

TM-H6000IV-DT

Technical Reference Guide

Product Overview

Describes features and general specifications for the product.

Setup

Describes setup and installation of the product and peripherals.

Preinstalled OS Information

Describes the preinstall information and recovery method.

Utility

Describes the utilities included in this product and how to use them.

Application Development Information

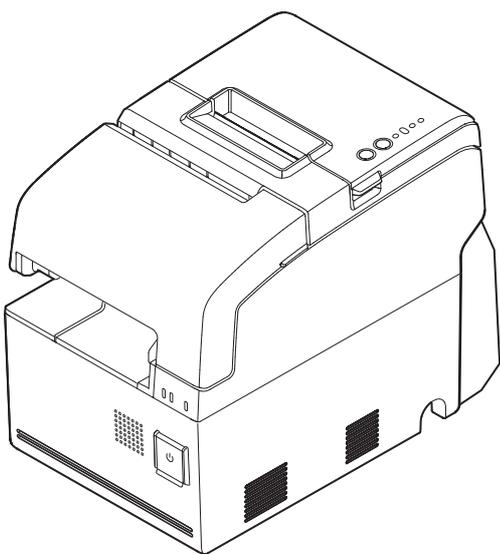
Describes how to control the printer and information necessary when you develop applications.

Handling

Describes how to handle the product.

Appendix

Describes character code tables.



Cautions

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For Safety

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

 WARNING	You must follow warnings carefully to avoid serious bodily injury.
 CAUTION	Provides information that must be observed to prevent damage to the equipment or loss of data. <ul style="list-style-type: none">• Possibility of sustaining physical injuries.• Possibility of causing physical damage.• Possibility of causing information loss.
CAUTION	Provides information that must be observed to avoid damage to your equipment or a malfunction.
NOTE	Provides important information and useful tips.

Warnings



WARNING

- **To avoid risk of electric shock, do not set up this product or handle cables during a thunderstorm.**
- **Never insert or disconnect the power plug with wet hands.**
Doing so may result in severe shock.
- **Handle the power cable with care.**
Improper handling may lead to fire or electric shock.
 - * Do not modify or attempt to repair the cable.
 - * Do not place any heavy object on top of the cable.
 - * Avoid excessive bending, twisting, and pulling.
 - * Do not place the cable near heating equipment.
 - * Check that the plug is clean before plugging it in.
 - * Be sure to push the plug all the way in.
- **Be sure to use the specified power source.**
Connection to an improper power source may cause fire or shock.
- **Do not place multiple loads on the power outlet.**
Overloading the outlet may lead to fire or shock.
- **Shut down your equipment immediately if it produces smoke, a strange odor, or unusual noise.**
Continued use may lead to fire. Immediately unplug the equipment and contact your dealer or a Seiko Epson service center for advice.
- **Never attempt to repair this product yourself.**
Improper repair work can be dangerous.
- **Never disassemble or modify this product.**
Tampering with this product may result in injury or fire.
- **Do not allow foreign matter to fall into the equipment.**
Penetration by foreign objects may lead to fire.
- **If water or other liquid spills into this equipment, do not continue to use it.**
Continued use may lead to fire. Unplug the power cord immediately and contact your dealer or a Seiko Epson service center for advice.
- **Do not use aerosol sprayers containing flammable gas inside or around this product.**
Doing so may cause fire.

Cautions



- **Do not connect cables in ways other than those mentioned in this manual.**
Different connections may cause equipment damage or fire.
- **Be sure to set this equipment on a firm, stable, horizontal surface.**
The product may break or cause injury if it falls.
- **Do not use this product in locations subject to high humidity or dust levels.**
Excessive humidity and dust may cause equipment damage or fire.
- **Do not place heavy objects on top of this product. Never stand or lean on this product.**
Equipment may fall or collapse, causing breakage and possible injury.
- **To avoid injury, do not insert fingers or any part of the hand in the roll paper opening where the manual cutter is installed.**
- **Do not open the roll paper cover without taking the necessary precautions, as this can result in injury from the autocutter fixed blade.**
- **To ensure safety, unplug this product before leaving it unused for an extended period.**

Wireless LAN (OT-WL01) Important Safety Information



- **May exert electromagnetic interference on, and cause malfunction of, cardiac pacemakers.**
Before using this product, check that there is no one in the vicinity using a cardiac pacemaker.
- **May exert electromagnetic interference on, and cause malfunction of, sensitive medical equipment.**
Before using this product, check that there is no sensitive medical equipment in the vicinity.
- **Use of this product on aircraft may be restricted in some countries.**
Before using this product, check that use of this product is not restricted on the aircraft.
- **Never attempt to repair this product yourself.**
Improper repair work can be dangerous.
- **Never disassemble or modify this product.**
Tampering with this product may result in injury or fire.



- **The OT-WL01 is only for indoor use.**
- **The OT-WL01 should only be used for EPSON TM-i series and TM-DT.**
If it is installed on another device, it may result in computer failure, damage, or malfunctions.
- **To comply with RF exposure compliance requirements, a distance of at least 20 cm must be maintained at all times between the antenna of OT-WL01 and people in the vicinity.**
- **Do not store in locations with high temperatures or high humidity.**
It may in particular be damaged or deformed if left in a vehicle with the windows shut, or placed in locations with unusually high temperatures for extended periods such as in direct sunlight.
- **Do not wet the OT-WL01.**
This may cause malfunctions to occur.
- **Do not use near microwave ovens.**
Wireless communication may be interrupted by electromagnetic interference generated by microwave ovens.
- **Do not drop it, subject it to shocks, or place heavy objects on it.**

Wireless LAN (OT-WL01) Usage Precautions

Wireless Telegraphy Act Regulations

The following acts are prohibited by the Wireless Telegraphy Act.

- Modifying and disassembling (including the antenna)
- Removing the label of conformance

Notes on Security when Using Wireless LAN

(Important information on customer rights (maintaining privacy))

The advantage of using a wireless LAN over a LAN cable is that, because information is exchanged using radio signals, you can easily connect to the network if you are within range of the radio signals. A disadvantage of this is that within a certain range, the electromagnetic signals can pass through barriers such as walls, so that if security countermeasures are not implemented in some way, problems such as the following may occur.

- Communication data can be intercepted
A third party may be able to receive wireless transmissions without authorization, and they could obtain personal information from these transmissions such as IDs, passwords, or credit card numbers, or they could intercept the contents of personal e-mail messages.
- Unauthorized access to the network
A third party could access an individual or intra-company network without permission and carry out any of the following activities.
 - Retrieve personal data or other secret information (information leakage)
 - Pose as another user and send inappropriate data (impersonation)
 - Overwrite the contents of intercepted data and resend it (falsification)
 - Introduce a computer virus which could cause data loss or system crashes (damage)

Initially, the possibility that such problems could occur through settings concerning the security of the wireless LAN product and by using the product are decreased, because the wireless LAN card and the access point have security measures to deal with these problems. We recommend that you use this product after making security settings using our own judgement and assuming full responsibility, and with your full understanding of problems that may occur if you do not make any security settings.

Notes on Setting SSID (Service Set Identifier)

For protection of security, note the following precautions when setting the SSID.

- Change the SSID from the default setting.
- Do not set texts by which the owner can be identified as the SSID.

Notes on Setting Cryptographic Key

For protection of security, note the following precautions when setting the cryptographic key.

- Avoid using words on a dictionary as practicably as possible.
- Combine meaningless alphanumeric characters and symbols.
- Use texts consisted of at least 13 characters or more or of 20 characters or more if possible.

Restriction of Use

When this product is used for applications requiring high reliability/safety, such as transportation devices related to aviation, rail, marine, automotive, etc.; disaster prevention devices; various safety devices, etc.; or functional/precision devices, etc., you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety, such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care, etc., please make your own judgment on this product's suitability after a full evaluation.

About this Manual

Aim of the Manual

This manual was created to provide information on development, design, and installation of receipt issue systems and development and design of printer applications for developers.

Manual Content

The manual is made up of the following sections:

Chapter 1	Product Overview
Chapter 2	Setup
Chapter 3	Preinstalled OS Information
Chapter 4	Utility
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Chapter 6	Handling
Appendix	Appendix

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Product Overview

This chapter describes features and general specifications of the product.

Features

TM-H6000IV-DT has the function to seamlessly connect POS peripheral devices and server services. By using TM-H6000IV-DT, the users can construct POS solutions of the next generation that have excellent connectivity and services.

- The controller has the PC architecture that uses Intel® Atom™ processor.
- The OS employs Windows Embedded POSReady 7 and provides functionality as a Windows computer.
- You can connect external devices with USB connections and serial connections (LCD unit with touch panel, keyboard, MSR, etc.).
- Built-in SATA HDD. You can use it with POS applications or databases.
- Equipped with 10BASE-T / 100BASE-TX / 1000BASE-T LAN communication capability as standard. As an optional feature, it can also support wireless LAN.
- Equipped with Powered USB 12 V x 3 ports as standard.
- Communication between applications is enabled by the function of communication box.
- You can print directly or control POS peripherals from the Web application. (ePOS-Device API).
- Web application is available for server-side scripting (Perl or php). And you can also use SQLite database.
- If Web contents are placed on this product's Web server, you can periodically acquire the contents from a separate server. (Automatic update of Web content)
- You can print directly or control POS peripherals from native applications (mobile terminals) for iOS and Android. (ePOS-Device XML).
- You can use the pre-installed software required for the Thin-Client environment as the virtual desktop / application client and printer.

Features of this printer

Slip printing

- The printer includes a Magnetic Ink Character Recognition (MICR) reader and an endorsement printer (E/P).
- High throughput using bidirectional minimum distance printing.
- A mechanical form stopper gives stability to slip paper.
- Opening the front carriage unit makes removing jammed paper easy.

Receipt printing

- High speed receipt printing is possible.
- Graphics are also printed with high-speed printing.
- Multi-tone graphics printing is possible.
- Barcode and two-dimensional symbol printing is possible.
- Easy drop-in paper loading.
- An autocutter is standard equipment.
- Paper-saving function is supported.

System connection examples

As shown below, you can configure various systems.

- PC-POS System ([Page 17](#))
- Printing and controlling POS peripherals from the Web application ([Page 18](#))
- Communication between applications ([Page 19](#))
- Printing and controlling POS peripherals from an application on a tablet terminal ([Page 20](#))
- Acquiring data from a server at a remote location ([Page 21](#))
- Virtual environment client ([Page 22](#))

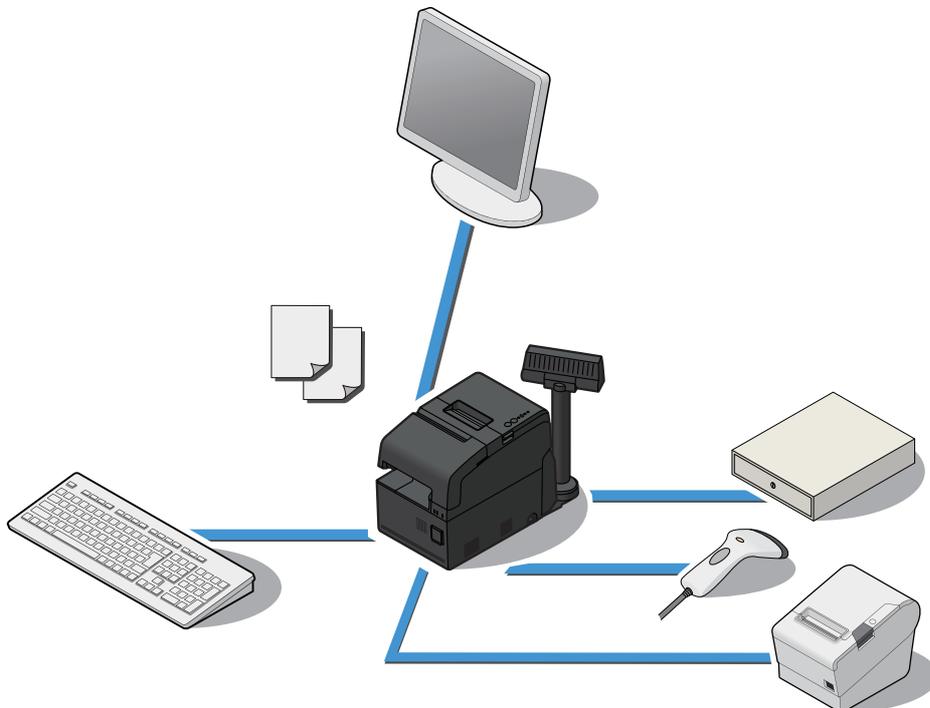
PC-POS System

You can configure a simple POS system by installing POS applications and connecting a display with a touch panel and a barcode scanner to the TM-H6000IV-DT.

The OS is based on Windows and includes HDD. You can install the Windows driver (APD) and the UPOS driver.

You can also transfer the conventional Windows-based PC-POS system as it is.

This saves on system installation fees, saves space, and increases its maintainability.



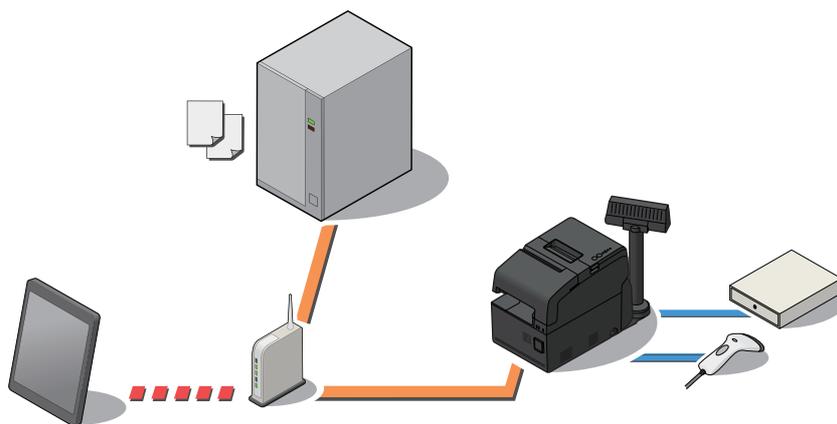
Printing and controlling POS peripherals from the Web application

ePOS-Device API is supported. You can print or control devices (display on the customer display or input/output from the POS peripherals) from the Web application.

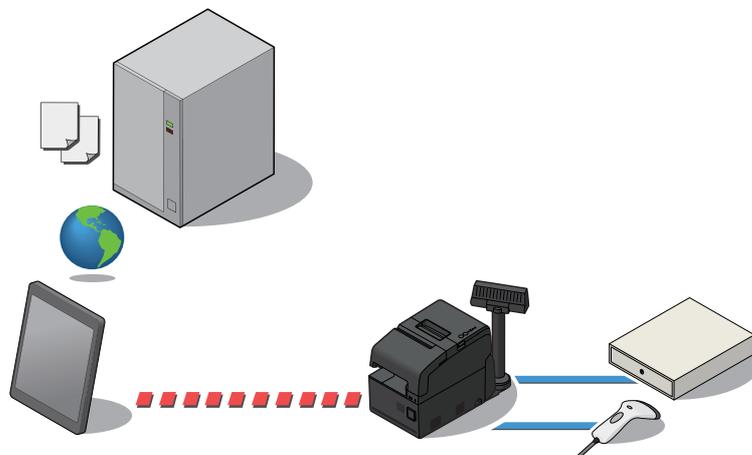
You can control the customer display, barcode scanner, USB devices, or the serial device from the same API system. Also, you can customize the API and send and receive device commands.

You can control it from the Web browser on a computer, smart phone or tablet terminal.

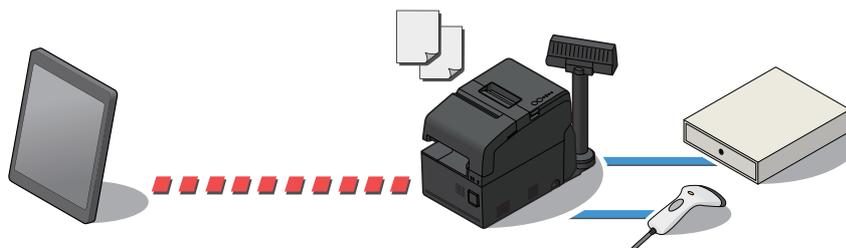
- Connection example 1



- Connection example 2



- Connection example 3



Communication between applications

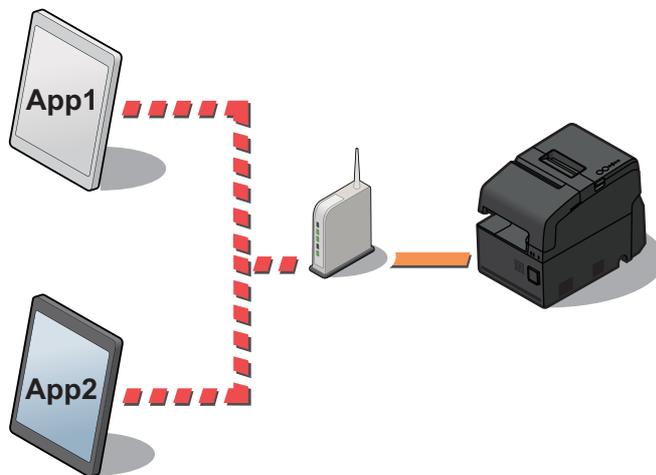
This function is supported by ePOS-Device API / ePOS-Device XML. Communication between applications is enabled by the function of communication box.

- ePOS-Device API

Supports communication between web applications. Enables communication between web applications on devices such as a smart phone and tablet terminal.

- ePOS-Device XML

Enables communication from the application on a device such as a smart phone and tablet terminal to the application on another terminal via TM-DT.



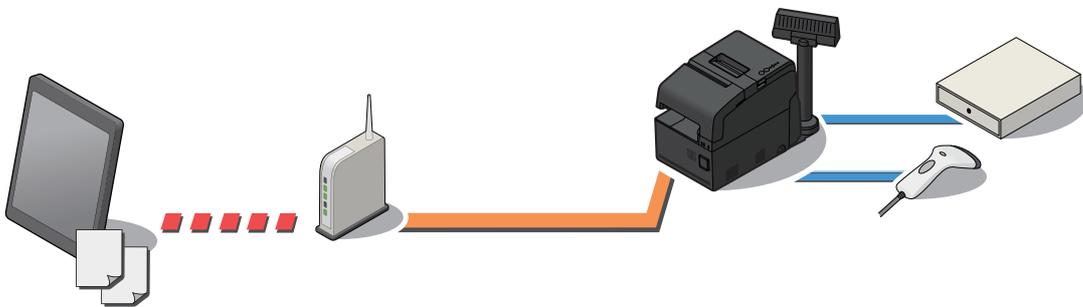
Printing and controlling POS peripherals from an application on a tablet terminal

ePOS-Device XML is supported. You can print or control devices (display on the customer display or input / output from the POS peripherals) from a tablet terminal application. You can control the customer display, barcode scanner, USB devices or serial devices from the same system.

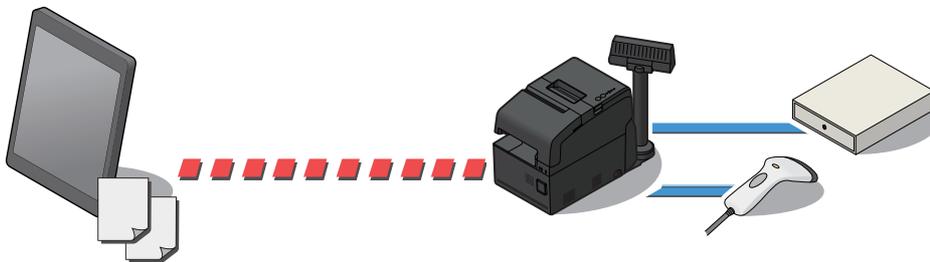
Also, you can customize it and send and receive device commands. You can control it from the application on a smart phone or tablet terminal with socket communication.

For an environment that can use HTTP communication and can handle XML, you can control the device from the OS application with socket communication.

- Connection example 1



- Connection example 2



Acquiring data from a server at a remote location (via Internet or any other means) and printing the acquired data

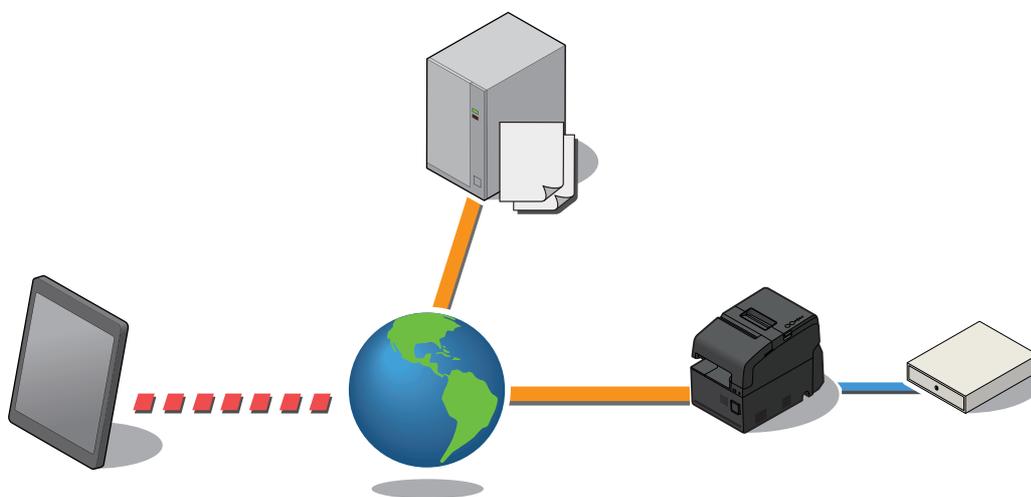
This product supports the Server Direct Print function, with which the printer requests data from the Web server and prints the acquired data.

Your application can print data only by sending back the print data in response to a request from the printer.

If the Web server has acquired a global IP address, data can be printed from a remote location via Internet.

Only printers and cash drawers are supported.

Customer displays and barcode scanners are not supported.

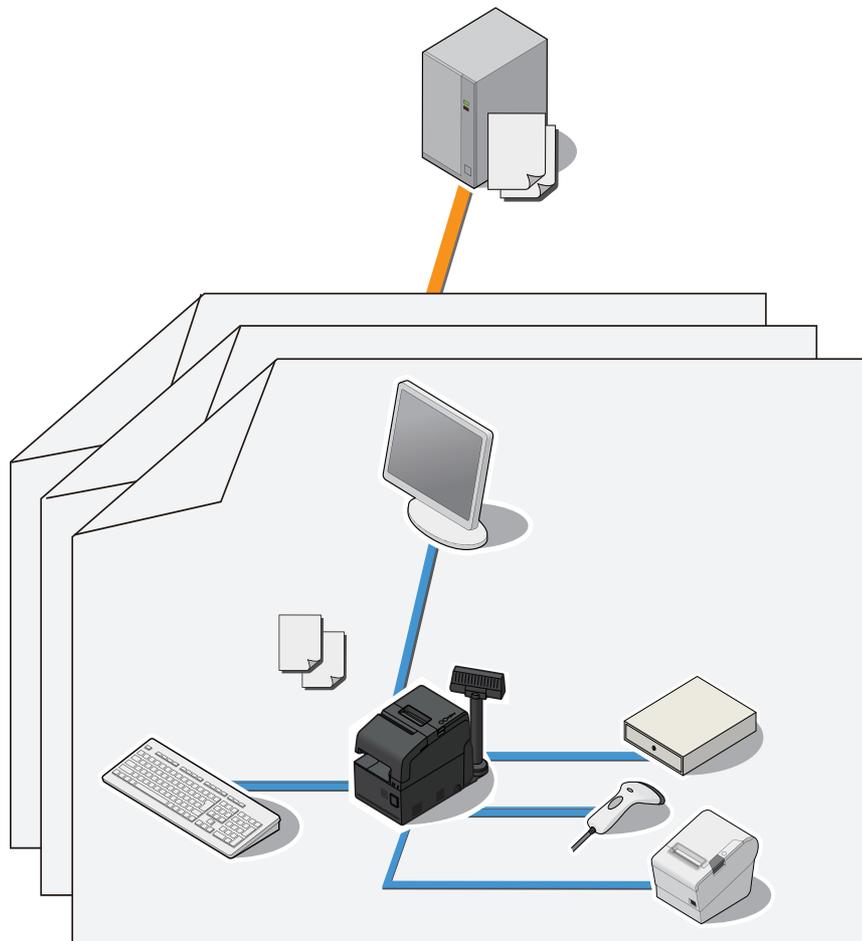


Virtual environment client

You can use the product as a client of a virtual desktop or virtual application.

It supports Citrix XenServer/Client, VM Ware, and Microsoft's Hyper-V/App-V.

Printing is supported for applications that use the UPOS driver and APD (Windows driver).



Product Configurations

Paper width

- 80 mm

Colors

- Black

Accessories

Included

- AC adapter, T (Model No. M284A)
- AC cable *1
- Connector cover
- Ribbon cartridges (ERC-32, ERC-43)
- Roll paper (for operation check)
- Recovery disc
- User's Manual
- Warranty certificate (May not be included, depending on the model.)

*1 May vary based on specifications and region.

Options

- Wireless LAN cable set (Model: OT-WL01)
- Customer display (Model: DM-D110-USB)
- Pole kit (Model: DP-502-114)

Related manuals

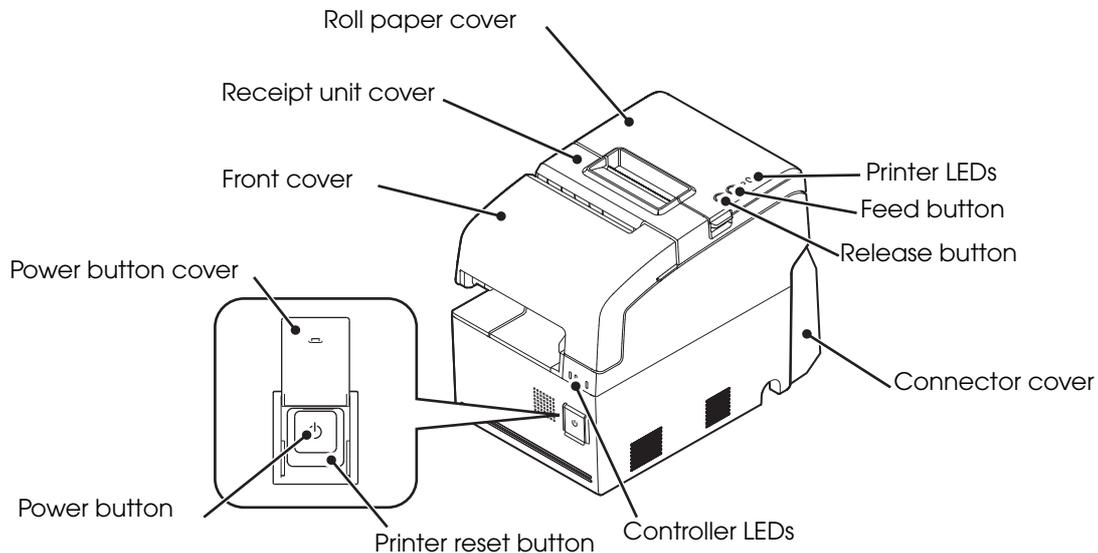
- TM-H6000IV-DT Technical Reference Guide (this manual)
- TM-H6000IV-DT User's Manual
- ePOS-Device API User's Manual
- ePOS-Device XML User's Manual
- Server Direct Print User's Manual
- TM-DT Thin-Client System Setup Guide
- TM-DT series Easy Setup Guide

For details about each system, refer to "[Application Development Information](#)" on page 157, or to each system manual.

Peripherals

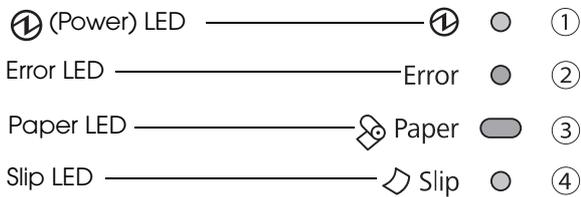
The external devices that can be connected to this product, such as POS peripherals, vary based on the system in use. For details, refer to "[Application Development Information](#)" on page 157.

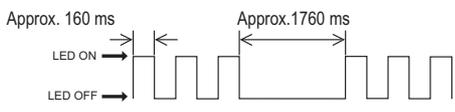
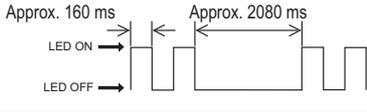
Part Names and Functions



Name	Description
Roll paper cover	Open this cover to load/ replace the roll paper.
Receipt unit cover	Open this cover to install/replace the ribbon cartridge for endorsement printing.
Front cover	Open this cover to install/replace the ribbon cartridge for front slip printing.
Power button cover	Open this cover to operate the power button and the printer reset button.
Power button	Press this button to turn on or shut down the product. Keep pressing the button to turn off the product forcibly. (See "Forced Termination" on page 189.)
Printer reset button	Keep pressing this button with a pointed object (such as a pen) until the  (Power) LED goes off to reset the printer unit.
Connector cover	Attach this cover to protect cables.
Release button	Press this button to release the retained slip paper.
Feed button	Press this button to feed the roll paper.
Printer LEDs	Indicate the printer unit status. (See "Printer LEDs" on page 26.)
Controller LEDs	Indicate the controller unit status. (See "Controller LEDs" on page 27.)

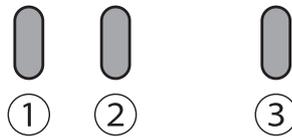
Printer LEDs



Name	Status	Description
① (Power) LED (Green)	On	Power is being supplied
	Off	Power is not being supplied
② Error LED (Orange)	On	Offline <ul style="list-style-type: none"> Immediately after the power is turned on or immediately after a reset (offline). Automatically goes off after a while to indicate that the printer is ready. The end of the roll paper is detected, and when printing has stopped (offline). If this happens, replace the roll paper.
	Flashing	An error has occurred
	Off	Normal operation (online)
③ Paper LED (Orange)	On	Roll paper near-end.
	Flashing	Waiting for the self-test printing to be continued.
	Off	There is a sufficient amount of roll paper remaining.
④ Slip LED (Green)	On	Slip paper mode.
	Flashing	Waiting for slip paper to be inserted/removed. <ul style="list-style-type: none"> Waiting to insert slip  Waiting to remove slip 
	Off	Roll paper mode.

Controller LEDs

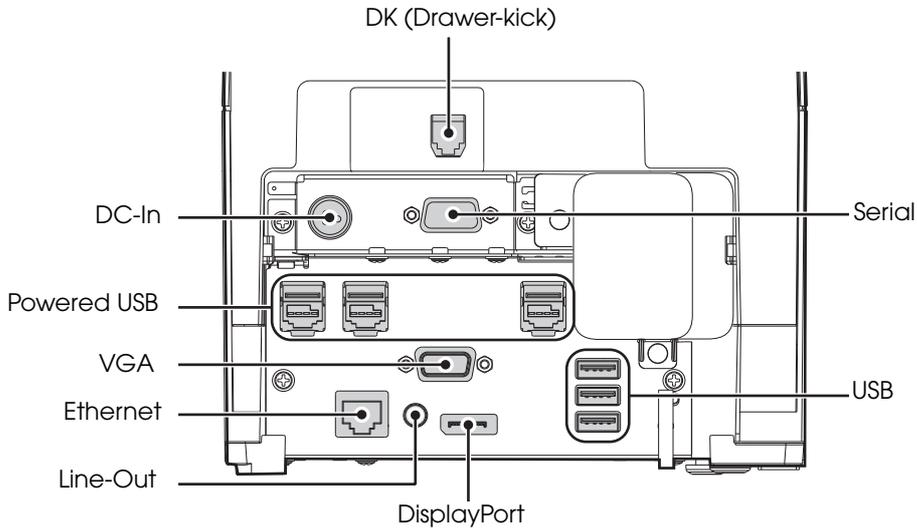
These display the controller unit's status.



Name	Status	Description
① Status LED (Green)	On	Power is on
	Flashing (Approx. 1 second intervals)	Stand-by mode
	Off	Power is off
② Status LED (Orange)	Flashing (Approx. 1 second intervals)	OS start-up sequence <ul style="list-style-type: none"> • Accessing the HDD; Do not turn the power off. Doing so may result in data loss.
	Flashing (Approx. 160 millisecond intervals)	CPU high-temperature warning An error has occurred. Contact the Espon customer service.
③ Storage access LED (Green)	On	Accessing storage.

Connectors

All the cables are connected to the connection panel on the back of the printer.



Name	Description
DK (Drawer-kick)	Connect the cash drawer here.
DC-In	Connect the AC adapter, T here.
Powered USB	Connect external devices with Powered USB interface here.
VGA	Connect the display here.
Ethernet	Connect the printer to the network.
Line-Out	Connect an external speaker here.
DisplayPort	Connect the display here.
USB	Connect external devices with USB interface here.
Serial	Connect a serial communication device with serial interface here.

NOTE

If the connector cover is attached, remove it to access the connectors.
(See ["Removing the Connector Cover" on page 115.](#))

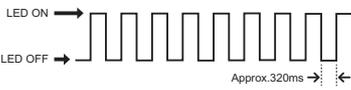
Printer function

When an error occurs, the printer stops operating, goes offline, and flashes the Error LED.

There are three possible error types: automatically recoverable errors, recoverable errors, and unrecoverable errors.

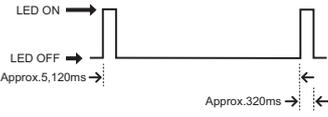
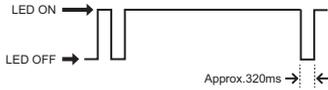
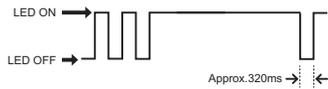
Automatically Recoverable Errors

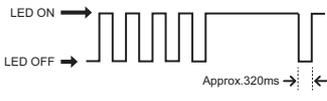
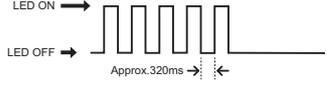
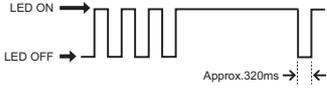
They can be recovered easily, as described below.

Error	Error description	Error LED flash pattern	Recovery measure
Print head temperature error	A high temperature outside the head drive operating range was detected.		Recovers automatically when the print head cools.

Recoverable Errors

Printing is no longer possible when recoverable errors occur. They can be recovered easily by turning the power off and then on again or sending an error recovery command from the driver after eliminating the cause of the error.

Error	Error description	Error LED flash code	Recovery measure
Autocutter error	Autocutter does not work correctly.		Remove the jammed paper or foreign matter in the printer, close the roll paper cover, send the error recovery command, or turn the power on again.
Carriage detection error in front slip printing	The carriage is malfunctioning due to a paper jam.		Remove the jammed paper or foreign matter in the printer, send the error recovery command, or turn the power on again.
Carriage detection error in endorsement printing	The carriage is malfunctioning due to a paper jam.		Remove the jammed paper or foreign matter in the printer, send the error recovery command, or turn the power on again.

Error	Error description	Error LED flash code	Recovery measure
Slip ejection error	The slip is not ejected after feeding a specified amount of paper, or the slip eject sensor does not detect paper.	 <p>LED ON → LED OFF →</p> <p>Approx. 320ms → ←</p>	Send the error recovery command or turn the power on again.
Mechanical operation error	The position of the platen/roller open and close mechanism cannot be detected.	 <p>LED ON → LED OFF →</p> <p>Approx. 320ms → ←</p>	
Roll paper cover open error	The roll paper cover or receipt unit was opened during printing on roll paper.	 <p>LED ON → LED OFF →</p> <p>Approx. 320ms → ←</p>	Close the roll paper cover, and then send the error recovery command or turn the power on again.
Receipt unit open error*	The receipt unit was opened during printing.		

*: Occurs only when memory switch 8-8 is set to ON.

CAUTION

The error recovery command is valid only if a recoverable error (excluding automatically recoverable errors) occurs.

Unrecoverable Errors

If the same error occurs again even after turning the power back on, contact your dealer or a Epson service center



Turn off the power immediately when unrecoverable errors occur.

Error	Error description	Error LED flash code
R/W error in memory or gate array	After R/W checking, the printer does not work correctly.	
High voltage error	The power supply voltage is extremely high.	
Low voltage error	The power supply voltage is extremely low.	
CPU execution error	The CPU is executing an incorrect address.	
Circuit error	A circuit error is detected.	

NV Memory (Non-Volatile Memory)

The printer's NV memory stores data even after the printer power is turned off. NV memory contains the following memory areas for the user:

- NV graphics memory
- User NV memory
- Memory switches
- R/E (Receipt Enhancement)
- User-defined page
- Maintenance counter



As a guide, NV memory rewriting should be used 10 times or less a day when you program applications.

NV Graphics Memory

Graphics, such as shop logos to be printed on receipts, can be stored.

Use the TM-H6000IV Utility to register graphics.



