

## Advanced Printer Driver Ver.4

# Customer Display Manual

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### APD Overview

Descriptions of the APD features.

### Using the APD

Descriptions of simple printings and useful functions.

### Reference

Descriptions of property settings of the printer driver.

### Restrictions

Descriptions of restrictions on use of the APD.

### Specification

Explains the specifications of the Customer display driver.



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## For Safety

### Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

**CAUTION**

Provides information that must be observed to avoid damage to your equipment or a malfunction.

**NOTE**

Provides important information and useful tips.

## Restriction of Use

When this product is used for applications requiring high reliability/safety such as transportation devices related to aviation, rail, marine, automotive etc.; disaster prevention devices; various safety devices etc; or functional/precision devices etc, you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care etc, please make your own judgment on this product's suitability after a full evaluation.

## About this Manual

### Aim of the Manual

This manual is aimed to provide all the necessary information for development engineers to develop, design, and install POS system, or to develop and design printer applications.

### Manual Content

The manual is made up of the following sections:

Chapter 1	<a href="#">APD Overview</a>
Chapter 2	<a href="#">Using the APD</a>
Chapter 3	<a href="#">Reference</a>
Chapter 4	<a href="#">Restrictions</a>
Appendix	<a href="#">Specification</a>

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# APD Overview

## Introduction

The Advanced Printer Driver (APD) is a Windows driver for the EPSON TM printers. Using the Status API, the APD also can be used to monitor the TM printer status in your POS system.

### Manual organization

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#### Install Manual

Descriptions of the procedures from installing the APD to performing test print, adding printer drivers, and the silent install which is an automated APD installation.

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#### TM/BA/EU Printer Manual

Descriptions of how to use the APD and its functions.

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#### Printer Specification

Descriptions of the specifications of each printer driver.

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#### TM-C100 Manual

Descriptions of how to use the TM-C100 printer driver and its functions.

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#### Customer Display Manual

This manual. Descriptions of how to use the Customer Display printer driver and its functions.

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#### Status API Manual

Descriptions of how to get the status of the TM printer from the user application by using the Status API.

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#### Devmode API / PRINTERINFO Manual

Descriptions of how to configure some printer functions on your application using the Devmode API. Descriptions of the PRINTERINFO Function of Windows.

## Inquiries

See the Epson home page.

- For customers in North America, go to the following web site.  
<http://www.epsonexpert.com/>
- For customers in other countries, go to the following web site.  
<http://www.epson-pos.com/>

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## ESC/POS commands

ESC/POS commands are not open to the public. Ask your sales representative for details.

## Differences Depending on the OS

The content of the descriptions of some operations in this book may be different depending on the OS. See the following.

Item	Description
Screens shown	Screens in Windows Vista are used for the descriptions in this manual.
Setting a printer driver	Windows 7 [Start] - [Control Panel] - [Hardware and Sound] - [Devices and Printers] Right click the printer driver, and select the [Printer properties]. Windows Vista [Start] - [Control Panel] - [Hardware and Sound] - [Printer] Right click the printer driver, and select the [Properties]. Windows XP [Start] - [Control Panel] - [Printers and Faxes] Right click the printer driver, and select the [Properties].



## APD4 Features

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### Easy

- Just like making print settings on the printer driver, a content to be displayed on the Customer Display can be specified on the driver.
- Even from a .NET environment, the APD TrueType font substitution function allows your Customer Display to display text using device font.

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### Convenience

- The brightness of the Customer Display can be adjusted in the properties setting.
- Using control font, the Customer Display can be controlled from an application.
- The Customer Display and TM printer can share the same port on a computer.  
Because just one port is required for the two devices, you can save the port on your computer.

# How to Connect the Customer Display and TM Printer to a Single Port on Computer

## Connection Method

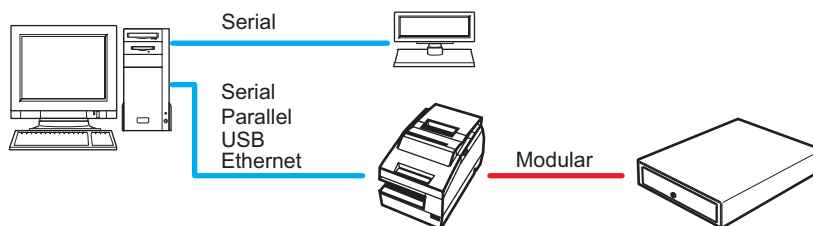
Three connection methods are available; stand-alone connection, pass-through connection and Y-connection.

The stand-alone connection uses a serial interface on a computer for connecting the Customer Display.

The pass-through connection connects the computer and the Customer Display directly and connects the TM printer to the Customer Display.

The Y-connection connects the computer and the TM printer directly, and connects the Customer Display to the TM printer.

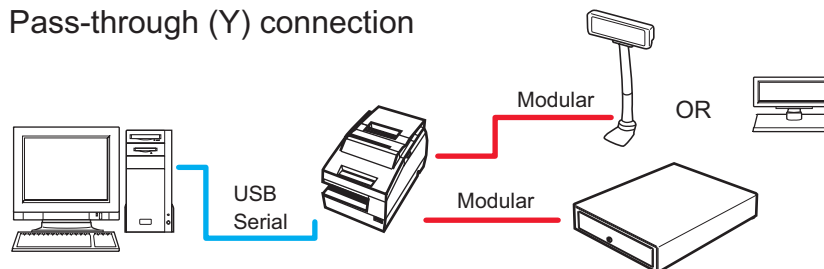
### Stand-alone connection



### Pass-through connection



### Pass-through (Y) connection



## Precautions

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### Stand-alone connection

- The serial interface must be used and the communication settings on the computer and the Customer Display must be the same. For information on how to set DIP switch on the Customer Display, see the Advanced Users Guide for your model. (For the DM-D120, see the IR-700 Technical Reference Guide.)

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### Pass-through connection

- First install the Customer Display driver. Then, install the TM printer driver.
- The serial interface must be used and the communication settings on each of the three devices must be the same. For information on DIP switch / Memory switch settings on the Customer Display and the TM printer, see their Advanced Users Guide for your model.

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### Y connection

- First install the TM printer driver. Then, install the Customer Display driver.
- When you use the DM-D500, set DIP switch 2-1 to ON.
- Set the Handshaking setting of the printer to "Receive buffer full".
- The available interfaces of the computer and the TM printer are USB and serial. The TM printer and the Customer Display should be connected using the serial interface, and the modular cable of the Customer Display should be connected to the DM-D connector on the printer. For USB, set the Customer Display DIP switch speed to 19200 bps. For information on DIP switch / Memory switch settings on the Customer Display and the TM printer, see their Advanced Users Guide for your model.
- When turning on the Customer Display and the TM printer, first turn on the Customer Display, and then turn on the printer.

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## Other Information

For the Serial connection, use a cable configured as follows.

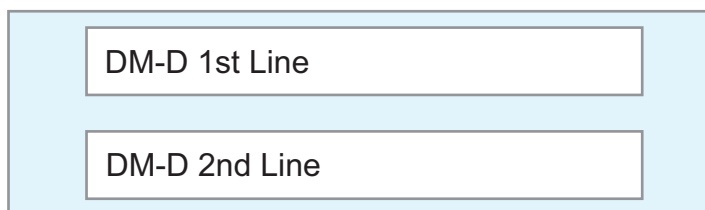
D-Sub 25P(TM)			D-Sub 9P(PC)	
Pin	Signal		Signal	Pin
1	FG		DCD	1
2	TXD		TXD	3
3	RXD		RXD	2
20	DTR		DTR	4
6	DSR		DSR	6
4	RTS		RTS	7
5	CTS		CTS	8
7	GD		GD	5
25	RESET		RI/RESET	9

## Customer Display Driver Types

### DM-D110/120/210

A text driver is provided for DM-D110/120/210. The DM-D110/120/210 text driver has the following functions.

- 20 characters x 2 lines display.
- Device font, such as alphanumeric characters and control font, can be displayed.  
For more details, see the Advanced User's Guide.
- Specify DM-D 1st Line font for displaying the text in the first line, and specify DM-D 2nd Line font for displaying the text in the second line.



### DM-D500

For DM-D500, both text and graphic drivers are provided.

- ☐ Text driver
  - The following five types of display formats are available.  
20 characters x 2 lines, 32 characters x 2 lines, 32 characters x 3 lines, 32 characters x 4 lines, and 42 characters x 8 lines.
- ☐ Graphic driver
  - An image of 256 x 64 dots can be displayed.

# Using the APD

This chapter explains how to use the functions contained in the APD.

## CAUTION

- Some functions are not available depending on the model of the Customer Display.
- Administrator permission is required for property settings of the printer driver.

