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DTC1000/4000/4500

CUPS Driver User Guide-LINUX

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These reference documents were thoroughly reviewed to provide HID Global with professional and international standards, requirements, guidelines and models for our technical, training and user documentation. At all times, the Copyright Protection Notice for each document was adhered to within our HID Global documentation process. This reference to other documents does not imply that HID Global is an ISO-certified company at this time.

- ANSI/ISO/ASQ Q9001-2000 American National Standard, (sub-title) Quality Management Systems - Requirements (published by the American Society of Quality, Quality Press, P.O. Box 3005, Milwaukee, Wisconsin 53201-3005)
- The ASQ ISO 9000:2000 Handbook (editors, Charles A. Cianfrani, Joseph J. Tsiakals and John E. West; Second Edition; published by the American Society of Quality, Quality Press, 600 N. Plankinton Avenue, Milwaukee, Wisconsin 53203)
- Juran's Quality Handbook (editors, Joseph M. Juran and A. Blanton Godfrey; Fifth Edition, McGraw-Hill)

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Section 1: Supported Distributions CUPS

The **Common Unix Printing System (CUPS)**, a modular printing system for Unix-like computer operating systems, allows a computer to act as a print server. A computer running CUPS is a host that can accept print jobs from client computers, process them, and send them to the appropriate printer. The minimum required CUPS version for this driver is 1.2.0, if a previous version of the CUPS interface is being used please contact the support team at HID Global.

The driver has been tested on the following Linux distributions:

32-bit Linux versions:

- Ubuntu 8.04 & 9.04
- Debian 5.04
- Fedora 7, 8, 9 & 10
- Mandriva One 2009
- Red Hat Enterprise 5
- openSuse 10.3

64-bit Linux versions:

- Ubuntu 9.04
- Debian 5.03
- Fedora 11
- Mandriva One 2009
- openSuse 11.1

Section 2: Installation Procedures

Please follow these same procedures for the DTC1000, DTC4000, and DTC4500. The DTC4500 will refer to Lamination Options not used with the DTC1000 and DTC4000 Card Printers.

Please see [Lamination Options](#) for the DTC4500 specifics.

Installing the CUPS Driver

On some Linux Distributions, it may be necessary to disable SELinux capabilities in order to install or use the CUPS Driver. Refer to the SELinux web site at:

<http://www.nsa.gov/research/selinux/index.shtml>

or the documentation for your specific distribution for more information.

Once the CUPS driver is installed, the Printer's Options are accessible by following the instructions (provided in this section under **Installing the CUPS Driver**).

Step	Procedure
1	Unpack the driver tar-ball by running the following command as root from the directory the file was downloaded to: <pre data-bbox="402 1045 906 1077">tar -xzvPf fargoDTC4000-1.0.0.x.tar.gz</pre> <p data-bbox="362 1098 1304 1163">(Note: If an existing driver was already present on the system, it may be necessary to restart CUPS to allow the file changes to take effect.)</p>

Adding a USB Printer

Most distribution of Linux support USB plug and play. With the driver installed, let your Operating System search for a driver. Select Fargo for the make and DTC4000 for the model. Printer will be listed in the CUPS with function options. If you prefer follow the instructions below.

Step	Procedure
1	Attach Power and USB to the printer.
2	Address the primary CUPS interface on the local computer using a web browser. The address for the CUPS interface is: http://localhost:631/
3	Choose Add Printer . (Note: If you are asked for a username and password, enter your login username and password or the "root" username and password.)
4	Enter a Name, Location and Description for the Printer. Click Continue .
5	Select the printer in the device list. (E.g.: "Fargo DTC4000 USB #1") Click Continue .
6	Select the Manufacturer (Fargo) from the list. (Skip this step if CUPS detected the manufacturer for you.) Click Continue .
7	Select DTC4000 (en) from the Model list. Click Add Printer .

Adding a Network Printer

Step	Procedure
1	Make sure that the printer is turned on.
2	Get the IP address from the printer as described below.
3	Address the primary CUPS interface on the local computer using a web browser. The address for the CUPS interface is: http://localhost:631/
4	Choose Add Printer . (Note: If you are asked for a username and password, enter your login username and password or the "root" username and password.)
5	Enter a Name, Location and Description for the Printer. Click Continue .
6	Select the printer in the device list. You get the correct printer with the help of the IP address (e.g., "RAM 10.150.6.47"). Continue with Step 7. If the printer is not in the list select Internet Printing Protocol (ipp) Click Continue .
7	Enter the URI based on the IP address
8	Select the Manufacturer (Fargo) from the list. (Skip this step if CUPS detected the manufacturer for you.) Click Continue .
9	Select DTC4000 (en) from the Model list. Click Add Printer .

Determining the Printer IP Address

Step	Procedure
1	Apply power to the Printer.
2	Ensure that the Printer is connected to the network via the RJ45 jack on the back of the Printer.
3	Wait up to one minute for the Printer to allow the Printer to obtain an IP address from DHCP.
4	Click Menu (Pause) button to start the menu.
5	Select Info (Pause) button to start the information menu.
6	Click Next (On/Off) button info until you reach the IP address entry.
7	<p>If your model does not have a display, then press and hold the Pause button for 4+ seconds to print a settings card.</p> <ul style="list-style-type: none">• The printer must be ready and idle for the card to print.

Reviewing the File Listing

These files should have been installed to your computer. (**Note:** Replace DTC4000 by DTC1000 or DTC4500 for the file listings of the other printer models.)

