BLACK BOX®
NETWORK SERVICES

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WIRELESS MODEMS (900-MHZ)
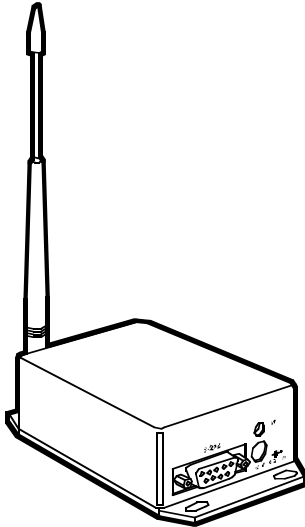
Break the distance barrier of RS-232 and RS-485 connections—and conquer common cabling problems, too!

Key Features

▶ *Outdoor range of up to 2 miles (3.2 km) with dipole antenna.*

▶ *Indoor range of 600 to 1300 ft. (182.9 to 396.2 m).*

▶ *Automatically initialises when powered on using AT commands stored in EEPROM.*

▶ *Operates point-to-point or multipoint.*

When installing wiring to link your datacommunications equipment is not practical, choose our wireless modems. They let you install your equipment indoors or outdoors without cable interference, crosstalk, ground loops, or other wiring problems. These modems must be used in pairs.

Select compact or rail-mount modems. Since they operate at a frequency of 900 MHz using spread-spectrum technology, they comply with the FCC Class B certification required. Initialise the modems automatically or customise them via the 16 initial AT command strings—which you can read and modify—stored in onboard EEPROM.

During the first 10 seconds after power on, the modem sets the baud rate to 9600 bps and looks for configuration commands at the RS-232 or RS-485 serial port. If it doesn't receive any valid configuration commands during this time, the modem starts initialising itself with the EEPROM-stored AT commands. The LED on the front panel flashes as each of the stored AT commands are sent to the modem. When the front-panel LED goes off and stays off, initialisation is complete.

To place the modem in EEPROM read/write mode, simply enter a valid initialisation command within 10 seconds after the modem is powered on.

The modem automatically stores the break sequence (+++) at the beginning of the initialisation process, so you don't need to enter it at the beginning of each AT command.

Go the distance.

When used outdoors, the antennas on a pair of these modems enable you to place devices up to 2 miles (3.2 km) apart. Used indoors, extend distances from 600 to 1300 ft.—that's more than four football fields long!

Install the 900-MHz Wireless Repeater between wireless modems. It includes two dipole antennas, so it can connect to one modem for each antenna. The distance between one modem and the repeater can be 600 to 1300 ft. indoors or 2 miles outdoors. Likewise, the distance between the repeater and the second modem can be 600 to 1300 ft. or 2 miles. This brings the total distance between modems to 1200 to 2600 ft. indoors or 4 miles outdoors.

10889

Connect a remote card reader to a local PC via a pair of Compact Wireless Modems.
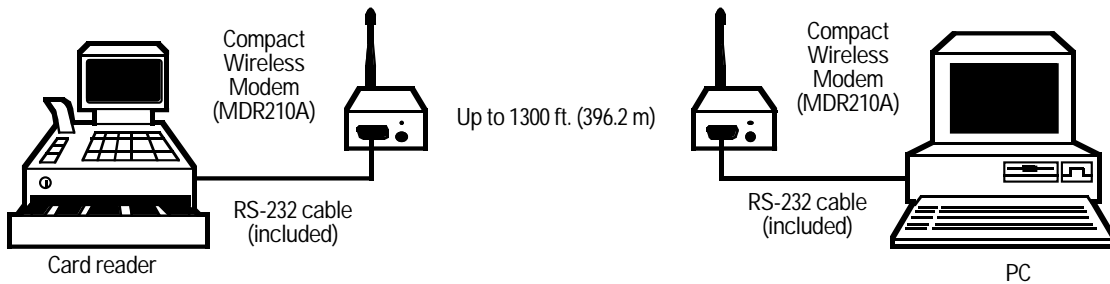
Specifications

Frequency Range: 902 to 928 MHz, unlicensed ISM band type frequency-hopping spread-spectrum transceiver

Frequency Control: Direct FM

Transport Protocol: Transparent networking

Network Topology: Point-to-point or multipoint

Channel Capacity: Hops through 25 channels, up to 65,000 Net IDs

Operation: Half-duplex

Serial Data Interface:
MDR210A-232, MDR212A-232: Asynchronous (RS-232) CMOS (TTL) signals, 5 V, 3.3 V tolerant;
MDR210A-485, MDR212A-485: 1.5 V to 5 V differential

Serial Data Rate:
2400 to 57,600 bps, set at factory (performance specifications vary with the data rate)

Channel Data Rate: 10 kbps

Transmit Power Output: 100 mW

Range*: Indoor: 600 to 1300 ft. (182.9 to 396.2 m);
Outdoor: 2 mi. (3.2 km) with included antenna

*Range calculations are for 9600-baud radio, line-of-sight. Actual range will vary based upon specific board integration, antenna selection, environment, and the OEM's device.

Mounting: MDR212A-232, MDR212A-485: Via DIN rails

Connectors:
MDR210A-232, MDR210A-485, MDR212A-232, MDR212A-485: (1) DB9 female (RS-232), (1) terminal block (RS-485);
Antenna connector: Reverse polarity SMA male

Indicators: (1) Power LED

Operating Temperature: -40 to +185°F (-40 to +85°C)

Operating Humidity: 10 to 90% noncondensing.

Power: 115 VAC, 60 Hz (external) or 6–24 VDC

Size: 0.4"H x 1.6"W x 2.7"D (1 x 4.1 x 6.9 cm)

Weight: 0.8 oz. (22.7 g)

What's Included

- (1) Compact or DIN Rail Wireless Modem (900-MHz)
- (1) CD-ROM containing setup software
- (1) 6-ft. (1.8-m) DB9 male to DB9 female RS-232 cable
- (1) power supply
- (1) dipole antenna for wireless modems; (2) dipole antennas for repeater
- (1) users' manual