## Application Printer Settings

The following explains the initial printer settings from the Windows application to the customer display. Set the printer model and paper from the application you are to use.

This is an example using WordPad. Run [All Programs] - [Accessories] - [WordPad] from the [Start] menu.

## NOTE

When printing a device font in Microsoft Word, the following setting is necessary.

- For Word 2003 or earlier : From [Tools] - [Options] - [Compatibility], select "Microsoft Word 6.0/95" in [Recommended Options for] or make a check in "Use printer metrics to lay out document" in [Options].
- For Word 2007 : From [Word Options] - [Advanced] - [Compatibility Options for], select "Microsoft Word 6.0/95" or "Custom" in [Lay out this document as if created in], and make a check in "Use printer metrics to lay out document" in [Layout Options].

### 1. Printer driver specification

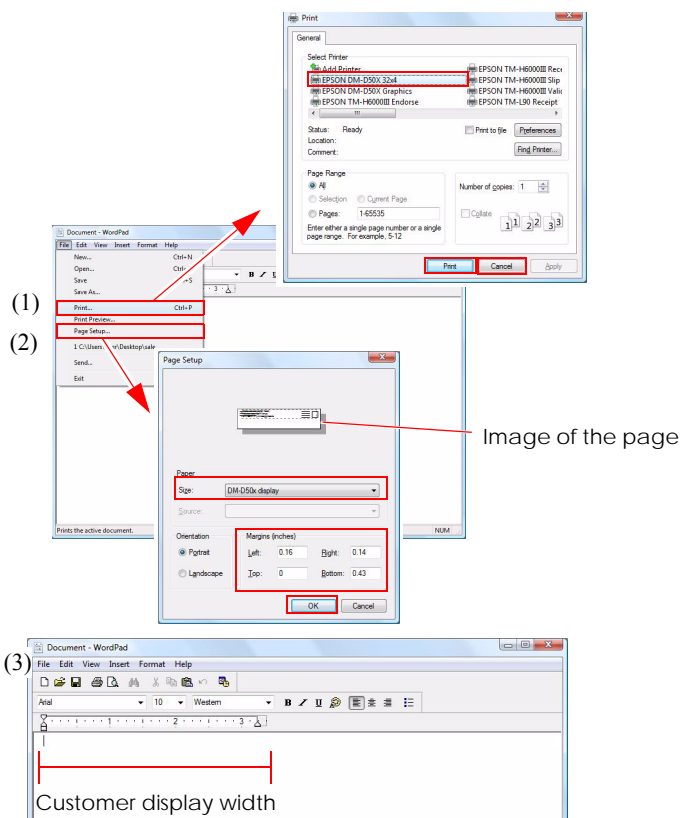
Select [File] - [Print...] to display the print dialog box. Select the printer driver you are to use. Press the [Apply] button, then press the [Cancel]. Return to WordPad screen.

### 2. Page Setup

Select [File] - [Page Setup] to display the Page Setup dialog box. Select the paper you are to use. At this point the Page Setup illustration changes to image of the page. Set the margins, and then press the [OK] button.

### 3. Exit Settings

The paper width selected with Page Setup is applied to WordPad.



# Text Display

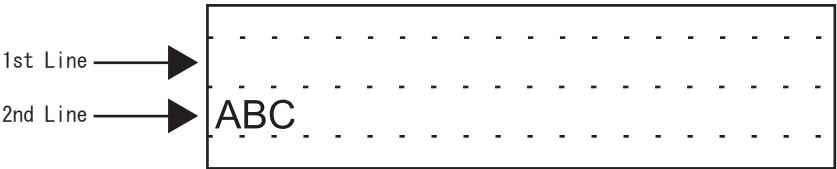
The Customer Display displays text using the built-in device font.  
When displaying device font in a .NET environment, font substitution is required. For more details, see [“Device Font Printing in a .NET Environment”](#) on page 16.

## Device Font Settings

To use the device font, select the type of the device font.

### Device Font Type

The 1st, 2nd, 3rd and 4th of the device font names indicate in which line the font is used. The font name with "1st" is the font used in the top line on the display. (For example, when you specify DM-D2ndLine for text "ABC", the "ABC" is displayed in the second line.)

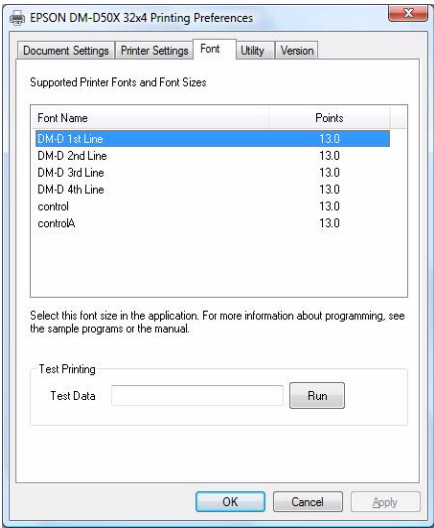


For DM-D110/120/210/500, DM-D xx Line font is provided.

Font name	Style
DM-D XXX Line	Alphanumeric characters

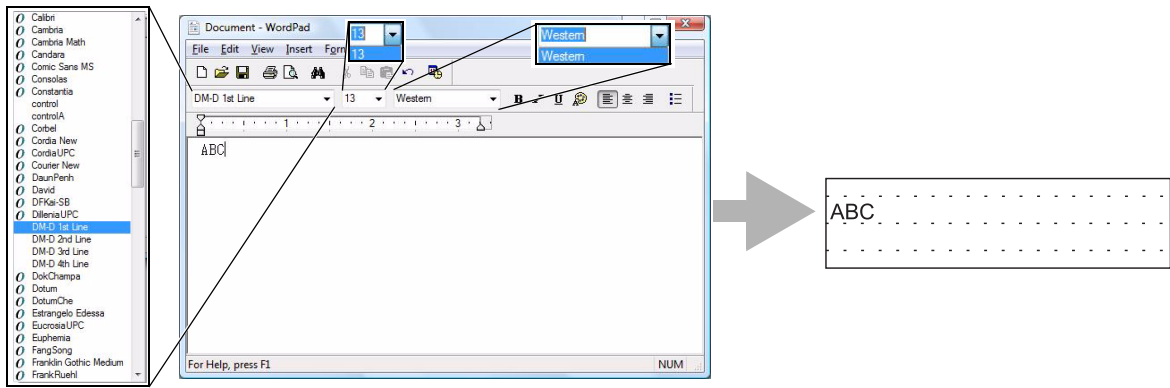
### Device Font Size

The device font size is displayed on [Printing Preferences] - [Font] tab.



Printing Method

Specify Device Font, specified Point (check with [Font] tab) and language in print data.



NOTE

- Even if you make bold, italic and underline settings to characters, those settings are not reflected on the display.
- Character design and size displayed on the Customer Display are slightly different from those displayed in an application screen.

Program

The following is an example program for reference.

```
Printer.Font.Charset = 0
`Font
Printer.Font.Name = "DM-D 1st Line"
`Size
Printer.Font.Size = 16.0
`Printing text
Printer.Print "ABC"
```

NOTE

Font and point size changes depending on the Customer Display model and its driver. Check the point size of the font on the [Font] tab of the printer driver. (The above example is from the DM-D50X 32x4.)

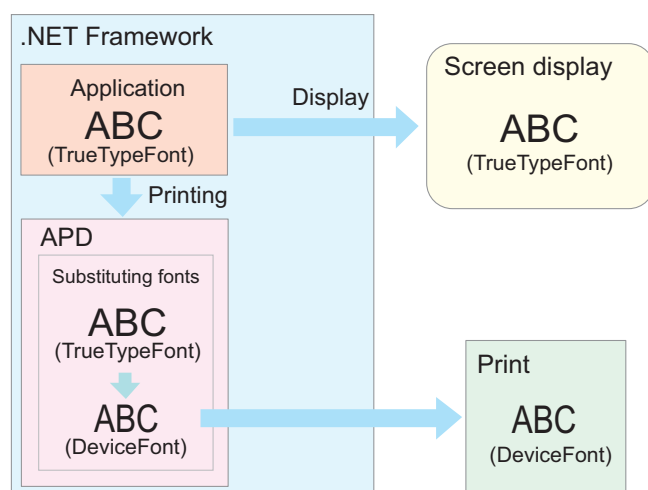
## Device Font Printing in a .NET Environment

.NET Framework supports only TrueType and OpenType fonts. Therefore, the printer's device fonts cannot be used. In the APD, therefore, a font substitution function is provided to allow you to use device fonts even with .NET Framework.

This function is not only useful in a .NET Framework environment: it also allows you to use the device fonts from an application that only supports TrueType fonts.

