

SIMREX Corporation

DataMover™ SS-CC Spread Spectrum

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

WIRELESS c o n t a c t CLOSURE



I/O FEATURES

- 15 bits of DIO
- Any bit can be output or input
- I/O can be read by Host command or Autonomous transmission.
- Autonomous mode allows CC to communicate without being polled by Host.
- Autonomous mode may be Timer, Strobe or Change triggered.
- Contact closures can be transferred from CC to other CC's..
- 0-30V input without damage. 1V low, 3.5V high.
- 30V open collector output, 100 mA max, Vsat=1V @100 mA.
- Event counter up to 10,000,000 counts

RADIO FEATURES

- High Speed. Throughput to 115.2 Kbps
- Unparalleled Robustness
 - Forward error correction
 - CRC/ARQ, multiple re-sends
- 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

Applications

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

Wireless / Contact / Closure

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.

Application Overview

SIMREX is pleased to introduce the DataMover SS-CC as an efficient method of transferring contact closures from one point to another or to multiple points. The DataMover SS-CC may either be polled by a Host controller (PC or another DataMover CC) or may transmit IO status autonomously based on a timer, strobe or a change in state of an input.

A pair of DataMover SS-CC's may be used to transfer I/O state from one node to another in effect emulating a multiconductor cable without any wires!

Product Overview

The SIMREX Corporation DataMover SS-CC utilizes FHSS (Frequency Hopping Spread Spectrum) in the ISM Band of 902-928 MHz or 2.4016-2.4778 GHz to provide reliable long range data transportation at up to 115.2 Kbps. Any DataMover SS-CC 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-CC Solution?

- **The DataMover SS-CC** can be configured to transfer I/O status without the need for a polling host computer. A Master DataMover SS-CC's input status may be relayed to the outputs of a slave DataMover SS-CC.
- **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.
- **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.
- **Low Power consumption.** Sleep mode for extremely low power consumption requirements - typically draws 7mA - yet still recovers quickly for fast access to your critical data.
- **SIMREX DataMover SS-CC is a price/performance leader** offering flexibility and reliability for both point-to-point and point-to-multipoint requirements.

DataMover™ SS-CC Spread Spectrum Contact Closure / Radio Specifications

Frequency Band	902-928 MHz ISM band 2.406-2.482 GHz ISM band
Physical and Environmental	
Dimensions	(Approx. 3.6 D x 5.1 W x 1.0 H inches) (Approx. 9.1 D x 12.9 W x 2.5 H cm)
Input Power	6 to 30 Vdc
Current Drain	Mode <u>30Vdc</u> <u>13.8Vdc</u> <u>6Vdc</u> Transmit 236 mA 510mA 1.18A Receive 51 mA 100mA 155mA
Sleep Mode	~3mA typical
Temperature Range	-40 to +70 degrees C
Humidity	< 95% RH (Non-condensing)
Transmitter	
Power Output (user selectable)	SS-900: .1 to 1 watt (20dBm - 30dBm) SS-2.4: .1 to .5 watt (20dBm to 27dBm)
Modulation	CPFSK
Receiver	
Sensitivity	-108 dBm (1 x 10 ⁻⁶ 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-232/422/485 (User Selectable)
Usable Throughput	115.2 kbps
Port Speeds	300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps asynchronous

Connectors	
Power, User, NMS	2-Pin Phoenix, DB-9 female, RJ11
RF	TNC
Operating Modes	
Point-to-Multipoint	Master 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

Agency Approvals	
FCC	Part 15 Approved
UL/CSA	Class 1, Div. 2 approved* (UL 508, UL 1604)
IC	Approved

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