Honeywell

ESIM Command Reference

User Manual

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ESIM COMMAND REFERENCE

ESim is a printer command language that emulates commands in the Eltron Programming Language (EPL II). This Command Reference includes descriptions of ESim commands.

Contents

ESim Supported Operating Modes

ESim supports two modes of operation: Standard and PF8 Legacy Mode. Certain commands may operate differently depending on whether Legacy Mode is active. We suggest testing your label formats in Standard Mode first as this mode works for virtually all uses. See a further explanation of legacy mode here

Supported Printers

Printer Model
PC23d, PC43d, PC43t
PD43, PD43c
PC42t, PC42d
PM42

Other printers support an earlier version of ESim. For more information, see the product page for your printer at sps.honeywell.com.

Commands Listed by Syntax

Syntax	Commands	Description
'	Code Comment Line	Use this command to comment out all data between the single quote character (') and the line feed character.
#	Code Comment Line	Use this command to comment out all data between the hash character (#) and the line feed character.
;	Code Comment Line	Use this command to comment out all data between the semicolon character (;) and the line feed character.
?	Download variables	Use this command to signal to the printer that the data following are variable or counter values. This command is used by the host system to send data representing variables and/or counters to the printer after a stored for containing variables and/or counters has been retrieved.
^@	Reset printer	Use this command to reset the printer (soft restart).
^A	Enter pause printing mode	When batch printing, this high-priority command finishes the current label and temporarily suspends printing any further labels in the print job.
^B	Break batch printing	When batch printing, this high-priority command finishes the current label, stops printing, and cancels the remainder of the print job. It also cancels print jobs that have already been paused using a ^A command.
^C	Continue printing	This high-priority command makes the printer exit the Pause Printing mode, that is, continue printing the remainder of a print job after having been temporarily stopped using a ^A command.
^D	Remaining labels	Use this high priority command to make the printer return the number of labels remaining to be printed in a batch print job.
^default	Restore factory default settings	Use this command to reset the printer to its complete factory default settings followed by a printer restart.
^ee	Immediate error report	Use this command to force the printer to report error and status immediately.
A	Print text	Use this command to print an text string to the image print buffer. The Latin (English, etc.) font sets (1-5, a-z, and A-Z)

Syntax	Commands	Description
		are single-byte (8 bits per byte) character maps. The Asian characters are double-byte mapped characters. The printed Asian character depends on the double-byte values.
a	Print Text (Truetype Fonts)	Use this command to print an text string to the image print buffer. Use the parameters in the command to specify the TrueType font, size, and position of the text.
AUTOFR	Automatic form printing	Creates a label format file that is automatically retrieved and prompted for variables (if necessary) from any of the communication interfaces each time the printer is powered up.
B	1D bar code command	Use this command to print one-dimensional bar codes.
b	2D Barcode command	Use this command to print two-dimensional bar codes.
C	Counter	Use this command to define one of maximum 10 automatic counters.
C	Cut immediate	Use this command to make the cutter perform a cutting cycle without printing a form. You can only perform this command when you have a cutter installed on your printer.
D	Density	Use this command to select the print density.
EI	List soft fonts	Use this command to print out on a label a list of all the user-downloaded fonts ("soft fonts") that are stored in the printer memory.
EK	Delete soft font	Use this command to delete user-downloaded fonts ("soft fonts") from non-volatile memory.
eR	User-defined error/status character control	This command allows the advanced programmer to specify the printer's error/status report character for error reporting via the RS-232 serial and other communication interfaces.
ES	Store soft font	This command is used to download and store user-downloaded fonts ("soft fonts") in memory.
f	Cut position	Use this command to adjust the cutting position along the y-axis in relation to the media according to other characteristics of individual printers and batches of

Syntax	Commands	Description
		media.
fB	Adjust Backup Position	Use this command to retract the media position along the y-axis in relation to the media, for achieving better media placement to peel, cut and/or tear off media, to handle the various characteristics of individual printers and media.
FE	End form store	Use this command to end a Form Store sequence.
FI	Print form information	Use this command to print on a label the list of all forms stored in the printer memory.
FK	Delete form	This command is used to delete forms from memory.
FR	Retrieve form	Use this command to retrieve a form that was previously stored in memory.
FS	Form store	This command begins a form store sequence.
GG	Print graphics	Use this command to print a graphic file that is stored in printer memory.
GI	Print graphics information	Use this command to print on a label the list of all graphics stored in memory.
GK	Delete graphics	Use this command to delete a specified installed graphic, or any installed graphics from memory.
GM	Store graphics in memory	Use this command to store graphics files in non-volatile memory.
GRP	Return graphics from print buffer	Use this command to dump part of the printer buffer back to the host.
GW	Store graphics in image buffer	Use this command to store binary graphic file data directly into the printing image buffer memory, to be used for immediate printing.
i	Asian character spacing	Use this command to place an adjustable inter-character space between Asian font characters (fonts 8 and 9 only).
I	Character set selection	Use this command to select the desired character set.
j	Media feed adjustment	This command sets the media feed for tear-off (straight-through), peel-off (self-strip), or cut-off operation.
JB	Disable top of form backup	Use this command to disable the printer from retracting media to position the leading edge of the label to be at the burn line on start of print.

Syntax	Commands	Description
JF	Enable top of form backup	Use this command to enable the printer to retract media to position the leading edge of the label to be at the burn line on start of print.
LE	Line draw exclusive	Use this command to draw black lines where the line needs to be white when intersecting a black area or object or black when intersecting a white object or area.
LO	Line draw black	Use this command to draw black lines. Lines drawn using this command are black, and will stay as black where two (or more) lines intersect.
LS	Line draw diagonal	Use this command to draw diagonal black lines.
LW	Line draw white	Use this command to draw/render white lines.
N	Clear image buffer	Use this command to clear the image buffer before rendering a new image buffer. It also clears any error list that has not been presented.
o	Cancel Software Options	Use this command to cancel certain printer customization parameters set by o series commands, and set them to their defaults.
O	Option select	Enable or disable various sensors, the cutter, and feed button actions.
oR	Character substitution	Use this command to substitute the Euro currency character (€) for any character in the printer-resident fonts. This command is also used to enable/disable the slash zero character.
P	Print	Use this command to print the label.
PA	Print automatic	Use this command in a stored form sequence to automatically print the form as soon as all variable data has been supplied.
PF	Feed media	Use this command to feed the media forward or backward by a given length.
Q	Set form length	Use this command to set the form and gap length when using the label gap sensor, or the amount of media feed after the print image in case of continuous media.
q	Set label width	Use this command to set the label width.
R	Set reference point	Use this command to move the reference point for the

Syntax	Commands	Description
		X and Y axis. All horizontal and vertical measurements in other commands use the setting for R as the origin for measurements.
r	Set relative reference point	Use this command to move the reference point for the x-axis and y-axis relative to the label width set by a previous q command.
S	Speed select	Use this command to select the print speed. The speeds supported, and the default speed, will be dependent on the printer itself.
SA	Setup adjust	Use this command to control the activation and storage of setup commands and values.
SPC	Setup print copy	Use this command is to change the function of the Feed button to print a copy of the label currently residing in the image buffer.
TD	Define Date Format	Use this command to define the date format for printing dates.
TS	Set real time clock	Use this command to set the time and date in the printer's real-time clock, RTC (only if the printer is fitted with this option).
TT	Define time format	Use this command to defined the time format for printing.
U	Print configuration	Use this command to print the printer configuration information on a label.
UA	Enable clear label counter mode	Use this command set the printer to clear the print buffer queue if an out of media condition is encountered.
UB	Reset label counter mode	Use this command to clear the UA command setting and restore the default setting to allow the printer to resume printing a batch job if an out of media condition is encountered.
UC	Command reply accept character control	Use this command to specify a prompt to acknowledge characters which the printer returns on the communications channel to the host after each command execution with no error reply before proceeding with the next command.
UE	Soft fonts information inquiry	Use this command to get information about the user downloaded fonts stored in the printer memory.

Syntax	Commands	Description
		Information will be sent back to host.
UF	Form information inquiry	Use this command to get information about the forms currently stored in the printer. Information will be sent back from printer to host.
UG	Graphics information inquiry	Use this command to get information about graphics currently stored in the printer. Information will be sent back to host.
UI	Enables prompts and code page inquiry	Use this command to get information about a code page. Response is sent back to the host.
UM	Code page and memory inquiry	Use this command to get information about the current code page you are using and information about the printer memory. When you send this command, the information is sent from the printer back to the host.
UN	Disable error reporting	Use this command to disable the US command, error reporting. Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.
UP	Code page and memory inquiry printing	Use this command to print information about a code page and amount of free memory of the printer. The information is also sent from the printer to the host through the communications interface.
UQ	Configuration inquiry	Use this command to get the printer configuration. When you send this command, the information is sent from the printer to the host.
US / UT	Enable error reporting	Use this command to enable the status reporting feature with optional direct recovery. Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.
UV	Product identity and Asian font types	Use this command to retrieve information about the firmware and fonts stored. When you send this command, the information is sent from the printer to the host.
V	Define variable	Use this command to define variable data for use in the stored forms, for the text and bar code data fields. Variable data can be used in combination with fixed data or other data types (counter, date, etc..).

Syntax	Commands	Description
X	Draw box	Use this command to draw a box shape with black lines.
xa	Autosense	Use this command to enable the printer to detect the label and gap length and set the sensor levels. This command does not place the printer in the Dump mode and does not print the printer configuration label.
Y	Serial port setup	Use this command to set up the communication parameters of the serial RS-232 port.
Z	Print direction	Use this command to set the printing orientation.

Commands Listed by Name

Commands	Syntax	Description
1D bar code command	B	Use this command to print one-dimensional bar codes.
2D bar code command	b	Use this command to print two-dimensional bar codes.
Adjust Backup Position	fB	Use this command to retract the media position along the y-axis in relation to the media, for achieving better media placement to peel, cut and/or tear off media, to handle the various characteristics of individual printers and media.
Asian character spacing	i	Use this command to place an adjustable inter-character space between Asian font characters (fonts 8 and 9 only).
Automatic form printing	AUTOFR	Creates a label format file that is automatically retrieved and prompted for variables (if necessary) from any of the communication interfaces each time the printer is powered up.
Autosense	xa	Use this command to enable the printer to detect the label and gap length and set the sensor levels. This command does not place the printer in the Dump mode and does not print the printer configuration label.
Break batch printing	^B	When batch printing, this high-priority command finishes the current label, stops printing, and cancels the remainder of the print job. It also cancels print jobs that have already been paused using a ^A command.
Cancel Software Options	o	Use this command to cancel certain printer customization parameters set by o series commands, and set them to their defaults.
Character set selection	I	Use this command to select the desired character set.
Character substitution	oR	Use this command to substitute the Euro currency character (€) for any character in the printer-resident fonts. This command is also used to enable/disable the slash zero character.
Clear image buffer	N	Use this command to clear the image buffer before rendering a new image buffer.

Commands	Syntax	Description
		It also clears any error list that has not been presented.
Code Comment Line	'	Use this command to comment out all data between the single quote character (') and the line feed character.
Code Comment Line	#	Use this command to comment out all data between the hash character (#) and the line feed character.
Code Comment Line	;	Use this command to comment out all data between the semicolon character (;) and the line feed character.
Code page and memory inquiry	UM	Use this command to get information about the current code page you are using and information about the printer memory. When you send this command, the information is sent from the printer back to the host.
Code page and memory inquiry printing	UP	Use this command to print information about a code page and amount of free memory of the printer. The information is also sent from the printer to the host through the communications interface.
Command reply accept character control	UC	Use this command to specify a prompt to acknowledge characters which the printer returns on the communications channel to the host after each command execution with no error reply before proceeding with the next command.
Configuration inquiry	UQ	Use this command to get the printer configuration. When you send this command, the information is sent from the printer to the host.
Continue printing	^C	This high-priority command makes the printer exit the Pause Printing mode, that is, continue printing the remainder of a print job after having been temporarily stopped using a ^A command.
Counter	C	Use this command to define one of maximum 10 automatic counters.
Cut immediate	C	Use this command to make the cutter perform a cutting cycle without printing a form. You can only perform this command when you have a cutter installed on your printer.
Cut position	f	Use this command to adjust the cutting position

Commands	Syntax	Description
		along the y-axis in relation to the media according to other characteristics of individual printers and batches of media.
Define Date Format	TD	Use this command to define the date format for printing dates.
Define time format	TT	Use this command to defined the time format for printing.
Define variable	V	Use this command to define variable data for use in the stored forms, for the text and bar code data fields. Variable data can be used in combination with fixed data or other data types (counter, date, etc..).
Delete form	FK	This command is used to delete forms from memory.
Delete graphics	GK	Use this command to delete a specified installed graphic, or any installed graphics from memory.
Delete soft font	EK	Use this command to delete user-downloaded fonts ("soft fonts") from non-volatile memory.
Density	D	Use this command to select the print density.
Disable error reporting	UN	Use this command to disable the US command, error reporting. Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.
Disable top of form backup	JB	Use this command to disable the printer from retracting media to position the leading edge of the label to be at the burn line on start of print.
Download variables	?	Use this command to signal to the printer that the data following are variable or counter values. This command is used by the host system to send data representing variables and/or counters to the printer after a stored for containing variables and/or counters has been retrieved.
Draw box	X	Use this command to draw a box shape with black lines.
Enable clear label counter mode	UA	Use this command set the printer to clear the print buffer queue if an out of media condition is encountered.
Enable error reporting	US / UT	Use this command to enable the status reporting feature with optional direct recovery. Please refer to the

Commands	Syntax	Description
		"Error Types and Responses" section for information regarding the types of error codes and responses.
Enable top of form backup	JF	Use this command to enable the printer to retract media to position the leading edge of the label to be at the burn line on start of print.
Enables prompts and code page inquiry	UI	Use this command to get information about a code page. Response is sent back to the host.
End form store	FE	Use this command to end a Form Store sequence.
Enter pause printing mode	^A	When batch printing, this high-priority command finishes the current label and temporarily suspends printing any further labels in the print job.
Feed media	PF	Use this command to feed the media forward or backward by a given length.
Form information inquiry	UF	Use this command to get information about the forms currently stored in the printer. Information will be sent back from printer to host.
Form store	FS	This command begins a form store sequence.
Graphics information inquiry	UG	Use this command to get information about graphics currently stored in the printer. Information will be sent back to host.
Immediate error report	^ee	Use this command to force the printer to report error and status immediately.
Line draw black	LO	Use this command to draw black lines. Lines drawn using this command are black, and will stay as black where two (or more) lines intersect.
Line draw diagonal	LS	Use this command to draw diagonal black lines.
Line draw exclusive	LE	Use this command to draw black lines where the line needs to be white when intersecting a black area or object or black when intersecting a white object or area.
Line draw white	LW	Use this command to draw/render white lines.
List soft fonts	EI	Use this command to print out on a label a list of all the user-downloaded fonts ("soft fonts") that are stored in the printer memory.
Media feed adjustment	j	This command sets the media feed for tear-off (straight-through), peel-off (self-strip), or cut-off

Commands	Syntax	Description
		operation.
Option select	O	Enable or disable various sensors, the cutter, and feed button actions.
Print	P	Use this command to print the label.
Print automatic	PA	Use this command in a stored form sequence to auto-matically print the form as soon as all variable data has been supplied.
Print configuration	U	Use this command to print the printer configuration information on a label.
Print direction	Z	Use this command to set the printing orientation.
Print form information	FI	Use this command to print on a label the list of all forms stored in the printer memory.
Print graphics	GG	Use this command to print a graphic file that is stored in printer memory.
Print graphics information	GI	Use this command to print on a label the list of all graphics stored in memory.
Print text	A	Use this command to print an text string to the image print buffer. The Latin (English, etc.) font sets (1-5, a-z, and A-Z) are single-byte (8 bits per byte) character maps. The Asian characters are double-byte mapped char-acters. The printed Asian character depends on the double-byte values.
Print Text (Truetype Fonts)	a	Use this command to print an text string to the image print buffer. Use the parameters in the command to specify the TrueType font, size, and position of the text.
Product identity and Asian font types	UV	Use this command to retrieve information about the firmware and fonts stored. When you send this com-mand, the information is sent from the printer to the host.
Remaining labels	^D	Use this high priority command to make the printer return the number of labels remaining to be printed in a batch print job.
Return graphics from print buffer	GRP	Use this command to dump part of the printer buffer back to the host.

Commands	Syntax	Description
Reset label counter mode	UB	Use this command to clear the UA command setting and restore the default setting to allow the printer to resume printing a batch job if an out of media condition is encountered.
Reset printer	^@	Use this command to reset the printer (soft restart).
Restore factory default settings	^default	Use this command to reset the printer to its complete factory default settings followed by a printer restart.
Retrieve form	FR	Use this command to retrieve a form that was previously stored in memory.
Serial port setup	Y	Use this command to set up the communication parameters of the serial RS-232 port.
Set form length	Q	Use this command to set the form and gap length when using the label gap sensor, or the amount of media feed after the print image in case of continuous media.
Set label width	q	Use this command to set the label width.
Set real time clock	TS	Use this command to set the time and date in the printer's real-time clock, RTC (only if the printer is fitted with this option).
Set reference point	R	Use this command to move the reference point for the X and Y axis. All horizontal and vertical measurements in other commands use the setting for R as the origin for measurements.
Set relative reference point	r	Use this command to move the reference point for the x-axis and y-axis relative to the label width set by a previous q command.
Setup adjust	SA	Use this command to control the activation and storage of setup commands and values.
Setup print copy	SPC	Use this command is to change the function of the Feed button to print a copy of the label currently residing in the image buffer.
Soft fonts information inquiry	UE	Use this command to get information about the user downloaded fonts stored in the printer memory. Information will be sent back to host.
Speed select	S	Use this command to select the print speed. The

Commands	Syntax	Description
		speeds supported, and the default speed, will be dependent on the printer itself.
Store graphics in image buffer	GW	Use this command to store binary graphic file data directly into the printing image buffer memory, to be used for immediate printing.
Store graphics in memory	GM	Use this command to store graphics files in non-volatile memory.
Store soft font	ES	This command is used to download and store user-downloaded fonts ("soft fonts") in memory.
User-defined error/status character control	eR	This command allows the advanced programmer to specify the printer's error/status report character for error reporting via the RS-232 serial and other communication interfaces.

CHAPTER

3

COMMANDS

B – 1D Barcode command

Use this command to print one-dimensional bar codes.

Behavior of bar codes with Variables and Counters

The data field can be substituted by or combined with the following commands:

- Vnn =Prints the contents of variable "nn", where ""nn" is a two digit number from 00 to 99.
- Cn = Prints the contents of counter "n" at this position. Range of n = 0 to 9.
- Cn+/- x = Prints the contents of counter "n" at this position while setting the counters start value to "x". Range of n = 0 to 9. Enter + to increase the value or - to decrease the value.
- Data with the RTC Time & Date Functions
- The Data field can be replaced by or combined with the following variables:
- TT = Prints the current time at this position in the predefined format. See the TT command for format selection.
- TD =Prints the current date at this position in the predefined format. See the TD command for format selection.

Codabar 1D bar code

Code 39 1D bar code

Code 93 1D bar code

Code 128 1D bar code

EAN8 1D bar code

EAN13 1D bar code

Interleaved 2 of 5 1D bar code

MSI-3 with mod. 10 check digit 1D bar code

Planet 1D bar code

Plessey (MSI-1) 1D bar code

ESim Command Reference

Codabar 1D bar code

Use this command to render a codabar one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

‹p1›

Horizontal start position (X) in dots. Valid Value:

• A numeric value between 0 and the thermal printhead (TPH) width.

‹p2›

Vertical start position (Y) in dots. Valid Value:

• A numeric value between 0 and the specified media length.