### Substituting Fonts

The APD font substitution function replaces a TrueType font with a device font. By specifying a device font to be used as a substitute for a given TrueType font, displaying can be done using a device font. While it may appear that a TrueType font is selected, the actual displaying will be done using the device font.

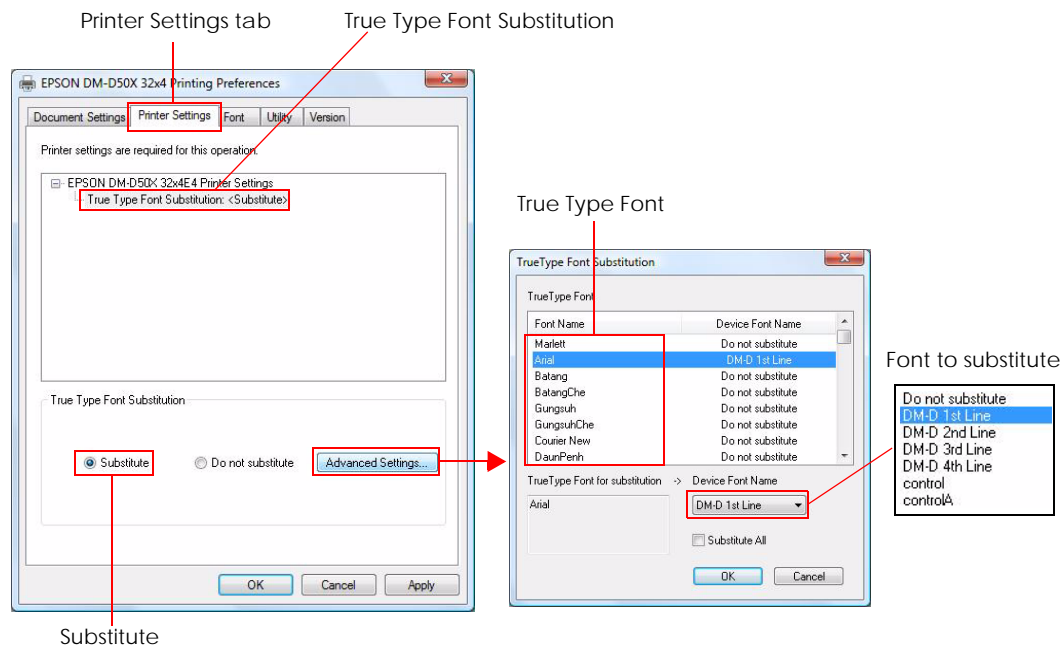


There are TrueType fonts that cannot be substituted by DM-D XXX Line, Control and ControlA fonts. See the following.

TrueType fonts not available for the substitution			
Marlett	Symbol	MS Outlook	Wingdings 3
Wingdings	Webdings	Wingdings 2	



Select the Printer Settings tab from Printing Preferences.



Make the following settings. See ["True Type Font Substitution" on page 31](#) for details.

Setting	Description
True Type Font Substitution	Enables TrueType font substitution. Select "Substitute".
True Type Font substitution	Specifies TrueType font to substitute.
True Type Font for	Specifies the device font for substitution.
Substitute All	Check this to replace all TrueType fonts with the same device font.

## Displaying Using a Device Font

Select the TrueType font to be substituted.

That TrueType font for which substitution has been specified will always be output as the device font. Otherwise, therefore, always select another TrueType font.

Font Substitution Settings

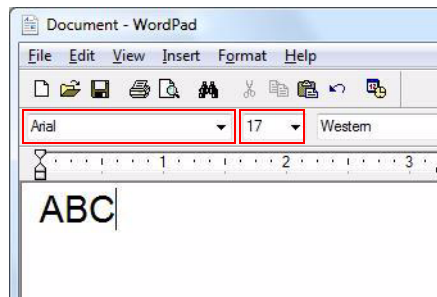
Make the [Printer Settings] - TrueType Font Substitution settings.  
(See "[Substituting Fonts](#)" on page 16.)

For the display data,  
specify a TrueType font and size.

Specify the font size by adding 4 point to the size in the [Font] tab and dropping the fractional part.

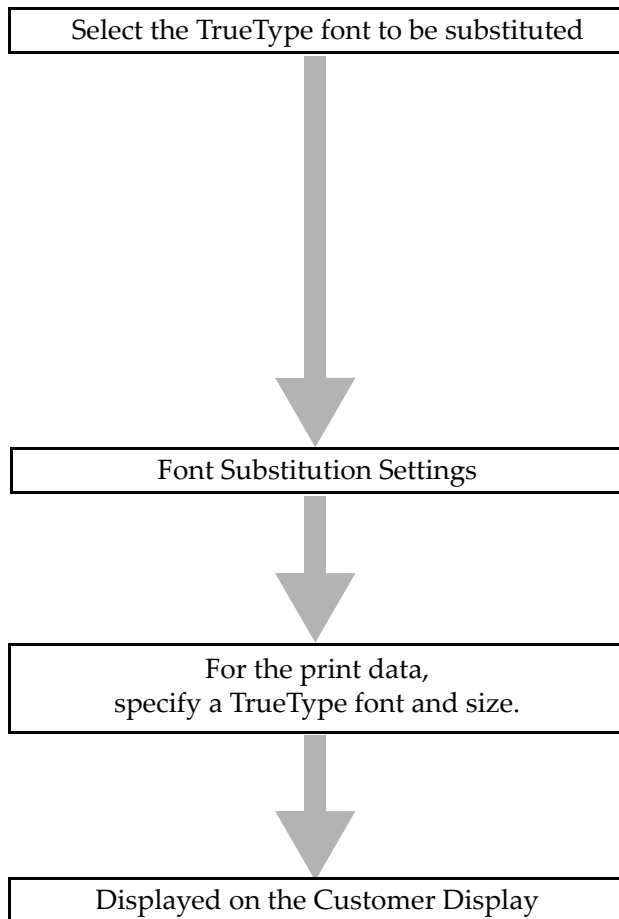
Example:

If the device font size is 13.0pt, specify 17.0pt.



Displayed on the Customer Display

## Printing Using a Control Font/Control A Font



- Select a TrueType font to be used as a control font.
- That TrueType font for which substitution has been specified cannot be used as other than the control font. If you specify this font for any other characters, not only will printing fail, but the system may operate as if another command had been specified. Therefore, make sure to select TrueType font that you will not use as other than the control font.

Make the [Printer Settings] - TrueType Font Substitution setting.  
(See "[Substituting Fonts](#)" on page 16.)

Specify a point size shown on the [Font] tab.

## Using Control Font

The control font can be used to edit or specify contents to be displayed.

### NOTE

Depending on the Customer Display model and the drivers, the available functions with the control font varies.

The available functions using the control font are as follows.

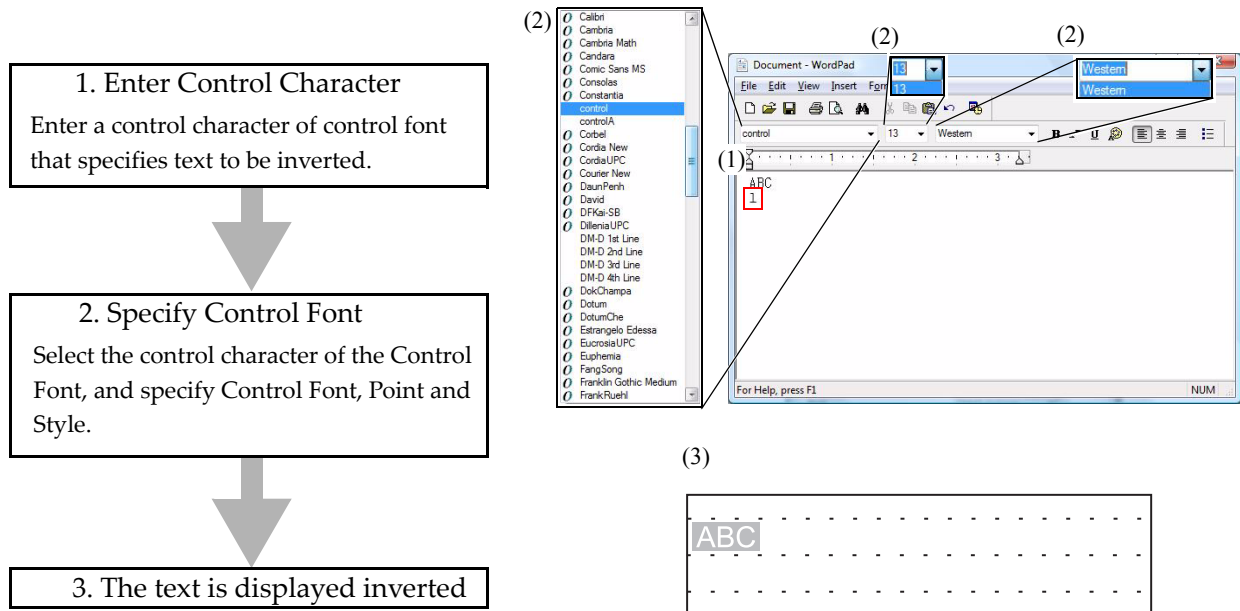
- Deleting the contents displayed  
All the contents or contents per line can be deleted.
- Flashing displayed text
- Displaying the date and time
- Inverting the display

