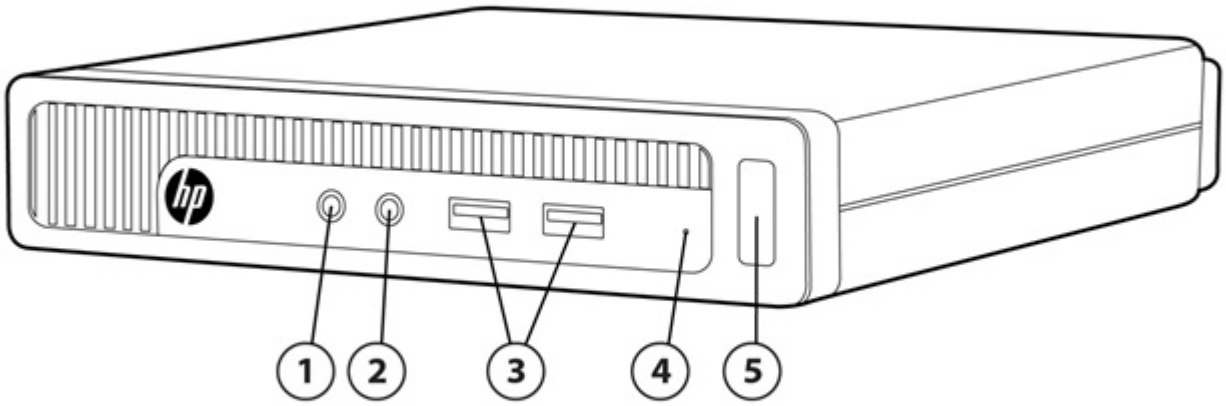
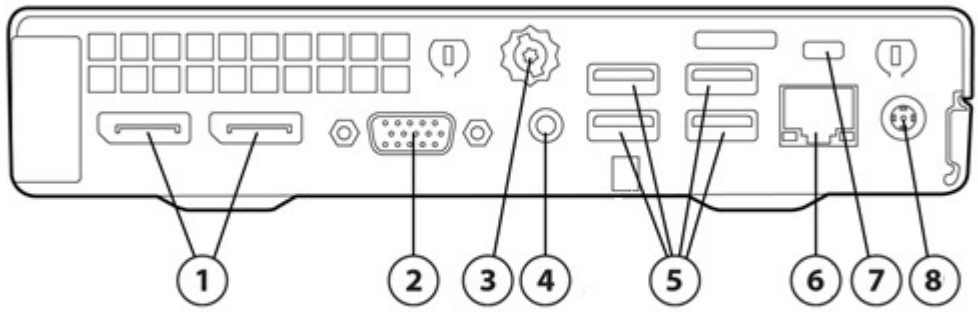
Overview

HP MP9 Digital Signage Player, Model 9000



1. 3.5mm headphone output
2. 3.5mm microphone jack
3. (2) Front USB 3.0 ports
4. PC status LED
5. Power button

Overview



1. (2) Display Port outputs
2. (1) VGA video port
3. Thumb screw
4. 3.5mm audio out jack
5. (4) USB 3.0 ports
6. (1) RJ-45 network connector
7. Cable lock slot
8. Security screw

Not Shown

Slots	(1) internal M.2 connector for optional wireless NIC (1) internal M.2 connector for optional SSD drive
Bays	(1) 2.5" internal storage drive bay
VESA	Support for VESA 100 mounting system on bottom of PC chassis

Overview

At A Glance

Product overview

Boost sales and engage customers with compelling dynamic and interactive signage content driven by the HP MP9 Model 9000, HP's smallest and most powerful digital signage player.

- Deliver picture-perfect rich media content to up to two digital displays at full 1080p resolution
- Deploy the super-small signage player wherever you need it in your retail environment - the integrated VESA mount system supports horizontal or vertical mounting under a counter, on a wall, inside a kiosk, or behind an HP Digital Signage Display
- Use the HP Quick Release Mounting Bracket [4] to securely mount the unit behind a display or to any flat surface.
- Protect the unit from theft and tampering with the HP Security Sleeve.[3]
- Rack and stack the player with the HP Rack Mount Shelf.[3]

[1] 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 on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Some functionality of vPro, 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. Microsoft Windows required.
[2] High-definition content required.
[3] Mounting hardware and optional features sold separately or as add-on features.
[4] HP Care Pack Services are sold separately. Service levels and response times for HP Care Pack Services may vary depending on your geographic location.

