

EPSON OPOS ADK MANUAL

**APPLICATION DEVELOPMENT
GUIDE**

POSPrinter (TM-H2000)

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Notes

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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
2.3 Port Information	4
2.4 Device Settings	7
2.4.1 Usable Device Specific Settings.....	7
2.4.2 Paper Width Setting	7
SECTION 3. FUNCTION DETAILS	8
3.1 Property Set Values and Default Values	8
3.1.1 Capability Set Values.....	8
3.1.2 List Properties.....	10
3.1.3 Width and Height Properties	11
3.1.4 Common Property Strings	12
3.1.5 PageMode Print Properties.....	12
3.2 Methods.....	13
3.3 Escape Sequences	14
3.4 Printable Barcode Type	15
3.5 Power Condition Reports.....	16
3.6 Synchronous Processing	16
3.7 Printing Positions	16
3.8 Electronic Logo Function (NVRAM)	17
3.9 Printable bitmap types and sizes	18
3.10 Maintenance Counter	19
3.11 Automatic Recovery Function	20
3.12 Output without Flow Control on the USB/ Ethernet Interfaces	20
3.13 LED Blinking when BeginInsertion is executed	20
3.14 Communication Compatibility	20
SECTION 4. WARNINGS.....	21

Section 1. Introduction

This manual describes the method of use and related items, as well as machine-specific precautions, when the EPSON TM-H2000 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-H2000	TM-H2000P	TM-H2000U	TM-H2000E

Before reading the manual, see the following explanation about the characteristic of the TM-H2000 models.

- Station: Receipt (Line Thermal 203dpi X 203dpi)
Slip endorsement (Serial impact dot matrix)
40CPL mode enabled: 127dpi X 72dpi
40CPL mode disabled: 160dpi X 72dpi

Note:

The setting of 40CPL mode is settable by “Endorse Multi Font” check box of “Slip” tab in “Device Specific Settings” dialog box of the SetupPOS utility.

Throughout the manual, the various model names will be referred to as TM-H2000.

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-H2000 printers.

2.1 References of Firmware Versions

Please refer to the release notes (SupportedDevicesList.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	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 and DIP-SW1-2, 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 accordance with the port information.

The described set values are the default values. For the details, please 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 or not a customer display is connected.

If connected, set to ON. If not, set to OFF.

Set DIP-SW2-3 and DIP-SW2-4 to match the environment of use.

Make other settings in accordance with the settings described above.

2) Parallel Port

DIP-SW1

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

Recommended
Recommended
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF

DIP-SW2

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

Settable
Fixed at OFF
Settable
Settable
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at ON

It is possible to change the settings of DIP-SW1-1 and DIP-SW1-2, but it is recommended to leave them OFF.

Set DIP-SW2-3 and DIP-SW2-4 to match the environment of use.

Do not change the current settings of DIP-SW2-5 to DIP-SW2-8.

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
2	OFF
3	OFF
4	OFF
5	OFF
6	OFF
7	OFF
8	OFF

Recommended
Recommended
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF

DIP-SW2

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

Settable
Fixed at OFF
Settable
Settable
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at ON

It is possible to change the settings of DIP-SW1-1 and DIP-SW1-2, but it is

recommended to leave them OFF.

Set DIP-SW2-3 and DIP-SW2-4 to match the environment of use.

Do not change the current settings of DIP-SW2-5 to DIP-SW2-8.

Make other settings in accordance with the settings described above.

4) Ethernet Port

DIP-SW1

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

Recommended
Recommended
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at OFF

DIP-SW2

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

Settable
Fixed at OFF
Settable
Settable
Fixed at OFF
Fixed at OFF
Fixed at OFF
Fixed at ON

It is possible to change the settings of DIP-SW1-1 and DIP-SW1-2, but it is recommended to leave them OFF.

Set DIP-SW2-3 and DIP-SW2-4 to match the environment of use.

Do not change the current settings of DIP-SW2-5 to DIP-SW2-8.

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, 38400, 57600, 115200
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]	19200
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 setting is 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-H2000.

2.4.1 Usable Device Specific Settings

For the TM-H2000, 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
	Homogenize Error Codes ^{*1}
	Ignore firmware version check
	Output complete timeout [s]
Paper	Paper Type
	Paper Width [mm]: LineWidth [dot]: LineCharsList
Slip	Reverse feed removal
	Blink LED with BeginInsertion
	Endorse Multi Font
Bitmap	TMFlogo...
	NVRAM
Color Bitmap	Halftone: Method
	Halftone: Brightness
	Color: Primary
Status Log	ERROR
	OFFLINE
	Log file name (include full path)
	Maximum file size [KB]
Printing Properties	Receipt Characters per Line
	Receipt Line Spacing [dots]
	Slip Characters per Line
	Slip 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 Paper Width Setting

The TM-H2000 supports the following paper width. After adding the TM-H2000 by the SetupPOS utility, open the “Device Specific Settings” dialog box. In the “Paper” tab the paper width could be selected.

