

Woosim OPOS Driver

Application Programmer Reference

Revision 3.2

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1. Overview

This guide provides necessary information about the application program development under POS system using Woosim Systems thermal printer and its OPOS driver

To use Woosim printer under POS system Woosim OPOS driver should be installed on the POS system host device. Refer to the "OPOS Driver Setup Guide" about Woosim OPOS driver installation and setup.

Woosim OPOS Driver supports only RX-MCU based thermal printers which are manufactured by Woosim Systems. It does not guarantee the normal operation for the other devices.

This document is made on a UPOS v1.13 specification basis. About details for UPOS, refer to the UPOS specification.

This document is subject to change without notice.

1.1. Definitions and Abbreviations

LDN	Local Device Name
MCU	Main Control Unit
MSR	Magnetic Stripe Reader
OLE	Object Linking and Embedding
OPOS	OLE for Retail POS
POS	Point of Sale
RX	RENESAS (MCU chip brand)
UPOS	Unified POS

1.2. References

- UnifiedPOS Retail Peripheral Architecture version 1.13 / NRF / 2009

2. POS Printer

2.1. Properties

This is property initial values in Woosim OPOS Printer Driver.

Journal station and Slip station are not supported, and this supports only Receipt station.

Some values can be different for some printers.

2.1.1. Capability Properties

Property	Value
CapCompareFirmwareVersion	FALSE
CapPowerReporting	OPOS_PR_NONE
CapStatisticsReporting	FALSE
CapUpdateFirmware	FALSE
CapUpdateStatistics	FALSE
CapCharacterSet	PTR_CCS_ASCII
CapCoverSensor	model dependent
CapMapCharacterSet	FALSE
CapRec2Color	FALSE
CapRecBarCode	TRUE
CapRecBitmap	TRUE
CapRecBold	TRUE
CapRecCartridgeSensor	FALSE
CapRecColor	PTR_COLOR_PRIMARY
CapRecDhigh	TRUE
CapRecDwide	TRUE
CapRecDwideDhigh	TRUE
CapRecEmptySensor	TRUE
CapRecItalic	FALSE
CapRecLeft90	TRUE
CapRecMarkFeed	model dependent
CapRecNearEndSensor	model dependent
CapRecPageMode	TRUE
CapRecPapercut	model dependent
CapRecPresent	TRUE
CapRecRight90	TRUE
CapRecRotate180	TRUE

CapRecRuledLine	0
CapRecStamp	FALSE
CapRecUnderline	TRUE
CapTransaction	TRUE

2.1.2. Functionality Properties

Property	Value
FontTypefaceList	Empty
PageModeArea	1 inch printer: "192,2400" 2 inch printer: "384,2400" 3 inch printer: "576,2400" 4 inch printer: "832,2400"
PageModeDescriptor	PTR_PM_BITMAP PTR_PM_BARCODE PTR_PM_BM_ROTATE PTR_PM_BC_ROTATE
RecBarCodeRotationList	"0,R90,L90,180"
RecBitmapRotationList	"0,R90,L90,180"
RecLineChars	1 inch printer: 21 2 inch printer: 32 3 inch printer: 48 4 inch printer: 69
RecLineCharsList	1 inch printer: "16,21,24" 2 inch printer: "32,42,48" 3 inch printer: "48,64,72" 4 inch printer: "69,92,104"
RecLineHeight	24
RecLineSpacing	default: 30 (0~255)
RecLinesToPaperCut	model dependent
RecLineWidth	1 inch printer: 192 2 inch printer: 384 3 inch printer: 576 4 inch printer: 832
RecSidewaysMaxChars	RecLineChars x 2
RecSidewaysMaxLines	RecLineWidth / RecLineSpacing

2.1.3. CharacterSet Property

Property	Value
CharacterSet	437
CharacterSetList	"437,1(Katakana),850,860,863,865,852,857,737,866,862,775,12(Polish),28605, 1252,858,855,1251,1250,1253,1254,1255,1258,1257,24(Azerbaijani),874,720, 1256,42(Farsi),43(ArabicFormB),50(Hindi),932,949,950,54936"

CharacterSetList property can be different partly depending on printer's release date.

For some character set, *RecLineChars* property can be fixed at specific value.

Among values 932, 949, 950, and 54936 in *CharacterSetList* property, only one value can be supported depending on printer release area.