- For detailed information about the TM-H6000IV Utility, see the TM-H6000IV Utility User's Manual.
- For information about how to use the NV graphics information, see ["NV Graphics Print Mode" on page 182](#).

User NV Memory

You can store and read text data for multiple purposes, such as for storing a note including customizing or maintenance information of the printer. Use ESC/POS commands to store and read the text data.



For information about ESC/POS commands, see the ESC/POS Application Programming Guide.

Memory switches

With the memory switches, which are software switches for the printer, you can configure various settings of the printer. For information about the memory switches, see ["Setting the Memory Switches/Receipt Enhancement" on page 75](#).

R/E (Receipt Enhancement)

Graphics, such as shop logos can be printed on top or bottom of receipts by setting R/E (Receipt Enhancement). For information about R/E, see "[Setting the Memory Switches/Receipt Enhancement](#)" on page 75.

User-defined Page

You can store character data in the user-defined page (character code table: page 255) so that you can also print characters not resident in the printer.



For the character code table, see "[Character Code Tables](#)" on page 205.

Maintenance Counter

With this function, printer information, such as the number of line printed, the number of autocuts, and printer operation time after the printer starts working, is automatically stored in NV memory. You can read the information with the TM-H6000IV Utility or in a self-test to use it for periodical checks or part replacement.

Product Specifications

Item		Specifications
CPU	Usable CPU	Intel® Atom™ Processor N2800 (1MB Cache, 1.86 GHz)
Memory	Main memory	4 GB, DDR3-1066 SO-DIMM slot
	BIOS	SPI Flash 4MB
Chipset		Intel® NM10
Video controller		On built-in CPU
Auxiliary storage		SATA HDD (500GB or more)
Interface	Ethernet	10BASE-T/100BASE-TX/1000BASE-T 1port (RJ-45) Support Wake On LAN Network boot
	Powered USB	3 ports (Power supply 12 V/5 V *1, *3)
	Standard USB	3 ports USB 2.0 (Power supply 5V *2, *3)
	Serial	D-sub 9 pin male
	VGA	D-sub 15 pin female Analog RGB
	DisplayPort	DP1.1 female (16.1 mm x 4.76 mm)
	Drawer-kick	RJ12 6pin (24V 1A)
	Line-out	3.5 mm Mini-jack
RTC/CMOS backup battery		RTC is backed up by lithium primary battery
Speaker		Internal monaural speaker

Printer unit	Base printer	TM-H6000IV	
	Receipt part	Line thermal method (thermal method)	
		Printing speed	300 mm/s maximum (text printing)
		Dot density	180 dpi x 180 dpi
		Printing width	72 mm
	Slip part	Serial impact dot matrix	
		Printing speed	Approximately 5.7 lps (Front-side printing 40 digits, at 17.8cpj) Approximately 4.0 lps (Reverse-side printing 40 digits, at 21.2cpj)
		Characters per line	45/25 (Front/reverse side) (Font A at 5x9) 60/33 (Front/reverse side) (Font B at 7x9)
	MICR part	Permanent magnet magnetization system	
		Supported font	E13B, CMC7 (Alphabets not supported)
Recognition rate		More than 99%	
Software	BIOS	AMI BIOS (Supports ACPI 2.0/APM 1.2/Plug&Play)	
	OS	Windows® Embedded POSReady 7	
	Device control software	ePOS-Device USB port controller (thin-client connection supported)	
Ribbon cartridge	Front slip printing	ERC-32	
	Endorsement printing	ERC-43	
Power supply	Dedicated AC adapter (AC adapter, T (Model: M284A)) DC 24V, 4.2 A		
Dedicated AC adapter	AC adapter, T (Model: M284A) Input: AC 100 V to AC 240 V, 50 Hz to 60 Hz, 2.4 A Max. Output: DC 24V, 4.2 A		
Main unit power consumption	16W (when in standby) / 92W (when receipt printing)		
External dimensions	186 mm {7.32"}(W) x 290 mm {11.42"}(D) x 246 mm {9.69"}(H) (including connector cover)		
Case color	Black		
Weight (Mass)	6.2 kg {13.7 lb} (including ribbon cartridges, not including paper)		

*1 : Max. 1.5 A per port

*2 : Max. 0.5 A per port

*3 : Total power consumption of Powered USB and standard USB ports must be 30W or less.

Power capacity to the exterior

Port	Power	Supply capacity
Powered USB*	DC + 12 V	1.5 A maximum for each port 3.0 A maximum total for all three ports
	DC + 5V	0.5 A maximum for each port 1.5 A maximum total for all three ports
Standard USB	DC + 5V	0.5 A maximum for each port (Peak 1 A/100 ms)
Drawer	DC + 24V	1.0 A

*: Power to the Powered USB port can be selected from two modes: power is supplied based on the status of the power switch (factory default value) or it is constantly supplied. For setting methods, refer to "[Character Code Tables](#)" on page 205.

Software Specifications

Print control	ePOS-Device API, ePOS-Device XML (No printer driver is required.)
TM Printer, POS peripherals control driver	<ul style="list-style-type: none"> • APD 4.55b (Windows printer driver for customer displays and other TM printers)
Web applications	Available server-side scripts: <ul style="list-style-type: none"> • PHP ver.5.4.5 • Perl ver.5.12.4 SQLite database access with the server-side script is also available
Utility	EPSON TMNet WebConfig <ul style="list-style-type: none"> • Registration of devices controlled by ePOS-Device • Registration settings for Web content • Various administrator function

Controllable printer	WW Model	
		<ul style="list-style-type: none">• Following printers with the UB-E02, UB-E03, UB-R03 or UB-R04 embedded<ul style="list-style-type: none">* TM-H6000IV* TM-L90* TM-P60II* TM-P60II Peeler* TM-T20* TM-T70* TM-T70II* TM-T88V* TM-T90* TM-U220

Printing Specifications

Slip printing

Printing method		Serial impact dot matrix
Head wire configuration		9-pin vertical line, wire pitch approximately 0.353 mm {1/72"}
Printing direction		Bidirectional, minimum distance printing
Printing speed	Front*	Approx. 5.7 lps (printing 40 columns per line with 17.8 cpi)
	Endorsement	Approx. 4.0 lps (printing 40 columns per line with 21.2 cpi)
Characters per line	Front	Font A (initial setting): 45 Font B: 60
	Endorsement	Font A: 25 Font B: 33 Endorsement font (initial setting): 40
Character dot spacing	Front	Font A (initial setting): 1 dot Font B: 2 half dots
	Endorsement	Font A: 1 dot Font B: 2 half dots Endorsement font (initial setting): 1 dot

lps: lines per second

cpi: characters per inch

*: when the head energizing time is set to standard mode.

NOTE

Printing speed may be slower, depending on such items as the data transmission speed.

Receipt printing

Printing method	Thermal line printing
Dot density	180 × 180 dpi
Printing direction	Unidirectional with friction feed
Maximum print speed* ¹	300 mm/s {11.81"/s}
Printing width	72.0 mm {2.83"}, 512 dots
Characters per line	Font A (initial setting): 42 Font B: 56
Character spacing* ²	Font A (initial setting): 0.28 mm {0.01"} (2 dots) Font B: 0.28 mm {0.01"} (2 dots)
Paper feed speed	Approx. 200 mm/s {7.87"/s} (during continuous printing)
Line spacing* ²	Approx. 4.23 mm {1/6"} (during continuous printing)

dpi: dots per inch

*1: When the printer prints with the standard print density level at 24V and 25°C {77°F}.

*2: Initial setting. Programmable by commands.

NOTE

Printing speed may be slower, depending on such items as the data transmission speed.

Character Specifications

Slip printing

Number of characters	Alphanumeric characters: 95 Extended graphics: 128 × 12 pages (including user-defined page) International characters: 37
Character structure	Font A: 5 × 9 Font B: 7 × 9 Endorsement font: 5 × 7
Character size	Font A: 1.56 × 3.11 mm Font B: 1.24 × 3.11 mm Endorsement font: 1.09 × 2.41 mm

Receipt printing

Number of characters	Alphanumeric characters: 95 Extended graphics: 128 × 11 pages (including user-defined page) International characters: 37 character types	
Character structure	Font A: 12 × 24 (including 2-dot horizontal spacing) Font B: 9 × 17 (including 2-dot horizontal spacing)	
Character size* (Standard/ Double-height/ Double-width/ Double-width, double-height)	Font A	1.41 × 3.39 mm/1.41 × 6.77 mm/2.82 × 3.39 mm/2.82 × 6.77 mm
	Font B	0.99 × 2.40 mm/0.99 × 4.80 mm/1.98 × 2.40 mm/1.98 × 4.80 mm

*: Space between characters is not included.

Characters can be scaled up to 64 times as large as the standard size.

Paper Specifications

Slip printing

Types	Normal paper, pressure sensitive paper, carbon copy paper
Form	Cut sheet
Size (W x L)	68 to 230 mm x 68 to 297 mm {2.68 to 9.06" x 2.68 to 11.69"}
Thickness	Normal paper (single-ply)
	0.09 to 0.22 mm {0.0035 to 0.0087"}
	Copy paper (front)
	Backing paper: 0.07 to 0.12 mm {0.0028 to 0.0047"} Copy paper, original paper: 0.04 to 0.07 mm {0.0016 to 0.0028"} Carbon copy paper: Approx. 0.035 mm {0.0014"} Total thickness: 0.09 to 0.47 mm {0.0035 to 0.0185"} However, total number of sheets must be 4 or fewer and the head energizing time must be set to copy mode.
	Copy paper (endorsement)
	Backing paper: 0.07 to 0.12 mm {0.0028 to 0.0047"} Copy paper, original paper: 0.04 to 0.07 mm {0.0016 to 0.0028"} Copy carbon paper: Approx. 0.035 mm {0.0014"} Total thickness: 0.09 to 0.31 mm {0.0035 to 0.0122"} However, total number of sheets must be 3 or fewer.

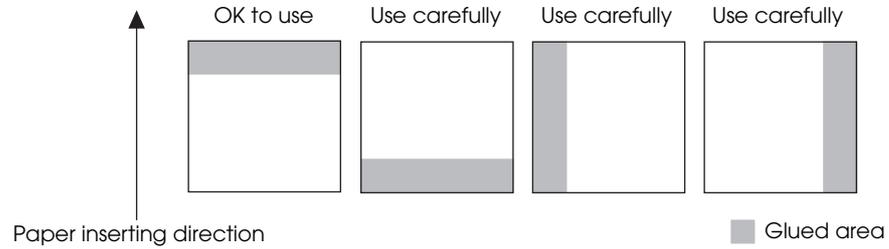
CAUTION

- Copy capability is greatly influenced by the ambient temperature, so printing must be performed under the conditions described below.

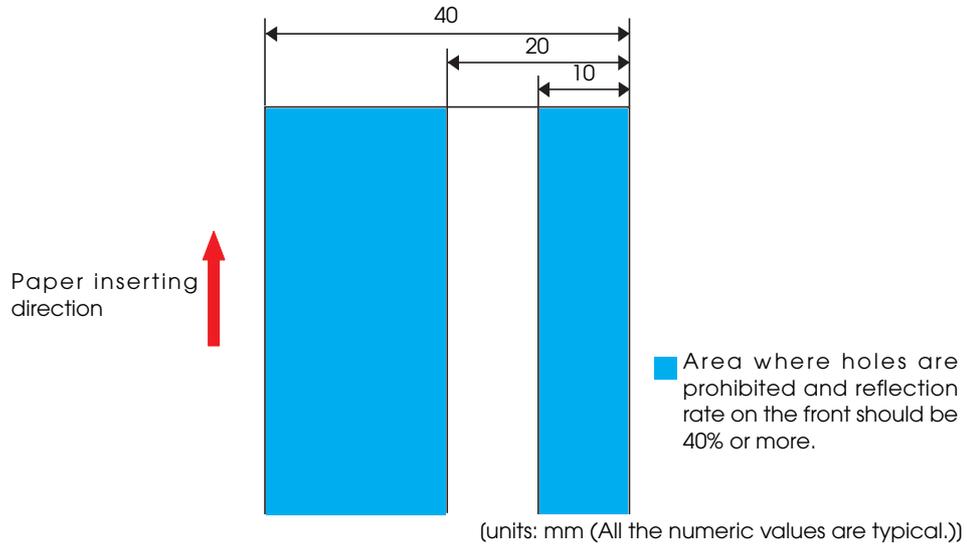
	Number of copies	Total thickness	Ambient temperature
Copy paper (front)	Original + 3 copies	0.31 mm or less	10 to 40°C {50 to 104°F}
	Original + 2 copies	0.31 mm or less	5 to 45°C {41 to 113°F}
	Original + 2 copies	0.47 mm or less	10 to 40°C {50 to 104°F}
Copy paper (endorsement)	Original + 2 copies	0.31 mm or less	10 to 40°C {50 to 104°F}

CAUTION

- The slip paper must be flat, without curls or wrinkles, especially at the top edges.
- When using slip paper with a glued area, choose it carefully, since paper feeding is affected by gluing conditions, such as position and dimension.



- Use thinner paper (N30 or equivalent) between the top and bottom sheets of multi-ply paper. If thick paper is used, the copy capability is lowered.
- Do not use paper that has holes, or is translucent at the BOF sensor position.
- Do not use paper that has holes or dark positions with low reflection (less than 40% reflection) on the front at the TOF sensor position.



Receipt printing

Type	Thermal paper	
Form	Roll paper	
Size	Roll paper diameter	83 mm {3.27"} maximum
	Roll paper core	Inside: 12 mm {0.47"}, Outside: 18 mm {0.71"}
	Roll width when taken up	80 + 0.5/-1.0 mm
	Paper width	79.5 ± 0.5 mm
Specified roll paper type	NTP080-80	

Specified original paper type

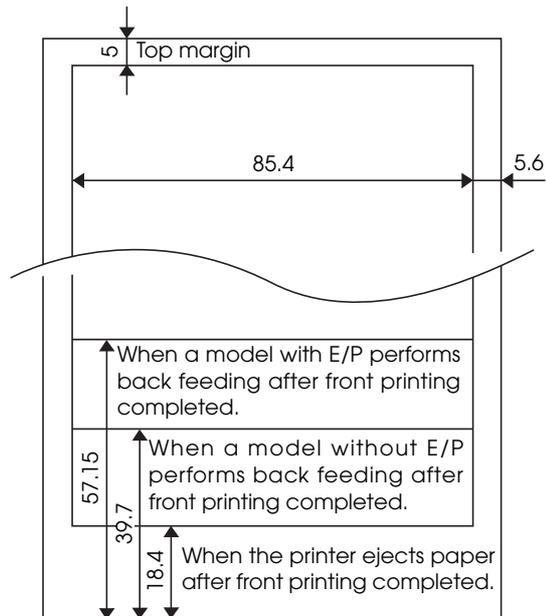
Paper type no.	Manufacturer
TF50KS-EY, TF60KS-E	NIPPON Paper Industries Co., Ltd.
PD160R, PD190R	OJI Paper Mfg. Co., Ltd.
P220AGB-1	Mitsubishi Paper Mills Limited.
P30023, P31023, P35024	Kanzaki Specialty Papers
AF50KS-E	Jujo Thermal Oy
F5041	Mitsubishi HiTec Paper Europe GmbH
KT55F20, KT48F20	Koehler Paper Group

CAUTION

- Paper must not be pasted to the roll paper core.
- For the best print quality for each paper type, it is recommended to test the print density. (See "[Setting the Memory Switches/Receipt Enhancement](#)" on page 75.)

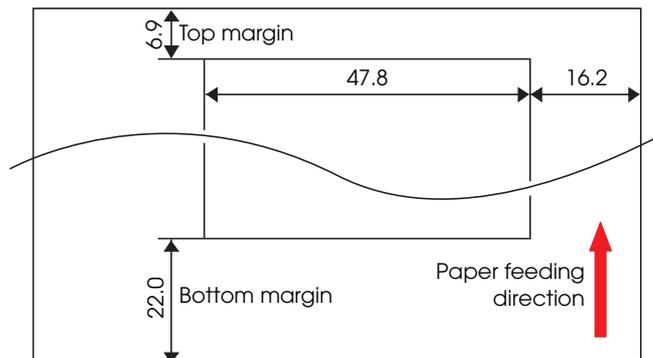
Printable Area

Slip (front) printing



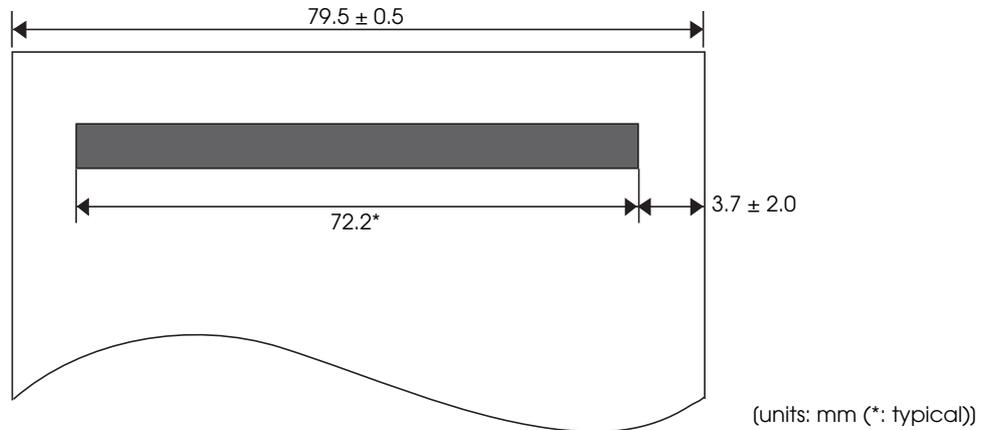
(units: mm (All the numeric values are typical.))

Slip (endorsement) printing

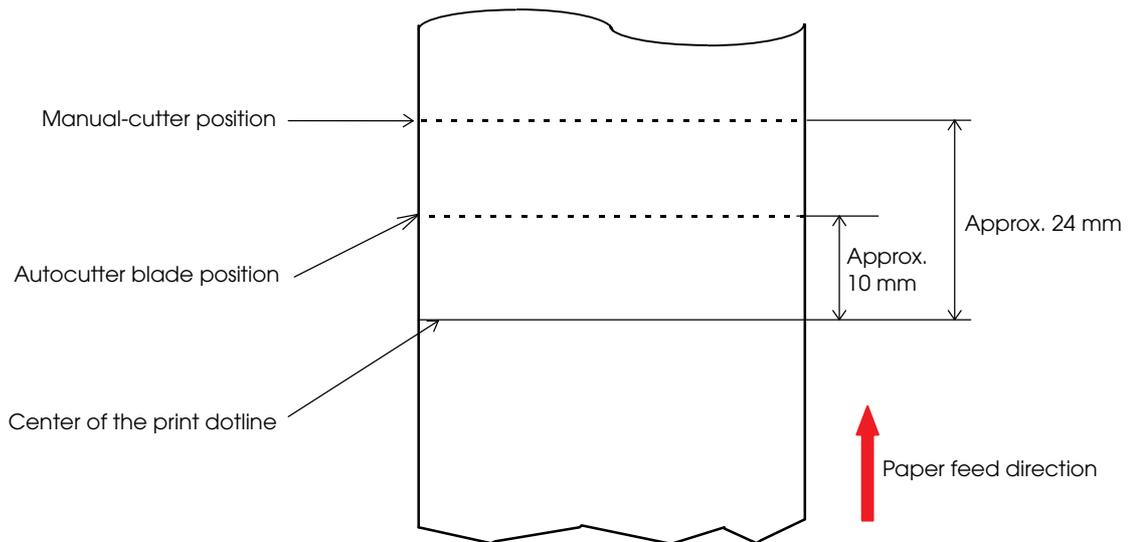


(units: mm (All the numeric values are typical.))

Receipt printing (80 mm paper width)



Printing and Cutting Positions

**CAUTION**

The values above may vary slightly as a result of paper slack or variations in the paper. Take this into account when setting the cutting position of the autocutter.

Ribbon cartridge

Model	Slip printing (front): ERC-32 Endorsement printing: ERC-43	
Color	Black	
Life*	ERC-32	4,000,000 characters
	ERC-43	3,000,000 characters

*: at 25°C {77°F} with continuous printing

MICR Reader

Reading method	Magnetic bias
Supported fonts	E13B, CMC7 (Alphabets are not supported.)
Recognition rate*	Recognition rate: 99% or more Recognition error rate: 0.1% or less

*: When using ANSI/ISO specified paper at 25°C {77°F}

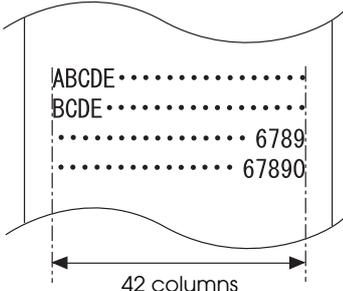
Recognition rate (%)=

{Total number of checks-(number of checks misread or not recognized)}/Total number of checks × 100

CAUTION

For reading MICR characters, paper length must be 120 mm {4.72"} or more.

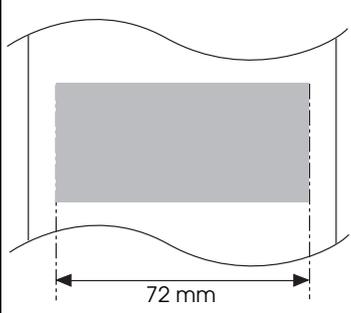
Electrical Characteristics

Supply voltage		DC 24V ± 7% Ripple voltage: 300 mVpp or less (for models with MICR reader)
Power consumption (when using the AC adapter, T)	Standby	16W
	Slip printing	84W
	Receipt printing	92W Note: When print ratio is approximately 18% <ul style="list-style-type: none"> • Continuous printing for 50 lines (repeating 20H-7FH) <ul style="list-style-type: none"> * Font A, 42 columns, ASCII character • 5 line feeding • Autocutting 

CAUTION

If printing is continuously performed with a high ratio, the overcurrent protection may be activated and result in uneven print density or a low voltage error. Therefore, the printing length must not exceed the following values when printing with high print ratio.

Print ratio: Number of dots being energized per one dot line/Total number of dots per one dot line (512 dots)

Print ratio	100%
Print example	
Print length	20 mm

Reliability

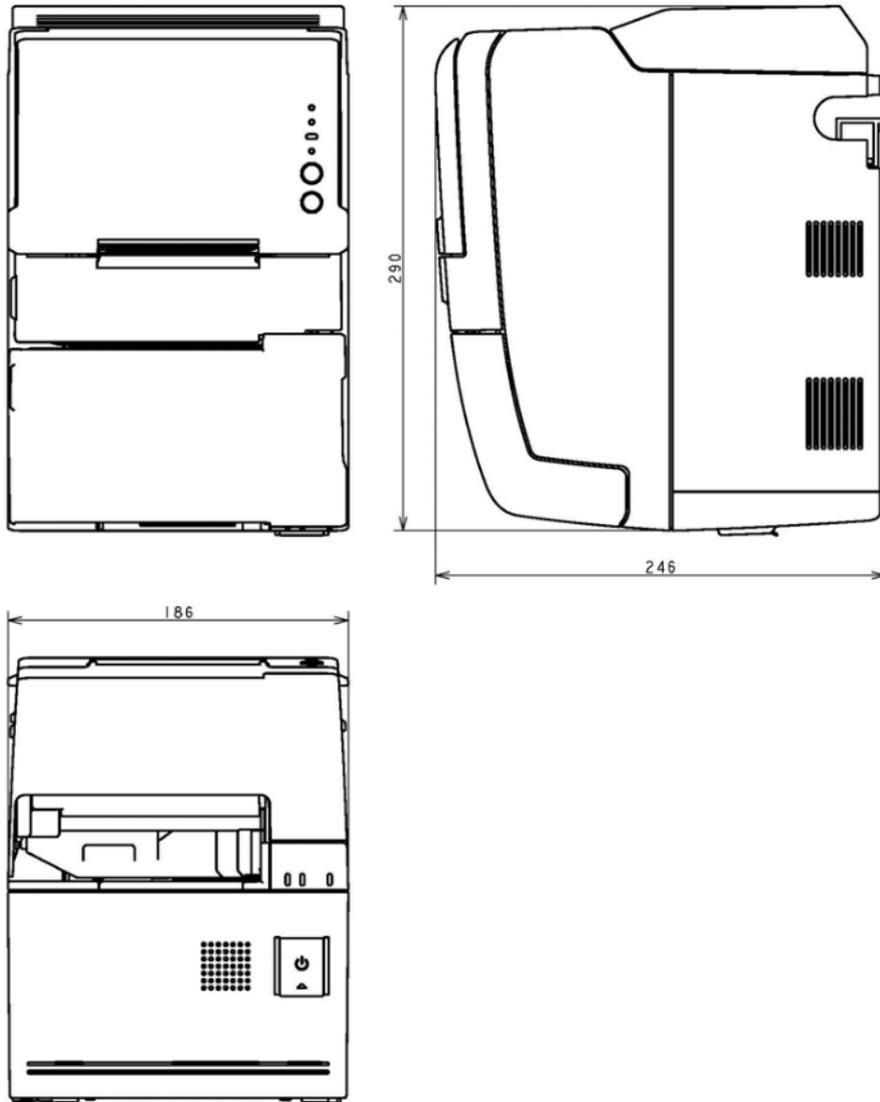
Life	Slip printer section/ Endorsement printer section	Number of carriage driving times	1,200,000 times for each section
		Number of paper feeds	Total for the sections: 27,000,000 lines
		Print head	200 million characters (when printing with Font B only)
	Receipt printer section	Printer mechanism	20,000,000 lines (when repeatedly printing 10 lines with 4.23 mm line spacing and feeding 5 lines)
		Print head	150 million pulses, 150 km
		Autocutter	2,000,000 cuts (when using the specified original paper types, or PD160R)
	MICR reader mechanism	240,000 passes (for US personal checks)	
MTBF	Slip printer section/ Endorsement printer section		180,000 hours
	Receipt printer section		360,000 hours
MCBF	Slip printer section/ Endorsement printer section	Number of carriage driving times	29,000,000 times for each section
		Number of paper feeds	Total for the sections: 65,000,000 lines
	Receipt printer section		96,000,000 lines

Environmental Conditions

Temperature/ Humidity	Operating	5 to 40°C {41 to 113°F}, 10 to 90% RH (See the operating temperature and humidity range below.)
	Storage (Factory packing)	-10 to 50°C {14 to 122°F}, 10 to 90% RH (except for paper)
		<p>Relative temperature (%RH)</p> <p>Environmental temperature (°C)</p> <p>Operating environment range</p> <p>----- Specified original paper: P300, P310, P350</p> <p>———— Specified original paper other than above</p>
Acoustic noise (operating)		<p>Receipt printing (max.): approximately 55 dB (Standing Operator position)</p> <p>Check paper printing (max.): approximately 63 dB (Standing Operator position)</p> <p>Note: The values above are measured in the Epson evaluation condition. Acoustic noise differs depending on the paper used, printing contents, and the setting values, such as print speed or print density.</p>

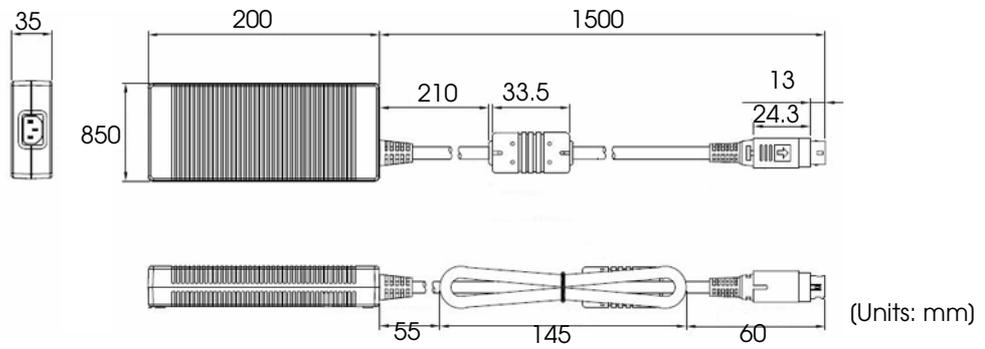
External Dimensions

- Width: Approximately 186 mm {7.32"}
- Depth: Approximately 290 mm {11.42"}
- Height: Approximately 246 mm {9.69"}



(Units: mm)

AC adapter, T



Input conditions	Input voltage: AC 100V to 240V
	Frequency: 50/60 Hz
	Input current (rating): 2.4A
Output conditions	Output voltage (rating): DC 24V \pm 5%
	Output current (rating): 4.2A

Option Specifications

Wireless LAN Cable Set (OT-WL01)

Wireless module	ELPAP07: 802.11b/g/n wireless LAN Module (EPSON)
Standard	IEEE802.11b/g/n (Wi-Fi certified)
SSID	1 to 32 one-byte alphanumeric characters
Connection mode	Ad hoc mode, Infrastructure mode
Authentication method, Encryption algorithm	Open+WEP, Shared+WEP, WPA-PSK+TKIP, WPA-PSK+AES, WPA2-PSK+AES, WEP64, WEP128, TKIP, AES
Power voltage	DC 4.5V to 5.5V
Current consumption	300 mA at maximum
Frequency range	2.4 GHz band
Potential interference range	40 m
Overall dimensions	Wireless LAN unit: Approx. 24 mm x 51 mm x 10 mm (W x D x H) USB extension cable: 1 m long

Customer Display (DM-D110-USB)

Display format	Vacuum fluorescent display	
Displayed number of characters	40 characters (20 columns x 2lines, 5 x 7 dot matrix)	
Display color	Green (505 nm)	
Brightness	690 cd/m ²	
Types of characters	Alphanumeric characters: 95 characters International characters: 37 characters Graphic characters: 128 characters x 12 pages	
Character construction	5 x 7 dot matrix, cursor	
Character size	3.5 x 5.0 mm	
Character pitch	5.2 mm	
Interface	USB2.0 Full-speed	
Reliability	20000 hours (Expected Life)	
Power source (Voltage)	DC5V 0.5A (Maximum)	
Power consumption	2.5W (Maximum)	
External dimensions	Display	165(W) x 50.5(D) x 69(H) mm
	Base	165(W) x 110(D) x 63(H)mm
	Dimensions	165(W) x 110(D) x 135(H)mm
Weight	0.31 kg {0.68 lb}	
Color	Black	
Tilt angle	Maximum 48°(4 steps, 5 position)	
Morizontal rotation angle	Maximum 90°	
Power supply	Supplied from TM-H6000IV-DT	
Option	Pole kit (DP-502-114)	



Setup

This chapter explains the installation and setting process for the product and external devices necessary before using this product and the setup for each system.

- PC-POS system ([page 56](#))
- ePOS-Device API ([page 57](#))
- ePOS-Device XML ([page 58](#))
- Server Direct Print ([page 59](#))

Updating the ePOS-Device

Once you have updated the ePOS-Device, you can use the new ePOS-Device functions. For each system, refer to "[System connection examples](#)" on [page 17](#).

Confirming the ePOS-Device version

You can confirm the version of the ePOS-Device on the EPSON TMNet WebConfig title bar.

Downloading the ePOS-Device update program

Download the following file from the Epson website and save it in your local environment.

- File name: ePOS-Device System Update Package

For more information about the update method, refer to the Readme file in the ePOS-Device update package.

CAUTION

The ePOS-Device cannot be downgraded.

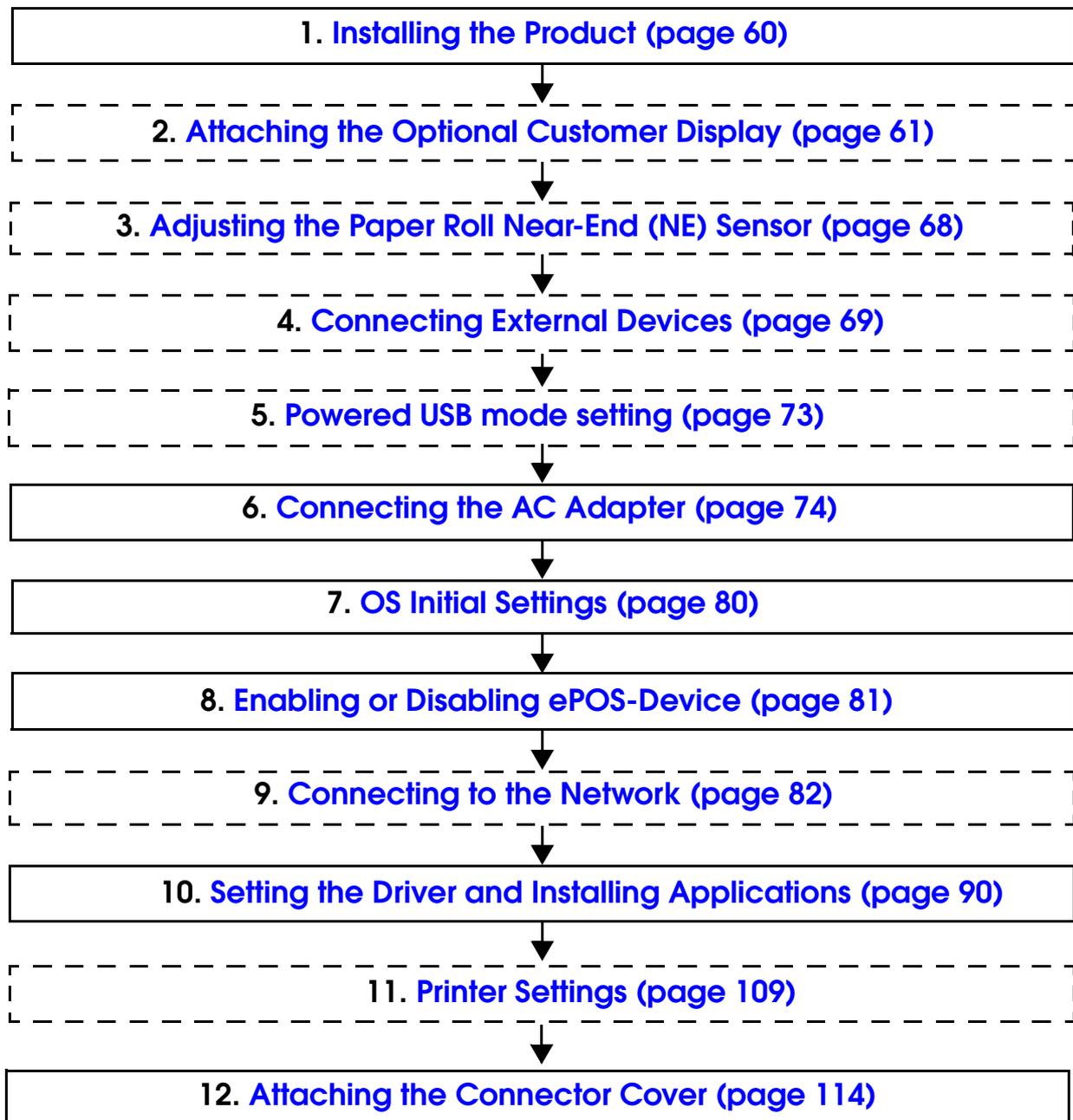
Flow of Setup

Setup for this product and the external devices vary depending on the system configuration method.