/usr/share/cups/profiles/sRGB.icm	Reference Color Profile
/usr/share/cups/profiles/DTC4000CLR.icm	Printer Specific Color Profile
/usr/share/cups/model/ DTC4000.ppd	PPD File for the DTC4000 Card Printer
/usr/lib/cups/filter/rastertofargo-x.y	Raster Filter for Fargo Card Printers. X.y is major and minor version of the filter
/usr/share/fargo/DTC4000/DTC4000.xml	Configuration File for the DTC4000 Card Printer.
/usr/share/fargo/DTC4000/*.prn	Test prn files.

Section 3: Printer Maintenance

Performing a Ribbon Sensor Calibration

Step	Procedure
1	Remove all cards from the Card Hopper and close the Hopper door.
2	Open the Front Cover, remove the Ribbon Cartridge and close the Printer's front cover.
3	From a terminal window enter: lpr -P DTC4000 "/usr/share/fargo/DTC4000/CalibrateRibbon.prn"
4	When completed, the Printer will beep twice.

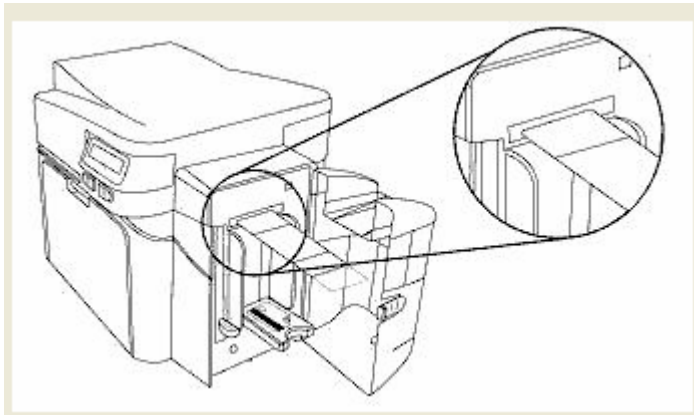
Performing a Lamination Sensor Calibration

This procedure applies to strictly to the DTC4500 Printer.

Step	Description
1	Ensure that the Cartridges are out of the Laminator.
2	Ensure the Laminator cover is closed.
3	From a terminal window enter: lpr -P DTC4500 "/usr/share/fargo/DTC4500/CalibrateLamination.prn"
4	When completed, the Printer will beep twice.

Cleaning the Printer

Step	Description
1	Remove all cards from the Card Hopper and close the Hopper door.
2	Open the Front Cover and remove the Ribbon Cartridge.
3	Remove the paper backing from both sides of the Cleaning Card.
4	Place the Cleaning card into the Single Feed Slot.
5	From a terminal window, enter: <code>lpr -P DTC4000 "/usr/share/fargo/DTC4000/CleanPrinter.prn"</code>



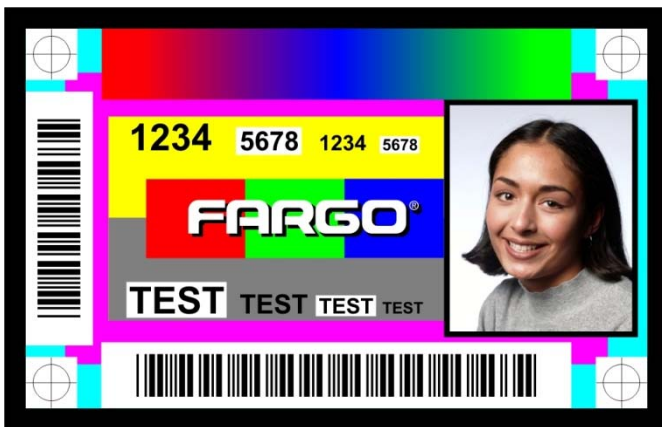
Section 4: Managing the Printer

Printing on the Command Line:

Printing a Test Card

Step	Description
1	Ensure that cards are in the Input Hopper.
2	Ensure that the YMCKO Ribbon is installed in the Printer.
3	From a terminal window, enter: <ul style="list-style-type: none"> • <code>lpr -P DTC4000 /usr/share/fargo/DTC4000/DTC4000_YMCKO_Tst.prn</code> OR <ul style="list-style-type: none"> • <code>lp -d DTC4000 /usr/share/fargo/DTC4000/DTC4000_YMCKO_Tst.prn</code>
4	When completed, a test card should be printed.

Example test card:



Simply Print Commands:

- `lpr -P [printer] [filename]`

OR

- `lp -d [printer] [filename]`

Printing with Magnetic Stripe Encoding:

Run the following command:

```
lp -d [printer] -o "MagTrack1=%25MAGTEST1%3F MagTrack2=%3B1234567890%3F  
MagTrack3=%3B1234567890%3F" [filename]
```

Printing with F-Panel:

Run the following command:

```
lp -d [printer] -o "FPanelFrontFilename=[Fpanel-filename]" [filename]
```

Print to File:

Run the following command:

```
lp -d DTC4500_LPT -o PrintToFile=/home/fargo/output.prn  
/home/fargo/Desktop/TestCardGirl.pdf
```

With this command line, the printer data stream is written to the specified file.

Managing from the Cups Web Interface

The Web printer management interface is located at:

<http://localhost:631/printers>

From there you can perform all printer management tasks with a few simple mouse clicks.

