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Software Demo/Test Application

The DT50M can be paired and communicate with classic Bluetooth and BLE devices. This allows the user to create serial to Bluetooth and/or Bluetooth to I/O control application. Diamond Technologies provides a Windows application as well as an API interface to assist users in configuration and program development. These can be found at www.diamondt.com.

To establish a Bluetooth connection, start the Windows DT50M application and select the correct Bluetooth outgoing COM port and click “Connect” as shown in Figure 5.

The blue light on the DT50M will illuminate once the Bluetooth connection has been established. After a connection is established Serial data can then be exchanged between your PC and the Serial port connector on the DT50M. Serial port data is displayed in the Serial Communications window of the DT50M application.

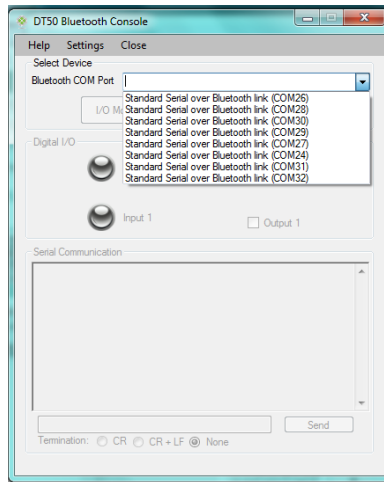


Figure 5

Changing Serial Communications Parameters

The DT50M application can also be used to change the default serial port settings of the DT50M. To access the serial settings, first put the DT50M into I/O Mode by clicking the I/O Mode button at the top left of the screen. Then select Settings at the top of the application main window. The serial settings dialog will be displayed as shown in Figure 6. Change serial port settings to desired values and click Set. The new settings will be saved in the DT50M.

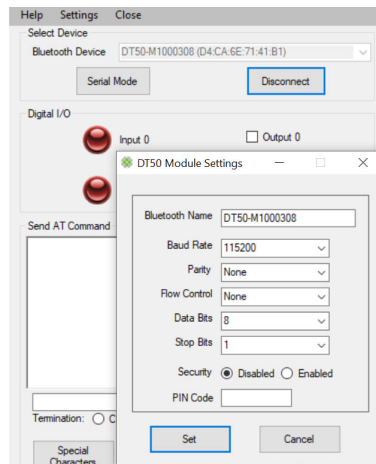


Figure 6

Controlling and Monitoring Digital I/O

The DT50M application can also be used to control the DT50M digital outputs and monitor the digital inputs. In order to control and monitor the I/O, you first need to ensure that the DT50M is in I/O mode by clicking the I/O Mode button at the top left of the main application window. The screen of the DT50M Application will then appear as shown in Figure 7. When in serial mode, a blue LED will illuminate the PWR indicator and will turn off when in IO mode. The DT50M digital outputs can now be turned on/off by selecting/deselecting the check boxes. The state of the DT50M digital inputs can be monitored by observing the Input0 and Input1 indicator lights on the application display. Note: When in I/O mode the DT50M will no longer exchange serial communications.

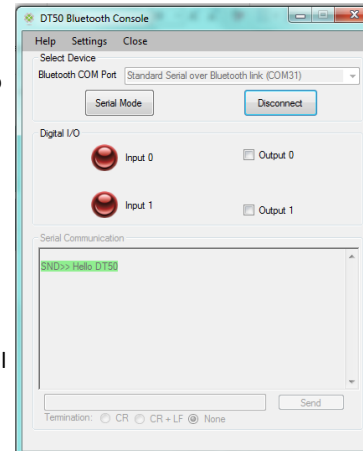


Figure 7

6

Wi-Fi Configuration and Settings

The DT50M can act as a Wi-Fi Access Point or a Wi-Fi station. Depending on your particular model the DT50M also supports 2.4 Ghz and 5 Ghz communications. Wi-Fi settings can be accessed from the “Settings” menu under “Wi-Fi Wizard” In this menu you are able to configure your DT50M as an access point or station, enable/disable authentication and set your IP address configurations. Change Wi-Fi settings to your desired values and click “Set” (shown in Figure 8). The new settings will be saved on the DT50M and will remain after power-cycling.

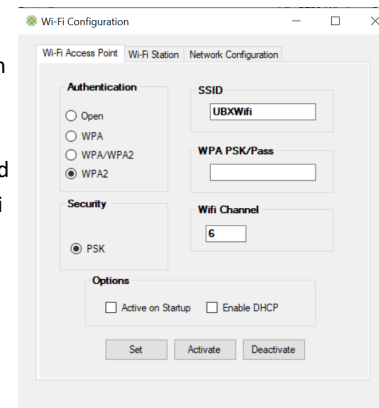


Figure 8

DT50M Wireless Gateway Quick Start Guide



Rev 1.24, 112020



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Overview

The DT50M Wireless Gateway is an easy to use serial to Bluetooth or Wi-Fi converter which incorporates Digital I/O. As a Serial Converter it supports RS232 and RS485 (RS422 model available). The Digital I/O can be controlled remotely from the Wireless interface, providing the ability to turn on and off devices remotely, as well as monitor the state of inputs. The DT50M includes an embedded Bluetooth and Wi-Fi stack and is fully Bluetooth qualified, providing the ability to interface to any Bluetooth compatible device. Depending on your particular model the DT50M line of products support Bluetooth, Bluetooth LE, Wi-Fi 2.4Ghz and Wi-Fi 5Ghz communications.

Diamond Technologies also provides a Windows based test and configuration tool as well as Android and IOS test apps.

