



Rogers Labs, a division of The Compatibility Center LLC

7915 Nieman Rd.
Lenexa, KS 66214
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FCC / ISED

RF Exposure Evaluation Report

VPR-60

FCC ID: OHRVPR-60

IC: 6775A-VPR-60

57.0-64.0 GHz

MS Sedco, Inc.

5706 W. 74th Street
Indianapolis, IN 46278

Test Report Number: 260309

Test Date: March 9, 2026 – April 9, 2026

Authorized Signatory: 

Patrick Powell

Rogers Labs, a division of The Compatibility Center LLC

FCC Designation: US5305

ISED Registration: 3041A

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Revisions

Revision 1 April 28, 2026 – Initial release

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Revision 1

Model/HVIN: VPR-60 FCC ID: OHRVPR-60

Test: 260309

Test to: 47CFR 1.1307, RSS-102 Issue 6

File: VPR-60 RFExp FCC-IC 260309 r1

MS Sedco, Inc.

IC: 6775A-VPR-60

S/N: 649153

Date: April 28, 2026

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Executive Summary

The purpose of this report is to evaluate the EUT's transmitters for exemption from routine SAR testing. This product is a fixed location device and is thereby treated as a mobile device with and is used in Public / Uncontrolled environments.

Regulatory Requirements:

FCC:

47CFR 1.1307

Per 47CFR §1.1310 and §2.091 RF Exposure is calculated.

This fixed location device is treated as a mobile device so MPE is required to evaluate it for exemption from routine SAR testing.

Industry Canada:

RSS-102 Issue 6

This is a mobile device so MPE is required to evaluate it for exemption from routine SAR testing.

Name of Applicant: MS Sedco, Inc.
 5706 W. 74th Street
 Indianapolis, IN 46278

Model: VPR-60

FCC ID: FCC ID: OHRVPR-60 IC: 6775A-VPR-60

Operating Frequency Range: 57.0 – 64.0 GHz

EUT details:

Names and IDs:

HVIN: VPR-60
 PMN/Model: VPR-60
 FCC ID: OHRVPR-60
 Industry Canada: 6775A-VPR-60

Equipment Operational Modes:

Mode#	Transmitter Type	Transmit Frequency (GHz)
1	FDS	57.0 ~ 64.0

Equipment Configuration



Equipment Tested

Model: VPR-60

MS Sedco, Inc.
5706 W. 74th Street
Indianapolis, IN 46278

<u>Equipment</u>	<u>Model / PN</u>	<u>Serial Number</u>
Radiated EUT #1	VPR-60	649153
24V transformer	12024	N/A

Software Version: VPR60-v1225

Integral PCB Patch Antenna

The design transmits pulses at center frequency and receives backscatter to determine motion in the field.

Test results in this report relate only to the items tested. Worst-case configuration data recorded in this report.

Equipment Function

The EUT is a fixed mounted field disturbance sensor. The design incorporates an authorized module (FCC ID: UXS-IDR-2050). The test sample was provided with an AC transformer to power the design for testing. The test system only required power to enable the transmitter function during testing. The test sample operated the transmitter at near 100% duty cycle while powered for testing purposes. The EUT was arranged as described by the manufacturer emulating typical use configuration for testing purposes. For testing purposes, the EUT received power from the provided external AC Transformer and was configured to operate in the manufacturer provided mode and duty cycle. As requested by the manufacturer and required by regulations, the equipment was evaluated for compliance using the available configurations with the worst-case data presented. This report documents the performed testing and results for the applicable configuration and product operation. Test results in this report relate only to the products described in this report.

Test Site Locations

Conducted EMI AC line conducted emissions testing performed in a shielded screen room located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS.

Antenna port Antenna port conducted emissions testing was performed in a shielded screen room located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS.

Radiated EMI The radiated emissions tests were performed at the 3 meters Semi-Anechoic Chamber (SAC) located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS.

Registered Site information: FCC Site: US5305, ISED: 32275, CAB Identifier: US0096

NVLAP Accreditation Lab code 200087-0

Environmental Conditions

Ambient Temperature	22.7° C
Relative Humidity	51.0 %
Atmospheric Pressure	1016.7 mb