Setting Options with Cups using Command-Line

Printer-Specific Options:

Each printer has its own options that are based on the options in the PPD (driver) file. The *lpoptions* command provides a way to see a list of the available options:

`lpoptions -p DTC4000 -1`

Each option starts with the option name, a slash, the human readable text for that option, and a colon. This is followed by a list of values for that option. The asterisk (*) in front of the value indicates that this is the default setting. The options themselves follow the colon:

Setting Printer Options:

For many types of files, the default printer options may be sufficient for your needs. However, at times you may need to change the options for a particular file you are printing. Cups provides both System V (*lp*) and Berkeley (*lpr*) printing commands.

The *lp* and *lpr* commands allow you to pass printer options using the `-o` options:

- **`lp -d [printer] -o landscape -o scaling=75 -o media=A4 [filename]`**

OR

- **`lpr -P [printer] -o landscape -o scaling=75 -o media=A4 [filename]`**

Section 5: Driver Options

Reviewing the Card Options

DTC4500: Card

Media Size:

Card Thickness:

Card Hopper Selection:

[Set Printer Options](#)

Command Line Usage	CUPS option	Description
Copies = X	n/a	Sets the number of Copies
PageSize = CR80	Media Size = CR80	Sets the Page Size for the print job to CR-80 (3.366"L x 2.110"W / 85.5mmL x 53.6mmW).
PageSize = CR79	Media Size = CR79	Sets the Page Size for the print job to CR-79 (3.295"L x 2.043"W / 83.7mmL x 51.9mmW).
CardThickness = <10, 20, 30, 40>	CardThickness = <10, 20, 30, 40>	Sets the Card Thickness to 10, 20, 30 or 40.

This option applies to the DTC4500 only:

Command Line Usage	CUPS option	Description
CardHopper = FirstAvailable	Card Hopper = First Available	Sets the card hopper to first available.
CardHopper = Hopper1	Card Hopper = Top	Sets the card hopper to 1.
CardHopper = Hopper2	Card Hopper = Bottom	Sets the card hopper to 2.

Reviewing the Print Options

DTC4000: Print Options

Ribbon Type:

Print Both Sides: True False

Split 1 Set of Ribbon Panels: True False

Print Back Image on Front of Card: True False

Print Back Side Only: True False

Rotate Front 180 Degrees: True False

Rotate Back 180 Degrees: True False

Disable Printing (Feed Card Only): True False

Write Only (No erase pass): True False

Command Line Usage	CUPS option	Description
Ribbon = YMCKO	Ribbon Type = YMCKO Full	Sets the Ribbon type for the print job to YMCKO – Full Color/ Resin Black/Overlay.
Ribbon = YMCKO_Half	Ribbon Type = YMCKO Half Panel	Sets the Ribbon type for the print job to YMCKO_HP – Full Color/ Resin Black/ Overlay/ Half Panel
Ribbon=YMCKK	Ribbon Type= YMCKK	Sets the Ribbon type for the print job to YMCKK – Full Color/Two Resin Black. Only available for the DTC4500.
Ribbon = YMCKOK	Ribbon Type = YMCKOK	Sets the Ribbon type for the print job to YMCKOK – Full Color/Two Resin Black/Overlay.
Ribbon = YMCFKO	Ribbon Type = YMCFKO	Sets the Ribbon type for the print job to YMCFKO – Full Color/ Fluorescing/ Resin Black/Overlay. Only available for the DTC4500 and DTC4000.

Reviewing the Print Options

Command Line Usage	CUPS option	Description
Ribbon = YMCFKOK	Ribbon Type = YMCFKOK	Sets the Ribbon type for the print job to YMCFKOK – Full Color/ Fluorescing/ Two Black/Overlay. Only available for the DTC4500 and DTC4000.
Ribbon = KStandard	Ribbon Type = Standard Resin	Sets the Ribbon type for the print job to Standard Resin.
Ribbon = KPremium	Ribbon Type = Premium Resin	Sets the Ribbon type for the print job to Premium Resin.
Ribbon = MonoColor	Ribbon Type = Colored Resin	Sets the Ribbon type for the print job to mono color Resin. This option should be used for any of the colored resin Ribbons (Red, Blue, Green, or White)
Ribbon = KO	Ribbon Type = KO - Premium Resin/Overlay	Sets the Ribbon type for the print job to KO – Premium Resin/Overlay.
Ribbon = BO	Ribbon Type = BO - Dye-Sub Black/Overlay	Sets the Ribbon type for the print job to BO – Dye Sub Black with Overlay
Ribbon = None	Ribbon Type = None - Re-Writable	Sets the Ribbon type for the print job to none. Used for rewriteable cards.

Reviewing the Print Options

Command Line Usage	CUPS option	Description
PrintBothSides = true/false	Print Both Sides = True/ False	Allows dual printing capabilities if the printer is equipped with a flipper module.
SplitRibbon = true/false	Split 1 Set of Ribbon Panels = True/ False	By selecting true this option will print full color on the front of the card and resin black on the back of the card. If using the YMCKO ribbon type, the front will print with YMC and the back with the K panel, and the O panel printed on the front.
PrintBackonFront = true/false	Print Back Image on Front of Card = True/ False	Allows printing back on front and front on back.
PrintBackOnly = true/false	Print Back Side Only = True/ False	Allows printing back side only.
RotatImageFront = true/false	Rotate Front 180 Degrees = True/ False	Allows rotating the front print.
RotatImageBack = true/false	Rotate Back 180 Degrees = True/ False	Allows rotating the back print.
DisablePrinting = true/false	Disable Printing (Feed Card Only) = True/ False	Allows disabling Printing, useful to encode cards.
WriteOnly= true/false	Write Only (No erase pass) = True/ False	Allows write only. (For rewriteable cards)

