EPSON

DM-D30

Technical Reference Guide

Product Overview

Describes features for this product.

Setup

Describes how to install and set this product.

Handling

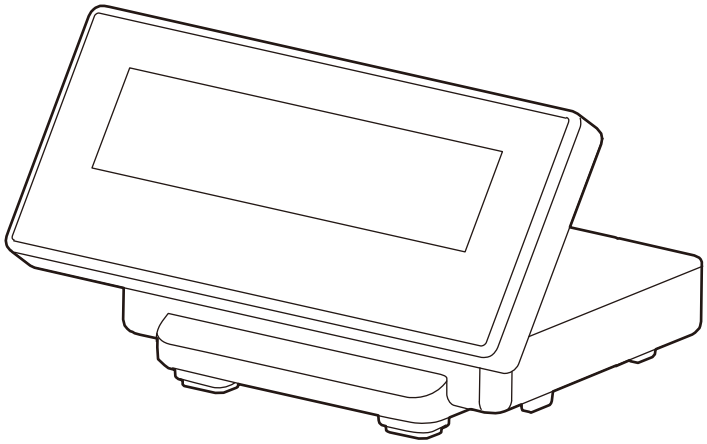
Describes the basic usage of this product.

Application Development Information

Describes how to control this product and information necessary for developing applications.

Appendix

Describes the specifications and character code tables.



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ESC/POS Proprietary Command System

Epson took the initiative by introducing ESC/POS, a proprietary POS printer command system, which includes patented or patent pending commands and enables versatile POS system construction with high scalability.

Compatible with all types of Epson POS printers and displays, this proprietary control system also offers the flexibility to easily make future upgrades. Its popularity is worldwide.

ESC/POS is designed to reduce the processing load on the host computer in POS environments. It comprises a set of highly functional and efficient commands that enables the full realization of the potential of printers.

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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

- Shut down your equipment immediately if it produces smoke, a strange odor, or unusual noise. Continued use may lead to fire. Immediately disconnect the USB cable and contact qualified service personnel 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, disconnect the USB cable immediately, and then contact qualified service personnel for advice. Continued usage may lead to fire.

Cautions

CAUTION

- Do not connect cables and external interfaces in ways other than those mentioned in the manual. Different connections may cause equipment damage and burning.
- 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 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.
- If you do not use this product for an extended period of time, always disconnect the USB cable for safety. If you move the product, ensure that all of the cables are disconnected before moving it.
- Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.

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 provides the development engineers with necessary information for developing, designing, installing the system using DM-D30 as well as for developing and designing the applications.

Manual Content

The manual is made up of the following sections:

Chapter 1	Product Overview
Chapter 2	Setup
Chapter 3	Handling
Chapter 4	Application Development Information
Appendix	Product Specifications Character Code Tables

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Product Overview

This chapter describes features of the product.

Features

DM-D30 is a customer display for displaying characters. The main features of this product are as follows.

Display

- 20 digit x 2 lines dot matrix for displaying half-width characters.

Usability

- Compact.
- You can adjust the angle of the display so it is easy to see.
- Power supply to the product is USB bus power.

Interface

- You can connect to a Windows PC USB port or the USB ports for the printers shown under "Connectable TM Printers" on page 9.
- When connected to a TM printer, attach the wireless LAN unit to the stand section* to connect the TM printer and a smart device or the like via wireless LAN.

  * There are limitations on the printers that can be attached. For details, see "Connecting the Printer's Wireless LAN Unit" on page 15.

Connectable TM Printers

Please click the following URL to see the printers that can be connected to this customer display.

☞ https://support.epson.net/p_doc/9d5/

Product Structure

Accessories

Included

- Affixing tape
- Manual

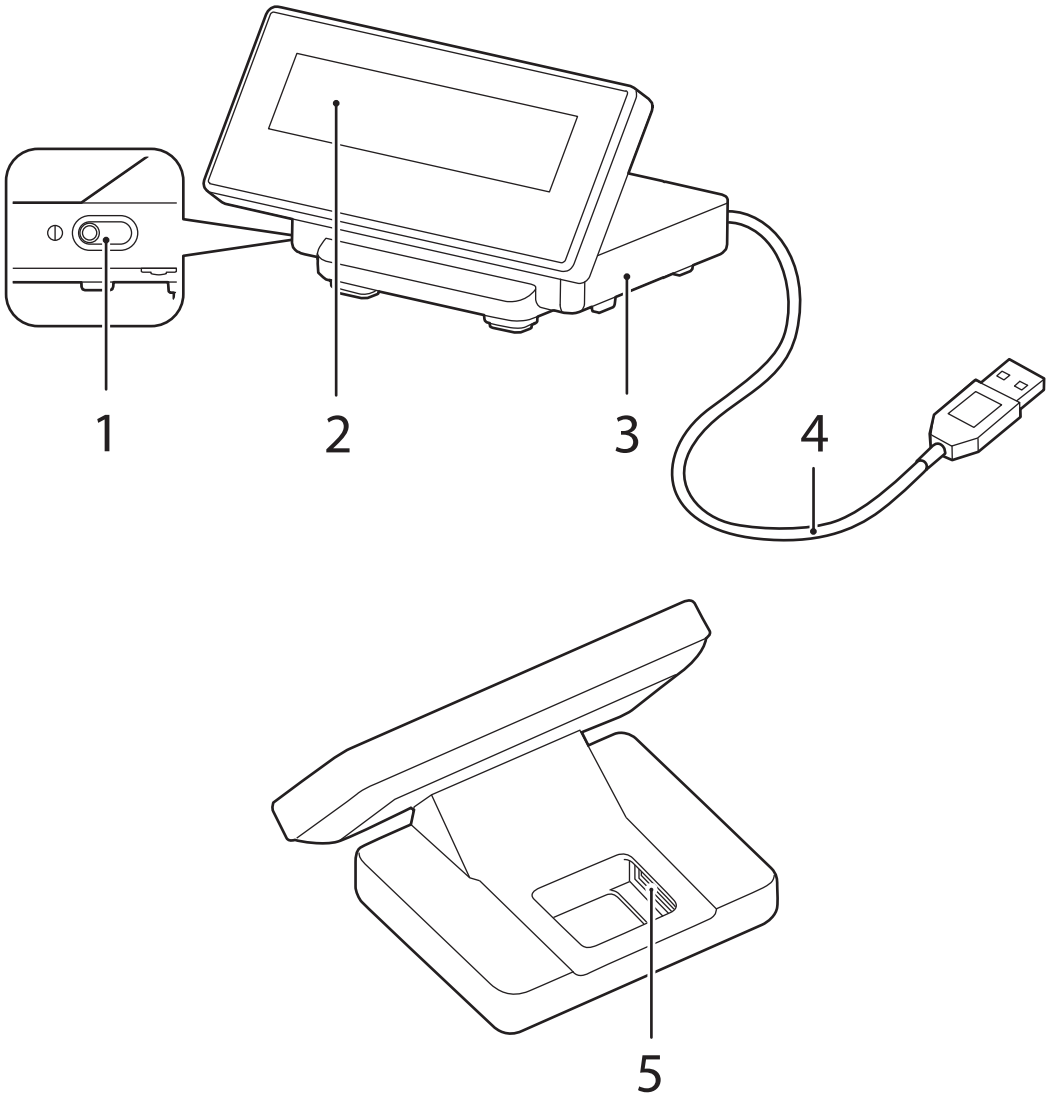
Option

- USB extension cable (1 m): OT-UL30

CAUTION

- Use the OT-UL30 if you want to extend the USB cable for the connection between this product and the TM printer.
- If attaching the wireless LAN unit to the stand of this product, you cannot use the USB extension cable. (The wireless LAN unit may not operate properly due to the voltage decrease from the cable.)

Part Names and Functions



1	Contrast adjustment control	Move this to adjust the contrast of the LCD screen.
2	Display	Displays on the LCD screen. You can adjust the angle of the display. Note: The display is covered with a protective film. Remove before use.
3	Stand	Supports the display unit. Place it on a flat surface.
4	USB cable	Use to connect to the printer or a computer.
5	Wireless LAN unit connector	Use to connect the Wireless LAN unit that is pre-installed to the printer's USB connector, when connecting to a Wi-Fi® model printer.

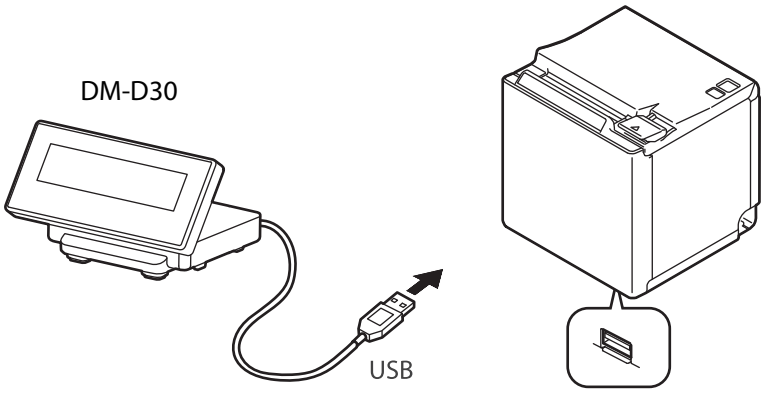
System Outline

This section explains the system connection pattern using this product.

Connecting with TM Printer

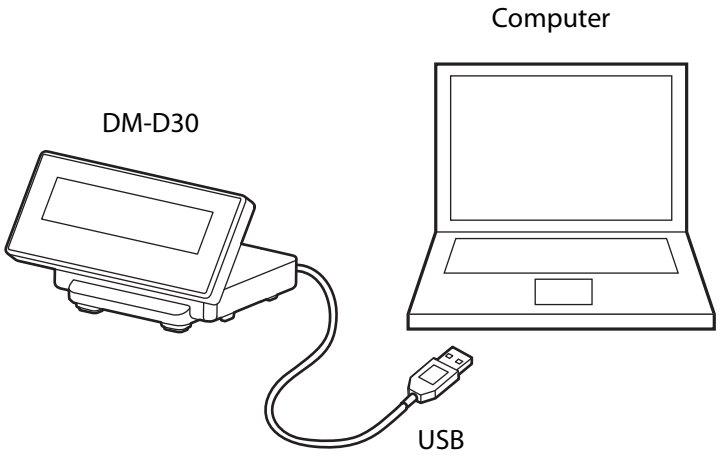
Connect this product's USB cable to the TM printer. Power is supplied from the printer.

For the connectable TM printers, see "Connectable TM Printers" on page 9.



Connecting with Computer

Connect this product's USB cable to the computer. Power is supplied from the computer.



CAUTION

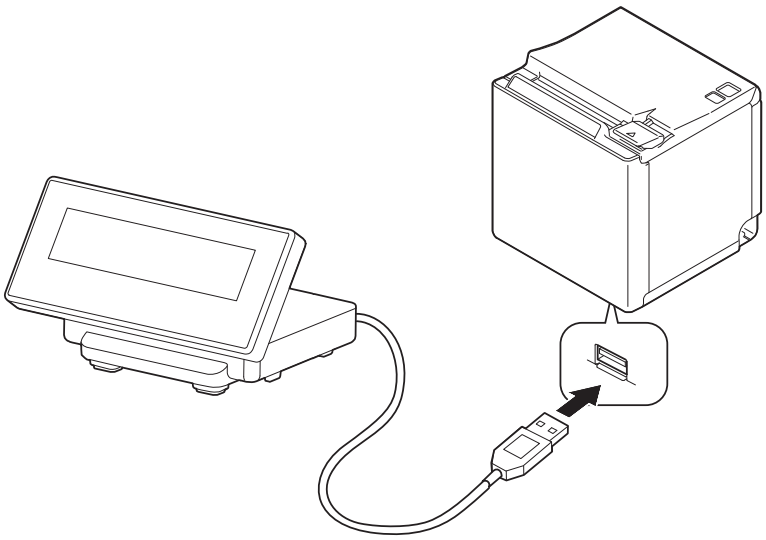
- When connecting to a bus power hub, this product may not always operate.
- Install the driver you are using before connecting.

Setup

This chapter explains the installation and setting operations necessary to use this product.

Connecting to the Printer

Connect the USB cable of the customer display to the USB connector on the printer.



CAUTION

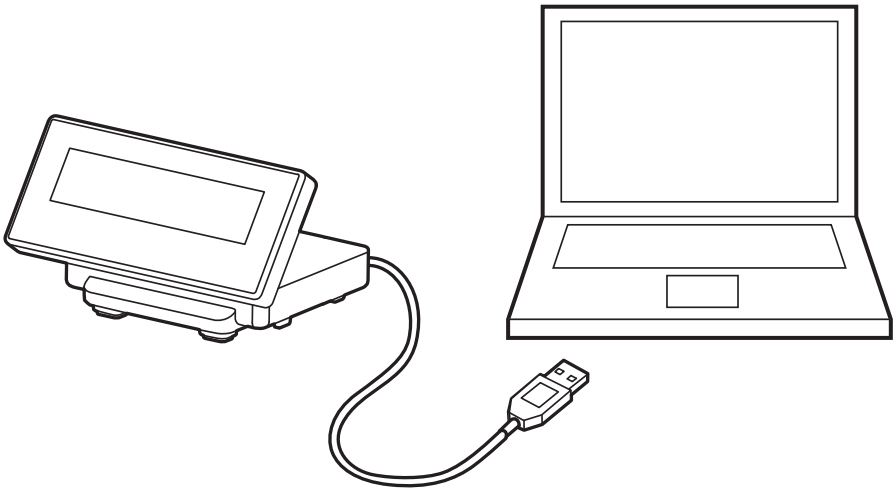
- When you connect the USB cable to the printer, be sure to turn off the printer before connecting.
- If extending the connection cable, use the dedicated extension cable OT-UL30. However, if connecting the wireless LAN unit to the stand of the DM-D30, you cannot use the extension cable.

NOTE

For the position of connectors on the printer and so on, see the documentation provided with the printer.

Connecting to the Computer

Connect the USB cable of the customer display to the USB connector on the computer.



CAUTION	We do not recommend using this USB bus power device with a USB extension cable. Depending on the configuration of the cable, operational errors or a deterioration in EMC characteristics may occur due to a drop in voltage.

Connecting the Printer's Wireless LAN Unit

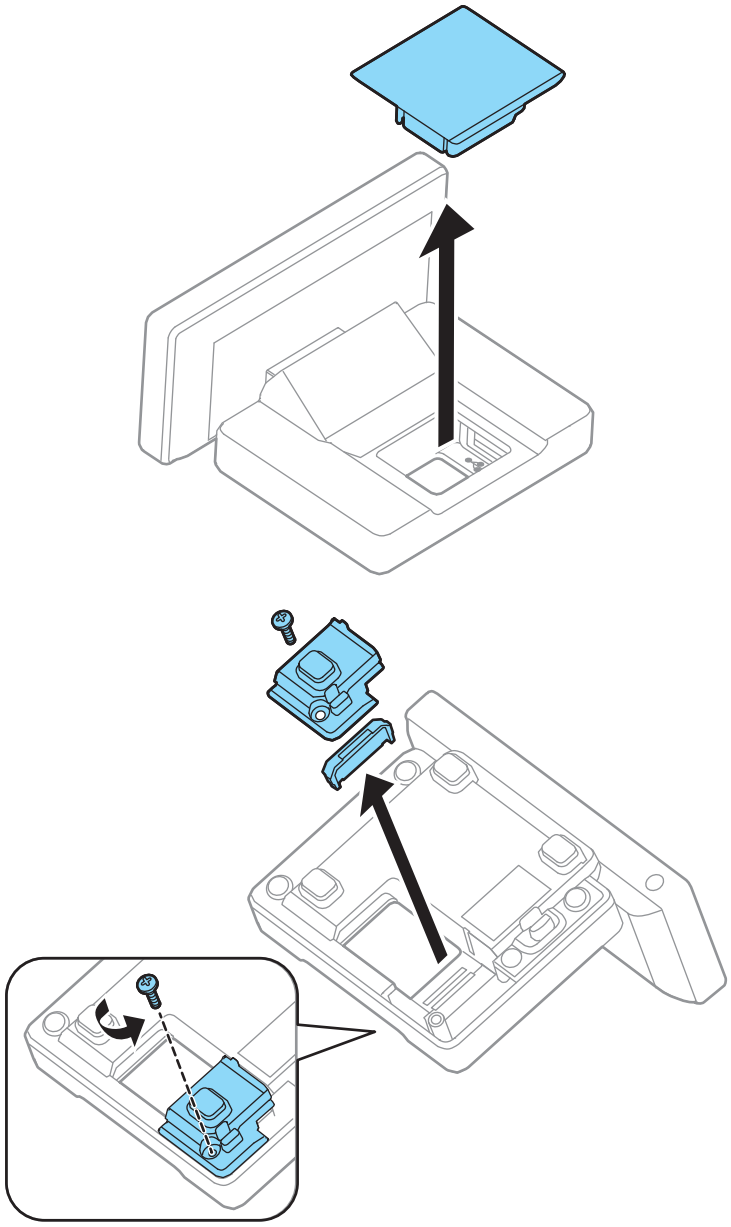
When the Wireless LAN unit is connected to the printer's USB connector and there are no free USB connectors, you can use the Wireless LAN unit and the customer display at the same time by connecting the Wireless LAN unit to the Wireless LAN unit connector on this device.

CAUTION

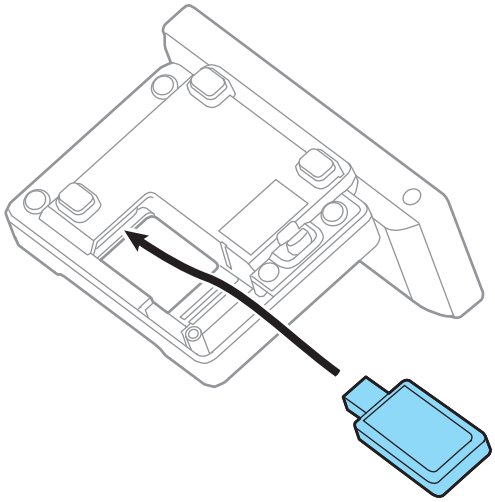
- You can only use the optional Wireless LAN unit supported by the TM printer.
- The following products cannot be used with the Wireless LAN unit connected to the Wireless LAN unit connector.
  TM-T88VI / TM-T88VII / TM-T70II-DT / TM-T88V-DT / TM-T70II-DT2 / TM-T88VI-DT2

Follow the steps below to connect the Wireless LAN unit to the device's Wireless LAN unit connector.

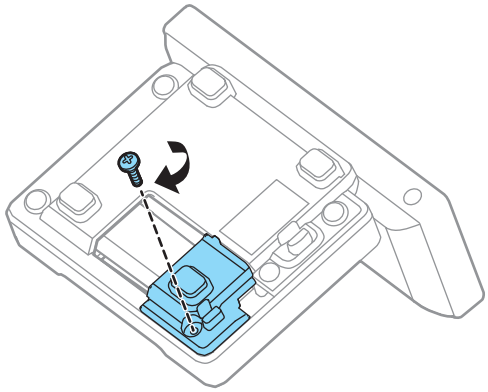
1 Remove the covers for the top and bottom of the stand as shown in the illustration.



2 Connect the Wireless LAN unit to the Wireless LAN unit connector.



3 Reattach the cover for the bottom. Keep the cover for the stand removed.

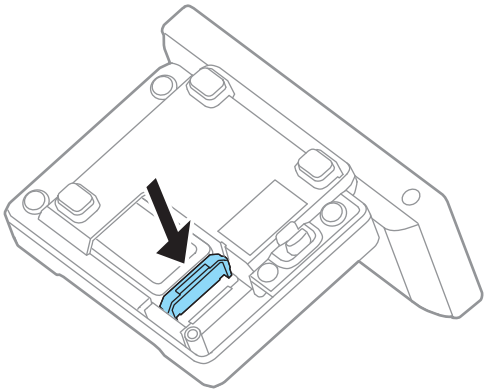


CAUTION

- Do not place anything in the upper section (cover opening) of the Wireless LAN unit. If heat is not allowed to dissipate when using the product, it may lead to a malfunction.
- Do not use a USB extension cable. Operational errors may occur due to a drop in voltage.

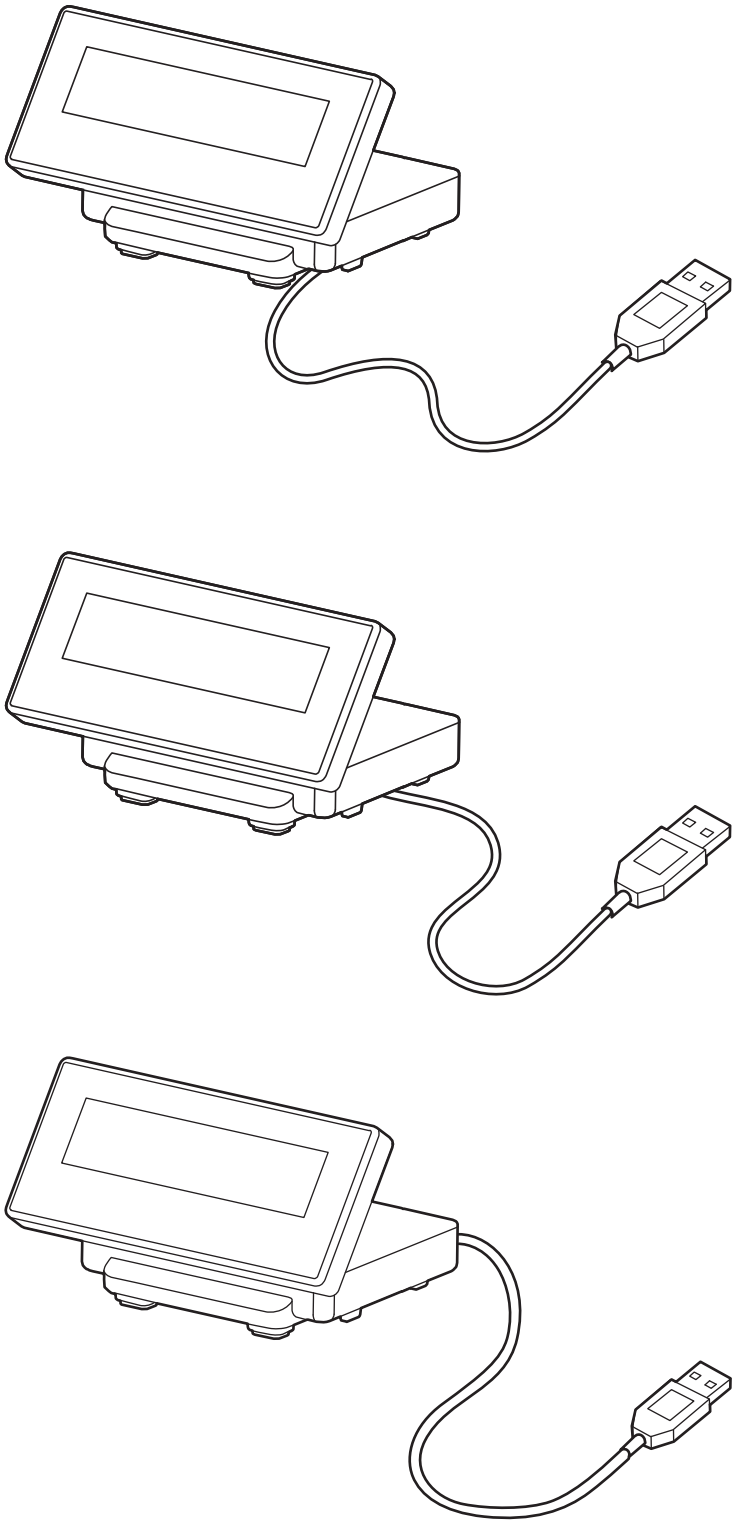
NOTE

Install dividers if necessary depending on the length of the Wireless LAN unit.



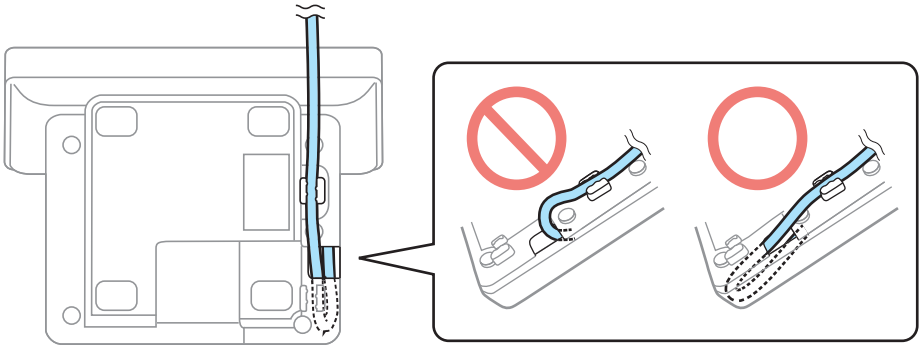
Drawing Out the Cable

You can draw out the USB cable from the front, the side, or the back.



NOTE

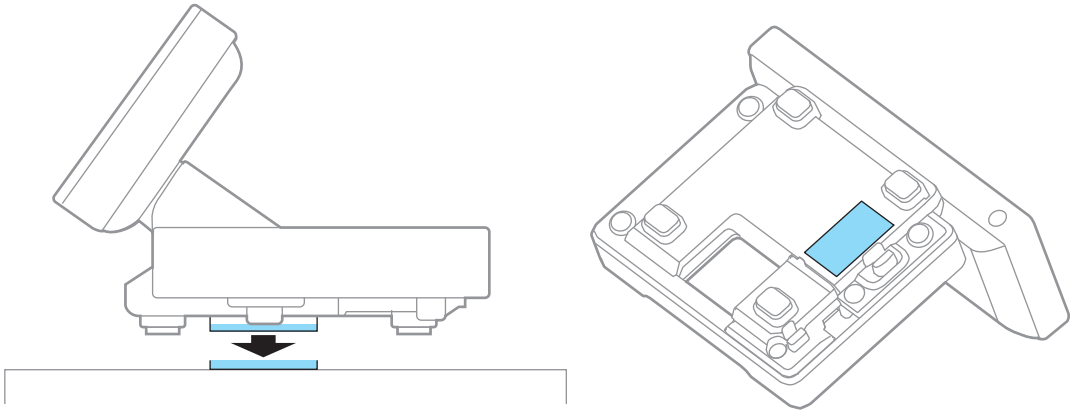
If you draw the cable from the front, fold the cable back inside the hollow of the stand, and then secure the cable as shown in the illustration, so that it does not become loose.



Affixing the Customer Display

You can use the affixing tape supplied to secure the device.

Attach the affixing tape to the points shown in the following illustration.



Memory Switch Setting

This product has a memory switch which can be set using the printer setting utility of the TM printer.

NOTE

Printer setting utilities are prepared for each TM product.

Turn Off Backlight

Select the period of time until the backlight turns off, from 0 to 120 minutes

Initial setting: 0 (Normaly On)

Code-page

Specify from 40 code pages and custom pages

Initial setting: PC437:USA,Standard Europe

International character set

Specify from 18 sets

Initial setting: USA

Adjust Brightness

Select from 20%, 40%, 60%, and 100%

Initial setting: 100%

Cursor Display

Select "Enabled" or "Disabled"

Initial setting: Disabled

Handling

This chapter explains the basic handling methods for this product.

Turning the Power On/Off

The power for this product is supplied by USB bus power, which means that the power is supplied from the connected printer or computer through the USB connector.

To turn this product on or off, turn the connected printer or computer on or off.

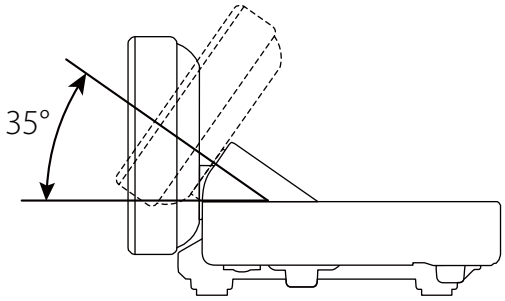
NOTE	The display may not turn off while the power is still supplied to USB connector, even if the printer's Power LED is off.

Changing the Angle of the Display Unit

You can change the angle of the display unit by holding the stand with your hand while moving the display unit.

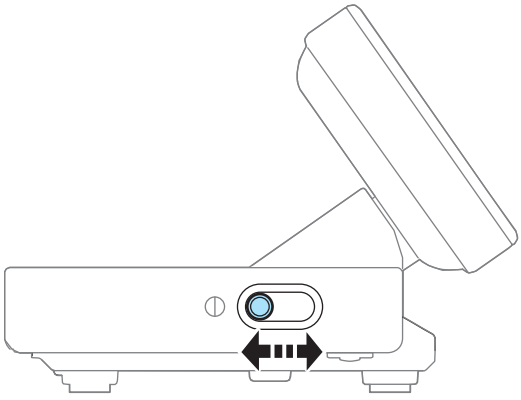
The following shows the range of motion.

CAUTION	Do not exceed the range of motion when moving the display unit. Applying excess force when moving the display unit may cause damage.



Adjusting the Contrast

You can adjust the contrast of the LCD screen by sliding the contrast adjustment control on the side of the stand.



Cleaning the Outer Case

Be sure to disconnect the USB cable from the printer or the computer, and then wipe the dirt off the outer case with a dry cloth or a damp cloth.

CAUTION

- Never clean the product with alcohol, benzine, thinner, or other such solvents. Doing so may damage or break the parts made of plastic and rubber.
- Rubbing the LCD screen with too much force using a dry cloth may scratch the surface.

Application Development Information

This chapter explains how to control the customer display as well as necessary information for developing system applications using this product.

Controlling the Customer display

This product supports the following control commands.

- ePOS-Print XML (Only when connected to a TM printer that supports ePOS-Print)
- ESC/POS

Users can control the customer display by using the aforementioned commands, or the following development kits or drivers.

- Epson ePOS SDK
- EPSON OPOS ADK
- EPSON OPOS ADK for .NET
- EPSON JavaPOS ADK
- EPSON Advanced Printer Driver Ver.5 (APD5)

ePOS-Print XML

ePOS-Print XML is the Epson original control command system for POS printers and customer displays.

By sending an XML-format request message via HTTP transmission to a TM printer that supports ePOS-Print, you can control the customer display connected to the printer. For details about ePOS-Print XML, see the ePOS-Print XML User's Manual.

> **NOTE**
>
> Control via ePOS-Print XML is possible only when connected to a TM printer that supports ePOS-Print.
> For the supported printers, see "Connectable TM Printers" on page 9.

ESC/POS

ESC/POS is the Epson original printer command system for POS printers and customer display. With ESC/POS commands, you can directly control all functions of this product, but detailed knowledge of printer specifications or combination of commands is required, compared to using drivers and applications.

For details on the ESC/POS commands, see "ESC/POS Command Reference for Customer Displays" by accessing the URL below.

☞ https://support.epson.net/publist/reference_en/

Cautionary Notes on Marquee Display

Due to the nature of the LCD installed, the marquee display (horizontal scroll display) may become difficult to see when the characters displayed are switched at a short interval.

We recommend using the following method to set the character display switch interval to 600 msec or longer.

- ePOS SDK
  Perform settings using the unitWait parameter of addMarguee (for JavaScript) or addMarqueeText (for the others).
  For details, see the User's Manual included with SDK.

- ESC/POS Commands
  Perform settings using the parameter *n* of the command US ^.
  For details, see "ESC/POS Command Reference for Customer Displays."

- OPOS ADK
  Perform settings using the MarqueeUnitWait property.
  For details, see the Application Development Guide included with ADK.

Software

The following software are provided for application development.

Development Kits

Software	Description
Epson ePOS SDK	Development kit for controlling the POS peripheral devices such as the printer and customer display from the Web application or native application for smart devices. It includes libraries, manuals, and sample programs.
for iOS	
for Android™	
for Universal Windows apps	
for JavaScript	
EPSON OPOS ADK	OCX driver that controls the POS peripheral devices such as the customer display using the OLE technologies *. Because controlling POS peripherals with original commands is not required on the application side, efficient system development is possible.
EPSON OPOS ADK for .NET	The OPOS ADK for .NET is a POS industry standard printer driver compatible with Microsoft POS for .NET. It allows you to develop applications that are compatible with the UPOS (Unified POS) specification. When developing applications, use a separate development environment such as Microsoft Visual Studio .NET.
EPSON JavaPOS ADK	JavaPOS ADK is a UPOS driver in Java environment. You can develop applications based on the UPOS (UnifiedPOS) specifications.

*: OLE technology developed by Microsoft divides software into part blocks. The OPOS driver is completely different from a printer driver for Windows. You need to program it in a development environment such as Visual Basic. It is not a driver that enables printing from a commercially available application.
You can acquire documents regarding the UnifiedPOS from the following link.
☞ https://www.omg.org/spec/UPOS

NOTE

Development kits are supported only when connected to a TM printer that supports ePOS-Print.
For the supported printers, see "Connectable TM Printers" on page 9

Drivers

Software	Description	Operating environment
EPSON Advanced Printer Driver Ver.5 (APD5)	Windows printer driver that can display on the customer display. You cannot send ESC/POS commands to the customer display or monitor the status.	Windows
TM Virtual Port Driver	Connect the USB directly to the PC, and use this when controlling using ESC/POS commands. This driver allows you to recognize customer displays connected by USB as a virtual serial port.	Windows

Manuals

Software	Description
Each TM printer's Technical Reference Guide	TM printer's Technical Reference Guide explains about the necessary information for developing, designing, installing the POS system using the TM printers, or for developing and designing the printer applications.
ePOS-Print XML Use's Manual	Describes ePOS-Print XML statements. This manual comes with sample programs.