Function	Control font	Driver		
		DM-D110/ 120/210	DM-D50X 32x4	DM-D50X Graphics
Deleting the contents displayed	a	√	√	√
Deleting the contents in the 1st line	b	√	-	-
Deleting the contents in the 2nd line	c	√	-	-
Canceling flashing of text	d	√	√	√
Flashing displayed text	e	√	√	√
Setting and displaying time of the counter	j	√	-	-
Displaying time of the counter	k	√	-	-
Specifying text to be inverted	l	√	√	√
Canceling inversion of text	m	√	√	√
Deleting the contents in the 1st line	p	-	√	-
Deleting the contents in the 2nd line	q	-	√	-
Deleting the contents in the 3rd line	r	-	√	-
Deleting the contents in the 4th line	s	-	√	-

√: the function can be used. -: the function cannot be used.

## Specify Control Font to print

The following explains how to use the control font. In the following example, the text "ABC" is inverted using a control font.



### Program

The following is an example program for reference.

```

Printer.Font.Charset = 0
`Font
Printer.Font.Name = "control"
`Size
Printer.Font.Size = 16
`Printing text
Printer.Print "I"

```



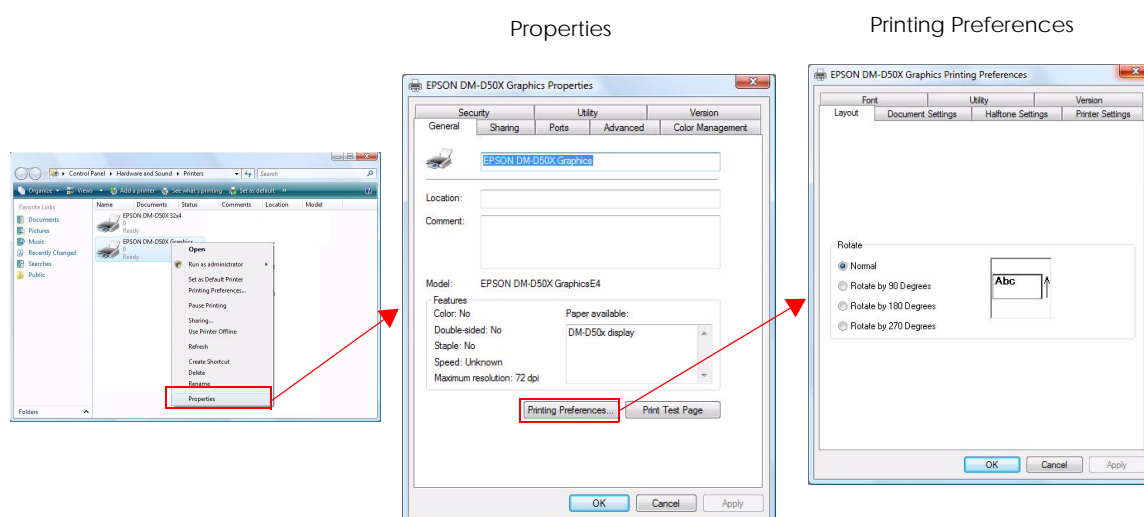
# Reference

This chapter describes the APD settings.

## CAUTION

- Some settings are not available for some printer models.
- Administrator permission is required for property settings of the printer driver.

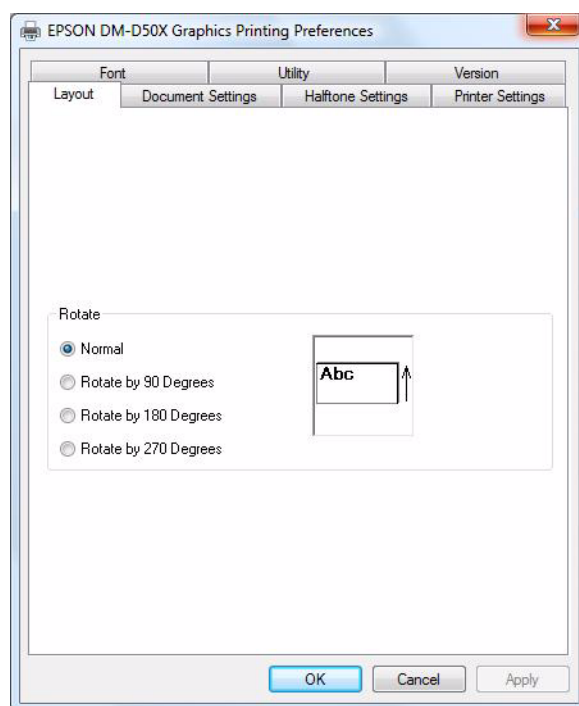
To open the setting screen of the printer driver Properties, right click the printer driver from [Start] - [Control Panel] - [Printers] and select [Properties] ([Reference page of other OS.](#)). Select the [General] tab on the Properties screen and click the [Printing Preferences...] button to open the Printing Preference screen.



## Printing Preferences

The Printing Preferences screen is displayed by selecting the Properties - [General] tab and clicking the [Printing Preferences...].

You can configure the following settings in the Printing Preferences screen.

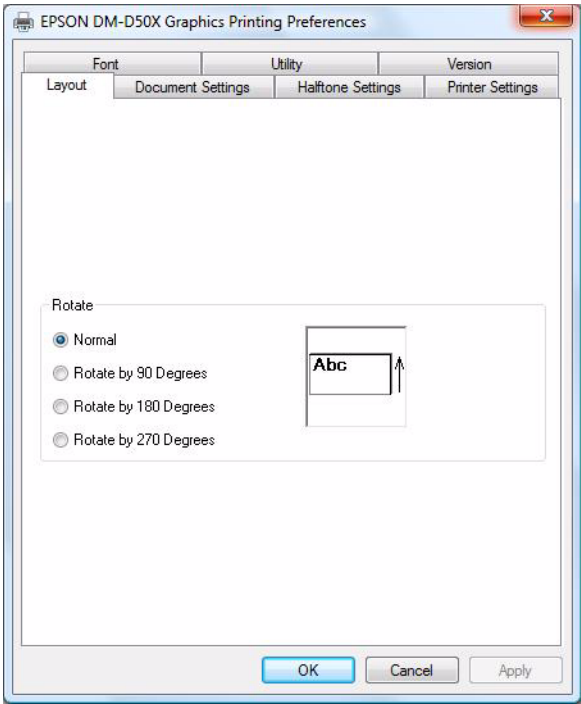


Tab	Description
Layout	Specifies whether to rotate an image to be displayed. (This setting item appears only when DM-D50X Graphics driver is used.)
Document Settings	Configures brightness of the Customer Display.
Halftone Settings	Configures the Dither Type and color assignment settings. (This setting item appears only when DM-D50X Graphics driver is used.)
Printer Settings	Configures True Type Font Substitution of the Customer Display.
Font	Displays the list of Device fonts.



Layout

Allows you to configure the paper size, rotation, and reduced print settings.



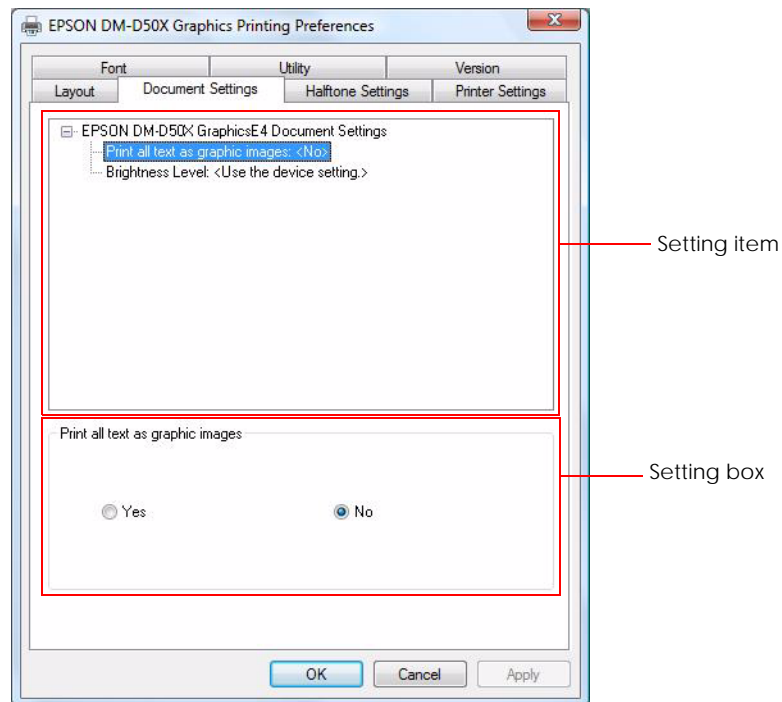
Setting		Description
Rotate		This configures print direction. The graphic shown on the right changes according to the selected setting. Select a desired setting for rotating a print image. When other than [Normal] is selected, the following message is displayed; "<Print all text as graphics image> will be automatically set to yes.
	Normal	No rotation is specified. This is the default.
	Rotate by 90 Degrees	This rotates a print image as specified.
	Rotate by 180 Degrees	The rotated print image is printed as a graphics image, therefore, the Device fonts, control font, and controlA font cannot be used.
	Rotate by 270 Degrees	



This setting item appears only when DM-D50X Graphics driver is used.

