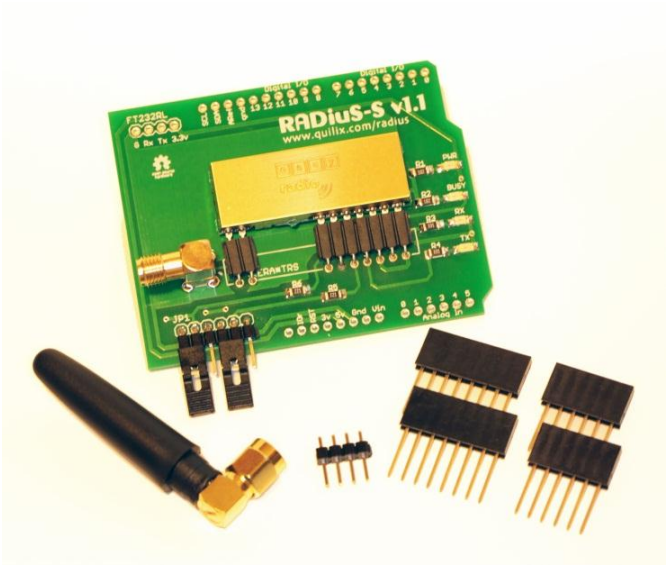

This 'shield' allows Arduino boards to communicate wirelessly using proprietary LPRS easyRadio technology operating in the 868MHz (UK & Europe) & 915MHz (US) Industrial Scientific & Medical (ISM) bands.

The essence of these devices is 'easy'. Host Arduino boards can send and receive (half duplex) up to 180 Bytes of data per packet that will be seamlessly delivered and presented to 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 LEDs	Diagnostics
Integral SMA Antenna connector	Allows use of extension cable for optimal antenna position
Configurable RF parameters (optional)	Fine tune for optimum performance
Up to 180 Bytes per packet	Ideal for 'Sense & Control' applications
Built-in Temperature Sensor	Usable by host program

An on-board header allows connection of an external FT232 USB device to configure the easyRadio module.

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

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		180	Bytes	Auto detect end of packet
Frequency (Default)		869.75		MHz	Europe - Configurable
		915		MHz	USA - Configurable
Receive Sensitivity		-107	-117	dBm	Configurable
RF Output Power	-1	+5	+7	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 Advanced datasheet available from www.lprs.co.uk
3) The device is supplied with a 868/915 MHz ¼ Wave whip Antenna

JP1 Pin Connections (Left to right with the SMA antenna connector on left)

1- Connects to Arduino D0
2 - Connects to easyRadio RX
3 - Connects to Arduino D2
4 - Connects to Arduino D1
5 - Connects to easyRadio TX
6 - Connects to Arduino D3

Configurations

Hardware Serial: Place jumpers across pins 1/2 and 4/5. Connects the easyRadio to Arduino's hardware serial port on pins D0 and D1. This setup can be very useful for field debugging.

Software Serial: Place jumpers across pins 2/3 and 5/6. Connects the easyRadio to a Software Serial port running on D2 and D3.

Other Serial: If the first two options cannot be used, you can remove the shorting jumpers and use a male to female jumper wire. Connect the female ends of your jumper wires to pins 2 and 5... then connect the male side of the jumper wire to your corresponding / preferred serial-enabled pins.

LPRS Part Number: eRA-**Arduino**-S900
Farnell Order Code: 214-7162

Includes ERA900TRS Transceiver & Antenna (as above)
and 2 x 6-pin Stackable Headers, 2 x 8-pin Stackable Headers

Requires an Arduino™ board (not included)

Acknowledgements

Arduino is a trademark of the Arduino team: http://www.arduino.cc/

The shield design is 'Open Hardware' published by Rick Winscot. Details: www.quilix.com/radius

Terms and Conditions of Use

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easyRadio modules are a component part of an end system product and should be treated as such. Testing to fitness is the sole responsibility of the manufacturer of the device into which easyRadio products are fitted, and is expected BEFORE deployment into the field.

Any liability from defect or malfunction is limited to the replacement of product ONLY, and does not include labour or other incurred corrective expenses.

Using or continuing to use these devices hereby binds the user to these terms.

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