

TM-L500A Ticket

Technical Reference Guide

Product Overview

Describes features and general specifications for the product.

Setup

Describes setup and installation of the product and peripherals.

Application Development Information

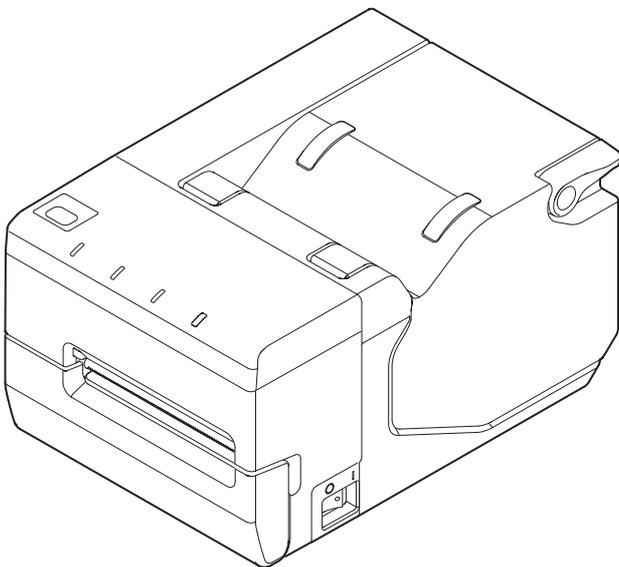
Describes how to control the printer and necessary information when you develop applications.

Handling

Describes how to handle the product.

Appendix

Describes interfaces, connectors, and character code tables.



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ESC/POS® Command System

EPSON ESC/POS is a proprietary POS printer command system that includes patented or patent-pending commands. ESC/POS is compatible with most EPSON POS printers and displays.

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 and also offers the flexibility to easily make future upgrades.

For Safety

Key to Symbols

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

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

Warnings



WARNING

- To avoid risk of electric shock, do not set up this product or handle cables during a thunderstorm
- **Never insert or disconnect the power plug with wet hands.**
Doing so may result in severe shock.
- **Handle the power cable with care.**
Improper handling may lead to fire or electric shock.
 - * Do not modify or attempt to repair the cable.
 - * Do not place any heavy object on top of the cable.
 - * Avoid excessive bending, twisting, and pulling.
 - * Do not place the cable near heating equipment.
 - * Check that the plug is clean before plugging it in.
 - * Be sure to push the plug all the way in.
- **Be sure to use the specified power source.**
Connection to an improper power source may cause fire or shock.
- **Do not place multiple loads on the power outlet.**
Overloading the outlet may lead to fire.
- **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



- **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.
- **Take care not to injure your fingers on the manual cutter:**
 - * When you remove printed paper.
 - * When you perform other operations, such as loading/replacing roll paper.
- **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.**

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; or functional/precision devices, 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 judgement 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 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	Specifications of Interfaces and Connectors Character Code Tables

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Product Overview

This chapter describes features and specifications of the product.

Features

The TM-L500A Ticket is a high-speed compact printer suited for issuing tickets.

The features are as follows:

Printing

- High speed printing: Max. 250 mm/s {9.84"/s}
- Selection of 4 paper widths — 50.8 mm {2.00"}, 54.0 mm {2.13"}, 79.5 mm {3.13"}, and 82.5 mm {3.24"}
- Auto printing position adjustment

Handling

- Compact body for flexible installation locations
- High-speed autocutter
- An optional paper supply device

Software

- Command protocol based on the ESC/POS Proprietary Command System
- Windows printer driver
- Bar code and two-dimensional symbol printing is possible.
- Maintenance counter

Environment

ENERGY STAR qualified.

Product Configurations

Interfaces

- Serial (9 Pin D-Sub) UB + USB interface model
- Ethernet interface model

Colors

EDG (Epson Dark Gray)

Accessories

Included

- AC adapter (Model: PS-180)
- Cable hook
- User's manual

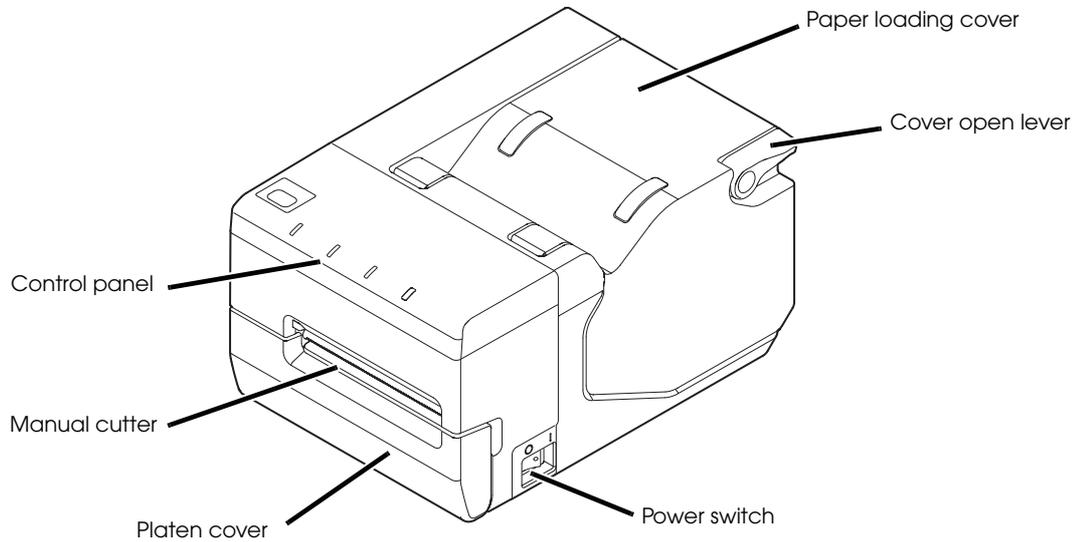
Options

- Paper supply (Model: SU-RPL500/RPL500B)
- Interface boards (UB-U500/UB-E500)

CAUTION

These optional interface boards are only for the TM-L500A. Never use them with other Epson printers. Also, never use other interface boards with the TM-L500A.

Part Names and Functions



Power Switch

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

CAUTION

- Before turning on the printer soon after turning it off, make sure the LEDs on the control panel are off.
- Before turning the printer off, it is recommended to send a power-off command to the printer. If you use the power-off sequence, the latest maintenance counter values are saved. (Maintenance counter values are usually saved every two minutes.)
For detailed information about ESC/POS commands, see the ESC/POS Application Programming Guide.

Control Panel



Ⓜ Power LED (Green)

- Lights when the power supply is on.
- Goes out when the power supply is turned off, or the printer is in the power-saving mode (sleep 3).

On Line LED (Green)

- Lights when the printer is online.
- Goes out when the printer is offline (For details about offline, see ["Offline" on page 15.](#)) or in the power-saving mode (sleep 3).

Error LED (Orange)

- Lights when the paper loading cover or the platen frame is open.
- Flashes when an error occurs. (For details about the flash codes, see ["Error Status" on page 16.](#))
- Goes out during regular operation or the power-saving mode (sleep 3).

Paper LED (Orange)

- Lights when paper is out.
- Goes out when paper is loaded, or the printer is in the power-saving mode (sleep 3).
- Flashes in self-test printing standby state or autoloading standby state.

Unload (↶) button

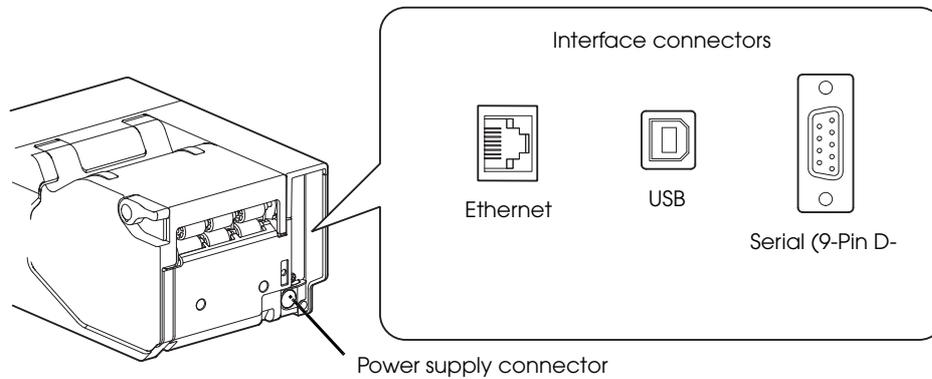
Holding down this button for 1 second or more feeds paper backward until the paper can be removed from the back of the printer.



For information about the power-saving mode, see ["Power-Saving Mode" on page 18.](#)

Connectors

All cables are connected to the connector panel on the lower rear of the printer.



- **Interface connector:** Connects the printer with the host computer interface. The interface type differs depending on the model. (See ["Interfaces" on page 12.](#))
- **Power supply connector:** Connects the power supply unit.

NOTE

For details on how to connect the interface connector and the power supply connector, see ["Connecting the Printer to the Host Computer" on page 42](#) and ["Connecting the Power Supply Unit \(PS-180\)" on page 45.](#)

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 a fatal error has occurred

Error Status

When an error occurs, the printer stops operating, the Error LED or Paper LED lights or flashes, and the buzzer beeps (only when the buzzer function is enabled). If the error is a fatal one, the printer goes offline.

Printer Errors

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

Error	Error description	Error LED flash code 	Recovery measure
Printhead/Motor temperature error	The temperature of the print head is extremely high.		Recovers automatically when the print head/motor cools.
Autocutter error	Autocutting failed.		Open the platen frame, remove the foreign object, and then load the appropriate paper. Or send an error recovery command.
Platen frame open (including while printing)	Platen frame is open.		Remove the paper in the paper path, and then load the appropriate paper.
Paper loading cover open	Paper loading cover is open.		Close the paper loading cover.
Paper out	Paper out sensor is in the status of paper not present.	(Note: Paper LED comes on when paper is out.)	Remove the paper in the paper path, and then load the appropriate paper.
Paper jam	Paper jam sensor has detected a paper jam.		Remove the paper wrapped around the platen, and then load the appropriate paper.

CAUTION

When an Autocutter error occurs, do not turn the printer power off. If the printer power is turned off in occurring Autocutter error, the print starting position of the first sheet immediately after the printer power is turned on is placed on the wrong position.

Unrecoverable Errors

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



Turn off the power immediately when unrecoverable errors occur.

Error	Error description	Error LED flash code 
R/W error in memory	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 executes an incorrect address.	
Internal circuit connection error	The connection of internal circuit is not correct.	

Data Receive Error (Only with the Serial Interface Models)

If any of the following errors occurs during serial interface communication, the printer prints “?” or ignores the data.

- Parity error
- Framing error
- Overrun error

Power-Saving Mode

The TM-L500A Ticket has the power-saving mode function to reduce the power consumption. There are 3 statuses, sleeps 1, 2, and 3 in the power-saving mode.

NOTE

For the power consumption during standby in each sleep mode, see ["Electrical Characteristics" on page 28](#).

Sleep 1 & Sleep 2

You can set the statuses, Sleeps 1 & 2 to any of the 3 patterns in the table below with the memory switch.

- Sleep 1: The printer enters this mode 10 seconds after entering standby status.
- Sleep 2: The printer enters this mode 5 minutes after entering standby status.

Patterns for sleep 1 and sleep2	Status	LEDs brightness
No power saving	—	Bright
Pattern 1 (initial setting)	Normal	Bright
	Sleep 1	Dim
	Sleep 2	Dim
Pattern 2	Normal	Bright
	Sleep 1	Dim
Pattern 3	Normal	Bright
	Sleep 1	Bright
	Sleep 2	Bright

NOTE

- Standby status is a status when no processing is being performed for printing or communication, and the cover is closed.
- When printing data is received, it is printed immediately.
- For details on how to set the memory switch, see ["Setting the Memory Switches" on page 47](#).

Sleep 3

When Sleep 3 is enabled with the memory switch, the printer enters this mode 4 hours after entering standby status.

During Sleep 3, the LEDs are off, and no operation is available.

The printer recovers to the normal status when you perform any of the following;

- Push one of the panel buttons.
- Turn the printer power off, and turn it back on. (Turn the printer power on after 3 seconds or more have passed.)

NV Memory (Non-Volatile Memory)

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

- Memory switches
- Maintenance counter

CAUTION

As a guide when you program applications, NV memory should be rewritten 10 or fewer times a day.

Memory Switches

With the memory switches, which are software switches for the printer, you can configure various settings of the printer.

For information about the memory switches see ["Setting the Memory Switches" on page 47](#).

Maintenance Counter

With this function, printer information, such as the number of lines printed, the number of MICR readings, the number of autocuts, and printer operation time after the printer starts working, is automatically stored in NV memory. You can read or reset the information with the TM-L500A Ticket Utility, the Status API of the APD, or OPOS ADK to use it for periodical checks or part replacement.

Product Specifications

Printing method	Thermal line printing
Dot density	203 dpi × 203 dpi
Printing direction	Unidirectional with friction feed
Paper width	50.8 mm {2.00"}, 54.0 mm {2.13"}(default), 79.5 mm {3.13"}, 82.5 mm {3.24"}
Number of characters	Alphanumeric characters: 95 Extended graphics: 128 × 43 pages International characters: 16 character sets
Character structure	Font A: 12 × 24 (including horizontal 2-dot spacing) Font B: 9 × 17 (including horizontal 2-dot spacing)
Cutting type	Full cut
Interfaces	Serial (RS-232), USB (2.0 Full-speed), Ethernet (10BASE-T/100BASE-TX)
Receive buffer	4 KB
Bar code/two-dimensional symbol printing	<ul style="list-style-type: none"> • Two-dimensional symbols (PDF417, QR code, Maxi-Code, GS1-DataBar) • Bar codes (UPC-A, UPC-E, EAN 13, EAN 8, Code 39, Interleaved 2 of 5, CODABAR, Code 128, GS1-128, GS1-DataBar) • CompositSymbology
Power supply	Epson PS-180 (Model: M159B)
Overall dimensions (H × W × D)	122 × 156 × 230 mm {4.80 × 6.14 × 9.06"}
Weight (mass)	Approx. 2.8 kg {6.2 lb}

dpi: dots per inch cpi: characters per inch

Printing Specifications

Printing method	Thermal line printing	
Dot density	203 dpi × 203 dpi	
Printing direction	Unidirectional with friction feed	
Paper width	50.8 mm {2.00"}, 54.0 mm {2.13"}(default), 79.5 mm {3.13"}, 82.5 mm {3.24"}	
Printing width	50.8 mm printing	48.0 mm (1.89"), 384 dots
	54.0 mm printing	51.0 mm (2.01"), 408 dots
	79.5 mm printing	77.0 mm (3.03"), 616 dots
	82.5 mm printing	80.0 mm (3.15"), 640 dots

Maximum printing speed

Text printing	250 mm/s {9.84"/s}
Bar code/2-dimensional symbol printing	126 mm/s {4.96"/s}

Note: The printing speeds listed above are the values when the printer prints with the standard print density level at 24V and 25°C {77°F}.

CAUTION

- When changing the paper width, you need to remove or move the paper guides. To change the paper width, see ["Changing the Paper Width" on page 34](#).
- Because some parts of the print head contact the platen and they may become worn out in narrower paper width printing, once you use the printer in narrower paper width printing, you cannot change it back to wider one.

NOTE

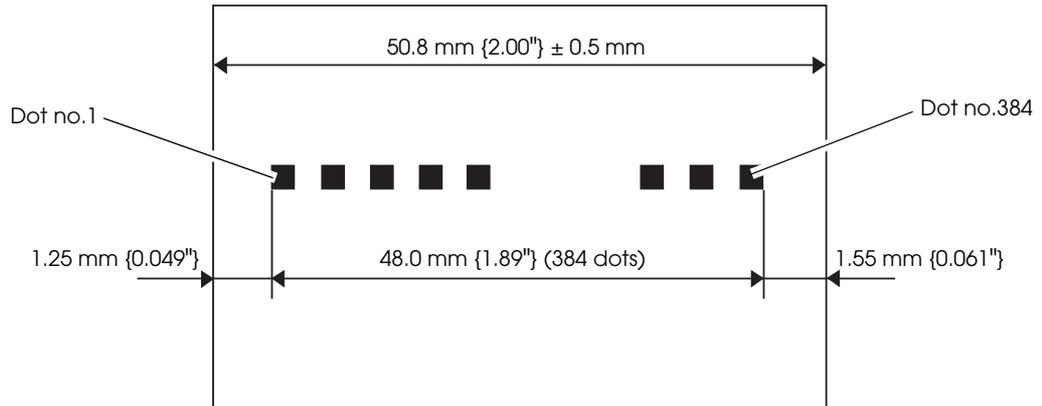
- Printing speed can be changed with the memory switch. (See ["Setting the Memory Switches" on page 47](#).)
- Printing speed may be slower, depending on such items as the data transmission speed.

Ticket paper					
	Resiste 400-7.0	Appleton	Type 2	04	150
	Resiste 400-5.3	Appleton	Type 2	01	150
	Resiste 800-5.3	Appleton	Type 2	01	150
	Resiste 800-4.5	Appleton	Type 1	03	150
	Resiste 500-7.6	Appleton	Type 1	05	150
	P354	Kanzaki Specialty Papers	Type 1	01	150
	ST-5	Kanzaki Specialty Papers	Type 2	04	150
	KT-300	Kanzaki Specialty Papers	Type 2	01	150
	TF1767	Mitsubisi HiTec	Type 2	03	150
	T1733	Mitsubisi HiTec	Type 2	03	150
	KL615 s B+	Kanzan	Type 1	01	150
	PolyTherm 300-3.0	Appleton	Type 3	02	200
	PolyTherm 300-4.1	Appleton	Type 3	01	200
	PolyTherm 500-4.1	Appleton	Type 2	02	200
	Resiste 190-3.2	Appleton	Type 3	05	200
	KPT 3370	Kanzaki Specialty Papers	Type 2	04	200
	KPT 33100	Kanzaki Specialty Papers	Type 3	04	200
	KLS46	Kanzan	Type 3	01	200
	AL60KT-S	Jujo Thermal Oy	Type 1	06	200
	140LES	RICOH	Type 2	05	200
	150LCS-B	RICOH	Type 2	05	200

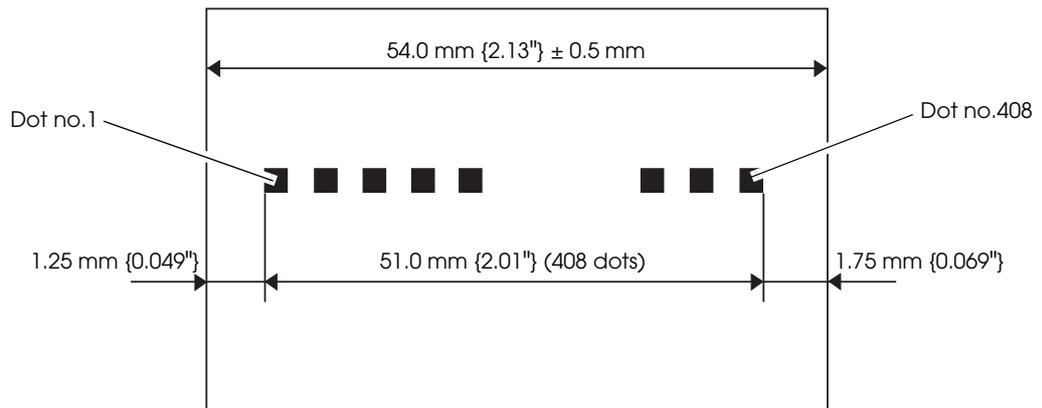
*: Roll paper diameter 152.4 mm {6.00"} maximum or fanfold

Printable Area

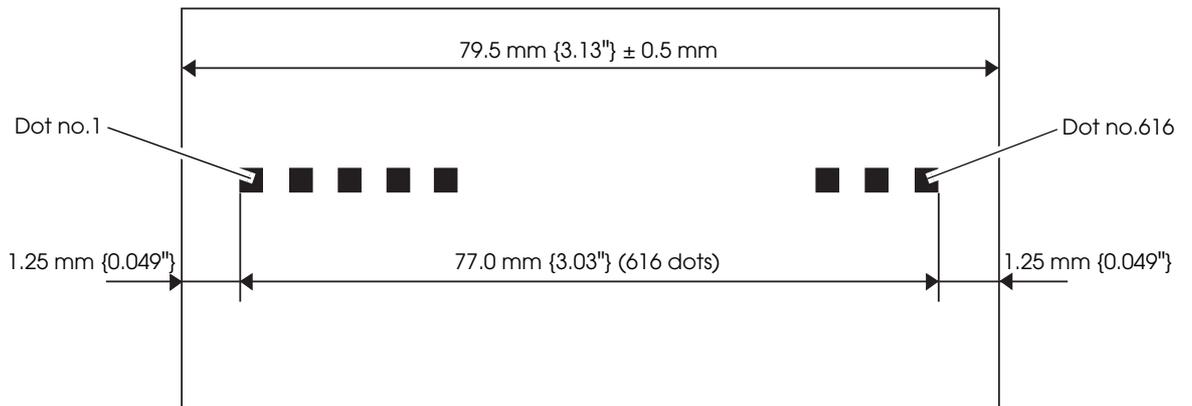
50.8 mm paper width printing



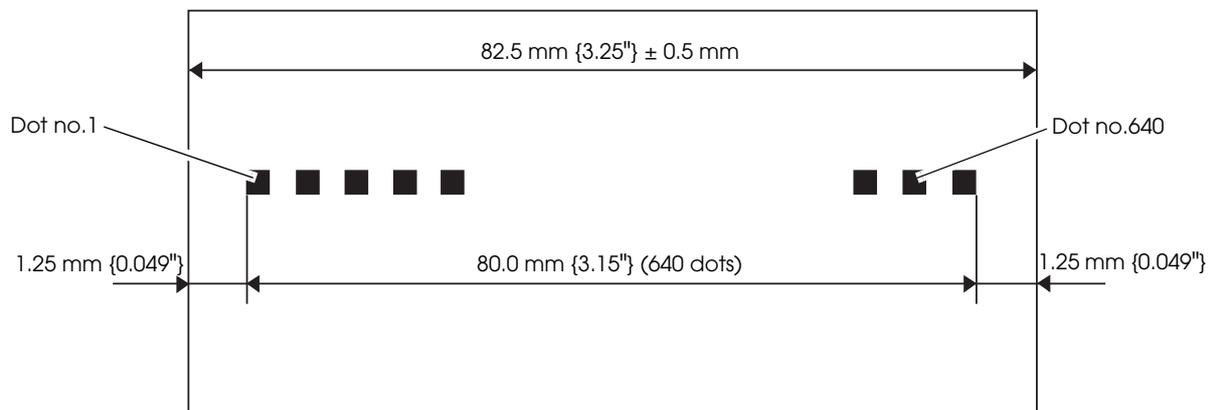
54.0 mm paper width printing



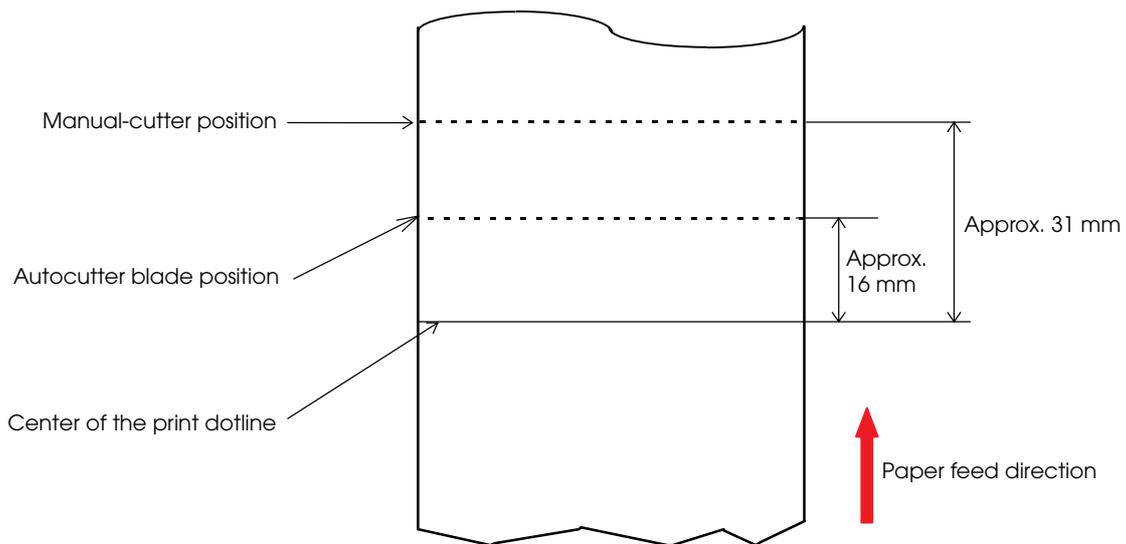
79.5 mm paper width printing



82.5 mm paper width printing



Printing and Cutting Positions



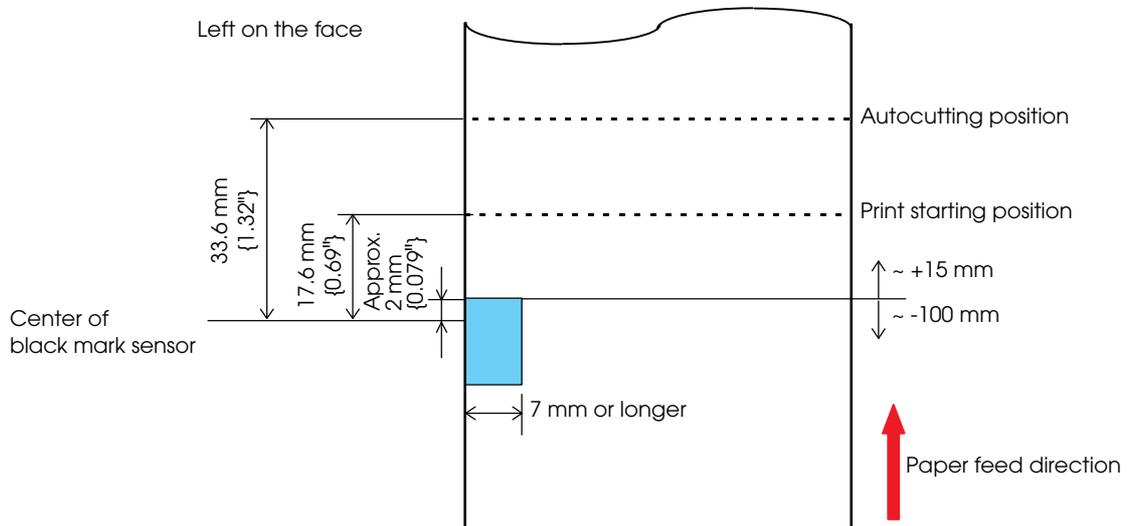
The numeric values are typical values.

CAUTION

- The values above may vary slightly as a result of paper slack or variations in the paper. Take this into account when setting the cutting position of the autocutter.
- When an Autocutter error occurs, do not turn the printer power off. If the printer power is turned off in occurring Autocutter error, the print starting position of the first sheet immediately after the printer power is turned on is placed on the wrong position.

Black Marks

Black marks are detected on the far left of the back of the paper (non-thermal face).



CAUTION

Reflection rate of black marks must be 10% or less, and that of the areas without black marks must be 75% or more. (Measured with Macbeth density meter PCMII (filter D).)

Electrical Characteristics



Be sure to use the power supply that came with your printer.

Power supply	Epson power supply PS-180 Rated voltage: 100 to 240V Rated frequency: 50 to 60Hz
Power consumption during operating (USB interface, at 23°C {73.4°F}, normal print density)	Mean: Approx. 24.1W (at 230V) Approx. 24.2W (at 115V)

CAUTION

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

Print width: Number of dots being energized per one dot line

	54 mm paper Total print width: 408 dots (51.0 mm {2.01"})	82.5 mm paper Total print width: 640 dots (80.0 mm {3.15"})
Print example	<p style="text-align: center;">51 mm</p>	<p style="text-align: center;">64 mm</p> <p>Print density must be 100% maximum.</p>
Print length	20 mm {0.79"}	20 mm {0.79"}

Power consumption during standby (at 23°C {73.4°F}, normal print density)	115V/60Hz	Serial I/F	Sleep 1	0.6W
			Sleep 2	0.6W
			Sleep 3	0.3W
			Power off	0.3W
	USB I/F	Sleep 1	0.6W	
		Sleep 2	0.5W	
		Sleep 3	0.3W	
		Power off	0.3W	
	Ethernet I/F	Sleep 1	2.6W	
		Sleep 2	2.5W	
		Sleep 3	0.3W	
		Power off	0.3W	
	230V/50Hz	Serial I/F	Sleep 1	0.7W
			Sleep 2	0.7W
			Sleep 3	0.4W
			Power off	0.4W
USB I/F		Sleep 1	0.7W	
		Sleep 2	0.6W	
		Sleep 3	0.4W	
		Power off	0.4W	
Ethernet I/F		Sleep 1	2.7W	
		Sleep 2	2.7W	
		Sleep 3	0.4W	
		Power off	0.4W	

Reliability

Life	Printer	100 km paper feeding or 5 years, which comes first	
	Printer mechanism (After-sales service parts)	Print head	60 km
		Autocutter	100,000-time autocutting of perforated area of thick paper 1000,000-time autocutting of non-perforated paper
MTBF (Failure is defined as a random failure occurring during the time of the random failure period.)	360,000 hours		

NOTE

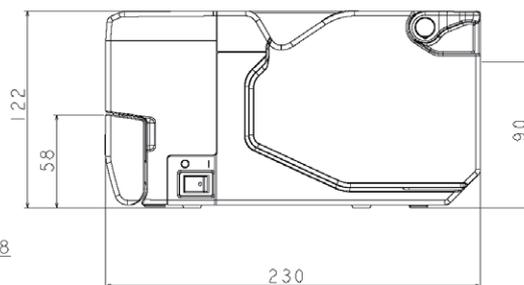
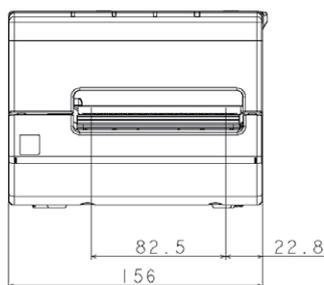
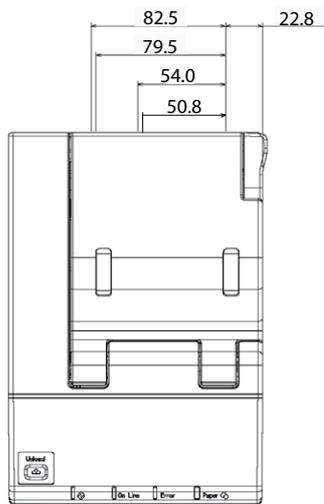
The life of printer mechanism may vary, depending on the media and printing pattern.

Environmental Conditions

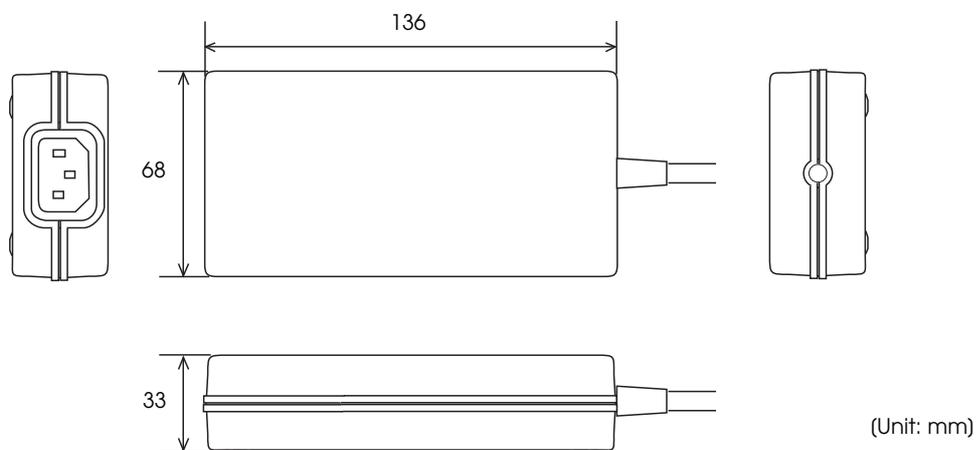
Temperature/ Humidity	Operating	5 to 45°C {41 to 113°F}, 10 to 80% RH
	Storage	-20 to 50°C {-4 to 122°F}, 10 to 90% RH (except for paper)
		<p>Operating environment range</p>
Acoustic noise (operating)	<p>Approximately 57 dB (bystander position) (including autocutting)</p> <p>Note: The values above are measured in the Epson evaluation condition. Acoustic noise differs depending on the paper used, printing contents, and the setting values, such as print speed or print density.</p>	

External Dimensions and Mass

- Height: Approximately 122 mm {4.80"}
- Width: Approximately 156 mm {6.14"}
- Depth: Approximately 230 mm {9.06"}
- Mass: Approximately 2.8 kg {6.17 lb}



Power Supply Unit (PS-180)



Electric characteristics	Input conditions	Input voltage: AC100V to AC240V
		Frequency: 50-60 Hz
		Input current (rating): 1.3A
	Output conditions	Output voltage (rating): DC24V \pm 5%
		Output current (rating): 2.1A
Case specifications	Dimensions (H x W x D)	68 x 136 x 33 mm {2.68 x 5.35 x 1.30"} (excluding projections)
	Weight	Approx. 0.4 kg {14.11 oz} (excluding the AC cable)
	Color	Black (matte)

CAUTION

For Energy Star printers, always use the power supply that came with your printer.

NOTE

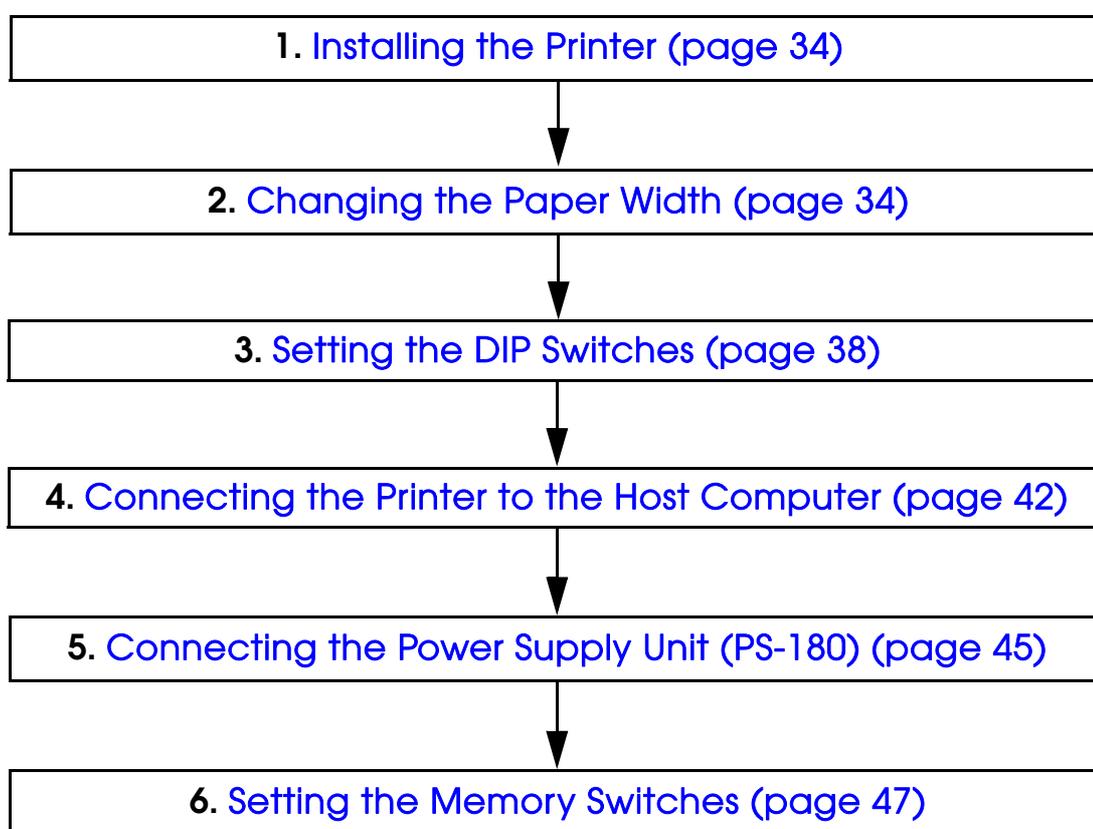
For detailed information about the PS-180, see the instruction manual for the PS-180.

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.



Installing the Printer

Important Notes

- The printer must be installed horizontally on a flat surface (not tilted).
- Do not place the printer in dusty locations.
- Do not knock or strike the printer. This may cause printing errors.
- Do not place any liquids or drinks on the printer case.

Changing the Paper Width

The printer is initially set to print on 54.0 mm width paper, but you can change the printer to print on 82.5 mm, 79.5 mm, or 50.8 mm width paper by removing or moving the paper guides installed in the printer.

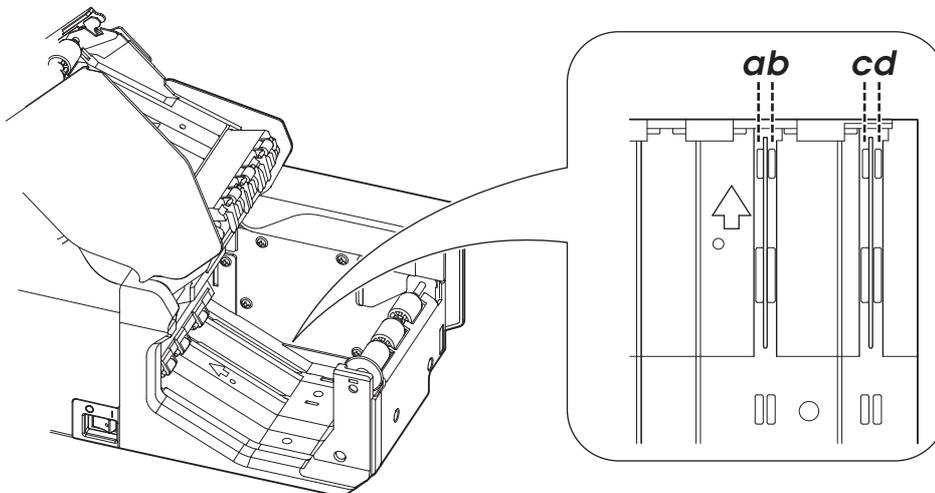
CAUTION

- Because some parts of the print head contact the platen and they may become worn out in narrower paper width printing, once you use the printer in narrower paper width printing, you cannot change it back to wider one.
- When changing the paper width, be sure to change the setting for the paper width with the customized value. To set the customized value, see "[Setting the Memory Switches](#)" on page 47.

To change the paper width to 82.5 mm, remove the paper guide installed in groove **b**. (See [page 35](#).)

To change the paper width to 79.5 mm, remove the paper guides installed in grooves **b** and **d**, and install one of them in groove **c**. (See [page 36](#).)

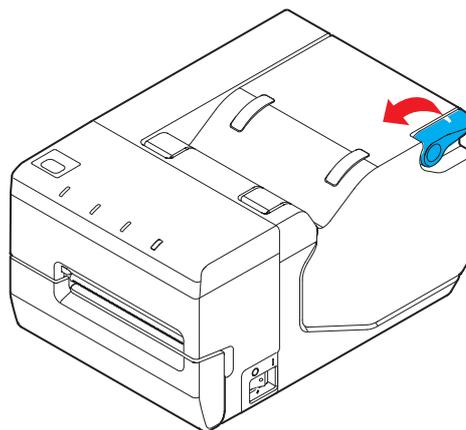
To change the paper width to 50.8 mm, remove the paper guide installed in groove **b**, and install it in groove **a**. (See [page 37](#).)



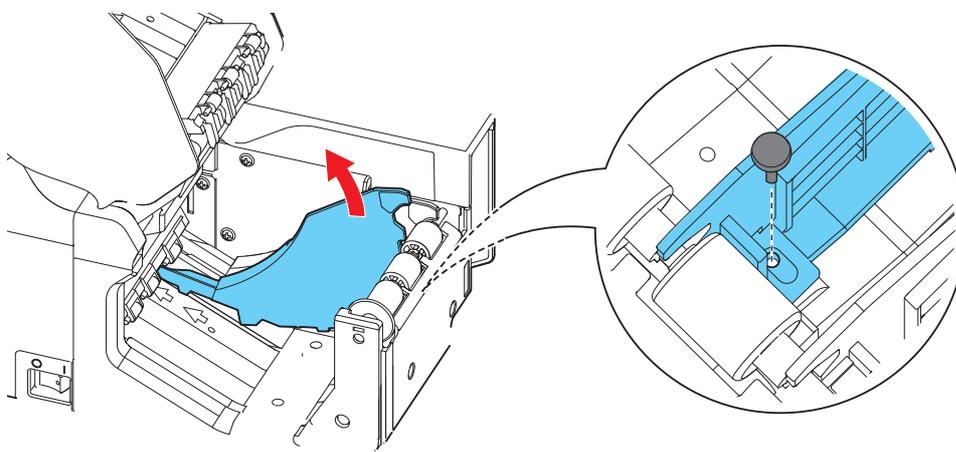
Setting the Paper Width to 82.5 mm

Follow the steps below to set the paper width to 82.5 mm.

- 1 Make sure the printer is turned off.
- 2 Open the paper loading cover by pulling up the cover open lever.



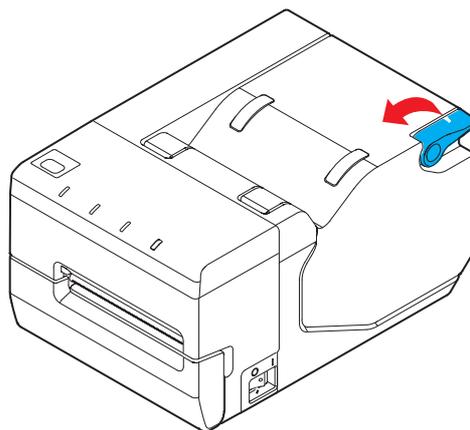
- 3 Remove the screw fixing the paper guide installed in groove **b** to remove the paper guide.



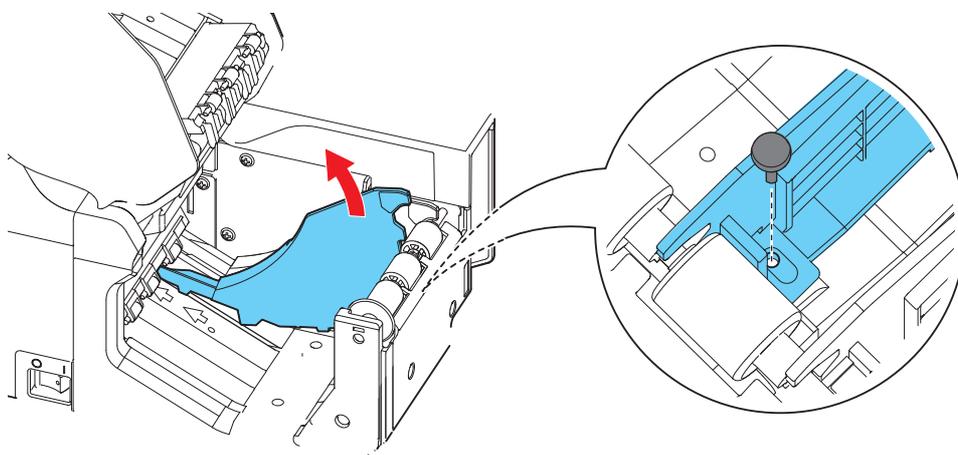
Setting the Paper Width to 79.5 mm

Follow the steps below to set the paper width to 79.5 mm.

- 1 Make sure the printer is turned off.
- 2 Open the paper loading cover by pulling up the cover open lever.



- 3 Remove the screws fixing the paper guides installed in grooves **b** and **d** to remove the paper guides.

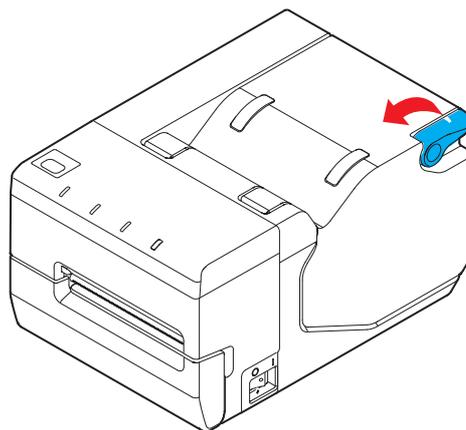


- 4 Install one of the removed paper guides in the groove **c** so that the projections of the paper guide are aligned with the holes along the groove.
- 5 Fix the paper guide with the screw.

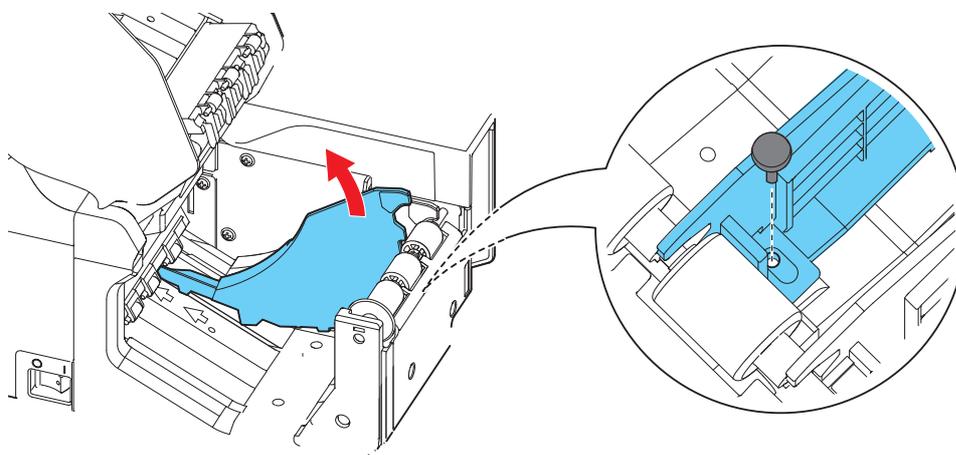
Setting the Paper Width to 50.8 mm

Follow the steps below to set the paper width to 50.8 mm.

- 1 Make sure the printer is turned off.
- 2 Open the paper loading cover by pulling up the cover open lever.



- 3 Remove the screw fixing the paper guides installed in grooves **b** to remove the paper guide.



- 4 Install the removed paper guide in the groove **a** so that the projection of the paper guide is aligned with the hole along the groove.
- 5 Fix the paper guide with the screw.

Setting the DIP Switches

On this printer, you can make various settings with DIP switches. Functions of the DIP switches differ depending on the interface.

Setting Procedure

Follow the steps below to change the DIP switch settings.

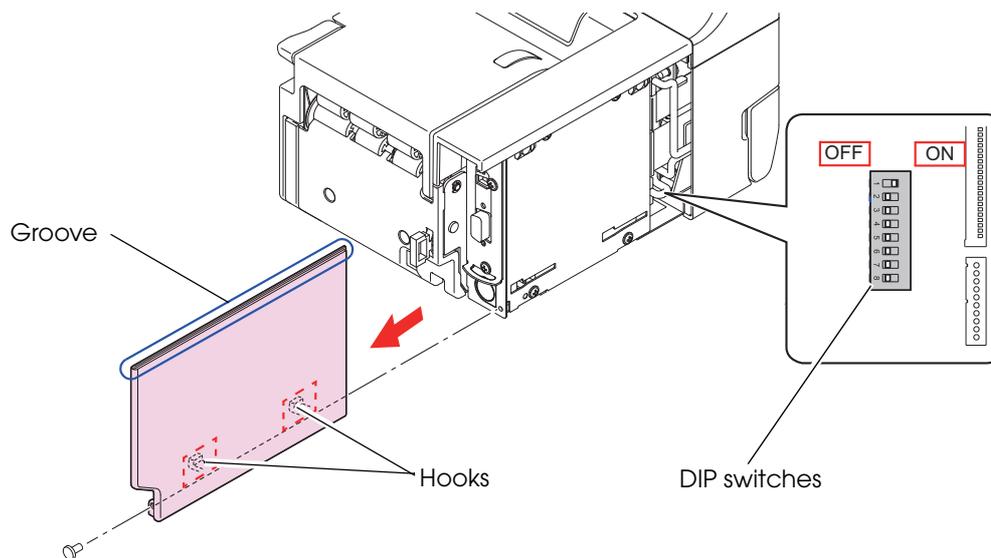


Before you remove the DIP switch cover, turn the printer off. Otherwise, a short-circuit may cause the printer to malfunction.

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 Remove the screw that secures the left case.
- 3 Slide the left case to the rear to release the groove and two hooks of the left case, and remove the left case.

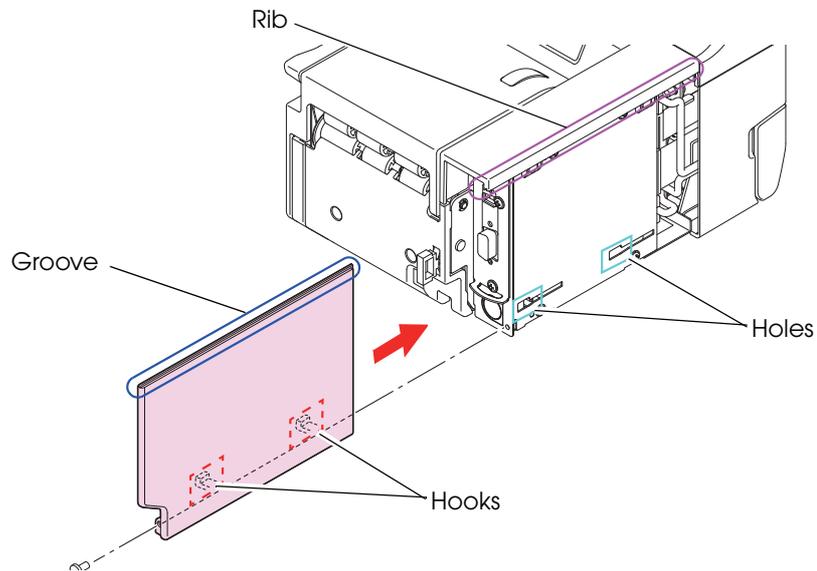


- 4 Set the DIP switches, using the tip of a tool, such as a small screwdriver.

5 Install the left case and secure it with the screw.

Align the groove on top of the left case with the rib of the upper case.

Align the two hooks of the left case with the two holes of the board plate and slide it to the front.



For Serial Interface

SW	Function	ON	OFF	Initial setting
1	Reserved (Do not change)	Fixed to ON		ON
2	Reserved (Do not change)	Fixed to OFF		OFF
3	Transmission speed selections	See the "Transmission Speed (DIP Switches 3/4)" table below.		ON
4				ON
5	DSR (hardware) reset	Enabled	Disabled	OFF
6	Reserved (Do not change)	Fixed to OFF		OFF
7	Reserved (Do not change)	Fixed to OFF		OFF
8	Reserved (Do not change)	Fixed to OFF		OFF

Transmission Speed (DIP Switches 3/4)

Transmission speed (bps)	SW 3	SW 4
Setting with the memory switch*: 2400, 4800, 9600, 19200 (initial setting), 38400, 57600, 115200	ON	ON
9600	OFF	ON
19200	ON	OFF
38400	OFF	OFF

bps: bits per second

* When DIP switches 3 and 4 are set to ON, the value (initially 19200) can be set to any of the values listed in the lower portion of the row using a command, memory switch setting mode, or the TM-L500A Ticket Utility. (See ["Setting the Memory Switches" on page 47.](#))

NOTE

Depending on print conditions, such as print duty, print head temperature, and data transmission speed, print speed is automatically adjusted, which can cause white lines due to intermittent print (the motor sometimes stops). To avoid this, set the transmission speed higher or keep the print speed constant by setting it lower. (See ["Setting the Memory Switches" on page 47.](#))

For USB Interface

SW	Function	ON	OFF	Initial setting
1	Reserved (Do not change)	Fixed to ON		ON
2	Reserved (Do not change)	Fixed to OFF		OFF
3	Reserved (Do not change)	Fixed to ON		ON
4	Reserved (Do not change)	Fixed to ON		ON
5	Reserved (Do not change)	Fixed to OFF		OFF
6	Reserved (Do not change)	Fixed to OFF		OFF
7	USB interface class	Printer class	Vendor class	OFF
8	Reserved (Do not change)	Fixed to OFF		OFF

For Ethernet Interface

SW	Function	ON	OFF	Initial setting
1	Reserved (Do not change)	Fixed to ON		ON
2	Reserved (Do not change)	Fixed to OFF		OFF
3	Reserved (Do not change)	Fixed to ON		ON
4	Reserved (Do not change)	Fixed to ON		ON
5	Reserved (Do not change)	Fixed to OFF		OFF
6	Reserved (Do not change)	Fixed to OFF		OFF
7	Reserved (Do not change)	Fixed to OFF		OFF
8	Reserved (Do not change)	Fixed to OFF		OFF

Connecting the Printer to the Host Computer

For Serial Interface

Connect the printer to a host computer by a serial interface (RS-232) cable.

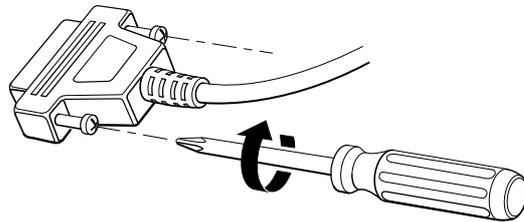


Be sure to turn off the power supply for both the printer and host computer before connecting the cables.

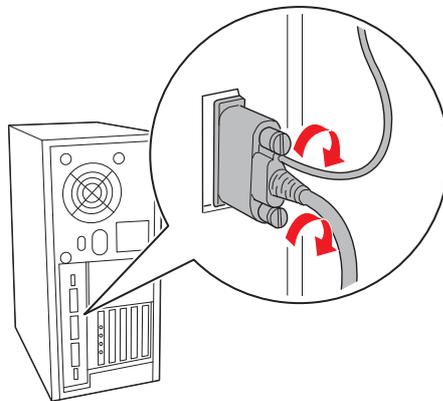


Use a null modem serial cable to connect the printer.

- 1** Insert the interface cable connector firmly into the interface connector on the connector panel.
- 2** When using connectors equipped with screws, tighten the screws to secure the connectors firmly.



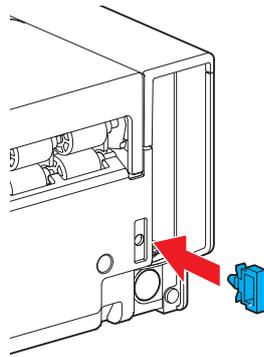
- 3** When using interface cables equipped with a grounding line, attach the ground line to the screw hole marked "FG" on the printer.
- 4** Connect the other end of the interface cable to the host computer.



For USB Interface

Connect the printer to a host computer by a USB interface cable.

- 1 Install the cable hook.

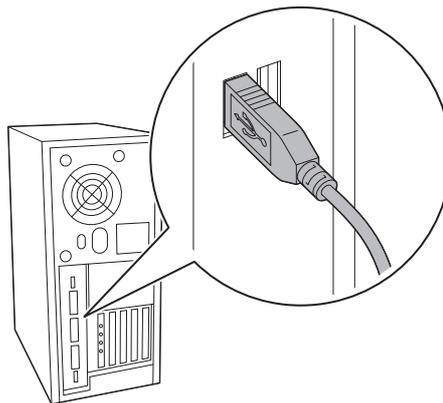


- 2 Put the USB cable through the cable hook.

CAUTION

Putting the USB cable through the cable hook prevents the cable from coming unplugged.

- 3 Connect the USB cable from the host computer to the USB upstream connector.
- 4 Connect the other end of the interface cable to the host computer.



For Ethernet Interface

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



- **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 10/100BASE-T LAN connector.**



For Ethernet interface communication settings, use TM-L500A Ticket Utility or EPSON TMNet WinConfig utility. For detailed information about the setting methods, see the TM-L500A Ticket Utility User's Manual or EPSON TM Net WinConfig User's Guide.

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

Connecting the Power Supply Unit (PS-180)

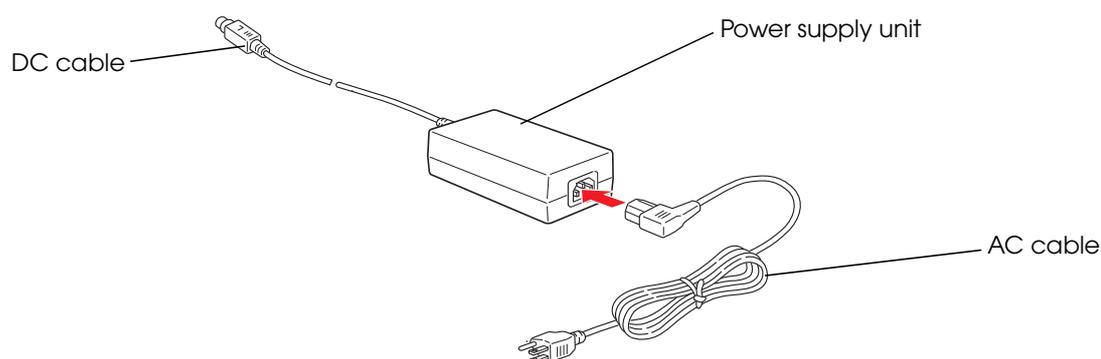
Use the PS-180 as the power supply unit.

Before using the power supply unit, read carefully the user's manual enclosed with it.



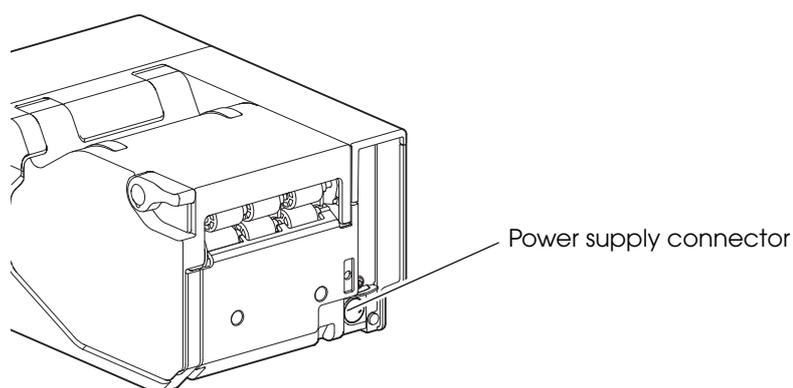
WARNING

- **Always use the EPSON PS-180 as the power supply unit.**
Using a nonstandard power supply can result in electric shock and fire.
- **Should a fault ever occur in the EPSON PS-180, immediately turn off the power to the printer and unplug the power supply cable from the wall socket.**

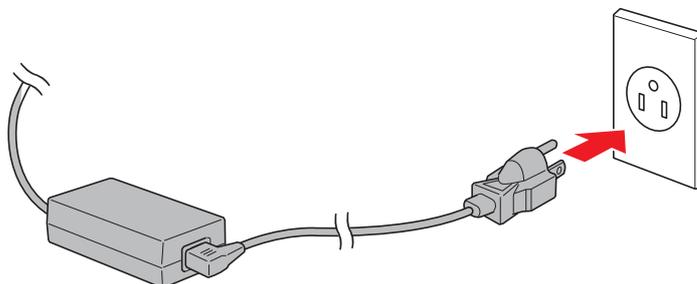


Connecting the Power Supply Unit

- 1 Make sure the printer's power supply is turned off and the AC cable has been unplugged from the wall socket.
- 2 Insert the connector of the DC cable onto the power supply connector.



3 Connect the plug of the AC cable to the wall socket.




WARNING

- **Be sure to unplug the AC 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.

Setting the Memory Switches

With the memory switch function, which is software setting for this printer, you can set the various functions.

For an outline of the functions, see the following section. Use TM-L500A Ticket Utility or ESC/POS commands to set the memory switches.

Memory Switches	BUSY condition	
	Data receive error	
	Automatic line spacing	
	Paper jam detection	
	USB power saving	
	Customized Values	Default character code table
		Default international character font
		Transition pattern for power saving
		Sleep 3
		Adjustment of TOF-cut position
		Paper width
		Print density
		Print speed
		Mark type
		Media type
	Buzzer volume	
	Transmission conditions for serial interface	

NOTE

- For detailed information about the TM-L500A Ticket Utility, see the TM-L500A Ticket Utility User's Manual.
- For detailed information about ESC/POS commands, see the ESC/POS Application Programming Guide.

Functions

BUSY condition

- Receive buffer full (initial setting)
- Receive buffer full or printer offline

Data receive error

- Ignored
- Receive error (initial setting)

Automatic line spacing

- Always enabled
- Always disabled (initial setting)

Paper jam detection

- Disabled
- Enabled (initial setting)

USB power saving

- Disabled
- Enabled (initial setting)

Default character code table

Selectable from 43 pages (initial setting: PC437 USA, Standard Europe)

NOTE

The pages consist of Bitmap fonts.

Default international character font

Selectable from 16 types (initial setting: USA)

NOTE

The types consist of Bitmap fonts.

Transition pattern for power saving

- No power saving
- Pattern 1 (initial setting)
- Pattern 2
- Pattern 3

Sleep 3

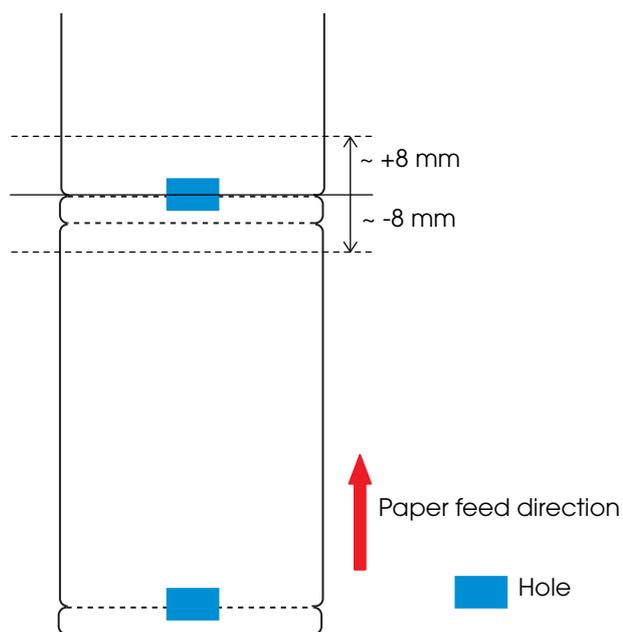
NOTE

For good print quality, set the media type, depending on the original paper number. (See "Paper Specifications" on page 23.)

- Enabled
- Disabled (initial setting)

Adjustment of TOF-cut position

Selectable from -8 mm to 8 mm (The initial setting differs depending on the model.)



Paper width

- 50.8 mm
- 54.0 mm (initial setting)
- 79.5 mm
- 82.5 mm

CAUTION

When changing the paper width, you need to remove or move the paper guides. To change the paper width, see ["Changing the Paper Width" on page 34](#).

Print density

Selectable from levels 1 to 9 (70% ~ 110%) (initial setting: level 7)

NOTE

- If the print density is set to a darker level, printing speed may be reduced.
- If the print density is set to a darker level, paper dust accumulates on the print head and print may be faint. For information on how to clean the thermal head, see ["Cleaning the Thermal Head" on page 63](#).
- For good print quality, set the print density, depending on the original paper number. (See ["Paper Specifications" on page 23](#).)

Print speed

Selectable from levels 1 to 10 (Slow ~ Fast) (initial setting: level 6)

NOTE

- Depending on print conditions, such as print duty, print head temperature, and data transmission speed, print speed is automatically adjusted, which may cause white lines due to intermittent print (the motor sometimes stops). To avoid this, keep the print speed constant by setting it lower, or set the transmission speed higher for the serial interface. (See ["Transmission Speed \(DIP Switches 3/4\)" on page 40](#).)
- For good print quality, set the print speed, depending on the original paper number. (See ["Paper Specifications" on page 23](#).)

Mark type

- Auto detection (initial setting)
- Hole
- Black mark
- No mark

Media type

Selectable from 4 types (initial setting: Type 2)



For good print quality, set the media type, depending on the original paper number. (See ["Paper Specifications" on page 23.](#))

Buzzer volume

Selectable from Off and levels 1 to 5 (initial setting: level 5)

Transmission conditions for serial interface

Transmission speed

When DIP switches 3 and 4 are set to ON, the value (initially 19200 bps) can be set to 2400, 4800, 9600, 19200, 38400, 57600, or 115200 bps. (See ["Transmission Speed \(DIP Switches 3/4\)" on page 40.](#))



The transmission speed can be set with DIP switches 3 and 4 (See ["Transmission Speed \(DIP Switches 3/4\)" on page 40.](#)) or the memory switch. When DIP switches 3 and 4 are set to ON, the setting with the memory switch is enabled.

Parity bit

- None (initial setting)
- Odd
- Even



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 a driver or ESC/POS commands to control the printer.

EPSON Advanced Printer Driver (APD)

EPSON Advanced Printer Driver is a Windows printer driver for EPSON TM printers. The Status API (Epson original DLL) that monitors printer status and sends ESC/POS commands is also attached to this driver.

For information about the driver operating environment, see the installation manual for APD.

CAUTION

When you use APD, be sure to set the DIP switch for printer mode to enable ESC/POS commands. (See "[Setting the DIP Switches](#)" on page 38.)

NOTE

You can use all functions, including ones not supported by APD, by using ESC/POS commands through your driver. Use the control A command of APD, or Status API to send ESC/POS commands from the driver.

ESC/POS Commands

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

To use ESC/POS commands, you need to agree to a nondisclosure contract first and obtain the ESC/POS Application Programming Guide. Ask your dealer for details.

Software and Manuals

The following software and manuals are provided for application development.

How to Get Drivers, Manuals, and the Utility

You can obtain drivers, manuals, and the TM-L500A Ticket Utility 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/>

Printer Driver

Software	Manual
EPSON Advanced Printer Driver (APD): EPSON Advanced Printer Driver is a Windows printer driver for EPSON TM printers. The Status API (Epson original DLL) that monitors printer status and sends ESC/POS commands is also attached to this driver.	<ul style="list-style-type: none">• APD Install Manual• APD TM/BA/EU Printer Manual• APD Printer Specification• Devmode API/PRINTERINFO Manual• Status API Manual• Sample Program Guide

Utilities

Software	Manual
TM-L500A Ticket Utility: Use for various settings.	<ul style="list-style-type: none">• TM-L500A Ticket Utility User's Manual
EPSON TM Net WinConfig: Use for IP address or wireless LAN setting.	<ul style="list-style-type: none">• EPSON TM Net WinConfig User's Guide

Self-Test Mode

In the self-test mode, the printer prints the current status of the printer and resident characters as a test print.

You can confirm the following information with the status print.

- Model name
- Control software version
- Printer settings
- User counter
- Maintenance counter

Starting the Self-Test

Follow the steps below to start the self-test.

- 1** Install the roll paper.
- 2** Close all covers.
- 3** While pressing the Unload (↑) button, turn on the printer. (Keep pressing the button until the printer starts printing.)

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

NOTE

With the Ethernet interface, before printing starts, it takes 15 seconds if the IP address is fixed and 20 seconds if the IP address is obtained with the automatic setting. (It may take longer, depending on the response time from the host.)

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

“If you want to continue SELF-TEST printing, please press Unload button.”

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

NOTE

If you press the Unload (↑) button for more than 1 second, the printer prints the other settings and counter value.

After printing the following message and autocutting the paper, the printer is initialized and returned to the normal mode.

“*** completed***”



Handling

This chapter describes basic handling of the printer.

Usage Precautions

- Install the printer horizontally.
- When installing, leave enough space around the printer for loading paper, turning on/off the power switch, removing jammed paper, and so on.
- Make sure cords and foreign objects are not caught in the printer.
- Do not open the covers during printing or autocutting.
- Make sure that the printer is not subjected to any impact or vibration.
- Do not put any food or drink on the printer case.
- Do not move the printer with the paper loading cover open. The cover may close unexpectedly.
- To prevent a paper jam, do not prevent paper from being ejected from the paper exit and do not pull the paper being ejected.

Installing and Replacing Paper



- **Do not open the covers during printing/autocutting.**
The printer may be damaged.
- **Do not touch the manual cutter with your hands.**
Otherwise, you may be injured because the manual cutter blade is sharp.

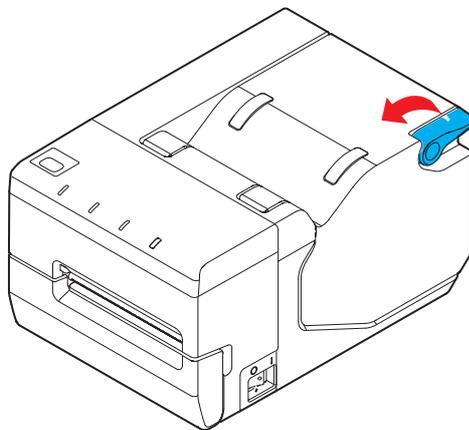
CAUTION

- Use paper that meets the printer specifications. For details about paper specifications, see ["Paper Specifications" on page 23](#).
- When changing the paper width, you need to remove or move the paper guide and to change the setting for the paper width with the customized value. To change the paper width, see ["Changing the Paper Width" on page 34](#).

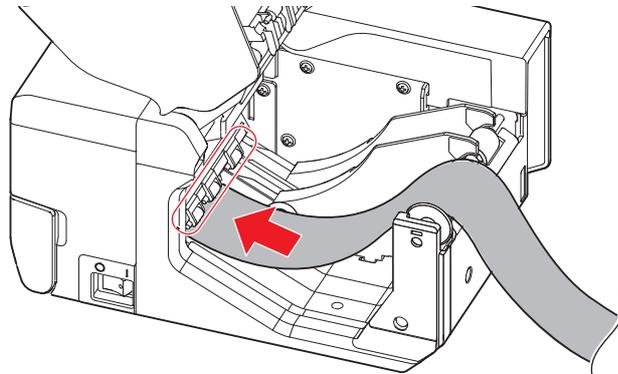
Installing Paper

When the Paper LED is on, follow the steps below to load paper.

- 1** Turn on the printer.
- 2** Open the paper loading cover by pulling up the cover open lever.



- 3** Insert the end of the paper under the rollers.
The paper is fed automatically.



- 4** Close the paper loading cover.
The paper is fed to the position of a punch hole or a black mark, and cut automatically.

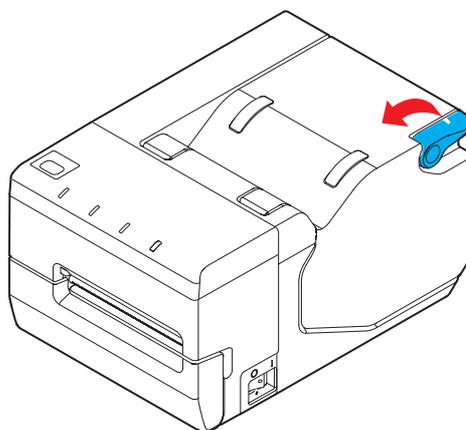
CAUTION

Close the paper loading cover immediately. If it is left open for 1 minute or longer, paper feeding may not be correct.

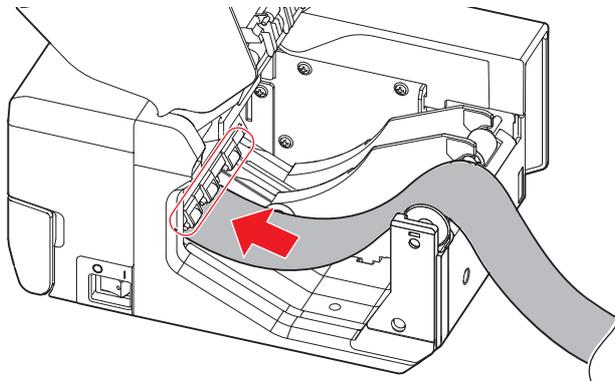
Replacing Paper

Follow the steps below to replace paper.

- 1** Turn on the printer.
- 2** Hold down the Unload (↑) button until the paper starts feeding backward.
- 3** After paper feeding stops, remove the paper by pulling it backward.
- 4** Open the paper loading cover by pulling up the cover open lever.



- 5** Insert the end of the paper under the rollers.
The paper is fed automatically.



- 6** Close the paper loading cover.
The paper is fed to the position of a punch hole or a black mark, and cut automatically.

CAUTION

Close the paper loading cover immediately. If it is left open for 1 minute or longer, paper feeding may not be correct.

Removing Jammed Paper

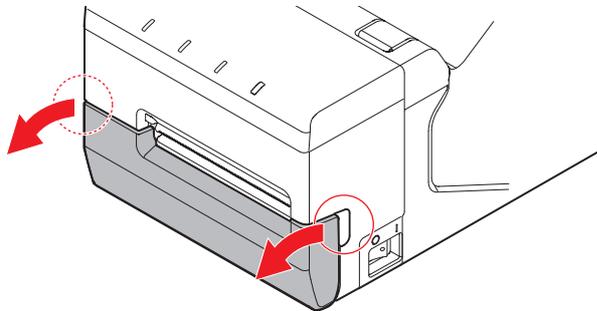
When a paper jam occurs, never pull out the paper forcibly.

Follow the steps below to remove the jammed paper.

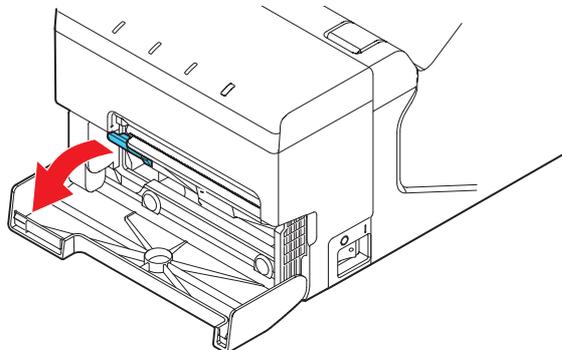


Do not touch the thermal head (See "Cleaning the Printer" on page 63.) **because it can be very hot after printing.**

- 1 Turn off the printer.
- 2 Open the platen cover.

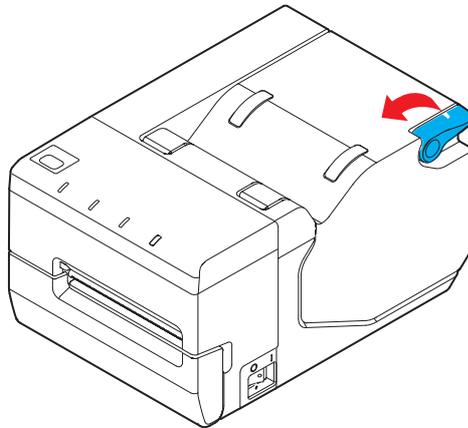


- 3 Push down the platen lever to open the platen frame.



- 4 Pull out the jammed paper forward, and cut any distorted, crumpled, or torn parts of the paper.

-
- 5** Open the paper loading cover by pulling up the cover open lever.



- 6** Pull out the paper backward, and cut any distorted, crumpled, or torn parts of the paper if there are any.
- 7** Close the platen frame and the platen cover.

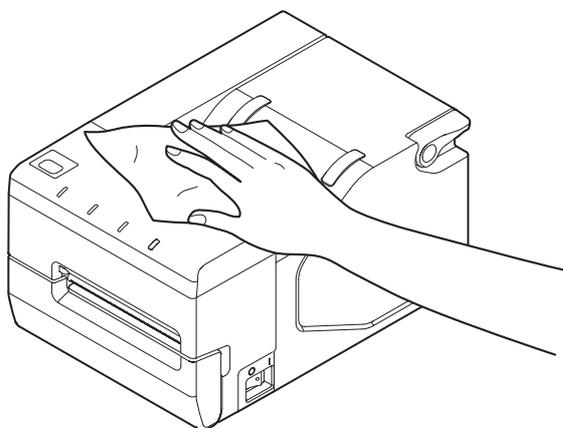
Cleaning the Printer

Cleaning the Printer Case

Be sure to unplug the AC cable from the wall socket and turn off the printer before cleaning. Wipe the dirt off the printer case with a dry cloth or a damp cloth.

CAUTION

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



Cleaning the Thermal Head

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

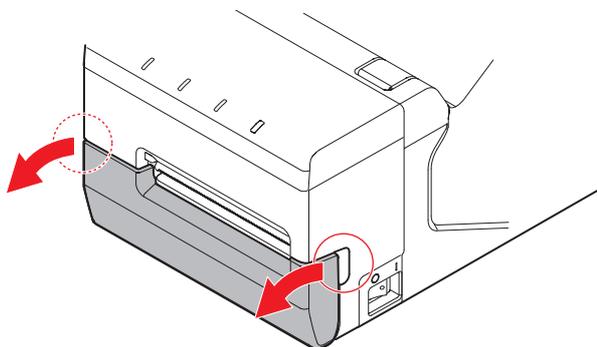


CAUTION

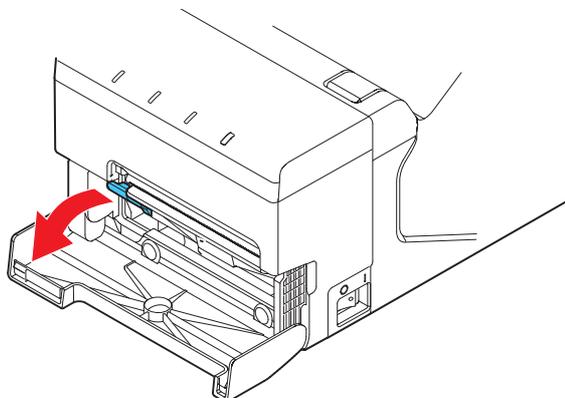
- After printing, the thermal head can be very hot. Do not touch it and let it cool before you clean it.
- Do not damage the thermal head by touching it with your fingers or any hard object.

- 1 Hold down the Unload (↑) button until the paper starts feeding backward.
- 2 After paper feeding stops, remove the paper by pulling it backward.
- 3 Turn off the printer.

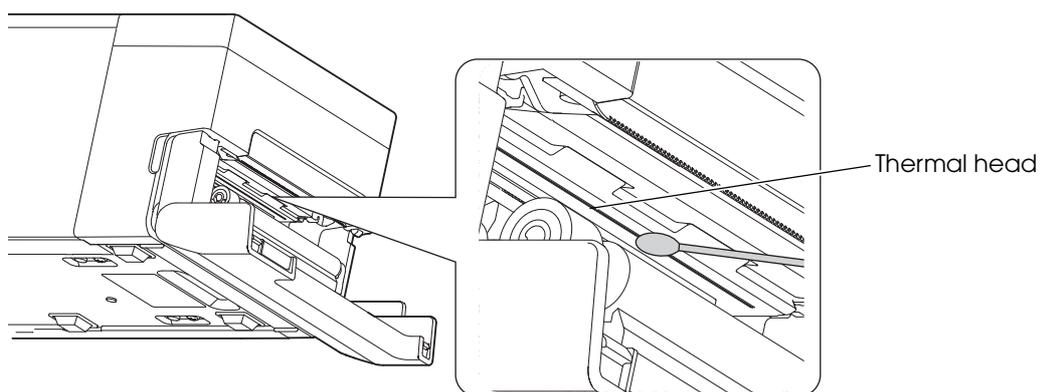
- 4** Open the platen cover.



- 5** Push down the platen lever to open the platen frame.



- 6** Clean the thermal elements of the thermal head with a cotton swab moistened with an alcohol solvent (ethanol or IPA).



- 7** Close the platen frame and the platen cover.

Preparing for Transport

Follow the steps below to transport the printer.

- 1** Turn off the printer.
- 2** Remove the power supply connector.
- 3** Remove the roll paper.
- 4** Pack the printer upright.



Appendix

Specifications of Interfaces and Connectors

RS-232 Serial Interface

Interface board specifications (RS-232-compliant)

Item		Specifications
Data transfer method		Serial
Synchronization		Asynchronous
Handshake		<ul style="list-style-type: none"> • DTR/DSR • RTS/CTS
Signal level	MARK	-3V to -15V logic "1"/OFF
	SPACE	+3V to +15V logic "0"/ON
Transmission speed (bps: bits per second)		<ul style="list-style-type: none"> • Select one of the following with DIP switches 3 and 4: 9600/19200/38400 bps • Select one of the following with a memory switch: 2400/4800/9600/19200/38400/57600/115200 bps
Bit lengths		8 bits
Parity selection		Select one of the following with a memory switch: <ul style="list-style-type: none"> • None • Even • Odd
Stop bit		1 or more bits However, the stop bit for data transfer from the printer is fixed to 1 bit.
Connector	Printer side	DSUB 9-pin (male) connector

Functions of each connector pin

DSUB9 Pin no.	Signal name	Signal direction	Function
1	NC	—	Not connected
2	RXD	Input	Receive data
3	TXD	Output	Transmit data
4	DTR	Output	Indicates whether or not the printer is BUSY. SPACE indicates that the printer is ready to receive data, and MARK indicates that the printer is BUSY. The memory switch changes the BUSY condition for the printer. (See "Setting the Memory Switches" on page 47.)
5	GND	—	Signal ground
6	DSR	Input	Indicates whether or not the host computer is ready to receive data. SPACE indicates that the host computer is ready to receive data, and MARK indicates that the host computer is not ready to receive data. The printer checks this signal before transmitting data. (Except when transmitting data with some status commands.) Changing the setting of DIP switch allows this signal to be used as a reset signal for the printer. (See "For Serial Interface" on page 40.)
7	RTS	Output	Same as DTR signal
8	CTS	Input	Indicates whether or not the host computer is ready to receive data. SPACE indicates that the host computer is ready to receive data, and MARK indicates that the host computer is not ready to receive data. The printer checks this signal before transmitting data. (Except when transmitting data with some status commands.)
9	NC	—	Not connected

NOTE

The printer goes **BUSY** under the following conditions:

Printer status		Memory switch 1-3	
		ON	OFF
Offline	1. During the period from when the power is turned on (including resetting through the interface) to when the printer becomes ready to receive data.	BUSY	BUSY
	2. During a self-test	BUSY	BUSY
	3. When the cover is open.	—	BUSY
	4. When the platen frame is open.	—	BUSY
	5. When the printer stops printing due to a paper-end.	—	BUSY
	6. When the printer stops printing due to a paper jam.	—	BUSY
	7. When an error has occurred.	—	BUSY
	8. When the receive buffer becomes full.	BUSY	BUSY

Receive buffer full:

- When the remaining space in the receive buffer drops to 128 bytes, the printer status becomes "buffer full" and it remains "buffer full" until the space in the receive buffer increases to 256 bytes.
- The printer ignores the data received when the remaining space in the receive buffer is 0 byte.

10BASE-T/100BASE-TX Ethernet Interface

Software specifications

Basic communication protocols

- IP, ARP, ICMP, UDP, TCP: Basic communications protocols for various functions (used by higher-level protocols below)

Printing communications protocols

- LP, LPR: Transfers printing data.
- TCP socket port: Transfers printing data and printer status with direct socket communications (bi-directional).

Protocol for obtaining status and setting

- HTTP: Displays module status and makes setting with the Web browser.
- SNMP: Obtains status and/or sets module or printer with the dedicated/commercial MIB tool.
- ENPC: Obtains status and/or sets the interface unit and printer.
- TFTP: Updates the interface unit firmware.

Automatic IP Address Assignment Protocols

Automatic IP addressing is executed in order shown in the table below. If DHCP is disabled or IP addressing for DHCP fails, then IP addressing for the next protocols is executed. If APIPA is disabled or IP address cannot be obtained, the internal setting parameters are used.

Protocol	Order	Application
DHCP	1	Obtains IP address.
APIPA	2	Assigns IP address.
Manual setting	3	Uses the internal parameters.

Internal parameter settings

Internal parameter settings can be changed with the following:

- ENPC protocol: Epson provides a dedicated utility that makes miscellaneous setting with the ENPC protocol.
- HTTP browser: An HTTP browser can make setting when connected to the module.
- arp commands and ping commands (Only IP address is settable.):

This function is available only when it has been enabled. The setting can be made only from a host PC that supports both arp and ping commands and is in the same segment as the module.

Article	Parameters	Default values	Utility		Browser		Status sheet print
			View	Setting	View	Setting	
IP address		192.168.192.168	Yes	Yes	Yes	Yes	Yes
Subnet mask		255.255.255.0	Yes	Yes	Yes	Yes	Yes
Gateway address		0.0.0.0	Yes	Yes	Yes	Yes	Yes
DHCP	Enable/Disable	Disable	Yes	Yes	Yes	Yes	Yes
APIPA	Enable/Disable	Disable	Yes	Yes	Yes	Yes	Yes
Arp/ping IP setting	Enable/Disable	Enable	Yes	Yes	Yes	Yes	No
Community name 1 (read-only)	Max. 16 characters	"public"	Yes	No	Yes	No	Yes
Community name 2 (read-write)	Max. 16 characters	None	Yes	Yes	Yes	Yes	Yes
IP Trap 1 Enable	Enable/Disable	Disable	Yes	Yes	Yes	Yes	No
IP Trap 2 Enable	Enable/Disable	Disable	Yes	Yes	Yes	Yes	No
Community name (IP Trap #1)	Max. 16 characters	None	Yes	Yes	Yes	Yes	No
Community name (IP Trap #2)	Max. 16 characters	None	Yes	Yes	Yes	Yes	No
IP trap #1 address		None	Yes	Yes	Yes	Yes	No
IP trap #2 address		None	Yes	Yes	Yes	Yes	No
Password		None	No	Yes	No	Yes	No
Physical layer setting	Auto negotiation /10Base-T Half /10Base-T Full /100Base-TX Half /100Base-TX Full	Auto negotiation	Yes	Yes	Yes	Yes	Yes
Hardware version	—	—	Yes	No	Yes	No	Yes
Firmware version	—	—	Yes	No	Yes	No	Yes
MAC address	—	—	Yes	No	Yes	No	Yes

USB (Universal Serial Bus) Interface

Outline

- Full-speed transmission at 12 Mbps [bps: bits per second]
- Plug & Play, Hot Insertion & Removal

USB transmission specifications

USB function

Overall specifications	USB 2.0	
Transmission speed	USB Full-Speed (12 Mbps)	
Transmission method	USB bulk transmission method	
Power supply specifications	USB self power supply function	
Current consumed by USB bus	0 mA	
USB packet size (with full-speed connection)		
USB bulk OUT (TM)	64 bytes	
USB bulk IN (TM)	64 bytes	
USB device class	Both vendor-defined class and USB printer class are supported. Switching of the class can be set by DIP switch on startup.	
USB descriptor	USB vendor-defined class	USB printer class
Vendor ID	04b8h	04b8h
Product ID	0202h	0E08h
String Descriptor	Manufacturer	EPSON
	Product	TM-L500A
	Serial number	Character string based on the product serial number

Status transmission from printer with USB interface

In order to ensure that there is no lack of status data, it is necessary to periodically retrieve status data at the host computer.

Unlike RS-232 transmission, status cannot spontaneously interrupt data transmission to the host computer.

The printer has a 128-byte status data buffer. Statuses that exceed the buffer capacity are canceled.

Character Code Tables

CAUTION

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

Common to All Pages

When the international character set (See ["International Character Sets" on page 117.](#)) is USA:

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

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

Page 1 (Katakana)

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

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

Page 3 (PC860: Portuguese)

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

HEX	8	9	A	B	C	D	E	F
0	Ç <small>128</small>	É <small>144</small>	Ì <small>160</small>	⋮ <small>176</small>	Ł <small>192</small>	⋈ <small>208</small>	ɑ <small>224</small>	≡ <small>240</small>
1	Ü <small>129</small>	È <small>145</small>	ˆ <small>161</small>	⋮ <small>177</small>	Ł̇ <small>193</small>	⋈̇ <small>209</small>	β <small>225</small>	± <small>241</small>
2	é <small>130</small>	Ê <small>146</small>	Ó <small>162</small>	⋮ <small>178</small>	τ <small>194</small>	π <small>210</small>	Γ <small>226</small>	≥ <small>242</small>
3	â <small>131</small>	Ô <small>147</small>	Ú <small>163</small>	ı <small>179</small>	† <small>195</small>	⋈ <small>211</small>	π <small>227</small>	≤ <small>243</small>
4	Â <small>132</small>	Ë <small>148</small>	¨ <small>164</small>	ı̇ <small>180</small>	– <small>196</small>	Ł̇ <small>212</small>	Σ <small>228</small>	ƒ <small>244</small>
5	à <small>133</small>	Ï <small>149</small>	˙ <small>165</small>	ı̇ <small>181</small>	† <small>197</small>	ƒ <small>213</small>	σ <small>229</small>	Ƶ <small>245</small>
6	ŋ <small>134</small>	Û <small>150</small>	³ <small>166</small>	ı̇̇ <small>182</small>	†̇ <small>198</small>	π <small>214</small>	μ <small>230</small>	÷ <small>246</small>
7	ç <small>135</small>	ù <small>151</small>	– <small>167</small>	π <small>183</small>	ı̇̇ <small>199</small>	⋈̇̇ <small>215</small>	τ <small>231</small>	≈ <small>247</small>
8	ê <small>136</small>	ɶ <small>152</small>	î <small>168</small>	ɶ <small>184</small>	Ł̇ <small>200</small>	†̇ <small>216</small>	ϕ <small>232</small>	° <small>248</small>
9	ë <small>137</small>	ô <small>153</small>	ƒ <small>169</small>	ı̇̇ <small>185</small>	ƒ̇ <small>201</small>	Ƶ <small>217</small>	θ <small>233</small>	• <small>249</small>
A	è <small>138</small>	ü <small>154</small>	˘ <small>170</small>	ı̇̇̇ <small>186</small>	⋈̇̇̇ <small>202</small>	ƒ̇ <small>218</small>	Ω <small>234</small>	• <small>250</small>
B	ï <small>139</small>	ϕ <small>155</small>	½ <small>171</small>	π̇ <small>187</small>	π̇ <small>203</small>	■ <small>219</small>	δ <small>235</small>	√ <small>251</small>
C	î <small>140</small>	£ <small>156</small>	¼ <small>172</small>	ı̇̇̇̇ <small>188</small>	ı̇̇̇̇ <small>204</small>	■ <small>220</small>	ω <small>236</small>	n <small>252</small>
D	= <small>141</small>	ù <small>157</small>	¾ <small>173</small>	⋈̇̇̇̇ <small>189</small>	= <small>205</small>	■ <small>221</small>	ϕ <small>237</small>	² <small>253</small>
E	À <small>142</small>	Û <small>158</small>	« <small>174</small>	Ƶ <small>190</small>	ı̇̇̇̇̇ <small>206</small>	■ <small>222</small>	ε <small>238</small>	■ <small>254</small>
F	§ <small>143</small>	f <small>159</small>	» <small>175</small>	Ƶ <small>191</small>	⋈̇̇̇̇̇ <small>207</small>	■ <small>223</small>	∩ <small>239</small>	SP <small>255</small>

Page 5 (PC865: Nordic)

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

HEX	8	9	A	B	C	D	E	F
0	Ç 128	Ï 144	ÿ 160	⋈ 176	Ł 192	Ƨ 208	ζ 224	- 240
1	ü 129	SP 145	ÿ̇ 161	⋈̇ 177	Ł̇ 193	Ƨ̇ 209	η 225	± 241
2	é 130	ò 146	ó 162	⋈̈ 178	Ł̈ 194	Ƨ̈ 210	θ 226	υ 242
3	â 131	ô 147	ú 163	ı̇ 179	ł̇ 195	χ̇ 211	λ 227	φ 243
4	ä 132	ö 148	À 164	ı̈ 180	ł̈ 196	ψ̇ 212	κ 228	χ̈ 244
5	à 133	ÿ̈ 149	Β̇ 165	Κ̇ 181	ł̈̇ 197	Ω̇ 213	λ̇ 229	§ 245
6	À̇ 134	û 150	Γ̇ 166	Λ̇ 182	Π̇ 198	α̇ 214	μ̇ 230	ψ̈ 246
7	ç 135	ù 151	Δ̇ 167	Μ̇ 183	Ρ̇ 199	β̇ 215	ν̇ 231	· 247
8	ê 136	ϱ 152	Ε̇ 168	Ν̇ 184	ℒ̇ 200	γ̇ 216	ξ̇ 232	° 248
9	ë 137	ö̇ 153	Ζ̇ 169	Η̇ 185	℞̇ 201	Ј̇ 217	ο̇ 233	¨ 249
A	è 138	ÿ̈̇ 154	Η̈ 170	η̈ 186	ℒ̈̇ 202	Γ̈ 218	π̈ 234	ω̈ 250
B	ï 139	á 155	½̇ 171	η̇ 187	π̇ 203	■̇ 219	ρ̇ 235	ÿ̈̈ 251
C	î 140	£̇ 156	θ̇ 172	η̈̇ 188	℞̈̇ 204	■̈̇ 220	σ̇ 236	ÿ̈̈̇ 252
D	Ë̇ 141	é̇ 157	Ι̇ 173	Ξ̇ 189	=̇ 205	δ̇ 221	ς̇ 237	ώ̇ 253
E	Ä̇ 142	ñ̇ 158	«̇ 174	Ο̇ 190	℞̈̈̇ 206	ε̇ 222	τ̇ 238	■̈̈̇ 254
F	Ḥ 143	ĺ̇ 159	»̇ 175	ι̇ 191	Σ̇ 207	■̈̈̈̇ 223	˘̇ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	☼ 176	Ł 192	SP 208	Ó 224	- 240
1	Ü 129	Ĉ 145	í 161	☼ 177	Ł 193	SP 209	Ɔ 225	SP 241
2	é 130	Ċ 146	ó 162	☼ 178	Ƨ 194	Ê 210	Ô 226	ℓ 242
3	â 131	ô 147	ú 163	ı 179	Ƨ 195	Ë 211	ò 227	ħ 243
4	ä 132	ö 148	ñ 164	ı 180	- 196	È 212	Ĝ 228	˘ 244
5	à 133	ò 149	Ñ 165	Á 181	† 197	ı 213	ğ 229	§ 245
6	ĉ 134	û 150	Ğ 166	Â 182	Ŝ 198	Í 214	μ 230	÷ 246
7	ç 135	ù 151	ğ 167	À 183	Ŝ 199	Î 215	℥ 231	· 247
8	ê 136	î 152	Ĥ 168	Ş 184	Ł 200	İ 216	ħ 232	° 248
9	ë 137	ö 153	ĥ 169	185	Ɔ 201	ı 217	Ú 233	¨ 249
A	è 138	ü 154	SP 170	186	Ł 202	ı 218	Û 234	˙ 250
B	ĩ 139	ĝ 155	½ 171	π 187	π 203	■ 219	Ù 235	SP 251
C	î 140	£ 156	Ĵ 172	„ 188	Ƨ 204	■ 220	Û 236	³ 252
D	ì 141	Ĝ 157	Ş 173	Ž 189	= 205	SP 221	Û 237	² 253
E	Ă 142	× 158	« 174	Ž 190	206	İ 222	· 238	■ 254
F	Ĉ 143	Ĵ 159	» 175	ı 191	α 207	■ 223	˘ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	☼ 176	Ł 192	o 208	Ó 224	- 240
1	Ü 129	æ 145	í 161	☼ 177	ł 193	ǎ 209	β 225	± 241
2	é 130	Æ 146	ó 162	☼ 178	τ 194	Ê 210	Ô 226	SP 242
3	â 131	ô 147	ú 163	ı 179	† 195	Ë 211	ò 227	¼ 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	ã 134	û 150	Ğ 166	Â 182	ã 198	Í 214	μ 230	÷ 246
7	ç 135	ù 151	ğ 167	À 183	Ǻ 199	Î 215	SP 231	· 247
8	ê 136	î 152	¿ 168	© 184	ℒ 200	Ï 216	× 232	° 248
9	ë 137	ö 153	® 169	¶ 185	℞ 201	Ј 217	Ú 233	¨ 249
A	è 138	ü 154	¬ 170	¶ 186	ℒ 202	Г 218	Û 234	• 250
B	ï 139	ø 155	½ 171	¶ 187	π 203	■ 219	Ü 235	¹ 251
C	î 140	£ 156	¼ 172	¶ 188	¶ 204	■ 220	ì 236	³ 252
D	ı 141	∅ 157	ı 173	¢ 189	= 205	ı 221	ÿ 237	² 253
E	Ǻ 142	§ 158	« 174	¥ 190	¶ 206	Ï 222	¯ 238	■ 254
F	Ǻ 143	§ 159	» 175	₺ 191	α 207	■ 223	˘ 239	SP 255

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HEX	8	9	A	B	C	D	E	F
0	Α 128	Ρ 144	Λ 160	⋯ 176	Λ 192	⋈ 208	ω 224	Ω 240
1	Β 129	Σ 145	Κ 161	⋯ 177	⊥ 193	⊟ 209	ά 225	± 241
2	Γ 130	Τ 146	λ 162	⋯ 178	τ 194	π 210	έ 226	≥ 242
3	Δ 131	Υ 147	μ 163	ι 179	† 195	⋈ 211	ή 227	≤ 243
4	Ε 132	Φ 148	ν 164	‡ 180	- 196	⊥ 212	ï 228	ï 244
5	Ζ 133	Χ 149	ξ 165	‡ 181	† 197	ƒ 213	ί 229	ÿ 245
6	Η 134	Ψ 150	ο 166	‖ 182	‡ 198	π 214	ό 230	÷ 246
7	Θ 135	Ω 151	π 167	π 183	‖ 199	‡ 215	ύ 231	≈ 247
8	Ι 136	α 152	ρ 168	‡ 184	⋈ 200	‡ 216	ü 232	° 248
9	Κ 137	β 153	σ 169	‖ 185	ƒ 201	⊥ 217	ώ 233	• 249
A	Λ 138	γ 154	ς 170	‖ 186	⋈ 202	γ 218	Ä 234	• 250
B	Μ 139	δ 155	τ 171	π 187	⊟ 203	■ 219	Έ 235	√ 251
C	Ν 140	ε 156	υ 172	⋈ 188	‖ 204	■ 220	Ή 236	η 252
D	Ξ 141	ζ 157	φ 173	⋈ 189	= 205	⊥ 221	Ί 237	² 253
E	Ο 142	η 158	χ 174	⊥ 190	‖ 206	⊥ 222	Ό 238	■ 254
F	Π 143	θ 159	ψ 175	γ 191	⊥ 207	■ 223	Υ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	SP 160	° 176	ĩ 192	Π 208	Û 224	π 240
1	SP 129	SP 145	‘ 161	± 177	À 193	Ρ 209	α 225	ρ 241
2	SP 130	SP 146	’ 162	² 178	Β 194	SP 210	β 226	ς 242
3	SP 131	SP 147	£ 163	³ 179	Γ 195	Σ 211	γ 227	σ 243
4	SP 132	SP 148	€ 164	´ 180	Δ 196	Τ 212	δ 228	τ 244
5	SP 133	SP 149	Ⓣ 165	ˆ 181	Ε 197	Υ 213	ε 229	υ 245
6	SP 134	SP 150	ı 166	À 182	Ζ 198	Φ 214	ζ 230	φ 246
7	SP 135	SP 151	§ 167	• 183	Η 199	Χ 215	η 231	χ 247
8	SP 136	SP 152	¨ 168	È 184	Θ 200	Ψ 216	θ 232	ψ 248
9	SP 137	SP 153	© 169	Η 185	Ι 201	Ω 217	ι 233	ω 249
A	SP 138	SP 154	• 170	Ϊ 186	Κ 202	Ï 218	κ 234	ϊ 250
B	SP 139	SP 155	« 171	» 187	Λ 203	ÿ 219	λ 235	ÿ 251
C	SP 140	SP 156	¬ 172	ƒ 188	Μ 204	ά 220	μ 236	ό 252
D	SP 141	SP 157	- 173	½ 189	Ν 205	έ 221	ν 237	ύ 253
E	SP 142	SP 158	SP 174	Υ 190	Ξ 206	ή 222	ξ 238	ώ 254
F	SP 143	SP 159	- 175	Ϟ 191	Ο 207	ί 223	ο 239	SP 255

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

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

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

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

HEX	8	9	A	B	C	D	E	F
0	┌ 128	๐ 144	SP 160	ฌ 176	ย 192	เ 208	· 224	๒๓ 240
1	┐ 129	๑ 145	ก 161	ฉ 177	ร 193	แ 209	๕ 225	๒๔ 241
2	└ 130	๒ 146	ข 162	ค 178	ร 194	โ 210	๖ 226	๒๕ 242
3	┘ 131	๓ 147	ค 163	ด 179	ล 195	ใ 211	+ 227	๒๖ 243
4	132	๔ 148	ฆ 164	ถ 180	ว 196	ไ 212	๘ 228	๒๗ 244
5	- 133	๕ 149	ง 165	ท 181	ศ 197	ำ 213	· 229	๒๘ 245
6	┌ 134	๖ 150	จ 166	ธ 182	ษ 198	ำ 214	๐ 230	๒๙ 246
7	┐ 135	๗ 151	ฉ 167	น 183	ส 199	๑ 215	๑๑ 231	๓๐ 247
8	└ 136	๘ 152	ช 168	บ 184	ห 200	๒ 216	๑๒ 232	๓๑ 248
9	┘ 137	๙ 153	ซ 169	ป 185	ฬ 201	๓ 217	๑๓ 233	๓๒ 249
A	┘ 138	๐ 154	ฌ 170	ผ 186	อ 202	๔ 218	๑๔ 234	๓๓ 250
B	█ 139	ค 155	ฉ 171	ฝ 187	ฮ 203	๕ 219	๑๕ 235	๓๔ 251
C	← 140	๑ 156	ฉ 172	ฝ 188	๕ 204	๖ 220	๑๖ 236	๓๕ 252
D	↑ 141	๒ 157	ฉ 173	ฝ 189	ภ 205	๗ 221	๑๗ 237	๓๖ 253
E	→ 142	๓ 158	ฌ 174	ภ 190	า 206	๘ 222	๑๘ 238	๓๗ 254
F	↓ 143	๔ 159	ท 175	ม 191	ำ 207	๙ 223	๑๙ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	๕- 128	๕+ 144	เ 160	๕๕ 176	ภ 192	๕๕ 208	เ 224	๐ 240
1	๕๕ 129	๕- 145	ก 161	ท 177	ม 193	๕ 209	แ 225	๑ 241
2	๕๖ 130	๕๕ 146	ข 162	ฃ 178	ย 194	า 210	โ 226	๒ 242
3	๕+ 131	๕๖ 147	ข 163	ค 179	ร 195	ำ 211	ใ 227	๓ 243
4	๕- 132	๕+ 148	ค 164	ค 180	ถ 196	๕ 212	ใ 228	๔ 244
5	๕๕ 133	๐- 149	ค 165	ค 181	ล 197	๕ 213	า 229	๕ 245
6	๕๖ 134	๐๕ 150	ฆ 166	ถ 182	ภ 198	๕ 214	า 230	๖ 246
7	๕+ 135	๐๖ 151	ง 167	ท 183	ว 199	๕ 215	๕ 231	๗ 247
8	๕- 136	๐+ 152	จ 168	ธ 184	ศ 200	๐ 216	๐ 232	๘ 248
9	๕- 137	๐ 153	ฉ 169	น 185	ษ 201	๕ 217	๕ 233	๙ 249
A	๕๕ 138	๐ 154	ช 170	บ 186	ส 202	๐ 218	๕ 234	๐ 250
B	๕๖ 139	๐ 155	ช 171	บ 187	ห 203	- 219	+ 235	๑ 251
C	๕+ 140	๐ 156	ฃ 172	ผ 188	ฬ 204	๐ 220	๕ 236	๑ 252
D	๕- 141	๐ 157	ค 173	ผ 189	อ 205	T 221	๐ 237	๑ 253
E	๕๕ 142	๐ 158	ฅ 174	ฝ 190	ฮ 206	๐ 222	๕ 238	๑ 254
F	๕๖ 143	๐ 159	ฆ 175	ฝ 191	๑ 207	๐ 223	๐ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	┌ 128	๙ 144	SP 160	๙๙ 176	ภ 192	๕๕ 208	ไ 224	๐ 240
1	┐ 129	๑ 145	ก 161	ท 177	ม 193	๕ 209	แ 225	๑ 241
2	└ 130	๕- 146	ข 162	ฃ 178	ย 194	า 210	โ 226	๒ 242
3	┘ 131	๕๕ 147	ช 163	ฅ 179	ร 195	ำ 211	ใ 227	๓ 243
4	132	๕๖ 148	ค 164	ด 180	ถ 196	๗ 212	ใ 228	๔ 244
5	- 133	๕+ 149	ค 165	ด 181	ล 197	๗ 213	า 229	๕ 245
6	┌ 134	๗- 150	ฆ 166	ถ 182	ภ 198	๗ 214	ำ 230	๖ 246
7	┐ 135	๗๕ 151	ง 167	ท 183	ว 199	๗ 215	๙ 231	๗ 247
8	└ 136	๗๖ 152	จ 168	ธ 184	ศ 200	๑ 216	๑ 232	๘ 248
9	┘ 137	๗+ 153	ฉ 169	น 185	ษ 201	๑ 217	๑ 233	๙ 249
A	┌ 138	๗๑ 154	ช 170	บ 186	ส 202	๑ 218	๑ 234	๑ 250
B	█ 139	๗- 155	ช 171	ป 187	ห 203	๗- 219	+ 235	๗- 251
C	← 140	๗๕ 156	ฃ 172	ฝ 188	ฬ 204	๗๕ 220	๕ 236	๗๕ 252
D	↑ 141	๗๖ 157	ฅ 173	ฝ 189	อ 205	๗๖ 221	๑ 237	๗๖ 253
E	→ 142	๗+ 158	ฉ 174	พ 190	ฮ 206	๗+ 222	๗ 238	๗+ 254
F	↓ 143	๗ 159	ฉ 175	พ 191	๗ 207	๗ 223	๑ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	SP 160	SP 176	SP 192	é 208	SP 224	SP 240
1	SP 129	SP 145	SP 161	SP 177	SP 193	ẹ 209	ỏ 225	ủ 241
2	SP 130	SP 146	SP 162	SP 178	SP 194	ề 210	õ 226	ũ 242
3	SP 131	SP 147	SP 163	SP 179	SP 195	ễ 211	ó 227	ú 243
4	SP 132	SP 148	SP 164	SP 180	SP 196	ễ 212	ọ 228	ụ 244
5	SP 133	SP 149	SP 165	à 181	SP 197	ế 213	ồ 229	ừ 245
6	SP 134	SP 150	SP 166	ả 182	ă 198	ệ 214	ở 230	ử 246
7	SP 135	SP 151	SP 167	ã 183	â 199	ì 215	ỡ 231	ữ 247
8	SP 136	SP 152	ă 168	á 184	ã 200	ỉ 216	ố 232	ứ 248
9	SP 137	SP 153	â 169	a 185	ã 201	SP 217	ộ 233	ự 249
A	SP 138	SP 154	ê 170	SP 186	ă 202	SP 218	ờ 234	ỳ 250
B	SP 139	SP 155	ô 171	ã 187	â 203	SP 219	ở 235	ỷ 251
C	SP 140	SP 156	ơ 172	ã 188	è 204	ĩ 220	ỡ 236	ỹ 252
D	SP 141	SP 157	ư 173	ã 189	SP 205	í 221	ở 237	ý 253
E	SP 142	SP 158	đ 174	ã 190	ẻ 206	ị 222	ợ 238	ỵ 254
F	SP 143	SP 159	SP 175	SP 191	ễ 207	ò 223	ù 239	SP 255

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HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	SP 160	SP 176	SP 192	É 208	SP 224	SP 240
1	SP 129	SP 145	Ă 161	SP 177	SP 193	Ě 209	Ỏ 225	Ủ 241
2	SP 130	SP 146	Â 162	SP 178	SP 194	Ê 210	Ỗ 226	Ữ 242
3	SP 131	SP 147	SP 163	SP 179	SP 195	Ë 211	Ó 227	Ú 243
4	SP 132	SP 148	SP 164	SP 180	SP 196	Ě 212	Ọ 228	Ụ 244
5	SP 133	SP 149	SP 165	À 181	SP 197	Ë 213	Ô 229	Ừ 245
6	SP 134	SP 150	SP 166	Ả 182	Ă 198	Ê 214	Ỗ 230	Ữ 246
7	SP 135	SP 151	Đ 167	Ã 183	Â 199	Ì 215	Ỗ 231	Ữ 247
8	SP 136	SP 152	SP 168	Á 184	Ã 200	Î 216	Ố 232	Ứ 248
9	SP 137	SP 153	SP 169	À 185	Ã 201	SP 217	Ộ 233	Ự 249
A	SP 138	SP 154	Ê 170	SP 186	Ă 202	SP 218	Ỗ 234	Ỡ 250
B	SP 139	SP 155	Ô 171	Ả 187	Â 203	SP 219	Ỗ 235	Ỡ 251
C	SP 140	SP 156	Ớ 172	Ả 188	Ê 204	Ï 220	Ỗ 236	Ỡ 252
D	SP 141	SP 157	Ứ 173	Ả 189	SP 205	Í 221	Ớ 237	Ỡ 253
E	SP 142	SP 158	SP 174	Ả 190	Ê 206	Ị 222	Ớ 238	Ỡ 254
F	SP 143	SP 159	SP 175	SP 191	Ë 207	Ò 223	Ừ 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	ب 160	⋮ 176	ل 192	ﻻ 208	ض 224	≡ 240
1	SP 129	“ 145	ة 161	⋮ 177	ل 193	ﻻ 209	ط 225	” 241
2	é 130	° 146	ت 162	⋮ 178	ت 194	π 210	ظ 226	” 242
3	â 131	ô 147	ث 163	 179	ت 195	ﻻ 211	ع 227	” 243
4	SP 132	α 148	ج 164	ت 180	- 196	ل 212	غ 228	’ 244
5	à 133	- 149	ح 165	ت 181	† 197	ل 213	ف 229	” 245
6	SP 134	û 150	خ 166	ﻻ 182	ت 198	π 214	ﻻ 230	’ 246
7	ç 135	ù 151	د 167	π 183	ﻻ 199	ﻻ 215	ق 231	≈ 247
8	ê 136	ء 152	ذ 168	ك 184	ﻻ 200	ﻻ 216	ك 232	° 248
9	ë 137	آ 153	ر 169	ﻻ 185	ل 201	ل 217	ل 233	• 249
A	è 138	أ 154	ز 170	ﻻ 186	ﻻ 202	ل 218	م 234	• 250
B	ï 139	ؤ 155	س 171	ﻻ 187	ﻻ 203	■ 219	ن 235	√ 251
C	î 140	£ 156	ش 172	ك 188	ﻻ 204	■ 220	ه 236	n 252
D	SP 141	ل 157	ص 173	ﻻ 189	= 205	■ 221	و 237	2 253
E	SP 142	ئ 158	« 174	ك 190	ﻻ 206	■ 222	ي 238	■ 254
F	SP 143	ا 159	» 175	ك 191	ﻻ 207	■ 223	ي 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	Ć 128	É 144	Ā 160	⋯ 176	Ł 192	ą 208	Ó 224	- 240
1	Ü 129	æ 145	Ī 161	⋯ 177	Ł 193	č 209	β 225	± 241
2	é 130	Æ 146	Ó 162	⋯ 178	τ 194	ę 210	ō 226	“ 242
3	ā 131	ō 147	ž 163	l 179	† 195	è 211	Ń 227	¾ 243
4	ä 132	ö 148	ž 164	l 180	- 196	ì 212	õ 228	¶ 244
5	ǫ 133	Ǫ 149	ž 165	Ą 181	† 197	š 213	õ 229	§ 245
6	ǻ 134	ϕ 150	” 166	č 182	Ų 198	ų 214	μ 230	÷ 246
7	Ć 135	Ś 151	l 167	Ę 183	Ū 199	ū 215	ń 231	” 247
8	ł 136	ś 152	© 168	È 184	Ł 200	ž 216	Ʒ 232	° 248
9	ē 137	ö 153	® 169	Ų 185	Ŧ 201	ĵ 217	Ʒ 233	• 249
A	Ŕ 138	ü 154	¬ 170	ll 186	ll 202	Ŧ 218	ł 234	• 250
B	Ŗ 139	ø 155	½ 171	Ų 187	Ŧ 203	■ 219	ł 235	1 251
C	ī 140	£ 156	¼ 172	ll 188	ll 204	■ 220	Ŗ 236	3 252
D	ž 141	ø 157	ł 173	ł 189	= 205	l 221	Ē 237	2 253
E	Ä 142	× 158	« 174	š 190	ll 206	l 222	Ń 238	■ 254
F	Ā 143	Ꝥ 159	» 175	ł 191	ž 207	■ 223	' 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	ђ <small>128</small>	љ <small>144</small>	а <small>160</small>	џ <small>176</small>	Љ <small>192</small>	л <small>208</small>	я <small>224</small>	- <small>240</small>
1	Ђ <small>129</small>	Љ <small>145</small>	А <small>161</small>	џ <small>177</small>	Љ <small>193</small>	Л <small>209</small>	Р <small>225</small>	Ы <small>241</small>
2	ѓ <small>130</small>	љ <small>146</small>	б <small>162</small>	џ <small>178</small>	Т <small>194</small>	М <small>210</small>	Р <small>226</small>	Ы <small>242</small>
3	Ђ <small>131</small>	Љ <small>147</small>	Б <small>163</small>	Љ <small>179</small>	Т <small>195</small>	М <small>211</small>	С <small>227</small>	З <small>243</small>
4	ё <small>132</small>	ђ <small>148</small>	ц <small>164</small>	џ <small>180</small>	- <small>196</small>	Н <small>212</small>	С <small>228</small>	З <small>244</small>
5	Ё <small>133</small>	Ђ <small>149</small>	Ц <small>165</small>	Х <small>181</small>	џ <small>197</small>	Н <small>213</small>	Т <small>229</small>	Ш <small>245</small>
6	е <small>134</small>	Љ <small>150</small>	Д <small>166</small>	Х <small>182</small>	К <small>198</small>	О <small>214</small>	Т <small>230</small>	Ш <small>246</small>
7	Е <small>135</small>	Љ <small>151</small>	Д <small>167</small>	И <small>183</small>	К <small>199</small>	О <small>215</small>	У <small>231</small>	Э <small>247</small>
8	ѕ <small>136</small>	ђ <small>152</small>	е <small>168</small>	И <small>184</small>	Љ <small>200</small>	П <small>216</small>	У <small>232</small>	Э <small>248</small>
9	Ѕ <small>137</small>	Ђ <small>153</small>	Е <small>169</small>	И <small>185</small>	Љ <small>201</small>	Ј <small>217</small>	Ж <small>233</small>	Щ <small>249</small>
A	і <small>138</small>	Ц <small>154</small>	Ф <small>170</small>	И <small>186</small>	Љ <small>202</small>	Г <small>218</small>	Ж <small>234</small>	Щ <small>250</small>
B	І <small>139</small>	Ц <small>155</small>	Ф <small>171</small>	И <small>187</small>	Љ <small>203</small>	■ <small>219</small>	В <small>235</small>	Ч <small>251</small>
C	ї <small>140</small>	Ю <small>156</small>	Г <small>172</small>	И <small>188</small>	Љ <small>204</small>	■ <small>220</small>	В <small>236</small>	Ч <small>252</small>
D	Ї <small>141</small>	Ю <small>157</small>	Г <small>173</small>	Й <small>189</small>	= <small>205</small>	П <small>221</small>	Ь <small>237</small>	§ <small>253</small>
E	ј <small>142</small>	Ь <small>158</small>	« <small>174</small>	Й <small>190</small>	Љ <small>206</small>	Я <small>222</small>	Ь <small>238</small>	■ <small>254</small>
F	Ј <small>143</small>	Ь <small>159</small>	» <small>175</small>	Г <small>191</small>	ѡ <small>207</small>	■ <small>223</small>	№ <small>239</small>	SP <small>255</small>

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

HEX	8	9	A	B	C	D	E	F
0	Ⲁ <small>128</small>	ⲁ <small>144</small>	Ⲃ <small>160</small>	ⲃ <small>176</small>	Ⲅ <small>192</small>	ⲅ <small>208</small>	Ⲇ <small>224</small>	ⲇ <small>240</small>
1	Ⲉ <small>129</small>	ⲉ <small>145</small>	Ⲋ <small>161</small>	ⲋ <small>177</small>	Ⲍ <small>193</small>	ⲍ <small>209</small>	Ⲏ <small>225</small>	ⲏ <small>241</small>
2	Ⲑ <small>130</small>	ⲑ <small>146</small>	Ⲓ <small>162</small>	ⲓ <small>178</small>	Ⲕ <small>194</small>	ⲕ <small>210</small>	Ⲗ <small>226</small>	ⲗ <small>242</small>
3	ⲙ <small>131</small>	ⲛ <small>147</small>	Ⲝ <small>163</small>	ⲝ <small>179</small>	Ⲟ <small>195</small>	ⲟ <small>211</small>	Ⲡ <small>227</small>	ⲡ <small>243</small>
4	Ⲣ <small>132</small>	ⲣ <small>148</small>	Ⲥ <small>164</small>	ⲥ <small>180</small>	Ⲧ <small>196</small>	ⲧ <small>212</small>	Ⲩ <small>228</small>	ⲩ <small>244</small>
5	ⲫ <small>133</small>	Ⲭ <small>149</small>	ⲭ <small>165</small>	Ⲯ <small>181</small>	ⲯ <small>197</small>	Ⲱ <small>213</small>	ⲱ <small>229</small>	Ⲳ <small>245</small>
6	Ⲵ <small>134</small>	ⲵ <small>150</small>	Ⲷ <small>166</small>	ⲷ <small>182</small>	Ⲹ <small>198</small>	ⲹ <small>214</small>	Ⲻ <small>230</small>	ⲻ <small>246</small>
7	Ⲽ <small>135</small>	ⲽ <small>151</small>	Ⲿ <small>167</small>	ⲿ <small>183</small>	Ⳁ <small>199</small>	ⳁ <small>215</small>	Ⳃ <small>231</small>	ⳃ <small>247</small>
8	Ⳅ <small>136</small>	ⳅ <small>152</small>	Ⳇ <small>168</small>	ⳇ <small>184</small>	Ⳉ <small>200</small>	ⳉ <small>216</small>	Ⳋ <small>232</small>	ⳋ <small>248</small>
9	Ⳍ <small>137</small>	ⳍ <small>153</small>	Ⳏ <small>169</small>	ⳏ <small>185</small>	Ⳑ <small>201</small>	ⳑ <small>217</small>	Ⳓ <small>233</small>	ⳓ <small>249</small>
A	ⳕ <small>138</small>	Ⳗ <small>154</small>	ⳗ <small>170</small>	Ⳙ <small>186</small>	ⳙ <small>202</small>	Ⳛ <small>218</small>	ⳛ <small>234</small>	Ⳝ <small>250</small>
B	Ⳟ <small>139</small>	ⳟ <small>155</small>	Ⳡ <small>171</small>	ⳡ <small>187</small>	Ⳣ <small>203</small>	ⳣ <small>219</small>	ⳤ <small>235</small>	⳥ <small>251</small>
C	⳦ <small>140</small>	⳧ <small>156</small>	⳨ <small>172</small>	⳩ <small>188</small>	⳪ <small>204</small>	Ⳬ <small>220</small>	ⳬ <small>236</small>	Ⳮ <small>252</small>
D	ⳮ <small>141</small>	⳯ <small>157</small>	⳰ <small>173</small>	⳱ <small>189</small>	Ⳳ <small>205</small>	ⳳ <small>221</small>	⳴ <small>237</small>	⳵ <small>253</small>
E	⳷ <small>142</small>	⳸ <small>158</small>	⳹ <small>174</small>	⳺ <small>190</small>	⳻ <small>206</small>	⳼ <small>222</small>	⳽ <small>238</small>	⳾ <small>254</small>
F	⳿ <small>143</small>	ⴀ <small>159</small>	ⴁ <small>175</small>	ⴂ <small>191</small>	ⴃ <small>207</small>	ⴄ <small>223</small>	ⴅ <small>239</small>	SP <small>255</small>

HEX	8	9	A	B	C	D	E	F
0	° 128	β 144	SP 160	◦ 176	ϕ 192	ذ 208	- 224	آ 240
1	• 129	⊞ 145	- 161	۱ 177	ء 193	ر 209	ف 225	آ 241
2	• 130	ϕ 146	ل 162	۲ 178	آ 194	ز 210	ف 226	ن 242
3	√ 131	± 147	£ 163	۳ 179	أ 195	ع 211	ك 227	ه 243
4	☼ 132	½ 148	¤ 164	٤ 180	ؤ 196	ث 212	ل 228	ه 244
5	- 133	¼ 149	ل 165	٥ 181	ع 197	ه 213	م 229	و 245
6	 134	≈ 150	SP 166	٦ 182	ث 198	ف 214	ن 230	ي 246
7	† 135	« 151	€ 167	٧ 183	ا 199	ط 215	ه 231	غ 247
8	† 136	» 152	ل 168	٨ 184	ب 200	ظ 216	و 232	ق 248
9	‡ 137	لا 153	ب 169	٩ 185	ة 201	ء 217	ي 233	لا 249
A	† 138	لا 154	ت 170	ف 186	ت 202	غ 218	ب 234	لا 250
B	‡ 139	SP 155	ث 171	؛ 187	ث 203	ا 219	فر 235	ل 251
C	‡ 140	SP 156	، 172	ع 188	ج 204	ر 220	ع 236	ك 252
D	‡ 141	لا 157	ج 173	شر 189	ح 205	÷ 221	غ 237	ي 253
E	‡ 142	لا 158	ح 174	صر 190	خ 206	× 222	غ 238	■ 254
F	‡ 143	، 159	خ 175	؟ 191	د 207	ع 223	م 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	SP 128	Ι 144	ϊ 160	⋯ 176	Λ 192	Τ 208	Ζ 224	- 240
1	SP 129	Ϊ 145	ΐ 161	⋯ 177	⊥ 193	Υ 209	Η 225	± 241
2	SP 130	ϐ 146	Ό 162	⋯ 178	τ 194	Φ 210	Θ 226	U 242
3	SP 131	SP 147	Ό 163	Ι 179	† 195	Χ 211	Λ 227	Φ 243
4	SP 132	SP 148	Α 164	† 180	- 196	Ψ 212	Κ 228	Χ 244
5	SP 133	Υ 149	Β 165	Κ 181	† 197	Ω 213	Λ 229	§ 245
6	À 134	ÿ 150	Γ 166	Λ 182	Π 198	α 214	μ 230	Ψ 246
7	€ 135	Θ 151	Δ 167	Μ 183	Ρ 199	β 215	ν 231	ˆ 247
8	· 136	ϐ 152	Ε 168	Ν 184	ℒ 200	γ 216	ξ 232	° 248
9	¬ 137	² 153	Ζ 169	‡ 185	℞ 201	Ј 217	Ο 233	ˆ 249
A	¡ 138	³ 154	Η 170	‡ 186	ℒ 202	Γ 218	Π 234	Ω 250
B	‘ 139	ά 155	½ 171	η 187	π 203	■ 219	ρ 235	Ü 251
C	’ 140	£ 156	θ 172	‡ 188	‡ 204	■ 220	σ 236	Ü 252
D	Έ 141	έ 157	Ι 173	≡ 189	= 205	δ 221	ς 237	ώ 253
E	- 142	ή 158	« 174	Ο 190	‡ 206	ε 222	τ 238	■ 254
F	Ή 143	ί 159	» 175	Γ 191	Σ 207	■ 223	ˆ 239	SP 255