Reviewing the Image Color Options

DTC4000: Image Color Options

Color Matching: ▾

Resin Dither: ▾

Dye-Sub Intensity (YMC): ▾

Resin Heat Front (K): ▾

Resin Heat Back (K): ▾

Overlay Heat: ▾

Erase Intensity: ▾

Sharpness: ▾

Contrast: ▾

Gamma: ▾

Yellow Balance: ▾

Magenta Balance: ▾

Cyan Balance: ▾

Command Line Usage	CUPS Option	Description
ColorMatching = None	Color Matching = None	Select None for print speed versus print color or for use of third party color matching software.
ColorMatching = System	Color Matching = System Color Management	This provides a closer match to the sRGB color specifications. (Note: This option shifts colors to a different color model so the colors in the image will more closely match how they appear on the monitor.)

Reviewing the Image Color Options

Command Line Usage	CUPS Option	Description
ResinDither = Graphics	Resin Dither = Optimize for Graphics	Select Optimize for Graphics when printing barcodes and graphics with resin.
ResinDither = Photos	Resin Dither = Optimize for Photos	Select Optimize for Photo when printing photo quality images with resin.
DyeSubIntensity = <-50 to 50>	Dye-Sub Intensity = <-50 to 50>	Dye-Sub intensity – defaults to zero and has a range from -50 to 50. This is valid for YMC panels.
ResinHeatFront = <-50 to 50>	Resin Heat Front = <-50 to 50>	Resin heat for the front of the card – defaults to zero and has a range from -50 to 50. Deals with K material only
ResinHeatBack = <-50 to 50>	Resin Heat Back = <-50 to 50>	Resin heat for the back of the card – defaults to zero and has a range from -50 to 50. Deals with K material only.
OverlayHeat = <-50 to 50>	Overlay Heat = <-50 to 50>	Overlay heat – defaults to zero and has a range from -50 to 50. Deals with O panel only.
EraseIntensity = <-50 to 50>	Erase Intensity = <-50 to 50>	Erase Intensity - defaults to zero and has a range from -50 to 50.
SharpnessOffset = <-50 to 50>	Sharpness = <-50 to 50>	Image Quality: Sharpness – defaults to zero with a range of -50 to 50.
ContrastOffset = <-50 to 50>	Contrast = <-50 to 50>	Image Quality: Contrast – defaults to zero with a range of -50 to 50.
GammaOffset = <-50 to 50>	Gamma = <-50 to 50>	Image Quality: Gamma – defaults to zero with a range of -50 to 50.
YellowBalance = <-50 to 50>	Yellow Balance = <-50 to 50>	Yellow Balance – defaults to zero with a range of -50 to 50.
MagentaBalance = <-50 to 50>	Magenta Balance = <-50 to 50>	Magenta Balance – defaults to zero with a range of -50 to 50.
CyanBalance = <-50 to 50>	Cyan Balance = <-50 to 50>	Cyan Balance – defaults to zero with a range of -50 to 50.

Reviewing the Image Position Options

DTC4000: Image Position Options

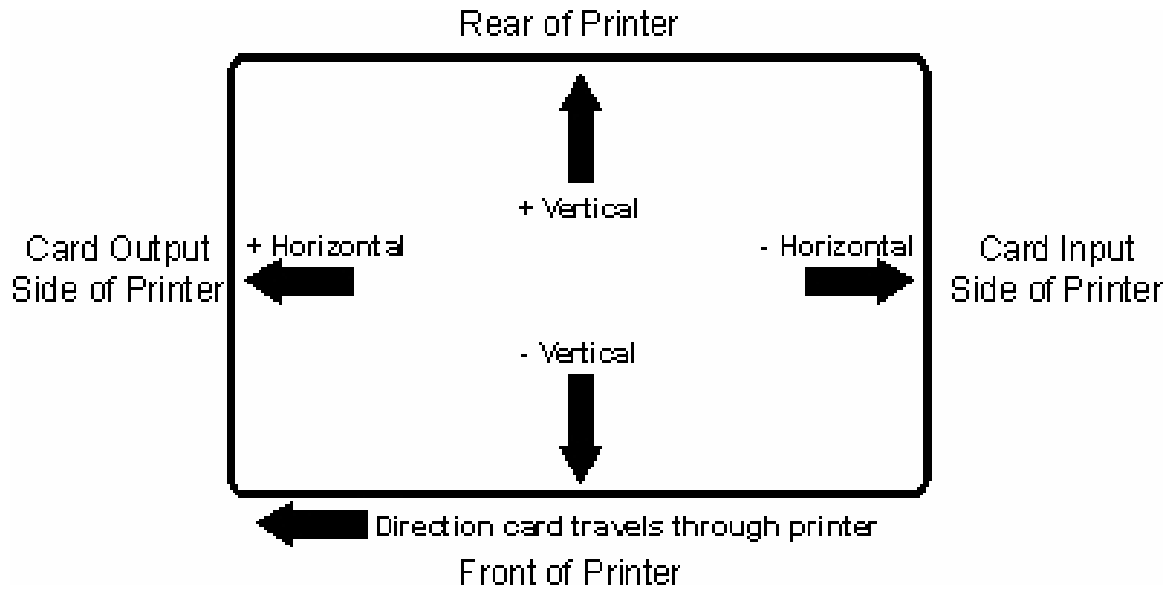
Vertical Offset:

Horizontal Offset:

Command Line Usage	CUPS option	Description
ImageVOffset = <-100 to 100>	Vertical Offset = <-100 to 100>	Use the Vertical adjustment to move the image toward the front of the Printer (if a positive number is entered) and toward the rear of the Printer (if a negative number is entered). Range is from -100 to 100.
ImageHOffset = <-100 to 100>	Horizontal Offset = <-100 to 100>	Use the Horizontal adjustment to move the image toward the card output side of the Printer (if a positive number is entered) and toward the card input side of the Printer (if a negative number is entered). Range is from -100 to 100. (Note: Adjusting the Horizontal offset may result in ribbon breaking.)

Reviewing the Image Position Options

Here is an overview of image position options.



Reviewing the Overlay and Print Area Options

DTC4000: Overlay Print Area Options

Front Overlay/Print Area: ▼

Back Overlay/Print Area: ▼

Front Apply Area(s): ▼

Back Apply Area(s): ▼

Visual Security Solution: ▼

Visual Security Type: ▼

Visual Security Orientation: ▼

Reviewing the Front Area

Command Line Usage	CUPS Options	Description
PrintAreaFrontOption = fullcard	Front Overlay/Print Area = Full Card	The full card will be printed, and overlay will be applied.
PrintAreaFrontOption = omitSmartChip	Front Overlay/Print Area = Omit Smart Chip Area	An area (corresponding to the ISO location for a smart chip) will be omitted from print and overlay.
PrintAreaFrontOption = omitMagStripe	Front Overlay/Print Area = Omit Mag Stripe Area	An area (corresponding to the ISO location for a Magnetic stripe) will be omitted from print and overlay.
PrintAreaFrontOption = omitSignature	Front Overlay/Print Area = Omit Signature Area	An area (corresponding to the ISO location for a Signature Stripe) will be omitted from print and overlay.
PrintAreaFrontOption = defined	NA	All defined areas will be omitted from print and overlay. The only way to use defined areas is through the command line. See Defining Overlay/Print area options: for more information.
PrintAreaFrontOption = undefined	NA	All undefined areas will be omitted from print and overlay. The only way to use defined areas is through the command line. See Defining Overlay/Print area options: for more information.

Reviewing the Front Area

Command Line Usage	CUPS option	Description
PrintAreaFrontApply = PrintAndOverlay	Front Apply Area(s) = Print and Overlay	Print area options are applied to print and overlay as described in the table above.
PrintAreaFrontApply = OverlayOnly	Front Apply Area(s) = Overlay Only	Print area options from the table above are applied to overlay only.
PrintAreaFrontApply = PrintOnly	Front Apply Area(s) = Print Only (No Overlay)	Print area options from the table above are applied to print only. Use this option for ribbons without overlay.

Reviewing the Back Area

Command Line Usage	CUPS Options	Description
PrintAreaBackOption = fullcard	Back Overlay/Print Area = Full Card	The full card will be printed, and overlay will be applied.
PrintAreaBackOption = omitSmartChip	Back Overlay/Print Area = Omit Smart Chip Area	An area (corresponding to the ISO location for a smart chip) will be omitted from print and overlay.
PrintAreaBackOption = omitMagStripe	Back Overlay/Print Area = Omit Mag Stripe Area	An area (corresponding to the ISO location for a Magnetic stripe) will be omitted from print and overlay.
PrintAreaBackOption = omitSignature	Back Overlay/Print Area = Omit Signature Area	An area (corresponding to the ISO location for a Signature Stripe) will be omitted from print and overlay.
PrintAreaBackOption = defined	n/a	All defined areas will be omitted from print and overlay. The only way to use defined areas is through the command line. See Defining Overlay/Print area options: for more information.
PrintAreaBackOption = undefined	n/a	All undefined areas will be omitted from print and overlay. The only way to use defined areas is through the command line. See Defining Overlay/Print area options: for more information.

Reviewing the Back Area (continued)

Command Line Usage	CUPS option	Description
PrintAreaBackapply = PrintAndOverlay	Back Apply Area(s) = Print and Overlay	Print area options are applied to print and overlay as described in the table above.
PrintAreaBackapply = OverlayOnly	Back Apply Area(s) = Overlay Only	Print area options from the table above are applied to overlay only.
PrintAreaBackapply = PrintOnly	Back Apply Area(s) = Print Only (No Overlay)	Print area options from the table above are applied to print only. Use this option for ribbons without overlay. (Note: If you are using Split Ribbon Print, this option must be set to Print Only.)
VisualSecurityArea = None	Visual Security Solution = No Visual Security	Sets the Visual Security Area to no visual Security.
VisualSecurityArea = UpperLeft	Visual Security Solution = Upper Left	Sets the Visual Security Area to upper left.
VisualSecurityArea = UpperRight	Visual Security Solution = Upper Right	Sets the Visual Security Area to upper right.
VisualSecurityArea = LowerLeft	Visual Security Solution = Lower Left	Sets the Visual Security Area to lower left.
VisualSecurityArea = LowerRight	Visual Security Solution = Lower Right	Sets the Visual Security Area to lower right.

