

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

POSPrinter (TM-m10)

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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-m10 POS Printers are used with the EPSON OPOS ADK program.

This manual applies to the following devices.

Device List

USB	Ethernet	Bluetooth
TM-m10U	TM-m10E	TM-m10B
TM-m10MU	TM-m10ME	TM-m10MB

Before reading the manual, see the following explanation about the characteristic of the TM-m10 models.

- TM-m10
Station: Receipt (Line Thermal 203 dpi X 203 dpi)

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-m10 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 using USB port

Not applicable

2) Port information when using Ethernet port

Not applicable

3) Port information when using Bluetooth port

Not applicable

2.4 Device Settings

The following explanation is about the settings for TM-m10.

2.4.1 Usable Device Specific Settings

For the TM-m10, 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
	Ignore firmware version check
	Output complete timeout [s]
Bitmap	TM-m10Utility
	NVRAM
Color Bitmap	Halftone: Method
	Halftone: Brightness
	Color: Primary
	Gradation: Method
Status Log	ERROR
	OFFLINE
	Log file name (full path name)
	Maximum file size [KB]
Default Value*1	Multilingual font
Printing Properties	Receipt Characters per Line
	Receipt Line Spacing [dots]
	CharacterSet [CodePage Number]

*1 Available only for the Multilingual character model.

2.4.2 Multilingual font Setting

The TM-m10 Multilingual character models support the following font type.

- CHINA GB18030
- TAIWAN BIG-5
- 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-m10 printer 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_UNICODE* ¹
CapMapCharacterSet	TRUE* 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	FALSE
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
CapRecRuledLine	FALSE
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 CHINA GB18030 character model or TAIWAN BIG-5 character model or Thai 1 Pass character model, "PTR_CCS_KANJI" is set.

*2 If CHINA GB18030 character model or TAIWAN BIG-5 character model or Thai 1 Pass character model, "FALSE" is set.

3.1.2 List Properties

The List Properties are explained in the following.

List Property	Settings
CharacterSetList	(TM-m10, TM-m10M ^{*1*2}) "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, 998, 999, 1098, 1125, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258" (TM-m10M ^{*3}) "120,121,126,130,131,437,997" ^{*4} "437,874" ^{*5}
JrnLineCharsList	{} ⁹⁹
RecLineCharsList	"35,42,46"
SlpLineCharsList	{} ⁹⁹
RecBarCodeRotationList	"0,R90, L90, 180"
RecBitmapRotationList	"0,R90, L90, 180"
SlpBarCodeRotationList	{} ⁹⁹
SlpBitmapRotationList	{} ⁹⁹
FontTypefaceList	{} ⁹⁹

^{*1} If Multilingual character model, "936" or "950" is added to the list.

^{*2} When the CapCharacterSet property is set to "PTR_CCS_UNICODE," "997" is added to the list. When CharacterSet is set to "997," 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.

^{*3} Device is limited to South Asia model.

^{*4} Available only for Thai3 Pass mode and Vietnamese.

^{*5} Available only for Thai1 Pass mode.

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	30	127	24 ^{*1}
JrnLineSpacing	X	X	X
SlpLineSpacing	X	X	X
SlpLineHeight [dot]	X		
RecLineHeight [dot]	(Font A) 24 (Font B) 24 (Font C) 17		
JrnLineHeight [dot]	X		
SlpLineWidth [dot]	X		
RecLineWidth [dot]	420		
JrnLineWidth [dot]	X		
RecSidewaysMaxLines	14 ^{*2}		
RecSidewaysMaxChars (When RecLineChars "35" is select)	100		
RecSidewaysMaxChars (When RecLineChars "42" is select)	120		
RecSidewaysMaxChars (When RecLineChars "46" is select)	133		
RecLinesToPaperCut	5 ^{*3}		
SlpSidewaysMaxLines	X		
SlpSidewaysMaxChars	X		
SlpMaxLines	X		

X: 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 FontC 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
U	TM-m10U	EPSON TM-m10U POSPrinter
	TM-m10MU	EPSON TM-m10M UPOS Printer
E	TM-m10E	EPSON TM-m10E POSPrinter
	TM-m10ME	EPSON TM-m10M EPOS Printer
B	TM-m10B	EPSON TM-m10B POSPrinter
	TM-m10MB	EPSON TM-m10MB POS Printer

I/F indicate the connected interface.

U: USB

E: Ethernet

B: Bluetooth

3.1.5 PageMode Print Properties

The Device information properties are described below.

Property	Station ^{*2}		
	Journal	Receipt	Slip
PageModeArea	-	"420", "1200"	-
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	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
[#]IF	0~9999	O
[#]uF Base Pitch [inch]	0~ equiv. 50 cm	O
[#]rF Maximum [inch]	X	X
[*]#E	0~65535	X
#fT	X	X
[!]bC	O	O
[!][#]uC	○	○
[!]iC	X	X
[#]rC	1	O
[!]rvC	O	O
[#]sC	X	X
[#]fC	X	X
[!]tbC	X	X
[!]tpC	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	O	O
*#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-m10 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
- DatamatrixCode

3.5 Power Condition Reports

The TM-m10 supports Power Condition Reports as follows.

Powered on reporting: Supported (Available by the manufacturer settings.)

Powered off reporting: Unsupported (Available by the manufacturer settings.)

3.6 Synchronous Processing

The TM-m10 supports the 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-m10 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-m10 models feature an electronic logo function (NVRAM). To use NVRAM, startup TM-m10 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-m10 Utility User's Manual”.

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

DirectIO:

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-m10: 393216 bytes

3.9 Printable bitmap types and sizes

The TM-m10 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		
	X (dot)	y (dot)	xy
NV bitmap	1~8192	1~2304	
Raster bitmap	1~19200	1~2400	

3.10 Maintenance Counter

The TM-m10 models 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
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-m10 models 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.

3.12 Output without Flow Control on the USB/Ethernet Interfaces

The TM-m10 supports 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 the power is turned on or off while using a Bluetooth connection, the recovery process might take time to complete.
- 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.