PRINTRONIX AUTO ID

Printer Protocol Interpreter DGL™

Programmer's Reference Manual for DGL, a Datamax® DPL™ Printer Protocol Interpreter

Thermal Series Printers

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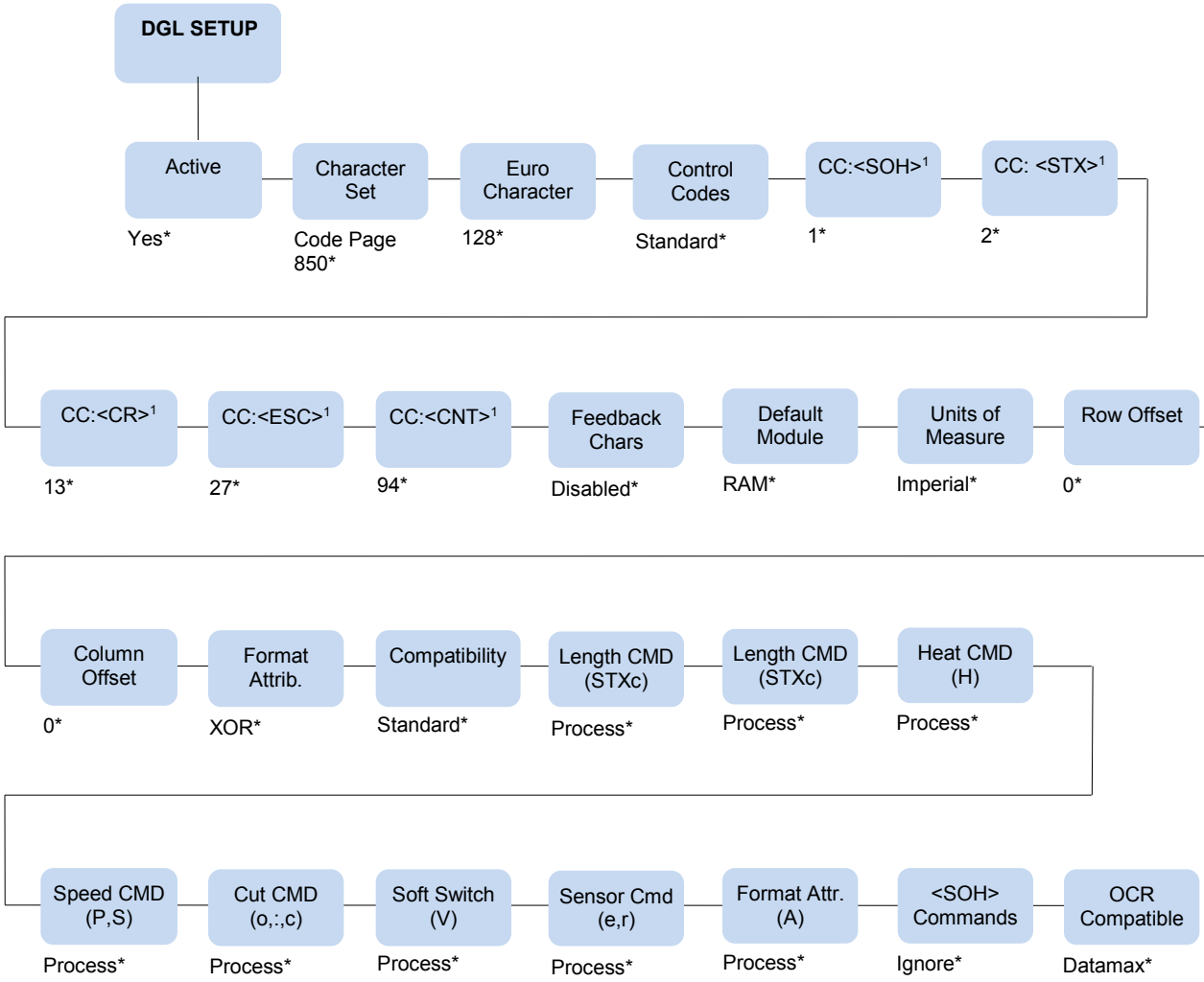
1 *Introduction*

About This Manual

This manual explains the differences between the Printer Protocol Interpreter Datamax Graphic Language (DGL) Utility and the Datamax® DPL™ language. Use this manual with your *Administrator's Manual* for complete printer-protocol operation.

DGL SETUP Menu

The DGL Setup submenu is found by selecting the Application icon within the Settings section of the User Interface. The DGL Setup submenu will only be present when the *Application* > *Control* > *Active IGP Emul* is set to DGL.



Notes:

* = Factory Default

[1] These menus are only present when you select User Defined in the Control Codes menu.

DGL SETUP Submenu

IMPORTANT **The DGL Setup submenu will only be present when the Active IGP Emulation menu *Application > Control > Active IGP Emul* is set to DGL.**

Application > DGL Setup > Active	
This setting determines if the DGL parser should process all incoming data or pass all the data to the underlying emulation.	
Yes	DGL is active; processes all DPL commands.
No	DGL is inactive; data is processed as pure text.
Factory Default	Yes

Application > DGL Setup > Character Set		
This option will Selects the legacy DGL character set.		
Character Set	PC-8TK CP 437T Roman 8 Spanish Swedish English Ascii Win3.0 Latin 1 Win3.1 Latin 1 Win3.1 Latin 2 Win 3.1 Latin 5 Unicode UTF8	Cyrillic Danish/Norweg. 8859-1 Latin 1 8859-2 Latin 2 8859-5 Latin 5 French German Italian Legal PC-8 CP437 Code Page 852 Code Page 850
Factory Default	Code Page 850	

Application > DGL Setup > Euro Character	
Allows the operator to select the position of the Euro character in the code page.	
Minimum	0
Maximum	255
Factory Default	128

Application > DGL Setup > Control Codes	
Allows the operator to change the prefix of the software commands interpreted by the printer.	
Standard	See “Standard” row in Table 1 below.
Alternate	See “Alternate” row in Table 1 below.
Alternate 2	See “Alternate 2” row in Table 1 below.
User-Defined	When selected, five additional menus “CC <XX>” are unhidden following this menu. These sub-menus allow the user to set a value for each of the control codes.
Factory Default	Standard

Table 1 Control Code Settings

	SOH	STX	CR	ESC	CNT
Standard	0x01	0x02	0x0D	0x1B	0x5E
Alternate	0x5E	0x7E	0x0D	0x1B	0x40
Alternate 2	0x5E	0x7E	0x7C	0x1B	0x40
User-Defined	0x01	0x02	0x0D	0x1B	0x5E

Application > DGL Setup > CC <SOH> Application > DGL Setup > CC <STX> Application > DGL Setup > CC <CR> Application > DGL Setup > CC <ESC> Application > DGL Setup > CC <CNT>	
When Control Code menu is set to “User Defined”, these menus will be unhidden and the prefixes for commands can be configured.	
Minimum	0
Maximum	255
Factory Default	According to row “User-Defined” in Table 1.

Application > DGL Setup > Feedback Chars
When enabled, the printer returns a Hex 1E [RS] after each label successfully prints, and Hex 1F [US] after each batch of labels is printed. For invalid characters, the printer responds with Hex 07 [BEL].

Enabled	Feedback characters are sent to the host.
Disabled	No feedback characters are sent.
Factory Default	Disabled

Application > DGL Setup > Default Module	
Sets the default module used to store files when no module or default module is specified in the command. See Chapter 3 for further details.	
RAM	Store files in RAM
Flash	Store files in FLASH
EMC	Store files in extended memory (e.g., SD card).
Factory Default	RAM

Application > DGL Setup > Units of Measure	
Sets the printer to interpret measurements as Imperial or Metric values.	
Imperial	Inches
Metric	Metric values
Factory Default	Imperial
IMPORTANT	<STX>n and <STX>m commands override this setting, and stay in effect until the printer is taken OFFLINE and back ONLINE.

Application > DGL Setup > Row Offset	
Shifts the vertical start of the print position. This is the user setting for row adjustment.	
Minimum	0
Maximum	99.99 inch or 999.9 mm
Factory Default	0
IMPORTANT	The Label Formatting command [R] only temporarily overrides this setting; it reverts back to this setting after the current label format is finished.

