

**EPSON OPOS ADK MANUAL**

# **APPLICATION DEVELOPMENT GUIDE**

**LineDisplay (DM-D30)**

Version 3.00 Feb. 2019

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# Section 1. Introduction

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This manual describes the method of use and related items, including device-specific precautions, when the LineDisplay device is used with EPSON OPOS ADK.

Before the LineDisplay can be used, the EPSON OPOS ADK should be installed and the devices to be used should be set using the SetupPOS utility. For setting methods, see the Section 2 of this manual.

This manual applies to the following devices.

DM-D30

## **Compatibility mode**

The compatibility mode for upward compatibility was added in OPOS Ver2.60.

For the details of the compatibility mode, please refer to “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE Compatibility Mode”.

## Section 2. Details on Settings

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This section describes how to make the settings for the LineDisplay devices.

### 2.1 Device Information

The DeviceDescription and DeviceName for each model are as follows.

I/F	DeviceDescription	DeviceName
S	EPSON DM-D30 (TM USB Connection) LineDisplay	DM-D30
P	EPSON DM-D30P (TM USB Connection) LineDisplay	DM-D30P
U	EPSON DM-D30U (TM USB Connection) LineDisplay	DM-D30U
E	EPSON DM-D30E (TM USB Connection) LineDisplay	DM-D30E
B	EPSON DM-D30B (TM USB Connection) LineDisplay	DM-D30B

I/F indicate the connected interface.

The following is the list of the two connecting interfaces.

S: Serial

P: Parallel

U: USB

E: Ethernet

B: Bluetooth

In USB I/F, the standalone connection can be selected.

Note TM USB Connection means connecting DM-D30 to USB Type-A port of the printer directly.

### 2.2 References of Firmware Versions

Refer to the release notes (Relnote.txt).

### 2.3 Settings of DIP Switches and Hardware

Not applicable

## **2.4 Setting of Devices**

The SetupPOS utility should be used for setting devices. For more detail, refer to "EPSON OPOS ADK MANUAL User's Manual (Installer/ SetupPOS/ TMUSB)".

### **1) Device Specific Settings**

Not applicable

## **2.5 Port Information**

All display settings are exactly the same as the connected printer.

### **1) Port information when using serial port**

Not applicable

### **2) Port information when using parallel port**

Not applicable

### **3) Port information when using USB port**

Not applicable

### **4) Port information when using Ethernet port**

Not applicable

### **5) Port information when using Bluetooth port**

Not applicable

## Section 3. Function Details

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This section describes the functions of the LineDisplay device in details. Supplementary explanation of the parts not described in detail in "UPOS" is also given here.

### 3.1 CheckHealth Method

#### 3.1.1 Internal Test

When executed, communications with the display is performed and the result is returned. Nothing is shown on the display.

When the method is executed by OPOS\_CH\_INTERNAL, the character strings of the CheckHealthText property is as follows.

"Internal Hcheck: Complete" : CheckHealthText

After executing the CheckHealth method, be sure to confirm the returned value. If an error has occurred, there is no point in referring to the CheckHealthText property. For details on the occurred error, refer to the Section 6 of this manual.

#### 3.1.2 External Test

When executed, the following character strings are sent to and displayed on the display.

External Hcheck!!

DeviceName=Model name

Confirm that the displayed contents are correct.

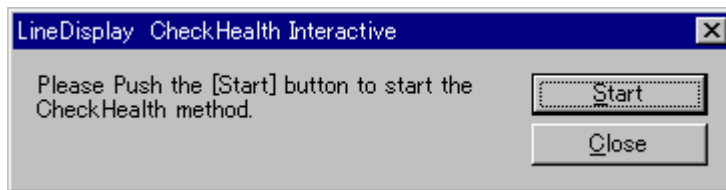
When the method is executed by OPOS\_CH\_EXTERNAL, the character strings of the CheckHealthText property is as follows.

"External Hcheck: Complete" : CheckHealthText

After executing the CheckHealth method, be sure to confirm the returned value. If an error has occurred, there is no point in referring to the CheckHealthText property. For details on the occurred error, refer to the Section 6 of this manual.

### 3.1.3 Interactive Test

Executes interactive CheckHealth test. When executed, the following dialog box is displayed.