Product features

- PC Chassis and all internal components and modules are manufactured with low halogen[1] content
- Intel® Q87 chipset supporting Intel 4th generation Core processors, featuring integrated Intel HD Graphics and Intel® vPro™ technology (available with select processors)
- Intel® Ethernet Connection I217L GbE LOM integrated network connection
- DDR3 Synchronous Dynamic Random Access Memory (SDRAM)
- Independent monitor support via VGA and dual Display Port video interfaces
- Standard and high efficiency energy saving power supply options
- Optional Intel Smart Response Technology disk cache modules

1 External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

Standard Features and Configurable Components (availability may vary by country)

OPERATING SYSTEMS

Preinstalled When Purchased

Microsoft Windows Embedded Standard 7P (64-bit)

CHIPSET

Intel® Q87 Express

PROCESSOR

Intel® Core™ i5-4570T Processor
Up to 3.6 GHz Max. Turbo Frequency (2.9 GHz base frequency)
4 MB cache, 4 cores, 4 threads
Intel HD Graphics 4600
Supports DDR3 memory up to 1600 MT/s data rate
Supports Intel® vProTM Technology and Intel® Stable Image Platform Program (SIPP)

Intel® Core™ i3-4330 Processor
Up to 3.5 GHz base frequency
4 MB cache, 2 cores, 4 threads
Intel HD Graphics 4600
Supports DDR3 memory up to 1600 MT/s data rate

GRAPHICS

System Integrated Graphics

Intel® HD Graphics, Intel® HD graphics 4400 or Intel® HD Graphics 4600 depending on CPU model installed (integrated on processor)

Adapters and Cables

HP DisplayPort to DisplayPort Cable
HP DisplayPort to DVI-D Adapter
HP DisplayPort to HDMI Adapter
HP DisplayPort to VGA Adapter
HP USB to Serial Port Adapter

Standard Features and Configurable Components (availability may vary by country)

STORAGE

Hard Disk Drives (HDD)

500 GB 7200 rpm HDD

Solid State Drives (SSD)

128 GB SSD

MEMORY

Form Factor	Type	Maximum	# of Slots
MP9 Digital Media Player	DDR3 non-ECC Up to 1600 MT/s	8 GB	2 SODIMM

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 1600 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

Intel I217LM Gigabit Network Connection (standard)

Wireless

Intel Wireless-N 7260 802.11 M.2 a/b/g/n NIC Card[1]

[1] 802.11a/b/g/n wireless network card is an optional or add-on feature and requires separately purchased wireless access point and internet service. Availability of public wireless access points limited.

NOTE: Either the integrated network connection or the Intel Centrino wireless NIC is required to support Intel vPro Technology features.

AUDIO/MULTIMEDIA

HD audio with Realtek ALC221 codec (all ports are stereo)

DTS Studio Sound audio management technology

Microphone and headphone front ports (3.5mm)

Line-out rear Port (3.5mm)

Multi-streaming capable

Internal speaker (standard)

Standard Features and Configurable Components (availability may vary by country)

KEYBOARDS AND POINTING DEVICES

Keyboard

HP USB Keyboard (optional)
*Keyboard contains 25% post-consumer recycled plastic material.