‹p3›

Rotation. Valid Values:

• 0: No rotation
• 1: 90 degrees
• 2: 180 degrees
• 3: 270 degrees

‹p4›

Selects codabar bar code. Valid Value:

• K

‹p5›

Narrow bar width (in dots). Valid Value:

• Range: 1 – 20

‹p6›

Wide bar width (in dots) Valid Value:

• Range: 2 – 30

‹p7›

Bar code height (in dots) Valid Value:

• Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

- Valid range:
- Follows standard codabar valid data and start/stop symbols.
- Data: "0" to "9", "-", "$", ":", "/", ".", "+".
- Start/Stop Symbols: "A", "E", "N", "T", "*".

Behavior

- If the data contains invalid characters/symbols, no bar code will be rendered.

Code 39 1D bar code

Use this command to render code 39 one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects bar code. Valid Values:

- 3: Code 39 standard or extended
- 3C: Code 39 with check digit

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 - 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 - 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

<u>Range</u>

- Uppercase letters: A – Z
- Numeric Digits: 0 – 9
- Special Characters: –, ., $, /, +, %, and space

Behavior

- If the data contains invalid characters, ESim will attempt to render the bar code for valid characters and ignore / skip the invalid characters.

Difference

- ESim may render different from other EPL II competitor printers in situations where the data consists of invalid characters.

Code 93 1D bar code

Use this command to render a code 93 one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects code 93 bar code. Valid Value:

- 9

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 – 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 – 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Value:

- Range: Full 128 code, from HEX 00 to 7F.

Behavior

- Encoding of valid data is based on the basic symbols A – Z, 0 – 9 and "-", ".", "$", "/", "+" and "%", with four special purpose symbols used in a two-character format to represent other characters.

Limitation

- Data with NULL is not able to be accepted, and may result in truncated data encoded in the rendered bar code.

Code 128 1D bar code

Use this command to render code 128 one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

* A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

* A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

* 0: No rotation (default with invalid value)
* 1: 90 degrees
* 2: 180 degrees
* 3: 270 degrees

<p4>

Selects code 128 bar code types. Valid Values:

* 0: Code 128 UCC Serial Shipping Container Code
* 1:Code 128 Auto A, B, C mode
* 1A: Code 128 Manual selection of subset A
* 1B: Code 128 Manual selection of subset B
* 1C: Code 128 Manual selection of subset C

<p5>

Narrow bar width (in dots). Valid Value:

* Range: 1 – 20

<p6>

Wide bar width (in dots). Value

- Range: 2 - 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

- Range: Code 128 valid data range according to Code 128 subset A, B, C.
- The backslash (\) character designates the following character as literal and will encode into the data field.
- Parameters Details

Print out	Data field data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

- If <p3> parameter value is out of range, ESim will ignore the value and render the bar code as if there is no rotation.
- **For Code 128 UCC**
  - the allowable data length rendered is up to 19 characters only, any data of longer length, the bar code will not be rendered for the 20th character and beyond.
  - data type is numeric only for Code 128 UCC.

Behavior (EPL mode)

- Code 128 function control characters (FCN#). Multiple FCN#s, TTs, TDs and "DATA" strings can be concatenated, and can be inserted within the symbol.
- FCN2, FCN3 and FCN4 are invalid in Code 128 mode C (<p4> = 1C) causing a syntax error return.

- Code 128 can encode all 128 standard characters (0 – 127). Function character FCN4 provides a means to encode extended characters (128 – 255). And it directs the reader to add 128 to the value of each affected character before allowing transmission.

- Two consecutive FCN4s will toggle between standard and extended mode for all succeeding data characters (until the end of the symbol, or until the next pair of FCN4s is seen).

- A single FCN4 toggles between standard and extended mode for only one following data character.

- Both A and B code sets are needed to represent the extended character set, just as both sets are needed to represent the standard character set.

- FCN4s can be inserted manually, if desired, by following the syntax described above. The printer will, however, insert them automatically if extended characters are encountered in the DATA:

- If up to 4 contiguous extended characters are seen, it will go into extended mode by inserting a single FCN4 before each one;

- If 5 or more contiguous extended characters are seen, it will go into extended mode by inserting two FCN4s before.

- While in extended mode, it will apply the rules as if standard characters are seen.

- The preferred way to encode extended characters is to simply embed them in the DATA and have the printer manage the encoding task automatically.

- It is illegal to mix automatic and manual modes within the data for a single symbol. Likewise, an FCN4 after an extended character will also be considered a syntax error.

Behavior (Legacy Mode)

- The Code 128 family has three unique data character subsets: A, B and C. Each character subset allows the inclusion of different type of data in a bar code. To include information found in different character subset, specify a change of character sets.

- Use the string invocation rules to encode special characters and the special functions keys, FNC1, FNC2, FNC3 and FNC4. Note that the human readable part in the symbol, FNC and code subset control characters is represented by a space. The input data string is a fixed string of maximum 64 alpha-numerical characters.

- Code 128 With Auto Selection of Subset and UCC/EAN
  Code 128 and EAN128 use automatic subset selection of Subset A, B, or C, both at the start and within the bar code.

- Code 128 With Manual Selection of Subset
  Start the Code 128 symbol with manual selection of subset A, B or C, to have complete control of composing the symbol data output.

- Invoke special control characters in the data string to switch between subsets or other special cases inside the symbol, as described in the table below.

Command Type values

Command Type	Text Print	Bar code	Manual Selection	C128	Bar code C128 Auto UCC/EAN128
Command	A	B	B	B	B, b[5]
Parameter \<p4\>	1	1A	1B	1C	1,IE[4],1EC[5]

String Invocation Rules

Starts with Auto	Starts with A, B, or C	Start A	Start B	Start C	Start A, B, or C (+FNC1)
Invocation in String	Text output {	Bar code output	Bar code output	Bar code output	Bar code output
\"	"	"	"	N.A.[2]	"
\\	\	\	\	N.A.[2]	\
\1	1	\<FNC1\>	\<FNC1\>	\<FNC1\>	\<FNC1\>
\2	2	\<FNC2\>	\<FNC2\>	N.A.[2]	\<FNC2\>
\3	3	\<FNC3\>	\<FNC3\>	N.A.[2]	\<FNC3\>
\4	4	\<FNC4\>	\<FNC4\>	N.A.[2]	\<FNC4\>
\A	A	Ignore[1]	\<Code A\>	\<Code A\>	A
\B	B	\<Code B\>	Ignore[1]	\<Code B\>	B
\C	C	\<Code C\>	\<Code C\>	Ignore[1]	C
\S	S	\<Shift\>	\<Shift\>	NA[2]	S
Char 06[3]	Char 06	Char 06	NA[2] in Code B	NA[2]	\<FNC1\>

Notes on the invocation rule table:

[1] Nothing happens if invocation code \A, \B, or \C refer to the same subset marked "Ignore".

[2] Not applicable combinations cause an error 01.

[3] Char hex 06 in string is a legacy for FNC1 invocation from earlier bar code 128 implementations.

[4] EAN/UCC symbology always included FNC1 in the first data position and does not support other FNCs.

[5] Linear component of 2D bar code EAN/UCC Composite-Code (Data 1).

EAN8 1D bar code

Use this command to render EAN8 one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

‹p1›

Horizontal start position (X) in dots. Valid Value:

* A numeric value between 0 and the thermal printhead (TPH) width.

‹p2›

Vertical start position (Y) in dots. Valid Value:

* A numeric value between 0 and the specified media length.

‹p3›

Rotation. Valid Values:

* 0: No rotation
* 1: 90 degrees
* 2: 180 degrees
* 3: 270 degrees

‹p4›

Selects EAN8 bar codes. Valid Values:

* E80: EAN8
* E82: EAN8 2 digit add-on
* E85: EAN8 5 digit add-on

‹p5›

Narrow bar width (in dots). Valid Value:

* Range: 1 - 20

‹p6›

Wide bar width (in dots). Valid Value:

* Range: 2 - 30

‹p7›

Bar code height (in dots). Valid Value:

- Range: 1 - 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Valid data length:
  EAN13 – 7 – 8 digits only
  EAN13 2 digit add-on – 9 – 10 digits only
  EAN13 5 digit add-on – 12 - 13 digits only

Behavior

- For invalid data length, the bar code will not be rendered.
- EAN8 accepts only 7 or more digits input, output will be 8 digits, with the 8th digit as the check digit.
- EAN8 will truncate data to length of 8 if input data length is larger than 8.
- EAN8 with 2 digit add-on accepts only 9 or 10 digits input, output will be 10 digits, with the 10th digit as the check digit.
- EAN8 with 5 digit add-on accepts only 12 or 13 digits input, output will be 13 digits, with the 13th digit as the check digit.
- For invalid data, the bar code may be rendered, but the encoding is non-standard/invalid, and may differ from other reference EPL II printers.
- For data which contains a '\' character, '\' will be removed, and if the data length is still valid, the bar code will be rendered based on the remaining digits.

EAN13 1D bar code

Use this command to render EAN13 one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects EAN13 bar codes. Valid Values:

- E30: EAN13
- E32:EAN13 2 digit add-on
- E35:EAN13 5 digit add-on

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 - 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 - 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 - 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Valid data length:
  EAN13 – 12 – 13 digits only
  EAN13 2 digit add-on – 14 – 15 digits only
  EAN13 5 digit add-on – 17 – 18 digits only

Behavior

- For invalid data length, the bar code will not be rendered.
- For data shorter by 1 (e.g. 14 digit input for EAN13 with 2 digit add on), a '0' will be padded to the right as part of the main bar code data.
- For invalid data, the bar code may be rendered, but the encoding is non–standard/invalid, and may differ from other reference EPL II printers.
- For data which contains a '\' character, '\' will be removed, and if the data length is still valid, the bar code will be rendered based on the remaining digits.

Interleaved 2 of 5 1D bar code

Use this command to render interleaved 2 of 5 one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects interleaved 2 of 5 bar codes. Valid Values:

- 2: Interleaved 2 of 5
- 2C: Interleaved 2 of 5 with mod 10 check digit
- 2D: Interleaved 2 of 5 with human readable check digit

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 - 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 - 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 - 999

‹p8›

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

‹DATA›

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Data length: Even number of digits.

Behavior

- Non-numeric data will be dropped from the data fields.
- If all data is non-numeric, the bar code will not be rendered.
- If odd number of digits is input as data, a '0' will be inserted to start of the data.
- When <p5> has a value of 0, default values of <p5>= 2 and <p6>= 4 will be applied.

ESim Command Reference

MSI-3 with mod. 10 check digit 1D bar code

Use this command to render a MSI-3 with mod. 10 check digit one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

* A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

* A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

* 0: No rotation (default with invalid value)
* 1: 90 degrees
* 2: 180 degrees
* 3: 270 degrees

<p4>

Selects MSI-3 with mod. 10 check digit. Valid Value:

* M

<p5>

Narrow bar width (in dots). Valid Value:

* none

<p6>

Wide bar width (in dots). Valid Value:

* none

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 – 999

‹p8›

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

‹DATA›

Fixed data field. Valid Value:

- Valid data: Numerical data 0 – 9.

Behavior

- Non-numeric data will be dropped from the data fields, and only the numeric data will be encoded.

Planet 1D bar code

Use this command to render a Planet one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects Planet bar code. Valid Value:

- PL

<p5>

Narrow bar width (in dots). Valid Value:

- none

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 – 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Valid data lengths: 5, 6, 9, 10, 11, 12, 13 numerical characters.

Behavior

- For invalid data (non numerical) the bar code will not be rendered.
- For data lengths outside of the specified range, the bar code will not be rendered.

Difference

- Other EPL II printers may not recognize the <p8> field and not print the human readable portion.
- ESim recognizes the <p8> field; other EPL printers do not.

Plessey (MSI-1) 1D bar code

Use this command to render a Plessey (MSI-1) one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects Plessey (MSI-1) with double-modulo-10-check-digit bar code. Valid Value:

- L

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 – 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 – 30

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 - 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Value:

- Valid data: Numerical data 0 – 9

Behavior

- Non–numeric data will be dropped from the data field, and only the numeric data will be encoded.

Postnet 1D bar code

Use this command to render Postnet one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

‹p1›

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

‹p2›

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

‹p3›

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

‹p4›

Selects Postnet bar codes. Valid Value:

- P: Postnet bar code

‹p5›

Narrow bar width (in dots). Valid Value:

- none

‹p6›

Wide bar width (in dots). Valid Value:

- Range: 2 – 30

‹p7›

Bar code height (in dots). Valid Value:

- Range: 1 – 999

<p8>

Render human readable data with bar code. Valid Values:

- This field is ignored for this bar code.
- Human readable text will not be rendered.

<DATA>

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Valid data lengths: 5, 6, 9, 10, 11, 12, 13 numerical characters.

Behavior

- For invalid data (non numerical) the bar code will not be rendered.
- For data lengths outside of the specified range, the bar code will not be rendered.
- Human readable text will not be rendered regardless of <p8>value.

RSS-14 1D bar code

Use this command to render RSS-14 one-dimensional bar code family, for numeric data.

This is a subset of the RSS bar code family set which includes basic RSS-14, RSS Limited, RSS Stacked and RSS Truncated, and does not support RSS expanded nor 2D composite bar codes.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects RSS-14 bar code. Valid Values:

Value	Description	Width Multiplier	Minimum Height Multiplier
R14	Basic RSS-14	96	33
RL	Limited	74	10
RS	Stacked	50	13
RT	Truncated	96	13

<p5>

Narrow bar width (in dots). Valid Values:

- Range: 1 – 10
- The narrowest module will be this number of dots.
- Symbol Width is calculated by using <p5>multiplied by the bar code Width Multiplier listed in <p4>for the selected RSS-14 bar code type. This symbol width value includes the relevant symbol "quite zone".

<p6>

Wide bar width (in dots). Valid Value:

- 2

<p7>

Bar code height (in dots). Valid Value:

- Range: 1 - 999

<p8>

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

<DATA>

Fixed data field. Valid Value:

- Valid data: Numerical data 0 - 9
- Valid data length: 14 digits

Behavior

- ESim will render the bar code with a narrow separator, which may differ from other EPL II printers. This rendering method follows the RSS-14 standard, and ensures better scanning of the bar code.
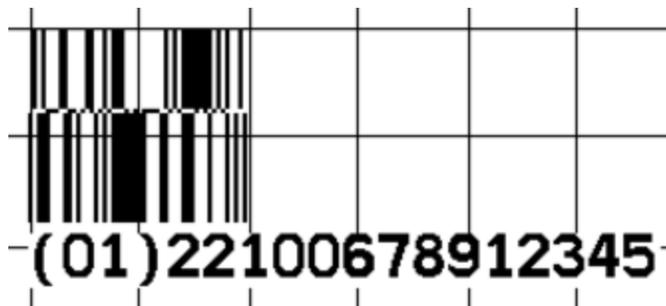
UCC/EAN 128 1D bar code

Use this command to render a UCC/EAN 128 one-dimensional bar code symbol.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

* A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

* A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

* 0: No rotation
* 1: 90 degrees
* 2: 180 degrees
* 3: 270 degrees

<p4>

Selects UCC/EAN 128 bar code. Valid Value:

* 1E

<p5>

Narrow bar width (in dots). Valid Value:

* Range: 1 – 20

<p6>

Wide bar width (in dots). Valid Value:

* Range: 2 – 30

<p7>

Bar code height (in dots). Valid Value:

* Range: 1 - 999

<p8>

Render human readable data with bar code. Valid Values:

* B: Render human readable data
* N: Do not render human readable data

<DATA>

Fixed data field. Valid Values:

* The backslash (\) character designates the following character as literal and will encode into the data field.

Print out	Data field data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

* ESim will locate valid Application Identifiers based on the UCC/EAN bar code standard and insert parenthesis, "(" and ")" as an indication.
* Invalid data may still be encoded without a valid Application Identifier, and an attempt to find the next instance of a valid Application Identifier will be conducted in the stream of input data to be encoded.

UPC A & E 1D bar code

Use this command to render UPCA & UPC E one-dimensional bar code symbols.

Syntax

B<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>,"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Rotation. Valid Values:

- 0: No rotation
- 1: 90 degrees
- 2: 180 degrees
- 3: 270 degrees

<p4>

Selects UPC bar codes. Valid Values:

- UA0: UPC A
- UA2: UPC A 2 digit add-on
- UA5: UPC A 5 digit-add-on
- UE0: UPC E
- UE2: UPC E 2 digit add-on
- UE5: UPC E 5 digit-add-on
- 2U: UPC Interleaved 2 of 5 (SCC)

<p5>

Narrow bar width (in dots). Valid Value:

- Range: 1 - 20

<p6>

Wide bar width (in dots). Valid Value:

- Range: 2 - 30

‹p7›

Bar code height (in dots). Valid Value:

- Range: 1 - 999

‹p8›

Render human readable data with bar code. Valid Values:

- B: Render human readable data
- N: Do not render human readable data

‹DATA›

Fixed data field. Valid Values:

- Valid data: Numerical data 0 – 9
- Valid data length:
  UPC–A: 11, 12 digits only
  UPC–A 2 digit add–on: 13, 14 digits only
  UPC–A 5 digit add–on: 16, 17 digits only
  UPC–E: 6, 7 digits only
  UPC–E 2 digit add–on: 8, 9 digits only
  UPC–E 5 digit add–on: 11, 12 digits only
  UPC Interleaved 2 of 5: 13, 14 digits only

Behavior

- UPC Interleaved 2 of 5 will accept data length less than 13, and takes the first 13 digits in data that are longer than 14.
- UPC–A accepts only 11 or 12 digits input, output will be 12 digits, with the 12th digit as the check digit.
- UPC–A with 2 digit add–on accepts only 13 or 14 digits input, output will be 14 digits, with the 14th digit as the check digit.
- UPC–A with 5 digit add–on accepts only 16 or 17 digits input, output will be 17 digits, with the 17th digit as the check digit.
- UPC–E accepts only 6 or 7 digits input, output will be 7 digits, with the 7th digit as the check digit.
- UPC–E with 2 digit add–on accepts only 8 or 9 digits input, output will be 9 digits, with the 9th digit as the check digit.
- UPC–E with 5 digit add–on accepts only 11 or 12 digits input, output will be 12 digits, with the 12th digit as the check digit.

- For invalid data, the bar code will not be rendered, this may differ from other reference EPL II printers, which may render unusable bar codes.

b – 2D Barcode command

Use this command to print two-dimensional bar codes

Aztec bar code

Data Matrix bar code

EAN/UCC Composite-Code bar code

MaxiCode bar code

PDF417 bar code

QR Code bar code

Aztec bar code

Use this command to print an Aztec two dimensional bar code symbol.

Syntax

b<p1>,<p2>,<p3>[,p4][,p5][,p6][,p7][,p8],"<DATA>"

b<p1>,<p2>,<p3>[,d][,e][,m][,f][,r],"<DATA>"

Parameters

<p1>

Horizontal start position (X) in dots.

<p2>

Vertical start position (Y) in dots.

<p3>

Selects Aztec bar code. Valid Value:

- A

The order of parameters [p4]-[p8] is not important. Include the prefix letter ([d],[e],[f], [m] or [r]) to select the parameter followed by a valid numeric value.

[p4(d)]

Symbol Scaling. Valid Values:

- Default: 3
- Range: 1–99

[p5(e)]

Symbol layer, error correction levels. Valid Values:

- Default: e0
- Accepted Values:
  e0: Checkword level 23% +3.
  e1–e99: 1% to 99% check words
  e101–e104: Compact symbol, 1 to 4 layers
  e201–e232: Full symbol, 1 to 32 layers
  e300: Rune symbol

[p6(f)]

flg(n) format. Valid Values:

- Default: Disabled
- Enable the flg(n) format using Escape character (27 dec).