When [Start] is selected, the following character strings are sent to and displayed on the display.

Interactive Hcheck!!

DeviceName= Device name

Confirm that the displayed contents are correct.

When the method is executed by OPOS\_CH\_INTERACTIVE, the character strings of the CheckHealthText property are as follows.

- “Interactive Hcheck: Canceled” : When the [Close] button is pressed without the [Start] button having been pressed even once.
- “Interactive Hcheck: Complete” : When the [Close] button is pressed after the [Start] button has been pressed.

After executing the CheckHealth method, be sure to confirm the returned value. If an error has occurred, there is no point in referring to the CheckHealthText property. For details on the occurred error, refer to the Section 6 of this manual.



## 3.2 Property Set Values and Default Values

### 3.2.1 Capability Set Value

Capability Name	Set Value (DM-D30)
CapBlink	DISP_CB_BLINKALL
CapBrightness	TRUE
CapCharacterSet	DISP_CCS_KANA
CapDescriptors	FALSE
CapHMarquee	TRUE
CapVMarquee	FALSE
CapCharWait	TRUE
CapPowerReporting	OPOS_PR_STANDARD
CapBlinkRate	TRUE
CapCursorType	DISP_CCT_NONE
CapCustomGlyph	TRUE
CapReadBack	DISP_CRB_SINGLE
CapReverse	DISP_CR_REVERSEEACH
CapBitmap	FALSE
CapMapCharacterSet	FALSE
CapScreenMode	FALSE

### 3.2.2 Property Default Set Values and Setting Ranges

- Brightness setting range and default value.

Set Value	DeviceBrightness
0-19	0%
20-39	20%
40-59	40%
60-79	60%
80-100	100% *1

\*1 Denotes the default value.

- Code page setting range and default value

	Set Value (DM-D30)
CaracterSetList	130,131,150,151,152,153,154,155,254,255,437*1,720,737,775,850,851,852,853,855,857,858,860,861,862,863,864,865,866,869,998,999,1098,1125,1250,1251,1252,1253,1254,1255,1256,1257,1258

\*1 Denotes the default value.

- Relations between CharacterSet and set values.

CharacterSet	130	131	150	151	152
Page No. Set Value	Page30	Page31	Page15	Page39	Page40

CharacterSet	153	154	155	254	255
Page No. Set Value	Page42	Page43	Page53	Page254	Page255

CharacterSet	437	720	737	775	850
Page No. Set Value	Page0	Page32	Page14	Page33	Page2

CharacterSet	851	852	853	855	857
Page No. Set Value	Page11	Page18	Page12	Page34	Page13

CharacterSet	858	860	861	862	863
Page No. Set Value	Page19	Page3	Page35	Page36	Page4

CharacterSet	864	865	866	869	998
Page No. Set Value	Page37	Page5	Page17	Page38	Page0

CharacterSet	999	1098	1125	1250	1251
Page No. Set Value	Page16	Page17	Page44	Page45	Page46

CharacterSet	1252	1253	1254	1255	1256
Page No. Set Value	Page16	Page47	Page48	Page49	Page50

CharacterSet	1257	1258
Page No. Set Value	Page51	Page52

- Set values of other properties

Property Name	Set Value (DM-D30)
DeviceWindow	4
DeviceRows	2
DeviceColumns	20
DeviceDescriptors	0
CustomGlyphList	20-7E
GlyphHeight	16
GlyphWidth	8
MapCharacterSet	FALSE
MaximumX	0
MaximumY	0
ScreenMode	0
ScreenModeList	2x20

### 3.3 Restrictions on Parameters for Methods

Method Name	Parameter	Max. Value
CreateWindow	WindowHeight	Up to 1024
	WindowWidth	Up to 1024

### 3.4 Supplementary Explanation of Functions

#### 3.4.1 Conditions for Execution of CheckHealth Method

The conditions for execution of the CheckHealth method are as follows for the marquee and teletype. The 1 to 3 levels of the CheckHealth method are common.

- All windows should show MarqueeType=DISP\_MT\_NONE and all windows should be set to InterCharacterWait=0.

If these conditions are not met, OPOS\_E\_BUSY is returned.

