

EPSON OPOS ADK MANUAL

APPLICATION DEVELOPMENT GUIDE

POSPrinter (TM-T88IV)

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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-T88IV 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-T88IV | TM-T88IVP | TM-T88IVU | TM-T88IVE |
| TM-T88IVM | TM-T88IVPM | TM-T88IVMU | TM-T88IVME |

Before reading the manual, see the following explanation about the characteristic of the TM-T88IV models.

- TM-T88IV

Station: Receipt (Line Thermal 180 dpi X 180 dpi)

Color printing: 2-Color Printing

Throughout the manual, the various model names will be referred to as TM-T88IV.

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-T88IV Series printers.

2.1 References of Firmware Versions

Refer to the release notes (Relnote.txt).

2.2 Settings of DIP Switches

Confirm that the following settings have been made correctly.

1) Serial port

DIP-SW1

| No. | Setting | |
|-----|---------|--------------|
| 1 | OFF | Recommended |
| 2 | OFF | Recommended |
| 3 | OFF | Fixed at OFF |
| 4 | OFF | Fixed at OFF |
| 5 | OFF | Settable |
| 6 | OFF | Settable |
| 7 | 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 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 (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 | OFF | Settable |
| 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.

When parallel I/F is used with Windows 2000, Windows XP or Windows Vista, please set DIP-SW2-1 (BUSY condition) to ON (Receive buffer full).

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.

2.3 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] | 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] | 9600 |
| Bit length [bit] | 8 |
| Parity | NONE |
| Stop bit [bit] | 1 |
| Handshake | DTR/DSR |
| Output buffer length [byte] | 1024 |
| Output interval time [ms] | 2500 |

2) Port information when using parallel port

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

| Item | Setting range |
|-----------------------------|---------------|
| Output buffer length [byte] | 32 to 1024 |
| Output interval time [ms] | 0 to 9999 |

The default settings are as shown in the following table.

| Item | Setting range |
|-----------------------------|---------------|
| Output buffer length [byte] | 1024 |
| Output interval time [ms] | 2500 |

3) Port information when using USB port

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

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

The default 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-T88IV.

2.4.1 Usable Device Specific Settings

For the TM-T88IV, 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 ^{*2} | 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} Available only for the Multilingual character model.

2.4.2 Paper Type Setting

The TM-T88IV models support the following paper type. After adding the TM-T88IV by the SetupPOS utility, open the “Device Specific Settings” dialog box. In the “Paper” tab the paper type could be selected..

The settable paper types are as follows:

- Normal
- 2-Color Thermal

The default paper type is set to Normal.

2.4.3 Multilingual font Setting

The TM-T88IV 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-T88IV 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_UNICODE ^{*1} |
| CapMapCharacterSet | TRUE ^{*5} |
| 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 |
| CapRecPercut | TRUE |

| | |
|-----------------------|--|
| CapRecNearEndSensor | TRUE |
| CapRecMarkFeed | 0 |
| CapRecLeft90 | TRUE |
| CapRecItalic | FALSE |
| CapRecEmptySensor | TRUE |
| CapRecDwideDhigh | TRUE |
| CapRecDwide | TRUE |
| CapRecDhigh | TRUE |
| CapRecColor | PTR_COLOR_PRIMARY PTR_COLOR_CUSTOM1 *2 *3 |
| CapRecCartridgeSensor | 0 |
| CapRecBold | TRUE |
| CapRecBitmap | TRUE |
| CapRecBarCode | TRUE |
| CapRec2Color | TRUE *2 *4 |
| 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 Accordance with the selected paper in the SetupPOS utility, the set value will differ.

When selecting Normal Paper (Default), two colors print cannot be executed.

^{*3} If using to the power saving mode by setting of DIP-SW2-3 and DIP-SW2-4,
CapRecColor property is set to PTR_COLOR_PRIMARY.

^{*4} If using to the power saving mode by setting of DIP-SW2-3 and DIP-SW2-4,
CapRec2Color property is set to FALSE.

