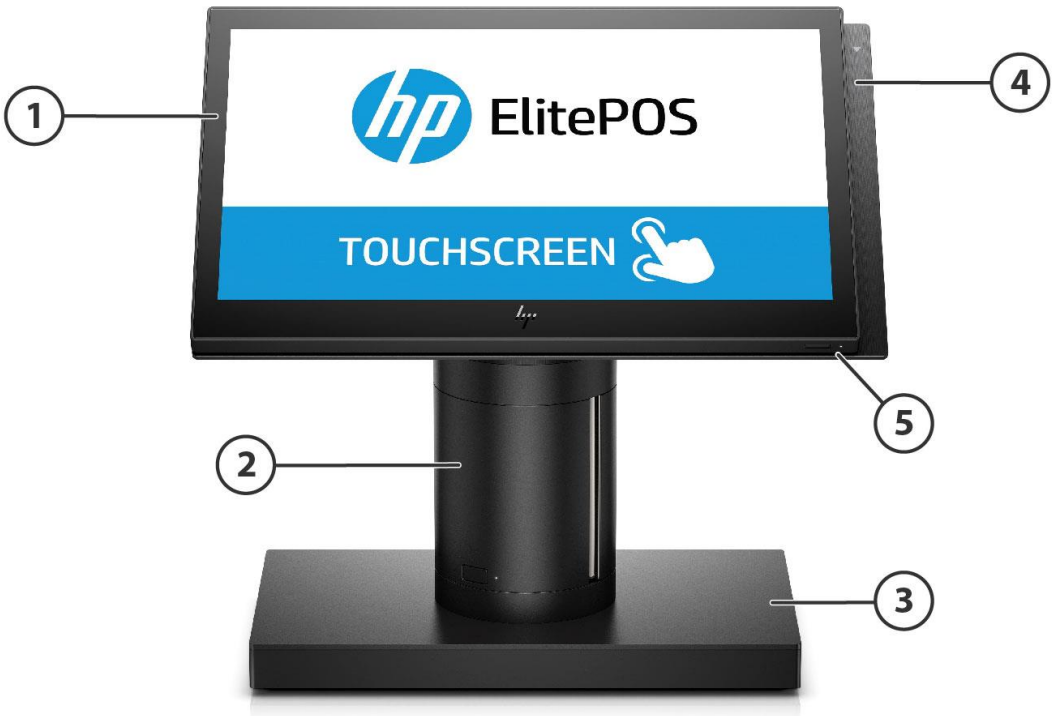
Overview

HP ElitePOS G1 Retail System, Models 141, 143, & 145

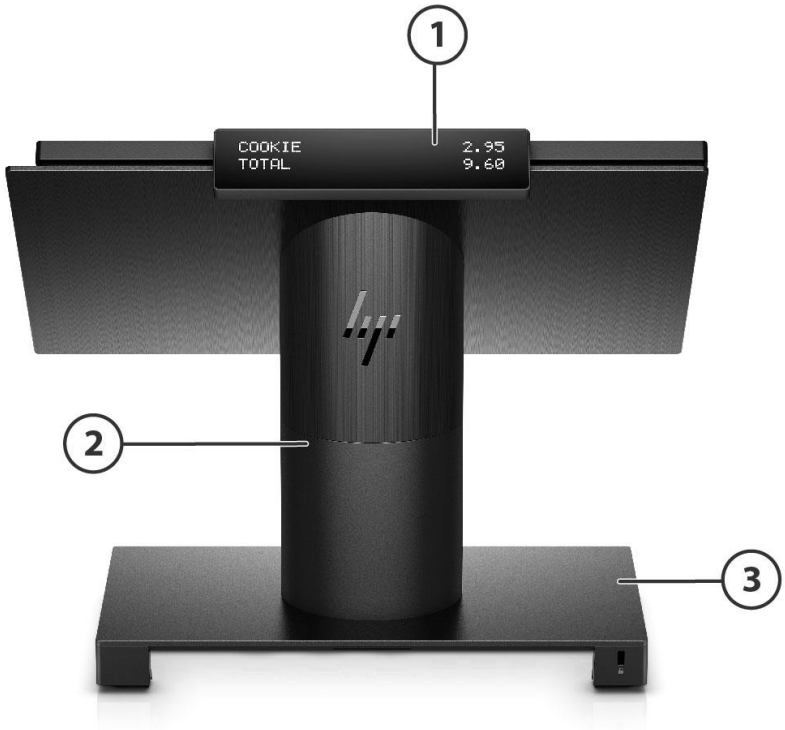
FRONT VIEW



1. 14-inch diagonal display panel (wide-aspect ratio); FHD 1920 x 1080 resolution Projected Capacitive Touch Screen
2. HP ElitePOS Integrated Column Printer
3. Choice of 2 ElitePOS I/O Connectivity Bases
4. HP ElitePOS Integrated MSR
5. Recessed Power Button

Overview

REAR VIEW

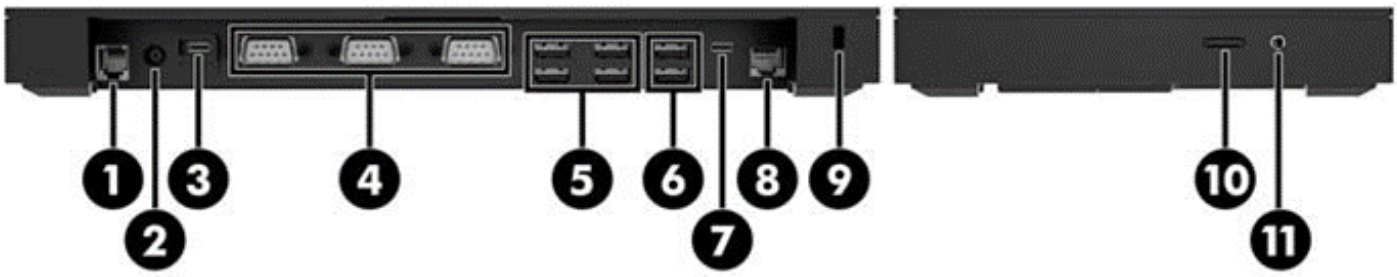


REAR VIEW

1. HP ElitePOS 2 x 20 Customer-facing Display (CFD)
2. Rotate/Tilt Stand (Fix Position Stand Available)
3. Choice of 2 ElitePOS I/O Connectivity Bases

Overview

HP ElitePOS
Basic I/O Connectivity Base (Rear/Side View)



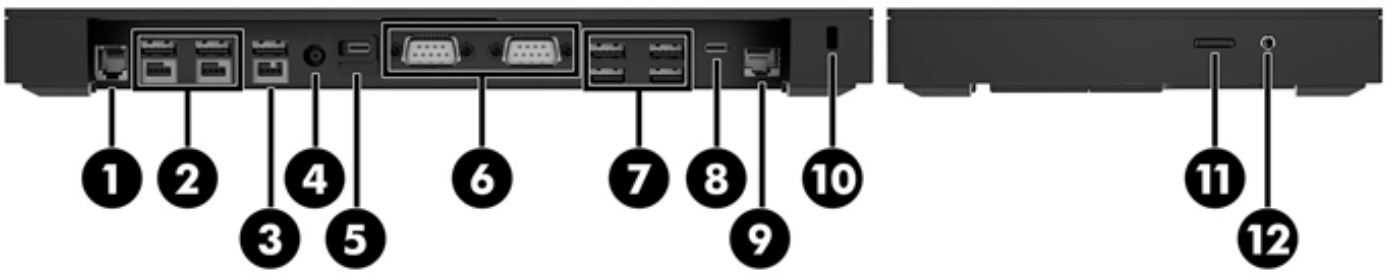
Basic I/O Connectivity Basecomponents

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.

Overview

Advanced I/O Connectivity Base* (Rear/Side View)



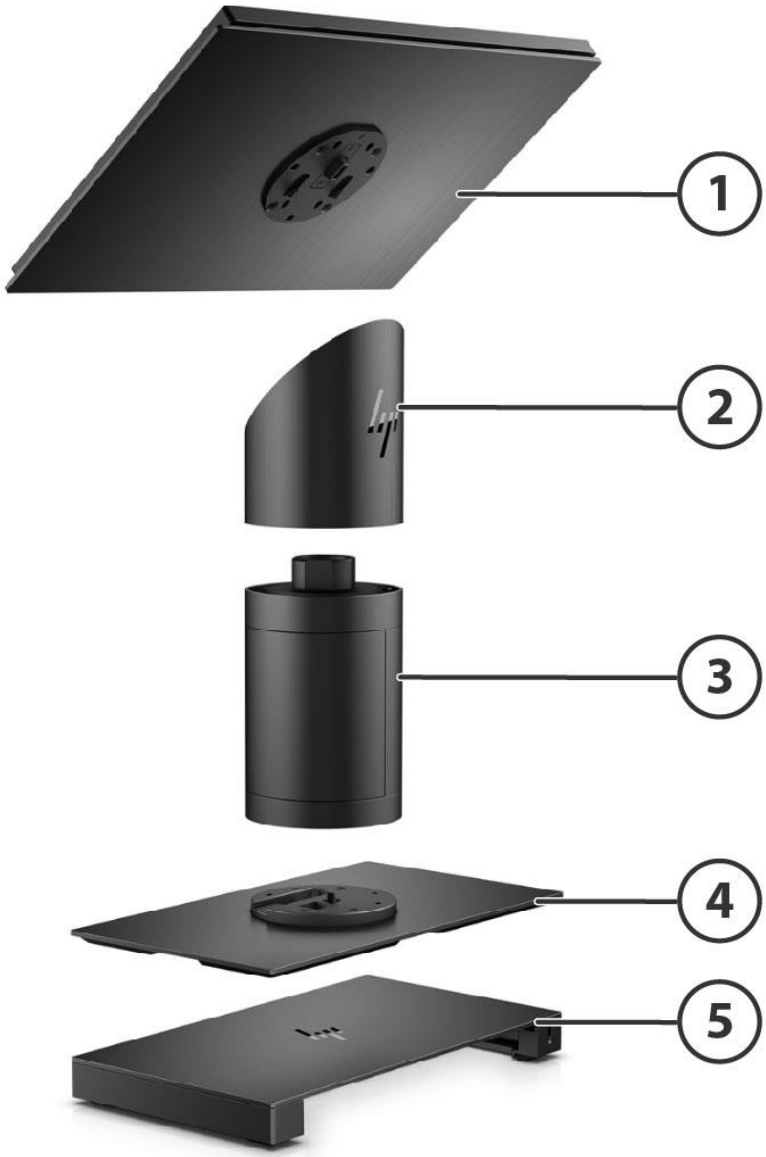
Advanced I/O Connectivity Base components

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

IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into the cash drawer jack.
* Available November 2017

Overview

Component Breakdown



Component Breakdown

1. Head unit: Choice of Model 141 (Intel® Celeron® 3965U), 143 (Intel® Core™ i3 - 7100U)* or 145 (Intel® i5 -7300U)*
2. Fixed Position or Swivel & Tilt stand or No Stand Option
3. Optional Integrated Printer or Stand Spacer
4. Stability Base Plate
5. Connectivity Base: 2 Options based on I/O requirements

Overview

Not shown: Stand connects through a Single USB-C Cable with secure latching to connectivity base (Refer to page xxx)
* Available November 2017

Stand Options

1. HP ElitePOS Rotate/Tilt Stand with Integrated Column Printer
2. HP ElitePOS Rotate/Tilt Stand
3. HP ElitePOS Fixed Position Stand

Note: The stands are shown on a Stability Base Plate.