Application > DGL Setup > Column Offset	
Shifts the horizontal, left-justified start of the print position to the right without shifting the Label Width termination point to the right. This is the user setting for row adjustment.	
Minimum	0
Maximum	99.99 inch or 999.9 mm
Factory Default	0
IMPORTANT	The Label Formatting command [C] only temporarily overrides this setting; it reverts back to this setting after the current label format is finished.

Application > DGL Setup > Format Attrib.	
Affects the manner in which overlapping text and graphics are treated as the label is printed.	
XOR	Intersecting text strings, images, and barcodes print on top of one another.
Transparent	Intersecting text strings, images, and bar codes will not be printed. An odd number of overlapping objects will print.
Opaque	Intersecting text strings, images, and barcodes are obliterated by those formatted last. Each character cell is treated as opaque.
Factory Default	XOR

Application > DGL Setup > Compatibility	
This setting defines the emulation compatibility.	
Standard	Datamax I-Series and W-Series compatible.
S-462	Avery S-462 compatible. The difference with standard is that dimensions for barcodes and graphics lines are always in 1/100 inches, independent of the selected Units of Measure (can be 1/100 inches or 1/ 10 mm). The selected Units of Measure value is used for all other parameters.
Factory Default	Standard

Application > DGL Setup > Compatibility	
This setting defines the emulation compatibility.	
Standard	Datamax I-Series and W-Series compatible.
S-462	Avery S-462 compatible. The difference with standard is that dimensions for barcodes and graphics lines are always in 1/100 inches, independent of the selected Units of Measure (can be 1/100 inches or 1/ 10 mm). The selected Units of Measure value is used for all other parameters.
Factory Default	Standard

Application > DGL Setup > Length Cmd (STXc) Application > DGL Setup > Heat Cmd (H) Application > DGL Setup > Speed Cmd (P.S) Application > DGL Setup > Cut Cmd (o.:c) Application > DGL Setup > Soft Switch (V) Application > DGL Setup > Sensor Cmd (e.r) Application > DGL Setup > Format Attr.(A)	
The menus allow ignoring of several configuration commands in the host data. This allows using their corresponding front-panel settings, without being overridden by host commands.	
Ignore	When you select “Ignore,” the command will be ignored.
Process	The commands will be processed.
Factory Default	Process

Application > DGL Setup > <SOH> Commands	
Allows the user to enable handling of the <SOH> status and control commands, as described in Chapter 2 page 18.	
Ignore	When you select “Ignore,” the command will be ignored.
Process	The commands will be processed.
Factory Default	Ignore

Application > DGL Setup > OCR Compatible	
Allows the user to select which OCR size to use.	
Datamax	Uses the size as defined by the Datamax reference printer.
Standard	Uses the size as defined by the OCR standard.
Factory Default	Datamax

2 *Fully Supported Commands*

Status and Control Command Functions

NOTE: To allow handling of command listed in this section, set *Application* > *DGL Setup* > *<SOH> Commands* menu to Enable.

For more information on SOH command functionality, refer to Bi-Directional Communications page 40.

SOH # - Reset

This command resets the printer. Resetting the printer returns all settings to default and clears both the communications and printing buffers. The command also clears the internal RAM memory.

SOH * - Reset

This command resets the printer. Resetting the printer returns all settings to default and clears both the communications and printing buffers. The command also clears the internal RAM memory.

SOH A - Send ASCII Status String

This command allows the host computer to check the current printer status. The printer returns a string of eight characters to the host, followed by a carriage return. Each character is either a 'Y' or 'N' indicating that the associated condition is true (Y) or false (N). Byte 1 is the first character transmitted by the printer. See <SOH>F.

SOH B - Toggle Pause

This command toggles the printer's paused state on and off. (This is the same function achieved when pressing the PAUSE button on the printer.

SOH C - Stop/Cancel

This command performs the same function as pressing the "Cancel Data" soft key on OFFLINE screen of the front panel. This function clears the current label format from the print buffer, pauses the printer, and illuminates the pause/stop indicator.

SOH E - Send Batch Quantity

This command causes the printer to send back a 4-digit number indicating the quantity of labels left to print in the current batch, followed by a carriage return. Communications latency may cause this value to be higher than actual on some printers.

SOH F - Send Status Byte

This command instructs the printer to send a single status byte where each bit (1 or 0) represents one of the printer's status flags, followed by a carriage return, see table below. If an option is unavailable for the printer, the single bit will always be 0. A satisfied condition equals 1.

System-Level Command Functions

STX A - Set Time and Date

This command sets the time and date. The initial setting of the date will be stored in the printer's internal memory. This date can be verified by printing a configuration label.

STX a - Enable Feedback Characters

This command enables the feedback ASCII HEX characters 07, 1E, and 1F to be returned from the printer following specific events.

STX B - Get Printer Time and Date Information

This command retrieves the time and date information from the printer and transmits the response to a host device. See <STX>A for details and restrictions.

STX c - Set Continuous Paper Length

This command is used to define the page (label) size when printing on continuous media. It disables the media sensor top-of-form function but continues to monitor paper-out conditions.

STX E - Set Quantity for Stored Label

This command sets the number of labels to print for the label format currently stored in the print buffer. (The printer automatically stores the most recent label format in the buffer until the printer is reset or turned 'Off'.) To print, this command is used in conjunction with the <STX>G command.

STX e - Select Edge Sensor

This command enables "see-through" sensing for top-of-form detection of die- cut and notched media. The printer's transmissive media sensor will detect a minimum gap of 0.05 inches (1.27mm) between labels. Label stock must be at least 0.1 inches (2.5mm) between each top-of-form (start of print point on the next label).

STX F - Form Feed

This commands the printer to form feed one label.

STX G - Print Last Label Format

This command prints a previously formatted label and restarts a canceled batch job after the last processed label. This is used when there is a label format in the print buffer. The <STX>E command is used to enter the quantity.

STX I - Input Image Data

This command must precede image data downloading from a host computer to the printer. The data that immediately follows the command string will be image data.

STX i - Downloading Scalable Fonts

The command structure for downloading TrueType (.TTF) scalable fonts follows, (font files must be single character systems).

STX K - Extended-System Commands

This expands the System-Level Commands. See the Extended-System Commands for more information.

STX KE - Character Encoding

This command specifies a character in the DPL data stream to be substituted with a delimited two-character ASCII hexadecimal numeric equivalent.

Any character in the DPL data stream may be substituted with a delimited two- character ASCII hexadecimal numeric equivalent. The command allows the delimiting character to be selected, and the encoding to be enabled or disabled. When character encoding is enabled, the printer will decode any ASCII hexadecimal numeric pairs following the delimiter as single byte values. This command is used where control characters cannot be transmitted or where control characters within data may prematurely terminate a label format record. Although the delimiter may be changed at any time (except within a label format definition) there cannot be more than one defined delimiter, and character encoding must be disabled with <STX>KN prior to re-enabling, regardless of any change in the delimiter.

STX k - Test RS-232 Port

This command instructs the printer to transmit the character Y from the printer's RS-232 port. (Failure to receive Y could indicate an interfacing problem.)

STX L - Enter Label-Formatting Command

This command switches the printer to the Label-Formatting command input mode. Once in this mode, the printer expects to receive Record Structures and Label-Formatting commands. Status and Control, System-Level, and Font-Loading commands will be ignored until the label formatting mode is terminated with E, s, or X, (see Label-Formatting Commands for additional information.)

STX m - Set Printer To Metric

This command sets the printer to interpret measurements as metric values (e.g., <STX>c0100 will equal 10.0mm). See STX n - Set Printer to Imperial (Inches).

STX n - Set Printer to Imperial (Inches)

This command sets the printer to interpret measurements as Imperial values (e.g., <STX>c0100 will equal 1.00 inch). See STX m - Set Printer To Metric.

STX o - Cycle Cutter

This command will immediately cycle the cutter blade on the option Cutter Mechanism. The Cutter must be installed, enabled and the interlocks closed for operation. The Commands to activate the Cutter (System Level Command <STX>o, and Label Formatting Commands 'c' and ':') are only processed when the *Media* > *Handling* > *Media Handling* menu is set to 'Cut', and *Application* > *DGL Setup* > *Cut Cmd* is set to 'Process'.

STX Q - Clear All Modules

This command instructs the printer to clear all of the Flash, RAM, and Internal Modules.

STX q - Clear Module

This command clears the selected memory module (Flash or RAM).

