

How to connect an Epson Serial Printer

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Overview

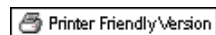
A serial connection is probably the most common type of connection between a POS computer and the printer. A serial connection involves a pair of wires (transmit and receiver) along with the status and handshaking wires. The data cable connects the serial port on the computer to the serial adapter card on the printer. If installing a Serial Buffer II, see here..

Required Components

- Epson POS Printer with Connect-It serial adapter (UB-S01 or equivalent)
- Windows computer with serial port

Epson Printers Covered

- TM-T88II
- TM-T88III
- TM-T88IV
- TM-T88V
- TM-U200
- TM-U220
- TM-U230
- TM-U590
- TM-U675
- TM-H6000III



Installing and Setting the Connect-It Serial Adapter

Install the Connect-It serial adapter into the Epson TM series printer



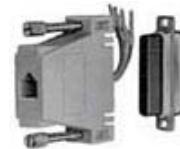
The adapter can replace the existing adapter and is held in place by 2 screws.

Finding the Right Cable

The most common problem we've had with serial adapters and printers isn't the printer at all - it's the cable! There's a wide variety of connection schemes used to connect a serial printer. The most common is the null modem type connection where the transmit and received lines are crossed. Epson also recommends crossing the DTR with the DSR and the CTS with the RTS lines.

Very often the printer is attached using an internally wired adapter which converts the DB-25 connector to a phone type (RJ-11) connector. The connections can be wired inside the housing for custom wiring options.

Note: The DB-25 cable connector on the printer is a serial connection while the serial interface connection on the back of most computers is not a DB-25 connector but a DB-9 male. The DB-25 connectors commonly found on the back of computers is the parallel interface. This is confusing, but it's the way it is.



- DB-25 Female (printer connector)



- DB-9 Male (computer connector)



Epson's recommended serial Connection cabling:

D-Sub 25P(TM)			D-Sub 9P(PC)	
Pin	Signal		Signal	Pin
1	FG		DCD	1
2	TXD		TXD	3
3	RXD		RXD	2
20	DTR		DTR	4
6	DSR		DSR	6
4	RTS		RTS	7
5	CTS		CTS	8
7	GD		GD	5
25	RESET		RI/RESET	9

We commonly use the following 'Null Modem' arrangement with good results:

D-Sub 25 (TM)		D-Sub 9(PC)
2 TxD	connected to	2 RxD
3 RxD	connected to	3 TxD

20 DTR	connected to	6 DSR
20 DTR	connected to	8 CTS
6 DSR	connected to	4 DTR
7 GD	connected to	5 GD

Tip: If unsure on which cable to use, first try a standard Null Modem cable.

Getting Initial Printer and Connect-it Adapter Settings - the Self Test

Print the initial settings of the serial adapter by running the self test. Run the printer self test by holding down the feed button while turning on the printer. The printer will print a list of initial settings including baud rate, data bits, parity, stop bit, flow control (handshaking). These values will be needed when configuring the serial port in Windows.

Configuring the Computer

Check the POS application to determine what the port settings should be on the computer. The POS application and the printer must have the same baud rate, data bits, parity, stop bit for the printer to print legibly. Also the handshaking must be set the same for the printer to print at all.

You can change the interface settings of the printer using the DIP switches on the underside of the printer. See the support page for the model of printer you are using for specific switch settings.

Verify the port you are using by checking the port in the Device Manager under the System applet in the Windows Control Panel.

Installing the Device Drivers for Windows

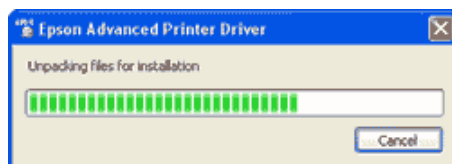
To obtain the latest Device Drivers from Epson:

1. Download and Install Epson's drivers available from www.pos.epson.com
1. Click on **TECHNICAL RESOURCES**
2. Select the printer model under the menu
3. Click the **download drivers on the printer page**
4. **For detailed installation instructions, click here.**

Configuring the Printer in Windows

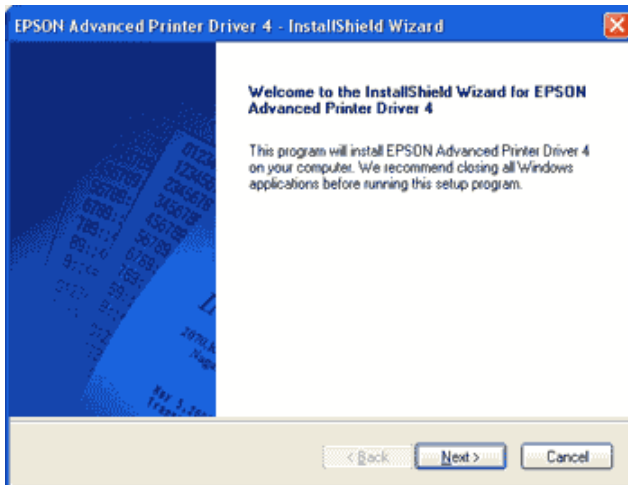
First off, it should be said that the serial printer is not Windows plug and play compliant. You need to make a few changes in the printer settings in Windows to get it to work with the serial adapter. Specifically you need to configure the serial port you are using to connect with the printer.