[p7(m)]

menu support option. Valid Values:

- Value 'm' to enable
- Default: Disabled

[p8(r)]

Inversed image of bar code. Valid Values:

- Value 'r' to enable render inversed image of bar code
- Default: Disabled

<DATA>

Fixed data field. Valid Values:

- Max data length is relative chosen model type and data mode.
- Special handling for quotes '"' and backslash '\' apply.

Print out	Data field data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

- Both layer and error correction affects the symbol size.

Limitations

- Data with NULL is not able to be accepted, and its use will result in a truncated data encoded in the rendered bar code.

Data Matrix bar code

Use this command to print the two dimensional bar code symbols for Data Matrix bar code.

Syntax

b<p1>,<p2>,<p3>,<p4>,"<DATA>"

b<p1>,<p2>,<p3>[,p4][,p5][,p6][,p7],"<DATA>"

Syntax 1

Parameters

‹p1›

Horizontal start position (X) in dots.

‹p2›

Vertical start position (Y) in dots.

‹p3›

Selects Data Matrix bar code. Value

* D

‹p4›

Narrow bar. Valid Value:

* Range: 1 – 15

‹"DATA"›

Fixed data field. Valid Value:

* Any combination of data strings at a maximum of 125 characters long.

Syntax 2

Parameters

‹p1›

Horizontal start position (X) in dots

‹p2›

Vertical start position (Y) in dots

‹p3›

Selects Data Matrix bar code. Valid Value:

- D

[p4 (c)]

Number of columns to encode

[p5 (r)]

Number of rows to encode

[p6 (h)]

Sets the minimum square data module size used for encoding data. Valid Values:

- Default Value: 5
- Accepted Values: 1-40

[p7(v)]

Selects an inverse image of the bar code (sometimes known as reverse video or a negative image). Valid Values:

- Value 'r' to enable render inversed image of bar code
- Default: Disabled

<"DATA">

Fixed data field. Valid Values:

- Any combination of data strings at a maximum of 125 characters long.
- Special handling for quotes '"' and backslash '\' apply.

Print out	Data field data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

- For Syntax 1, for invalid <p4> values, no bar code will be rendered.
- Each module size, columns and rows fields can either be specified in the parameters according to Syntax 2, or can be calculate automatically.
- If there are no <p4> value specified, it is implied as Syntax 2, and will be treated as such, and will generate the bar code based on data length to calculate the bar code size.
- Data with NULL will not be accepted, and its use will result in a truncated data encoded in the rendered bar code

ESim Command Reference

EAN/UCC Composite-Code bar code

Use this to select EAN/UCC Composite-code bar code.

Syntax

b<p1>,<p2>, <p3>, <p4>,<o>,<x>,<y>,<s>,1,[B,][P][F,]<M>,"<Data1 | Data2>"

Parameters

<p1>

Horizontal start position (X) in dots

<p2>

Vertical start position (Y) in dots

<p3>

Selects bar code type.

(linear part and two-dimensional part). Valid Value:

- C

<p4>

Selection of bar code type

(linear part and two-dimensional part). Valid Value:

- 1EC

<o>

Rotation. Valid Values:

- Default: 0
  0 = No rotation
  1 = 90° rotation clockwise
  2 = 180° rotation clockwise
  3 = 270° rotation clockwise

<x>

Module width of pixel size in dots, magnification of both linear and 2D composite component. Valid Values:

- Default: 2
- The value must be between 1 – 10.

<y>

Bar height on linear part in dots. Valid Value:

- The value must be between 2 - 2999.

‹Y›

Bar height on two-dimensional composite part in dots. Minimum height is 2*x, nominal is 4*x. Valid Value:

- The value must be between 2 - 2999. The default is 8.

‹s›

Separator pattern height in dots between linear component and two dimensional composite component. Minimum height is s = 1*x, maximum height, s = 6*x. Valid Value:

- The value must be between 1 - 60. The default is same as x.

‹l›

Manually controlled column count on CC-C code. Valid Values:

- The value must be between 1 - 30.
- The column count, if not set, by default will be optimized to linear bar width.

[B]

Flag for human readable text of linear component part, to present within the same rules as to the single bar code. Font selection depends on the bar code type. It is similar to B-command parameter <p8>. Valid Value:

- Default: no B flag.

[px, y, m]

Human readable text of two-dimensional composite component part appended by additional variables for any position relocation around the composite bar code: Valid Values:

- x = horizontal start location: max is 4 digits
- y = vertical start location: max is 4 digits. This value is limited by the volatile memory available on your printer.
- m = maximum characters per line. The max is 3 digits, and 0 = no limit.
- Fixed Font selection 3 without any multiplier used. CR, LF in data causes the rest of the text to wrap around to the next line.
- Similar design as b-command parameter p on PDF417.
- Limits are x and y position limitations.
- Default is no p.

[F]

Restrain control filter, to reduce input data information, by deleting special characters for the bar code rendering, but allowing them be a part of human readable text.

Deleted characters are "(", ")", space, CR and LF.

Filters only hex 0ah, 0dh, 20h, 28h, 29h. Valid Value:

- Default: no F.

<M>

Manually controlled Pipe character: Separator between data of linear and two-dimensional composite part. Use this parameter only in exceptional case. Valid Values:

- Default: M.
- Range: any printable character.

<Data1|Data2>

The data area represents a string data field surrounded by quotation-marks.

Data1 – String of primary data to linear component.

"|" – Data separator pipe character.

Data2 – string of secondary data to two-dimensional composite data. Valid Values:

- Data1 – limited to 48 digits.
- Data2 – Characters in ISO 646 ().

Behavior

- Error codes
  If data is not suitable to optional parameters, Error 01 (syntax error) occurs.
  If data is too long or out of range, Error 03 (data length error) occurs.
  If data does not fit in area specified, Error 50 occurs.
- The 2-D component of the bar code may have one more row as compared to reference PF8 printers, and will be shorter as well.

MaxiCode bar code

Use this command to generate MaxiCode bar code symbols with a single command. The printer will automatically interpret and encode data into MaxiCode symbols for data modes 2, 3, 4, and 6. Up to eight symbols can be linked.

Syntax

B<p1>,<p2>,<p3>,[p4,][p5,]"<DATA>"

Parameters

<p1>
Horizontal start position (X) in dots

<p2>

Vertical start position (Y) in dots

<p3>

Selects MaxiCode bar code. Valid Value:

• M

[p4 (c)]

Selection of mode. Valid Values:

Value	Description
m2	Mode 2
m3	Mode 3
m4	Mode 4
m6	Mode 6

1. If [p4] (mx) is not used, the printer will use rules to automatically format the "DATA" parameter. If the postal code (third parameter, PC) in the "DATA" is:

   • All numeric characters, the printer will automatically select Mode 2.

   • Alpha / alphanumeric character combinations will set the printer to Mode 3.

   • Not used, the printer automatically selects Mode 3.

2. If [p4] value is "m2 or m3", the printer will use rules to format the "Data" parameter:

   • In Mode 2 - If a non-numeric character is entered in the Postal Code "Data" parameter field, then the MaxiCode bar code will not be printed.

   • In Mode 3 – If the Postal Code "Data" field is more than 6 characters, then the additional characters in the bar code field will be truncated.

[p5 = x,y]

Associated MaxiCode symbol numbering. Valid Values:

- x, y where,
  x = Symbol number
  y = Total number of associated symbols

- Default: Not used

- Range: 1 - 8 for both x and y

<"DATA">

Mode Dependent Data Format. Mode dependent data is bounded by quotation marks.
Maximum of 2 KBytes of data. Valid Values:

mode	Data Format
2 & 3	"CL,CO,PC[,LPM]"
4 & 6	"LPM"

- CL = Class Code (3 digits required)
- CO = Country Code (3 digits required)

Mode 2 = Numeric Characters

Mode 3 = International Characters (up to 6 characters)

- PC = Postal Code

Mode 2 = 5 or 9 numerical characters, including USA Postal ZIP 5 or 9 char. For less
than 9 characters, the printer will pad the field with 0's.

Mode 3 (International) = Any alphanumeric character (up to 6 characters)

- LPM = Low priority message (data). printable characters (up to 84 characters per
  symbol), any 256 character map.

PDF417 bar code

Use this command to print PDF 417 bar code.

Syntax

b<p1>,<p2>,<p3>,<p4>,<p5>[,p6][,p7][,p8][,p9][,p10][,p11][,p12][,p13][,p14],<"DATA">

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- 0 to 65536

<p2>

Vertical start position (Y) in dots. Valid Value:

- 0 to 65536

<p3>

Selects PDF417 bar code. Valid Value:

- P

<p4(www)>

Maximum print width in dots

<p5(hhh)>

Maximum print height in dots

[p6(s)]

Sets error correction level. Valid Values:

- Accepted Values: s0 – s8
- If level is not specified, a level that generates about 1/8 as many ECC code words as data code words is selected.

[p7 (c)]

selects data compression method. Valid Values:

- Default Value: 0
- Accepted Values: 0 – Auto Encoding
- 1 – Binary mode

[p8 (pxxx,yyy,mm)]

print human readable.

p ="p" – parameter identifier

xxx = horizontal start location

yyy = vertical start location

mm = maximum characters per line

[p9 (f)]

Bar code origin point. Valid Values:

- Default: 1
- Valid Values: 0 or 1
- f1– Center of bar code as defined by the automatically adjusted symbol size, i.e. width and height
- f0– Upper left corner of bar code.

[p10 (x)]

module width (in dots). Valid Values:

- Default: 6 (dots).
- Valid Values: 1 – 9.

[p11 (y)]

set bar height (in dots). Valid Values:

- Range: 1 – 99
- Default: 4 times module width ([p10])

[p12 (r)]

maximum row count. Maximum limit for the number of rows to be used for auto selecting symbol features.

[p13 (l)]

maximum column count Maximum limit for the number of columns to be used for auto selecting symbol features.

[p14 (t)]

truncated flag. Valid Values:

- Default: 0
- Accepted values: 0 = not truncated
- 1= truncated

[p15 (o)]

rotation. Valid Values:

- Default: 0
- Accepted Values (clockwise):
    0 = 0º,
    1 = 90º
    2=180º
    3=270º
- Settings of 90º & 270º will cause the symbols maximum height (<p4>) and width (<p5>) values to transpose when calculating and generating the symbol, i.e. the height would affect column dimensions and width would affect row dimensions.

<"DATA">

data in or binary representation.

<u>Valid Values:</u>

- Special handling for quotes '"' and backslash '\' apply.

Print Out	Data Field Data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

- If the horizontal start position (X) is larger than the media width, the bar code will not be printed.
- ESim will optimize automatically for readability of data. The symbol's geometry is adjusted (typically reducing the size of the symbol) as in the defined parameters. ESim will use the largest possible module size (in terms of bar width and height) and minimize the number of rows and columns.
- For rotation with center origin point f1 ([p9]), and o1,2,3 ([p15]), ESim rotates at the top left corner of the PDF bar code, which may be different from other EPL II printer behavior, which uses a different pivot point for rotation under f1. For top, left origin point f0, ESim rotation behavior should be similar with other EPL II printer behavior, using the top left corner pivot point.
- Data compression method (field c) is always set at automatic, regardless of the value (valid or invalid) sent. This may result in a bar code that looks different visu-ally from other EPL II printers, but the data scanned will be the same.
- If the data exceeds what the bar code can encode based on the size specified in the parameters, ESim will truncate the data in order to render the bar code based on the size specification, in other EPL II printers, the bar code may not even be rendered.

<u>Behavior (Legacy)</u>

- If the horizontal start position (X) is larger than the media width, the <p1> (X) value, will be reset to (<p1> modulo label_width)

Limitations

- ESim does not support Macro PDF.

- The number of rows in the PDF 417 bar code rendered may be one more than other EPL II printer in some cases, depending on the compression, width, height and max row & column settings when using the B command, due to different encoding methodology.

QR Code bar code

Use this command to generate QR Code bar code symbols. The parsing of this command will be affected by the legacy mode selection.

Syntax (EPL mode)

b<p1>,<p2>,<p3>,[p4-p8],<"DATA">

Parameters

<p1>

Horizontal start position (X) in dots.

<p2>

Vertical start position (Y) in dots.

<p3>

Selects QR Code. Valid Value:

* Q

[p4 (m)]

Code Model. Valid Values:

* Default: 2
* Accepted Values:
  1 = Model 1 (original)
  2 = Model 2 (enhanced)

[p5 (s)]

Scale Factor. Valid Values:

* Default: 3
* Range: 1–30

[p6 (e)]

Error Correction Level (Reed–Solomon). Valid Values:

* Default: M
* Accepted Values:
  L = Lowest
  M = Medium (default)
  Q = Optimized
  H = Highest

[p7 (i)]

Data Input Mode

Note: Data will all be processed in automatic mode, please see behavior #2 below. Valid Values:

- Default: A
- Accepted Values:
  A = Automatic Data Select
  M = Initialize manual data mode. Data type is set by the first character in the data field ("DATA").

[p8 (D)]

Append symbol, allows joining data from 2 to 16 QR code symbols

Note: This field is unsupported, please see limitations below. Valid Values:

Sub-prefix	Values	Description
c	01 to 16	symbol number
d	01 to 16	divisions
p	00 to FF (hexadecimal)	parity

<"DATA">

Fixed data field. Valid Values:

- Data sent to the printer will be converted to one of the four formats defined by parameter [p7].
- The printer will, by default, automatically select the data mode for the entire fixed data string. The data encoding method will be automatically selected to achieve optimal data compression.
- If parameter [p7] is set to iM, then the first character in the data field must be either one of the following:
  N - Numeric (0 - 9)
  A - Alphanumeric (0 - 9, A - Z, a - z, space,$,%, *,+, -, . , /, :)
  K - Kanji (Shift JIS character ranges 8140 - 9FFC and E040 - EAA4 hexadecimal)
  B – Binary
- Reserved characters in the data field cannot be used within the data string are: " and / .
- The backslash (\) character designates the following character as literal and will encode into the data field.
- Parameters Details

Print out	Data field data
"	\"

"my data"	\"my data\"
\	\\
\code\	\\code\\

Syntax (Legacy mode)

b<p1>, <p2>, <p3>,[cn,mn,on,sn,xn,ynn],<"DATA">

Parameters

<p1>

Horizontal start position (X) in dots

<p2>

Vertical start position (Y) in dots

<p3>

Fixed data mode character set.

Note: Data will all be processed in automatic mode, please see behavior (EPL mode) below. Valid Values:

- 1 = Numerical data mode
- 2 = Alphanumerical data mode
- 3 = 8-bit data mode (JIS 0201)
- 4 = Kanji data mode (JIS 0208) (Note: See limitation below)
- 5 = Mixing mode (any of mode c1–c4, model type 2)
- Model 1 default = Most optimal alternative of c1 to c4.
- Model 2 default = c5.
- Internally during rendering the QR Code, the mode can be switched within a bar code to minimize the bit stream area.
- By using parameter cn, the data mode character set will be fixed.

[m]

Model type is defined and unchanged within one QR Code. Valid Values:

- Default: 1
- Accepted Values:
  1 = Original version
  2 = Enhanced version.

[o]

Rotation. Valid Values:

- Default: 0

- Accepted Values:
  0 = 0° rotation clockwise (default)
  1 = 90° rotation clockwise.
  2 = 180° rotation clockwise.
  3 - 270° rotation clockwise

[s]

Set correction level (Reed-Solomon). Valid Values:

- Default: L

- Accepted values
  L = 7%
  M = 15%
  Q = 25%
  H = 30%

[x]

Masking factor.

This enables the ratio of dark to light modules in the symbol to b approximated to 1:1 minimizing the occurrence of arrangements of close modules that will hinder decoding. Valid Values:

- Default: 8

- Range: 0 - 8.
  8 is auto masking.

[y]

Cell pixel size magnification. Valid Values:

- Default: 10

- Range: 1 - 30.

<"DATA">

Fixed data field. Valid Values:

- Data length limited to 780 bytes.

- Data is determined by the data mode character setting (<p3>) and model mode (m) as such:

<p3>	Characteristics Symbol size in cell (increment of 4 cells)	Model 1 (original)	Model 2 (enhanced)

		21*21 to 73*73	1'*21 to 177*177
1	Numeric data modes: Digits 0-9	Maximum is 1167 characters.	Maximum is 7089 characters.
2	Alphanumeric data mode: Digits 0-9, upper case letters A-Z, and 9 other characters	Maximum is 707 characters.	Maximum is 4296 characters.
3	8-bit byte data mode: JIS 8-bit character set (Latin and Kana) in accordance with JIS X 0201	Maximum is 486 characters.	Maximum is 2953 characters.
4	Kanji data mode: Shift JIS X 0208	Maximum is 299 characters.	Maximum is 1817 characters.
5	Mixing mode: Mix of mode 1-4 above	N.A.	Applicable

- The backslash (\) character designates the following character as literal and will encode into the data field.
- Parameters Details

Print out	Data field data
"	\"
"my data"	\"my data\"
\	\\
\code\	\\code\\

Behavior

- Error codes
  If data is not suitable to optional parameters, Error 01 (syntax error) occurs.
  If data is too long or out of range, Error 03 (data length error) occurs.
  If data does not fit in area specified, Error 50 occurs

Behavior (EPL Mode)

- Data Input Mode
  ESim shall treat data in automatic mode in all cases, regardless of mode specified.
  If the mode is selected as manual mode, and the first character is not any of the pre-defined character (N, A, K or B), ESim will treat the first character as part of the data string, whereas EPL II in other printers will truncate off this character regardless. i.e. if data is "12345", with <p7> field as iM, EPL II may only encode "2345", but ESim will take in the entire string "12345" as is.
  In a case like this, the resulting bar code rendered may appear larger as compared to reference EPL printer, since more characters need to be encoded in the bar code.

ESim Command Reference

- Data Input Mode, invalid data
ESim treats data automatically regardless of data type specified while other EPL II printers may follow the type strictly. If the data is sent as "N12ABC" with <p7> field as iM, EPL II printers may randomly assign numeric values to the characters "ABC" in the data, whereas ESim will treat the data as "12ABC" automatically and encode as entered.

- Error Correction level at Q or L may result in the bar code that looks different from other EPL II printers by visual inspection. The scanned data will still be the same.

- Invalid <p4> value may still result in a bar code being rendered as compared to other EPL II printers, which may not print the bar code at all.

Behavior (Legacy Mode)

- In legacy mode, using c5 (mixing data mode) lowercase characters will be converted to uppercase to follow legacy printer behavior.

Limitation

- Kanji and Binary data mode shall be supported as is binary data, without specific consideration for data formatting, or special character handling such as shift JIS characters.

- In EPL mode, <p8> field (D) is unsupported.

<p8 (D)>

Append symbol, allows joining data from 2 to 16 QR code symbols. Valid Values:

Sub-prefix	Values	Description
c	01 to 16	symbol number
d	01 to 16	divisions
p	00 to FF (hexadecimal)	parity

fB – Adjust Backup Position

Use this command to retract the media position along the y-axis in relation to the media, for achieving better media placement to peel, cut and/or tear off media, to handle the various characteristics of individual printers and media.

Syntax

fB<p1>

Parameters

<p1>

Media position adjustment (in dots). Valid Values:

- Default: 0
- Range: 0 – 255

Behavior

- The media will retract based on the value of <p1> in dots.

i – Asian character spacing

Use this command to place an adjustable inter-character space between Asian font characters (fonts 8 and 9 only).

Syntax

i<p1>

Parameters

<p1>

Space between the Asian characters (in dots). Valid Values:

- Default: 0 (no space)
- Range: 0 to 9

Behavior

- The inter-character spacing (in dots) will be multiplied with the horizontal and vertical multiplier values of the selected font.

