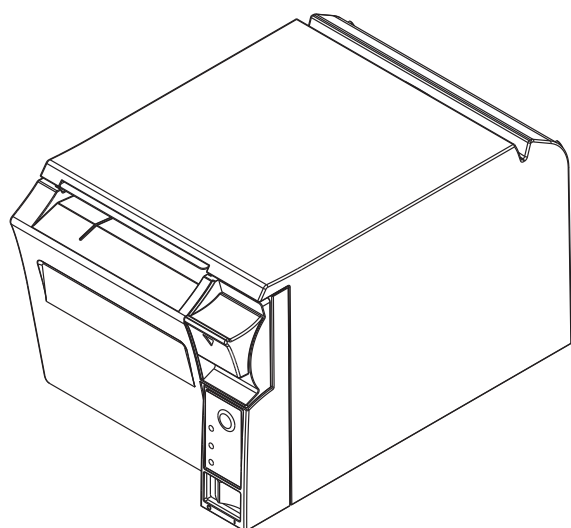# TM-T70-i

Technical Reference Guide

Product Overview

Describes features and general specifications for the product.

Setup

Describes setup and instrallation of the product and peripherals.

Application Development Information

Describes how to control the printer and necessary information 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. • 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.
- **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.
- **If you open the DIP switch cover, be sure to close the cover and tighten the screw after adjusting the DIP switch.**
  Using this product with the cover open may cause fire or electric shock.
- **Do not use aerosol sprayers containing flammable gas inside or around this product.**
  Doing so may cause fire.

Cautions

⚠️ **CAUTION**	• **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.**
	• **When connecting external devices to the USB (including Micro-USB) connectors, 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.
	  ∗ Use the UL-approved external devices (only for North American users).
	  ∗ Connect the external devices only when those total rated current is less than 2.0A.

Wireless LAN (OT-WL01) Important Safety Information

⚠️ **WARNING**	• **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.

⚠️ **CAUTION**	• **OT-WL01 is only for indoor use.** • **OT-WL01 should only be used for EPSON TM Intelligent Printers.** 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 get OT-WL01 wet.** 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   Application Development Information

Chapter 4   Handling

Appendix   Character Code Tables

Contents

Product Overview

This chapter describes features and specifications of the product.

Features

ePOS-Print system

- Direct printing from an application via network is possible.
- Controlling network models, the TM-T70, TM-T88V, and TM-T90 is possible.

High speed printing

- Issuing of batch receipts is possible.
- Maximum print speed: 170 mm/s
- Graphics are also printed with high-speed printing.

Front operation

- Easy drop-in paper loading
- Front access operation of the power button and operation panel
- Front access operation for receipt ejection

Software

- XML printer using ePOS-Print API
- Printer driver is not required.
- Bar code printing is possible.

Interface

On board Ethernet interface and USB host 4 ports

Others

- Development kits such as MSDN are not required for application development.
- Registering web pages on the TM-T70-i makes them accessible on the Web.

Product Configuration

Color

- ECW (Epson Cool White)
- EDG (Epson Dark Gray)

Accessories

Attachments

- Roll paper (for operation check)
- Dedicated AC adapter
- AC cable
- Power switch cover
- User's manual

Options

- Wireless LAN cable set (Model: OT-WL01)
- Connector cover (Model: OT-CC70W/OT-CC70B)

  Protects cables and interface connected to the printer.

Parts Name and Function

Manual cutter

Roll paper cover

Power switch cover

Cover open lever

Control panel
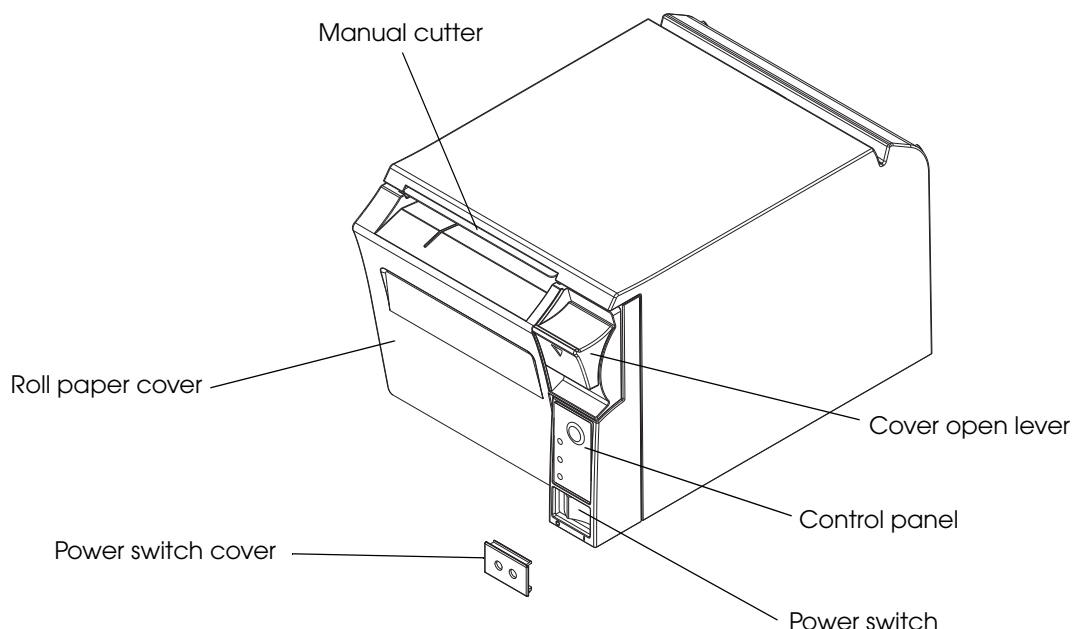
Power switch

Power Switch

Turns the printer on or off. The marks on the switch: (⏻ / |)

After turning on the printer, it takes about 30 seconds until the printer is ready for printing.

⚠ **CAUTION**	**Before turning on the printer, be sure to check that the AC adapter is connected to the power supply.**

Power Switch Cover

Install the power switch cover that comes with the TM-T70-i onto the printer to prevent inadvertent changing of the power switch, to prevent tampering, and to improve the appearance of the printer.

To reset the printer when the power switch cover is installed, insert a long, thin object (such as the end of a paper clip) into the hole in the power switch cover and press the power switch.

⚠ **WARNING**	**If an accident occurs with the power switch cover attached, unplug the power cord immediately.** Continued use may cause fire or shock.

```
                              FEED

FEED button ─────────────    ⬇

PAPER OUT LED ───────────○   PAPER
                             ⬳OUT

ERROR LED ───────────────○   ERROR

⬭ (POWER) LED ──────────○   ⬭
```
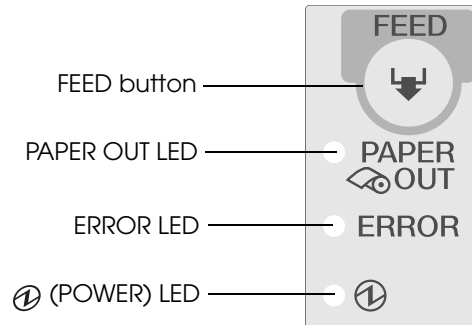
🕹FEED button

Pressing this button once feeds the roll paper by one line. Holding this button down feeds the roll paper continuously.

LED

⬳PAPER OUT LED

- Lights when there is no more roll paper or there is little remaining.

- Off when there is a sufficient amount of roll paper remaining.

- Flashes when a self-test is in progress.

ERROR LED

Lights or flashes when the printer is offline.

- Lights after the power is turned on or after a reset (offline). Automatically goes out after a while to indicate that the printer is ready.

- Lights when the end of the roll paper is detected, and when printing has stopped (offline). If this happens, replace the roll paper.

- Flashes when an error occurs. (For details about the flash codes, see "Error Status" on page 21.)

- Goes out during regular operation (online).

⬭ POWER LED (green)

- Lights when the power supply is on.

- Goes out when the power supply is turned off.

Connectors

All cables are connected to the connector panel on the lower rear of the printer.
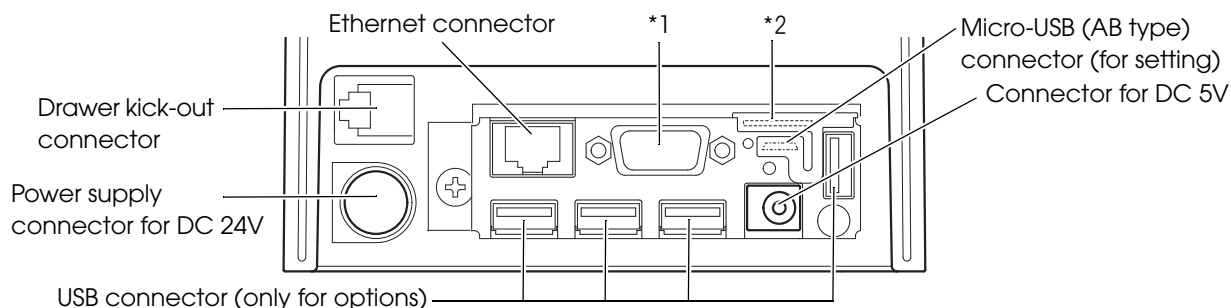
- Ethernet connector: Connects the printer with a host computer.
- Drawer kick-out connector: Connects a cash drawer.
- Power supply connector for DC 24V: Connects a power supply unit
- USB connector: Connects optional products.
- Power supply connector for DC 5V: Connects a power supply unit
- Power supply connector: Connects a power supply unit

*1: Analog RGB connector (Currently not available.)

*2: Micro SD card slot (Currently not available.)

CAUTION For details on how to connect the power supply connector and cash drawer, see "Connecting the Printer to the System" on page 45 and "Connecting the Cash Drawer" on page 50.

Push Button

The push button on the lower rear of the printer prints a status sheet or initializes the printer.
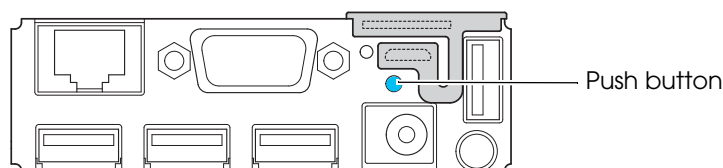
Push button

- Status sheet printing:
  Make sure that the printer is turned on, press the push button for approximately 3 seconds. When you release the button, a status sheet on which network parameters are printed will be ejected. (See "Confirming with a status sheet" on page 61.)

- Initialization:
  Make sure the printer is turned on, press the push button for approximately 10 seconds. When you release the button, all setting will be initialized. (See "Initializing the Network Setting" on page 66.)

Offline

The printer automatically goes offline under the following conditions:

- During power on (including resetting with the interface) until the printer is ready
- During the self-test
- When the roll paper cover is open.
- While roll paper is fed using the FEED button.
- When an error has occurred

Error Status

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

When connection to external devices fails, check the status LEDs at the lower rear of the printer.
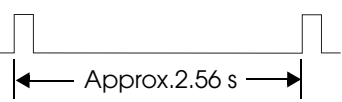
Automatically Recoverable Errors

Printing is no longer possible when automatically recoverable errors occur. They can be recovered easily, as described below.

Error	Error description	Error LED flash code Approx. 160 ms	Recovery measure
Roll paper cover open error	The roll paper cover was opened during printing.		Recovers automatically when the roll paper cover is closed.
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 on again after eliminating the cause of the error.
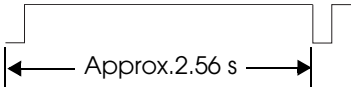
Error	Error description	Error LED flash code Approx. 160 ms	Recovery measure
Autocutter error	Autocutter does not work correctly.	Approx.2.56 s	Remove the jammed paper or foreign matter in the printer, close the roll paper cover, and then turn the power on to recover.

Unrecoverable Errors

Printing is no longer possible when unrecoverable errors occur. The printer must be repaired.

⚠ **CAUTION**	**Turn off the power immediately when unrecoverable errors occur.**

Error	Error description	Error LED flash code
Memory R/W error	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.	
Internal circuit connection error	Internal circuits are not connected correctly.	
UIB error	An abnormal operation occurs in UIB.	

No Connection to External Devices

When connection to external devices is not possible, check the status LED at the back of the printer.

Status LED
Orange: Booting
Green: Operating normally
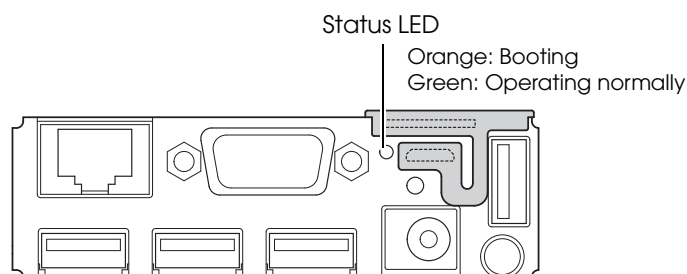
When the status LED is lit in green

- Check whether the interface cable or the optional wireless LAN cable set is connected correctly. (See "Connecting to External Devices" on page 94.)

- Print the status sheet to check whether the network settings are correct. (See "Confirming Network Setting" on page 61.)

When the status LED is lit in orange

When the status LED is off after turning on the printer or remains lit in orange even if 30 seconds have passed after turning on the printer, the interface board needs repairing.

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 area for the user:

- NV graphics memory
- Memory switches (customized value)

⚠
CAUTION
As a guide, NV memory rewriting should be 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 Flash Logo Setup utility for NVRAM to register graphics.

Memory Switches (Customized Value)

With the memory switches (customized value), which are software switches for the printer, you can set print density, print speed, and number of head energization. See .

Product Specifications

Printing method		Thermal line printing
Cutting method		Partial cut (cutting with one point in left edge left uncut)
Roll paper (single-ply)		Width: 79.5 ± 0.5 mm (3.13 ± 0.02")
Interface		Ethernet (10BASE-T/100BASE-TX) Wireless LAN (IEEE802.11b/g/n)*
Buffer	Receive buffer	4 KB/45 bytes (selectable using the DIP switch 1-2)
	Downloaded buffer	12 KB (both for user-defined characters and downloaded images)
	NV graphics data	256 KB
Barcode/two-dimensional code printing		UPC-A, UPC-E JAN 8 (EAN 8), JAN 13 (EAN 13) CODE 39 ITF CODABAR (NW-7) CODE 93 CODE 128 PDF417 QR CODE
Power supply		EPSON AC ADAPTER, RA (Model: M266A)
Life	Mechanism	15,000,000 lines
	Thermal head	100 million pulses, 100 km
	Autocutter	1,500,000 cuts
	MTBF	360,000 hours
	MCBF	52,000,000 lines
Temperature/humidity		Operating: 5 to 45°C {41 to 113°F}, 10 to 90% RH Storage: -10 to 50°C {14 to 122°F}, 10 to 90% RH
Overall dimensions		114 × 125 × 194 mm {4.49 × 4.92 × 7.64"} (H × W × D)
Weight (mass)		Approx. 1.8 kg {3.96 lb} (Roll paper excluded)

* When the optional wireless LAN cable set (OT-WL01) is used.

Software Specifications

Print control		ePOS-Print (XML Web service is used. No printer driver is required.)
Utility		EPSON TMNet WebConfig • Network setting (Ethernet/Wireless LAN) • Web contents registration • ePOS-Print setting
Controllable printer	Model	Following printers with the UB-E02 or UB-R03 embedded. • TM-T88V • TM-T70 • TM-T90
	Number of printers	20 printers at maximum

Intelligent Section Specifications

CPU	Arm9/400MHz
ROM	256MB
RAM	256MB 30MB at maximum for Web contents
OS	Linux Ver. 2.6.3

Printing Specifications

Printing method		Thermal line printing
Dot density		180 × 180 dpi
Printing direction		Unidirectional with friction feed (Reverse feed is not supported.)
Maximum printable width		72.2 mm, 512 dots
Character per line	Font A (12 × 24)	42
	Font B (9 × 17)	56
Maximum print speed*	High speed mode	170 mm/s
	Low power consumption mode	150 mm/s
Line spacing		4.23 mm {1/6"}

dpi: dots per inch

* when the printer prints with the default print density level at 24V and 25°C {77°F}.

