

# The Shark RS 232 / RS 485 Serial Adapter Bluetooth®



## Description

Stevens' Shark serial cable replacement uses *Bluetooth* wireless technology to transmit critical data in industrial, medical, security and environmental monitoring applications. Its robust design handles many extreme environmental conditions. The Shark will communicate with another Shark or with any *Bluetooth*-enabled device.

The Shark is a Class 1 *Bluetooth* radio that provides a 100-meter range of communications. With an external antenna attachment and specific antenna options, the user may increase the communication range between the Shark and other *Bluetooth* wireless-enabled devices. Unlike other RS 232 adapters, the Stevens Shark emulates the behavior of a serial cable connection by controlling the serial port and turning the serial port on only when a *Bluetooth* wireless connection is established.

The Shark includes an internal lithium ion rechargeable battery as an optional power source that provides approximately 4 hours of continuous operation in *Bluetooth* wireless connected mode.

The Shark also incorporates LEDs that indicate various levels of connection and power status. Power management is an integral part of the Shark design, including the serial port control, idle mode, low operating current and a switch that turns off the power LED to conserve standby current.

In addition to built-in durability and flexibility, the Shark RS 232/485 Adapter is designed for ease-of-use. It is pre-configured in slave mode to operate with most applications without any set-up procedures. The Shark Config Utility Software is an easy-to-use Windows application for configuration of the Shark to individual needs, including designating the Shark as a master device to control and discover other *Bluetooth* devices, assigning a unique device name and activating secure communications. Shark Config can be used over a *Bluetooth* wireless link. No installation of drivers is required..

### What is *Bluetooth*?

*Bluetooth* is simply a short-range radio transmission technology to which industry standards have been applied, allowing any *Bluetooth*-enabled device to communicate with any other *Bluetooth*-enabled device. This allows the "paring" of two devices to be a quick and easy process compared to standard radio systems. As an example, *Bluetooth* radio technology can commonly be seen in the consumer market being used to connect cell phones with wireless ear pieces.

## Features

- Class 1 *Bluetooth* radio
- 100 meter range
- Ranges greater than 100 meters with alternate antenna configurations
- Multiple security features
- RS 232 and RS 485 serial cable emulation
- External RF antenna connector for flexible and optimal installation
- Internal rechargeable battery
- Optimal power management including serial port control
- AT command set available for advanced operations

## Applications

- For industrial, medical, security, environmental monitoring equipment and instruments with a serial cable connection for communications
- For use with data loggers, SCADA, communications relays, controls, PCs and other electronic instrumentation

# The Shark RS 232 / RS 485 Serial Adapter

## Technical Specifications

### Corporate Headquarters

12067 NE Glenn Widing Drive  
Suite 106  
Portland, Oregon 97220

800.452.5272 Toll Free  
503.445.8000 Tel  
503.445.8001 Fax  
info@stevenswater.com  
www.stevenswater.com

Since 1911, Stevens Water Monitoring Systems, Inc. has been a leading manufacturer of:

- Water Level Sensors
- Water Quality Sensors
- Soil Moisture Sensors
- Chart Recorders
- Staff Gages
- Telemetry Systems
- Data Collection Platforms

#### Bluetooth Radio

Frequency band 2.4 to 2.483 GHz  
Modulation scheme FHSS, GMSK  
Receive sensitivity -80 dBm, type for BER, 0.1%

#### Baud Rate

Default 9600 bps  
Configurable 1200 to 115,200 bps  
Flow control, default None

#### Environmental Conditions

Operating temperature -40° to 80° C<sup>1</sup>  
Storage temperature -40° to 90° C  
Humidity 5% to 95% non-condensing

#### External Antenna

+ 2 dBi<sup>2</sup>

#### RF Connector

Female SMA

#### Impedance

50 ohm

#### Serial Connector

9-pin male D-SUB

#### Shark Config Software

Windows 98, 2000, ME & XP compatible

#### Enclosure

Polycarbonate  
48.8 x 85.75 x 20 mm

#### Bluetooth Profiles

General Access Profile  
Service Discovery Profile  
Serial Port Profile

#### Internal Battery

Battery type Lithium ion rechargeable  
4.2 VDC  
Battery life Approximately 4 hours of continuous use  
Number of recharge cycles 500

#### Power

External power supply 6 to 15 VDC  
Transmit power 20 dBm max

#### Operating current

Master mode 55 mA typical  
Slave mode 40 mA typical


#### Standby current

Master mode 5 mA typical  
Slave mode 4 mA typical

#### Certifications

Bluetooth 1.1 qualified  
FCC / CFR 47, part 15  
Industry Canada (CSA)  
CE Mark: EN 300 328-2 & EN 301 489-17  
Safety LVD: EN60950-1

### Common Usage Scenarios



**Scenario 1:**  
Set up a CSA pair as a serial cable replacement



**Scenario 2:**  
Set up the CSA pair as a passive serial **Bluetooth** receiver

**Stevens is an Adoptive Member of the Bluetooth Special Interest Group (SIG)**

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### ORDERING INFORMATION

Part #	Description	Part #	Description
80000	The Shark Includes power plug, antenna and utility software	92988	Null Modem Cable
80039	90° Adapter UP	80040	90° Adapter DOWN
80035	Desktop Utility Software	See Note <sup>2</sup>	Optional Antennas
80043	RS 485 4-wire to RS 485 2-wire Adapter	80044	RS 232 to RS 485 2-wire Adapter

<sup>1</sup> Internal battery operating temperature -20° to +70° C

<sup>2</sup> For other antenna options contact Stevens or visit Stevens' website at [www.stevenswater.com](http://www.stevenswater.com)