AUTOFR – Automatic form printing

Creates a label format file that is automatically retrieved and prompted for variables (if necessary) from any of the communication interfaces each time the printer is powered up.

Syntax

FS"AUTOFR"

Behavior

- To exit the "AUTOFR" mode, send a NULL character to the printer.
- Always test the form using another name before making it a startup form. If a startup form causes an error, there are two ways of clearing it:
- From ESim, Send a NULL to exit "AUTOFR" mode. Then, delete the startup file using FK"AUTOFR".
- Alternatively, the file can be deleted using other system level methods like FTP if the printer firmware supports it, after exiting from "AUTOFR" mode.

Note

- N.A.

Limitations

- Only exit with NULL is supported in ESim.

xa - Autosense

Use this command to enable the printer to detect the label and gap length and set the sensor levels. This command does not place the printer in the Dump mode and does not print the printer configuration label.

Syntax

xa

Parameters

There are no parameters for this command.

Behavior

- The Auto sensing is used to calibrate the sensors that control the media feed and determines where the individual labels or tags start and stop. It starts measuring the gain level of the sensors, followed by searching for gap or black mark during media feeding.

- For printer supporting the Smart Media Calibration feature, this command will trigger a Smart Media Calibration. For printers not supporting the Smart Media Calibration feature, a testfeed will be triggered.

^B – Break batch printing

When batch printing, this high-priority command finishes the current label, stops printing, and cancels the remainder of the print job. It also cancels print jobs that have already been paused using a ^A command.

Syntax

^B

Parameters

There are no parameters for this command.

Behavior

- The reply at US is by default <ACK> (can be changed using UCnn command).
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.
- This command may not be processed when the input data buffer is full.

ESim Command Reference

o – Cancel Software Options

Use this command to cancel certain printer customization parameters set by o series commands, and set them to their defaults.

Syntax

o

Parameters

There are no parameters for this command.

Behavior

- This command cannot be used inside a form.
- This command must be issued prior to printing or issuing a text or a bar code command.

I - Character set selection

Use this command to select the desired character set.

Syntax

I<p1>,<p2>,<p3>

Parameters

<p1>

Number of data bits (character set). Valid Values:

- Default: 8
- Range: 7 & 8

<p2>

Printer code page for 7 or 8 data bits. Valid Values:

- Default: 0
- Range: 0-13, A - K

Note: See tables below for <p2> values for different code page.

<p3>

KDU country code (3 digits). Valid Values:

- Default: 001 (only if <p1> = 8).

Note: This parameter is unsupported, and will be ignored.

Printer code page (<p2>) for 7 data bits (<p1>=7)

<p2>	Language
0	English (US)
1	English (UK)
2	German
3	French
4	Danish
7	Swedish
8	Swiss

Printer code page (<p2>) for 8 data bits (<p1>=8)

ESim Command Reference

<p2>	Code Page	Language
0	DOS 437	English (UK)
1	DOS 850	Multilingual (Latin 1)
2	DOS 852	Latin 2 (Cyrillic II/Slavic)
3	DOS 860	Portuguese
4	DOS 863	Canadian (French)
5	DOS 865	Norwegian
6	DOS 857	Turkish
7	DOS 861	Icelandic
8	DOS 862	Hebrew
9	DOS 855	Cyrillic
10	DOS 866	Cyrillic CIS 1
11	DOS 737	Greek
12	DOS 851	Greek 1
13	DOS 869	Greek 2
A	Windows 1252	Latin 1
B	Windows 1250	Latin 2
C	Windows 1251	Cyrillic
D	Windows 1253	Greek
E	Windows 1254	Turkish
F	Windows 1255	Hebrew
G	Code Page 950	Simplified Chinese
H	Code Page 950	Traditional Chinese
I	Code Page 949	Korean
J	Code Page 932	Japanese
K	UTF–8	Unicode (generic use for languages not listed above, such as Thai)

Behavior

- Code page UTF–8 can be considered to be use for languages not listed in the table, e.g. Thai language.

Limitations

- *<p3>* is unsupported, and will be ignored.

oR – Character substitution

Use this command to substitute the Euro currency character (€) for any character in the printer-resident fonts. This command is also used to enable/disable the slash zero character.

Syntax

oR [p1[,p2]]

Parameters

[p1]

If [p1] = E, the Euro character is mapped to the code page position specified by [p2].

If [p1] = 0, this toggles the status of printing a slashed zero or not. If currently printing slashed zero, p1=0 will stop printing slashed zero. If not currently printing slashed zero, p1=0 will start printing slashed zero. Out of box default is zero with slash.

- Valid Value: [p1] = E or 0 (zero)

Note: If no [p1] or [p2] parameters are provided, all code pages are reset to the original default character mapping.

[p2]

Specifies the code page position for the Euro character in the range 32–255 decimal for all code pages, provided [p1] = E. If [p2] is omitted, the Euro character is mapped to the code page position 213 decimal for all code pages provided that [p1] = E. Valid Values:

- Default: 213 (decimal)
- Range: 0 – 255 (decimal)

Note: [p1] must be = E

Behavior

The oR command is an ESim settings command and:

- cannot be issued inside a form.
- must be issued prior to issuing a text command and printing it.
- affects a single character on all code pages. Changing the character position restores in the original changed position.
- this printer parameter data is preserved until changed by the oR command (without parameters), or the printer is reset to default.
- you can also use the "o" command to set oRE settings back to default.

Behavior (EPL mode)

- This Euro character is only applicable for resident fonts 1 to 4.

Behavior (Legacy mode)

- The Euro character is applicable for resident fonts 1 to 5.
- The toggling of slash zero is not applicable in legacy mode.

N – Clear image buffer

Use this command to clear the image buffer before rendering a new image buffer.

It also clears any error list that has not been presented.

Syntax

N

Parameters

There are no parameters for this command.

Behavior

- The N command must not be used within stored forms.
- All printer configuration commands should have been issued prior to issuing the N command to begin building the image for printing within the image buffer.
- A Line Feed (LF) must be sent prior to the N command to make sure that previous data in the command buffer has been cleared so that the printer will be initialized and ready to accept new commands.

' – Code Comment Line

Use this command to comment out all data between the single quote (') and the line feed character.

Syntax

' Comment Data

Parameters

No parameters.

Behavior

- For Honeywell printers, carriage return is accepted as line feed character as well.

- Comments must be on their own line. End-of-line comments are not allowed.

– Code Comment Line

Use this command to comment out all data between the hash character (#) and the line feed character.

Syntax

Comment Data

Parameters

No parameters.

Behavior

- For Honeywell printers, carriage return is accepted as line feed character as well.

- Comments must be on their own line. End-of-line comments are not allowed.

; – Code Comment Line

Use this command to comment out all data between the semicolon character (;) and the line feed character.

Syntax

; Comment Data

Parameters

No parameters.

Behavior

- For Honeywell printers, carriage return is accepted as line feed character as well.

- Comments must be on their own line. End-of-line comments are not allowed.

UM – Code page and memory inquiry

Use this command to get information about the current code page you are using and information about the printer memory. When you send this command, the information is sent from the printer back to the host.

Syntax

UM

Parameters

There are no parameters for this command.

Behavior

- The printer sends information on the currently selected code page and memory status back to the host in the following formats:
- UM<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>

Parameters

<p1>

Image buffer size (KBytes).

<p2>

Form memory allocated (KBytes).

<p3>

Form memory available (KBytes).

<p4>

Graphic memory allocated (KBytes).

<p5>

Graphic memory available (KBytes).

<p6>

External font memory allocated (KBytes).

<p7>

External font memory available (KBytes).

<p8>

Appends a full reply from the UI command data format. Valid Value:

ESim Command Reference

- Refer to UI command.

Limitations

- ESim deviates from PF8 printer response.

Example

```
UM↵
UM128,001.435,40160,020.829,40160,8923.260,40160
UI80
```

UP – Code page and memory inquiry printing

Use this command to print information about a code page and amount of free memory of the printer. The information is also sent from the printer to the host through the communications interface.

Syntax

UP

Parameters

There are no parameters for this command.

Behavior

- Printer will send information back to host (same as UM command), followed by printing out the current printer configuration (same as U command).
- The format of data sent to host:
- <UP><p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,<p8>

Parameters

<p1>

Image buffer size (KBytes).

<p2>

Form memory allocated (KBytes).

<p3>

Form memory available (KBytes).

<p4>

Graphic memory allocated (KBytes).

<p5>

Graphic memory available (KBytes).

<p6>

External font memory allocated (KBytes).

<p7>

External font memory available (KBytes).

<p8>

Appends a full response for the UI command data format. Valid Values:

- Refer to UI command return values.

UC – Command reply accept character control

Use this command to specify a prompt to acknowledge characters which the printer returns on the communications channel to the host after each command execution with no error reply before proceeding with the next command.

Syntax

UC<p1>

Parameters

<p1>

Specifies the desired reply character by its decimal value. Valid Values:

- Default: 0
- Range: 0 – 255

Note: If <p1> is anything other than a numerical character or the value is 0, there will be no Command Reply Accept character (default).

Behavior

- Default is no Command Reply Accept Character (command UC0).
- Parameter <p1> saves in non-volatile memory (resets back on each power cycle).
- If command UC is activated, it replaces the <ACK> character at the end of command US and P.
- If an error occurs and error report is activated, the error message is sent instead.

UQ – Configuration inquiry

Use this command to get the printer configuration. When you send this command, the information is sent from the printer to the host.

Syntax

UQ

Parameters

There are no parameters for this command.

Behavior

- Printer replies the printer configuration line by line, in ASCII, to host.
- Information and number of lines sent by printer will be of the same format as the U command.

Limitations

- The reporting format and text may differ from other EPL II printers, due to hardware and configuration differences.
- The settings reflected by this command is only based on the most recent time the corresponding ESIM settings command was issued, and may not reflect the actual system setting if it was changed via means other than using the ESIM command. e.g via printer web page configuration, or LCD user interface.

Example

UQ↵
ESim, K10.12.XXXXXX
Serial Port: 11,N,8,1
USB: VID= 1662, PID = 44
DRAM: 125284K installed
Image Buffer size: 128K
FLASH: 49060K, User: 49060K/40344K
I8,1 JF f100
S4 D10 R040,024 ZB UN
q832 Q1219,24 j50
Option: N
SA0 SPC0 M0
PAPER GAP: 461, 576 (12)
Date: Sep/14/2016
Time: 15:09:55
Printer Name: PC43-173C1100010
MAC Address: 00:10:40:38:A4:10
IP Selection: DHCP

IP address: 199.70.188.138
Netmask: 255.255.255.0
Default Gateway: 199.70.188.1
DNS: 199.70.288.168

^C – Continue printing

This high-priority command makes the printer exit the Pause Printing mode, that is, continue printing the remainder of a print job after having been temporarily stopped using a ^A command.

Syntax

^C

Parameters

There are no parameters for this command.

Behavior

- The reply at command US is by default <XON> (can be changed using eR command).
- Another way to resume printing a batch is to press the Feed button.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.
- This command may not be processed when the input data buffer is full.

C – Counter

Use this command to define one of maximum 10 automatic counters.

Syntax

C<p1>,<p2>,<p3>,<p4>[,p5],"[-],<PROMPT>"

Parameters

<p1>

Counter number. Valid Values:

* Default: 0
* Range: 0 – 9

<p2>

Maximum number of digits for counter. Valid Values:

* Default: 1
* Range: 1 - 29

<p3>

Field Justification. Valid Values:

* Field justification:
  L = Left justification.
  R = Right justification.
  C = Center justification.
  N = No justification

<p4>

Step Value. Valid Values:

* Step value. Plus or minus sign followed by a single digit between 1 to 9
  + Increase.
  – Decrease.

Note: Using a step value of +0 allows the counter to be used as an additional variable data field.

[p5]

Alphanumerical support (optional). Valid Values:

* N= Numerical support. Anything other than digit and leading spaces in DATA causes error 03.
* A = Alpha support: Base 10 on digits, base 26 on letters (default).

- B = Alphanumerical support: Base 36
- Note that anything else than digit, leading spaces, and uppercase alpha characters in DATA causes error 03.
  Wrap around:
  0 –9 goes back to 0.
  A –Z goes back to A.

[-]

KDU Prompt Options

A single leading minus sign in the prompt field causes the prompt to be sent one time only after the form is retrieved.

KDU will not be supported, but the return character will still be seen on the console in which the printer is connected to. Valid Value:

- N.A.

<-->

Suppress KDU Prompt Options

A double leading minus sign in the prompt field causes the prompt to be suppressed

KDU will not be supported, but will be effective on whatever console on the host application the printer is connected to. Valid Value:

- N.A.

<"prompt">

A prompt text that can be displayed on the terminal when a UI command has been issued. It is preceded by a single or double minus sign. Valid Value:

- Between 0 – 32 characters

Behavior

- Used in consecutive numbering applications, such as serial numbers. Counters can only be used in the Form Edit mode, and not in Direct mode. Counters have to be defined after variables.
- The C command is used in forms that require sequential numbering. When initializing counters, they must be defined in order (e.g. C0 first, C1 second...).
- Field justification (<p3>) affects the printing of counter data. When L, R or C are selected, the counter field is the width of <p2> value. Data will justify within the counter (<p2>) field per the selected <p3>. The N parameter will print the minimum number of characters.
- To print the contents of the counter, the counter number is referenced in the "DATA" field of the A (text) or B (bar code) commands.

- If the value of a counter starts with a single digit like "1", then there will be no lead-ing zero padding. If the value start with, for example, "01", then the counter will be padded, up to the maximum number of digits (<P2>), with zeros.
- Invalid <p1> values (10 and above) will be ignored and form will proceed to be prin-ted if the for and other commands are valid. This is considered a known, and pre-ferred behavior of ESim, and differs from other EPL II implementation of competitor printers, which does not print, and yet or feeds out an empty label.
- When field justification L, R or C are selected, the counter field is the width of <p2> value.
- Data will justify within the counter (<p2>) field per the selected justification.
- N parameter will print the minimum number of characters.
- Out of range values used for <p2> (< 1 or > 29) will be set to 5.

C – Cut immediate

Use this command to make the cutter perform a cutting cycle without printing a form. You can only perform this command when you have a cutter installed on your printer.

Syntax

C

Parameters

No parameters.

Behavior

- The command C is used for two purposes. C appended by parameters is used to define counters in the Form Edit mode, whereas C without any appending parameters is used to initiate a cutting operation.
- C (Cut Immediate) cannot be used inside a form.

Behavior (EPL mode)

- In standard mode, the media will feed before cutting without depending on the j command.

Behavior (Legacy)

- C (Cut Immediate) will cut at point where the media stops and could potentially cut across printed portions on the media. This is governed by the special legacy j command that forces a feed of the media before cutting.

f – Cut position

Use this command to adjust the cutting position along the y-axis in relation to the media according to other characteristics of individual printers and batches of media.

Syntax

f<p1>

Parameters

<p1>

Cut position index measured in dots. Valid Values:

- 203 dpi (8 dots/mm):
  Default: 100
  Range: 020 – 180

- 300 dpi (11.81 dots/mm):
  Default: 100
  Range: 000 - 200

Behavior

- Increasing the cut position index value moves the cut further away from the label just printed.

- Decreasing the cut position index value moves the cut closer to the label just printed.

TD – Define Date Format

Use this command to define the date format for printing dates.

Syntax

TD<p1>[/p2/p3]

Parameters

<p1> to <p3>

The parameters describe the format of the date display. At least one parameter must be specified.

Each parameter can be any of the acceptable values. Valid Values:

- y2: Year in 2 digits.
- y4: Year in 4 digits.
- me: Month as a 3-letter English abbreviation.
- mn: Month in 2 digits.
- dd: Day in 2 digits.

</>

Separator character. Valid Values:

- Default: /
- Range: Character in the range between 32 decimal and 63 decimal.

Behavior

- Format after power up is mn-dd-y4
- TD can be treated as a variable and placed within a text or bar code command's DATA parameter. The date will be printed. Days can be offset by up to 253 days for the TD variable.
- The separator is printed between the results of each of the supplied parameters.

TT – Define time format

Use this command to defined the time format for printing.

Syntax

TT<p1>[|p2|p3][p4]

Parameters

<p1>,[p2],[p3]

Describes format of time display. At least one parameter must be supplied. Valid Values:

- Default: h:m:s (power-up)
- Range: h, m or s

Note: h: Hours in 2 digits
m: Minutes in 2 digits
s: Seconds in 2 digits

[p4]

Enable 12 Hour clock format (Optional). Valid Values:

- Default: no + (24 hr clock)
- Value: +, or nothing

Note: Time will display with "AM" or "PM" if + is supplied.

[|]Separator character. Valid Value:

- Range: Character in the range between 32 decimal and 63 decimal.

Behavior

- The separator character is printed between the results of each of the supplied parameters.

V – Define variable

Use this command to define variable data for use in the stored forms, for the text and bar code data fields. Variable data can be used in combination with fixed data or other data types (counter, date, etc..).

Syntax

V<p1>,<p2>,<p3>,"[–]<PROMPT>"

Parameters

<p1>

Variable number. Valid Values:

- Range: 00 – 99

Note: Variable (reference) numbers are sequential and must be input into a form in ascending order.

<p2>

Maximum number of characters. Valid Values:

- Range: 1 – 99

Note: This is the maximum number of characters allowed in the variable field

<p3>

Field Justification. Valid Values:

- Range: L = Left
  R = Right
  C = Center
  N = No Justification

Note: Right and center justification does not apply to soft fonts, they will be defaulted to left justification.

<–>

KDU Prompt Options

A single leading minus sign in the prompt field causes the prompt to be sent one time only after the form is retrieved.

KDU will not be supported, but the return character will still be seen on the console in which the printer is connected to. Valid Value:

- Range: 1 to 40 for KDU Range (<p2>), but not to exceed a total of 1500 bytes for all variables.

<--->

Suppress KDU Prompt Options

A double leading minus sign in the prompt field causes the prompt to be suppressed.

KDU will not be supported, but the return character will still applicable on the console in which the printer is connected to. Valid Value:

- N.A.

<PROMPT>

A prompt text that can be displayed on the terminal when a UI command has been issued. It is preceded by a single or double minus sign. Valid Value:

- An text field that will be transmitted to the host (via the serial interface) each time this command is executed.

Behavior

- When defining and initializing variables:

    - Define them in order (e.g. V00 first, V01 second...)
    - Start from the entries immediately after the FS"name" command.
    - Located before any counter variables.
    - Variables cannot have the NULL character (0 dec.;00 hex.).

- To print the contents of a variable, the number of the variable must be included in the "DATA" field of the A (Print Text) or B (Print bar code) commands.

- The field justification parameter affects the way the variable is printed. When left, right, or center justification are selected, the counter value is printed left, right or center justified in an area with a width defined by the <p2> parameter. If the number of digits in the counter value is less than the number of digits defined by <p2>, the area is padded with space characters.

- If no justification is selected, the field adjusts to fit the actual length of the data without exceeding the set maximum field length, which may be useful when using a counter as input data to a bar code.

- KDU support will not be available.

Limitations

- The maximum amount of data stored as variable data, including counter variables and data reference overhead cannot exceed 1500 bytes.

ESim Command Reference

FK – Delete form

This command is used to delete forms from memory.

Syntax

FK <"name"> | <"*">

Parameters

<"name">

Name of form to be deleted. Valid Values:

- Range: Alphanumeric, up to 96 characters.

Note: Form names will be case sensitive and based on system filename accepted characters.

<"*">

Asterisk '*' as a wildcard. Valid Value:

- ALL forms in memory will be deleted

Limitations

- Deviation: In other EPL II printers, FK"name" must be issued twice for it to take effect. ESim only needs it to be issued once.

GK – Delete graphics

Use this command to delete a specified installed graphic, or any installed graphics from memory.