Test Results

Test Data

	Transmitter Output power (mW)	34.80						
	Transmitter Output power (W)	0.035						
	Output Power for % duty Cycle operation (Watts)	100	0.035		Antenna Gain (dBi)	0		
	Output Power for 100% duty Cycle operation (Watts)		0.035		Antenna Gain (Numeric)	1.00		
Tx Frequency (MHz)	59750	Calculation power (Watts)	0.035	dBd + 2.17 = dBi	dBi to dBd	2.17		
					Antenna Gain (dBd)	-2.17		
Cable Loss (dB)	0.0	Adjusted Power (dBm)	15.42		Antenna minus cable (dB)	0.00		
					Antenna Gain (Numeric)	1.00		
	Calculated ERP (mw)	21.114			EIRP = Po(dBm) + Gain (dB)			
	Calculated EIRP (mw)	34.800			Radiated (EIRP) dBm	15.416		
	$\text{Power density (S) mW/cm}^2 = \frac{\text{EIRP}}{4\pi r^2}$				ERP = EIRP - 2.17 dB			
	r (cm) EIRP (mW)				Radiated (ERP) dBm	13.246		
	Occupational Limit	FCC radio frequency radiation exposure limits per 1.1310						
5	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)				
50.0	W/m ²	30-300	1	0.2				
	General Public Limit	300-1,500	f/300	f/1500				
1	mW/cm ²	1,500-100,000	5	1				
10.0	W/m ²							
	Occupational Limit	IC radio frequency radiation exposure limits per RSS-102						
50	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)				
50	W/m ²	100-6,000	0.6455f ^{0.5}					
10	W/m ²	6,000-15,000	50					
10	W/m ²	48-300		1.291				
		300-6,000		0.02619f ^{0.6834}				
		6,000-15,000	50	10				
		15,000-150,000	50	10				
					General Public	Occupational		
f = Transmit Frequency (MHz)			f (MHz) =	59750	59750	MHz		
P _T = Power Input to Antenna (mW)			P _T (mW) =	34.8000	34.8000	mW		
Duty cycle (percentage of operation)			% =	100	100	%		
P _A = Adjusted Power due to Duty cycle or Cable Loss (mW)			P _A (mW) =	34.80	34.80	mW		
G _N = Numeric Gain of the Antenna			G _N (numeric) =	1.00	1.00	numeric		
S ₂₀ = Power Density of device at 20cm (mW/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²	S ₂₀ (mW/m ²) =	0.01	0.01	mW/m ²		
S ₂₀ = Power Density of device at 20cm (W/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²	S ₂₀ (W/m ²) =	0.07	0.07	W/m ²		
S _L = Power Density Limit (W/m ²) FCC			S _L (W/m ²) =	1.0	5.0	W/m ²		
S _L = Power Density Limit (W/m ²) Canada			S _L (W/m ²) =	10.0	50.0	W/m ²		
R _C = Minimum distance to the Radiating Element for Compliance (cm) FCC		R _C =√(P _A G _N /4πS _L)	R _C (cm) =	5.3	2.4	cm		
R _C = Minimum distance to the Radiating Element for Compliance (cm) Canada		R _C =√(P _A G _N /4πS _L)	R _C (cm) =	1.7	0.7	cm		
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) FCC		S _C =(P _A G _N)/(4πR _C) ²	S _C (W/m ²) =	1.00	5.00	W/m ²		
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) Canada		S _C =(P _A G _N)/(4πR _C) ²	S _C (W/m ²) =	10.00	50.00	W/m ²		
R ₂₀ = 20cm			R ₂₀ =	20	20	cm		

Summary: Standalone MPE Calculations and Summary (Public Limits)								
	TxDuty Cycle (%)	TxFrequency (MHz)	Power Total (mW)	Antenna Gain (numeric)	S _L (W/m ²)	S ₂₀ (W/m ²)	R _C (cm)	S _C (W/m ²)
FCC	100	59750	34.8	1.00	1.000	0.07	5.3	1.00
Canada	100	59750	34.8	1.00	10.000	0.07	1.7	10.00

Conclusion

The VPR-60, a device that is deployed in public, uncontrolled environments, meets Maximum Permissible Exposure (MPE) RF exposure requirements for both FCC and Industry Canada. For RF exposure safety, personnel should maintain a safe distance of 20 cm from the product.

Annex

- Annex A Measurement Uncertainty Calculations
- Annex B Test Equipment
- Annex C Laboratory Certificate of Accreditation

Annex A Measurement Uncertainty Calculations

The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16–4. Result of measurement uncertainty calculations are recorded below. Component and process variability of production devices similar to those tested may result in additional deviations. The manufacturer has the sole responsibility of continued compliance.

Measurement	Expanded Measurement Uncertainty $U_{(lab)}$
3 Meter Horizontal 0.009-1000 MHz Measurements	4.16
3 Meter Vertical 0.009-1000 MHz Measurements	4.33
3 Meter Measurements 1-18 GHz	5.46
3 Meter Measurements 18-40 GHz	5.16
10 Meter Horizontal Measurements 0.009-1000 MHz	4.15
10 Meter Vertical Measurements 0.009-1000 MHz	4.32
AC Line Conducted	1.75
Antenna Port Conducted power	1.17
Frequency Stability	1.00E-11
Temperature	1.6°C
Humidity	3%