Mice

HP USB Mouse (optional)

HP BIOS

Key features of the HP BIOS include:

- Deployment and manageability – HP BIOS provides several technologies that help integrate the MP9 Digital Signage Player into the enterprise, such as PXE, remote configuration, remote control, and F10 Setup support for 12 languages.
- 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 2.1
- Computrace 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 HP computer in any enterprise 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 upgrade HP computers, including BIOS updates from within DOS (DOSFlash), BIOS updates from within Windows (HPQFlash), HP Client Manager, and fail-safe recovery. In addition, the HP BIOS Utilities tool enables replicated BIOS setup throughout the Enterprise; it is available from within the BIOS software and from the support website.
- 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. HP MP9 Digital Signage Player models use ACPI to provide power conservation features.
- S5 Max Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 1W is S5 (when turned off). When S5 Max Power Savings feature is enabled power to slots is turned off along with WOL functionality.

Standard Features and Configurable Components (availability may vary by country)

SECURITY

Trusted Platform Module (TPM) 1.2

SATA port disablement (via BIOS)

Drive lock

Intel® Identify Protection Technology (IPT)[1]

Serial, parallel, USB enable/disable (via BIOS)

Optional USB Port Disable at factory (user configurable via BIOS)

Removable media write/boot control

Power-On password (via BIOS)

Setup password (via BIOS)

Support for chassis padlocks and cable lock devices

[1]Models configured with Intel Core processors have the ability to utilize advanced security protection for online transactions. IPT, used in conjunction with participating web sites, provides double identity authentication by adding a hardware component in addition to the usual user name and password. IPT is initialized through an HP Client Security module.

ENVIRONMENTAL & REGULATORY

ENERGY STAR® qualified models available

EPEAT® registered where applicable/supported. See www.epeat.net for registration status by country.

Low halogen[1] (chassis, all internal components and modules)

TAA compliant

[1] External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

PORTS

USB 3.0	Front:	2
	Rear:	4
Video	VGA:	1
	DisplayPort:	2 (with multi-stream)
PS/2		
Video		

NOTE: When configured with a4th generation Intel Core i3 CPU only two of the available video output ports are active

Audio	Front:	headphone/mic
	Rear:	line in/out
	3.5mm	diameter
Network Interface	RJ-45	

Standard Features and Configurable Components (availability may vary by country)

SLOTS

M.2	1 ea. M.2-2230 (for WLAN) 1 ea. M.2-2280 (for storage)

BAYS

2.5" internal storage drive	1 ea.

SERVICE AND SUPPORT

On-site Warranty [1]: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day [2] service for parts and labor and includes free telephone support [3] 24 x 7. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing a Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: www.hp.com/go/cpc

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 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.

NOTE 3: Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

OPERATING SYSTEMS

Preinstalled	Microsoft Windows Embedded Standard 7P (64-bit)

INTEL 4th GENERATION CORE vPRO PROCESSORS

All HP MP9 Digital Signage Player models featuring this technology include processors that are part of the Intel 2013 Stable Image Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP MP9 Digital Signage Player, thus making these models the most stable, secure, and manageable platforms available to enterprises today.

Intel Advanced Management Technology (AMT) v9.0 – 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 9.0 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/IDER
- 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 Base set-up and configuration
- Management Engine (ME) firmware roll back
- Wireless AMT functionality on Desktop (WoDT)
- Enhanced KVM resolution

Technical Specifications - Graphics

Intel HD Graphics

VGA Controller	Integrated
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)
Bus Type	N/A
RAMDAC	N/A
Memory	Intel graphics do not have dedicated memory but utilizes some of the computer's system memory The amount of memory used for graphics depending on the amount of system memory installed, BIOS settings, operating system, and system load. 32 MB is pre-allocated for graphics use at system boot time. Additional memory can be allocated at boot time by the BIOS for PAVP (Protected Audio Video Playback) support for playback of protected video content. 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	Microsoft Windows 7: Up to 1.7GB Windows 8: Up to 1.8GB **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	4th Generation Core processors:
	• The Processor Graphics contains a refresh of the seventh generation graphics core enabling substantial gains in performance and lower power consumption. Up to 16 EU support.
	• 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 HW Decode
	• Advanced Scheduler 2.0, 1.0
	• Windows 7, Windows 8, Linux OS Support
	• DirectX 11.1
	• OpenGL 4.0
	• Open CL 1.2