Syntax

GK <"name">|<"*">

Parameters

<"name">

Name of the graphic that will be deleted from non-volatile memory. Valid Values:

- Range: Alphanumeric, up to 96 characters.

Note: File names will be case sensitive based on system filename accepted characters, and stored exactly as entered.

<"*">

Asterisk '*' as a wildcard. Valid Value: ALL graphics installed in the system will be deleted.

EK – Delete user-downloaded fonts ("soft fonts")

Use this command to delete user-downloaded fonts ("soft fonts") from non-volatile memory.

Syntax

EK "<name>"

Parameters

<name>
Name of user-downloaded fonts ("soft fonts") to be deleted from non-volatile memory.
Valid Values:

- a – z: Lower case named fonts

- *: wildcard, deletes ALL user-downloaded fonts ("soft fonts") in the system.

D – Density

Use this command to select the print density.

Syntax

D<p1>

Parameters

<p1>

Density settings. Valid Values:

- Default: 10
- Range: 0 – 15.

Note: 0 is the lightest printing and 15 is the darkest.

UN – Disable error reporting

Use this command to disable the US command, error reporting. Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.

Syntax

UN

Parameters

There are no parameters for this command.

JB – Disable top of form backup

Use this command to disable the printer from retracting media to position the leading edge of the label to be at the burn line on start of print.

Syntax

JB

Parameters

There are no parameters for this command.

Behavior

- The top of form backup feeds out the media further upon printing, to allow the label to be torn or peeled off. It will retract the media for the printing of the next label at the top of the label.
- If the optional cutter is installed, this top of form backup should not be used, and it will be ignored. To disable, send a JB command.
- All j command will be ignored upon issuing this command, but can be enabled again with the JF command.

? – Download variables

Use this command to signal to the printer that the data following are variable or counter values.

This command is used by the host system to send data representing variables and/or counters to the printer after a stored for containing variables and/or counters has been retrieved.

Syntax

?,<DATA>

Behavior

- The amount of data following the question mark line must match exactly the total number and order of variables and/or counters for that specific form.
- Variables and counters must be entered sequentially in ascending order, and sep-arated by a line feed.

X – Draw box

Use this command to draw a box shape with black lines.

Syntax

X<p1>,<p2>,<p3>,<p4>,<p5>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

<p3>

Line thickness in dots. Valid Value:

- Line thickness in dots.

<p4>

Horizontal end position (X) in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p5>

Vertical end position (Y) in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

Behavior

- If <p3> > <p4>, then line thickness value is assigned to Horizontal end position value and if <p3> > <p5>, then line thickness value is assigned to vertical end position value.

UA – Enable clear label counter mode

Use this command set the printer to clear the print buffer queue if an out of media condition is encountered.

Syntax

UA

Parameters

There are no parameters for this command.

Behavior

- Three scenarios will clear this command setting:

    1. Power cycle

    2. Reset

    3. UB command

- Default behavior when a printer encounters out of media is to resume printing once new media or ribbon is present.

- Any unfinished labels or jobs will continue to be printed including batch print jobs.

US / UT – Enable error reporting

Use this command to enable the status reporting feature with optional direct recovery. Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.

Syntax

US or UT

Parameters

There are no parameters for this command.

Behavior

- Most recent communication channel will be used for status reporting.
- Non-parallel port
    - If there is an error, the printer will return a response NACK(0x15) following the error codes, refer to response list for the list of error codes.
    - If there are no errors, the printer will return ACK(0x6) after each label is printed or dispensed.
    - If a label is dispensed, the printer will send a DLE(0x10).
    - Upon paper or ribbon is empty, the printer will send, a "O7" and "Pnnn" where nnn is the number of labels remaining.
- The printer's default setting is to disable error reporting.
- Use the UN command to disable error reporting if this is enabled.
- The format of the error messages is controlled by the eR command.
- Please refer to the "Error Types and Responses" section for information regarding the types of error codes and responses.

JF – Enable top of form backup

Use this command to enable the printer to retract media to position the leading edge of the label to be at the burn line on start of print.

Syntax

JF

Parameters

There are no parameters for this command.

Behavior

- Top of form backup is used in connection with the j command. The printer feeds out enough extra media after printing a label so that it can be torn, peeled, or cut off properly.
- Top of form backup can be disabled by a JB command.
- If the optional cutter is installed on the printer, the JB command must be preceded by an O command.
- All j command will be ignored, but can be enabled again with the JF command.
- Activating the cutter using an OC command has the same effect as issuing a JF command.

UI – Enables prompts and code page inquiry

Use this command to get information about a code page. Response is sent back to the host.

Syntax

UI

Parameters

There are no parameters for this command.

Behavior

- The printer sends information on the currently selected code page back to the host in the following formats:
- <UI>,<p1>,<p2>
- <p1> = Number of data bits.
- <p2> = Code page.

FE – End form store

Use this command to end a Form Store sequence.

Syntax

FE

Parameters

There are no parameters for this command.

Behavior

- The Form Store sequence must start with the FS command and end with the FE command.

^A – Enter pause printing mode

When batch printing, this high-priority command finishes the current label and temporarily suspends printing any further labels in the print job.

Syntax

^A

Parameters

There are no parameters for this command.

Behavior

- The reply at command US/UN is by default <NAK>92<XOFF> (can be changed using eR command).
- To resume printing a batch, send the command ^C or press the Feed button.
- To cancel the remainder of the print job, use the ^B command.
- The pause mode LED blink shall follow each printer system's pause mode blinking sequence.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.

PF – Feed media

Use this command to feed the media forward or backward by a given length.

Syntax

PF <p1>[,p2[,p3]]

Parameters

<p1>

Number of steps to feed the media. Positive values feed the media forward, negative values backward.

- Range: -999 to 9999

Note: The amount of backward feed is dependent on printer mechanical capability.

[p2]

Position control after feeding. Valid Values:

- Default: 0
- Allowed values:

  0. The media has unknown position. Printer needs label gap/black mark detecting before next print job (default).
  1. Media is located in the printing position.
  2. (not supported in ESim): Media feed stops when Black mark/label gap is in sensor position or, if no black mark/gap is detected, when <p1>dots are stepped (error 99 is reported).

[p3]

Option delay after feeding before the next print job in the queue. Delay is p3*100 ms. Valid Value:

- Range: Integer value

Behavior

- Media feeding will not be disrupted by pressing the Feed button or by opening the cover and/or print head.

Limitations

1. Standalone, command-line use (i.e.: as a single command from a terminal application) of the PF command is not supported if the printer command language is set to Autosense due to a conflict with the Direct Protocol/Fingerprint language

PRINTFEED command. In this instance, issuing a PF command will result in the current print buffer being printed. If used within an EPL printing script then PF<p1> is supported to feed the indicated number of dot lines.

2. Parameter [p2]value = 2 is not supported in ESim (Not normally used in printing job scripts)

UF – Form information inquiry

Use this command to get information about the forms currently stored in the printer. Information will be sent back from printer to host.

Syntax

UF

Parameters

There are no parameters for this command.

Behavior

- Total number of forms followed by a list of all stored forms will be sent back to the host.
- To have the form names listed in order, pre-pad the number with '0's as such <form-name>01, <formname>02 …. This is a known different behavior from other EPL II printers.

Example

UF↵
0012
Form01
Form02
:
:
Form12

FS – Form store

This command begins a form store sequence.

Syntax

FS,<"name">

Parameters

<"name">

Name of form to be stored in memory. Valid Values:

• Range: Alphanumeric, up to 96 characters.

Note: Form names will be case sensitive and based on system filename accepted characters, and stored exactly as entered.

Behavior

• All commands following FS are stored in the Forms memory until a FE command is received to end the form store process.

• If a form with the same name is already stored in memory, the FS command results in an error and the old form is retained.

• When updating a form, use the FK command to delete the old version before storing the new version.

• To print a list of the forms currently stored in memory, use the FI command.

• Global commands EI, EK, ES, FI, FK, GI, GK, GM, M, N, TS, U, UE, UF, UG, Y, W, ?, ^@ must not be used in a form store sequence. These commands will be ignored.

• Data stored within a form cannot have the Null (0 dec. 00 hex.) character as part of any data within that form.

Note: Form name, AUTOFR, is reserved for Automatic Form Printing (refer to AUTOFR).

Difference

• N and P commands can be used in forms for ESim, but will result in an error and a blank label printed in other EPL II implementations on competitor printers.

UG – Graphics information inquiry

Use this command to get information about graphics currently stored in the printer. Information will be sent back to host.

Syntax

UG

Parameters

There are no parameters for this command.

Behavior

- Total number of graphics followed by a list of stored graphics (supported graphics formats only) will be sent back to host.

- The resident (factory installed) graphics will not be listed as part of the list.

Example

UG↵
004
Graphic1.PCX
Picture01.png
Picture02.png
Logo.bmp

^ee – Immediate error report

Use this command to force the printer to report error and status immediately.

Syntax

^ee

Parameters

There are no parameters for this command.

Behavior

- After the command is sent to printer, the printer will return an error and status report back through the communication interfaces once it reaches a state of normal-command-input or error waiting-recovery.
- Command must end with <CR> or <LF> to be correctly executed.
- The printer replies to the host via the communications interface in one of the following formats:

    1. If no error code is available (normal case):
       00<CR><LF>
       whereby 00 : Status code OK

    2. If only one error code is available:
       XX<CR><LF>
       whereby XX : Error or status code

    3. If more error or status codes are available:
       XX,YY,ZZ<CR><LF>
       whereby XX YY ZZ : Error or status codes.

- Please refer to the Error response tables under the "Error Types and Responses" section for the full list of errors reported.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.
- This command may not be processed when the input data buffer is full.

LO – Line draw black

Use this command to draw black lines. Lines drawn using this command are black, and will stay as black where two (or more) lines intersect.

Syntax

LO<p1>,<p2>,<p3>,<p4>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

<p3>

Horizontal length in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p4>

Vertical length in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

LS – Line draw diagonal

Use this command to draw diagonal black lines. Lines drawn using this command are black, and stay as black where two (or more) lines intersect.

Syntax

LS<p1>,<p2>,<p3>,<p4>,<p5>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

<p3>

Line thickness in dots Value:

Note: MUST be a numeric value.

<p4>

Horizontal end position (X) in dots. Valid Value:

Note: MUST be a numeric value.

<p5>

Vertical end position (Y) in dots. Valid Value:

Note: MUST be a numeric value.

Behavior

- If <p3> > Horizontal end position, then line thickness takes precedence.

LE - Line draw exclusive

Use this command to draw black lines where the line needs to be white when intersecting a black area or object or black when intersecting a white object or area.

Syntax

LE<p1>,<p2>,<p3>,<p4>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Horizontal length in dots. Valid Value:

- A numeric value > 0

<p4>

Vertical length in dots. Valid Value:

- A numeric value > 0

LW – Line draw white

Use this command to draw/render white lines. Where the white line intersects an area previously rendered black, that area will now be rendered white.

Syntax

LW<p1>,<p2>,<p3>,<p4>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

<p3>

Horizontal length in dots. Valid Values:

- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p4>

Vertical length in dots. Valid Values:

- Range: 0 – maximum label length

Note: MUST be a numeric value.

EI – List user-downloaded fonts ("soft fonts")

Use this command to print out on a label a list of all the user-downloaded fonts ("soft fonts") that are stored in the printer memory.

Syntax

EI

Parameters

No parameters.

Behavior

- List of items are in alphabetical order.

j – Media feed adjustment

This command sets the media feed for tear-off (straight-through), peel-off (self-strip), or cut-off operation.

Syntax

j<p1>

Parameters

<p1>

Length of media feed after printing in dots. Valid Values:

- 203 dpi (8 dots/mm):
  Default: for tear-off (straight-through) operation: 136
  for peel-off (self-strip) operation: 110
  Range: 0 – 203

- 300 dpi (11.81 dots/mm):
  Default: for tear-off (straight-through) operation: 204
  for peel-off (self-strip) operation: 165
  Range: 0 – 300

Behavior

- This is a Honeywell specific legacy printer command, it exists in ESim to maintain compatibility with scripts created for old legacy printers, and should not be part of EPL scripts created for newer printers in which ESim will be running.

- When using peel-off operation, the labels should remain slightly stuck to the liner (backing paper) so they do not fall off but can still can be easily removed.

- In tear-off operation, the j command adjusts the media feed so that the perforation between tags or gap between labels is aligned with the tear bar.

- The extra media feed set by the j command can be enabled or disabled using JF and JB "Top of Form Backup" commands. By default, "Top of Form Backup" is enabled.

- This is a PF8 specific command and values used. For example, '136' on the 203dpi printer is a value to indicate to feed to the printer tear bar, which effectively may not be translated to actual 136 dots for printers other than PF8. Newer printers will treat '136' as a 'feed to tear bar' default, and take back and forwards feeds with reference to the value '136'.

Example

- A command of j110 would indicate a feed '-26' from the tear bar of any printer, and a j180 would indicate a feed forward by 44 from the tear bar.

O – Option select

Enable or disable various sensors, the cutter, and feed button actions.

Syntax

O[S[,P|N],<L>,<D>,<Fp1>[,Cnnn|Cb]]

Parameters

[S]

Enable reverse gap sensing.

[P|N]

Enable / Disable label taken sensor.

‹L›

Enable Printer press feed button to print function.

‹D›

Disable ribbon end sensor.

‹Fp1›

Form feed action setting. Valid Values:

- Ff: form feed (default)
- Fr: print the last printed label again.
- Fi: ignore feed button press

[Cnnn]

Print nnn labels before cutting. Valid Value: nnn: 1 – 255

[Cb]

Print batch before cutting.

Behavior

Parameters can be entered in any order. Default is on.

- **S – Reverse Gap Sensing Enabled**
  By default, the sensor interprets blockage of light to mean a label is present. This parameter reverses the operation of the label gap sensor so it interprets a blockage of light as a gap between labels. Before using the S parameter, make sure to load the printer with the appropriate type of media.

- **P / N – Label Taken Sensor Enable / Disable**
  When the label taken sensor is enabled, the communication to the printer is blocked

as long as the sensor detects a label in the feed out slot. This command does not work with a cutter; if a cutter kit is fitted on the printer, use ON to disable the sensor.

- **L – Enable Printer press feed button to print function**
  If enabled, the printer will pause after printing a label until the feed button is pressed before printing the next label.

- **D – Ribbon End Sensor Disable**
  The ribbon end sensor (thermal transfer models only) detects reflections from the trailing silvery part of the transfer ribbon.

  Direct Thermal Mode
  If the ribbon end sensor is disabled, density settings are interpreted via a table that gives an optimized printout for direct thermal printing. For help with density settings, see "D – Density".

  Thermal Transfer Mode
  If the ribbon end sensor is enabled, an error occurs if no reflection is detected. The density settings are interpreted via a table that gives an optimized printout for thermal transfer printing. For help with density settings, see "D – Density".

- **F – Form feed action setting**
  Ff: Sets the feed button press to feed out a label (default behavior)
  Fr: Sets the feed button press to trigger a reprint of the last printer label
  Fi: Sets the printer to ignore the feed button press

- **C – Cutter Enabled**
  If the C parameter is enabled, and you have a cutter installed, you can cut a label after it is printed. Commands JF and JB are disabled but their values remain stored in memory.
  If the C parameter is disabled, you cannot cut a label after it has been printed. Commands JF and JB are enabled. The f command is disabled but its value remains stored in memory.

- Combinations of Various O Command Parameters

Command	LTS(N)	DT/TTRMode(D)	ReverseGap(S)	Cutter(C)
O	Enable	TT	Disable	Disable
OD	Enable	DT	Disable	Disable
OS	Enable	TT	Enable	Disable
OD,S	Enable	DT	Enable	Disable
OS,Cnnn|b	Disable	TT	Enable	Enable
OD,S,Cnnn|b	Disable	DT	Enable	Enable
ON	Disable	TT	Disable	Disable

ESim Command Reference

OP	Enable	TT	Disable	Disable
ON,D	Disable	DT	Disable	Disable
ON,D,S	Disable	DT	Enable	Disable
OP,D,S	Enable	DT	Enable	Disable
ON,Cnnn|b	Disable	TT	Disable	Enable
OCnnn|b	NotUsed	TT	Disable	Enable
OD,Cnnn|b	Disabled	DT	Disable	Enable

P – Print

Use this command to print the label.

Syntax

P[p1[,p2]]

Parameters

[p1]

Specifies the number of label sets. Valid Values:

- Default: 1
- Range: 1-65535

[p2]

Specifies the number of copies of each label. Valid Values:

- Default: 1
- Range: 1-65535

Behavior

- The command can be used inside a stored form sequence for printing, this behavior is different from other EPL II printers that do not allow P command in forms.
- Use the PA command, for automatic printing of stored forms.

PA – Print automatic

Use this command in a stored form sequence to automatically print the form as soon as all variable data has been supplied.

Syntax

PA,<p1>[,p2]

Parameters

<p1>

Number of label sets. Valid Values:

- Range: 1 – 65535

Note: Can be variable data.

[p2]

Number of copies of each label. Valid Values:

- Range: 1 – 65535

Note: Can be variable data.

- Used together with counters, this sets the number of copies of each label. This value is only used when using counters, otherwise it is ignored.

U – Print configuration

Use this command to print the printer configuration information on a label.

Syntax

U

Parameters

No parameters.

Behavior

- The label will consist of

System Information

- Firmware version number
- Serial port settings
- USB PID, VID
- Installed RAM size (in Kbytes)
- Image buffer size (in KBytes)
- Flash memory installed, and available for user

ESIM settings commands

- I command, code page setting
- JF/JB setting
- f, feed, setting
- S command, Print speed setting
- D command, Density setting
- R & r commands, reference and relative reference point
- O command options
- Feed direction as ZT/ZB
- Error reporting mode as US/UN
- q command, media width setting
- Q command, media length setting
- Media type description as Black Mark, Gap, Continuous, DT/TT
- Date & Time

- Printer Name
- IP Network settings

Limitations

- The reporting format and text may differ from other EPL II printers, due to hardware and configuration differences.

- The settings reflected by this command is only based on the most recent time the corresponding ESIM settings command was issued, and may not reflect the actual system setting if it was changed via means other than using the ESIM command. e.g via printer web page configuration, or LCD user interface.

Example

```
ESim2, K10.12.XXXXXX
Serial Port: 11,N,8,1
USB: VID= 1662, PID = 44
```

```
DRAM: 125284K installed
Image Buffer size: 128K
FLASH: 49060K, User: 49060K/40344K
I8,1 JF f100
S4 D10 R040,024 ZB UN
q832 Q1219,24 j50
Option: N
SA0 SPC0 M0
PAPER GAP: 461, 576 (12)
Date: Sep/14/2016
Time: 15:09:56
Printer Name: PC43-173C1100010
MAC Address: 00:10:40:38:A4:10
IP Selection: DHCP
IP address:199.70.188.138
Netmask: 255.255.255.0
Default Gateway:199.70.188.1
DNS: 199.70.188.168
```

Z – Print direction

Use this command to set the printing orientation.

Syntax

Z<p1>

Parameters

<p1>

Printing orientation. Valid Values:

- T=Right-reading top of label is at leading edge. (default)
- B=Right-reading top of label is at trailing edge.

Behavior

- This command affects the complete print image, including text, bar codes, graphics, lines, and boxes, as well as the location f the reference point, see "R – Set Reference Point".
- Printing a test label in the Test modes or using a U or UP command resets the print direction to default (ZT).
- This command setting is saved in non-volatile memory, and stays even after printer power reset.

FI – Print form information

Use this command to print on a label the list of all forms stored in the printer memory.

Syntax

FI

Parameters

No parameters.

Behavior

- Issue a FI command after storing a form to make sure the storing was successful and to show the amount of free memory.

GG – Print graphics

Use this command to print a graphic file that is stored in printer memory.

