

PmodRF1™ Reference Manual



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Note: This document applies to Rev A of the board.

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Overview

The PmodRF1 is a radio transceiver that can be selectively configured to operate in the open 902MHz to 928MHz ISM band for use in North America, the European SRD Band of 863MHz to 870MHz, or the Chinese WPAN band of 779MHz to 787MHz. This flexibility ensures that users from many parts of the world can safely use this one product in applications requiring wireless communication.

The PmodRF1 features the Atmel AT86RF212, a low-power, long-range radio transceiver. Atmel's partner, Meshnetics, independently verified that the transceiver is capable of communicating at a range of 6km, but the effective range will depend on a variety of factors, such as antenna selection, line-of-sight, and other environmental obstructions.

The board also features an SMA connector, which allows users to select the antenna that best suits their application.

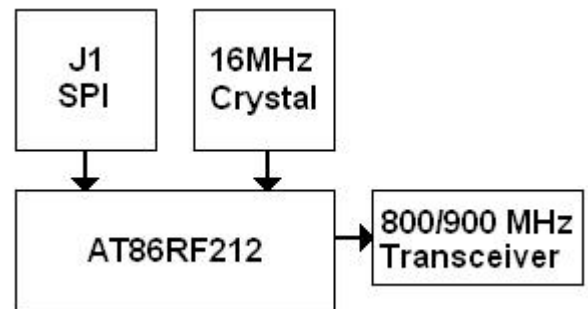
Atmel makes software libraries that enable users to implement 6LoWPAN, ZigBee PRO, and IEEE 802.15.4-based networks using the AT86RF212 transceiver.



Functional Description

The main communications interface for the PmodRF1 is an SPI bus accessible via J1. The PmodRF1 implements an SPI slave interface set up in Mode 0, MSB first. The PmodRF1 also offers an interrupt request signal, reset, multipurpose control signal, and an output clock driver on the J1 header.

Refer to the PmodRF1 schematic available on the Digiilent website for more information about the hardware connections.



For more information on the Atmel AT86RF212, refer to the data sheet available at www.atmel.com.

Connector J1 – SPI Communications		
Pin	Signal	Description
1	SEL	Slave Select
2	MOSI	Master out/Slave in Data
3	MISO	Master in/Slave out Data
4	SCLK	Serial Clock
5	GND	Power Supply Ground
6	VCC	Power Supply (3.3V)
7	IRQ	Interrupt Request Signal
8	RST	Hardware Reset (Active Low)
9	SLP_TR	Multipurpose Control Signal
10	CLKM	Clock Output
11	GND	Power Supply Ground
12	VCC	Power Supply (3.3V)