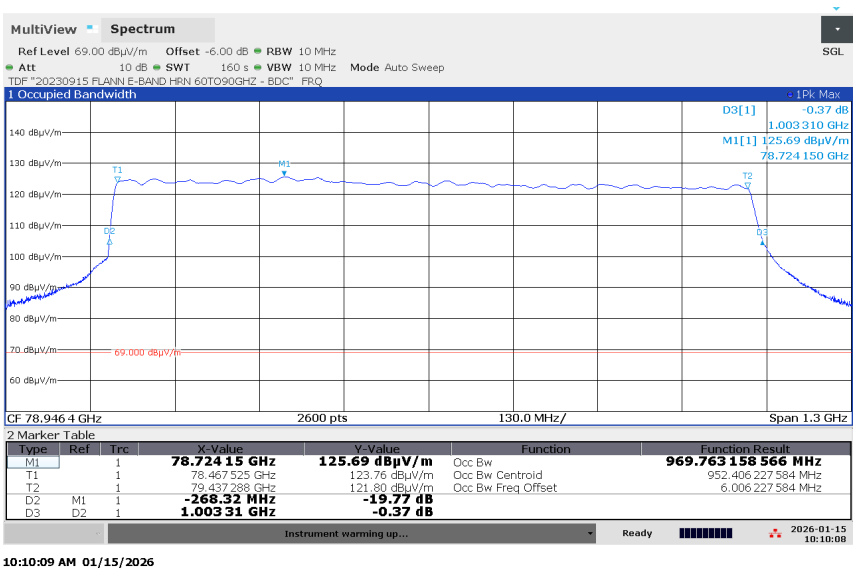

Figure 4.2.2 Example Intentional Emission Bandwidth.

4.2.3 Fundamental Emission

Following the test procedures listed in Section 2.1, radiated emissions measurements are made on the EUT for both Horizontal and Vertical polarized fields. Table 4.2.3 details the results of these measurements.

Table 4.2.3 Fundamental Radiated Emissions.

EUT Modes: **a1** TX123 **a5**
EUT: PRECO STAL79 **a2** TX2 **a6**
Test Date(s): 01/12/26 **a3** FRONT **a7**
Test Engineer: J. Nantz **a4** REAR **a8**

R0	Frequency Start MHz	Frequency Stop MHz	Site Temp. Hum C, %	Site Table Angle deg	Site MR m	Site DR m	Site N/F m	Site CF dB	EUT Mode	EUT Volt. (V)	EUT Dim cm	Test Antenna Pol. H/V	Test Antenna Ant. Height m	Test Antenna Dim. cm	Test Antenna Ka dB/m	Cable/Mixer CL/Kg dB	Receiver Bandwidth RBW MHz	Receiver Bandwidth VBW MHz	Field Strength @ DR Pk Meas. dBuV/m	Field Strength @ DR Pk Limit dBuV/m	Field Strength @ DR Avg Meas. dBuV/m	Field Strength @ DR Avg Limit dBuV/m	EIRP Pk Calc. dBm	EIRP Pk Limit dBm	EIRP Avg Calc. dBm	EIRP Avg Limit dBm	Regulation USA/CAN 95M/251 §	Details Pass/Fail dB	Comments
R1	SETUP		OATSD						SAMPLE FCC3			HRNE01				VDIE01	FSW6701		NOTES: EUT Copolarized along long axis of radome.										
R2	78473.0	78473.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a1**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	126.5				31.3	55.0			95M/251	**23.7**	Peak Meas, CW mode
R3	79000.0	79000.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a1**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	125.6				30.4	55.0			95M/251	24.6	Peak Meas, CW mode
R4	79432.0	79432.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a1**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	124.9				29.7	55.0			95M/251	25.3	Peak Meas, CW mode
R5	78473.0	78473.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a2**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	123.7				28.5	55.0			95M/251	26.5	Peak Meas, CW mode
R6	79432.0	79432.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a2**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	122.4				27.2	55.0			95M/251	27.8	Peak Meas, CW mode
R7	78473.0	78473.0	20, 43	0.0	3.0	3.0	1.3	0.0	**a2**	24.0	5.0	V	1.5	2.0		-6.0	1.00	3.00	122.1				26.9	55.0			95M/251	28.1	Peak Meas, CW mode
R8																													
R9																													
R10	76000.0	81000.0	20, 43	0.0	3.0	3.0	1.4	0.0	**a3**	24.0	5.0	H	1.5	2.0		-6.0	1.00	3.00	126.5				31.3	55.0			95M/251	**23.7**	Peak Meas, CW mode
R11	76000.0	81000.0	20, 43	0.0	3.0	3.0	1.4	0.0	**a4**	24.0	5.0	H	1.5	2.0		-6.0	1.00	3.00	125.4				30.2	55.0			95M/251	**24.8**	Peak Meas, CW mode
R12	76000.0	81000.0	20, 43	0.0	3.0	3.0	1.4	0.0	**a3**	24.0	5.0	H	1.5	2.0		-6.0	1.00	3.00			114.4				19.2	50.0	95M/251	30.8	FCC RMS Meas, chirp
R13	76000.0	81000.0	20, 43	0.0	3.0	3.0	1.4	0.0	**a4**	24.0	5.0	H	1.5	2.0		-6.0	1.00	3.00			111.4				16.2	50.0	95M/251	33.8	FCC RMS Meas, chirp
R14																													
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29