The settable paper width is as follows:

- 79.5 mm [576 dots]
- 57.5 mm [420 dots]

The default paper width is set to 79.5 mm.

Section 3. Function Details

This section describes the functions of the TM-H2000 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	
	Receipt	Slip Endorsement
CapTransaction	TRUE	
CapCoverSensor	TRUE	
CapConcurrentRecSlp	FALSE	
CapConcurrentJrnSlp	FALSE	
CapConcurrentJrnRec	FALSE	
CapConcurrentPage Mode	FALSE	
CapCharacterSet	PTR_CCS_UNICODE	
CapMapCharacterSet	TRUE	
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	
CapRecRuledLine	FALSE	
CapSlpUnderline	FALSE	(40CPL mode disabled): TRUE (40CPL mode enabled): FALSE
CapSlpRotate180	TRUE	
CapSlpRight90	FALSE	
CapSlpNearEndSensor	TRUE	
CapSlpLeft90	FALSE	
CapSlpItalic	FALSE	
CapSlpEmptySensor	TRUE	
CapSlpDwideDhigh	FALSE	(40CPL mode disabled): TRUE (40CPL mode enabled): FALSE
CapSlpDwide	FALSE	(40CPL mode disabled): TRUE (40CPL mode enabled): FALSE
CapSlpDhigh	FALSE	(40CPL mode disabled): TRUE (40CPL mode enabled): FALSE
CapSlpColor	PTR_COLOR_PRIMARY	
CapSlpCartridgeSensor	0	
CapSlpBothSidesPrint	FALSE	

CapSlpBold	FALSE	(40CPL mode disabled): TRUE (40CPL mode enabled): FALSE
CapSlpBitmap	TRUE	
CapSlpBarCode	FALSE	
CapSlp2Color	FALSE	
CapSlpFullslip	TRUE ^{*1}	
CapSlpPresent	TRUE	
CapSlpPageMode	FALSE	
CapSlpRuledLine	FALSE	

^{*1} FALSE when operating with validation mode. Please refer to corresponding subsection of this section for validation printing.

3.1.2 List Properties

The List Properties are explained in the following.

List Property	Settings
CharacterSetList	"254, 255, 437, 850, 852, 858, 860, 863, 865, 866, 997, 998, 999, 1252"
JrnLineCharsList	""
RecLineCharsList (79.5 mm)	"48, 64"
RecLineCharsList (57.5 mm)	"35, 46"
SlpLineCharsList	(40CPL mode disabled): "25, 33" (40CPL mode enabled): "40"
RecBarCodeRotationList	"0, R90, L90, 180"
RecBitmapRotationList	"0, R90, L90, 180"
SlpBarCodeRotationList	"0, 180"
SlpBitmapRotationList	"0, R90, L90, 180"
SlpBarCodeRotationList (Validation)	"0, 180"
SlpBitmapRotationList (Validation)	"0, R90, L90, 180"
SlpBitmapRotationList (Endorsement)	"0, 180"
FontTypefaceList	""

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	(40CPL mode disabled)	(40CPL mode disabled)	(40CPL mode disabled)
	12	127	0
	(40CPL mode enabled)	(40CPL mode enabled)	(40CPL mode enabled)
	10	10	10
SlpLineHeight [dot]	(40CPL mode disabled): 9 (40CPL mode enabled): 7		
RecLineHeight [dot]	24, 17		
JrnLineHeight [dot]	X		
SlpLineWidth [dot]	(40CPL mode disabled): 150 (40CPL mode enabled): 240		
RecLineWidth [dot] (79.5 mm)	576		
RecLineWidth [dot] (57.5 mm)	420		
JrnLineWidth [dot]	X		
RecSidewaysMaxLines (79.5 mm)	19 ^{*3}		
RecSidewaysMaxLines (57.5 mm)	14 ^{*3}		
RecSidewaysMaxChars (Font A is selected)	123 ^{*4}		
RecSidewaysMaxChars (Font B is selected)	164 ^{*4}		
RecLinesToPaperCut	4 ^{*2}		
SlpSidewaysMaxLines	0		
SlpSidewaysMaxChars	0		
SlpMaxLines	8		

X : No settings

^{*1} 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 character height.

^{*3} It can be changed by the settings of the XxxLineSpacing or the XxxLineHeight.

^{*4} It can be changed by the settings of the font width.

When the SlpLineSpacing is 0, the SlpSidewaysMaxLines is -1.

