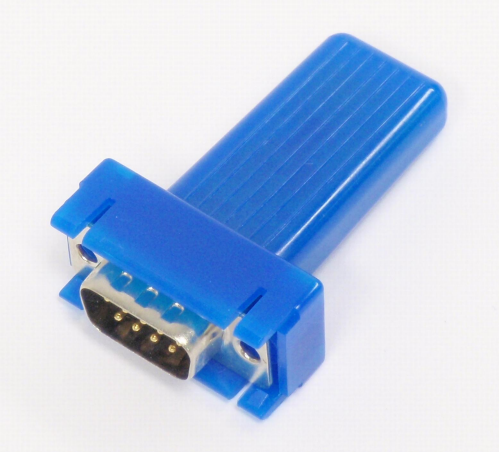

M0200, M0201, M0202 and M0203 Bluetooth to RS232 serial adapters

Module Description

The M020 Bluetooth modules use the serial port profile (SPP) to provide a short range RS232 to Bluetooth wireless connection. The devices are self discovering and no setup is required from the host device. There are four different configurations, the tables below detail the common specification and an overview of the different applications.

Common specification

Input power	5-28VDC with auto resetting over voltage and over current protection. Suitable for connection to vehicle power supplies. Power supplied through pin 9.
RS232 specification	9600 baud, 8 bits, 1 stop bit no parity.
Power consumption	Peak 70mA transmitting at max range
Radio range	20m (65ft)
Bluetooth PIN code	Use when using a third party master device – 1234
Certifications	Bluetooth certified (BQB) Bluetooth 2.0 Standard (802.11b tolerant) FCC module certification CE certification RoHS compliant

Configuration details

M0200	Cable replacement master end. Used as a master to M0201, once a slave is discovered and paired the master will not try to connect to a different slave.
M0201	Cable replacement slave end. Used with M0201, once discovered and connected to a master the slave will never be discoverable to any other master device.
M0202	Multi-roaming master. Used as a master to M0203, if unconnected will search for any M0203 and will connect to the first one found. If disconnected will search again.
M0203	Multi-roaming slave. Will remain discoverable if unconnected. Can be used with M0203 or any other BT SPP master such as a PC, smart phone or PDA.

RS232 Connections

The M020 modules have one DB9 male connector for power and the RS232 communications. The table below shows the connections for a three wire RS232 connection to the host device.

DB9 Pin	Host device connection
2 – Rx Data	To remote device transmit data (Tx). Pin 3 on a host with DB9
3 – Tx Data	To remote device receive data (Rx). Pin 2 on a host with DB9
5 – GND	To remote device signal ground
9 – Power in	To host 5-28V DC supply. The power and signal grounds both use pin 5. Ensure that the power supplied has a ground referenced to the host signal ground.

Example setups

Cable replacement

For a cable replacement solution use M0200 and M0201. Binding should be done for one pair at a time, once each set of adapters are bound you can then proceed to bind another set. If there are multiple master or slave devices in discovery mode the binding will be unpredictable. Wire cables as shown and connect adapters, power up the system. The adapters should then start up and discover each other, once both show a solid blue LED they are bound and will not try and discover another device.

Multi-roaming

In the case where one master may connect to different slaves depending on which is in range use a M0202 master with M0203 slave devices. In this case when the master is not connected to a slave it will search for a candidate slave. If there is a slave in range the master device will connect to it. If the connection is lost the slave will return to being discoverable and the master will search for a slave. Once the devices are wired apply power, connection is indicated by the blue LED switching to a solid on state.

Third party host

To use a device such as a PC or PDA as the master device use a M0203 slave. Once the slave is connected and powered up follow the instructions for your master device to discover the slave and connect to it. The PIN code for the slave device is 1234.

LED state

The device has one blue LED to indicate the state it is in, the table below summarises the states.

State	LED indication
Startup	Master - long flash, Slave – double flash
Master searching	Double flash every 5 seconds
Slave discoverable	Double flash every 5 seconds
Master bound, looking for slave	Single flash every 3 seconds
Slave bound, undiscoverable	Single flash every 1 second
Connected	LED on