

# SIMREX Corporation

## DataMover™ SS I/O Control Platform

902-928 MHz  
Frequency Hopping  
Spread Spectrum  
I/O Control  
Transceiver

# PROGRAMMABLE wireless i/o AND CONTROL



### I/O FEATURES

- 20 MHz controller that can be programmed with "smarts" for user applications.
- 16 bits of DIO (expandable for additional digital or analog IO).
- 2+ serial ports for user application.
- Serial ports for configuration and Flash upgrade.
- Available with or without internal Spread Spectrum radio.
- Internal relay option.
- GPS interface capability for timing or positioning applications.

### IMPLEMENTED APPLICATIONS

- AES Encryption module.
- Traffic Crosswalk Controller
- GPS equipped time synchronization unit for Traffic Controller applications.

### RADIO FEATURES

- High Speed. Throughput to 115.2 Kbps
- Unparalleled Robustness
  - Forward error correction
  - CRC/ARQ, multiple re-sends
- Store and forward - with self healing networks
- Network wide diagnostics - Central network control without the need to visit sites

### Applications

- Traffic Control.
- SCADA, Industrial Automation
- Process Control
- Gas and Oil Exploration, Production and Transportation
- Electric, Water and Gas Utilities



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

For almost 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.

### Application Overview

SIMREX is pleased to introduce the DataMover SS-IO as a general purpose radio enabled controller platform. The DataMover SS-IO is best suited for applications where some application specific "smarts" are required in some or all of the nodes in the system. These applications can be simple sequencing of inputs and outputs like a Crosswalk Controller or more complex data parsing, protocol conversion, timing or process control.

The processing capability of the DataMover SS-IO controller can substitute for a PC in many applications.

### Product Overview

The Simrex DataMover SS-IO is built around a high performance microcontroller that has 16 bits of DIO and serial ports that may be used for programming and for user applications.

The wireless element of the DataMover SS-IO utilizes FHSS (Frequency Hopping Spread Spectrum) in the ISM Band of 902-928 MHz to provide reliable long range data transportation at up to 115.2 Kbps. Any DataMover SS-IO can be configured as a repeater extension and also have I/O capability. The DataMover SS radio (without I/O) may also be used as a repeater. 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.

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

- If your application has unique requirements that dictate a controller that can be programmed to implement the application.
- Applications that may be using PC's for simple control tasks as part of the system may be able to replace the PC's with Datamover SS-IO.
- **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 transparently 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.
- **Small Footprint** allows installation inside RTU or PLC housing.
- **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.
- **SIMREX DataMover SS-IO is a price/performance leader** offering flexibility and reliability for both point-to-point and point-to-multipoint requirements.

# DataMover™ SS-IO Spread Spectrum I/O Controller / Radio Specifications

<b>Frequency Band</b>	902-928 MHz ISM band
<b>Physical and Environmental</b>	
Dimensions	(4.1 D x 4.4 W x 2.1 H inches) (10.4 D x 11.2 W x 5.3 H cm)
Input Power	12 Vdc
Temperature Range	-37 to +70 degrees C
Humidity	< 95% RH (Non-condensing)

## Transmitter

Power Output	1 Watt (30dBm), user selectable down to 100mW (+20dBm)
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## 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	Four RS-232 (one shared with radio, one for flash programming)  16 digital IO
Usable Throughput	115.2 kbps
Port Speeds	1.2 to 115.2 kbps

## Connectors

Power, User, NMS	2 Pin Phoenix
User	(4) RS232 (RJ11)
NMS	RS232 (RJ11)
RF	TNC
Digital I/O	16 pin Phoenix

## Operating Modes

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

Diagnostics Centralized network control eliminates site visits Create store-and-forward configurations Compatible with other Simrex products
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## Agency Approvals

FCC	Part 15 Approved
IC	Approved



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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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