Syntax

GG<p1>,<p2>,"<name>"

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<name>

Graphic file name. Valid Values:

This is the file name used when the graphic was stored, and is case sensitive.

- The name may be from 1 up to 96 characters long.
- This name can be specified via variable data (V00 – V99).

Behavior

- A graphic can only be printed in the same direction and size as when it was saved. There are no means of magnification or rotation of an individual graphic.

GI – Print graphics information

Use this command to print on a label the list of all graphics stored in memory.

Syntax

GI

Parameters

No parameters.

A – Print text

Use this command to print an text string to the image print buffer.

The Latin (English, etc.) font sets (1-5, a-z, and A-Z) are single-byte (8 bits per byte) character maps.

The Asian characters are double-byte mapped characters.

The printed Asian character depends on the double-byte values.

Syntax

A<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,"<DATA>"[,p8p9p10...]

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Default: 0
- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Default: 0
- Range: 0 – maximum label length

Note: MUST be a numeric value.

<p3>

Rotation Valid Values:

- Characters will be placed vertically from left to right and then rotated to render.
- Valid Values:
  0 = normal (no rotation)
  1 = 90 degrees
  2 = 180 degrees
  3 = 270 degrees
- Rotation for Asian Fonts Only
  Characters are placed horizontally from top downwards and rotated to be rendered.
  Both horizontal and vertical character rotation are supported.
- Valid Values: (Asian Fonts Only)
  4 = normal (no rotation)
  5 = 90 degrees

6 = 180 degrees

7 = 270 degrees

<p4>

Font selection. Valid Values:

Value	Description	
	203 dpi	300 dpi
1	20.3 cpi, 6 pts, (8 x 12 dots)	25 cpi, 4 pts, (12 x 20 dots)
2	16.9 cpi, 7 pts, (10 x 16 dots)	18.75 cpi, 6 pts, (16 x 28 dots)
3	14.5 cpi, 10 pts, (12 x 20 dots)	15 cpi, 8 pts, (20 x 36 dots)
4	12.7 cpi, 12 pts, (14 x 24 dots)	12.5 cpi, 10 pts, (24 x 44 dots)
5	5.6 cpi, 24 pts, (32 x 48 dots)	6.25 cpi, 21 pts, (48 x 80 dots)
A – Z, a – z, *TA – TZ	Reserved for Soft Font storage.	
6	Numeric Only (14 x 19 dots)	Numeric Only (14 x 19 dots)
7	Numeric Only (14 x 19 dots)	Numeric Only (14 x 19 dots)
Asian Font (downloaded separately)		
8	Simplified Chinese, Japanese, Korean 203 dpi fonts : 24 x 24 dots 300 dpi Double-byte fonts: 36 x 36 dots 300 dpi Single-byte fonts: 24 x 26 dots	
9	Traditional Chinese, Japanese, Korean 300 dpi Double-byte fonts: 36 x 36 dots 300 dpi Single-byte fonts: 24 x 26 dots	

- Fonts 1-5 are fixed pitch.
- Asian font printing support a single language with fonts 8 and 9.
- Or, for either a 203 dpi or 300 dpi printer
- 8 = Asian fonts: (24 x 24 dots in a double–byte)–
- Chinese BIG–5, Big5.24 (priority 1)
- Chinese GB, GB.24 (priority 2)
- Japanese, Japanese.24 (priority 3)
- Korean, Korea.24 (priority 4)
- 9= Asian fonts: (24 x 24 dots in a double–byte)–
- Chinese BIG–5, Big5.24 (priority 1)
- Chinese GB, GB.24 (priority 2)

- Korean, Korea.24 (priority 3)
- *TA = Used for Thai language font

\<p5>

Horizontal multiplier. Valid Values:

- Horizontal multiplier expands the text horizontally.
- Range: 1 – 9
- **Legacy Mode:**
  - For \<p4>= TA–TZ. This parameter is the font horizontal size in dots used to compute the font width enlargement. Width % enlargement = \<p5>*100/\<p6>

\<p6>

Vertical multiplier. Valid Values:

- Vertical multiplier expands the text vertically.
- Range: 1 – 9
- **Legacy Mode:**
  - Only for \<p4>= TA–TZ. This parameter is the font vertical size in dots and is used to compute the font point size. point size = \<p6> * 72/ TPH resolution (dpi)

\<p7>

Reverse image. Valid Values:

- Valid Values:
  N = normal
  R = reverse image

\<DATA>

Fixed data field. Valid Values:

- Fixed data field.
- Special handling for quotes '"' and backslash '\' apply.

To Print	Enter into Data Field
"	\"
"Company"	\"Company\"
\	\\
\code\	\\code\\

[p8]

Optional parameter,

Variable data field number. Valid Values:

- A variable data field number,
- Renders the contents of the variable "nn" at this position, where n is a 2 digit number from 00-99
- Range: 00 - 99

[p9]

Optional parameter,

arithmetic operator. Valid Values:

- Valid Values:
- + or –

[p10]

Optional parameter.

Variable data field number or constant value. Valid Values:

- Accepted Values: Numeric values only
- The expression must start with a variable field in [p8].
- The character field length defined in the first variable will be used to format the result. The result field will be 'X's, if it is longer than the character length defined.
- During form storage, if the constant value is too large, it will be considered a syntax error.
- If an error occurs in the expression, the result field will be 'X's.

Behavior

Variable Data and Counter Functions

The "Data" field can be replaced by or combined with the following commands:

- Vnn = Prints the contents of variable "nn" at this position where nn is a 2 digit number from 00 to 99. For more information, refer to the V command.
- Cn = Prints the contents of counter "n" at this position where n is a one digit number from0 to 9. For more information, refer to the C command.

Behavior (Legacy Mode)

- For <p4> values = TA - TZ. In legacy mode,
    - the horizontal multiplier (<p5>) parameter specifies the font horizontal size in dots used to compute the font width enlargement. Width % enlargement =

<p5>*100/<p6>.

- ○ the vertical multiplier (<p6>) parameter specifies the font vertical size in dots and is used to compute the font point size. point size = <p6> * 72/ TPH res-olution (dpi).

Data with the RTC Time & Date Functions

The "Data" field can be replaced by or combined with the following variables:

- TT = Prints the current time at this position in the predefined format. See the TT command for format selection.
- TD = Prints the current date at this position in the predefined format. See the TD command for format selection.

Invalid <p7> values other than N or R

Invalid <p7> values will be defaulted back to N for normal printing. This behavior is different from other EPL II printer behavior.

a – Print Text (Truetype Fonts)

Use this command to print an text string to the image print buffer.

Use the parameters in the command to specify the TrueType font, size, and position of the text.

Syntax

a<p1>,<p2>,<p3>,<p4>,<p5>,<p6>,<p7>,"<DATA>",[p8p9p10]...

Parameters

<p1>

Horizontal start position (X) in dots. Valid Values:

- Default: 0
- Range: 0 – width of TPH

Note: MUST be a numeric value.

<p2>

Vertical start position (Y) in dots. Valid Values:

- Default: 0
- Range: 0 – maximum label length

Note: .MUST be a numeric value

<p3>

Rotation. Valid Values:

- Characters are placed vertically from left to right and then rotated to render.
- Valid Values:
  0 = normal (no rotation)
  1 = 90 degrees
  2 = 180 degrees
  3 = 270 degrees
- Rotation for Asian Fonts Only
- Characters are placed horizontally from top downwards and rotated to be rendered. Both horizontal and vertical character rotation are supported.
- Valid Values: (Asian Fonts Only)
  4 = normal (no rotation)
  5 = 90 degrees
  6 = 180 degrees
  7 = 270 degrees

‹p4›

Installed (resident or user-downloaded) TrueType font name. Valid value:

- Actual (case sensitive) name of the True Type font installed on the printer.
- Typically the printer will be pre-installed with a set of standard TrueType fonts.

‹p5›

Height of the font in point size. Valid Value:

- Default: 12

‹p6›

Clockwise slant in degrees. Valid Values:

- Default: 0º
- Range: 0º – 90º

‹p7›

Width percent enlargement in relation to the height. Valid Values:

- Default: 100
- Range: 1 – 1000

[p8]

Reverse image. Valid Values:

- Valid Values:
  N = normal
  R = reverse image

‹DATA›

Fixed data field. Valid Values:

- Fixed data field.
- Special handling for quotes '"' and backslash '\' apply.

To Print	Enter into Data Field
"	\"
"Company"	\"Company\"
\	\\
\code\	\\code\\

[p8]

Optional parameter,

Variable data field number. Valid Values:

- A variable data field number,

- Renders the contents of the variable "nn" at this position, where n is a 2 digit number from 00-99

- Range: 00 – 99

[p9]

Optional parameter,

arithmetic operator. Valid Values:

- Valid Values:

- + or –

[p10]

Optional parameter.

Variable data field number or constant value. Valid Values:

- Accepted Values: Numeric values only

- The expression must start with a variable field in [p8].

- The character field length defined in the first variable will be used to format the result. The result field will be 'X's, if it is longer than the character length defined.

- During form storage, if the constant value is too large, it will be considered a syntax error.

- If an error occurs in the expression, the result field will be 'X's.

Behavior

Variable Data and Counter Functions

The "Data" field can be replaced by or combined with the following commands:

- Vnn = Prints the contents of variable "nn" at this position where nn is a 2 digit number from 00 to 99. For more information, refer to the V command.

- Cn = Prints the contents of counter "n" at this position where n is a one digit number from 0 to 9. For more information, refer to the C command.

Data with the RTC Time & Date Functions

The "Data" field can be replaced by or combined with the following variables:

- TT = Prints the current time at this position in the predefined format. See the TT command for format selection.

- TD = Prints the current date at this position in the predefined format. See the TD command for format selection.

UV – Product identity and Asian font types

Use this command to retrieve information about the firmware and fonts stored. When you send this command, the information is sent from the printer to the host.

Syntax

UV

Parameters

There are no parameters for this command.

Behavior

- This command is for Honeywell printers only.
- For all printers, the first line returned after the UV command is firmware version appended by a CR/LF, followed by information on the font appended by CR/LF.
- The reporting of Asian fonts will be different from other EPL II printer text, due to different fonts (font naming) used.

Example

UV↵
ESim, K10.12.XXXXXX, PC43t(203dpi)
Asian Font Simplified Chinese (CP936)

^D – Remaining labels

Use this high priority command to make the printer return the number of labels remaining to be printed in a batch print job.

Syntax

^D

Parameters

There are no parameters for this command.

Behavior

- The reply at command US is by default Pnnnn<CR><LF>, where nnnn is the number of remaining labels.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.
- This command may not be processed when the input data buffer is full.

GRP – Return graphics from print buffer

Use this command to dump part of the printer buffer back to the host.

Syntax

GRP<p1>,<p2>,<p3>,<p4>[,p5]

Parameters

<p1>

X-position in printer dots. Valid Value:

* A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Y-position in printer dots. Valid Value:

* A numeric value between 0 and the specified media length.

<p3>

Number of bytes across the graphic.

(8 dots = 1 byte). Valid Value:

* A numeric value in bytes.

<p4>

Number of dot rows going down the graphic. Valid Value:

* A numeric value in dots.

[p5]

Optional parameter.

Parameter setting the format of the data. Valid Values:

* Allowed values are:
  B = Binary, not inversed.
  b = Binary, inversed (default).
  H = Hexadecimal, not inversed.
  h = Hexadecimal, inversed.

Behavior

* This command is the reverse of the GW command and can be used to verify that data has been rendered correctly. What part of the print buffer is sent back to the host is specified by the parameters <p1>–<p4> above, and the format of this data by

[p5].

- This is a legacy (non EPL II) command, in which its purpose can be fulfilled by grabbing the printer system image buffer from the printer web page, if network option is available for the printer. The image buffer can be saved and installed on the printer as a graphic, and called using the GG command to print it.

Limitations

- There is no flow control or handshaking when sending this data to the host, so use this command only for small areas to avoid data corruption.

UB – Reset label counter mode

Use this command to clear the UA command setting and restore the default setting to allow the printer to resume printing a batch job if an out of media condition is encountered.

Syntax

UB

Parameters

There are no parameters for this command.

Behavior

- By default, the printer will resume printing once the empty roll is replaced with a new roll to finish a batch print job.

^@ – Reset printer

Use this command to reset the printer (soft restart).

Syntax

^@

Parameters

There are no parameters for this command

Behavior

- This command resets the printer in the same way as a power off followed by a power on.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- The printer will ignore all other commands sent while the reset command is being executed.

Limitations

- This command may not be processed when the input data buffer is full.

^default – Restore factory default settings

Use this command to reset the printer to its complete factory default settings followed by a printer restart.

Syntax

^default

Parameters

There are no parameters for this command.

Behavior

- This command returns the printer to its system default setup, which will reset configurations, communications settings, and user settings and installed files.
- This command must be followed by CR/LF to be correctly interpreted.
- This command is not available during the operation of storing data such as graphics, soft fonts.
- This command cannot be used within a stored form.
- This command is only available during command input, that is, not as part of data for graphics, soft fonts, or in format forms.
- This command cannot be inside a variable input (?) or inside a string area ("").
- This command can be sent to the printer during all other printing operations.
- This command will be ignored while the reset command is being executed.
- This command may not be processed when the input data buffer is full.

FR – Retrieve form

Use this command to retrieve a form that was previously stored in memory.

Syntax

FR<"name">

Parameters

<"name">

Name of form that was stored in memory. Valid Values:

- Range: Alphanumeric, up to 96 characters.

Note: Form names will be case sensitive and based on system filename accepted characters, and stored exactly as entered.

Y – Serial port setup

Use this command to set up the communication parameters of the serial RS-232 port.

Syntax

Y<p1>,<p2>,<p3>,<p4>

Parameters

<p1>

Baud rate:
11 = 115,200 baud
57 = 57,600 baud
38 = 38,400 baud
19 = 19,200 baud
96 = 9,600 baud
48 = 4,800 baud
24 = 2,400 baud
12 = 1,200 baud. Valid Values:

- Default: 115,200.

- Range: as indicated in description.

Note: System default setting is also dependent on systems capabilities.

<p2>

Parity:
O = Odd
E = Even
N = None. Valid Values:

- System Default: N (None)

- Range: O, E, N

<p3>

Number of data bits:
7 = 7 data bits
8 = 8 data bits. Valid Values:

- System Default: 8

- Range: 7, 8

<p4>

Number of stop bits:
1 = 1 stop bit
2 = 2 stop bits. Valid Values:

- System Default: 1
- Range: 1, 2

Behavior

- After receiving this command, the printer will reset its communication on the serial RS-232 communication port.
- By default, the printer serial speed shall be determined by the system capabilities and defaults to no parity, 8 data and 1 stop bit.
- The printer sends XOFF when an error occurs.
- Setting RTS/CTS is not supported by this command.

Limitations

- This command is a legacy command, and does not support setting of RTS/CTS, hardware flow control. Setting it via printer systems setting is recommended.

Q – Set form length

Use this command to set the form and gap length when using the label gap sensor, or the amount of media feed after the print image in case of continuous media.

Syntax

Q<p1>,<p2>,[±p3]

(for gap media)

Q<p1>,0[±p3]

(for continuous media)

Q<p1>,B<p2>,[±p3]

(for blackmark media)

Parameters

<p1>

Gap & Blackmark Media Mode:

Form length measured in dots. Printhead type determines the number of dots for this parameter.

Continuous Media Mode:

Media feed to be performed in dots, after the actual print image has been printed. Valid Values:

- 203 dpi (8 dots/mm):
  Default: 1200 dots.
- 300 dpi (11.81 dots/mm):
  Default: 1800 dots.
  Range: 0 – 32767

<p2>

Gap length or thickness of black line. Valid Values:

- 203 dpi (8 dots/mm):
  Default: 24 dots
  Range: 16–240 dots
- 300 dpi (11.81 dots/mm):
  Default: 36 dots
  Range: 18–240 dots

- Gap Media:
  By default, the printer is in Gap mode and parameters are set with the system media calibration.
- Black Mark Media:
  Set <p2> to B plus black line thickness in dots. See the Gap mode range.
- Continuous Media:
  Set <p2> to 0 (zero) The transmissive (gap) sensor will be used to detect the end of media.

[±p3]

Optional offset length measured in dots. Valid Values:

- Optional value.
- <P3> is primarily used for black mark labels where the perforation can be within the black mark, or between two black marks. The <p3> value is used to indicate the distance between the perforation and the top of the black mark.
- For butterfly media, it will indicate the length of the extension of the 'wings' from the top of the main narrow strip.

Behavior

- The Continuous media mode is similar to the system setting for Continuous Variable Length media.
- There is no Q command setting for Continuous Fixed Length media, this can be set via printer systems settings.

q – Set label width

Use this command to set the label width.

Syntax

Parameters

<p1>

Width of label measured in dots. Valid Value:

- Default will be dependent on each printer's system default for media width.

Behavior

- The q command causes the image buffer to be formatted to match the label width.
- If an R command (reference point) is sent after a q command, the image buffer is automatically reformatted to match the width of the print head and the margins are reset accordingly.

TS – Set real time clock

Use this command to set the time and date in the printer's real-time clock, RTC (only if the printer is fitted with this option).

Syntax

TS<p1>,<p2>,<p3>,<p4>,<p5>,<p6>

Parameters

<p1>

Month. Valid Value:

- Range: 01–12

<p2>

Day. Valid Value:

- Range: 01–31

<p3>

Year. Valid Values:

- Range: 90–99 (for 1990–1999)
- Range: 00–89 (for 2000–2089)

Note: Last two digits of Year.

<p4>

Hour. Valid Values:

- Range: 00–23

Note: Note: Shown in 24 hour format.

<p5>

Minutes. Valid Value:

- Range: 00–59

<p6>

Seconds. Valid Value:

- Range: 00–59

Behavior

- This command is useful only if the printer is fitted with a real-time clock circuit (RTC).

R – Set reference point

Use this command to move the reference point for the X and Y axis.
All horizontal and vertical measurements in other commands use the setting for R as the origin for measurements.

Syntax

R<p1>,<p2>

Parameters

<p1>

Horizontal (left) margin measured in dots. Valid Values:

- Default is 000.
- The value must be between 0 and the printer's maximum printhead width.

<p2>

Vertical (top) margin measured in dots. Valid Values:

- Default is 000.
- The value is have to be between 0 – 4000.

Behavior

- The reference point command is used to establish top and left margins to prevent printing off the edge of the label.