NOTE	• Printing speed may be slower, depending on the such items as the data transmission speed. • High speed mode/low power consumption mode can be shifted with a DIP switch (2-3/2-4).

Character Specifications

Number of characters		Alphanumeric characters: 95
		Extended graphics: 128 × 11 pages (including user-defined page)
		International characters: 48
Character structure		Font A (Initial setting): 12 × 24 (including 2-dot spacing in horizontal)
		Font B: 9 × 17 (including 2-dot spacing in horizontal)
Character size	Font A	Standard: 1.69 × 3.38 mm
		Double-height: 1.69 × 6.77 mm
		Double-width: 3.38 × 3.38 mm
		Double-width, double-height: 3.38 × 6.77 mm
	Font B	Standard: 1.69 × 3.38 mm
		Double-height: 1.69 × 6.77 mm
		Double-width: 3.38 × 3.38 mm
		Double-width, double-height: 3.38 × 6.77 mm

Note:

1. The actual print character may be smaller than the size shown in the table above, because the above size includes spaces in the font.

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

3. Character size not including the horizontal spacing in the standard scale is as follows:

Font A (12 × 24): 1.41 (W) × 3.384 (H) mm

Font B (9 × 17): 0.987 (W) × 2.397 (H) mm

Printable Area

79. 5 ± 0. 5 mm

0. 141 ± 0. 05 mm

72. 2 ± 0. 2 mm

(3. 7 mm)   (3. 7 mm)
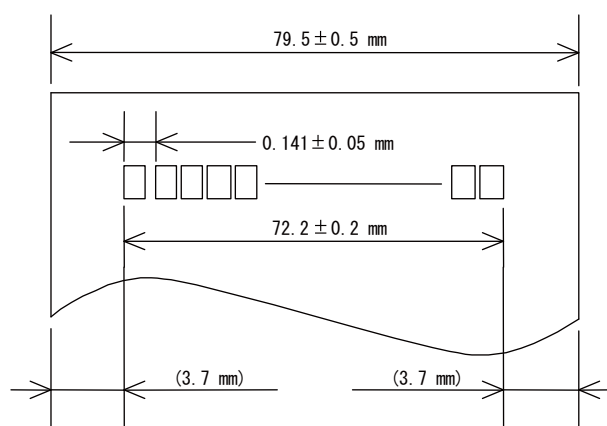
| **CAUTION** | In 2-divided energizing, the print position within the printable area of the thermal elements for dots 1 to 256 and 257 to 512 is shifted approximately 0.07 mm {0.0028"} as shown in the figure below in the paper feed direction. |

1   256

257   512

abut 0. 07 mm
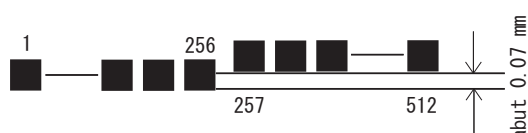
In 4-divided energizing, the print position within the printable area of the thermal elements for dots 1 to 96, 97 to 240, 241 to 368, and 369 to 512 is shifted approximately 0.04 mm {0.0016"} as shown in the figure below in the paper feed direction.

abut 0. 04 mm

1   97   241   369   512
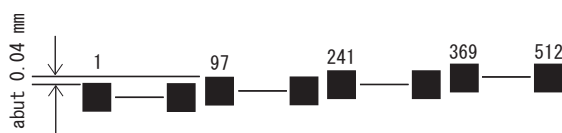
Printing and Cutting Positions

Manual-cutter position

Autocutter blade position

Center of the print dotline

Approx. 30

Approx. 15

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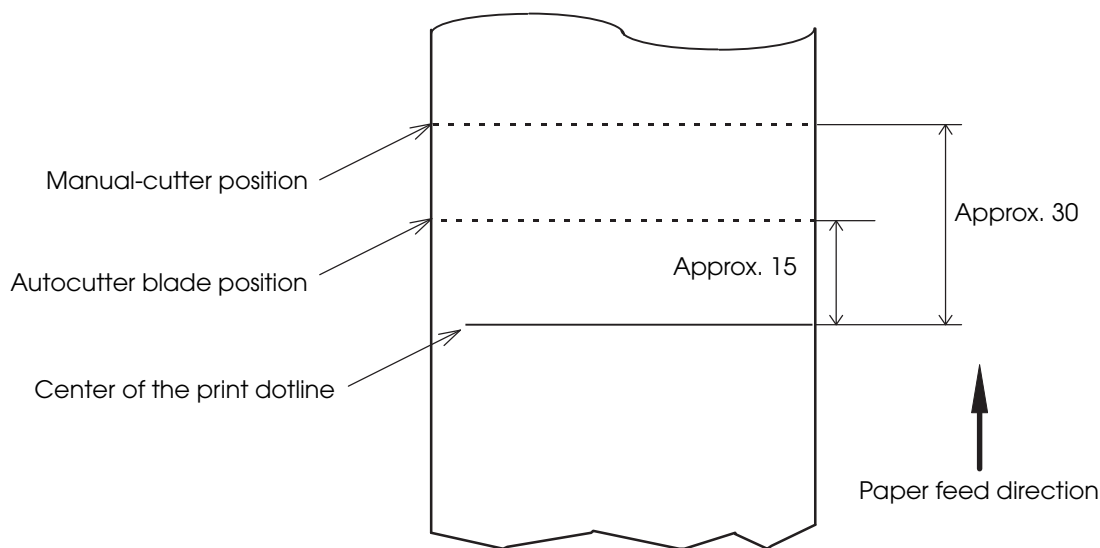
(units: mm (All the numeric values are typical.))

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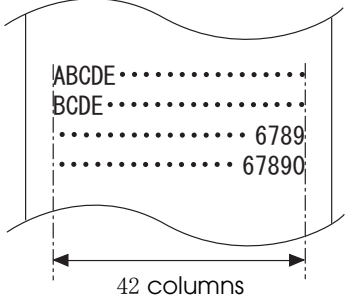
Paper Specifications

Paper type		Specified thermal paper
Size	Roll paper diameter	83 mm {3.27"} maximum
	Roll paper spool	Inside: 12 mm {0.47"}, Outside: 18 mm {0.71"}
	Take-up roll paper width	80 + 0.5/-1.0 mm
	Paper width	79.5 ± 0.5 mm

Specified roll paper type		NTP080-80
		    In U.S.A.: Nakagawa Mfg. (USA) Inc.
		    In Europe: Nakagawa Mfg. (Europe) GmbH
		    In Southeast Asia: N.A.K. Mfg. (Malaysia) SDN BHD
		(Original paper: TF50KS-E Nippon Paper Industries Co., Ltd.Åj

CAUTION	• Paper must not be pasted to the roll paper spool. • The remaining amount of the roll paper when a roll paper near-end is detected differs depending on the spool type.

Electrical Characteristics

Supply voltage		DC 24V: DC 24V ± 5% DC 5V: DC 5V
Current consumption (at 24V, 25°C, normal print density)	Standby	Mean: Approximately 0.1A Maximum 1A for drawer kick-out driving.

	Operating	DC 24V Mean: Approximately 1.8A
		 DC 5V*: Maximum 1.0A/2.5A
		
		 Note: When print ratio is approximately 18%
		 • Continuous printing for 50 lines (repeating 20H-7FH)
		    ∗ Font A
		    ∗ 42 columns
		    ∗ ASCII character

* When the supply current from the USB connectors is

- less than 600mA: Maximum 1.0A
- more than 600mA: Maximum 2.5A

Environmental Conditions

Temperature/ Humidity	Operating	5 to 45°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)
Acoustic noise (Operating)		Approximately 55 dB (Bystander position) Note) The values above are measured in the Epson evaluation condition. The acoustic noise differs depending on the paper used, printing contents, or the setting values such as print speed or print density.

External Dimensions and Mass

- Height: Approximately 114 mm {4.49"}

- Width: Approximately 125 mm {4.92"}

- Depth: Approximately 194 mm {7.64"}

- Mass: Approximately 1.8 kg {3.96 lb} (except for roll paper)

\<When the Optional OT-CC70 is installed\>

(Unit: mm)

33
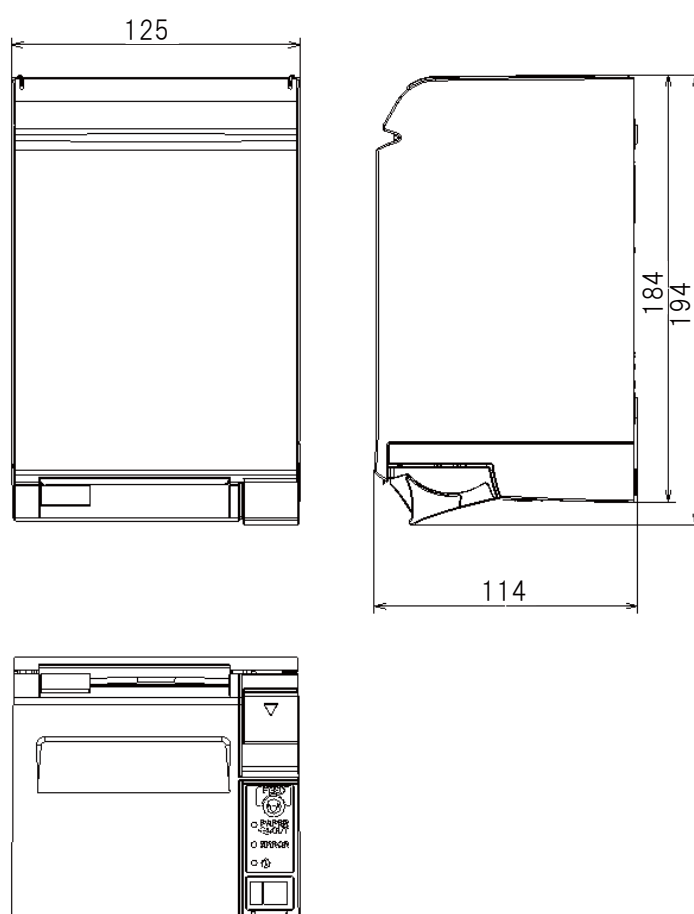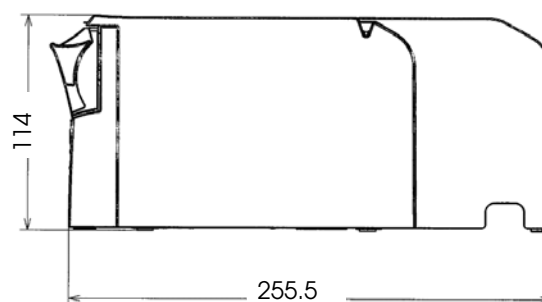
TM-T70-i Dedicated AC Adapter

Input conditions	Input voltage: AC 100V to 240V
	Frequency: 50/60 Hz
	Input current (rating): 1.3A
Output conditions	Output voltage (rating): DC 24V ± 5%
	Output current (rating): 2.1A

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 certificated)
SSID	1 to 32 one-byte alphabet and numbers
Connection mode	Ad hoc mode, Infrastructure mode
Authentic 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	300mA at maximum
Frequency range	2.4 GHz band
Potential interference range	40 m
Overall dimensions	Wireless LAN unit: Approx. 24 × 51 × 10 (W × D × H) USB extension cable: 1 m (length)

1

Setup

This chapter describes setup and installation of the product and peripherals.

Flow of Setup

This chapter consists of the following sections along with the setup flow of the product and peripherals.

1. Installing the Printer (page 38)

⬇

2. Setting the DIP Switches (page 40)

⬇

3. Connecting the Power Supply Unit (page 43)

⬇

4. Setting the Memory Switches (page 44)

⬇

5. Connecting the Printer to the System (page 45)

⬇

6. Connecting the Cash Drawer (page 50)

⬇

7. Arranging the Cables (page 52)

⬇

8. Establishment of ePOS-Print System (page 53)

⬇

9. Network Setting (page 56)

⬇

10. Setting for Connected Devices (page 67)

⬇

11. Registering Web Pages (page 69)

Installing the Printer

You can install this printer only horizontally.

Fix the printer so that it does not move around when you open the roll paper cover and cut roll paper. A tape for fixing the printer is available as an option. (See "Affixing Position of DF-10" on page 39.)

As shown in the figure below, install the printer with a maximum tilt of 3°.

Installing the printer with a tilt of more than 3° may cause the following problems.

• Roll paper near end cannot be detected.

• The roll paper cover will not close after installing roll paper.

• Roll paper cannot be taken out.
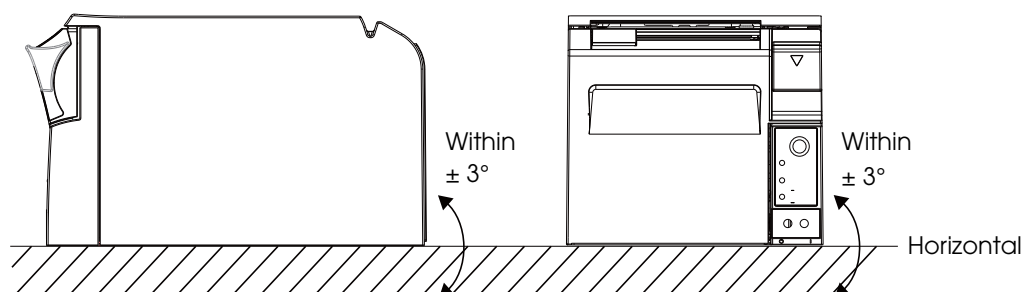
If the printer installation does not fit within the specifications shown in the figure below, the following problems may occur.

• Cannot set the roll paper in the printer

• Cannot cut the paper with the manual cutter
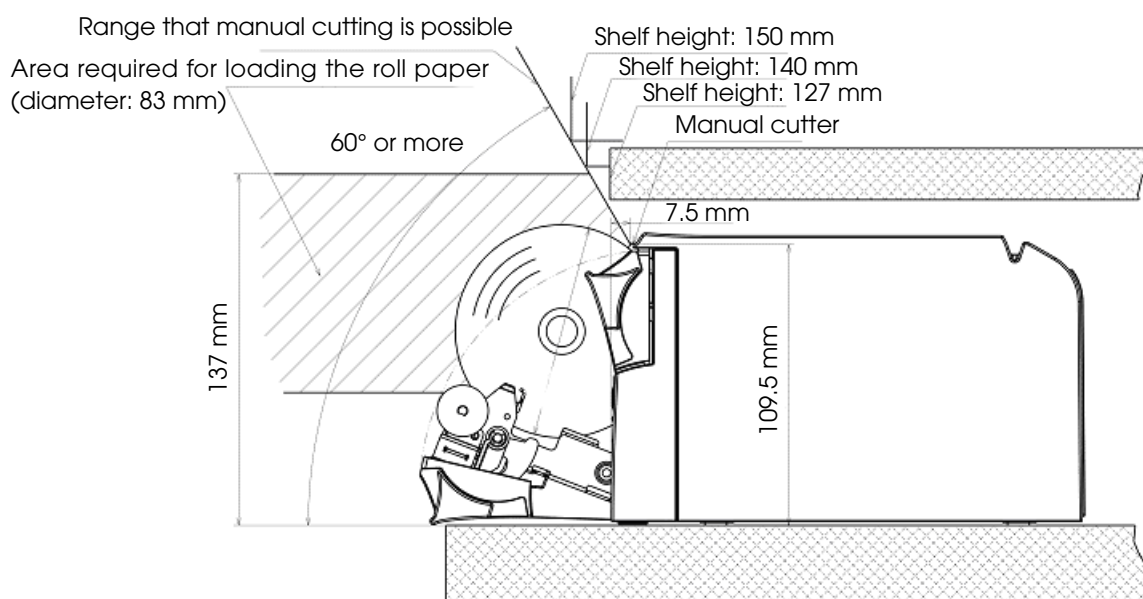
Important Notes on Installation

- The printer must be installed horizontally.
- Do not place the printer in dusty locations.
- Do not catch cables or foreign matter under the printer.
- Do not put anything that has a force of more than 32.7 N {3 kgf} on the top of the printer.