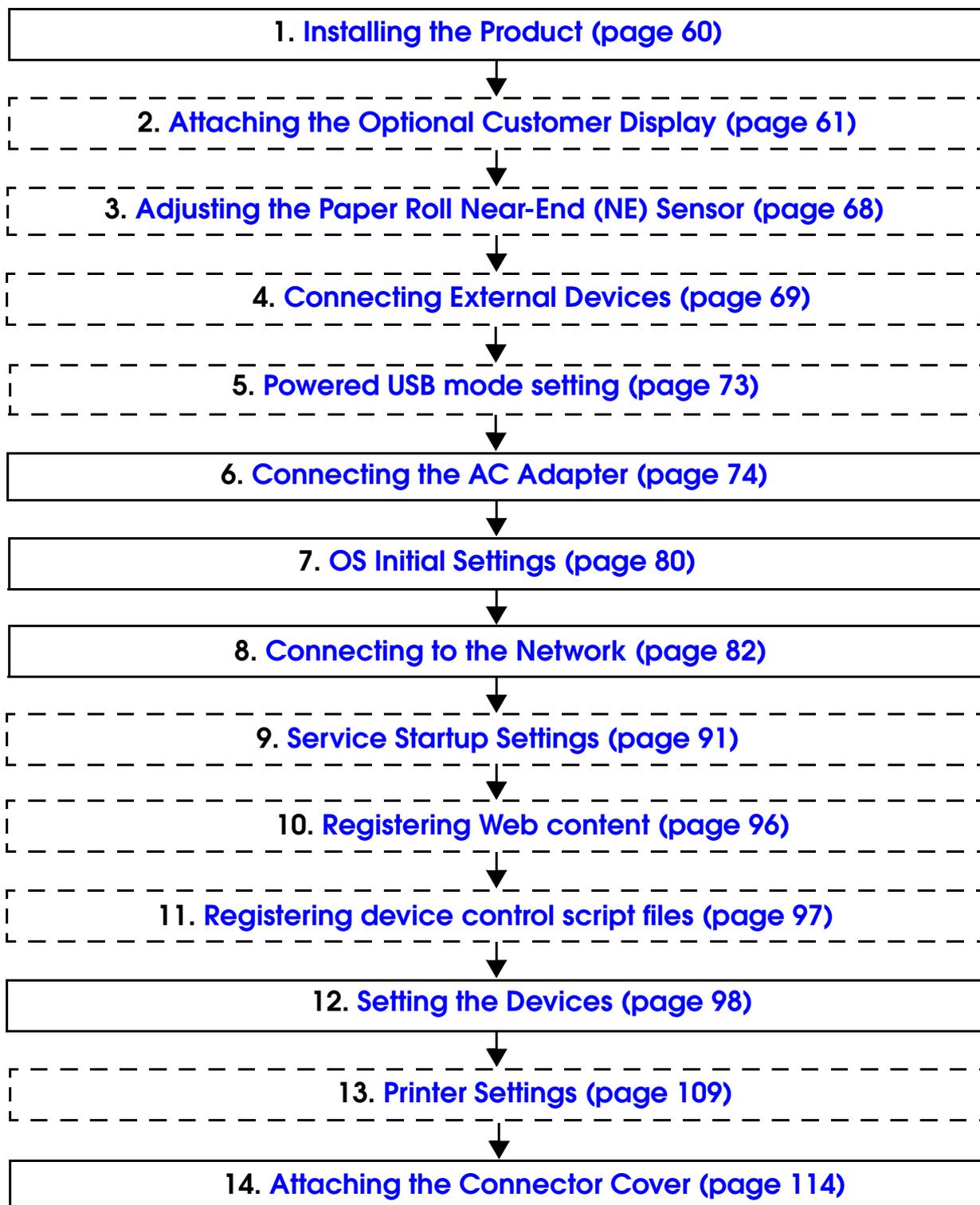
NOTE

In this setup flow, necessary items are in a frame with a solid line. Optional items are explained in a frame with a dotted line.

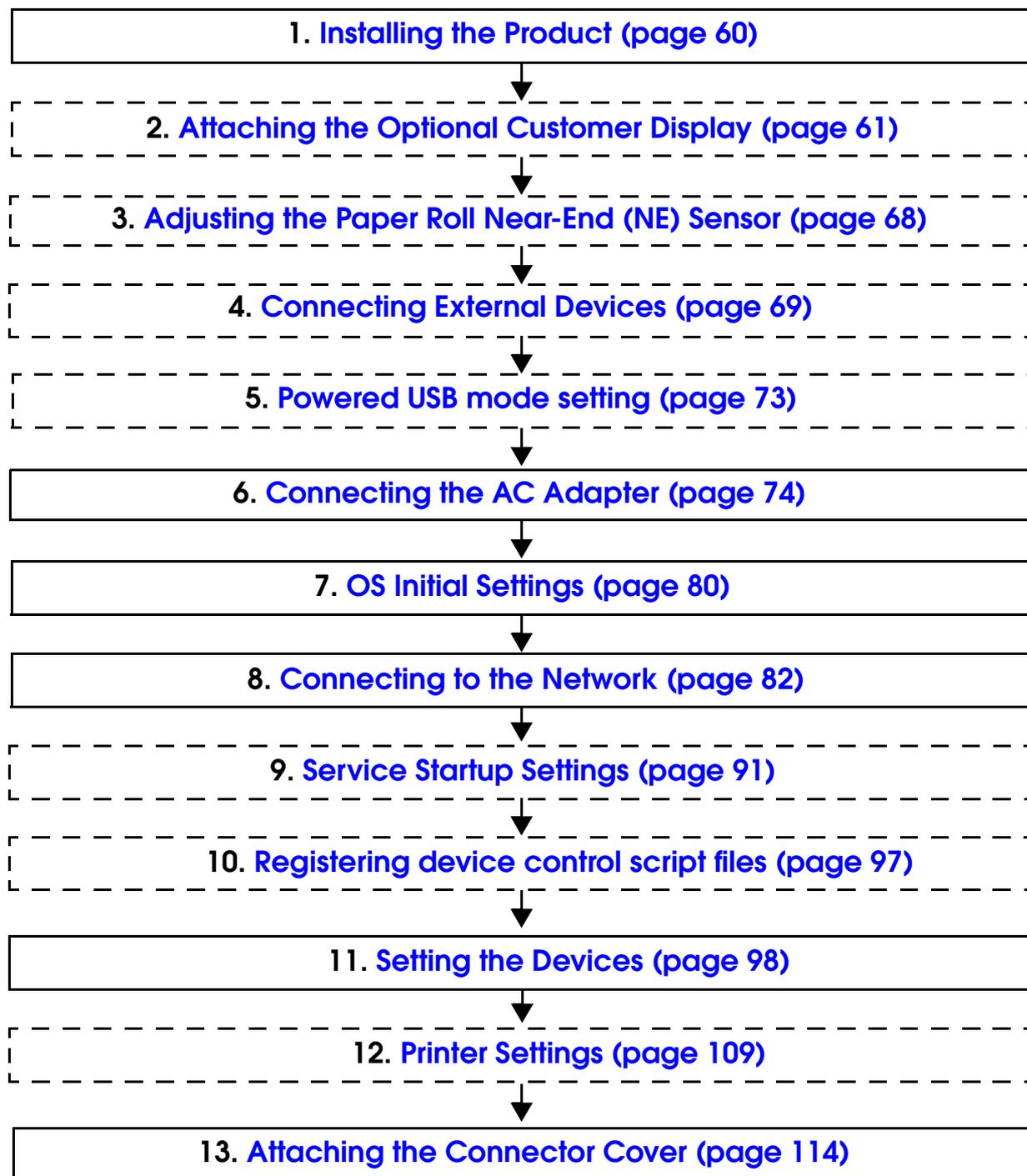
PC-POS System



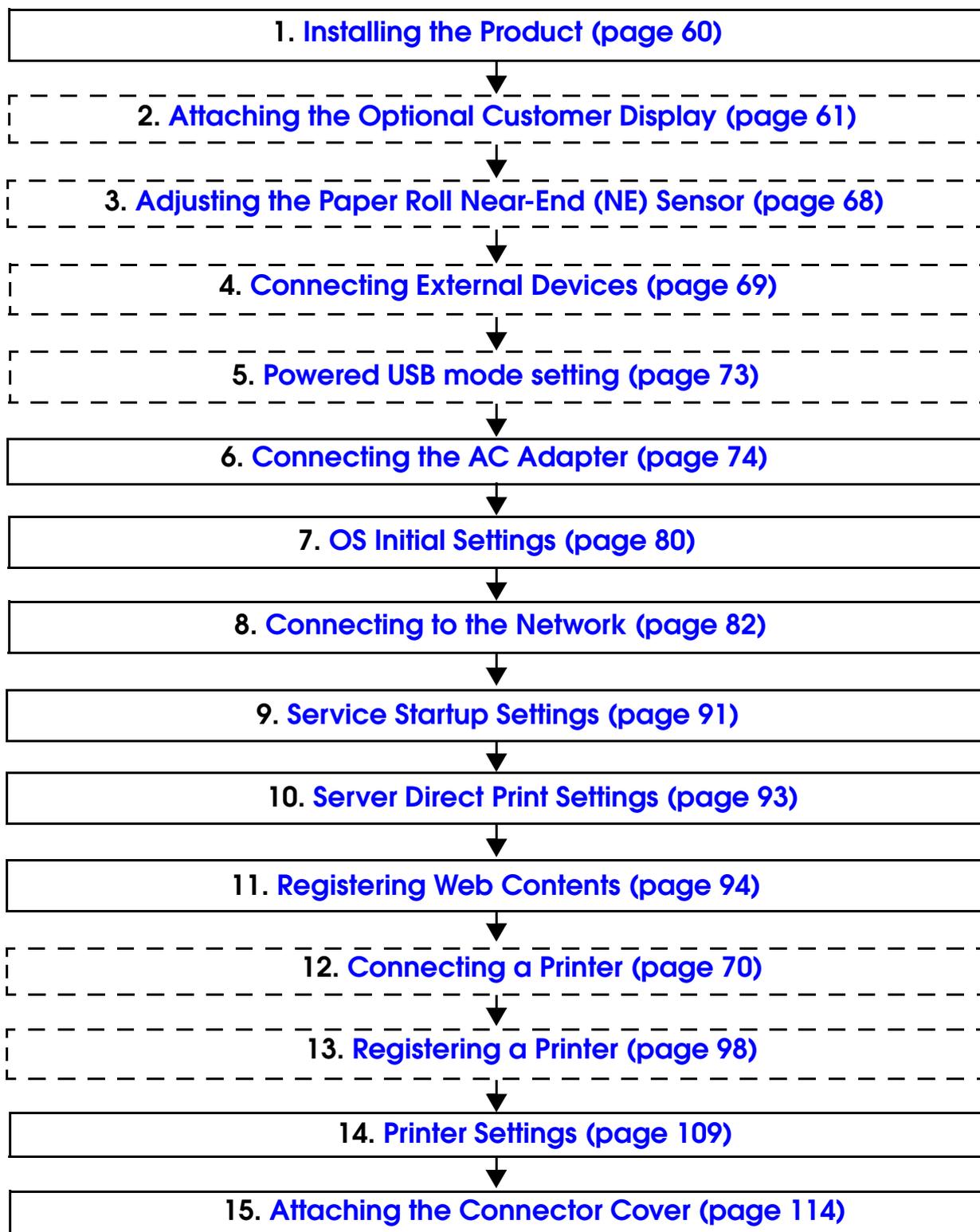
If using ePOS-Device API (Controlling the printing and external devices from a Web application)



If using ePOS-Device XML (Controlling the printing and external devices from a terminal application)



If using Server Direct Print
(printing via Internet or from a remote location)



Installing the Product

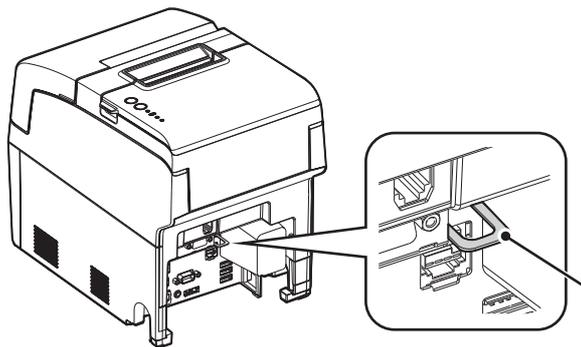
Install the product horizontally on a firm, stable surface.

CAUTION

Do not place the product near any magnetic fields to avoid decreasing the MICR recognition rate.

NOTE

The security hook on the back of the product allows you to attach a commercially available antitheft wire.



Attaching the Optional Customer Display

Setting the Customer Display

DM-D110-USB has the DIP switches. The functions are as follows.

- Displaying self-test
- Setting the communication speed (Serial communication)

In normal use, you do not need to change the settings. If you change this setting, please match the setting to that of the product. When used in ePOS-Device API / XML, you need to set with EPSON TMNet WebConfig.

DIP Switch Functions

CAUTION

- Remove the USB cable from the computer and remove the cover of the dip switch. If the USB cable is still connected to the computer during operation, this product may break down due to short circuit, etc.
- If you open the DIP switch cover, be sure to close the cover after setting the DIP switch. When used without the cover, it may cause a malfunction.

DSW No.	Function	ON	OFF	Default
1-1	Data Receive Error	Ignore	Displays "?"	OFF
1-2	Receive Data Length	7bit	8bit	OFF
1-3	Parity	With Parity	No Parity	OFF
1-4	Parity Selection	Even	Odd	OFF
1-5	Communication Speed Switching	Refer to "Communication Speed Switching"		ON
1-6				OFF
1-7				ON
1-8	Execution of Self-Test *1	Yes	No	OFF

*1: Executes the self-test once only when the power is turned on.

Communication Speed Switching

SW1-5	SW1-6	SW1-7	Communication Speed (bps)
ON	ON	ON	2400
OFF	ON	ON	4800
ON	OFF	ON	9600
OFF	OFF	ON	19200
ON	ON	OFF	38400
OFF	ON	OFF	57600
ON	OFF	OFF	115200
OFF	OFF	OFF	(Reserved)

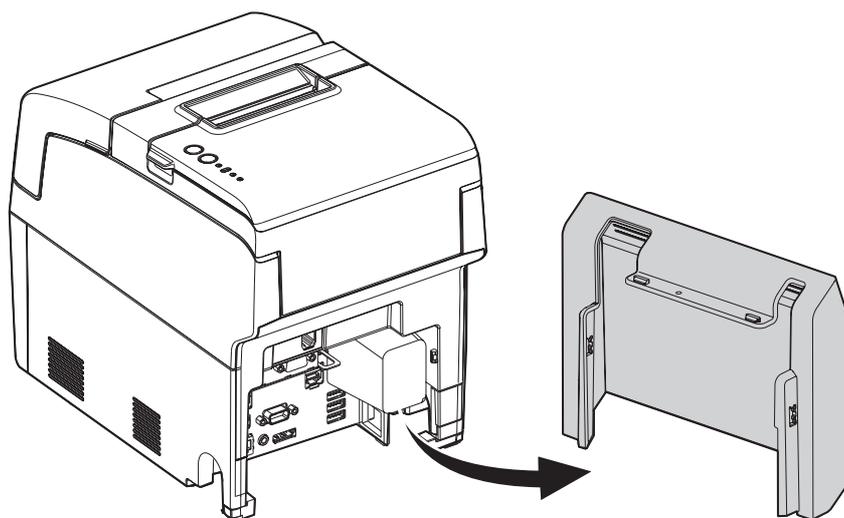
How to set the DIP switch

- 1** Disconnect the cable connecting the DM-D110-USB.
- 2** Remove the DIP switch cover.
- 3** Switch the switch with something pointy.
- 4** Close the DIP switch cover.

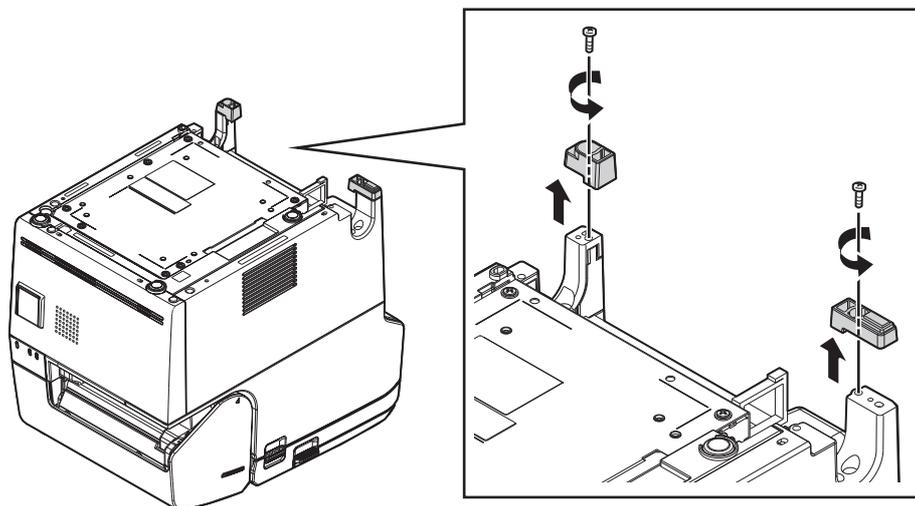
Attaching the Customer Display

Follow the instructions to install the optional DM-D110-USB on the TM-H6000IV-DT using the exclusive DP-502 pole kit.

- 1 Remove the connector cover. Reattach it after the DM-D110-USB is installed.



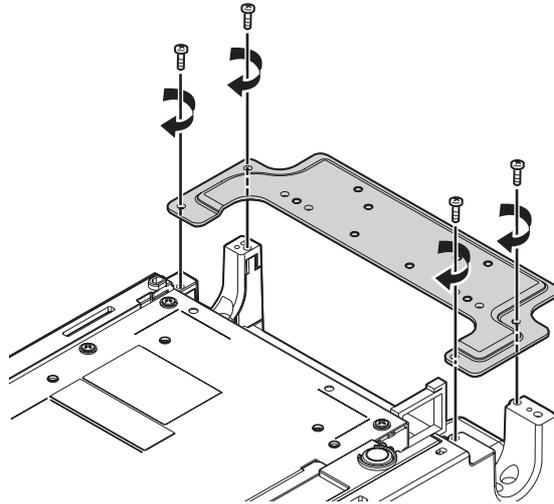
- 2 Remove the two feet.



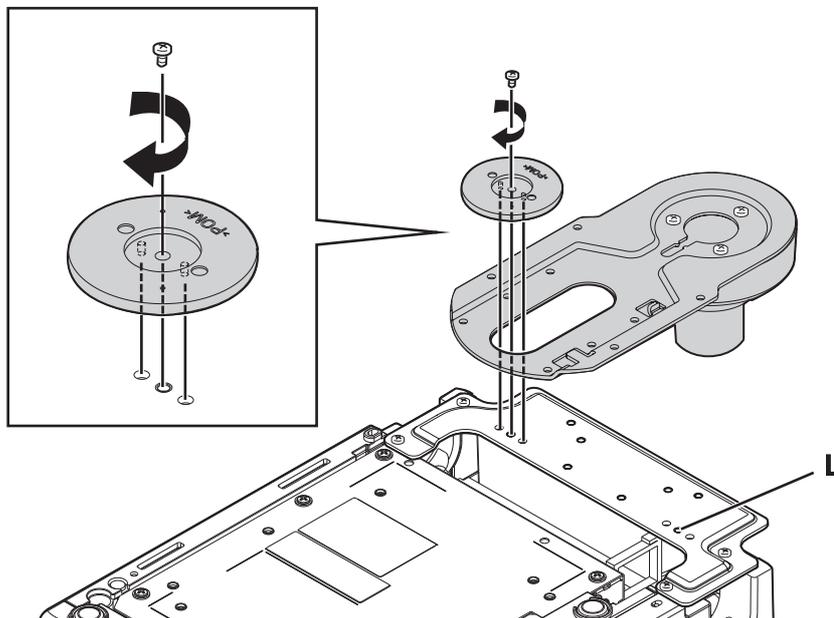
- 3** Use the 2 screws removed in Step 2 and the 2 included long screws.

CAUTION

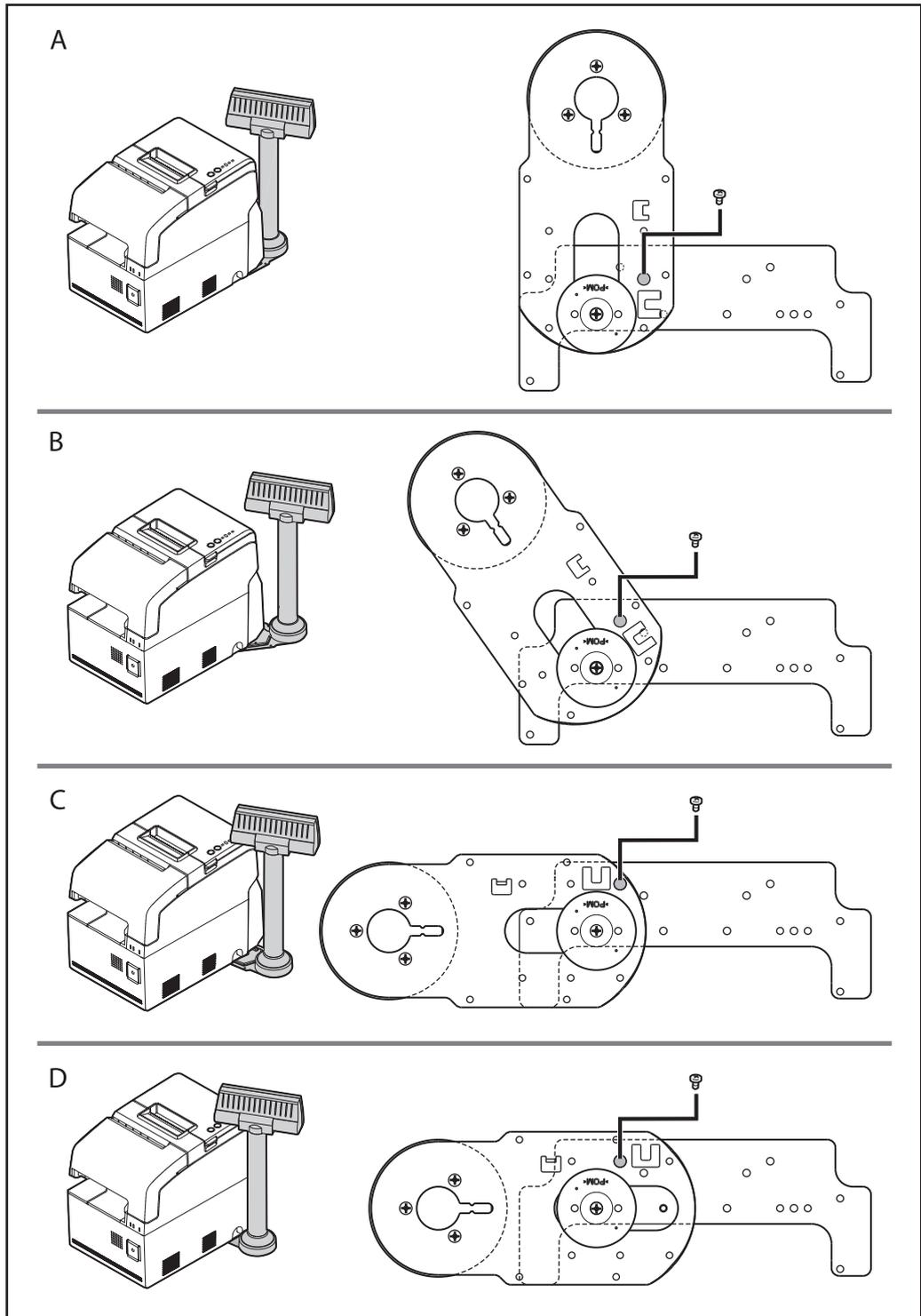
Be sure not to connect the cables before attaching the plate. Otherwise, the cables can be damaged.



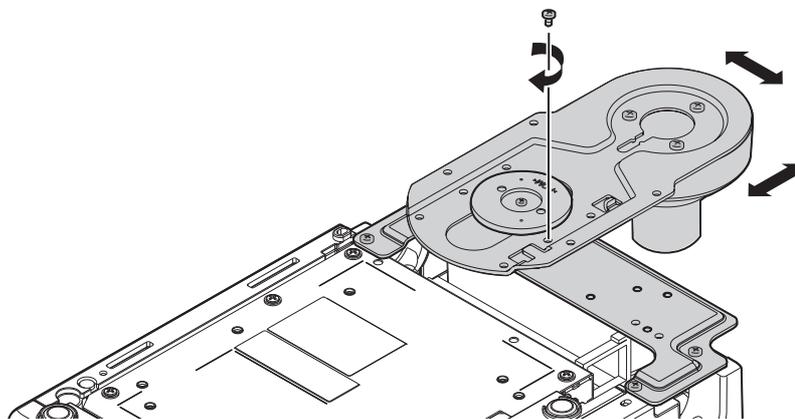
- 4** The illustration shows how to install the DM-D110-USB on the right side of the TM-H6000IV-DT. If you install it on the left side, use screw hole **L**.



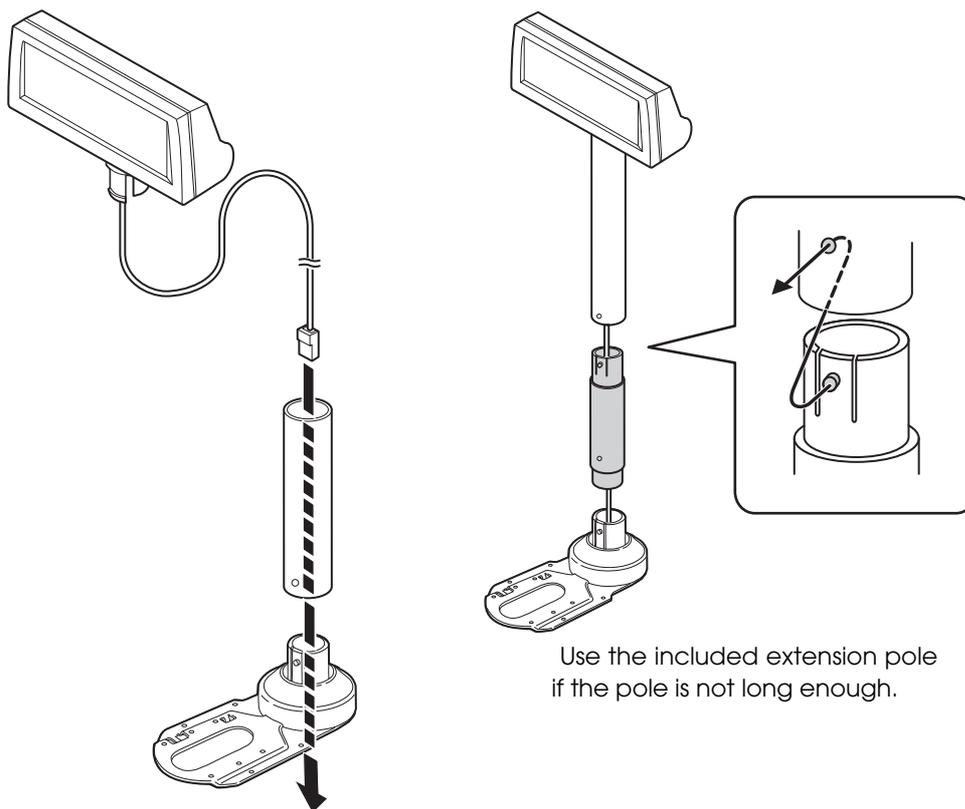
- 5** Select the position where the DM-D110-USB is to be installed from A, B, C, or D.



- 6** Move the attached part in Step 4 so that screw holes indicated in the illustration are aligned with each other, according to the position you selected. Fix it with the included screw.

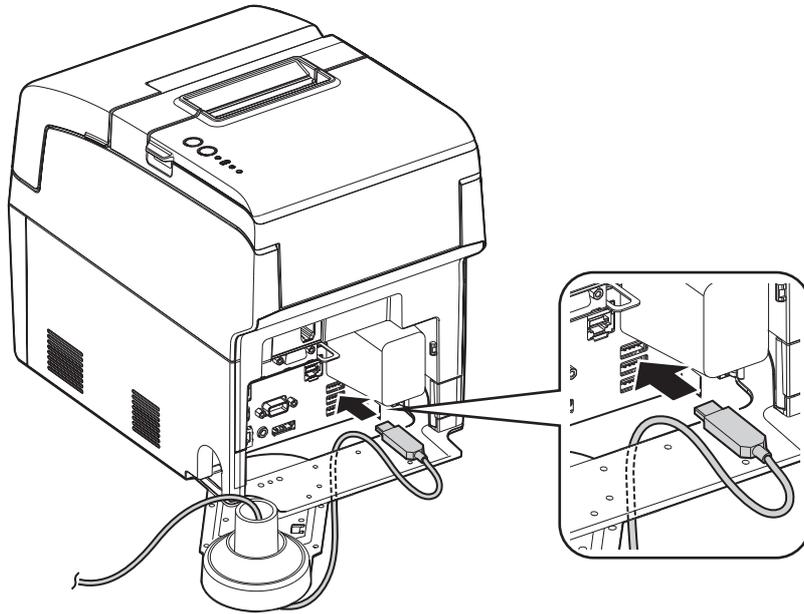


- 7** Use the included extension pole if the pole is not long enough.

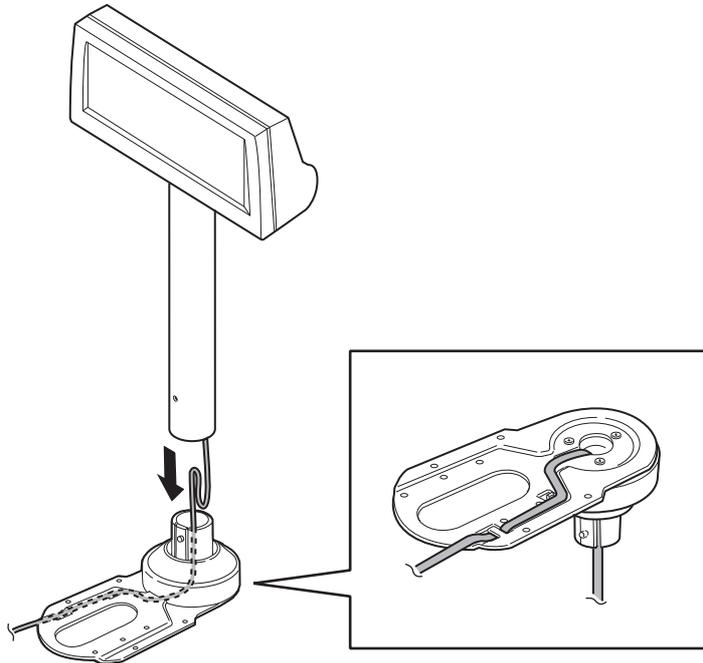


Use the included extension pole
if the pole is not long enough.

- 8** Connect the connector of DM-D110-USB to TM-H6000IV-DT.



- 9** Install DM-D110-USB to the attachment base.



Adjusting the Paper Roll Near-End (NE) Sensor

Below are two situations where a roll paper NE sensor adjustment is required.

- To adjust the detection position to suit the diameter of the roll paper core used.
- To adjust the detection position of the remaining amount of roll paper.

CAUTION

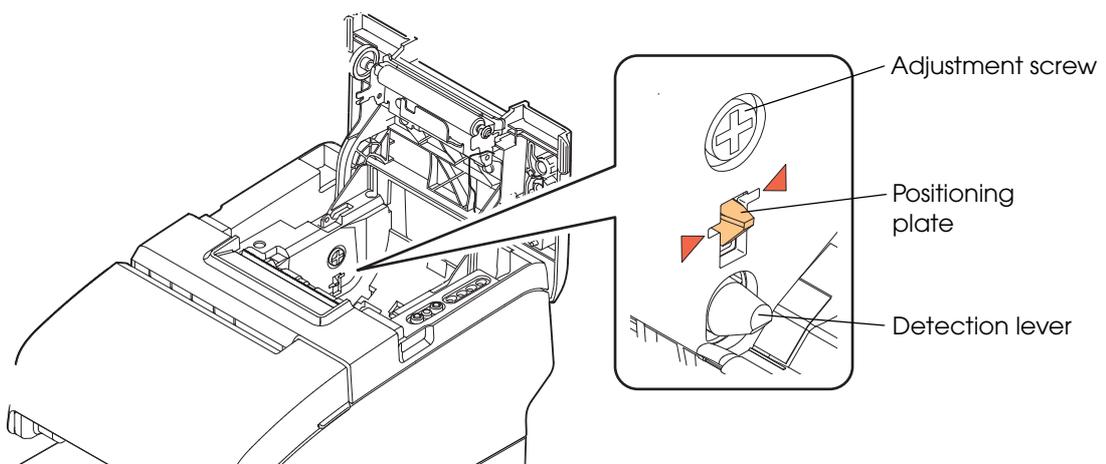
- Since roll paper cores vary slightly in shape, depending on paper roll design and manufacturing tolerances, it is impossible to detect the remaining paper exactly.
- Use roll paper with a core inner diameter of 12 mm {0.47"} and outer diameter of 18 mm {0.71"} so that the NE sensor can detect the remaining paper as accurately as possible.

Follow the steps below to adjust the roll paper near-end sensor.

- 1** Open the roll paper cover.
- 2** Loosen the adjustment screw fastening the sensor, and align the upper edge of the positioning plate with the adjustment position.

Adjustment position	Remaining amount of paper (outer diameter)
Upper	Approx. 27 mm {1.06"}
Lower (Initial setting)	Approx. 23 mm {0.91"}

- 3** Tighten the adjustment screw.
- 4** Make sure that the detection lever operates smoothly.



Connecting External Devices

Connect external devices as necessary.

If you connect external devices, connect each cable to the connector on the back of the product.

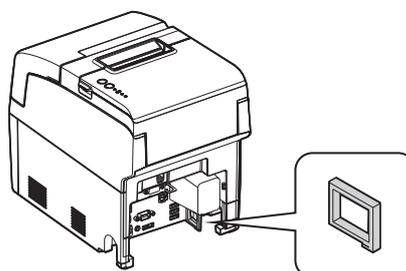


CAUTION

- **When connecting an external device to a USB connector, be sure to check this product and the device's manual for the amount of power consumed by the external device.**
- When connecting external devices to the USB and powered USB ports, follow the precautions below.
 - * Confirm the rated current of the external devices by checking the descriptions on the devices or manuals. Do not use a device whose rated current is unclear.
 - * Connect the external devices only when those total power consumption is 30 W or less.
 - * When you use powered USB ports, make sure that the TM-H6000IV-DT is turned off before connecting each cable. When the powered USB mode (See "[Powered USB mode setting](#)" on page 73.) is set to Mode 2, also make sure that the AC cable is disconnected from a power outlet before connecting it.

NOTE

When pulling out the cables whose connectors do not lock themselves (USB cables and Line-Out cable), pass the cables through the wire saddle to prevent the cables from coming off.



Connecting a Mouse and Keyboard

Connect a USB mouse and USB keyboard to the USB.

Connecting a Display

Connect a display to the VGA or the DisplayPort connector.

CAUTION

Connect the display when this product is off.
If you connect the display when this product is on, data may not be properly displayed.

Connecting a Printer

Connect a printer that is supported by the system and applications. You can connect it using the following methods.

- USB
- Serial
- Ethernet

(For network printers, we recommend setting the IP address in advance.)

NOTE

The connection method varies depending on your system in operation. For details, refer to ["Development Information for Each System" on page 157](#).

Connecting POS Peripherals

- Connect POS peripherals with USB interface to the USB.
- Connect POS peripherals with serial interface to the COM connector or use USB-serial conversion cables to convert them and connect them to the USB, and install the drivers for each model. For details such as the order in which to connect them, refer to each device's user's manual.
- You can perform the connection test from EPSON TMNet WebConfig. For details, refer to ["Setting the Devices" on page 98](#).

NOTE

Dedicated drivers are necessary, depending on the devices.
Acquire and install the drivers as necessary.

Connecting the Cash Drawer

When using a cash drawer, connect the cash drawer.

Use the cash drawer handled by EPSON or your dealer.

Connecting the Drawer Kick-out Cable

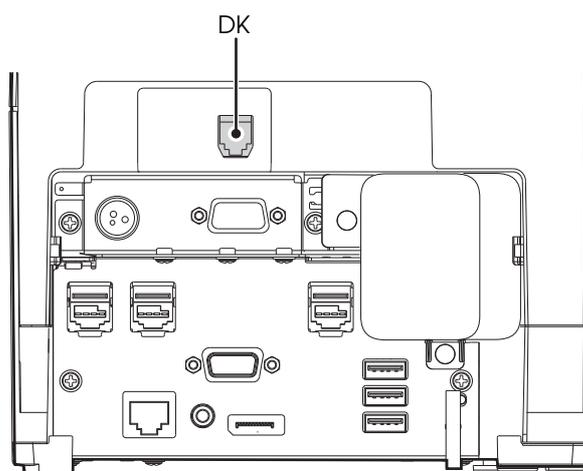


- **Specifications of drawers differ a great deal, depending on makers or models. When you use a drawer other than the specified, make sure its specifications meet the following conditions.**

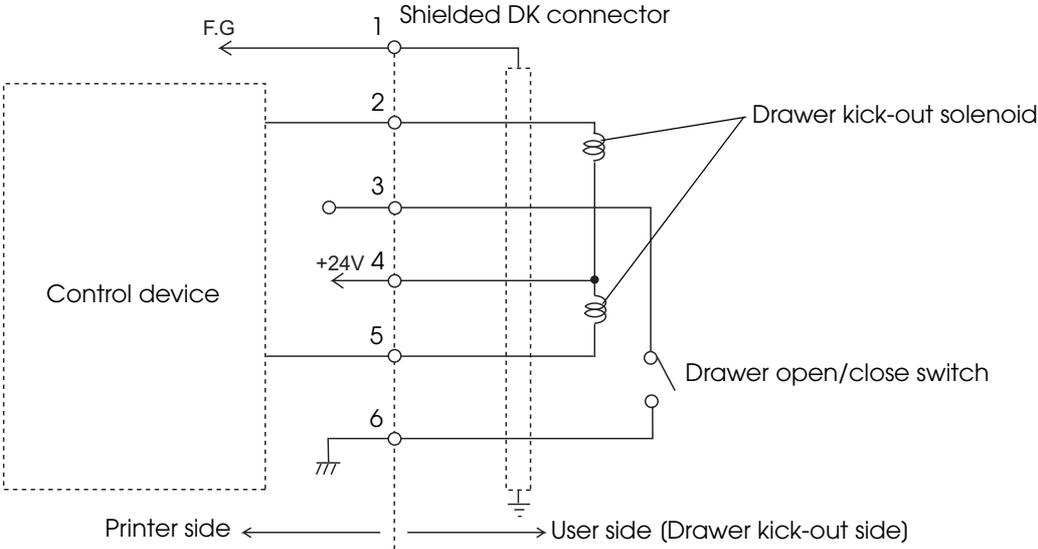
Otherwise, devices may be damaged.