Installing the Epson Printer Drivers in Windows



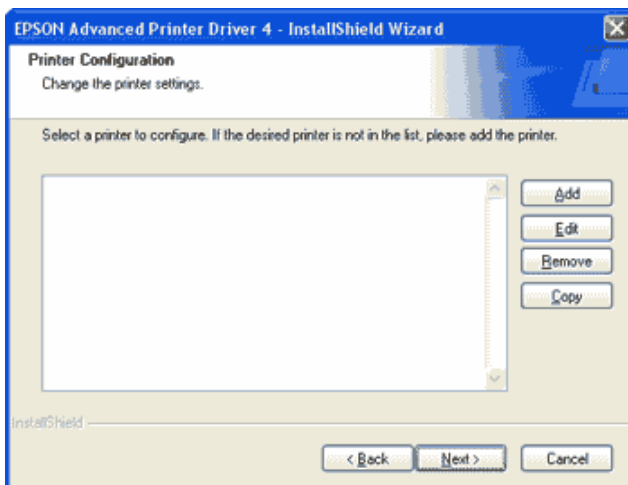
Unpacking the Drivers

After downloading the driver installer from Epson, the drivers need to be unpacked before the installer can run.



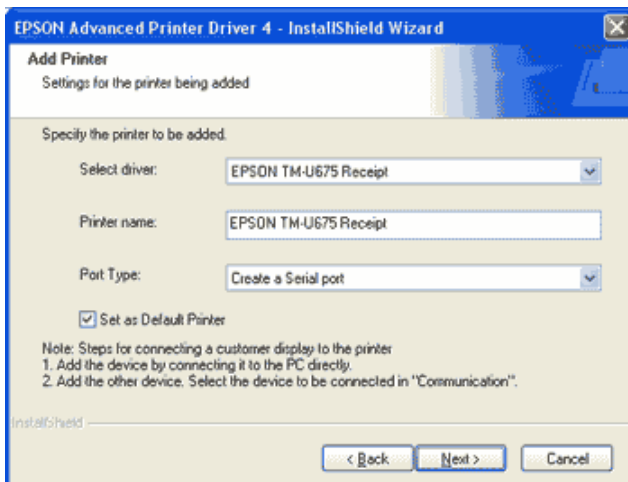
Starting the Installation

The installer walks you through selecting the model and interface you are installing drivers for in Windows.



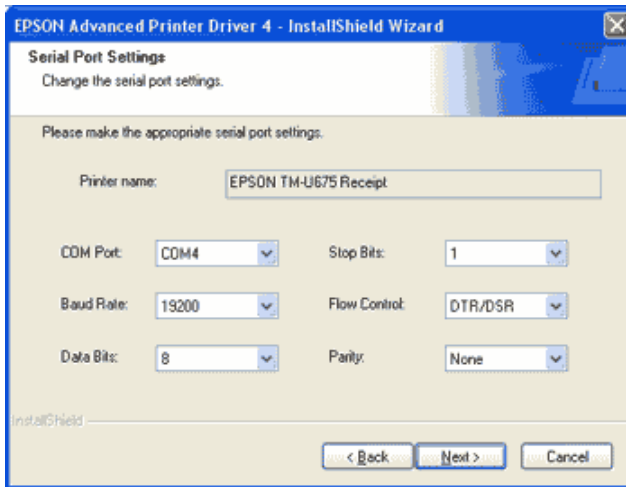
Add the Serial Printer

Press the 'Add' button to add the new printer to Windows.



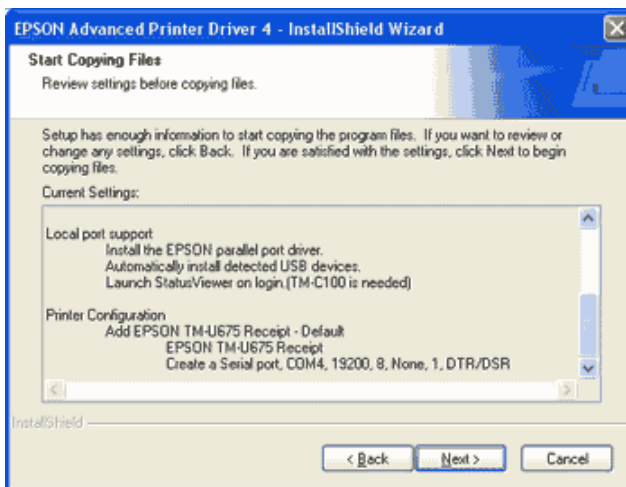
Selecting the Printer and the Printer Port

Choose the Epson model of the printer installed from the pull-down menu and choose the type of interface in use (Serial) for the port type.