Affixing Position of DF-10

When you use the affixing tapes for fixing the printer (Model: DF-10), paste them as shown in the figure below.

Affixing position of the DF-10
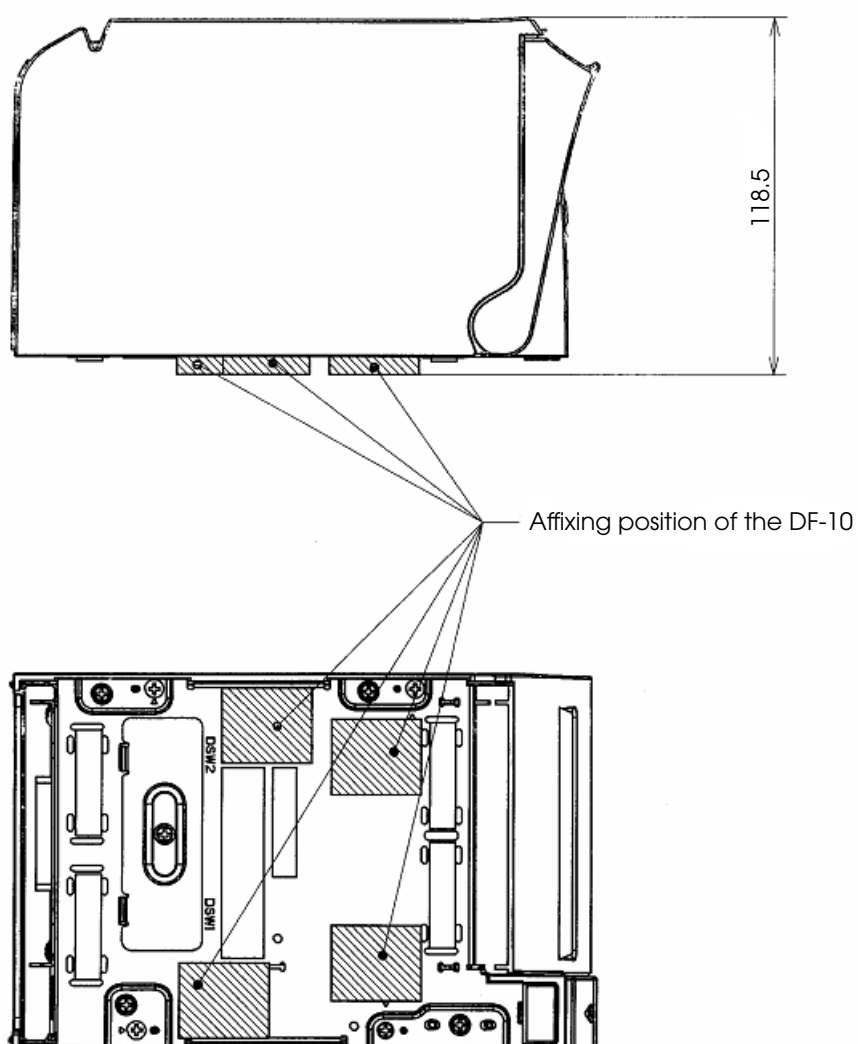
Setting the DIP Switches

On this printer, you can make various settings with DIP switches.

Setting Procedure

Follow the steps below to change the DIP switch settings.

⚠ **CAUTION**	**Before you remove the DIP switch cover, turn the printer off.** Otherwise, a short-circuit may cause the printer to malfunction.

CAUTION	DIP switch settings are enabled only when the power is turned on or the printer is reset via the interface. If the settings are changed after that, the functions will not change.

1   Make sure the power supply for the printer is turned off.

2   Unscrew the screw to remove the DIP switch cover from the base of the printer.

DIP switch 2
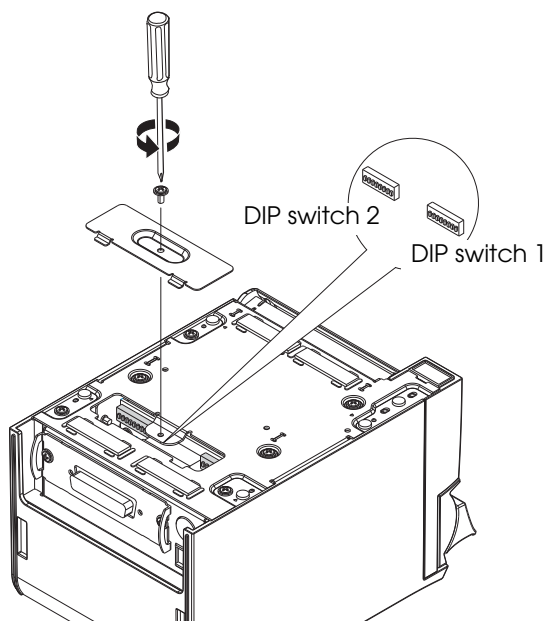
DIP switch 1

3   Set the DIP switches, using the tip of a tool, such as a small screwdriver.

4   Attach the DIP switch cover, and screw it in place.

Functions

DIP switch bank 1

SW	Function	ON	OFF	Factory setting
1-1	Auto line feed	Always enabled	Always disabled	OFF
1-2	Receive buffer capacity	45 bytes	4 KB	OFF
1-3	Reserved	—	—	OFF
1-4	Error signal output	7 bits	8 bits	OFF
1-5 ~ 1-8	Reserved	—	—	OFF

DIP switch bank 2

SW	Function	ON	OFF	Factory setting
2-1	Reserved (Do not change settings)	Fixed to ON		ON
2-2	Reserved (Do not change settings)	Fixed to OFF		OFF
2-3 ~ 2-4	Selects print density/Low power consumption mode	See "Selecting the Print Density (DIP Switch 2-3/2-4)" on page 42.		OFF
2-5	Reserved	—	—	OFF
2-6 ~ 2-7	Reserved (Do not change settings)	Fixed to OFF		OFF
2-8	IF pin 31 reset signal (Do not change settings)	Fixed to ON		ON

CAUTION Do not change the setting of DIP switches 2-1, 2-2, 2-6, 2-7, and 2-8. Otherwise, the printer may not operate normally.

Selecting the Print Density (DIP Switch 2-3/2-4)

Function	SW 2-3	SW2-4
Low power consumption mode	ON	ON
Print density (Standard)	OFF	OFF
Print density (Darker than standard)	ON	OFF
Print density (Dark)	OFF	ON

CAUTION	• If the print density is set to "Darker than standard" or "Dark" level, printing speed may be reduced. • The print density can be set with DIP switches (2-3/2-4) or the customized value. (See "Setting the Memory Switches" on page 44.) The initial setting of the customized value is "Depends on the DIP switch settings." If the customized value is changed, the value set with the customized value is enabled.

Connecting the Power Supply Unit

Use the TM-T70-i dedicated AC adapter and the AC cable included with the product as the power supply unit.

⚠️ **WARNING**	• **Be sure to use the included AC adapter as the power supply unit.** Using a nonstandard power supply can result in electric shock and fire. • **Should a fault ever occur in the included AC adapter, immediately turn off the power to the printer and unplug the power supply cable from the wall socket.** • **Be sure to unplug the power supply unit's cable from the wall socket whenever connecting or disconnecting the power supply unit to the printer.** Failure to do so may result in damage to the power supply unit or the printer. • **Make sure the wall socket power supply satisfies the rated voltage requirements of the power supply unit. Never insert the power supply cable plug into a socket that does not meet the rated voltage requirements of the power supply unit.** Doing so may result in damage to both the power supply and the printer.

CAUTION	When installing the DC 5 V cable through the cable exits on the back, fix the cables with the cable band to prevent the cables from coming off. (See "Arranging the Cables" on page 52.)

Connecting the Power Supply Unit

Make sure the printer's power supply is turned off, and then connect the AC adapter and AC cable.

DC 24V

DC 5V

AC cable

TM-T70-i dedicated
AC adapter
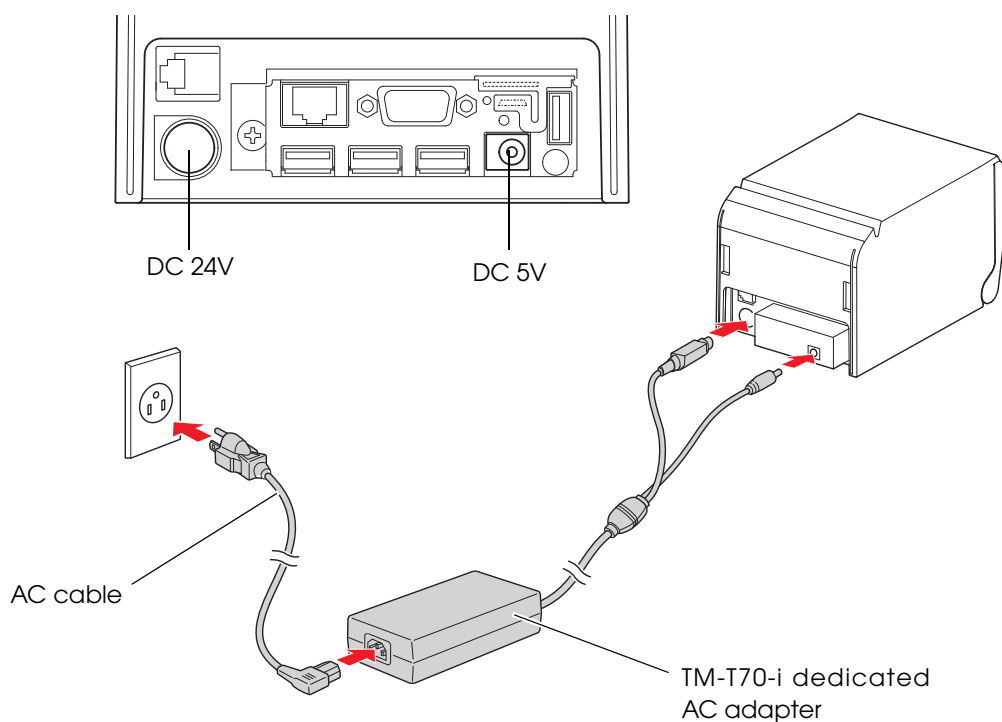
Setting the Memory Switches

With the "memory switch (customized value)", which is a software switch of this printer, you can set:

- Print density
- Print speed
- Number of head energizing parts

Use the Memory Switch Setting Utility to set the memory switches.

NOTE	• For detailed information about the memory switch utility, see the user's manual for the Memory Switch Setting Utility. • To use the Memory Switch Setting Utility, connect the printer with a PC for setting via the Micro-USB cable. Connecting the printer with a PC via a network is not possible.

Selecting the print density

Selectable from levels 1 to 13 (light ~ dark).

CAUTION	The print density can be set with DIP switches (2-3/2-4) or the customized value. (See .) The initial setting of the customized value is "Depends on the DIP switch settings." If the customized value is once changed, value set with the customized value is enabled.

Selecting the print speed

Selectable from levels 1 to 9 (low ~ high). (Initial setting: level 9)

CAUTION	Depending on print conditions such as print duty, print head temperature, or 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.

Selecting the number of head energizing parts

- One-part energizing
- Two-part energizing
- Four-part energizing
- Auto energizing (Initial setting)

NOTE	Usually, the number of head energizing parts does not need to be changed.

Connecting the Printer to the System

CAUTION	The printer uses the modular connectors specifically designed for the cash drawer. Do not connect these connectors to an ordinary telephone line.

For Ethernet Interface

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

Ethernet interface connection diagram

10BASE-T/100BASE-TX

DM-D

Serial cable

Modular cable

TM-T70-i

Cash drawer
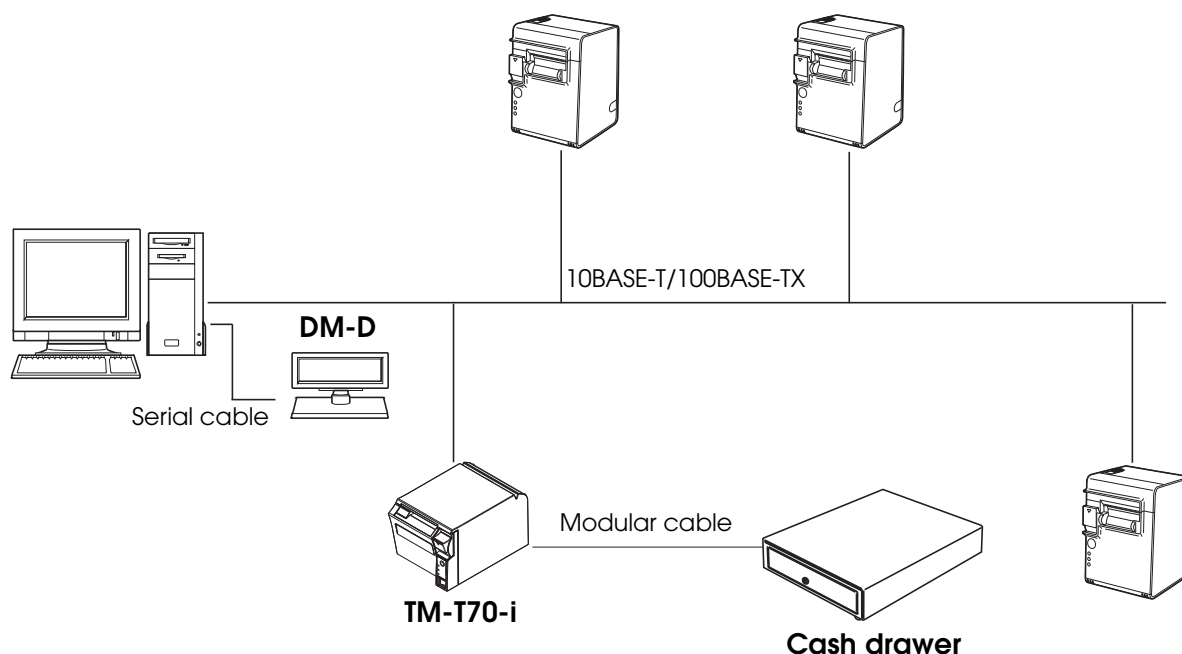
Connecting the LAN interface cable

⚠ CAUTION	• **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 standard telephone line cable to the 10BASE-T/100BASE-TX LAN connector.**

Connect a 10BASE-T/100BASE-TX cable to the 10BASE-T/100BASE-TX LAN connector by
pressing firmly until the connector clicks into place.

Ethernet connector
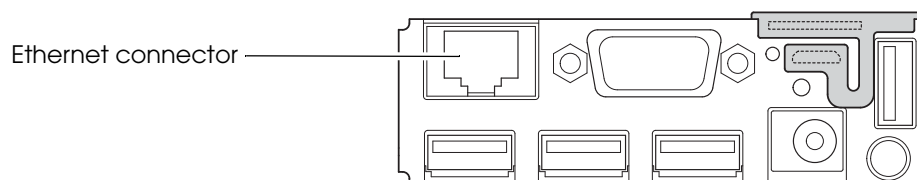
For Wireless LAN Interface

The optional wireless LAN cable set (OT-W01) enables you to use the printer with a wireless LAN connection.

Be sure not to connect a LAN cable when you use the wireless LAN cable set.

