# RC1280HP, 500mW

Long-Range Multi-Channel RF Module

The RC1280HP high performance narrow-band RF module operates in the license-free ISM-bands at 868 MHz and is a complete and compact RF transceiver with embedded protocol. The embedded protocol and universal UART interface make it possible to add a wireless link with shortest development time. No additional components are needed for excellent RF performance, except for a simple antenna. With a quarter-wave antenna (whip or PCB) a line-of-sight range of 5-6 km can be achieved. The module requires only two low-cost SMD 2x5 pins connectors on the carrier PCB for easy and cost-effective assembly.

Features

Multi-channel 25 kHz narrow-band operation

5 channels (500 mW), 80 channels (10 mW)

Embedded RF protocol

Small size (19.5 x 60.5 x 6 mm)

3.3 V operation

3 / 5 V logic level tolerant interface

Conforms with EU R&TTE directive (license-free use)

Applications

OEM products

Home, building and industrial automation

Automatic meter reading

Remote control and telemetry

Fleet and asset management
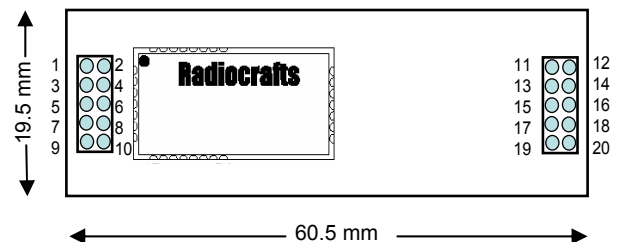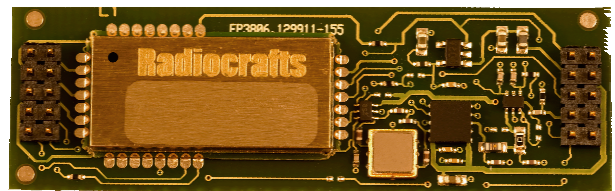
Host interface

Two wires only: RXD and TXD

UART compatible

Supports RS232, RS422, RS485

CTS / RTS flow control optional

Non-volatile configuration memory

Simple in-circuit configuration of

- Radio channel
- RF output power
- Destination address
- Flow control and packet size

Embedded protocol

RC232^{TM} proprietary protocol

Two way (half-duplex)

Point-to-point

Point-to-multipoint

Addressing and broadcasting

>65000 unique addresses

Data buffer up to 128 bytes

CRC calculation and error check

Ultra low power OFF and SLEEP modes (< 1 uA)

RF parameters

25 kHz channel operation

Excellent sensitivity (-108 dBm)

High power mode: 5 channels

Low power mode: 80 channels

4.8 kb/s

Very low power (20.2 mA in RX)

Up to 27 dBm output power (700 mA)

50 Ohm antenna interface

5-6 km range line-of-sight

CE certified under R&TTE
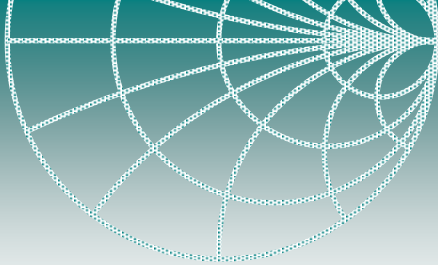
RC1280HP

How do I transmit data?

Send your data to the RXD pin on the module. Use the UART format with settings (19200, 8, 1, N). Up to 128 bytes are buffered in the module. The module will transmit the data when
-the max packet length is reached
-the unique end character is sent
-the modem timeout limit is reached
The packet length, end character and timeout limit are configurable in-circuit.

How do I change the RF channel or any other parameter?

To change configurable parameters, assert the CONFIG pin, and send the command string using the same serial interface as for transmitting data. Parameters can be changed permanently and stored in non-volatile memory in the module.
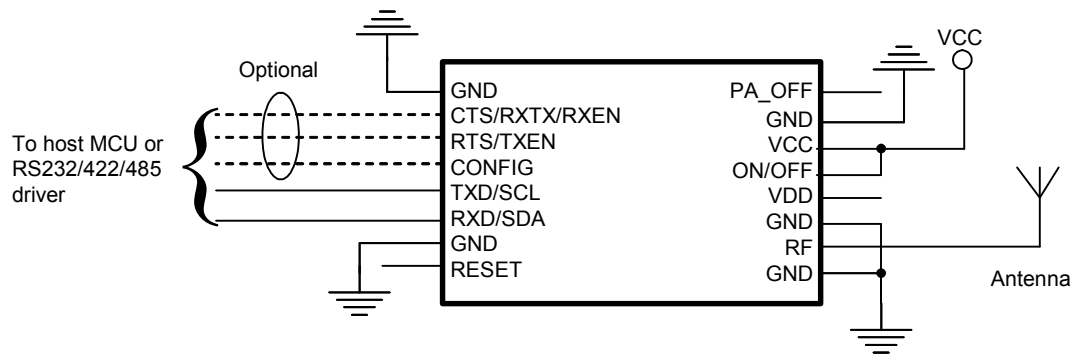
How do I receive data?

Any received data packet with correct address and check sum will be sent on the TXD pin using the same UART format as for transmit.

What about the antenna?

In most cases a simple quarter wavelength wire or a PCB track will do. Contact Radiocrafts and we will recommend the best antenna solution for your application.

Is it really that simple?

Yes. And what's more; the module operates at 3.3 V and tolerates 3 and 5 V logic input levels. Just drop it into your application circuit. In the simplest case you only need two spare pins (RXD, TXD) on your host microcontroller / microprocessor, and one more pin (CONFIG) if you want to change the configuration.

Radiocrafts - Embedded Wireless Solutions

Radiocrafts offers standard RF modules for operation in the license-free ISM bands at 315 / 419 / 429 / 433 / 439 / 444 / 447 / 868 / 915 / 2450 MHz including ZigBee. We provide compact modules that are easy to integrate and easy to use, for shortest possible time-to-market. Radiocrafts also makes customer specific solutions, from specification to turn-key delivery. Based on our experience in a wide variety of products and applications we find the best solution to take your idea to the market at a minimum of time and cost.

Distributor/rep:

Radiocrafts

Embedded Wireless Solutions