**Ocean Optics**

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SERIAL-BT-ADP Getting Started

Ocean Optics is offering the SERIAL-BT-ADP serial-to-Bluetooth[TM] adapters for replacing an RS-232 cable in your system with a wireless connection for operating at a distance of up to 300 feet (100 meters). A pair of these Bluetooth devices works with an RS-232 serial interface to a computer, or other equipment using serial data format, replacing a dedicated cable connection with no need for any software changes.

The adapters are used in pairs to replace a direct serial data cable connection anywhere in your laboratory or industrial system. Simply disconnect each end of the RS-232 cable and connect the correct adapters (male or female) to the equipment at each end of the link. See the example below using an STS spectrometer.
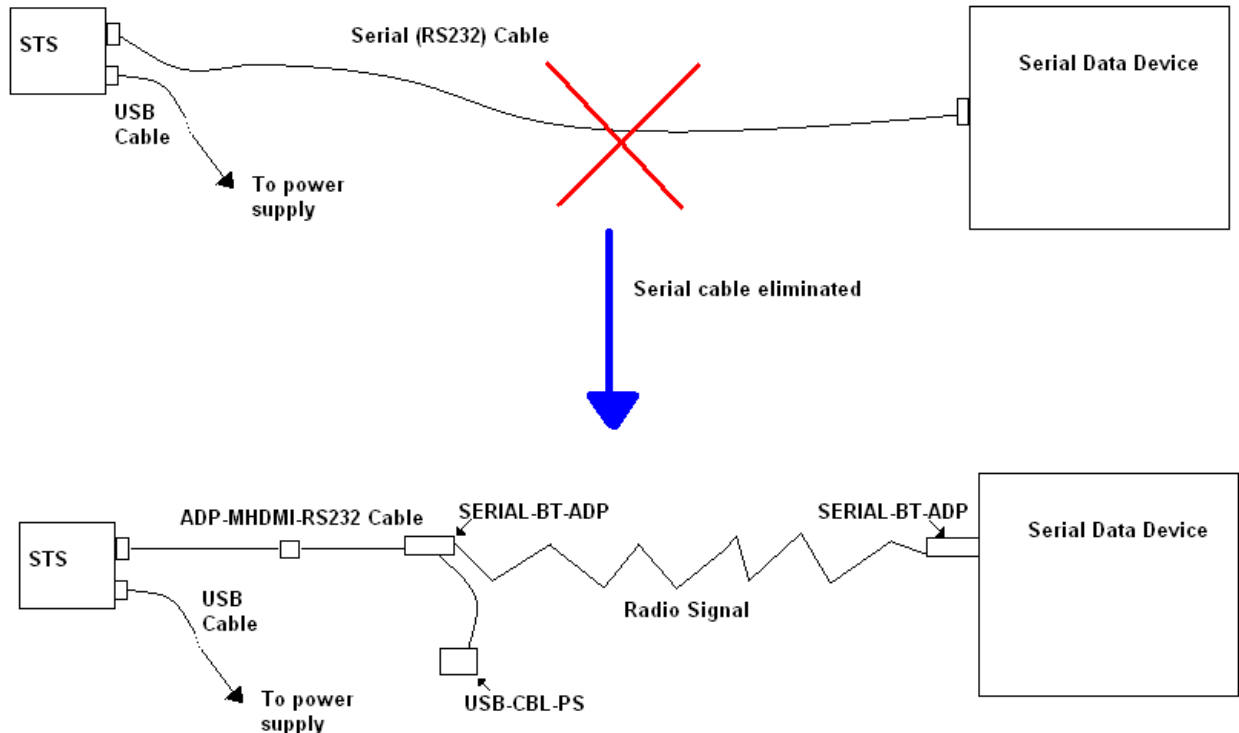
For systems that are already capable of communicating using Bluetooth, such as a PDA, tablet computer, laptop, or smart phone, the adapters can be used individually. This allows you to share one or more data acquisition devices, each equipped with this adapter, among several users. When using the adapter individually, application software (possibly custom, not included) is required for your device to communicate with the Bluetooth module.

External power must be supplied to each Bluetooth module for operation. A suitable 5 volt power supply (USB-CBL-PS) is available from Ocean Optics (see **Additional Equipment Available** below), or you may supply 5 volt power directly from your system using a power cable (available from Digi-Key, see **Additional Equipment Available** below) or from your system using Pin 9 on the data connector.

Models Available

The following Bluetooth serial adapter models are available from Ocean Optics:

❑ **SERIAL-BT-ADP**: Contains 2 units, one male and one female DSUB9 connector

❑ **SERIAL-BT-ADP-M**: Contains one unit, male DSUB9 connector

❑ **SERIAL-BT-ADP-F**: Contains one unit, female DSUB9 connector

Additional Equipment Available

❑ **Ocean Optics USB spectrometer**

❑ **Spectrometer operating software** such as SpectraSuite

❑ **STS-CBL-PS cable:** Connects the STS spectrometer to Bluetooth or WiFi adapters and provides power when not connected to your computer's USB port.