- For narrow labels, the R command could be substituted by q and r commands, which have the benefit of making better use of a limited image buffer. Any R command after a q command resets the width to the maximum print width, as a qnnn command, where 'nnn' is the value of the maximum label width supported by the printer. The values for the latest R command (or r, whichever was last executed) are printed on the test label.
  The print direction commands ZB, and ZT affect the location of the reference point, as illustrated below.
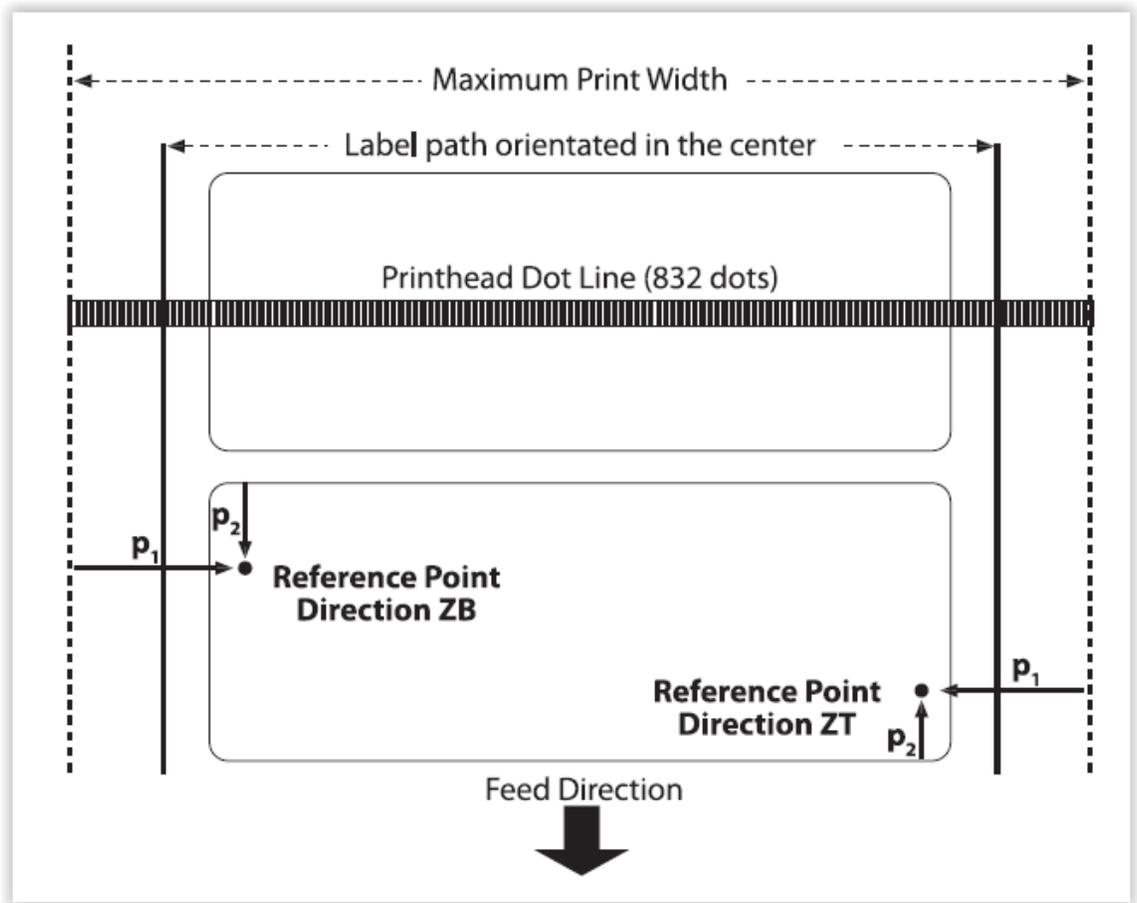
r – Set relative reference point

Use this command to move the reference point for the x-axis and y-axis relative to the label width set by a previous q command.

Syntax

r<p1>,<p2>

Parameters

‹p1›

Horizontal (left) margin measured in dots. Valid Value: Default is 000.

‹p2›

Vertical (top) margin measured in dots. Valid Value: Default is 000.

Behavior

- The relative reference point command is used to establish the top and left margins relative to the label width. For narrow labels, the r command can be used after a q command, which has the benefit of making better use of a limited image buffer. The values for the latest r command (or R, whichever was last executed) are printed on the test label.
  The print direction commands ZB and ZT affect the location of the relative reference point as illustrated.
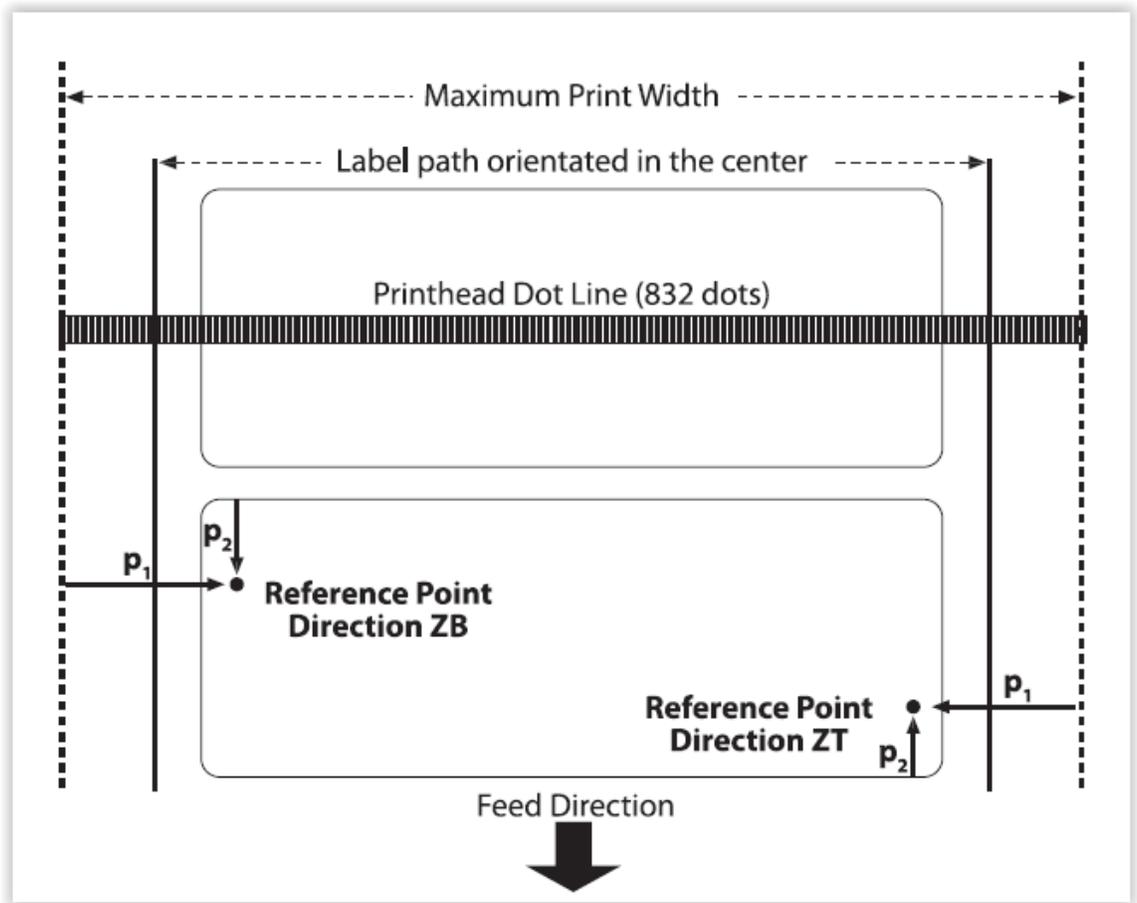
Maximum Print Width

Label path orientated in the center

Printhead Dot Line (832 dots)

p_2

p_1

Reference Point Direction ZB

Reference Point Direction ZT

p_1

p_2

Feed Direction

SA – Setup adjust

Use this command to control the activation and storage of setup commands and values.

Syntax

SA<p1>

Parameters

<p1>

Setup adjust value. Valid Values:

- 0 = All commands remain active and values are saved when changed. The printer uses stored setup values (default).
- 1 = All setup parameters are locked and commands are ignored. The printer uses only previously stored setup values.
- 2 = All setup commands within forms are ignored.

Behavior

- The SA command affects the following setup commands: R, r, D, j, J, q, Q, S, Z, and SPC. The current SA value is stored in Flash memory and printed on the test label.

SPC – Setup print copy

Use this command is to change the function of the Feed button to print a copy of the label currently residing in the image buffer.

Syntax

SPC<p1>

Parameters

<p1>

Setup Print Copy value. Valid Values:

- 0 = Media feeds as usual when the Feed button is pressed (default).
- 1 = Print Copy is activated (see behavior).
- 2 – Print Copy is activated. In this state, additional fields can be added to the existing image and printed by pressing the Feed button.

Behavior

- The following commands sent after the last printout will disable Print Copy (when SPC1 is set): a, A, b, B, GW, GG, LE, LO, LS, LW, N, q, Q, r, R, X, and Information commands.
- The current SPC value is stored in Flash memory and printed on the test label.

UE – Soft fonts information inquiry

Use this command to get information about the user downloaded fonts stored in the printer memory. Information will be sent back to host.

Syntax

UE

Parameters

There are no parameters for this command.

Behavior

- Printer will send the number of external fonts stored followed by a list of each font's name, height and direction to the host.

Example

UE↵
004
i,33dots,dir:2
k,34dots,dir:2
q,55dots,dir:0
s,39dots,dir:2

S - Speed select

Use this command to select the print speed. The speeds supported, and the default speed, will be dependent on the printer itself.

Syntax

S<p1>

Parameters

<p1>

Print speed. Valid Values:

- Default: Printer system dependent, please refer to printer system manual for information.
- Range:
  0 – 2 = 50 mm/sec (2 in/sec)
  3 = 75mm/sec (3 in/sec)
  4 = 100 mm/sec (4 in/sec)
  5 = 125 mm/sec (5 in/sec)
  6 = 150 mm/sec (6 in/sec)
  7 = 175 mm/sec (7 in/sec)
  8 = 200 mm/sec (8 in/sec)
- Values larger than 9 can be calculated in increments of 25mm/sec, provided the system supports these speeds.

Behavior

- Changing the print speed can affect the quality/darkness of the printout, this may have to be adjusted using a D command.

GW – Store graphics in image buffer

Use this command to store binary graphic file data directly into the printing image buffer memory, to be used for immediate printing.

Syntax

GW<p1>,<p2>,<p3>,<p4>,<DATA>

GW<p1>,<p2>,<p3>,<p4O>,<xOA>,<DATA>

Parameters

<p1>

Horizontal start position (X) in dots. Valid Value:

- A numeric value between 0 and the thermal printhead (TPH) width.

<p2>

Vertical start position (Y) in dots. Valid Value:

- A numeric value between 0 and the specified media length.

<p3>

Width of graphic in bytes. Valid Value:

- Width of graphic in bytes. Eight (8) dots = one (1) byte of data.

<p4>

Number of lines of Graphic in dots (print rows). Valid Value:

- A positive numeric value larger than 0.

<DATA>

Raw binary data without graphic file formatting. Valid Value:

- Data must be in bytes. Multiply the width in bytes (<p3>) by the number of print lines (<p4>) for the total amount of graphic data. The printer automatically calculates the exact size of the data block based upon this formula.

Behavior

- The graphic data sent directly to the image buffer will not be stored.
- The graphic data is lost when the image has finished printing, power is removed or the printer is reset. Commands that size (Q and q) or clear (N and M) the image buffer will also remove graphic image data.

- Use this command instead of GM for temporarily used graphics, for example images that change between each label. The graphics are downloaded directly to the volatile memory.

- The printer will calculate exactly how much data to expect based on <p3> and <p4>, and ignore any additional data.

GM – Store graphics in memory

Use this command to store graphics files in non-volatile memory.

Syntax

GM<"name">,<p1><CRLF>,<DATA>

Parameters

<"name">

Graphic name to be stored under, and to be used when retrieving the stored graphic. Detail:

- Range: Alphanumeric characters up to 96 characters long.

<p1>

File size in bytes. Detail:

- This is the size of the original graphics file.

<"data">

Graphics data.

Details:

- Graphic file data in 1-bit (black & white) binary data format file.
    - The graphic file (in its entirety) must be sent in binary form as the data itself.
    - A graphic will not store if there is insufficient memory

Behavior

- Only single-bit depth BMP, GIF, PCX & PNG graphic file formats are supported.
- Graphic names stored are case sensitive and will be stored as entered; i.e. "LOGO1", "logo1" and "LoGo1" are three different graphics when stored into the printer or when retrieved by the user.
- Deleting a single graphic requires that the GK"name" command string be issued twice for each graphic file to be deleted.
- The binary data to be stored depends on the value of <p1>, and any additional binary data after that will be discarded.

ES – Store user-downloaded fonts ("soft fonts")

This command is used to download and store user-downloaded fonts ("soft fonts") in memory.

Syntax

ES"<name>"<p1>,<p2>,<p3>,<a$_1$>,<b$_1$>,<c$_1$>,<"data$_1$">...<a$_n$>,<b$_n$>,<c$_n$>,<"data$_n$" >

Parameters

<name>

single letter name of font. Valid Value: Range: a - z (lower case)

<p1>

Number of characters to be downloaded (in hexadecimal coding). Valid Value:

- Range: 00–FF hex (0–255 decimal) for 1 to 256 characters per user-downloaded fonts ("soft fonts") set.

<p2>

Character rotation using hexadecimal coding. Valid Values:

- Range:
  00 hex = 0° and 180°
  01 hex = 90° and 270° clockwise
  02 hex = All four directions in 0° and 180° rotation pair and 90° and 270° degree rotation pair.

<p3>

Font height. Valid Values:

- Range: 00–FF hex
  Measured in dots and expressed as a hexadecimal coding.

- Font height includes ascenders and descenders of characters and need to fit in the character cell of:
  203 dpi printers:
  256 dots (1.26 in. / 32.03 mm)
  300 dpi printers:
  256 dots (0.85 in. / 21.67 mm)

<a$_{1-n}$>

Download character map position in hexadecimal coding. Valid Value: Range: 00–FF hex

<b$_{1-n}$>

Spacing to next print character in dots. Valid Value: Range: 00–FF hex
Downloaded character's next printed character position in dots, i.e. Character tracking – the space between characters.
Must be greater than or equal to the character width, see parameter c_1. Dots in a decimal number converted to a hexadecimal number

$<c_{1-n}>$

(1st) Downloaded characters width. Valid Value: Range: 00–FF hex
Dots in a decimal number converted to a hexadecimal number

$<"DATA_{1-n}">$

(1st) Character bitmap. Valid Values:

- <p3> x c_1 = bit map data (in bytes).
- Data is received in bytes on a line by line basis. The 0,0 cell map position is in the top left corner of the map as viewed in the 0 degree rotation.
- Repeat parameters a, b, c, and data for each character until all characters in the set have been downloaded.
- For fonts with the rotation parameter <p2> set to 02 hex (all directions), repeat the individual font character download for each 90º rotated character from the start of the character set until all rotated characters in the set have been downloaded.
- The number of individual character maps downloaded is double the characters in the font set (<p1>).

Behavior

- A maximum of 256 characters can be stored per font.

eR – User-defined error/status character control

This command allows the advanced programmer to specify the printer's error/status report character for error reporting via the RS-232 serial and other communication interfaces.

Syntax

eR<p1>,<p2>[,p3]

Parameters

<p1>

Single character. Valid Values:

- Default: '0' (in ASCII)
- Range: 0–255 decimal (00–FF hexadecimal)

<p2>

Mode of User Defined Error/Status Character reply. Valid Values:

- Default: 0
- Range: 0, 1, 2, 6
- <p2> = 0
- Where error number is NN:
- XOFF (19 dec. / 13 hex.) Output upon error : <NAK>NN<XOFF>
- XON (17 dec. / 11 hex.) Output upon error recovery: <XON>
- <p2> = 1
- Reply only with character, defined by <p1>:
- Report the defined error character followed by a carriage return and line feed.
- Output at error action: <p1><CRLF>
- Output at error recovery: [p3]<CRLF>
- <p2> = 2
- Reply with character <p1> and error number NN:
- Reports the defined error character, error code, and followed by a carriage return and line feed
- Output at error action: <p1>NN<CRLF>
- Output at error recovery: [p3]00<CRLF>
- <p2> = 6 Mode of <XOFF> and <XON> replacement

- Like default mode (0), but with all <XOFF> replaced by <p1> and all <XON> replaced by optional [p3]:
Output at error action: <NAK>NN<p1>
Output at error recovery: [p3]NN

[p3]

Optional recovery action single character. Valid Value:

- The normal recovery character <XON> is replaced by [p3].Value of [p3] is one single character, except hex 00. If no [p3] is available, <p1> is used instead as a recovery action character.

CONFIGURATION

ESim configuration files (ESIM.CFG) from earlier versions are automatically migrated to the printer's configuration system on upgrading to v12 or higher firmware. After migration, the ESCIM.CFG file will be renamed to ESIM.OLD and will remain in the /home/user folder of the printer. This file may be removed, if desired, using an FTP utility.

The ESim printer settings can be found in the printer menu system as follows:
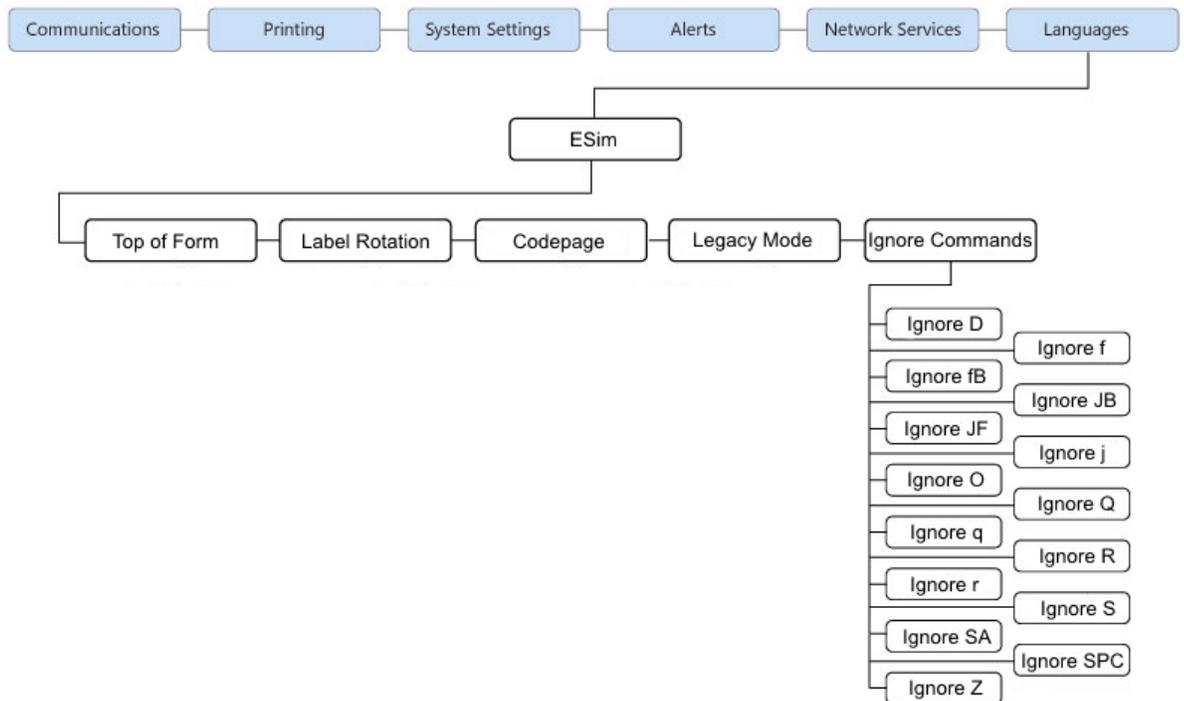
Codepage

ESim may use code pages to render text for specific regional needs. Here is a list of supported code pages. Choose the code page desired from the ESim menu under Languages.