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

Technical Specifications - Graphics

Resolution	Refresh Rates
800x600	60 Hz
1024x768	60 Hz
1152x864	60 Hz
1280x600	60 Hz
1280x720	60 Hz
1280x800	60 Hz
1280x960	60 Hz
1280x1024	60 Hz
1360x768	60 Hz
1366x768	60 Hz
1400x1050	60 Hz
1440x900	60 Hz
1600x900	60 Hz
1600x1200*	60 Hz
1680x1050	60 Hz
1920x1080	60 Hz
1920x1200*	60 Hz
1920x1440*	60 Hz
2560x1440*	60 Hz
2560x1600*	60 Hz

* Only supported on displays connected to the external DisplayPort connector.

Technical Specifications – Hard Disk and Solid State Storage

Introduction:

HP Serial Advanced Technology Attachment (SATA) Hard Drives maximize the performance of HP Business PCs 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 PC platform enabling easy aggregation of multiple hard drives into a single PC. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability. The MP9 Digital Signage Player supports the latest SATA 6.0Gb/s specification.

HP Drive Lock

HP Serial ATA Hard Drives offer enhanced security via a new Drive Lock. When enabled, this ATA security feature set 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. AHCI support is typically implemented in RAID configurations.

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

Technical Specifications – Hard Disk and Solid State Storage

HP 500-GB 7.2K SATA 6.0Gb/s 2.5" Hard Disk Drive

Capacity	500,107,862,016 bytes	
Rotational Speed	7,200 rpm	
Interface	Serial ATA 2.0 (6.0 Gb/s)	
Buffer Size	16 MB	
Logical Blocks	976,773,168	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track:	2.0 ms
	Average:	11 ms
	Full-Stroke:	25 ms
Height (nominal)	0.374 in/9.5 mm	
Width (nominal)	Media diameter: 2.5 in/63.5 mm	
	Physical size: 2.75 in/70 mm	
Operating Temperature	41° to 131° F (5° to 55° C)	

HP 128 GB Solid State Drive

Unformatted Capacity	128 GB*	
Architecture	Multi Level Cell (MLC) NAND	
Interface	SATA 6 GB/sec	
Dimensions (W x H x D)	2.75 x 0.276 x 3.96 in (6.985 x 0.7 x 10.05 cm)	
Weight	0.16 lb (73 g)	
Bandwidth Performance	Sustained Sequential Read:	Up to 450 MB/s
	Sustained Sequential Write:	Up to 260 MB/s
	Random Read:	up to 46K IOPs
	Random Write:	up to 56K IOPs
Latency	Read:	55ms (TYP)
	Write:	55ms (TYP)
Power	DC power requirement:	Min 4.5 V; Max 5.5 V
	Total power consumption:	160 mW (Active) ; <85 mW; (Idle)
Useful Drive Life	1.2 million device hours**	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Maximum Wet Bulb Temperature (operating):	84° F (29° C)
	Shock:	1,500 G/1.0 msec
Regulations	UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B, Korea KCC, CE Mark	
Option kit contents	HP 128 GB Solid State Drive, documentation, 3.5-inch bay adapter bracket, 3.5-inch bay adapter bracket screws, SATA cable	

Technical Specifications – Hard Disk and Solid State Storage

* For solid state disk drives, GB means 1 billion bytes. 128GB is the unformatted capacity of this drive before a portion of the drive is reserved for flash management features. Actual capacity will vary by content
** The product achieves a mean time between failure (MTBF) based on population statistics not relevant to individual units.