(ROW)	(COLUMN)	NOTE:
R0	C5	MR is Measurement Range, which may be reduced from DR to achieve necessary SNR.
R0	C6	DR is the regulatory Desired Range measurement distance.
R0	C7	N/F is Near-Field / Far-Field distance computed for max of Antenna Dimension (C10 or C14) computed above 1 GHz.
R0	C8	CF is computed using a 20 dB/decade Decay Rate.
R2-R7	C19	Measurement settings for peak power according to KDB 653005 D01 76-81 GHz Radars v01r02, 4 (c) but with radar in CW mode negating concerns for pulse desensitization.
R12, R13	C19	Measurement settings for RMS power integrated over the OBW according to KDB 653005 D01 76-81 GHz Radars v01r02, 4(b)

4.3 Unintentional Emissions

4.3.1 Transmit Chain Spurious Emissions

The results for the measurement of transmit chain spurious emissions at the nominal voltage and temperature are provided in Table 4.3.1 .

Table 4.3.1 (i) Transmit Chain Spurious Emissions.

EUT Modes: **a1** **a5** max all modes a1-a4
EUT: PRECO STAL79 **a2** **a6**
Test Date(s): 01/12/26 **a3** **a7**
Test Engineer: J. Nantz **a4** **a8**

R0	Frequency Start MHz	Frequency Stop MHz	Site Temp. Hum C, %	Site Table Angle deg	Site MR m	Site DR m	Site N/F m	Site CF dB	EUT Mode	EUT Volt. (V)	EUT Dim cm	Test Antenna Pol. H/V	Test Antenna Ant. Height m	Test Antenna Dim. cm	Test Antenna Ka dB/m	Cable Mixer CL/Kg dB	Receiver Bandwidth RBW MHz	Receiver Bandwidth VBW MHz	Field Strength @ DR Pk Meas. dBuV/m	Field Strength @ DR Pk Lim. dBuV/m	Field Strength @ DR QPk/Avg Meas. dBuV/m	Field Strength @ DR QPk/Avg Lim. dBuV/m	EIRP Pk Calc. dBm	EIRP Pk Lim. dBm	EIRP Qpk/Avg Calc. dBm	EIRP Qpk/Avg Lim. dBm	Regulation USA/CAN 95M/GEN §	Pass/Fail dB	Comments
R1	SETUP		OATSD						SAMPLE FCC3			BICEMCO01				CBL01	FPL1007											
R2	30.0	88.0	20 38	0.0	3.0	3.0	0.0	0.0	**a5**	24.0	5.0	H/V	1-4				0.12	0.30	33.4		24.5	40.0	-61.8		-70.7		15.209 / GEN	15.5	
R3	88.0	216.0	20 38	0.0	3.0	3.0	0.0	0.0	**a5**	24.0	5.0	H/V	1-4				0.12	0.30	36.2		27.7	43.5	-59.0		-67.5		15.209 / GEN	15.8	
R4	SETUP		OATSD						SAMPLE FCC3			LOGEMCO01				CBL01	FPL1007											
R5	216.0	1000.0	20 38	0.0	3.0	3.0	0.0	0.0	**a5**	24.0	5.0	H/V	1-4				0.12	0.30	39.5		38.9	46.0	-55.7		-56.3		15.209 / GEN	7.1	