CAUTION	This printer cannot be used with the LAN connection and wireless LAN connection at the same time. When the printer is set and installed for both of them, only the LAN connection works.

Wireless LAN interface connection diagram

Access point

Modular cable

TM-T70-i   **Cash drawer**
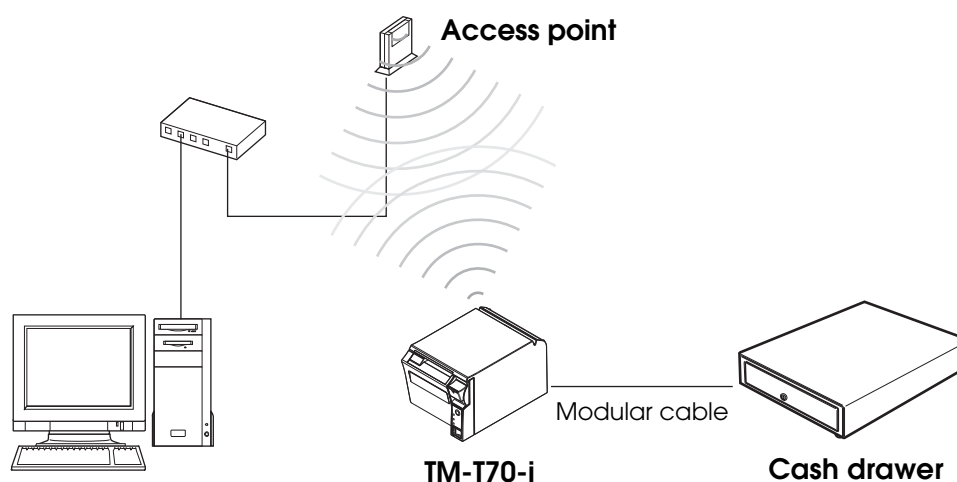
Connecting the wireless LAN cable set

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

To connect the wireless LAN unit to the printer, you can connect directly or use the USB extension cable.

If connecting the wireless LAN unit directly causes interference with other cables or bad communication, use the included USB extension cable.

Connecting the unit directly with the printer

Install the wireless LAN unit to a USB connector of the printer.
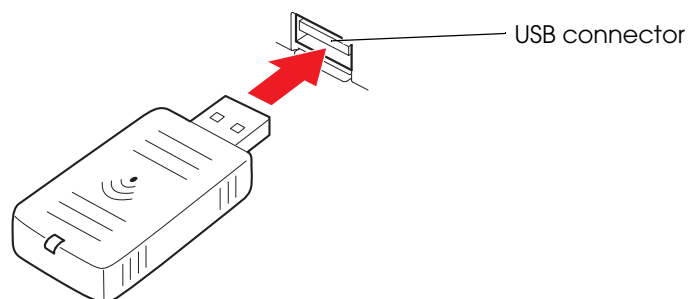
USB connector

Using the USB extension cable

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 form coming off.
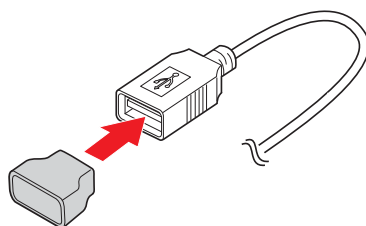
2 Insert the wireless LAN unit into the connector of the cable.
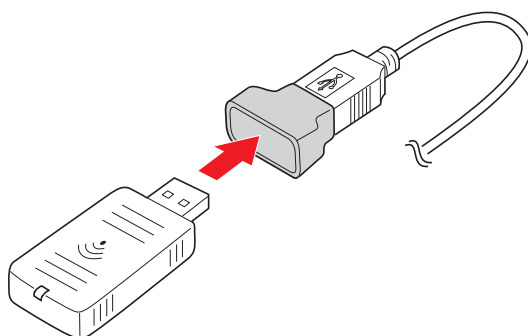
CAUTION Adjust the position of the rubber cover so that the description on the label on the back side of the wireless LAN unit is not covered.

3 Connect the USB extension cable to the USB connector of the printer.
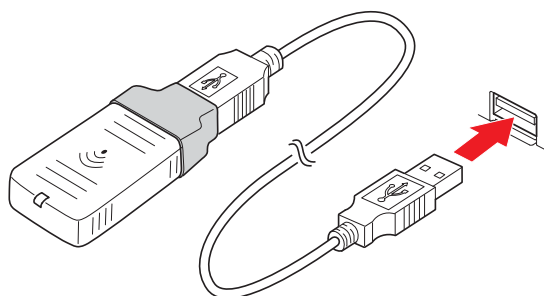
NOTE	If you want to fix the wireless LAN unit, cut the included affixing tape to fit and put on the unit, and fix the unit in a place with good communication.
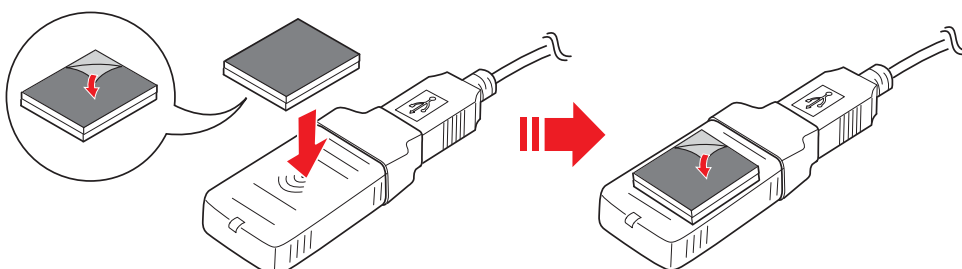
Wireless LAN indicator

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

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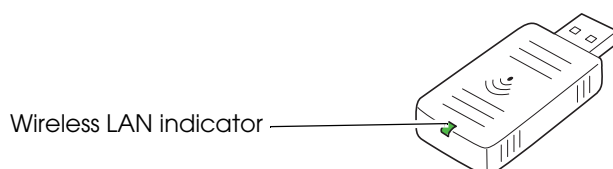
Wireless LAN indicator (Green)	Status
Off	The wireless LAN unit is not connected to the printer. Or the printer power is OFF.
Flashing	This wireless LAN unit is connected to the printer and is in operation.
Flashing rapidly	This wireless LAN unit is connected to the printer and is in operation. This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

Connecting the Cash Drawer

Use the cash drawer handled by EPSON or your dealer.

Connecting the Drawer Kick-out Cable

⚠ **WARNING**	• Specifications of drawers differ depending on makers or models. When you use a drawer other than specified, make sure its specification meets 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 drawer kick-out connector.
	  ∗ When the drawer open/close signal is used, a switch must be provided between drawer kick-out connector pins 3 and 6.
	  ∗ The resistance of the load, such as a drawer kick-out solenoid, must be 24 Ω 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 drawer kick-out connector. Doing so may damage the telephone line or printer.

Connect the connector of the drawer kick-out cable to the printer.
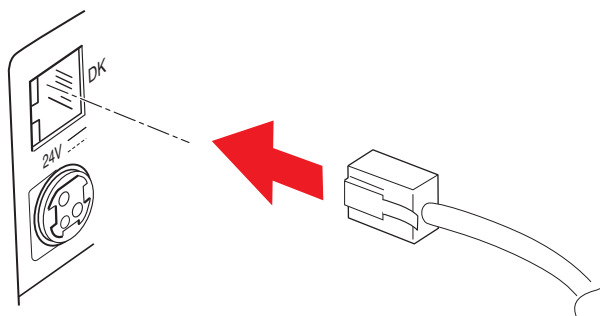
Drawer Circuitry
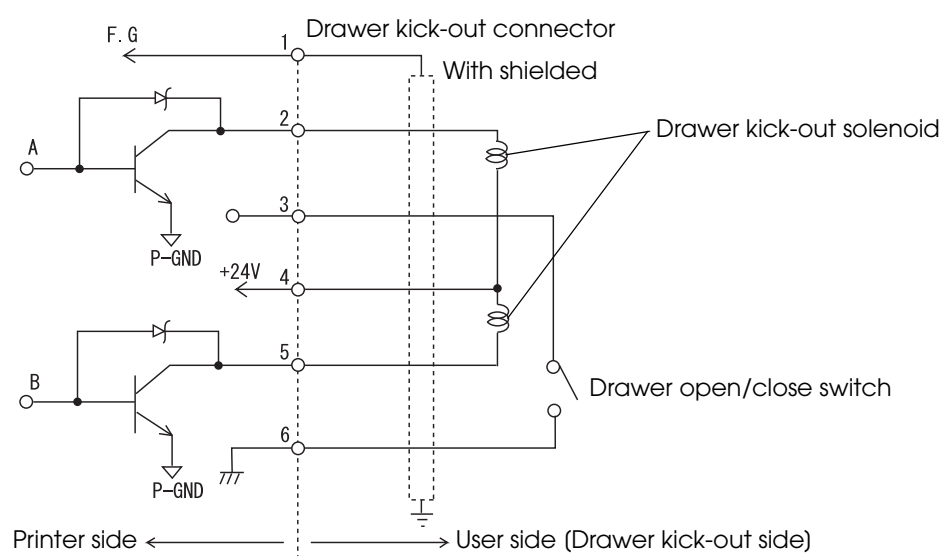
Arranging the Cables

When installing cables without locking connectors (USB cable and DC 5V cable) through the cable exits on the back, fix the cables with the cable band to prevent the cables form coming off.

Cable band
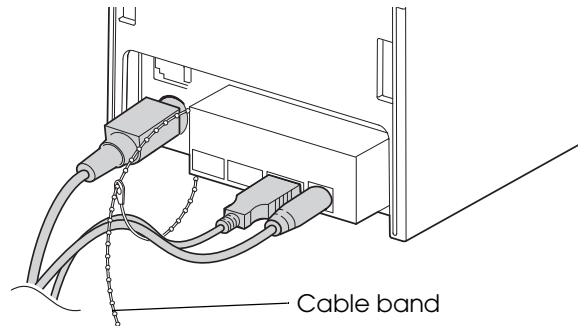
NOTE	When attaching the optional connector cover (OT-CC70), use multiple cable exits depending on the number of the cables. After installing, make sure the cables are not pinched by the connector cover.

Establishment of ePOS-Print System

ePOS-Print API is an application programming interface to use ePOS-Print Service from a client side-JavaScript. Its aim is to control printers easily using a HTML5 compliant web browser not only from personal computers or POS terminals, but also from network devices such as smart phones or tablet terminals.

- Supports various devices and OS installing a HTML 5 compliant web browser.
- Installation of a driver or plugin is not required.
- A server PC for printing is not required.
- Adds the print function to the public/private cloud.
- Printing with an intelligent printer is possible.
- Printing with the other TM printers via an intelligent printer is possible.

NOTE	For details on ePOS-Print, see ePOS-Print User's Manual.

CAUTION	Establishment of an ePOS-Print system using more than one TM-T70-i printer is not possible.

2

Examples of System Establishment

Depending on where a web application is registered, the following examples of the system establishment are possible.

- Registering on the TM-T70-i
- Registering on a web server

Registering on the TM-T70-i
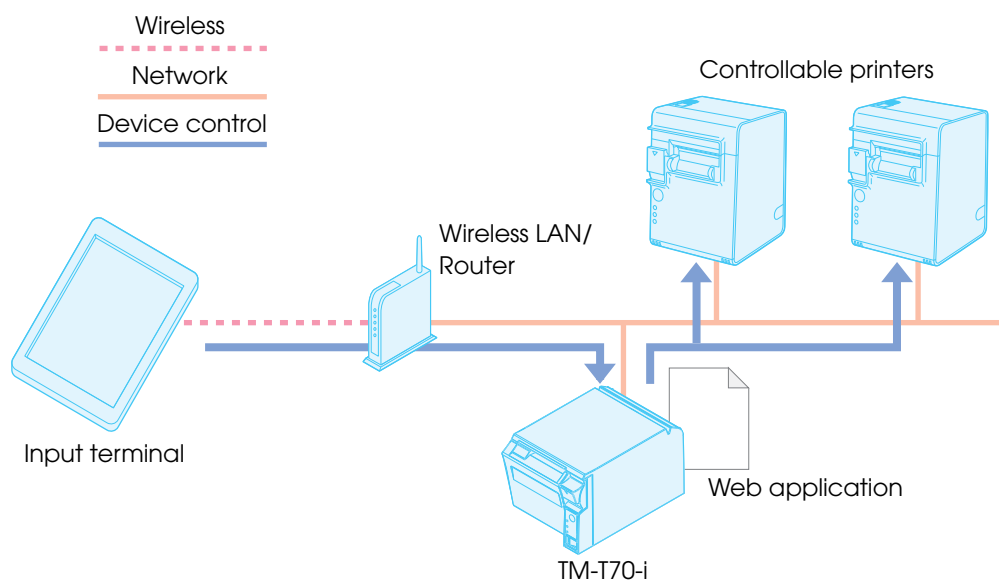
- Input terminal:
  Executes the web application from a browser.
  The browser must be HTML 5 compliant.
- TM-T70-i:
  Receives the print document sent from the web browser, prints receipts, or controls other devices.

Registering on the web server
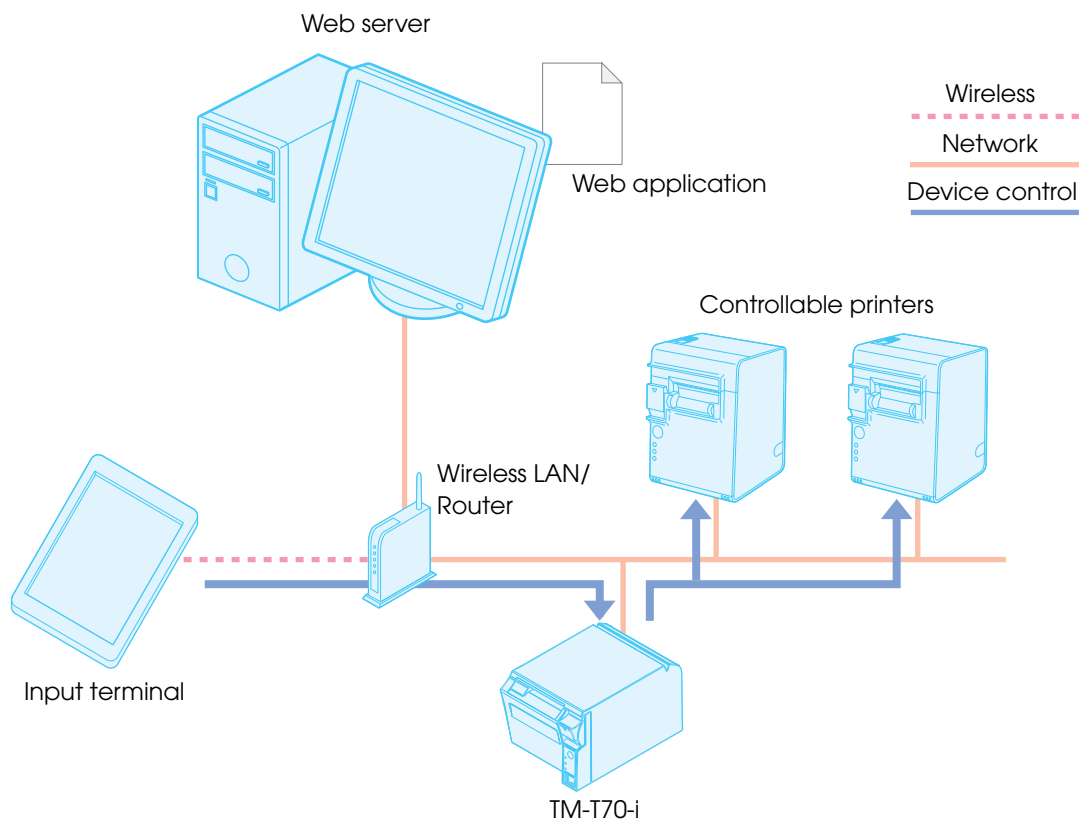
- Web server:
  The web application is installed.