STX r - Select Reflective Sensor

This command selects the reflective media sensor for top-of-form detection of reflective stock (e.g., fan-folded tags with carbon-based black marks printed along the underside of the media). The end of the black mark determines label TOF. Labels must be at least 0.5" (13mm) between each TOF mark. (The <STX>e command switches from reflective back to edge sensing).

STX S - Set Feed Rate

This command determines the feed rate of the media when the printer's FEED button is pressed.

STX U - Label Format Field Replacement

This command places new label data into format fields. Format fields are used to build a label. The new data string must equal the original string length and contain valid data. To easily keep track of fields, place all of the fields to be updated with the command at the beginning of the label format. A maximum of 99 format fields can be updated. Fields are numbered consecutively 01 to 99, in the order received.

STX V - Software Settings

Printer options are set by entering selections through the menu. The software setting command allows two of these option settings to be modified without returning to the menu. Choosing the appropriate values allow the option(s) to be turned 'On' or 'Off'. Each has a corresponding bit whose value is 1 when enabled. Enabling the Cutter bit selects 'Cut' Media Handling, and the Present bit selects 'Tear-Off'. Disabling the Cutter or Present bit selects the Factory- Default media handling setting: 'Continuous' Media Handling.

The <STX>V command can be ignored by setting the menu *Application > DGL Setup > Soft. Switch (V)* to 'Ignore'.

STX v - Print Firmware Version Information

This command causes the printer to respond by sending a version string. The version may be different from printer to printer (this data is the same as that printed on the configuration label).

STX W - Request Memory Module Information

This command requests a directory listing for memory module(s). Although a module can store font, graphics and format data together, it can display only one type of information at a time. If the module contains all three types of data, it will be necessary to check the directory three times, using each of the control parameters, F, G, and L, to determine the contents.

STX X - Set Default Module

This command is used when downloading information to a module memory. It is designed to allow the user to select between modules. If 'C' is entered to select a memory bank, the data will go to the bank set by this command (Set Default Module). See Chapter 3, Flash/Ram Module Compatibility.

STX x - Delete File from Module

This command removes a specific file from the specified module. The file name is removed from the module directory and thus the file cannot be accessed. The actual storage space occupied by the file is not released (this only applies to the flash memory). The menu option *System > Flash File Edit > Optimize and Reboot* can be used to reclaim all deleted file storage space.

STX y - Select Font Symbol Set

This command selects the scalable font symbol set. The selected symbol set remains active until another symbol set is selected. Not all symbol sets can be used with all fonts.

Label Formatting Command Functions

: - Set Cut By Amount

This command allows a predetermined number of labels to be printed before a cut is initiated. This feature is useful when it is necessary to print an uncut strip of labels. Between 1 and 9999 labels may be printed before a cut is made. The amount must be smaller than the quantity of labels printed.

+ (>) Make Last Field Entered Increment Numeric (Alphanumeric)

The printer is capable of automatically incrementing fields on each label of a batch. This command is useful to print labels numbered in sequence. The data in the field will increment by the value after the + sign, each time a label is printed. The + character may be replaced by a > character to make the field increment alphabetically rather than numerically. This command is effective only on the label format record it follows. It is intended for use with the label batch quantity Q or the System-Level Commands for quantities and reprint, <STX>E and <STX>G.

- (<) Make Last Field Entered Decrement Numeric (Alphanumeric)

The printer is capable of counting down fields on labels in a batch. This command is useful when printing labels need to be numbered in reverse sequence. The data in the field will decrement by the value after the minus sign with every label printed. The minus character may be replaced by a < character in order to make the field decrement alphabetically rather than numerically. This command has effect on only the label format record that it follows. It is intended for use in conjunction with the label batch quantity Q, or the System-Level Commands for quantity and reprint, <STX>E and <STX>G.

^ Set Count by Amount

An application using incrementing or decrementing fields (+, -, >, <) will occasionally require that more than one label be printed with the same values before the field data is updated. This situation is handled with the ^nn command. All printers default to 1.

A - Set Format Attribute

This command specifies the type of format operation and remains in effect until another format command is specified or another label format has begun (<STX>L). Each label format defaults to the menu value.

B - Barcode Magnification

This command provides a mechanism to specify barcodes greater than 36 dots (0-9,A-Z in the field record). The value is reset to 1 at the start of every label and stays active for the entire label or set to a new value.

C - Set Column Offset Amount

This command allows horizontal adjustment of the point where printing begins. This feature is useful when a single format must be printed on several different types of labels that contain pre-printed information. (If the pre-print does not appear in the same place on every label, the new data may overlap the pre-printed data.) The ‘C’ command instructs the printer to print label formats nnnn units to the right of the position that the format specifies.

c - Set Cut By Amount

This command is the same as the ‘:’ command except only a two-digit value can be entered. This command allows a predetermined number of labels to be printed before a cut is made. 1 to 99 labels may be printed before a cut is made.

D - Set Dot Size Width and Height

This command is used to change the size of a printed dot, hence the print resolution – dots per inch (DPI) of the printhead. By changing the height of a dot, the maximum length of a label can be increased or decreased.

E - Terminate Label Formatting Mode and Print Label

When the printer is processing Label-Formatting Commands and receives an 'E' command, it will immediately print a label based upon the data received at that point. Even if no printable data has been received, the printer will generate and feed a label (other termination commands are 'X' and 's'). Commands sent to the printer after a "terminate label" command must be Status and Control, System-Level or Font Download type.

F - Advanced Font Attributes

These commends extend the text presentation capabilities for Scalable Fonts. The format attribute allows a set of label format records to select Bolding, Italicizing and Underlining. Additional commands allow the specification of line rotation and font changes within a label field.

FB +/- Turns Bolding on or off

FI +/- Turns Italicizing on or off

FU +/- Turns Underlining on or off

FPn Points

Specify the vertical point size of the following text relative to the base line.

FSn Points

Specify the horizontal point size of the following text relative to the base line.

G - Place Data in Global Register

The 'G' command saves the print data of a print format record in a global register (temporary storage). This data may be retrieved and copied to another record in the same label format using the special Label-Formatting Command, <STX>S. Global registers are named in the order received, beginning with register A, ending at register P, and incrementing with each instance of the G command use.

H - Enter Heat Setting

This command changes the "on time" of elements of the printhead. (The default setting can be changed through the keypad). An increase or decrease in this value results in a change of heat applied by the printhead to the media, lightening or darkening the print contrast accordingly. This is helpful when using different media types, each requiring a different amount of heat to properly image the media. The host device can send this command value to correct the heat setting per the application.

m Set Metric Mode

This command sets the printer to measure in metric. When this command is sent, all measurements will be interpreted as metric values, (e.g., a column offset of 0010 will be interpreted as 1.0mm). All printers default to Imperial (inch) mode. Menu selectable.

n Set Inch Mode (Imperial)

This command sets the printer to measure in inches. When this command is sent, all measurements will change to inches. All printers default to Imperial units. Menu selectable.

P Set Print Speed

This command sets a print speed for a label or batch of labels.

Q Set Quantity of Labels to Print

This command sets the number of the label copies to be printed. All printers default to 1.

R Set Row Offset Amount

This command allows vertical adjustment of the point where printing begins. This is useful when a single format is printed on several different types of labels that contain pre-printed information. However, if the pre-printing does not appear in the same place on every label, data may overprint the pre- printed areas. The 'R' command instructs the printer to print label formats nnnn increments above the position the format specifies. Valid input values are numbers between 0000 and 9999, (refer to the C, Set Column Offset Amount Command.)

r Recall Stored Label Format

This command is used to retrieve entire label formats that have been stored on a memory module.

S Set Slew Rate

This command sets the rate for the printer to feed non-printed areas of the label through the printer. The slew rate remains unchanged unless another slew rate command is sent, the printer is reset or a new rate is set via the menu.

s Store Label Format in Module

This command stores a label format in a specified module. Supplying memory module name A, B, or D will store the label to that module. (Using C will cause the label format to be stored in whichever module has been set as the default module, refer to the Set Default Module Command, <STX>X.) The store label-format command will terminate the Label-Formatting Command.

T Set Field Data Line Terminator

This command is valid only for the next format record, after which the terminator defaults to a carriage return. This allows the user to embed special binary control codes (e.g., carriage returns) into the data to be printed. It is intended to be used with record types (e.g., PDF417), that will accept binary data.

U Make Previous Field A String Replace Field

This command does not require the use of an updated field (register loading); the command only controls the way the bit-mapped data is formatted. The data used when it is created must be valid for the font type being used. If the command is used, only the changing data will be reformatted; if this command is not used the entire label will be formatted. The U command is used in conjunction with the <STX>U command to reformat only portions of a label, resulting in faster label generation.