R6	640.0	640.0	20 38	0.0	3.0	3.0	0.0	0.0	**a5**	24.0	5.0	H	1-4				0.12	0.30	39.5		38.9	46.0	-55.7		-56.3		15.209 / GEN	**7.1**	
R7	640.0	640.0	20 38	0.0	3.0	3.0	0.0	0.0	**a5**	24.0	5.0	V	1-4				0.12	0.30	37.8		37.5	46.0	-57.4		-57.7		15.209 / GEN	8.5	
R8	SETUP		OATSD						SAMPLE FCC3			HQR1TO18S01				CBL04	FSW6701											
R9	1000.0	6000.0	20 38	0.0	3.0	3.0	0.9	0.0	**a5**	24.0	5.0	H/V	1.5	15.0			1.00	3.00	63.5	74.0	42.6	54.0	-31.7		-52.6		15.209 / GEN	10.5	
R10	1304.0	1304.0	20 38	0.0	3.0	3.0	0.2	0.0	**a5**	24.0	5.0	H	1.5	15.0			1.00	3.00	63.5	74.0	42.6	54.0	-31.7		-52.6		15.209 / GEN	10.5	
R11	1625.0	1625.0	20 38	0.0	3.0	3.0	0.2	0.0	**a5**	24.0	5.0	V	1.5	15.0			1.00	3.00	47.8	74.0	32.9	54.0	-47.4		-62.3		15.209 / GEN	21.1	
R12	6000.0	18000.0	20 38	0.0	3.0	3.0	2.7	0.0	**a5**	24.0	5.0	H/V	1.5	15.0			1.00	3.00	48.4	74.0	39.5	54.0	-46.8		-55.7		15.209 / GEN	14.5	
R13	SETUP		OATSD						SAMPLE FCC3			HRNK01				CBL04	FSW6701											
R14	18000.0	26500.0	20 38	0.0	3.0	3.0	1.8	0.0	**a5**	24.0	5.0	H/V	1.5	10.2			1.00	3.00	60.3	74.0	46.5	54.0	-34.9		-48.7		15.209 / GEN	7.5	
R15	SETUP		OATSD						SAMPLE FCC3			HRNKA01				CBL04	FSW6701											
R16	26500.0	40000.0	20 38	0.0	3.0	3.0	2.3	0.0	**a5**	24.0	5.0	H/V	1.5	9.2			1.00	3.00	59.1	74.0	42.1	54.0	-36.1		-53.1		15.209 / GEN	11.9	
R17																													
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29

(ROW)	(COLUMN)	NOTE:
R0	C5	MR is Measurement Range, which may be reduced from DR to achieve necessary SNR.
R0	C6	DR is the regulatory Desired Range measurement distance.
R0	C7	N/F is Near-Field / Far-Field distance computed for max of Antenna Dimension (C10 or C14) computed above 1 GHz.
R0	C8	CF is computed using a 20 dB/decade Decay Rate.
R7,R11	C28	For a vehicular mounted radio device, only spurious arrising from the RF chain are subject to the spurious emissions limits. If these emissions are from digital circuitry, they may not be subject.

Table 4.3.1 (ii) Transmit Chain Spurious Emissions.

EUT Modes: **a1** **a5** max all modes (a1 - a4)
EUT: PRECO STAL79 **a2** **a6**
Test Date(s): 01/12/26 **a3** **a7**
Test Engineer: J. Nantz **a4** **a8**

