

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

**POSPrinter(TM-T81M/TM-T81IIM/TM-T81IIM-42C/
TM-T81IIIM)**

Version 3.00 Mar. 2024

Notes

- (1) Reproduction of any part of this documentation by any means is prohibited.
- (2) The contents of this documentation are subject to change without notice.
- (3) Comments and notification of any mistakes in this documentation are gratefully accepted.
- (4) This software cannot be used with other equipment that the specified.
- (5) EPSON will not be responsible for any consequences resulting from the use of any information in this documentation.

Trademarks

Microsoft®, Windows®, Windows Server®, Visual Basic® and Visual C++® are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

QR Code is a registered trademark of Denso Wave Incorporated.

EPSON® and ESC/POS® are registered trademarks of Seiko Epson Corporation.

Other product and company names used herein are for identification purposes only and may be trademarks or registered trademarks of their respective companies.

Contents

SECTION 1. INTRODUCTION	1
SECTION 2. DETAILS ON SETTINGS	2
2.1 References of Firmware Versions	2
2.2 Settings of DIP Switches	2
2.2.1 <i>TM-T81M</i>	2
2.2.2 <i>TM-T81IIM</i>	4
2.2.3 <i>TM-T81IIIM</i>	4
2.3 Port Information.....	5
2.4 Device Settings	6
2.4.1 <i>Usable Device Specific Settings</i>	6
2.4.2 <i>Multilingual font Setting</i>	7
SECTION 3. FUNCTION DETAILS.....	8
3.1 Property Set Values and Default Values.....	8
3.1.1 <i>Capability Set Values</i>	8
3.1.2 <i>List Properties</i>	10
3.1.3 <i>Width and Height Properties</i>	12
3.1.4 <i>Common Property Strings</i>	13
3.1.5 <i>PageMode Print Properties</i>	13
3.2 Methods.....	15
3.3 Escape Sequences.....	16
3.4 Printable Barcode Type	17
3.5 QR CODE Printing.....	18
3.5.1 <i>QR CODE Printing</i>	18
3.5.2 <i>Printing Size</i>	18
3.5.3 <i>Error Correction Level</i>	18
3.5.4 <i>Printing Position</i>	18
3.6 Synchronous Processing	19
3.7 Printing Positions.....	19
3.8 Electronic Logo Function (NVRAM)	19
3.9 Printable bitmap types and sizes	20
3.10 Printable bitmap types and sizes	20
3.11 Automatic Recovery Function	21
3.12 Output without Flow Control on the USB Interface	21
SECTION 4. WARNINGS	22

Section 1. Introduction

This manual describes the method of use and related items, as well as machine-specific precautions, when the EPSON TM-T81M, TM-T81IIM, TM-T81IIM-42C and TM-T81IIIM POS Printers are used with the EPSON OPOS ADK program.

This manual applies to the following devices.

Device List

Serial	Parallel	USB	Ethernet
TM-T81M	TM-T81PM	TM-T81MU	TM-T81ME
TM-T81IIM	-	TM-T81IIMU	TM-T81IIME
TM-T81IIM-42C	-	TM-T81IIM-42CU	TM-T81IIM-42CE
TM-T81IIIM	-	TM-T81IIIMU	TM-T81IIIME

Before reading the manual, see the following explanation about the characteristic of the TM-T81M, TM-T81IIM, TM-T81IIM-42C and TM-T81IIIM.

Station: Receipt (Line Thermal 203 dpi X 203 dpi)

Throughout the manual, the various model names will be referred to as TM-T81 series.

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-T81 series printers.

2.1 References of Firmware Versions

Refer to the release notes (Relnote.txt/SupportedDevicesList.txt).

2.2 Settings of DIP Switches

2.2.1 TM-T81M

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	ON	Settable
8	OFF	Settable

DIP-SW2

No.	Setting	
1	OFF	Settable
2	OFF	Settable
3	OFF	Settable
4	OFF	Settable
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.
- Set DIP-SW2-2 in accordance with whether a customer display is connected. If connected, set ON. If not, set OFF.
- Set DIP-SW2-3 and DIP-SW2-4 (Specification of the print density) to match the environment of use.
- Make other settings in accordance with the settings described above.
- When using with the power saving mode, set DIP-SW2-3 and DIP-SW2-4 to ON.