Download

You can obtain software and manuals from one of the following URLs.

For customers in North America, go to the following web site and follow the on-screen instructions.

☞ https://www.epson.com/support/

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

☞ https://epson.sn

Appendix

Product Specifications

Display type		STN LCD (160 x 32 dots)
Number of characters displayed		40 characters (20 columns x 2 rows)
Display color		White/Blue
Brightness		100 cd/m^2
Character classes		Alphanumeric: 95 characters (8 x 16 dots) International characters: 18 sets (8 x 16 dots) Graphic characters: 128 characters x 41 pages
Character size		4.1 x 8.3 mm {0.16 x 0.33"} (W x H, alphanumeric)
Character pitch		4.7 mm {0.19"}
Interface	USB	USB 2.0 High/Full speed
Reliability		Lifespan 50,000 hours
Input voltage		DC 4.75 to 5.25 V (Operates with USB bus power)
Current consumption		0.2 A (Wireless LAN unit not connected) 0.7 A (Wireless LAN unit connected)
Angle of the Display Unit		0–35°
Power supply		USB bus power

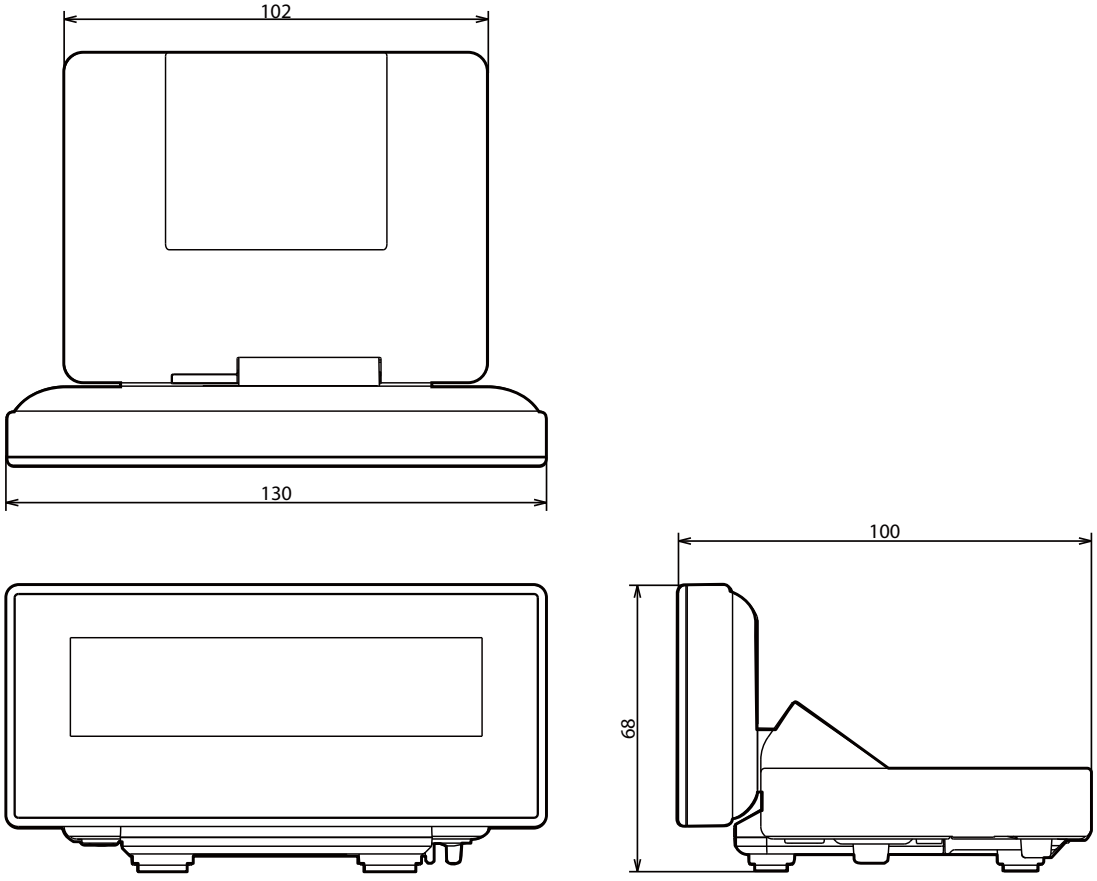
Environmental Conditions

Item	Specification
Temperature	Operating: 5 to 45 °C {41 to 113 °F} Storage: -10 to 50 °C {14 to 122 °F}
Humidity	Operating: 10 to 90% (non-condensing) Storage: 10 to 90% (non-condensing)

External Dimensions and Mass

Item	Specification
Width	130 mm {5.12"}
Depth	100 mm {3.94"}
Height	68 mm {2.68"}
Mass	approximately 0.26 kg (0.57 lb)

* When the angle of display unit is 0 degree.



[Unit: mm]

Character Code Tables

See the Character Code Tables for Customer Displays that can be accessed from the following URL:
☞ https://support.epson.net/publist/reference_en/