X Terminate Label-Formatting Mode

When the printer is in Label-Formatting mode and receives this command, it will immediately switch to the System-Level Command mode and generate a label format based on whatever data it has already received. However, unlike the 'E' command, it will not print a label. (Other termination commands are the 'E' and 's' Label-Formatting Commands.)

y Select Font Symbol Set

Same as a System-Level Command <STX>y. Symbol sets are used only with scalable fonts (see Generating Label Formats; also see <STX>y).

z Zero (Ø) Conversion to "0"

This command removes the slashes from zeros in fonts 0 to 8, and barcodes. The command is effective only for the label format in which it appears, and applies to all format records containing fonts 0 through 8 or barcodes A through Z. (None of the smooth fonts [font 9] have a slash zero.) The command has no effect on scalable fonts.

STX S Recall Global Data And Place In Field

Once a global register has been defined, its contents can be used as data in other fields. When the printer receives the command <STX>Sn in a format record data field, it will place data from the specified global register into the data field, (see Label-Formatting Command G). Global registers contain the data in the first A through P format record data fields.

STX T Print Time and Date

Time and date string data is selected by choosing the string character A through Z and a through h to retrieve data from the printer's internal clock. The date string characters are not printed, instead the printed label will show the corresponding print values.

The <STX>T may now be preceded by data to be printed/encoded and/or the string may now be terminated by a <STX> command followed by data terminated by a <CR>.

Font Loading Command Functions

ESC *c###D - Assign Font ID Number

This command is the first command required for downloading a font to either RAM or Flash Memory modules. ESC represents the ASCII control character 27.

ESC)s###W - Font Descriptor

This command (typically first data in a font file) contains all of the information about the font contained in the file. Different font generation software will create different length header information, but the initial 64 bytes will remain consistent with the PCL-4 (HP LaserJet II) format.

ESC *c###E - Character Code

This code is the ASCII decimal value corresponding to the next downloaded character.

ESC (s#W - Character Download Data

This command contains all of the information for one downloaded character.

Barcode Symbologies

A(1): Code 3 of 9

B(1): UPC-A

C(1): UPC-E (See Partially Supported Commands)

D(1): Interleaved 2 of 5 (I 2 of 5)

E(1): Code 128

F(1): EAN-13

G(1): EAN-8

H(1): Health Industry Barcode (HBIC) (Code 39 barcode with a modulo 43 checksum)

I(1): Codabar

J(1): Interleaved 2 of 5 with a modulo 10 checksum

K(1): Plessey (See Partially Supported Commands)

L(1): Interleaved 2 of 5 with a modulo 10 checksum and shipping bearer bars

M(1): 2-digit UPC addendum

N(1): 5-digit UPC addendum O(1): Code 93

P: Postnet

Q(1): UCC/EAN Code 128 (See Partially Supported Commands)

R(1): UCC/EAN Code128 K-MART NON EDI barcode. (See Partially Supported Commands)

S(1): UCC/EAN Code 128 Random Weight (See Partially Supported Commands)

T(1): Telepen

u: UPS MaxiCode (Modes 2&3) (See Partially Supported Commands)

U: UPS MaxiCode (Modes 2&3) with Byte Count Specifier (See Partially Supported Commands)

v: FIM

Z: PDF-417

Z: PDF-417 with Byte Count Specifier

W1c: DataMatrix

W1C: DataMatrix with Byte Count Specifier

W1d: QR auto format

W1D: QR manual format

W1f: Aztec

W1f: Aztec with Byte Count

W1g and W1G: USD-8 (Code 11)

W1k: RSS (six types) (See Partially Supported Commands)

W1R(1): UCC/EAN Code 128 K-Mart NON EDI barcode (alternate type) (See Partially Supported Commands)

W1z: MicroPDF-417

W1Z: MicroPDF-417 with Byte Count

(1) These barcodes print human readable interpretation when uppercase ID is specified. Lowercase prints barcode without HR.

3 *Command Enhancements and Differences*

For more information on SOH command functionality, refer to Bi-Directional Communications page 40.

SOH D - SOH Shutdown

The internal firmware architecture no longer requires the execution of an "SOH" shutdown for binary downloading. *(Obsolete command.)*

SOH U - Update System Database with Current Database

This command will copy the current User database into the system database. There are various DPL commands that modify the configuration of the printer. See the <STX>K…command for specifics on how these commands function. The user should send the <SOH>U command after these configuration commands so that these commands can take effect. This command will cause the printer to reset. See the <SOH># command above for details on what events occur during a reset. *(Not supported.)*

STX J - Set Pause for Each Label

This command causes the printer to pause after printing each label and is intended for use with the optional Peel and Present Mechanism or with a Tear Bar when no Present Sensor is installed. After removing the printed label, the PAUSE button must be pushed in order to print the next label. (The printer must be reset to clear the <STX >J command.) *(Not supported.)*

STX KC - Get Configuration

This command returns the configuration of the printer. The form of the returned data is similar to that of a printed Configuration Label. This command should be Parsed by KEYWORDS, not by Character POSITIONS. Each line is terminated by a CR (0x0d) & LF (0x0a). *(Not supported.)*

STX Kc - Configuration Set

This command specifies the Power-up Configuration parameter values for the printer. It is equivalent to using other system commands followed by the <SOH>U. The printer will reset upon completion of a command stream containing parameter value changes; no commands should be sent to the printer until this reset is complete. This command is intended for easily configuring a custom setup, not for dynamic configuration changes. *(Not supported.)*

STX Kd - Set File as Factory Default

This command selects the specified file name as the "factory default" for the printer's configuration. After execution, subsequent "Select Factory Default" commands will configure the printer to the file's configuration. Currently there are three ways to "Select Factory Defaults": 1) by the <STX>KF command; 2) power-up the printer while pressing the RIGHT SOFT KEY; or, 3) via setting the printer's menu *Configs* > *Control* > *Load Config* to 'Factory'. *(Not supported.)*

STX KF - Select Factory Defaults

This command restores the printer's configuration to the "factory default" settings. These factory default values may be either the Datamax default settings or the configuration file previously specified in the <STX>Kd command. *(Not supported.)*

STX Kf - Set Present Distance

This command specifies an additional amount to advance the label after printing. *(Not supported.)*

STX Kp - Module Protection

This command controls memory module protection. When “protected”, a module will ignore format, downloads and delete commands. This command can be useful to add data to Datamax reserved modules, Z (ILPC) and Y (EFIGS). *(Not supported.)*

STX KQ - Query Memory Configuration

This command causes the printer to transmit its internal DRAM memory configuration to the host device. The transmitted data provides information regarding the total amount of installed internal DRAM, the amount available for configuration and the amount currently assigned to specific functions or entities. *(Reported values are not all actual values.)*

STX Kq - Query Memory Configuration (new format)

This command causes the printer to transmit its internal DRAM memory configuration to the host device. The transmitted data provides information regarding the total amount of internal DRAM installed, the amount available for configuration, and the amount currently assigned to specific functions or entities. *(Not supported.)*

STX Kr - Resettable Counter Reset

This command resets the internal counters. Follow this command with an <SOH>U command to retain the reset or the counters will revert to the previous values after cycling power. *(Not supported.)*

STX KV - Verifier Enable/Disable

This command allows the verifier (option, if installed), to be enabled and disabled. *(Not supported.)*

STX Kx - Delete Configuration File

This command deletes the specified configuration file. *(Not supported.)*

STX Kb - Backfeed Time Delay

(Obsolete Extended System Command).

STX K- - Top of Form, Offset Distance

(Obsolete Extended System Command).

STX KD Database Configuration

(Obsolete Extended System Command).

STX KI - GPIO Input

(Obsolete Extended System Command).

STX KM - Configure Internal Memory Module Size

(Obsolete Extended System Command).

STX KO - GPIO Output

(Obsolete Extended System Command).

STX KR - Reset Memory Configuration

(Obsolete Extended System Command).

STX KS - Configure Scalable Font Cache Size

(Obsolete Extended System Command.)

STX KW - Configure Print Width Size

(Obsolete Extended System Command.)