Stand Configurations

HP ElitePOS No Stand Option - Display Head Only (Includes 100mm VESA Mounting Bracket)

HP ElitePOS Fixed Position Stand with Stability Base Plate

HP ElitePOS Fixed Position Stand Counter Mount -No Base Plate-includes Counter Mounting Bracket

Overview

HP ElitePOS Rotate/Tilt Stand with Stability Base Plate

HP ElitePOS Rotate/Tilt Counter Mount No Base Plate/includes Counter Mounting Bracket

HP ElitePOS Rotate/Tilt Stand with Integrated Printer and Stability Base Plate

HP ElitePOS Rotate/Tilt Stand with Integrated Printer and No Base Plate-includes counter mount

Overview

At A Glance

- Align Model to preferred solution
  - Model 141: Anti-glare WLED SVA 300-nit panel with FHD 1920 x 1080 resolution and an Intel® Celeron® 3965U 2.2GHz 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 2.40GHz 3M 2133 2C6 processor*
  - Model 145: Anti-glare WLED UWVA 500-nit panel with FHD 1920 x 1080 resolution and an Intel® i5 -7300U 2.60GHZ 3MB 2133 2C6 processor*
- Long lifecycle performance All-in-One (AiO) Retail System for retail and hospitality markets Choice of operator display:
  - 14"diagonal Wide Aspect ratio Projected Capacitive display; Full HD SVA 1920 x 1080 Resolution, Anti-glare
  - 14"diagonal Wide Aspect ratio Projected Capacitive display; Full HD UWVA 1920 x 1080 Resolution, Anti-glare*
- Processor choices:
  - Intel® Core™ i5-7300U with vPro (2.6GHz, 3M Cache, 2 Cores)*
  - Intel® Core™ i3-7100U (2.4GHz 3M Cache, 2 Cores)*
  - Intel® Core™ Celeron® 3965U (2.2GHz, 2M Cache, 2 Cores)
- Operating System choices:
  - Windows 10 Professional 64-bit
  - Windows 10 IoT Enterprise 2016 LTSB 64-bit
  - FreeDOS 2.0
- Connectivity Base Choices
  - HP Basic I/O Connectivity Base
  - HP Advanced I/O Connectivity Base*
- Integrated peripheral options (can also be purchased and installed separately except for the HP ElitePOS MSR & HP ElitePOS Column Printer which are configurable options):
  - HP ElitePOS MSR
  - HP ElitePOS Column Printer
  - HP ElitePOS Fingerprint Reader
  - HP ElitePOS Top Mount 2x20 CFD
- Industry-standard 100mm VESA mounting pattern allows for flexible use without the optional stand (Mounting hardware sold separately)
- Choice of Fixed Positions Stand, Rotate/Tilt Stand that allows for 10° angle adjustability & 180-degree rotation left or right, or no stand (display – head unit only) which includes 100mm VESA Mounting Bracket
- (2) Two DDR4 Memory Slots (32 GB Maximum)
- Realtek RTL8153 Ethernet Connection
- Intel & Realtek WLAN Options
- Trusted Platform Module (TPM 2.0)
- HP BIOSphere with HP Sure Start technology
- (1) M.2 drive bay
- Cable Management Features
- ENERGY STAR® certified, EU Compliant, RoHS2 Compliant, EPEAT® Gold
- Basic Retail I/O connectivity Base: 120W, 88% efficient, active PFC (external)
- Advanced Retail I/O connectivity Base: 180W, 89% efficient, active PFC (external)
- Display Head unit Only 65W, 89% efficient at 20V, active PFC (external)
- Standard Warranty Options – 90/90/90, 1/1/1, 3/3/3; Plus Optional Care Packs

* Available November 2017

NOTE: See important legal disclosures for all listed specs in their respective features sections.

Standard and Configurable Components

OPERATING SYSTEM

Preinstalled	Windows 10 Professional 64-bit Windows 10 IoT Enterprise 2016 LTSB 64-bit FreeDOS 2.0
Certified	SuSE Linux® 12 SP3**

NOTE: In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel® 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com

* Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com

** SUSE YES Certification is planned for late CY17 on a single platform configuration. More information about SUSE YES certification on https://www.suse.com/partners/ihv/yes/

The following features are not supported by SUSE Linux Enterprise Desktop:

- Power Management features
- Multi-touch capabilities
- Systems configured with Linux do not qualify for ENERGY STAR

PROCESSORS

Model 143 & 145***

- Intel® Core™ i5-7300U with vPro (2.6GHz, 3M Cache, 2 Cores)
- Intel® Core™ i3-7100U (2.4GHz 3M Cache, 2 Cores)

Model 141

- Intel® Core™ Celeron® 3965U (2.2GHz, 2M Cache, 2 Cores)

NOTE: Core™ i5 Turbo Boost technology – performance can be increased through the BIOS

*NOTE: Your product does not support Windows 8 or Windows 7, In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on http://www.support.hp.com

**Note: Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing system required. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

***Available November 2017

Standard and Configurable Components

CORE™ vPRO™ PROCESSORS

INTEL® 7th GENERATION CORE™ vPRO™ PROCESSORS
The HP ElitePOS Retail System features this technology, and includes processors that are part of the Intel® Stable Image. Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP ElitePOS Retail System. This makes these models the most stable, secure, and manageable platforms available to retailers today.

Intel® Advanced Management Technology (AMT) v11.6+ – An advanced set of remote management features and functionality which provides network administrators the latest and most effective tools to remotely discover, heal, and protect networked client systems regardless of the system's health or power state. AMT 11.6+ includes the following advanced management functions:

- Power Management (on, off, reset)
- Hardware Inventory (includes BIOS and firmware revisions
- Hardware Alerting
- Agent Presence
- System Defense Filters
- SOL/USBR
- Cisco NAC/SDN Support
- ME Wake-on-LAN
- DASH 1.1 compliance
- IPv6 Support
- Fast Call for Help - a client inside or outside the firewall may initiate a call for help via BIOS screen, periodic connections, or alert triggered connection
- Remote Scheduled Maintenance - pre-schedule when the PC connects to the IT or service provider console for maintenance. Remote PCs can get required patches, be inventoried, etc. by connecting to their IT console or Service Provider when it's convenient.
- Remote Alerts - automatically alert IT or service provider if issues arise
- Access Monitor - Provides oversight into Intel® AMT actions to support security requirements
- PC Alarm Clock
- Microsoft NAP Support
- Host-based set-up and configuration
- Management Engine (ME) firmware roll back
- Wireless AMT functionality on Desktop (WoDT)
- Enhanced KVM resolution

*Some functionality of this technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro™ technology is dependent on 3rd party software providers. Compatibility with future "virtual appliances" is yet to be determined.

** Intel® Active Management Technology requires an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes.

CHIPSET

Intel® Multi-Chip Package – MCP

HP BIOS

Key features of the HP BIOS include:

- Deployment and manageability – HP BIOS provides several technologies that help integrate the HP ElitePOS G1 Retail System into a business environment, such as PXE, remote configuration, remote control, and F10 Setup support for 14 languages.
- Update your BIOS via the cloud or standardize on a BIOS version hosted on Enterprise network.
- Select models feature either Intel® Standard Manageability or Intel® Core™ vPro™ Processor Technology.
- Stability – HP BIOS supports the HP stable product roadmap by releasing only critical BIOS changes to the factory and advanced change notification.
- UEFI specification 2.5
- Absolute Persistence agent – For tracking and tracing services, available in select countries, separate software and purchase of a subscription is required.
- Thermal and power management – The HP BIOS provides and enables thermal and power management technologies so component temperatures are managed for high reliability and to assist in operating the ElitePOS G1 Retail System in any retail environment.
- Acoustic performance – Industry leading acoustic emissions across the range of operating conditions.
- Serviceability – HP BIOS provides diagnostic and detailed service information.
- Upgrades and recovery – HP BIOS provides numerous ways to update the HP ElitePOS, using a host-based Windows application, various remote deployment tools (HP Client Manager, HP Software Support Manager, scheduled network updates, and fail-safe recovery. In addition, the HP ElitePOS system supports management tools for replicating BIOS settings throughout the Enterprise, either host-based software (HP BIOS Configuration Utility), 3rd party remote management tools such as SCCM, or manually using USB.
- HP BIOS uses PKI signing of the BIOS for trusted BIOS upgrades and recovery.

Additional HP BIOS Features:

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- Administrator password – Also known as the setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS version cannot be changed and changes cannot be made to BIOS settings using F10 setup or under the OS.
- Advanced Configuration and Power Interface (ACPI) – Represents a significant innovation in power and configuration management, allowing operating systems and applications to manage power based on activity and usage. The HP ElitePOS G1 Retail System uses ACPI to provide power conservation features.
- S5 Max Power Savings setting supports EU Lot6 requirement and allows the computer to power down below .5W in S5 (when turned off). When S5 Max Power Savings feature is enabled power to slots is turned off along with WOL functionality and USB Charging ports.
- When the S5 Maximum Power Savings feature is enabled, only the power button will turn on the system. Other wake sources such as Wake on LAN are powered off and do not function.

Sure Start

- BIOS Integrity checking – Sure Start protection ensures that only trusted BIOS code is executed and not rootkits, viruses and malware. Verification is done upon boot up, shutdown and while on.
- Sure Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability.
- Protecting beyond BIOS – Integrity checking and repair is extended to other data that should be protected such as network configuration parameters (network name), platform specific information (i.e. system IDs) and other code the system needs to boot.
- Audit enabled – System Audit via Sure Start Event Logs capture data such as incident, repair date and time for troubleshooting and investigating.

Security

- HP ElitePOS Biometric Fingerprint Reader (optional)
- Bolt to counter mechanism

Standard and Configurable Components

- VESA mounting
- HP ElitePOS Keyed Cable Lock
- HP BIOSphere with SureStart Gen 3
- Device Guard
- Credential Guard and password protection
- Trusted Platform Module TPM 2.0 Embedded Security Chip (SLB9670 - Common Criteria EAL4+ Certified)
- Drive lock
- USB enable/disable (via BIOS)
- Power-on password (via BIOS)
- Setup password (via BIOS)
- Tamper Resistant Screw affixed on stand of the system unit, used to secure display head to stand without Quick Release

Standard and Configurable Components

SOFTWARE

HP Client Management Solutions (available for free download from hp.com/go/easydeploy)

HP BIOSphere with Sure Start Generation 3.0

HP Support Assistant

HP Device Guard

HP Credential Guard

GRAPHICS

Intel® HD Graphics (integrated)

Integrated Graphics	Intel Integrated HD Graphics 610 (Celeron, Model 141); Intel Integrated HD Graphics 620 (Core i3, Model 143, Core i5, Model 145)
DisplayPort	Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays (including the integrated panel)
Memory	The BIOS has options for selecting the dedicated memory size of 128MB, 256MB or 512MB Additional memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.
Maximum Graphics Memory	Windows 10 >4 GB Note: the actual amount of maximum graphics memory can be less than the amounts listed above depending upon your computer's configuration.
Maximum Color Depth	32 bits/pixel

Graphics/Video API Support	7th Generation Core™ processors:
	• Next Generation Intel® Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience
	  ○ Encode/transcode HD content
	  ○ Playback of high definition content including Blu-ray Disc
	  ○ Superior image quality with sharper, more colorful images
	• DirectX Video Acceleration (DXVA) support for accelerating video processing
	  ○ Full AVC/VC1/MPEG2/HEVC HW Decode
	• Advanced Scheduler 2.0, 1.0
	• Windows 10, Linux OS Support
	• DirectX 12.1
	• OpenGL 4.4
	• Open CL 1.2 (Intel® HD Graphics 510)
	• Open CL 1.2/2.0 (Intel® HD Graphics 530)

Standard and Configurable Components

Supported Display Resolutions and Refresh Rates

Note: Other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Refresh Rates
640x480	60 Hz
800x600	60 Hz
1024x768	60 Hz
1280x720	60 Hz
1280x768	60 Hz
1360x768	60 Hz
1280x1024	60 Hz
1400x1050	60 Hz
1680x1050	60 Hz
1920x1080	60 Hz
1920x1200*	60 Hz
2048x1152*	60 Hz
2048x1280*	60 Hz
2048x1536*	60 Hz
2304x1440*	60 Hz
2560x1440*	60 Hz
3840x2160**	30 Hz
2560x1600*	60 Hz
2880x1800*	60 Hz
3200x2400*	60 Hz
4096x2160*	60 Hz
4096x2304*	60 Hz

* Only supported on displays connected to the external DisplayPort connector.
** 3840x2160 is not supported for Celeron series processors

Standard and Configurable Components

MEMORY

Type

DDR4-2400 Memory DIMMs, Transfer rates up to 2400 MT/s

Maximum

32 GB

# of Slots

2 SODIMM

Memory Upgrades

Both slots are customer accessible / upgradeable.

- 4 GB (4 GB x 1)
- 8 GB (4 GB x 2)
- 8 GB (8 GB x 1)
- 16 GB (8 GB x 2)
- 16 GB (16 GB x 1)
- 32 GB (16 GB x 2)

System Memory Support

The HP ElitePOS G1 Retail System supports DDR4 protocols with two independent, 64-bit wide channels each accessing one or two SoDIMMs.