- Input terminal:
  Executes the web application from a browser (HTML 5 compliant).

- TM-T70-i:
  Receives the print document sent from the web browser, prints receipts, or controls other devices.

Network Setting

> **CAUTION** System operating using a dynamic IP address with a DHCP server is not possible with the TM-T70-i printer.

> **NOTE** With either connection, wired LAN or wireless LAN, network setting for both the wired LAN and wireless LAN is possible.

Wired LAN Setting

Follow the steps below to set for wired LAN by using EPSON TMNet WebConfig.

1 Connect a PC for setting to the network.

2 Connect the TM-T70-i printer to the network, and turn it on.

3 Print a status sheet.
   For how to print a status sheet, see "Confirming with a status sheet" on page 61.

4   Set the PC for setting as the same as the setting printed on the status sheet.

5   Start up the web browser on the PC for setting, and enter the printer's IP address printed on the status sheet in the address bar as shown below.

http://xxx.xxx.xxx.xxx/PrinterConfigurationPage/

EPSON TMNet WebConfig starts.

6   Select (Configuration), (Wired), and then (TCP/IP).
The [TCP/IP Setting (Wired)] screen appears.

7   Configure the printer's network setting.
For details, see "TCP/IP Setting (Wired)" on page 79.

8   Click (Submit).

Wireless LAN Setting

Follow the steps below to set for wireless LAN (when the optional wireless LAN cable set, OT-WL01, is used) by using EPSON TMNet WebConfig.

CAUTION	This printer cannot be used with the LAN connection and wireless LAN connection at the same time. When the printer is set and installed for both of them, only the LAN connection works.

1 Connect a PC for setting to the network.

2 Connect the TM-T70-i printer to the network, and turn it on.

3 Print a status sheet.

For how to print a status sheet, see "Confirming with a status sheet" on page 61.

4 Set the PC for setting as the same as the setting printed on the status sheet.

5 Start up the web browser on the PC for setting, and enter the printer's IP address printed on the status sheet in the address bar as shown below.

http://xxx.xxx.xxx.xxx/PrinterConfigurationPage/

EPSON TMNet WebConfig starts.

6 Select (Configuration), (Wireless), and then (TCP/IP).
The [TCP/IP Setting (Wireless)] screen appears.

7 Configure the printer's network setting.
For details, see "TCP/IP Setting (Wireless)" on page 81.

8 Click (Submit).

9 Select (Configuration), and then (Wireless).
The [Wireless Setting] screen appears.

10 Configure security settings for the network.
For details, see "Security setting" on page 59 and "Wireless Setting" on page 80.

11 Click (Submit).

Security setting

Set the following items depending on the network mode.

Item	Description
Network Mode	Set the communication mode (Infrastructure/Ad-Hoc).
SSID	Same value as that for access point. 32 alphanumeric characters at maximum.
Ad-Hoc Channel	Set when (Ad-Hoc) is selected for (Network Mode). Selectable from 1 to 11.
Communication Standard	Set the communication standard.
Authentication Method	Set the authentication algorithm.
Security Mode	Set the encryption algorithm.
Default WEP Key	Set the WEP key to use.
WEP Key 1 to 4	Set character strings for WEP keys when using WEP for security setting.
WPA/WPA2 Pre-Shared Key	Set a character string (8 to 63 ASCII characters) for (WPA/WPA2 Pre-Shared Key) when using WPA/WPA2 for security setting.

Confirming Network Setting

You can confirm the network setting with a status sheet or EPSON TMNet WebConfig.

Confirming with a status sheet

Make sure the printer is turned on, press the push button at the interface part for approximately 3 seconds. When you release the button, a status sheet on which network parameters are printed will be ejected.

With the status sheet, you can check all the settings necessary for connecting to the network.

Use a sharp-pointed object to press the push button.

Push button
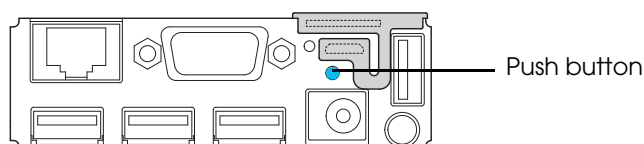
| NOTE | If you keep pressing the button for more than 10 seconds, the network settings are initialized. |

Information on a status sheet

```
*****************************
      EPSON Status Sheet
*****************************

<General Information>
Software
  X.XX
Model
  TM-T70-i
Time
  yyyy-mm-dd hh:nn:ss
  GMT+hh:nn

              ⋮

<Web Contents Update>
Use Automatic Update
  No
Date of Installed Web Contents
  yyyy-mm-dd hh:nn:ss
Date of Last Automatic Update
  yyyy-mm-dd hh:nn:ss
Status of Last Automatic Update
  Not update automatically yet

-----------------------------------------
```

Item	Description
General Information	Shows the general information.
Software	Shows the printer's software version.
Model	Shows (TM-T70-i).
Time	Shows the present time and time difference
Wired	Shows wired LAN settings.
MAC Address	Shows the MAC address.
Link Speed & Duplex	Shows the speed of data link layer.
Wired TCP/IP	Shows TCP/IP settings for wired LAN.
Get IP Address	Shows the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Shows the APIPA setting.
IP Address	Shows the IP address.
Subnet Mask	Shows the subnet mask.
Default Gateway	Shows the default gateway.
Acquire DNS Server Address Automatically	Shows the method of getting the address of the DNS server.
DNS Server Address	Shows the IP address of the DNS server.
Wireless	Shows wireless LAN settings.
MAC Address	Shows the MAC address.
Hardware Version	Shows the hardware version of the wireless LAN cable set (OT-WL01).
Software Version	Shows the software version of the wireless LAN cable set (OT-WL01).
Communication Standard	Shows the wireless LAN standard.
Network Mode	Shows the communication mode.
SSID	Shows the SSID.
Wireless LAN Frequency Region	Shows the frequency range.
Ad-Hoc Channel	Shows the ad-hoc channel.
Authentication Method	Sets the authentication method.
Security Mode	Sets the encryption scheme.

Item	Description
Wireless TCP/IP	Shows TCP/IP settings for wireless LAN.
Get IP Address	Shows the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Shows the APIPA setting.
IP Address	Shows the IP address.
Subnet Mask	Shows the subnet mask.
Default Gateway	Shows the default gateway.
Acquire DNS Server Address Automatically	Shows the method of getting the address of the DNS server.
DNS Server Address	Shows the IP address of the DNS server.
Time Server Setting	Shows time settings.
Use Time Server	Shows whether to use the time server or not.
Get Time Server	Shows the method of getting the time server.
Time Server	Shows the IP address of the time server.
Time Server Status	Shows the result of communication with the time server.
Device	Shows the following information of the devices registered for ePOS-Print. • Device ID • Model number • IP address • Connection status
Web Contents Update	Shows update settings for web contents.
Use Automatic Update	Shows whether automatic updating of web contents is enabled or disabled.
Update Schedule*	Shows the update schedule for web contents.
File URL*	Shows the URL for the file to update automatically.
Use Proxy*	Shows the URL and port number for the proxy server to use.
File Access Test*	Shows whether the URL is specified correctly.

2

Item	Description
Date of Installed Web Contents	When Automatic Update Setting is enabled: Shows the date and time when the web contents (zip file) were created. When Automatic Update Setting is disabled: Shows the date and time when the web contents were uploaded.
Date of Last Automatic Update	Shows the date and time of last automatic updating.
Status of Last Automatic Update	Shows the result of last automatic updating.

* Printed only when the automatic update setting for web contents is enabled (see "Web Contents Update Settings" on page 83).

Confirming with EPSON TMNet WebConfig
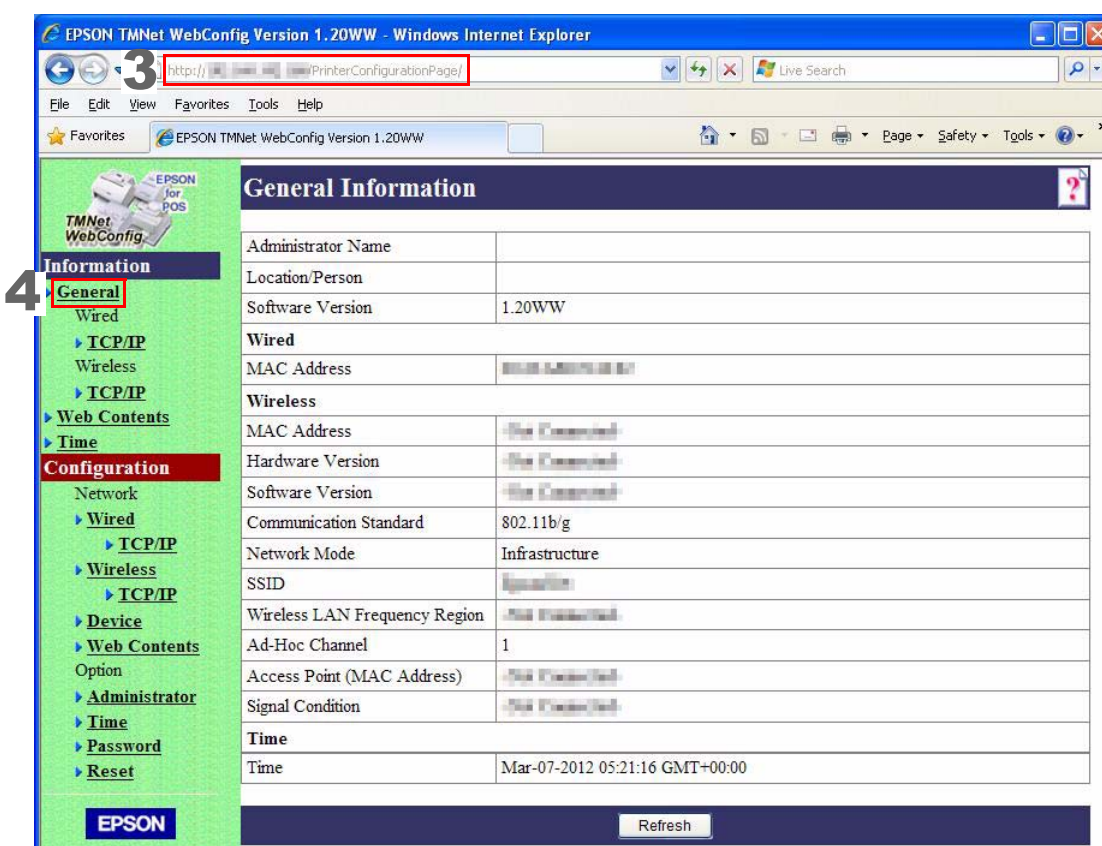
1 Start up a PC for setting.

2 Connect the TM-T70-i printer to the network, and turn it on.

3 Start up the web browser on the PC for setting, and enter the printer's IP address in the address bar as shown below.

        http://xxx.xxx.xxx.xxx/PrinterConfigurationPage/

EPSON TMNet WebConfig starts.

4 Select (Information), and then (General).

The [General Information] screen appears. You can check the network settings.

Initializing the Network Setting

When network connection fails, follow the steps below to initialize the network setting to the default.

1 Load the paper on the printer and turn on the printer.

2 Press the push button for more than 10 seconds until the following message is printed.

Use a sharp-pointed object to press the push button.

Push button
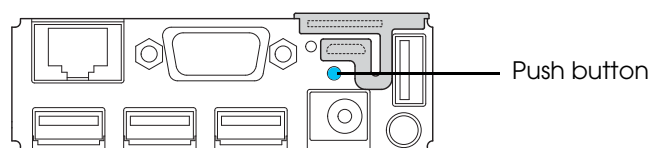
```
Resetting to Network Setting!
Please Wait...

WARNING: DO NOT
TURN OFF POWER
```

CAUTION	Do not turn off the power until the initialization is completed.

3 20 to 25 seconds later, the following message is printed, and a status sheet is printed out.

```
Reset to Network Setting Finished!

*****************************
     EPSON Status Sheet
*****************************
```

Setting for Connected Devices

Follow the steps below to set for devices controlled by the TM-T70-i printer by using EPSON TMNet WebConfig.

CAUTION	Setting the TM-T70-i printer itself is not possible. You can change the device ID for the TM-T70-i printer.
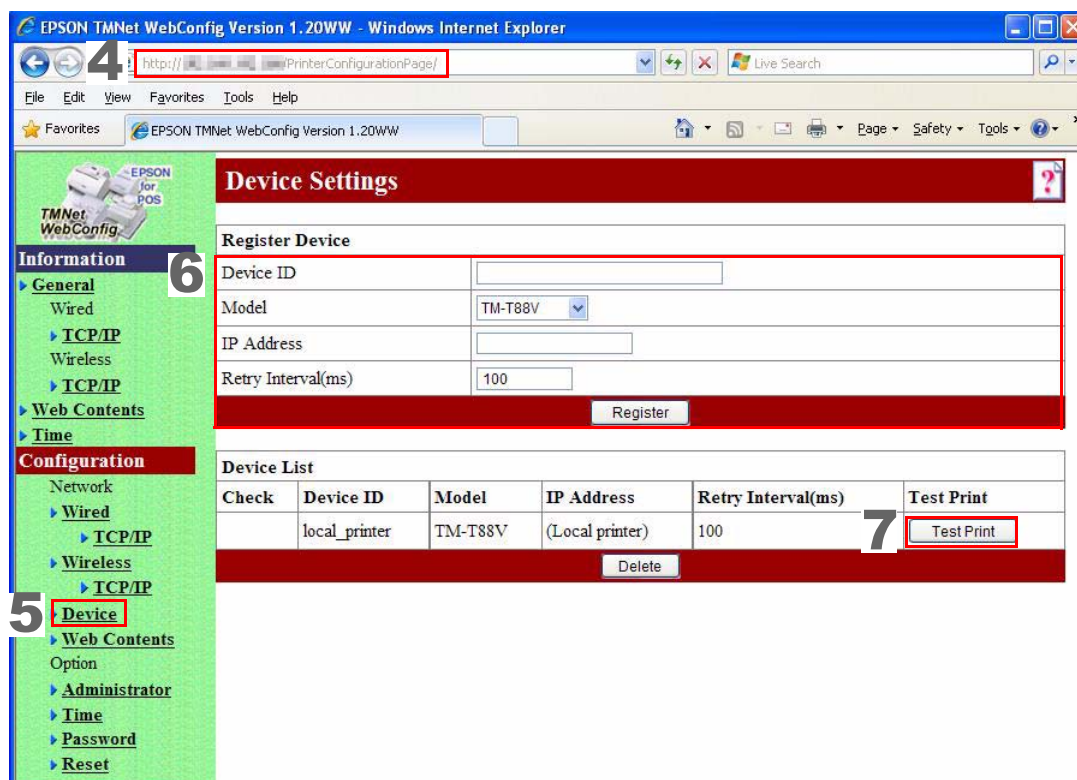
1 Start up a PC for setting.

2 Connect all the printers to be controlled to the network, and turn them on.

3 Print a status sheet for each printer.
For how to print a status sheet, see "Confirming with a status sheet" on page 61.

4 Start up the web browser on the PC for setting, and enter the TM-T70-i printer's IP address in the address bar as shown below.

http://xxx.xxx.xxx.xxx/PrinterConfigurationPage/

EPSON TMNet WebConfig starts.

5 Select (Configuration), and then (Device).

The [Device Settings] screen appears.

6 Set for the following items, and click (Register).

The information of the registered devices is shown in [Device List].