Reviewing the Back Area

Command Line Usage	CUPS option	Description
VisualSecurityType = VeriMark	Visual Security Type = VeriMark	Sets the Visual Security Type to VeriMark.
VisualSecurityType = HoloMark	Visual Security Type = HoloMark	Sets the Visual Security Type to HoloMark.
VisualSecurityOrientation = Landscape	Visual Security Orientation = Landscape	Sets the Visual Security Orientation to Landscape.
VisualSecurityOrientation = Portrait	Visual Security Orientation = Portrait	Sets the Visual Security Orientation to Portrait.

Reviewing the Print Area Examples

Display: Omit Smart Chip Example



Display: Omit Magnetic Stripe Example



Reviewing the Print Area Examples

Display: Omit Signature Area Example



Defining Overlay/Print Area Options

If custom print areas should be excluded from the print, this can be done with defined areas. To use these custom areas, **PrintAreaFrontOption** or **PrintAreaBackOption** must be set to defined or undefined areas.

- Select **defined** to exclude all defined areas from the print. Select **undefined** to exclude all undefined areas from the print.
- Five (5) areas can be defined. The only way to define these areas is via the command line interface. (**Note:** This is because these parameters are too complex for the cups interface. Use 2,3,4 or 5 instead of 1 to address the other print areas.)
- To define a print area set Origin X and Y and Length X and Y. Remember that Origin, Length and Origin + Length must be in the printable area.

The printable area is from 0/0 to 152/242 for CR80 and from 0/0 to 148/238 for CR79.

Command Line Usage	CUPS option	Description
PrintAreaFrontEnable1 = true/ false	n/a	Select if print area front 1 should be enabled.
PrintAreaFrontXOrigin1 = X	n/a	Sets the X origin for print area front 1.
PrintAreaFrontYOrigin1 = X	n/a	Sets the Y origin for print area front 1.
PrintAreaFrontXLength1 = X	n/a	Sets the X length for print area front 1.
PrintAreaFrontYLength1 = X	n/a	Sets the Y length for print area front 1.
PrintAreaBackEnable1 = true/ false	n/a	Select if print area back 1 should be enabled.
PrintAreaBackXOrigin1 = X	n/a	Sets the X origin for print area back 1.
PrintAreaBackYOrigin1 = X	n/a	Sets the Y origin for print area back 1.
PrintAreaBackXLength1 = X	n/a	Sets the X length for print area back 1.
PrintAreaBackYLength1 = X	n/a	Sets the Y length for print area back 1.

Reviewing the K-Panel Options

DTC4000: K-Panel Options

Front YMC Under K: True False

Back YMC Under K: True False

Front K-Panel Area: ▼

Back K-Panel Area: ▼

[Set Printer Options](#)

Command Line Usage	CUPS Options	Description
YMCunderKFront = true/ false	Front YMC Under K = True/ False	Sets if YMC colors are printed under the K print areas.
YMCunderKBack = true/ false	Back YMC Under K = True/ False	Sets if YMC colors are printed under the K print areas.
KpanelFrontApply = none	Front K-Panel Area = None	Select None to have any graphics objects that are black in color to be printed using composite colors (YMC).
KpanelFrontApply = fullcard	Front K-Panel Area = Full Card	Select Full Card to print any black graphic objects on the card in resin.
KpanelFrontApply = defined	n/a	Select Defined Areas to print graphic object in the defined areas in resin.
KpanelFrontApply = undefined	n/a	Select Undefined Areas to print graphic object outside the defined areas in resin.

Reviewing the K-Panel Options

Command Line Usage	CUPS option	Description
KPanelBackApply= none	Back K-Panel Area = None	Select None to have any graphics objects that are black in color to be printed using composite colors (YMC).
KPanelBackApply= fullcard	Back K-Panel Area = Full Card	Select Full Card to print any black graphic objects on the card in resin.
KPanelBackApply= defined	n/a	Select Defined Areas to print graphic object in the defined areas in resin.
KPanelBackApply= undefined	n/a	Select Undefined Areas to print graphic object outside the defined areas in resin.

Reviewing the K-Panel Options

5 K-Panel areas can be defined. The only way to define these areas is via the command line interface. (**Note:** This is because these parameters are too complex for the cups interface. Use 2,3,4 or 5 instead of 1 to address the other k-panel areas.)

- To define a k-panel area, set Origin X and Y and Length X and Y. Remember that Origin, Length and Origin + Length must be in the printable area.
- The printable area is from 0/0 to 152/242 for CR80 and from 0/0 to 148/238 for CR79.

Command Line Usage	CUPS option	Description
KPanelFrontEnable1 = true/ false	n/a	Select if k-panel front 1 should be enabled.
KPanelFrontXOrigin1 = X	n/a	Sets the X origin for k-panel front 1.
KPanelFrontYOrigin1 = X	n/a	Sets the Y origin for k-panel front 1.
KPanelFrontXLength1 = X	n/a	Sets the X length for k-panel front 1.
KPanelFrontYLength1= X	n/a	Sets the Y length for k-panel front 1.
KPanelBackEnable1= true/ false	n/a	Select if k-panel back 1 should be enabled.
KPanelBackXOrigin1= X	n/a	Sets the X origin for k-panel back 1.
KPanelBackYOrigin1= X	n/a	Sets the Y origin for k-panel back 1.
KPanelBackXLength1= X	n/a	Sets the X length for k-panel back 1.
KPanelBackYLength1= X	n/a	Sets the Y length for k-panel back 1.

Reviewing the F-Panel Options

F-Panel cards must be printed on the command line.