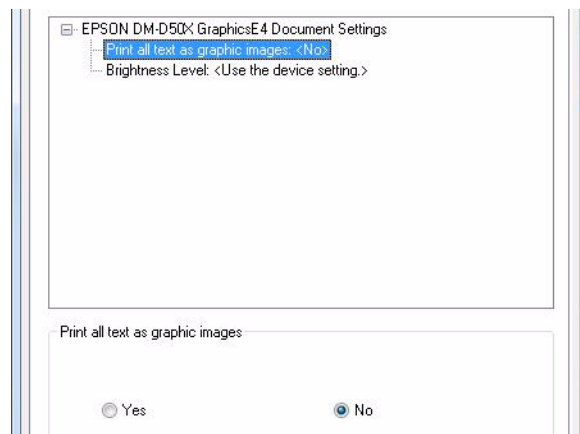
## Document Settings

The Document Settings allows you to configure the document property. In the upper area of the window, the setting items are displayed in a tree view format, and the current settings of each setting items are shown on the right. If you select a setting item, the setting options for the selected item are displayed in the lower box.



## Print all text as graphics image

All the data will be printed as a graphics image.



Setting	Description
Yes	All print data is printed as a graphics image. The computer creates the print data in the same way as Windows driver does, therefore, the print data size becomes larger. In addition to that, Device fonts are replaced with TrueType fonts, and Device fonts are not displayed in the Font tab.
No * (Default)	Device fonts are printed. The customer display creates the print data, therefore, the data size becomes smaller. In addition to the Device fonts, you can also use control font, and controlA font. Due to some settings, you may not be able to change the setting from "Yes" to "No". In such case, a message appears to notify you of the setting that prevents the change.

\* When this setting is changed to "Yes" because of other settings, a message appears to notify you of the change.

### CAUTION

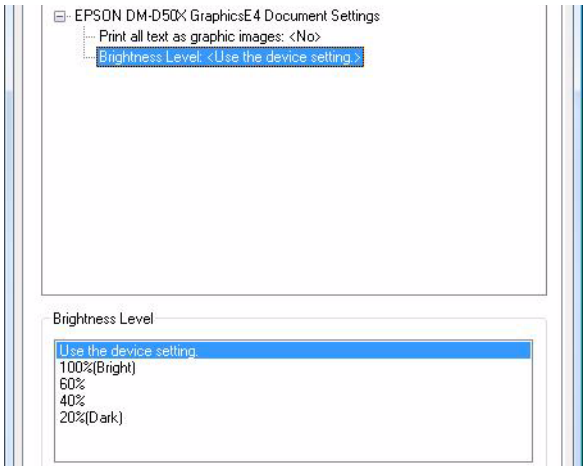
"If you select "Yes", you can not use control font and controlA font.

### NOTE

This setting item appears only when DM-D50X Graphics driver is used.

# Brightness level

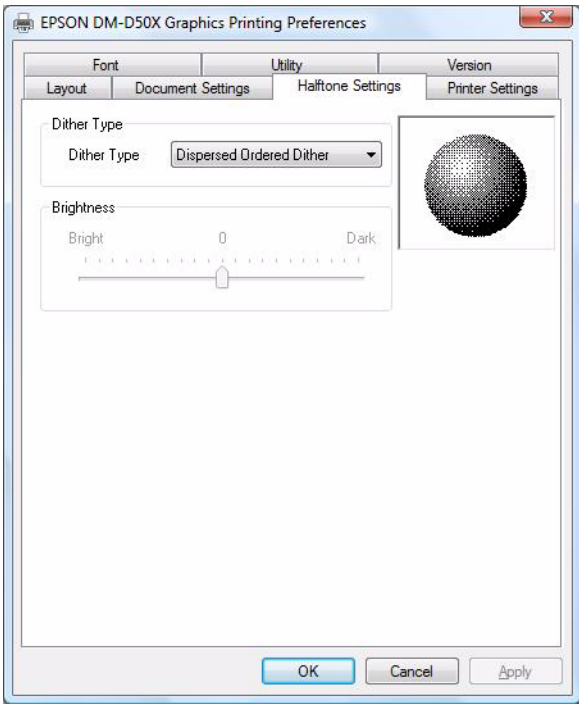
Configures brightness of the Customer Display.



Setting	Description
Use the device setting	Applies the brightness setting made on the Customer Display.
100%[Bright]	Specifies 100% brightness. (This is the brightest setting)
60%	Specifies 60% brightness.
40%	Specifies 40% brightness.
20%[Dark]	Specifies 20% brightness.

# Halftone Settings

Allows you to specify halftone setting for an image.



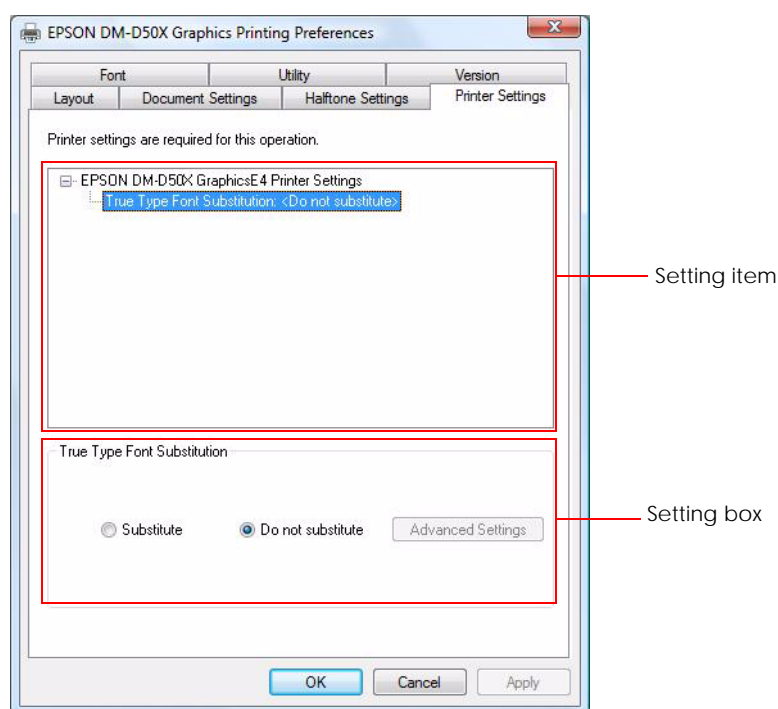
Setting	Description
Dither Type	<p>Defines the dithering algorithm. Depending on the dither type selected, the image is displayed with a different pattern of dots. The following 4 options are available.</p> <ul style="list-style-type: none"><li>• Dispersed Ordered Dither</li><li>• Clustered Ordered Dither</li><li>• Error Diffusion</li><li>• Threshold</li></ul>



This setting item appears only when DM-D50X Graphics driver is used.

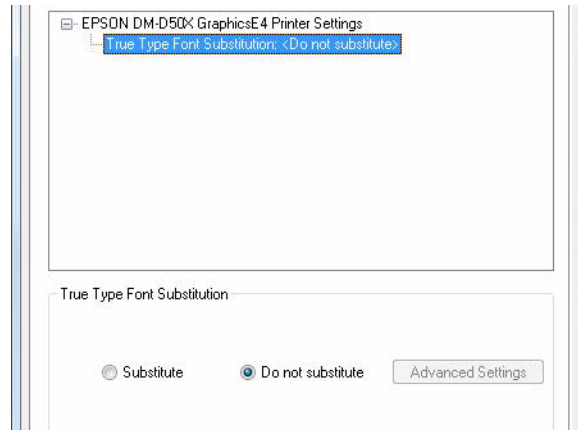
## Printer Settings

Allows you to make settings of the printer. The setting items are displayed in the upper box of the Printer Settings screen. If you select a setting item, the setting options for the selected item are displayed in the lower box.