R0	Frequency Start GHz	Frequency Stop GHz	Site Temp. Hum C, %	Site Table Angle deg	Site MR m	Site DR m	Site N/F m	Site CF dB	EUT Mode	EUT Volt. (V)	EUT Dim cm	Test Antenna Pol. H/V	Test Antenna Ant. Height m	Test Antenna Dim. cm	Test Antenna Ka dB/m	Cable Mixer CL/Kg dB	Receiver Bandwidth RBW MHz	Receiver Bandwidth VBW MHz	Field Strength @ DR Pk Meas. dBuV/m	Field Strength @ DR Pk Lim. dBuV/m	Field Strength @ DR QPk/RMS Meas. dBuV/m	Field Strength @ DR QPk/RMS Lim. dBuV/m	EIRP/MHz Pk Calc. dBm/MHz	EIRP/MHz Pk Lim. dBm/MHz	EIRP/MHz Avg / RMS Calc. dBm/MHz	EIRP/MHz Avg / RMS Lim. dBm/MHz	Regulation Canada RSS-251 §	Pass/Fail dB	Comments
R1	SETUP		OATSD						SAMPLE	FCC3		HRNU01					FSW6701												
R2	40.0	70.0	20 38	0.0	0.3	3.0	1.9	20.0	**a5**	24.0	5.0	H/V	1.5	6.3			1.00	3.00	58.7		49.3		-36.5		-45.9	-30.0	10.2	15.9	noise floor
R3	SETUP		OATSD						SAMPLE	FCC3		HRNE01				MIX60TO9001	FSW6701												
R4	70.0	73.5	20 38	0.0	3.0	3.0	1.2	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	56.7		47.4		-38.5		-47.8	-30.0	10.2	17.8	noise floor
R5	73.5	76.0	20 38	0.0	3.0	3.0	1.3	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	53.4		42.6		-41.8		-52.6	-30.0	10.2	22.6	noise floor
R6	81.0	90.0	20 38	0.0	3.0	3.0	1.5	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	70.5		57.3		-24.7		-37.9	-30.0	10.2	7.9	noise floor
R7	SETUP		OATSD						SAMPLE	FCC3		HRNF01				MIX90TO14001	FSW6701												
R8	90.0	140.0	20 38	0.0	3.0	3.0	2.3	0.0	**a5**	24.0	5.0	H/V	1.5	1.8			1.00	3.00	68.3		58.5		-26.9		-36.7	-30.0	10.2	**6.7**	noise floor
R9	SETUP		OATSD						SAMPLE	FCC3		HRNG01				MIX140TO22001	FSW6701												
R10	140.0	162.0	20 38	0.0	0.3	3.0	2.7	20.0	**a5**	24.0	5.0	H/V	1.5	1.0			1.00	3.00	65.7		54.9		-29.5		-40.3	-30.0	10.2	10.3	noise floor
R11																													
R12																													

R13	Frequency Start GHz	Frequency Stop GHz	Site Temp. Hum C, %	Site Table Angle deg	Site MR m	Site DR m	Site N/F m	Site CF dB	EUT Mode	EUT Volt. (V)	EUT Dim cm	Test Antenna Pol. H/V	Test Antenna Ant. Height m	Test Antenna Dim. cm	Test Antenna Ka dB/m	Cable Mixer CL/Kg dB	Receiver Bandwidth RBW MHz	Receiver Bandwidth VBW MHz	Field Strength @ DR Pk Meas. dBuV/m	Field Strength @ DR Pk Lim. dBuV/m	Field Strength @ DR QPk/Avg Meas. dBuV/m	Field Strength @ DR QPk/Avg Lim. dBuV/m	S @ DR Pk Calc. dBm/cm2	S @ DR Pk Lim. dBm/cm2	S @ DR Avg Calc. dBm/cm2	S @ DR Avg Lim. dBm/cm2	Regulation USA Part 95M §	Pass/Fail dB	Comments
R14	SETUP		OATSD						SAMPLE	FCC3		HRNU01					FSW6701												
R15	40.0	70.0	20 38	0.0	0.3	3.0	1.9	20.0	**a5**	24.0	5.0	H/V	1.5	6.3			1.00	3.00	58.7		49.3		-97.0		-106.4	-62.2	95.3379	44.2	noise floor
R16	SETUP		OATSD						SAMPLE	FCC3		HRNE01				MIX60TO9001	FSW6701												
R17	70.0	73.5	20 38	0.0	3.0	3.0	1.2	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	56.7		47.4		-99.0		-108.3	-62.2	95.3379	46.1	noise floor
R18	73.5	76.0	20 38	0.0	3.0	3.0	1.3	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	53.4		42.6		-102.3		-113.1	-62.2	95.3379	50.9	noise floor
R19	81.0	90.0	20 38	0.0	3.0	3.0	1.5	0.0	**a5**	24.0	5.0	H/V	1.5	2.0			1.00	3.00	70.5		57.3		-85.2		-98.4	-62.2	95.3379	36.2	noise floor
R20	SETUP		OATSD						SAMPLE	FCC3		HRNF01				MIX90TO14001	FSW6701												
R21	90.0	140.0	20 38	0.0	3.0	3.0	2.3	0.0	**a5**	24.0	5.0	H/V	1.5	1.8			1.00	3.00	68.3		58.5		-87.4		-97.2	-62.2	95.3379	35.0	noise floor
R22	SETUP		OATSD						SAMPLE	FCC3		HRNG01				MIX140TO22001	FSW6701												
R23	140.0	200.0	20 38	0.0	1.0	3.0	3.3	9.5	**a5**	24.0	5.0	H/V	1.5	1.0			1.00	3.00	65.7		54.9		-90.0		-100.8	-62.2	95.3379	38.6	noise floor
R23	200.0	220.0	20 38	0.0	1.0	3.0	3.7	9.5	**a5**	24.0	5.0	H/V	1.5	1.0			1.00	3.00	65.7		54.9		-90.0		-100.8	-60.0	95.3379	40.8	noise floor
R24	SETUP		OATSD						SAMPLE	FCC3		HRNG01				MIX220TO33001	FSW6701												
R25	220.0	243.0	20 38	0.0	0.1	3.0	4.1	29.5	**a5**	24.0	5.0	H/V	1.5	1.0			1.00	3.00	69.4		59.1		-86.3		-96.6	-60.0	95.3379	36.6	noise floor
R27																													
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29