- * The load, such as a drawer kick-out solenoid, must be connected between pins 4 and 2 or pins 4 and 5 of the DK connector.
- * When the drawer open/close signal is used, a switch must be provided between DK connector pins 3 and 6.
- * The resistance of the load, such as a drawer kick-out solenoid, must be 24Ω or more or the input current must be 1A or less.
- * Be sure to use the 24V power output on drawer-kick out connector pin 4 for driving the equipment.
- **Use a shield cable for the drawer connector cable.**
- **Two driver transistors cannot be energized simultaneously.**
- **Leave intervals longer than 4 times the drawer driving pulse when sending it continuously.**
- **Be sure to use the printer power supply (connector pin 4) for the drawer power source.**
- **Do not insert a telephone line into the DK connector.**
Doing so may damage a telephone line or printer.

Connect the connector of the drawer kick-out cable to the product.



Drawer Connection Circuitry



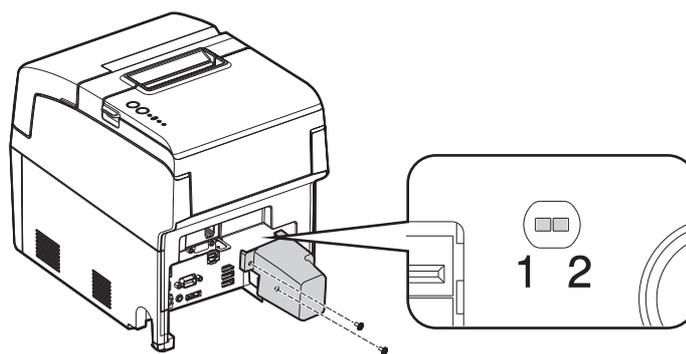
Powered USB mode setting

The product has 2 powered USB modes and is initially set to Mode 1.

Mode	Description
Mode 1	Enables interlock with power supply to TM-H6000IV-DT (Set at factory shipment). Power is supplied when TM-H6000IV-DT is ON and no power is supplied when TM-H6000IV-DT is OFF.
Mode 2	Disables interlock with power supply to TM-H6000IV-DT. Power is constantly supplied to the USB device regardless of whether TM-H6000IV-DT is ON/OFF.

Use the following procedure to change the switch's setting.

- 1 Make sure that the product is turned off.
- 2 Remove the 2 screws to remove the cover.



- 3 Use tweezers to change the position of the switch.
- 4 Fix the cover with the 2 screws.

Connecting the AC Adapter

Use the dedicated AC adapter for TM-H6000IV-DT provided with the printer.



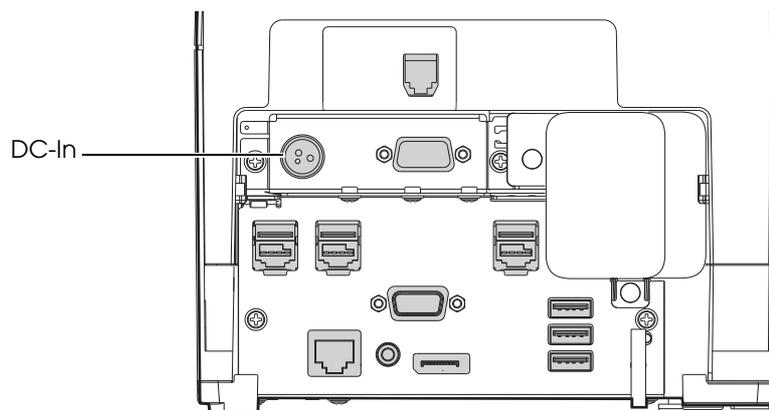
**Be sure to use the specified AC adapter [AC adapter,T (Model: M284A)].
Connection to an improper power source may cause fire.**

CAUTION

Be sure to leave a space between the AC adapter and the main unit.

Connecting the AC adapter

- 1 Make sure that the power to the printer is turned off and that the AC adapter power cord is unplugged from the wall socket.
- 2 Connect the DC cable of the AC adapter to the DC-In.



- 3 Insert the AC Adapter power cord into a wall socket.

Setting the Memory Switches/Receipt Enhancement

With the memory switch and R/E (receipt enhancement) function, which are software settings for this printer, you can set the various functions.

For an outline of the functions, see the following section. Use the methods shown in the table below; TM-H6000IV Utility, Memory Switch Setting Mode, or ESC/POS commands, to set the memory switches and R/E functions.

Settings\Setting Methods		TM-H6000IV Utility	Memory Switch Setting Mode	ESC/POS Commands	
Memory Switches	Power on notice		✓	✓	
	Error signal output		✓	✓	
	Slip paper jam detection		✓	✓	
	Receipt unit open during printing		✓	✓	
	Customized Values	User NV memory capacity		✓	✓
		NV graphics memory capacity		✓	✓
		Roll paper width	✓	✓	✓
		Receipt print density	✓	✓	✓
		Receipt print speed	✓	✓	✓
		Command execution during offline	✓	✓	✓
		Power supply unit capacity	✓	✓	✓
		Autocutting at roll paper cover close	✓	✓	✓
		Automatic paper reduction	✓	✓	✓
		Print density in multi-tone printing	✓	✓	✓
Receipt Enhancement	Automatic top logo printing	✓		✓	
	Automatic bottom logo printing	✓		✓	
	Top logo printing at cover close	✓		✓	
	Top logo printing at power on	✓		✓	

NOTE

- For detailed information about the TM-H6000IV Utility, see the TM-H6000IV Utility User's Manual.
- For information about how to use the memory switch setting mode, see "[Memory Switch Setting Mode](#)" on page 186.
- For detailed information about ESC/POS commands, see the ESC/POS Application Programming Guide.

Functions

Power on notice

- Transmits (initial setting)
 - Does not transmit
-

Slip paper jam detection

- Enabled (initial setting)
 - Disabled
-

Receipt unit open during printing

- Offline (initial setting)
 - Recoverable error
-

User NV memory capacity

- 1 KB (initial setting)
- 64 KB
- 128 KB
- 192 KB

NV graphics memory capacity

- None
- 64 KB
- 128 KB
- 192 KB
- 256 KB
- 320 KB
- 384 KB (initial setting)

Roll paper width

- 80 mm (initial setting)

Receipt print density

Selectable from levels 1 to 13 (70% ~ 130%) (initial setting: level 7)

Depending on the paper type, it is recommended to set the print density as shown in the table below for the best print quality.

Original Paper Type	Density Level
AF50KS-E	4 (85%)
TF50KS-EY, P220AGB-1	5 (90%)
P35024	6 (95%)
TF60KS-E, PD160R, PD190R, KT48F20, KT55F20,F5041	7 (100%)
P30023, P31023	8 (105%)

CAUTION

- If the print density is set to a darker level, printing speed may be reduced.
- If the print density is set to a darker level, paper dust accumulates on the print head and print may be faint. For information on how to clean the thermal head, see "[Cleaning the Thermal Head](#)" on page 202.
- The print density can be set the customized value.

Receipt print speed

Selectable from levels 1 to 13 (Slow ~ Fast) (initial setting: level 13)

NOTE

Depending on print conditions, such as print duty, print head temperature, and data transmission speed, print speed is automatically adjusted, which may cause white lines due to intermittent print (the motor sometimes stops). To avoid this, keep the print speed constant by setting it lower.

Command execution during offline

When this function is enabled, you can execute specified commands even if the printer is offline due to specified causes.

- Enabled
- Disabled (initial setting)

NOTE

For the combination of the offline causes and executable commands, see the ESC/POS Application Programming Guide.

Power supply unit capacity

Selectable from levels 1 to 3 (Low ~ High) (initial setting: level 3)

Autocutting at roll paper cover close

- Cuts
- Does not cut (initial setting)

Automatic paper reduction

- Extra upper space reduction: disabled (initial setting) or enabled
- Extra lower space reduction: disabled (initial setting) or enabled
- Line space reduction rate: not reduced (initial setting), 25%, 50%, or 75%
- Line feed reduction rate: not reduced (initial setting), 25%, 50%, or 75%
- Barcode height reduction rate: not reduced (initial setting), 25%, 50%, or 75%

Print density in multi-tone printing

Selectable from levels 1 to 13 (70% ~ 130%) (initial setting: level 7)

Depending on the paper type, it is recommended to set the print density for the best print quality.

Automatic top logo printing

Key code

Selectable from key codes of registered logos

Alignment

- Left
- Center
- Right

Automatic bottom logo printing

Key code

Selectable from key codes of registered logos

Alignment

- Left
- Center
- Right

Top logo printing at cover close

- Enabled (initial setting)
- Disabled

Top logo printing at power on

- Enabled
- Disabled (initial setting)

OS Initial Settings

The following explains the procedures for setting the OS when you turn on the power for this product for the first time.

CAUTION

- When performing setup for the OS, you need a display and a keyboard.
- Connect the display when this product is off.
If you connect the display when this product is on, data may not be properly displayed.

- 1** Check that the product's power is not on, and connect the display and keyboard.

NOTE

The display can use either the VGA or the DisplayPort. If you are using dual display, perform separate settings.
For detail, refer to ["Settings for Dual Display" on page 120](#).

- 2** Turn on the product. The login screen is displayed. Input the password.
The initial settings are as follows.

OS	User name	Password
Windows Embedded POSReady 7	EPSON-USER	H6000IV-DT

- 3** The OS desktop is displayed. Select (Start), then (Control Panel), and (Date and Time). The "Date and Time" window are displayed. Set the time, date, and the timezone.

NOTE

You can also set the date, time, and the timezone using EPSON TMNet WebConfig.

Enabling or Disabling ePOS-Device

Use the desktop shortcut to enable or disable ePOS-Device.

Enabling or disabling ePOS-Device starts and stops all functions related to the web services shown below.

- Apache Web Server, and web content registered in TM-DT
- Automatic update of Web content
- EPSON TMNet Web Config
- Printing with ePOS-Device API
- Printing with ePOS-Device XML
- Printing with Server Direct Print
- Status Notification
- Easy Setup

NOTE

- If you enabled ePOS-Device, it uses 100 MB or more of memory. If you are using this product with a PC-POS system or in a virtual environment, we recommend disabling e-POS-Device.
- ePOS-Device is set to [Enabled] in the default settings.

Enabling ePOS-Device

Run [ePOS-Device Enabled] from the shortcut on the desktop.



Disabling ePOS-Device

Run [ePOS-Device Disabled] from the shortcut on the desktop.



Connecting to the Network

For Ethernet Interface

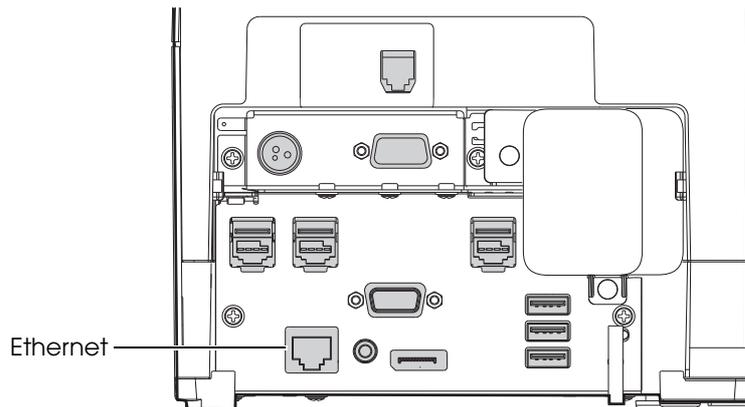
Connect the product to a network by a LAN cable via a hub.

Connecting the Ethernet interface cable



- **When LAN cables are installed outdoors, make sure devices without proper surge protection are cushioned by being connected through devices that do have surge protection.**
Otherwise, the devices can be damaged by lightning.
- **Never attempt to connect the customer display cable, drawer kick-out cable, or a telephone line cable to the Ethernet connector.**

Insert a category 5e or higher LAN cable into the Ethernet until you hear a click.



Network settings

Perform network settings, such as the IP address.

You can perform settings in the following ways.

- Setting in a local environment: Setting with Windows
 Setting with EPSON TMNet WebConfig
- Setting on a computer for setting: Setting with EPSON TMNet WebConfig

NOTE

- If ePOS-Device is disabled, EPSON TMNet WebConfig will not start. For detail, refer to ["Enabling or Disabling ePOS-Device" on page 81](#).
- If you perform settings in a local environment, connect a display, a keyboard, and a mouse with this product. If you use a PC for setting, you do not have to connect a display, a keyboard, and a mouse with this product. Instead, set up a direct network connection with this product.

Windows Embedded POSReady 7

Click [Start], then [Control Panel]. Run "Network and Sharing Center".

Select the type of connection you want to perform settings for, and open the connection properties.

EPSON TMNet WebConfig

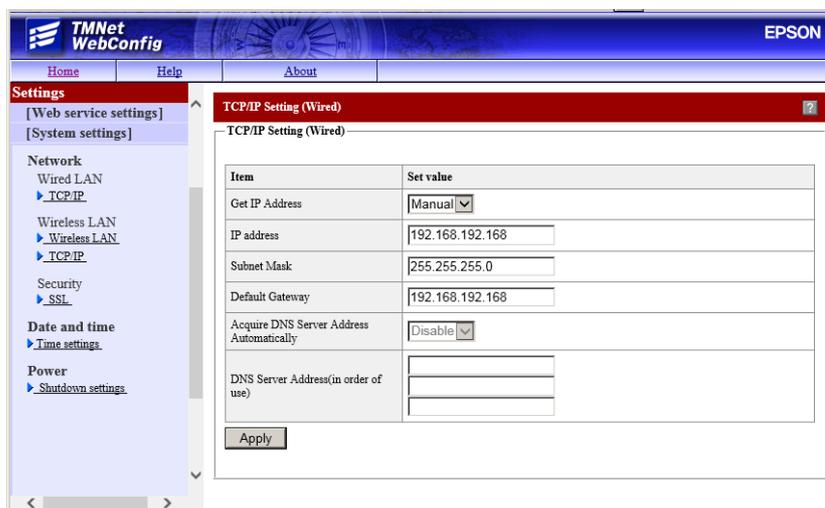
Run [Disabling ePOS-Device] from the shortcut on the desktop.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).
http://"TM-DT's IP address"/webconfig
The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2** Select (Settings) - (System settings) - (TCP/IP) under (Wired LAN).
The "TCP/IP setting (Wired)" screen is displayed.



- 3** Set the IP address and other network settings, then click (Apply).

For Wireless LAN Interface

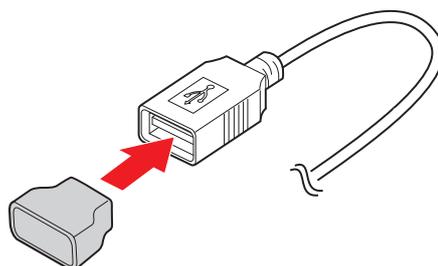
The optional wireless LAN cable set (OT-WL01) enables you to use the product with a wireless LAN connection.

Connecting the wireless LAN cable set

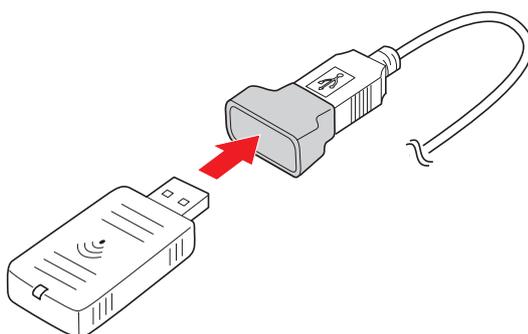
Check whether the following items are included. If any item is damaged, contact your dealer.

- Wireless LAN unit
- USB extension cable
- Affixing tape (1 pair, 2 pieces)
- Rubber cover
- User's manual

- 1** Attach the included rubber cover to the connector of the USB extension cable into which the wireless LAN unit will be inserted, to prevent the unit from coming off.

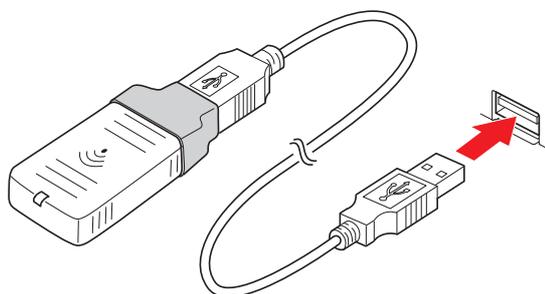


- 2** Insert the wireless LAN unit into the connector of the cable.

**CAUTION**

Adjust the position of the rubber cover so that the description on the label on the back side of the wireless LAN unit is not covered.

3 Connect the USB extension cable to the USB connector of the printer.

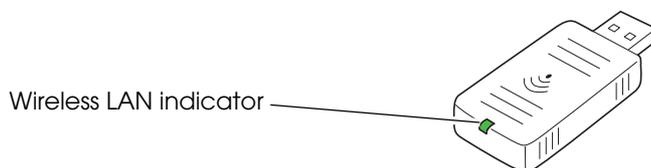


NOTE If you want to fix the wireless LAN unit, cut the included affixing tape to fit and put on the unit, and fix the unit in a place with good communication.

The diagram illustrates the process of affixing a tape to the wireless LAN unit. On the left, a circular inset shows a close-up of a piece of tape being cut. A red arrow points from this inset to the main unit, where another red arrow points to the top surface of the wireless LAN unit. A second red arrow points to the right, showing the final result: the tape is applied to the top of the unit, securing it in place.

Wireless LAN indicator

The position of the wireless LAN indicator is shown in the illustration below.



Wireless LAN indicator (Green)	Status
Off	The wireless LAN unit is not connected to the printer. Or the printer power is OFF.
Flashing	This wireless LAN unit is connected to the printer and is in operation.
Flashing rapidly	This wireless LAN unit is connected to the printer and is in operation. This unit is communicating on a network.

Ad hoc settings (Windows Embedded POSReady 7)

- 1 Click (Start), and in (Search programs and files), input "ad hoc".
- 2 Click the listed "Set up a wireless ad-hoc (computer-to-computer) network".
- 3 Following "Set Up an Ad Hoc Network", input the items, and check "Save this network". Then click "Next". Follow the directions in "Set up a wireless ad hoc network", input the items, and check "Save the network".

Setting with EPSON TMNet WebConfig

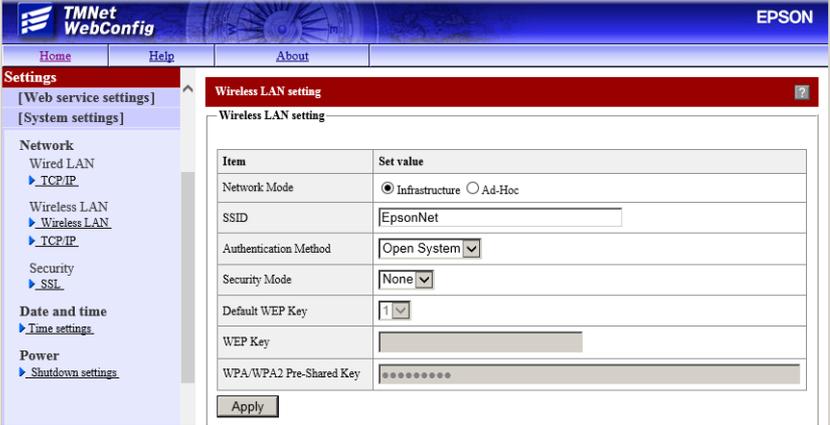
You can perform settings from a computer for settings via the network. You can also set the IP address without connecting a display to this product.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop. EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).
http://"TM-DT's IP address"/webconfig
The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings)- (System settings), then (Wireless LAN).
The "Wireless LAN Settings" screen is displayed.

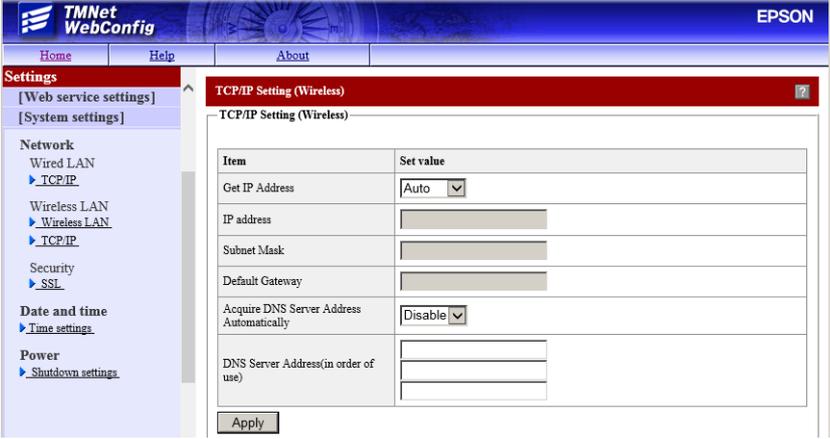


The screenshot shows the EPSON TMNet WebConfig interface. The top navigation bar includes "Home", "Help", and "About". The left sidebar lists various settings categories: "Settings" (with sub-items for Web service and System settings), "Network" (with sub-items for Wired LAN, TCP/IP, and Wireless LAN), "Security" (with sub-item for SSL), "Date and time" (with sub-item for Time settings), and "Power" (with sub-item for Shutdown settings). The "Wireless LAN" category is selected, and the "Wireless LAN setting" screen is displayed. This screen contains a table with the following items and values:

Item	Set value
Network Mode	<input checked="" type="radio"/> Infrastructure <input type="radio"/> Ad-Hoc
SSID	EpsonNet
Authentication Method	Open System
Security Mode	None
Default WEP Key	1
WEP Key	
WPA/WPA2 Pre-Shared Key	*****

An "Apply" button is located at the bottom of the settings table.

- 3 Perform network settings for a wireless LAN, then click (Apply).
- 4 Select (Settings)- (System settings) - (TCP/IP) under (Wireless LAN).
The "TCP/IP Settings (Wireless)" screen is displayed.



The screenshot shows the TMNet WebConfig interface. The left sidebar contains a tree view under 'Settings' with categories: [Web service settings], [System settings], Network (Wired LAN, TCP/IP, Wireless LAN, TCP/IP), Security (SSL), Date and time (Time settings), and Power (Shutdown settings). The main content area is titled 'TCP/IP Setting (Wireless)' and contains a table for configuration.

Item	Set value
Get IP Address	Auto <input type="checkbox"/>
IP address	<input type="text"/>
Subnet Mask	<input type="text"/>
Default Gateway	<input type="text"/>
Acquire DNS Server Address Automatically	Disable <input type="checkbox"/>
DNS Server Address(in order of use)	<input type="text"/> <input type="text"/>

Apply

- 5 Set the IP address and other network settings, then click (Apply).

Setting the Driver and Installing Applications

Installing and Setting the Drivers

You must install drivers depending on the type of external devices.

For more about how to install and set the drivers, refer to the manual for each driver.

CAUTION

- APD 4.55 is installed in this product.
- Do not uninstall APD.

Installing Applications

You need to download and install a driver that is compatible with the control method and the device to be controlled.

The Windows driver (APD Ver.4.55) for the Product's printer has been installed in this product.

Control method	Device to be controlled	Driver
Windows printer driver	Product's printer	APD Ver.4.55 (already installed in the main unit)
	TM printer	Model-specific printer driver, APD Ver.5 Use APD Ver.4.52c or later versions for models without model-specific drivers.
	Customer display	APD Ver.4.55 (already installed in the main unit)
OPOS ADK	<ul style="list-style-type: none">• Product's printer• TM printer• Customer display	OPOS ADK 2.70R3 or later
OPOS ADK for .NET	<ul style="list-style-type: none">• Product's printer• TM printer• Customer display	OPOS ADK for .NET Version 1.12.3 or later
JavaPOS ADK	<ul style="list-style-type: none">• Product's printer• TM printer• Customer display	JavaPOS ADK1.13.3 or later

Service Startup Settings

It is necessary to perform service setup settings for the TM-H6000IV-DT depending on the system operation method.

Use EPSON TMNet WebConfig to perform the service setup settings, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

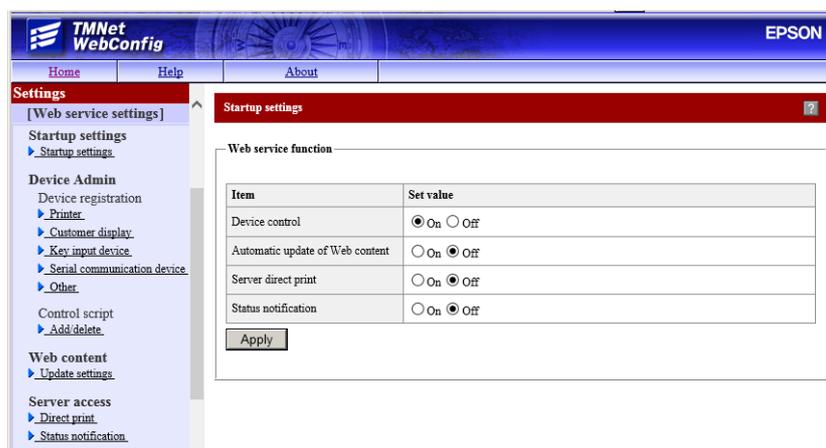
NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://"TM-DT's IP address"/webconfig

The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Startup settings).
The "Startup settings" screen is displayed.



3 Set the following, then click (Apply).

Item	Description
Device control	Set whether to control POS peripherals using this product or not.
Automatic update of Web content	Set whether to use the automatic update for Web content or not.
Server direct print	Set whether to use the server direct print or not.
Status notification	Set whether to use the status notification or not.

Support system and startup settings for each service are as follows.

System	Device control	Automatic update of Web content	Server direct print	Status notification
ePOS-Device API	On (default)	Off / On	Off / On	Off / On
ePOS-Device XML	On (default)	Off / On	Off / On	Off / On
Server Direct Print	On (default)	Off / On	On	Off / On

Server Direct Print Settings

Use EPSON TMNet WebConfig to perform the Server Direct Print settings, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://*"TM-DT's IP address"*/webconfig

The default *"TM-DT's IP address"* for this product is *"192.168.192.168"*.

- 2 Select (Settings) - (Web service settings), then (Direct print).
The "Server direct print" screen is displayed.



- 3 Set the following, then click (Apply).

Item	Description
ID	Specify the user name to be used for Digest authentication for the server. The specified value is also passed as the ID parameter value of the form data to be posted to the server. (This is used to identify multiple printers.)
Password	Specify the password to be used for Digest authentication for the server.
URL	Set the web server URL for acquiring print data. After designating it, click "Access test" and check if the URL is properly specified.
Interval (sec.)	Set the interval for acquiring print data.

Registering Web Contents

Perform registration as follows, depending on the system and method in use.

If placing Web content in this product's Web server using ePOS-Device API or Server Direct Print, register the Web content.

CAUTION	When you upload Web content, the existing registered Web content is discarded. (The folders under U_data remain.)
----------------	----------------------------------------------------------------------------------------------------------------------

Specifications of the file to be registered

- You can register the following for Web content.
HTML files, CSS files, JavaScript, image data, Perl scripts, php scripts
- You can use SQLite3 as a database.
- If including scripts in Web content, follow the naming rules below.
For Perl scripts: *.cgi
For php scripts: *.php
- Zip the files to be registered all together. The zip file name is arbitrary.

CAUTION	<ul style="list-style-type: none">• Use one-byte alphanumeric characters (ASCII characters) for a zip file name and sub-folder name.• The maximum size of the files before zipping is 100 MB. Otherwise, registering fails.
----------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Cautions for the files to be registered

- Web contents cannot be registered additionally. All files are overwritten and registered. Zip web contents before registering.

<Example for sample program>

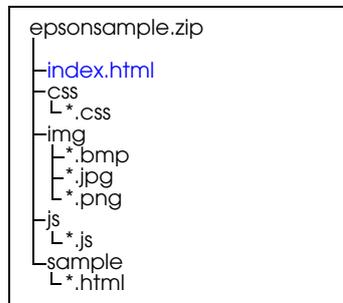
```
epsonsample.zip ..... : Zip file
├── index.html
├── css
│   └── *.css
├── img
│   ├── *.bmp
│   ├── *.jpg
│   └── *.png
├── js
│   └── *.js
└── sample
    └── *.html
```

- When you access to registered web contents from an input terminal and so on, the URL differs depending on the folder structure of the zip file.

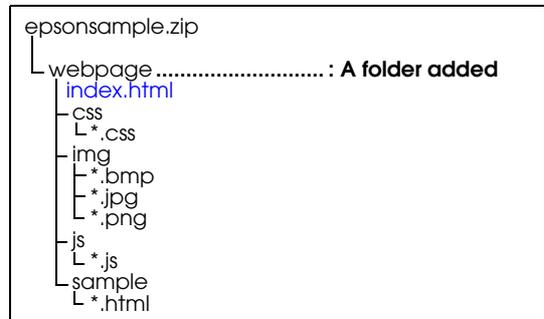
① `http://[the product's IP address]/index.html`

② `http://[the product's IP address]/webpage/index.html`

①



②



Registering Web content

Use EPSON TMNet WebConfig to register Web contents on this product, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).
http://"TM-DT's IP address"/webconfig
The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Update settings).
The "Web content update settings" screen is displayed.

The screenshot shows the EPSON TMNet WebConfig interface. The left sidebar has a 'Settings' section with 'Web service settings' selected. The main content area is titled 'Web content update settings'. It includes a 'Manual update' section highlighted with a red box, which contains a 'Web content file (*.zip)' field with a 'Browse...' button and an 'Upload' button. Other sections include 'Update schedule' with radio buttons for 'Regular interval From 12AM', 'Daily', 'Weekly', and 'Monthly', and a 'File URL' field with an 'Access test' button.

- 3 Select (Browse...), and specify the file (zip file format) you want to register, then click (Upload).

Registering device control script files

Use EPSON TMNet WebConfig to register device control scripts on this product, following the procedures below.

NOTE

This registration is used when registering device control script files, such as serial communication devices, using ePOS-Device.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

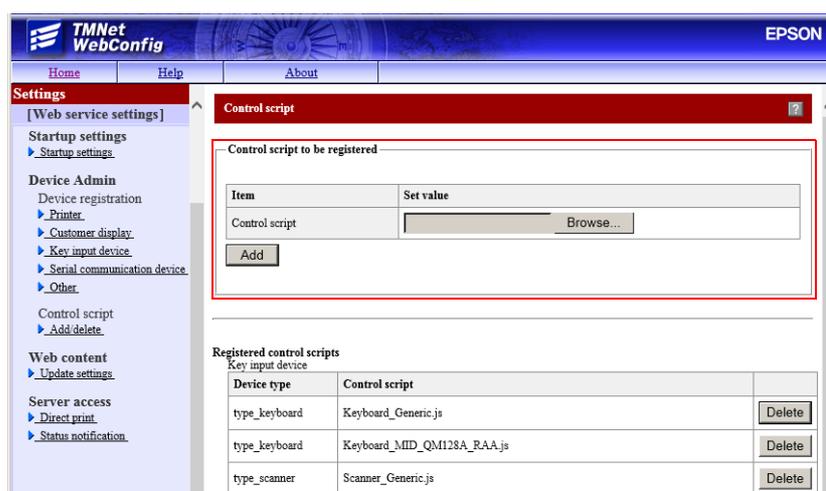
NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://*"TM-DT's IP address"*/webconfig

The default *"TM-DT's IP address"* for this product is *"192.168.192.168"*.

- 2 Select (Settings) - (Web service settings), then (Add/delete).
The "Control script" screen is displayed.



- 3 Select (Browse...), and specify the control script you want to register, then click (Add).

Setting the Devices

Registering a Printer

Use EPSON TMNet WebConfig to register a network printer on this product, following the procedures below. This product's printer is already registered, so settings are not necessary.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop. EPSON TMNet WebConfig is started.

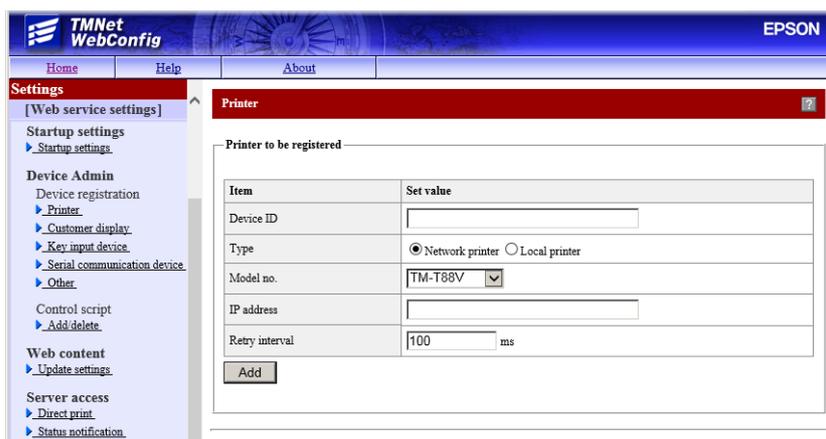
NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://"TM-DT's IP address"/webconfig

The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Printer). The "Printer" screen is displayed.



The screenshot shows the EPSON TMNet WebConfig interface. The top navigation bar includes 'Home', 'Help', and 'About'. The left sidebar is titled 'Settings' and contains several expandable sections: '[Web service settings]', 'Startup settings', 'Device Admin', 'Control script', 'Web content', and 'Server access'. The 'Printer' section under 'Device Admin' is selected. The main content area is titled 'Printer' and contains a form for registering a printer. The form has a table with two columns: 'Item' and 'Set value'. The rows are: 'Device ID' (text input), 'Type' (radio buttons for 'Network printer' and 'Local printer'), 'Model no.' (dropdown menu showing 'TM-T88V'), 'IP address' (text input), and 'Retry interval' (text input '100' followed by 'ms'). An 'Add' button is located below the table.

Item	Set value
Device ID	<input type="text"/>
Type	<input checked="" type="radio"/> Network printer <input type="radio"/> Local printer
Model no.	<input type="text" value="TM-T88V"/>
IP address	<input type="text"/>
Retry interval	<input type="text" value="100"/> ms

- 3** Set the following, then click (Add).
The information for the registered device is displayed in (Registered printers).

Item	Description
Device ID	Set the device ID for the printer you want to register. (Any character string)
Type	Select network printer.
Model no.	Select the printer model.
IP address	Input the IP address of the printer you want to control.
Retry interval	Set the timeout retry interval.

- 4** Click (Operating test)/(Test printing) and check if the registered printer operates properly.

[Operating test] appears if the registered printer is TM-H6000IV/TM-H6000IV-DT, and [Test printing] appears for printers other than TM-H6000IV/TM-H6000IV-DT. Clicking [Operating test] displays the "Operating test" screen. Use the "Operating test" screen to check the printer performance. (See "Operating test" on page 131.)

The screenshot shows the TMNet WebConfig interface for printer registration. The left sidebar contains navigation menus for Information, Settings, and Web content. The main area displays the 'Printer' configuration form with fields for Device ID, Type (Network printer selected), Model no. (TM-T88V), IP address, and Retry interval (100 ms). Below the form is a table of registered printers with 'Operating test' and 'Test printing' buttons highlighted in red.

Device ID	Model no.	IP address	Retry interval (ms)	Operating test	Delete
local_printer	TM-H6000IV-DT	(Local printer)	100	Operating test	Delete
network_printer01	TM-T88V	192.168.192.168	100	Test printing	Delete

Customer Display Settings

Use EPSON TMNet WebConfig to register the dedicated customer display DM-D110-USB, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).
http://"TM-DT's IP address"/webconfig
The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Customer display).
The "Customer display" screen is displayed.



The screenshot shows the EPSON TMNet WebConfig interface. The top navigation bar includes 'Home', 'Help', and 'About'. The left sidebar is titled 'Settings' and contains several categories: '[Web service settings]', 'Startup settings', 'Device Admin', 'Control script', 'Web content', and 'Server access'. The 'Customer display' option under 'Device Admin' is selected. The main content area is titled 'Customer display' and features a 'Customer display usage' section with radio buttons for 'Do not use' (selected) and 'Use'. Below this is a table for 'Communication settings' with columns for 'Item' and 'Set value'. The table contains three rows: 'Communication speed (bps)' set to '9600', 'Data bit' set to '8', and 'Parity' set to 'None'. A 'Brightness setting' is also present, set to '100%'. At the bottom of the settings area are 'Apply' and 'Display test' buttons.