Item	Description
Device ID	Set an ID for a device to be controlled.
Model number	Select an model for a device to be controlled.
IP address	Enter an IP address for a device to be controlled. (See the status sheet printed in Step 3.)
Retry interval (ms)	Set a retry interval for a device to be controlled.

7 Click (Test Print) to check whether the registered printer operates correctly.

Registering Web Pages

When you register an application on the TM-70-i printer, register web contents.

Specifications of the file to be registered

- Static contents such as HTML files, CSS files, JavaScript files, and image data.
- Zip the files to be registered all together. The zip file name is arbitrary.

CAUTION

- Use one-byte alphanumeric characters (ASCII characters) for a zip file name and sub-folder name.
- Do not use any of the following names for top folders in the web application.
  - ∗ PrinterConfigurationPage ∗ lisences ∗ technical-support
  - ∗ cgi-bin ∗ firmware-update
- The maximum size of the files before being zipped is 30 MB. Otherwise, registering fails.
- If you access the URL of the web application when it is not registered, a 403-forbidden error will be returned instead of a 404-not found error.

Cautions for the files to be registered

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

<Example for sample program>

```
ePOS-Print_UM_E_Sample.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 in the zip file.
  ① http://[the TM-T70-i printer's IP address]/index.html
  ② http://[the TM-T70-i printer's IP address]/webpage/index.html

①
```
epsonsample.zip

├ index.html
├ css
│  └ *.css
├ img
│  ├ *.bmp
│  ├ *.jpg
│  └ *.png
├ js
│  └ *.js
└ sample
   └ *.html
```

②
```
epsonsample.zip

└ webpage............................ : A folder added
   ├ index.html
   ├ css
   │  └ *.css
   ├ img
   │  ├ *.bmp
   │  ├ *.jpg
   │  └ *.png
   ├ js
   │  └ *.js
   └ sample
      └ *.html
```

How to Register

Follow the steps below to register web pages by using EPSON TMNet WebConfig.
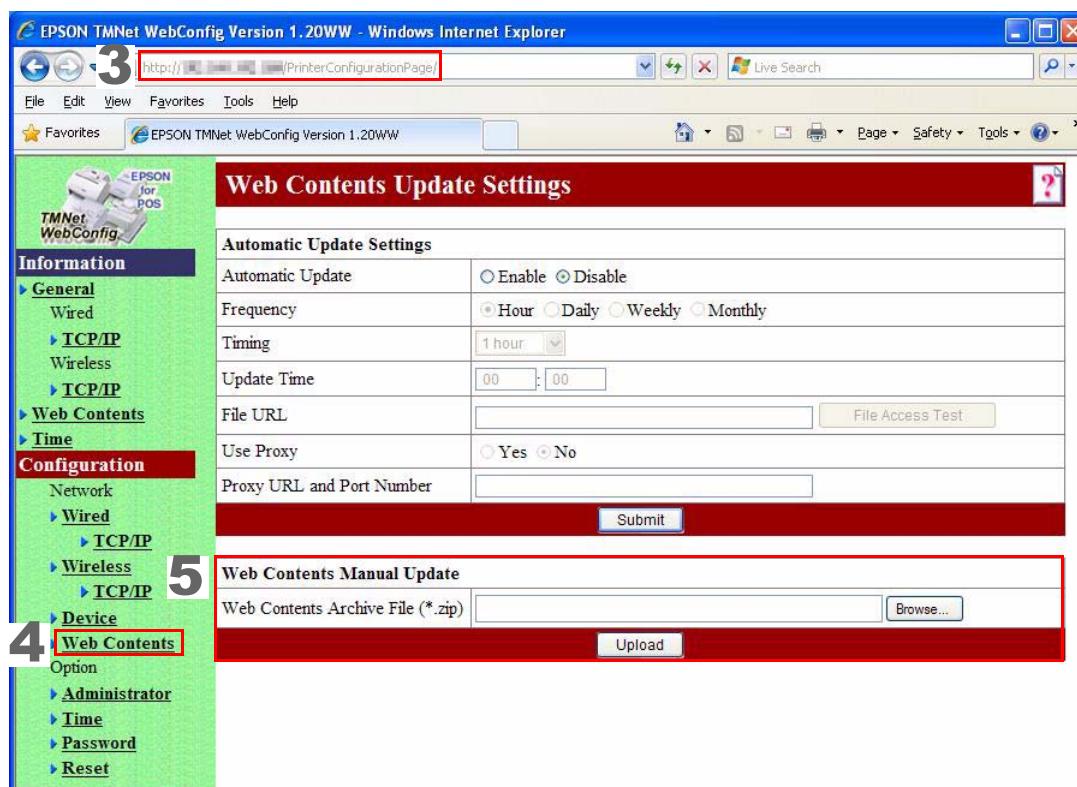
1 Start up a PC for setting.

2 Connect the TM-T70-i printer to the network, and turn it on.

3 Start up the web browser on the PC for setting, and enter the TM-T70-i printer's IP address in the address bar.
   EPSON TMNet WebConfig starts.

4 Select (Configuration), and then (Web Contents).
   The [Web Contents Update Settings] screen appears.

5 Click (Browse...), specify the zip file to be registered, and then click (Upload).

Application Development Information

This chapter describes how to control the printer and gives information useful for printer application development.

How to Control the Printer

Use ePOS-Print to control the printer. For detailed information on ePOS-Print, see ePOS-Print User's Manual.

Software and Manuals

The following software and manuals are provided for application development.

CAUTION	• To use the utilities, connect the printer with a PC for setting via the Micro-USB cable. Connecting the printer with a PC via a network is not possible. • After using the utilities, be sure to turn off the printer, and then turn it on.

Software	Description	Manual
TM Flash LOGO Setup Utility for NVRAM (TM-FLOGO)	Use to register data such as shop logos in the NV memory of the printer.	—
Memory Switch Setting Utility	use to change the memory switch and customized value.	User's manual
EPSON TMNet WebConfig	Use to set for network, connected devices, web contents, administrator information, time, password, and resetting.	See "EPSON TMNet WebConfig" on page 72.

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/

EPSON TMNet WebConfig

EPSON TMNet WebConfig is a Utility to set the printer on a web browser. This section describes EPSON TMNet WebConfig using Internet Explorer as a browser.

Starting EPSON TMNet WebConfig

Follow the steps below to start up EPSON TMNet WebConfig.

1 Start up a PC connected to the network.

2 Start up the web browser and input the printer's IP address (http:// printer's IP address) in the address bar as shown below.

> http://xxx.xxx.xxx.xxx/PrinterConfigurationPage/

EPSON TMNet WebConfig starts.

CAUTION	• For the printer's IP address, see the status sheet. For the status sheet, see "Confirming with a status sheet" on page 61. • A user name and a password will be required on the authentication screen. Enter "epson" for both the user name and the password. You can change the password on the [Password Setting] screen (see "Password Setting" on page 87.).

General Information

You can check the general information of the TM-T70-i.
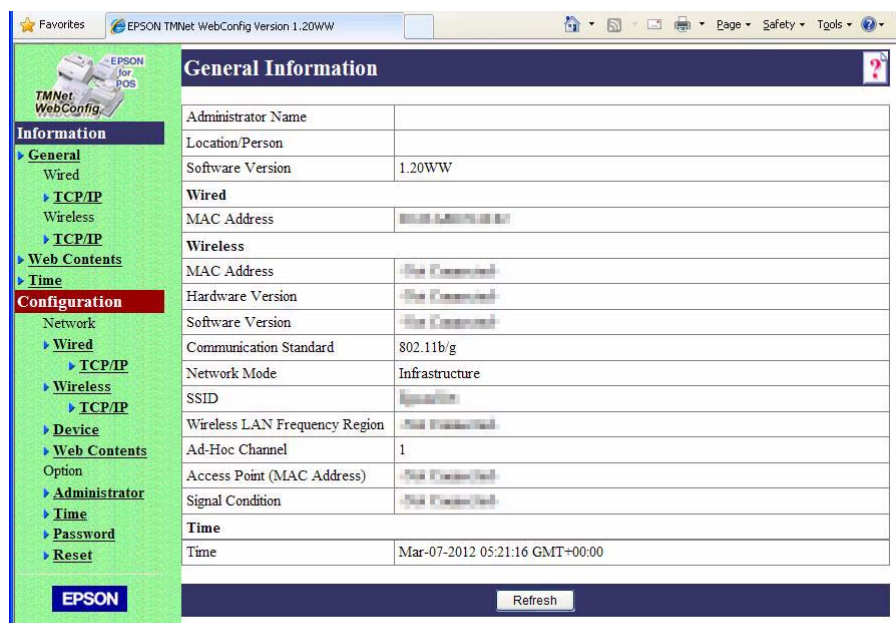
Item		Description
Administrator Name		Shows the administrator name.
Location/Person		Shows the user name
Software Version		Shows the software version of the TM-T70-i.
Wired	MAC Address	Shows the MAC address for wired LAN.
Wireless	MAC Address	Shows the MAC address for wireless LAN.
	Hardware Version	Shows the hardware version for wireless LAN.
	Software Version	Shows the software version for wireless LAN.
	Communication Standard	Shows the communication standard.
	Network Mode	Shows the communication mode.
	SSID	Shows the SSID.
	Wireless LAN Frequency Region	Shows region codes.
	Ad-Hoc Channel	Shows the ad-hoc channel.
	Access Point (MAC Address)	Shows the MAC address for the access point.
	Signal Condition	Shows the signal strength.
Time	Time	Shows the present time.

TCP/IP Information (Wired)

You can check the TCP/IP setting for a wired LAN.

Item	Description
Get IP Address	Shows the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Shows the APIPA setting.
IP Address	Shows the IP address when (Get IP Address) is set to (Manual).
Subnet Mask	Shows the subnet mask when (Get IP Address) is set to (Manual).
Default Gateway	Shows the default gateway when (Get IP Address) is set to (Manual).
Acquire DNS Server Address Automatically	Shows the method of getting the address of the DNS server.
DNS Server Address	Shows the addresses of the DNS server in order of usage when (Acquire DNS Server Address Automatically) is set to (Disable).

TCP/IP Information (Wireless)

You can check the TCP/IP setting for a wireless LAN when the optional wireless LAN cable set (OT-WL01) is used.

Item	Description
Get IP Address	Shows the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Shows the APIPA setting.
IP Address	Shows the IP address when (Get IP Address) is set to (Manual).
Subnet Mask	Shows the subnet mask when (Get IP Address) is set to (Manual).
Default Gateway	Shows the default gateway when (Get IP Address) is set to (Manual).
Acquire DNS Server Address Automatically	Shows the method of getting the address of the DNS server.
DNS Server Address	Shows the addresses of the DNS server in order of usage when (Acquire DNS Server Address Automatically) is set to (Disable).

3

Web Contents Update Information

You can check the update setting for web contents.

Item		Description
Automatic Update	Update Schedule	Shows the automatic update setting for installing web contents.
	File URL	Shows the URL for the file to update automatically.
	Proxy URL and Port Number	Shows the URL and port number for the proxy server to use.
	Date of Installed Web Contents	When automatic update setting is enabled: Shows the date and time when the web contents (zip file) were created. When manual update setting is disabled: Shows the date and time when the web contents were uploaded.
	Date of Last Automatic Update	Shows the latest date and time when the web contents were installed on the TM-T70-i automatically.
	Status of Last Automatic Update	Shows the result of the last update of web contents on the TM-T70-i.

Time Information

You can check the time setting.

Item	Description
Time	Shows the present time.
Use Time Server	Shows whether time server is used for time setting.
Get Time Server	Shows the method of getting time server.
Time Server	Shows the IP address or host name of the time server.
Time Server Status	Shows the result of communication with the time server.

3

Wired Setting

You can make settings for a wired LAN network.
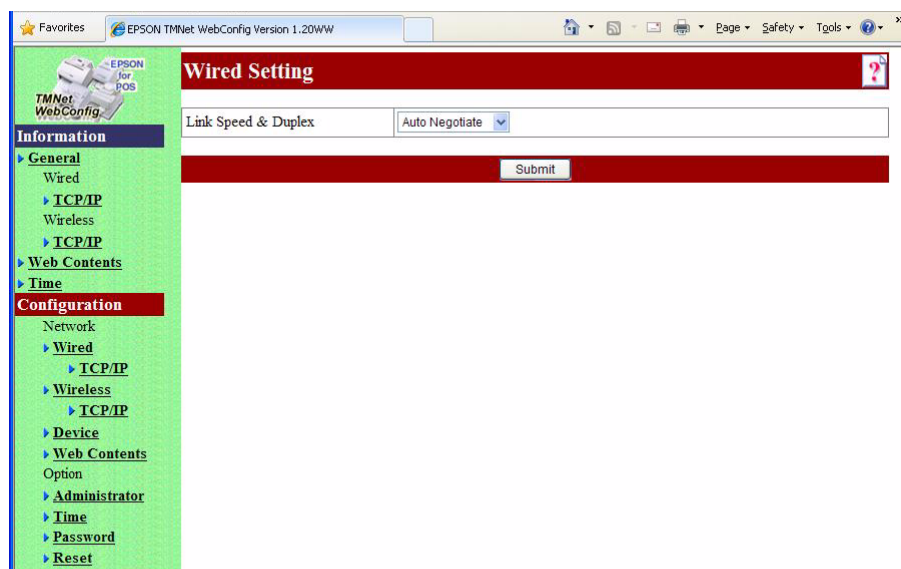
Item	Description
Link Speed & Duplex	Sets the speed of data link layer.
Submit	Submits the setting to the TM-T70-i.

TCP/IP Setting (Wired)

You can make settings for a wired LAN such as IP address.

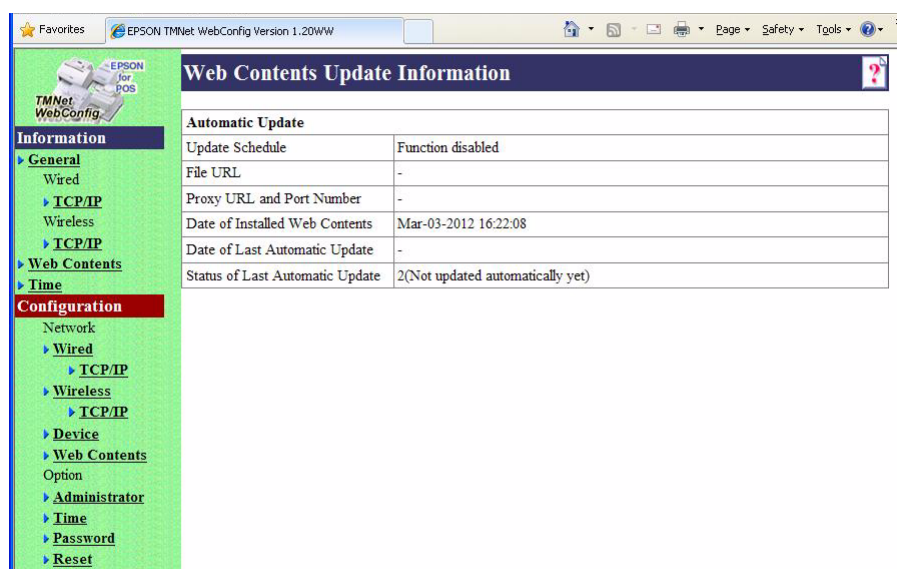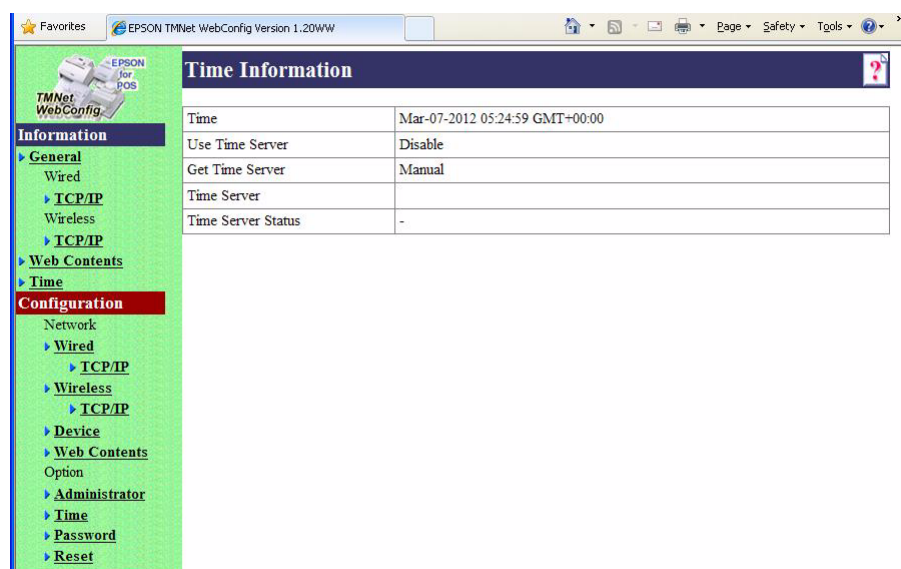| Item	Description
Get IP Address	Sets the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Enables or disables the APIPA setting.
IP Address	Sets the IP address when (Get IP Address) is set to (Manual).
Subnet Mask	Sets the subnet mask when (Get IP Address) is set to (Manual).
Default Gateway	Sets the default gateway when (Get IP Address) is set to (Manual).
Acquire DNS Server Address Automatically	Sets the method of getting the address of the DNS server.
DNS Server Address	Sets the addresses of the DNS server in order of usage when (Acquire DNS Server Address Automatically) is set to (Disable).
Submit	Submits settings to the TM-T70-i.

3

Wireless Setting

You can make settings for a wireless LAN network when the optional wireless LAN cable set (OT-WL01) is used.

Item	Description
Network Mode	Sets the communication mode.
SSID	Sets the SSID.
Ad-Hoc Channel	Sets the ad-hoc channel. (Available only in the ad-hoc mode)
Communication Standard	Sets the communication standard.
Authentication Method	Sets the authentication algorithm.
Security Mode	Sets the encryption algorithm.
Default WEP Key	Sets the WEP key to use.
WEP Key 1	Sets the WEP key 1.
WEP Key 2	Sets the WEP key 2.
WEP Key 3	Sets the WEP key 3.
WEP Key 4	Sets the WEP key 4.
WPA/WPA2 Pre-Shared Key	Sets the network key.
Submit	Submits settings to the TM-T70-i.

TCP/IP Setting (Wireless)

You can change settings for a wireless LAN such as IP address when the optional wireless LAN cable set (OT-WL01) is used.

Item	Description
Get IP Address	Sets the method of getting the IP address.
Set using Automatic Private IP Addressing (APIPA)	Enables or disables the APIPA setting.
IP Address	Sets the IP address when (Get IP Address) is set to (Manual).
Subnet Mask	Sets the subnet mask when (Get IP Address) is set to (Manual).
Default Gateway	Sets the default gateway when (Get IP Address) is set to (Manual).
Acquire DNS Server Address Automatically	Sets the method of getting the address of the DNS server.
DNS Server Address	Sets the addresses of the DNS server in order of usage when (Acquire DNS Server Address Automatically) is set to (Disable).
Submit	Submits settings to the TM-T70-i.

Device Settings

You can set devices controlled by the TM-T70-i or check their operation.

CAUTION	Setting the TM-T70-i printer itself is not possible. You can change the device ID for the TM-T70-i printer.

Item		Description
Register Device	Device ID	Sets the ID of a device to control.
	Model	Sets the model of a device to control.
	IP Address	Sets the IP address of a device to control.
	Retry Interval (ms)	Sets the retry interval of a device to control.
	Register	Adds a device to the Device List.
Device List	Device	Lists devices controlled by the TM-T70-i and their settings. When a device is checked, (Delete) is available. Clicking (Test Print) performs a test print with the device.
	Delete	Deletes the checked device.

Web Contents Update Settings

You can set how to install and update web contents to register on the TM-T70-i or update them.
See also "Registering Web Pages" on page 69.

Item		Description
Automatic Update Settings	Automatic Update	Sets the method of installing web contents. When it is enabled, configure other settings in (Automatic Update Settings). When it is disabled, install web contents manually.
	Frequency	Sets the frequency of automatic update for web contents.
	Timing	Sets the timing of automatic update for web contents.
	Update Time	Sets the start time of automatic update for web contents.
	File URL	Specifies the URL for a file to update automatically. After specifying it, clicking (File Access Test) checks whether the URL is specified correctly.
	Use Proxy	Sets whether to use the proxy server or not. When (Yes) is selected, set (Proxy URL and Port Number).
	Proxy URL and Port Number	Sets the URL and port number for the proxy server to use.
	Submit	Submits settings to the TM-T70-i.

Item		Description
Web Contents Manual Update	Web Contents Archive File (*.zip)	Specifies the web contents to install.
	Upload	Registers the specified web contents on the TM-T70-i.

Administrator Setting

You can set the information for the administrator of the TM-T70-i.

Item	Description
Administrator Name	Sets the name of the administrator of the TM-T70-i.
Location/Person	Sets the location where the TM-T70-i is installed.
Submit	Submits settings to the TM-T70-i.

Time Setting

You can set the time for the TM-T70-i.

Item		Description
Time		Sets the time. Clicking (Get Time) shows the present time.
Time Zone (Hour)		Sets the time zone.
Time Server Setting	Use Time Server	Sets whether to use the time server or not for time setting.
	Get Time Server	Sets the method of getting the IP address/host name for the time server.
	Time Server	Sets the IP address/host name for the time server when (Get Time Server) is set to (Manual).
	Time Server Status	Shows the result of communication with the time server.
Submit		Submits settings to the TM-T70-i.

Password Setting

You can change a password.

Item	Description
Old Password	Enter the current password.
New Password	Enter the new password.
Re-input Password	Enter the new password for confirmation.
Submit	Submits settings to the TM-T70-i.

CAUTION	A user name and a password will be required on the authentication screen when you start up this utility and when you change settings. Enter "epson" for the user name and the password you set for the password.

Reset
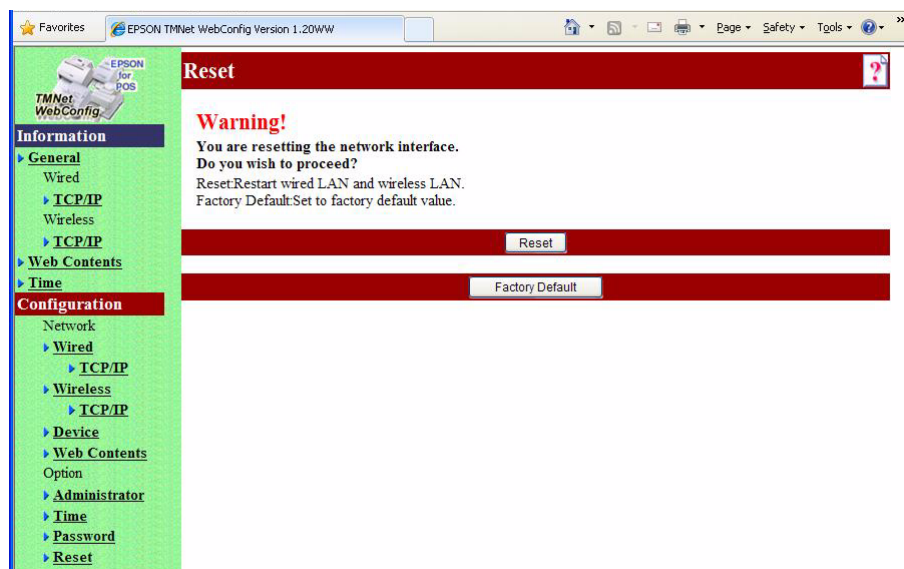
Item	Description
Reset	Restart wired LAN and wireless LAN.
Factory Default	Returns settings of the TM-T70-i to default ones.

Setting Check Modes

Besides the ordinary print mode, the printer has a self-test mode and hexadecimal dumping mode to check settings of the printer.

Self-test Mode

You can confirm the following printer functions by running the self-test.

- Control circuit functions
- Printer mechanism
- Print quality
- ROM version
- DIP switch settings

Starting Self-test

Follow the steps below to run the self-test.

1   Close the roll paper cover.

2   While pressing the FEED button, turn on the printer. (Keep pressing the FEED button until the printer starts printing.)

The printer prints 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 OUT LED flashes. (The printer is now in the self-test wait mode.):

"If you want to continue SELF-TEST printing. Please press FEED button."

3   To begin the print test again, press the FEED button while the printer is in the self-test wait mode.

4   After printing the following message, the printer is initialized and returned to the normal 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.

Starting hexadecimal dumping

Follow the steps below to perform the hexadecimal dumping.

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.

1 Open the roll paper cover.

2 While pressing the FEED button, turn on the printer.

3 Close the roll paper cover.

Data received from then on is printed out from the printer in hexadecimal numbers and their corresponding characters.

4 To quit the hexadecimal dumping mode, turn off the printer or press the FEED button three times.

Printing 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  ***
```