- Two channels of non-ECC DDR4 unbuffered small outline dual in-line memory modules (SO-DIMM) with a maximum of one DIMMs per channel
- Single-channel and dual-channel memory organization modes
- Data burst length of eight for all memory organization modes
- Memory data transfer rates of up to 2400 MT/s; actual supported data transfer rate determined by the configured processor.
- 64-bit wide channels
- DDR4 system memory I/O voltage of 1.2V
- Theoretical maximum memory bandwidth of:
- 21.3 GB/s in dual-channel mode assuming 1333 MT/s
- 25.6 GB/s in dual-channel mode assuming 1600 MT/s
- 34.0 GB/s in dual-channel mode assuming 2133 MT/s
- 38.4 GB/s in dual-channel mode assuming 2400 MT/s

Key Benefits of DDR4 Memory:

- Dual channel configuration – HP ElitePOS features motherboards designed with two memory channels instead of a single channel.
- Reduce system latencies and significantly improve your system performance with dual channel memory configurations by utilizing the theoretical bandwidth of two memory modules instead of one.
- Expect fast start-up times with reduced delays during routine operations and system maintenance functions. Meet everyday workloads head on, and run more programs simultaneously. Easily toggle back and forth between several open applications with noticeable speed.

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

Memory modules support data transfer rates up to 2400 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

CAUTION: You must shut down the Retail System and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the Retail System is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

HARD DISK AND SOLID STATE STORAGE

Drive Bays

1 (one) M.2 SSD Bays

- SATA
- PCIe (NVME)

M.2 Storage:

M.2 SATA

128GB M2 SATA-3 TLC
256GB M2 SATA-3 TLC SSD
512GB M2 SATA-3 TLC SSD
512GB Turbo Drive G2 MLC SSD

NVMe

128GB TLC 6000p SSD
256GB PCIe NVMe TLC SSD
256GB TLC Pro 6000p SSD
512GB PCIe NVMe TLC SSD
512GB TLC Pro 6000p SSD
1TB PCIe-3x4 NVMe TLC SSD

Standard and Configurable Components

OPERATOR DISPLAY

14" Diagonal Wide-Aspect Operator Value Display (Model 141), Anti-Glare WLED SVA

Touch Technology	Projected Capacitive Touchscreen
Resolution	1920 x 1080
Aspect Ratio	16:9
Max Color	262K
Brightness	Typical 300 nits (LCM)*
Contrast Ratio	Typical 300:1*
Pixel Pitch	160.86 um x 160.86 um
Viewing Angle	Horizontal 90^0, Vertical 65^0
Response rate	10ms (Typical On/Off)
Backlight	LED
Operating Temperature range	0 to 60^0C (+ 60^0C as panel surface temperature)

14" Diagonal Wide Aspect Projective Capacitive Operator Display (Models 143 & 145), Anti-Glare WLED UWVA

Touch Technology	Projected Capacitive Touchscreen
Resolution	1920 x 1080
Aspect Ratio	16:9
Max Color	262K
Brightness	Typical 500 nits (LCM)*
Contrast Ratio	Typical 800:1
Pixel Pitch	161um x 161 um
Viewing Angle	Horizontal 178^0, Vertical 178^0
Response rate	25ms (Typical On / Off)
Backlight	LED
Operating Temperature range	0 to 60^0C (+ 60^0C as panel surface temperature)

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

Technical Specifications - Audio

High Definition Audio*

ElitePOS System Audio (Realtek ALC3228)

Type	Integrated
HD Stereo Codec	ALC3228 High Definition Audio Codec
Internal Speaker Amplifier	1W amplifier for the internal speaker only.
Sampling	All DACs support 44.1k/48k/96k/192kHz sample rate All ADCs support 44.1k/48k/96k/192kHz sample rate S/PDIF-OUT support 16/20/24-bit format and 32/44.1/48/88.2/96/192kHz rate
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

Advanced & Basic I/O Base (Realtek ALC4040)

Type	USB
Audio Codec	ALC4040 Audio Codec with USB to I2S audio controller and hardware active noise cancellation
Audio I/O Ports	1 headphone-out/microphone-in combo
Sampling	One I2S/PCM/TDM digital interface supports sample rates 8k, 16k, 32k, 44.1k, 48k, 96k, and 192kHz One stereo DAC supports up to 44.1, 48, and 192KHz Sample Rate, 16/24-bit One stereo ADC Input supports 44.1, 48, and 96KHz Sample Rate, 16/24-bit
Analog Audio	Yes
# of Channels on Line-Out	2
External Speaker Jack	1

NOTE(Retail Advanced & Basic Hubs Only): Audio input ports are re-taskable as a Line-in or Microphone-in port. External speakers must be powered externally. Multi-streaming can be enabled to allow independent audio streams to be sent to/from the internal speakers and headphone/Line out jack. This allows for different audio applications to use separate audio ports on the system. For example, the Headphone jack could be used with a headphone for a communications application while the internal speakers for a multimedia application.

Technical Specifications – Storage

Introduction:

HP Serial Advanced Technology Attachment (SATA) Hard Drives maximize the performance by providing the technologies to meet your increasing storage demands with high-capacity drives offering superior reliability and performance.
SATA provides faster data transfer speeds, better system cooling airflow, more bandwidth, more headroom for speed increases in future generations and better data integrity. A next-generation technology, the SATA interface connects hard drives to the Platform, enabling easy aggregation of multiple hard drives into a single Retail Point of Sale system. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability. The HP ElitePOS Retail System supports the latest SATA 6.0Gb/s specification.

HP Drive Lock

Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided.

SMART IV Technology

Self-Monitoring Analysis and Reporting Technology (SMART) hard drive technology allows hard drives to monitor their own health and to raise flags if imminent failures are predicted. If the drive determines that a failure is imminent, the SMART hard drive technology enables the intelligent manageability or management software to generate a fault alert. While the current versions of SMART hard drives do a good job monitoring the data on the hard drive media, the ever increasing emphasis on reliability and quality has promoted HP to implement SMART IV technology which constantly checks that the data flow from host interface to media and media to host interface is not compromised. This is accomplished by inserting a 2 byte parity code into every 512 byte block in the data path of the hard drive's Cache RAM. This unique parity checking performed by HP's SMART IV technology hard drives, allows for more complete error detection coverage encompassing the entire data path between the host and the hard drive.

Smart IV is also known as IOEDC: I/O Error Detection Code.

Native Command Queuing

NCQ or Native Command Queuing is a SATA protocol extension that allows the hard drive to have several write or read commands outstanding at the same time. In contrast, normal non-queued operation requires each command to be completed before the next command is issued by the host system. Queuing allows the drive to complete the commands in the order that allows for best overall throughput. It also involves an advanced method of transferring data to or from the host, called First Party Direct Memory Access (FPDMA), which allows the hard drive and the host controller to manage the data transfers for multiple outstanding commands, without involving the host processor. NCQ can contribute to better performance but the results are dependent on many factors, including the access patterns of the various applications and operating system functions that are initiating drive accesses. Enabling NCQ features in the hard drive requires AHCI support from the host system BIOS, controller, and driver.

Note: GB = 1 billion bytes. Actual available capacity is less.

Intel 128GB Three Layer Cell 6000p Solid State Drive

Unformatted Capacity	128 GB	
Architecture	3D Tri-Level Cell (TLC) NAND	
Interface	PCIe NVMe 3.0 x4	
Form Factor	M.2 (80mm)	
Height	Up to 1.5mm	
Width	22mm	
Length	80mm	
Weight	Up to 40 g	
Bandwidth Performance	**Sustained Sequential Read:**	Up to 770 MB/s
	Sustained Sequential Write:	Up to 450 MB/s
	Random Read	Up to 40k IOPS
	Random Write	Up to 35k IOPS
Useful Drive Life	72TB written, up to 40GB/day for 5 years	
Power	**Power consumption:**	Active: 200mW Typical Idle: 50mW Typical L1.2 Sleep 5mW Typical
Mean Time Between Failure (MTBF)	1,600,000 Hours	
Environmental (all conditions, non-condensing)	**Operating Temperature:**	32° to 158° F (0° to 70° C)
	Vibrating – Operating	2.17 GRMS (5-700Hz) Max
	Vibrating – Non-Operating	3.13 GRMS (5-800Hz) Max

128GB Solid State M2 SATA-3 Three Layer Cell Drive

Drive Weight	0.019 lb (8.5 g)-0.022 lb (10 g)	
Capacity	128 GB	
Height	0.09 in (2.23 mm)- 0.14 in (3.58 mm)	
Width	0.87 in (22 mm)	
Interface	ATA-8, SATA 3.0	
Bandwidth Performance	**Maximum Sequential Read:**	500 ~ 540 MB/s
	Maximum Sequential Write:	130 ~ 450 MB/s
Logical Blocks	250,069,680	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	DIPM; TRIM; DEVSLP	
Security Features	ATA Security	

Technical Specifications – Storage

256GB M2 SATA-3 Three Layer Cell Solid State Drive

Drive Weight	0.022 lb (10 g)	
Capacity	256 GB	
Height	0.09 in (2.3 mm)- 0.14 in (3.58 mm)	
Width	0.87 in (22 mm)	
Interface	ATA-8, SATA 3.0	
Bandwidth Performance	**Maximum Sequential Read:**	515 ~ 540 MB/s
	Maximum Sequential Write:	260 ~ 450 MB/s
Logical Blocks	500,118,192	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	DIPM; TRIM; DEVSLP	
Security Features	ATA Security	

256GB PCIe NVMe Three Layer Cell Solid State Drive

Unformatted Capacity	256 GB	
Architecture	Solid State Drive with TLC NAND Flash and PCIE interface. Complies with NVMe Standard Power Saving Modes: L1 substates support Multi Queue support	
Interface	PCI-E Gen3 x 4	
Form Factor	M.2 2280	
Height	3.73 mm	
Width	22.00 ± 0.15 mm	
Length	80.00 ± 0.15 mm	
Weight	Up to 8 g	
Bandwidth Performance	**Sustained Sequential Read:**	Up to 2600 MB/s
	Sustained Sequential Write:	Up to 1000 MB/s
Power	**Power consumption:**	Active: Typical 6.1W; Idle: Typical 80mW L1.2: Typical 5mW
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	**Operating Temperature:**	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

Technical Specifications – Storage

Intel 256GB Three Layer Cell Pro 6000p Solid State Drive

Unformatted Capacity	256GB*	
Architecture	3D Tri-Level Cell (TLC) NAND	
Interface	PCIe NVMe 3.0 x4	
Form Factor	M.2 22 x 80mm	
Height	Up to 1.5mm	
Width	22mm	
Length	80mm	
Weight	Up to 40 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 1570 MB/s
	Sustained Sequential Write:	Up to 540 MB/s
	Random Read:	Up to 80K IOPs
	Random Write:	Up to 70K IOPs
Power	Total power consumption:	200mW (active); 50mW (idle)
Mean Time Between Failure (MTBF)	1,600,000 Hours	
Useful Drive Life	144TB written, up to 80GB/day for 5 years	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Vibrating - Operating:	2.17 GRMS (5-700Hz) Max
	Vibrating – Non-Operating	3.13 GRMS (5-800Hz) Max

* For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

512GB M2 SATA-3 Three Layer Cell Solid State Drive

Drive Weight	0.019 lb (8.5 g)- 0.02 lb (10 g)	
Capacity	512 GB	
Height	0.09 in (2.3 mm)- 0.14 in (3.58 mm)	
Width	0.87 in (22 mm)	
Interface	ATA-8, SATA 3.0	
Bandwidth Performance	**Maximum Sequential Read:**	500 ~ 540 MB/s
	Maximum Sequential Write:	440 ~ 515 MB/s
Logical Blocks	1,000,215,216	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	ATA Security, DIPM; TRIM; DEVSLP	

512GB PCIe NVMe Three Layer Cell Solid State Drive

Unformatted Capacity	512 GB
Architecture	Solid State Drive with TLC NAND Flash and PCIE interface. Complies with NVMe Standard Power Saving Modes: L1 substates support Multi Queue support
Interface	PCI-E Gen3 x 4