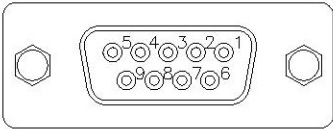
2

Serial Connections

Serial Port Connector RS232/RS485 DB9 female

NOTE: RS422 model available—contact factory

Pin	Function
1	D+ RS485
2	TX RS232
3	RX RS232
4	Vin (+4.5 – 40VDC)*
5	GND
6	D- RS485
7	CTS
8	RTS
9	Vin (+4.5 – 40VDC)*



Default Serial Communication Settings:
115.2 kbits/s , 8 Data bits, 1 Stop Bit, No Parity,
No Flow Control
* By default pin 9 is enabled for Vin. This can be changed to pin 4 using an internal jumper

Power

The DT50M can be powered either via the serial connector, pins 4 and 9, or via the I/O connector, pins 13 and 14. The voltage range is **+4.5 to +40VDC** while using the serial connector or the I/O connector. When power is applied to either the I/O connector or serial connector the PWR and MODE LEDs on the face of the DT50M will be green. Note, many devices will supply small amounts of power on Pin4 (DTR) of a standard serial port. This power may light the green PWR LED, but it is typically insufficient power for the module to operate properly.

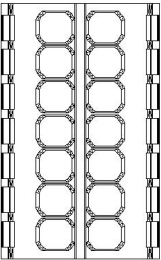
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I/O Connections

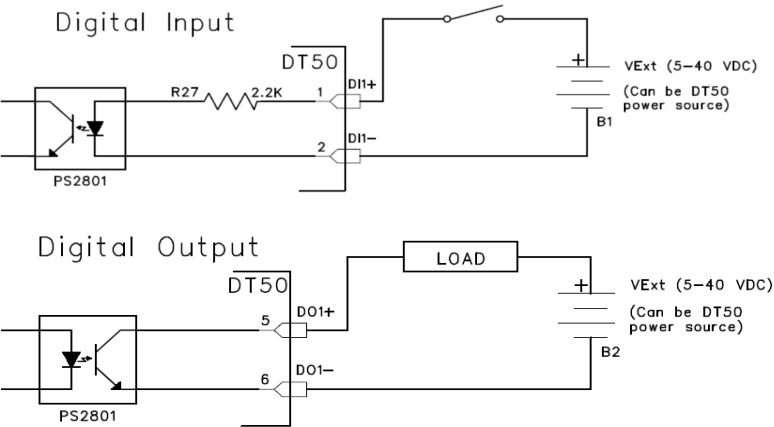
I/O versions of the DT50M include a 14 pin pluggable terminal block for I/O connections.

I/O Connector 14 pin pluggable Terminal Block

Pin	Function	Pin	Function
1	DI1 +	2	DI1 -
3	DI2 +	4	DI2 -
5	DO1 +	6	DO1-
7	DO2 +	8	DO2 -
9	Reserved	10	Reserved
11	Reserved	12	Reserved
13	V+ (+4.5 - +40VDC)	14	GND



The 14 pin pluggable I/O connector uses spring pressure termination connections. Connection points are opened by inserting a thin blade screw driver into the sides of the connector. This actuates and opens the top spring connections. The below diagrams depict the wiring of DI and DO I/O on the DT50M Terminal block connections.



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Bluetooth Serial Port Device Setup

The DT50M provides an easy to use serial cable replacement solution between any two devices. In order to use the serial port of the DT50M in a Windows based application it is necessary to first Add the DT50M to your PC Devices and Printers selection. First click on Windows Start > Devices and Printers. In Device and Printers select Add a Device as shown in Figure 1.

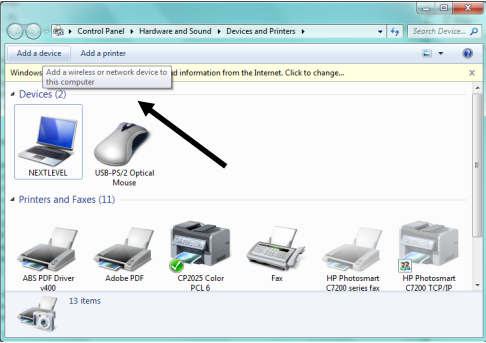


Figure 1

The “Select a device to add to this computer” selection box will then be displayed showing all available devices . Select the DT50M as shown in Figure 2 and click Next.

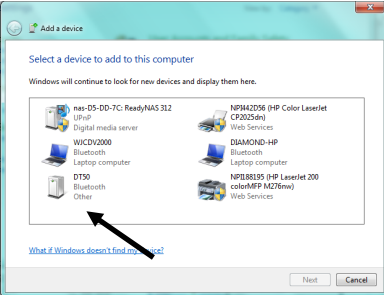


Figure 2

After the DT50M has been added to your PC available Devices and Printers list you can right click on the DT50M properties. This displays the SPP service now available with your DT50M and lists the outgoing COM port which has been assigned to the DT50M. This is shown in Figure 3. Note: Windows will setup (2) Bluetooth COM ports for you; one is for incoming connections and one is for outgoing connections. You will utilize the outgoing connections port later in this guide.

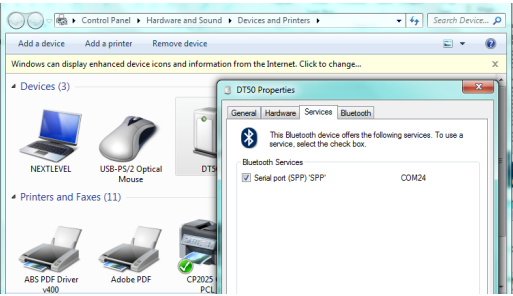


Figure 3

The DT50M COM port can now be used in serial applications. The serial port settings on the DT50M must match the settings of your serial device. To change the DT50M serial port settings see section 5 of this guide. Note: There is no need to change the serial port settings of the Bluetooth COM port which was configured in this section. The communications between your PC and the DT50M will use Bluetooth.