2) Parallel Port

DIP-SW 1

No.	Setting	
1	OFF	Recommended
2	OFF	Recommended
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-SW 2

No.	Setting	
1	ON	Recommended
2	OFF	Fixed at OFF
3	OFF	Settable
4	OFF	Settable
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-SW1-1 (Auto line feed) and DIP-SW1-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- Set DIP-SW2-3 and DIP-SW2-4 (Specification of the print density) to match the environment of use.
- Make other settings in accordance with the settings described above.
- When using with the power saving mode, set DIP-SW2-3 and DIP-SW2-4 to ON.

3) USB Port

DIP-SW1

No.	Setting	
1	OFF	Recommended
2	OFF	Recommended
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	Fixed at OFF
3	OFF	Settable
4	OFF	Settable
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-SW1-1 (Auto line feed) and DIP-SW1-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- Set DIP-SW2-3 and DIP-SW2-4 (Specification of the print density) to match the environment of use.
- Make other settings in accordance with the settings described above.
- When using with the power saving mode, set DIP-SW2-3 and DIP-SW2-4 to ON.

4) Ethernet Port

DIP-SW1

No.	Setting	
1	OFF	Recommended
2	OFF	Recommended
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	Fixed at OFF
3	OFF	Settable
4	OFF	Settable
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-SW1-1 (Auto line feed) and DIP-SW1-2 (Specification of the received buffer capacity), but it is recommended to leave them OFF.
- Set DIP-SW2-3 and DIP-SW2-4 (Specification of the print density) to match the environment of use.
- Make other settings in accordance with the settings described above.
- When using with the power saving mode, set DIP-SW2-3 and DIP-SW2-4 to ON.

2.2.2 TM-T81IIM

Not applicable

2.2.3 TM-T81IIIM

Not applicable

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, 38400, 57600, 115200
Bit length [bit]	8
Parity	NONE, ODD, EVEN
Stop bit [bit]	1
Handshake	DTR/DSR

The default settings are as shown in the following table.

Item	Setting range
Baud rate [bps]	(TM-T81M) : 9600 (TM-T81IIM, TM-T81IIM-42C, TM-T81IIIM) : 38400
Bit length [bit]	8
Parity	NONE
Stop bit [bit]	1
Handshake	DTR/DSR

- **TM-T81IIM/TM-T81IIM-42C**

The baud rate setting of devices is set using the TM-T81II Utility.
For details, please refer to the “TM-T81II Utility User's Manual”.

- **TM-T81IIIM**

The baud rate setting of devices is set using the TM-T81III Utility.
For details, please refer to the “TM-T81III Utility User's Manual”.

2) Port information when using USB port

Not applicable

3) Port information when using Ethernet port

Not applicable

2.4 Device Settings

The following explanation is about the settings for the TM-T81 series.

2.4.1 Usable Device Specific Settings

For the TM-T81 series, the following device specific settings are settable by the SetupPOS utility. For the detail, please refer to the corresponding part of the Section 2 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)”

TM-T81M:

Tab	Settings
General	Disable panel buttons
	Assume print complete when data output finishes
	Homogenize Error Codes ^{*1}
	Ignore firmware version check
	Output complete timeout
Bitmap	TMFlogo...
	NVRAM
Color Bitmap	Method
	Brightness
	Primary
Status Log	ERROR
	OFFLINE
	Log file name (full path name)
	Maximum file size [KB]
Default Value	Multilingual font
Printing Properties	Receipt Characters per Line
	Receipt Line Spacing [dots]
	CharacterSet [CodePage Number]

^{*1} The operations differ by the firmware versions. See the corresponding part of the section 2 of this manual.

TM-T81IIM, TM-T81IIM-42C and TM-T81IIIM:

Tab	Settings
General	Disable panel buttons
	Assume print complete when data output finishes
	Homogenize Error Codes ^{*1}
	Ignore firmware version check
	Output complete timeout
Bitmap	TMFlogo...
	NVRAM
Color Bitmap	Method
	Brightness
	Primary
Status Log	ERROR
	OFFLINE
	Log file name (full path name)
	Maximum file size [KB]
Default Value	Multilingual font
Printing Properties	Receipt Characters per Line
	Receipt Line Spacing [dots]
	CharacterSet [CodePage Number]

^{*1} The operations differ by the firmware versions. See the corresponding part of the section 2 of this manual.

2.4.2 Multilingual font Setting

The TM-T81 series supports the following font type.

- CHINA GB18030
- VIETNAMESE
- THAI 3 PASS
- THAI 1 PASS

The default paper type is set to CHINA GB18030.

