

TEC OPOS Control

OPOS Line Display WD-111

Apprication User's Guide

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1.Line Display

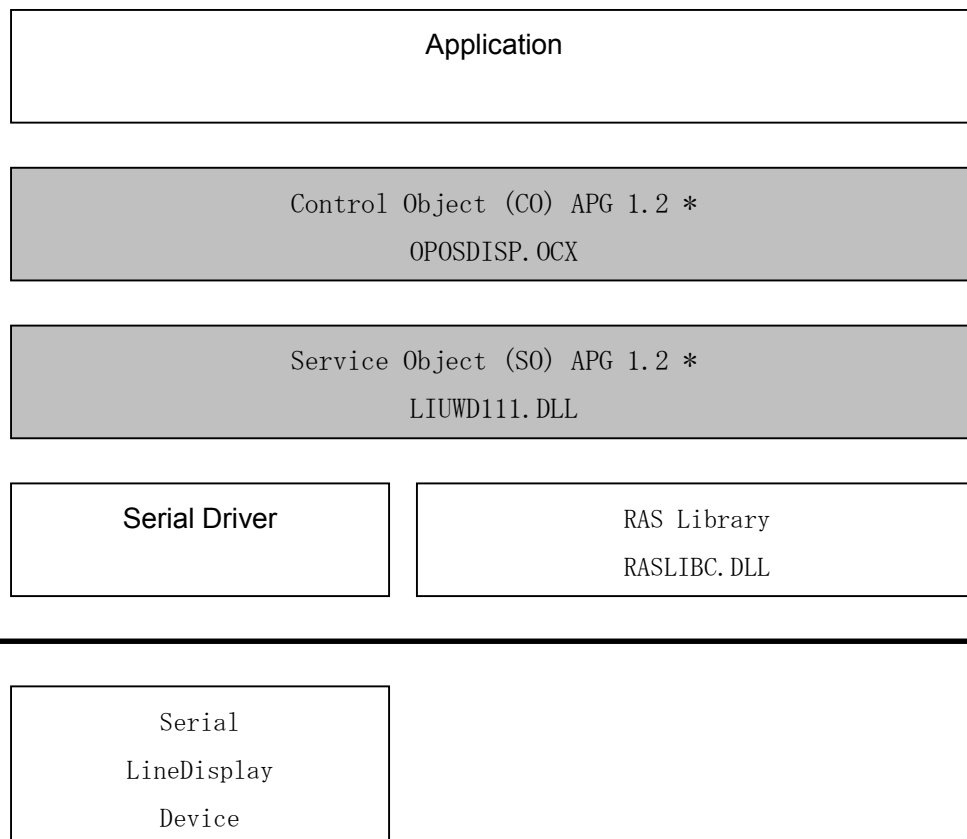
1.1. Line Display Control ["LIUWD-111"]

1.1.1. Support Model

WD-111

1.1.2. Architecture Structure

This control is constituted by these software module as below.



* This is a module constituting this control.

1.1.3. Functions

Support	Doesn't Support
Displays the Numeric	Horizontal/Vertical marquee scroll Lighting / lights out Descriptor Brightness control of device Displays by Teletype mode Displays the Kana-character Changes the Display mode Blinks of Descriptor Reverse video of each character/device Blink video of each character/device Setting of Blinking rate Setting of character defined by user Mapping of character sets Displays the Bitmap Escape sequence Setting of cursor type Read back of the displaying character by device Accumulation of statistics Reset of statistics Reports of power status

Table 1 WD-111 Line Display Control function

Properties (There is writing only the fixed thing which depend on a type of device.)

