LM058 Bluetooth® v2.0, v2.1 RS232 Serial Adapter
Standalone (With Embedded Bluetooth® v2.0 / v2.1 Stack)

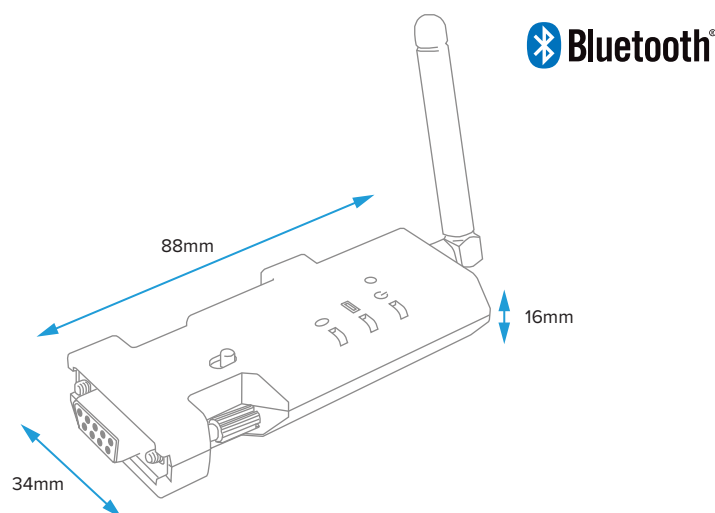|	
Revised	16/JAN/2021
Datasheet Version	2.3
Ordering Options	See last page

Bluetooth®

88mm

16mm

34mm

Features

- Bluetooth® v2.0, v2.1 wireless technology

- 18 dBm Tx Output Power and -86 dBm Rx Sensitivity

- Serial (RS232) interface

- Serial Port Profile (SPP) available

- Programmable Standalone Module
  (With Embedded Bluetooth® v2.0, v2.1 Stack)

- Unique patented firmware enabling serial printer functionality

- Up to 1000m (in open space) with an alternative antenna and up to 100m (in open space) with standard 2 dBi antenna.

- 88mm x 34mm x 16mm (without SMA Connector)

- Powered by USB - Mini USB, DB9 or AC adaptor

- DTE / DCE (Master / Slave) mode switch

- DTR / DSR Handshaking and RTS / CTS Flow control lines

- Full Duplex for simultaneous communication between sender and receiver

- Ease of configuration and setup using the LM149 software

- Configurations pre-installed on production

- See our website for this products certifications.

- RoHS, REACH and WEEE

Typical Industries

- EPOS

- Aviation

- M2M

- Automotive

- LNG

Overview

The LM058 Bluetooth® serial adapter (RS232) provides a secure and reliable Bluetooth® v2.0, v2.1 connection. This wireless connection reaches a range of up to 100m in open space with a standard antenna (2 dBi) and a range of up to 1000m in open space by using an alternative antenna (See LM252 (5 dBi), LM253 (7 dBi), LM254 (9 dBi)), replacing the RS232 cables between a master (DTE) device and slave (DCE) device(s) such as printers, data loggers and digital signalling devices.

The LM058 patented firmware allows the serial configurations to be used. The firmware controls the RS232 signals, including DTR / DSR handshaking and RTS / CTS flow control lines. The LM058 is powered by USB, DB9 or AC adaptor. All settings and configurations are even retained when the adapter is powered down.

Our LM149 software can be used to change the settings and configurations, including auto connect function, discoverable / non-discoverable function, device name, baud rate, data bits and flow control. AT Commands are used to change the configurations. The developer is also able to configure and modify the settings of a remote LM058 from a local LM058. Customised configurations and settings can be preloaded to the LM058, simplifying the manufacturing and testing process.

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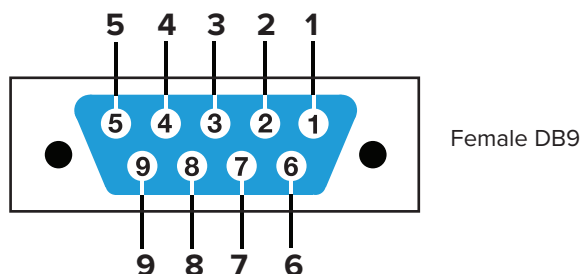
General Specification

Wireless	
Bluetooth® Standard	v2.0 and v2.1
Adapter Type	Standalone (Configurable with AT Commands)
Profiles	SPP
Hardware	
Chipset	CSR
Antenna	SMA Connector
Flash Memory	8 Mbit
RAM	48 KB
Interfaces	Serial (RS232)
Power Supply	4V to 12V DC
Crystal Oscillator	16 MHz
LED Indicators	Link (BLUE), Data (ORANGE) and Power (RED)
RS232 (Serial)	
RS232 Interface	D_SUB 9 pin female
Signal	RxD, TxD, DTR, DSR, RTS, CTS and GND
Full Duplex	Yes
Baud Rate	1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 460.8 and 921.6 Kbps
RF Characteristics	
Tx Output Power	18 dBm (Maximum)
Rx Sensitivity	-86 dBm (Typical)
Antenna Gain	2 dBi (Typical)
Current Consumption	140 mA (Maximum)
Range (in open space)	Up to 1000m with an alternative antenna. Up to 100m with Standard 2 dBi antenna
Data Rate	Up to 3Mbps
Frequency	2.4 GHz to 2.485 GHz
Hopping	1,600/sec, 1MHz channel space
Modulation Scheme	GFSK-Mbps, DQPSK-2 Mbps, and 8-DPSK-3Mbps
Physical Characteristics	
Operating Temperature	-10°C to +70°C
Dimensions (L x W x H)	88mm x 34mm x 16mm (without SMA Connector)
Weight	36.62g +/- 0.25g tolerance
Compliance	See our website for this products certifications. RoHS, REACH and WEE