Item	Set value
Communication speed (bps)	9600
Data bit	8
Parity	None

3 Select (Use) and perform the following settings.

Item	Description
Communication settings	Used for customer display communication settings. If you changed the DM-D110-USB dip switch settings, change the communication settings in accordance with those changes. (If you do not change the dip switch settings, use the default settings.)
Brightness setting	Set the brightness of the customer display in percentages. You can set 20%, 40%, 60%, or 100%. The maximum brightness is 100%.

Device ID for the dedicated customer display is fixed to "local_display".

4 Check the settings and click (Apply).

5 Click (Display test) and check if the customer display operates properly. For details about how to install the customer display, refer to ["Connecting a Display" on page 69](#).

Registering a Key Input Device

Use EPSON TMNet WebConfig to register a key input device on this product, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://"TM-DT's IP address"/webconfig

The default "TM-DT's IP address" for this product is "192.168.192.168".

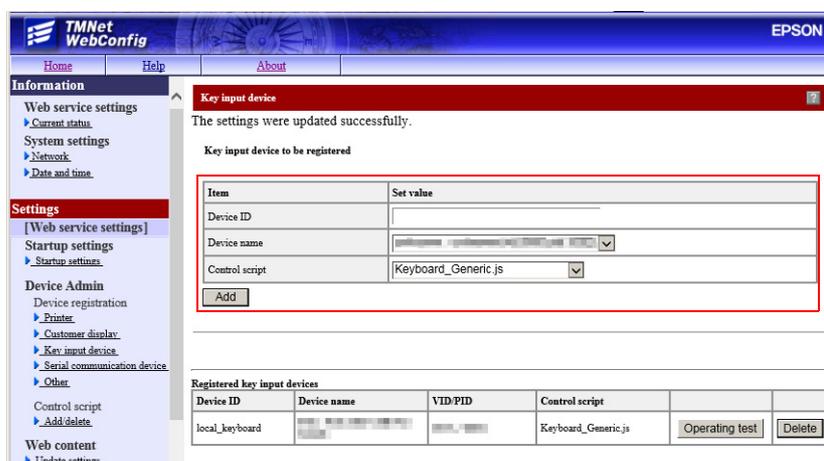
- 2 Select (Settings) - (Web service settings), then (Key input device).
The "Key input device" screen is displayed.

The screenshot displays the EPSON TMNet WebConfig interface. The top navigation bar includes 'Home', 'Help', and 'About'. The left sidebar is titled 'Settings' and contains a tree view with categories: '[Web service settings]', 'Startup settings', 'Device Admin', 'Control script', 'Web content', and 'Server access'. The 'Key input device' option is selected under 'Device Admin'. The main content area is titled 'Key input device' and contains a form for registering a device. The form has the following fields:

Item	Set value
Device ID	<input type="text"/>
Device name	[unknown : unknown] ▼
Control script	Keyboard_Generic.js ▼

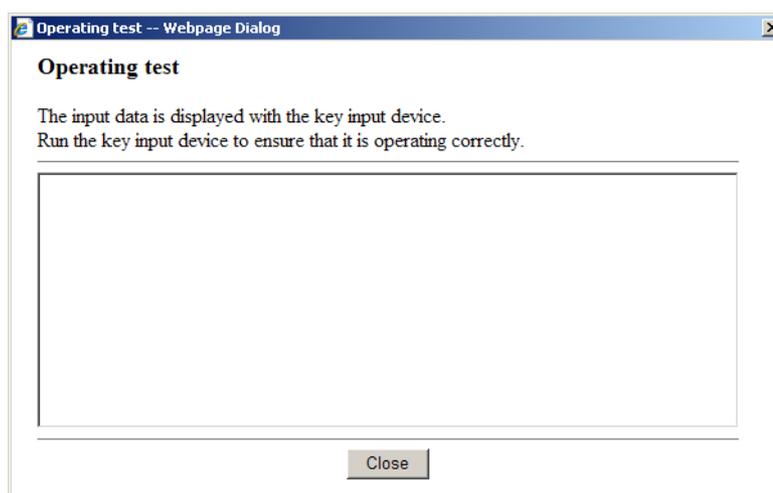
Below the form is an 'Add' button. At the bottom of the page, there is a table titled 'Registered key input devices' with the following columns: Device ID, Device name, VID/PID, Control script, and an empty column.

- 3** Set the following, then click (Add).
The information for the registered device is displayed in [Registered key input device].



Item	Description
Device ID	Set the device ID for the key input device you want to control.
Device name	Select the key input device model. Unregistered key input devices that are currently connected to the unit are listed.
Control script	Select the script to control the device.

- 4** Click the (Operating test).
The (Operating test -- Webpage Dialog) screen is displayed.



- 5** Use the key input device, and check if the registered key input device operates properly.

Serial Communication Device Registration

Use EPSON TMNet WebConfig to register a serial communication device with this product, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

NOTE

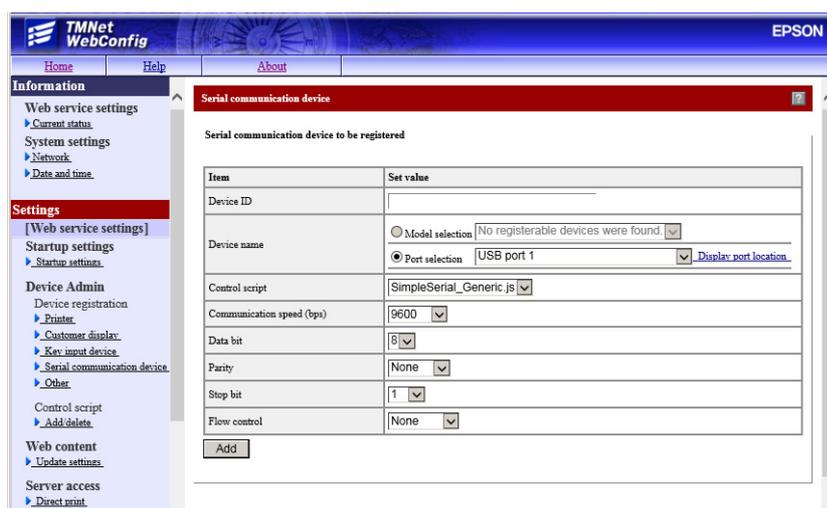
If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).

http://"TM-DT's IP address"/webconfig

The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Serial communication device).

The "Serial communication device" screen is displayed.



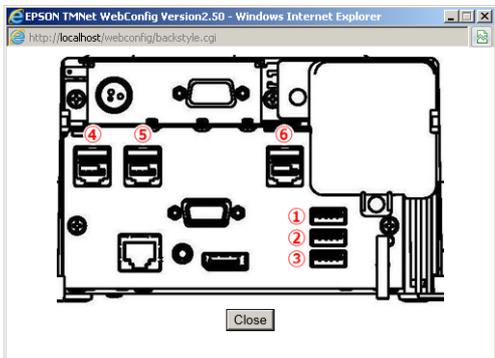
The screenshot shows the EPSON TMNet WebConfig interface. The left sidebar contains a navigation menu with sections: Information, Settings, Device Admin, Control script, Web content, and Server access. The 'Settings' section is expanded, and 'Serial communication device' is selected. The main content area is titled 'Serial communication device' and contains a table for 'Serial communication device to be registered'.

Item	Set value
Device ID	<input type="text"/>
Device name	<input type="radio"/> Model selection [No registerable devices were found.] <input checked="" type="radio"/> Port selection [USB port 1] Display port location
Control script	[SimpleSerial_Generic.js]
Communication speed (bps)	[9600]
Data bit	[8]
Parity	[None]
Stop bit	[1]
Flow control	[None]

An 'Add' button is located at the bottom of the table.

- 3 Set the device ID. (Any character string)

4 Select the product name or port for the serial communication device.

Item	Description
Physical serial port	This is the serial port on the back of this product.
USB port 1 to 6	<p>These are the USB ports on the back of this product.</p> <p>If connecting a serial device using a COM-USB cable, select the corresponding USB port. You can check the USB port number using (Display port location).</p> 

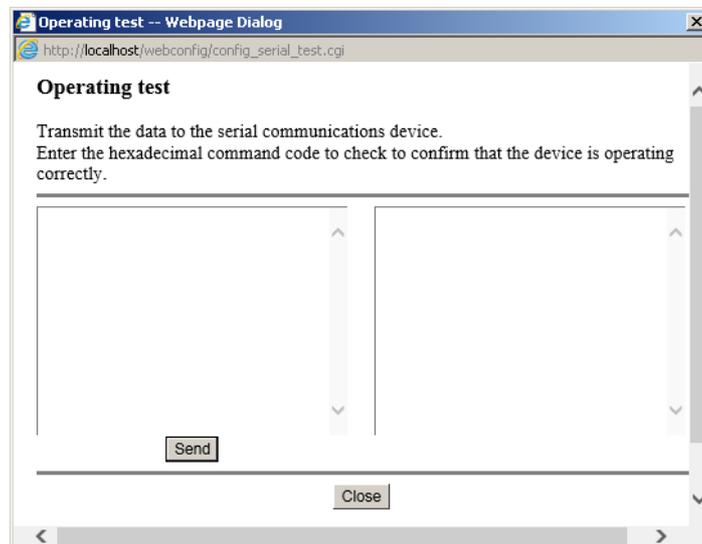
5 Set the following, then click (Add). Information of the registered device is displayed in the [Registered serial communication devices].

Item	Set value
Device ID	
Device name	<input type="radio"/> Model selection No registrable devices were found. <input checked="" type="radio"/> Port selection USB port 1 Display port location
Control script	SimpleSerial_Generic.js
Communication speed (bps)	9600
Data bit	8
Parity	None
Stop bit	1
Flow control	None

Registered serial communication devices						
Device ID	Device name	VID:PID	Control script			
sa	Physical serial port	-	SimpleSerial_Generic.js	Detailed display	Operating test	Delete

Item	Description
Control script	Select the control script to control the serial communication device.
Communication speed (bps)	Select the communication speed.
Data bit	Select the data bit.
Parity	Select the parity.
Stop bit	Select the stop bit.
Flow control	Select whether there is flow control or not.

- 6** Click the (Operating test).
The (Operating test -- Webpage Dialog) screen is displayed.



- 7** Enter the sending command in the left text box and click (Send) to send the command to the device. (Success) appears on the right side of the window if a response is sent from the device.

Registering Other Devices

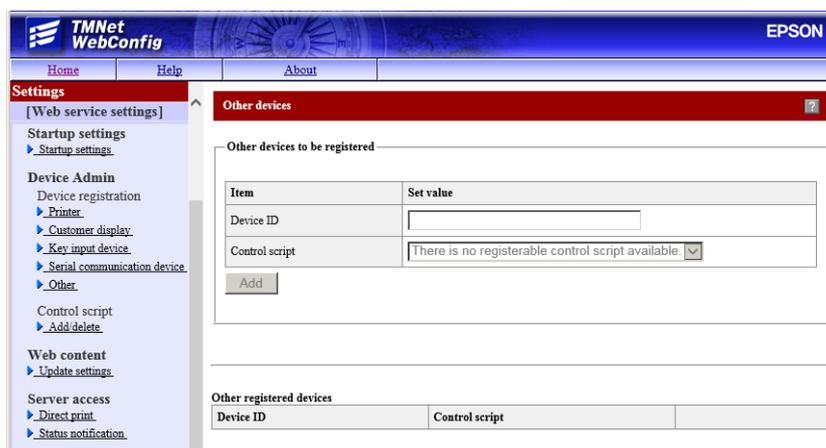
Use EPSON TMNet WebConfig to register other devices on this product, following the procedures below.

- 1 Run EPSON TMNet WebConfig from shortcut on the desktop.
EPSON TMNet WebConfig is started.

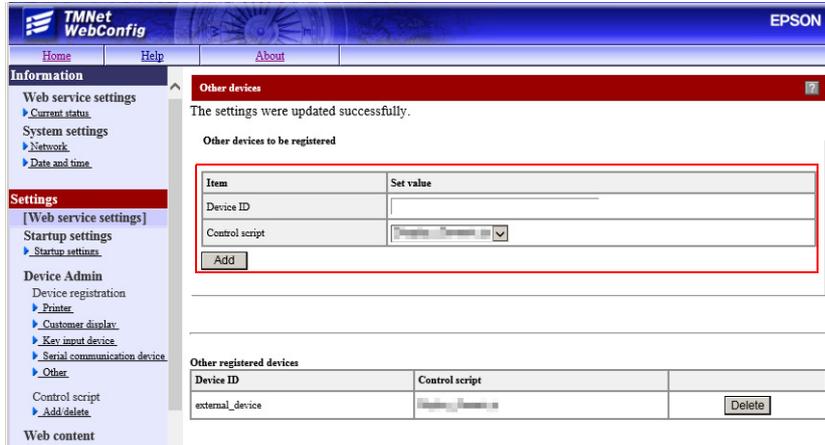
NOTE

If you perform settings from an external device, enter the following in the URL field of your Web browser (such as the address bar).
 http://"TM-DT's IP address"/webconfig
 The default "TM-DT's IP address" for this product is "192.168.192.168".

- 2 Select (Settings) - (Web service settings), then (Other).
The "Other devices" screen is displayed.



- 3** Set the following, then click (Add).
The information for the registered device is displayed in [Other registered devices].



Item	Description
Device ID	Set the device ID for the device you want to control.
Control script	Select the control script to control the other devices.

Printer Settings

You can register logos in the NV (non volatile) memory area in the printer unit and print them.



You can also directly print raster format image data as logos without registering them on the product.

Use TM-H6000IV Utility to register logos.

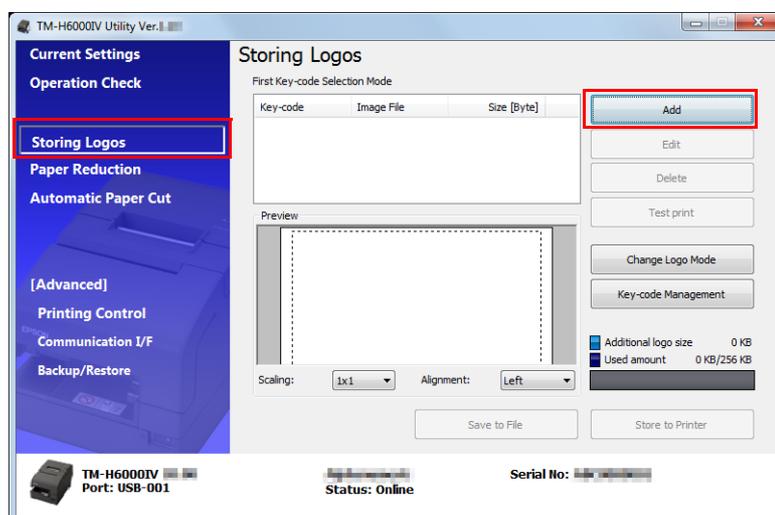
Register Procedures

Follow the steps below to register logos.



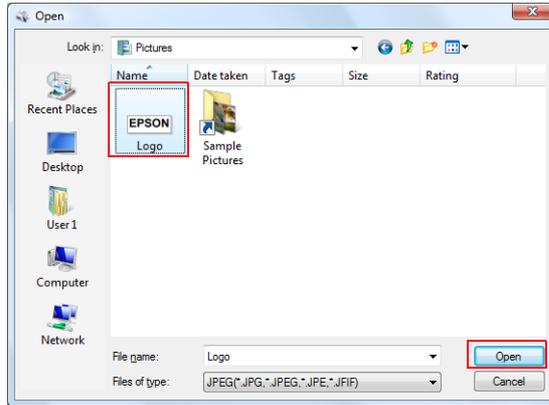
It is recommended to write all logos together in the printer when you register more than one logo.

- 1 Select (Start) - (All Programs) - (EPSON) - (TM-H6000IV Software) - (TM-H6000IV Utility), and starting the TM-H6000IV Utility.
- 2 Select (Storing Logos), and then click (Add).



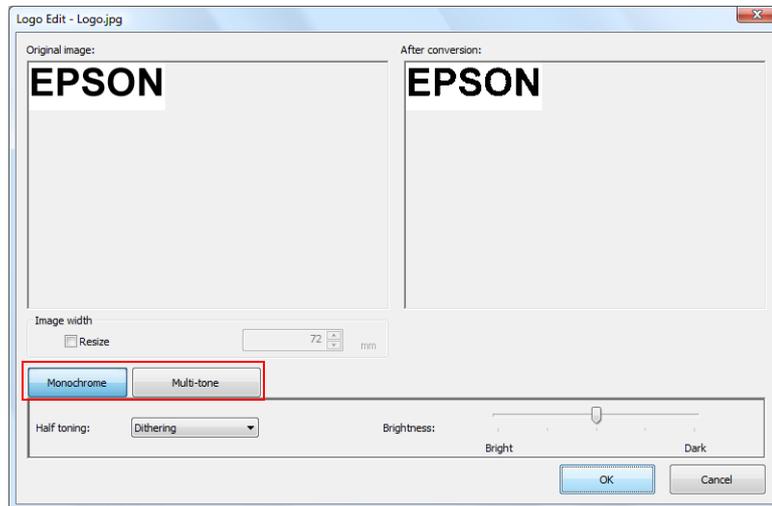
3 Specify the image data to be used as a logo.

A file size of 2047 (W) x 831 (H) dots(Key-code Nonuse Mode (not recommended):1023 (W) x 288 (H) dots) or less can be specified, and the format can be bmp, jpeg, gif, or png. If the logo width is greater than the paper width (greater than 512 dots), a warning message will appear. Click [OK] and reduce the logo size in the [Logo Edit] screen of step 4.

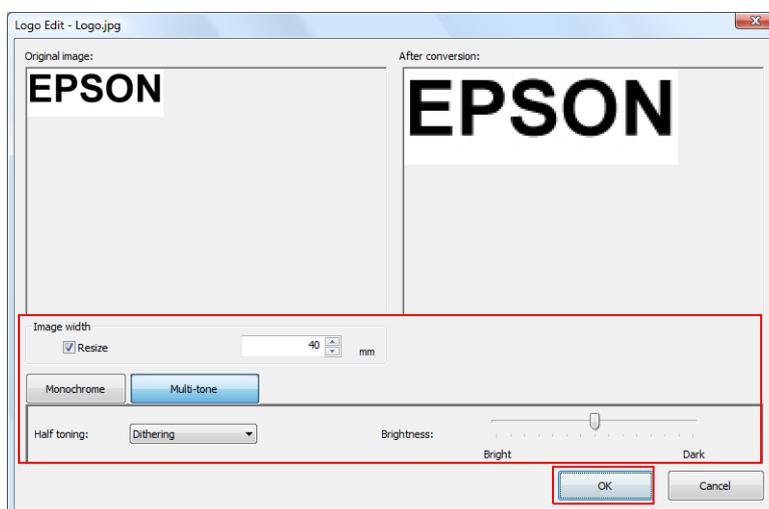


4 The (Logo Edit) screen appears. Click (Monochrome) or (Multi-tone) to select the format of the image to be printed.

The [Multi-tone] does not appear when the mode for storing logo is set to [Key-code Nonuse Mode (not recommended)]. Colors are reduced to 2 colors with [Monochrome] selected and to 16 colors (shades) in grayscale with [Multi-tone] selected.



- 5** Edit the logo image while checking the image previewed on the upper portion of the screen. When finished, click (OK) .

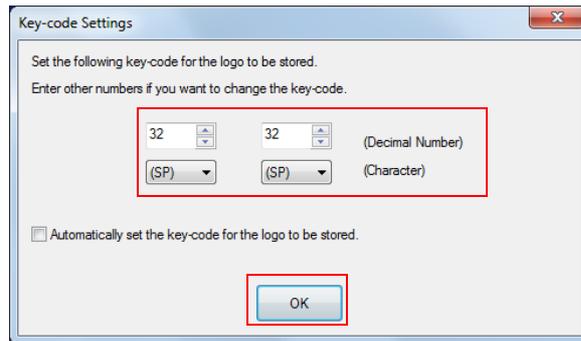


You can edit the followings.

Setting	Description
Resize	Specifies whether or not the image is resized. If the image width is greater than the paper width and resizing is not specified, the part of the image that exceeds the paper width will be cut off.
Width	Specifies the width to which the image is resized (in mm).
Half toning	Configures the halftone setting of the image. Select from (Dithering) / (Error diffusion) / (None) when (Monochrome) is selected in Step 3 and from (Dithering) / (None) when (Multi-tone) is selected.
Brightness	Configures the brightness of the image. Select from 5 levels when (Monochrome) is selected in Step 3 and from 15 levels when (Multi-tone) is selected.

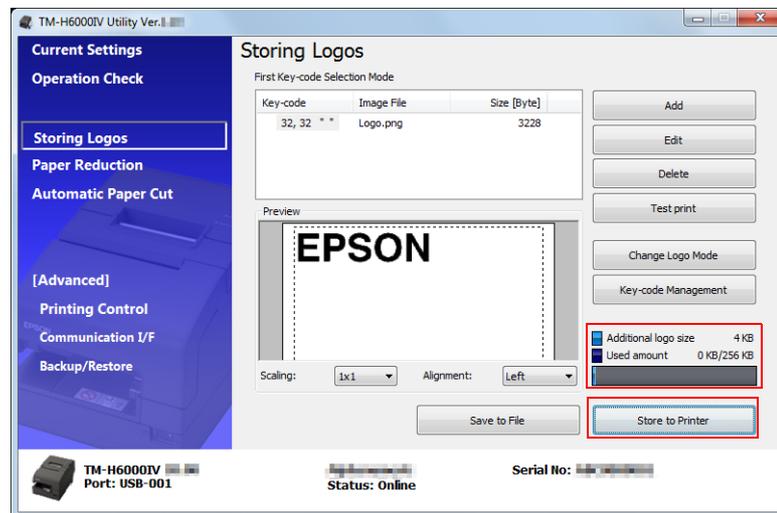
- 6 If the logo mode is (First Key-code Selection Mode) and (Automatically set the keycode for the logo to be stored.) is not turned on, the "Key-code Settings" screen is displayed. Set a Key-code and click (OK).

If the logo mode other than [First Key-code Selection Mode] is selected or [Automatically set the keycode for the logo to be stored.] is turned on, the "Key-code Settings" screen is not displayed.

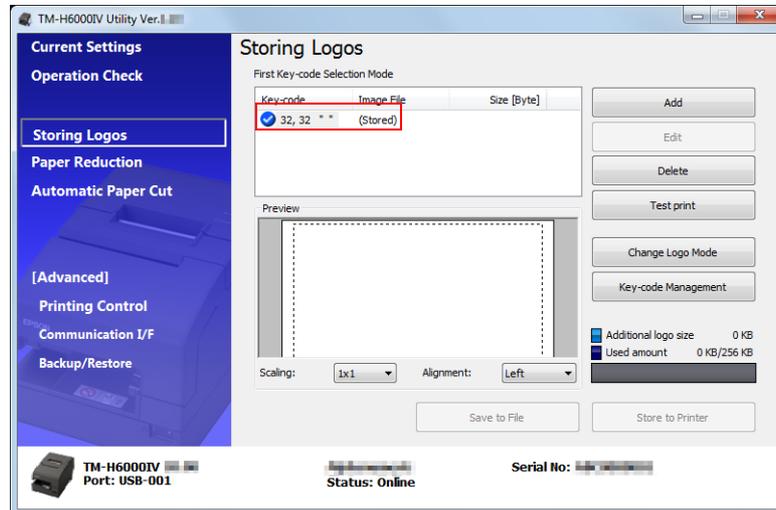


- 7 The logo data is added on the list. When storing multiple logo data, repeat Step 1 through 4.

- 8 After storing all the logo data to be added to the printer, check the indicator on the right side of the screen to see if the data size is acceptable to be stored on the printer, and then click (Store to Printer).



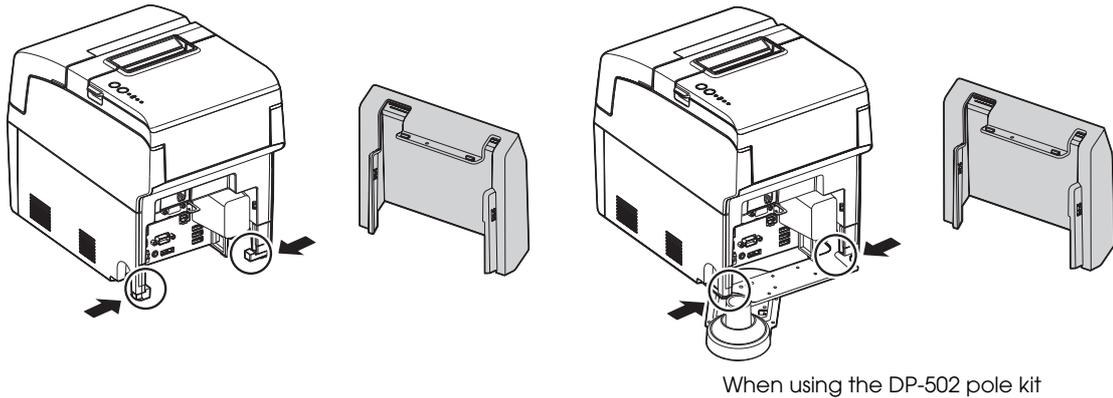
- 9 The logo data is stored to the printer. The logo data are also saved in the logo store file (TLG file). This file is used when creating the printer setting file.



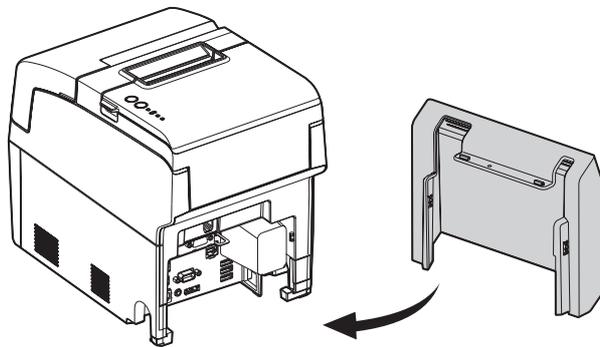
Attaching the Connector Cover

Attach the connector cover to protect the cables by following the steps below.

- 1** Put the connector cover on the feet of the main body.
If the DP-502 pole kit is used to mount DM-D110-USB to the main body, place the connector cover over the plate.



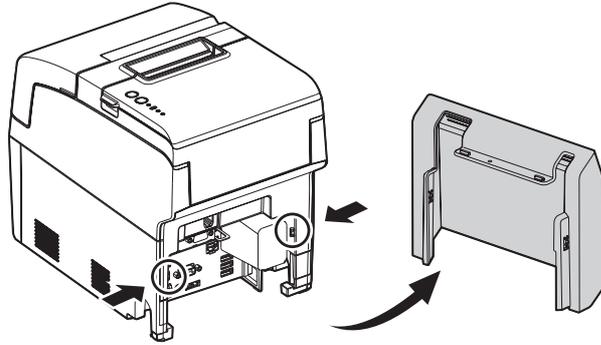
- 2** Push the connector cover to click onto the main body.



- 3** Make sure the cables are not pinched.

Removing the Connector Cover

To remove the connector cover, push both sides of the cover inward to remove the projections of the product from the holes in both sides of the cover.





Preinstalled OS Information

Windows Embedded POSReady 7

Preinstallation information

Item	Details	
HDD format		
	File system	NTFS
	Volume label	TM-H6000IV-DT
Preinstalled software		
	OS	Windows® Embedded POSReady 7
	Additional Packages	.NET Framework2.0 SP2
		.NET Framework3.0 SP2
		.NET Framework3.5 SP1
	Driver	Atom N2xx INF File Update Utility
		D2xxx Chipset Driver
		Intel® Embedded Media and Graphics Driver
		GPIO driver
		Broadcom Network Driver
		Conexant Sound Driver
		EPSON Advanced Printer Driver 4.55b
		EPSON TM printer Communication module
		Customer Display COM-USB Driver
		ePOS-Device and related software
	Tool	EPSON TMNet WebConfig
		TM-H6000IV Utility
User information (Default)		
	User Name	EPSON-USER
	User Password	H6000IV-DT
EPSON TMNet WebConfig Information (Default)		
	User Name	epson
	User Password	epson

HDD version

To verify the HDD version, see HDVER.TAG in the root directory of the startup drive.

This file is in text format and can be viewed using Notepad, etc. The contents of HDVER.TAG are as follows.

```
[HD Information]
MODEL=TM-H6000IV-DT
OS=POSReady7
LANG=English
VER=2.xx.xx
```

Recovery

Follow the steps below to perform the recovery.

NOTE

- When the recovery procedure is performed, all data will be deleted. Back up any necessary data before performing the procedure.
- Recovery requires about 40 minutes.

- 1** Turn off the power of the product.
- 2** Connect a DVD drive, a USB keyboard, and a USB mouse to the product's USB connectors.
- 3** Connect a display to the product's VGA connector.
- 4** Insert the recovery disk into the DVD drive.
- 5** Turn on the product, and "Press any key to boot from CD or DVD" is displayed. Press any key.
- 6** The system starts using the recovery disk. When a message that says "Do you want to recover?" is displayed. Click (Yes).

- 7** A confirmation message that says "All data on disc will be deleted. Do you really want to start recovery?" is displayed. Click (Yes).
- 8** Recovery is performed.
- 9** After the recovery procedure, the system automatically shuts down. The system automatically restarts several times for Windows initialization.

NOTE

Do not enter any information until the Windows log-in screen appears.

- 10** The Windows log-in screen is displayed. Enter the password and log in.

NOTE

The initial password is "H6000IV-DT".

- 11** Select (Start)-(Control Panel)-(Date and Time), and the (Date and Time menu) is displayed. Set the date, time, and time zone.
- 12** Turn off the product. Then remove the DVD drive.

Settings for Dual Display

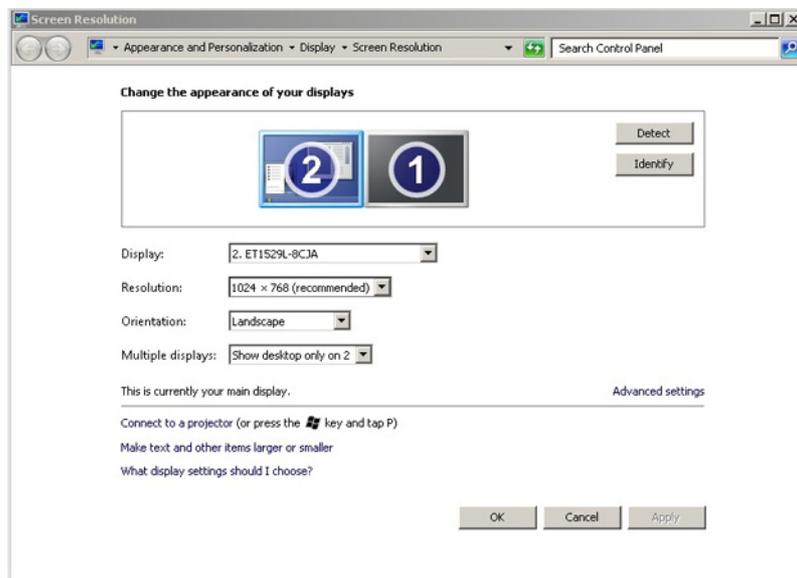
If using dual display, perform settings using the following procedure.

CAUTION

This setting is a function enabled only for Windows Embedded POSReady 7.

- 1 Connect displays this product's VGA port and DisplayPort.
- 2 Click (Start), then (Control Panel), and execute (Adjust screen resolution).

The "Screen Resolution" window is displayed.



- 3 From the "Display" list, select the display connected to the display port.

CAUTION

With this product, the Digital Flat Panel allotted to Display1 cannot be used. If you make a mistake and set for display only on Display1, the display will disappear, but will be redisplayed approximately 20 seconds later.

- 4 From the "Multiple displays" list, select "Show desktop only on 2".
- 5 Click (OK).
- 6 A confirmation message is displayed. Click (Keep changes).
The display settings are saved.

Using OS Hibernation

CAUTION

- This setting is a function enabled only for Windows Embedded POSReady 7.
- Perform these settings using a user account with administrator privileges.
- If you use hibernation, a system file the same size as the main memory is created by the OS. This product has a main memory of 4 GB, so 4 GB of the space on the main storage (HDD) is used.

Enable the OS hibernation using the following procedure.

- 1** Click (Start) - (All programs), then right click (Accessories) - (Command Prompt). Click (Run as administrator) on the displayed list.
- 2** Execute the following command.
powercfg /h on
You can now use the OS hibernation.



Utility

The following explains the utilities equipped in this product.

EPSON TMNet WebConfig

Starting EPSON TMNet WebConfig

Start EPSON TMNet WebConfig using the method below.

NOTE

If ePOS-Device is disabled, EPSON TMNet WebConfig will not start.
For detail, refer to ["Enabling or Disabling ePOS-Device" on page 81](#).

- 1 Connect a display, keyboard and mouse to the product.
Log in as the Administrator.
- 2 Start TMNet WebConfig from the shortcut on the desktop.
EPSON TMNet WebConfig starts.

NOTE

If you are making settings from an external device, start the Web browser, and input the following.
<http://This product's IP address/webconfig/>



Information - Web service settings - Current status

You can check the basic settings for this product.

The screenshot shows the 'Current status' page in the TMNet WebConfig interface. The page is organized into several sections, each with a table of settings and their current values.

Section	Item	Value
Admin information	Administrator name	
	Installation location	
Web service function	Web service function	On
Status of Web content update	Automatic update for Web content	Daily 00:00
	Date and time of Web content installed	Not run
	Date and time of last automatic update	Not run
	Result of automatic update	Not run
Server direct print	Run state	Stopped
	ID	
	Interval (sec.)	5
	Date and time of last run	Not run
	Final run results	Not run
Status notification	Run state	Stopped
	ID	
	Interval (sec.)	5
	Date and time of last run	Not run

	Item	Description
Admin information	Administrator name	Displays the administrator name for this product.
	Installation location	Displays the installation location for this product.
Web service function	Web service function	Displays whether the Web service function is enabled or not.
Status of Web content update	Automatic update for Web content	Displays the schedule for automatic updates for Web content.
	Date and time of Web content installed	Displays the date and time that the Web contents were installed.
	Date and time of last automatic update	Displays the date and time of the last automatic update performed.
	Result of automatic update	Displays the results of the automatic update.

Item		Description
Server direct print	Run state	Displays the run state of the server direct print.
	ID	Displays the web server ID acquiring print data of the server direct print.
	Interval (sec.)	Displays the interval for acquiring print data.
	Date and time of last run	Displays the date and time last run of the server direct print.
	Final run results	Displays the final run results of the server direct print.
Status notification	Run state	Displays the run state of the status notification.
	ID	Displays the web server ID sending status notification.
	Interval (sec.)	Displays the interval for sending status notification.
	Date and time of last run	Displays the date and time last run of the status notification.
	Final run results	Displays the final run results of the status notification.

Information - System settings - Network

You can check the network settings for this product.



	Item	Description
TCP/IP Information (Wired LAN)	IP address	Displays this product's IP address for a wired LAN network.
	Subnet Mask	Displays the subnet mask.
	Default Gateway	Displays the default gateway.
	Acquire DNS Server Address Automatically	Displays whether the Acquire DNS Server Address Automatically function is enabled or not.
	DNS Server Address (in order of use)	Displays automatically acquired DNS server addresses in the order they are used.
TCP/IP Information (Wireless LAN)	IP address	Displays this product's IP address for a wireless LAN network.
	Subnet Mask	Displays the subnet mask.
	Default Gateway	Displays the default gateway.
	Acquire DNS Server Address Automatically	Displays whether the Acquire DNS Server Address Automatically function is enabled or not.
	DNS Server Address (in order of use)	Displays automatically acquired DNS server addresses in the order they are used.

Item		Description
Wireless LAN Setting (Wireless LAN)	Network Mode	Displays this product's wireless LAN network mode.
	SSID	Displays the SSID for the registered wireless LAN network.
Security (SSL settings)	SSL	Displays whether the SSL is enable or disable.
	Domain of the certificate	Displays the domain of the certificate.
	Validity period of the certificate	Displays the validity period of the certificate.

Information - System settings - Date and time

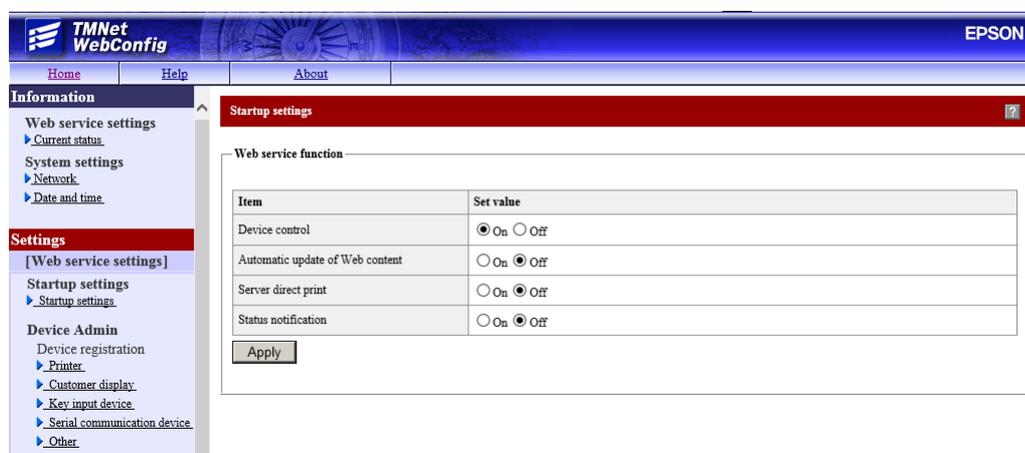
You can check this product's time settings.