Annex B Test Equipment

Equipment	Manufacturer	Model (SN)	Band	Cal Date(m/d/y)	Due
☒ LISN	FCC	FCC-LISN-50-25-10(1PA) (160611)	.15-30MHz	3/20/2026	3/20/2027
☐ Cable	Huber & Suhner Inc.	Sucoflex102ea(L10M)(303073)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(1.5M)(303069)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Belden	RG-58 (L1-CAT3-11509)	9kHz-30 MHz	9/9/2025	9/9/2026
☒ Antenna	Com Power	AL-130 (121055)	.001-30 MHz	9/2/2025	9/2/2026
☐ Antenna:	EMCO	6509	.001-30 MHz	9/16/2024	9/16/2026
☒ Antenna	ARA	BCD-235-B (169)	20-350MHz	9/2/2025	9/2/2026
☒ Antenna	Sunol	JB-6 (A100709)	30-1000 MHz	9/2/2025	9/2/2026
☐ Antenna	ETS-Lindgren	3147 (40582)	200-1000MHz	9/16/2024	9/16/2026
☒ Antenna	ETS-Lindgren	3117 (200389)	1-18 GHz	3/17/2025	3/17/2027
☒ Antenna	Com Power	AH-118 (10110)	1-18 GHz	9/16/2024	9/16/2026
☒ Antenna	Com Power	AH-1840 (101046)	18-40 GHz	3/17/2025	3/17/2027
☒ Analyzer	Rohde & Schwarz	ESU40 (100108)	20Hz-40GHz	7/9/2025	7/9/2026
☒ Analyzer	Rohde & Schwarz	ESW44 (101534)	20Hz-44GHz	1/20/2026	1/20/2027
☐ Analyzer	Rohde & Schwarz	FS-Z60, 90, 140, and 220	40GHz-220GHz	12/22/2017	12/22/2027
☐ Amplifier	Com-Power	PA-010 (171003)	100Hz-30MHz	9/9/2025	9/9/2026
☐ Amplifier	Com-Power	CPPA-102 (01254)	1-1000 MHz	9/9/2025	9/9/2026
☒ Amplifier	Com-Power	PAM-118A (551014)	0.5-18 GHz	9/9/2025	9/9/2026
☒ Amplifier	Com-Power	PAM-840A (461328)	18-40 GHz	9/9/2025	9/9/2026
☒ Pwr Sensor	Rohde & Schwarz	NRP33T	0.05-33 GHz	9/9/2025	9/9/2026
☒ Generator	Rohde & Schwarz	SMBV100A6 (260771)	20Hz-6 GHz	3/20/2026	3/20/2027
☐ RF Filter	Micro-Tronics	BRC50722 (009).9G notch	30-18000 MHz	3/20/2026	3/20/2027
☐ RF Filter	Micro-Tronics	HPM50117 (063) 3G HPF	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRM50702 (172) 2G notch	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRC50703 (G102) 5G notch	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRC50705 (024) 5G notch	30-18000 MHz	3/20/2026	3/20/2027
☐ Attenuator	Fairview	SA6NFN100W-40 (1625)	30-18000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1445)	30-6000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1735)	30-6000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-6W2+ (1438)	30-6000 MHz	3/20/2026	3/20/2027
☒ Weather station	Davis	6152 (A70927D44N)		1/23/2026	1/23/2027

<u>Equipment</u>	<u>Manufacturer</u>	<u>Model (SN)</u>	<u>Band</u>	<u>Cal Date(m/d/y)</u>	<u>Due</u>
☒ Frequency Counter: Leader		LDC-825 (8060153)		3/20/2026	3/20/2027
☐ ISN	Com-Power	Model ISN T-8 (600111)		3/20/2026	3/20/2027
☒ LISN:	Com-Power	Model LI-220A		9/16/2024	9/16/2026
☐ LISN:	Com-Power	Model LI-550C		9/16/2024	9/16/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(1.5M)(303072)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(L1M)(281183)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(4M)(281184)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(L10M)(317546)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Time Microwave	4M-750HF290-750 (L4M)	9kHz-24 GHz	9/9/2025	9/9/2026
☒ Cable	Mini-Circuits	KBL-2M-LOW+ (23090329)	9kHz-40 GHz	3/20/2026	3/20/2027
☒ Analyzer	HP	8562A (3051A05950)	9kHz-125GHz	3/20/2026	3/20/2027
☐ Antenna:	Solar	9229-1 & 9230-1		2/5/2026	2/5/2028
☐ CDN:	Com-Power	Model CDN M325E		9/16/2024	9/16/2026
☐ EMC Transient Generator HVT	TR 3000			2/5/2026	2/5/2027
☐ AC Power Source (Ametech, California Instruments)				2/5/2026	2/5/2027
☒ Field Intensity Meter: EFM-018				2/5/2026	2/5/2027
☒ ESD Simulator: MZ-15				3/20/2026	3/20/2027
☐ Injection Clamp Luthi Model EM101				not required	
☐ R.F. Power Amp ACS 230-50W				not required	
☐ R.F. Power Amp EIN Model: A301				not required	
☐ R.F. Power Amp A.R. Model: 10W 1010M7				not required	
☐ R.F. Power Amp A.R. Model: 50U1000				not required	
☒ Temperature Chamber				not required	
☒ Shielded Room				not required	

Annex C Laboratory Certificate of Accreditation

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®] ILAC-MRA

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200087-0

Rogers Labs, a division of The Compatibility Center LLC
Lenexa, KS

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 Communiqué on ISO/IEC 17025).*

2025-03-11 through 2026-03-31
Effective Dates

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

[Signature]
For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®] ILAC-MRA

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200087-0

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2026-03-17 through 2027-03-31
Effective Dates

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

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Revision 1

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