Description	The printer codepage for printing
Value	8 Bit Data: 0 – 13, A – K
	0 – DOS 437
	1 – DOS 850
	2 – DOS 852
	3 – DOS 860
	4 – DOS 863
	5 – DOS 865
	6 – DOS 857
	7 – DOS 861
	8 – DOS 862
	9 – DOS 855
	10 – DOS 866
	11 – DOS 737
	12 – DOS 851
	13 – DOS 869
	A – Windows 1252
	B – Windows 1250
	C – Windows 1251
	D – Windows 1253
	E – Windows 1254
	F – Windows 1255
	G – Code Page 950 (Simplified Chinese)
	H – Code Page 950 (Traditional Chinese)
	I – Code Page 949 (Korean)

Description	The printer codepage for printing
	J – Code page 932 (Japanese)
	K – UTF-8 (Thai)
	7 Bit Data: 0 – 8
	0 – USA
	1 – British
	2 – German
	3 – French
	4 – Danish
	5 – Italian
	6 – Spanish
	7 – Swedish
	8 – Swiss
Default	0 – DOS 437

Label Rotation

Description	Sets orientation of label as it exits the printer. 'On' prints a label which appears right-reading as viewed from the front of the printer. 'Off' prints a label which is rotated 180º so it appears upside-down as viewed from the front of the printer. This is equivalent to the ZB/ZT command.
Value	On Off
Default	Off

Legacy Mode

Description	Enables or disables ESim legacy mode. Default = Disable
Value	Enable Disable
Default	Disable

Commands Supporting Legacy Mode:

- A (Print text)
- C (Cut immediate)
- oR Character Substitution
- Code 128 1D bar code
- PDF417 2D bar code
- QR code 2D bar code

Top of Form

Description	Determines if the media automatically backs up to the top of form.
Value	Enable Disable
Default	Enable

IGNORE COMMANDS

Supported ESim Ignore Commands previously stored in IGNCMDS.CFG are automatically migrated to the printer's configuration system on upgrading to v12 or higher firmware. After migration, the IGNCMDS.CFG file will be renamed to IGNCMDS.OLD and will remain in the /home/user folder of the printer. This file may be removed, if desired, using an FTP utility.

During migration, for each command found in IGNCMDS.CFG:

• If supported, status in the Ignore Commands list is set to "Ignore."

• If not supported, "Unsupported Ignore Command" is appended to the line.

Check IGNCMDS.CFG for unsupported commands, and report those commands to Technical Support for future evaluation.

Ignore D – Density

Description	Ignore the D (Density) command
Value	On / Off
Default	Off

Ignore f – Cut position

Description	Ignore the f (Cut position) command
Value	On / Off
Default	Off

Ignore fB – Adjust backup position

Description	Ignore the fB (Adjust backup position) command
Value	On / Off
Default	Off

Ignore j – Media feed adjustment

Description	Ignore the j (Media feed adjustment) command
Value	On / Off
Default	Off

Ignore JB – Disable top of form backup

Description	Ignore the JB (Disable top of form backup) command
Value	On / Off
Default	Off

Ignore JF – Enable top of form backup

Description	Ignore the JF (Enable top of form backup) command
Value	On / Off
Default	Off

Ignore O - Option select

Description	Ignore the O (Option select) command
Value	On / Off
Default	Off

Ignore q – Set label width

Description	Ignore the q (Set label width) command
Value	Off / On
Default	Off

Ignore Q – Set form length

Description	Ignore the Q (Set form length) command
Value	On / Off
Default	Off

Ignore r – Set relative reference point

Description	Ignore the r (Set relative reference point) command
Value	On / Off
Default	Off

Ignore R – Set reference point

Description	Ignore the R (Set reference point) command
Value	On / Off
Default	Off

Ignore S – Speed select

Description	Ignore the S (Speed select) command
Value	On / Off
Default	Off

Ignore SA - Setup adjust

Description	Ignore the SA (Setup adjust) command
Value	On / Off
Default	Off

Ignore SPC - Setup print copy

Description	Ignore the SPC (Setup print copy) command
Value	On / Off
Default	Off

Ignore Z - Print direction

Description	Ignore the Z (Print direction) command
Value	On / Off
Default	Off

CHAPTER

6

ERROR TYPES AND RESPONSES

This section covers the error types and responses that may be received when EPL commands are sent to the printer running ESim.

Error Response Message Glossary

The following table contains explanations for the text error messages listed in the Error Response Table.

Text	Description
Error	Referred error number divided in code and type.
Code	Referred error number.
Description	Responses depending on error reporting flag controlled by US and UN commands.
Response at ^ee	Output on serial line of error number, if only one error is available.
<CR>	0x0d
<LF>	0x0a
<CRLF>	0x0d + 0x0a
<XON>	0x11
<XOFF>	0x13
<NAK>	0x15
–	Nothing happens.
[XOFF]	Flag for waiting on error recovery. Default value is <XOFF> = 0x13, but can be substituted with command eRp_1,6,p_3 where p_1 is replacement of <XOFF> and where p_3 is a replacement of <XON>.

Error Response Tables

This section provides information on the error responses. The table provides information about when the Error Reporting is enabled (US, UT command). And when the Error Reporting is disabled (UN command).

[XOFF] may be changed by eR command, please refer eR command for details.

Error Code	Description	Response if US or UT	Response if UN	Response to Command ^ee
	No error		-	
1	Syntax error	<NAK>01[XOFF]	-	-
2	Object exceeds image buffer border	<NAK>02[XOFF]	[XOFF]	-
3	Data length error	<NAK>03[XOFF]	-	-
4	Insufficient memory to store data	<NAK>04[XOFF]	-	-
5	Memory configuration error	<NAK>05[XOFF]	-	-
7	Out of media, marked with Pnnn = Number of remaining labels	<NAK>07[XOFF]	[XOFF]	07<CRLF>
8	Form or image name duplicate	<NAK>08[XOFF]	-	-
9	Form or image not found	<NAK>09[XOFF]	-	-
11	Printhead up (cover open)	<NAK>11[XOFF]	[XOFF]	11<CRLF>
12	Pause Mode or Paused in Peel Mode	<NAK>12[XOFF]	-	12<CRLF>
13	LTS detection waiting, peel pause	<NAK>13[XOFF]	-	13<CRLF>
16	No form was retrieved before "?<CRLF>" was entered	<NAK>16[XOFF]	-	-
17	Out of ribbon, marked with Rnnn =	<NAK>17Rnnn [XOFF]	[XOFF]	17<CRLF>

Error Code	Description	Response if US or UT	Response if UN	Response to Command ^ee
	Number of remaining labels			
50	**EPL Mode**: Printer Busy – Processing Print Job **Legacy mode**: Does not fit in area specified	<NAK>50[XOFF]	–	50<CRLF>
51	Data length too long	<NAK>51[XOFF]	–	–
61	High motor temperature	<NAK>61[XOFF]	[XOFF]	61<CRLF>
62	High printhead temperature	<NAK>62[XOFF]	[XOFF]	62<CRLF>
73	Download error	<NAK>73[XOFF]	–	–
81	Cutter jammed or not installed	<NAK>81[XOFF]	[XOFF]	81<CRLF>
89	Dump mode (after auto-detection)	<NAK>89[XOFF]	[XOFF]	89<CRLF>
92	Pause printing mode	<NAK>92[XOFF]	–	92<CRLF>
94	Autosensing mode	<NAK>94[XOFF]	[XOFF]	94<CRLF>
99	Other errors	<NAK>99[XOFF]	[XOFF]	–

SYSTEM BEHAVIOR

Empty image buffer behavior

When a 'P' (Print) command is issued, but the image buffer has nothing rendered, ESim will not perform any media feeding action. This behavior could be different from other EPL2 printers behavior, which may feed an empty label.

Font Aliasing

ESim contains the ability to create aliases for fonts. Aliases are a means of substituting one font for another. In earlier versions of ESim fonts were not as close to reference EPL II printers as with this version and some customers wished to substitute their own fonts for ESim classic fonts. With the newest version of ESim this need is largely obsolete but you still have the option.

Fonts may be aliased using two methods:

1. Aliases stored in settings.xml (preferred). Creating aliases in settings.xml allows them to be freely copied between printers, enabling consistent and simple printer cloning.

2. Aliases stored in ESIMFNT.ALS (legacy). Aliases created using the legacy method can still be used but this is not preferred. If the same alias identifier exists in both settings.xml and ESIMFNT.ALS then the alias in settings.xml will be used.

3. Aliases created in ESIMFNT.ALS are not automatically converted to settings.xml aliases. We encourage users to try label formats using the default fonts in the new ESim, and if aliasing is still required then either use the existing ESIMFNT.ALS file or create new aliases using settings.xml.

Backward Compatibility with Font Aliasing ESIMFNT.ALS

Backward compatibility is implemented in ESim to support the font aliasing method.

ESIMFNT.ALS Font Aliasing Method

ESIMFNT.ALS requires the user to specify the ESIMFNT.ALS font aliasing settings in the font alias file, "ESIMFNT.ALS". When an ESIMFNT.ALS file is found in the /home/user folder upon boot-up, if the user has not already aliased any fonts with the settings.xml, ESim would perform font aliasing according to the settings specified in the file.

ESIMFNT.ALS is defined in the following format:

File name : ESIMFNT.ALS

File directory : /home/user/

Format

<ID>id<SYSFONT>sysfont<SIZE>pt<WIDTH>width<SHEIGHT>slant<CHARMAP>code

Descriptions

Parameters	Description	Values
id	Font ID of the font that the user targets to alias	a to z; TA to TZ
sysfont *	Printer system TrueType font to use to replace the font specified with parameter "id"	Alphanumeric
pt	Point size of the font to use for printing	Unit: Points Default: 12
width	Font width magnification percentage	Unit: Percentage
slant	Font slant height	Unit: Degrees
code	Code page for the font character set	Only numerical value

* The user can issue the Fingerprint command "FONTS" to the printer for a list of all fonts stored in the printer.

Example 1

<ID>b<SYSFONT>Andale Mono Bold< SIZE>14

<WIDTH>110<SHEIGHT>17<CHARMAP>1250

The above example creates an alias for Font ID 'b' to the resident font "Andale Mono Bold", with point size 14, width=110%, slant=17 degrees and code page 1250.

Example 2

<ID>TA<SYSFONT>Arial Narrow< SIZE>12

<WIDTH>100<SHEIGHT>0<CHARMAP>1252

The above example creates an alias for Font ID "TA" to the downloaded Arial Narrow font,
 with point size 12, width=100%, slant=0 degrees and code page 1252.

Backward Compatibility Implemented and Known Differences

The backward compatibility is implemented to allow the user to alias fonts in the way similar to ESIMFNT.ALS, i.e. by uploading an ESIMFNT.ALS file to the /home/user/fonts folder.

However, there are the following differences:

1. The font aliasing configuration done with settings.xml has higher priority over this backward compatible method. If the user has already performed font aliasing with settings.xml, ESim will ignore ESIMFNT.ALS. To perform font aliasing with ESIMFNT.ALS, the user has to completely remove font aliases done with settings.xml.
2. ESIMFNT.ALS requires the user to restart the printer for any updates to ESIMFNT.ALS to take effect. This requirement has been removed in ESim for better user experience. When changes to ESIMFNT.ALS are applied, the updates can be seen in the next label printed.

Configuration with settings.xml

Font Aliasing Configuration with settings.xml

The file settings.xml shall be used to configure the font aliasing settings for ESim.

The following is the XML structure for settings.xml. Note that XML is case-sensitive.

File name : settings.xml

These are the steps to apply font aliasing configuration with settings.xml:

1. Construct the settings.xml according to the structure below, noting that:

    a. The tags <Group Name="Font Aliasing">...</Group> is to be added under-
        <Subsystem Version="1.0" Name="Printer">as an element

    b. For each alias, one set of <Group Name="Font">...</Group> is to be added under-
        <Group Name="Font Aliasing">...</Group>[PK1]

2. Save the settings.xml file.

3. Upload settings.xml to the printer and apply the configuration.

Structure:

```
<Group Name="Font Aliasing">
  <Group Name="Font">
    <Field Name="Font ID">id</Field>
    <Field Name="Font Name">sysfont</Field>
    <Field Name="Font Height">height</Field>
    <Field Name="Font Width">width</Field>
    <Field Name="Slant">slant</Field>
    <Field Name="Code Page">code</Field>
    <Field Name="Target Language">target-language</Field>
  </Group>
</Group>
```

Descriptions

Parameters	Corresponding Parameter in ESIMFNT.ALS ESim	Description	Values
Font ID (Mandatory)	id	Font ID	Acceptable Values: a to z; TA to TZ
Font Name * (Mandatory)	sysfont	TrueType font to use to replace the font specified with parameter "id"	Alphanumeric

Parameters	Corresponding Parameter in ESIMFNT.ALS ESim	Description	Values
Font Height (Optional)	pt	Point size of the font	Unit: Points Default : 12
Font Width (Optional)	width	Font width magnification	Unit: Percentage Default : 100
Slant (Optional)	s-height	Font slant height	Unit: Degrees Default : 0
Code Page (Optional)	code	Code page for the font	Numeric Default: 1
Target Language (Mandatory)	(N/A)	The command language that this font aliasing setting is to be applied to	Acceptable Values: ZSIM, IPL, FP, DP, and ESIM

* The user can issue the Fingerprint command "FONTS" to the printer for a list of all fonts stored in the printer.

Example

```
<Group Name="Font Aliasing">
  <Group Name="Font">
    <Field Name="Font ID">b</Field>
    <Field Name="Font Name">Andale Mono Bold</Field>
    <Field Name="Font Height">14</Field>
    <Field Name="Font Width">110</Field>
    <Field Name="Slant">17</Field>
    <Field Name="Code Page">1250</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">TA</Field>
    <Field Name="Font Name">Arial Narrow</Field>
    <Field Name="Font Height">12</Field>
    <Field Name="Font Width">100</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
</Group>
```

In the above example,

- Font ID "b" is aliased to the resident Andale Mono Bold font with point size 14, width-h=110%, slant=17 degrees and code page 1250.

- Font ID "TA" is aliased to the downloaded Arial Narrow font with point size 12, width-h=100%, slant=0 degrees and code page 1252.

Note: Each set of <Group Name = "Font">...</Group> defines the settings for one font to be aliased. To illustrate with the example above, when two fonts are to be aliased, the user shall define two sets of <Group Name = "Font">...</Group>

To change the font aliasing setting, settings.xml needs to be manually applied to the system.

Updating the Font Aliasing Settings

To change the font aliasing setting, settings.xml needs to be manually applied to the system.

Updating the Font Aliasing Settings

Whenever font aliases are applied, the printer first removes all existing aliases for all languages, and then applies the alias information based on the new settings.xml file.

This implies that:

- It is not possible simply to edit an existing alias with a "partial" alias settings file.
- To update the font aliasing settings of an aliased font, the user shall change the value(s) of the XML entry corresponding the font (while keeping the entries for other aliased fonts unchanged), and re-apply settings.xml to the system.
- To add a new font alias, the user shall add a new XML entry according to the above structure (while keeping the entries for other aliased fonts intact), and re-apply settings.xml to the system.
- To remove the aliasing of a font, the user shall remove the XML entry corresponding to that font (while keeping the entries for other aliased fonts intact), and re-apply settings.xml to the system.

How to Remove Font Aliases

The user can remove font aliases with the following methods:

1. Restoring the printer to the default settings

   - All the font aliases will be removed when the printer is restored to the default settings.

2. Updating and reapplying the XML configuration file

   - Individual font aliases can be removed using this method.
   - To remove a font alias, the user shall remove the corresponding XML tags from the XML configuration file previously used to perform font aliasing. (The user can use the 'Download Configuration' function to download the XML configuration file.) The updated XML configuration file shall be applied to update the font aliasing settings.
   - Below are examples:

ESim Command Reference

Example 1: Removing alias to Font ID "b", but keeping other existing aliases

Current XML Configuration File:	Updated XML Configuration File:

<pre><Group Name="Font Aliasing">
  <Group Name="Font">
    <Field Name="Font ID">b</Field>
    <Field Name="Font Name">Andale Mono
Bold</Field>
    <Field Name="Font Height">14</Field>
    <Field Name="Font Width">110</Field>
    <Field Name="Slant">17</Field>
    <Field Name="Code Page">1250</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">c</Field>
    <Field Name="Font Name">Arial Narrow</Field>
    <Field Name="Font Height">12</Field>
    <Field Name="Font Width">100</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">d</Field>
    <Field Name="Font Name">Universal</Field>
    <Field Name="Font Height">15</Field>
    <Field Name="Font Width">200</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
</Group></pre>
	<pre><Group Name="Font Aliasing">
	  <Group Name="Font">
	    <Field Name="Font ID">c</Field>
	    <Field Name="Font Name">Arial
	Narrow</Field>
	    <Field Name="Font Height">12</Field>
	    <Field Name="Font Width">100</Field>
	    <Field Name="Slant">0</Field>
	    <Field Name="Code Page">1252</Field>
	    <Field Name="Target Language">ESIM</Field>
	  </Group>
	  <Group Name="Font">
	    <Field Name="Font ID">d</Field>
	    <Field Name="Font Name">Universal</Field>
	    <Field Name="Font Height">15</Field>
	    <Field Name="Font Width">200</Field>
	    <Field Name="Slant">0</Field>
	    <Field Name="Code Page">1252</Field>
	    <Field Name="Target Language">ESIM</Field>
	  </Group>
	</Group></pre>

Notes:

1. The font aliasing settings for Font 'b' has been removed from the "Current XML Configuration File",
   while Fonts 'c' and 'd' are recreated using their original settings, effectively leaving them intact.

2. After applying this updated configuration, Font 'b' will not be aliased to any font.

Example 2: Removing more than one font alias (Font IDs "b" and "c"), but keeping other existing aliases

Current XML Configuration File:	Updated XML Configuration File:

<pre><Group Name="Font Aliasing">
  <Group Name="Font">
    <Field Name="Font ID">b</Field>
    <Field Name="Font Name">Andale Mono
Bold</Field>
    <Field Name="Font Height">14</Field>
    <Field Name="Font Width">110</Field>
    <Field Name="Slant">17</Field>
    <Field Name="Code Page">1250</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">c</Field>
    <Field Name="Font Name">Arial Narrow</Field>
    <Field Name="Font Height">12</Field>
    <Field Name="Font Width">100</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">d</Field>
    <Field Name="Font Name">Universal</Field>
    <Field Name="Font Height">15</Field>
    <Field Name="Font Width">200</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
</Group></pre>
	<pre><Group Name="Font Aliasing">
	  <Group Name="Font">
	    <Field Name="Font ID">d</Field>
	    <Field Name="Font Name">Universal</Field>
	    <Field Name="Font Height">15</Field>
	    <Field Name="Font Width">200</Field>
	    <Field Name="Slant">0</Field>
	    <Field Name="Code Page">1252</Field>
	    <Field Name="Target Language">ESIM</Field>
	  </Group>
	</Group></pre>

Notes:

1. The font aliasing to Font IDs "b" and "c" have been removed from the "Current XML Configuration File",
    while all other font aliases are recreated using their original settings, effectively leaving them intact.

2. After applying this updated configuration, Font IDs "b" and "c" will no longer be aliased to any fonts.

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Example 3: Removing all font aliases

Current XML Configuration File:	Updated XML Configuration File:

<pre><Group Name="Font Aliasing">
  <Group Name="Font">
    <Field Name="Font ID">b</Field>
    <Field Name="Font Name">Andale Mono Bold</Field>
    <Field Name="Font Height">14</Field>
    <Field Name="Font Width">110</Field>
    <Field Name="Slant">17</Field>
    <Field Name="Code Page">1250</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">c</Field>
    <Field Name="Font Name">Arial Narrow</Field>
    <Field Name="Font Height">12</Field>
    <Field Name="Font Width">100</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
  <Group Name="Font">
    <Field Name="Font ID">d</Field>
    <Field Name="Font Name">Universal</Field>
    <Field Name="Font Height">15</Field>
    <Field Name="Font Width">200</Field>
    <Field Name="Slant">0</Field>
    <Field Name="Code Page">1252</Field>
    <Field Name="Target Language">ESIM</Field>
  </Group>
</Group></pre>
	<pre><Group Name="Font Aliasing">
	  <Group Name="Font">
	    <Field Name="Font ID"></Field>
	    <Field Name="Font Name"></Field>
	    <Field Name="Font Height"></Field>
	    <Field Name="Font Width"></Field>
	    <Field Name="Slant"></Field>
	    <Field Name="Code Page"></Field>
	    <Field Name="Target Language"></Field>
	  </Group>
	</Group></pre>

Notes:

1. After applying this updated configuration, all font aliasing will be removed.

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