Item	Description
Date and time	Displays the time and the timezone set for this product.
Automatically adjust clock for Daylight Saving Time	Displays whether the automatic daylight saving time adjustment function is enabled or not.
Use Time Server	Displays whether the function to use a time server is enabled or not.
Time Server	Displays the address set as a time server.

Settings - Web service settings - Startup settings

Performs startup settings for various Web service functions.



Item	Description
Device control	Enables or disables device control functions that use Web service. Used for ePOS-Device.
Automatic update of Web content	Enables or disables the automatic update function for Web content.
Server direct print	Enables or disables the server direct print function.
Status notification	Enables or disables the status notification function.
Apply	Registers the settings to this product.

Settings - Web service settings - Printer

Performs the settings for printers controlled by this product.

The screenshot shows the 'Printer' settings page in the TMNet WebConfig interface. The page has a blue header with 'TMNet WebConfig' and 'EPSON' logos. A navigation menu on the left includes 'Information', 'Settings', 'Startup settings', 'Device Admin', 'Web content', and 'Server access'. The main content area shows a success message: 'The settings were updated successfully.' Below this is a form titled 'Printer to be registered' with fields for 'Device ID', 'Type' (radio buttons for 'Network printer' and 'Local printer'), 'Model no.' (dropdown menu showing 'TM-T88V'), 'IP address', and 'Retry interval' (set to '100 ms'). An 'Add' button is below the form. At the bottom, there is a table titled 'Registered printers' with columns for 'Device ID', 'Model no.', 'IP address', 'Retry interval (ms)', and action buttons 'Operating test' and 'Delete'.

Item	Set value
Device ID	
Type	<input checked="" type="radio"/> Network printer <input type="radio"/> Local printer
Model no.	TM-T88V
IP address	
Retry interval	100 ms

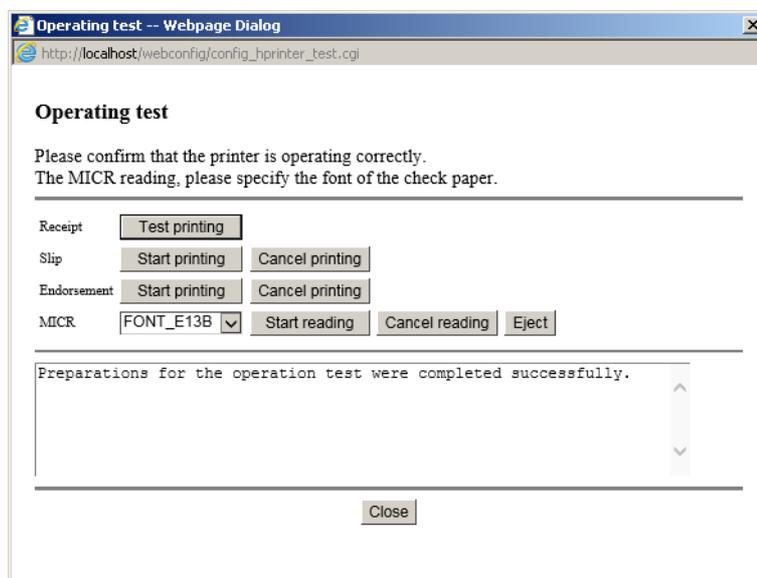
Device ID	Model no.	IP address	Retry interval (ms)		
local_printer	TM-H6000IV-DT	(Local printer)	100	Operating test	Delete
network_printer01	TM-T88V	192.168.192.168	100	Test printing	Delete

Item	Description
Device ID	Set the ID for the controlled printer. (Any character string)
Type	Select the type for the controlled printer.
Model no.	Select the model number for the controlled printer.
IP address	Set the printer IP address for each device ID.
Retry interval	Set the timeout retry interval.
Add	Registers the printer on this product.
Registered printers	Displays a list of registered printers.
Operating test	Click "Operating test" to display the "Operating test" window. Perform an operating test for the hybrid printer. For details, refer to "Operating test" on page 131 .
Test printing	Performs a test printing. "TEST_PRINT" is printed.
Delete	Deletes a registered printer.

NOTE

The initial value for the device ID for the printer equipped in this product is "local_printer."

Operating test



Item		Description
Receipt	Test printing	Performs a test printing. "TEST_PRINT" is printed.
Slip	Start printing	Performs a slip printing test. "TEST_PRINT" is printed.
	Cancel printing	Cancels printing.
Endorsement	Start printing	Performs an endorsement printing test. "TEST_PRINT" is printed.
	Cancel printing	Cancels printing.
MICR	pull-down menu	Select a reading format.
	Start reading	Starts reading.
	Cancel reading	Cancels reading.
	Eject	Ejects paper.
Close		Closes the window.

Settings - Web service settings - Customer display

Performs the settings for the customer display controlled by this product.

The screenshot shows the 'Customer display' configuration page in the TMNet WebConfig interface. The page has a blue header with 'TMNet WebConfig' and 'EPSON' logos. A navigation menu on the left lists various settings categories. The main content area is titled 'Customer display' and contains the following elements:

- Customer display usage:** Two radio buttons: Do not use and Use.
- Communication settings table:**

Item	Set value
Communication speed (bps)	9600
Data bit	8
Parity	None
- Brightness setting:** A dropdown menu set to 100%.
- Display test:** A button to test the display.
- Apply:** A button to save the settings.

Item		Description
Do not use		Do not use a customer display.
Use		Use a customer display.
Communication settings	Communication speed (bps)	Set the communication speed.
	Data bit	Set the data bit.
	Parity	Set the parity.
Brightness setting		Set the brightness of the customer display in percentages. You can set 20%, 40%, 60%, or 100%. The maximum brightness is 100%.
Display test		Check if the customer display operates properly. When "Display test" is clicked, characters appear on the customer display.
Apply		Registers the settings to this product.

Settings - Web service settings - Key input device

Performs the settings for the key input device controlled by this product.

The screenshot shows the 'Key input device' settings page in the TMNet WebConfig interface. The page has a blue header with 'TMNet WebConfig' and 'EPSON' logos. A navigation menu on the left includes 'Information', 'Settings', and 'Web content'. The main content area shows a success message: 'The settings were updated successfully.' Below this, there is a section titled 'Key input device to be registered' with a form containing three fields: 'Device ID' (text input), 'Device name' (dropdown menu), and 'Control script' (dropdown menu). An 'Add' button is located below the form. At the bottom, there is a table titled 'Registered key input devices' with columns for 'Device ID', 'Device name', 'VID/PID', and 'Control script'. The table contains one entry: 'local_keyboard' with a 'Keyboard_Generic.js' control script. To the right of this entry are 'Operating test' and 'Delete' buttons.

Item	Description
Device ID	Set the ID for the key input device.
Device name	Set the device name for the key input device.
Control script	Set the device control script to control the key input device.
Add	Registers the key input device.
Registered key input devices	Displays a list of registered key input devices.
Operating test	Performs an operating test for a registered key input device.
Delete	Deletes a registered key input device.

NOTE

Register device control scripts as necessary. For details, refer to "[Settings - Web service settings - Control script - Add/delete](#)" on page 137.

Settings - Web service settings - Serial communication device

Performs the settings for serial communication devices controlled by this product.

The screenshot shows the 'Serial communication device' settings page in the TMNet WebConfig interface. The page is titled 'Serial communication device' and contains a table for configuring the device. The table has two columns: 'Item' and 'Set value'. The items and their values are as follows:

Item	Set value
Device ID	
Device name	<input type="radio"/> Model selection [No registerable devices were found.] <input checked="" type="radio"/> Port selection [USB port 1] Display port location
Control script	[SimpleSerial_Generic.js]
Communication speed (bps)	[9600]
Data bit	[8]
Parity	[None]
Stop bit	[1]
Flow control	[None]

Below the configuration table is an 'Add' button. At the bottom of the page, there is a table titled 'Registered serial communication devices' with the following data:

Device ID	Device name	VID/PID	Control script			
sa	Physical serial port	-	SimpleSerial_Generic.js	Detailed display	Operating test	Delete

Item		Description
Device ID		Set the device ID.
Device name	Model selection	Select the device model name.
	Port selection	Select the device port.
Control script		Select the device control script for controlling the serial communication device.
Communication speed (bps)		Set the device communication speed.
Data bit		Set the data bit.
Parity		Set the parity.
Stop bit		Set the stop bit.
Flow control		Set the flow control.
Add		Registers the serial communication device on this product.

Item	Description
Registered serial communication devices	Displays a list of registered serial communication devices.
Detailed display	Displays the device settings confirmation window.
Operating test	Performs an operating test for a registered serial communications device.
Delete	Deletes a registered serial communications device.

NOTE

Register device control scripts as necessary.

For details, refer to ["Settings - Web service settings - Control script - Add/delete"](#) on page 137.

Settings - Web service settings - Other device

Performs settings for other devices controlled by this product.

The screenshot shows the 'Other devices' configuration page in the TMNet WebConfig interface. The page has a blue header with the TMNet WebConfig logo and EPSON branding. A navigation menu on the left lists various settings categories. The main content area features a red banner with the text 'Other devices' and a success message: 'The settings were updated successfully.' Below this, there are two tables. The first table, 'Other devices to be registered', has columns for 'Item' and 'Set value'. It contains two rows: 'Device ID' with an empty text input field, and 'Control script' with a dropdown menu showing 'DeviceControlScript'. An 'Add' button is located below the table. The second table, 'Other registered devices', has columns for 'Device ID' and 'Control script'. It contains one row with 'external_device' in the 'Device ID' column and a 'Delete' button in the 'Control script' column.

Item	Description
Device ID	Set the ID for the controlled device.
Control script	Set the device control script to control the device.
Add	Registers the device on this product.
Other registered devices	Displays other devices registered on this product.
Delete	Deletes the corresponding device control script from this product.

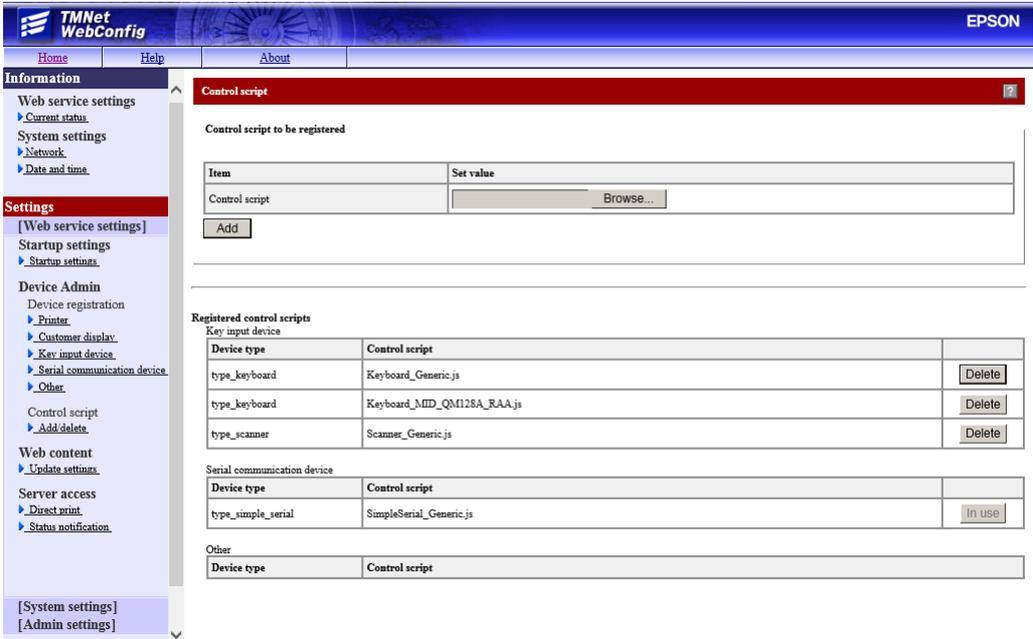
NOTE

Register device control scripts as necessary.

For details, refer to ["Settings - Web service settings - Control script - Add/delete" on page 137.](#)

Settings - Web service settings - Control script - Add/delete

Performs registration or deletion for device control scripts used by this product.



Item	Description
Control script	Set the control script to be registered. Click (Browse) to display the "Choose File to Upload" window. Select the file to be used.
Add	Registers the device control script on this product.
Registered control scripts	Deletes the corresponding device control script from this product.
	The corresponding device control script is in use.

Settings - Web service settings - Web content - Update settings

Performs settings for the installation method and update settings for the Web content registered on this product.

	Item	Description
Automatic update settings	Update schedule	Set the schedule for automatic update of the Web content.
	File URL	Specify a URL for the file to automatically update. After designating it, click "Access test" and check if the URL is properly specified.
	Use of proxy	Set whether you are using a proxy server or not. If you selected "Use", set "Proxy URL and port no."
	Proxy URL and port no.	Set the URL and port number for the proxy server in use.
	Apply	Registers the automatic update settings on this product.
	After setting settings, update Web content immediately	After the automatic update settings are registered on this product, the Web content will be updated.
Manual update	Web content file (*.zip)	Specify the Web content to be installed. Click (Browse) to display the "Choose File to Upload" window. Select the file to be used.
	Upload	Uploads the specified Web content.

Settings - Web service settings - Server direct print

Performs TCP/IP settings for this product's server direct print.

The screenshot shows the TMNet WebConfig interface. The left sidebar contains a navigation menu with categories like Information, Settings, Device Admin, Web content, and Server access. The main content area is titled 'Server direct print' and contains a table with the following items and values:

Item	Set value
ID	<input type="text"/>
Password	<input type="text"/>
URL	<input type="text"/> <input type="button" value="Access test"/>
Interval (sec.)	5

Below the table is an 'Apply' button.

Item	Description
ID	Specify the user name to be used for Digest authentication for the server. The specified value is also passed as the ID parameter value of the form data to be posted to the server. (This is used to identify multiple printers.)
Password	Specify the password to be used for Digest authentication for the server.
URL	Set the web server URL for acquiring print data. After designating it, click "Access test" and check if the URL is properly specified.
Interval (sec.)	Set the request interval.
Apply	Registers the settings to this product.

Settings - Web service settings - Status notification

Performs TCP/IP settings for this product's status notification.

The screenshot shows the TMNet WebConfig interface for an EPSON device. The left sidebar contains a navigation menu with categories like Information, Settings, Device Admin, Web content, and Server access. The 'Status notification' page is active, displaying a table with the following items and values:

Item	Set value
ID	<input type="text"/>
Password	<input type="password"/>
URL	<input type="text"/> <input type="button" value="Access test"/>
Interval (sec.)	5

Below the table is an button.

Item	Description
ID	Specify the user name to be used for Digest authentication for the server. The specified value is also passed as the ID parameter value of the form data to be posted to the server. (This is used to identify multiple printers.)
Password	Specify the password to be used for Digest authentication for the server.
URL	Set the web server URL for sending status notifications. After designating it, click "Access test" and check if the URL is properly specified.
Interval (sec.)	Set the interval for sending status notifications.
Apply	Registers the settings to this product.

Settings - System settings - TCP/IP (Wired LAN)

Performs TCP/IP settings for this product's wired LAN.

The screenshot shows the TMNet WebConfig interface for an EPSON device. The left sidebar contains a navigation menu with categories like Information, Settings, Network, and Date and time. The main content area is titled 'TCP/IP Setting (Wired)' and contains a table with the following items and values:

Item	Set value
Get IP Address	Manual
IP address	192.168.192.168
Subnet Mask	255.255.255.0
Default Gateway	192.168.192.168
Acquire DNS Server Address Automatically	Disable
DNS Server Address(in order of use)	

An 'Apply' button is located below the table.

Item	Description
Get IP Address	Selects (Auto) or (Manual) for the method for acquiring the IP address.
IP Address	Specifies the IP address. Only enabled when the method for acquiring the IP address is (Manual).
Subnet Mask	Specifies the subnet mask. Only enabled when the method for acquiring the IP address is (Manual).
Default Gateway	Specifies the default gateway. Only enabled when the method for acquiring the IP address is (Manual).
Acquire DNS Server Address Automatically	Selects (Enable) or (Disable) for automatically acquiring the DNS server address. Only enabled when the method for acquiring the IP address is (Auto).
DNS Server Address (in order of use)	Specifies DNS server addresses in order of use. Can be specified only when (Disable) is selected for automatically acquiring the DNS server address.
Apply	Registers the settings to this product.

Settings - System settings - Wireless LAN (Wireless LAN)

Performs settings for this product's wireless LAN.

The screenshot shows the TMNet WebConfig interface for an EPSON device. The left sidebar contains a navigation menu with sections: Information (Web service settings, System settings), Settings (Web service settings, System settings), Network (Wired LAN, Wireless LAN), Security, Date and time, Power, and Admin settings. The main content area is titled 'Wireless LAN setting' and contains a table with the following items and values:

Item	Set value
Network Mode	<input checked="" type="radio"/> Infrastructure <input type="radio"/> Ad-Hoc
SSID	EpsonNet
Authentication Method	Open System
Security Mode	None
Default WEP Key	1
WEP Key	
WPA/WPA2 Pre-Shared Key	*****

Below the table is an 'Apply' button.

Item	Description
Network Mode	Specifies this product's network mode.
SSID	Specifies the SSID for the SSID network.
Authentication Method	Specifies the authentication method for the wireless LAN network.
Security Mode	Specifies the encryption method for the wireless LAN network.
Default WEP Key	Selects the WEP key used in the wireless LAN network.
WEP Key	Inputs the network WEP key.
WPA/WPA2 Pre-Shared Key	Inputs the pre-shared key used if the encryption method is "WPA" or "WPA2".
Apply	Registers the settings to this product.

Settings - System settings - TCP/IP (Wireless LAN)

Performs TCP/IP settings for this product's wireless LAN.

The screenshot shows the TMNet WebConfig interface for an EPSON device. The main content area is titled "TCP/IP Setting (Wireless)" and contains the following configuration items:

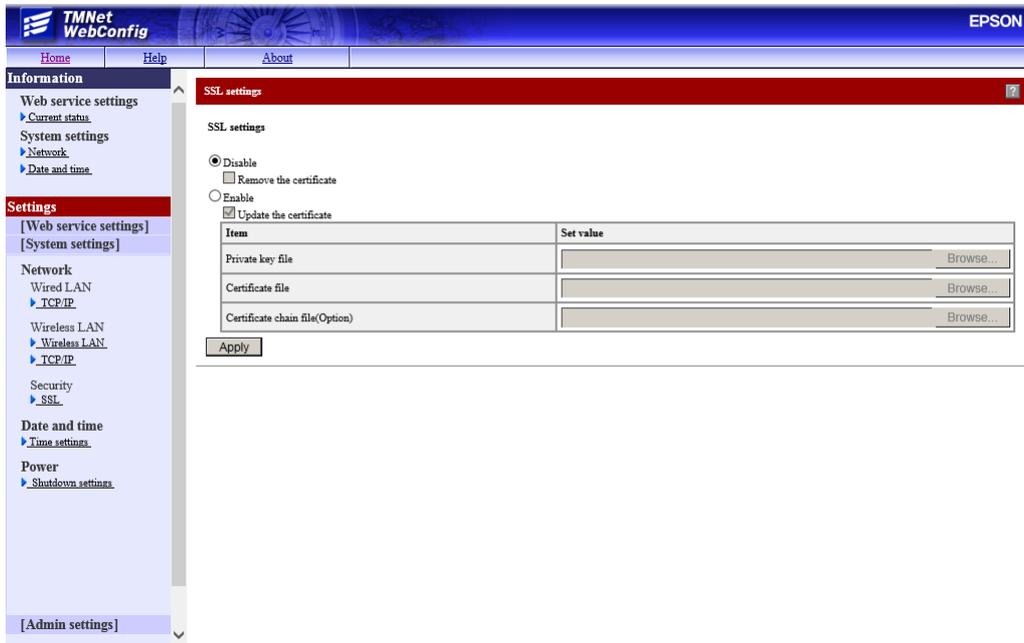
Item	Set value
Get IP Address	Auto
IP address	
Subnet Mask	
Default Gateway	
Acquire DNS Server Address Automatically	Disable
DNS Server Address(in order of use)	

An "Apply" button is located at the bottom of the configuration area.

Item	Description
Get IP Address	Selects (Auto) or (Manual) for the method for acquiring the IP address.
IP address	Specifies the IP address. Only enabled when the method for acquiring the IP address is (Manual).
Subnet Mask	Specifies the subnet mask. Only enabled when the method for acquiring the IP address is (Manual).
Default Gateway	Specifies the default gateway. Only enabled when the method for acquiring the IP address is (Manual).
Acquire DNS Server Address Automatically	Selects (Enable) or (Disable) for automatically acquiring the DNS server address. Only enabled when the method for acquiring the IP address is (Auto).
DNS Server Address (in order of use)	Specifies DNS server addresses in order of use. Can be specified only when (Disable) is selected for automatically acquiring the DNS server address.
Apply	Registers the settings to this product.

Settings - System settings - SSL

Performs SSL settings for this product.



Item	Description
Disable	Disables SSL authentication.
<input type="checkbox"/> Remove the certificate	Select this checkbox to delete the SSL certificate.
Enable	Enables SSL authentication.
<input checked="" type="checkbox"/> Update the certificate	To update the SSL certificate, select this checkbox and specify the following files: <ul style="list-style-type: none"> • Private key file • Certificate file • Certificate chain file(Optional)
Apply	Registers the settings to this product.

Settings - System settings - Time setting

Performs time settings for this product.

The screenshot shows the TMNet WebConfig interface. The left sidebar contains a navigation menu with categories: Information, Settings, Network, Security, Date and time, and Power. The 'Date and time' category is expanded, showing 'Time settings'. The main content area displays the 'Time settings' page with the following table:

Item	Set value
Date and time	09 | Dec | 2013 | 02 : :55
Time Zone	[(UTC-05:00) Eastern Time (US & Canada)]
Automatically adjust clock for Daylight Saving Time	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Use Time Server	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Time Server	time.windows.com

Below the table is an 'Apply' button.

Item	Description
Date and time	Sets the time.
Time Zone	Sets the area. Sets the time difference from Coordinated Universal Time.
Automatically adjust clock for Daylight Saving Time	Selects whether to automatically adjust the clock for Daylight Saving Time.
Use Time Server	Selects whether to use a time server.
Time Server	Specifies the URL for the time server.
Apply	Registers the settings to this product.

Settings - System settings - Shutdown settings

Performs shutdown settings for this product.

The screenshot shows the TMNet WebConfig interface for EPSON. The left sidebar contains a navigation menu with the following items: [Web service settings], [System settings], Network (Wired LAN, TCP/IP, Wireless LAN, TCP/IP), Security (SSL), Date and time (Time settings), Power (Shutdown settings), and [Admin settings]. The main content area is titled 'Shutdown settings' and contains the following configuration options:

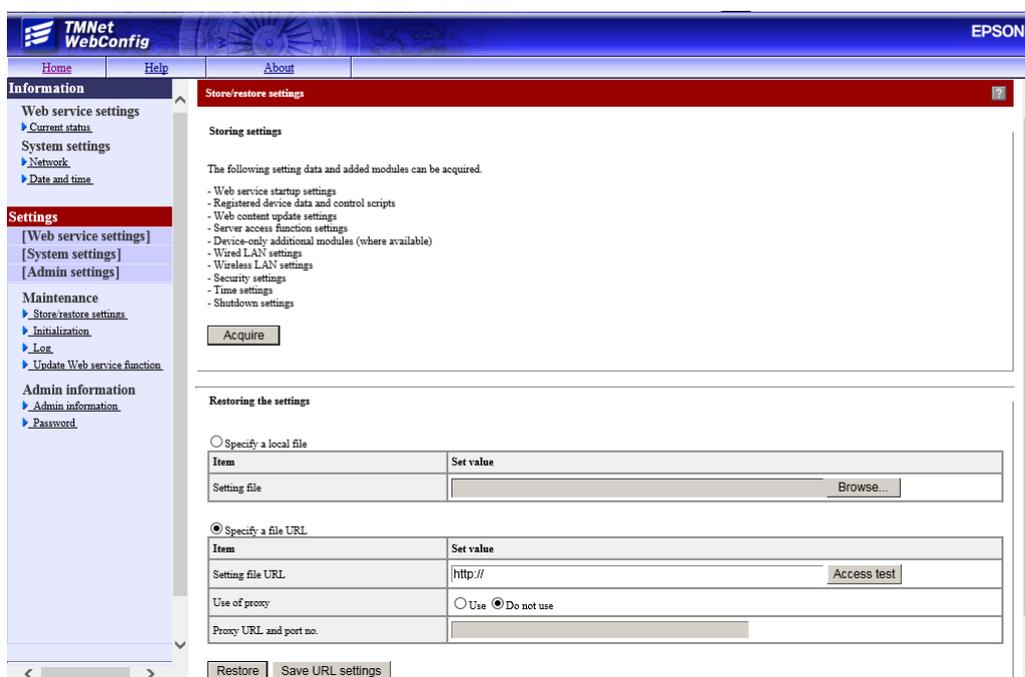
Item	Set value
When the power button is pressed	Shutdown
ePOS-Device Shutdown permission	<input checked="" type="radio"/> Permit <input type="radio"/> Do not permit
ePOS-Device Password protection	<input checked="" type="radio"/> Require a password <input type="radio"/> Do not require a password

Below the table are two buttons: 'Apply' and 'Turn off the power'.

Item		Description
When the power button is pressed		Set the operation when you press the power button.
ePOS-Device	Shutdown permission	Specify the permission settings for shutdown from ePOS-Device.
	Password protection	Specify the password authentication for shutdown from ePOS-Device.
Apply		Registers the settings with this product.
Turn off the power		Shuts down the product.

Settings - Admin settings - Store/restore settings

Store and restores various settings for this product.



Item		Description
Acquire		Acquires the setting file for this product.
Specify a local file	Setting file	Specify the location of the local setting file.
Specify a file URL	Setting file URL	Specify the URL of the setting file.
	Use of proxy	Set whether you are using a proxy server or not.
	Proxy URL and port no.	Set the proxy URL and port number.
Restore		Restores the product from the specified setting file.
Save URL settings		Saves the setting file URL and proxy settings.

Restored items

Items to be restored in the [Restoring the settings] are as follows.

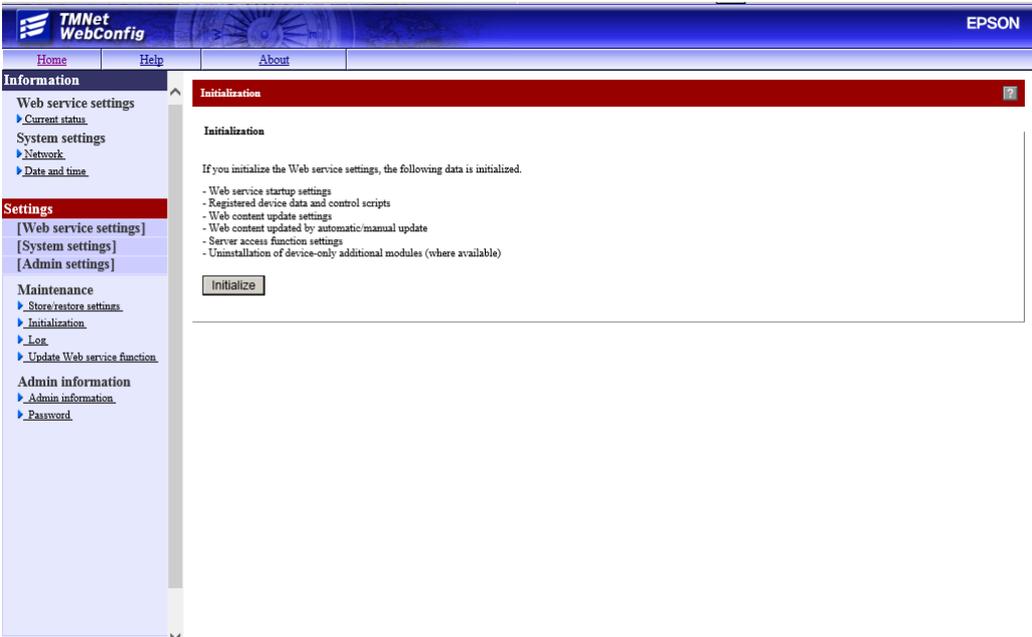
Item		Availability	
Startup settings		Available	
Registered device	Printer	<ul style="list-style-type: none"> • Device ID • Model no. • IP address • Retry interval 	Available
	Customer display	<ul style="list-style-type: none"> • Do not use / Use • Communication settings <ul style="list-style-type: none"> * Communication speed * Data bit * Parity • Brightness setting 	Available
	Key input device	<ul style="list-style-type: none"> • Device ID • Device name • VID/PID • Control script 	Available
	Serial communication device	<ul style="list-style-type: none"> • Device ID • Device name • VID/PID • Control script • Communication settings <ul style="list-style-type: none"> * Communication speed * Data bit * Parity * Stop bit * Flow control 	Available
	Other device	<ul style="list-style-type: none"> • Device ID • Control script 	Available
Control script		<ul style="list-style-type: none"> • Registered control scripts 	Available
Web content	Automatic update settings	<ul style="list-style-type: none"> • Update schedule • File URL • Use of proxy • Proxy URL and port no. 	Available

Item			Availability
Server access	Server direct print	<ul style="list-style-type: none"> • ID • Password • URL • Interval 	Available
	Status notification	<ul style="list-style-type: none"> • ID • Password • URL • Interval 	Available
Wired LAN	TCP/IP Settings (Wired)	<ul style="list-style-type: none"> • Get IP Address • IP address • Subnet Mask • Default Gateway • Acquire DNS Server Address Automatically • DNS Server Address 	Available
Wireless LAN	Wireless Setting	<ul style="list-style-type: none"> • Network Mode • SSID • Authentication Method • Security Mode • Default WEP Key • WEP Key • WPA/WPA2 Pre-Shared Key 	Available
	TCP/IP Settings (Wireless)	<ul style="list-style-type: none"> • Get IP Address • IP address • Subnet Mask • Default Gateway • Acquire DNS Server Address Automatically • DNS Server Address 	Available
Security	SSL Settings	<ul style="list-style-type: none"> • Disable • Enable <ul style="list-style-type: none"> * Private key file * Certificate file * Certificate chain file (Option) 	Available
Date Time	Time Setting	<ul style="list-style-type: none"> • Date time 	Not available
		<ul style="list-style-type: none"> • Time Zone • Automatically adjust clock for Daylight Saving Time • Use Time Server • Time Server 	Available

Item			Availability
Power	Shutdown settings	<ul style="list-style-type: none"> • When the power button is pressed • Shutdown permission • Password protection 	Available
Maintenance	Save/restore settings	<ul style="list-style-type: none"> • Specify the local file to use/Specify the file URL to use • Setting file URL • Use of proxy • Proxy URL and port no. 	Available
	Update Web service function	<ul style="list-style-type: none"> • Specify the local file to use/Specify the file URL to use • Setting file URL • Use of proxy • Proxy URL and port no. 	Available
Admin Information	Administrator information	<ul style="list-style-type: none"> • Administrator name • Installation location 	Available
	Password	<ul style="list-style-type: none"> • Password 	Not available

Settings - Admin settings - Initialization

Initializes the Web service settings for this product.

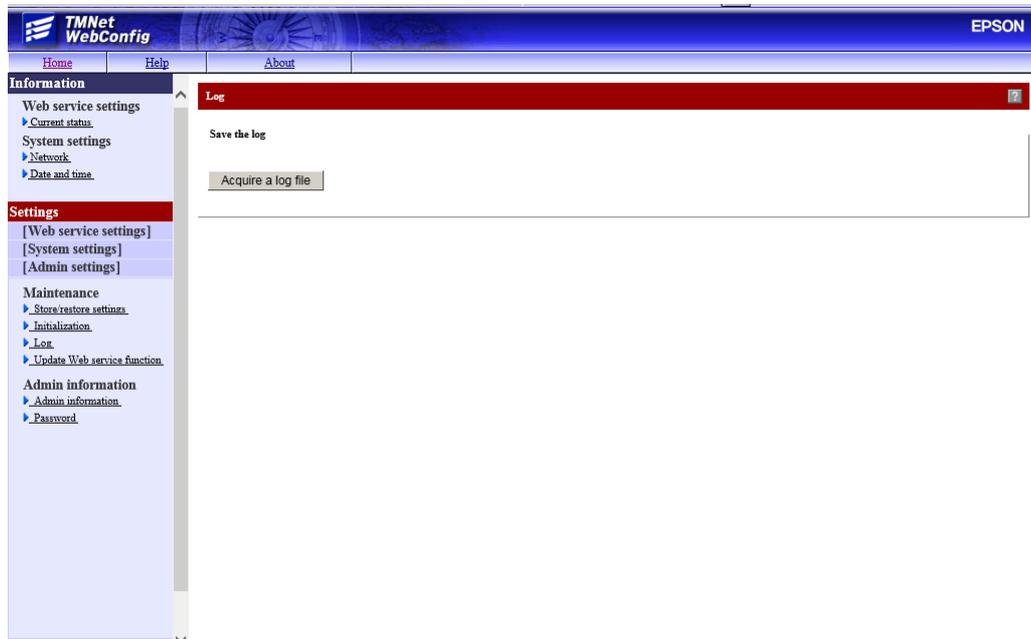


Item	Description
Initialize	Initializes the Web service settings.

CAUTION If you initialize the Web service, the password for EPSON TMNet WebConfig will also be initialized.
The initial values are below.
User name: epson
Password: epson

Settings - Admin settings - Log

Acquires this product's log file.



Item	Description
Acquire a log file	Acquires this product's log file.

Settings - Admin settings - Update Web service function

Updates the Web service function used in this product.

Item		Description
Specify a local file	Update file	Specify the local file for updating.
Specify a file URL	Update file URL	Specify the URL of the file for updating.
	Use of proxy	Set whether you are using a proxy server or not.
	Proxy URL and port no.	Set the proxy URL and port number.
Update		Applies the update file.
Save URL settings		Saves the URL settings for the Web service function.

Settings - Admin settings - Admin information

Sets the administrator information for this product.

The screenshot shows the TMNet WebConfig interface. The top navigation bar includes 'Home', 'Help', and 'About'. The left sidebar contains a tree view with categories: Information, Settings, Maintenance, and Admin information. The 'Admin information' category is expanded, showing 'Admin information' and 'Password'. The main content area is titled 'Administrator information' and contains a table with two columns: 'Item' and 'Set value'. The table has two rows: 'Administrator name' and 'Installation location'. Below the table is an 'Apply' button.

Item	Description
Administrator name	Set the administrator name.
Installation location	Set the installation location.
Apply	Registers the settings to this product.

Settings - Admin settings - Password

Sets the password for this utility.

Item	Set value
Old password	<input type="text"/>
New password	<input type="text"/>
New password (Reenter to confirm)	<input type="text"/>

Item	Description
Old password	Input the current password.
New password	Input the new password.
New password (Reenter to confirm)	For confirmation, input the new password again.
Apply	Registers the set password on this product.

CAUTION

After setting the password, you will be asked for your user name and password on the certification screen displayed when this utility starts. Input "epson" for the user name and input the set password for the password. The initial value for the password is "epson".

TM-H6000IV Utility

This TM-H6000IV Utility is provided as a utility for setting this product's printer. You can set the following.

- Storing Logos
- Paper Reduction settings
- Automatic Paper Cut settings
- Printing Control settings
- Communication Interface settings
- Backup / Restore

For details about how to use TM-H6000IV Utility, refer to the TM-H6000IV User's Manual.

Application Development Information

This chapter explains the control method for printers and necessary information for developing applications that use this product.

Development Information for Each System

TM-H6000IV-DT application development information varies based on the system.

- PC-POS System
- ePOS-Device API
- ePOS-Device XML
- Server Direct Print
- Virtual environments system

Download

Drivers, utilities, and manuals can be downloaded from one of the following URLs.

For customers in North America, go to the following web site:

<http://www.epsonexpert.com/> and follow the on-screen instructions.

For customers in other countries, go to the following web site:

<https://download.epson-biz.com/?service=pos>

PC-POS System Development Information

This system uses the same development environment as a Windows computer.

