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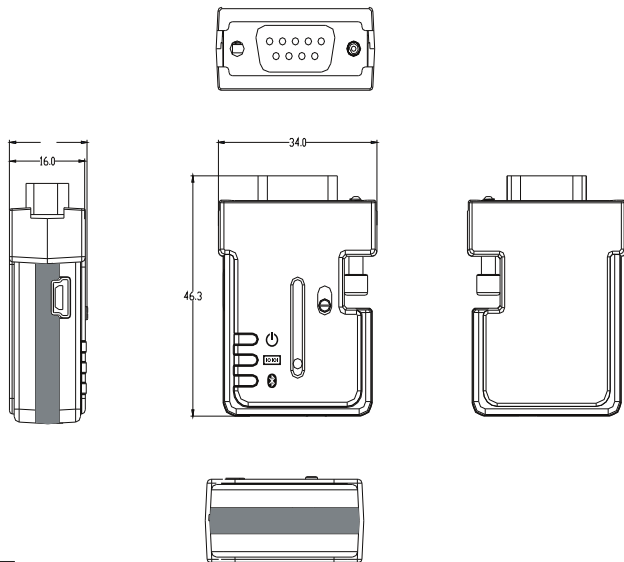
1   Features

• 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 hadrware 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.

3   Packaging Options

SRP - Single Retail Pack
Part No 048-0012

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

Optional:
LM025   Slim Line 9 pin to 25 pin Converter

TRP - Twin Retail Pack
Part No 048-0013

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

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 Temparature	-20 °C to +75 °C
Dimensions	46.3 mm (W) x 34 mm (D) x 16 mm (H)

5 Signals

Female DB9
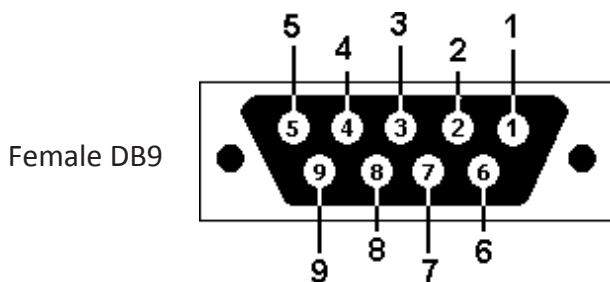
Pin out for LM048v2 Adapter

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

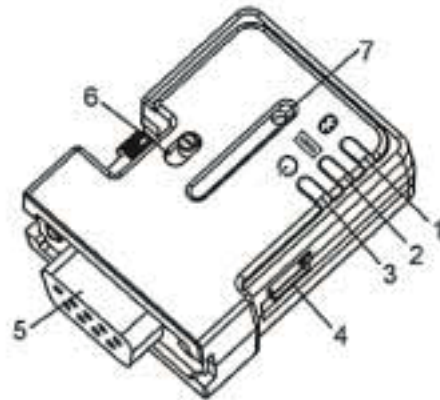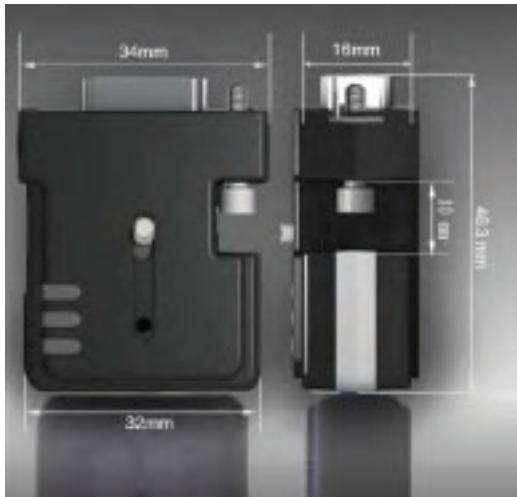The factory settings of the COM Port are as follows:

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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