#### 3.4.2 Marquee Operation when the ClaimDevice Method is executed and the DeviceEnable Property is set to TRUE after Executing the ReleaseDevice Method.

If the ReleaseDevice method is executed while the marquee is activated, the display will stop at that point. When the ClaimDevice method is then executed, the display will continue as it is. If DeviceEnabled property is set to TRUE, marquee will start working again.

Modify the MarqueeType property in the disable condition or after executing the ReleaseDevice method. Then, the display will take place in accordance with the modified MarqueeType property when the ClaimDevice method is executed and the DeviceEnabled property is set to TRUE.

### 3.4.3 Teletype Display Outside the Viewport

Only the characters displayed inside the viewport are teletyped. In the logical window, the data outside the viewport are processed instantly, not in accordance with the specified interval set as `InterCharacterWait`.

Ex.1: Window with large width

The viewport is defined as a 2×5 window and the window as a 2×8 window. "1234567890123" is displayed herein by Teletype display. The `InterCharacterWait` property is set to 1000 msec.

One character is shown at a time inside the viewport during the first 5 seconds.

1	2	3	4	5			

Then, processing to "8" is executed instantly without waiting for the interval set as the `InterCharacterWait` time

1	2	3	4	5	6	7	8

After the following one-second has elapsed, display takes place from '9'.

1	2	3	4	5	6	7	8
9							

When comma is used as the time delimiter, it will be displayed as "1, 2, 3, 4, 5, 9, 0, 1, 2, 3".

Ex.2: Window with large height

The viewport is defined as a 2×3 window and the window as a 4×3 window. "1234567890" is displayed herein by Teletype display. The `InterCharacterWait` property is set to 1000 msec.

One character is shown at a time inside the viewport during the first 6 seconds.

1	2	3
4	5	6

After that, the display position changes instantly without waiting for the interval set as the InterCharacterWait time.

1	2	3
4	5	6
7	8	9
0	1	2

3

However, since the data is longer than the window, scrolling occurs.

4	5	6
7	8	9

At this point, the “789”, newly displayed inside the viewport by scrolling, is displayed by teletype. It will be displayed as “1, 2, 3, 4, 5, 6, 7, 8, 9” (when comma is used as the time delimiter).

#### 3.4.4 ClearText Method during Teletyped Display

When the ClearText method is executed in the Teletype Mode, the data which has been buffered and still has not been displayed is also deleted.

### 3.5 Device Statistics

The DeviceStatistics function is added in response to the compliance of the "UPOS 1.8".

Please refer to the “EPSON OPOS ADK MANUAL APPLICATION GUIDE Device Statistics” for the details of the Device Statistics.

## Section 4. Expanded Functions

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This section describes the expanded functions of the LineDisplay device.

### 4.1 DirectIO Function

The usage of the DirectIO method and DirectIOEvent event is described below.

#### 4.1.1 DirectIO Method

**Syntax** **DirectIO** *Command* As Long, *pData* As Long, *pString* As String

Parameter	Explanation
<i>Command</i>	Output format. Normally set to DISP_DI_OUTPUT*.
<i>pData</i>	Not used. Normally DISP_DI_DUMMY will be entered.
<i>pString</i>	ESC/POS command, character variable storing the data containing NULL.

\* The DISP\_DI\_SYNC command of Ver1.xx can also be used.

**Remarks** The entire character strings set in the *pString* variable will be sent to the communications port as it is. In case of sending to the display, it is necessary to add the display selecting command (ESC=2) before the data.

**Return** Either of the following values is returned, and stored in the ResultCode property.

Value	Meaning
OPOS_SUCCESS	DirectIO successful.
OPOS_E_CLOSED	Control is closed.
OPOS_E_NOTCLAIMED	The device is not claimed.
OPOS_E_DISABLED	Device is not enabled.
OPOS_E_ILLEGAL	Command cannot be output to device.
OPOS_E_FAILURE	Problem with the device.
OPOS_E_OFFLINE	The device is offline.

**Prerequisites** Open, Claim & Enable

#### 4.1.2 DirectIOEvent Event

No applicable

### 4.2 List of Commands Usable with DirectIO

The commands that can be output using DirectIO are described below. Outputting other than these commands will affect the OPOS settings and subsequent operation of OPOS cannot be guaranteed.