STX M - Set Maximum Label Length

This command instructs the printer to travel this distance in search of top-of- form (label edge, notch, black mark, etc.) before declaring a paper out fault. The fault condition can occur if this value is set too close to the physical length of the label (within 0.1inch/2.54mm). Therefore, it is good practice to set this value at 2.5 to 3 times the actual label length used. The minimum value should be at least 5" (127mm). *(Not supported.)*

STX O - Set Start of Print (SOP) Position

This command sets the point where printing starts relative to the selected SOP Emulation (SOP Emulation may be enabled and selected using the printer's Menu System). The position specified by this command emulates a selected legacy printer's distance, as measured between the Media Sensor and the Printhead burn line. This value is independent of the <STX>f command. If the SOP Emulation is set to 'Disabled', this command is ignored. *(Not supported.)*

STX P - Character (HEX) Dump Mode

This command instructs the printer to enter the Character Hex Dump Mode (ASCII Dump / "monitor mode"). All data sent to the printer following this command will be printed in the raw ASCII format. Labels must be at least four inches (102mm) long and as wide as the maximum print width. This command has the same effect as turning the printer 'On' while pressing the FEED button; in this case however, a Configuration and Test label will be printed. To return to normal operation, the printer must be manually reset. *(Not supported.)*

STX p - Controlled Pause

The controlled pause command will cause the printer to pause only after all previously received commands are executed. This is often useful between label batches. (This command will not clear the pause condition. *(Not supported.)*

STX R - Ribbon Saver On/Off

This is the only command used for the optional Ribbon Saver. This does not instruct the Ribbon Saver when to engage, rather it turns the operation 'On' or 'Off'. The option will operate automatically, lifting when the minimum amount of label white space is exceeded. The operation is continuous when enabled. The printer must be set to thermal transfer (ribbon) printing mode. *(Not supported.)*

STX T - Printhead Dot Pattern Test Label

This command instructs the printer to print a dot pattern test label. To view all dots, the labels must be at least four inches (102mm) long and as wide as the maximum print width. *(Not supported.)*

STX t - Test RAM Memory Module

This command tests all RAM modules; however, the printer must be in feedback mode for the command to function. The printer returns a one-line message stating whether the module is good or bad, (no message is returned if a module is unavailable). Feedback mode can be enabled via the menu (see the corresponding Operator's Manual for additional information). *(Always returns OK status.)*

STX w - Test Flash Memory Module

This command performs a test sequence on flash memory modules; however, the time for each test will vary (from 20 seconds up to two minutes), depending on the size of the module. The module must have the write protect switch 'Off' for testing; all stored data will be destroyed. The printer responds with 'good' or 'bad' message results for each module tested. (No modules present will result in no printer response.) *(Always returns OK status.)*

STX Y - Output Sensor Values

This command causes the printer to respond with the sensor value status. The printer must be in feedback mode (menu setting). When <STX>Y is received, the printer will respond with the internal A-D sensor values, see table below. To repeat the display of values, send the printer a 'SPACE' (20 hexadecimal). Send <ESC> to terminate the function. *(Not supported.)*

STX Z - Print Internal Information

This command prints the configuration. To capture all printed information, use labels as wide as the print width and at least 4 inches (102mm) long. *(Not supported.)*

STX z - Pack Module

This command causes the printer to reclaim all storage space associated with all deleted files on the specified module. A Flash Module cannot be packed. *(Not supported.)*

STX b - Set Cutter signal time

(Obsolete System Command.)

STX C - Copy Module

(Obsolete System Command.)

STX D - Memory Dump (Test Mode Only)

(Obsolete System Command.)

STX d - Set Printer to double buffer mode

(Obsolete System Command.)

STX g - Internal Batch Software Mode

(Obsolete System Command.)

STX N - Enter Internal Batch

(Obsolete System Command.)

STX s - Set Printer to single buffer mode

(Obsolete System Command.)

e - Recall Printer Configuration

This command recalls a previously stored printer configuration. It is highly recommended that only one Recall Printer Configuration command be used per label, and that it be used at the beginning of the label; otherwise, unpredictable results will occur. (Printer Configurations may be stored using the Extended System Commands or the printer's menu system.) *(Not supported.)*

f - Set Present Speed

(Not supported.)

M - Select Mirror Mode

This command instructs the printer to “mirror” all subsequent print field records. This command toggles the mirroring mode. Mirrored fields are transposed visually, as if the object is viewed in a Printed Result. *(Not supported.)*

p - Set Label Backup Speed

This command is used for the “Peel and Present” and “Cut Label Operations”. It allows the user to specify the rate at which the printer will reverse the label direction to align the next start of print position. The rate set by this command remains in effect until another backup speed command is received, see Appendix L for valid ranges. The speed is modified via the menu or when the printer is reset. *(Not supported.)*

W - Wait mode (Prodigy only)

(Obsolete System Command.)

Z - Zip Mode (Prodigy only)

(Obsolete System Command.)

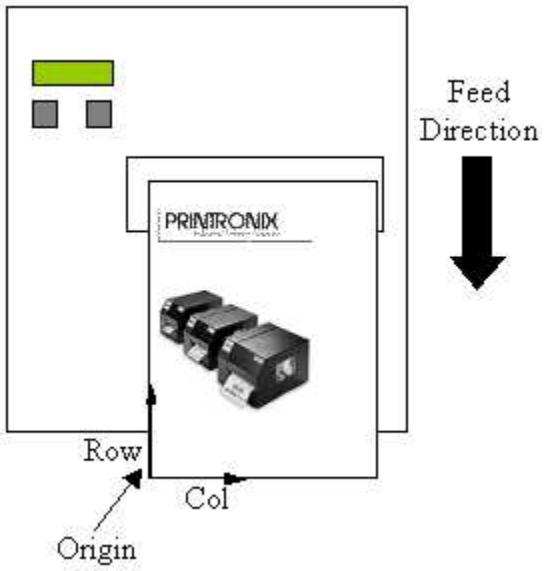
Print Area

When looking at the front of the printer, the origin of the label is positioned at the bottom left of the label, and extends up and to the right. The label length for continuous labels can be set in the Menu and through the <*STX*>*cnnnn* command.

On Datamax printers, the print width is adjusted through the menu 'LABEL WIDTH'. According to the manual, objects extending beyond the page width will not print. However, this does not seem to have any effect on the I-42xx: the full width can always be used. On DGL, objects draw beyond the adjusted page width will not print.

Physical page-rotation is not available on Datamax. When rotation is needed, each object should be rotated individually.

See figure below for a graphical representation of the print area, and the coordinate system used by DGL.



Fonts

See the tables below for the different types of fonts that will be available.

All Single-Byte fonts will be supported and will be available in DGL by default. Double-Byte support has not been planned.

Internal Bitmapped Non-Proportional fonts:

Table 2 Internal Bitmapped Non-Proportional fonts:

		Description				
Type (b)	**DPI**	**Height**	**Width**	**Spacing**	**Point Size**	**Agfa Typeface**
0		**96-character alphanumeric font, uppercase, and lowercase.**				
	203	7	5	1	2.5	
	300	10	7	1	2.4	
1		**145-character uppercase and lowercase alphanumeric font that includes descenders and ascenders.**				
	203	13	7	2	4.6	
	300	19	10	3	4.6	
2		**138-character alphanumeric upper and lower case font.**				
	203	18	10	2	6.4	
	300	27	15	3	6.5	
3		**62-character alphanumeric uppercase font.**				
	203	27	14	2	9.6	
	300	40	21	3	9.6	
4		**62-character alphanumeric uppercase font.**				
	203	36	18	3	12.8	
	300	53	27	4	12.7	
5		62-character alphanumeric uppercase font.				
	203	52	18	3	18.4	
	300	77	27	4	18.5	
6		**62-character alphanumeric uppercase font.**				
	203	64	32	4	22.7	
	300	95	47	6	22.8	
7		**OCR-A, size I.**				
	203	32	15	5	11.3	
	300	95	47	6	11.3	
8		**OCR-B, size III.**				
	203	28	15	5	9.9	
	300	41	22	7	9.8	

Smooth, Scalable and Downloaded Fonts:

Size Field (eee)	Description	Agfa Typeface
	Bit-Mapped Resident Font	
A04 - A72 (1) 000 - 010 (1)	CG Triumvirate, Bit-Mapped Smooth Font (Point sizes 4, 5, 6, 8, 10, 12, 14, 18, 24, 30, 36, 48, and 72)	
	Scalable Resident Fonts (standard)	
S00	CG Triumvirate Bold Condensed	
S01	CG Triumvirate	
	Scalable Resident Fonts (optional)	
SA0	CG Times	
SA1	CG Times Italic	
SA2	CG Times Bold	
SA3	CG Times Bold Italic	
SB0	CG Triumvirate Bold Condensed	
U40	Gothic B Kanji, Double Byte (Binary)	
u40	Gothic B Kanji, Double Byte (Hex ASCII)	
UC0	GB Simplified Chinese, Double Byte (Binary)	
uC0	GB Simplified Chinese, Double Byte (Hex ASCII)	
UH0	Korean Hangul, Double Byte (Binary)	
uH0	Korean Hangul, Double Byte (Hex ASCII)	
	Bit-Mapped Downloaded Fonts	
100 - 999	Bit-Mapped Downloaded Fonts	N/A
	Scalable Downloaded Fonts	
S50 - S5z... S90 - S9z	Single Byte (Binary)	N/A
U50 - U5z... U90 - U9z	Double Byte (Binary)	N/A
u50 - u5z... u90 - u9z	Double Byte (Hex ASCII)	N/A

Font ID 9 uses the Size field (*eee*) in the Record Format to select the Smooth, Scalable, or Downloaded fonts.