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Signals

Female DB9

Pin outs for LM058 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

Factory Settings

The factory settings of the COM Port are as follows:

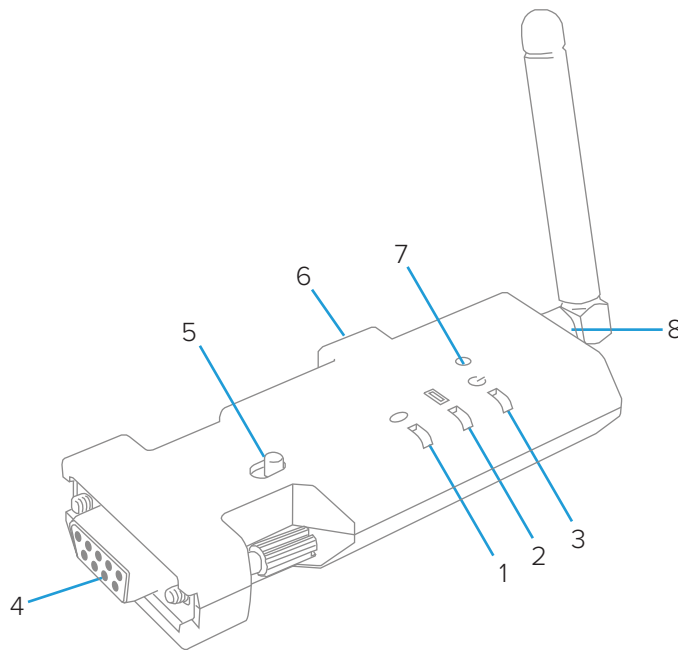|	
Baud Rate	19200 bps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

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

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Hardware Structure

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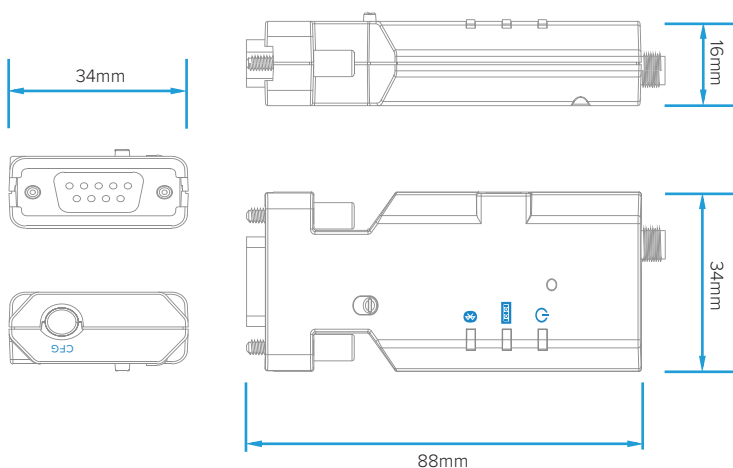
Switch Functions

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 witch can swap TxD/RxD, RTS/CTS signals. By switching, you can set the
adapter as a DTE (towards antenna connector) or a DCE (towards RS232 connector).

Additional Dimensions

34mm

16mm

34mm

88mm

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Datasheet Version Notes

v1.0	13 MAR 2018	Added version notes to datasheet.
v2.0	1 MAY 2018	New LM058 version 3 release (with new power amplifier replacing previous).
v2.1	29 MAY 2018	New Part Numbers released for LM058 version 3.
v2.2	23 JUL 2019	Packing Options Revised.
v2.3	16 JAN 2021	Datasheet branding updates.

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A Better Connection

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Ordering Options

058-3050   **AO - Adapter Only**
1 x Bluetooth® Serial Adapter
1 x 2dBi Antenna

058-3051   **SWB - Single White Box**
1 x Bluetooth® Serial Adapter
1 x 2dBi Antenna
1 x DB9 Gender Changer - male to male

058-3054   **SRP - Single Retail Pack**
1 x Bluetooth® Serial Adapter
1 x 2dBi Antenna
1 x DB9 Gender Changer - male to male
1 x USB - mini USB Cable for power supply
1 x Power Supply Unit with Multi-Plug faces

058-3052   **TWB - Twin White Box**
2 x Bluetooth® Serial Adapters
2 x 2dBi Antenna
1 x DB9 Gender Changer - male to male

058-3055   **TRP - Twin Retail Pack**
2 x Bluetooth® Serial Adapters
2 x 2dBi Antenna's
1 x DB9 Gender Changer - male to male
1 x USB mini USB Cable for power supply
1 x Power Supply Unit with Multi-Plug faces

Optional - LM025
Slim Line 9 pin to 25 pin Convertor

● See our website to download any applicable Product Software, Manuals and Notes - http://www.lm-technologies.com/downloads