\* DM-D30

Command	Meaning
CLR	Clears the display screen
CAN	Clears the display position line
ESC %	For specifying and canceling setting of downloaded characters
ESC &	For definition of downloaded characters
ESC ?	For deleting downloaded characters
US T	For setting and displaying the counter (time)
US U	For displaying the counter (time)
US:	For starting and ending definition of the contents of macro processing
US ^	For executing macro processing

### 4.3 Escape Sequence List

The LineDisplay provides escape sequences. To use the expanded functions, specify any of these escape sequences in the DisplayText(At) method. The following table lists the escape sequences supported by the LineDisplay.

Command	Meaning
ESC  bC	The character strings following this command are highlighted.
ESC  rvC	The character strings following this command are shown as reversed characters.
ESC  N	Cancels the attributes of the set characters.

## Section 5. Device Specific Programming

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This section describes device specific programming of the LineDisplay devices.

### 5.1 Issuing ESC/POS Commands

The EPSON DM series LineDisplay supports various ESC/POS commands. The DirectIO method is used to output these commands. For the DirectIO method specifications, see the Section 4 of this manual.

Example showing how to issue the command for clearing the LineDisplay:

```
Dim RC As Long
Dim Dummy As Long
Dim DispSelect As String
Dim Data As String
Dummy=DISP_DI_DUMMY
DispSelect = Chr(&H1B) + "=" + Chr(&H2)
Data=Chr(&H0C)
RC=OPOSLineDisplay1.DirectIO( DISP_DI_OUTPUT,
                        Dummy,           `Normally synchronous output
                        DispSelect + Data ) `Normally DISP_DI_DUMMY
                                           `Display selection + CLR
If RC=OPOS_SUCCESS Then
    `Successful
Else
    `Error
End If
```



## Section 6. Error Information

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This section describes the error codes that may result from execution of LineDisplay methods. The common properties and methods are described in "EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE GENERAL DEVELOPMENT". Refer to this guide for more information.

### 6.1 ResultCode List

#### 6.1.1 When Executing Properties

The ResultCode and ResultCodeExtended when properties are executed are as follows.

Property Name	ResultCode	ResultCodeExtended	Meaning
DeviceBrightness	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	Function cannot be used.
		OPOS_EX_DEVBUSY	The device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
		OPOS_EX_BADPROPVAL	Set value is illegal.
	OPOS_E_OFFLINE	0	Refer to <i>UPOS Specifications</i> .
		OPOS_EPTR_COVER_OPEN	Printer cover is open.
		OPOS_EPTR_JRN(REC)_EMPTY	No paper in printer.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .

Property Name	ResultCode	ResultCodeExtended	Meaning
CharacterSet	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
CurrentWindow	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
CursorRow	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
CursorColumn	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
CursorUpdate	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
MarqueeType	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
		OPOS_EX_INCAPABLE	Function cannot be used.
MarqueeFormat	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
MarqueeUnitWait	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
MarqueeRepeatWait	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.

Property Name	ResultCode	ResultCodeExtended	Meaning
InterCharacterWait	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
BlinkRate	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
		OPOS_EX_INCAPABLE	Function cannot be used.
CursorType	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPROPVAL	Set value is illegal.
		OPOS_EX_INCAPABLE	Function cannot be used.
MapCharacterSet	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	Function cannot be used.
ScreenMode	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	0	Refer to <i>UPOS Specifications</i> .
		OPOS_EX_INCAPABLE	Function cannot be used.

\*1 The POSPrinter condition errors are as follows:

OPOS\_EPTR\_COVER\_OPEN  
 OPOS\_EPTR\_JRN\_EMPTY  
 OPOS\_EPTR\_REC\_EMPTY  
 OPOS\_EPTR\_REC\_CARTRIDGE\_REMOVED  
 OPOS\_EPTR\_REC\_CARTRIDGE\_EMPTY  
 OPOS\_EPTR\_REC\_HEAD\_CLEANING  
 OPOS\_EPTR\_LABEL\_JAM  
 OPOS\_EPTR\_MECHANICAL  
 OPOS\_EPTR\_CUTTER  
 OPOS\_EPTR\_UNRECOVERABLE  
 OPOS\_EPTR\_AUTORECOVERABLE

### 6.1.2 When Executing Methods

The ResultCode and ResultCodeExtended when methods are executed are as follows.