NOTE: For I42xx: The Smooth Internal CG Triumvirate Bitmap Fonts are automatically converted to the CG Triumvirate Scalable Font, which therefore also affects the code pages.

Slash Zero

All resident bitmap fonts use the slashed zero by default. This can be disabled through Label Formatting command '*z*'.

None of the scalable fonts have the slashed zero available.

Codepages

Resident Bitmap Fonts

The Resident Bitmap fonts don't use different codepages; the characters are mapped at predefined positions, defined in the table below.

See the print samples in Appendix C in the 'Class Series Programmers Manual' for the reference characters.

Valid ASCII Characters for bitmap fonts:

Font	Valid ASCII Characters (decimal)	Euro Char
0	32 - 127	255
1, 2	32 - 168, 171, 172, 225	255
3, 4, 5, 6	32, 35 - 38, 40 - 58, 65 - 90, 128, 142 - 144, 146, 153, 154, 156, 157, 165, 168, 225	255
7	32 - 126	N/A
8	32, 48 - 57, 60, 62, 67, 69, 78, 83, 84, 88, 90	N/A

Scalable Fonts

The scalable fonts allow codepage selection through the System Command <*STX*>*ySxx*, and the Label Formatting Command *ySxx*, where *xx* is a two letter CP Identifier.

Note that on Datamax, not all fonts have an entire compliment of character codes for a given code page.

The default codepage is (PT) PC-8 TK, Code Page 437T.

See table below for an overview of the available codepages. Additional info and print samples can be found in the 'Class Series Programmers Manual', Appendix E and I.

Codepages used by Scalable Fonts:

CPG ID	Description	CPG ID	Description
DN	ISO 60 Danish / Norwegian	R8	Roman-8
E1	ISO 8859/1 Latin 1	SP	ISO 17: Spanish
E2	ISO 8859/2 Latin 2	SW	ISO 11: Swedish

CPG ID	Description	CPG ID	Description
E5	ISO 8859/9 Latin 5	UC	Unicode (UTF8)
FR	ISO 69: French	UK	ISO 4: United Kingdom
GR	ISO 21: German	US	ISO 6: ASCII
IT	ISO 15: Italian	W1	Windows 3.1 Latin 1
LG	Legal	WE	Windows 3.1 Latin 2
PE	PC-852 Latin 2	WO	Windows 3.0 Latin 1
PM	PC-850 Multilingual	WT	Windows 3.1 Latin 5
PT	PC-8 TK, Code Page 437T		

Unicode Printing

Unicode characters are printed using UTF8 encoding. Which Unicode characters can be printed depends on the selected font. Unicode printing is supported for resident as well as downloaded TrueType fonts.

Downloading Bitmap Fonts

The Font-loading <ESC> commands are used to download bitmap-fonts in the PCL-4 (HP LaserJet II) format.

Downloading Scalable Fonts

Two types of Scalable fonts can be downloaded to the printer with <*STX*> *i* command:

- IntelliFont (.CDI) *Not Supported.*
- TrueType (.TTF)

Advanced Format Attributes

Advanced Format Attributes can be used to manipulate the font / string attributes. They can even affect partial strings by embedding them in the text data stream.

NOTE: DGL will not support these commands when embedded in a text- string (only when they appear as separate commands).

Dot Size

Label formatting command 'Dwh' can be used to change the size of a printed dot, hence the print resolution – dots per inch (DPI).

NOTE: The dot size does not affect all printed objects;

Barcodes are only affected in horizontal direction (Barcode PDF affected in both directions!)

Graphics are not affected at all

Barcode Symbologies

The sections below list the limitations for the barcodes that are partially supported.

Positioning

The barcode origin lies at the lower left coordinate, and indicates the origin of the PDF interpretation.

UPC / EAN

If the user provides the checksum, the printer will check that it matches the expected checksum. If it does not match, the printer will print all zeros and the expected checksum. *(Not supported for UPC-E.)*

UCC/EAN Code 128

DGL follows the UCC standards and requires the amount of data that is defined for the provided AI (Application Identifier). For example, with barcode 'Q' the required amount of data is 19 according to the Datamax manual. An AI of '00' requires 19 databytes, however, Datamax also prints the barcode when 19 databytes are provided with another AI. DGL does not; the amount of data required is based only on the provided AI.

Barcodes Q, R, S and W1R all print the same UCC barcode on DGL (except for differences in PDF placement); required lengths only depend on the provided AI.

Plessey

DGL does not accept more than 14 bytes as barcode data, while Datamax does. However, according to the Datamax manual the maximum length is 14, so problems are not expected.

PostNet

Datamax has a slightly larger width for the first space in the start character, all other sizes match exactly.

MaxiCode

The postal code can have a length of up to 9 digits, and up to 6 for alphanumeric on Datamax. DGL, however, always encodes using exactly 6 or 9. When less than 6 alphanumeric bytes are provided, trailing spaces will be added, and trailing zeros will be added when the given data is numeric and less than 9.

RSS14

The maximum accepted item number for RSS Limited barcodes is 1999999999999; DGL will not print the barcode when a larger number is provided. Datamax does accept larger numbers.

DGL does not support X and Y Pixel-Undercut.

Not Implemented Barcodes:

W1I: EAN 128 w/auto subset switching

W1J: Code 128 w/auto subset switching

W1t: TCIF Linked Barcode 3 of 9 (TLC39)

Images

Images can be downloaded to the printer to be stored in Flash or DRAM in the following formats using the *<STX>I* Command.

Image Formats:

ID	Format
F	7-bit Datamax image load file.
B	.BMP 8-bit format (image will be flipped) black and white.
b	.BMP 8-bit format (save image as received) black and white.
I	.IMG 8-bit format (image will be flipped) black and white.
I	.IMG 8-bit format (save image as received) black and white.
P	.PCX 8-bit format (image will be flipped) black and white.
P	.PCX 8-bit format (save image as received) black and white

NOTE: The first image-row received will be printed at given coordinates. All following rows are appended on top of each other. So when using the 'save image as received' version, the image will be printed upside- down

Graphics - Supported graphics objects:

- Lines / Boxes: Fully supported
- Polygons: Partially supported

  The polygon command only prints rectangles. The bounding box covering all specific polygon points is used as coordinates for the rectangle.

  Fillpattern ID 1 (Solid Black) is the only supported fill pattern, all other pattern IDs print without fill.
- Circles: Fully supported

Flash / Ram Module Compatibility

DPL can store / read several different types of objects to separate modules, and perform operations on these modules.

Objects that can be stored to modules can be Labels, Images, Scalable or Bitmap fonts.

Module Operations:

Cmd	Description	Comment
<STX>x	File delete from module	Supported
<STX>q	Module clear	Supported
<STX>Q	Modules, clear all	Supported
<STX>z	Module, compress	Not supported

Cmd	Description	Comment
<STX>W	Module, directory request	Partially Supported
<STX>X	Module, set default	Supported
<STX>w	Module, FLASH memory Test	Print the status report
<STX>t	Module, RAM memory Test	Print the status report
<STX>Kp	Module Protection	Not Supported

DGL will emulate 2 different Modules: Ram and Flash. Datamax has several Flash and Ram modules, but DGL will map all Flash modules to the same PTX Flash File System, and all Ram Modules to the global Memory Pool.