Common Properties	Value
ControlObjectDescription	"TEC OPOS Line Display Control Object"
ControlObjectVersion	"1002000"
ServiceObjectDescription	"TEC OPOS Line Display Service Object"
ServiceObjectVersion	"1002000"
DeviceDescription	"WD-111 Serial Line Display"
DeviceName	"TEC WD-111"
Device Specific Properties	Value
CapBlink	DISP_CB_NOBLINK
CapBrightness	FALSE
CapCharacterSet	DISP_CCS_NUMERIC
CapDescriptors	FALSE
CapHMarquee	FALSE
CapICharWait	FALSE
CapVMarquee	FALSE
CharacterSet	101
CharacterSetList	"101"
DeviceWindows	999
DeviceRows	1
DeviceColumns	11
DeviceDescriptors	0

Table 2 WD-111 Line Display Control Properties value (A part of items)

Escape-sequence to work only a time when it was ordered.

Function	Data	
Displays Bitmap	ESC B	X

Escape-sequence to work only a time when it was printing.

Function	Data	
Reverse character	ESC rvC	X
Blink	ESC kC	X
Normal	ESC N	X

O : Support X : Not Support (The escape sequence that is not recognized)

Table 3 WD-111 Line Display Control Escape sequence

1.1.4. Specification of CheckHealth

1) Internal Level (OPOS_CH_INTERNAL)

Confirms the connection status of device and terminal via circuit status.

“TEC Line Display LIUWD OPOS CheckHealth:External”

Return value (ResultCode)	CheckHealthText	Description
OPOS_SUCCESS	“Internal HCheck:Connected”	Connected
	“Internal HCheck:Disconnected”	Not Connected
OPOS_E_NOTCLAIMED	“HCheck: Exclusive”	Claim error
OPOS_E_DISABLED	“HCheck: Disabled”	Device Disable

2) External Level (OPOS_CH_EXTERNAL)

“-1234567890”

Line display will scroll the following string. “-0123457899876543210-”

Return value (ResultCode)	CheckHealthText	Description
OPOS_SUCCESS	“External HCheck: Complete”	Success
OPOS_E_TIMEOUT	“External HCheck: Error”	Device busy
OPOS_E_NOTCLAIMED	“HCheck: Exclusive”	Claim error
OPOS_E_DISABLED	“HCheck: Disabled”	Device Disable

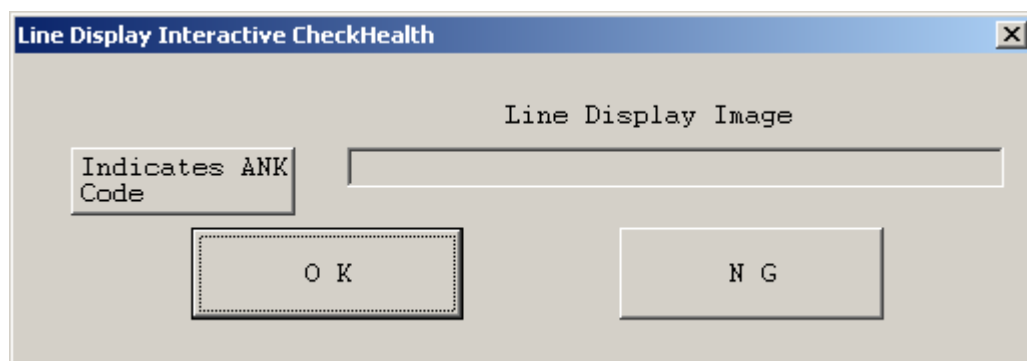
3) Interactive Level (OPOS_CH_INTERACTIVE)

The dialogue box appears as below.

Then, you check the Line indicator unit by using this dialogue utility.

So, push the ‘Indicates ANK Code’ button, then WD111 displays as xxxxxx

Then, select the OK button or the NG button based on checking by yourself.



Return value (ResultCode)	CheckHealthText	Description
OPOS_SUCCESS	"Interactive HCheck: Successful"	Finishes with OK button
OPOS_E_FAILURE	"Interactive HCheck: Error"	Finishes with NG button
OPOS_E_NOTCLAIMED	"HCheck: Exclusive"	Claim error
OPOS_E_DISABLED	"HCheck: Disabled"	Device Disable

1.1.5. Specification of DirectIO

About this control, no extensional function is supported by DirectIO method.

Command	Function
DISP_DIO_DIRECTOUTPUT	Output directly

Constant value that is used in DirectIO of this control is defined on 'TecDisp.h'.

