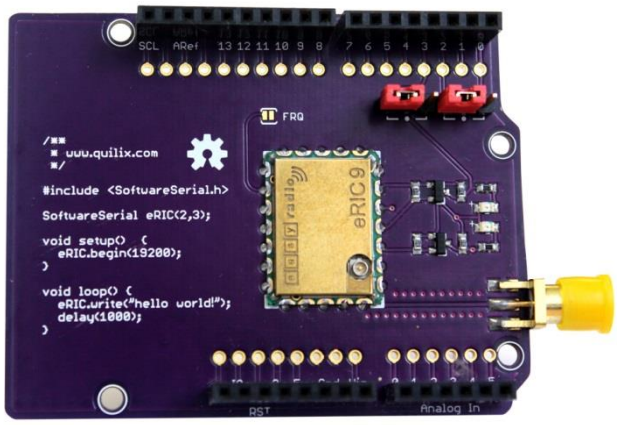
eRIC Shield for Arduino™



This 'shield' allows Arduino™ boards to communicate wirelessly using proprietary LPRS 'easyRadio' technology operating in the 433MHz or 868/915MHz (Industrial Scientific & Medical (ISM) bands.

The essence of these devices is 'easy'. Host Arduino™ boards can send and receive (half duplex) up to 250 Bytes of data per packet that will be seamlessly delivered and presented to all other hosts within range. There is no need for any complicated 'bit balancing' or elaborate coding schemes. 'Easy': Data In and Data Out !

These devices provide considerably greater range (typically 200m) and less power consumption than similar WiFi or Bluetooth dongles operating in the overcrowded 2.4GHz bands.

Frequency, bandwidth, power output and data rate can (optionally) be configured to allow multiple devices to communicate free from interference from each other and any other RF devices.

Features	Benefits
LPRS easyRadio RF Transceiver technology	Bi-directional link, no 'RF protocol' software required
Transmit, Receive, Busy and Power LEDs	Diagnostics
Integral SMA Antenna connector	Allows use of extension cable for optimal antenna position in product
Configurable RF parameters (optional)	Fine tune for optimum performance
Up to 250 Bytes per packet	Ideal for 'Sense & Control' applications
Built-in Temperature Sensor	Usable by host program

Addressing and implementation of networking (point to point, peer to peer, mesh) can handled by Arduino™ application software thus providing flexibility and simplicity.

An optional on-board 4 pin header allows connection of an external FT232 USB adapter device to configure the easyRadio module should need be.

Specifications

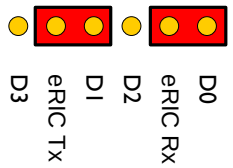
Supply: +5V ± 5%, Temperature 20°C

Parameter	Min	Typical /Default	Max	Units	Notes
Supply Voltage		5V		Volts	Powered by host Arduino™
Supply Current		25		mA	Receive (Idle state)
		35		mA	Transmit
Data Rate	2.4	19.2	115.2	Kbps	Configurable - See Note 1 below
Packet Size	1		250	Bytes	Auto detect end of packet
Frequency (Default)		434		MHz	Configurable
		868		MHz	Version
		915		MHz	Version
Receive Sensitivity		-107	-117	dBm	Configurable
RF Output Power	-5	+9	+10	dBm	Configurable
Antenna		50		Ω	Via SMA Connector
Range		200		m	Dependant on conditions/terrain
Operating Temperature	-40	20	85	°C	
Mechanical					
Size		68 x 52 x 10		mm	Excluding connectors & antenna
Weight		24		g	Without antenna

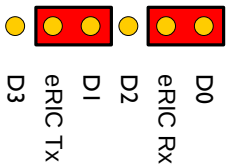
Notes

1) Parameters can be configured using 'easyRadio Companion' software available from: www.lprs.co.uk
2) Please read this datasheet in conjunction with the easyRadio eRIC datasheet available from: www.lprs.co.uk
3) The board is supplied with either an eRIC4 or eRIC9 module fitted together with a matching 434MHz or 868/915 MHz antenna.

Jumper Pin Configuration



Hardware Serial:
Connects eRIC to Arduino hardware serial port (UART) on D0 and D1



Software Serial:
Connects eRIC to Arduino software serial port on D2 and D3

Other Serial: Alternatively remove the shorting jumpers and use male to female jumper wires. Connect the female ends of jumper wires to eRIC Rx and Tx pins and connect the male end to corresponding/preferred serial-enabled pins on Arduino™.