Technical Specifications - Removable Storage

HP Slim SuperMulti DVD Writer Drive

Height	12.7mm height	
Orientation	Either horizontal or vertical	
Interface type	SATA/ATAPI	
Disc recording capacity	Up to 8.5 GB DL or 4.7 GB standard	
Dimensions (W x H x D)	5.04 x 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel	
Weight (max)	0.42 lb (190 g)	
Write speeds	DVD-RAM	Up to 5X
	DVD-R DL	Up to 6X
	DVD+R	Up to 8X
	DVD+RW	Up to 8X
	DVD+R DL	Up to 6X
	DVD-R	Up to 8X
	DVD-RW	Up to 6X
	CD-R	Up to 24X
	CD-RW	Up to 24X
Read speeds	DVD-RAM	Up to 5X
	DVD-RW, DVD+RW	Up to 8X
	DVD-R DL, DVD+R DL	Up to 8X
	DVD+R, DVD-R	Up to 8X
	DVD-ROM DL, DVD-ROM	Up to 8X
	CD-ROM, CD-R	Up to 24X
	CD-RW	Up to 24X
Access time (typical reads, including settling)	Random	DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical)
	Full Stroke	DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical)
	Stop Time	6 seconds (typical)
Power	Source	Slimline SATA DC power receptacle
	DC Power Requirement	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC (< 1000 mA typical, 1600 mA maximum)

Technical Specifications - Removable Storage

Environmental conditions (operating - non-condensing)	Temperature	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)

HP Slim Blu-ray BDXL Drive

Height	12.7mm Slim tray-load
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc capacity	Up to 128 GB QL, 100 GB TL, 50 GB DL or 25 GB standard SL
Dimensions W x H x D (max)	5.04 x 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel
Weight (max)	Up to 0.37 lb (170 g) without bezel

		Triple-layer	**Quadruple-layer**
Write speeds	BD-R	Up to 4x	Up to 4x
	BD-RE	Up to 2x	Not supported
		Single-layer	**Double-layer**
	BD-R	Up to 6x	Up to 6x
	BD-RE	Up to 2x	Up to 2x
	DVD-R	Up to 8x	Up to 6x
	DVD-RW	Up to 6x	Not supported
	DVD+R	Up to 8x	Up to 6x
	DVD+RW	Up to 8x	Not supported
	DVD-RAM	Up to 5x	N/A
	CD-R	Up to 24x	N/A
	CD-RW	Up to 24x	N/A

		Triple-layer	**Quadruple-layer**
Read speeds	BD-R	Up to 4x	Up to 4x
	BD-RE	Up to 4x	Not supported
		Single-layer	**Double-layer**
	BD-ROM	Up to 6X	Up to 6X
	BD-R	Up to 6x	Up to 6x
	BD-RE	Up to 6x	Up to 6x
	DVD-ROM	Up to 8x	Up to 8x
	DVD-R	Up to 8x	Up to 8x
	DVD-RW	Up to 8x	Not supported
	DVD+R	Up to 8x	Up to 8X
	DVD+RW	Up to 8x	Not supported

Technical Specifications - Removable Storage

	BDMV (AACS Compliant Disc)	Up to 6x/2x (Read/Play)
	DVD-RAM	Up to 5x
	DVD-Video (CSS Compliant Disc)	Up to 8x/4x (Read/Play)
	CD-R/RW/ROM	Up to 24x
	CD-DA (DAE)	Up to 20x/10x (Read/Play)
Access times (typical reads, including setting)	**Random**	BD-ROM: 205 ms (typical), DVD-ROM: 185 ms (typical), CD-ROM: 165 ms (typical)
	Full Stroke	BD-ROM: 350 ms (typical), DVD-ROM: 345 ms (typical), CD-ROM: 340 ms (typical)
Power	**Source**	Slimline SATA DC power receptacle
	DC Power Requirement	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC -1200 mA typical, 2000 mA maximum
Environmental (all conditions non-condensing)	**Temperature** (operating)	41° to 122° F (5° to 50° C)
	Relative Humidity (operating)	10% to 80%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)

HP Slim DVD-ROM Drive

Height	12.7mm	
Orientation	Either horizontal or vertical	
Interface type	SATA/ATAPI	
Dimensions (W x H x D)	5.04 x 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel	
Weight (max)	Up to 0.37 lb (170 g) without bezel	
Read speeds	DVD+R/-R/+RW/ -RW/+R DL /-R DL	Up to 8X
	DVD-ROM	Up to 8X
	CD-ROM, CD-R	Up to 24X
	CD-RW	Up to 24X
Access time (typical reads, including settling)	Random	DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical)
	Full Stroke	DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical)
Power	Source	Slimline SATA DC power receptacle
	DC Power Requirement	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC - <1000 mA typical, < 1600 mA maximum

