

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

POSPrinter (TM-U950)

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Section 1. Introduction

This manual describes the method of use and related items, as well as machine-specific precautions, when the EPSON TM-U950 POS Printers are used with the EPSON OPOS ADK program.

This manual applies to the following devices.

Device List

Serial	Parallel	USB
TM-U950	TM-U950P	TM-U950U
TM-U950M ^{*1}	TM-U950PM ^{*1}	-

^{*1} South Asia character model.

Before reading the manual, see the following explanation about the characteristic of the TM-U950.

TM-U950

Station: Receipt / Journal / Slip (9-pin Serial impact dot matrix)

Throughout the manual, the various model names will be referred to as TM-U950.

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

This section describes connection configurations and how to make the settings for the TM-U950 Series printers.

2.1 References of Firmware Versions

Refer to the release notes (Relnote.txt).

2.2 Settings of DIP Switches

Confirm that the following settings have been made correctly.

1) Serial port

DIP-SW1

No.	Setting	
1	OFF	Fixed at OFF
2	OFF	Settable
3	OFF	Settable
4	OFF	Settable
5	OFF	Settable
6	OFF	Settable
7	OFF	Recommended
8	OFF	Fixed at OFF

DIP-SW2

No.	Setting	
1	OFF	Recommended
2	OFF	Recommended
3	ON	Fixed at ON
4	OFF	Recommended
5	OFF	Settable
6	ON	Fixed at ON
7	OFF	Fixed at OFF
8	OFF	Fixed at OFF

- It is possible to change the settings of DIP-SW1-7 (Processing of the data input error) and DIP-SW2-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- Set DIP-SW1-8 (Handshake) to DTR/DSR.
- Set DIP-SW1-1 (Bit length) to 8 bits.
- Set DIP-SW1-2 to DIP-SW1-5 in accordance with the port information.
- The described set values are the default values. For the details, refer to the product manual of the POSPrinter. Also, if these settings are changed, make sure to change the port information using the SetupPOS utility.
- Set DIP-SW1-6 in accordance with whether or not a customer display is connected. If connected, set to ON. If not, set to OFF.
- It is possible to change the settings of DIP-SW2-1 (Auto line feed) and DIP-SW2-4 (Carriage Moving Speed), but it is recommended to leave them OFF.
- Make other settings in accordance with the settings described above.

2) Parallel Port / USB Port

DIP-SW1

No.	Setting	
1	OFF	Fixed at OFF
2	OFF	Fixed at OFF
3	OFF	Fixed at OFF
4	OFF	Fixed at OFF
5	OFF	Fixed at OFF
6	OFF	Fixed at OFF
7	OFF	Fixed at OFF
8	OFF	Fixed at OFF

DIP-SW2

No.	Setting	
1	OFF	Recommended
2	OFF	Recommended
3	ON	Fixed at ON
4	OFF	Recommended
5	OFF	Settable
6	ON	Fixed at ON
7	OFF	Fixed at OFF
8	ON	Fixed at ON

- It is possible to change the settings of DIP-SW2-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- It is possible to change the settings of DIP-SW2-1 (Auto Line Feed) and DIP-SW2-4(Carriage Moving Speed), but it is recommended to leave them OFF.
- When parallel I/F is used with Windows 2000, Windows XP or Windows Vista please set Busy Condition of DIP-SW2-5 to ON (Buffer full).
- Make other settings in accordance with the settings described above.

2.3 Port Information

1) Port information when serial port is used

The port information that can be set with the SetupPOS utility is as follows.

Item	Setting range
Baud rate [bps]	1200, 2400, 4800, 9600
Bit length [bit]	8
Parity	NONE, ODD, EVEN
Stop bit [bit]	1
Handshake	DTR/DSR
Output buffer length [byte]	32 to 1024
Output interval time [ms]	0 to 9999

The default settings are as shown in the following table.

Item	Setting range
Baud rate [bps]	9600
Bit length [bit]	8
Parity	NONE
Stop bit [bit]	1
Handshake	DTR/DSR
Output buffer length [byte]	1024
Output interval time [ms]	2500

2) Port information when using parallel port

The port information that can be set with the SetupPOS utility is as follows.

Item	Setting range
Output buffer length [byte]	32 to 1024
Output interval time [ms]	0 to 9999

The default settings are as shown in the following table.

Item	Setting range
Output buffer length [byte]	1024
Output interval time [ms]	2500

2.4 Device Settings

The following explanation is about the settings for TM-U950.

2.4.1 Usable Device Specific Settings

For the TM-U950, the following Device Specific Settings are settable by the SetupPOS utility. For the detail, please refer to the Section 2 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)”.