Section 3. Function Details

This section describes the functions of the TM-T81 series 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	Setting Value
CapTransaction	TRUE
CapCoverSensor	TRUE
CapConcurrentRecSlp	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentJrnRec	FALSE
CapConcurrentPageMode	FALSE
CapCharacterSet	PTR_CCS_KANJI*1
CapMapCharacterSet	FALSE*2
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	TRUE
CapRecUnderline	TRUE
CapRecStamp	FALSE
CapRecRotate180	TRUE
CapRecRight90	TRUE
CapRecPapercut	TRUE
CapRecNearEndSensor	TRUE
CapRecMarkFeed	0
CapRecLeft90	TRUE
CapRecItalic	FALSE

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

*1 If Thai 3 Pass character model or VIETNAMESE character model,
“PTR_CCS_UNICODE” is set.

*2 If Thai 3 Pass character model or VIETNAMESE character model, “TRUE” is set.

3.1.2 List Properties

The List Properties are explained in the following.

TM-T81M, TM-T81IIM:

List Property	Settings
CharacterSetList	(Simplified Chinese) "255,437,850,852,858,860,863,865,866,936,998,999,1252" (Thai1 Pass) "437, 874" (Thai3 Pass and Vietnamese) "120,121,126,130,131,437,997" ^{*1}
JrnLineCharsList	""
RecLineCharsList	(Font A) "48" (Font B) "64"
SlpLineCharsList	""
RecBarCodeRotationList	"0,R90, L90, 180"
RecBitmapRotationList	"0,R90, L90, 180"
SlpBarCodeRotationList	""
SlpBitmapRotationList	""
FontTypefaceList	""

TM-T81IIM-42C:

List Property	Settings
CharacterSetList	(Simplified Chinese) "255,437,850,852,858,860,863,865,866,936,998,999,1252" (Thai1 Pass) "437, 874" (Thai3 Pass and Vietnamese) "120,121,126,130,131,437,997" ^{*1}
JrnLineCharsList	""
RecLineCharsList	(Font A) "42" (Font B) "60"
SlpLineCharsList	""
RecBarCodeRotationList	"0,R90, L90, 180"
RecBitmapRotationList	"0,R90, L90, 180"
SlpBarCodeRotationList	""
SlpBitmapRotationList	""
FontTypefaceList	""

^{*1} All characters loaded in the device are allocated to Unicode for printing. However, the BinaryConversion property should be set to "OPOS_BC_NONE" when printing with Unicode.

TM-T81IIIM:

List Property	Settings
CharacterSetList	(Simplified Chinese) "255,437,850,852,858,860,863,865,866,936,998,999, 1252" (Thai1 Pass) "437, 874" (Thai3 Pass and Vietnamese) "120,121,126,130,131,437,997*1"
JrnLineCharsList	{}"
RecLineCharsList	79.5mm: (Font A) "48" (Font B) "64" 57.5mm: (Font A) "35" (Font B) "46"
SlpLineCharsList	{}"
RecBarcodeRotationList	"0, R90, L90, 180"
RecBitmapRotationList	"0, R90, L90, 180"
SlpBarcodeRotationList	{}"
SlpBitmapRotationList	{}"
FontTypefaceList	{}"

3.1.3 Width and Height Properties

The width and height properties are described below.

TM-T81M, TM-T81IIM and TM-T81IIM:

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	30	127	17 ^{*1}
JrnLineSpacing	X	X	X
SlpLineSpacing	X	X	X
SlpLineHeight [dot]	X		
RecLineHeight [dot]	24,17		
JrnLineHeight [dot]	X		
SlpLineWidth [dot]	X		
RecLineWidth [dot]	576		
JrnLineWidth [dot]	X		
RecSidewaysMaxLines	19 ^{*2}		
RecSidewaysMaxChars	(Font A) 138 (Font B) 184		
RecLinesToPaperCut	4 ^{*3}		
SlpSidewaysMaxLines	X		
SlpSidewaysMaxChars	X		
SlpMaxLines	X		

TM-T81IIM-42C:

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	30	127	17 ^{*1}
JrnLineSpacing	X	X	X
SlpLineSpacing	X	X	X
SlpLineHeight [dot]	X		
RecLineHeight [dot]	24,17		
JrnLineHeight [dot]	X		
SlpLineWidth [dot]	X		
RecLineWidth [dot]	546		
JrnLineWidth [dot]	X		
RecSidewaysMaxLines	19 ^{*2}		
RecSidewaysMaxChars	(Font A) 127 (Font B) 184		
RecLinesToPaperCut	4 ^{*3}		
SlpSidewaysMaxLines	X		
SlpSidewaysMaxChars	X		
SlpMaxLines	X		

X: No settings

^{*1} In the case of a line thermal station, the LineSpacing setting is identical with the height of the characters which means that it can be set at up to 17 when Font B is selected.