Method Name	ResultCode	ResultCodeExtended	Meaning
DisplayText	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE	Marquee is under execution.
		OPOS_EX_BADPARAM+1	Data parameter does not comply with the BinaryConversion property.
		OPOS_EX_BADPARAM+2	Attribute parameter is illegal.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within timeout period.
	OPOS_E_FAILURE	0	Refer to <i>UPOS Specifications</i> .
		OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .
DisplayTextAt	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE	Marquee is under execution.
		OPOS_EX_BADPARAM+1	Row parameter is illegal.
		OPOS_EX_BADPARAM+2	Column parameter is illegal.
		OPOS_EX_BADPARAM+3	Data parameter does not comply with the BinaryConversion property.
		OPOS_EX_BADPARAM+4	Attribute parameter is illegal.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
	OPOS_E_FAILURE	0	Refer to <i>UPOS Specifications</i> .
		OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .

Method Name	ResultCode	ResultCodeExtended	Meaning
ClearText	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE	Marquee is under execution.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .
CreateWindow	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EDISP_TOOMANYWINDO WS	All available windows are in use.
		OPOS_EX_BADPARAM+1	ViewportRow parameter is illegal.
		OPOS_EX_BADPARAM+2	ViewportColumn parameter is illegal.
		OPOS_EX_BADPARAM+3	ViewportHeight parameter is illegal.
		OPOS_EX_BADPARAM+4	ViewportWidth parameter is illegal.
		OPOS_EX_BADPARAM+5	WindowHeight parameter is illegal.
		OPOS_EX_BADPARAM+6	WindowWidth parameter is illegal.
	OPOS_E_FAILURE	0	Refer to <i>UPOS Specifications</i> .
DestroyWindow	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	0	Refer to <i>UPOS Specifications</i> .
RefreshWindow	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE	Marquee is under execution.
		OPOS_EX_BADPARAM+1	The window specified in the Window parameter does not exist.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .
ScrollText	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INVALIDMODE	Marquee/teletype is under execution.
		OPOS_EX_BADPARAM+1	Direction parameter is illegal.
		OPOS_EX_BADPARAM+2	Units parameter is illegal.
		OPOS_EX_DEVBUSY	Device is busy.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .

Method Name	ResultCode	ResultCodeExtended	Meaning
SetDescriptor	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_BADPARAM+1	<i>Descriptor</i> parameter is illegal.
		OPOS_EX_BADPARAM+2	<i>Attribute</i> parameter is illegal.
		OPOS_EX_INCAPABLE	<i>CapDescriptors</i> is False.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
ClearDescriptors	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	Device has no descriptor.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
	OPOS_E_FAILURE	OPOS_EX_MICRMODE	Printer is in MICR mode.
		POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .
ReadCharacterAtCursor	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	<i>CapReadBack</i> is FALSE.
DefineGlyph	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	<i>CapCustomGlyph</i> is FALSE.
		OPOS_EX_BADPARAM+1	A character code outside the range set with <i>CustomGlyphList</i> is used.
		OPOS_EX_BADPARAM+2	The <i>Glyph</i> parameter is invalid.
		OPOS_EX_DEVBUSY	Device is busy.
		OPOS_EX_TIMEOUT	Output result is not returned within the timeout period.
		OPOS_EX_MICRMODE	Printer is in MICR mode.
		OPOS_EDISP_TOOMANYDEFGLYPH	The <i>Glyph</i> character cannot be defined any further.
	OPOS_E_FAILURE	POSPrinter condition errors *1	Refer to <i>UPOS Specifications</i> .

