DEVICE FUNCTIONS

AR0485B Bluetooth RS485/RS422 Adapters with RJ Connector RJ9/RJ10/RJ11/RJ12/RJ45

Features

- RS485/RS422 interface with RJ connector
- Half-duplex data communication
- ESD, EFT, and surge protection
- Customer defined connector pin assignments
- Bluetooth Class 1 Radio
- Integrated antenna
- Data encryption
- Support Microsoft Windows Bluetooth COM port
- Battery powered
- LED indicators
- Configuration via USB
- Touch button power switch
- Battery usage meter
- Battery overdischarge protection (manually activate)

Specifications

Bluetooth	Bluetooth v2.1 + EDR
	Class 1 Radio
RS485/RS422	Half-duplex transceiver
	1/8-unit-load receiver input impedance or up to 256 transceivers on one bus
	True fail-safe receiver
	No integral 120Ohm termination resistor
	4P4C, 6P6C, or 8P8C modular plug connector
	Baud rate: 300bps to 115200bps
	Parity: Even, Odd, None, Mark, Space
	Data length: 5-bit, 6-bit, 7-bit, 8-bit
	Stop bits: 1-bit, 2-bit
USB	USB 2.0, USB Micro-B receptacle connector
Software	Microsoft Windows 8, Windows 7, Windows Vista, eeTerminal.
Power	3.6v AA size battery

Typical Application - Microsoft Windows Bluetooth COM Port

This application requires install this Bluetooth adapter on Microsoft Windows, and Bluetooth connection to computer is required. A virtual COM port is created for this adapter after installation. User application software can access this adapter's RS485/RS422 interface using this virtual COM port. Here are the steps to install this adapter on Microsoft Windows. The adapter's authentication pin code is 1234.

Method 1 - Install Bluetooth Adapter Using eeTerminal Power on Bluetooth adapter. Starts eeTerminal. Select **File** from menu bar, and select **Open Device**. The software lists all compatible devices in a pop-up window. Select the Bluetooth device from the list and click the **Open** button. Follow the on-screen instructions to install the device if this Windows version supports automatic device installation.

Method 2 - Install Bluetooth Adapter Using Windows Bluetooth Device Manager Power on Bluetooth adapter. Locate Bluetooth icon on Microsoft Windows taskbar. Click on it and select *Add a Bluetooth Device*. Follow Microsoft Windows on-screen instructions to install the device.

After Windows successfully installs the Bluetooth adapter, a virtual COM port (Outgoing direction) with SPP description will be created.

To check the COM port number, click on Windows taskbar and select *Open (Bluetooth) Settings*. Click *COM Ports* in *Bluetooth Settings* window.

LED Indicator - Bluetooth connection

Status	LED Flash Rate
Connected	Solid on
Waiting for connection	Once per second

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LED Indicator - Battery meter and battery switch

Status	LED Flash Rate
Battery switch (touch button)	Solid on while touching, otherwise off
Battery good	LED off
Battery low (Non-rechargeable)	Once every 3 or 2 seconds
Battery extremely low (Non-rechargeable)	Once per second
Battery low (Rechargeable)	Once per second
Battery cutoff (Rechargeable)	LED off

Assembling and RS485/RS422 Signals

The modular plug connector can be assembled by us if pin assignments are provided. The pins of the 4P4C, 6P6C, 8P8C plug connectors are numbered sequentially 1 to 4, 1 to 6, 1 to 8. Pin 1 is on the left when the connector is viewed with the retention mechanism on the bottom and the cable opening toward the viewer. An integral 120 Ohm termination resistor can be installed if requested. RS485/RS422 signals are,

Conductor Color	RS485/RS422 Signal
Green	TxD+/RxD+ (A)
Orange	TxD-/RxD- (B)
Black	GND (C)

Ordering Information

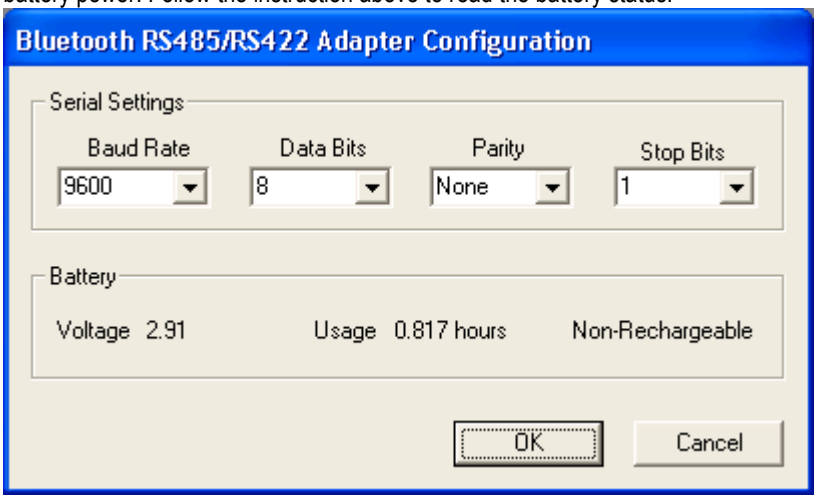
Part Number	Connector Type	RJ Connector
AR0485B44	4P4C	RJ9, RJ10, RJ22
AR0485B66	6P6C	RJ11, RJ12, RJ14, RJ25
AR0485B88	8P8C	RJ45

