

Print Settings using the Application

July 08, 2016

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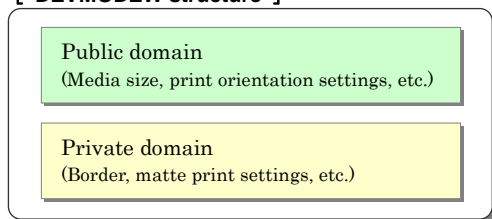
1. Outline of Print Settings

Print settings at the printer are made using the DEVMODEW (or DEVMODE) structure. You can change the print settings by altering the DEVMODEW structure value.

2. DEVMODEW structure

As shown below, the DEVMODEW structure is comprised of the public domain, for standard settings such as paper size and print orientation, and the private domain, for individual printer settings such as border and matte printing. The private domain is located behind the public domain.

[DEVMODEW structure]



(1) Public domain structure (standard settings)(*1)

	Data form (.NET)	Size (Byte)	Comments
dmDeviceName	Byte * 64	64	Device name (*2)
dmSpecVersion	Short	2	DEVMODEW version
dmDriverVersion	Short	2	Driver version
dmSize	Short	2	DEVMODEW structure Byte size
dmDriverExtra	Short	2	Byte size of data following DEVMODEW structure
dmFields	Integer	4	Valid entry number for DEVMODEW structure
dmOrientation	Short	2	Paper orientation
dmPaperSize	Short	2	Paper size
dmPaperLength	Short	2	Paper length
dmPaperWidth	Short	2	Paper width
dmScale	Short	2	Paper size scale
dmCopies	Short	2	Number of copies
dmDefaultSource	Short	2	Default pin number
dmPrinterQuality	Short	2	Print quality (X direction resolution)
dmColor	Short	2	Color mode (Color/monochrome)
dmDuplex	Short	2	Double-side print setting
dmYResolution	Short	2	Y direction resolution
dmTTOption	Short	2	TrueType font print method
dmCollate	Short	2	Page collating setting
dmFormname	Byte * 64	64	Form name (*2)
dmUnusedPadding	Short	2	Unused
dmBitsPerPel	Integer	4	Bit quantity per pixel
dmPelsWidth	Integer	4	Width
dmPelsHeight	Integer	4	Height
dmNup	Integer	4	Nup method
dmDisplayFrequency	Integer	4	Display operation frequency
dmICMMethod	Integer	4	ICM setting
dmICMIntent	Integer	4	Color matching method
dmMediaType	Integer	4	Media type
dmDitherType	Integer	4	Dither type
dmReserved1	Integer	4	Not used. must be zero
dmReserved2	Integer	4	Not used. must be zero
dmPanningWidth	Integer	4	Must be zero
dmPanningHeight	Integer	4	Must be zero

(*1) Please refer to Microsoft's site for more information.

URL: [https://msdn.microsoft.com/en-us/library/windows/desktop/dd183565\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/dd183565(v=vs.85).aspx) (As of July 2016)

(*2) When using DEVMODE structure in VB6.0, the size of dmDeviceName and/or dmFormname is 32Byte

(2) Private domain structure (individual printer settings)

Structure member	Data form (.NET)	Size (Byte)	Comments
OemExStrSize	Integer	4	Private domain size
OemExSign	Integer	4	Private domain header "MSFT"
OemExVer	Integer	4	Private DEVMODEW version
OemBorder	Integer	4	Border setting
OemColorAdjustment	Integer	4	Color adjustment by driver
OemSharpness	Integer	4	Sharpness
OemAdjGammaR	Integer	4	Color adjustment gamma R
OemAdjGammaG	Integer	4	Color adjustment gamma G
OemAdjGammaB	Integer	4	Color adjustment gamma B
OemReserved00	Integer	4	Reserved (setting prohibited)
OemAdjBrightnessR	Integer	4	Color adjustment brightness R
OemAdjBrightnessG	Integer	4	Color adjustment brightness G
OemAdjBrightnessB	Integer	4	Color adjustment brightness B
OemReserved01	Integer	4	Reserved (setting prohibited)
OemAdjContrastR	Integer	4	Color adjustment contrast R
OemAdjContrastG	Integer	4	Color adjustment contrast G
OemAdjContrastB	Integer	4	Color adjustment contrast B
OemReserved02	Integer	4	Reserved (setting prohibited)
OemAdjChromaR	Integer	4	Color adjustment chroma R
OemAdjChromaG	Integer	4	Color adjustment chroma G
OemAdjChromaB	Integer	4	Color adjustment chroma B
OemReserved03	Integer	4	Reserved (setting prohibited)
OemReserved04	Integer	4	Reserved (setting prohibited)
OemReserved05	Integer	4	Reserved (setting prohibited)
OemReserved06	Integer	4	Reserved (setting prohibited)
OemReserved07	Integer	4	Reserved (setting prohibited)
OemReserved08	Integer	4	Reserved (setting prohibited)
OemOvercoatFinish	Integer	4	Overcoat finish (Gloss/matte/fine-matte/luster)
OemReserved09	Integer	4	Reserved (setting prohibited)
OemPrintRetry	Integer	4	Print retry setting
OemReserved10	Integer	4	Reserved (setting prohibited)
OemReserved11	Integer	4	Reserved (setting prohibited)
OemHighDensity	Integer	4	High density print setting
OemReserved12	Integer	4	Reserved (setting prohibited)

3. DEVMODEW structure Private domain header search

Because the location of the private domain in the DEVMODEW structure differs depending on the computer, it is necessary to search for the private domain header.

There is header information for the private domain header, and the character string "MSFT" is included, so the private domain header location can be found by searching for this string. For details of the process, refer to the sample program "ExDevModeTopSearch()".

4. DEVMODEW structure setting values

Setting type	Structure member	Setting value	
		value	Setting
Paper size	dmPaperSize	nnn	Paper size designation setting
Paper orientation	dmOrientation	1	Vertical
		2	Horizontal
X direction resolution	dmPrinterQuality	300	300dpi
		600	600dpi
Y direction resolution	dmYResolution	300	300dpi (Hi-speed)
		600	600dpi (Hi-quality)
ICM	dmICMMethod	1	OFF
		2	ON
Border	OemBorder	0	No
		1	Yes
Driver color adjustment	OemColorAdjustment	0	OFF
		1	ON
Sharpness	OemSharpness	0	Strong blur
		:	
		2	Initial setting
		:	
		10	Sharp
Color adjustment gamma	OemAdjGammaR, G, B	-100	
		:	
		100	
Color adjustment brightness	OemAdjBrightnessR, G, B	-100	
		:	
		100	
Color adjustment contrast	OemAdjContrastR, G, B	-100	
		:	
		100	
Color adjustment chroma	OemAdjChromaR, G, B	-100	
		:	
		100	
Overcoat finish	OemOvercoatFinish	0	Gloss
		1	Matte
		2	Fine-matte
		3	Luster
Print retry	OemPrintRetry	0	No
		1	Yes
High density printing	OemHighDensity	0	Normal print
		1	High density print

5. Sample Program

This is a VB.NET print setting application. With this sample program, print settings can be made using the DEVMODEW structure.

In order to use this sample program, please make the following changes to conform to your operating environment.

■Printer Name

Change the “Printer Name” in Form1_Load0.

The initial setting is “PrinterName = “DP-DS820”, so you should set the name of the printer you have installed. For the printer name, refer to “Printer and Fax” on the computer.

■32/64bit OS selection

If the OS is 64bit, you should attach “#Const x64 = True” to the beginning of DS820Stat.vb.

The initial setting is for 32bit, and is set as “#Const x64 = False”.

