



Hardware Reference Guide

HP Engage One Retail System, Model 141

HP Engage One Retail System, Model 143

HP Engage One Retail System, Model 145

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Product notice

This guide describes features that are common to most models. Some features may not be available on your computer.

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About This Guide

This guide provides basic information for upgrading this computer model.






-
-  **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in death or serious injury.
 -  **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.
 -  **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). An Important alert warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
 -  **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
 -  **TIP:** Provides helpful hints for completing a task.
-

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1 Product overview

Standard features



The HP Engage One Retail System is designed for long-term deployment within general retail, hospitality, and other markets. It includes the following features:

- Integrated All-in-One (AiO) form factor
- 14-inch diagonal display panel (wide-aspect ratio); FHD 1920 x 1080 resolution, sealed and chemically hardened, anti-glare; anti-smudge
- Model 141: anti-glare WLED SVA 300-nit panel with FHD 1920 x 1080 resolution and an Intel® Celeron® 3965U 2.2 GHz 2M 2133 2C6 processor
- Model 143: anti-glare WLED UWVA 500-nit panel with FHD 1920 x 1080 resolution and an Intel® Core™ i3 - 7100U 2.40 GHz 3M 2133 2C6 processor
- Model 145: anti-glare WLED UWVA 500-nit panel with FHD 1920 x 1080 resolution and an Intel® i5 - 7300U 2.60 GHz 3MB 2133 2C6 processor



NOTE: Nits is the measure of the typical brightness of the panel as specified, prior to anti-glare coating.

- Optional 100 mm x 100 mm VESA mounting bracket
- Optional counter top mounting bracket
- Choice of a rotate/tilt stand with a 10° tilt range and 180° swivel capability, or a fixed position stand
- Optional HP peripherals:
 - HP Engage One integrated magnetic strip reader (MSR) (integrated into the head unit as configure to order)
 - HP Engage One integrated 2 x 20 LCD customer-facing display (CFD), top mount
 - HP Engage One integrated column printer or standalone printer
 - HP Engage One 2D barcode scanner
 - HP Engage One biometric fingerprint reader

- DDR4 2400 MHz memory with up to 32 GB RAM
- Operating system choices:
 - Windows® 10 IoT Enterprise 2016 LTSB 64-bit
 - Windows 10 Professional 64-bit
 - FreeDOS 2.0
- HP Engage One Advanced I/O Connectivity Base (optional)
 - 2 powered serial ports (0 V, 5 V, 12 V)
 - (2) 12 V powered USB ports
 - (1) 24 V powered USB port
 - 4 USB 3.0 ports
 - 1 cash drawer jack
 - 1 RJ-45 network jack
 - 1 video-out USB Type-C port
- HP Engage One Basic I/O Connectivity Base (optional)
 - 3 powered serial ports (0 V, 5 V, 12 V)
 - 4 USB 2.0 ports
 - 2 USB 3.0 ports
 - 1 cash drawer jack
 - 1 RJ-45 network jack
 - 1 video out USB Type-C port
- One internal SD card reader on the computer head unit and one external microSD card reader on the I/O connectivity base
- Universal audio jack with CTIA headset support on the I/O connectivity base
- One M.2 SSD internal drive on the computer head unit
- ENERGY STAR® compliant

Integrated features

The integrated devices shown below are optional.



Features

(1)	14-inch diagonal display panel (wide-aspect ratio); FHD 1920 x 1080 resolution, sealed and chemically hardened, anti-glare; anti-smudge	(4)	HP Engage One 2 x 20 Customer-facing Display (CFD)
(2)	HP Engage One Integrated Column Printer	(5)	HP Engage One Integrated MSR
(3)	Choice of 2 Engage One I/O Connectivity Bases	(6)	HP Engage One Biometric Fingerprint Reader

Display panel options:

- Anti-glare WLED SVA 300 nits panel
- Anti-glare WLED UWVA 500 nits panel

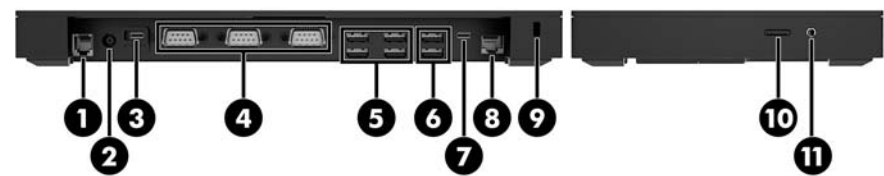
NOTE: Nits is the measure of the typical brightness of the panel as specified, prior to anti-glare coating.

Stand options



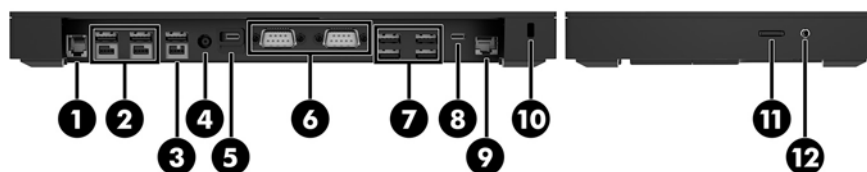
Options	
(1)	HP Engage One Rotate/Tilt Stand with Integrated Column Printer
(2)	HP Engage One Rotate/Tilt Stand
(3)	HP Engage One Fixed Position Stand
NOTE: The stands are shown on a stability base.	

HP Engage One Basic I/O Connectivity Base components



Basic components	
(1)	Cash drawer jack
(2)	Power connector
(3)	USB Type-C power port
(4)	Powered serial ports (3)
(5)	USB 2.0 ports (4)
(6)	USB 3.0 ports (2)
(7)	USB Type-C port
(8)	RJ-45 network jack
(9)	Security cable slot
(10)	MicroSD card reader
(11)	Headset jack
IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into the cash drawer jack.	

HP Engage One Advanced I/O Connectivity Base components



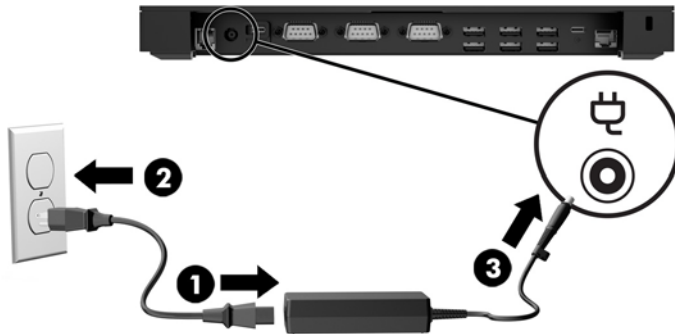
Advanced components

(1)	Cash drawer jack	(7)	USB 3.0 ports (4)
(2)	Powered USB 12 V ports (2)	(8)	USB Type-C port
(3)	Powered USB 24 V port	(9)	RJ-45 network jack
(4)	Power connector	(10)	Security cable slot
(5)	USB Type-C power port	(11)	MicroSD card reader
(6)	Powered serial ports (2)	(12)	Headset jack

IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into the cash drawer jack.

Connecting an AC adapter to power

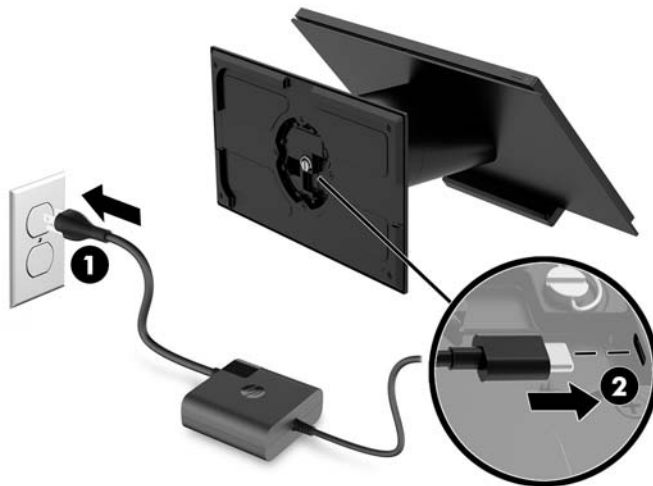
To connect an AC adapter to the I/O connectivity base, connect one end of the power cord to the AC adapter (1) and the other end to a grounded AC outlet (2), and then connect the AC adapter to the power connector on the I/O connectivity base (3).



To connect an AC adapter to the computer when it is not connected to an I/O connectivity base, connect the AC adapter to a grounded AC outlet (1), and then connect the power adapter's USB Type-C connector to the USB Type-C power port on the underside of the stand or stability base (2).

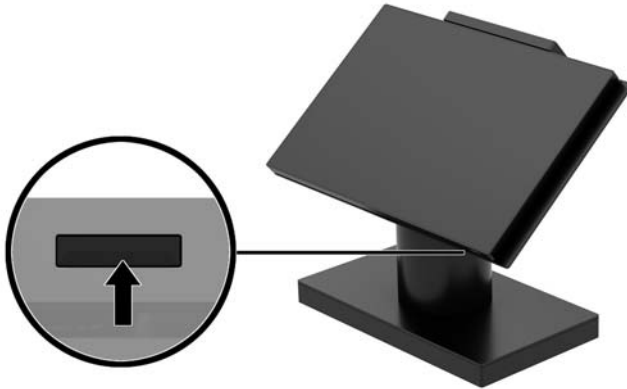


NOTE: The image below is shown with a stability base.



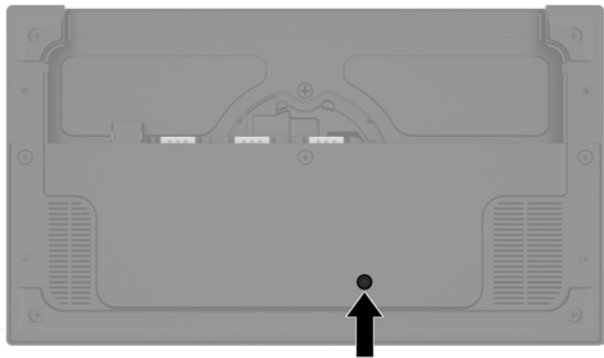
Locating the Engage One power button

The computer power button is located on the bottom right edge of the bezel.



Locating the I/O connectivity base power button

The I/O connectivity base power button is located on the underside of the I/O connectivity base.



The head unit controls the I/O connectivity base. When the head unit is turned off, the I/O connectivity base is turned off and power is not available from the I/O connectivity base ports. The exception is the I/O connectivity base's USB Type-C port that connects to the head unit. That port will remain powered so that it can continue to communicate with the head unit and allow the I/O connectivity base to turn back on when the head unit is turned on.

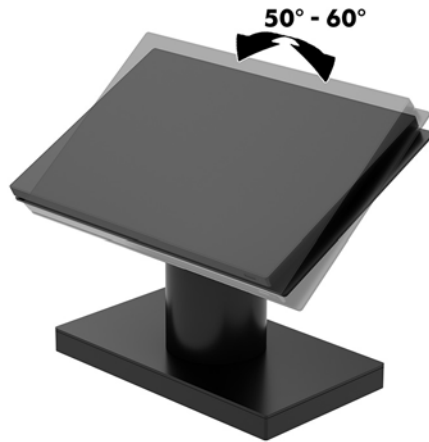
After the system has been turned off, you can press the power button on the underside of the I/O connectivity base to allow power to be available on the I/O connectivity base ports while the head unit remains turned off.

Adjusting the Engage One head unit

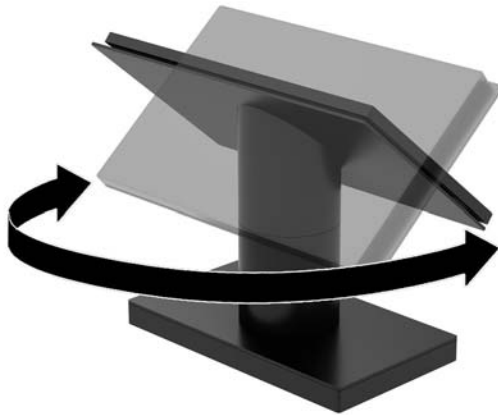


NOTE: The tilt and swivel features are only available on performance stands.

You can tilt and swivel the computer head to set it to a comfortable viewing angle. There is a 10° tilt range that can be set between 50° and 60°.

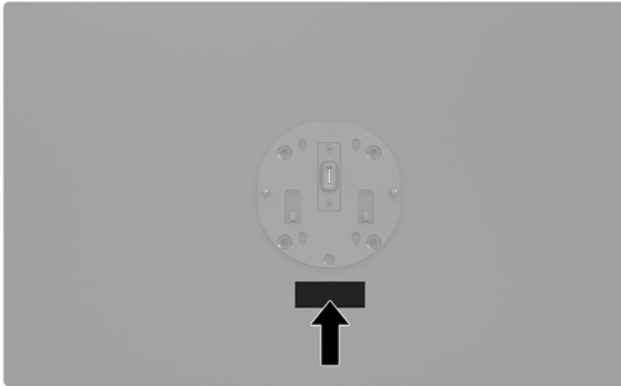


The computer head unit can be swiveled 180° in either direction.



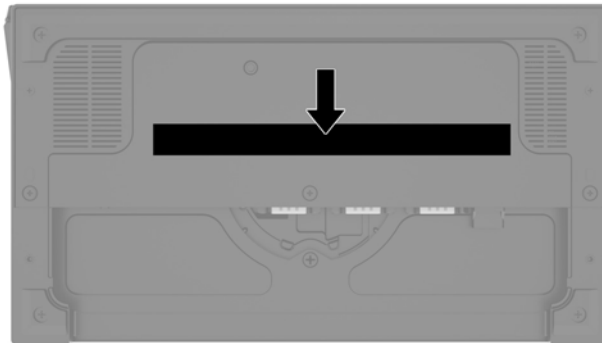
Engage One serial number location

Each computer has a unique serial number and a product ID number that are located on the exterior of the computer. Keep these numbers available for use when contacting customer service for assistance.



I/O connectivity base serial number location

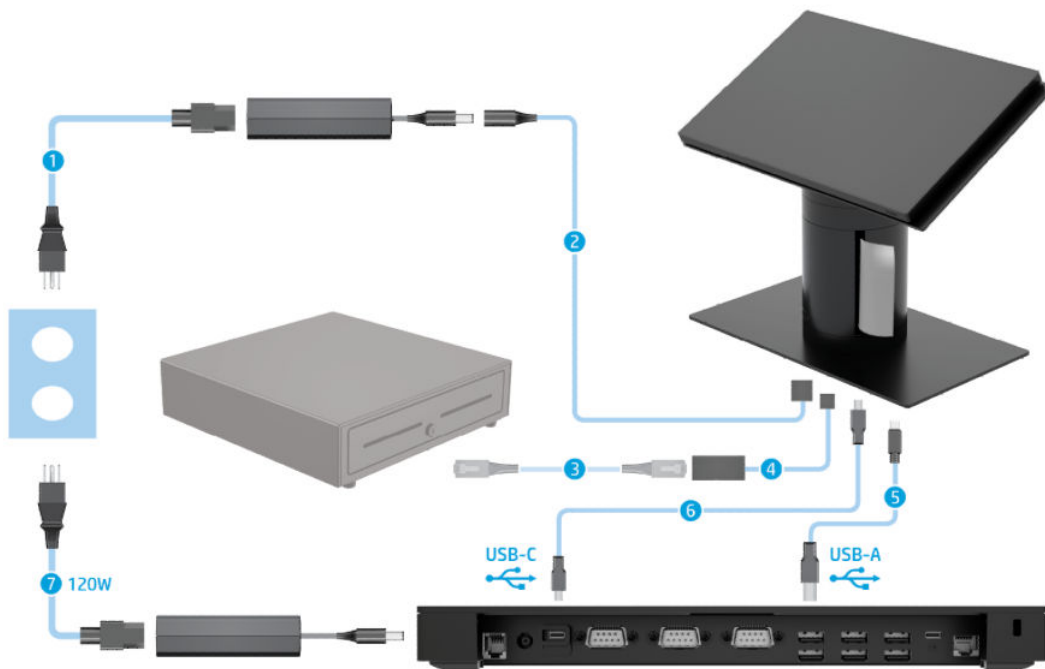
Each I/O connectivity base has a unique serial number and a product ID number that are located on the exterior of the I/O connectivity base. Keep these numbers available for use when contacting customer service for assistance.



Regulatory information is located in the base plate or wall mount. Install the base plate or wall mount back after disassembly.

2 Cable routing configurations

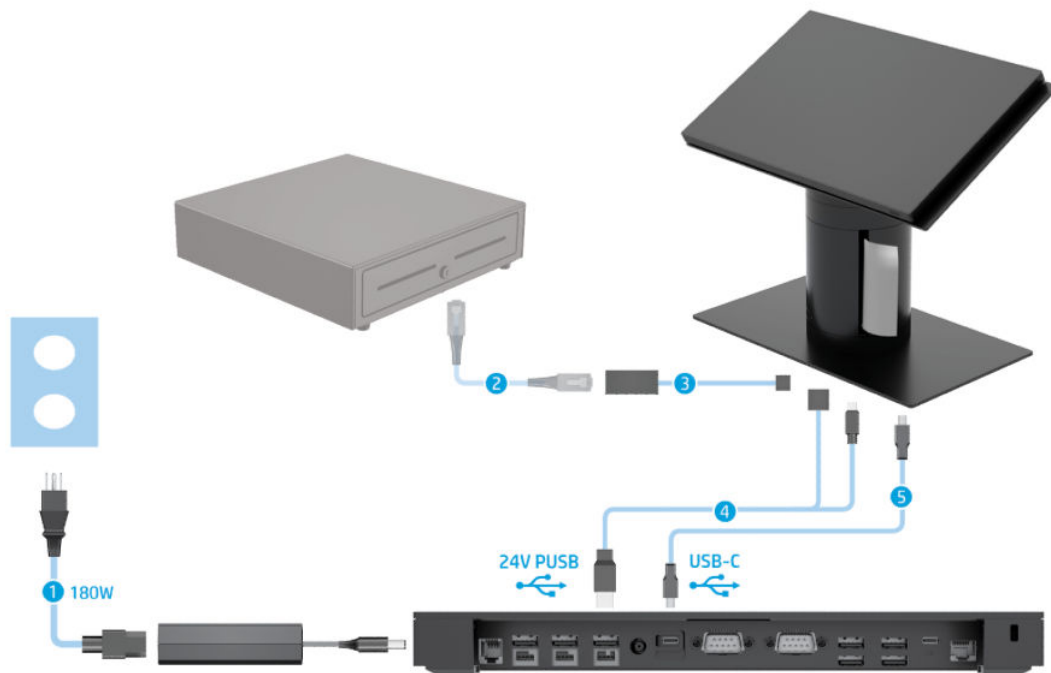
Cable matrix for Engage One with integrated column printer and basic I/O connectivity base



Cables

(1)	Column printer AC power cord	(5)	I/O connectivity base mini USB Type-B to USB Type-A data cable
(2)	Column printer AC adapter cable	(6)	I/O connectivity base USB Type-C cable
(3)	Cash drawer cable (purchased separately with cash drawer)	(7)	I/O connectivity base 120 W AC power cord
(4)	Column printer cash drawer cable		

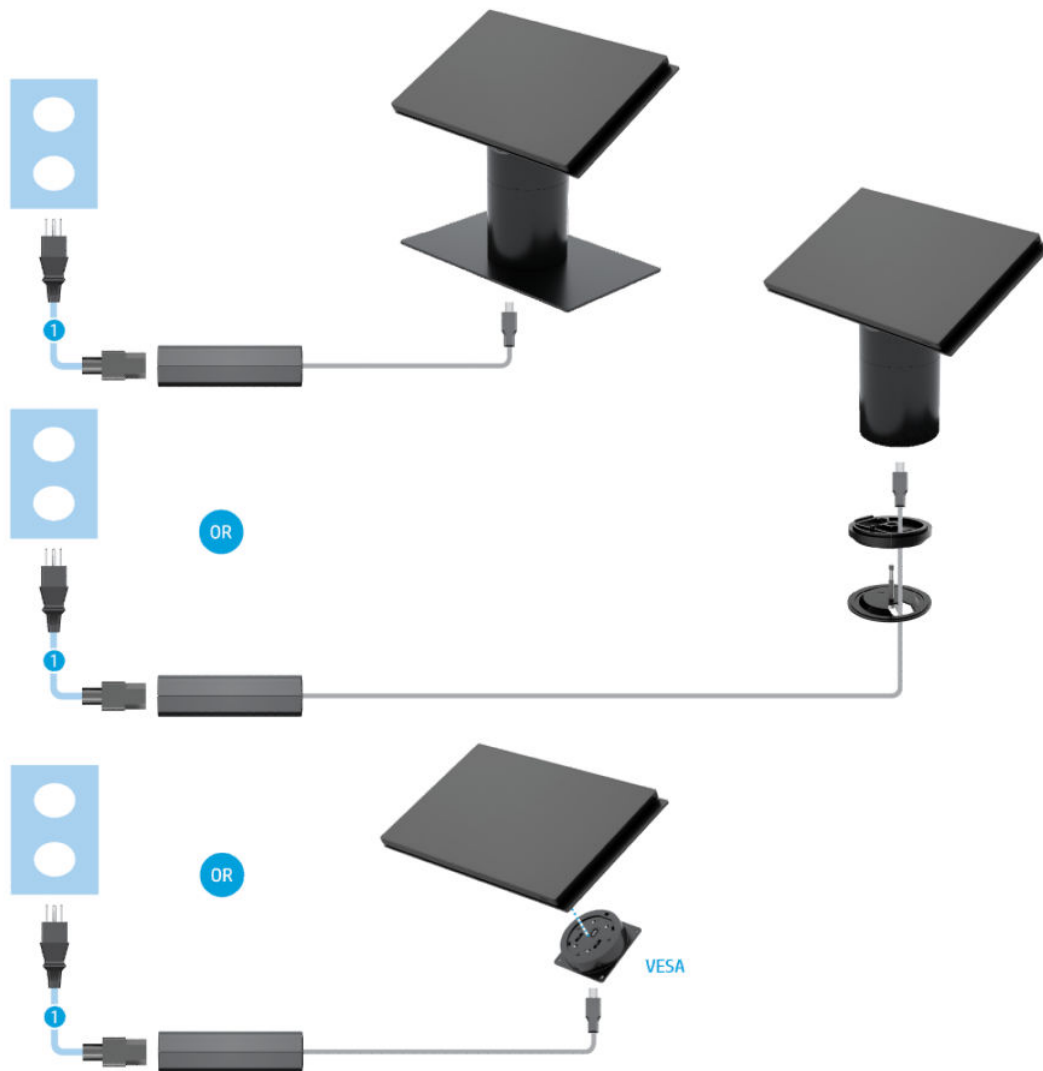
Cable matrix for Engage One with integrated column printer and advanced I/O connectivity base



Cables

(1)	I/O connectivity base 180 W AC power cord	(4)	Column printer 24 V PUSB power and data Y cable
(2)	Cash drawer cable (purchased separately with cash drawer)	(5)	I/O connectivity base USB Type-C cable
(3)	Column printer cash drawer cable		

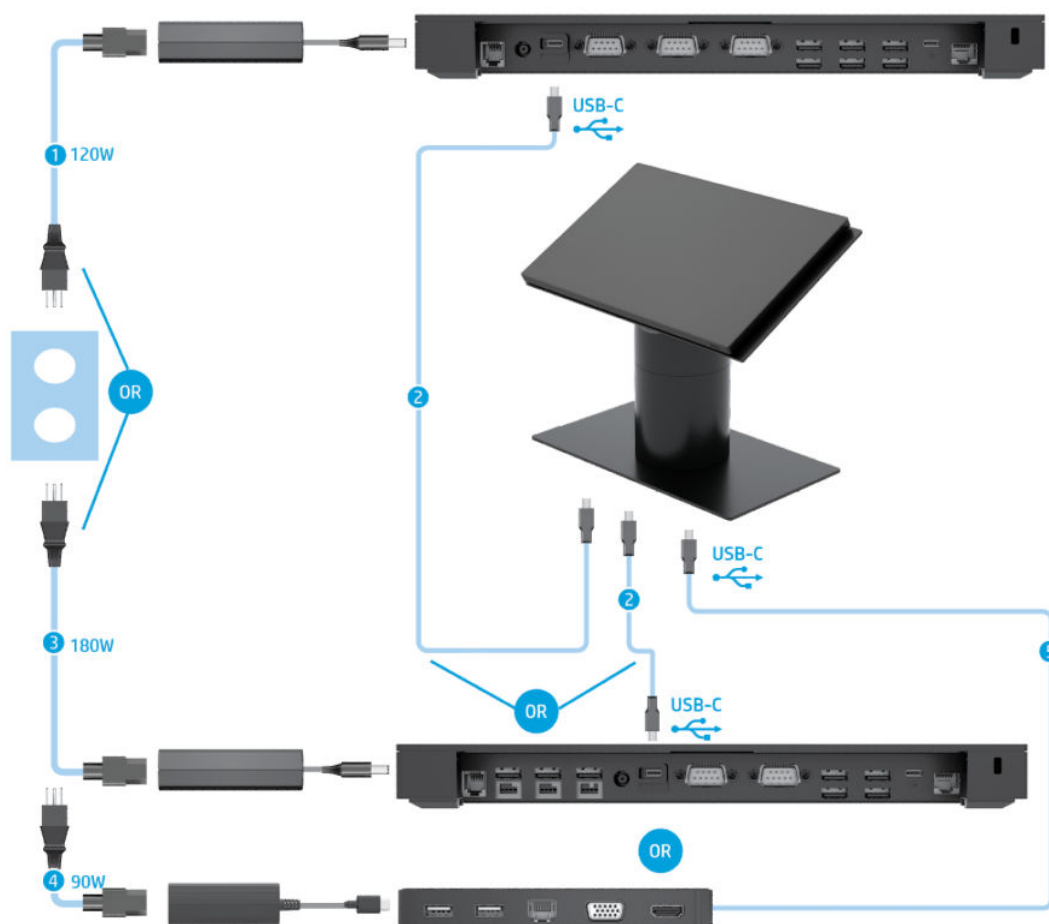
Cable matrix for Engage One without I/O connectivity base



Cables

(1) PC power cord

Cable matrix for Engage One with I/O connectivity base



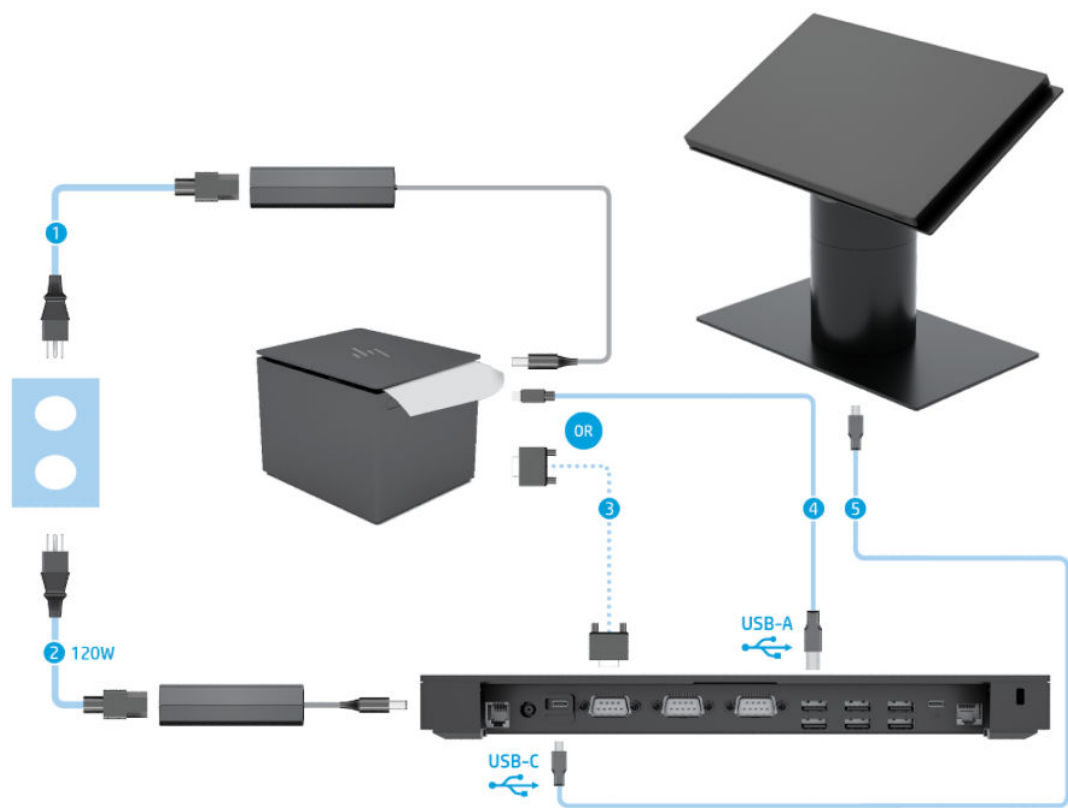
Cables

(1)	Basic I/O connectivity base 120 W AC power cord	(4)	USB-C mini dock 90 W AC power cord
(2)	I/O connectivity base USB Type-C cable	(5)	USB-C mini dock captive USB Type-C cable
(3)	Advanced I/O connectivity base 180 W AC power cord		



NOTE: In the European region, the USB-C mini dock is sold as an aftermarket option kit only. In all other regions, the USB-C mini dock is sold as drop-in-box option.

Cable matrix for Engage One with basic I/O connectivity base and standalone printer

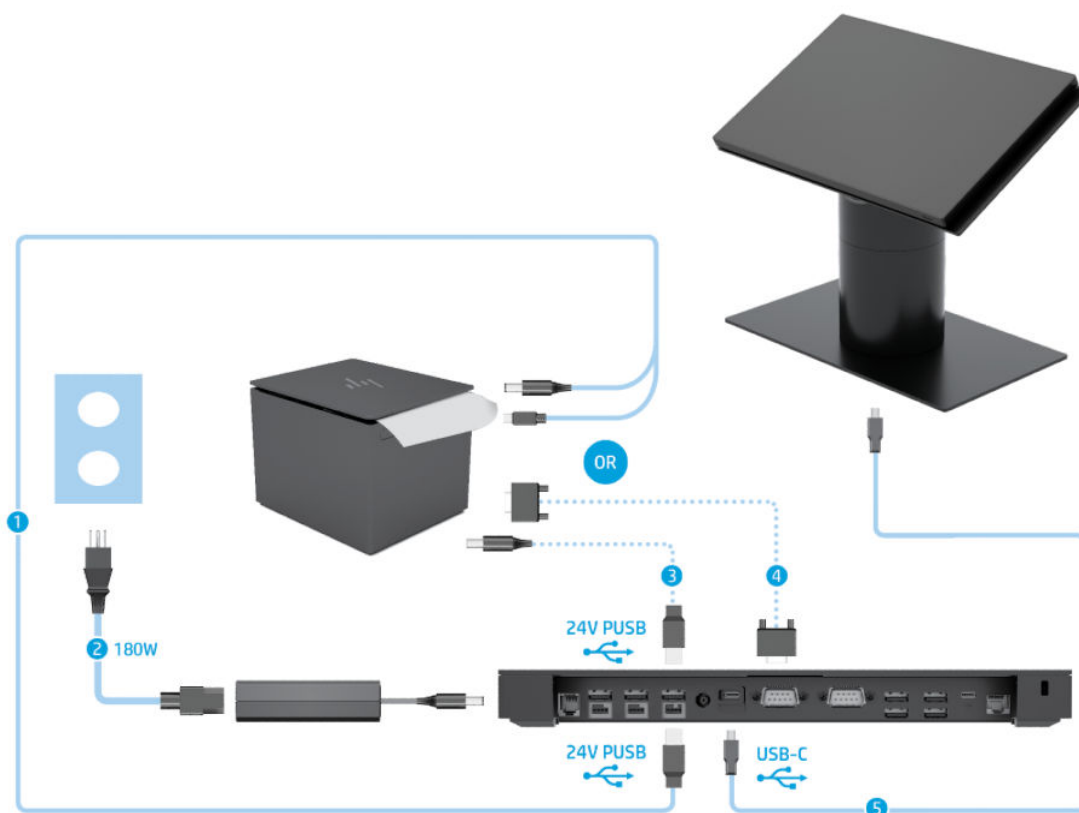


Cables

(1)	Printer AC power cord	(4)	Printer USB Type-A to Type-B data cable
(2)	Basic I/O connectivity base 120 W AC power cord	(5)	Basic I/O connectivity base USB Type-C cable
(3)	Printer serial data cable		

IMPORTANT: Connect either the serial data cable (3) or the USB Type-A data cable (4) between the I/O connectivity base and the printer. Do not connect both.

Cable matrix for Engage One with advanced I/O connectivity base and standalone printer



Cables

(1)	Printer 24 V PUSB power and data "Y" cable	(4)	Printer serial data cable
(2)	Advanced I/O connectivity base 180 W AC power adapter cord	(5)	Advanced I/O connectivity base USB Type-C cable
(3)	Printer 24 V PUSB power cable		

IMPORTANT: Connect either the 24 V PUSB power and data "Y" cable (1) or the 24 V PUSB power cable (3) and serial data cable (4) between the I/O connectivity base and the printer. Do not connect all three.


3 Hardware configurations and upgrades

Tools needed

A Phillips screwdriver can be used for procedures described in this guide.

Warnings and cautions

Before performing upgrades be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

 **WARNING!** To reduce the risk of personal injury from electric shock, hot surfaces, or fire:

Disconnect the power cord from the AC outlet before removing the enclosure. Energized parts are inside.

Allow the internal system components to cool before you touch them.

Replace and secure the enclosure before restoring power to the equipment.


Do not connect telecommunications or telephone connectors to the network interface controller (NIC) receptacles.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Plug the power cord in a grounded (earthed) AC outlet that is easily accessible at all times.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the AC outlet, grasp the cord by the plug.

To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and provides guidelines for posture and work habits that increase your comfort and decrease your risk of injury. It also provides electrical and mechanical safety information. This guide is located on the web at <http://www.hp.com/ergo>.


 **IMPORTANT:** Static electricity can damage the electrical components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. See [Electrostatic discharge on page 53](#) for more information.

When the computer is plugged into an AC power source, voltage is always applied to the system board. You must disconnect the power cord from the power source before opening the computer to prevent damage to internal components.

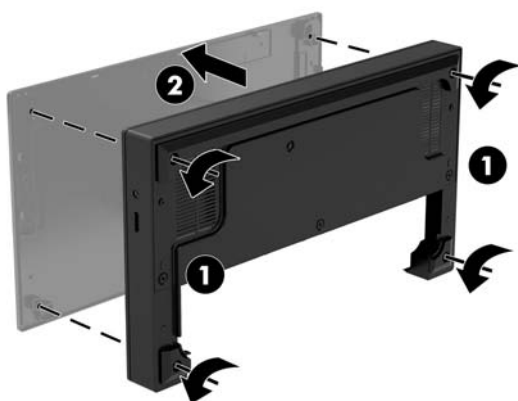
Attaching an I/O connectivity base to the Engage One

You can attach an I/O connectivity base to the bottom of the computer's stand.

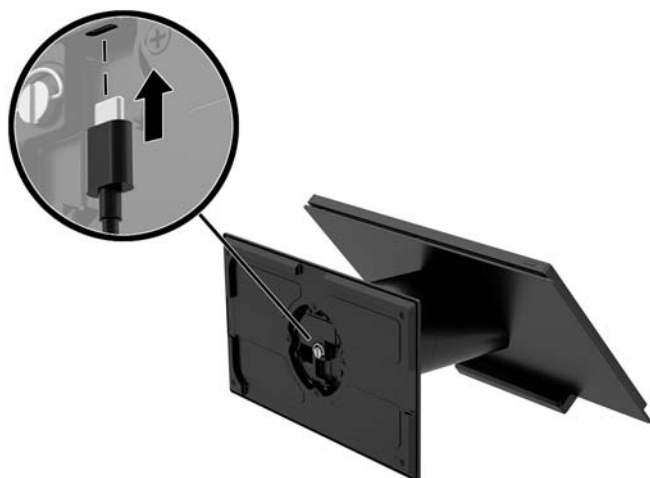
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cords from the computer and I/O connectivity base.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

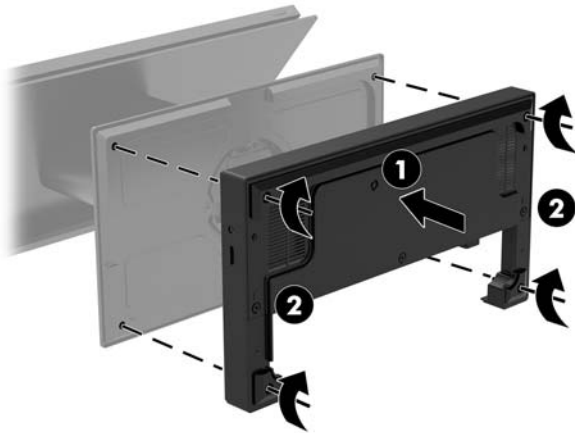
3. Remove the cover on the I/O connectivity base by removing the four screws on the underside of the I/O connectivity base (1), and then lifting the cover off the I/O connectivity base (2).



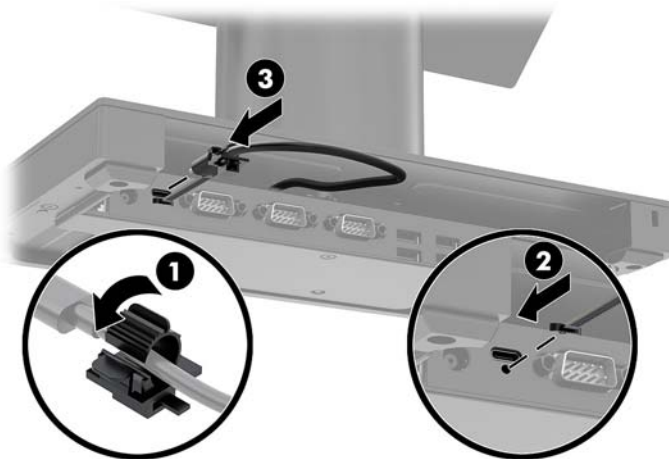
4. Connect the USB Type-C power cable to the USB Type-C port on the underside of the stand's column.



5. Place the I/O connectivity base onto the bottom of the stand (1), and then tighten the four screws on the underside of the I/O connectivity base (2) to secure the I/O connectivity base to the stand. Be sure that the USB Type-C power cable is routed through the gap between the back of the I/O connectivity base and the stand.




6. To connect and secure the USB Type-C power cable, attach the cable clip to the cable (1), insert the cable tie into the hole (2) below the USB Type-C port on the hub, and then slide the cable clip onto the cable tie and connect the cable to the port (3).



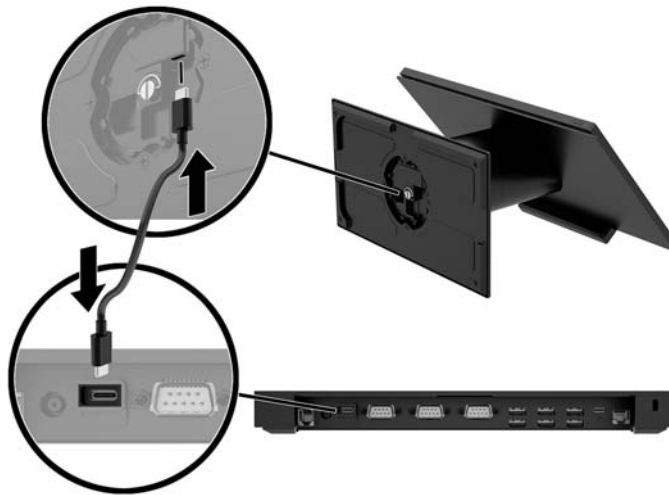
7. Connect the I/O connectivity base's AC adapter to the I/O connectivity base and a grounded AC outlet. See [Connecting an AC adapter to power on page 6](#).

Connecting a standalone I/O connectivity base to the Engage One

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cords from the computer and I/O connectivity base.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.


3. Connect the USB Type-C power cable to the USB Type-C port on the underside of the stand's column and to the USB Type-C power port on the I/O connectivity base.




4. Connect the I/O connectivity base's power supply to the I/O connectivity base and a grounded AC outlet. See [Connecting an AC adapter to power on page 6](#).

Configuring the I/O connectivity base's powered serial ports

The serial ports can be configured as standard (non-powered) serial ports or powered serial ports. Some devices use a powered serial port. If the serial port is configured as a powered port, devices that support a powered serial interface do not require an external power source.

 **IMPORTANT:** The system must be powered off before connecting or disconnecting serial port devices.


 **NOTE:** The I/O connectivity base ships with all serial ports configured in standard non-powered serial mode (0 volts) by default.

There are three voltage settings for each serial port.

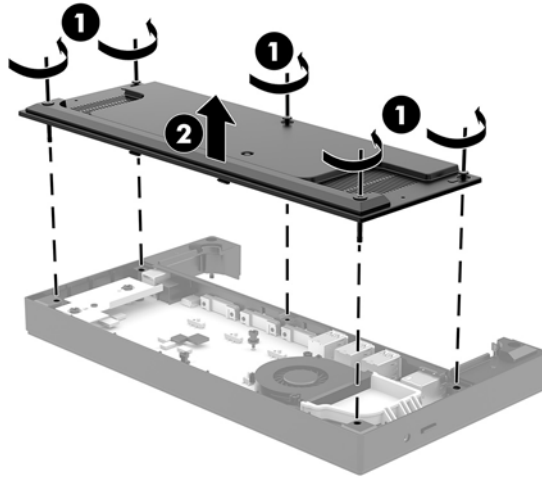
- 0 volts
- 5 volts
- 12 volts

To change the voltage settings for a powered serial port:

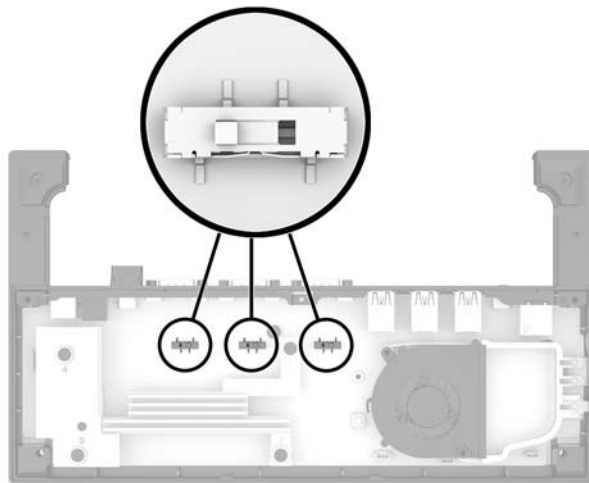
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord and all peripheral devices from the I/O connectivity base.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the I/O connectivity base.

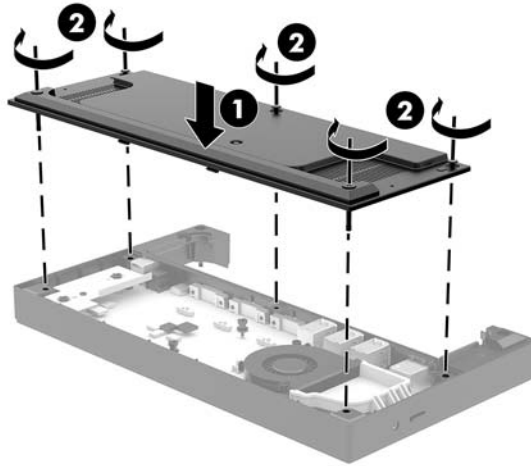
3. Remove the five screws on the underside of the I/O connectivity base (1) that secure the bottom plate to the I/O connectivity base, and then remove the bottom plate from the I/O connectivity base (2).



4. Adjust the voltage select switch behind each serial port to the desired setting.



5. Place the bottom plate onto the I/O connectivity base (1), and then secure the plate to the I/O connectivity base with the five screws (2).



6. Reconnect the I/O connectivity base's power cord and peripheral devices.

Connecting a standalone optional fingerprint reader to the I/O connectivity base

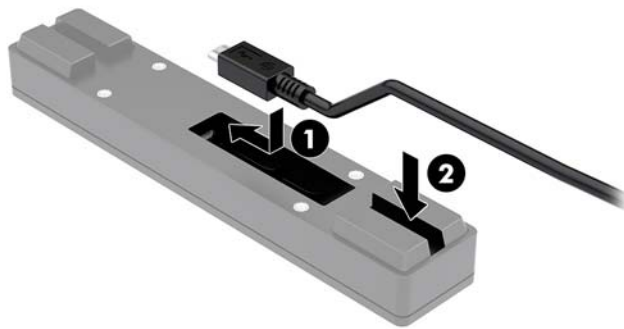
The optional fingerprint reader can be used as a standalone device or it can be attached to the I/O connectivity base. Follow the procedure below to connect a standalone fingerprint reader to the I/O connectivity base.

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cords from the computer and I/O connectivity base.

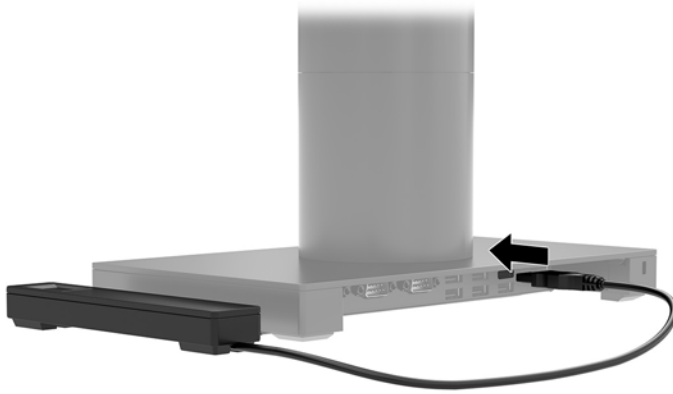


IMPORTANT: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Connect the USB cable to the fingerprint reader (1) and route the cable through the routing channel (2) on the fingerprint reader.




4. Connect the fingerprint reader USB cable to a USB Type-A port on the I/O connectivity base.




5. Reconnect the I/O connectivity base and computer power cords.

Attaching an optional fingerprint reader to the I/O connectivity base

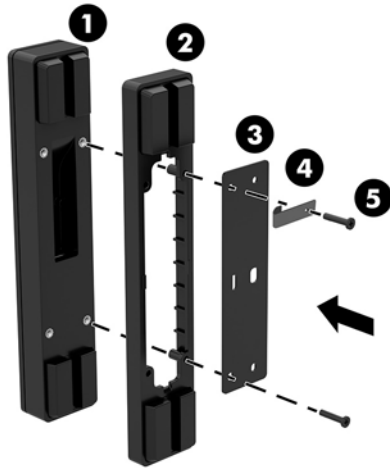
The optional fingerprint reader can be used as a standalone device or it can be attached to the I/O connectivity base. Follow the procedure below to attach the fingerprint reader to the I/O connectivity base.

 **NOTE:** You can attach the fingerprint reader to either side of the I/O connectivity base, but if you attach it to the left side of the I/O connectivity base, the fingerprint reader will cover the microSD slot and the headset jack on the I/O connectivity base.

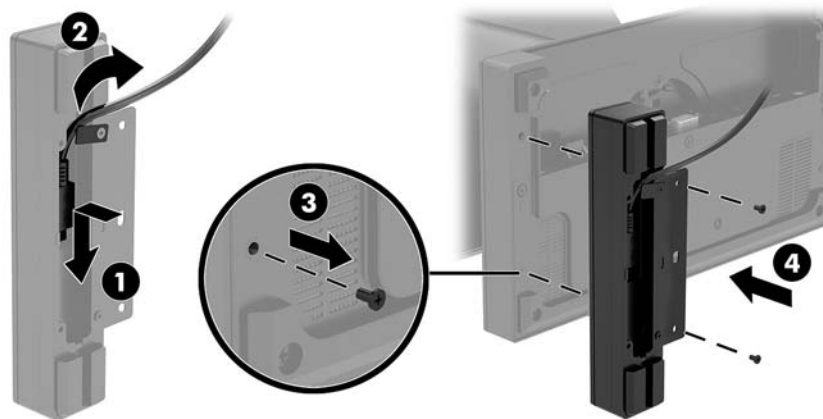
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cords from the computer and I/O connectivity base.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Place the fingerprint reader (1) on the riser (2), and then attach the mounting bracket (3) and cable routing clip (4) to the fingerprint reader and riser with the two long screws (5) included with the fingerprint reader.



4. Connect the USB cable to the fingerprint reader (1) and route the cable under the routing clip on the fingerprint reader (2). Remove the mounting screw (3) from the underside of the I/O connectivity base, and then attach the bracket on the fingerprint reader assembly to the underside of the I/O connectivity base (4) using the screw that was removed from the base and the short screw included in the kit.




5. Connect the fingerprint reader cable to a USB Type-A port on the I/O connectivity base.




6. Reconnect the I/O connectivity base and computer power cords.

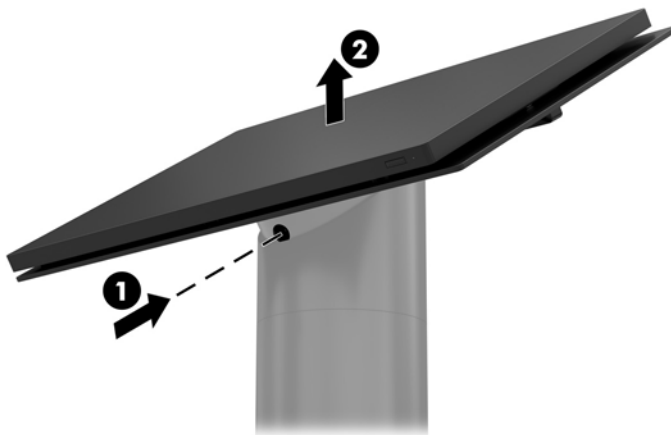
Removing the Engage One head unit from the stand

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.


3. Insert a thin metal tool, such as a screwdriver, into the computer head unit release hole (1) on the stand to depress the release button, and then pull the head unit from the stand (2).

 **NOTE:** If a security screw is installed in the release hole, remove the screw with a T-10 screwdriver to access the release button.

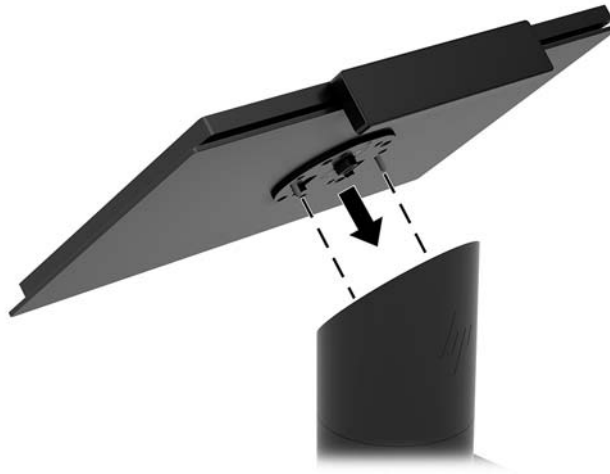


Attaching the Engage One head unit to the stand

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

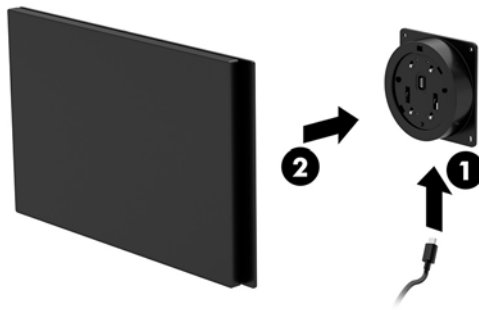
3. Align the guide posts on the rear of the computer head unit with the corresponding holes in the stand's column, and then press the head unit onto the column.



Mounting the Engage One head unit to a wall

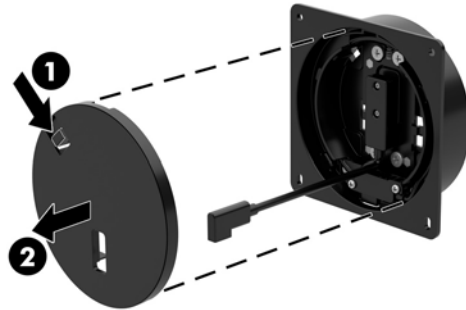
You can use an optional VESA mounting bracket to mount the computer head unit to a wall.

1. If the computer head unit is attached to a stand, remove the head unit. See [Removing the Engage One head unit from the stand on page 24](#).
2. Attach the VESA mounting bracket to a wall.
3. Connect the USB Type-C power cable to the USB Type-C port on the VESA mounting bracket (1). Align the guide posts on the rear of the computer head unit with the corresponding holes in the VESA mounting bracket, and then press the head unit onto the VESA mounting bracket (2).

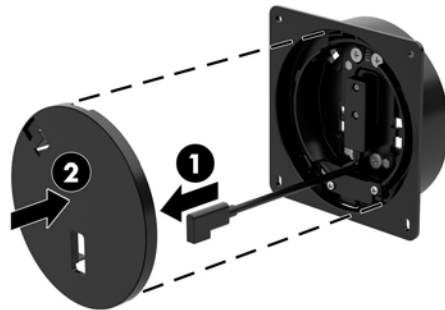


You also have the option of routing the USB Type-C cable out the rear of the VESA bracket and through a wall instead of attaching a USB Type-C cable to the port on the side of the bracket.

- a. Press the rear cover release tab (1) on the VESA bracket, and then pull the rear cover off the VESA bracket (2). Unplug the cable from the inside of the VESA bracket.




- b. Route the USB Type-C cable from the inside of the VESA bracket through the slot on the bracket's rear cover (1), and then replace the rear cover (2).



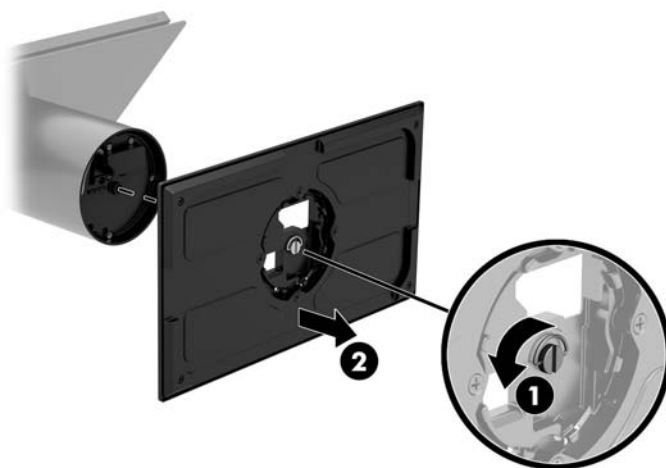
4. Connect the power cable from the VESA bracket to a wall outlet or I/O connectivity base.

Mounting the Engage One to a counter top


You can use an optional counter top mounting bracket to mount the computer head unit and column to a counter top.

 **NOTE:** The mounting bracket requires an 80 mm hole in the counter top. The thickness of the counter top must be 10 mm to 50 mm.

1. If the stand's base is attached to the column, remove the screw on the underside of the column (1), and then remove the base from the column (2).



2. Route the cable(s) through the routing hole on the top piece of the mounting bracket (1) and attach the cable(s) to the bottom of the column (2).

 **NOTE:** If the column has a printer, there are four cables to connect. If it does not have a printer, there is one cable to connect.



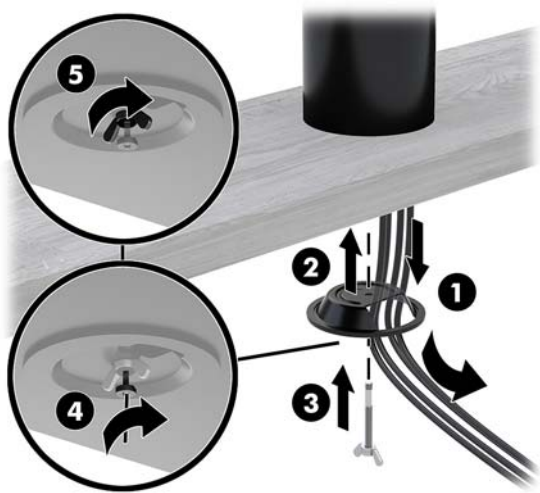
3. Hold the top piece of the mounting bracket against the bottom of the column, route the cables through the hole in the mounting surface, and then place the column over the hole on the mounting surface.



4. The bottom piece of the mounting bracket can be oriented in two ways, depending on the thickness of your mounting surface. Orient the bracket properly for your application before attaching it.



5. Route the cables through the hole in the bottom piece of the mounting bracket (1). Press the mounting bracket against the bottom of the mounting surface (2), and then insert the screw (3) through the mounting bracket. Then tighten the screw (4) so that the screw is fully inserted into the column, and then tighten the wing nut (5) on the screw to fasten the bracket to the mounting surface.

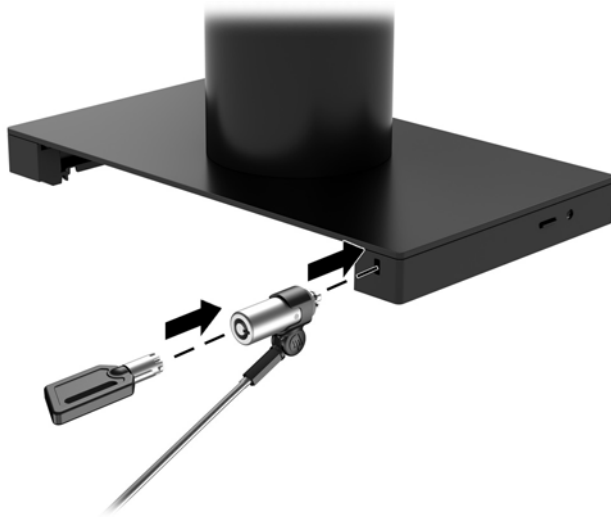


Installing a security cable on the I/O connectivity base

You can secure the I/O connectivity base to a fixed object with an optional Keyed Cable lock security cable extension and an optional security cable available from HP.



NOTE: The security cable is sold separately as an aftermarket option kit only.



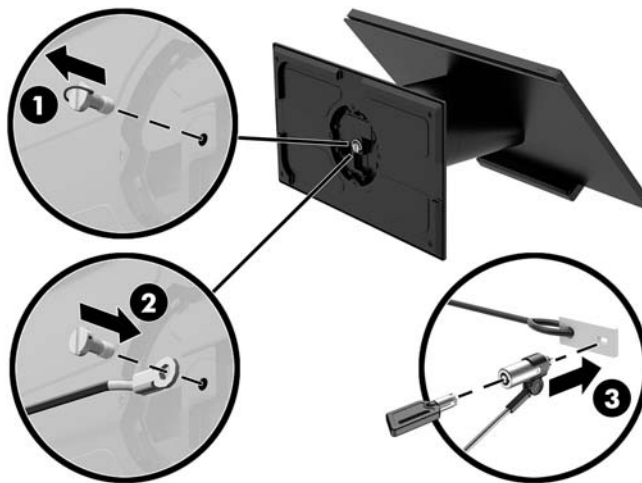
Installing a security cable on the Engage One column

You can secure the I/O connectivity base to a fixed object with an optional Keyed Cable lock security cable extension and an optional security cable available from HP.



NOTE: The security cable is sold separately as an aftermarket option kit only.

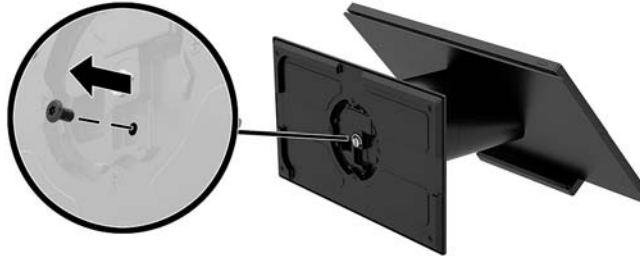
1. Remove the screw from the bottom of the column (1).
2. Attach the security cable extension to the bottom of the column using the tamper-resistant screw (2) included with the security cable extension.
3. Secure the other end of the security cable extension with a security cable (3).



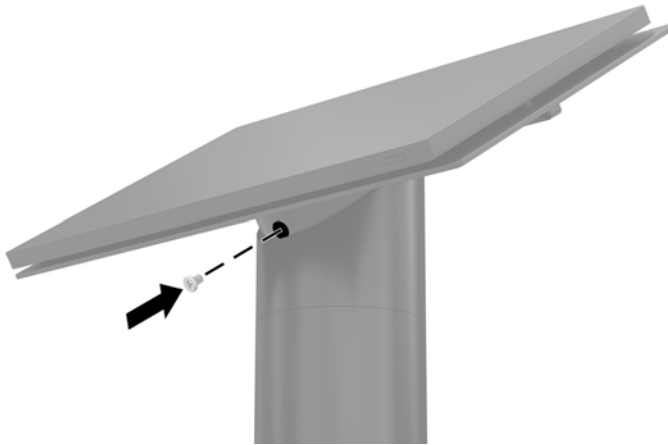
Installing a security screw on the Engage One head unit and stand

You can insert a tamper-resistant security screw into the computer's column with a T-10 screwdriver to prevent access to the computer head unit's release button.

1. Remove the security screw from the bottom of the stand's column.



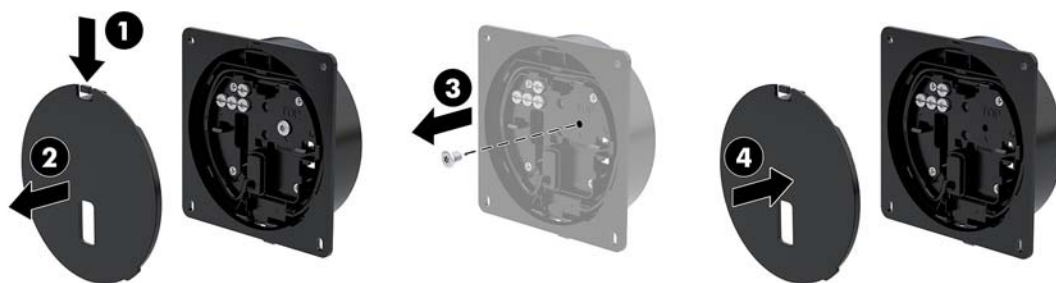
2. Install the security screw in the release button hole on the stand's column.



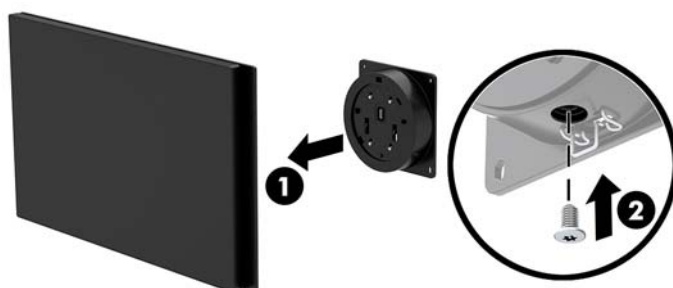
Installing a security screw on the Engage One head unit and VESA mount

You can insert a tamper-resistant security screw into the computer's VESA mount with a T-10 screwdriver to prevent access to the computer head unit's release button.

1. Press the rear cover release tab (1) on the VESA bracket, and then pull the rear cover off the VESA bracket (2). Then remove the security screw (3) from inside the VESA bracket, and then replace the rear cover (4).




2. Press the head unit onto the VESA mount (1) if it is not already attached, and then install the security screw (2) in the release button hole on the VESA mount.



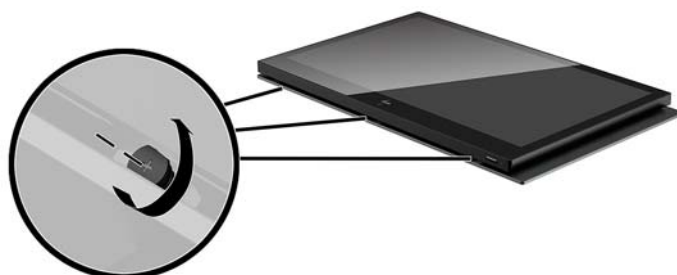
Removing the display panel

You must remove the display panel from the computer head unit to access internal computer components.


1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

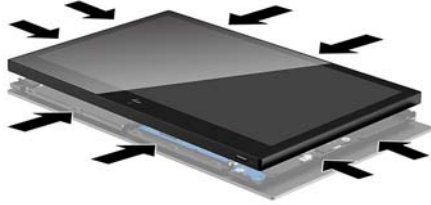
 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Loosen the three captive screws in the slot on the bottom of the computer head unit.




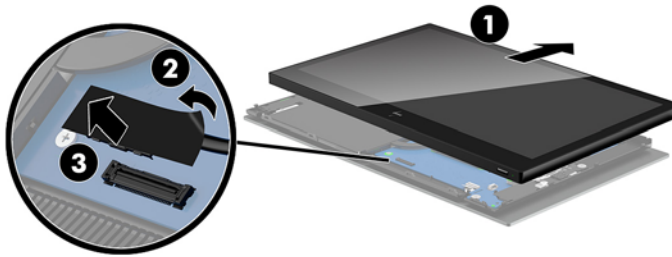
5. Separate the computer's display panel from the computer head unit at the connection points, and then lift the display panel up approximately 2.5 cm (one inch).

 **IMPORTANT:** Do not lift the display panel higher than 2.5 cm (one inch) from the computer head unit. An internal cable must be disconnected before the display panel can be fully removed.




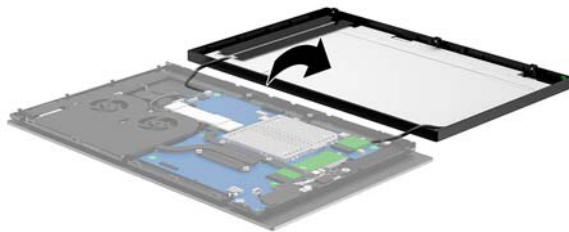
6. Holding the display panel 2.5 cm (one inch) from the computer head unit, shift the display panel forward no more than 7.5 cm (three inches) (1) to access the display cable connection. Lift the edges of the tape that covers the display cable connection (2), and then disconnect the display cable from the connector on the system board (3) by pulling the tab on the cable end.

 **IMPORTANT:** Be careful not to fold the edges of the tape. It must be replaced when the display cable is reconnected.



7. Rotate the display panel over the top of the computer head unit and onto a flat surface covered by a soft clean cloth.

 **IMPORTANT:** The touch and WLAN cables will still be connected between the top of the display panel and the top of the computer head unit. Be careful when removing the display panel so that the cables do not become disconnected.



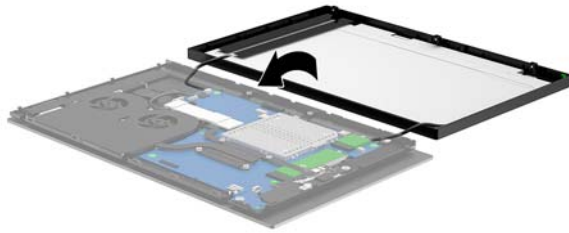
Replacing the display panel

Follow the instructions below to replace the display panel on the computer head unit after replacing or installing internal components.

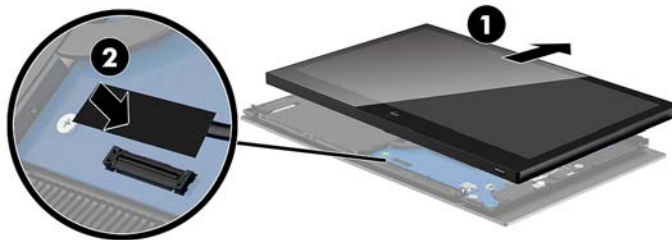
1. Rotate the display panel over the computer head unit.



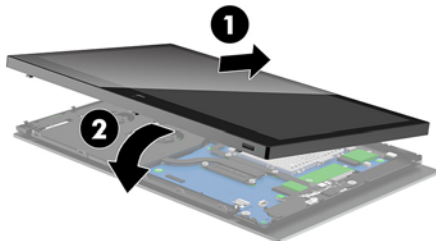
IMPORTANT: Be sure that the touch and WLAN cables are connected between the top of the display panel and the top of the computer head unit.



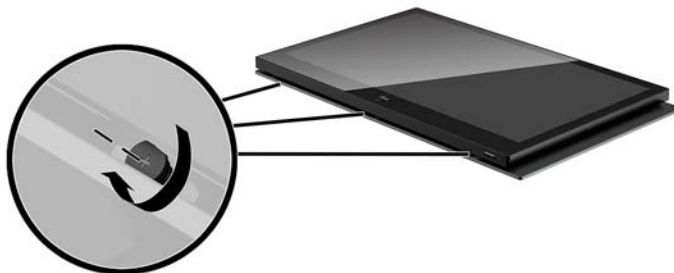
2. Hold the display panel 2.5 cm (one inch) above the computer head unit with the display panel shifted forward 7.5 cm (three inches) (1). Connect the display cable to the display connector on the system board (2), and then press down the edges of the tape so that it adheres to the system board.



3. Slide the top of the display panel onto the computer head unit (1) so that the top of the display panel is secured to the top of the computer head unit, and then rotate the display panel down and snap it onto the computer head unit (2), making sure that all connection points around the display panel are firmly attached to the computer head unit.



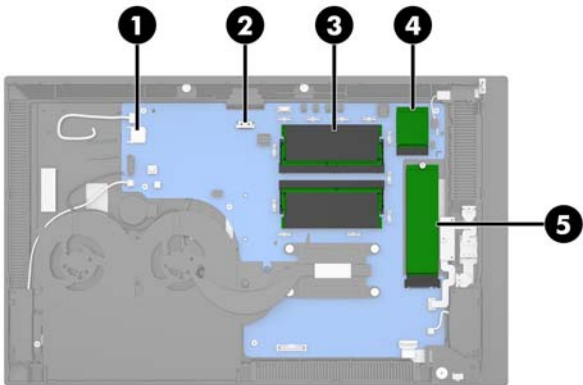
4. Tighten the three captive screws in the slot on the bottom of the computer head unit.



5. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#)
6. Reconnect the power cord and press the power button.

System board components


Refer to the table below to locate the system board components referenced in this guide.



System board components			
(1)	SD card slot	(4)	WLAN module
(2)	CFD connector	(5)	M.2 SSD
(3)	Memory modules		

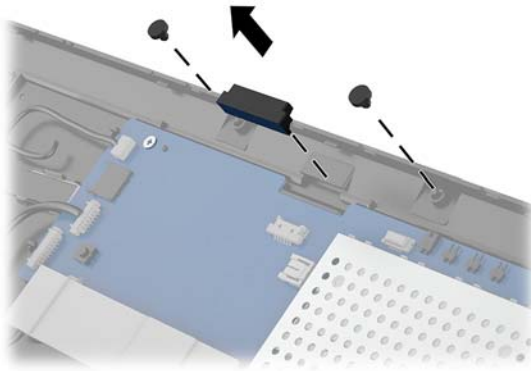
Installing a 2 x 20 customer-facing display (CFD)

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

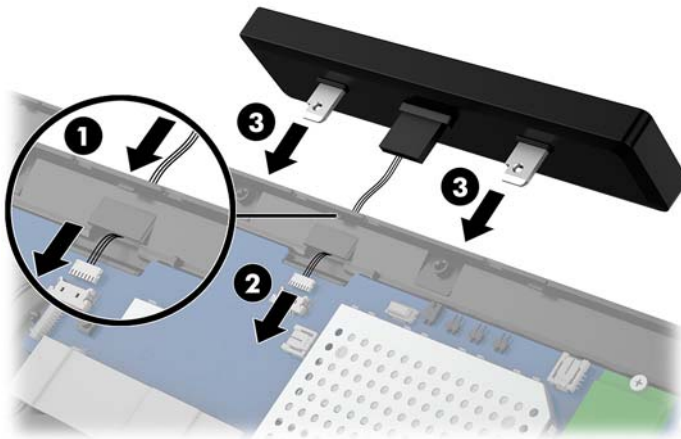
 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Remove the display panel from the computer head unit. See [Removing the display panel on page 31](#).

5. Remove the rubber stoppers from the CFD cable routing channel and the two CFD screw holes.



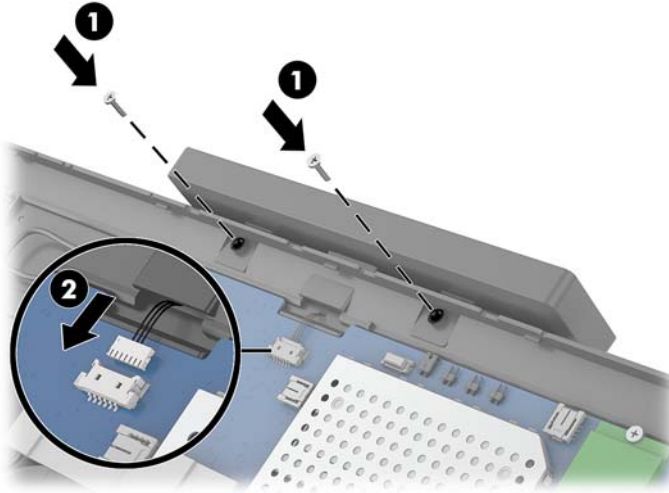
6. Route the CFD cable through the routing channel on the computer head unit (1). Pull the cable all the way through the channel (2), and then slide the screw tabs on the CFD into the slots on the computer head unit (3).



7. Install the two screws that attach the CFD to the computer head unit (1), and then connect the CFD cable to the connector on the system board (2).



IMPORTANT: Make sure the entire CFD cable is pulled all the way through the head unit routing channel before installing the CFD so that the cable does not get pinched between the CFD and the head unit.



8. Replace the computer head unit's display panel. See [Replacing the display panel on page 32](#).
9. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#).
10. Reconnect the power cord and press the power button.

Installing memory

The computer comes with at least one preinstalled double data rate 4 synchronous dynamic random access memory (DDR4-SDRAM) small outline dual in-line memory module (SODIMM). There are two memory sockets on the system board that can be populated with up to 32 GB of memory.

DDR4-SDRAM SODIMMs

For proper system operation, the memory modules must be 1.2 volt DDR4-SDRAM SODIMMs and adhere to the following specifications:

- Industry-standard 260-pin
- Unbuffered non-ECC PC4-19200 DDR4-2400 MHz-compliant
- Support CAS latency DDR4 2400 MHz (17-17-17 timing)
- Contain the mandatory Joint Electronic Device Engineering Council (JEDEC) specification

The computer supports the following:

- 512-Mbit, 1-Gbit, 2-Gbit, 4-Gbit, and 8-Gbit non-ECC memory technologies
- Single-sided and double-sided SODIMMs
- The following SODIMMs are offered:
 - 4 GB (1 x 4 GB) DDR 42400 SODIMM memory
 - 8 GB (1 x 8 GB) DDR 42400 SODIMM memory
 - 8 GB (2 x 4 GB) DDR 42400 SODIMM memory
 - 16 GB (1 x 16 GB) DDR 42400 SODIMM memory
 - 16 GB (2 x 8 GB) DDR 42400 SODIMM memory
 - 32 GB (2 x 16 GB) DDR 42400 SODIMM memory



NOTE: The system will not operate properly if you install unsupported SODIMMs.

Removing and installing a memory module

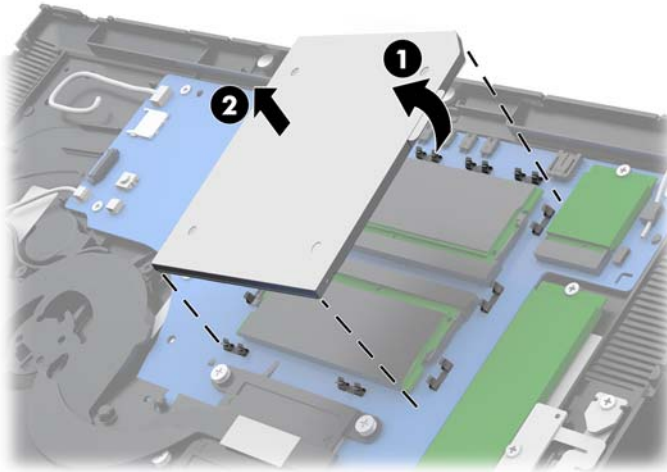
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.



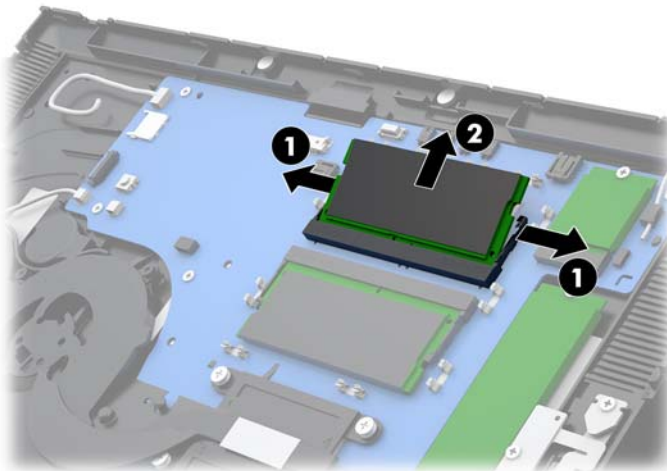
IMPORTANT: You must disconnect the power cord and wait approximately 30 seconds for the power to drain before replacing the memory module. Regardless of the power-on state, voltage is always supplied to the memory module as long as the computer is plugged into an active AC outlet. Adding or removing a memory module while voltage is present may cause irreparable damage to the memory module or system board.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Remove the display panel from the computer head unit. See [Removing the display panel on page 31](#).

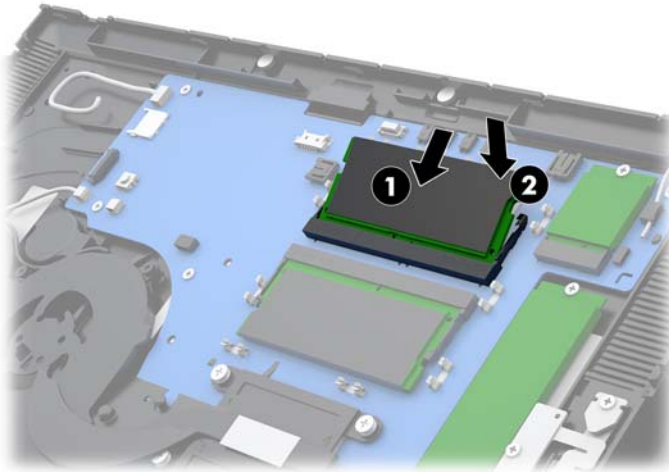
5. Remove the shield over the memory modules by pulling the tab on the shield up (1), and then lifting the shield from the system board (2).



6. To remove a memory module, press outward on the two latches on each side of the memory module (1), and then pull the memory module out of the socket (2).

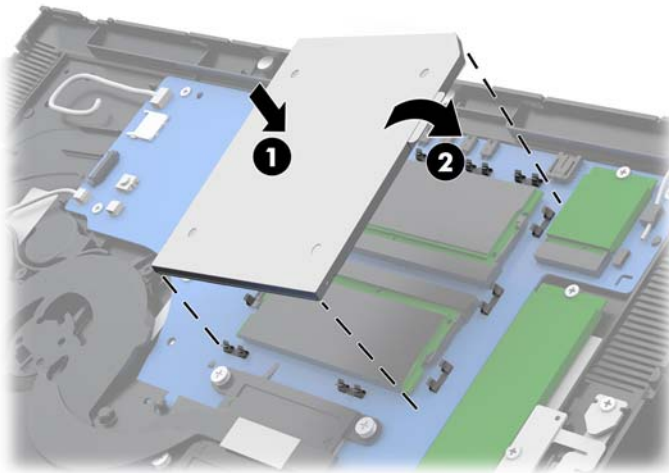


7. To install a memory module, slide the new memory module into the socket at approximately a 30° angle (1), and then press the memory module down into the socket (2) so that the latches lock it in place.



NOTE: A memory module can be installed in only one way. Match the notch on the module with the tab on the memory socket.


8. Replace the shield over the memory modules by pressing the left side of the shield down onto the system board (1) and then the pressing the right side down (2).




9. Replace the computer head unit's display panel. See [Replacing the display panel on page 32](#).
10. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#)
11. Reconnect the power cord and press the power button.

The computer automatically recognizes the additional memory when you turn on the computer.

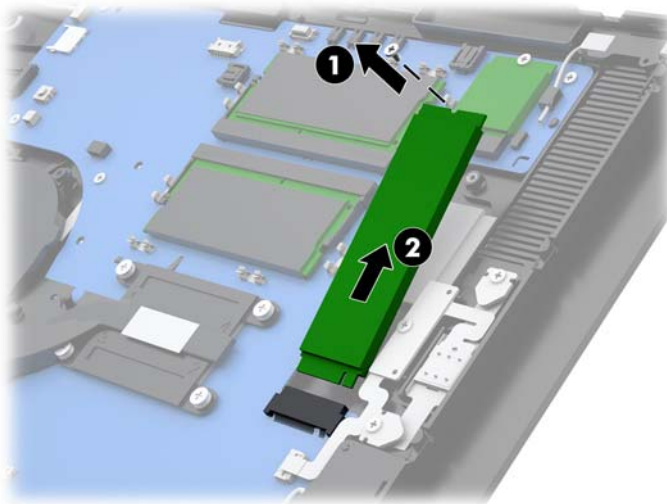
Removing and installing an M.2 solid-state drive (SSD)

 **IMPORTANT:** If you are replacing an SSD, be sure to back up the data from the old SSD so that you can transfer the data to the new SSD.

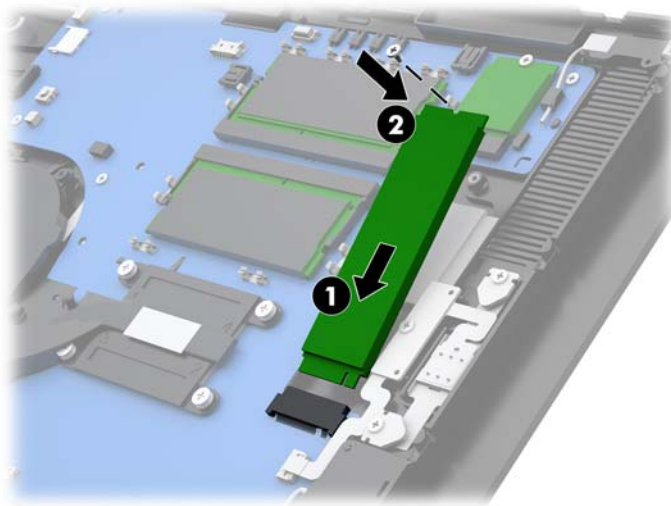
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Remove the display panel from the computer head unit. See [Removing the display panel on page 31](#).
5. To remove an SSD, remove the screw that secures the SSD to the system board (1), and then slide the SSD out of the system board connector (2).



6. To install an SSD, slide the connector end of the SSD into the system board connector (1), and then secure the other end of the SSD to the system board with the screw (2).



7. Replace the computer head unit's display panel. See [Replacing the display panel on page 32](#).
8. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#)
9. Reconnect the power cord and press the power button.

Inserting an internal SD card

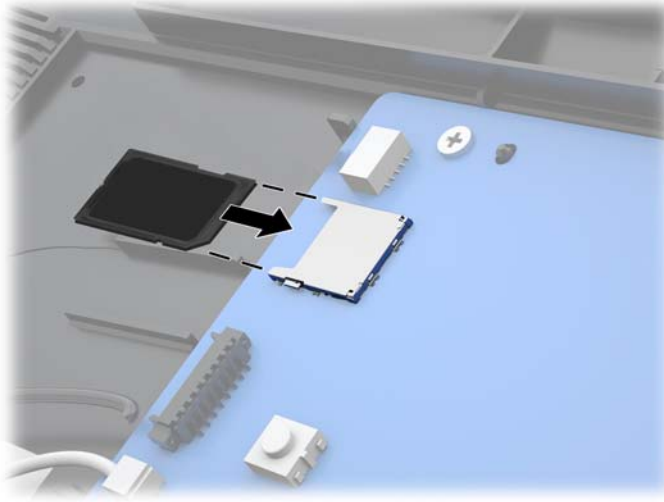
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.



IMPORTANT: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Remove the display panel from the computer head unit. See [Removing the display panel on page 31](#).


5. Insert the SD card into the SD card slot on the system board.



6. Replace the computer head unit's display panel. See [Replacing the display panel on page 32](#).
7. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#)
8. Reconnect the power cord and press the power button.

Removing and installing a WLAN module

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord from the computer.

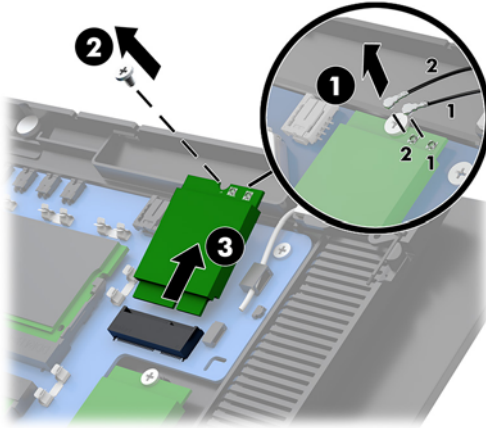
 **IMPORTANT:** Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

3. Remove the computer head unit from the stand. See [Removing the Engage One head unit from the stand on page 24](#).
4. Remove the display panel from the computer head unit. See [Removing the display panel on page 31](#).

5. To remove a WLAN module, disconnect the WLAN cables (1), remove the screw (2) that secures the module to the system board, and then slide the module out of the system board connector (3).



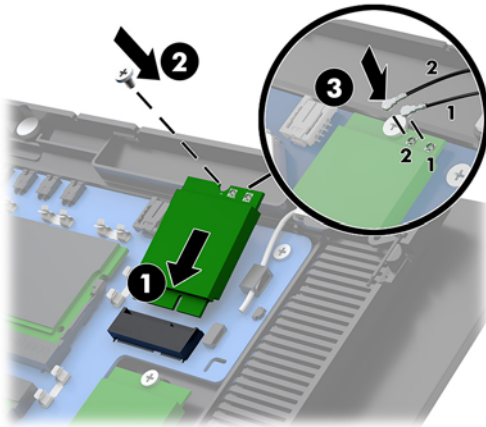
IMPORTANT: The WLAN cables and connectors are labeled **1** and **2**. Make sure that you match the numbered labels on the WLAN module with the numbered labels on the cables when reconnecting the cables.



6. To install a WLAN module, slide the connector end of the module into the system board connector (1), then secure the other end of the module to the system board with the screw (2), and then connect the two cables from the display panel to the connectors on the WLAN module (3).



IMPORTANT: The WLAN cables and connectors are labeled **1** and **2**. Make sure that you match the numbered labels on the WLAN module with the numbered labels on the cables when connecting the cables.



7. Replace the computer head unit's display panel. See [Replacing the display panel on page 32](#).
8. Attach the computer head unit to the stand. See [Attaching the Engage One head unit to the stand on page 25](#)
9. Reconnect the power cord and press the power button.

4 Using the column printer

The column printer is an optional component that may be included with your system.

Standard features

Standard features	
Interface	USB
Memory/firmware	8 MB flash memory, History EEROM, 4k buffer
Energy-savings	Option to configure printer to enter low-power (1 watt) idle state if no data is received after user-specified number of minutes
Resident character sets	PC code pages 437 (US), 720 (Arabic), 737 (Greek), 775 (Baltic), 850 (Multilingual), 852 (Latin II), 857 (Turkish), 858 (with Eurosymbol), 860 (Portuguese), 862 (Hebrew), 863 (French Canadian), 864 (Arabic), 865 (Nordic), 866 (Cyrillic), 874 (Thai), 1250 (Windows Central Europe), 1251 (Windows Cyrillic), 1252 (Windows Latin I), 1254 (Windows Turkish), 1255 (Windows Hebrew), 1256 (Windows Arabic), 1257 (Windows Baltic), 28591 (Windows Latin 1), 28592 (Windows Latin 2), 28594 (Windows Baltic), 28596 (Windows Arabic), 28599 (Windows Turkish), 28605 (Windows Latin 9), Katakana, and KZ_1048 (Kazakh)
Downloadable fonts	Code pages 932 (Kanji), 949 (Korean), 936 (Simplified Chinese), and 950 (Traditional Chinese)
Integrated bar codes	Code 39, Code 93, Code 128, UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), Interleaved 2 of 5, Codabar, Code 128, PDF-417 (two-dimensional), Code 128 extended, GS1 Databar, QR code, and Datamatrix
Print	Monochrome in either 44 (standard) or 56 (compressed) columns on 80 mm wide thermal paper
Paper path	80.0 mm
Roll Diameter	50.8 mm max. (2 inches)
Print resolution	8-dots/mm
Speed	Up to 114 mm/second throughput (monochrome)
Paper sensing	Paper out
Human interface	Audible tone from speaker (software-driven). Simple commands in configuration menu issued through paper feed button. Green LED status light, located next to the paper feed button.
Cash drawer driver	Connector for one or two cash drawers (obtain a "Y" cord for two drawers)
Knife	Paper cutter standard on all units

Printing features

The printer is versatile, with diverse printing options available. Text, graphics, and bar codes can be presented in many different forms and sizes. For more information on programming the printer to change text, graphics, or other characteristics, refer to the *Programming Guide*.

When to change the receipt paper

Change the paper when it is near the end of the roll or when the roll is empty. When the paper is low, you must monitor usage to avoid running out part of the way through a transaction. When the roll is empty, you must load a new roll immediately or data may be lost.

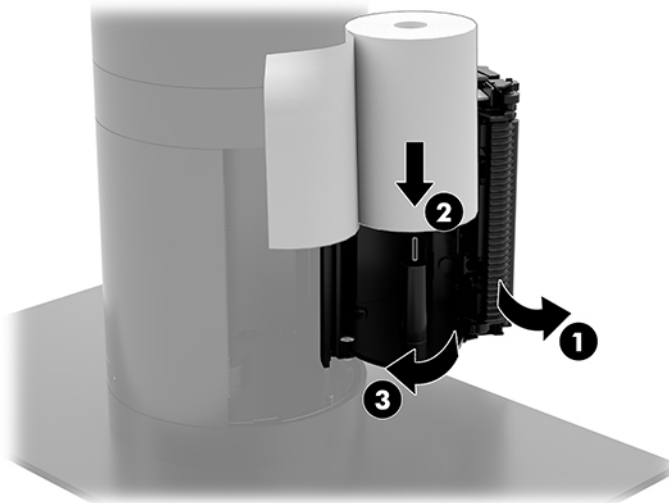
- When the paper is low, a colored stripe appears on the receipt paper (if the paper purchased has a stripe) indicating that enough paper remains for a small transaction.
- When the roll is empty, a green LED on the printer flashes quickly indicating the paper must be installed.



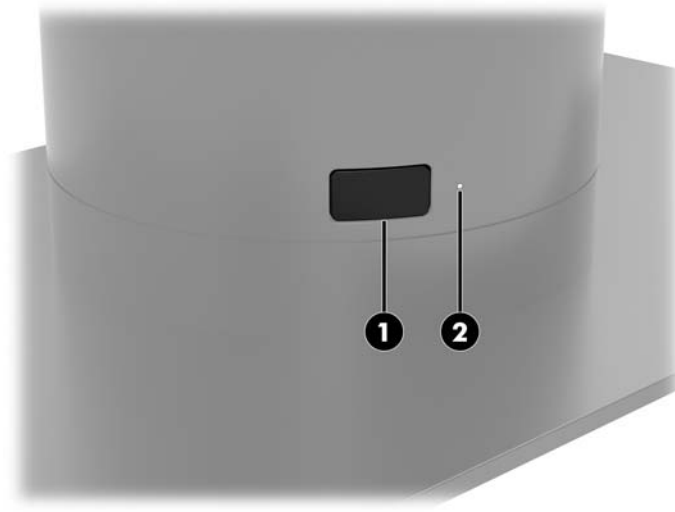
IMPORTANT: Do not try to operate the printer or host computer if the printer runs out of paper. The printer may continue to accept data from the host computer even though it is unable to print. Data may be lost as a result.

Loading the printer receipt paper

1. Open the receipt cover by pushing up evenly on each side of the cover until it unsnaps (1).
2. Remove the test printout or used paper roll if necessary.
3. Place the receipt paper into the paper compartment on the spindle so that it unrolls from the inside (2). Leave a few inches of paper sticking out of the printer. To prevent jamming, make sure the paper is between the guidelines.
4. While holding the paper in place, close the receipt cover (3) making sure to apply a little more pressure after the first click to ensure that it is fully latched. When fully latched with paper installed, the LED will stop blinking.



5. To test that the paper is loaded correctly, advance the paper with the paper feed button (1), and then tear the excess paper off against the knife on the cover. A steady green LED (2) means the printer is on and operating normally. If the LED is flashing, the cover may not be completely shut.



Thermal paper specifications

The printer requires qualified thermal paper with the following dimensions:

- **Width:** 80 +0/-0.6 mm (3.15 +0/-0.03")
- **Diameter:** 50.8 mm max. (2")

The paper must not be attached at the roll's core. Use paper with a colored stripe at the end to indicate that the paper is running low.

The above figures are based on a core diameter of 22 ± 0.5 mm (0.87") outside and 11.5 ± 0.5 mm (0.45") inside.

Qualified paper grades

Contact the manufacturer of your choice to order paper. HP recommends the following paper grades produced by their respective manufacturers. There are a number of paper manufacturers qualified to provide this paper, provided the POS paper rolls are from the recommended grades for monochrome (black ink) paper.

Qualified manufacturers	Phone/Fax	Paper grade
Appvion, Inc. (USA)	Voice: (800) 922-1729	Alpha 400-2.3 (was T1030)
825 E. Wisconsin Ave.	Fax: (800) 922-1712	Alpha 800-2.4 (was T1012A)
Appleton, WI 54912		POS-Plus 600-2.4
http://www.appvion.com		Alpha 900-3.4 (was Superior)
		All current Appvion papers are BPA-free
Jujo Thermal Ltd.	Voice: 358 (0) 10 303 200	AF50KS-E3
P.O. Box 92 FI-27501	Fax: 358 (0) 10 303 2419	AP62KS-E3

Qualified manufacturers	Phone/Fax	Paper grade
Kaattua, Finland http://www.juothermal.com/		
Kanzaki Specialty Papers (USA) 20 Cummings St. Ware, MA 01082-2002 http://www.kanzakiusa.com/	Voice: (888) 526-9254 Fax: (413) 731-8864	P30023 (was P-300), P31023 (was P-310), P35024 (was P-350), P35032 (was P-354), P39023 (BPA free, was P-390), P30521 (BPA free), P30523 (BPA free), P31523 (BPA free), P35532 (BPA free)
Koehler UK Ltd. (Great Britain) 2 White Oak Square London Road Swanley, Kent BR8 7AG, U.K. http://www.koehlerpaper.com/en/	Voice: (44) 1322 661010 Fax: (44) 1322 614656	KT55-F20
Koehler AG Hauptstr. 2-4 D-77704 Oberkirch, Germany http://www.koehlerpaper.com/en/	Voice: (49) 7802 81-0 Fax: (49) 7802 81-4330	KT55-F20
Mitsubishi Int'l Corp. (USA) 655 Third Ave. New York, New York 10017 http://www.mitsubishicorp.com/us/en/	Voice: (212) 605-2000 Fax: (212) 605-2597	P-5035 T-8051 TP-8065 PP-5051
OJI Paper Company Ltd. Ginza 4-chome Tokyo 104, Japan http://www.ojipaper.co.jp/english/	Voice: (81)3-3563-1111 Fax: (81)3-3563-1135	KF-60 PD-170R PD-170R
Thermal Solutions Intl, Inc. 6740 Broadview Ave, Suite D Jacksonville, FL 32254 http://thermalsolutionsinternational.com	Voice: (800) 479-6070, (904) 860-1966 Fax: (904) 646-4530	19018RDT Features: 30% post-consumer waste, recycled/BPA free

Troubleshooting the printer

The printer is generally trouble-free; however, unexpected conditions may arise. Refer to the following sections to diagnose and solve these printer conditions. To resolve complex issues, you may need to contact an authorized HP service representative.

Printer tone and green LED

Condition	Possible causes	Possible solutions	Where to go for more information
Green LED, quick steady flashing.	Paper roll is empty.	Load a new paper roll.	See Loading the printer receipt paper on page 45 .
	Receipt cover is open.	Close the cover. If the problem persists, continue opening and closing the cover until the LED stops blinking.	
	The knife is unable to return to the home position.	Stop using the printer.	
Green LED, slow steady flashing.	Other problems may be indicated.	Stop using the printer.	Contact your authorized HP service representative.
Printer beeps (two-tone—low frequency, high frequency).	Printer has been turned on and is ready to operate.	No action is required.	
Printer beeps and flashes green LED in various combinations.	These all indicate a serious condition.	Stop using the printer.	Contact your authorized HP service representative.

Printing issues

Condition	Possible causes	Possible solutions	Where to go for more information
Colored stripe on the receipt.	Paper is low.	Change the paper.	See Loading the printer receipt paper on page 45 .
Receipt does not come out all the way.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Receipt is not cut.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Print is light or spotty.	Paper roll is loaded incorrectly.	Reload the paper correctly.	See Loading the printer receipt paper on page 45 .
	Thermal printhead is dirty.	Use recommended thermal receipt paper and clean the printhead with 99% isopropyl alcohol.	
	Variations in paper.	Increase print density in Set Hardware Options of printer configuration menu to 110% or 120% as needed.	
Vertical column of print is missing.	This indicates a serious condition with the printer	Stop using the printer.	Contact your authorized HP service representative.

Condition	Possible causes	Possible solutions	Where to go for more information
	electronics or missing dot on printhead.		
One side of receipt is missing.	This indicates a serious condition with the printer electronics.	Stop using the printer.	Contact your authorized HP service representative.



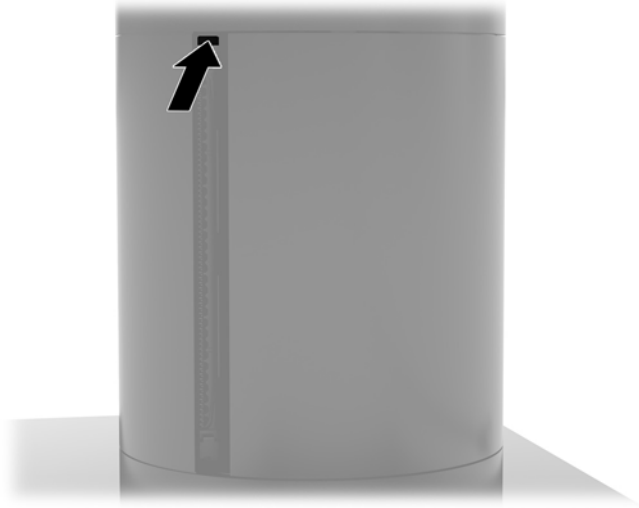
NOTE: Using nonrecommended paper may damage the printhead and void the warranty.

Printer does not function

Condition	Possible causes	Possible solutions	Where to go for more information
Printer does not function when turned on and LED is off.	Power is not plugged in.	Check that the host or power supply is getting power.	
Printer does not function when turned on and LED is blinking.	Receipt cover is not fully closed.	Close and latch the receipt cover.	
Printer stops functioning.	Printhead has overheated.	Allow the printhead to cool down.	
	Printer is in energy-saving mode.	Press the paper feed button to revive the printer.	
Printer does not open.	Receipt cover is stuck.	Release the latch failsafe.	See Latch failsafe on page 50 .

Latch failsafe

In the event that the receipt cover becomes stuck, the printer has a failsafe to release the cover's latches. Using a thin pointed object, press the rectangular button adjacent to the printhead. With enough pressure, the latches should release, and the receipt cover should open.



Cleaning the printer

Because of the way the printer sits while in use, it is likely there will be buildup of paper and other debris from the knife. HP recommends that you keep the printer in working order by periodically cleaning the debris from the printer.

To clean the printer, open the cover, remove the paper roll, and then use a can of compressed air to blow the debris out from the bottom plate where it accumulates.

5 Configuring the software

Touch screen calibration for Windows 10 Professional and Windows 10 IoT Enterprise for Retail



NOTE: The Windows calibration tool works only in digitizer touch mode. If you install a retail touch utility, it will set the touch screen to POS mode (mouse mode) by default and will not allow the Windows calibration tool to run.

To calibrate the touch module in Windows 10 Professional and Windows 10 IoT Enterprise for Retail:

1. Open Control Panel. You can type `Control Panel` in the Search box to access it.
2. In Control Panel, type `calibrate` in the Search box. Under **Tablet PC Settings**, tap the **Calibrate the screen for pen or touch input** link. In the **Tablet PC Settings** dialog box, tap the **Calibrate** button, and then proceed to step 3.
3. Follow the on-screen instructions to press the target marks on the touch screen. At the end of the calibration process, the touch module should be aligned with the video and the touch points will be accurate.

Configuring optional HP integrated peripheral modules

To configure the integrated USB peripheral, refer to the *HP Point of Sale Configuration Guide* (available in English only). The guide is located with the documentation on your retail computer and at <http://www.hp.com/support>. To access the guide on the retail computer, select **Start**, and then select **HP Point of Sale Information**.



NOTE: Check <http://www.hp.com/support> for updated software or documentation that became available between the time your product was manufactured and the time it was delivered to you.

A Enabling encryption on the MSR

The MSR designed into the Engage One terminal has an optional encryption functionality. HP has partnered with IDTECH Products to perform key injection services remotely. For more information about their service, contact the IDTECH Products sales team at Sales@idtechproducts.com.

B Electrostatic discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Preventing electrostatic damage

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm \pm 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, contact an HP authorized dealer, reseller, or service provider.



NOTE: For more information on static electricity, contact an HP authorized dealer, reseller, or service provider.

C Computer operating guidelines, routine care, and shipping preparation

Computer operating guidelines and routine care

Follow the guidelines below to properly set up and care for the computer:

- HP recommends a 17 mm clearance around the vents on the computer head unit and I/O connectivity base for heat dissipation.
- Keep the computer away from excessive moisture, direct sunlight, and extremes of heat and cold.
- Never operate the computer with any access panels removed.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's recirculated or preheated air.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.
- Keep liquids away from the computer and I/O connectivity base.
- Never cover the vents on the computer or I/O connectivity base with any type of material.
- Install or enable power management functions of the operating system or other software, including sleep states.
- Turn off the computer before you do either of the following:
 - Wipe the exterior of the computer with a soft, damp cloth as needed. Using cleaning products may discolor or damage the finish.
 - Occasionally clean the air vents on all vented sides of the computer. Lint, dust, and other foreign matter can block the vents and limit the airflow.



NOTE: For more information on your retail system care and maintenance, refer to “Retail Point of Sales Systems - Routine Care and Maintenance” available at <http://www.hp.com/support>.

Touch screen maintenance

Keep your display and touch sensor clean. The touch sensor requires very little maintenance. HP recommends that you periodically clean the glass touch sensor surface. Be sure to turn off your display before cleaning. Typically, an isopropyl alcohol and water solution ratio of 50:50 is the best cleaning agent for your touch sensor. It is important to avoid using any caustic chemicals on the touch sensor. Do not use any vinegar-based solutions.

Apply the cleaner with a soft, lint-free cloth. Avoid using gritty cloths. Always dampen the cloth and then clean the sensor. Be sure to spray the cleaning liquid onto the cloth, not the sensor, so that drips do not seep inside the display or stain the bezel.

MSR maintenance

To clean the MSR (magnetic strip reader), swipe a standard cleaning card through the MSR a couple of times. You can order a standard cleaning card online. You can also put a thin oil-free cloth around a credit card.

Shipping preparation

Follow these suggestions when preparing to ship the computer:

1. Back up the hard drive files. Be sure that the backup media is not exposed to electrical or magnetic impulses while stored or in transit.



NOTE: The hard drive locks automatically when the system power is turned off.

2. Remove and store all removable media.
3. Turn off the computer and external devices.
4. Disconnect the power cord from the AC outlet, and then from the computer.
5. Disconnect the system components and external devices from their power sources, and then from the computer.
6. Pack the system components and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.

D Accessibility

HP designs, produces, and markets products and services that can be used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

Supported assistive technologies

HP products support a wide variety of operating system assistive technologies and can be configured to work with additional assistive technologies. Use the Search feature on your device to locate more information about assistive features.



NOTE: For additional information about a particular assistive technology product, contact customer support for that product.

Contacting support

We are constantly refining the accessibility of our products and services and welcome feedback from users. If you have an issue with a product or would like to tell us about accessibility features that have helped you, please contact us at (888) 259-5707, Monday through Friday, 6 a.m. to 9 p.m. Mountain Time. If you are deaf or hard-of-hearing and use TRS/VRS/WebCapTel, contact us if you require technical support or have accessibility questions by calling (877) 656-7058, Monday through Friday, 6 a.m. to 9 p.m. North American Mountain Time.



NOTE: Support is in English only.

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