Command Line Usage	CUPS Options	Description
FpanelFrontFilename = X	n/a	Sets the filename for the F-panelfront. The F-panelfront will only be printed if an explicit file name is specified.
FpanelBackFilename = X	n/a	Sets the filename for the F-panelback. The F-panelback will only be printed if an explicit file name is specified.

Reviewing the Lamination Options

To increase lamination adhesion, overlay should not be applied. Ribbon with an overlay panel (i.e. YMCKO, YMCKO_HP, YMCKOK, YMCFKO, YMCFKOK, KO, BO), by default will apply the overlay, to change this, select Print Only (No Overlay) from Overlay and Print options. (**Note:** These options apply to the DTC4500 only.)

DTC4500: Lamination Options

Horizontal Offset: ▼

Dwell Time (sec/in): ▼

Lamination Side: ▼

Cartridge 1: ▼

Transfer Temp (Celsius): ▼

Cartridge 2: ▼

Transfer Temp (Celsius): ▼

Reviewing the Lamination Position and Speed

Command Line Usage	CUPS Options	Description
LamPosition = <-100 to +100>	Horizontal Offset = <-100 to +100>	Horizontal Offset: To move the overlamine more toward the card output side of the Printer, enter a negative number
LamSpeed= < 8 to 55>	Dwell Time (sec/in)= <0.8 to 5.5>	Dwell Time: Controls the throughput speed of the cards. The range of this parameter is from 0.8s to 5.5s. The command line parameter is Multiplied by 10.

Reviewing the Lamination Side

Command Line Usage	CUPS Options	Description
LamSide = None	Lamination Side = None	No Lamination will be done.
LamSide = FrontSide	Lamination Side = Front	Only front of card will be laminated.
LamSide = BackSide	Lamination Side = Back	Only back of card will be laminated.
LamSide = BothSides	Lamination Side = Both	Both sides of card will be laminated.
LamSide = OppositeSides	Lamination Side = Opposite	Will flip the card again before laminating.

Reviewing the Lamination Film Types Per Cartridge

Command Line Usage	CUPS Options	Description
LamType1 = None	Cartridge 1 = None	Indicates that no film is being used in Cartridge 1.
LamType1 = ClearFilm	Cartridge 1 = Clear Film	Indicates that Clear film is being used in Cartridge 1.
LamType1 = RegisteredFilm	Cartridge 1 = Registered Film	Indicates that Registered Film is being used in Cartridge 1.
LamType1 = PolyGuard_06	Cartridge 1 = 0.6 Polyguard	Indicates that 0.6 Polyguard is being used in Cartridge 1.
LamType1 = PolyGuard_10	Cartridge 1 = 1.0 Polyguard	Indicates that 1.0 Polyguard is being used in Cartridge 1.
LamType1 = PolyGuardAltPatch	Cartridge 1 = Polyguard Alternating Patch	Indicates that Polyguard Alternating Patch is being used in Cartridge 1.
LamType1 = HolographicFilm	Cartridge 1 = Holographic Film	Indicates that Holographic Film is being used in Cartridge 1.
LamType2 = None	Cartridge 2 = None	Indicates that no film is being used in Cartridge 2.
LamType2 = ClearFilm	Cartridge 2 = Clear Film	Indicates that Clear film is being used in Cartridge 2.
LamType2 = RegisteredFilm	Cartridge 2 = Registered Film	Indicates that Registered Film is being used in Cartridge 2.

Reviewing the Lamination Film Types Per Cartridge

Command Line Usage	CUPS Options	Description
LamType2 = PolyGuard_06	Cartridge 2 = 0.6 Polyguard	Indicates that 0.6 Polyguard is being used in Cartridge 2.
LamType2 = PolyGuard_10	Cartridge 2 = 1.0 Polyguard	Indicates that 1.0 Polyguard is being used in Cartridge 2.
LamType2 = PolyGuardAltPatch	Cartridge 2 = Polyguard Alternating Patch	Indicates that Polyguard Alternating Patch is being used in Cartridge 2.
LamType2 = HolographicFilm	Cartridge 2 = Holographic Film	Indicates that Holographic Film is being used in Cartridge 2.

Reviewing the Lamination Transfer Temperatures per Cartridge

Command Line Usage	CUPS Options	Description
LamTransferTemp1 = <500 to 1700>	Transfer Temp (Celsius) = <50 to 170 C>	Sets the transfer temperature in Celsius for Cartridge number 1. The command line parameter is multiplied by 10.
LamTransferTemp2 = <500 to 1700>	Transfer Temp (Celsius) = <50 to 170 C>	Sets the transfer temperature in Celsius for Cartridge number 2. The command line parameter is multiplied by 10.

Reviewing the Global Magnetic Encoding Options

DTC4000: Global Magnetic Encoding Options

Coercivity: High (2750 Oe) ▾

Shift Left Data: True False

Set Printer Options

Command Line Usage	CUPS option	Description
Coercivity = 4000	Coercivity = Super (4000 Oe)	Sets the coercivity for magnetic encoding to 4000Oersted
Coercivity = 2750	Coercivity = High (2750 Oe)	Sets the coercivity for magnetic encoding to 2750 Oersted
Coercivity = 600	Coercivity = Medium (600 Oe)	Sets the coercivity for magnetic encoding to 600 Oersted
Coercivity = 300	Coercivity = Low (300 Oe)	Sets the coercivity for magnetic encoding to 300 Oersted

Command Line Usage	CUPS option	Description
ShiftDataLeft = true/false	Data Shift Left = Yes/No	Allows shifting the data left.

