

# SIMREX Corporation

## DataMover™ SS-ODU Package

902-928 MHz  
2.406-2.482 GHz  
Frequency Hopping  
Spread Spectrum  
Integrated Transceiver

# UNLICENSED wireless DATA



### RADIO FEATURES

- High Speed. Throughput to 115.2 Kbps
- Unparalleled Robustness
  - Forward error correction
  - CRC/ARQ, multiple re-sends
- Opto-Isolated from controller RS232 port
- Industrial Grade - Extended -40 to +70 degrees C temperature range for trouble free operation in extreme environments
- Sleep mode - ~ 3mA, ideal for solar power applications
- Store and forward - with self healing networks
- Network wide diagnostics - Central network control without the need to visit sites

### Antenna/Enclosure

- Professional mounting kit that allows both wall and pole installation and both azimuth and elevation control
- Built to IP-67 enclosure requirements to withstand all electrical and environmental issues
- Integral Panel Antenna
  - 900 MHz - 12.5 dBi Gain
  - 2.4 GHz - 19 dBi Gain
- Eliminates unnecessary electrical and RF points of failure

Unlicensed / Wireless / Data

### SIMREX..Global wireless solutions. Unlicensed Wireless Data

For more than 2 decades, SIMREX Corporation's wireless products have been providing wireless networking solutions with applications in SCADA, telemetry, telecommunications, mobile data and online transaction markets. SIMREX Corporation provides licensed and unlicensed solutions, installed worldwide.

### Product Overview

The SIMREX Corporation DataMover SS-ODU utilizes FHSS (Frequency Hopping Spread Spectrum) in the ISM Bands of 902-928 MHz or 2.406-2.482 GHz to provide reliable long range data transportation at up to 115.2 Kbps. The DataMover SS-ODU provides transparent data communications for nearly all SCADA / Telemetry and EFM protocols including MODBUS.

Any DataMover SS-ODU can be configured as a repeater extension. This allows store and forward data operation to extend the operation range of the network. Multiple repeaters can exist at any level of the network preventing a single radio failure from disabling the entire network. There is no limit to the number of repeaters that can be used. This product is available for use in Class 1, Division 2, Groups A, B, C & D hazardous locations. \*

### Why Consider a DataMover SS-ODU Solution?

- **High system performance and data integrity.** Robust construction, digital signal processing [DSP] technology with self-equalization, automatic CRC/ARQ and powerful forward error correction.
- **Flexibility and rapid installation.** Quick return on investment due to plug-and-play installation. License-free radio design with the ability to communicate with any asynchronous protocol without extra software or additional programming.
- **Performance under the most adverse conditions.** Robust design provides excellent performance in the face of interference or difficult signal paths.
- **SIMREX network-wide diagnostics software** simplifies tasks and reduces the cost of managing the network infrastructure by eliminating trips to the field. Provides a non-intrusive means of maintaining link and radio network performance.
- **Opto-Isolated Flexible interfaces.** All DataMover SS-ODU come equipped with Opto-Isolated RS-232 for direct connection to most RTU/PLC's.
- **Low Power consumption.** Sleep mode for extremely low power consumption requirements - radio typically draws 3mA - yet still recovers quickly for fast access to your critical data.
- **SIMREX DataMover SS-ODU is a price/performance leader** offering flexibility and reliability for both point-to-point and point-to-multipoint requirements.

### Applications

- SCADA
- Tested and approved to work with Schweitzer Engineering Laboratories [SEL] Mirrored Bits™
- Industrial Automation
- Process Control
- Gas and Oil Exploration, Production and Transportation
- Electric, Water and Gas Utilities

# DataMover™ SS Radio/ ODU Specifications

**Frequency Band** 902-928 MHz ISM Band  
2.406-2.482 GHz ISM Band

## Physical and Environmental

Input Power 6 to 30 Vdc

Current Drain Mode 30Vdc 13.8Vdc 6Vdc

|          |       |       |       |
|----------|-------|-------|-------|
| Transmit | 36 mA | 510mA | 1.18A |
| Receive  | 51 mA | 100mA | 155mA |

Sleep Mode 3 mA typical

Temperature Range -40 to +70 degrees C

Humidity < 95% RH (Non-condensing)

## Transmitter

Power Output (user selectable) **SS-900:** .1 Watt to 1 Watt  
(20 dBm to 30 dBm) at 6Vdc to 30Vdc  
**SS-2.4:** .1 Watt to .5 Watt  
(20 dBm to 27 dBm) at 6Vdc to 30Vdc

Modulation CPFSK

## Receiver

Sensitivity -108 dBm (1 x 10<sup>-6</sup> BER) typical

Error Detection CRC16; Resend on Error

Interference Avoidance 64,000 hop patterns selected automatically  
via network address

FEC, CRC/ARQ and/or Multiple Packet Transmits

Excellent Strong Signal (interference) Characteristics

Band Segmentation for Friendly Coexistence with Other Services such as LMS

## Data

Interface RS-232

Usable Throughput 115.2 kbps

Port Speeds 1.2 to 115.2 kbps

## Operating Modes

Point-to-Multipoint Master or Remote  
Repeater Extension (Store and Forward)  
- Unlimited repeaters  
- self healing networks

## Network Management

Diagnostics

Centralized network control eliminates site visits

Create store-and-forward configurations

Compatible with other Simrex products

## Integrated Antenna Specifications

Antenna Gain

|         |          |
|---------|----------|
| 900 MHz | 12.5 dBi |
| 2.4 GHz | 19 dBi   |

Size 391 x 391 x 43 mm  
15.4 x 15.4 x 1.7 in

Enclosure Weight 1.1Kg  
2.75 lbs

Connectors (Options) RJ45, N-TYPE

Enclosure Material Aluminum

Fasteners Stainless Steel

Mounting Both wall and pole mount [see detail drawing]

AZ/EL control Both

Pole Size 0.75in to 3.0in  
(1.9cm to 7.6cm)

Temperature -40°C to 70°C

Humidity 100%

Water Tightness IP-67

Wind Load (Survival): 125mph (201kph)

## Agency Approvals

|     |                  |
|-----|------------------|
| FCC | Part 15 Approved |
| IC  | Approved         |

## Available Configurations:

**DM SS-9M2-ODU-13DBI-24** - integrated 13dBi panel antenna, 24V PS  
**DM SS-9M2-ODU-OMNI-24** - integrated 5dBi omni antenna, 24V PS  
**DM SS-9M2-ODU-X-24** - N female connector for ext antenna, 24V PS

## SIMREX CORPORATION

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SIMREX DataMover products are manufactured under a quality system certified to ISO 9001. SIMREX reserves the right to make changes to specifications of products described in this data sheet at any time without notice and without obligation to notify any person of such changes.

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