

POS Printer Developers / Programmers

"FREQUENTLY ASKED QUESTIONS / TROUBLE SHOOTING GUIDE"

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INTRODUCTION

These are the FAQ (Frequently Asked Questions) for users who are writing applications for Star printers.

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A. GENERAL

1. What programming languages can be used to control Star Printers?

You can access Star printers from any programming language which allows you to access the Serial or Parallel port of your computer. This includes Qbasic, Visual Basic, all versions of C and C++, Delphi, Power Basic and most other languages.

2. Do Star provide any dll's or other custom API's to provide control over their printers?

We can supply a 32bit Windows dll which helps access the parallel port safely and bi-directionally under current versions of Windows (including NT).

An ActiveX (OCX) control is available which makes it extremely easy to add direct printer control via any available interface type (parallel, serial, USB, ethernet) as long as your development environment supports such controls (such as Visual Basic). This control can be downloaded from <http://www.starmicronicseurope.com/download/util/SCommSetup.exe> and the documentation can be downloaded from <http://www.starmicronicseurope.com/download/util/StarPrinterCommunicationControl.pdf>.

Star also provides a complete set of drivers for Windows 95, 98, ME, NT4, 2000 and XP as well as OPOS, JavaPOS, Mac OSX and Linux (CUPS).

Star's current Windows drivers are provided with a DLL which enables your application to directly examine the status of your printer, documentation and example projects are supplied with the drivers.

3. Can I use standard Windows drivers?

Yes, We can provide Windows 95, 98, ME, NT4, 2000 and XP drivers for all of our current POS printers.

4. What are OPOS drivers?

OPOS is an alternative Windows driver standard which is designed specifically for POS devices because many features common to POS printers (e.g. cash drawer/peripheral device control, auto cutter, non-fixed paper length's) are not supported by Microsoft's standard Printing system.

5. What methods can I use to control a Star POS printer?

You can control all of our printers directly by sending control commands directly to the serial or parallel port. Alternatively if your application is Windows based then you can use our standard Windows drivers or OPOS drivers. We also have JavaPOS, Linux and Mac OS X drivers available.

From most operating systems it is quite easy to control a printer directly without the need for any driver

6. What is the best method to use when controlling a Star POS printer?

This really depends on your needs. If you want to be able to support a wide range of printers then you probably should use some type of driver, if you need to support larger desktop printers (e.g. laser's) then you will have to use the standard Windows drivers.

For maximum power, speed and flexibility, or if you are using a platform for which we do not have a dedicated driver, you should access the printer directly by sending control codes to the serial or parallel port of your computer. All Star printers support a very similar command set so it is easy to support our whole range to give your end users a choice of printer, often a printer will just ignore commands that it can not perform (e.g. a printer without an auto-cutter will accept the cut command) so it is safe to take advantage of features which may not be available to all printers. See the answer to question B-1 for examples of how to access the printer directly.

B. Direct programming

1. How do I open a printer port for direct communication?

Many languages will provide a library or object for handling the serial port. These are usually designed with modem control in mind but will work just as well with a serial printer. An example of this is the 'MSComm' control which is supplied with Visual Basic.

Under most operating systems it is possible to open a serial or parallel port as if they were a file. Under MS-DOS or Windows these are known as COMx: or LPTx: for serial or parallel ports respectively (where x represents the port number e.g. COM1: for the first serial port).

A simple Qbasic compatible example (this will also work under Visual Basic):

```
REM Open printer on COM1: for output using the most common serial port
settings)
Open "COM1:9600,n,8,1" for output as 1

REM Print some text to the printer
PRINT #1, "Test print"

REM Feed the printer forward 8 lines
PRINT #1, CHR$( &H1B) + "a" + CHR$(8)

REM Perform a cut
PRINT #1, CHR$( &H1b) + "d0"

REM Close the serial port now that output is complete
CLOSE 1
```

The win32 API provides a better way to access any printer installed under Windows directly. This has several advantages: any interface is supported (including USB, Network printers, USB to parallel/serial converters e.t.c), the print jobs go through the Windows spooler (very useful when multiple users are using one printer) and Windows handles all error checking for you.

The API functions that are required are:

- OpenPrinter() - to open the printer for communication
- StartDocPrinter() - begin a new printer document
- StartPagePrinter() - begin a new page
- WritePrinter() - write data directly to the printer
- EndPagePrinter() - end the page
- EndDocPrinter() - end the document
- ClosePrinter() – close the printer

Any data sent to the printer in this way will not be filtered by the printer driver and will not have extra header or footer data added.

If your development environment supports 32bit ActiveX (OCX) controls then the easiest method of direct communication is with Star's StarComm control. Any applications built using this control will have support for all available interface types (currently serial, parallel, ethernet and spooler communication which provides USB support). Please see answer A2 for download information.

2. Where can I find information about the control codes supported by a Star printer?

Star produce programmers manuals for all printers. Please contact your dealer or distributor to obtain a copy of the programmers manual for the printer you are using.

