eRIC USB Dongle

Utilising proprietary LPRS 'easyRadio' technology operating in the 434MHz or 868/915MHz Industrial Scientific & Medical (ISM) bands a pair of eRIC USB 'dongles' can provide a simple 'wireless bridge' between any host devices that support USB serial communications such as a PC or Raspberry Pi ™ or BeagleBone Black etc.

These devices provide considerably greater range 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
USB Connection	'Plug & Play' operation, appears as a 'Com' port
Low current consumption	Can be powered directly from USB port
Integral SMA Antenna connector	Allows use of extension for optimal antenna position
FTDI FT232 USB IC	Linux & Windows drivers available (see below)
Transmit & Receive LEDs	Diagnostics
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

Host devices can send and receive (half duplex) up to 250 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 !

Specifications

Supply: +5V ± 5%, Temperature 20°C

Parameter	Min	Typical /Default	Max	Units	Notes
Supply Voltage		5V		Volts	Powered by USB connection
Supply Current		25		mA	Receive (Idle state)
		35		mA	Transmit
USB Host 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	Europe
		915		MHz	US
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		80 x 22 x 10		mm	Including connectors, excluding antenna
Weight		11		g	Without antenna
USB Connector		USB Type A Plug			Cable not supplied

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 eRIC Radio Transceiver 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 868/915 MHz antenna.

The dongle uses an FTDI FT232 USB to serial device. FTDI offers royalty-free virtual com port drivers for the following operating systems:

Windows 98, 98SE, ME, 2000, Server 2003, XP and Server 2008
Windows 7 32,64-bit
Windows XP and XP 64-bit
Windows Vista and Vista 64-bit
Windows XP Embedded Windows CE 4.2, 5.0 and 6.0
Mac OS 8/9, OS-X
Linux 2.4 and greater

Acknowledgements

Raspberry Pi is a Trademark of the Raspberry Pi Foundation.
The design is 'Open Hardware' designed and published by Rick Winscot. Details: www.quilix.com

Product Order Codes

Name	Description	Frequency	Order Code
eRIC400 USB Dongle	UK/European Version (Can Marked '4')	433MHz	eRIC4-USB
eRIC900 USB Dongle	Europe/US Version (Can Marked '9')	868/915MHz	eRIC9-USB
Antenna	UK & Europe	433MHz	ANTSR433
Antenna	Europe & USA	868/915MHz	ANTST900