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

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

HEX	8	9	A	B	C	D	E	F
0	SP 128	ؤ 144	ح 160	۰ 176	ل 192	ع 208	ک 224	- 240
1	SP 129	ئا 145	خ 161	۰ 177	ل 193	ع 209	ک 225	۰ 241
2	، 130	ب 146	خ 162	۰ 178	ت 194	ع 210	ک 226	ی 242
3	؛ 131	با 147	د 163	ا 179	ت 195	غ 211	ک 227	- 243
4	؟ 132	پ 148	ذ 164	ا 180	- 196	غ 212	ل 228	ه 244
5	ء 133	پ 149	ر 165	ض 181	ت 197	غ 213	ل 229	ا 245
6	آ 134	ت 150	ز 166	ف 182	ظ 198	غ 214	م 230	۲ 246
7	آ 135	تا 151	ث 167	ط 183	ع 199	ف 215	م 231	۳ 247
8	ک 136	ث 152	س 168	ط 184	ل 200	ف 216	ن 232	۴ 248
9	ا 137	ثا 153	س 169	ا 185	ا 201	ل 217	ن 233	۵ 249
A	ل 138	ج 154	ش 170	ا 186	ا 202	ا 218	و 234	۶ 250
B	د 139	ج 155	ش 171	ا 187	ا 203	■ 219	ه 235	۷ 251
C	ء 140	ج 156	ص 172	ک 188	ا 204	■ 220	ه 236	۸ 252
D	أ 141	چ 157	ط 173	وال 189	= 205	ق 221	ه 237	۹ 253
E	أ 142	خ 158	« 174	ظ 190	ا 206	ق 222	ه 238	■ 254
F	ک 143	ح 159	» 175	گ 191	SP 207	■ 223	ی 239	SP 255

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

HEX	8	9	A	B	C	D	E	F
0	А <small>128</small>	Р <small>144</small>	а <small>160</small>	⌘ <small>176</small>	Л <small>192</small>	ą <small>208</small>	р <small>224</small>	ė <small>240</small>
1	Б <small>129</small>	С <small>145</small>	б <small>161</small>	⌘ <small>177</small>	л <small>193</small>	č <small>209</small>	с <small>225</small>	ë <small>241</small>
2	В <small>130</small>	Т <small>146</small>	в <small>162</small>	⌘ <small>178</small>	т <small>194</small>	ę <small>210</small>	т <small>226</small>	≥ <small>242</small>
3	Г <small>131</small>	У <small>147</small>	г <small>163</small>	І <small>179</small>	† <small>195</small>	ė <small>211</small>	у <small>227</small>	≤ <small>243</small>
4	Д <small>132</small>	Ф <small>148</small>	д <small>164</small>	‡ <small>180</small>	– <small>196</small>	į <small>212</small>	ф <small>228</small>	” <small>244</small>
5	Е <small>133</small>	Х <small>149</small>	е <small>165</small>	Ą <small>181</small>	† <small>197</small>	š <small>213</small>	х <small>229</small>	“ <small>245</small>
6	Ж <small>134</small>	Ц <small>150</small>	ж <small>166</small>	Č <small>182</small>	У <small>198</small>	ų <small>214</small>	ц <small>230</small>	÷ <small>246</small>
7	З <small>135</small>	Ч <small>151</small>	з <small>167</small>	Ę <small>183</small>	Ū <small>199</small>	ū <small>215</small>	ч <small>231</small>	≈ <small>247</small>
8	И <small>136</small>	Ш <small>152</small>	и <small>168</small>	Ė <small>184</small>	Ł <small>200</small>	ž <small>216</small>	ш <small>232</small>	° <small>248</small>
9	Й <small>137</small>	Щ <small>153</small>	й <small>169</small>	Į <small>185</small>	Г <small>201</small>	Ј <small>217</small>	щ <small>233</small>	• <small>249</small>
A	К <small>138</small>	Ь <small>154</small>	к <small>170</small>	ІІ <small>186</small>	Ł <small>202</small>	Г <small>218</small>	ь <small>234</small>	• <small>250</small>
B	Л <small>139</small>	Ы <small>155</small>	л <small>171</small>	П <small>187</small>	П <small>203</small>	■ <small>219</small>	ы <small>235</small>	√ <small>251</small>
C	М <small>140</small>	Ъ <small>156</small>	м <small>172</small>	Д <small>188</small>	Г <small>204</small>	■ <small>220</small>	ъ <small>236</small>	n <small>252</small>
D	Н <small>141</small>	Э <small>157</small>	н <small>173</small>	І <small>189</small>	= <small>205</small>	І <small>221</small>	э <small>237</small>	² <small>253</small>
E	О <small>142</small>	Ю <small>158</small>	о <small>174</small>	Š <small>190</small>	Г <small>206</small>	І <small>222</small>	ю <small>238</small>	■ <small>254</small>
F	П <small>143</small>	Я <small>159</small>	п <small>175</small>	Г <small>191</small>	Ž <small>207</small>	■ <small>223</small>	я <small>239</small>	SP <small>255</small>

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

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HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	Ř 192	Đ 208	ř 224	đ 240
1	SP 129	‘ 145	˘ 161	± 177	Á 193	Ń 209	á 225	ń 241
2	, 130	’ 146	˘ 162	˙ 178	Â 194	Ň 210	â 226	ň 242
3	SP 131	“ 147	ł 163	‡ 179	Ǻ 195	Ó 211	ǻ 227	ó 243
4	” 132	” 148	Ꝥ 164	˘ 180	Ǻ 196	Ô 212	ǻ 228	ô 244
5	… 133	• 149	Ȧ 165	μ 181	Ĺ 197	Õ 213	Í 229	õ 245
6	† 134	- 150	ı 166	¶ 182	Ć 198	Ö 214	ć 230	ö 246
7	‡ 135	- 151	§ 167	• 183	Ç 199	× 215	ç 231	÷ 247
8	SP 136	SP 152	¨ 168	· 184	Č 200	Ř 216	č 232	ř 248
9	‰ 137	™ 153	© 169	ą 185	É 201	Û 217	é 233	û 249
A	Š 138	š 154	Ş 170	ş 186	Ę 202	Ú 218	ę 234	ú 250
B	‹ 139	› 155	« 171	» 187	Ě 203	Ů 219	ě 235	ů 251
C	Ś 140	ś 156	ˆ 172	Ľ 188	Ě 204	Ü 220	ś 236	ü 252
D	Ÿ 141	ÿ 157	- 173	˘ 189	Í 205	Ý 221	í 237	ý 253
E	Ž 142	ž 158	® 174	Ÿ 190	Î 206	Ï 222	î 238	ÿ 254
F	Ž 143	ž 159	Ž 175	ž 191	Ǿ 207	ß 223	ǿ 239	· 255

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

Page 47 (WPC1253: Greek)

HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	ï 192	Π 208	Û 224	π 240
1	SP 129	‘ 145	“ 161	± 177	À 193	Ρ 209	α 225	ρ 241
2	, 130	’ 146	À 162	² 178	Β 194	SP 210	β 226	ς 242
3	f 131	“ 147	£ 163	³ 179	Γ 195	Σ 211	γ 227	σ 243
4	” 132	” 148	¤ 164	´ 180	Δ 196	Τ 212	δ 228	τ 244
5	… 133	• 149	¥ 165	μ 181	Ε 197	Υ 213	ε 229	υ 245
6	† 134	- 150	¡ 166	¶ 182	Ζ 198	Φ 214	ζ 230	φ 246
7	‡ 135	- 151	§ 167	· 183	Η 199	Χ 215	η 231	χ 247
8	SP 136	SP 152	“ 168	Έ 184	Θ 200	Ψ 216	θ 232	ψ 248
9	‰ 137	™ 153	© 169	Ή 185	Ι 201	Ω 217	ι 233	ω 249
A	SP 138	SP 154	à 170	Ί 186	Κ 202	Ï 218	κ 234	ï 250
B	< 139	> 155	« 171	» 187	Λ 203	ÿ 219	λ 235	ÿ 251
C	SP 140	SP 156	¬ 172	ð 188	Μ 204	ά 220	μ 236	ό 252
D	SP 141	SP 157	- 173	½ 189	Ν 205	έ 221	ν 237	ύ 253
E	SP 142	SP 158	® 174	Υ 190	Ξ 206	ή 222	ξ 238	ώ 254
F	SP 143	SP 159	- 175	Ϻ 191	Ο 207	ί 223	ο 239	SP 255

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

Page 49 (WPC1255: Hebrew)

HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	· 192	। 208	א 224	ן 240
1	SP 129	‘ 145	י 161	± 177	·· 193	· 209	ב 225	ס 241
2	, 130	’ 146	¢ 162	2 178	·· 194	· 210	ג 226	ע 242
3	f 131	“ 147	£ 163	3 179	·· 195	· 211	ד 227	ק 243
4	” 132	” 148	¥ 164	ˆ 180	· 196	 212	ה 228	צ 244
5	… 133	• 149	¥ 165	μ 181	·· 197	 213	ו 229	פ 245
6	† 134	- 150	ı 166	¶ 182	· 198	 214	ז 230	צ 246
7	‡ 135	- 151	§ 167	· 183	- 199	’ 215	ח 231	ק 247
8	^ 136	~ 152	¨ 168	· 184	· 200	” 216	ט 232	ך 248
9	‰ 137	™ 153	© 169	1 185	· 201	SP 217	י 233	ש 249
A	SP 138	SP 154	× 170	÷ 186	SP 202	SP 218	ך 234	ן 250
B	< 139	> 155	« 171	» 187	· 203	SP 219	ס 235	SP 251
C	SP 140	SP 156	¬ 172	$\frac{1}{4}$ 188	· 204	SP 220	ע 236	SP 252
D	SP 141	SP 157	- 173	$\frac{1}{2}$ 189	· 205	SP 221	פ 237	SP 253
E	SP 142	SP 158	® 174	$\frac{3}{4}$ 190	- 206	SP 222	צ 238	SP 254
F	SP 143	SP 159	- 175	ı 191	- 207	SP 223	ק 239	SP 255

HEX	8	9	A	B	C	D	E	F
0	€ 128	گ 144	SP 160	° 176	^ 192	ذ 208	à 224	” 240
1	پ 129	‘ 145	‘ 161	± 177	ء 193	ر 209	ل 225	” 241
2	، 130	’ 146	¢ 162	² 178	آ 194	ز 210	â 226	≈ 242
3	f 131	“ 147	£ 163	³ 179	أ 195	س 211	م 227	´ 243
4	” 132	” 148	¤ 164	´ 180	ؤ 196	ث 212	ن 228	ô 244
5	… 133	• 149	¥ 165	µ 181	ل 197	ص 213	ه 229	´ 245
6	† 134	- 150	- 166	¶ 182	ئ 198	ف 214	و 230	˘ 246
7	‡ 135	- 151	§ 167	· 183	ا 199	x 215	ç 231	÷ 247
8	^ 136	ك 152	¨ 168	¸ 184	ب 200	ط 216	è 232	” 248
9	‰ 137	™ 153	© 169	¹ 185	ة 201	ظ 217	é 233	ù 249
A	ث 138	ٲ 154	ھ 170	؛ 186	ن 202	ع 218	ê 234	° 250
B	< 139	> 155	« 171	» 187	ث 203	غ 219	ë 235	û 251
C	€ 140	€ 156	¬ 172	¼ 188	ج 204	ا 220	ی 236	ü 252
D	چ 141	SP 157	- 173	½ 189	ح 205	ف 221	ي 237	SP 253
E	ث 142	SP 158	® 174	¾ 190	خ 206	ق 222	î 238	SP 254
F	ڈ 143	ن 159	- 175	? 191	د 207	ك 223	ï 239	ع 255

Page 51 (WPC1257: Baltic Rim)

HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	À 192	Š 208	ą 224	š 240
1	SP 129	‘ 145	SP 161	± 177	Ī 193	Ņ 209	į 225	ň 241
2	, 130	’ 146	¢ 162	² 178	Ā 194	Ņ 210	ā 226	ņ 242
3	SP 131	“ 147	£ 163	³ 179	Ć 195	Ó 211	ć 227	ó 243
4	” 132	” 148	¤ 164	´ 180	Ä 196	Ō 212	ä 228	ō 244
5	… 133	• 149	SP 165	μ 181	Å 197	Õ 213	å 229	õ 245
6	† 134	- 150	ı 166	¶ 182	Ę 198	Ö 214	ę 230	ö 246
7	‡ 135	- 151	§ 167	· 183	Ē 199	× 215	ē 231	÷ 247
8	SP 136	SP 152	Ø 168	ø 184	Č 200	Ț 216	č 232	ț 248
9	‰ 137	™ 153	© 169	¹ 185	É 201	ł 217	é 233	ł 249
A	SP 138	SP 154	Ɔ 170	Ɔ 186	Ž 202	Ś 218	ż 234	ś 250
B	‹ 139	› 155	« 171	» 187	È 203	Ū 219	è 235	ū 251
C	SP 140	SP 156	¬ 172	¼ 188	Ĝ 204	Ü 220	ğ 236	ü 252
D	¨ 141	- 157	- 173	½ 189	Ɔ 205	Ž 221	Ɔ 237	ž 253
E	˘ 142	• 158	® 174	¾ 190	Ī 206	Ž 222	ī 238	ž 254
F	˙ 143	SP 159	Æ 175	æ 191	Ł 207	ß 223	ł 239	· 255

HEX	8	9	A	B	C	D	E	F
0	€ 128	SP 144	SP 160	° 176	À 192	Ð 208	à 224	đ 240
1	SP 129	‘ 145	ì 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	, 130	’ 146	¢ 162	² 178	Â 194	” 210	â 226	· 242
3	f 131	“ 147	£ 163	³ 179	Ã 195	Ó 211	ã 227	ó 243
4	” 132	” 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	… 133	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	ơ 245
6	† 134	- 150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	‡ 135	- 151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	^ 136	~ 152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	‰ 137	™ 153	© 169	¹ 185	É 201	Ù 217	é 233	ù 249
A	SP 138	SP 154	à 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	ư 253
E	SP 142	SP 158	® 174	¾ 190	Î 206	~ 222	î 238	đ 254
F	SP 143	ÿ 159	- 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

Page 53 (KZ1048: Kazakhstan)

HEX	8	9	A	B	C	D	E	F
0	ӧ 128	ӧ̇ 144	SP 160	° 176	А 192	Р 208	а 224	р 240
1	ґ 129	‘ 145	Ұ 161	± 177	Б 193	С 209	б 225	с 241
2	, 130	’ 146	Ұ 162	І 178	В 194	Т 210	в 226	т 242
3	ґ̇ 131	“ 147	Ә 163	і 179	Г 195	У 211	г 227	у 243
4	” 132	” 148	Ҙ 164	ө 180	Д 196	Ф 212	д 228	ф 244
5	… 133	• 149	Ө 165	ұ 181	Е 197	Х 213	е 229	х 245
6	† 134	- 150	і̇ 166	җ 182	Ж 198	Ц 214	ж 230	ц 246
7	‡ 135	- 151	§ 167	• 183	З 199	Ч 215	з 231	ч 247
8	€ 136	SP 152	Ё 168	ё 184	И 200	Ш 216	и 232	ш 248
9	‰ 137	™ 153	© 169	№ 185	Й 201	Щ 217	й 233	щ 249
A	Ӏ 138	Ӏ̇ 154	Ғ 170	Ғ 186	К 202	Ъ 218	к 234	ъ 250
B	‹ 139	› 155	« 171	» 187	Л 203	Ы 219	л 235	ы 251
C	ӑ 140	ӑ̇ 156	ҫ 172	ә 188	М 204	Ь 220	м 236	ь 252
D	Қ 141	Қ 157	- 173	Ң 189	Н 205	Э 221	н 237	э 253
E	Һ 142	Һ 158	® 174	Ң 190	О 206	Ю 222	о 238	ю 254
F	Ҫ 143	Ҫ 159	Ү 175	ү 191	П 207	Я 223	п 239	я 255

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

International Character Sets

Country	ASCII code (Hex)													
	23	24	25	2A	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	\$	%	*	@	[\]	^	`	{		}	~
France	#	\$	%	*	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	%	*	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	\$	%	*	@	[\]	^	`	{		}	~
Denmark I	#	\$	%	*	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	%	*	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	%	*	@	°	\	é	^	ù	à	ò	è	ì
Spain I	Pt	\$	%	*	@	ı	Ñ	ı	^	`	¨	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	ı	Ñ	ı	é	`	ı	ñ	ó	ú
Latin America	#	\$	%	*	á	ı	Ñ	ı	é	ü	ı	ñ	ó	ú
Korea	#	\$	%	*	@	[₩]	^	`	{		}	~
Slovenia/Croatia	#	\$	%	*	Ž	Š	Đ	Ć	Č	ž	š	đ	ć	č
China	#	¥	%	*	@	[\]	^	`	{		}	~
Vietnam	₫	\$	%	*	@	[\]	^	`	{		}	~
Arabia	#	\$	%	*	@	[\]	^	`	{		}	~