Technical Specifications – Storage

Form Factor	M.2 2280	
Height	3.73 mm	
Width	22.00 ± 0.15 mm	
Length	80.00 ± 0.15 mm	
Weight	Up to 8 g	
Bandwidth Performance	**Sustained Sequential Read:**	Up to 2600 MB/s
	Sustained Sequential Write:	Up to 1200 MB/s
Power	**Power consumption:**	Active: Typical 6.1W; Idle: Typical 80mW L1.2: Typical 5mW
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	**Operating Temperature:**	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

512GB Turbo Drive G2 Multi-Layer Cell Solid State Drive

Drive Weight	0.02 lb (10g)	
Capacity	512 GB	
Height	0.09 in (2.3 mm) ~ 0.14 in (3.65 mm)	
Width	0.87 in (22 mm)	
Interface	PCIe NVMe Gen3X4	
Bandwidth Performance	**Maximum Sequential Read** (128KB):	2,260 ~ 3,000 MB/s
	Maximum Sequential Write (128KB):	1,500 ~ 1,600 MB/s
Logical Blocks	1,000,215,216	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	ATA Security (Option); TRIM; L1.2	

Intel 512GB Three Layer Cell Pro 6000p Solid State Drive

Unformatted Capacity	512 GB	
Architecture	3D Tri-Level Cell (TLC) NAND	
Interface	PCIe NVMe 3.0 x4	
Form Factor	M.2 2280	
Height	Up to 1.5mm	
Width	.22mm	
Length	80mm	
Weight (typical)	Up to 10 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 1775 MB/s
	Sustained Sequential Write:	Up to 560 MB/s
	Random Read:	Up to 100k IOPS
	Random Write:	Up to 90k IOPS
Power	Total power consumption:	200mW (active); 50mW (idle)
Mean Time Between Failure (MTBF)	1,600,000 Hours	

Technical Specifications – Storage

Useful Drive Life	288 TBW Written, up to 160GB/day for 5 Years	
Environmental (all conditions, non-condensing)	**Operating Temperature:**	32° to 158° F (0° to 70° C)
	Vibrating - Operating:	2.17 GRMS (5-700Hz) Max
	Vibrating – Non-Operating	3.13 GRMS (5-800Hz) Max

1TB PCIe-3x4 NVMe Three Layer Cell Solid State Drive

Drive Weight	0.02 lb (10 g)	
Capacity	1024 GB	
Height	0.09 in (2.3 mm) ~ 0.14 in (3.65 mm)	
Width	0.87 in (22 mm)	
Interface	PCIe NVMe Gen3X4	
Bandwidth Performance	**Maximum Sequential Read:**	2,500 ~ 3,000 MB/s
	Maximum Sequential Write:	1,400~ 1,700 MB/s
Logical Blocks	2,000,409,264	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	ATA Security (Option); TRIM; L1.2	

Realtek RTL8153

Connector	RJ-45
System Interface	PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ
NIC Device Driver Name	PCIe GBE Ethernet Family Controller
Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet) Jumbo Frame 9K Auto MDI/MDIX Crossover cable detection
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Performance Features	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling
Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro and vPro)

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz **Note:** The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels. 802.11a/n • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz

	• 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz **Note:** Indonesia no support this band)
Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15 (20MHz and 40MHz) 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Security[1]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between band Access Points
Output Power[2]	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum

Technical Specifications – Networking and Communications

	802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm	
Weight	Type 2230 : 2.8g Or Type 1630 : 2g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
- **LED Activity**	LED Amber – Radio OFF; LED White – Radio ON	
Notes	1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and apacket error rate of 10% for 802.11a/g (OFDM modulation). * Wireless access point and internet service required. Availability of public wireless access points limited.	

HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology (System Bluetooth Specifications)

Bluetooth Specification	4.0+EDR Compliant		
Frequency Band	2402 to 2480 MHz		
Number of Available Channels	79 (1 MHz) available channels		
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric		
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of +4 dBm for BR and EDR.		
Receiver Sensitivity	**Modulation**	**0.01% BER**	**0.001% BER**

	GFSK	-80 dBm	-70 dBm
	π/4-DQPSK	-80 dBm	-70 dBm
	8DPSK	-80 dBm	-70 dBm
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW		
Range	Up to 33 ft (10 m)		
Electrical Interface	USB 2.0 compliant		
Bluetooth Software Supported	Microsoft Windows Bluetooth Software		
Link Topology			
Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves		
Bluetooth Software Supported Security	Full support of Bluetooth Security Provisions		
Power Management	Microsoft Windows ACPI, and USB Bus Support		
Power Management Certifications	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff		
Security	All necessary regulatory approvals for supported countries, including:		
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249		
Bluetooth Profiles Supported			
Power Management Certifications	ETS 300 328, ETS 300 826		
	Low Voltage Directive IEC950		
Certifications	UL, CSA, and CE Mark		
Bluetooth Profiles Supported	Serial Port Profile (SPP)[1] Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN)[1,2] Generic Object Exchange Profile (GOEP)[1,2] Object Push Profile (OPP)[1,2] File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP)[1,2] Personal Area Networking Profile (PAN)[1,2] Human Interface Device Profile (HID)[1,2] FAX Profile (FAX) Basic Imaging Profile (BIP)[2] Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)		

Realtek 802.11b/g/n (1x1) WiFi and Bluetooth® 4.0 Combo

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified

Technical Specifications

Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz Note: The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 07, (20MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Security[1]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	802.11b : +16dBm minimum 802.11g : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm minimum 802.11n HT40(2.4GHz) : +13dBm minimum 802.11n HT20(5GHz) : +12dBm minimum 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded antennas for 2.4GHz are provided to the card to support WLAN and Bluetooth communications. (Support Dual antenna or Single antenna, depend on platform requirement)
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g

Technical Specifications

Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – Radio ON	

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications

POWER

Power Supply	120W for Basic Retail I/O connectivity Base, 180W for Advanced Retail I/O connectivity Base, 65W for Display Head Unit Only 120W, 88% efficient, active PFC (external), 180W, 89% efficient, active PFC (external), 65W, 89% efficient at 20V, active PFC (external)
Operating Voltage Range	90V~264VAC
Rated Voltage Range	100V~240AC
Rated Line Frequency	50~60HZ
Operating Line Frequency Range	47~63HZ
Rated Input Current	<2.2A/120W, <2.52A/180W, 1.7A/65W
Power Supply Fan	N/A
ENERGY STAR® Compliant	ENERGY STAR® certified and EPEAT® registered configurations available
Power Cord Length	2 I/O Base Cable Options: (1) 45cm – when I/O Base is attached to Stand (2) 1.8m – when I/O Base is detached or display head only
Current Leakage (NFPA99)	Less than 300 microamps of leakage current at 120 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1 of "National Fire Protection Association standard" NFPA99 2012 edition. Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1 of "National Fire Protection Association standard" NFPA99 2012 edition. **NOTE:** This power supply meets ENERGY STAR® compliance in conjunction with a select range of processors and modules.

WEIGHTS & DIMENSIONS

NOTE: Weight and dimensions below do not include MSR, Biometric Reader, Webcam, or CFD.

Head unit (no MSR)	
Product Dimensions	336.2mm (L) X 216.4mm (D) X 17.6mm (H) , 13.2in x 8.5in x .7in
Dimension Note	Without stand

Rotate / tilt stand & fixed position stand/Column Printer	
Product Dimensions	96(L) x 96(D) x 220(H) mm / 260 (H) mm, 3.8in (L) x 3.8in (D) x 8.7in (H) / 10.2in (H)
Dimension Note	Fixed Position Stand & Rotate Tilt Stand w/ Integrated Column Printer

Retail I/O connectivity Base	
Product Dimensions	284 (L) x 162(D) x 29.2(H) mm, 11.2in (L) x 6.4in (D) x 1.1in (H)
Dimension Note	Connectivity Base Only

Technical Specifications

Display Head Unit with collar	
Weight	1.4 kg / 3.1 lbs
Weight Note	Starting weight without stand. Exact weight depends on configuration.

Rotate / Tilt Stand	
Weight	1.3 kg / 3.0 lbs
Weight Note	Weight of Rotate/Tilt Stand only

Fixed Position Stand	
Weight	1.1 kg / 2.4 lbs
Weight Note	Weight of Fixed Position Stand only

Retail I/O Connectivity Base	
Weight	.6 kg / 1.3 lbs
Weight Note	Weight of Connectivity Base only

Packaging Carton (Display Head & Hub Only)	
Packaging Dimensions	552mm (L) X 165mm (D) X 318mm (H) , 21.7in x 6.5in x 12.5in

Packaging Carton (Display Head, Stand & Hub)	
Packaging Dimensions	495mm (L) X 295mm (D) X 453mm (H) , 19.5in x 11.6in x 17.8in

MISCELLANEOUS FEATURES

Management Features

- Advanced Configuration and Power Management Interface (ACPI). Allows the system to wake from a low power mode.
- Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system.
- Intel® Wired for Management support; industry wide initiative to make Intel® architecture based PCs, servers and mobile computers more inherently manageable out-of-the-box and over the network
- Dual State Power Button; acts as both an on/off button and a suspend-to-sleep button

HP Point of Sale Diagnostics UEFI:

- This utility enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support

Serviceability Features:

- System/Emergency ROM
- Flash ROM
- Flash Recovery with Video Configuration Record Software
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- Clear CMOS Button
- Color coordinated cables and connectors
- Front power switch
- System memory can be upgraded without removing the system board or any internal components

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Interpreting System Validation Diagnostic Front Panel LEDs and Audible Codes

During the system validation phase that occurs at system startup, the BIOS validates the functionality of the following subsystems and conditions:

- AC adapter
- System board power
- Processor failure
- BIOS corruption
- Memory failure
- Graphics failure
- System board failure
- BIOS authentication failure

If an error is detected, specific patterns of long and short blinks, accompanied by long and short beeps (where applicable) are used to identify the error. These patterns will make up a two part code:

- Major – the category of the error
- Minor – the specific error within the category

NOTE: Single beep/blink codes are not used.

Number of long beeps/blinks	Error category
1	Not used
2	BIOS

3	Hardware
4	Thermal
5	System board

Patterns of blink/beep codes are determined by using the following parameters:

- 1 second pause occurs after the last major blink.
- 2 second pause occurs after the last minor blink.
- Beep error code sequences occur for the first 5 iterations of the pattern and then stop.
- Blink error code sequences continue until the computer is unplugged or the power button is pressed.

NOTE: Not all diagnostic lights and audible codes are available on all models.

The red LED blinks to represent the major error category (long blinks). The white LED blinks to represent the minor error category (short blinks). For example, '3.5' indicates 3 long red blinks and 5 short white blinks to communicate the processor is not detected.

Category	Major/minor code	Description
BIOS	2.2	The main area (DXE) of BIOS has become corrupted and there is no recovery binary image available.
	2.3	The embedded controller policy requires the user to enter a key sequence.
	2.4	The embedded controller is checking or recovering the boot block.
Hardware	3.2	The embedded controller has timed out waiting for BIOS to return from memory initialization.
	3.3	The embedded controller has timed out waiting for BIOS to return from graphics initialization.
	3.4	The system board displays a power failure (crowbar).*
	3.5	The processor is not detected.*
	3.6	The processor does not support an enabled feature.
Thermal	4.2	A processor over temperature condition has been detected.*
	4.3	An ambient temperature over temperature condition has been detected.
	4.4	An MXM over temperature condition has been detected.
System board	5.2	The embedded controller cannot find valid firmware.
	5.3	The embedded controller has timed out waiting for the BIOS.
	5.4	The embedded controller has timed out waiting for BIOS to return from system board initialization.
	5.5	The embedded controller rebooted the system after a possible lockup condition had been detected through the use of a System Health Timer, Automated System Recovery Timer, or other mechanism.

* Indicates hardware triggered event; all other events are controlled by the BIOS.

Additional Features **Description**

Technical Specifications

Drive Lock	Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided. DPS Access through F10 Setup during Boot A diagnostic hard drive self-test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user
Drive Protection System	Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted
SMART I - Drive Failure Prediction	Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count
SMART II - Off-Line Data Collection	By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure
SMART III - Off-Line Read Scanning	IOEDC: I/O Error Detection Circuitry
Defect Reallocation	Detects errors in Read/Write buffers on HDD cache RAM
SMART IV - End-to-End CRC for hard drives	Interface in F10 setup provides confirmation of SMART IV support.