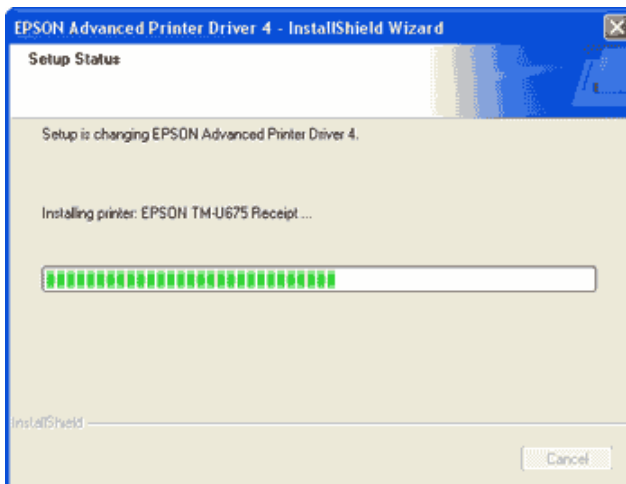
Setting the Port Settings for the printer

Insert the baud, bits, flow control and parity settings from the printer obtained in the Self Test, above. Also select the number of the COM port on the computer connected to the printer.



Installing the Driver Files

The installer will summarize the drivers selected. You can back up and change the driver here, if necessary.



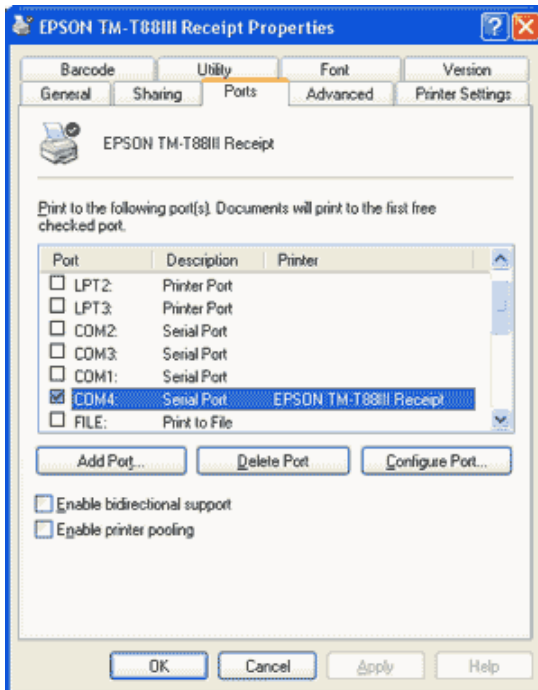
Completing the Driver Installation

The drivers will now be installed with the model and port selected.

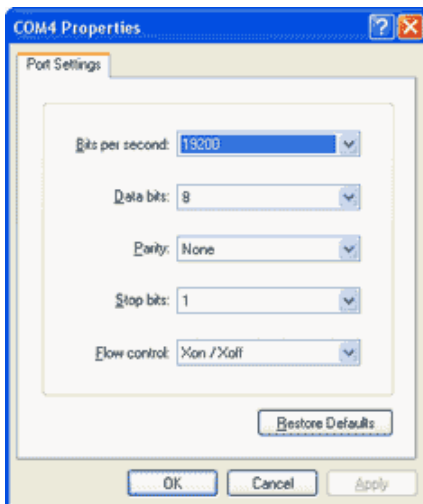
This completes the installation of the Epson printer drivers.

Checking the Driver Installation in Windows

Open the printer in the Windows Printer Folder. Select the Ports Tab. Turn off *bidirectional support*, if experiencing problems printing.



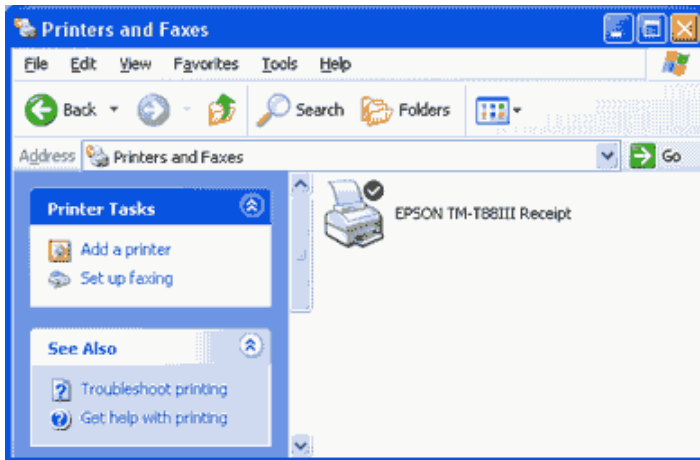
You can try selecting the serial port in use (COM4 in the above example). Press the 'Configure Port' button to open the properties screen.