## True Type Font Substitution

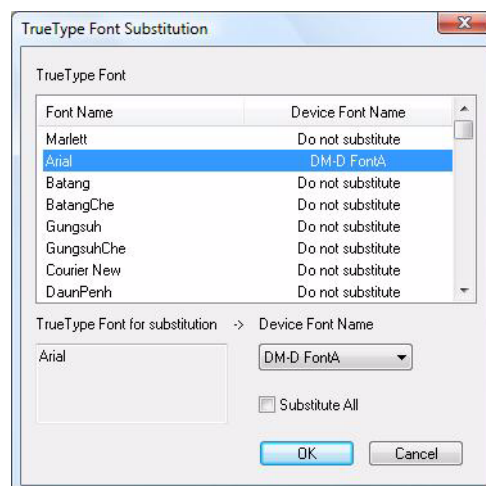
Allows you to replace True Type Font with Device font, control font, or controlA font.



Setting	Description
Replace (Default)	Replaces True Type font with Device font, control font, or controlA font.
Do Not Replace	Does not replace the True Type font.
Advanced settings	Displays the "True Type Font Substitution" screen. This button is enabled when the "Replace" is selected.

## True Type Font Substitution settings

Allows you to configure True Type substitution settings.



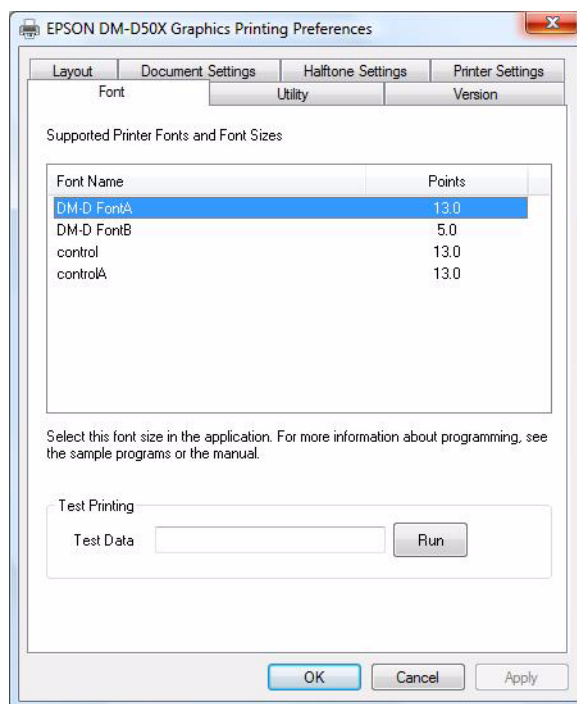
Setting	Description
True Type Font	Displays the True Type font list. Select True Type fonts to be replaced.
Device Font Name	Specify the device fonts to be replaced, "Control" and "ControlA".
Replace All	Replace all the True Type Font on the "True Type Font" list to the fonts selected on [Device Font Name]. If you put a check mark next to this item, [True Type Font] will be grayed out.

## Font

The list of Device fonts and Points supported by the TM printer is displayed.

When using a Device font, make sure to specify the corresponding point indicated in the list.

When programming, also specify the font and point as indicated in the list.

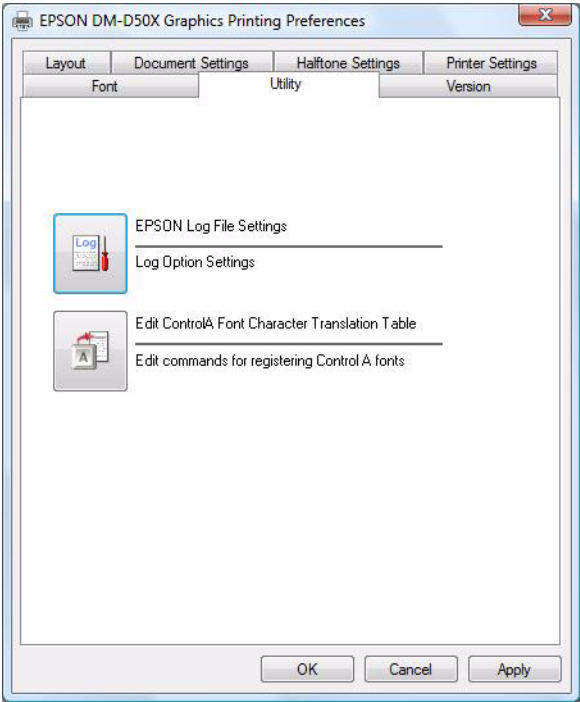


Setting	Description
Test Printing	After selecting one of the fonts in the upper box, enter test data into the Test Data box and click the Execute button to display the test data on the Customer Display.



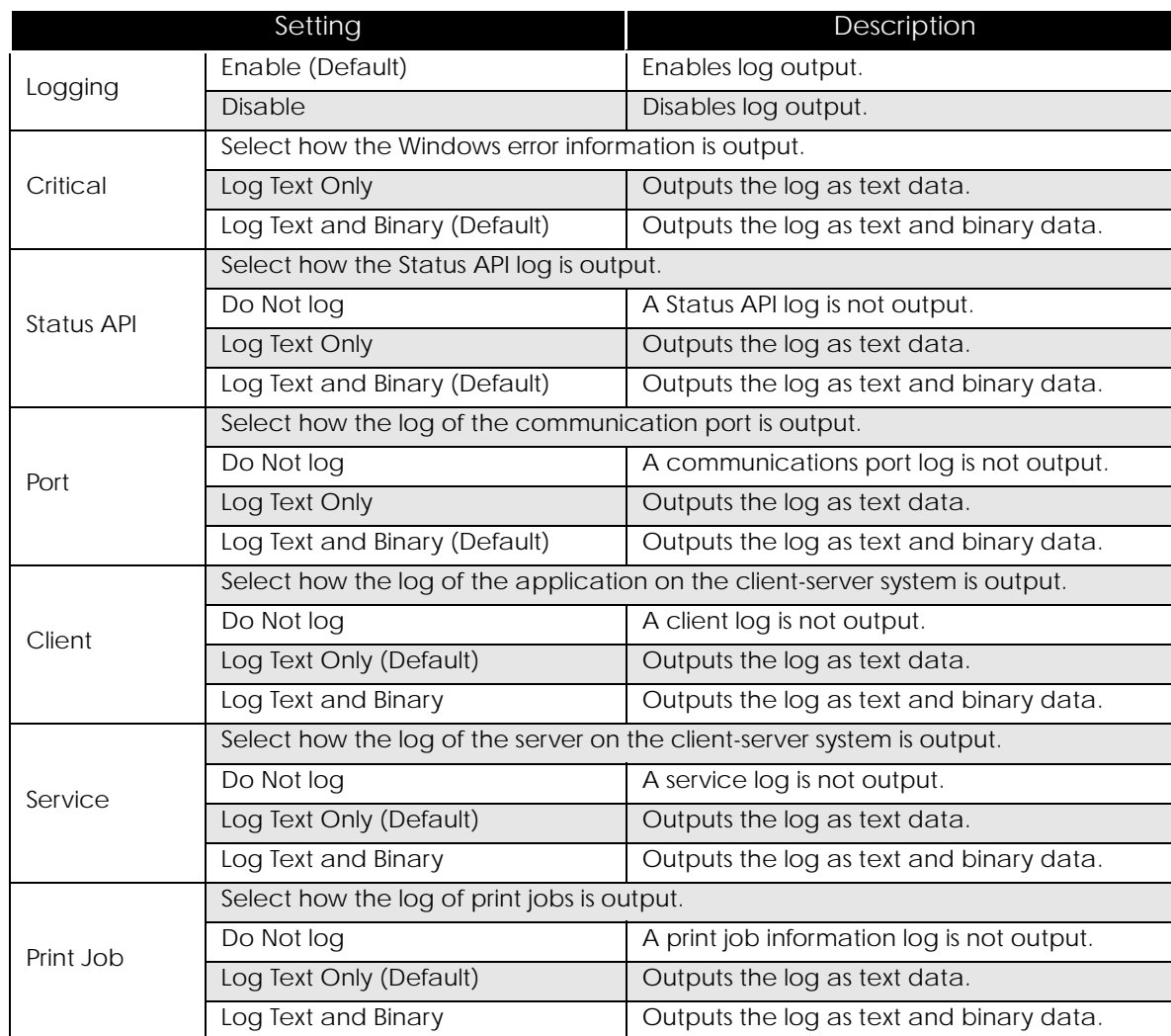
Utility

The available utilities are the EPSON Log File and the EPSON controlA Font.