We recommend to using it in this file and the module of the pair.

(1) Output Directly

Function Outputs directly to LineDisplay.

Format	Parameter	Description
	Command	DISP_DIO_DIRECTOUTPUT
	pData	N/A (must fix it to 0)
	pString	String what you want to display

Description When you use this function, you must finish the process 'Open', 'Claim' and 'DeviceEnabled = TRUE'. This method outputs the strings directly.

Notice It isn't recognized even if there is the escape code into this string. The format of this string is relating on BinaryConversion property.

The status of device is uncertainty after this command performed.

Return It returns one of the status from list below, and it memorises to the ResultCode-property.

Value	Description
OPOS_SUCCESS	Success of the process
OPOS_E_CLOSED	This control is closing
OPOS_E_NOTCLAIMED	This device isn't claimed till now.
OPOS_E_DISABLED	This device is disabled
OPOS_E_ILLEGAL	Memory could not be allocated.
OPOS_E_NOHARDWARE	The power cut off.
OPOS_E_TIMEOUT	The timeout occurred.
OPOS_E_FAILURE	The communication error occurred.

1.1.6. Registry setting of OPOS

Registry has the device configuration information as below.

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\LineDisplay

\WD111

Common	"TEC.LIUWD111.S"
Service	"C:\OPOS\TEC\LIUWd111.dll"
Description	"TEC WD111 Serial Line Display"
Version	"1.2"
Port	"COM1" to "COM10"
BaudRate	"9600"
DebugLogFile	"C:\OPOS\TEC\LOG\WD111.LOG"
DebugLogLevel	"1"

Service	File name of this Service Object
Description	Description of this Service Object
Version	Version of this Service Object
Port	Port name to connect the WD-111 One of the port from COM1 to COM10 This setting can be set from OPOS control panel.
BaudRate	Baud rate (Communication speed of RS-232C) Fixed 9600 This setting can be set from OPOS control panel.
DebugLogFile	Specifies a log file with path which records OPOS operations. If a folder does not exist, no log is kept.
DebugLogLevel	Specifies a level for recording a log in a file specified by DebugLogFile. 0: Log is not output. 1: Level where a log is recorded mainly at a time of error

Table 4 WD111 Line Display Control Registry

1.1.7. About Log recording

This control support limited log recording function. The log file path is describe in the "DebugLogFile" entry in the registry, and the log level is describe by "DebugLogLevel" entry.

The format of the log is : Date,Time,[Method Name],Information,ApplicationName. Below is the sample of the log:

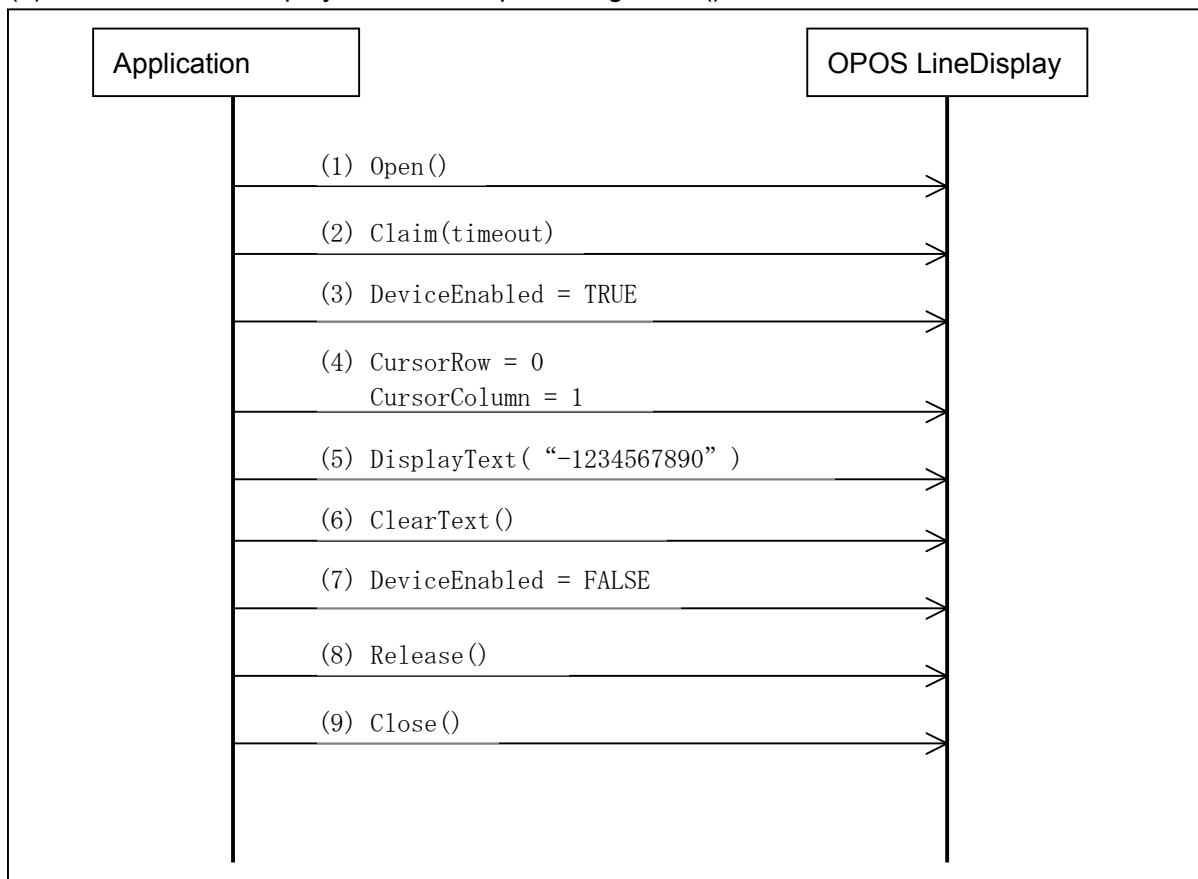
```
2009/12/07,11:12:58.604,[CLineDisplay::OpenSe]>>> Start: DeviceName=WD111 (C:\WD111TEST.exe)
2009/12/07,11:12:58.620,[CLineDisplay::OpenSe]<<< End: Open service success!(C:\WD111TEST.exe)
```

1.1.8. Usage

Explains the usage of a function as below.

Displays the characters & Eliminates the characters

- (1) Open the Line Display Control with performing Open() method.
- (2) Claim the Line Display Control with performing Claim(timeout) method.
- (3) Enable the Line Display Control with performing DeviceEnabled property equals True.
- (4) Determine the Cursor position with setting as CursorRow property equals 0 and CursorColumn property equals 1.
- (5) Displays the string at cursor position with performing DisplayText("-1234567890")
- (6) Eliminates the all character in window with performing ClearText() method.
- (7) Disable the Line Display Control with performing DeviceEnabled property equals FALSE.
- (8) Release the Line Display Control with performing Release() method.
- (9) Close the Line Display Control with performing Close() method.



1.1.9. Result Code list of property modification and method execution

The list of the Result code name vs value.

ResultCode	Value
OPOS_SUCCESS	0
OPOS_E_CLOSED	101
OPOS_E_CLAIMED	102
OPOS_E_NOTCLAIMED	103
OPOS_E_NOSERVICE	104
OPOS_E_DISABLED	105
OPOS_E_ILLEGAL	106
OPOS_E_NOHARDWARE	107
OPOS_E_OFFLINE	108
OPOS_E_NOEXIST	109
OPOS_E_EXISTS	110
OPOS_E_FAILUER	111
OPOS_E_TIMEOUT	112
OPOS_E_BUSY	113
OPOS_E_EXTENDED	114

1) Result list with setting the properties.

There is the list of common result and specific result that valid properties.

