

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

POSPrinter (TM-U325)

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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-U325 Series POS Printers are used with the EPSON OPOS ADK program.

This manual applies to the following devices.

Device List

Serial	Parallel	USB	Ethernet
TM-U325	TM-U325P	TM-U325U	TM-U325E

Before reading the manual, see the following explanation about the characteristic of the TM-U325 models.

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

Throughout the manual, the various model names will be referred to as TM-U325.

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-U325 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	Recommended
2	OFF	Recommended
3	OFF	Fixed at OFF
4	OFF	Fixed at OFF
5	OFF	Settable
6	OFF	Settable
7	OFF	Settable
8	OFF	Settable

DIP-SW2

No.	Setting	
1	OFF	Settable
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

- It is possible to change the settings of DIP-SW1-1 (Processing of the data input error) and DIP-SW1-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- Set DIP-SW1-3 (Handshake) to DTR/DSR.
- Set DIP-SW1-4 (Bit length) to 8 bits.
- Set DIP-SW1-5 to DIP-SW1-8 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.
- Make other settings in accordance with the settings described above.

2) Parallel 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	Settable
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	ON	Fixed at ON

- It is possible to change the settings of DIP-SW1-2 (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), but it is recommended to leave them OFF.
- Make other settings in accordance with the settings described above.
- When parallel I/F is used with Windows 2000, Windows XP or Windows Vista, please set Busy Condition of DIP-SW2-1 to ON (Buffer full).

3) 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	Settable
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	ON	Fixed at ON

- It is possible to change the settings of DIP-SW1-2 (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), but it is recommended to leave them OFF.
- Make other settings in accordance with the settings described above.

4) Ethernet 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	Settable
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	ON	Fixed at ON

- It is possible to change the settings of DIP-SW1-2 (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), but it is recommended to leave them OFF.
- 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]	2400,4800,9600,19200
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

3) Port information when using USB port

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

Item	Setting range
Output interval time [ms]	0 to 9999

The default settings are as shown in the following table.

Item	Setting range
Output interval time [ms]	2500

4) Port information when using Ethernet 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-U325.

2.4.1. Usable Device Specific Settings

For the TM-U325, 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-U325 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	Set Value
CapTransaction	TRUE
CapCoverSensor	TRUE
CapConcurrentRecSlp	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentJrnRec	FALSE
CapConcurrentPageMode	FALSE
CapCharacterSet	PTR CCS ASCII
CapMapCharacterSet	FALSE
CapJrnUnderline	FALSE
CapJrnNearEndSensor	FALSE
CapJrnItalic	FALSE
CapJrnEmptySensor	FALSE
CapJrnDwideDhigh	FALSE
CapJrnDwide	FALSE
CapJrnDhigh	FALSE
CapJrnColor	0
CapJrnCartridgeSensor	0
CapJrnBold	FALSE
CapJrn2Color	FALSE
CapJrnPresent	FALSE
CapRecPageMode	FALSE
CapRecUnderline	TRUE
CapRecStamp	FALSE
CapRecRotate180	TRUE
CapRecRight90	FALSE
CapRecPapercut	FALSE
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	FALSE
CapSlpDwideDhigh	TRUE
CapSlpDwide	TRUE
CapSlpDhigh	TRUE
CapSlpColor	PTR_COLOR_PRIMARY
CapSlpCartridgeSensor	0
CapSlpBothSidesPrint	FALSE
CapSlpBold	TRUE
CapSlpBitmap	TRUE
CapSlpBarCode	FALSE
CapSlp2Color	FALSE
CapSlpFullslip	FALSE
CapSlpPresent	TRUE
CapSlpPageMode	FALSE

3.1.2. List Properties

The List Properties are explained in the following.

List Property	Settings
CharacterSetList	"437,850,858,860,863,865,998"
JrnLineCharsList	""
RecLineCharsList	"33,40"
SlpLineCharsList	"33,40"
RecBarCodeRotationList	""
RecBitmapRotationList	"0,180"
SlpBarCodeRotationList	""
SlpBitmapRotationList	"0,180"
FontTypefaceList	""

3.1.3. Width and Height Properties

The line width and height properties are described below.

