# SIMREX Corporation
## DataMover™ Preempt

902-928 MHz
2.406 - 2.482 GHz
Frequency Hopping
Spread Spectrum
I/O Control
Transceiver

# WIRELESS
## remote preempt
# CONTROL



## PREEMPTION FEATURES

- Up to 4 routes selectively preempted from a single control point.
- Sub-second response time.
- Selectable, failsafe state on all outputs.
- Link valid indicator from each intersection.
- Preempt acknowledge from each intersection.
- Electrical isolation between intersection and firehall.
- Intersections may act as repeaters.

## RADIO FEATURES

- License-free long range 900 MHz or 2.4GHz radio.
- High Speed.  Application throughput to 115.2 Kbps.
- Unparalleled Robustness
  - Forward error correction
  - CRC/ARQ, multiple re-sends improve performance in poor RF conditions.
- Repeater mode - with self healing networks.
- Network wide diagnostics - Central network control without the need to visit sites

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

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

## Application Overview

SIMREX is pleased to introduce the DataMover Preempt as a general purpose radio preemption system for fixed control locations.  The DataMover Preempt is best suited for applications where wired switches are inconvenient and/or cost prohibitive.  There can be protracted delays in getting right of way for buried or overhead wiring to the traffic controller.  The DataMover Preeempt can be deployed quickly with most installations taking less than a day.

Variants are available with the capability to control from 1 to 4 remote intersections.

## Product Overview

The Simrex DataMover Preempt is built around a high performance microcontroller that has 16 bits of digital IO and serial ports that may be used for programming and user   applications.   The wireless element of the DataMover Preempt utilizes FHSS (Frequency Hopping Spread Spectrum) in the unlicensed  ISM Band 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 radio can also be used as a standalone repeater for Datamover Preempt systems.   This allows store and forward data operation to extend the operation range of the network.

The DataMover Preempt is available as a prebuilt and prewired solution enclosed in a NEMA enclosure.  Additionally, variants of the control box are available with built in antennas to further simplify installation in situations where the RF path is not difficult.

## Why Consider a DataMover Preempt Solution?

- Rapid deployment.
- Supervised data link with status indicator.
- 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.  Low cost deployment due to plug-and-play installation.  .
- Performance under the most adverse conditions.  Robust design provides excellent performance in the face of interference or difficult signal paths.

## Applications
- Traffic Control for Emergency Vehicles.
- Firehouse

# DataMover™ Preempt
# Spread Spectrum Radio Specifications

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

**Physical and Environmental**

Dimensions:

(radio for traffic controller) (4.1 D x 4.4 W x 2.1 H inches)
(10.4 D x 11.2 W x 5.3 H cm)
(NEMA enclosure)   (12.0 W x 14.0 H x 7.0 D inches)
(30.5 W x 35.6 H x 17.8 D cm)

Input Power   12 Vdc

Temperature Range   -37 to +70 degrees C

Humidity   < 95% RH (Non-condensing)

**Transmitter**

Power Output   SS-900: .1 to 1 watt
(user selectable)     (20dBm - 30dBm)
SS-2.4: .1 to .5 watt
(20dBm to 27dBm)

**Receiver**

Sensitivity   -108 dBm (1 x $10^{-6}$ BER) typical

Error Detection   CRC16; Resend on Error

Interference Avoidance   More than 60,000 hop patterns selected automatically  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, one for configuration, one spare)

16 digital IO (8 in, 8 out)

Usable Throughput   115.2 kbps
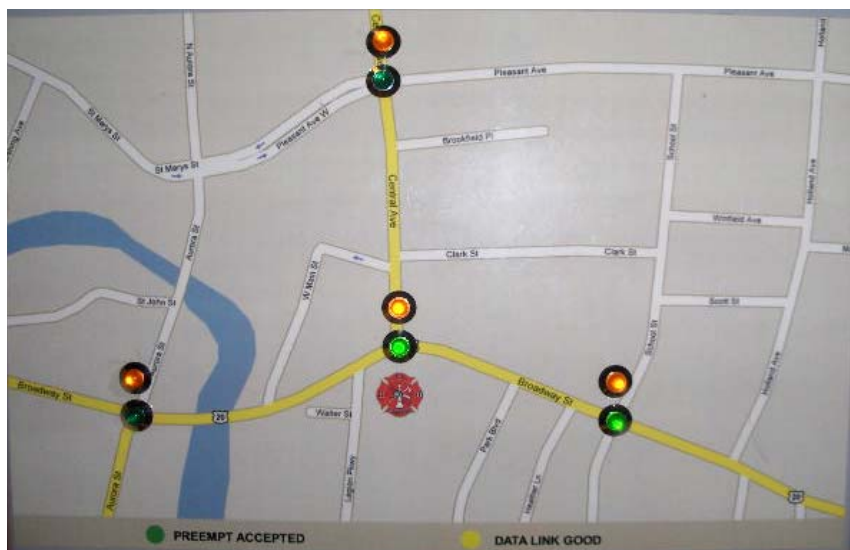
Port Speeds   1.2 to 115.2 kbps

**Connectors**

Power, User, NMS   2 Pin Phoenix

User   (4) RS232 (RJ11)

NMS   RS232 (RJ11)

RF   TNC

Digital I/O   16 pin Phoenix

**Network Management**

Diagnostics

Centralized network control eliminates site visits

Create store-and-forward configurations

Compatible with other Simrex products

**Agency Approvals**

FCC   Part 15 Approved

IC   Approved



PREEMPT ACCEPTED      DATA LINK GOOD

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