(ROW)	(COLUMN)	NOTE:
R0	C5	MR is Measurement Range, which may be reduced from DR to achieve necessary SNR.
R0	C6	DR is the regulatory Desired Range measurement distance.
R0	C7	N/F is Near-Field / Far-Field distance computed for max of Antenna Dimension (C11 or C14) computed above 1 GHz.
R0	C8	CF is computed using a 20 dB/decade Decay Rate.
R0	C23	EIRP is computed from field strength at 3 meter distance in a 1 MHz RBW / 3 MHz VBW.
R13	C23	Spatial Power Density S @ 3m (dBm/cm^2) = EIRP (dBm) – 10*log10(4*pi*((300cm)^2)) = EIRP (dBm) – 60.5 dB, E-Field (dBuV/m) @ 3m - 155.7 dB
R13	C23	S @ DR: 600 pW/cm2 = -62.2 dBm/cm2, 1000 pW/cm2 = -60 dBm/cm2, FCC Regulatory Limit; ISED Regulatory Limit EIRP / MHz

5 Measurement Uncertainty and Accreditation Documents

The maximum values of measurement uncertainty for the laboratory test equipment and facilities associated with each test are given in the table below. This uncertainty is computed for a 95.45% confidence level based on a coverage factor of $k = 2$.

Table 5.0.0 Measurement Uncertainty.

Measured Parameter	Measurement Uncertainty†
Radio Frequency	$\pm(f_{Mkr}/10^7 + RBW/10 + (SPN/(PTS-1))/2 + 1\,\text{Hz})$
Conducted Emm. Amplitude	$\pm 1.9\,\text{dB}$
Radiated Emm. Amplitude ($f < 30\,\text{MHz}$)	$\pm 3.1\,\text{dB}$
Radiated Emm. Amplitude ($30 - 200\,\text{MHz}$)	$\pm 4.0\,\text{dB}$
Radiated Emm. Amplitude ($200 - 1000\,\text{MHz}$)	$\pm 5.2\,\text{dB}$
Radiated Emm. Amplitude ($f > 1000\,\text{MHz}$)	$\pm 3.7\,\text{dB}$

†Ref: CISPR 16-4-2:2011+A1:2014


United States Department of Commerce
National Institute of Standards and Technology

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AHD (Amber Helm Development, L.C.)
Sister Lakes, MI

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique on ISO/IEC 17025).

2025-06-04 through 2026-06-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

Figure 5.0.0 Accreditation Documents