3.1.4 Common Property Strings

The Device information properties are described below.

I/F	DeviceName	DeviceDescription
S	TM-H2000	EPSON TM-H2000 POS Printer
P	TM-H2000P	EPSON TM-H2000P POS Printer
U	TM-H2000U	EPSON TM-H2000U POS Printer
E	TM-H2000E	EPSON TM-H2000E 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

3.1.5 PageMode Print Properties

The Device information properties are described below.

Property	Station ^{*2}	
	Receipt	Slip Endorsement
PageModeArea	(monochrome) (79.5mm) "576", "1476" (57.5mm) "420", "1476"	(Normal dot) " (Half dot) "
PageModeDescriptor ^{*1}	BM/BC/BMR/BCR	0

^{*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	Receipt: O Slip endorsement: X	O ^{*2}
PrintBitmap	O	O ^{*3}
PrintMemoryBitmap	O	O ^{*3}
CutPaper	O (1~100: One point remains uncut)	X
MarkFeed	X	X
ChangePrintSide	X	X
ValidateData	O	O
TransactionPrint	O	O
SetLogo	O	O
SetBitmap	Receipt: O Slip endorsement: X	O
RotatePrint	O	X
EndRemoval	O	O
BeginRemoval	O	O
EndInsertion	O	O
BeginInsertion	O	O
ClearPrintArea	Receipt: O Slip endorsement: X	O
PageModePrint	Receipt: O Slip endorsement: X	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	Receipt	Slip Endorsement	Compatibility with the PageMode printing
#P	0~100 ^{*2}	X	X
#fP	0~100 ^{*2}	X	X
#sP	X	X	X
sL	X	X	X
#B	O	X	O
tL	O	O	O
bL	O	O	O
[*]#R	O	X	O
#IF	0~9999	0~9999	O
#uF Base Pitch [inch]	0~approx . 50 cm	0~approx . 50 cm	O
#rF Maximum [inch]	X	327	X
[*]#E	0~65535	0~65535	X
#fT	X	X	X
bC	O	(40CPL mode disabled): O (40CPL mode enabled): X	O
!bC	O	(40CPL mode disabled): O (40CPL mode enabled): X	O
#uC	1~2	(40CPL mode disabled): 1 (40CPL mode enabled): X	O
iC	X	X	X
!iC	X	X	X
rC	1	1	O
rvC	O	X	Receipt: O Slip endorsement: X
!rvC	O	X	Receipt: O Slip endorsement: X
#sC	X	X	X
#fC	X	X	X
tbC	X	X	X
!tbC	X	X	X
tpC	X	X	X
!tpC	X	X	X
1C	O	O	O
2C	O	(40CPL mode disabled): O (40CPL mode enabled): X	O
3C	O	(40CPL mode disabled): O (40CPL mode enabled): X	O

4C	O	(40CPL mode disabled): O (40CPL mode enabled): X	O
#hC	1~8	(40CPL mode disabled): 1~2 (40CPL mode enabled): 1	O
#vC	1~8	(40CPL mode disabled): 1~2 (40CPL mode enabled): 1	O
cA	O	(40CPL mode disabled): O (40CPL mode enabled): X	O ^{*1}
rA	O	(40CPL mode disabled): O (40CPL mode enabled): X	O ^{*1}
lA	O	(40CPL mode disabled): O (40CPL mode enabled): X	O
#stC	1	1	1
!stC	O	O	O
*#dL	X	X	X
N	O	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.

^{*2} This Escape Sequence is not supported when 90-degree rotated print mode.

3.4 Printable Barcode Type

The TM-H2000 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
- PDF 417
- GS1-Data
- GS1-Data Expanded
- GS1-128

- GS1-Data Truncated
- GS1-Data Limited
- GS1-Data Stacked
- GS1-Data Stacked Omnidirectional
- GS1-Data Expanded Stacked
- MAXI CODE
- QR CODE
- COMPOSITE

For the PDF 417 type, the maximum height is limited to 831 dots.

3.5 Power Condition Reports

The TM-H2000 support Power Condition Reports as follows.

Powered on reporting: Supported

Powered off reporting: Unsupported

3.6 Synchronous Processing

The TM-H2000 supports the Process ID for the Synchronous Processing.

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-H2000 supports the function for setting printing position.

Function	Receipt	Slip Endorsement
Left margin	O	O
Printing Position	O	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)

TM-H2000 models feature an electronic logo function (NVRAM). There are two ways of using NVRAM explained as follows:

1. Using TMFlogo Utility

Start up TMFlogo utility from “Device Specific Settings” dialog box of SetupPOS utility, and register image files (BMP style) with NVRAM in advance. For the details of the registration, please refer to the “Help” of “TMFlogo utility” and/ or “EPSON OPOS ADK MANUAL User’s Manual TMFlogo Utility”.