❑ **USB-CBL-PS:** A 5 V power supply for SERIAL-BT-ADP

❑ **ADP-MHDMI-RS232 cable:** Allows an Ocean Optics device with an MHDMI connector (such as STS and Jaz) to interface to an accessory device's RS-232 connection.

❑ **Power cable:** Available from Digi-Key (part number CA-2214-ND for 6 ft or CA-2220-ND for 3 ft), suitable for connecting power directly to your system , or extending the cable from a power supply

SERIAL-BT-ADP Installation

Installing the adapter consists of the following main steps:

• Configuring the SERIAL-BT-ADP by setting the configuration switches
• Connecting the adapter to your computer's serial port

Setting the Configuration Switches

The SERIAL-BT-ADP adapters have a set of configuration switches on the top. Using a paperclip or small screwdriver, you must set these switches to the serial baud rate being used by your spectrometer as described below. The following settings assume that a pair of units are being used: one male and one female (SERIAL-BT-ADP).

9600 Baud Rate Switch Settings

This is the default baud rate for most Ocean Optics spectrometers: Maya2000 Pro, NIRQuest, QE65000, STS, Torus, USB2000+ and USB4000.
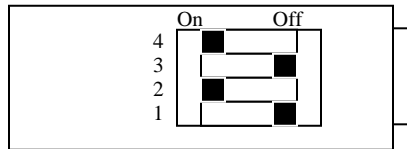
Unit 1 (master) switch settings:

9.6K/115K baud	Switch 4 = on
Auto Master	Switch 3 = on
Auto Discover	Switch 2 = on
Factory Defaults	Switch 1 = off
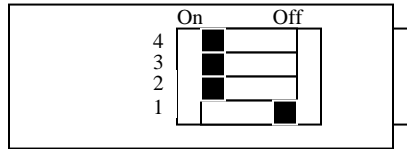
Unit 2 (slave) switch settings:

9.6K/115K baud	Switch 4 = on
Auto Master	Switch 3 = off
Auto Discover	Switch 2 = on
Factory Defaults	Switch 1 = off

These setting will set the Bluetooth pair to 9600 baud, no parity, 8 bits, 1 stop bit, 1 start bit. These settings will also cause unit 1 to act as a master and search for the nearest slave (unit 2). It is important that no other slave devices are closer than the unit 2.
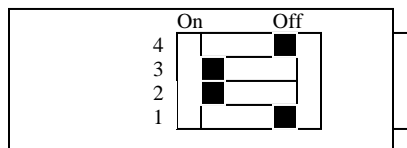
Note

Once the SERIAL-BT-ADP devices have been successfully paired, set Switch 2 (Automatic Discovery) to off to prevent them from inadvertently pairing with any other Bluetooth devices within range.

115200 Baud Rate Switch Settings

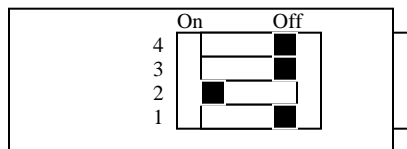This is the default baud rate for the following spectrometers: HR2000+ and HR4000.

Unit 1 (master) switch settings:

9.6K/115K baud	Switch 4 = off
Auto Master	Switch 3 = on
Auto Discover	Switch 2 = on
Factory Defaults	Switch 1 = off

Unit 2 (slave) switch settings:

9.6K/115K baud	Switch 4 = off
Auto Master	Switch 3 = off
Auto Discover	Switch 2 = on
Factory Defaults	Switch 1 = off

These setting will set the Bluetooth pair to 115200 baud, no parity, 8 bits, 1 stop bit, 1 start bit. These setting will also cause unit 1 to act as a master and search for the nearest slave (unit 2). It is important that no other slave devices are closer than the unit 2.

Note

Once the SERIAL-BT-ADP devices have been successfully paired, set Switch 2 (Automatic Discovery) to off to prevent them from inadvertently pairing with any other Bluetooth devices within range.

57600 Baud Rate Switch Settings

This is the default baud rate for the Jaz spectrometer. Reset the Jaz baud rate to 115200 baud using the Jaz Serial Bus menu as described in the *Jaz Installation and Operation Manual*, then set the SERIAL-BT-ADP switches for 115200 baud as shown above.

For More Information on the SERIAL-BT-ADP

Further instructions for setting up your SERIAL-BT-ADP device are contained in the Bluetooth Serial Adapter User Manual (RN-BT-SRL-UM) available here: *http://www.rovingnetworks.com/products/RN_240*

For More Information on Other Ocean Optics Products

You can access complete documentation for other Ocean Optics products on the *Software and Technical Resources* CD or by visiting our website at *http://www.oceanoptics.com*. Select **Technical | Operating Instructions**. Choose the appropriate document from the drop-down lists or use the **Search by Model Number** field.

Please feel free to call Ocean Optics Technical Support at (727) 733-2447 for help or more information.