Setting	Description
EPSON Log File Setting	Opens the Log File Setting screen.
Edit controlA font character translation table	Opens the EPSON controlA font setting screen.

Allows you to create a log file which can help you to troubleshoot a problem quickly. See the [Status API Guide](#) for more details about the log file.



Setting		Description
Binary Format	Configures the binary data format.	
	Hexadecimal (Default)	Outputs the log to a hexadecimal log file.
	Base64	Outputs the log to a Base64 log file.
Log File Directory	Specify where to output the log file. (Default) Windows XP: C:\Documents and Settings\All Users\Application Data\Epson\POSPort Windows 7 / Vista: C:\ProgramData\Epson\POSPort	
Log Size Limit (MB)	Specify the upper limit of the log file size. When the upper limit is exceeded, the log file is compressed using zip format and saved as a BAK file. The subsequent log information is saved as a new log file. A sequential number is added to the name of the BAK files. (example: EpsonPOSPort1.bak). Specify the number of log files to be backed up. (Range: 1 to 1024 , Default: 5)	
Backup File Count	Specify the number of log files to be backed up. (Range 1 to 9 , Default: 1)	

**CAUTION**

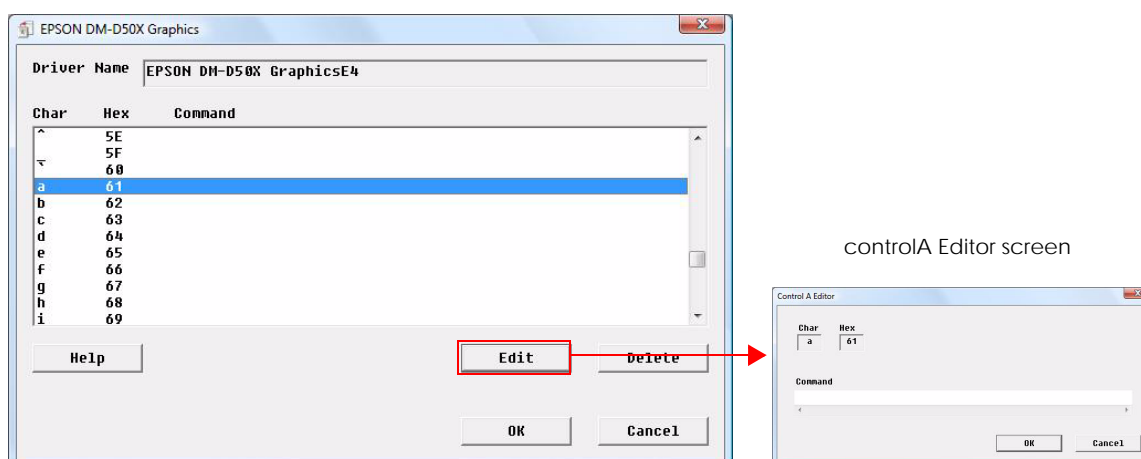
Hexademical dump is not supported.

## Edit controlA font character translation table

Allows you to edit EPSON controlA Font settings. You can assign ESC/POS commands to the selected controlA Font characters. When the assigned characters are printed, the corresponding ESC/POS commands are executed.

### NOTE

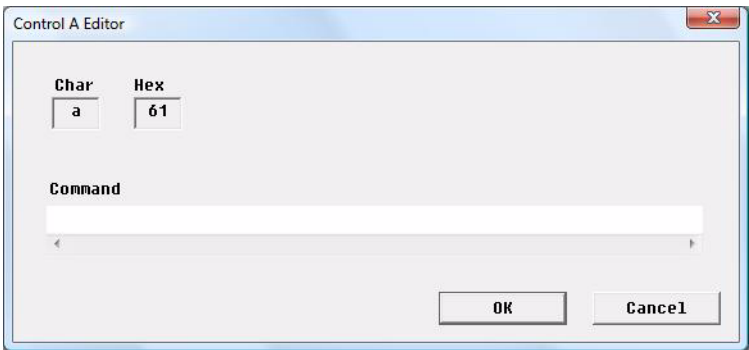
- Up to 255 bytes characters can be assigned.
- ESC/POS commands are not open to the public. Ask your sales representative for more information.



Setting	Description
Driver Name	Displays the printer driver name for which the controlA Font will be configured.
Char	Displays the selected ASCII code as characters.
Hex	Displays the selected ASCII code as hexadecimal.
Command	Displays the ESC/POS command corresponding to the ASCII code. It is displayed in hexadecimal.
Help	Displays the EPSON controlA Font help.
Edit	Displays the controlA Editor screen. Allows the [Command] to be edited.
Delete	Deletes the [Command] selected from the list box.
OK	Saves the configured settings and closes the EPSON controlA Font.
Cancel	Closes EPSON controlA Font without reflecting the changes.

controlA Editor screen

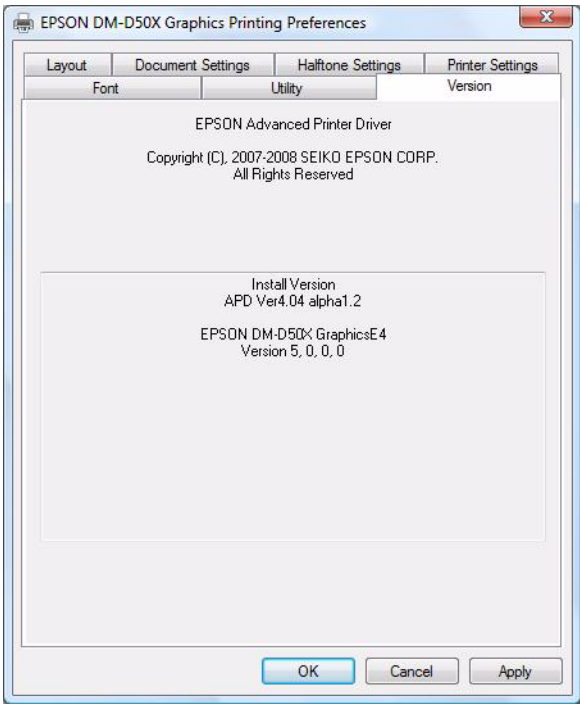
An ESC/POS command to be assigned to the selected character can be entered.



Setting	Description
Char	Displays the selected ASCII code as characters. The content cannot be changed.
Hex	Displays the selected ASCII code as hexadecimal. The content cannot be changed.
Command	Enter the ESC/POS command that will correspond to the ASCII code. Enter using hexadecimal.

Version

Displays the printer driver version information.





# Restrictions

This chapter describes the restrictions that apply to the APD.

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## OS Settings

1. When the operating system of your computer recovers from sleep or standby mode, "??" may be displayed.
2. With Windows 7/ Vista/ XP, use [Enable advanced printing features] (EMF spool) in the printer driver Properties - [Advanced] tab set to ON. Setting otherwise (RAW spool) applies the following restrictions to the GDI functions:
  - Raster images cannot be displayed as specified by `StrtchBlt()` / `BitBlt()`.
  - When transferring bit information from display device context to the printer device context using `StretchBlt()`, the GDI function returns "Failure" and prevents the driver from printing.

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## Displaying

1. Any portions of data that extends beyond the printable area are not displayed.
2. When rotating data to be displayed using a graphic driver, the device font cannot be used (not displayed). Use Windows font in such case.
3. Euro currency mark is not supported.





# Specification

This chapter explains the specifications of the Customer display driver.

## CAUTION

Administrator permission is required for property settings of the printer driver.

The page for each printer is as follows.