Tab	Settings
General	Disable panel buttons
	Assume print complete when data output finishes
	Ignore firmware version check
	Homogenize Error Codes
	Output complete timeout
Color Bitmap	Method
	Brightness
	Primary
Status Log	ERROR
	OFFLINE
	Log file name (full path name)
	Maximum file size [KB]

Section 3. Function Details

This section describes the functions of the TM-U950 printers in details. Supplementary explanation of the parts not described in detail in the "UPOS" is also given here.

3.1 Property Set Values and Default Values

The following explanation is about the property set values and the default values.

3.1.1 Capability Set Values

The following values are the Capability set values.

Capability Name	TM-U950
CapTransaction	TRUE
CapCoverSensor	TRUE
CapConcurrentRecSlp	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentJrnRec	TRUE
CapConcurrentPageMode	FALSE
CapCharacterSet	PTR_CCS_ASCII
CapMapCharacterSet	FALSE
CapJrnUnderline	TRUE
CapJrnNearEndSensor	TRUE
CapJrnItalic	FALSE
CapJrnEmptySensor	TRUE
CapJrnDwideDhigh	TRUE
CapJrnDwide	TRUE
CapJrnDhigh	TRUE
CapJrnColor	PTR_COLOR_PRIMARY
CapJrnCartridgeSensor	0
CapJrnBold	TRUE
CapJrn2Color	FALSE
CapJrnPresent	TRUE
CapRecPageMode	FALSE
CapRecUnderline	TRUE
CapRecStamp	FALSE
CapRecRotate180	TRUE
CapRecRight90	FALSE
CapRecPapercut	TRUE
CapRecNearEndSensor	TRUE
CapRecMarkFeed	0
CapRecLeft90	FALSE
CapRecItalic	FALSE
CapRecEmptySensor	TRUE
CapRecDwideDhigh	TRUE
CapRecDwide	TRUE

CapRecDhigh	TRUE
CapRecColor	PTR_COLOR_PRIMARY
CapRecCartridgeSensor	0
CapRecBold	TRUE
CapRecBitmap	TRUE
CapRecBarCode	FALSE
CapRec2Color	FALSE
CapRecPresent	TRUE
CapSlpUnderline	TRUE
CapSlpRotate180	TRUE
CapSlpRight90	FALSE
CapSlpNearEndSensor	TRUE
CapSlpLeft90	FALSE
CapSlpItalic	FALSE
CapSlpEmptySensor	TRUE
CapSlpDwideDhigh	TRUE
CapSlpDwide	TRUE
CapSlpDhigh	TRUE
CapSlpColor	PTR_COLOR_PRIMARY
CapSlpCartridgeSensor	0
CapSlpBothSidesPrint	FALSE
CapSlpBold	TRUE
CapSlpBitmap	TRUE
CapSlpBarCode	FALSE
CapSlp2Color	FALSE
CapSlpFullslip	TRUE
CapSlpPresent	TRUE
CapSlpPageMode	FALSE

3.1.2 List Properties

The List Properties are explained in the following.

● TM-U950

List Property	Settings
CharacterSetList	(TM-U950) "255,437,850,858,860,863,865,998"
	(TM-U950M) *1 "120,121,123,126,437,998" *2
JrnLineCharsList	"30,40"
RecLineCharsList	"30,40"
SlpLineCharsList	"66,88"
RecBarCodeRotationList	" "
RecBitmapRotationList	"0, 180"
SlpBarCodeRotationList	" "
SlpBitmapRotationList	"0, 180"
FontTypefaceList	" "

*1 Device is limited to South Asia model.

*2 The list is for South Asia character model.

3.1.3 Width and Height Properties

The width and height properties are described below.

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	12	127	0
JrnLineSpacing	12	127	0
SlpLineSpacing	12	127	0
SlpLineHeight [dot]	9		
RecLineHeight [dot]	9		
JrnLineHeight [dot]	9		
SlpLineWidth [dot]	400		
RecLineWidth [dot]	180		
JrnLineWidth [dot]	180		
RecSidewaysMaxLines	0 ^{*2}		
RecSidewaysMaxChars	0 ^{*3}		
RecLinesToPaperCut	11 ^{*1}		
SlpSidewaysMaxLines	0 ^{*3}		
SlpSidewaysMaxChars	0		
SlpMaxLines	0		

X : No settings

^{*1} It can be changed by the settings of the RecLineSpacing or the character height.
When the RecLineSpacing is "0", the RecLinesToPaperCut is "-1".

^{*2} It can be changed by the settings of the XxxLineSpacing or the XxxLineHeight.

^{*3} It can be changed by the settings of the font width.

*When the RecLineSpacing is 0, the RecLinesToPaperCut is -1.

*When the XxxLineSpacing is 0, the XxxSidewaysMaxLines is -1.

