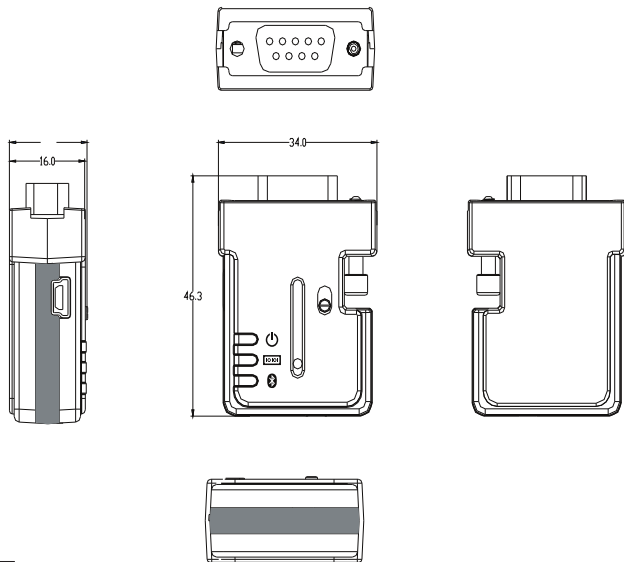




## LM048v2 Bluetooth RS232 Serial Adapter 100m Distance with On-Board Antenna

Product: LM048v2  
Part No: 048-0000  
Datasheet Rev 1.2/12-02-14



### 1 Features

- World's smallest RS232 Bluetooth adapter
- Multiple power supply options, AC Mains via Mini USB, USB-Mini USB  
No mains power cable needed as adapter can also be powered from RS232 Pin 9
- Supports upto 100 meters (open space)
- Unique Patented Firmware Enabling Serial Printer Functionality
- DTR DSR Handshaking and RTS CTS Flow Control options available depending on the configuration
- No need of external host or software. Works as a standalone product
- Ability to transfer DTR, DSR, RTS and CTS line status over air providing true Serial Cable replacement solution. This functionality allows serial printers using DSR or CTS line for error reporting such "Out of Paper", "Printer Offline" etc
- Supports Bluetooth Serial Port Profile (SPP) and Generic Access Profile (GAP)
- CSR BC04 Bluetooth chipset with Bluetooth 2.0 + EDR firmware based design.  
Bluetooth 2.1 +EDR firmware also available
- Ease of configuration and setup using LM149 Software
- FCC, RoHS, BQB and RTTE certified

### 2 Overview

Data transfer made easy with World's smallest RS232 Bluetooth adapter. This adapter provides RS232 cable replacement for devices which use RTS/CTS flow control or DTR DSR Handshaking.

This Adapter can be powered from RS232 Pin 9 or from Mini USB Port via the AC mains adapter or Mini USB-USB cable. Our new patented firmware replicated all RS232 control signals (DTR, DSR, RTS, and CTS) transfer over Bluetooth link. Unlike other Bluetooth serial adapters in the market, a pair of LM048 adapters with its unique hardware and firmware combination can act as a true straight or twisted serial cable solution.

LM Technologies Ltd provides a application called LM149 Configuration Software which allows easy configuration of these adapters. LM Technologies Ltd also provides option to configure the adapter from console using an inbuilt menu system. This option may be required for a device which has just keyboard and screen such as cash register. These units are FCC, RoHS, BQB and RTTE certified.



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### 3 Packaging Options

#### SRP - Single Retail Pack

Part No 048-0006

- 1x Bluetooth Serial Adapter
- 1x DB9 male to female connector
- 1x USB - mini USB Cable for power supply
- 1x All in one power supply (UK, EU and US)
- 1x CD with LM149 Configuration Software
- User Manual and QSG included in CD

Optional:

LM025 Slim Line 9 pin to 25 pin Converter

#### TRP - Twin Retail Pack

Part No 048-0012

- 2x Bluetooth Serial Adapter
- 1x DB9 male to female connector
- 1x USB - mini USB Cable for power supply
- 1x All in one power supply (UK, EU and US)
- 1x CD with LM149 Configuration Software
- User Manual and QSG included in CD

Optional:

LM025 Slim Line 9 pin to 25 pin Converter

#### AO - Adapter Only

Part No 048-0000

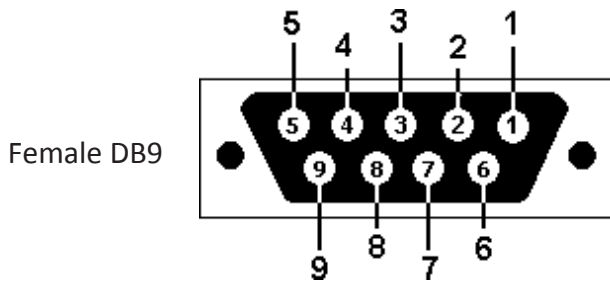
- 1x Bluetooth Serial Adapter

### 4 General Specification

Specification	Description
Baud Rate	1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2/230.4/460.8/921.6 Kbps
Coverage	Upto 100 m
Connection	Point -to-Point
Signal	TxD, RxD, RTS, CTS, DTR, DSR and GND
RS-232 Interface	D_SUB 9-pin female
Standard Bluetooth	Specification 2.0 + EDR
Frequency	2.400 to 2.4835 GHz
Hopping	1,600/sec, 1MHz channel space
Modulation	GFSK- Mbps, DQPSK-2 Mbps, and 8-DPSK-3Mbps
Tx Power	Max 18 dBm (Class 1)
Rx Sensitivity	-86 dBm typical
Antenna	Chip Antenna
Antenna Gain	Max. 1 to 2 dBi
Power Supply	+4 to +13 V DC
Current Consumption	Max 90 mA
Operation Temperature	-20 °C to +75 °C
Dimensions	46.3 mm (W) x 34 mm (D) x 16 mm (H)



## 5 Signals



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### Pin out for LM048v2 Adapter

Pin	RS232 Signal	DTE to DCE Direction	DCE to DTE Direction	Description
1	CD	Input	Output	Not Connected
2	RxD	Input	Output	Receive Data
3	TxD	Output	Input	Transmit Data
4	DTR	Output	Input	Data Terminal Ready
5	GND	N/A	N/A	Signal Ground
6	DSR	Input	Output	Data Set Ready
7	RTS	Output	Input	Request to Send
8	CTS	Input	Output	Clear to Send
9	Vcc	Input	Input	Power Supply

## 6 Factory Settings

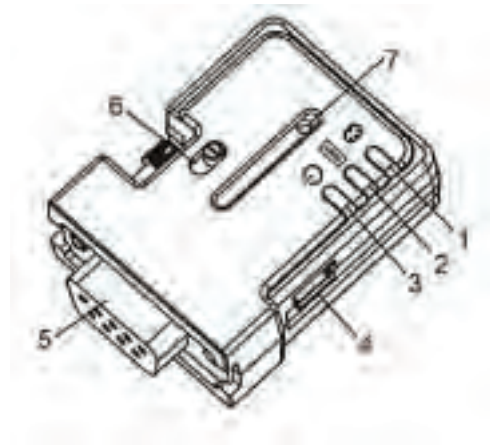
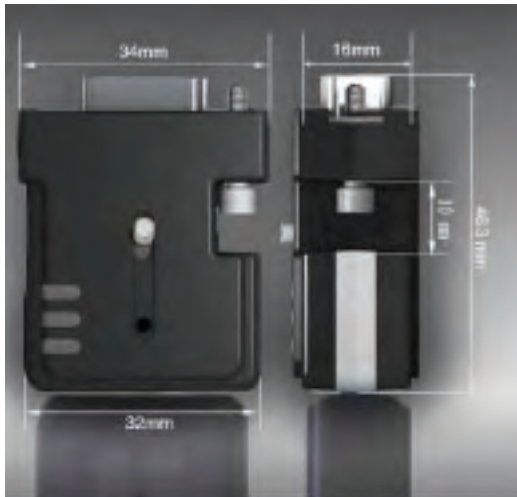
The factory settings of the COM Port are as follows:

Baud Rate: 19200 bps  
 Data Bits: 8  
 Parity: None  
 Stop Bits: 1  
 Flow Control: None

Customized settings are available as factory settings upon special request;  
 Bonding, Pre-Pairing, different Baud Rates, Data Bits, Parity and Flow Control Settings



## 7 Hardware Structure



1. Link LED	2. Data LED	3. Power LED	4. Mini USB Connector
5. RS232 Connector	6. Slide Switch	7. Reset Button	

### Reset Button

By pressing the RESET button you can:

- Disconnect a wireless connection (after a short press)
- Restore the factory settings (after over 3 seconds press)

### Slide Switch

The slide switch can swap TxD/RxD, RTS/CTS and DTR/DSR Signals. By switching, you can set the adapter as a DTE (towards antenna connector) or a DCE (towards RS232 connector).



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## 8 Revision History

Revision	Date	Remarks
1.0	17/11/2011	First Version with new Layout
1.1	20/03/2012	Some minor changes in data sheet content
1.2	12/02/2014	1. Packaging information corrected 2. Revision information added