Handling

This chapter describes basic handling of the printer.

Installing and Replacing Roll Paper

⚠ WARNING	• **Do not open the roll paper cover during printing.**
	  The printer may be damaged.
	• **Do not touch the manual cutter with your hands when installing or replacing the roll paper.**
	  Otherwise, you may be injured because the manual cutter blade is sharp.

CAUTION	• Use roll paper that meets the printer specification. For details about paper specification, see "Paper Specifications" on page 30. • Paper must not be pasted to the roll paper spool.

1 Press the cover open lever to open the roll paper cover.
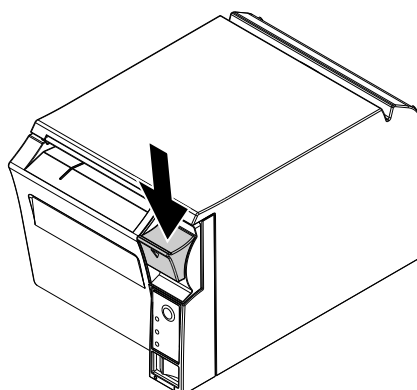
2 Remove the used roll paper core, if any.

3 In the correct direction of the roll paper, install the roll paper.
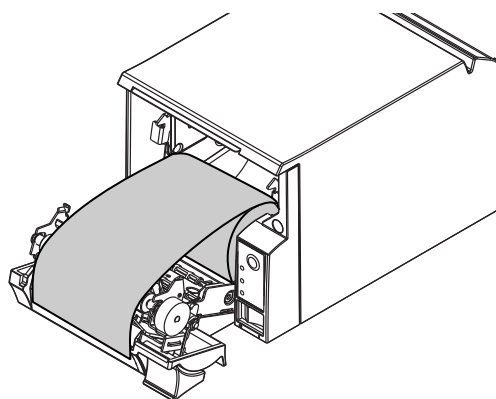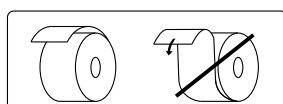
4 Pull out some roll paper, and make sure that the roll paper is set between the paper guides.

Paper guides
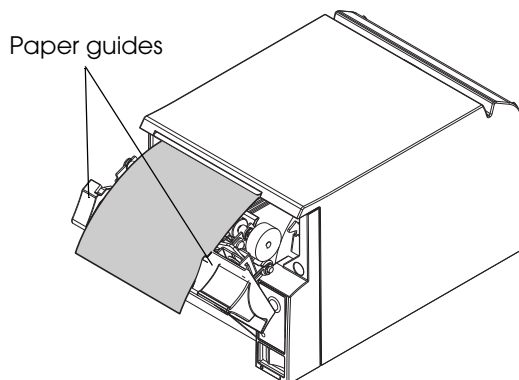
5 Close the roll paper cover.
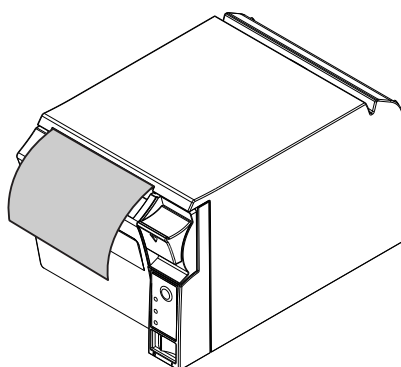
6 Tear off the roll paper.
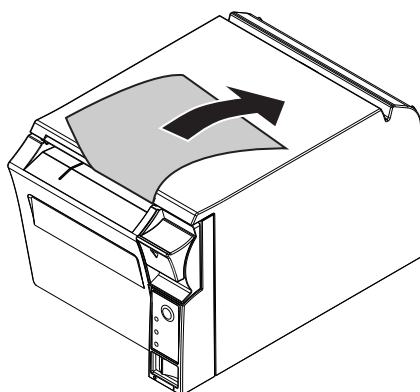
Removing Jammed Paper

> ⚠ **CAUTION**
>
> Do not touch the thermal head (See**"Cleaning the Thermal Head" on page 93**.) because it can be very hot after printing.

1 Turn off the printer and press the cover open lever to open the roll paper cover.

2 Remove the jammed paper, reinstall the roll, and close the roll paper cover.

Cleaning the Thermal Head

Epson recommends cleaning the thermal head periodically (generally every 3 months) to maintain receipt print quality.

> ⚠ **CAUTION**
>
> After printing, the thermal head can be very hot. Do not touch it and let it cool before you clean it. Do not damage the thermal head by touching it with your fingers or any hard object.

Turn off the printer and open the printer cover. Clean the thermal elements of the thermal head with a cotton swab moistened with an alcohol solvent (ethanol or IPA).

Thermal head

4
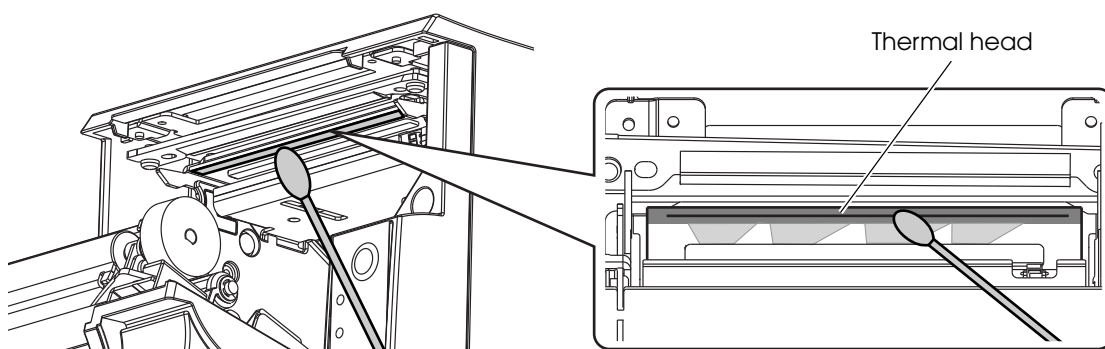
Connecting to External Devices

Follow the steps below to connect external devices to the interface section.

⚠ **CAUTION**	• **When connecting external devices to the USB (including Micro-USB) connectors, 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.**
	  ∗ **Use the UL-approved external devices (only for North American users).**
	  ∗ **Connect the external devices only when those total rated current is less than 2.0A.**
	• **When using the printer, make sure the protective cover fits firmly into place.**
	• **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.**

NOTE	Connecting the optional Wireless LAN Cable Set (OT-WL01) to the USB connector enables the wireless LAN connection. (See "Connecting the wireless LAN cable set" on page 47.)While connecting via wireless LAN, keep the Ethernet cable unconnected to the printer.

