

Introduction to Intermec's Fingerprint

What is Fingerprint?

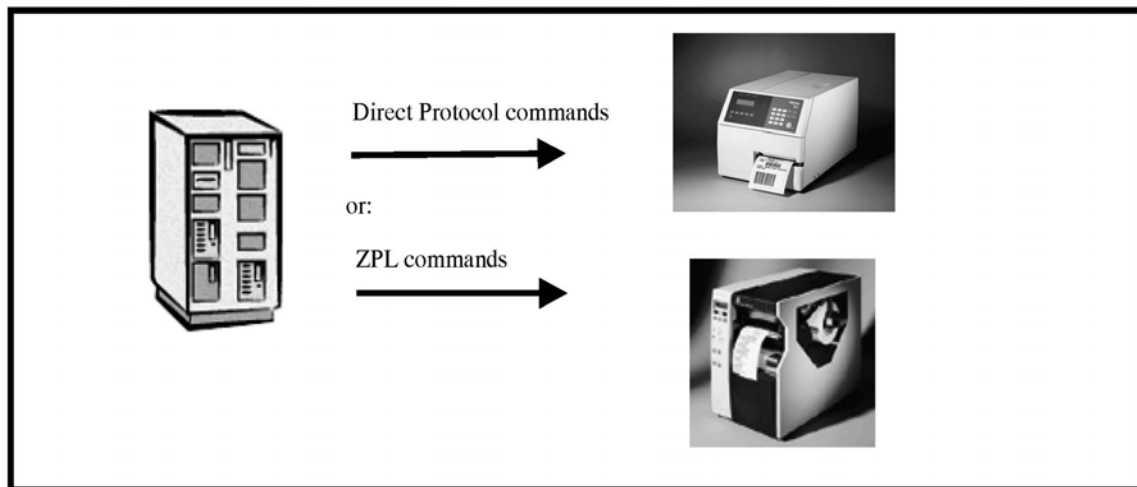
Fingerprint is a programming tool for the Intermec range of barcode/label thermal printers. It is simple-to-use, and allows you to fully customise any printer function, by utilising Fingerprint's BASIC-like command structure.

Competitive printers contain a static command language that controls the printer with the help of an attached computer, similar to Intermec's Direct Protocol or IPL printer programming languages. Intermec printers come with a command language (Direct Protocol) and a printer-resident, dynamic application programming language (Fingerprint), which allows you to fully customise any printer function.

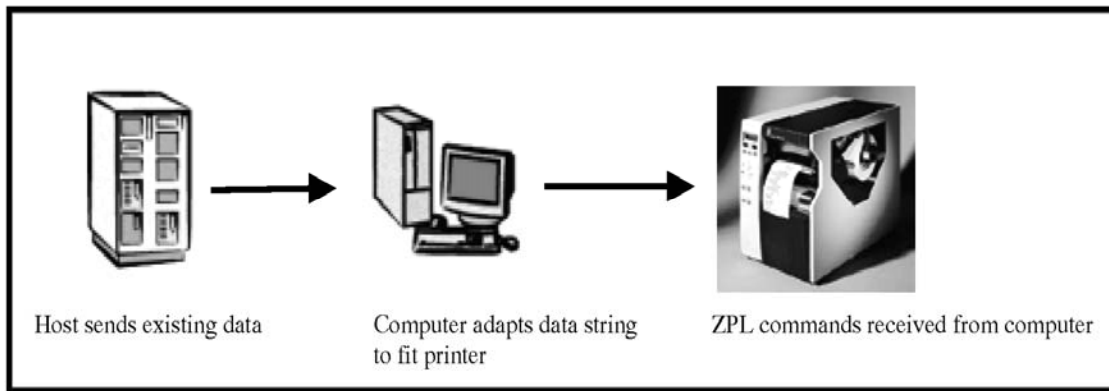
Intermec's Fingerprint printers are preinstalled with both a command language (Direct Protocol similar to ZPL etc.) and Fingerprint.

Unlike Direct Printers Protocols like IPL, ZPL, EPL etc which are static predefined commands, Fingerprint is dynamic and can be programmed to meet customers' specific requirements.

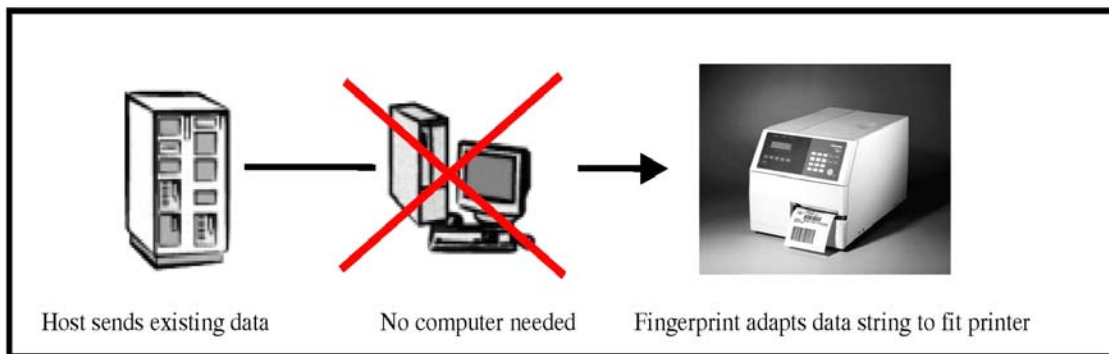
When using a command language based printer, the customer must fully adapt his system and requirements to the printer. The printer can in no way adapt to the host:



When the host software cannot be changed, a computer must be connected between the host and the command language based printer. A computer software application converts the host data into a data string that the printer will understand:

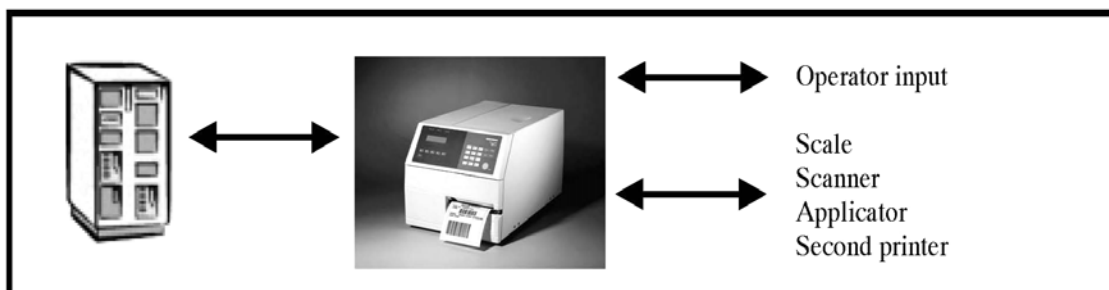


Using Fingerprint, the printer is instead programmed to receive the host data and to pick the appropriate information from the data string for printing:



Furthermore, the Fingerprint printer can also be programmed to handle:

- Operator input using the built-in keyboard and display
- Control other equipment (via optional serial and digital i/o ports)



A Fingerprint printer is like a computer that prints, allowing for a seamless integration to an existing host system. Furthermore, Fingerprint allows for customising any type of printer functionality, to even further meet or exceed the customer's expectations.

Some unique examples of what Fingerprint can do:

- Handle existing data strings from a host system to create labels with proper data
- Handle existing command language strings (like ZPL) from a host system
- Control other digital equipment like applicators, scales, conveyor belt signals etc.
- Customized printer display and keyboard functions for operator input
- Customized data input/output for a wide variety of interfaces
- Printer resident data bases for distributed data handling

Summary of Fingerprint benefits

- Flexible solutions tailored to customers changing application requirements.
- A tool for resellers and system integrators to add unique value by developing own proprietary printer application programs
- Reduce development costs and time -no need to make changes at the host system software
- Capability to leverage many operating modes across one common printer platform within an account
- Speed of implementation (faster response to customer demands)
- Ability to integrate bar code labelling into a customers process where it was previously unattainable without major system changes.
- Printer acting as a computer can control other equipment (scale, label applicator, scanner, second printer etc)
- Less hardware to purchase, deploy and maintain.

What Intermec printers are Fingerprint capable?

The following EasyCoder printers come equipped with Fingerprint and Direct Protocol:

- Easycoder PD42
- Easycoder PM Series
- Easycoder PF Series
- Easycoder PX Series

Examples of Applications

- The customer is using label printer from a competitor. He now wants to use Intermec printers in the same application, but doesn't want to change his host software.
- The host system has a line printer for printing a pick list. The customer wants to be able mark his goods with labels by adding a label printer to his system.
- Print and apply a label on a package, all controlled by the printer
- The operator needs to select a specific label format or print job from his workspace. The operator needs to select from different products in a database but there is no network at the production site that could provide the necessary information.
- Print labels with price information based on weight from a scale and a best before date.

How do you program in Fingerprint?

When developing a Fingerprint application program, the printer needs to be connected to either a terminal or a PC. Two PC software applications are needed:

- Text editor (Windows Notepad etc.) - to write the Fingerprint application
- Communications program (Windows Terminal etc.) - to download, test and store the Fingerprint application in the printer

A command language based printer uses only static commands:

- Command Language (ZPL, DPL etc.)
 - Static commands only, like:
 - ^FO50,40
 - ^AD
 - ^FD Fingerprint is Unique!^FS

Fingerprint uses both static commands (like in ZPL etc.) and dynamic instructions:

- Programming Language (Fingerprint)
 - Static commands for label format, like:
 - PRPOS 50, 40
 - FONT "SwissBold"
 - PRTXT "Fingerprint is Unique!"

plus:

- Dynamic programming instructions like:
 - Programming loops
 - IF...THEN... ELSE
 - WHILE...WEND
 - Branch instructions
 - GOTO
 - GOSUB...RETURN
 - Data processing commands
 - A% = A% + 3
 - PRINT STRING\$(4,A,\$)
 - File handling instructions
 - OPEN "Partnos" FOR INPUT AS #1
 - Data Input, Output
 - INPUT #1, A\$
 - Data communication
 - ON COMSET (background interrupt)
 - Action instructions
 - ON KEY (10) GOSUB Pause
 - ON ERROR GOTO Errhand
 - Printer hardware instructions:
 - Keyboard functionality
 - LCD Display and LEDs functionality
 - Beeper / Sound
 - Paper feeding
 - Communication interfaces

The dynamic programming instructions allows for developing customised printer functions, meeting any type of customer requirement. There is no restriction for handling data, keyboard/display functions or any other printer function.

Where does the Fingerprint application exist?

The Fingerprint application program is stored in the printer either in EPROM, SRAM or FLASH memory or memory card. Once the printer is powered up, the printer firmware starts to execute the program (AUTOEXEC.BAT), or waits until the host sends a request to start executing a specific program. The printer can store several programs in the resident printer file operating system, for increased flexibility. The program can easily be updated with new functions, by downloading an upgraded or new program to the printer. The possibility to store a Fingerprint application in the printer, makes the printer dedicated for a specific customer's needs, ready to be used in the installed environment upon power-up