Printer	Driver	Page
DM-D110	EPSON DM-D110/120/210 E4	<a href="#">41</a>
DM-D120		<a href="#">42</a>
DM-D210		<a href="#">42</a>
DM-D500	EPSON DM-D50X 42X8 E4	<a href="#">43</a>
	EPSON DM-D50X 32X4 E4	<a href="#">43</a>
	EPSON DM-D50X 32X3 E4	<a href="#">44</a>
	EPSON DM-D50X 32X2 E4	<a href="#">44</a>
	EPSON DM-D50X 20x2 E4	<a href="#">45</a>
	EPSON DM-D50X Graphics E4	<a href="#">46</a>

## DM-D110

Item	Description			
Driver Name	EPSON DM-D110/120/210 E4			
Device Font	Font Name : DM-D 1st Line                      DM-D 2nd Line Point : 7			
Control Font	Font Name : control , Point : 7 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	i	Put out light with saving displayed contents
	b	Clear 1st line (CAN for 1st Line)	j	Set and display a counter time
	c	Clear 2nd line (CAN for 2nd Line)	k	Display a counter
	d	Screen is always lighting	l	Enable reversed character
	e	Screen is blinking at 10x50msec intervals	m	Disable reversed character
	f	Screen is blinking at 20x50msec intervals	n	Define macro process
	g	Screen is blinking at 40x50msec intervals	o	Do macro process
	h	Screen is blinking at 60x50msec intervals		
ControlA Font	Font Name : controlA , Point : 1 • Characters defined by ControlA Definition File can be selected. • No operations for characters not defined. No printing for spaces.			
Resolution	72x72DPI			

## DM-D120

Item	Description			
Driver Name	EPSON DM-D110/120/210 E4			
Device Font	Font Name : DM-D 1st Line                      DM-D 2nd Line Point : 7			
Control Font	Font Name : control , Point : 7 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	i	Put out light with saving displayed contents
	b	Clear 1st line (CAN for 1st Line)	j	Set and display a counter time
	c	Clear 2nd line (CAN for 2nd Line)	k	Display a counter
	d	Screen is always lighting	l	Enable reversed character
	e	Screen is blinking at 10x50msec intervals	m	Disable reversed character
	f	Screen is blinking at 20x50msec intervals	n	Define macro process
	g	Screen is blinking at 40x50msec intervals	o	Do macro process
	h	Screen is blinking at 60x50msec intervals		
ControlA Font	Font Name : controlA , Point : 1 • Characters defined by ControlA Definition File can be selected. • No operations for characters not defined. No printing for spaces.			
Resolution	72x72DPI			

## DM-D210

Item	Description			
Driver Name	EPSON DM-D110/120/210 E4			
Device Font	Font Name : DM-D 1st Line                      DM-D 2nd Line Point : 7			
Control Font	Font Name : control , Point : 7 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	i	Put out light with saving displayed contents
	b	Clear 1st line (CAN for 1st Line)	j	Set and display a counter time
	c	Clear 2nd line (CAN for 2nd Line)	k	Display a counter
	d	Screen is always lighting	l	Enable reversed character
	e	Screen is blinking at 10x50msec intervals	m	Disable reversed character
	f	Screen is blinking at 20x50msec intervals	n	Define macro process
	g	Screen is blinking at 40x50msec intervals	o	Do macro process
	h	Screen is blinking at 60x50msec intervals		
ControlA Font	Font Name : controlA , Point : 1 • Characters defined by ControlA Definition File can be selected. • No operations for characters not defined. No printing for spaces.			
Resolution	72x72DPI			

## DM-D500

Item	Description			
Driver Name	EPSON DM-D50X 42X8 E4			
Device Font	Font Name : DM-D 1st Line      DM-D 2nd Line      DM-D 3rd Line      DM-D 4th Line DM-D 5th Line      DM-D 6th Line      DM-D 7th Line      DM-D 8th Line Point : 5			
Control Font	Font Name : control , Point : 5 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	o	Do macro process
	d	Screen is always lighting	p	Clear 1st line
	e	Screen is blinking at 10x50msec intervals	q	Clear 2nd line
	f	Screen is blinking at 20x50msec intervals	r	Clear 3rd line
	g	Screen is blinking at 40x50msec intervals	s	Clear 4rd line
	h	Screen is blinking at 60x50msec intervals	t	Clear 5rd line
	i	Put out light with saving displayed contents	u	Clear 6rd line
	l	Enable reversed character	v	Clear 7rd line
	m	Disable reversed character	w	Clear 8rd line
	n	Define macro process		
ControlA Font	Font Name : controlA , Point : 5 • Characters defined by ControlA Definition File can be selected. • No operations for characters not defined. No printing for spaces.			
Resolution	72x72DPI			

Item	Description			
Driver Name	EPSON DM-D50X 32X4 E4			
Device Font	Font Name : DM-D 1st Line	DM-D 2nd Line	DM-D 3rd Line	DM-D 4th Line
	Point : 13			
Control Font	Font Name : control , Point : 13			
	No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	m	Disable reversed character
	d	Screen is always lighting	n	Define macro process
	e	Screen is blinking at 10x50msec intervals	o	Do macro process
	f	Screen is blinking at 20x50msec intervals	p	Clear 1st line
	g	Screen is blinking at 40x50msec intervals	q	Clear 2nd line
	h	Screen is blinking at 60x50msec intervals	r	Clear 3rd line
	i	Put out light with saving displayed contents	s	Clear 4rd line
l	Enable reversed character			
ControlA Font	Font Name : controlA , Point : 13			
	<ul style="list-style-type: none"><li>• Characters defined by ControlA Definition File can be selected.</li><li>• No operations for characters not defined. No printing for spaces.</li></ul>			
Resolution	72x72DPI			

Item	Description			
Driver Name	EPSON DM-D50X 32X3 E4			
Device Font	Font Name : DM-D 1st Line      DM-D 2nd Line      DM-D 3rd Line Point : 13			
Control Font	Font Name : control , Point : 13 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	l	Enable reversed character
	d	Screen is always lighting	m	Disable reversed character
	e	Screen is blinking at 10x50msec intervals	n	Define macro process
	f	Screen is blinking at 20x50msec intervals	o	Do macro process
	g	Screen is blinking at 40x50msec intervals	p	Clear 1st line
	h	Screen is blinking at 60x50msec intervals	q	Clear 2nd line
	i	Put out light with saving displayed contents	r	Clear 3rd line
ControlA Font	Font Name : controlA , Point : 13 <ul style="list-style-type: none"><li>• Characters defined by ControlA Definition File can be selected.</li><li>• No operations for characters not defined. No printing for spaces.</li></ul>			
Resolution	72x72DPI			

Item	Description			
Driver Name	EPSON DM-D50X 32X2 E4			
Device Font	Font Name : DM-D 1st Line      DM-D 2nd Line Point : 13			
Control Font	Font Name : control , Point : 13 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	l	Enable reversed character
	d	Screen is always lighting	m	Disable reversed character
	e	Screen is blinking at 10x50msec intervals	n	Define macro process
	f	Screen is blinking at 20x50msec intervals	o	Do macro process
	g	Screen is blinking at 40x50msec intervals	p	Clear 1st line
	h	Screen is blinking at 60x50msec intervals	q	Clear 2nd line
	i	Put out light with saving displayed contents		
ControlA Font	Font Name : controlA , Point : 13 <ul style="list-style-type: none"><li>• Characters defined by ControlA Definition File can be selected.</li><li>• No operations for characters not defined. No printing for spaces.</li></ul>			
Resolution	72x72DPI			

Item	Description			
Driver Name	EPSON DM-D50X 20x2 E4			
Device Font	Font Name : DM-D 1st Line                      DM-D 2nd Line Point : 13			
Control Font	Font Name : control , Point : 13 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	k	Display a counter
	d	Screen is always lighting	l	Enable reversed character
	e	Screen is blinking at 10x50msec intervals	m	Disable reversed character
	f	Screen is blinking at 20x50msec intervals	n	Define macro process
	g	Screen is blinking at 40x50msec intervals	o	Do macro process
	h	Screen is blinking at 60x50msec intervals	p	Clear 1st line
	i	Put out light with saving displayed contents	q	Clear 2nd line
	j	Set and display a counter time		
ControlA Font	Font Name : controlA , Point : 13 • Characters defined by ControlA Definition File can be selected. • No operations for characters not defined. No printing for spaces.			
Resolution	72x72DPI			

Item	Description			
Driver Name	EPSON DM-D50X Graphics E4			
Device Font	Font Name : DM-D FontA Point : 13 Font Name : DM-D FontB Point : 5			
Control Font	Font Name : control , Point : 13 No operations for characters other than those mentioned above.			
	Char	Function	Char	Function
	a	Clear screen (CLR)	G	NV bit image No. 1 is printed in the Normal mode
	d	Screen is always lighting	H	NV bit image No. 2 is printed in the Normal mode
	e	Screen is blinking at 10x50msec intervals	I	NV bit image No. 3 is printed in the Normal mode
	f	Screen is blinking at 20x50msec intervals	J	NV bit image No. 4 is printed in the Normal mode
	g	Screen is blinking at 40x50msec intervals	K	NV bit image No. 5 is printed in the Normal mode
	h	Screen is blinking at 60x50msec intervals	[	NV bit image No. 1 is printed in the Double Height Double Width mode
	i	Put out light with saving displayed contents	]	NV bit image No. 2 is printed in the Double Height Double Width mode
	l	Enable reversed character	^	NV bit image No. 3 is printed in the Double Height Double Width mode
	m	Disable reversed character	-	NV bit image No. 4 is printed in the Double Height Double Width mode
	n	Define macro process	`	NV bit image No. 5 is printed in the Double Height Double Width mode
	o	Do macro process		
	ControlA Font	Font Name : controlA , Point : 13 <ul style="list-style-type: none"><li>• Characters defined by ControlA Definition File can be selected.</li><li>• No operations for characters not defined. No printing for spaces.</li></ul>		
Resolution	72x72DPI			