Property name	ResultCode	Description	Countermeasures
Common	OPOS_SUCCESS	Succeeded in the setting of the property	-
	OPOS_E_CLOSED	Device control is closing	Reset this property after performing Open method
BinaryConversion	OPOS_E_ILLEGAL	It set the invalid value	Sets the valid value
DeviceEnabled	OPOS_E_NOTCLAIMED	Device is not claimed	Reset this property after performing Claim method
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
DeviceBrightness	OPOS_E_NOTCLAIMED	Device is not claimed	Reset this property after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Reset this property after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	It set the invalid value Out of range by 0 to 100.	Sets the valid value(0 to 100)
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes
	OPOS_E_FAILURE	It is the communication error between device and terminal	Has to investigate the root causes

Property name	ResultCode	Description	Countermeasures
CharacterSet	OPOS_E_NOTCLAIMED	Device is not claimed	Reset this property after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Reset this property after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	It set the invalid value	Sets the valid value
CurrentWindow	OPOS_E_ILLEGAL	It set the invalid window value	Sets the valid value
CursorRow	OPOS_E_ILLEGAL	It set the invalid cursor row value	Sets the valid value
CursorColumn	OPOS_E_ILLEGAL	It set the invalid cursor column value	Sets the valid value

2) Result list with performing Open method.

* It notes separately from other methods. Because Open method is more special with comparing the other method.

戻り値	ResultCode	OpenResult	Description	Countermeasures
OPOS_SUCCESS	OPOS_SUCCESS	OPOS_SUCCESS	It has finished correctly.	-
OPOS_E_ILLEGAL	-	OPOS_OR_ALREADYOPEN	It has already opened	-
OPOS_E_NOEXIST	OPOS_E_CLOSED	OPOS_OR_REGBADNAME	Bad registry setting. There is not registry corresponding to the opening name.	Confirm the open name.
OPOS_E_NOEXIST	OPOS_E_CLOSED	OPOS_OR_REGPROGID	S0 did not register correctly	Re-register the S0. If problem occur again, has to investigate the root causes.
OPOS_E_NOSERVICE	OPOS_E_CLOSED	OPOS_OR_CREATE	Failed to create the instance of S0	Re-install this control. If problem occur again, has to investigate the root causes.
OPOS_E_NOSERVICE	OPOS_E_CLOSED	OPOS_OR_BADIF	S0 doesn't support mandatory method	Re-install this control. If problem occur again, has to investigate the root causes.
OPOS_E_NOSERVICE	OPOS_E_CLOSED	OPOS_OR_BADVERSION	S0 version is not correct	Re-install this control. If problem occur again, has to investigate the root causes.
OPOS_E_ILLEGAL	OPOS_E_CLOSED	OPOS_OR_FAILEDOPEN	Failed to create the system resource	Has to investigate the root causes.
OPOS_E_NOEXIST	OPOS_E_CLOSED	OPOS_OR_FAILEDOPEN	Registry setting is not correct	Reset the registry Key. If problem occur again, has to investigate the root causes.
OPOS_E_NOSERVICE	OPOS_E_CLOSED	OPOS_OR_FAILEDOPEN	C0 doesn't support mandatory method	Re-install this control. If problem occur again, has to investigate the root causes.

3) Result list with performing DirectIO method.

Command	Return value/ ResultCode	Description	Countermeasure
Common between commands	OPOS_SUCCESS	It has finished correctly	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_ILLEGAL	Command parameter is illegal	Appoint the valid command
DISP_DIO_DIRECTOUTPUT	OPOS_E_NOTCLAIMED	Device is not claimed	Retry this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Memory cannot be allocated	Has to investigate the root causes.
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILURE	It is the communication error between device and terminal	Has to investigate the root causes.

4) Result list with performing method.

* Below is the result after performing the method except Open-DirectIO method.