Method Name	ResultCode	ResultCodeExtended	Meaning
DisplayBitmap	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	<i>CapBitmap</i> is FALSE.
		OPOS_EX_BADPARAM+1	<i>ViewportRow</i> parameter is illegal.
		OPOS_EX_BADPARAM+2	<i>ViewportColumn</i> parameter is illegal.
		OPOS_EX_BADPARAM+3	<i>ViewportHeight</i> parameter is illegal.
		OPOS_EX_BADPARAM+4	<i>ViewportWidth</i> parameter is illegal.
SetBitmap	OPOS_SUCCESS	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLOSED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_NOTCLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_DISABLED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_CLAIMED	0	Refer to <i>UPOS Specifications</i> .
	OPOS_E_ILLEGAL	OPOS_EX_INCAPABLE	<i>CapBitmap</i> is FALSE.
		OPOS_EX_BADPARAM+1	<i>ViewportRow</i> parameter is illegal.
		OPOS_EX_BADPARAM+2	<i>ViewportColumn</i> parameter is illegal.
		OPOS_EX_BADPARAM+3	<i>ViewportHeight</i> parameter is illegal.
		OPOS_EX_BADPARAM+4	<i>ViewportWidth</i> parameter is illegal.
		OPOS_EX_BADPARAM+5	<i>WindowHeight</i> parameter is illegal.

\*1 The POSPrinter condition errors are as follows:

OPOS\_EPTR\_COVER\_OPEN  
 OPOS\_EPTR\_JRN\_EMPTY  
 OPOS\_EPTR\_REC\_EMPTY  
 OPOS\_EPTR\_REC\_CARTRIDGE\_REMOVED  
 OPOS\_EPTR\_REC\_CARTRIDGE\_EMPTY  
 OPOS\_EPTR\_REC\_HEAD\_CLEANING  
 OPOS\_EPTR\_LABEL\_JAM  
 OPOS\_EPTR\_MECHANICAL  
 OPOS\_EPTR\_CUTTER  
 OPOS\_EPTR\_UNRECOVERABLE  
 OPOS\_EPTR\_AUTORECOVERABLE

## 6.2 Remedial Actions for Principal Errors

ResultCodeExtended	Remedy
OPOS_EX_DEVBUSY, OPOS_EX_TIMEOUT	If the power to the display is disconnected, it is necessary to once apply Close and then invoke Open/Claim/Enable again.
OPOS_EPTR_COVER_OPEN, OPOS_EPTR_JRN(REC)_EMPTY, OPOS_EPTR_CUTTER, OPOS_EPTR_UNRECOVERABLE, OPOS_EPTR_MECHANICAL, OPOS_EPTR_OVERHEAT, OPOS_EX_MICRMODE	Confirm the status of the printer, and then execute the methods and properties again.
OPOS_EX_BADPARAM + x	The parameter is not correct for the method to be used. Confirm the parameter range for the method to be used.
OPOS_EX_INCAPABLE	After confirming the capability, switch to a program that executes the method.
OPOS_EX_BADPROPVAL	Using "UPOS", recheck the specifications of the methods and properties and setting conditions for the methods and properties as described in this manual.
OPOS_EDISP_TOOMANYDEFGLYPH	Define Glyph in the character code by which Glyph has already been defined. In this case, the old Glyph definition is overwritten.



## Section 7. Warnings

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- When using the DirectIO method to issue a command, be sure to read the instructions on the particular command in the product manual.
- The port information should be in accordance with the settings of the parent device.
- When the DirectIO method is used to send data to the display, there may be data within the range from 128 to 255 that is not sent correctly. Accordingly, some data patterns of the downloaded characters cannot be specified.
- When the parent device is in the busy state (waiting for insertion of SLIP paper, or when cover is open, etc.), methods such as DisplayText will fail. Errors such as ResultCode=OPOS\_E\_ILLEGAL. ResultCodeExtended=Printer error details, etc. will be generated. Teletype display and Marquee display will not be updated while the printer is in the busy state.
- The settable baud rates and code pages differ with the device. Refer to the respective manuals.
- The DM series cannot automatically display period and comma characters using DirectIO.
- Depending on the operating environment, there can be a case of missing data when transmitting data via serial port. In order to prevent such cases of missing data, it is recommended to set a smaller value for the FIFO setting for the serial communication. (Recommended value: "1")
- If the ReadCharacterAtCursor method is executed when there is no character information at the cursor position, character code 127 is returned.
- The Glyph information defined by the DefineGlyph method disappears and cannot be displayed when the power supply on the printer is turned on or off.
- The number of Glyph characters that can be defined by the DefineGlyph method is as follows.

Model	Number of characters
DM-D30	95 characters

- The error code differs by that timing when the power is turned OFF.