When recalling something from a module, the Module Identifier is not specified in the command, so this should not cause a problem when DGL maps them to a single Flash / Ram module.

The only problem that might occur is when there is bi-directional communication needed for a Windows driver, which might verify an object got stored correctly by requesting a module directory.

When specifying a module that is not available, the printer will automatically select the default module.

Bi-Directional Communications

Bi-Directional communications can be divided in two groups: time-critical (immediate), and non-time-critical responses.

Datamax describes the time critical responses as follows:

When the printer receives a Status and Control Command, its current operation will be momentarily interrupted to respond to the command. Status and Control Commands may be issued before or after System-Level Commands; however, they cannot be issued among (a) Label-Formatting Commands, (b) during font downloading, or (c) during image downloading.

Cutter Commands

The Commands to activate the Cutter (System Level Command <*STX*>*o*, and Label Formatting Commands '*c*' and '*:*') are only processed when the *Media* > *Handling* > *Media Handling* menu is set to 'Cut', and the *Application* > *DGL Setup* > *Cut Cmd* menu is set to 'Process'.

The *Media* > *Handling* > *Media Handling* menu setting can be set up through the Software Switch Setting command <STX>V.

- Enabling the Cutter bit selects 'Cut' Media Handling.
- Enabling the Present bit selects 'Tear-Off' Media Handling.

Disabling cutter or present bit selects media handling setting 'Continuous'.

The <STX>V command can be ignored by setting the menu *Application* > *DGL Setup* > *Soft. Switch (V)* to 'Ignore'.

Emulations

Datamax allows emulation of legacy and other resolution printers through menu settings (Plus, Allegro, Column and SOP emulations). *None of these emulations are supported on DGL.*

Printer Configuration

All DPL commands affecting the printer configuration will be ignored.

DGL has its own configuration management to save / load configuration settings that can be used instead. See table below for the affected commands (all ignored):

Cmd	Description
<SOH>U	Update System Database with Current Database
<STX>KC	Get Configuration
<STX>Kc	Set Configuration
<STX>Kd	Set File as Factory Defaults
<STX>KF	Select Factory Defaults
<STX>Kx	Delete Configuration File
e	Recall Printer Configuration

Command Reference

The following sections explain why certain commands are partially supported or ignored.

Ignored Commands

<STX>Kb	Backfeed Time Delay
<STX>K-	Top-of-Form. Offset Distance
<STX>KF	Set Present Distance
<STX>M	Set Maximum Label Length (Distance to search for Gap before error)
<STX>R	Ribbon Saver
<STX>b	Set Cutter signal time
<STX>Y	Output Sensor Values
	DataMax Values do not correspond with PTX values.
<STX>D	Memory Dump (Test Mode Only)
<STX>d	Set Printer to double buffer mode
<STX>s	Set Printer to single buffer mode
	This only affects the internal processing of dynamic fields, cannot be changed in DGL, which always prints using display list.
<STX>g	Internal Batch Software Mode
<STX>N	Enter Internal Batch
f	Set Present Speed
p	Set Backfeed Speed
FR[+/-]n	Degrees

Label Length:

When Datamax receives a label that exceeds the configured physical page-length, it will still print the whole job by spanning it across multiple physical pages. DGL will clip the job at the configured physical page-length.

Workaround

<SOH>U	Update System Database with Current Database
<STX>KC	Get Configuration
<STX>Kc	Set Configuration
<STX>Kd	Set File as Factory Defaults
<STX>KF	Select Factory Defaults
<STX>KQ	Query Memory Configuration
<STX>Kq	Query Memory Configuration (new format)
<STX>Kx	Delete Configuration File
<STX>KD	Database Configuration
<STX>KR	Reset Memory Configuration
E	Recall Printer Configuration
	PTX has its own Configuration Management.
<STX>Kr	Reset Internal Counters
<STX>KV	Verifier Enable/Disable
	Use *Validator* menu options
<STX>KI	GPIO Input
<STX>KO	GPIO Output
	PTX has its own GPIO configuration methods
<STX>KS	Configure Scalable Font Cache Size
	PTX Font cache does not need to be configured because it is already optimized for maximum size and performance.
<STX>P	Enter Character Dump Mode
	Use the *Tools* > *Diagnostics* > *Hex Dump* Menu
<STX>T	Printhead Dot Pattern Test Label
<STX>Z	Print Configuration and Dot Pattern Labels
	See the *Tools* > *Print Tests* > *Run Tests* menu
<STX>J	Set Pause for each label
<STX>p	Controlled Pause
	These commands can be supported by using CST tables to filter out the commands, and have GPIO put the printer in Single Label Mode. A panel-key can then be assigned by GPIO to either print the next label (for <*STX*>*J*), or disable pause mode again (for <*STX*>*p*).

Partially Supported Commands

<STX>t	Test DRAM Memory Module
<STX>w	Test FLASH Module

This command tests the DRAM / Flash and reports back to the host. DGL always reports ‘OK’ status.

A Configuration Setting Compatibility

The tables below list the Datamax configuration setting along with a description of its behavior on Datamax printers, and the corresponding Printronix menu setting for PSA 4 printers.

Table 3 Media Settings Menu

Datamax Setting	Description	PTX Menu
MEDIA TYPE	Selects the printing method. DIRECT THERMAL, *THERMAL TRANSFER	*Media* > *Handling* > *Print Mode*
SENSOR TYPE	Selects the top-of-form (TOF) sensing method for the media. *GAP,CONTINUOUS,REFLECTIVE	*Sensors* > *Control* > *Gap/Mark Sensor*
LABEL LENGTH	When the Sensor Type is set to Continuous, this value is used to determine the TOF. *04.00in (0-99.99)	*Media* > *Image* > *Label Length*
MAXIMUM LABEL LENGTH	Sets the maximum length between TOF marks (gap or reflective). If this limit is exceeded, a top of form fault is declared. *16.00in (0-99.99)	N/A
PAPER OUT DISTANCE	Sets the length of travel before an Out of Stock condition is declared. *00.25in (0-99.99)	NA/
LABEL WIDTH	Sets the maximum limit for the printable surface width. Objects extending beyond this limit will NOT print. *04.10, 06.61 or 08.52 (0 - 08.52)	*Media* > *Image* > *Label Width*
SENSOR CALIBRATION	Adjusts the printer to sense your media.	*Sensors* section of the menu.

Table 4 Print Control Menu

Datamax Setting	Description	PTX Menu
HEAT	Controls the 'burn-time' of the printhead. This is the equivalent of Heat Setting on most label software programs. *10 (0-30)	Media > Image > Print Intensity
PRINT SPEED	Controls the rate of label movement during the printing process. *6 (2-12 ips)	*Media* > *Image* > *Print Speed*
FEED SPEED	Controls the rate of label movement between printing areas. *6 (2-12 ips)	*MEDIA* > *Image* > *Slew Speed*
REVERSE SPEED	Controls the rate of label movement during backup positioning for start of print, cutting or present distance.	N/A
ROW OFFSET	Shifts the vertical start of print position. *00.00in (0-99.99)	*Application* > *DGL Setup* > *Row Offset*: *00.00in (0-99.99)
COLUMN OFFSET	Shifts the horizontal, left-justified start of print position to the right. *00.00 in (0-99.99)	*Application* > *DGL Setup* > *Column Offset*: *00.00in (0-99.99)
PRESENT DISTANCE	Sets the label stop position past the start of print. *0.00 in (0-4.00)	N/A
CUSTOM ADJUSTMENTS	For fine tuning the following settings:	
	DARKNESS XX (1-64)	N/A
	PRESENT ADJUST XXX DOTS (0-128)	N/A
	ROW ADJUST XXX DOTS (-100 to 100)	*Media* > *Image* > *Vertical Shift*
	COLUMN ADJUST XXX DOTS (0-128)	*Media* > *Image* > *Horizontal Shift*