TEMPERATURE, HUMIDITY, ALTITUDE

Temperature	**Operating**	50° to 104° F (10 to 40° C)
	Non-operating	-22° to 149° F (-30°to 65° C)
Relative humidity	**Operating**	20 to 85%
Altitude (unpressurized)	**Operating**	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 30,000 ft (9,144 m)

Technical Specifications

ENVIRONMENTAL & INDUSTRY

Environmental Data

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the ElitePOS model is based on a typically configured system featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

HP ElitePOS G1 Model 141

Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	12.58W	13.07W	12.65 W
Normal Operation (Long idle)	10.71 W	10.96W	10.79 W
Sleep	3.28 W	3.31W	3.26W
Off	1.15W	1.18 W	1.15 W
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	42.89 BTU/hr	44.59 BTU/hr	43.02 BTU/hr
Normal Operation (Long idle)	36.54 BTU/hr	37.39 BTU/hr	36.74 BTU/hr
Sleep	11.15 BTU/hr	11.29 BTU/hr	11.12 BTU/hr
Off	3.92 BTU/hr	3.99 BTU/hr	3.92 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.7	17
Fixed Disk – Random writes	2.7	17

NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family . HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

HP ElitePOS G1 Model 143/145

Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	12.58W	13.07W	12.65 W
Normal Operation (Long idle)	10.71 W	10.96W	10.79 W
Sleep	3.28 W	3.31W	3.26W
Off	1.15W	1.18 W	1.15 W

Technical Specifications

Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	42.89 BTU/hr	44.59 BTU/hr	43.02 BTU/hr
Normal Operation (Long idle)	36.54 BTU/hr	37.39 BTU/hr	36.74 BTU/hr
Sleep	11.15 BTU/hr	11.29 BTU/hr	11.12 BTU/hr
Off	3.92 BTU/hr	3.99 BTU/hr	3.92 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.7	17
Fixed Disk – Random writes	2.7	17

Technical Specifications

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 2 memory slots
- M.2 2230 slot for WLAN
- (1) M.2 2280 slot for SSD
- (4) USB Ports (2 – USB 2.0; 2 – USB 3.0) Plug in ports for 2 bases
- (3) USB Ports for Peripheral Integration around display head (Top, Left, Right)

Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater the1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 25.4% post-consumer recycled plastic (by wt.)
- This product is 96% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	1350 g
Internal:	PLASTIC/EPE (Expanded Polyethylene)	575 g

The EPE foam packaging material is made from 0% recycled content.

The corrugated paper packaging materials contains at least 25% recycled content.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries

Technical Specifications

- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the HP Inc. web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP Inc. Corporate Environmental Information

For more information about HP's commitment to the environment

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
ISO 14001 certificates:
PC Product Design ISO 14001 certificate
and
HP Operations ISO 14001 certificate

SERVICE AND SUPPORT

HP ElitePOS Peripherals

Ninety-day (90-90-90), one-year (1-1-1), and three-year (3-3-3) limited warranty delivers (ninety days/one year/three years) of on-site, next business day[2] service for parts and labor and complimentary limited technical support.[3] Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack.[1] To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc

NOTES:

1. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
2. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
3. Technical support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. 24 x 7 support may not be available in some countries.

HP ElitePOS Serial USB Thermal Printer

Models

HP ElitePOS Serial USB Thermal	1RL96AA

General	**Supported Character Sets Resident Code Pages:**	437 (US) 720(Arabic) 737 (Greek) 775 (Lithuanian) 850(Multilingual) 852 (Slavic) 857(Turkish) 858 (with Eurosymbol) 860(Portuguese) 862(Hebrew) 863 (French Canadian) 864 (Arabic) 865(Nordic) 866(Cyrillic) 874 (Thai) 932(Kanji) 936 (Simplified Chinese) 949 (Korean - Hangul) 950 (Traditional Chinese) KZ_1048 (Kazakh) 1250(Latin) 1251 (Cyrillic) 1252 (Windows Latin I) 1254 (Turkish) 1255 (Hebrew) 1256(Arabic) 1257(Baltic) Katakana 28591 (ISO8859-1, Latin 1) 28592 (ISO8859-2, Latin 2) 28594 (ISO8859-4, Latin 4) 28596 (ISO8859-6, Latin/Arabic) 28599 (ISO8859-5, Latin 5/Turkish) 28605 (ISO8859-15, Latin 9) Unicode UTF-8 encoding for listed code pages
	Bar Codes	**1D:** UPC-A, UPC-E, EAN8, EAN13, Code 39, Code 93, Interleaved 2 of 5 Codabar, Code 128, Code 128, EAN 128, GS1 Databar **2D:** Datamatrix, QR code, PDF 417
	Print Method	Direct Thermal
	Printing Speed	114 mm/sec (33.75 LPS)
	Resolution	203 DPI
	Flash Memory	8 MB
	RAM	8 MB

HP ElitePOS Peripherals

	Knife	Full and Partial cuts supported
	Receipt-Columns	44/56
	Paper Type	Direct Thermal Monochrome POS Grade(s)
	Paper Roll Size (W x D)	3.1 in. X 3.26 in. (80 mm X 83 mm)
	Paper Thickness Range	2.3 – 3.2 mil
	Cash Drawers	1 connector can drive 2 cash drawers with separately purchased splitter cable (default configuration is connection to 1 cash drawer)
Mechanical	**Dimensions (WxDxH)**	4.4 in. X 5.2 in. X 4.06 in. (111.8 mm X 131.6 mm X 103 mm)
	Weight	1.75lbs. (.793 kg) (printer only)
	Color	Ebony black
Interface/Connection	**Interface**	RS232 (9-Pin Female to 9-Pin Female NULL modem cable) or standard USB 2.0 cable. 24V Cash Drawers support with RJ 12 interface
Power	**External Power Supply**	48 w
	Operating Voltage	24 V
	Full Load Current	2 A w/active power management system
	Idle Current	25mA
	Idle Power	0.6 W
Temperature Range	**Operating**	41°F to 95°F (5°C to 35°C) at 5% to 90% humidity 95°F to 122°F (35°C to 50°C) at 5% to 40% humidity
	Non-operating	Transit range: -40°F to 140°F (-40°C to 60°C) 5% to 95% humidity Storage range: 14°F to 122°F (35°C to 50°C) at 5% to 90% humidity
Drivers	Windows, OPOS, JPOS	
OperatingSystems	**Windows** • Windows 10 IoT Enterprise for Retail (64-bit) • Windows 10 Pro (64-bit) **Linux** • Red Hat/CentOS 6 and 7 (32-bit and 64 bit) • Suse Linux® Enterprise POS 11 and 12 (32-bit and 64-bit) • Ubuntu 14.04 LTS (32-bit and 64-bit)	
Reliability	MCBF Print Mechanism: 29-million lines MCBF Knife Cuts: 1-million Print Head Life: 100 km	
Agency Certifications	**Flammability:** UL 94V-0	
	Safety: UL 60950-1 2nd edition 2014-10-14; UL 62382-1 CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 EN 60950-1:2006 + A1:2010+ A2:2013 IEC/EN 62382-1 2ND Edition CB Report: IEC 60950-1:2005 + A1:2009 +A2:2013 GB4943.1-2011-China IS 13252-1 (2010)/A1:2013/A2:2015	

HP ElitePOS Peripherals

Radiated Emissions: FCC 47CFR, Part 15, Class B
ICES-003: 2012, Issue 6, Class B
EN 55032:2015 Class B
CISPR22 Class B
VCCI: V-3/2015.04 Class B
AS/NZS 3548

Immunity: EN55024: 2010
EN61000-4-2 Level 4 (8kV direct, 15kV air discharge)
EN61000-4-3: Level 3 (10V/m)
EN61000-4-6 Level 3 (10V rms)
EN61000-4-4: Level 3 (2kV mains, 1kV data lines)

RoHS, WEEE

Option kit contents HP ElitePOS Serial USB Thermal Printer, Starter paper roll

NOTE: This printer does not comply with fiscalization requirements that may be required in certain countries.

HP ElitePOS Peripherals

HP ElitePOS 2D Barcode Scanner

Model

HP ElitePOS 2D Barcode Scanner 1RL97AA

General

Scanner Type	2D Imager
Light source	White LED
Read Rate	30 frames/seconds
Nominal working distance	Depth of Field Minimum distance determined by symbol length and scan angle. Printing resolution, contrast, and ambient light dependent.

Typical Performance *

Narrow Width	**Depth of Field**
10 mil Code 39	27.94-330.2 mm (1.1-13.0”)
10 mil Code 128	27.94-330.2 mm (1.1-13.0”)
100% UPC-A	45.72-419.1 mm (1.8-16.5”)
10 mil Aztec	53.34-203.2 mm (2.1-8.0”)
6.7 mil PDF 417	45.72-182.88 mm (1.8 - 7.2”)
10 mil DM**	53.34-203.2 mm (2.1 – 8.0”)

HP ElitePOS Peripherals

* Performance may be impacted by bar code quality and environmental conditions

** Data Matrix (DM)

Symbol Contrast	35% minimum reflectance difference
Roll (tilt)	± 360°
Pitch	± 60°
Skew	± 70°
1D decode symbologies	UPC/EAN (A) UPC/EAN (E) UPC/EAN/ (13) UPC/EAN (8) Code 39 (Regular) Code 128 EAN 128 Code 93 GS1 Databar Omnidirectional GS1 DataBar Stacked GS1 DataBar Truncated GS1 Databar Expanded UPC/EAN/JAN (ISBN) UPC/EAN/JAN (Bookland) UPC/EAN/JAN (ISSN) ISSN - 2 EAN 13/P2 (with 2 digits Add-On) EAN 13/P5 (with 5 digits Add-On) Code 39 (including full ASCII) Code39 CIP (French Pharmaceutical) Code 39 (trioptic) LOGMARS (Code 39 w/ standard check digit enabled) Code 32 (Italian Pharmacode 39) Interleaved 2 of 5 Standard 2of 5 Industrial 2 of 5 Code 11 (with two check digits) Code 11 (with one check digit) Codabar MSI PZN - code 39 GS1 DataBar Limited Codablock F
2D decode symbologies	Datamatrix QR Codes (QR, Micro QR and Multiple QR Codes) PDF-417 Aztec Maxicode Micro PDF417 Datamatrix (2D inversed) Chinese Sensible Code GS1 DataBar Stacked Omni-directional GS1 DataBar Expanded Stacked Postal Codes Australian

HP ElitePOS Peripherals

Japanese
Planet
Postnet
Royal Mail

Mechanical

Dimensions (L x W x H)	125 x 44 x 76.8 mm (4.92 x 1.73 x 3.02 in)
Weight	130 g (4.59 oz)
Cable length	2m
Color	Ebony Black

Interface/Connection

Cable	USB

Temperature

Operating	32°F to 122°F (0°C to 50°C)
While Charging	32°F to 104°F (0°C to 40°C)
Storage/transport	-40 to 158 °F (-40 to 70 °C)
Humidity (non-condensing)	0 to 95% relative humidity

Power

Idle Current	Standby/Idle (Typical):< 70mA
Input Voltage	5V, 500mA

Drivers

Windows USB COM, OPOS, and JPOS

Operating System

Compatible with:

Windows
Windows 10 IoT Enterprise for Retail (64-bit)
Windows 10 Pro (64-bit)
Linux
Red Hat/Cento 6 and 7 (32-bit and 64-bit)
Suse Linux® Enterprise POS 11 SP3 (32-bit and 64-bit)
Ubuntu 14.04 LTS (32-bit and 64-bit)

Agency Certifications

C-Tick, KCC, BSMI, VCCI, CSA, CE, FCC

Option Kit Contents

HP ElitePOS 2D Barcode Scanner with attached 6.5 ft (2M) USB cable, Scanner Stand.