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

^{*3} It can be changed by the settings of the RecLineSpacing or the character height.

3.1.4 Common Property Strings

The Device information properties are described below.

I/F	DeviceName	DeviceDescription
S	TM-T81M	EPSON TM-T81M POS Printer
	TM-T81IIM	EPSON TM-T81IIM POS Printer
	TM-T81IIM-42C	EPSON TM-T81IIM POS Printer 42Column Mode
	TM-T81IIIM	EPSON TM-T81IIIM POS Printer
P	TM-T81PM	EPSON TM-T81PM POS Printer
U	TM-T81MU	EPSON TM-T81MU POS Printer
	TM-T81IIMU	EPSON TM-T81IIMU POS Printer
	TM-T81IIM-42CU	EPSON TM-T81IIMU POS Printer 42Column Mode
	TM-T81IIIMU	EPSON TM-T81IIIMU POS Printer
E	TM-T81ME	EPSON TM-T81ME POS Printer
	TM-T81IIME	EPSON TM-T81IIME POS Printer
	TM-T81IIM-42CE	EPSON TM-T81IIME POS Printer 42Column Mode
	TM-T81IIIME	EPSON TM-T81IIIME POS Printer

I/F indicate the connected interface.

The following is the list of the connecting interfaces.

S: Serial

P: Parallel

U: USB

E: Ethernet

3.1.5 PageMode Print Properties

The Device information properties are described below.

TM-T81M, TM-T81IIM and TM-T81IIIM:

Property	Station *2		
	Journal	Receipt	Slip
PageModeArea	-	"576", "1662"	-
PageModeDescriptor *1	-	BM/BC/BMR/BCR	-

TM-T81IIM-42C:

Property	Station *2		
	Journal	Receipt	Slip
PageModeArea	-	"546", "1662"	-
PageModeDescriptor *1	-	BM/BC/BMR/BCR	-

TM-T81IIIM:

Property	Station ^{*2}		
	Journal	Receipt	Slip
PageModeArea	-	(79.5mm) "576", "1662" (57.5mm) "420", "1662"	-
PageModeDescriptor ^{*1}	-	BM/BC/BMR/BCR	-

^{*1} Following setting values are used for the PageModeDescriptor property.

- BM : Bitmap printing is available.
- BC : Barcode printing is available.
- BMR : Rotated printing of bitmap is available.
- BCR : Rotated printing of barcode is available.

^{*2} If the Station's CapRecPageMode and/or CapSlpPageMode property values are FALSE, the PageModeArea property shall have " " and the PageModeDescriptor property shall have "0" respectively as a setting value.

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	X	X
PrintImmediate	O	O ^{*1}
PrintBarCode	O	O ^{*2}
PrintBitmap	O	O ^{*3}
PrintMemoryBitmap	O	O ^{*3}
CutPaper	O (1~100: Cutting with one point of the bottom left corner uncut)	X
MarkFeed	X	X
ChangePrintSide	X	X
ValidateData	O	O
TransactionPrint	O	O
SetLogo	O	O
SetBitmap	O	O
RotatePrint	O	X
EndRemoval	X	X
BeginRemoval	X	X
EndInsertion	X	X
BeginInsertion	X	X
ClearPrintArea	O	O
PageModePrint	O	O
DrawRuledLine	X	X

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	Supported/Unsupported	Compatibility with the PageMode printing
#P	0~100	X
#fP	0~100	X
#sP	X	X
sL	X	X
#B	O	O
tL	O	O
bL	O	O
[*]#R	O	O
#fF	0~9999	O
#uF Base Pitch [inch]	0~ equiv. 50 cm	O
#rF Maximum [inch]	X	X
[*]#E	0~65535	X
#fT	X	X
[!] b C	O	O
#uC	1~2	O
[!] i C	X	X
#rC	1	O
[!] r vC	O	O
#sC	X	X
#fC	X	X
[!] t bC	X	X
[!] t pC	X	X
1C	O	O
2C	O	O
3C	O	O
4C	O	O
#hC	1~8	O
#vC	1~8	O
cA	O	O ^{*1}
rA	O	O ^{*1}
lA	O	O
[!] [#] stC	1	1
*#dL	X	X
N	O	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 Printable Barcode Type

The TM-T81 series allows the following barcode types.

