

## XRF - Wireless Data Module (R001)

---

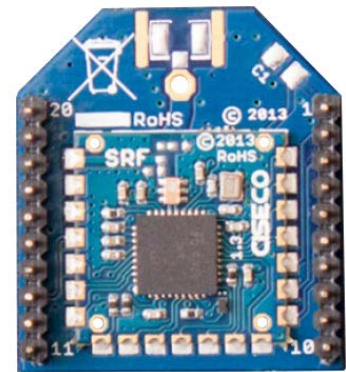
### 1. Product overview:

With an equivalent of over 40 million hours of run time in the field, the XRF is an extremely popular, easy to use, RF serial data module.

Alongside its popularity, its great range and XBee styled pin layout makes it a must have for any hobbyist or inventor.

The XRF provides an "out of the box" wireless RF serial connection without any need for programming or end-user configuration. When we say plug them in and go, we mean it, they transfer serial data transparently without any initial configuration.

Operating in the ISM bands (868 to 915 MHz), the XRF has greater range than Bluetooth, WiFi or Zigbee style 2.4 GHz units that sport the same footprint. We have had reports from customers sending data over more than 3 Km using the standard supplied whip antennas!



We have a range of sensors, actuators, support boards, Arduino shields and Raspberry Pi add-on boards that when fitted with an XRF become wireless nodes in a "Wireless Things" powered internet of things.

---

### 2. How it works:

The XRF is designed for transmitting and receiving of serial data in a very easy to use module. Data is sent in "packets", these short bursts are essential to the XRF running as the error checking, encryption etc has to be done at periodic intervals. This packet method does mean that the actual "streamed" rate is always lower than the baud rate actually set, this is very important to remember. Employing encryption adds extra overhead and reduces the stream rate also. We have emulated "a wire connection" as closely as is possible.

The XRF comes pre-loaded with firmware which enables it to interwork with all other Wireless Things RF modules, without any programming or configuration. You provide data one end, and it appears on the other. All data packets, data checking etc. is all done for you.

It is fitted with a CC1110, low power, System-on-chip, which acts as a micro-controller unit (MCU). As well as this, it has a sub - 1 GHz transceiver and an encryption engine.

**Features:**

- 2mm pin spacing the same as the XBee
  - Just 4 connections needed for transparent serial data mode (PWR, GND, RX, TX)
  - Supports network identifier PANID for communications into separate networks if desired
  - Facilitates remote Arduino/Xino over-the-air programming
  - Can be programmed in its own right (requires a TI cc debugger and a lot of experience in C)
  - Supports serial bootloading (firmware updates without a hardware programmer and using just RX/TX lines)
  - 5v tolerant data lines (can be used with a 5v micro without level conversion)
  - Acts in most serial applications as a drop in replacement for series 1 XBees
- 

### 3. Technical information:

Size		
Length	18.9	mm
Width	25	mm
Depth	9	mm

---

### 4. Limitations of product:

The XRF is not recommended or authorized for use in life support, surgical implantation, nuclear or aircraft applications or for any use or application in which the failure of a single component could cause substantial harm to persons or property.