HP ElitePOS Peripherals

HP ElitePOS Fingerprint Reader

Models

HP ElitePOS Fingerprint Reader	1RL98AA

Model	**HP ElitePOS Fingerprint Reader**	1RL98AA
General	**Scan Data**	8-bit grayscale (256 levels of gray)
	Pixel resolution	508 DPI
	Scan capture area	18mm x 1280mm
Mechanical	**Standalone Dimensions(LxWxH)**	162 x 30 x 20.7 (mm) (6.38 x 1.18 x .81 in)
	Attached Dimensions (LxWxH)	162x30 x29.2 (mm) (6.38 x 1.18 x 1.15 in)
	Standalone Weight	79g (2.79 oz)
	Attached Weight	116g (4.09 oz)
	Color	Ebony Black
Interface/Connection	**Interface**	USB 2.0
Power	**Supply Voltage**	5.0V ±5% supplied by USB

HP ElitePOS Peripherals

	Supply Current Imaging Mode	80 mA @ 3.3V
	Supply Current Sleep Mode	1350 uA @ 3.3V
Environmental	**Temperature**	- 20 C to + 70 C
	Humidity	5% to 93% RH w/o condensation
Drivers		Windows
Operating Systems	**Compatibility**	**Windows**
		Windows 10 IoT Enterprise for Retail 64-bit*,***
		Windows 10 Professional 64-bit*,***
		Windows 8.1 Professional 64-bit**
		Windows Industry 8.1 Pro Retail 64-bit**
		Windows 7 Professional 64-bit**
		Windows 7 Professional 32-bit**
		Windows Embedded POSReady 7 64-bit**
		Windows Embedded POSReady 7 32-bit**
		Linux
		Ubuntu 12.04
		Ubuntu 13.04
		Ubuntu 14.04

Reliability	**Surface Coating**	Scratch Resistant Withstands more than 4 million rubs
	Readability	More than 100,000 read/write cycle More than 20 yrs data retention Works well with dry, moist, or rough fingerprints
	Security	Counterfeit Finger Rejection Latent Print Rejection Encryption Fingerprint Data

* Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com

** Not all features are available in all editions of Windows. This system may require upgraded and/or separately purchased hardware to take full advantage of Windows functionality. See http://www.microsoft.com.

HP ElitePOS Peripherals

*** Full support on all x86-based Windows, NO current support drivers for ARM processor platforms.

HP ElitePOS Top Mount 2x20 CFD

Models

HP ElitePOS Top Mount 2x20 CFD 1RL95AA

General	**Display Type**	TFT LCD
	Resolution	480(W) x 3(RGB) x 64(H) Pixel Dots
	Average Brightness	600 cd/m^2
	Display Mode	Alphanumeric: 20 digits x 2 lines
	Character Dot Matrix	24x32 dots for 20 x 2
	Dot Size (X *Y)	0.279 (W) x 0.281 (H) mm
	Character Type	Alphanumeric and Compound (2-Bytes) Words
	Character Size	9.0 (H) mm x 6.7 (W) mm
	User Define Character	96 characters
	Language	**Compound (2-Bytes Words):**

		Arabic Japanese Korean Persian Simplified Chinese Traditional Chinese **Alphanumeric:** Bosnian Croatian Czech Danish Dutch English (US) Estonian Faroese Finnish Flemish French French Canadian German Greek Hebrew Hungarian Icelandic Indonesian International English Irish Italian Katakana Latvian Lithuanian Norwegian Polish Portuguese Romanian Russian Slovak Slovene Spanish Swedish Turkish
	Viewing Direction	12 O'clock : Customer application 6 O'clock: Gray scale inversion
	Viewing Area	135.28 (W) * 19.0 (L)
	Viewing Angle	θ_L Φ= 180˚ (9 o'clock) 70 degree θ_R Φ= 0˚ (3 o'clock) 70 degree θ_T Φ= 90˚ (12 o'clock) 50 degree θ_B Φ= 270˚ (6 o'clock) 70 degree
	Command Modes	ADM788, AEDEX, CD5520, DSP880, EMAX, Epson, LD540, Logic Control, UTC/P / UTC/S
Mechanical	**Product Dimensions**	157.47 (W) x 34.47 (H) x 12.9 (D) mm (6.2 x 1.36 x .51 in) (metal bracket for inserting to platform excluded)
	Panel Dimensions	148.9 (W) x 29.1 (L) x 3.35 (H) (5.86 x 1.15 x .132 in)

HP ElitePOS Peripherals

	Net Weight	Approx. 110 grams (3.88 oz)
	Color	Ebony Black
Interface/Connection	**Interface**	USB
	Baud Rate	Direct connection 9600
Power	**Voltage (typical)**	5VDC +/-10%
	Current consumption (typical)	400mA
Reliability	**MTBF**	30,000 hours
Operating Systems (Compatible with)	**Windows** Windows 10 IoT Enterprise for Retail (64-bit)* Windows 10 Pro (64-bit)* **Linux** Red Hat/Cento 6 and 7 (32-bit and 64-bit) Suse Linux® Enterprise POS 11 SP3 (32-bit and 64-bit) Ubuntu 14.04 LTS (32-bit and 64-bit)	
Drivers	Windows USB COM, OPOS, JPOS	
Certifications	FCC, CE, VCCI, RCM, KCC, ICE, CSA, EAC	
Kit Contents	HP ElitePOS Top Mount 2x20 CFD, 2 screws	

* Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com.

**Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. See http://www.microsoft.com.

HP ElitePOS Column Printer

Models

HP ElitePOS Column Printer	1RL99AA

General	**Supported Character Sets Resident Code Pages:**	437 (US) 720 (Arabic) 737 (Greek) 775 (Lithuanian) 850 (Multilingual) 852 (Slavic) 857 (Turkish) 858 (with Eurosymbol) 860 (Portuguese) 862 (Hebrew) 863 (French Canadian) 864 (Arabic) 865 (Nordic) 866 (Cyrillic) 874 (Thai) 932 (Kanji) 936 (Simplified Chinese) 949 (Korean - Hangul) 950 (Traditional Chinese) KZ_1048 (Kazakh) 1250 (Latin) 1251 (Cyrillic) 1252 (Windows Latin 1) 1254 (Turkish) 1255 (Hebrew) 1256 (Arabic) 1257 (Baltic) Katakana 28591 (ISO8859-1, Latin 1) 28592 (ISO8859-2, Latin 2) 28594 (ISO8859-4, Latin 4) 28596 (ISO8859-6, Latin/Arabic) 28599 (ISO8859-5, Latin 5/Turkish) 28605 (ISO8859-15, Latin 9) Unicode UTF-8 encoding for listed code pages
	Bar Codes	**1D:** UPC-A, UPC-E, EAN8, EAN13, Code 39, Code 93, Interleaved 2 of 5 Codabar, Code 128, Code 128, EAN 128, GS1 Databar **2D:** Datamatrix, QR code, PDF 417
	Print Method	Direct Thermal
	Printing Speed	114 mm/sec (33.75 LPS)
	Resolution	203 DPI
	Flash Memory	8 MB
	RAM	8 MB

HP ElitePOS Peripherals

	Knife	Full and Partial cuts supported
	Receipt-Columns	44/56
	Paper Type	Direct Thermal Monochrome POS Grade(s)
	Paper Roll Size (W x D)	3.1 in. X 2 in. (80 mm X 51 mm)
	Paper Thickness Range	2.3 – 3.2 mil
	Cash Drawers	1 connector can drive 2 cash drawers with separately purchased splitter cable (default configuration is connection to 1 cash drawer)
Mechanical	**Dimensions (DxH)**	3.78 in. (D) x 5.5 in. (H) (96 mm x 140 mm)
	Color	Ebony black
Interface/Connection	**Interface**	Standard USB 2.0 cable Type A to Type B mini 24V Cash Drawers support with RJ 12 interface
Power	**External Power Supply**	48 w
	Operating Voltage	24 V
	Full Load Current	2 A w/ active power management system
	Idle Current	25mA
	Idle Power	0.6 W
Temperature Range	**Operating**	41°F to 95°F (5°C to 35°C) at 5% to 90% humidity 95°F to 122°F (35°C to 50°C) at 5% to 40% humidity
	Non-operating	Transit range: -40°F to 140°F (-40°C to 60°C) 5% to 95% humidity Storage range: 14°F to 122°F (35°C to 50°C) at 5% to 90% humidity
Drivers	Windows, OPOS, JPOS	
Operating Systems	**Windows** • Windows 10 IoT Enterprise for Retail (64-bit) • Windows 10 Pro (64-bit) **Linux** • Red Hat/CentOS 6 and 7 (32-bit and 64 bit) • Suse Linux® Enterprise POS 11 and 12 (32-bit and 64-bit) • Ubuntu 14.04 LTS (32-bit and 64-bit)	
Reliability	MCBF Print Mechanism: 29-million lines MCBF Knife Cuts: 1-million Print Head Life: 100 km	
Agency Certifications	**Flammability:** UL 94V-0	
	Safety: UL 60950-1 2nd edition 2014-10-14; UL 62382-1 CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 EN 60950-1:2006 + A1:2010+ A2:2013	

CB Report: IEC 60950-1:2005 + A1:2009 +A2:2013
IEC/EN 62382-1 2ND Edition
GB4943.1-2011-China
IS 13252-1 (2010)/A1:2013/A2:2015

Radiated Emissions: FCC 47CFR, Part 15, Class B
ICES-003: 2012, Issue 6, Class B
EN 55032:2015 Class B
CISPR32
VCCI: V-3 Class B ITE VCCI-CISPR32
AS/NZS 3548

Immunity: EN55024: 2010
EN61000-4-2 Level 4 (8kV direct, 15kV air discharge)
EN61000-4-3: Level 3 (10V/m)
EN61000-4-6 Level 3 (10V rms)
EN61000-4-4: Level 3 (2kV mains, 1kV data lines)

RoHS, WEEE

Option kit contents Starter paper roll

NOTE: This printer does not comply with fiscalization requirements that may be required in certain countries.

HP ElitePOS MSR

Model	**HP ElitePOS MSR**	Configurable option only. Not available as after-market option.
General	**Magnetic stripe formats**	ISO 7811, AAMVA
	Card thickness	0.015 to 0.045 in (0.38 to 1.14 mm)
	Indicators	Bi-colored LED, beeper (requires system audio driver)
Mechanical		
	Slot width	0.045 in (1.14 mm)
	Color	Ebony Black
Interface/Connection	**Connection**	Integrated directly into head unit.
Power	**Voltage (typical)**	5 VDC +/- 10%, 50mV ripple max
	Current consumption (typical)	40mA max
Drivers	Windows native, OPOS, JPOS	

HP ElitePOS Peripherals

Operating Systems	**Compatibility**	**Windows** Windows 10 IoT Enterprise for Retail (64-bit)*,*** Windows 10 Pro (64-bit)*,***