Enter the same settings as were printed out in the adapter self-test. We recommend that you run off the 'bidirectional printing' option on the Ports screen.

Installing the Printer Driver in Windows

After installing the drivers, the printer should be visible in the printers folder of the Windows Control Panel.



Testing the Printer

You should now be ready to test the printer by printing some text or by pressing the "Print Test Page" button in the General Tab of the printer properties.

If the printer fails to print the test page then check:

1. Power cable is installed and the printer is turned on
2. Data cable is installed on the printer and the computer
3. Port settings are set the same on the printer (from the Self Test) and in Windows
4. The COM port selected in Windows is correct
5. The data cable has the right configuration for the printer and computer in use. *Using the wrong data cable is the most common problem with new installations.* The printer will fail to print unless the cable is compatible.

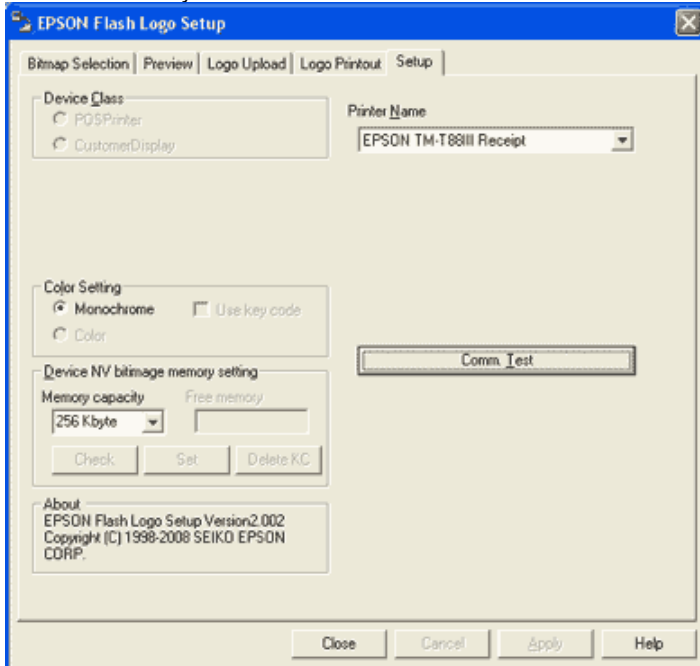
Utilities to Run on the Computer

You can verify connectivity by running the Epson Flash utility.

Epson Flash Utility

The Epson Flash Utility is normally installed along with the Epson printer drives. It is used to upload bitmaps to Epson printers, but has a simple communication test which can check for basic connectivity between the computer and the printer. Pressing the "Comm. Test" button on the Setup tab of the utility will give a go/no-go indication of

basic connectivity.



Running the TMNet configuration utility on the Computer

The TMNet network utility is not compatible with the serial interface.

Troubleshooting

Connectivity Problems, never printed

- The data cable is incorrect. Typically serial printers need to use a Null Modem serial cable. This cable is not straight through - it crosses transmit and receive lines.
- The Epson printer driver has not been installed for the serial adapter and printer in use. Check the cable is plugged into a serial (COM) port on the computer side. On the computer side this is typically a D-shaped connector with 9-pins.
- The printer or the interface card is defective. Confirm printer operation with self-test. Confirm interface card by swapping with another interface card or printer.

Prints Garbage

- The interface settings are not the same on both the printer and computer. Run the printer self test to show the current settings on the printer. Check the computer side to see that settings are the same. Settings can be changed on the printer using the DIP switches.
- The printer selected in the software is not correct or the software doesn't support the printer in use.

No longer prints

- The TM printer is turned off. Turn on the TM printer. Confirm the connection of the power supply unit or the voltage of the commercial power.
- The TM printer is offline. Turn the TM printer online.
- The ERROR LED of the TM printer is on or flashing. Remove the error cause.
- The printing port of the driver on the computer side is not specified correctly. Confirm the driver setting on the computer side.
- The printer is not online in Windows. Check the status of the printer in the Windows Control Panel, the printer should show status as ready. *Tip:* try stopping and restarting the **Print Spooler** from the Services applet of the Control Panel.

Printing is slow

- There are problems with the computer. Printing speed may go down due to problems with the network system or applications. Run the printer self test to confirm the printer is capable of printing at its normal speed.