Technical Specifications - Removable Storage

Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)

System Memory Support

The HP MP9 Digital Signage Player supports the 4th generation Intel® Core™ processor family. Based on a new PC micro-architecture, the processor is designed for a two-chip platform consisting of a processor and Platform Controller Hub (PCH). Unlike previous generations, the 4th generation Intel® Core™ processor includes an Integrated Memory Controller (IMC). The IMC supports DDR3/DDR3L protocols with two independent, 64-bit wide channels each accessing one or two DIMMs.

- Two channels of non-ECC DDR3/DDR3L unbuffered dual in-line memory modules (UDIMM) or DDR3/DDR3L unbuffered small outline dual in-line memory modules (SO-DIMM) with a maximum of two 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 1600 MT/s; actual supported data transfer rate determined by the configured processor.
- 64-bit wide channels
- DDR3/DDR3L system memory I/O voltage of 1.5V
- 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

Platform Memory Support

- The HP MP9 Digital Signage Player supports up to two (2) industry-standard DDR3-SDRAM SO-DIMMs.

CAUTION: You must shut down the computer 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 computer 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.

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.

Intel® I217LM GbE Network Connection (integrated)

Connector	RJ-45
System Interface	Integrated on PCA
Controller	Intel I217LM GbE platform LAN connect networking controller
Memory	24 KB FIFO packet buffer memory
Data rates supported	10/100/1000 Mbps
IEEE Compliance	802.1P 802.1Q 802.2 802.3 802.3ab 802.3az 802.3u
Bus architecture	PCI Express and SMBus
Data transfer mode	PCIe-based interface for active state operation (S0 state) and SMBus for host and management traffic (Sx low power state)
Power requirement	Requires 3.3V and 0.9V or just 3.3V with integrated regulators Power consumption 0.733 Watts
Boot ROM support	Yes
Network transfer mode	Full-duplex Half-duplex (not supported for the 1000BASE-T transceiver)
Network transfer rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
Environmental	Operating Temperature: 0° to 85° C Operating Humidity: 60% RH
Management	WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, Advanced cable diagnostic
Alerting	ASF 2.0 support; AMT 9.0 support

Technical Specifications - Audio

High Definition Audio

Type	Integrated
HD Stereo Codec	Realtek 2-channel ALC221 codec
Audio I/O Ports	Front microphone-In (150-K ohm Input Impedance) Rear Line-Out* (190 ohms Output Impedance, expects at least a 10-K ohm load) Front Microphone/Headphone jack is re-task able to provide Microphone input, line-in or Headphone output to support connecting two headphones to the front of the system. When configured as a second front headphone output, both front headphone outputs are always driven with the same signal. All ports are 3.5mm
Internal Speaker Amplifier	1.5W amplifier for the internal speaker only. External speakers must be powered externally.
Multi-streaming Capable	Multi-streaming can be enabled in the Realtek control panel to allow independent audio streams to be sent to/from the front and rear jacks.
Sampling	8 kHz - 192 kHz
Wavetable Syntheses	Yes – Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes
External Speaker Jack	Yes
Full Duplex	Yes

HP USB Keyboard (optional)

	Keys	104, 105, 106, 107, 109 layout (depending upon country)
Physical characteristics	Dimensions (L x W x H)	18.12 x 6.47 x 0.96 in (46.03 x 16.43 x 2.44 cm)
	Weight	2 lb (0.9 kg)
Electrical	Operating voltage	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	USB Type A plug connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft (1.8 m)
	Microsoft PC 99 - 2001	Mechanically compliant
	Acoustics	43-dBA maximum sound pressure level
Environmental	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	-22° to 140° F (-30° to 60° C)
	Operating humidity	10% to 90% (non-condensing at ambient)
	Non-operating humidity	20% to 80% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence
Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
Ergonomic compliance	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, KC	

Technical Specifications - Input/Output Devices

Kit contents	Keyboard	Installation Guide
	Warranty Card	Safety and Comfort Guide

HP USB Mouse (optional)

Dimensions (H x L x W)	1.5 x 4.5 x 2.5 in (3.8 x 11.6 x 6.3 cm)
Weight	0.22 lb (0.10 kg)
Cable length	70.9 in (180 cm)
System requirements	Available USB port

Technical Specifications – Power

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- 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.

