



# 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.

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.

**RFInnovations**

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

# Specifications

<b>Variable Data Rate</b>	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.
<b>Frequency Hopping Spread Spectrum</b>	Users can select a particular channel or hop between frequencies in order to avoid jammed or occupied channels in the license free band.
<b>Diagnostics at a Glance</b>	The front panel LEDs display diagnostic information indication such as Receive Signal Strength (RSSI), transmit power, radio temperature and RS232 port status.
<b>Low Power Consumption</b>	With three different power saving modes and current draw down to 3mA, the Piccolo data radio is ideal for solar and battery applications.
<b>Data Integrity</b>	User selectable Automatic Retry Request (ARQ) combined with radio CRC offers a high level of data integrity for end-to-end error free transmission
<b>Easy Network Configuration</b>	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.
<b>Network Expansion</b>	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 45mm

### Weight:

- In Case 300g
- 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  $1 \times 10^{-6}$  BER @9600bps

## GENERAL

**Operating Voltage:** 8V to 35V DC (negative ground)

### Operating Current:

- Transmit @12.5V 50 mA nominal @ 25mW
- Standby @12.5V 30mA nominal
- Sleep @ 12.5V 3mA nominal

**Operating Temp:** -10 to +60°C

**Operating Humidity:** Up to 90% non-condensing relative humidity

## CONNECTORS

**Antenna:** SMA Female (50 Ohm)

**Serial:** 2 x RJ45 RS232 ports

**Power:** Phoenix PH1176508 (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