1   Connect each cables to the connectors at the back of the printer.

Ethernet connector   *1   *2   Protective cover

Drawer kick-out connector

Micro-USB (Type AB) connector (for setting only)

USB connectors (for optional products)

*1: Analog RGB connector (not available currently)
*2: Micro SD card slot (not available currently)
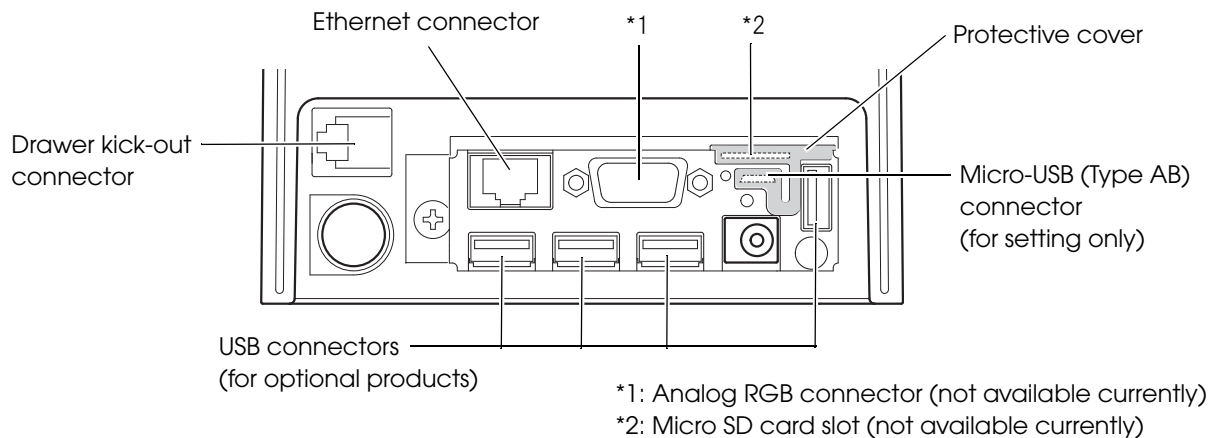
2   Connect other ends of the cables to external devices.

Preparing for Transport

Follow the steps below to transport the printer.

1   Turn off the printer.

2   Confirm that ⏻ LED is off.

3   Remove the power supply connector.

4   Remove the roll paper.

5   Pack the printer 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 International character set (See "International Character Sets" on page 109.) is USA:

HEX	0	1	2	3	4	5	6	7
0	NUL 00	DLE 16	SP 32	0 48	@ 64	P 80	` 96	p 112
1	01	XON 17	! 33	1 49	A 65	Q 81	a 97	q 113
2	02	18	" 34	2 50	B 66	R 82	b 98	r 114
3	03	XOFF 19	# 35	3 51	C 67	S 83	c 99	s 115
4	EOT 04	DC4 20	$ 36	4 52	D 68	T 84	d 100	t 116
5	ENQ 05	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
6	ACK 06	22	& 38	6 54	F 70	V 86	f 102	v 118
7	07	23	' 39	7 55	G 71	W 87	g 103	w 119
8	08	CAN 24	(40	8 56	H 72	X 88	h 104	x 120
9	HT 09	25	) 41	9 57	I 73	Y 89	i 105	y 121
A	LF 10	26	∗ 42	: 58	J 74	Z 90	j 106	z 122
B	11	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	14	RS 30	. 46	> 62	N 78	^ 94	n 110	~ 126
F	15	31	/ 47	? 63	O 79	_ 95	o 111	SP 127

HEX	8		9		A		B		C		D		E		F	
0	Ç	128	É	144	á	160	▒	176	└	192	╨	208	α	224	≡	240
1	ü	129	æ	145	í	161	▓	177	┴	193	╤	209	β	225	±	241
2	é	130	Æ	146	ó	162	█	178	┬	194	╥	210	Γ	226	≥	242
3	â	131	ô	147	ú	163	│	179	├	195	╙	211	π	227	≤	243
4	ä	132	ö	148	ñ	164	┤	180	─	196	╘	212	Σ	228	⌠	244
5	à	133	ò	149	Ñ	165	╡	181	┼	197	╒	213	σ	229	⌡	245
6	å	134	û	150	ª	166	╢	182	╞	198	╓	214	µ	230	÷	246
7	ç	135	ù	151	º	167	╖	183	╟	199	╫	215	τ	231	≈	247
8	ê	136	ÿ	152	¿	168	╕	184	╚	200	╪	216	Φ	232	°	248
9	ë	137	Ö	153	⌐	169	╣	185	╔	201	┘	217	Θ	233	•	249
A	è	138	Ü	154	¬	170	║	186	╩	202	┌	218	Ω	234	·	250
B	ï	139	¢	155	½	171	╗	187	╦	203	█	219	δ	235	√	251
C	î	140	£	156	¼	172	╝	188	╠	204	▄	220	∞	236	ⁿ	252
D	ì	141	¥	157	¡	173	╜	189	=	205	▌	221	φ	237	²	253
E	Ä	142	Pt	158	«	174	╛	190	╬	206	▐	222	ε	238	■	254
F	Å	143	ƒ	159	»	175	┐	191	╧	207	▀	223	∩	239	SP	255

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Page 1 (Katakana)

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

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

100

Page 3 (PC860: Portuguese)

HEX	8		9		A		B		C		D		E		F	
0	Ç	128	É	144	á	160	▒	176	└	192	╨	208	α	224	≡	240
1	ü	129	À	145	í	161	▒	177	┴	193	╤	209	β	225	±	241
2	é	130	È	146	ó	162	▓	178	┬	194	╥	210	Γ	226	≥	242
3	â	131	ô	147	ú	163	│	179	├	195	╙	211	π	227	≤	243
4	ã	132	õ	148	ñ	164	┤	180	─	196	╘	212	Σ	228	⌠	244
5	à	133	ò	149	Ñ	165	╡	181	┼	197	╒	213	σ	229	⌡	245
6	Á	134	Ú	150	ª	166	╢	182	╞	198	╓	214	µ	230	÷	246
7	ç	135	ù	151	º	167	╖	183	╟	199	╫	215	τ	231	≈	247
8	ê	136	Ì	152	¿	168	╕	184	╚	200	╪	216	Φ	232	°	248
9	Ê	137	Õ	153	Ò	169	╣	185	╔	201	┘	217	Θ	233	•	249
A	è	138	Ü	154	¬	170	║	186	╩	202	┌	218	Ω	234	·	250
B	Í	139	¢	155	½	171	╗	187	╦	203	█	219	δ	235	√	251
C	Ô	140	£	156	¼	172	╝	188	╠	204	▄	220	∞	236	ⁿ	252
D	ì	141	Ù	157	¡	173	╜	189	=	205	▌	221	φ	237	²	253
E	Ã	142	₧	158	«	174	╛	190	╬	206	▐	222	ε	238	■	254
F	Â	143	Ó	159	»	175	┐	191	╧	207	▀	223	∩	239	SP	255

HEX	8		9		A		B		C		D		E		F	
0	Ç	128	É	144	¦	160	▒	176	└	192	╨	208	α	224	≡	240
1	ü	129	È	145	´	161	▓	177	┴	193	╤	209	β	225	±	241
2	é	130	Ê	146	ó	162	█	178	┬	194	╥	210	Γ	226	≥	242
3	â	131	ô	147	ú	163	│	179	├	195	╙	211	π	227	≤	243
4	Â	132	Ë	148	¨	164	┤	180	─	196	╘	212	Σ	228	⌠	244
5	à	133	Ï	149	¸	165	╡	181	┼	197	╒	213	σ	229	⌡	245
6	¶	134	û	150	³	166	╢	182	╞	198	╓	214	µ	230	÷	246
7	ç	135	ù	151	¯	167	╖	183	╟	199	╫	215	τ	231	≈	247
8	ê	136	¤	152	Î	168	╕	184	╚	200	╪	216	Φ	232	°	248
9	ë	137	Ô	153	┌	169	╣	185	╔	201	┘	217	Θ	233	•	249
A	è	138	Ü	154	¬	170	║	186	╩	202	┌	218	Ω	234	·	250
B	ï	139	¢	155	½	171	╗	187	╦	203	█	219	δ	235	√	251
C	î	140	£	156	¼	172	╝	188	╠	204	▄	220	∞	236	ⁿ	252
D	═	141	Ù	157	¾	173	╜	189	═	205	▌	221	φ	237	²	253
E	À	142	Û	158	«	174	╛	190	╬	206	▐	222	ε	238	■	254
F	§	143	ƒ	159	»	175	┐	191	╧	207	▀	223	∩	239	SP	255

Page 5 (PC865: Nordic)

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	░ 176	└ 192	╨ 208	α 224	≡ 240
1	ü 129	æ 145	í 161	▒ 177	┴ 193	╤ 209	β 225	± 241
2	é 130	Æ 146	ó 162	▓ 178	┬ 194	╥ 210	Γ 226	≥ 242
3	â 131	ô 147	ú 163	│ 179	├ 195	╙ 211	π 227	≤ 243
4	ä 132	ö 148	ñ 164	┤ 180	─ 196	╘ 212	Σ 228	⌠ 244
5	à 133	ò 149	Ñ 165	╡ 181	┼ 197	╒ 213	σ 229	⌡ 245
6	å 134	û 150	ª 166	╢ 182	╞ 198	╓ 214	μ 230	÷ 246
7	ç 135	ù 151	º 167	╖ 183	╟ 199	╫ 215	τ 231	≈ 247
8	ê 136	ÿ 152	¿ 168	╕ 184	╚ 200	╪ 216	Φ 232	° 248
9	ë 137	Ö 153	⌐ 169	╣ 185	╔ 201	┘ 217	Θ 233	• 249
A	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Ω 234	· 250
B	ï 139	ø 155	½ 171	╗ 187	╦ 203	█ 219	δ 235	√ 251
C	î 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	∞ 236	ⁿ 252
D	ì 141	Ø 157	¡ 173	╜ 189	= 205	▌ 221	Φ 237	² 253
E	Ä 142	Pt 158	« 174	╛ 190	╬ 206	▐ 222	ε 238	■ 254
F	Å 143	ƒ 159	¤ 175	┐ 191	╧ 207	▀ 223	∩ 239	SP 255

Page 16 (WPC1252)

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	¡	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	ƒ	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	ˆ	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

Page 17 (PC866: Cyrillic #2)

HEX	8	9	A	B	C	D	E	F
0	А 128	Р 144	а 160	░ 176	└ 192	╨ 208	р 224	Ё 240
1	Б 129	С 145	б 161	▒ 177	┴ 193	╤ 209	с 225	ё 241
2	В 130	Т 146	в 162	▓ 178	┬ 194	╥ 210	т 226	Є 242
3	Г 131	У 147	г 163	│ 179	├ 195	╙ 211	у 227	є 243
4	Д 132	Ф 148	д 164	┤ 180	─ 196	╘ 212	ф 228	Ї 244
5	Е 133	Х 149	е 165	╡ 181	┼ 197	╒ 213	х 229	ї 245
6	Ж 134	Ц 150	ж 166	╢ 182	╞ 198	╓ 214	ц 230	ў 246
7	З 135	Ч 151	з 167	╖ 183	╟ 199	╫ 215	ч 231	ў 247
8	И 136	Ш 152	и 168	╕ 184	╚ 200	╪ 216	ш 232	° 248
9	Й 137	Щ 153	й 169	╣ 185	╔ 201	┘ 217	щ 233	• 249
A	К 138	Ъ 154	к 170	║ 186	╩ 202	┌ 218	ъ 234	· 250
B	Л 139	Ы 155	л 171	╗ 187	╦ 203	█ 219	ы 235	√ 251
C	М 140	Ь 156	м 172	╝ 188	╠ 204	▄ 220	ь 236	№ 252
D	Н 141	Э 157	н 173	╜ 189	═ 205	▌ 221	э 237	¤ 253
E	О 142	Ю 158	о 174	╛ 190	╬ 206	▐ 222	ю 238	■ 254
F	П 143	Я 159	п 175	┐ 191	╧ 207	▀ 223	я 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	░ 176	└ 192	đ 208	Ó 224	- 240
1	ü 129	Ĺ 145	í 161	▒ 177	┴ 193	Đ 209	β 225	˝ 241
2	é 130	Í 146	ó 162	▓ 178	┬ 194	Ď 210	Ô 226	˛ 242
3	â 131	ô 147	ú 163	│ 179	├ 195	Ë 211	Ń 227	ˇ 243
4	ä 132	ö 148	Ą 164	┤ 180	─ 196	ď 212	ń 228	˘ 244
5	ů 133	Ľ 149	ą 165	Á 181	┼ 197	Ň 213	ň 229	§ 245
6	ć 134	ľ 150	Ž 166	Â 182	Ă 198	Í 214	Š 230	÷ 246
7	ç 135	Ś 151	ž 167	Ě 183	ă 199	Î 215	š 231	¸ 247
8	ł 136	ś 152	Ę 168	Ş 184	Ŀ 200	ě 216	Ŕ 232	° 248
9	ë 137	Ö 153	ę 169	╣ 185	╔ 201	┘ 217	Ú 233	¨ 249
A	Ő 138	Ü 154	SP 170	║ 186	╩ 202	┌ 218	ŕ 234	• 250
B	ő 139	Ť 155	ź 171	╗ 187	╦ 203	█ 219	Ű 235	ű 251
C	î 140	ť 156	Č 172	╝ 188	╠ 204	▄ 220	ý 236	Ř 252
D	Ź 141	Ł 157	ş 173	Ż 189	═ 205	Ţ 221	Ý 237	ř 253
E	Ä 142	× 158	« 174	ż 190	╬ 206	Ů 222	ţ 238	■ 254
F	Ć 143	č 159	» 175	┐ 191	¤ 207	▀ 223	´ 239	SP 255

Page 19 (PC858: Euro)

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

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	SP 160	SP 176	SP 192	SP 208	SP 224	SP 240
1	SP 129	SP 145	SP 161	SP 177	SP 193	SP 209	SP 225	SP 241
2	SP 130	SP 146	SP 162	SP 178	SP 194	SP 210	SP 226	SP 242
3	SP 131	SP 147	SP 163	SP 179	SP 195	SP 211	SP 227	SP 243
4	SP 132	SP 148	SP 164	SP 180	SP 196	SP 212	SP 228	SP 244
5	SP 133	SP 149	SP 165	SP 181	SP 197	SP 213	SP 229	SP 245
6	SP 134	SP 150	SP 166	SP 182	SP 198	SP 214	SP 230	SP 246
7	SP 135	SP 151	SP 167	SP 183	SP 199	SP 215	SP 231	SP 247
8	SP 136	SP 152	SP 168	SP 184	SP 200	SP 216	SP 232	SP 248
9	SP 137	SP 153	SP 169	SP 185	SP 201	SP 217	SP 233	SP 249
A	SP 138	SP 154	SP 170	SP 186	SP 202	SP 218	SP 234	SP 250
B	SP 139	SP 155	SP 171	SP 187	SP 203	SP 219	SP 235	SP 251
C	SP 140	SP 156	SP 172	SP 188	SP 204	SP 220	SP 236	SP 252
D	SP 141	SP 157	SP 173	SP 189	SP 205	SP 221	SP 237	SP 253
E	SP 142	SP 158	SP 174	SP 190	SP 206	SP 222	SP 238	SP 254
F	SP 143	SP 159	SP 175	SP 191	SP 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	β
U.K.	£	$	@	[	\	]	^	`	{	|	}	~
Denmark I	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
Spain I	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	$	@	[	¥	]	^	`	{	|	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
Korea	#	$	@	[	₩	]	^	`	{	|	}	~
Slovenia/Croatia	#	$	Ž	Š	Đ	Ć	Č	ž	š	đ	ć	č
China	#	¥	@	[	\	]	^	`	{	|	}	~