Temperature Range	Operating: 50° to 95° F (10° to 35° C)* Non-operating: –22° to 140° F(–30° to 60° C)
Relative Humidity	Operating: 10% to 90% (non-condensing at ambient) Non-operating: 5% to 95% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating: 10,000 ft (3048 m) Non-operating: 30,000 ft (9144 m)

*Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.

Power Supply

Standard Efficiency	65W active PFC 87% efficient
Operating Voltage Range	90 - 264 VAC
Rated Voltage Range	100 - 240 VAC
Rated Line Frequency	50/60 Hz
Operating Line Frequency	47 - 63 Hz
Current Leakage (NFPA 99)	< 250 µA
External Power Adapter	
Total Cord Length	12 ft 8 in

Technical Specifications – Weights & Dimensions

Weights & Dimensions

Chassis (W x H x D)	6.9 x 7.0 x 1.3 in 175 x 177x 34 mm
System Volume	62.79 cu in 1.05 L
System Weight*	2.9 lb 1.3 kg
Packaging (H x W x D)	*Pending*
Shipping Weight	*Pending*
Palletization Profile	*Pending*

Technical Specifications – 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

Serviceability Features

- Dual colored power LED on front of computer to indicate either normal or fault condition
- Diagnostic LED Explanation Table:
  - Number of 1-second red LED blinks followed by a 2-second pause, then repeats:
    - 2 - processor thermal protection activated
    - 3 - processor not installed
    - 4 - power supply failure
    - 5 -- memory error
    - 6 - video error
    - 7 - PCA failure (ROM detected failure prior to video)
    - 8 - invalid ROM, bootblock recovery mode
    - 9 - system not fetching code
    - 10 - system hang while loading an option ROM
- HP PC Hardware 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
- System/Emergency ROM
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software
- 5 Aux Power LED on System PCA
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- DIMM Connectors for easy Upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive, CD & Diskette Removal
- Green Pull Tabs, and Quick Release Latches for easy Identification

Technical Specifications – Miscellaneous Features

Additional Features

	Description
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
Drive Protection System	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
	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
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	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
	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 with Defect Reallocation	IOEDC: I/O Error Detection Circuitry
	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.

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 where HP registers commercial desktop products. See http://www.epeat.net for registration status in your country.

*__NOTE:__ This product conforms to the examination standards (2003 version) under JEITA's 'PC Green Label System.

System Configuration

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

Model	Energy Consumption (typically configured)	115 VAC	230VAC	100VAC
MP9	Normal Operation	*Pending*	*Pending*	*Pending*
	Sleep (ENERGY STAR® low power mode)	*Pending*	*Pending*	*Pending*
	Off	*Pending*	*Pending*	*Pending*

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.

Model	Heat Dissipation*	115 VAC	230VAC	100VAC
MP9	Normal Operation	*Pending*	*Pending*	*Pending*
	Sleep	*Pending*	*Pending*	*Pending*
	Off	*Pending*	*Pending*	*Pending*

*__NOTE:__ 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 (LWAd, bels)	Sound Pressure (LpAm, decibels)
Model	(Typically configured)		
MP9	Idle	*Pending*	*Pending*
	Fixed Disk (random writes)	*Pending*	*Pending*

Technical Specifications – Environmental Data

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years.

Batteries

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

Batteries used in the product do not contain:

- Mercury greater the 1ppm by weight
- Cadmium greater than 20ppm by weight

Battery Size	CR2032 (coin cell)
Battery Type	Lithium

Model	**Additional Information**
MP9	• *Pending*

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

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
- 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.

Technical Specifications – Environmental Data

- 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

Hewlett-Packard 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 Hewlett Packard 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.