RS485/RS422 Serial Configuration and Check Battery Status

The adapter's serial settings are configured using eeTerminal (download from www.devicefunctions.com). Connect the adapter's USB port to a computer's USB port. Start eeTermianl, click **File** from menu bar, and select **Open Device**. eeTerminal lists all compatible devices in a pop-up window. Select **DEVICE FUNCTIONS UART/RS485** and click the **Configure** button. A device configuration window will pop up. Select the required serial settings and click **Ok** to save the new settings, or click **Cancel** to cancel the configuration.

In the battery section, it shows the battery status: battery voltage, number of hours that the battery has been used, and battery type (non-rechargeable or rechargeable).

The battery status is not updated automatically on PC. To check the battery status from PC, first turn off the battery if it is on, turn on the battery power. Follow the instruction above to read the battery status.



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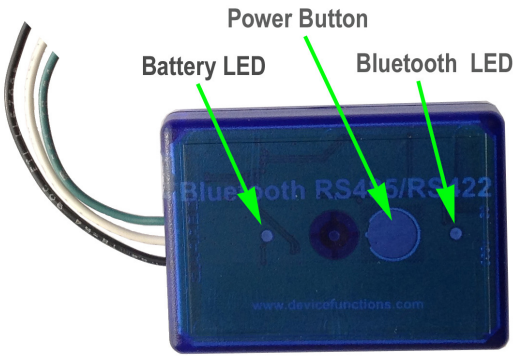
Battery Power On and Power Off

Touch on power button ⏻ until battery LED lights up. Left your finger. Touch twice more consecutively. The battery LED must be on with each touch. This turns on battery power. The same procedure is used to turn off battery power.



Battery Usage Meter

The battery usage meter tells the number of hours that the battery has been used. Power on the adapter. Place your finger on ⏻ power button. The battery LED will start flashing in a few seconds. Count the number of flashing until the battery LED stops flashing. Lift your finger. The battery usage is read as,

Number of Flashing	Battery Usage (hours)
10	90 - 100
9	80 - 90
8	70 - 80
7	60 - 70
6	50 - 60
5	40 - 50
4	30 - 40
3	20 - 30
2	10 - 20
1	Less than 10

Change Battery

This adapter requires a 3.6v AA size battery. Both non-rechargeable and rechargeable batteries can be used. Unscrew the screw on the battery pack. Remove the cover gently. Remove the old battery and place the new battery in. Align the + and - signs on the battery with the + and - signs on the battery holder. Put on the cover and tighten the screw.

Rechargeable Battery Overdischarge Protection

This feature can be activated when changing battery. It prevents rechargeable battery degradation caused by overdischarge. To activate overdischarge protection, touch on ⏻ power button while placing in the rechargeable battery. The LED must be solid on. Left your finger. Touch twice more consecutively. The LED will flash three times. This indicates that the over discharge protection is activated.

Overdischarge protection is off by default. You need to activate this feature every time when you change rechargeable battery.

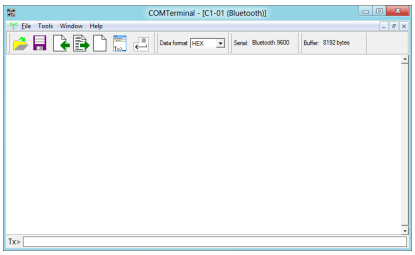
Touch Button Adjustment

Unscrew the screw and gently remove the cover. Remove the battery. Touch on ⏻ power button while placing back the battery. The LED is solid on. Keep touching on ⏻ power button until LED off. Lift your finger. Wait until the LED is solid on again. Place your finger over ⏻ power button. Keep your finger on ⏻ power button until LED starts flashing. Lift your finger. When the LED stops flashing, the touch button recalibration is done.

The following procedure can be used to restore manufacture's touch button setting. Unscrew the screw and gently remove the cover. Remove the battery. Touch on ⏻ power button while placing back the battery. The LED is solid on. Keep your finger on ⏻ power button until LED off. Continue keeping your finger on ⏻ power button until LED starts flashing. Lift your finger. When the LED stops flashing, the touch button is restored.

Accessories

eeTerminal
Configure, read, and write Bluetooth adapters. Upload/download files.



Environmental Conditions

Operating temperature range	0°C TO +45°C
Storage temperature range	-20°C TO +35°C
Relative humidity	0% to 90%, non-condensing