Method	Return Value / ResultCode	Description	Countermeasure
Close	OPOS_SUCCESS	Device just disable, and it was closed.	-
	OPOS_E_CLOSED	It is already closed	-
	OPOS_E_ILLEGAL	CheckHealth method is performing in OPOS_CH_INTERACTIVE level	Retry this method after waiting the CheckHealth method finish.
Claim ClaimDevice	OPOS_SUCCESS	Device is just claimed	-
	OPOS_E_CLOSED	It is closed	Retry this method after performing Open method
	OPOS_E_CLAIMED	Device rejects the claim	Retry this method after releasing device by other application.
	OPOS_E_ILLEGAL	CheckHealth method is performing in OPOS_CH_INTERACTIVE level	Retry this method after waiting the CheckHealth method finish.
		Failed the start of the thread	Has to investigate the root causes.
		Invalid parameter was appointed when device was opened.	Has to investigate the root causes.
	OPOS_E_TIMEOUT	Timeout occurred when application waits device releasing by other application.	Retry this method after releasing device by other application.

Method	Return Value / ResultCode	Description	Countermeasure
Claim	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_FAILUER	Error occurred when device was opened	Has to investigate the root causes.
Release ReleaseDevice	OPOS_SUCCESS	Device is released	-
	OPOS_E_CLOSED	It is closed	-
	OPOS_E_ILLEGAL	Application did not claim the device CheckHealth method is performing in OPOS_CH_INTERACTIVE level	- Retry this method after waiting the CheckHealth method finish.
CheckHealth	OPOS_SUCCESS	CheckHealth could start correctly	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid CheckHealthLevel was appointed	Appoint the valid CheckHealth level
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
		NG button was appointed on OPOS_CH_INTERACTIVE dialogue.	-

Method	Return Value / ResultCode	Description	Countermeasure
ResetStatistics	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
RetrieveStatistics	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
UpdateStatistics	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
DisplayText	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid Attribute was appointed	Appoint the valid Attribute

Method	Return Value / ResultCode	Description	Countermeasure
DisplayText	OPOS_E_ILLEGAL	Memory cannot be allocated	Has to investigate the root causes.
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
DisplayTextAt	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid Attribute was appointed	Appoint the valid Attribute
		Invalid Row/Cloumn was appointed	Appoint the valid Row/Column
		Memory cannot be allocated	Has to investigate the root causes.

Method	Return Value / ResultCode	Description	Countermeasure
DisplayTextAt	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
ClearText	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
ScrollText	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method

Method	Return Value / ResultCode	Description	Countermeasure
ScrollText	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid Direction was appointed	Appoint the valid Direction
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
SetDescriptor	OPOS_SUCCESS	It has finished correctly.	–
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
SetDescriptor	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid Descriptor was appointed	Appoint the valid Descriptor

Method	Return Value / ResultCode	Description	Countermeasure
SetDescriptor	OPOS_E_ILLEGAL	Invalid Attribute was appointed	Appoint the valid Attribute
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
ClearDescriptors	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection
	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
CreateWindow	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method

Method	Return Value / ResultCode	Description	Countermeasure
CreateWindow	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid parameter was appointed	Appoint the valid parameter
		Memory cannot be allocated	Has to investigate the root causes.
DestroyWindow	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Window Number equals 0, this window cannot be deleted.	Retry this method after setting CurrentWindow property besides 0.
		Information of current window couldn't be got.	Has to investigate the root causes.
RefreshWindow	OPOS_SUCCESS	It has finished correctly.	-
	OPOS_E_CLOSED	It is closed	call this method after performing Open method
	OPOS_E_NOTCLAIMED	Device is not claimed	call this method after performing Claim method
	OPOS_E_DISABLED	Device is disabled	Retry this method after setting DeviceEnabled property true
	OPOS_E_ILLEGAL	Invalid Window was appointed	Appoint the valid Window
	OPOS_E_NOHARDWARE	Device is power off or device is not connected	Check the device power supply and the device connection

Method	Return Value / ResultCode	Description	Countermeasure
RefreshWindow	OPOS_E_TIMEOUT	It is the communication timeout between device and terminal	Has to investigate the root causes.
	OPOS_E_FAILUER	It is the communication error between device and terminal	Has to investigate the root causes.
ReadCharacterAtCursor	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
DefineGlyph	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
DisplayBitmap	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-
SetBitmap	OPOS_E_CLOSED	It is closed	-
	OPOS_E_NOSERVICE	This method is not support because of SO Version is too old	-