Interfaces and External Devices

Category	Device	Interface	Description
Printer	TM-H6000IV-DT (This product's printer)	USB	Recognized as a USB-connection TM-H6000IV.
	TM printer	USB	TM printer connected to this product via an USB interface.
	TM printer	network	TM printer connected to the same network as this product.
Cash drawer	-	Drawer	Recognized as connected to this TM-H6000IV-DT.
Customer display	DM-D110-USB	COM7 *	Optional customer display. Although you connect this to a USB connector, a virtual COM port is used for communication.
USB communication device	Barcode reader, etc.	USB	For more on settings, refer to each device's manual.
Serial communication device	-	COM4	For more on settings, refer to each device's manual. By using COM-USB conversion cables and drivers, you can connect multiple devices via USB.
Display	-	VGA Displaypor	Used in operating the application. For more on settings, refer to each device's manual.

* This is a setting for when another USB-serial conversion device is not connected. If you connect a USB-serial conversion device, a COM port is assigned to that device for each connection. Refer to the Windows Device Manager for accurate information regarding ports.

Control Method for Devices

The followings are methods for controlling devices.

- ESC/POS command:
This can control the EPSON TM printer, cash drawer, and customer display. (For details, refer to "[ESC/POS command](#)" on page 160.)
- APD4 (Windows printer driver):
This driver can control TM printers controlled by TM-H6000IV-DT, cash drawers, and customer displays.
The Status API (Epson original DLL) that monitors printer status and sends ESC/POS commands is also attached to this driver.
- OPOS ADK:
This OCX driver can control POS peripherals using OLE technology*1. Because controlling POS peripherals with original commands is not required on the application side, efficient system development is possible.
- OPOS ADK for .NET:
OPOS ADK for .NET allows you to develop applications that are compatible with Microsoft POS for .NET. When developing applications, use a separate development environment such as Microsoft Visual Studio .NET.

*1: OLE technology developed by Microsoft divides software into part blocks. The OPOS driver is presupposed to be used with a development environment such as Visual Basic, unlike ordinary Windows drivers. It is not a driver to be used for printing from commercial applications.

ESC/POS command

ESC/POS is the Epson original printer command system. With ESC/POS commands, you can directly control all the TM printer functions, but detailed knowledge of printer specifications or combination of commands is required.

For information about ESC/POS commands, see the ESC/POS Application Programming Guide. You need a non-disclosure agreement with Epson to get the guide. Contact your dealer for more details.

The ESC/POS command functions are listed below.

ESC/POS command functions

Commands	Active sheet	Roll paper	Slip paper		
			Front	Endorsement 40 cpl mode disabled	40 cpl mode enabled
Print commands					
Print and line feed	✓	✓	✓	✓	✓
Print and carriage return	✓	✓	✓	✓	✓
Print and feed paper	✓	✓	✓	✓	✓
Print and reverse feed		✓	✓	✓	✓
Print and feed <i>n</i> lines	✓	✓	✓	✓	✓
Print and reverse feed <i>n</i> lines		✓	✓	✓	✓
Print and eject cut sheet		✓	✓	✓	✓
Print and return to standard mode	✓	✓			
Print data in page mode	✓	✓			
Line spacing commands					
Select default line spacing	✓	✓	✓		
Set line spacing	✓	✓	✓		
Character commands					
Select character code table	✓	✓	✓	✓	✓
Select an international character set	✓	✓	✓	✓	✓
Set right-side character spacing	✓	✓	✓	✓	✓
Select print mode(s)	✓	✓	✓	✓	

Turn underline mode on/off	✓	✓	✓	
Turn emphasized mode on/off	✓	✓	✓	
Select character font	✓	✓	✓	
Select character size	✓	✓	✓	
Turn smoothing mode on/off	✓			
Turn double-strike mode on/off	✓	✓	✓	
Turn upside-down print mode on/off	✓	✓	✓	✓
Turn 90° clockwise rotation mode on/off	✓	✓*1	✓*1	
Turn white/black reverse print mode on/off	✓			
Select/cancel user-defined character set	✓	✓	✓	
Define user-defined characters	✓	✓	✓	
Cancel user-defined characters	✓	✓	✓	
Cancel print data in page mode	✓	✓		
Printing paper commands				
Select the side of the slip		✓	✓	✓
Feed to the print starting position for the slip		✓	✓	✓
Select paper type(s) for printing	✓	✓	✓	✓
Select paper type(s) for command settings	✓	✓	✓	✓
Set cut sheet wait time	✓	✓	✓	✓
Panel button commands				
Enable/disable panel buttons	✓	✓	✓	✓
Paper sensor commands				
Select paper sensor(s) to stop printing	✓	✓	✓	✓
Select paper sensor(s) to output paper-end signals	✓	✓	✓	✓
Print position commands				
Horizontal tab	✓	✓	✓	✓
Set horizontal tab positions	✓	✓	✓	✓

Set left margin	✓	✓	✓	
Set print area width	✓	✓	✓	✓*2
Select justification	✓	✓	✓	
Set absolute print position	✓	✓	✓	✓
Set relative print position	✓	✓	✓	
Set print position to the beginning of print line	✓	✓	✓	✓
Set print area in page mode	✓	✓		
Select print direction in page mode	✓	✓		
Set absolute vertical print position in page mode	✓	✓		
Set relative vertical print position in page mode	✓	✓		
Bit image commands				
Transmit the NV graphic memory capacity	✓	✓		
Print the graphics data in the print buffer	✓			
Transmit the remaining capacity of the NV graphics memory	✓	✓		
Transmit the remaining capacity of the download graphics memory	✓	✓	✓	✓
Transmit the key code list for defined NV graphics	✓	✓		
Delete all NV graphics data	✓	✓		
Delete the specified NV graphics data	✓	✓		
Define the NV graphics data (raster format)	✓	✓		
Print the specified NV graphics data	✓	✓		
Transmit the key code list for defined download graphics	✓	✓		
Delete all download graphics data	✓	✓		
Delete the specified download graphics data	✓	✓		

Define the NV graphics data (raster format)	✓	✓		
Print the specified download graphics data	✓	✓		
Store the graphics data in the print buffer (raster format)	✓			
Specify Windows BMP NV graphics data	✓			
Specify Windows BMP download graphics data	✓			
Select bit-image mode	✓	✓	✓	✓
Status commands				
Enable/disable Automatic Status Back (ASB)	✓	✓	✓	✓
Customize ASB-status bits	✓	✓	✓	✓
Transmit status	✓	✓	✓	✓
Transmit real-time status	✓	✓	✓	✓
Enable/disable Automatic Status Back (ASB) for optional functions (extended status)	✓	✓	✓	✓
Barcode commands				
Print barcode	✓	✓*3		
Set barcode height	✓	✓	✓	✓
Set barcode width	✓	✓	✓	✓
Select print position of HRI characters	✓	✓	✓	✓
Select font for HRI characters	✓	✓	✓	✓
Two-dimensional code commands				
PDF417: Set the number of columns in the data region	✓			
PDF417: Set the number of rows	✓			
PDF417: Set the width of the module	✓			
PDF417: Set the row height	✓			
PDF417: Set the error correction level	✓			

PDF417: Select the options	✓			
PDF417: Store the data in the symbol storage area	✓			
PDF417: Print the symbol data in the symbol storage area	✓			
PDF417: Transmit the size information of the symbol data in the symbol storage area	✓			
QR Code: Select the model	✓			
QR Code: Set the size of the module	✓			
QR Code: Set the error correction level	✓			
QR Code: Store the data in the symbol storage area	✓			
QR Code: Print the symbol data in the symbol storage data area	✓			
QR Code: Transmit the size information of the symbol data in the symbol storage area	✓			
MaxiCode: Select the mode	✓			
MaxiCode: Store the data in the symbol storage area	✓			
MaxiCode: Print the symbol data in the symbol storage area	✓			
MaxiCode: Transmit the size information of the symbol data in the symbol storage area	✓			
Two-dimensional GS1 DataBar: Set the width of module	✓			
Two-dimensional GS1 DataBar: Set the maximum width of GS1 DataBar Expanded Stacked	✓			
Two-dimensional GS1 DataBar: Store the data in the symbol storage area	✓			
Two-dimensional GS1 DataBar: Print the symbol data in the symbol storage area	✓			

Two-dimensional GS1 DataBar: Transmit the size information of the symbol data in the symbol storage area	✓			
Composite Symbology: Set the width of module	✓			
Composite Symbology: Set the maximum width of GS1 DataBar Expanded Stacked	✓			
Composite Symbology: Select font for HRI characters	✓			
Composite Symbology: Store the data in the symbol storage area	✓			
Composite Symbology: Print the symbol data in the symbol storage area	✓			
Composite Symbology: Transmit the size information of the symbol data in the symbol storage area	✓			
Macro function commands				
Start/end macro definition	✓	✓	✓	✓
Execute macro	✓	✓	✓	✓
Mechanism control commands				
Turn unidirectional print mode on/off	✓	✓	✓	✓
Return home		✓	✓	✓
Set/cancel cut sheet reverse eject	✓	✓	✓	✓
Release paper	✓	✓	✓	✓
Select cut mode and cut paper	✓			
Customized commands				
Change into the user setting mode	✓	✓	✓	✓
End the user setting mode session	✓	✓	✓	✓
Change the setting of the memory switch	✓	✓	✓	✓
Transmit the setting of the memory switch	✓	✓	✓	✓
Set the customized setting values	✓	✓	✓	✓

Transmit the customized setting values	✓	✓	✓	✓
Set the transmission conditions for the serial interface	✓	✓	✓	✓
Transmit the transmission conditions for the serial interface	✓	✓	✓	✓
Save the setting values from the work area into the storage area	✓	✓	✓	✓
Load the setting values stored in the storage area to the work area	✓	✓	✓	✓
Select the setting values loaded to the work area after the initialization process	✓	✓	✓	✓
Delete the specified record	✓	✓	✓	✓
Store the data in the specified record	✓	✓	✓	✓
Transmit the data in the specified record	✓	✓	✓	✓
Transmit capacity of the NV user memory currently being used	✓	✓	✓	✓
Transmit the remaining capacity of the NV user memory	✓	✓	✓	✓
Transmit the key code list	✓	✓	✓	✓
Delete all data in the NV user memory	✓	✓	✓	✓
Set 40 cpl mode	✓	✓	✓	✓
Miscellaneous commands				
Initialize printer	✓	✓	✓	✓
Transmit printer ID	✓	✓	✓	✓
Set horizontal and vertical motion units	✓	✓	✓	✓*2
Select peripheral device	✓	✓	✓	✓
Generate pulse	✓	✓	✓	✓
Generate pulse in real time	✓	✓	✓	✓
Execute power-off sequence	✓	✓	✓	✓
Clear buffer(s)	✓	✓	✓	✓
Enable/disable real-time command	✓	✓	✓	✓
Send real-time request to printer	✓	✓	✓	✓

Select page mode	✓	✓		
Select double-density page mode		✓		
Select standard mode	✓	✓		
Enable/disable transmission of paper status	✓	✓	✓	✓
Execute test print	✓	✓	✓	✓
Select the print speed	✓	✓	✓	✓
Initialize maintenance counter	✓	✓	✓	✓
Transmit maintenance counter	✓	✓	✓	✓
Receipt enhancement commands				
Cancel set values for top/bottom logo printing	✓	✓	✓	✓
Transmit set values for top/bottom logo printing	✓	✓	✓	✓
Set top logo printing	✓	✓	✓	✓
Set bottom logo printing	✓	✓	✓	✓
Make extended settings for top/bottom logo printing	✓	✓	✓	✓
Enable/disable top/bottom logo printing	✓	✓	✓	✓
MICR control commands				
Transmit real-time status	✓	✓	✓	✓
Select MICR data handling	✓	✓	✓	✓
Read check paper	✓	✓	✓	✓
Load check paper to print starting position	✓	✓	✓	✓
Eject check paper	✓	✓	✓	✓
Request retransmission of check paper reading result	✓	✓	✓	✓
Clean MICR mechanism	✓	✓	✓	✓

*1: Available only for Font A and multi-byte code characters

*2: Fixed value

*3: Only for standard mode

Software

The following softwares are provided for application development.

Software

Software	Manual
<p>EPSON Advanced Printer Driver Ver.4.55 (APD4): This driver is the Windows printer driver for TM printers and customer displays controlled by TM-H6000IV-DT.</p>	<ul style="list-style-type: none"> • APD Install Manual • APD TM/BA/EU Printer Manual • APD Printer Specification • Status API Manual • Devmode API/PRINTERINFO Manual • Sample Program Guide
<p>EPSON OPOS ADK: This OCX driver can control POS peripherals using OLE technology*1. Because controlling POS peripherals with original commands is not required on the application side, efficient system development is possible.</p>	<ul style="list-style-type: none"> • Installation Manual • User's Guide • Application Development Guide • OPOS Application Programming Guide*2 • UnifiedPOS Retail Peripheral Architecture*2 • Sample Program Guide
<p>EPSON OPOS ADK for .NET: OPOS ADK for .NET is a Microsoft POS for .NET compliant business standard driver that allows you to develop applications that are compatible with UPOS (UnifiedPOS). When developing applications, use a separate development environment such as Microsoft Visual Studio .NET.</p>	<ul style="list-style-type: none"> • Installation Guide • User's Guide • UnifiedPOS Retail Peripheral Architecture*2 • Application Development Guide

Software	Manual
<p>EPSON JavaPOS ADK</p> <p>JavaPOS is the standard specification which defines an architecture and device interface (API) to access various POS devices from a Java based system. Using JavaPOS standard API allows control with Javabased applications of functions inherent to each device. A flexible design with Java language and JavaPOS enables many different types of computer systems, such as stand alone or network configuration, to use a same application. You can use JavaPOS to build applications and drivers independently of platforms. This allows flexible configurations using thin clients to meet the system requirements.</p>	<ul style="list-style-type: none"> • JavaPOS ADK Installation Guide

*1: OLE technology developed by Microsoft divides software into part blocks. The OPOS driver is presupposed to be used with a development environment such as Visual Basic, unlike ordinary Windows drivers. It is not a driver to be used for printing from commercial applications.

*2: This guide describes not only Epson-specific functions, but also general information on how to control printers using the OPOS ADK (in the chapter POS Printer and Appendix).

ePOS-Device API

The following explains the items required to develop a system that uses ePOS-Device API. For details about ePOS-Device API, refer to the ePOS-Device API User's Manual.

NOTE

You can download the latest version of ePOS-Device and update the device.

External Devices

The following is information as of December, 2013. For the latest information, refer to the ePOS-Device API User's Manual.

Printer

- TM-H6000IV-DT: This product's printer
- Network printer: TM printer connected to the same network as this product. Applicable models:
 - TM-H6000IV
 - TM-L90
 - TM-P60II
 - TM-P60II Peeler
 - TM-T20
 - TM-T70
 - TM-T70II
 - TM-T88V
 - TM-T90
 - TM-U220

CAUTION

TM printers connected to this product via USB interface cannot be used.

Cash drawer

Recognized as connected to this product's printer.

Customer display

- DM-D110-USB

CAUTION

Other customer displays connected to this product via USB or serial interface cannot be used.

Key input device

Device with the device control script prepared in advance

- MSR
- Barcode scanner
- USB keyboard device

You must acquire the device control script files for the following devices

- Input device that can operate with the OS standard HID driver

Serial communication device

You must acquire the device control script files for the following devices

- Serial communication device that can operate with the OS standard serial communication driver
(A separate serial-USB conversion driver is necessary.)
- USB devices that can be controlled the same as a serial communication device

Other devices

These can be used if you create a device control script file and register the device.

Application Information

Web applications

Register (install) a Web application (contents) that uses ePOS-Device API in any of the following Web servers.

- TM-H6000IV-DT Web server
- Web server in the network
- Web server via the Internet

If registering a Web application on the TM-H6000IV-DT, use EPSON TMNet WebConfig to register it.

Device control

Specify a device ID for each device. The initial value for the device ID for this product's printer is "local_printer".

You do not need to specify one for DM-D110-USB. Device ID for the dedicated customer display is fixed to "local_display".

Make the device control setting with EPSON TMNet WebConfig.

ePOS-Device XML

The following explains the items required to develop a system that uses ePOS-Device XML. For details about ePOS-Device XML, refer to the ePOS-Device XML User's Manual.

NOTE

You can download the latest version of ePOS-Device and update the device.

External Devices

The following is information as of December, 2013. For the latest information, refer to the ePOS-Device XML User's Manual.

Printer

- TM-H6000IV-DT: This product's printer
- Network printer: TM printer connected to the same network as this product.
Applicable models:
 - TM-H6000IV
 - TM-L90
 - TM-P60II
 - TM-P60II Peeler
 - TM-T20
 - TM-T70
 - TM-T70II
 - TM-T88V
 - TM-T90
 - TM-U220

CAUTION

TM printers connected to this product via USB cannot be used.

Cash drawer

Recognized as connected to this product's printer.

Customer display

- DM-D110-USB

CAUTION

Other customer displays connection to this product via USB or serial cannot be used.

Key input device

Device with the device control script prepared in advance

- MSR
- Barcode scanner
- USB keyboard device

You must acquire the device control script files for the following devices

- Input device that can operate with the OS standard HID driver

Serial communication device

You must acquire the device control script files for the following devices

- Serial communication device that can operate with the OS standard serial communication driver
(A separate serial-USB conversion driver is necessary.)
- USB devices that can be controlled the same as a serial communication device

Other devices

These can be used if you create a device control script file and register the device.

Application Information

Environment that can use socket communication and can handle XML documents

- ❑ Examples: iOS / Android / Windows CE / Windows / Linux / Mac OS, etc.
- ❑ Java, .NET Framework

Device control

Specify a device ID for each device. The initial value for the device ID for this product's printer is "local_printer".

You do not need to specify one for DM-D110-USB. Device ID for the dedicated customer display is fixed to "local_display".

Make the control setting with EPSON TMNet WebConfig.

Server Direct Print

The following explains the items required to develop a system that uses Server Direct Print. For details about Server Direct Print, refer to the Server Direct Print User's Manual.

External Devices

The following is information as of October, 2013. For the latest information, refer to the Server Direct Print User's Manual.

Printer

- TM-H6000IV-DT: This product's printer
- Network printer: TM printer connected to the same network as this product.
Applicable models:
 - TM-H6000IV
 - TM-L90
 - TM-P60II
 - TM-P60II Peeler
 - TM-T20
 - TM-T70
 - TM-T70II
 - TM-T88V
 - TM-T90
 - TM-U220

CAUTION

TM printers connected to this product via USB cannot be used.

Cash drawer

Recognized as connected to this product's printer.

Customer display

Cannot use.

Key input device

Cannot use.

Serial communication device

Cannot use.

Application Information

Web server

If the Web server has acquired a global IP address, data can be acquired and printed from the server at a remote location via Internet.

Web application

In addition to generating print data (no layout required to be set up), your Web application needs a function that, in response to a request from this product, sends back either print data (if any) or a message telling no print data exists.

Registration of web server and timing

In addition to generating print data (no layout required to be set up), your Web application needs a function that, in response to a request from this product, sends back either print data (if any) or a message telling no print data exists.

Device control

Specify a device ID for each device. The initial value for the device ID for this product's printer is "local_printer".

Specify any device ID for a network printer.

Use EPSON TMNet WebConfig for these settings and registration.

Setting/Checking Modes

Besides the ordinary print mode, the printer has the following modes to set or check settings of the printer.

- Self-test Mode
- Hexadecimal Dumping Mode
- NV Graphics Print Mode
- Receipt Enhancement Information Print Mode
- Memory Switch Setting Mode

Self-test Mode

In the self-test mode, the printer prints the current status of the printer (on the roll paper) and resident characters as a test print (roll paper and slip paper).

You can confirm the following information with the status print.

- ROM version
- Interface setting
- Buffer capacity setting
- Busy condition setting
- Automatic line feed setting
- Customer display connection
- Resident character set
- Print density setting
- Installed devices (MICR unit, endorsement printer unit)
- Maintenance information (thermal head, autocutter, impact head, MICR head)
- DIP switch settings

Starting the status print and test print on the roll paper

Follow the steps below to start a status print and test print on the roll paper.

- 1** Install the roll paper.
- 2** Close all covers and the receipt unit.
- 3** Turn on the product while pressing the Feed button. (Keep pressing the button until the printer starts printing.)

The printer starts printing the current status of the printer on the roll paper.

When the printer finishes printing the printer status, the following message is printed and the Paper LED flashes. (The printer is now in the self-test wait mode.)

```
“Select Modes by pressing Feed button.  
Continue SELF-TEST : Less than 1 second  
Mode Selection      : 1 second or more”
```

- 4** To start the test print, press the Feed button (less than 1 second).
The printer prints a rolling pattern on the roll paper, using only the built-in character set.

NOTE

If you select the mode selection, see ["NV Graphics Print Mode" on page 182](#), ["Receipt Enhancement Information Print Mode" on page 184](#), or ["Memory Switch Setting Mode" on page 186](#).

After printing the following message, the printer is initialized and returned to the standard mode.

```
“*** completed ***”
```

Starting the test print on slip paper

Follow the steps below to start a test print on slip paper.

- 1** Close all covers and the receipt unit.
- 2** Turn on the product while pressing the Release button. (Keep pressing the button until the Slip LED starts flashing.)
The printer goes into the slip insertion waiting status.
- 3** Insert slip paper.
The printer prints a rolling pattern on the slip paper, using only the built-in character set.

After printing the following message, the printer is initialized and returned to the standard mode.

*** completed ***

Hexadecimal Dumping Mode

In the hexadecimal dumping mode, the printer prints the data transmitted from a host computer in hexadecimal numbers and their corresponding characters.

Follow the steps below to run this mode.

CAUTION

- If there is no character corresponding to print data, "." is printed.
- If print data is less than one line, press the Feed button to print the line.
- Applications that confirm printer status may not work correctly during the hexadecimal dumping mode. The printer returns only the status for "Transmit real-time status."

- 1 Open the roll paper cover.
- 2 Turn on the product while pressing the Feed button.
- 3 Close the roll paper cover.

The printer starts printing data received from then on in hexadecimal numbers and their corresponding characters.

Print example:

```
Hexadecimal Dump
To terminate hexadecimal dump,
press FEED button three times.

1B 21 00 1B 26 02 40 40 1B 69 . ! . . & . @ @ . i
1B 25 01 1B 63 34 00 1B 30 31 . % . . c 4 . . 0 1
41 42 43 44 45 46 47 48 49 4A A B C D E F G H I J

*** completed ***
```

Turn off the printer or press the Feed button three times to return to the standard mode.

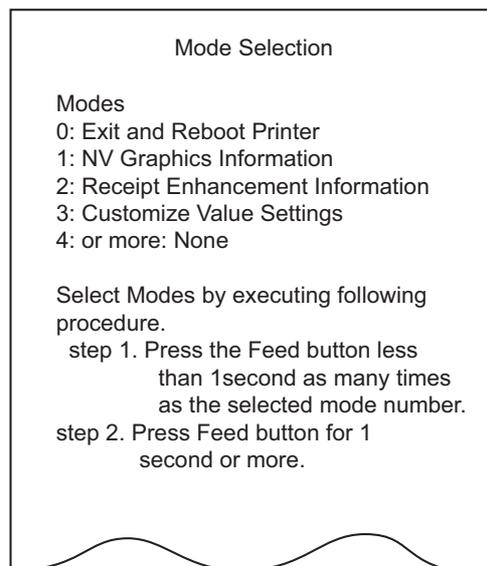
NV Graphics Print Mode

You can confirm the following information by running NV graphics print mode:

- Capacity of the NV graphics
- Used amount of the NV graphics
- Unused capacity of the NV graphics
- Number of NV graphics that are registered
- Key code, number of dots in X direction, number of dots in Y direction, number of colors to be defined.
- NV graphics data

Follow the steps below to run this mode.

- 1** Close all covers and the receipt unit.
- 2** Turn on the product while pressing the Feed button. (Keep pressing the Feed button until the printer starts printing.)
The printer starts printing the current status of the printer.
- 3** After the printing has been completed, press the Feed button (more than one second).
The printer starts printing instructions.



- 4** After the printing has been completed, press the Feed button (less than 1 second).
- 5** Then Press the Feed button (more than one second).
NV Graphics Information is printed.
- 6** Then Press the Feed button (more than one second).

After printing the following message, the printer is initialized and returned to the standard mode.

*** completed ***

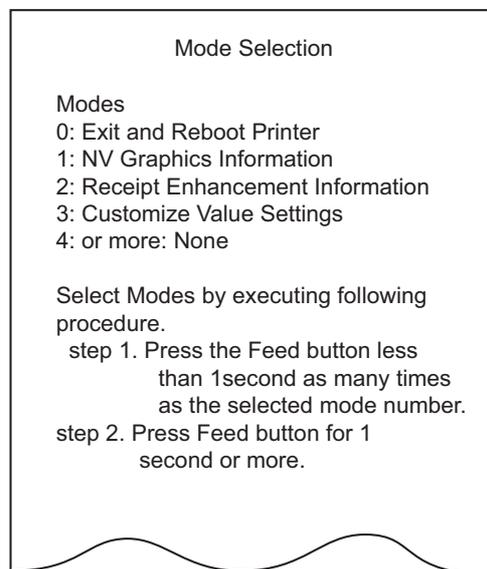
Receipt Enhancement Information Print Mode

You can confirm the following information by running the receipt enhancement (R/E) information mode:

- Automatic top logo setting
- Automatic bottom logo setting
- Extended settings for automatic top/bottom logo

Follow the steps below to run this mode.

- 1** Close the roll paper cover.
- 2** Turn on the product while pressing the Feed button. (Keep pressing the Feed button until the printer starts printing.)
The printer prints the current status of the printer.
- 3** After the printing has been completed, press the Feed button (more than one second).
The printer starts printing instructions.



- 4** After the printing has been completed, press the Feed button twice.
- 5** Then Press the Feed button (more than one second).
Receipt Enhancement Information is printed.
- 6** Then Press the Feed button (more than one second).

After printing the following message, the printer is initialized and returned to the standard mode.

*** completed ***

Memory Switch Setting Mode

You can configure the memory switches of the printer.

- Receipt print density
- Automatic paper reduction
- Roll paper width
- Power supply unit capacity
- Error control
- NV capacity
(User NV memory, NV graphics memory)
- Transmission speed for serial interface
- Autocutting at roll paper cover close
- Interface selection
- Receipt print speed
- Power on notice
- Command execution during offline

NOTE

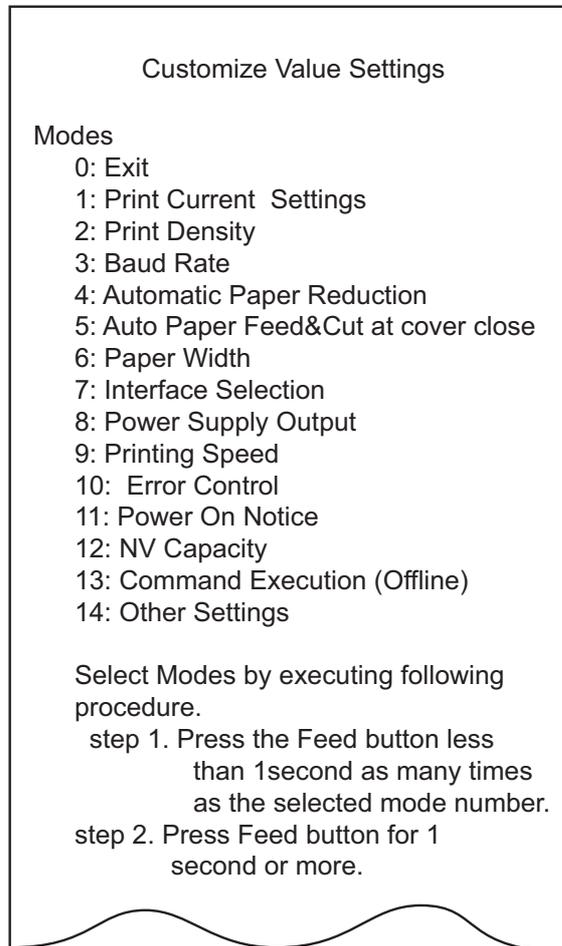
For detailed information about memory switches (customized value), see ["Setting the Memory Switches/Receipt Enhancement"](#) on page 75.

Follow the steps below to run this mode.

- 1** Close the roll paper cover.
- 2** Turn on the product while pressing the Feed button. (Keep pressing the Feed button until the printer starts printing.)
The printer prints current status of the product.

- 3** After the printing has been completed, press the Feed button (more than one second).

The printer starts printing instructions.



- 4** After the printing has been completed, press the Feed button three times.

- 5** Then Press the Feed button (more than one second).

The printer starts printing instructions for settings. Follow the instructions.

After one setting has been completed, the printer stores the setting and then starts initializing. After that, the printer returns to the standard mode.



Handling

This chapter explains how to handle the TM-H6000IV-DT.

Turning Power On/Off

Press the power button to turn on/off the product. You can also turn on the product through the network.

The operating system of the product has a standby mode. The system can be set so that the standby mode can be turned on and off with the power button.

CAUTION

- If you turn the product off, wait more than 10 seconds before you turn it on again.
- When the product is turned off or when it is in the standby mode, do not hold down the power button longer than 4 seconds.

NOTE

Assign the functions to the power button through the operating system or BIOS.

Forced Termination

CAUTION

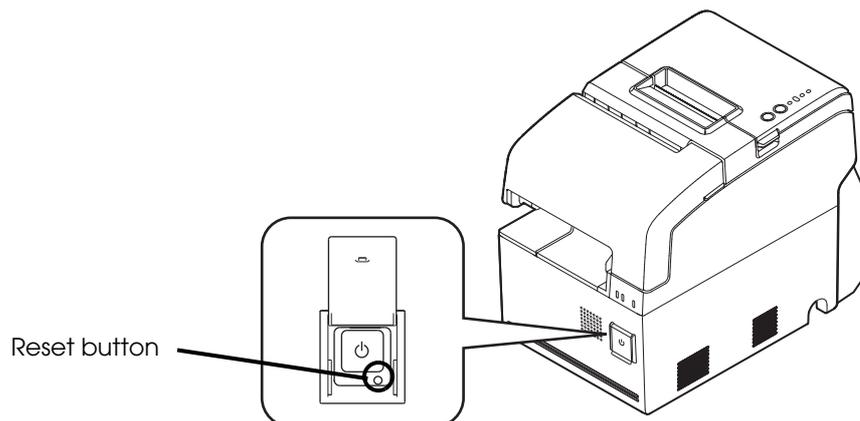
When forced termination is executed, all unsaved data is lost and recovery of the operating system may be required.

If you cannot turn the product off using applications or the operating system, you can execute forced termination as a last resort by pressing the power button for approximately 4 seconds.

Printer Operation

Printer Reset

Keep pressing this button with a pointed object (such as a pen) until the  (Power) LED goes off to reset the printer unit.

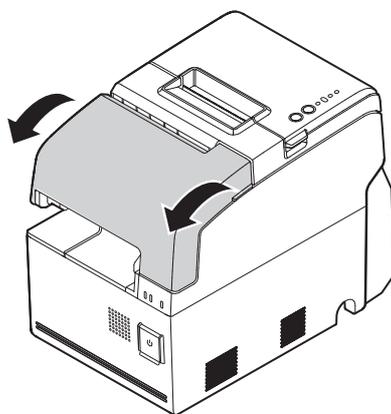


Installing/Replacing the Ribbon Cartridges

For Front Slip Printing

Follow the steps below to install/replace the ribbon cartridge for front slip printing (ERC-32).

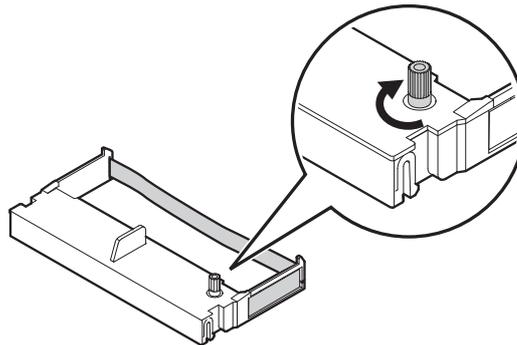
- 1** Turn on the product.
- 2** Open the front cover.



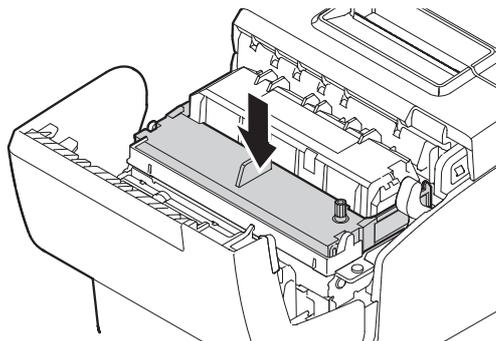
- 3 Remove the used ribbon cartridge, if there is one.
- 4 Turn the knob on the ribbon cartridge a little in the direction of the arrow marked on the cartridge to remove any slack in the ribbon.

CAUTION

Make sure to note the direction of the arrow marked on the ribbon cartridge when turning the knob. If it is turned in the reverse direction, the cartridge may be damaged.



- 5 Insert a new ribbon cartridge until it clicks into place.

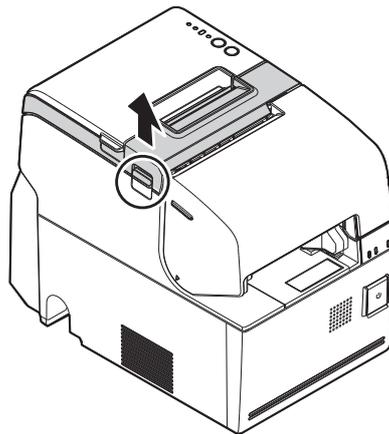


- 6 Turn the knob on the cartridge in the marked direction again to remove any slack in the ribbon.
- 7 Close the front cover.

For Endorsement Printing

Follow the steps below to install/replace the ribbon cartridge for endorsement printing (ERC-43).

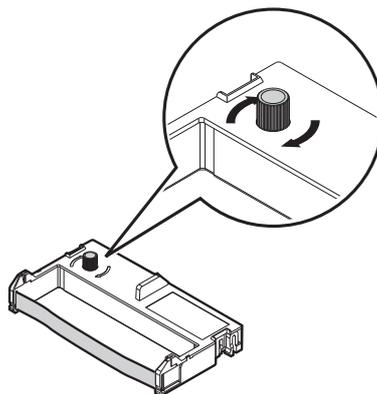
- 1 Turn on the product.
- 2 Open the receipt unit cover.



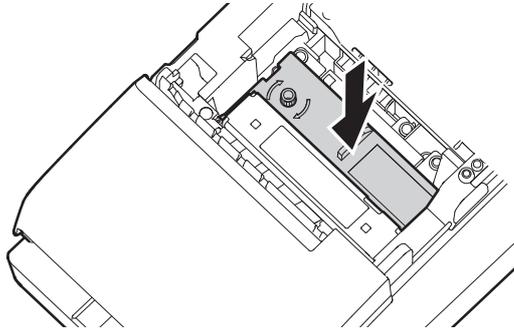
- 3 Remove the used ribbon cartridge, if there is one.
- 4 Turn the knob on the ribbon cartridge a little in the direction of the arrow marked on the cartridge to remove any slack in the ribbon.

CAUTION

Make sure to note the direction of the arrow marked on the ribbon cartridge when turning the knob. If it is turned in the reverse direction, the cartridge may be damaged.



- 5** Insert a new ribbon cartridge until it clicks into place.



- 6** Turn the knob on the cartridge in the marked direction again to remove any slack in the ribbon.
- 7** Close the receipt unit cover.

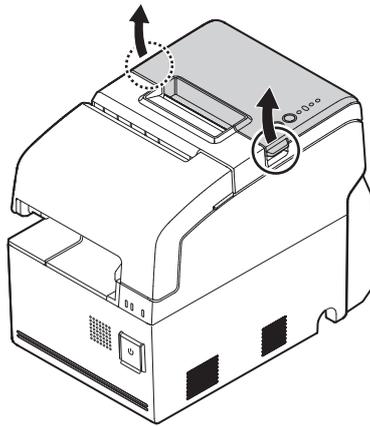
Loading/Replacing the Roll Paper

Follow the steps below to load/replace the roll paper.

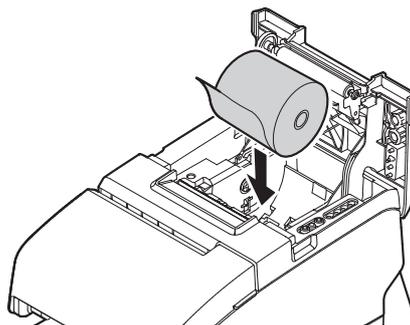
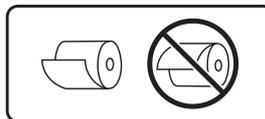
CAUTION

Paper must not be pasted to the roll paper core.

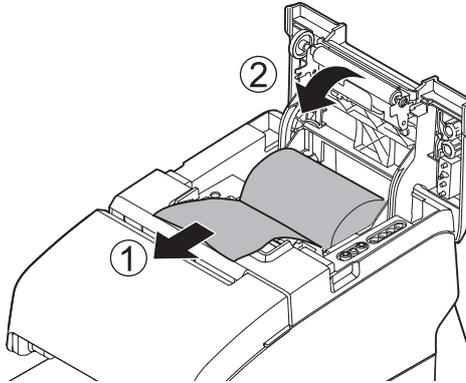
- 1 Open the roll paper cover.