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 Section 4 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)” for detail.

2. Using SetBitmap Method

Checking “NVRAM” check box on “Bitmap” tab in “Device Specific Settings” dialog box of SetupPOS utility enable to register image files with NVRAM using SetBitmap method.

Regarding the details of image files registration with NVRAM using SetBitmap method, please refer to the Section 8 of “EPSON OPOS ADK MANUAL APPLICATION DEVELOPMENT GUIDE POSPrinter (TM Series)”

The available size of NVRAM is as follows:

TM-H2000	393216 bytes
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3.9 Printable bitmap types and sizes

The TM-H2000 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		
	x (x x 8 dots)	y (y x 8 dots)	xy
Download bitmap	1~2040	1~2040	Receipt: ≤ 32768
Raster bitmap	1~1024	1~4095	
Color bitmap	1~1024	1~207	
NV bitmap	1~8192	1~2304	

- When printing endorsement on the backside of a Slip, the download bitmap cannot be specified.
- A bitmap registered to print on the face cannot be printed on the other side of the Slip.
- Even if meet with the limitation described above, a bitmap that extend the paper width cannot be printed.
- When a height of the raster bitmap expands the value described above, the SO (Service Object) will automatically separate the bitmap data into multiple bitmaps, then print the multiple bitmaps data as one connected bitmap.

3.10 Maintenance Counter

The TM-H2000 models feature a maintenance counter function for retaining an operation log of the printer. The following chart shows the available maintenance counters for the TM-H2000.

Counter number Hexadecimal	Counter	Unit	Max. Value	Counter Type
0A	Paper feed in number of lines: Slip	Lines	178,956,970	Resettable
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
28	Number of carriage drive: Slip	Times	4,294,967,295	Resettable
29	Number of printed characters: Slip	Characters	4,294,967,295	Resettable
32	Number of auto-cutter operations	Times	4,294,967,295	Resettable
3C	Number of check paper readings	Times	4,294,967,295	Resettable
3E	Number of platen/roller opening/closing mechanism driving	Times	4,294,967,295	Resettable
46	Uptime of product	Hours	71,582,788	Resettable
8A	Paper feed in number of lines: Slip	Lines	178,956,970	Cumulative
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	Paper feed in number of head lines: Roll paper	Lines	143,165,576	Cumulative
A8	Number of carriage drive: Slip	Times	4,294,967,295	Cumulative
A9	Number of printed characters: Slip	Characters	4,294,967,295	Cumulative
B2	Number of auto-cutter operations	Times	4,294,967,295	Cumulative
BC	Number of check paper readings	Times	4,294,967,295	Cumulative
C6	Uptime of product	Hours	71,582,788	Cumulative

3.11 Automatic Recovery Function

The TM-H2000 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-H2000 supports outputting without flow control on the USB/Ethernet interfaces. The operations differ by the firmware versions. See the section 2 of this manual.

3.13 LED Blinking when BeginInsertion is executed

In the case of the TM-H2000, settings can be made in the SetupPOS utility so that the LED of the Slip starts blinking when BeginInsertion is executed. When the settings have been made in the SetupPOS utility, the LED of the slip will start blinking to indicate that the device is waiting for the paper to be inserted when the BeginInsertion method is executed.

3.14 Communication Compatibility

Use the "Communication Compatibility" setting of the SetupPOS utility if you want to enable a compatibility relation to the serial connection in the device being used by the USB connection. For details, please refer to the "Section 5. SetupPOS Utility" of the "EPSON OPOS ADK MANUAL User's Manual (Installer/ SetupPOS/ TMUSB)" manual.

Section 4. Warnings

This section describes precautions in use of TM-H2000.

- Due to hardware limitations and the position of the Slip, it is not possible to change the printing side and then search for the position where printing should start. In this case, OPOS_E_ILLEGAL (OPOS_EX_INVALIDMODE) is returned.
- Before switching the printing side, the Transaction data and the data for 90-degree rotated printing are printed on the current printing side, and Transaction is automatically set to PTR_TP_NORMAL and Rotate is set to PTR_RP_NORMAL.

This is because different functions are used for the two printing sides (the print head is different) and this factor may cause an improper result if the data is not printed on the printing side selected when the printing command is issued. Because this processing is performed before the position of the Slip is checked in order to take the above mentioned restrictions into consideration, there may be instances where the above error is generated after the buffered data is printed, or the printing side may not be switched.

- In the SetBitmap method, a data set to print on the face side cannot be printed on the backside.
- The width limitation on 90-degree rotated printing to the right is limited to 831 dots for printing on receipt. For printing on slip, it is limited to 704 dots.