- Code 128
- Code 128 Parsed
- Code 93
- Codabar
- ITF
- Code 39
- JAN 13 (EAN 13)
- JAN 8 (EAN 8)
- UPC-E
- UPC-A
- PDF417
- QRCODE

3.5 QR CODE Printing

3.5.1 QR CODE Printing

When printing QR CODE, set the Symbology parameter to one of the following values.

PTR_BCS_QRCODE:	Print using QR CODE model 2.
PTR_BCS_OTHER + 3:	Print using QR CODE model 1 (old specification, used for maintaining compatibility).
PTR_BCS_OTHER + 4:	Print using QR CODE model 2.

3.5.2 Printing Size

Because the width and length of QR CODE are the same, printing is done to the inner part at a size closest to it by using the value specified by the Width parameter. Therefore, the height of print is not affected by the Height parameter. If the Height parameter is less than 0, an error occurs.

The print size is determined by the version of QR and the size of the module. Because the version of QR is determined by the data length and type, you can use the size of the module to adjust the print size. If the two dimensional barcode cannot fit into the print area (depending on the paper width, layout settings, etc.) then OPOS_E_ILLEGAL is returned and at this moment ResultCodeExtended becomes zero.

For QR, it differs from other two dimensional barcodes; if the encoded data result is not known, then the print width cannot be obtained. If the print width cannot be obtained, the page mode range for 90-degree rotated printing cannot be specified. Therefore, within OPOS it calculates the number of code words of the encoded data. Because of this reason, data amount can be correctly verified.

3.5.3 Error Correction Level

Error correction level is fixed at 7%.

3.5.4 Printing Position

Like the one dimensional barcode, the print position of the two dimensional barcode is the specified position.

3.6 Synchronous Processing

The TM-T81 series using Process ID to determine output completion.

Use of the Process ID allows multiple print commands to be queued to the printer simultaneously. For this reason, Asynchronous output (AsyncMode = TRUE) gives a performance improvement.

3.7 Printing Positions

The TM-T81 series supports 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.

3.8 Electronic Logo Function (NVRAM)

The TM-T81 series features an electronic logo function (NVRAM). To use NVRAM, start up the utility from “Device Specific Settings” of SetupPOS utility, and register image files (BMP style) with NVRAM in advance.

To print image files registered with NVRAM, please use the either of the following DirectIO:

PTR_DI_FLASH_BITMAP

PTR_DI_FLASH_BITMAP2

Please refer to the corresponding part of the Section 4 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)” for detail. The available NVRAM sizes are as follows:

262144 bytes

3.9 Printable bitmap types and sizes

The TM-T81 series supports the following bitmap commands. For the detail, please refer to the corresponding part of 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		
Download bitmap	x (dot)	y (dot)	xy
	1~2040	1~384	<=98304
Raster bitmap	1~2048	1~2303	
One-line bitmap	No setting range		

Even if meet with the limitation described above, a bitmap that extend the paper width cannot be printed.

3.10 Printable bitmap types and sizes

The TM-T81 series features a maintenance counter function for retaining an operation log of the printer.

The following chart shows the available maintenance counters.

Counter number Hexadecimal	Counter	Unit	Max. Value	Counter Type
14	Paper feed in number of lines: Roll paper	Lines	143,165,576	Resettable
15	Number of times head timing pulse: Roll paper	Times	4,294,967,295	Resettable
32	Number of auto-cutter operations	Times	4,294,967,295	Resettable
46	Uptime of product	Hours	71,582,788	Resettable
94	Number of paper feed lines: Roll paper	Lines	143,165,576	Cumulative
95	Number of times head timing pulse: Roll paper	Times	4,294,967,295	Cumulative
B2	Number of auto-cutter operations	Times	4,294,967,295	Cumulative
C6	Uptime of product	Hours	71,582,788	Cumulative

3.11 Automatic Recovery Function

The TM-T81 series features a function for automatic recovery when the power is turned on again after an interruption of power. Recovery processing is performed automatically when the printer's power is turned on again after an interruption. The recovery processing restores the printer to the condition it was in before the power was turned off.

3.12 Output without Flow Control on the USB Interface

The TM-T81 series are support outputting without flow control on the USB interface. The operations differ by the firmware versions. See the corresponding part of the section 2 of this manual.

Section 4. Warnings

This section describes precautions in use of the TM-T81 series.

- Thai1 Pass mode printing:

If print data remains in the printer buffer when printing is executed (i.e. The line feed for the print data was not completed), it is possible that the result will not be printed correctly.