# 2.4-GHz Serial Transceiver, (1) Client/Server Unit

**MDR244A**

Eliminate serial cable connections. Control your RS-485 devices wirelessly!

## Description

2.4-GHz Serial Transceiver, RS-485, (1) Client/Server Unit

## Quick Facts

- Interconnect terminals up to a mile apart and control serial devices remotely.

- Deploy in mobile, temporary, or fixed installations—point-to-point or multipoint.

- Operate in the license-free, internationally accepted 2.4-GHz band.

## Further Details

- Use Frequency-Hopping Spread Spectrum (FHSS) technology. Provide reliable RF transmission even in areas crowded with radio communications.

- Support RS-485 2-wire, half-duplex communications for easy integration into legacy systems.

- Industrial-grade. Feature durable, die-cast enclosures for use in a wide range of temperatures and elements.

- Plug-and-play design and GUI-based configuration software enable quick setup.
Upgrade your wired serial control links to wireless ones fast with these affordable, ready-to-use transceivers from Black Box.

By going wireless, you bring a whole new level of flexibility to your industrial, commercial, or business serial-control applications. Transmit around corners, through walls, and even in environments that are typically hostile to RF signals with the 2.4-GHz Serial Transceivers.

Just think of what you can do by not having long and cumbersome cable connections to deal with. You can set up links to devices on your factory floor or in any other setting where a wired link would be vulnerable to interruption. (See "Applications" below.)

The transceivers use Frequency-Hopping Spread Spectrum (FHSS) technology to provide reliable 115.2-kbps communications. With clear line of sight, they support links up to a mile (1.6 km) outdoors. Indoors, the 2.4-GHz Serial Transceivers transmit up to 500 feet (152.4 m).

The transceivers are ready to use out of the box. You can set them to begin transmitting standard asynchronous RS-485 serial data to one or more client transceivers in a matter of minutes!

The transceivers communicate with one another in client/server point-to-point or multipoint topologies with the central server node supporting any number of remote client nodes. You can set them to communicate with all connected devices or by using the unique MAC addresses embedded in each transceiver, send packets to a precise destination. To establish an RF link, the server-end unit emits a beacon to each client transceiver, which then informs the host that it has detected the beacon.

No elaborate configuration or special host software is required for transceiver operation. The included GUI-based, Windows® compatible software helps you to configure your transceivers to suit your specific application requirements.

Because the 2.4-GHz Serial Transceivers use license-free frequency bands, they're ready to use without any certification requirements. In most countries in North America and Europe, you can create up to 40 independent networks with the RS-485 2.4-GHz Serial Transceivers.

You can even create a number of subnetworks (by simply assigning unique radio addresses to the specific groups) and co-locate unique networks next to each other at the same site. A distinct hopping pattern is provided for each channel, which enables multiple networks to co-exist in the same area without any concerns over possible interference.

**Applications:**

• Set up reliable communications between a control room and factory or lab devices. Because there's no wiring to deal with, you cam move links from machine to machine in minutes.

• Link weight scales and other measurement equipment, as well as data logging, monitoring, and control instrumentation, and upload data to your PC without having to leave your control station.

• Establish permanent serial links to retail kiosks, point of purchase (PoP) displays, or ATMs. Unobtrusive and ultra-compact, the transceivers are easy to keep out of customers' sight.

• Set up temporary links for trade show or other event demos in which serial devices are used. With these portable transceivers, you can shorten booth setup and tear-down time, and there are no pesky cables to snarl you—or your visitors.

• Install less-evasive links for electronic signage. No trenches to dig, no pulling cable through a maze of conduit, no worrying about other contractors accidentally breaking your wired connection.

**The MDR244A includes:**

- (1) client/server unit

- (1) antenna

- (1) power supply

- (1) straight-through serial cable

## Technical Specifications for 2.4-GHz Serial Transceiver, RS-485, (1) Client/Server Unit:

Antenna Type — 1/2 wave dipole

Channels (Maximum) — U.S./Canada/Europe other than France: 40; France: 20

Data Rate (Maximum) — 115.2 kbps

Distance (Maximum) — 1 mi. (1.6 km) with clear line of sight

Frequency Band — 2402–2478 MHz FHSS

Network Topologies Supported — Point-to-point or point-to-multipoint (server/client architecture)

Operating Temperature — -40 to +176º F (-40 to +80º C)

RF Data Rate — 576 kbps (fixed)

Security — 1-Byte System ID

Connectors — MDR244A: Terminal block (RS-485)

Antenna: (1) RPSMA jack

Power: (1) barrel jack

Indicators — (4) LEDs: Power (PWR), Link, Transmit (Tx), Receive (Rx)

Power — 100–240-VAC, 50–60-Hz, autosensing transformer on 6-ft. (1.8-m) U.S. cord to 7.5 VDC

Consumption (at 12 VDC): 102 mA (50% TX/RX duty cycle);

Transceiver output: 100 mW (with 3 dBi antenna)

Input: 7–18 VDC

Size — Each transceiver: 1.4"H x 4.4"W x 2.7"D (3.6 x 11.2 x 6.9 cm)

Weight — Each transceiver: 0.3 lb. (0.2 kg)