

# RC2000 / RC2100

## Multi-channel RF modules at 2.45 GHz

The RC2000 and RC2100 high performance 2.45 GHz RF modules are the worlds smallest complete and compact RF transceivers with embedded protocol. With only half a square inch footprint the module fits into the smallest OEM products providing a cost-effective wireless solution. No additional components are needed for excellent RF performance, except for a simple antenna. The module is surface mounted and tape & reel delivery enables low cost pick & place manufacturing.

### Features

- Multi-channel operation
- 83 channels at 2.400 - 2.483 GHz
- Embedded RF protocol
- Small size (12.7 x 25.4 x 3.5 mm / 0.5" x 1.0" x 0.14")
- 2.8-5.5 V operation
- Very low power for battery applications
- 3 / 5 V logic level tolerant interface
- Conforms with EU R&TTE directive, FCC and ARIB
- Low cost
- SMD package, available on T&R

### Host interface

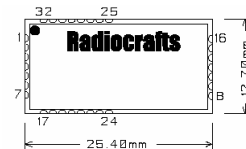
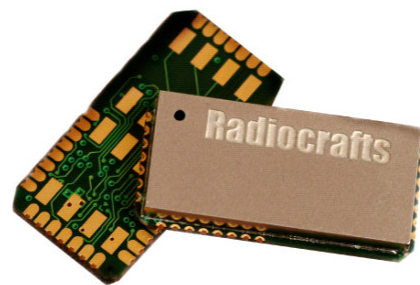
- Two wires only: RXD and TXD
- UART compatible
- Supports RS232, RS422, RS485
- CTS / RTS flow control optional
- Non-volatile configuration memory
- Simple in-circuit configuration of
  - Radio channel
  - RF output power
  - Destination address
  - Flow control and packet size

### Embedded protocol

- RC232™ 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)

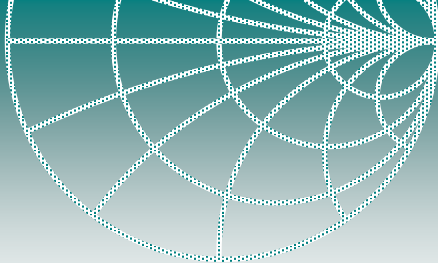
### Applications

- OEM products
- Home, building and industrial automation
- Automatic meter reading
- Remote control and telemetry
- Fleet and asset management



### RF parameters

- FSK and DSSS modulation
- Excellent sensitivity (-94 dBm)
- RC2000: 10 kb/s, 250 kb/s, 1 Mb/s
- RC2100: 250 kb/s, DSSS
- Very low power (21 mA in RX)
- Up to 0 dBm output power (18 mA)
- 50 Ohm antenna interface
- 100 m range line-of-sight
- CE certified under R&TTE



# RC2000 / RC2100

## How do I transmit data?

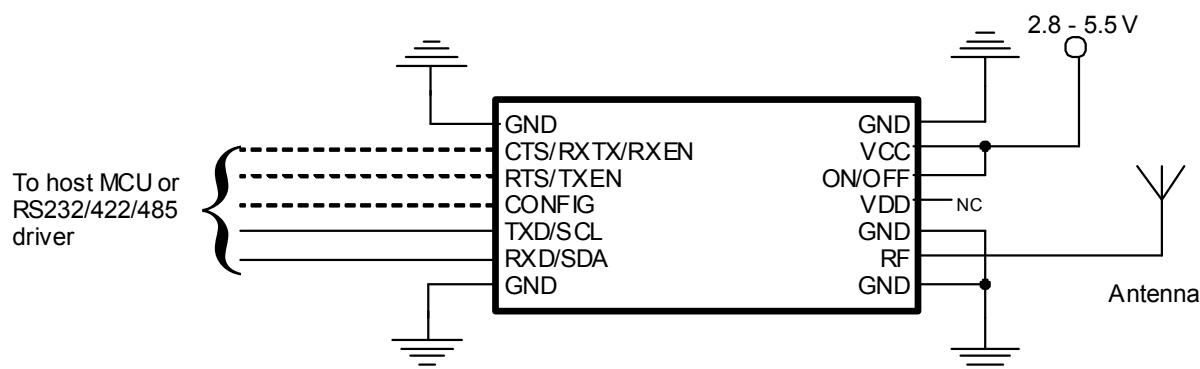
Send your data to the RXD pin on the module. Use the UART format with settings (19200, 8, 1, N). Up to 128 bytes are buffered in the module. The module will transmit the data when

- 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, see below.

## 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 2.8-5.5 V and tolerates 3 and 5 V logic input levels. Just drop it into your application circuit. In the simplest case you only need 2 spare pins (RXD, TXD) on your host microcontroller / microprocessor, and 1 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 / 433 / 429 / 868 / 915 / 2450 MHz. 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: