EPSON

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

POSPrinter
(TM-T82M/TM-T82M-42C/TM-T82II/TM-T82II-42C/ TM-T82III/TM-T82III-42C/TM-T82IV)

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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-T82M/TM-T82M-42C/TM-T82II(M)/TM-T82II(M)-42C/TM-T82III(M)/TM-T82III(M)-42C/TM-T82IV(M) POS Printers are used with the EPSON OPOS ADK program.

This manual applies to the following devices.
Device List

Serial	Parallel	USB	Ethernet
TM-T82M	TM-T82PM	TM-T82MU	TM-T82ME
TM-T82M-42C	TM-T82M-42CP	TM-T82M-42CU	TM-T82M-42CE
TM-T82II	TM-T82IIP	TM-T82IIU	TM-T82IIE
TM-T82IIM	TM-T82IIPM	TM-T82IIMU	TM-T82IIME
TM-T82II-42C	TM-T82II-42CP	TM-T82II-42CU	TM-T82II-42CE
TM-T82IIM-42C	TM-T82IIM-42CP	TM-T82IIM-42CU	TM-T82IIM-42CE
TM-T82III	TM-T82IIIP	TM-T82IIIU	TM-T82IIIE
TM-T82IIIM	TM-T82IIIPM	TM-T82IIIMU	TM-T82IIIME
TM-T82III-42C	TM-T82III-42CP	TM-T82III-42CU	TM-T82III-42CE
TM-T82IIIM-42C	TM-T82IIIM-42CP	TM-T82IIIM-42CU	TM-T82IIIM-42CE
TM-T82IV	-	TM-T82IVU	TM-T82IVE
TM-T82IVM	-	TM-T82IVMU	TM-T82IVME

Before reading the manual, see the following explanation about the characteristic of the TM-T82M/TM-T82M-42C/TM-T82II(M)/TM-T82II(M)-42C/TM-T82III(M)/TM-T82III(M)-42C/TM-T82IV(M) printers.

- TM-T82M/TM-T82M-42C/TM-T82II(M)/TM-T82II(M)-42C/TM-T82III(M)/ TM-T82III(M)-42C/TM-T82IV(M)
  Station: Receipt (Line Thermal 203 dpi X 203 dpi)

Throughout the manual, the various model names will be referred to as “TM-T82 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-T82 series printers.

2.1 References of Firmware Versions

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

2.2 Settings of DIP Switches

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]	38400
Bit length [bit]	8
Parity	NONE
Stop bit [bit]	1
Handshake	DTR/DSR

The baud rate setting of devices are set using the Utility of each device.

For details, please refer to the “Utility User's Manual”.

2) Port information when using Parallel port

Not applicable

3) Port information when using USB port

Not applicable

4) Port information when using Ethernet port

Not applicable

2.4 Device Settings

The following explanation is about the settings for the TM-T82 series.

2.4.1 Usable Device Specific Settings

For the TM-T82 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)”

Tab	Settings
General	Disable panel buttons
	Assume print complete when data output finishes
	Homogenize Error Codes *1
	Ignore firmware version check
	Output complete timeout [s]
Paper	Paper Type
	Paper Width [mm]: LineWidth [dot]: LineCharsList
Bitmap	TMFlogo...
	NVRAM
Color Bitmap	Halftone: Method
	Halftone: Brightness
	Color: 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 settings can be changed when using a connection other than serial.

2.4.2 Multilingual font Setting

The TM-T82M/TM-T82IIM /TM-T82IIIM/ TM-T82IVM supports the following font type.

- CHINA GB18030
- TAIWAN BIG-5
- VIETNAMESE
- THAI 3 PASS
- THAI 1 PASS

The default font type is set to CHINA GB18030.

Section 3. Function Details

This section describes the functions of the TM-T82 series 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
CapRecRuledLine	FALSE
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
CapSlpRuledLine	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-T82M/TM-T82IIM/TM-T82IIIM/TM-T82IVM:

List Property	Settings
CharacterSetList	**(Simplified Chinese)** ”120, 121, 126, 130, 131, 150, 151, 152, 153, 154, 155, 255, 437, 720, 737, 775, 850, 851, 852, 853, 855, 857, 858, 860, 861, 862, 863, 864, 865, 866, 869, 936, 998, 999, 1098, 1125, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258” **(Traditional Chinese)** ”120, 121, 126, 130, 131, 150, 151, 152, 153, 154, 155, 255, 437, 720, 737, 775, 850, 851, 852, 853, 855, 857, 858, 860, 861, 862, 863, 864, 865, 866, 869, 950, 998, 999, 1098, 1125, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258” **(Thai1 Pass)** “437, 874” **(Thai3 Pass and Vietnamese)** “120,121,126,130,131,437,997[*1]”
JrnLineCharsList	“”
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-T82II/TM-T82III/TM-T82IV:

List Property	Settings
CharacterSetList	”120, 121, 126, 130, 131, 150, 151, 152, 153, 154, 155, 255, 437, 720, 737, 775, 850, 851, 852, 853, 855, 857, 858, 860, 861, 862, 863, 864, 865, 866, 869, 997*1, 998, 999, 1098, 1125, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258”
JrnLineCharsList	“”
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-T82(M)/TM-T82II(M)/TM-T82III(M)/TM-T82IV(M)

List Property	Settings		
RecLineCharsList	79.5mm:	(Font A)	“48”
		(Font B)	“64”
	57.5mm:	(Font A)	“35”
		(Font B)	“46”

TM-T82(M)-42C/TM-T82II(M)-42C/TM-T82III(M)-42C
TM-T82IV (42 characters mode)

List Property	Settings		
RecLineCharsList	79.5mm:	(Font A)	“42”
		(Font B)	“60”
	57.5mm:	(Font A)	“42”
		(Font B)	“31”

3.1.3 Width and Height Properties

The width and height properties are described below.

TM-T82M/TM-T82II(M)/TM-T82III(M)/TM-T82IV(M):

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	30	127	24 *1
JrnLineSpacing	×	×	×
SlpLineSpacing	×	×	×
SlpLineHeight [dot]	×		
RecLineHeight [dot]	(Font A)	24	
	(Font B)	17	
JrnLineHeight [dot]	×		
SlpLineWidth [dot]	×		
RecLineWidth [dot]	(79.5mm)	576	
	(57.5mm)	420	
JrnLineWidth [dot]	×		
RecSidewaysMaxLines	(79.5mm)	19 *2	
	(57.5mm)	14 *2	
RecSidewaysMaxChars	(Font A)	138	
	(Font B)	184	
RecLinesToPaperCut	4 *3		
SlpSidewaysMaxLines	×		
SlpSidewaysMaxChars	×		
SlpMaxLines	×		

×: No settings

*1 When Font A is selected. In the case of a line thermal station, the Line Spacing 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 RecLineSpacing or the RecLineHeight.

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

TM-T82M-42C/TM-T82II(M)-42C/TM-T82III(M)-42C/
TM-T82IV(M)(42 characters mode) :

Property	Settings		
	Default Value	Maximum value [dot]	Minimum value [dot]
RecLineSpacing	30	127	24 *1
JrnLineSpacing	×	×	×
SlpLineSpacing	×	×	×
SlpLineHeight [dot]	×		
RecLineHeight [dot]	79.5mm:	(Font A)	24
		(Font B)	17
	57.5mm:	(Font A)	17
		(Font B)	24
JrnLineHeight [dot]	×		
SlpLineWidth [dot]	×		
RecLineWidth [dot]	(79.5mm)	546	
	(57.5mm)	378	
JrnLineWidth [dot]	×		
RecSidewaysMaxLines	(79.5mm)	18 *2	
	(57.5mm)	12 *2	
RecSidewaysMaxChars	79.5mm:	(Font A)	“127”
		(Font B)	“184”
	57.5mm:	(Font A)	“184”
		(Font B)	“138”
RecLinesToPaperCut	4 *3		
SlpSidewaysMaxLines	×		
SlpSidewaysMaxChars	×		
SlpMaxLines	×		

×: No settings

*1 When Font A is selected. In the case of a line thermal station, the Line Spacing 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 RecLineSpacing or the RecLineHeight.

*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-T82M	EPSON TM-T82M POS Printer
	TM-T82M-42C	EPSON TM-T82M POS Printer 42Column Mode
	TM-T82II	EPSON TM-T82II POS Printer
	TM-T82II-42C	EPSON TM-T82II POS Printer 42Column Mode
	TM-T82IIM	EPSON TM-T82IIM POS Printer
	TM-T82IIM-42C	EPSON TM-T82IIM POS Printer 42Column Mode
	TM-T82III	EPSON TM-T82III POS Printer
	TM-T82III-42C	EPSON TM-T82III POS Printer 42Column Mode
	TM-T82IIIM	EPSON TM-T82IIIM POS Printer
	TM-T82IIIM-42C	EPSON TM-T82IIIM POS Printer 42Column Mode
	TM-T82IV	EPSON TM-T82IV POS Printer
	TM-T82IVM	EPSON TM-T82IVM POS Printer
P	TM-T82PM	EPSON TM-T82PM POS Printer
	TM-T82M-42CP	EPSON TM-T82PM POS Printer 42Column Mode
	TM-T82IIP	EPSON TM-T82IIP POS Printer
	TM-T82II-42CP	EPSON TM-T82IIP POS Printer 42Column Mode
	TM-T82IIPM	EPSON TM-T82IIPM POS Printer
	TM-T82IIM-42CP	EPSON TM-T82IIPM POS Printer 42Column Mode
	TM-T82IIIP	EPSON TM-T82IIIP POS Printer
	TM-T82III-42CP	EPSON TM-T82IIIP POS Printer 42Column Mode
	TM-T82IIIPM	EPSON TM-T82IIIPM POS Printer
	TM-T82IIIM-42CP	EPSON TM-T82IIIPM POS Printer 42Column Mode
U	TM-T82MU	EPSON TM-T82MU POS Printer
	TM-T82M-42CU	EPSON TM-T82MU POS Printer 42Column Mode
	TM-T82IIU	EPSON TM-T82IIU POS Printer
	TM-T82II-42CU	EPSON TM-T82IIU POS Printer 42Column Mode
	TM-T82IIMU	EPSON TM-T82IIMU POS Printer
	TM-T82IIM-42CU	EPSON TM-T82IIMU POS Printer 42Column Mode
	TM-T82IIIU	EPSON TM-T82IIIU POS Printer
	TM-T82III-42CU	EPSON TM-T82IIIU POS Printer 42Column Mode
	TM-T82IIIMU	EPSON TM-T82IIIMU POS Printer
	TM-T82IIIM-42CU	EPSON TM-T82IIIMU POS Printer 42Column Mode
	TM-T82IVU	EPSON TM-T82IVU POS Printer
	TM-T82IVMU	EPSON TM-T82IVMU POS Printer
E	TM-T82ME	EPSON TM-T82ME POS Printer
	TM-T82M-42CE	EPSON TM-T82ME POS Printer 42Column Mode
	TM-T82IIE	EPSON TM-T82IIE POS Printer
	TM-T82II-42CE	EPSON TM-T82IIE POS Printer 42Column Mode
	TM-T82IIME	EPSON TM-T82IIME POS Printer
	TM-T82IIM-42CE	EPSON TM-T82IIME POS Printer 42Column Mode
	TM-T82IIIE	EPSON TM-T82IIIE POS Printer
	TM-T82III-42CE	EPSON TM-T82IIIE POS Printer 42Column Mode
	TM-T82IIIME	EPSON TM-T82IIIME POS Printer
	TM-T82IIIM-42CE	EPSON TM-T82IIIME POS Printer 42Column Mode
	TM-T82IVE	EPSON TM-T82IVE POS Printer
	TM-T82IVME	EPSON TM-T82IVME POS Printer

I/F indicate the connected interface.
S: Serial/ P: Parallel/ U: USB/ E: Ethernet

3.1.5 PageMode Print Properties

The Device information properties are described below.

TM-T82(M)/TM-T82II(M)/TM-T82III(M)/TM-T82IV(M):

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

TM-T82(M)-42C/TM-T82II(M)-42C/TM-T82III(M)-42C/
TM-T82IV (42 characters mode):

Property	Station *2		
	Journal	Receipt	Slip
PageModeArea	-	(79.5mm) “546”, “1662” (57.5mm) “378”, “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 property value is 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	✓	✓
PrintTwoNormal	×	×
PrintImmediate	✓	✓ *1
PrintBarCode	✓	✓ *2
PrintBitmap	✓	✓ *3
PrintMemoryBitmap	✓	✓ *3
CutPaper	✓ (1~100: Cutting with one point of the bottom left corner uncut)	×
MarkFeed	×	×
ChangePrintSide	×	×
ValidateData	✓	✓
TransactionPrint	✓	✓
SetLogo	✓	✓
SetBitmap	✓	✓
RotatePrint	✓	×
EndRemoval	×	×
BeginRemoval	×	×
EndInsertion	×	×
BeginInsertion	×	×
ClearPrintArea	✓	✓
PageModePrint	✓	✓
DrawRuledLine	×	×

✓ :Supported

× :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	×
#fP	0~100	×
#sP	×	×
sL	×	×
#B	✓	✓
tL	✓	✓
bL	✓	✓
[*]#R	✓	✓
#lF	0~9999	✓
#uF Base Pitch [inch]	0~ equiv. 50 cm	✓
#rF Maximum [inch]	×	×
[*]#E	0~65535	×
#fT	×	×
[!]bC	✓	✓
#uC	1~2	✓
[!]iC	×	×
#rC	1	✓
[!]rvC	✓	✓
#sC	×	×
#fC	×	×
[!]tbC	×	×
[!]tpC	×	×
1C	✓	✓
2C	✓	✓
3C	✓	✓
4C	✓	✓
#hC	1~8	✓
#vC	1~8	✓
cA	✓	✓ *1
rA	✓	✓ *1
lA	✓	✓
[!][#]stC	✓	✓
*#dL	×	×
N	✓	✓

✓:Supported
×: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-T82 series printers allow 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
- MAXI CODE
- GS1-Data
- GS1-Data Expanded
- GS1-128
- GS1-Data Truncated
- GS1-Data Limited
- GS1-Data Stacked
- GS1-Data Stacked Omnidirectional
- GS1-Data Expanded Stacked
- Composite
- AztecCode [*1]
- DataMatrixCode [*1]

[*1] Excluding TM-T82(M)/TM-T82(M)-42C.

3.5 MAXI CODE Printing

3.5.1 Symbology Parameter

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

PTR_BCS_MAXICODE	:	Print using MAXI mode 2.
PTR_BCS_OTHER + 0	:	Print using MAXI mode 3.
PTR_BCS_OTHER + 1	:	Print using MAXI mode 4 or 5. The mode is set to 4 or 5 automatically depending on the length of the Data parameter. (If the data is long, then the data correction level is lowered for printing.)
PTR_BCS_OTHER + 2	:	Print using MAXI mode 6.

3.5.2 Printing Size

Because the size of MAXI CODE is fixed, printing is done at a fixed size that is unaffected by the Width and Height parameters. An error occurs only when the Width and Height parameters fall below zero. If the two dimensional barcodes 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.

3.5.3 Printing Position

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

3.5.4 Data Format

3.5.4.1 Mode 2

In the case of mode 2, because the format of header + primary message + secondary message is fixed, data for the Data parameter must follow this format.

The header part contains the following data, which can be omitted.

"[)> RS 01 GS yy"

(In hexadecimal: 0x5B 0x29 0x3E 0x1E 0x30 0x31 0x1D 0x.. 0x..)

yy means '0' to '9' (0x30 to 0x39)

The primary message part contains the following data.

"Postal Code" GS "ISO Country Code" GS "Service Class Code" GS

Field	Length (byte)	Type
Postal Code	1 to 9	Number (0x30 to 0x39)
ISO Country Code	1 to 3	Number (0x30 to 0x39)
Service Class Code	1 to 3	Number (0x30 to 0x39)

For the secondary message, you can freely specify any data from 0x01 to 0xFF, and the data can be omitted. Since the length of the encoded data is not known, the data length cannot be correctly verified. For this reason, if the printer determines, after examining the original data length, that the data can more or less be printed, it tries to print the data; if the length is more than that, then an error occurs. (For the secondary message, an error occurs if the data length is more than 70 bytes.)

3.5.4.2 Mode 3

In the case of mode 3, except for the format of the primary message, it is same as mode 2. The primary message of mode 3 has the following type of data.

"Postal Code" GS "ISO Country Code" GS "Service Class Code" GS

Field	Length (byte)	Type
Postal Code	1 to 6	Number (0x30 to 0x39) A-Z space "#$%&'()*+,-./
ISO Country Code	1 to 3	Number (0x30 to 0x39)
Service Class Code	1 to 3	Number (0x30 to 0x39)

3.5.4.3 Modes 4 and 5

0x01 to 0xFF can be specified to the Data parameter, and there is no restriction on the format. Since the length of the encoded data is not known, the data length cannot be correctly verified. For this reason, if the printer determines, after examining the original data length, that the data can more or less be printed, it tries to print the data; if the length is more than that, then an error occurs. (An error occurs if Data is zero byte or more than 80 bytes.)

Mode 4 differs from mode 5 in the error correction level. As much as possible, OPOS uses the higher error correction level. Therefore, if the data amount is small (less than 50 bytes), OPOS uses mode 5 (the one with a higher error correction level).

3.5.4.4 Mode 6

0x01 to 0xFF can be specified to the Data parameter, and there is no restriction on the format. Since the length of the encoded data is not known, the data length cannot be correctly verified. For this reason, if the printer determines, after examining the original data length, that the data can more or less be printed, it tries to print the data; if the length is more than that, then an error occurs. (An error occurs if Data is zero byte or more than 80 bytes.)

3.6 QR CODE Printing

3.6.1 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.

3.6.2 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 barcodes 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.

3.6.3 Error Correction Level

Error correction level is fixed at 7%.

3.6.4 Printing Position

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

3.7 GS1 Printing (two dimension)

3.7.1 Symbology Parameter

When printing GS1, set the Symbology parameter to one of the following values.

PTR_BCS_GS1DATABAR_S	:	Print using GS1 DataBar Stacked Omnidirectional.
PTR_BCS_GS1DATABAR_E_S	:	Print using GS1 DataBar Expanded Stacked.
PTR_BCS_OTHER + 7	:	Print using GS1 DataBar Stacked.
PTR_BCS_OTHER + 8	:	Print using GS1 DataBar Stacked Omnidirectional.
PTR_BCS_OTHER + 9	:	Print using GS1 DataBar Expanded Stacked.

3.7.2 Printing Size

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 Width and Height parameters are less than 0, an error occurs. Because the printing size is determined by the data length [*1] and barcode type, you can use the size of the module to adjust the print size.

If the two dimensional barcodes 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 0.

[*1] Available only for the GS1 DataBar Expanded Stacked.

3.7.3 Printing Position

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

3.7.4 Data Format

[Setting range of data]

Symbology	Length (byte)	Characters that can be specified
GS1 DataBar Stacked	13	0x30-0x39
GS1 DataBar Stacked Omnidirectional	13	0x30-0x39 (The first character is limited to 0x30 or 0x31.)
GS1 DataBar Expanded Stacked	2 to 255	0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5F, 0x61-0x7a (The first two characters are limited to 0x30-0x39. Or if the first character is 0x28, the second and the third characters are limited to 0x30-0x39.)

[Special characters of GS1 DataBar 128]

Special characters	ASCII
FNC1	{1
‘(’	{(
‘)’	{}

3.8 COMPOSITE Printing

3.8.1 Symbology Parameter

When printing COMPOSITE, set the Symbology parameter to the following value.

HIWORD : The constant value of PDF417.
LOWORD : The constant value of the barcode that will combine the value of PDF417.

3.8.1.1 Combinable Barcode

The settable barcode in the LOWORD is as follows.

- UPC-A
- UPC-E (Compressed format)
- UPC-E
- EAN 8
- EAN 13
- GS1 DataBar
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional
- GS1 DataBar Limited
- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked
- GS1 DataBar 128

3.8.2 Printing Size

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 Width and Height parameters are less than 0, an error occurs.

Because the printing size is determined by the data length and composite barcode type, you can use the size of the module to adjust the print size.

If the two dimensional barcodes 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 0.

3.8.3 Printing Position

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

3.8.4 Data Format

The range designation of the HIWORD data is as follows.

Symbology	Length (byte)	Characters that can be specified
PDF417	3 to 2361	0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5f, 0x61-0x7a

The range designation of the LOWORD data is as follows.

Symbology	Length (byte)	Characters that can be specified
UPC-A	11	0x30-0x39
UPC-E (Compressed format)	6	0x30-0x39
UPC-E	11	0x30-0x39 (The first character is limited to 0x30.)
EAN 8	7	0x30-0x39
EAN 13	12	0x30-0x39
GS1 DataBar	13	0x30-0x39
GS1 DataBar Truncated	13	0x30-0x39
GS1 DataBar Stacked	13	0x30-0x39
GS1 DataBar Stacked Omnidirectional	13	0x30-0x39 (The first character is limited to 0x30 or 0x31.)
GS1 DataBar Limited	13	0x30-0x39 (The first character is limited to 0x30 or 0x31.)
GS1 DataBar Expanded	2 to 255	0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5F, 0x61-0x7a (The first two characters are limited to 0x30-0x39. Or if the first character is 0x28, the second and the third characters are limited to 0x30-0x39.)
GS1 DataBar Expanded Stacked	2 to 255	0x20-0x22, 0x25-0x3f, 0x41-0x5a, 0x5F, 0x61-0x7a (The first two characters are limited to 0x30-0x39. Or if the first character is 0x28, the second and the third characters are limited to 0x30-0x39.)
GS1 DataBar 128	3 to 255	0x00-0x7f

[Special characters of Barcodes (GS1 DataBar 128, GS1 DataBar Expanded and GS1 DataBar Expanded Stacked)]

Special characters	ASCII
FNC1	{1
FNC3	{3
'{'	{{
'('	{(
')'	{)
'*'	{*

3.9 Power Condition Reports

The TM-T82 series printers support Power Condition Reports as follows.

Powered on reporting : Supported

Powered off reporting : Unsupported

3.10 Synchronous Processing

The TM-T82 series printers use 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.

3.11 Printing Positions

The TM-T82 series support the function for setting printing position.

Function	Receipt
Left margin	✓
Printing Position	✓

✓: Supported

×: 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.

3.12 Electronic Logo Function (NVRAM)

The TM-T82 series feature an electronic logo function (NVRAM). To use NVRAM, startup TMFlogo utility from “Device Specific Settings” of SetupPOS utility and register image files (BMP style) with NVRAM in advance.

For the details of the registration, please refer to the “TM-T82 Utility User's Manual”.

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:

TM-T82 series: 262144 bytes

3.13 Printable bitmap types and sizes

The TM-T82 series support 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		
	X (dot)	y (dot)	xy
Download bitmap	1~2040	1~384	<= 98304
Raster bitmap	1~2048	1~2303	-
One-line bitmap	No setting range		

3.14 Maintenance Counter

The TM-T82 series feature 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
16	Number of lines fed (when the print head was replaced)	Lines	143,165,576	Resettable
32	Number of auto-cutter operations	Times	4,294,967,295	Resettable
46	Uptime of product	Hours	71,582,788	Resettable
94	Paper feed in number of lines: Roll paper	Lines	143,165,576	Cumulative
95	Number of times head timing pulse: Roll paper	Times	4,294,967,295	Cumulative
96	Number of lines feed (when the print head was replaced)	Lines	143,165,576	Cumulative
B2	Number of auto-cutter operations	Times	4,294,967,295	Cumulative
C6	Uptime of product	Hours	71,582,788	Cumulative

3.15 Automatic Recovery Function

The TM-T82 series feature 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.

3.16 Output without Flow Control on the USB/Ethernet Interfaces

The TM-T82 series support outputting without flow control on the USB/Ethernet interfaces. The operations differ by the firmware versions. See the corresponding part of the section 2 of this manual.

Section 4. Warnings

- **When using the TM-T82M-42C/ TM-T82II(M)-42C/ TM-T82III(M)-42C:**

If you are using a port that has already been registered and created in SetupPOS, "TM-T82/ TM-T82II/ TM-T82III" will be displayed in the TMPORT Settings list on the Communication Settings screen. In this case, please select "TM-T82/ TM-T82II/ TM-T82III".