3. Is there an easy way to print graphics?

Some of our printers support a feature called logo store. These printers are the SP2000, TSP552, TSP2000, SP500, TSP600, TSP700, TSP800, TSP1000 and TUP900. With these printers you can download a graphic into the printer's FlashROM and send a single command to the printer to

trigger the printing of this logo. The SP2000 and SP500 can store up to 8 logo's, the other printers support up to 255 logo's (FlashROM space permitting). A Windows based, graphical utility is available from our web site (<http://www.starmicronicseurope.com>) to make downloading logo's easy.

C. WINDOWS DRIVERS

1. Why does the printer feed about 10cm at the end of a print instead of cutting?

Please update to the latest Star drivers. These can be downloaded from our web site at <http://www.starmicronicseurope.com>.

2. Why are the control codes that I send to the printer being ignored?

It is not possible to send control codes to the printer via the Windows drivers. Windows strips non-printing characters such as <ESC> which are used to form commands to the printer.

There is a font built-in to the 'line mode' drivers called 'control' which allows you to trigger special features, for example you can switch to the 'control' font and print an 'A' to open cash drawer 1, or a 'F' to perform a full cut. Full documentation regarding the 'control' font is provided with our drivers

3. Is there any way to send control codes to the printer via the windows drivers?

It is possible to open a Windows printer for direct communication using the win32 API. See answer B1.

4. How can I open a cash drawer?

All of our current drivers can be configured to open a cash drawer at any particular point (start / end of document / page) via the "Print Options" tab..

You can also open the Cash Drawer with the use of the 'control' font which is built into our drivers. Switch to the 'control' font and print a character 'A' to open cash drawer 1.

5. How can I open a cash drawer without the printer spooling/cutting some paper?

When you open the cash drawer using the control font you must print something (even if it is only a single empty line) which may cause the printer to feed a small amount of paper or cut a small piece of paper.

The only solution to this is to open the printer's port directly and send the required commands directly to the printer. Here is a Visual Basic based example of how to open the cash drawer without using the driver:

```
REM Open the printer's port for output
Open Printer.port for output as 1

REM Send the <BEL> character (trigger the peripheral
device/cash drawer)
Print #1, Chr(7)

REM Close the printer's port
Close 1
```

A command line utility is available from Star which will send the cash drawer open command directly to your printer. This can be called from a command prompt or from your application to open a cash drawer without printing anything. This utility can be downloaded from http://www.starmicronicseurope.com/download/util/OpenDrawer_10_June_2003.zip.

6. Is there any way to speed up graphics printing?

If you are printing a few common graphics (such as a logo at the top of a receipt). Then you may be able to use Logo Store. Logo store enables you to permanently store up to 255 graphics in the printer and is supported by all of our printers which have a FlashROM (TSP600, TSP700, TSP800, TSP1000 and TUP900).

Once you have your logo's stored in the printer you can use the 'control' font (see answer C-3 for an explanation for the 'control' font) to ask the printer to print them out. Stored logo's always print at full speed.

7. I am using TrueType fonts and printing is very slow. Is there any way to speed the printing up?

TrueType fonts have to be printed as graphics which means that a lot of data needs to be sent to the printer. Current serial and parallel ports have a limited speed which means that the printer will often have to stop and wait until it has received a complete line of data.

Our drivers contain some 'resident' fonts which use the font that is built-in to the printer. If you use a resident printer font then no graphics data needs to be transmitted and the printer should be able to run at full speed.

Star's current thermal printer range supports 'raster' mode drivers which can print graphics (images and TrueType fonts) at full speed (up to 180mm/s on the TSP700). If your print job contains only Windows fonts and graphics then the raster drivers are highly recommended. Raster drivers are compatible with parallel, USB or ethernet interfaces only (not RS232 serial).

8. Why can I not print anything on this Star SP200 or DP8340 dot-matrix printer?

The Star SP200 and DP8340 range of printers are only capable of printing text. If your application is using a TrueType font then Windows will try to send the data as a graphic which the printer can not print (and will therefore do nothing). To print to one of these printers you should use a printer resident font (see answer C-7).

Alternatively you can use the Generic/Text-only printer driver that is supplied with Windows. This driver is able to convert TrueType fonts into resident fonts and will, therefore, print pure text from any Windows application.

D. VISUAL BASIC

1. What is the best way to access a serial port under VB?

Visual Basic is supplied with a control named MSComm which provides full access to serial ports and can be used to send and receive data to/from any of our printers with a serial interface.

Alternatively the StarComm OCX control (see answer A2) makes it easy to control a Star printer directly via any interface type.

2. What is the best way to access a parallel port under VB?

To access the parallel port you can open the port directly using the 'open' command (e.g. 'Open "LPT1:" For Output As 1') or you can use star's bi-directional parallel port dll.

Alternatively the StarComm OCX control (see answer A2) makes it easy to control a Star printer directly via any interface type.