Table 5 Printer Options Menu

Datamax Setting	Description	PTX Menu
MODULES	Memory available for user storage of graphics, fonts and label formats.	
PRINT DIRECTORY	Prints a label directory of selected, or of all available modules.	*System* > *Flash File Edit* > *Print File List*
PRINT FILE	The user may select from a list of available files for sample printing.	N/A
FORMAT MODULE	The user may select from a list of available modules for formatting – all data will be erased.	N/A
DELETE FILE	The user may select from a list of available files for deleting.	*System* > *Flash File Edit* > *Delete Files*
PACK MODULE	Packing the module removes files marked as deleted and defragments existing file structures to recover space.	*System* > *Flash File Edit* > *Optimize & Reboot*
PRESENT SENSOR	Used for on-demand label dispensing, here a printed label blocking the sensor will inhibit further printing until removed. ENABLED, *DISABLED, NOT INSTALLED	*Media* > *Handling* > *Media Handling*: Tear-off or Peel-off
CUTTER	Used to cut media into separate labels. ENABLED, *DISABLED, NOT INSTALLED	*Media* > *Handling* > *Media Handling*: Cut
SCANNER	Used to check the bar codes on the labels.	*Validator* settings
GPIO PORT	Model-dependent option used to interface the printer to an external controlling device.	*System* > *GPIO* settings

Table 6 System Settings Menu

Datamax Setting	Description	PTX Menu
CONFIGURATION FILE	Options for storage and recall of printer configuration files.	
RESTORE AS CURRENT	Provides a list of available configuration files. Selecting a file from the list causes a printer reset; afterward, the printer is configured according to the activated file.	*Configs* > *Control* > *Load Config*
SAVE SETTING AS	Saves the entire effective configuration of the printer to a file.	*Configs* > *Control* > *Save Config*
DELETE FILE	Provides a list of available configuration files to delete.	*Configs* > *Control* > *Delete Config*
FACTORY SETTING FILE	The selected file will be restored whenever a Level 1 reset is performed.	*Configs* > *Control* > *Power-Up Config*
INTERNAL MODULE	Sets the number of 1K blocks allocated for the internal RAM 'D' module. *1024 KB	N/A
DEFAULT MODULE	Sets the default module used to store files when no other module is specified.*D	*Application* > *DGL Setup* > *Default Module*: *RAM, Flash
SCALEABLE FONT CACHE	Sets the number of 1K blocks allocated for the scaleable font engine. *312 KB	N/A – printer is already optimized for maximum cache size
SINGLE BYTE SYMBOLS	Selects the code page used to print single byte fonts unless otherwise specified in DPL. *PC_850 MULTILINGUAL	*Application* > *DGL Setup* > *Character Set:* *PC-8 CP 437

Table 6 System Settings Menu

Datamax Setting	Description	PTX Menu
DOUBLE BYTE SYMBOLS	When equipped with the ILPC option, this selects the code page used to print double byte fonts unless otherwise specified in DPL.	N/A
TIME AND DATE	Allows the user to set Time and Date.	N/A
MEDIA COUNTERS	Internal record of inches printed and time of use.	
ABSOLUTE COUNTER	Number of inches printed since being set at the factory.	*Tools* > *Statistics* > *Total Media Dist*
RESETTABLE COUNTER	The number of inches printed since the last reset.	*Tools* > *Statistics* > *Head Print Dist*
RESET COUNTER	Resets the Resettable Counter to zero.	N/A – head counter is tracked on the head itself
PRINT CONFIGURATION	Prints the effective configuration of the system.	*Configs* > *Control* > *Print Config*: Current
CONFIGURATION LEVEL	To upgrade the application program (resident software) version of the printer.	
PRINTER KEY	Each printer has a unique Key number in the following form: vvvv-wwxx-yyyyyy-zzz	*Tools* > *About* > *Printer F/W*
UPGRADE PRINTER CODE	This function is used to upgrade the software feature level of the printer.	Through PNE Suite or printer web page
SET FACTORY DEFAULTS	Overwrite the current settings with the factory default settings.	*Configs* > *Control* > *Load Config*: Factory

Table 6 System Settings Menu

Datamax Setting	Description	PTX Menu
FORMAT ATTRIBUTES	Affects the manner in which overlapping text and graphics are treated as the label is printed. TRANSPARENT, *XOR, OPAQUE	*Application* > *DGL Setup* > *Format Attrib*: TRANSPARENT, *XOR, OPAQUE
IMAGING MODE	Instructs the printer whether to pre-image the label format.	N/A
PAUSE MODE	When enabled, suspends printing between each label until the PAUSE Key is pressed. ENABLED, *DISABLED	N/A
PEEL MODE	Specifies that a Feed operation be prevented when the label is presented and not removed. ENABLED, *DISABLED	*Media* > *Handling* > *Media Handling*: Tear-off or Peel-off
SECURITY	Provides the user with the ability to password protect all printer settings made through the front panel. ENABLED, *DISABLED, MODIFY PASSWORD	*System* > *Control* > *Set Lock Key*:
UNITS OF MEASURE	Selects the measurement system in which the system's settings are represented in the menu system and on configuration labels. METRIC, *IMPERIAL	*Application* > *DGL Setup* > *Units of Measure* METRIC, *IMPERIA
INPUT MODE	Defines the type of printer language. *DPL, LINE	N/A

Table 6 System Settings Menu

Datamax Setting	Description	PTX Menu
PLUS EMULATION ALLEGRO EMULATION DPI EMULATION COLUMN EMULATION SOP EMULATION	Provides compatibility with legacy Datamax emulations.	N/A
BACK AFTER PRINT	When the present distance is set with the cutter, present sensor or GPIO option enabled, this setting determines the timing of the label back up. ENABLED, *DISABLED	N/A
MENU LANGUAGE	Selects the language in which the menu system messages and configuration label are shown.	*System > Control > Display Language*
FAULT HANDLING LEVEL *1 2 VOID DISTANCE *0.25in (0-2.00) RETRY COUNT *1 (0-3)	When a faulted condition (ribbon or paper out, failed bar code, etc.) has been detected, this setting determines the action to be taken by the operator and the printer.	N/A

Table 7 Communications Menu

Datamax Setting	Description	PTX Menu
SERIAL PORT A SERIAL PORT B	Controls the communications settings for the Serial Ports.	*Host IO* > *Serial* settings
PARALLEL PORT A PARALLEL PORT B	Controls the communications settings for the Parallel Ports.	*Host IO* > *Centronics* or *Host IO* > *IEEE-1284* settings
NIC ADAPTER	Controls the communications settings for the Ethernet Ports.	*Network* settings
HOST SETTINGS	Settings which affect all communications with a host	
HOST TIMEOUT	The number of seconds a communications port must be idle before the printer may process data from a different port. *10 SEC (1-60)	*All communication port menus* → Timeout *10 Sec (1 – 60 Sec)
CONTROL CODES	Allows the operator to change the prefix of the software commands interpreted by the printer. *STANDARD CODES ALTERNATE CODES ALTERNATE CODES 2 ALTERNATE CODES 3	*Application* > *DGL Setup* > *Control Codes*: *Standard, Alternate1, Alternate2, User-defined
FEEDBACK CHARACTERS	Returns a Hex 1E, [RS], after each label successfully prints, and a Hex 1F, [US], after each batch of labels is printed. ENABLED, *DISABLED	*Application* > *DGL Setup* > *Feedback Chars*: Enable, *Disable
ESC SEQUENCES	Allows data containing invalid ESC control code sequences to be processed. ENABLED, *DISABLED	N/A
HEAT COMMAND SPEED COMMANDS	Allows the user to disable the DPL Heat and Speed Commands. ENABLED, *DISABLED	*Application* > *DGL Setup* > *Heat Cmd* and *Application* > *DGL Setup* > *Speed Cmd*: *Process, Ignore

Table 8 Diagnostics Menu

Datamax Setting	Description	PTX Menu
HEX DUMP MODE	Prints data and instructions received from the host rather than interpreting them as label formats ENABLE, *DISABLE	*Tools > Diagnostics > Hex Dump Mode*
OPTIONS TESTING	Tests currently installed options	N/A
PRINT TEST RATE (min)	The number of minutes to delay between the printing of batches of labels in Quick Test Mode. *000 (0-120)	N/A
SENSOR READINGS RIBBON SENSOR LIMITS	Analog Sensor readings are displayed.	*Sensors > Diagnostics > Media Profile*

B *Contact Information*

Printronix Auto ID Customer Support Center

IMPORTANT **Please have the following information available prior to calling the Printronix Customer Support Center:**

- Model number
- Serial number (located on the back of the printer)
- Installed options (i.e., interface and host type if applicable to the problem)
- Configuration printout: Refer to the *Administrator's Manual.*
- Is the problem with a new install or an existing printer?
- Description of the problem (be specific)
- Good and bad pictures that clearly show the problem (faxing or emailing of these pictures may be required)

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