Hewlett-Packard 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:
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

After-Market Options (availability may vary by region)

Communication Devices	Part Number
Intel Ethernet I210 - T1 Gbe NIC	E0X95AA
Intel Wireless-N 7260 802.11 M.2 a/b/g/n NIC Card	TBD

Graphics Solutions	Part Number
HP DisplayPort Cable Kit	VN567AA
HP DisplayPort To DVI-D Adapter	FH973AA
HP DisplayPort to HDMI Adapter	BP937AA
HP DisplayPort to VGA Adapter	AS615AA

Data Storage Drives and Accessories	Part Number
HP 500-GB 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive	QK554AA
HP 128-GB SATA 3.0Gb/s Solid State Drive	QV063AA

Input Devices	Part Number
HP USB Keyboard	QY776AA
HP USB Mouse	QY777AA

System Memory	Part Number
HP 4GB DDR3-1600 (PC3-12800) SODIMM	B4U39AA
HP 8GB DDR3-1600 (PC3-12800) SODIMM	B4U40AA

Stands and Accessories	Part Number
HP DM Chassis Tower Stand	G1K23AA
Belkin USB to Serial Adapter	EM449AA

After-Market Options (availability may vary by region)

LANDesk Software (E-Delivery)

	Part Number
LANDesk Management Suite License - 1-499 Nodes E-Delivery	QY369AAE
LANDesk Management Suite License - 500-999 Nodes E-Delivery	QY370AAE
LANDesk Management Suite License - 1000-1999 Nodes E-Delivery	QY371AAE
LANDesk Management Suite License - 2000-4999 Nodes E-Delivery	QY372AAE
LANDesk Management Suite License - 5000-9999 Nodes E-Delivery	QY373AAE
LANDesk Security Suite License E-Delivery	QY379AAE
LANDesk Management Suite 1 Year Maintenance - 1-499 Nodes E-Delivery	HZ825AAE
LANDesk Management Suite 1 Year Maintenance - 500-999 Nodes E-Delivery	HZ826AAE
LANDesk Management Suite 1 Year Maintenance - 1000-1999 Nodes E-Delivery	HZ827AAE
LANDesk Management Suite 1 Year Maintenance - 2000-4999 Nodes E-Delivery	HZ828AAE
LANDesk Management Suite 1 Year Maintenance - 5000-9999 Nodes E-Delivery	HZ829AAE
LANDesk Security Suite 1 Year Subscription	HZ830AAE
LANDesk Patch Management 1 Year Subscription - 1-499 Nodes E-Delivery	HZ831AAE
LANDesk Patch Management 1 Year Subscription - 500-999 Nodes E-Delivery	HZ832AAE
LANDesk Patch Management 1 Year Subscription - 1000-1999 Nodes E-Delivery	HZ833AAE
LANDesk Patch Management 1 Year Subscription - 2000-4999 Nodes E-Delivery	HZ834AAE
LANDesk Patch Management 1 Year Subscription - 5000-9999 Nodes E-Delivery	HZ835AAE

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- Legacy Technology Services is a leading nationwide provider of mobile computing, barcode, printers and point of sale equipment and services.
- For over a decade, thousands of clients across North America have trusted us to provide equipment from leading manufacturers backed by the services to support them.

Latest Hardware from top manufacturers

- Legacy handles virtually every major manufacturer of mobile computing, barcoding and point of sale equipment.

Expert Repair and Maintenance services

- Legacy is one of the best repair facilities in North America

Discontinued product sourcing

- They don't make it anymore? Our inventory also includes manufacturer close-outs and discontinued equipment to support our clients legacy infrastructure.

Trade-in and Disposal services

- That old equipment laying around your facility may still have some value. Legacy routinely purchases equipment from our clients around the globe.
  - Data destruction
  - Hardware disposal
  - Auditing services

Dedicated client account team

- Dedicated, highly trained account managers are here to answer all your questions and provide top notch service.

Equipment rental services

- Sometimes renting is a better solution, Legacy's huge rental inventory provides the equipment you need for temporary needs and projects.

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