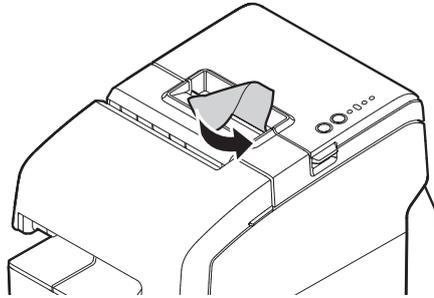
- 2 Remove the used roll paper core, if there is one.
- 3 Insert the roll paper in the correct direction.



- 4** Pull out some paper, and close the roll paper cover.



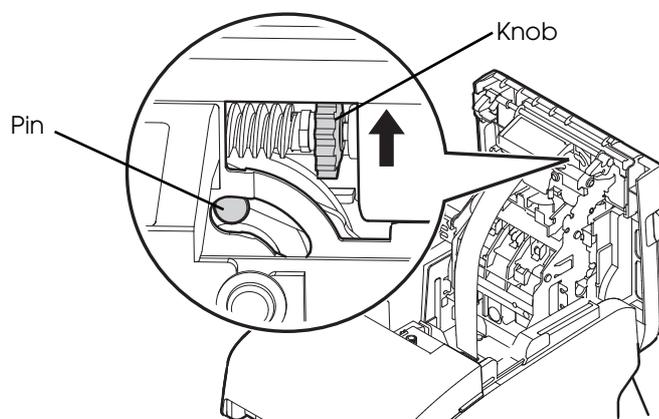
- 5** Tear off the paper with the cutter.



The roll paper cover will not open (the autocutter blade is locked)

Follow the steps below to return the autocutter blade to the correct position.

- 1** Turn off the product.
- 2** Open the receipt unit cover.
- 3** Turn the knob (indicated as a in the illustration) of the autocutter blade in the direction of the arrow until you see a pin (indicated as b in the illustration) in the opening of the frame.



Inserting the Slip Paper

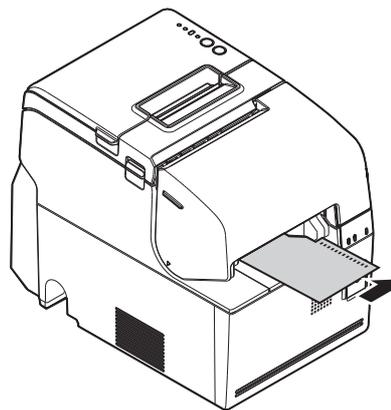
When printing on the slip paper, follow the steps below to insert the slip paper.

MICR reading is available by inserting the paper so that the MICR characters on the paper are on the right side.

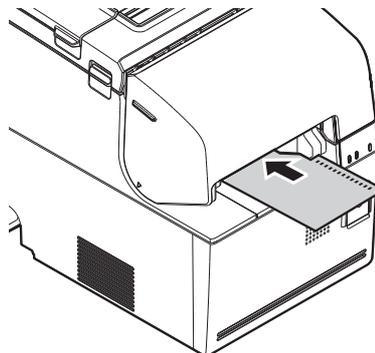
CAUTION

- Do not insert any paper that has clips or staples. This may cause paper jams and damage.
- Make sure the slip paper is flat, without curls, folds, or wrinkles.
- For MICR reading, use the slip paper of 12 cm {4.72"} long or more.

- 1** Turn on the product.
- 2** Insert the slip paper face up with the right paper edge against the right side of the paper guide, and insert it as far as it will go.

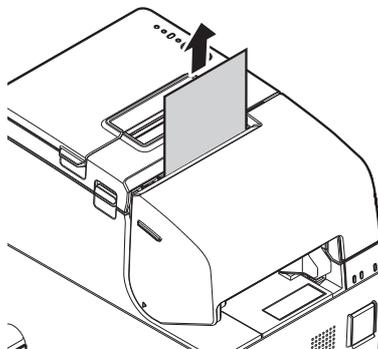


- 3** Insert the paper straight until the top edge of the paper touches the stopper.



4 When the product starts feeding the paper, release it immediately.

5 Remove the ejected paper by pulling it straight up out of the product.



Removing Jammed Paper

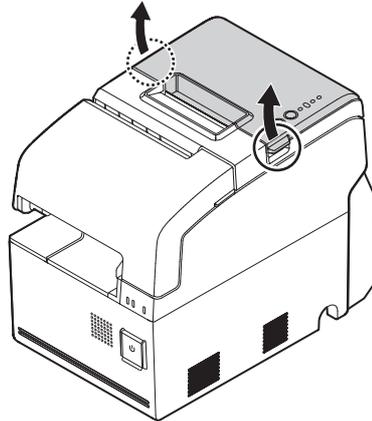
Follow the steps below to remove the jammed paper.



The thermal head can be very hot after printing. Be careful not to touch it and to let it cool before you clean it.

Removing Jammed Roll Paper

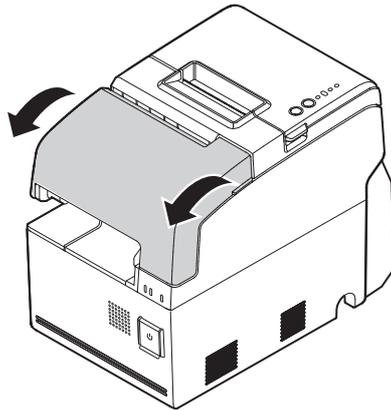
- 1 Turn off the product.
- 2 Open the roll paper cover.



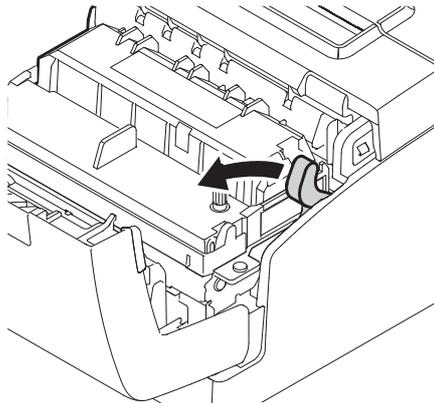
- 3 Remove the jammed paper.

Removing Jammed Slip Paper

- 1** Turn off the product.
- 2** Open the front cover.



- 3** Open the front carriage unit using the lever at the right of it.



- 4** Remove the jammed paper.

Controlling the Speaker Volume

You can control the speaker volume through the operating system of the computer.

Cleaning

Cleaning the Product Case

Be sure to turn off the product, and wipe the dirt off the product case with a dry cloth or a damp cloth.

CAUTION

Never clean the product with alcohol, benzine, thinner, or other such solvents. Doing so may damage or break the parts made of plastic and rubber.

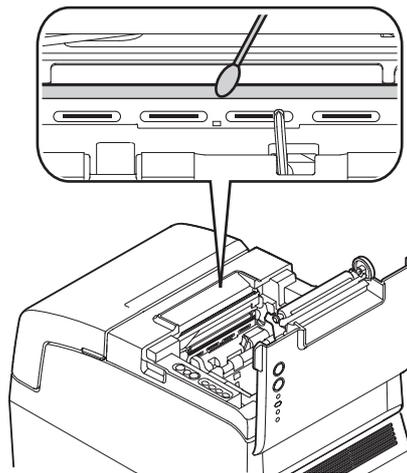
Cleaning the Thermal Head

To maintain receipt print quality, Epson recommends cleaning the thermal head periodically (generally every 3 months) by following the steps below.



- The thermal head can be very hot after printing. Be careful not to touch it and to let it cool before you clean it.
- Do not damage the thermal head by touching it with your fingers or any hard object.

- 1 Turn off the product.
- 2 Open the roll paper cover.
- 3 Clean the thermal elements of the thermal head with a cotton swab moistened with an alcohol solvent (ethanol or IPA).



Depending on the roll paper used, paper dust may stick to the platen roller and roll paper end sensor. To remove the paper dust, clean the platen roller and roll paper end sensor with a cotton swab slightly moistened with water. Turn on the printer power only after the water has completely dried.

Cleaning the MICR Head

When the MICR head becomes dirty, the printer cannot read MICR characters normally. Approximately every year, clean the MICR head with the following or an equivalent commercially available cleaning sheet:

KIC Products “Waffletechnology® MICR cleaning card”

CAUTION

- Be sure not to use an adhesive cleaning sheet.
- Be sure that the cleaning sheet is inserted with the correct side up and in the correct direction.
- Use a cleaning sheet only one time; then discard it.

NOTE

You can also perform MICR head cleaning with the TM-H6000IV Utility. For detailed information about the TM-H6000IV Utility, see the TM-H6000IV Utility User’s Manual.

- 1 Make sure the roll paper is installed correctly and the product is turned off.
- 2 Open the roll paper cover.
- 3 While holding down the Release button, turn on the printer.
- 4 Press the release button 7 times; then close the roll paper cover.
- 5 After the product prints “*****RECOGNITION MODE***** **Please set check.**” on the roll paper and the slip LED flashes, insert the cleaning sheet like standard slip paper.
See ["Inserting the Slip Paper" on page 197.](#)
- 6 Remove the ejected paper by pulling it straight up out of the product.
- 7 Turn off the product to exit the cleaning mode.

Preparing for Transport

Follow the steps below to transport the product.

- 1** Turn off the product.
- 2** Remove the peripherals and the power connector.
- 3** Remove the roll paper.
- 4** Pack the product upright.

Appendix

Character Code Tables

CAUTION

- The character code tables show only character configurations. They do not show the actual print pattern.
- “SP” in the table shows a space.

Common to All Pages

When the international character set (See "[International Character Sets](#)" on page 219.) is USA:

HEX	0	1	2	3	4	5	6	7
0	NUL 0	DLE 16	SP 32	0 48	@ 64	P 80	~ 96	p 112
1		XON 17	! 33	1 49	A 65	Q 81	a 97	q 113
2			" 34	2 50	B 66	R 82	b 98	r 114
3		XOFF 19	# 35	3 51	C 67	S 83	c 99	s 115
4	EOT 4	DC4 20	\$ 36	4 52	D 68	T 84	d 100	t 116
5	ENQ 5	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
6	ACK 6		& 38	6 54	F 70	V 86	f 102	v 118
7			' 39	7 55	G 71	W 87	g 103	w 119
8		CAN 24	(40	8 56	H 72	X 88	h 104	x 120
9	HT 9		) 41	9 57	I 73	Y 89	i 105	y 121
A	LF 10		* 42	: 58	J 74	Z 90	j 106	z 122
B		ESC 27	+ 43	; 59	K 75	[91	k 107	{ 123
C	FF 12	FS 28	, 44	< 60	L 76	\ 92	l 108	| 124
D	CR 13	GS 29	- 45	= 61	M 77	] 93	m 109	} 125
E		RS 30	. 46	> 62	N 78	^ 94	n 110	~ 126
F			/ 47	? 63	O 79	_ 95	o 111	SP 127

Page 0 (PC437: USA, Standard Europe)

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	á <small>160</small>	☼ <small>176</small>	Ł <small>192</small>	⋈ <small>208</small>	α <small>224</small>	≡ <small>240</small>
1	Ü <small>129</small>	æ <small>145</small>	í <small>161</small>	☼ <small>177</small>	Ł <small>193</small>	⋈ <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	Æ <small>146</small>	ó <small>162</small>	☼ <small>178</small>	τ <small>194</small>	π <small>210</small>	Γ <small>226</small>	≥ <small>242</small>
3	â <small>131</small>	ô <small>147</small>	ú <small>163</small>	ı <small>179</small>	† <small>195</small>	⋈ <small>211</small>	π <small>227</small>	≤ <small>243</small>
4	ä <small>132</small>	ö <small>148</small>	ñ <small>164</small>	† <small>180</small>	- <small>196</small>	Ł <small>212</small>	Σ <small>228</small>	ƒ <small>244</small>
5	à <small>133</small>	ò <small>149</small>	Ñ <small>165</small>	† <small>181</small>	† <small>197</small>	F <small>213</small>	σ <small>229</small>	J <small>245</small>
6	ã <small>134</small>	û <small>150</small>	ä <small>166</small>	|| <small>182</small>	† <small>198</small>	π <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	o <small>167</small>	π <small>183</small>	|| <small>199</small>	⋈ <small>215</small>	τ <small>231</small>	≈ <small>247</small>
8	ê <small>136</small>	ÿ <small>152</small>	¿ <small>168</small>	ƒ <small>184</small>	Ł <small>200</small>	† <small>216</small>	φ <small>232</small>	° <small>248</small>
9	ë <small>137</small>	ö <small>153</small>	ƒ <small>169</small>	|| <small>185</small>	ƒ <small>201</small>	J <small>217</small>	θ <small>233</small>	• <small>249</small>
A	è <small>138</small>	ü <small>154</small>	ƒ <small>170</small>	|| <small>186</small>	⋈ <small>202</small>	ƒ <small>218</small>	Ω <small>234</small>	• <small>250</small>
B	ï <small>139</small>	ϕ <small>155</small>	½ <small>171</small>	π <small>187</small>	⋈ <small>203</small>	■ <small>219</small>	δ <small>235</small>	√ <small>251</small>
C	î <small>140</small>	£ <small>156</small>	¼ <small>172</small>	⋈ <small>188</small>	|| <small>204</small>	■ <small>220</small>	ω <small>236</small>	n <small>252</small>
D	ì <small>141</small>	¥ <small>157</small>	ı <small>173</small>	⋈ <small>189</small>	= <small>205</small>	ı <small>221</small>	φ <small>237</small>	² <small>253</small>
E	Ä <small>142</small>	ƒ <small>158</small>	« <small>174</small>	J <small>190</small>	|| <small>206</small>	ı <small>222</small>	ε <small>238</small>	■ <small>254</small>
F	Å <small>143</small>	f <small>159</small>	» <small>175</small>	ı <small>191</small>	⋈ <small>207</small>	■ <small>223</small>	∩ <small>239</small>	SP <small>255</small>

HEX	8	9	A	B	C	D	E	F
0	ー 128	⊥ 144	SP 160	ー 176	タ 192	ミ 208	ニ 224	× 240
1	ー 129	〒 145	。 161	ア 177	チ 193	ム 209	ト 225	円 241
2	■ 130	† 146	「 162	イ 178	ツ 194	メ 210	キ 226	年 242
3	■ 131	† 147	」 163	ウ 179	テ 195	モ 211	ト 227	月 243
4	■ 132	ー 148	、 164	エ 180	ト 196	ヤ 212	▲ 228	日 244
5	■ 133	ー 149	・ 165	オ 181	ナ 197	ユ 213	▲ 229	時 245
6	■ 134	丨 150	ヲ 166	カ 182	ニ 198	ヨ 214	▼ 230	分 246
7	■ 135	丨 151	ア 167	キ 183	ヌ 199	ラ 215	▼ 231	秒 247
8	丨 136	「 152	イ 168	ク 184	ネ 200	リ 216	♠ 232	〒 248
9	丨 137	〒 153	ウ 169	ケ 185	ノ 201	ル 217	♥ 233	市 249
A	丨 138	⌒ 154	エ 170	コ 186	ハ 202	レ 218	♦ 234	区 250
B	丨 139	」 155	オ 171	サ 187	ヒ 203	ロ 219	♣ 235	町 251
C	■ 140	「 156	ヤ 172	シ 188	フ 204	ワ 220	● 236	村 252
D	■ 141	ゝ 157	ユ 173	ス 189	ヘ 205	ン 221	〇 237	人 253
E	■ 142	ゝ 158	ヨ 174	セ 190	ホ 206	” 222	/ 238	☼ 254
F	† 143	ノ 159	ツ 175	リ 191	マ 207	。 223	＼ 239	SP 255

Page 2 (PC850: Multilingual)

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	á <small>160</small>	☼ <small>176</small>	Ł <small>192</small>	ǫ <small>208</small>	Ó <small>224</small>	- <small>240</small>
1	Ü <small>129</small>	æ <small>145</small>	í <small>161</small>	☼ <small>177</small>	Ł <small>193</small>	Đ <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	Æ <small>146</small>	ó <small>162</small>	☼ <small>178</small>	Т <small>194</small>	Ê <small>210</small>	Ô <small>226</small>	= <small>242</small>
3	â <small>131</small>	ô <small>147</small>	ú <small>163</small>	l <small>179</small>	† <small>195</small>	Ë <small>211</small>	ò <small>227</small>	¼ <small>243</small>
4	ä <small>132</small>	ö <small>148</small>	ñ <small>164</small>	l <small>180</small>	- <small>196</small>	È <small>212</small>	õ <small>228</small>	¶ <small>244</small>
5	à <small>133</small>	ò <small>149</small>	Ñ <small>165</small>	Á <small>181</small>	† <small>197</small>	l <small>213</small>	õ <small>229</small>	§ <small>245</small>
6	ã <small>134</small>	û <small>150</small>	ä <small>166</small>	Â <small>182</small>	ã <small>198</small>	Í <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	o <small>167</small>	À <small>183</small>	Ǻ <small>199</small>	Î <small>215</small>	þ <small>231</small>	· <small>247</small>
8	ê <small>136</small>	ÿ <small>152</small>	¿ <small>168</small>	© <small>184</small>	Ł <small>200</small>	Ï <small>216</small>	þ <small>232</small>	° <small>248</small>
9	ë <small>137</small>	ö <small>153</small>	® <small>169</small>	¶ <small>185</small>	Ɔ <small>201</small>	Ј <small>217</small>	Ú <small>233</small>	¨ <small>249</small>
A	è <small>138</small>	ü <small>154</small>	¬ <small>170</small>	¶ <small>186</small>	Ł <small>202</small>	Г <small>218</small>	Û <small>234</small>	· <small>250</small>
B	ï <small>139</small>	ø <small>155</small>	½ <small>171</small>	¶ <small>187</small>	π <small>203</small>	■ <small>219</small>	Ü <small>235</small>	¹ <small>251</small>
C	î <small>140</small>	£ <small>156</small>	¼ <small>172</small>	¶ <small>188</small>	¶ <small>204</small>	■ <small>220</small>	Ý <small>236</small>	³ <small>252</small>
D	ì <small>141</small>	∅ <small>157</small>	ì <small>173</small>	¢ <small>189</small>	= <small>205</small>	¡ <small>221</small>	Ý <small>237</small>	² <small>253</small>
E	Ä <small>142</small>	× <small>158</small>	« <small>174</small>	¥ <small>190</small>	¶ <small>206</small>	Ï <small>222</small>	̄ <small>238</small>	■ <small>254</small>
F	Å <small>143</small>	f <small>159</small>	» <small>175</small>	г <small>191</small>	α <small>207</small>	■ <small>223</small>	˘ <small>239</small>	SP <small>255</small>

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	á <small>160</small>	☼ <small>176</small>	Ł <small>192</small>	⌌ <small>208</small>	α <small>224</small>	≡ <small>240</small>
1	ü <small>129</small>	À <small>145</small>	í <small>161</small>	☼ <small>177</small>	Ł <small>193</small>	⌌ <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	È <small>146</small>	ó <small>162</small>	☼ <small>178</small>	τ <small>194</small>	π <small>210</small>	Γ <small>226</small>	≥ <small>242</small>
3	â <small>131</small>	ô <small>147</small>	ú <small>163</small>	ı <small>179</small>	† <small>195</small>	⌌ <small>211</small>	π <small>227</small>	≤ <small>243</small>
4	ã <small>132</small>	õ <small>148</small>	ñ <small>164</small>	† <small>180</small>	- <small>196</small>	Ł <small>212</small>	Σ <small>228</small>	ƒ <small>244</small>
5	à <small>133</small>	ò <small>149</small>	Ñ <small>165</small>	† <small>181</small>	† <small>197</small>	ƒ <small>213</small>	σ <small>229</small>	Ƶ <small>245</small>
6	Á <small>134</small>	Ú <small>150</small>	ä <small>166</small>	|| <small>182</small>	† <small>198</small>	π <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	ó <small>167</small>	π <small>183</small>	|| <small>199</small>	|| <small>215</small>	τ <small>231</small>	≈ <small>247</small>
8	ê <small>136</small>	î <small>152</small>	¿ <small>168</small>	† <small>184</small>	⌌ <small>200</small>	† <small>216</small>	φ <small>232</small>	° <small>248</small>
9	Ê <small>137</small>	õ <small>153</small>	Ò <small>169</small>	|| <small>185</small>	ƒ <small>201</small>	Ƶ <small>217</small>	θ <small>233</small>	• <small>249</small>
A	è <small>138</small>	Ü <small>154</small>	¬ <small>170</small>	|| <small>186</small>	⌌ <small>202</small>	ƒ <small>218</small>	Ω <small>234</small>	• <small>250</small>
B	Í <small>139</small>	ϕ <small>155</small>	½ <small>171</small>	π <small>187</small>	π <small>203</small>	■ <small>219</small>	δ <small>235</small>	√ <small>251</small>
C	Ô <small>140</small>	£ <small>156</small>	¼ <small>172</small>	⌌ <small>188</small>	|| <small>204</small>	■ <small>220</small>	ω <small>236</small>	n <small>252</small>
D	ì <small>141</small>	Ù <small>157</small>	ì <small>173</small>	⌌ <small>189</small>	= <small>205</small>	|| <small>221</small>	φ <small>237</small>	² <small>253</small>
E	Ă <small>142</small>	ϖ <small>158</small>	« <small>174</small>	Ƶ <small>190</small>	|| <small>206</small>	|| <small>222</small>	ε <small>238</small>	■ <small>254</small>
F	Â <small>143</small>	Ó <small>159</small>	» <small>175</small>	ƒ <small>191</small>	⌌ <small>207</small>	■ <small>223</small>	∩ <small>239</small>	SP <small>255</small>

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	á <small>160</small>	☼ <small>176</small>	Ł <small>192</small>	⌌ <small>208</small>	α <small>224</small>	≡ <small>240</small>
1	Ü <small>129</small>	æ <small>145</small>	í <small>161</small>	☼ <small>177</small>	Ł̇ <small>193</small>	⌌̇ <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	Æ <small>146</small>	ó <small>162</small>	☼ <small>178</small>	τ <small>194</small>	π <small>210</small>	Γ <small>226</small>	≥ <small>242</small>
3	â <small>131</small>	ô <small>147</small>	ú <small>163</small>	l̇ <small>179</small>	ƒ <small>195</small>	⌌ <small>211</small>	π <small>227</small>	≤ <small>243</small>
4	ä <small>132</small>	ö <small>148</small>	ñ <small>164</small>	† <small>180</small>	- <small>196</small>	Ł <small>212</small>	Σ <small>228</small>	ƒ <small>244</small>
5	à <small>133</small>	ò <small>149</small>	Ñ <small>165</small>	‡ <small>181</small>	† <small>197</small>	ƒ <small>213</small>	σ <small>229</small>	Ƶ <small>245</small>
6	å <small>134</small>	û <small>150</small>	ä <small>166</small>	ll̇ <small>182</small>	ƒ̇ <small>198</small>	π <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	ȯ <small>167</small>	ll̇ <small>183</small>	ll̇̇ <small>199</small>	ll̇̇ <small>215</small>	τ <small>231</small>	≈ <small>247</small>
8	ê <small>136</small>	ÿ <small>152</small>	ÿ̇ <small>168</small>	ƒ̇ <small>184</small>	ll̇̇ <small>200</small>	ll̇̇̇ <small>216</small>	φ <small>232</small>	° <small>248</small>
9	ë <small>137</small>	ö̇ <small>153</small>	ƒ̇̇ <small>169</small>	ll̇̇̇ <small>185</small>	ll̇̇̇̇ <small>201</small>	ll̇̇̇̇̇ <small>217</small>	θ <small>233</small>	• <small>249</small>
A	è <small>138</small>	ü̇ <small>154</small>	ƒ̇̇̇ <small>170</small>	ll̇̇̇̇ <small>186</small>	ll̇̇̇̇̇ <small>202</small>	ll̇̇̇̇̇̇ <small>218</small>	Ω <small>234</small>	• <small>250</small>
B	ï <small>139</small>	ø <small>155</small>	½ <small>171</small>	ll̇̇̇̇̇ <small>187</small>	ll̇̇̇̇̇̇ <small>203</small>	ll̇̇̇̇̇̇̇ <small>219</small>	δ <small>235</small>	√ <small>251</small>
C	î <small>140</small>	£ <small>156</small>	¼ <small>172</small>	ll̇̇̇̇̇̇ <small>188</small>	ll̇̇̇̇̇̇̇ <small>204</small>	ll̇̇̇̇̇̇̇̇ <small>220</small>	ω <small>236</small>	n <small>252</small>
D	ì <small>141</small>	ø̇ <small>157</small>	i̇ <small>173</small>	ll̇̇̇̇̇̇̇ <small>189</small>	= <small>205</small>	ll̇̇̇̇̇̇̇̇̇ <small>221</small>	φ <small>237</small>	² <small>253</small>
E	Ä <small>142</small>	ƒ̇̇̇̇ <small>158</small>	« <small>174</small>	ll̇̇̇̇̇̇̇̇ <small>190</small>	ll̇̇̇̇̇̇̇̇̇̇ <small>206</small>	ll̇̇̇̇̇̇̇̇̇̇̇ <small>222</small>	ε <small>238</small>	ll̇̇̇̇̇̇̇̇̇̇̇̇ <small>254</small>
F	Å <small>143</small>	ḟ <small>159</small>	⌘ <small>175</small>	ll̇̇̇̇̇̇̇̇̇ <small>191</small>	ll̇̇̇̇̇̇̇̇̇̇̇̇ <small>207</small>	ll̇̇̇̇̇̇̇̇̇̇̇̇̇ <small>223</small>	∩ <small>239</small>	SP <small>255</small>

HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	À 192	Ð 208	à 224	ð 240
1	SP 129	‘ 145	ì 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	, 130	’ 146	¢ 162	² 178	Â 194	Ò 210	â 226	ò 242
3	f 131	“ 147	£ 163	³ 179	Ã 195	Ó 211	ã 227	ó 243
4	” 132	” 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	… 133	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	† 134	- 150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	‡ 135	- 151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	^ 136	~ 152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	‰ 137	™ 153	© 169	¹ 185	É 201	Ù 217	é 233	ù 249
A	Š 138	š 154	ª 170	º 186	Ê 202	Ú 218	ê 234	ú 250
B	‹ 139	› 155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	Œ 140	œ 156	¬ 172	¼ 188	Ì 204	Ü 220	ì 236	ü 252
D	SP 141	SP 157	- 173	½ 189	Í 205	Ý 221	í 237	ý 253
E	Ž 142	ž 158	® 174	¾ 190	Î 206	Þ 222	î 238	þ 254
F	SP 143	ÿ 159	- 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

HEX	8	9	A	B	C	D	E	F
0	А 128	Р 144	а 160	⌘ 176	Л 192	щ 208	р 224	Ё 240
1	Б 129	С 145	б 161	⌘ 177	л 193	т 209	с 225	ё 241
2	В 130	Т 146	в 162	⌘ 178	т 194	п 210	т 226	ё 242
3	Г 131	У 147	г 163	l 179	† 195	ц 211	у 227	ё 243
4	Д 132	Ф 148	д 164	† 180	— 196	Е 212	ф 228	ї 244
5	Е 133	Х 149	е 165	† 181	† 197	Г 213	х 229	ї 245
6	Ж 134	Ц 150	ж 166	ll 182	† 198	П 214	ц 230	ў 246
7	З 135	Ч 151	з 167	п 183	ll 199	† 215	ч 231	ў 247
8	И 136	Ш 152	и 168	† 184	Ц 200	† 216	ш 232	° 248
9	Й 137	Щ 153	й 169	ll 185	Г 201	J 217	щ 233	° 249
A	К 138	Ъ 154	к 170	ll 186	Ц 202	Г 218	ъ 234	° 250
B	Л 139	Ы 155	л 171	п 187	т 203	■ 219	ы 235	√ 251
C	М 140	Ь 156	м 172	ll 188	ll 204	■ 220	ь 236	No 252
D	Н 141	Э 157	н 173	ll 189	= 205	l 221	э 237	¤ 253
E	О 142	Ю 158	о 174	J 190	ll 206	l 222	ю 238	■ 254
F	П 143	Я 159	п 175	l 191	л 207	■ 223	я 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	⌘ 176	Ł 192	đ 208	Ó 224	- 240
1	ü 129	Í 145	í 161	⌘ 177	Ł 193	Đ 209	β 225	˘ 241
2	é 130	Í 146	ó 162	⌘ 178	τ 194	Đ 210	ô 226	• 242
3	â 131	ô 147	ú 163	ı 179	† 195	Ë 211	Ń 227	ˇ 243
4	ä 132	ö 148	Ą 164	ı 180	- 196	đ 212	ń 228	˘ 244
5	û 133	Ĺ 149	ą 165	Á 181	† 197	Ň 213	ň 229	§ 245
6	ć 134	ĩ 150	ž 166	Â 182	Ǻ 198	Í 214	š 230	÷ 246
7	ç 135	ś 151	ž 167	Ě 183	ǻ 199	Î 215	š 231	• 247
8	ł 136	ś 152	Ę 168	Ş 184	Ł 200	ě 216	Ŕ 232	° 248
9	ë 137	ö 153	ę 169	Ħ 185	Ʀ 201	Ј 217	Ú 233	¨ 249
A	õ 138	ü 154	€ 170	Ĭ 186	Ł 202	Г 218	ř 234	˙ 250
B	õ 139	ř 155	ž 171	ŋ 187	Ʀ 203	■ 219	Ů 235	ů 251
C	î 140	ť 156	č 172	Ɔ 188	Ʀ 204	■ 220	ý 236	ř 252
D	ž 141	ł 157	š 173	ž 189	= 205	Ј 221	ý 237	ř 253
E	Ǻ 142	× 158	« 174	ž 190	Ʀ 206	Ů 222	ť 238	■ 254
F	Ć 143	č 159	» 175	ı 191	ǻ 207	■ 223	˘ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	á <small>160</small>	☼ <small>176</small>	Ł <small>192</small>	ð <small>208</small>	Ó <small>224</small>	- <small>240</small>
1	ü <small>129</small>	æ <small>145</small>	í <small>161</small>	☼ <small>177</small>	ł <small>193</small>	Ð <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	Æ <small>146</small>	ó <small>162</small>	☼ <small>178</small>	ṽ <small>194</small>	Ê <small>210</small>	Ô <small>226</small>	= <small>242</small>
3	â <small>131</small>	ô <small>147</small>	ú <small>163</small>	ı <small>179</small>	† <small>195</small>	Ë <small>211</small>	ò <small>227</small>	$\frac{3}{4}$ <small>243</small>
4	ä <small>132</small>	ö <small>148</small>	ñ <small>164</small>	ı̇ <small>180</small>	- <small>196</small>	È <small>212</small>	õ <small>228</small>	¶ <small>244</small>
5	à <small>133</small>	ò <small>149</small>	Ñ <small>165</small>	Á <small>181</small>	† <small>197</small>	€ <small>213</small>	õ <small>229</small>	§ <small>245</small>
6	ã <small>134</small>	û <small>150</small>	ä <small>166</small>	Â <small>182</small>	ã <small>198</small>	Í <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	ȯ <small>167</small>	À <small>183</small>	Ǻ <small>199</small>	Î <small>215</small>	þ <small>231</small>	· <small>247</small>
8	ê <small>136</small>	ÿ <small>152</small>	¿ <small>168</small>	© <small>184</small>	Ł <small>200</small>	Ï <small>216</small>	þ <small>232</small>	° <small>248</small>
9	ë <small>137</small>	ö <small>153</small>	® <small>169</small>	¶ <small>185</small>	ŕ <small>201</small>	Ĵ <small>217</small>	Ú <small>233</small>	¨ <small>249</small>
A	è <small>138</small>	ü <small>154</small>	¬ <small>170</small>	¶ <small>186</small>	Ł <small>202</small>	ŕ <small>218</small>	Û <small>234</small>	· <small>250</small>
B	ï <small>139</small>	ø <small>155</small>	$\frac{1}{2}$ <small>171</small>	¶ <small>187</small>	ŕ <small>203</small>	■ <small>219</small>	Ü <small>235</small>	¹ <small>251</small>
C	î <small>140</small>	£ <small>156</small>	$\frac{1}{4}$ <small>172</small>	¶ <small>188</small>	ŕ <small>204</small>	■ <small>220</small>	Ý <small>236</small>	³ <small>252</small>
D	ì <small>141</small>	Ø <small>157</small>	ı̇ <small>173</small>	¢ <small>189</small>	= <small>205</small>	ı̇ <small>221</small>	Ÿ <small>237</small>	² <small>253</small>
E	Ǻ <small>142</small>	× <small>158</small>	« <small>174</small>	¥ <small>190</small>	¶ <small>206</small>	Ï <small>222</small>	- <small>238</small>	■ <small>254</small>
F	Ǻ <small>143</small>	f <small>159</small>	» <small>175</small>	₱ <small>191</small>	α <small>207</small>	■ <small>223</small>	˘ <small>239</small>	SP <small>255</small>

Page 254 (User-Defined Page)

The page 254 is available only for slip printing* (except for the endorsement font).

Spaces are defined for the font A.

The following fonts are defined for the font B as default. (Character structure: 7 × 7)

*: For endorsement printing, available only when the 40 cpl mode is disabled.

HEX	8	9	A	B	C	D	E	F
0	SP 128	Ö 144	SP 160	0 176	@ 192	P 208	· 224	p 240
1	ð 129	µ 145	! 161	1 177	A 193	Q 209	a 225	q 241
2	Ð 130	þ 146	" 162	2 178	B 194	R 210	b 226	r 242
3	Ê 131	Ɔ 147	# 163	3 179	C 195	S 211	c 227	s 243
4	Ë 132	Ú 148	\$ 164	4 180	D 196	T 212	d 228	t 244
5	È 133	Û 149	% 165	5 181	E 197	U 213	e 229	u 245
6	Í 134	Ü 150	& 166	6 182	F 198	V 214	f 230	v 246
7	Î 135	Ý 151	' 167	7 183	G 199	W 215	g 231	w 247
8	Ï 136	Ÿ 152	(168	8 184	H 200	X 216	h 232	x 248
9	Ì 137	± 153	) 169	9 185	I 201	Y 217	i 233	y 249
A	Ó 138	÷ 154	* 170	: 186	J 202	Z 218	j 234	z 250
B	β 139	· 155	+ 171	; 187	K 203	[219	k 235	{ 251
C	Ô 140	SP 156	, 172	< 188	L 204	\ 220	l 236	| 252
D	Ò 141	SP 157	- 173	= 189	M 205	] 221	m 237	} 253
E	SP 142	SP 158	. 174	> 190	N 206	^ 222	n 238	~ 254
F	ö 143	SP 159	/ 175	? 191	O 207	— 223	o 239	· 255

Page 255 (User-Defined Page)

Spaces are defined for the font A and endorsement font of slip printing and the font A and font B of receipt printing.

The following fonts are defined for the font B of slip printing as default. (Character structure: 7 × 7)

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	· 176	· 192	H 208	SP 224	SP 240
1	ü 129	æ 145	í 161	· 177	· 193	I 209	SP 225	SP 241
2	é 130	Æ 146	ó 162	· 178	· 194	SP 210	SP 226	SP 242
3	â 131	ô 147	ú 163	· 179	· 195	SP 211	SP 227	SP 243
4	ä 132	ö 148	ñ 164	· 180	· 196	SP 212	SP 228	SP 244
5	à 133	ò 149	Ñ 165	Á 181	· 197	SP 213	SP 229	SP 245
6	å 134	û 150	Ǧ 166	Â 182	â 198	· 214	SP 230	SP 246
7	ç 135	ù 151	ǧ 167	À 183	Ä 199	· 215	SP 231	SP 247
8	ê 136	ÿ 152	ı 168	İ 184	Ł 200	SP 216	SP 232	SP 248
9	ë 137	Ö 153	· 169	ł 185	ł 201	SP 217	SP 233	SP 249
A	è 138	Ü 154	· 170	ll 186	ll 202	SP 218	SP 234	SP 250
B	ï 139	ø 155	· 171	ł 187	ł 203	SP 219	SP 235	SP 251
C	î 140	£ 156	· 172	ł 188	ł 204	SP 220	SP 236	SP 252
D	ì 141	Ø 157	i 173	ç 189	= 205	SP 221	SP 237	SP 253
E	Ä 142	Ş 158	· 174	· 190	ł 206	SP 222	SP 238	SP 254
F	Å 143	ş 159	α 175	· 191	· 207	SP 223	SP 239	SP 255

International Character Sets

Country	ASCII code (Hex)											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	\$	@	[\]	^	`	{		}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	\$	@	[\]	^	`	{		}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
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Japan	#	\$	@	[¥]	^	`	{		}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
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Spain II	#	\$	á	ı	Ñ	ı	é	`	ı	ñ	ó	ú
Latin America	#	\$	á	ı	Ñ	ı	é	ü	ı	ñ	ó	ú
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