- 932 (Shift-JIS Japanese)
- 949 (KSC5601 Korean)
- 950 (BIG5 Traditional Chinese)
- 54936 (GB18030 Simplified Chinese)

2.1.4. Model Dependent Properties

Model	CapCover Sensor	CapRec MarkFeed	CapRecNear EndSensor	CapRec Papercut	RecLines ToPaperCut
CP381	TRUE	0	TRUE	TRUE	3
CP383	TRUE	0	TRUE	TRUE	3
DT380	TRUE	0	TRUE	TRUE	3
DT381	TRUE	0	TRUE	TRUE	3
DT383	TRUE	0	TRUE	TRUE	2
i250	TRUE	11	FALSE	FALSE	1
i350	TRUE	11	FALSE	FALSE	2
i450	TRUE	11	FALSE	FALSE	2
PP40	FALSE	0	FALSE	FALSE	3
R240	FALSE	11	FALSE	FALSE	1
R241	TRUE	11	FALSE	FALSE	1
R341	TRUE	11	FALSE	FALSE	1
R350	TRUE	11	FALSE	FALSE	1
SM40	FALSE	11	FALSE	FALSE	1

If *CapRecMarkFeed* property value is 11, the below method is supported.

- PTR_MF_TO_TAKEUP
- PTR_MF_TO_CUTTER
- PTR_MF_TO_NEXT_TOF

2.2. Methods

These methods are supported in Woosim OPOS Printer Driver.

The return value of all methods is saved in *ResultCode* property.

ResultCodeExtended property value is effective only when *ResultCode* value is OPOS_E_EXTENDED.

2.2.1. Common Method List

Method	Support
CheckHealth	O
ClaimDevice	O
ClearOutput	O

CloseService	O
CompareFirmwareVersion	X
DirectIO	X
OpenService	O
ReleaseDevice	O
ResetStatistics	X
RetrieveStatistics	X
UpdateFirmware	X
UpdateStatistics	X

2.2.2. POS Printer Method List

Method	Support
BeginInsertion	X
BeginRemoval	X
ChangePrintSide	X
ClearPrintArea	X
CutPaper	O
DrawRuledLine	X
EndInsertion	X
EndRemoval	X
MarkFeed	CapRecMarkFeed property dependent
PageModePrint	O
PrintBarCode	O
PrintBitmap	O
PrintImmediate	O
PrintMemoryBitmap	O
PrintNormal	O
PrintTwoNormal	X
RotatePrint	PTR_RP_RIGHT90, PTR_RP_LEFT90, PTR_RP_ROTATE180, PTR_RP_NORMAL PTR_RP_BARCODE, PTR_RP_BITMAP
SetBitmap	O
SetLogo	O
TransactionPrint	O
ValidateData	O

PrintBitmap method supports the following image file formats:

- BMP
- GIF

- JPG
- PNG

2.2.3. POS Printer Escape Sequence

PrintNormal method includes various Escape Sequences defined by UPOS specification. The below table shows the supported feature set about each Escape Sequence.

Name	Data	Support
Paper cut	ESC [#]P	O
Feed and Paper cut	ESC [#]fP	O
Feed, Paper cut, and Stamp	ESC [#]sP	X
Fire stamp	ESC sL	X
Print bitmap	ESC #B	O
Print top logo	ESC tL	O
Print bottom logo	ESC bL	O
Feed lines	ESC [#]lF	O
Feed units	ESC [#]uF	O
Feed reverse	ESC [#]rF	O
Pass through embedded data	ESC [*]#E	O
Print in-line barcode	ESC [*]#R	O
Print in-line ruled line	ESC *#dL	X
Font typeface selection	ESC #fT	X
Bold	ESC [!]bC	O
Underline	ESC [!][#]uC	O
Italic	ESC [!]iC	X
Alternate color (Custom)	ESC [#]rC	X
Reverse video	ESC [!]rvC	O
Shading	ESC [#]sC	X
Single high and wide	ESC 1C	O
Double wide	ESC 2C	O
Double high	ESC 3C	O
Double high and wide	ESC 4C	O
Scale horizontally	ESC #hC	O
Scale vertically	ESC #vC	O
RGB Color	ESC [#]fC	X
SubScript	ESC [!]tbC	X
SuperScript	ESC [!]tpC	X
Center justify	ESC cA	O
Right justify	ESC rA	O

Left justify	ESC IA	O
Strike-through	ESC ![#]stC	X
Normal	ESC N	O

3. Cash Drawer

3.1. Properties

This is property initial values in Woosim Cash Drawer Driver.

Property	Value
CapCompareFirmwareVersion	FALSE
CapPowerReporting	OPOS_PR_NONE
CapStatisticsReporting	FALSE
CapUpdateFirmware	FALSE
CapUpdateStatistics	FALSE
CapStatus	FALSE
CapStatusMultiDrawerDetect	FALSE

3.2. Methods

These methods are supported in Woosim Cash Drawer Driver.

The return value of all methods is saved in *ResultCode* property.

ResultCodeExtended property value is effective only when *ResultCode* value is OPOS_E_EXTENDED.