3.1.4 Common Property Strings

The Device information properties are described below.

● TM-U950

I/F	DeviceName	DeviceDescription
S	TM-U950	EPSON TM-U950 POS Printer
	TM-U950M	EPSON TM-U950M POS Printer
P	TM-U950P	EPSON TM-U950P POS Printer
	TM-U950PM	EPSON TM-U950PM POS Printer
U	TM-U950U	EPSON TM-U950U POS Printer

I/F indicate the connected interface.

The following is the list of the two connecting interfaces.

S: Serial

P: Parallel

U: USB

3.1.5 PageMode Print Properties

Not applicable

3.2 Methods

The following explanation is about supported/unsupported Methods, and the detailed information.

Method	Supported/Unsupported	Compatibility with the PageMode printing
PrintNormal	O	O
PrintTwoNormal	O	X
PrintImmediate	O	O ^{*1}
PrintBarCode	X	O ^{*2}
PrintBitmap	O	O ^{*3}
PrintMemoryBitmap	O	O ^{*3}
CutPaper	O (1-79: Three points remain uncut.) (80-100: One point remains uncut.)	X
MarkFeed	X	X
ChangePrintSide	X	X
ValidateData	O	O
TransactionPrint	O	O
SetLogo	O	O
SetBitmap	O	O
RotatePrint	O	X
EndRemoval	O	O
BeginRemoval	O	O
EndInsertion	O	O
BeginInsertion	O	O
ClearPrintArea	O	O
PageModePrint	O	O

O : Supported

X : Unsupported

^{*1} If the specified Station is ready to print, the printing data shall not be stored in the PageMode printing buffer but, instead, go straight to printing. If the Station is not ready to print, an error is returned.

^{*2} If other than "LEFT" is specified for the printing position of barcode, the printing shall be done, regardless of the PageModeHorizontalPosition property setting, based on the PageModePrintArea property setting in the horizontal direction.

^{*3} If other than "LEFT" is specified for the printing position of bitmap, the printing shall be done, regardless of the PageModeHorizontalPosition property setting, based on the PageModePrintArea property setting in the horizontal direction.

3.3 Escape Sequences

The following figure is about supported/unsupported Escape Sequences.

Escape Sequence	TM-U950
#P	0~100
#fP	0~100
#sP	X
sL	X
#B	O
tL	O
bL	O
#R	X
#F	0-9999
#uF Base Pitch [inch]	0-approx. 50 cm
#rF Maximum [inch]	1
#E	0~65535
#fT	X
[!]bC	O
#uC	1
[!]iC	X
#rC	1
[!]rvC	X
#sC	X
#fC	X
[!]tbC	X
[!]tpC	X
1C	O
2C	O
3C	O
4C	O
#hC	1-2
#vC	1-2
cA	O
rA	O
lA	O
N	O

O : Supported

X : Unsupported

Numbers: Settable range

*1 Regardless of the PageModeHorizontalPosition property setting, center or right adjust what is to be printed based on the PageModePrintArea property setting in the horizontal direction.

3.4 Power Condition Reports

The TM-U950 does not support Power Condition Reports.

3.5 Synchronous Processing

The TM-U950 does not use Process ID to determine output completion.

3.6 Printing Positions

The TM-U950 support the function for setting printing position.

Function	TM-U950
Left margin	X
Printing Position	O

O: Supported

X: Unsupported

When the left margin setting function is supported, it is possible to specify the horizontal printing position of the bitmap or barcode by dots unit.

When the printing position settings are supported, it is possible to specify the horizontal printing position of the text, bitmap, or the barcode to the left, center, or the right side of the paper.

3.7 Electronic Logo Function (NVRAM)

The TM-U950 does not support the Electronic Logo Function.

3.8 Printable Bitmap Types and Sizes

The TM-U950 support the following bitmap commands. For the detail, please refer to the Section 3 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)”. The allowance ranges for bitmaps are as follows.

- TM-U950

Bitmap command type	Allowance range		
Download bitmap	x (dot)	y (dot)	xy
	1-2040	1-384	<= 98304
One-line bitmap	No setting range		

3.9 Maintenance Counter

The TM-U950 does not support the Maintenance Counter.

3.10 Automatic Recovery Function

The TM-U950 does not have a function for automatic recovery when the power is turned on again after an interruption of power.

Section 4. Warnings

This section describes precautions in use of TM-U950.

- Use the PTR_TWO_RECEIPT_JOURNAL when the print data is output both on the Receipt and on the Journal, in order to keep a high compatibility in the PrintTwoNormal method. The PTR_S_JOURNAL_RECEIPT is still available to be compatible with the old version. The operation with the PTR_S_JOURNAL_RECEIPT is same as the PTR_TWO_RECEIPT_JOURNAL.