RFInnovations

Leaders in Wireless Data

Piccolo 433MHz Low Cost Data Radio

The Piccolo RFI-433 data radio modem is a licence free frequency hopping unit designed for reliable operation in industrial environments.

Features

- Dual RS232 ports for separate data streams
- 25 mW transmit power (software selectable)
- Up to 5km line of sight*
- Up to 38,400 bps (software selectable)
- Low power consumption with power saving modes
- Multi-mode LED front panel display for diagnostics, including RSSI meter
- Protocol DNP-3, Modbus and IEC 870 compatibility.

Applications

The RFI-433 is suited for applications in Utilities, Mining, Agriculture and Transport industries where reliable small area data transfer is critical.

The data radio can be used in small scale telemetry systems, with almost any PLC, RTU, HMI or DCS vendor for monitoring and control of critical assets in SCADA systems.

The Piccolo transparently moves data from end-to-end at speeds of up to 38.4 kbps. The low cost radio can also perform as a store and forward repeater to extend the range and can also be used with other RF Innovations radio modems and I/O modules.

*Maximum practical point-to-point distance with line of sight and suitable antennas.

Specifications

Variable Data Rate	The radio modulation rate can be selected to accommodate for path interference and background noise. Users can select higher rates for shorter distances or lower rates for more reliable signal propagation in difficult environments.
Frequency Hopping Spread Spectrum	Users can select a particular channel or hop between frequencies in order to avoid jammed or occupied channels in the license free band.
Diagnostics at a Glance	The front panel LEDs display diagnostic information indication such as Receive Signal Strength (RSSI), transmit power, radio temperature and RS232 port status.
Low Power Consumption	With three different power saving modes and current draw down to 3mA, the Piccolo data radio is ideal for solar and battery applications.
Data Integrity	User selectable Automatic Retry Request (ARQ) combined with radio CRC offers a high level of data integrity for end-to-end error free transmission
Easy Network Configuration	The Cruise Control software allows the user to configure, save and upload radio configuration settings. This allows for more efficient configuration of multiple radio modems.
Network Expansion	The Piccolo can be configured for store-and-forward and mobile remote operation for flexible and expandable network coverage.

PHYSICAL
Dimensions: 130mm x 80mm x 30mm
Weight:
- In Case   159g
- OEM   70g
Construction: light weight UV stabilized chassis and cover

MODEM
Serial Data: RS-232 Asynchronous with handshaking
Interface Speed: 300bps to 38400bps software selectable
Error Rate:
-107 dBm for less than 1×10^{-6} BER @9600bps

GENERAL
Operating Voltage: 7V to 33V DC (negative ground)
Operating Current:
- Transmit @12V   45 mA nominal @ 25mW
- Standby @12V   15mA nominal
- Sleep @ 12 V   2mA nominal
Operating Temp: -10 to + 60°C
Operating Humidity: Up to 95% non-condensing relative humidity

CONNECTORS
Antenna: SMA Female (50 Ohm)
Serial: 2 x RJ45 RS232 ports
Power: Phoenix PH-1776508 (2 positions)
           Mating connector supplied

RADIO
Frequency Range: 433.05 MHz to 434.79 MHz
Air Data Rate: 9600, 19200, 38400 bps (software selectable)
Duty Cycle: Up to 100%
Transmit Power: 1mW (+0dBm) to 25mW (+14dBm)
Mode of Operation: Time Division Duplex (Pseudo full duplex)
Channel Bandwidth: 20, 40, 200 kHz software selectable
Modulation: 2-level FSK

OPTIONS
RFI-433 HCHPD0: 433 MHz, packet driven, license free data radio

Specifications subject to change without notice V170831