3.2.1. Common Method List

Method	Support
CheckHealth	O
ClaimDevice	O
CloseService	O
CompareFirmwareVersion	X
DirectIO	X
OpenService	O
ReleaseDevice	O
ResetStatistics	X
RetrieveStatistics	X
UpdateFirmware	X
UpdateStatistics	X

3.2.2. Cash Drawer Method List

Method	Support
OpenDrawer	O
WaitForDrawerClose	X

4. MSR

4.1. Properties

This is property initial values in Woosim MSR Driver.

Property	Value
CapCompareFirmwareVersion	FALSE
CapPowerReporting	OPOS_PR_NONE
CapStatisticsReporting	FALSE
CapUpdateFirmware	FALSE
CapUpdateStatistics	FALSE
CapCardAuthentication	Empty
CapDataEncryption	MSR_DE_NONE
CapDeviceAuthentication	MSR_DA_NOT_SUPPORTED
CapISO	TRUE
CapJISOne	FALSE
CapJISTwo	FALSE
CapTrackDataMasking	FALSE
CapTransmitSentinels	FALSE
CapWritableTracks	MSR_TR_NONE
CardTypeList	MSR_CT_BANK

4.2. Methods

These methods are supported in Woosim MSR Driver.

The return value of all methods is saved in *ResultCode* property.

ResultCodeExtended property value is effective only when *ResultCode* value is OPOS_E_EXTENDED.

4.2.1. Common Method List

Method	Support
CheckHealth	O
ClaimDevice	O
ClearInput	O
ClearInputProperties	O
CloseService	O
CompareFirmwareVersion	X
DirectIO	X
OpenService	O

ReleaseDevice	O
ResetStatistics	X
RetrieveStatistics	X
UpdateFirmware	X
UpdateStatistics	X

4.2.2. MSR Method List

Method	Support
AuthenticateDevice	X
DeauthenticateDevice	X
RetrieveCardProperty	O
RetrieveDeviceAuthenticationData	X
UpdateKey	X
WriteTracks	X

4.3. Usage

Woosim Systems MSR device does not operate independently. It is operated in a form attached to the printer. Due to this, in order for the MSR device attached to the printer to be activated and ready to read the magnetic card, the printer must be in MSR mode.

DeviceEnabled property is used to activate MSR device. When the *DeviceEnabled* property is set to TRUE by the POS application program, the printer is switched to MSR mode and the MSR device is activated.

After reading the magnetic card information properly, the card information is stored in the MSR driver. After that, the printer exits MSR mode and the MSR device is deactivated again.

The card information stored in the MSR driver can be obtained by referring to the property values from the POS application program. In order to activate MSR device again, set the *DeviceEnabled* property to TRUE by the POS application program and repeat the above process.

5. Sample Project

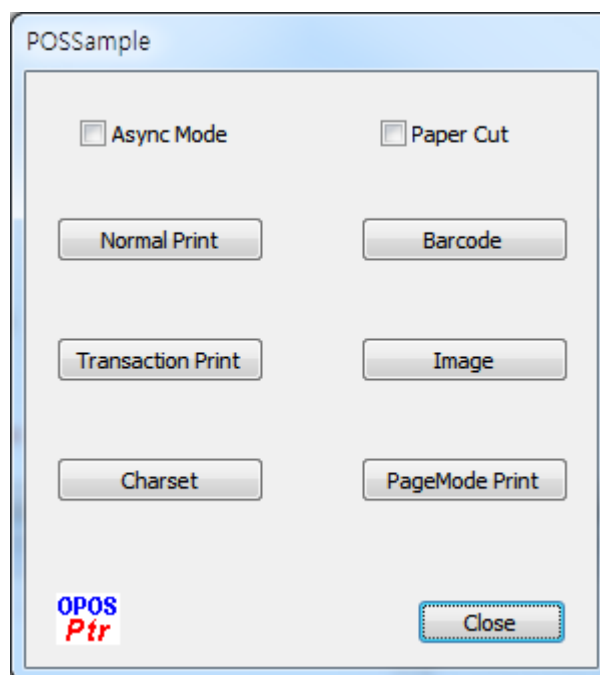
OPOS Driver package includes POSSample project and it is provided for OPOS application developers as references. It is created in Microsoft Visual Studio 2008, and before running it, the following part should be checked in developer's IDE.

```
bool CPOSSampleDlg::OpenPrinter(void)
{
    long    ret;

    ret = m_PosPtrCO.Open(_T("WSP")); // LDN
    if (ret == OPOS_SUCCESS)
    {
        ...
    }
    return true;
}
```

In the above code LDN which is marked as "WSP" should be changed to the real LDN which is set by OPOS Setup Utility in user's system.

After that, build and run POSSample project, following Dialog is shown.



When clicking each button under printer connection, data specified in the program is printed.

<Charset> button is used for Korean character printing in program source, but if the connected printer does not have Korean font, this part will not print normally.

For details, refer to the POSSample project source code.