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	12	127	0
JrnLineSpacing	X	X	X
SlpLineSpacing	12	127	0
SlpLineHeight [dot]	9		
RecLineHeight [dot]	9		
JrnLineHeight [dot]	X		
SlpLineWidth [dot]	200		
RecLineWidth [dot]	200		
JrnLineWidth [dot]	X		
RecSidewaysMaxLines	0		
RecSidewaysMaxChars	0		
RecLinesToPaperCut	8 ^{*1}		
SlpSidewaysMaxLines	0		
SlpSidewaysMaxChars	0		
SlpMaxLines	9		

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".

3.1.4. Common Property Strings

The Device information properties are described below.

I/F	DeviceName	DeviceDescription
S	TM-U325	EPSON TM-U325 POS Printer
P	TM-U325P	EPSON TM-U325P POS Printer
U	TM-U325U	EPSON TM-U325U POS Printer
E	TM-U325E	EPSON TM-U325E POS Printer

I/F indicate the connected interface.

The following is the list of the four connecting interfaces.:

S: Serial

P: Parallel

U: USB

E: Ethernet

3.2. Methods

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

Method	Supported/Unsupported
PrintNormal	O
PrintTwoNormal	X
PrintImmediate	O
PrintBarCode	X
PrintBitmap	O
PrintMemoryBitmap	O
CutPaper	X
MarkFeed	X
ChangePrintSide	X
ValidateData	O
TransactionPrint	O
SetLogo	O
SetBitmap	O
RotatePrint	O
EndRemoval	O
BeginRemoval	O
EndInsertion	O
BeginInsertion	O
ClearPrintArea	X
PageModePrint	X

O : Supported

X : Unsupported

3.3. Escape Sequences

The following figure is about supported/unsupported Escape Sequences.

Escape Sequence	Supported/Unsupported
#P	X
#fP	X
#sP	X
sL	X
#B	O
tL	O
bL	O
#R	X
#lF	0~9999
#uF Base Pitch [inch]	0~ approx. 50 cm
#rF Maximum [inch]	2
#E	0~65535
#fT	X
[!]bC	X
#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

3.4. Power Condition Reports

The TM-U325 models do not support Power Condition Reports.

3.5. Synchronous Processing

The TM-U325 models do not use Process ID to determine output completion.

3.6. Printing Positions

The TM-U325 models support the function for setting printing position.

Function	Receipt
Left margin	O
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-U325 models do not support the Electronic Logo Function.

3.8. Printable Bitmap Types and Sizes

The TM-U325 models 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.

Bitmap command type	Allowance range
One-line bitmap	No setting range

3.9. Maintenance Counter

The TM-U325 models do not support the Maintenance Counter.

3.10. Automatic Recovery Function

The TM-U325 models do not have a function for automatic recovery when the power is turned on again after an interruption of power.

3.11. Output without Flow Control on the USB/Ethernet Interfaces

The TM-U325 models do not supports outputting without flow control on the USB/Ethernet interfaces.

3.12. Validation Printing

The TM-U325 models support both slip and validation printing.

Select Validation using the DirectIO method.

Specify `PTR_DI_SELECT_SLIP` in the first parameter, then specify `PTR_DI_SLIP_FULLSLIP` or `PTR_DI_SLIP_VALIDATION` in the second parameter. After switching slip and validation, execute the `Begin/EndInsertion`, `Begin/EndRemoval`, or `PrintNormal` as normal printing operation. Some properties are automatically changed by the switching.

For the detail of the DirectIO methods, please refer to the Section 4 of "EPSON OPOS ADK MANUAL/APPLICATION DEVELOPMENT GUIDE/ POSPrinter (TM Series)". Also refer to the Section 5 of the manual for the programming examples.

Section 4. Warnings

This section describes precautions in use of the TM-U325.

There is no specific warning.