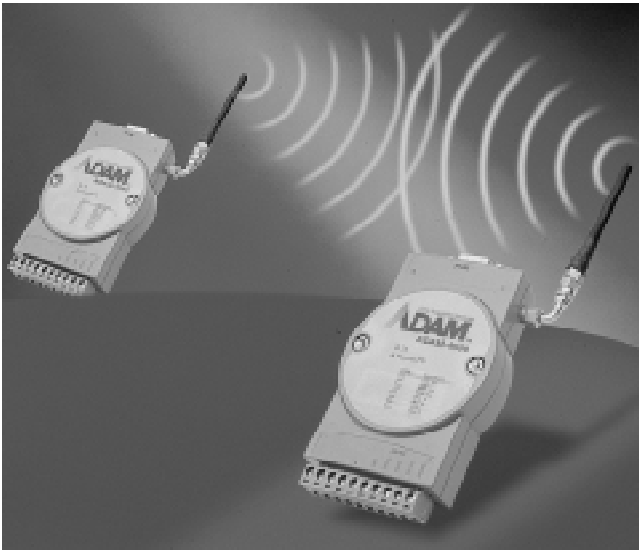


ADAM-4550

2.4 GHz Radio Modem Module (RS-232/485 Interface)



Introduction

ADAM-4550 is a new Direct-Sequence Spread Spectrum radio modem. It operates in the 2.4 GHz ISM band license-free with worldwide compliance. Communication with the user is provided through both RS-232 and RS-485 serial interfaces at speeds up to 115.2 Kbps.

The unit operates half duplex with an over-the-air data rate of 1 Mbps. The basic modem has 100 mW of output power and has a range of over 150 meters using a small whip antenna on its rear panel. Ranges in excess of 20 km (line-of-sight) are possible with an external pole-mounted high gain antenna available from Advantech.

The RS-485 standard supports half-duplex communication. This means a single pair of wires is used to both transmit and receive data. Handshaking signals such as RTS (Request To Send) are normally used to control the direction of the data flow. A special I/O circuit in the ADAM-4550 automatically senses the direction of data flow making handshaking signals unnecessary.

The ADAM-4550 radio modem provides reliable wireless connectivity for either point-to-point or point-to-multipoint networks. It is designed for data acquisition and control applications between remote sensors and the host computer. A typical application might include using an ADAM-4550 connected to a host computer via the RS-232 interface, and a number of ADAM-4550 units at remote sites. Each remote ADAM-4550 can interface with a number of remote devices via an RS-485 network. The ADAM-4550 modules at the remote sites relay the remote data to the host ADAM-4550 and the host ADAM-4550 sends the control commands to the remote sites via radio transmission.

Features

- Software configurable RS-232 and RS-485 data rates up to 115.2 Kbps
- Over 20 km transmission radius possible with external antenna and amplifier
- Built-in watchdog timer and automatic RS-485 data flow control
- Spread-spectrum radio modulation
- Operates in a worldwide license-free band (2.4 GHz)
- Over-the-air data flow rate between units of 1 Mbps
- Software configurable radio transceiver address
- Easily mounts on DIN-rail, panel or piggyback
- EEPROM for storing communication setups
- Supports point-to-point or point-to-multipoint application
- Transparent IEEE 802.1 protocol with 10 K buffer helps assure data integrity
- Power and data flow indicators for troubleshooting
- Includes diagnostic software for radio link measurement
- Complies with FCC Part 15 Rules and ETSI 300.683/300.328

Specifications

- **RS-232/RS-485 transmission speed (bps):** 1200, 2400, 4800, 9600, 19.2 K, 38.4 K, 57.6 K, 115.2 K
- **RS-232 interface connector:** Female DB-9
- **RS-485 interface connector:** Plug-in screw type terminal [accepts AWG 1-#12 or 2-#14-#22 (0.5 to 2.5 mm²) wires]
- **Radio transmission rate:** 1 Mbps
- **Radio transmission frequency:** 2.45 GHz nominal
- **Radio transmission power:** 100 mW nominal
- **Radio modulation:** Direct Sequence Spread Spectrum PSK
- **Radio transceiver address:** Software configurable up to 254 different addresses
- **Communication distance:** 550 feet effective range (under open site test with 2 dBi omni antenna). Actual distance depends on environmental conditions, antenna type and positioning.
- **Operating temperature:** 0 ~ 70° C (14 ~ 158° F)
- **Power requirements:** +10 to +30 V_{DC} (non-regulated)
- **Power consumption:** 4 W
- **Dimensions:** 60 mm x 120 mm (2.36" x 4.41")

Ordering Information

- ADAM-4550:** 2.4 GHz radio modem module (RS-232/RS-485 interface)
- Antenna, Cable, and Adapter:** Available on request