Sending ISO Magnetic Encoding Information

The CUPS Driver uses URL Encoding when defining data to be encoding to the Magnetic Stripe. Any special characters (such as start and end sentinels) must be described with URL encoding to be recognized. See the [Reviewing the URL Encoding Reference](#) for additional information.

- The first character of this data string must be the track's specific Start Sentinel (SS) and the last character must be the specific End Sentinel (ES).
- The characters or data in between the SS and ES can include all of the valid characters specific to each track.
- The number of these characters, however, is limited by each track's maximum character capacity.

When segmenting track data, the appropriate Field Separator (FS) must be used. The table below shows the SS, ES, FS and the valid characters defined for each track.

Track	Start Sentinel	End Sentinel	Field Separator	Valid Characters	Maximum Number of Characters
Track 1	%	?	^	ASCII 32-95	78
Track 2	;	?	=	ASCII 48-63	39
Track 3	;	?	=	ASCII 48-63	109

Sending JIS II Magnetic Encoding Information

JIS II uses only track 2. All other track data is ignored.

The CUPS Driver uses URL Encoding when defining data to be encoding to the Magnetic Stripe. Any special characters (such as start and end sentinels) must be described with URL encoding to be recognized.

See the [Reviewing the URL Encoding Reference](#) for additional information.

Sending RAW Magnetic Encoding Information

The CUPS Driver uses URL Encoding when defining data to be encoding to the Magnetic Stripe. Any special characters (such as start and end sentinels) must be described with URL encoding to be recognized.

See the [Reviewing the URL Encoding Reference](#) for additional information.

Reviewing the URL Encoding Reference

!	*	'	()	;	:	@	&
%21	%2A	%27	%28	%29	%3B	%3A	%40	%26
=	+	\$,	/	?	%	#	
%3D	%2B	%24	%2C	%2F	%3F	%25	%23	

Reviewing the ASCII Code and Character Table

ASCII Code	Character	ASCII Code	Character	ASCII Code	Character
32	space	56	8	80	P
33	!	57	9	81	Q
34	"	58	:	82	R
35	#	59	;	83	S
36	\$	60	<	84	T
37	%	61	=	85	U
38	&	62	>	86	V
39	'	63	?	87	W
40	(64	@	88	X
41)	65	A	89	Y
42	*	66	B	90	Z
43	+	67	C	91	[
44	,	68	D	92	\
45	-	69	E	93]
46	.	70	F	94	^
47	/	71	G	95	_
48	0	72	H		
49	1	73	I		
50	2	74	J		
51	3	75	K		
52	4	76	L		
53	5	77	M		
54	6	78	N		
55	7	79	O		

Reviewing the Magnetic Track Encoding Options

DTC4000: Magnetic Track Encoding Options

Track 1 Encoding Mode: ▼

LRC Generation: ▼

Character Size: ▼

Parity: ▼

ASCII Offset: ▼

Bit Density: ▼

Reverse Bit Order: True False

Add Leading Zeros: True False

Track 2 Encoding Mode: ▼

LRC Generation: ▼

Character Size: ▼

There are magnetic track encoding options for all 3 tracks.

- For the CUPS interface, every track starts with the selection of the encoding mode. ("Track X Encoding Mode").
- For command line printing, replace 1 by 2 or 3 to address the other tracks.

Command Line Usage	CUPS Options	Description
MagTrack1 = <data>	-	<p>Sets the data for magnetic track 1. The rules this data depends on the options selected for track 1.</p> <p>The only way to encode magnetic data is the command line, because this parameter is too complex for the cups interface.</p>

Reviewing the Magnetic Track Encoding Options

Command Line Usage	CUPS option	Description
Mag1TrackMode = ISO	Track 1 Encoding Mode = ISO	Sets the Encoding Mode for the Print job to ISO. See Sending ISO Magnetic Encoding Information for additional information.
Mag1TrackMode = Custom	Track 1 Encoding Mode = Custom	Sets the Encoding Mode for the Print job to Custom.
Mag1TrackMode = JIS	Track 1 Encoding Mode = JIS II	Sets the Encoding Mode for the Print job to JIS II. Remember that only track 2 is used for JIS2. See Sending JIS II Magnetic Encoding Information for additional information.
Mag1TrackMode = RAW	Track 1 Encoding Mode = RAW	Sets the Encoding Mode for the Print job to RAW. See Sending RAW Magnetic Encoding Information for additional information.
Mag1LRCGeneration = None/ Even/ Odd	LRC Generation = None/ Even Parity/ Odd Parity	Sets the LRC generation to none, even or odd.
Mag1Charsize = <4-8>	Character Size = <4-8>	Sets the character size to 4,5,6 or 7.
Mag1Parity = None/ Even/ Odd	Parity = None/ Even Parity/ Odd Parity	Sets the character parity to none, even or odd.
Mag1ASCIIOffset = Null/ Space/ Zero	ASCII Offset = Null/ Space/ Zero	Sets the ASCII offset to null, space or zero.
Mag1BitDensity = 75/ 128/ 210	Bit Density = 75/ 128/ 210	Sets the bit density to 75, 128 or 210
Mag1ReverseCharBits = True/ False	Reverse Bit Order = Yes/ No	Allows reversing the binary data.
Mag1AddLeadingZeros = True/ False	Add Leading Zeros = Yes/ no	Allows adding leading zeros to the data string based on bit density.