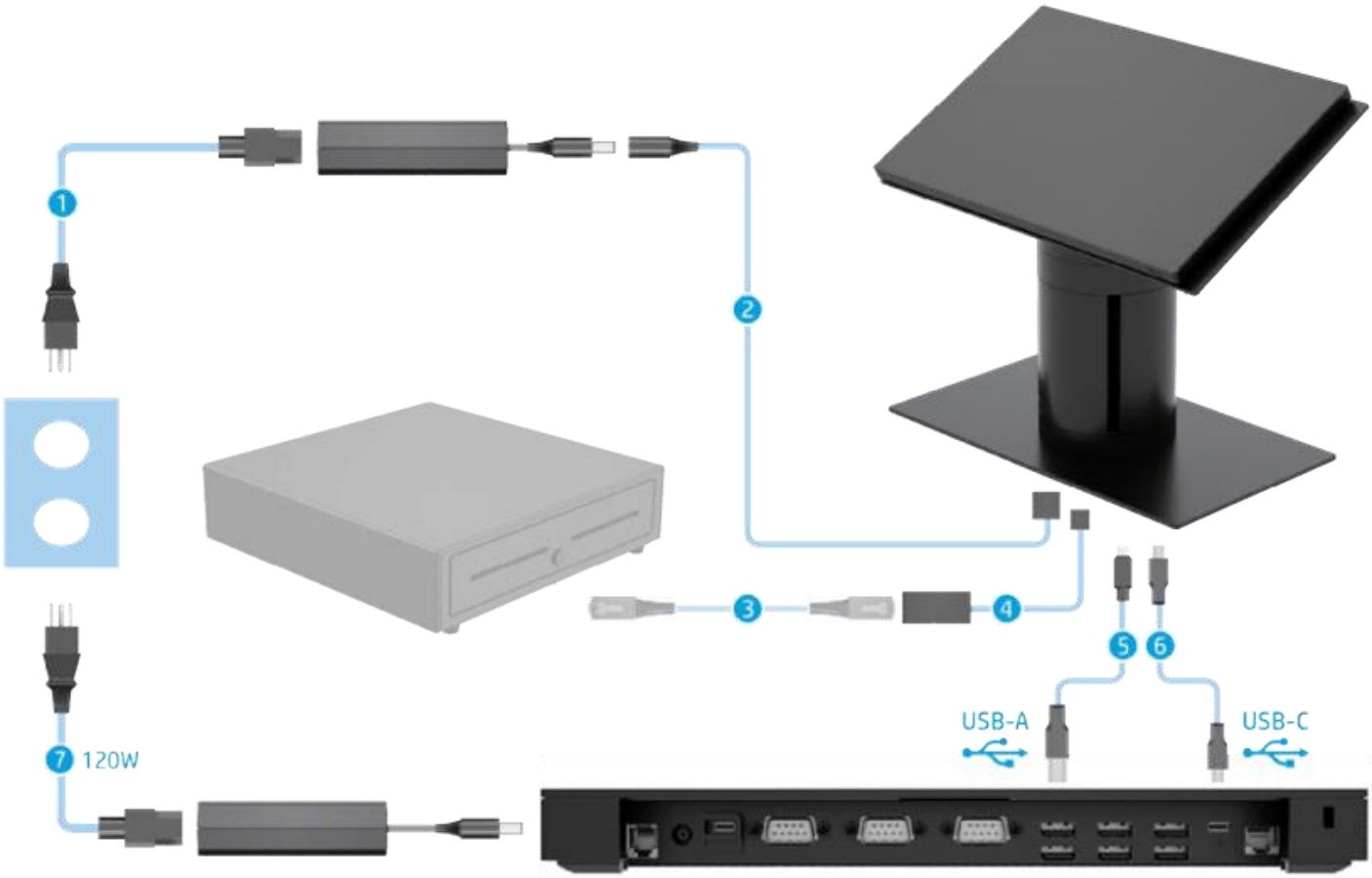
Temperature Range	**Operational**	0° C to 55° C
	Relative Humidity	90% (non-condensing)
Reliability	Operating Life	1,000,000 card swipes minimum
Agency Certifications	FCC, CE, USB-IF	
Country of Origin	Taiwan	

* Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com

** Not all features are available in all editions of Windows. This system may require upgraded and/or separately purchased hardware to take full advantage of Windows functionality. See http://www.microsoft.com.
*** Full support on all x86-based Windows, NO current support drivers for ARM processor platforms.

Cable Routing Configurations

ElitePOS cable matrix with integrated column printer and basic I/O connectivity base

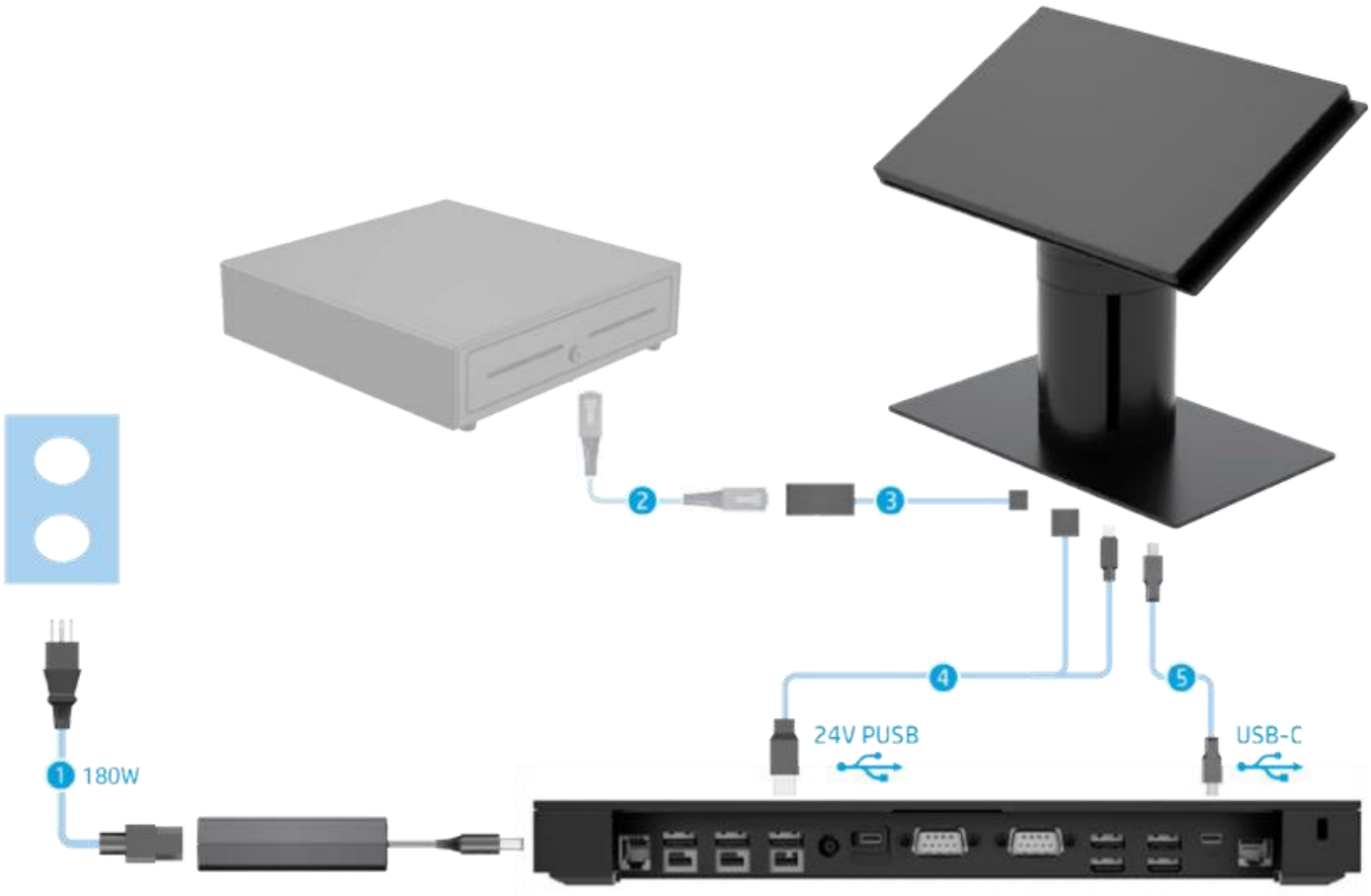


Cables

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

Cable Routing Configurations

ElitePOS cable matrix with integrated column printer and advanced I/O connectivity base

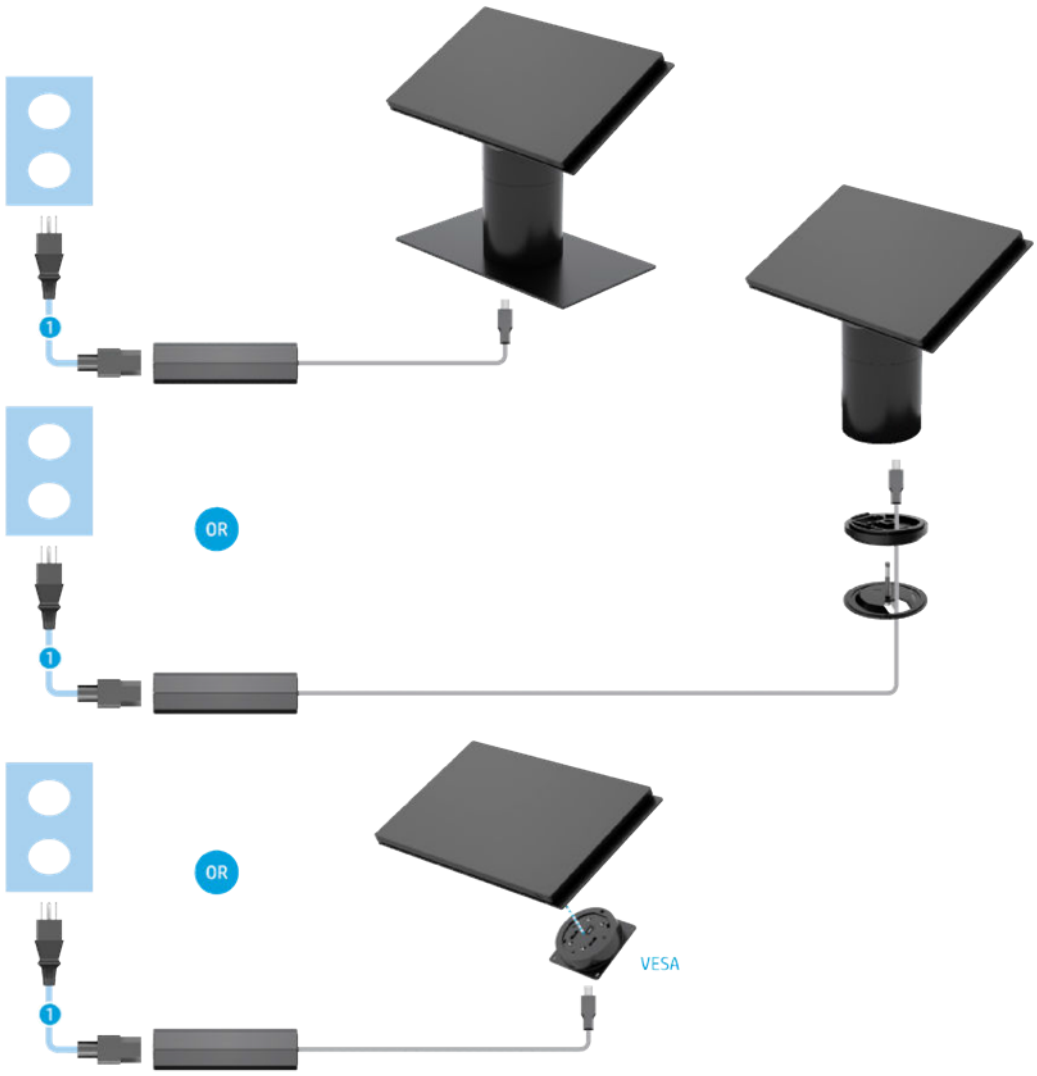


Cables

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

Cable Routing Configurations

ElitePOS cable matrix without I/O connectivity base

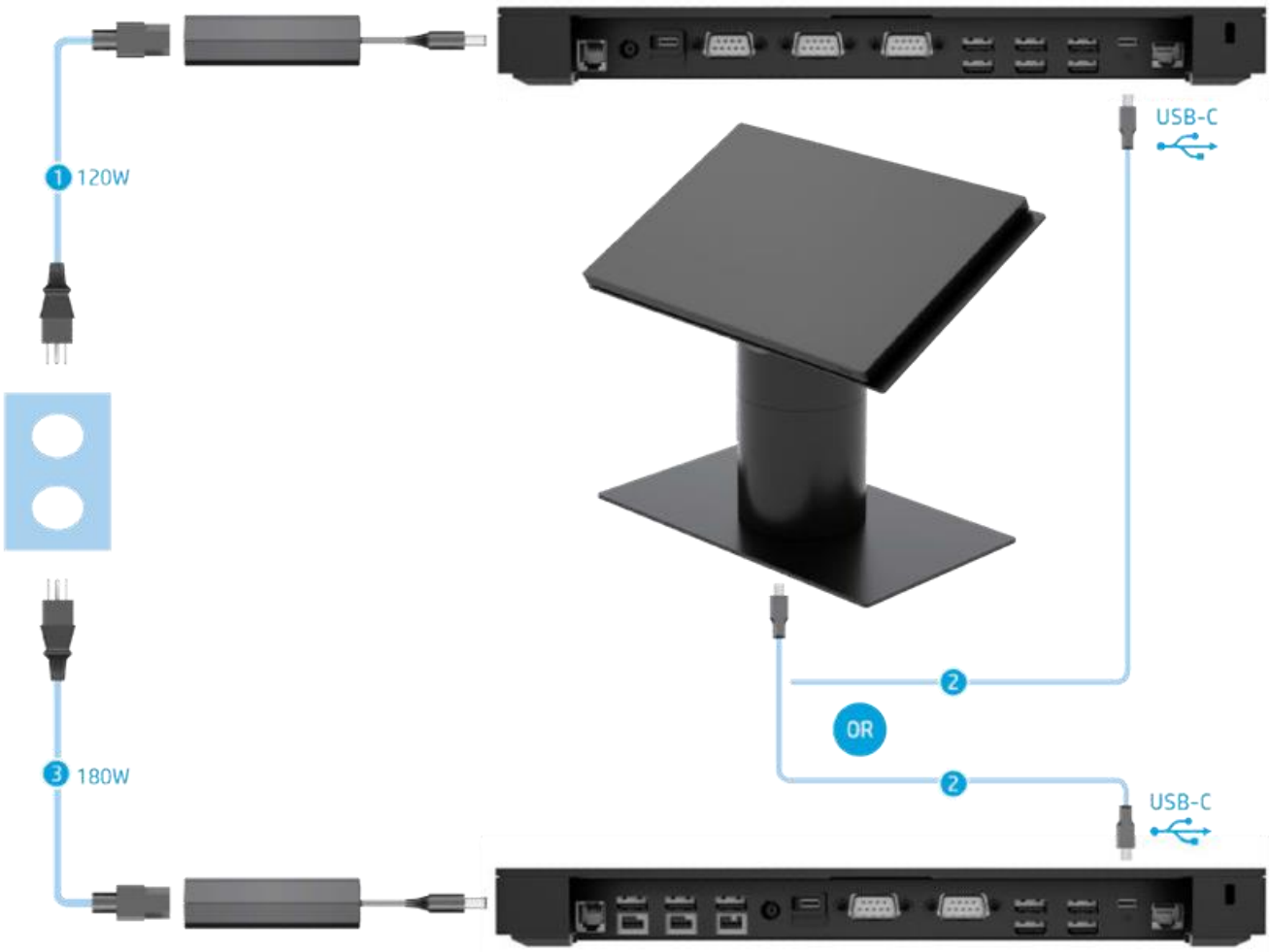


Cables

1. Power adapter cord

Cable Routing Configurations

ElitePOS cable matrix with I/O connectivity base and without printer

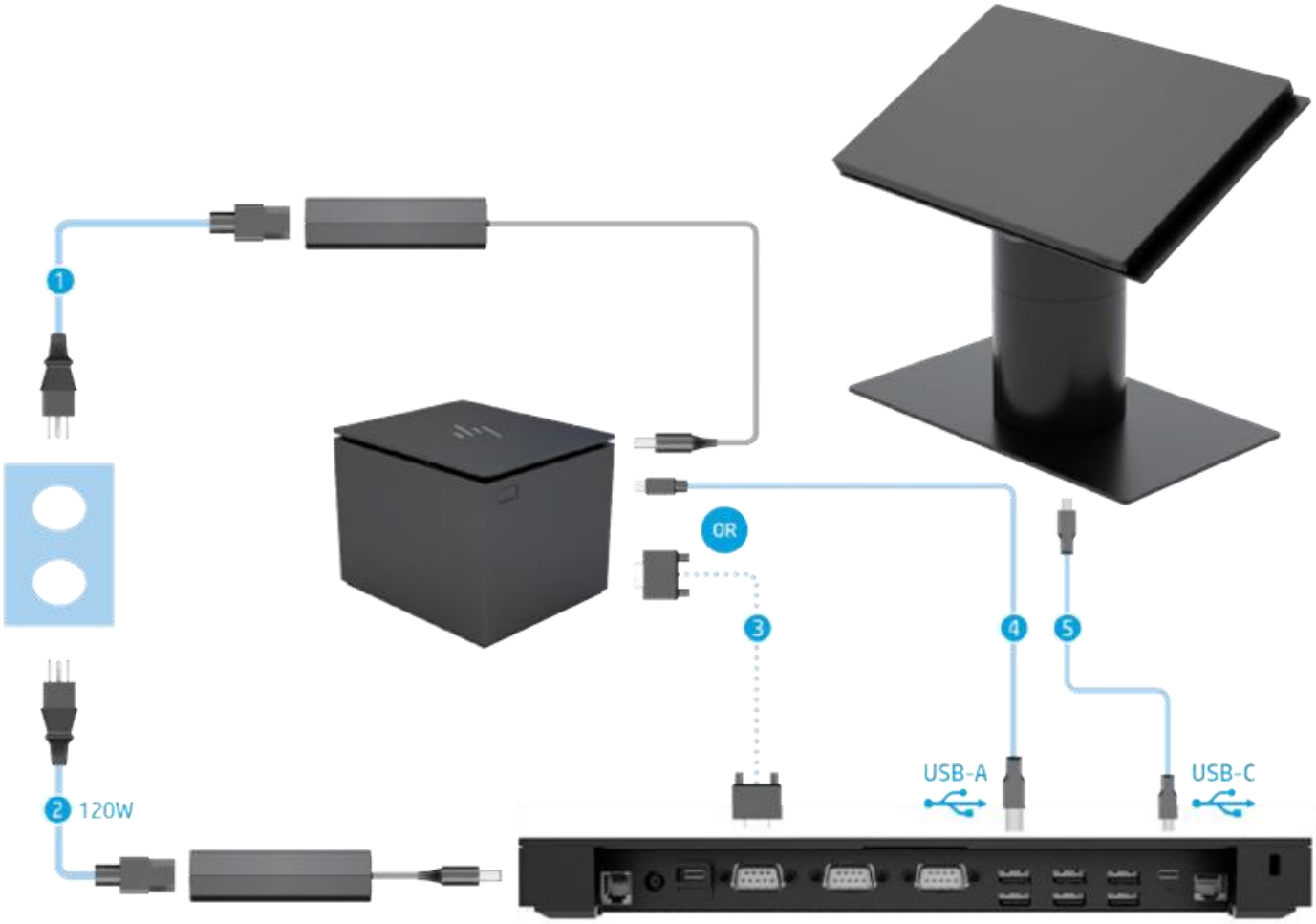


Cables

1. Basic I/O connectivity base 120 W AC power adapter cord
2. I/O connectivity base USB Type-C cable
3. Advanced I/O connectivity base 180 W AC power adapter cord

Cable Routing Configurations

ElitePOS cable matrix with basic I/O connectivity base and standalone printer



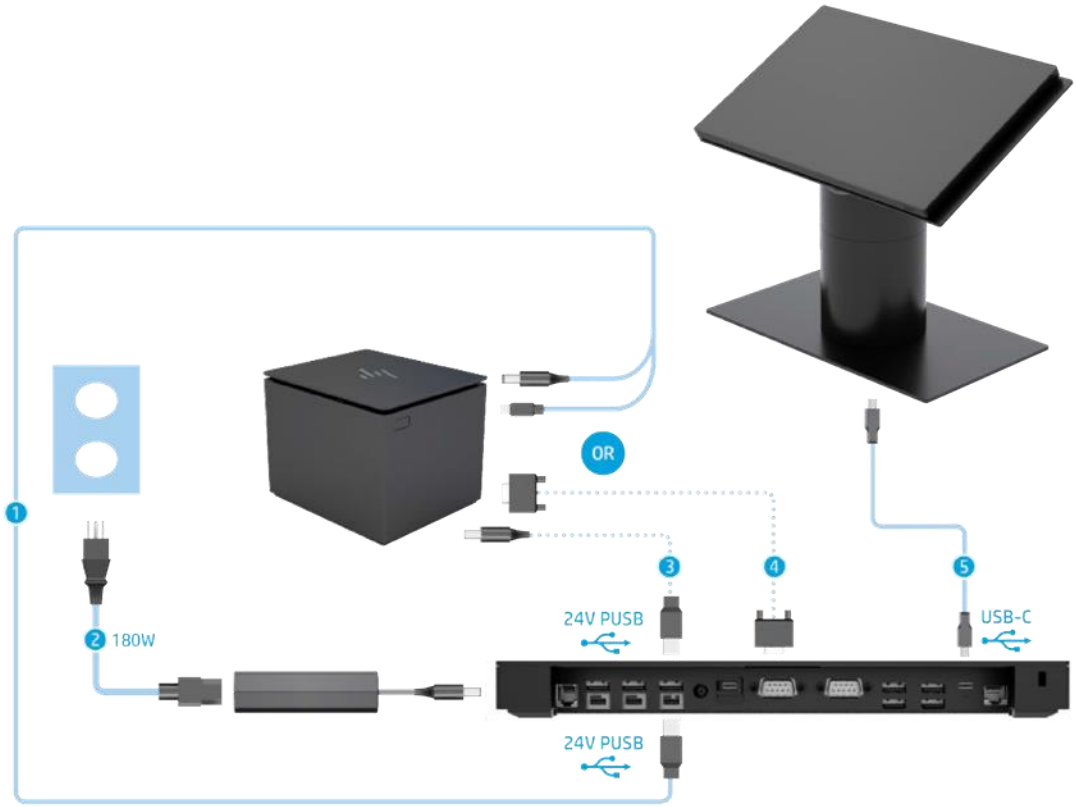
Cables

1. Printer power adapter cord
2. Basic I/O connectivity base 120 W AC power adapter cord
3. Printer serial data cable
4. Printer USB Type-A data cable
5. Basic I/O connectivity base USB Type-C 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 Routing Configurations

ElitePOS cable matrix with advanced I/O connectivity base and standalone printer



Cables

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

ElitePOS Accessories

Connectivity Bases	Part Number
HP ElitePOS Advanced I/O Connectivity Base*	1UN12AA
HP ElitePOS Basic I/O Connectivity Base	1UN11AA
Printers	
HP ElitePOS Serial USB Thermal Printer	1RL96AA
HP Hybrid POS Printer with MICR	FK184AA
HP Hybrid POS Printer with MICR II	X3D36AA
HP Ethernet Network Receipt Printer	M2D54AA
HP PUSB Thermal Receipt Printer	FK224AA
HP Serial USB Thermal Receipt Printer	BM476AA
HP Value PUSB Receipt Printer	F7M67AA
HP Value Serial/USB Receipt Printer II	X3B46AA
Epson H2000 PUSB Printer	K3L29AA
Epson TMT88V PUSB Thermal Receipt Printer	E1Q93AA
Epson TMT88V Serial USB Thermal Receipt Printer	D9Z52AA
Integrated Peripherals	
HP ElitePOS Biometric Finger Print Reader	1RL98AA
HP ElitePOS Top Mount 2 x 20 CFD	1RL95AA
Customer Facing Displays and Display Options	
HP ElitePOS 10.1in Touch Display*	1XD81AA
HP ElitePOS 10.1in Non-Touch Display*	1XD80AA
Pole Displays	
HP Graphical POS Pole Display	QZ704AA
HP LCD Pole Display	F7A93AA
HP POS Pole Display	FK225AA

*Available November 2017

ElitePOS Accessories

Cable kits for stand alone printer	Part Number
HP ElitePOS Printer USB + Pwr Adpter	1RM02AA
HP ElitePOS Printer Serial + Pwr Adptr	1RM03AA
HP ElitePOS Printer PUSB Y Cable	1RM04AA
HP ElitePOS Printer Serial + PUSB Pw only	1RM05AA

Graphics Video Adapters & Cables	
HP Type-C to DisplayPort Adapter	N9K78AA
HP Type-C to HDMI Adapter	N9K77AA
HP Type-C to VGA Adapter (Slice)	N9K76AA

IO Devices, I/O Adapters	
HP USB to Serial Port Adapter (Win7/8/10)	J7B60AA
HP USB Business Slim Keyboard	N3R87AA
HP USB 1000dpi Laser Mouse	QY778AA
HP USB Hardened Mouse	P1N77AA
HP USB Optical 2.9M Mouse	Z3Q64AA
HP POS Keyboard	FK221AA
HP POS Keyboard with MSR	FK218AA
HP PUSB Y Cable	BM477AA

Scanners	Part Number
HP ElitePOS 2D Barcode Scanner	1RL97AA
HP Linear Barcode Scanner II	Z1Z36AA
HP Imaging Barcode Scanner	BW868AA
HP Presentation Barcode Scanner	QY439AA
HP Wireless Barcode Scanner	E6P34AA

Cash Drawers	
HP Flip Top Cash Drawer	BW867AA
HP Heavy Duty Cash Drawer	FK182AA
HP Standard Duty Cash Drawer	QT457AA
HP USB Standard Duty Cash Drawer	E8E45AA
HP Standard Duty Till Insert w/ Lockable Lid	QT458AA
HP Cable Pack for Dual HP Cash Drawers	QT538AA

Summary of Changes

Date of change:	Version History:		Description of change:
	From v1 to v2		