^{*5} If CHINA GB18030 character model or TAIWAN BIG-5 character model or Thai 1 Pass
model, "FALSE" is set

3.1.2 List Properties

The List Properties are explained in the following.

| List Property | Settings |
|------------------------|---|
| CharacterSetList | (TM-T88IV) "255,437,850,852,858,860,863,865,866,998,999, 1252" ^{*1*5} (TM-T88IVM) ^{*2} "120,121,126,130,131,437,997" ^{*3} "437,874" ^{*4} |
| JrnLineCharsList | "" |
| RecLineCharsList | 79.5mm (Font A) "42" (Font B) "56" 57.5mm (Font A) "30" (Font B) "40" |
| SlpLineCharsList | "" |
| RecBarCodeRotationList | "0,R90, L90, 180" |
| RecBitmapRotationList | "0,R90, L90, 180" |
| SlpBarCodeRotationList | "" |
| SlpBitmapRotationList | "" |
| FontTypefaceList | "" |

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

^{*2} Device is limited to South Asia model.

^{*3} Available only for Thai3 Pass mode and Vietnamese

^{*4} Available only for Thai1 Pass mode.

^{*5} 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.

3.1.3 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) 17 | | |
| JrnLineHeight [dot] | X | | |
| SlpLineWidth [dot] | X | | |
| RecLineWidth [dot] | 512 | | |
| JrnLineWidth [dot] | X | | |
| RecSidewaysMaxLines | 17 ^{*2} | | |
| RecSidewaysMaxChars | (Font A) 69 ^{*3} (Font B) 92 ^{*3} | | |
| RecLinesToPaperCut | 5 ^{*4} | | |
| 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 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 font width.

- When the RecLineSpacing is 0, the RecLinesToPaperCut is -1.

^{*4} 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-T88IV | EPSON TM-T88IV POS Printer |
| | TM-T88IVM | EPSON TM-T88IVM POS Printer |
| P | TM-T88IVP | EPSON TM-T88IVP POS Printer |
| | TM-T88IVPM | EPSON TM-T88IVPM POS Printer |
| U | TM-T88IVU | EPSON TM-T88IVU POS Printer |
| | TM-T88IVMU | EPSON TM-T88IVMU POS Printer |
| E | TM-T88IVE | EPSON TM-T88IVE POS Printer |
| | TM-T88IVME | EPSON TM-T88IVME 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} | | |
|----------------------------------|-----------------------|--|------|
| | Journal | Receipt | Slip |
| PageModeArea | - | <monochrome> "512", "1662" <2-color> "512", "831" | - |
| 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 |
| #lF | 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 |
| !bC | O | O |
| #uC | 1~2 | O |
| iC | X | X |
| !iC | X | X |
| #rC | 1~2 | O |
| rvC | O | O |
| !rvC | O | O |
| #sC | X | X |
| #fC | X | X |
| tbC | X | X |
| !tbC | X | X |
| tpC | 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 | 1 | 1 |
| !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-T88IV 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 Power Condition Reports

The TM-T88IV supports Power Condition Reports as follows.

Powered on reporting: Supported

Powered off reporting: Unsupported

3.6 Synchronous Processing

The TM-T88IV uses 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-T88IV 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-T88IV models feature an electronic logo function (NVRAM). To use NVRAM, start up 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 “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 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-T88IV : 262144 bytes

3.9 Printable bitmap types and sizes

The TM-T88IV 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 |
| Download bitmap | 1~2040 | 1~384 | <= 98304 |
| Raster bitmap | 1~2048 | 1~1023 | |
| One-line bitmap | No setting range | | |

3.10 Color Bitmap Printing

The TM-T88IV models support color bitmap printing.

If a 16-color or a 256-color bitmap file is supplied, the image may be printed using 2 colors. If the original file is a 2-color bitmap, it will be printed in monochrome. The halftone method may be set using the “Device Specific Settings” dialog box.

To print an image using 2 colors, 2-color thermal paper must be selected in the “Device Specific Settings” dialog box and 2-color thermal receipt paper must be supplied in the printer.

3.11 Maintenance Counter

The TM-T88IV 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-T88IV.

| 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 |

3.12 Automatic Recovery Function

The TM-T88IV 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.

3.13 Output without Flow Control on the USB/Ethernet Interfaces

The TM-T88IV 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

This section describes precautions in use of TM-T88IV.

- When using the built-in buzzer model of TM-T88IV and TM-T88IVM with network connection, always use a UB-E02 or UB-R02 interface board. If a device is connected via an other interface board, Epson will not be responsible for any consequences.
- If 2-color thermal paper is selected from the “Device Specific settings” dialog box, 2-color thermal receipt paper must be used in the printer.
- If the device is set to the power saving mode when 2ColorThermal is selected in the PaperType combo box of SetupPOS, CapRec2Color property is set to FALSE. In addition, if 2-color printing is performed with the device set to the power saving mode, actual printing is single color.
- 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.