LM540v2 – Long Range Bluetooth 2.1+EDR USB Adapter

750m Distance with 2 dBi RP Dipole Antenna

Product	LM540v2
Part No	540-0542
Revised	16/12/2014

Features

- World's smallest RS232 Bluetooth adapter.
- Multi 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 up to 100 meters (in 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, simply 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 as "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.

Overview

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

The LM048v2 can be powered from RS232 Pin No.9 (4v-13v) 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) to transfer over the Bluetooth link. Unlike other Bluetooth serial adapters in the market, a pair of LM048 adapters with their unique hardware and firmware combination, can act as a true straight or twisted serial cable solution.

LM Technologies® provide an application called LM149 Configuration Software, which allows easy configuration of these adapters. LM Technologies® also provide an option to configure the adapter from a console using an in-built menu system. This option may be required for a device which only has a keyboard and screeen, such as a cash register.

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Packaging Options

SRP - Single Retail Pack
Part No 540-0545

1 x LM540-0542 Adapter
1 x LM251-1022 Antenna
1 x Retail Box

Single Adapter Bulk
Part No 540-0544

1 x LM540-0542 Custom Made.

AO - Adapter Only
Part No 540-0542

SRP - Single Retail Pack + IVT Key
Part No 540-0546

(Same as 540-0545 + 1 x IVT License Key).

Adapter + Antenna Bulk
Part No 540-0543

1 x LM540-0542
1 x LM251-1022

- User Guides, Manuals and Widcomm Configuration Software available to download via our website - http://www.lm-technologies.com/support/downloads

General Specification

Product Name	LM540v2
Chipset	CSR Bluecore 4 ROM
RF Output Power	Class 1
Transfer Rate (max)	Up to 3 Mbps enhanced data rate
Range	0-787 m with 2 dBi Antenna
I/O Interface	USB 2.0
Bluetooth Standard	Bluetooth v2.1 + EDR
Frequency Band	2.4 - 2.4835 GHz ISM Band
Frequency Hopping	1600 hops/sec, 1 MHz channel width
Modulation Method	GFSK for 1 Mbps, π/4-DQPSK for 2 Mbps, 8-DPSK for 3 Mbps
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)
Firmware	CSR Bluetooth 2.1 HCI ROM Image
Rx Sensitiviy	< - 86 dBm typical
RF Output	+17.6 dBm
Antenna Gain	Max 2.3 dBi
Input Voltage	DV 5V (via USB port)
LED Indicator	Power / Active

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General Specification (continued)

OS Support	Win XP-8/OSX/Linux. IVT Bluesoleil Driver available. Win8 driver freely downloadable
	Operating Temperature : -20°C to +75°C
Environment	Storage Temperature: -40°C to +85°C
Size	50.00mm (L) x 27.00mm (W) x 18.5mm (H)
Software / Drivers	IVT Bluesoleil 8.0, Standard Windows, Linux and OSX Bluetooth Driver
Bluetooth Profiles	GAP, SPP, HSP, HFP, DUN, FTP, FAX, PAN, LAN, HID, SYNC, HCRP, A2DP, AVRCP, BIP, GOEP, SDAP, OPP
Certification	FCC, CE, RoHS

FCC Warning Statement

This device complies with Part 15 and 15C of the FCC Rules. Operation is subject to the following two conditions:
1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 and 15C of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Installation and use of this device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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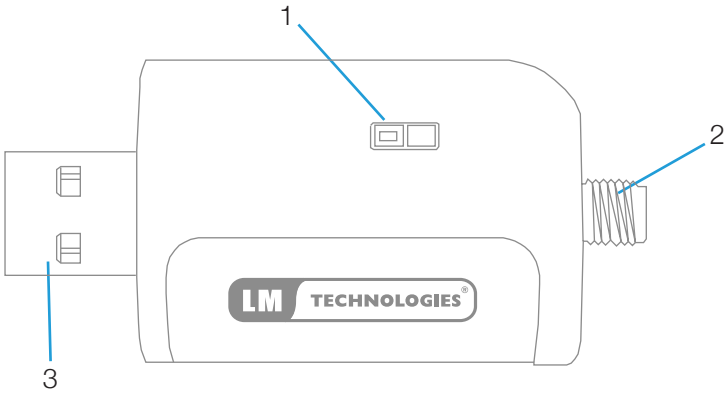
Hardware Structure

1 LED Indicator.
2 Antenna RP-SMA Connector.
3 USB Connector.



LED Functions

LED Red

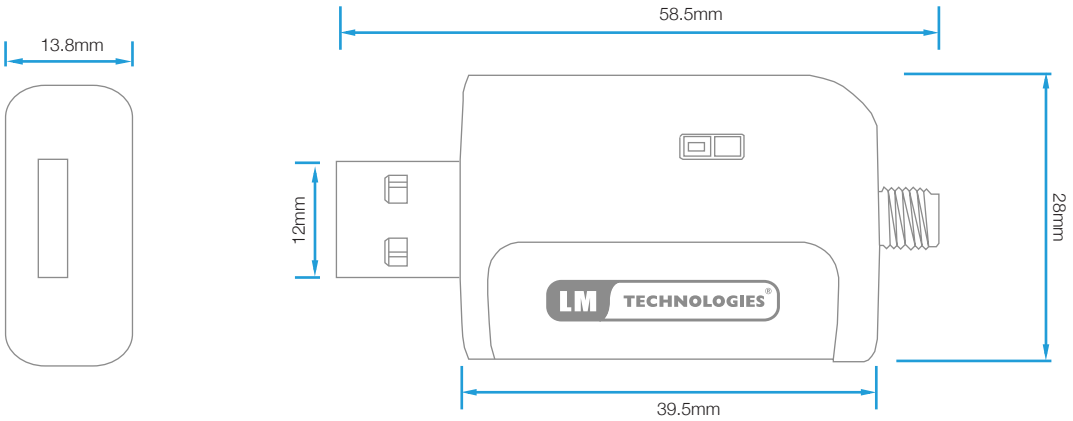
- LED is permanently on - Power on
  LED is off - Power off

LED Blue

- LED is flashing slow = Bluetooth is searching
  LED is permanently on = Bluetooth is connected

* Green LED will be added in a future update.

Dimensions



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Revision History

1.0	05/JAN/2011	First version with new layout
1.1	15/OCT/2013	1. Updated datasheet as per new Hardware revision LM540v2 2. Added FCC Warning Statement
1.2	16/DEC/2014	New Datasheet.

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