Overview

1. Power LED/Beep LED
2. Multi-Track (3) Magnetic Stripe Reader (MSR)

3. Resistive Touch Screen
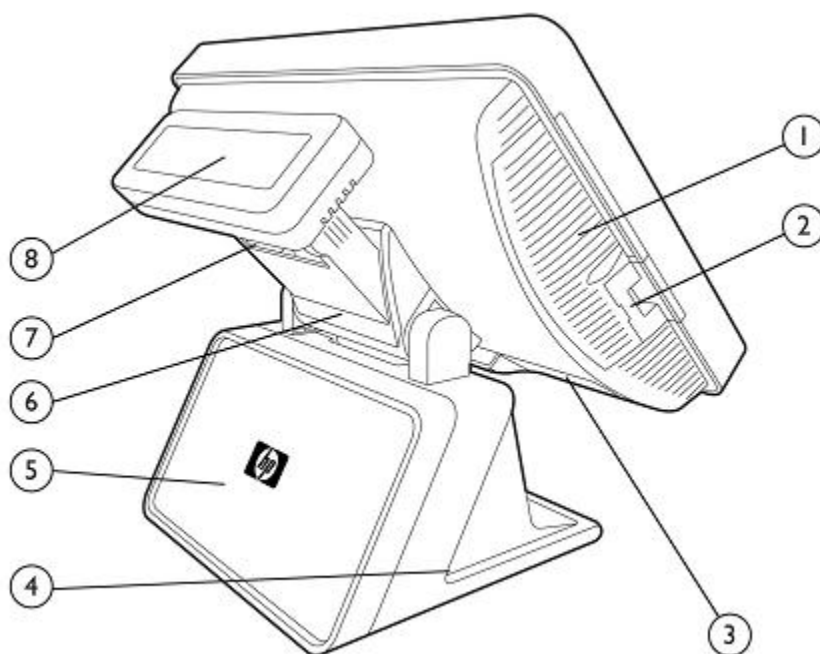
1. Two 2.5" Hard Disk Drive (HDD) bays
2. One USB 2.0 port, one audio line-out and one microphone-in jacks
3. I/O Panel with cover
4. Stand with internal power supply adapter

5. Advertisement panel (non-electrical)
6. Main display hinge, allows for 90-degree pitch adjustment
7. Customer Facing Display hinge, allows for 80degree pitch adjustment
8. Customer facing 2 Line Vacuum Florescent Display (VFD). Optional 10" LCD Customer Display also available.

Overview

At a Glance

- Intel® CoreTM Duo E7400 processor or Intel Celeron 440 processor
- One of the following operating systems: Windows 7, Windows XP Professional (available through downgrade rights from Genuine Windows 7 Professional), FreeDOS, POSReady 2009
- Intel Q965/ICH8R Chipset
- Dual Channel DDR2 Memory
- 10/100/1000 NiC
- Powered ports (Serial and USB+POWER 24V)
- SMART III HHD or SSD
- RAID level 0,1 capable (not preconfigured from HP Factory)
- Manageability Tools
- 2 year production life cycle
- Cable Management Features
- Advertising Panel (for print ads)
- Energy Star 5, EU Compliant, RoHS2 Compliant
- HP Warranty, 3/3/3 standard,

NOTE: All models and features may not be available in all countries.

Standard Features

Processors	Intel® Celeron® 440 (2.0 GHz, 512K L2 Cache, 800 MHz FSB) Intel Core™ 2 Duo E7400 (2.8 GHz, 3 MB L2 Cache, 1066 MHz FSB)

Operating System

Preinstalled

Microsoft Windows 7 Professional, 32-bit*

Windows XP Professional ** (available through downgrade rights from Windows 7 Professional) (for a limited time only)

FreeDOS

Microsoft Embedded POS Ready 2009

*This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.

**Windows 7 Professional disk may also be included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order annually at least 25 customer systems with the same custom image.

Graphics

Integrated Intel Graphics Media Accelerator 3000

Display

15-inch diagonal TFT dual-bulb display, 1024 x 768 resolution, with 5-wire resistive type touchscreen, liquid and dust resistant up to IP55. Precalibrated at factory but should be recalibrated after initial software via the calibration wizard. Can use stylus, finger tip, finger nail, or credit card edge to perform touch.

Touch Technology	5-wire resistive type
Resolution	1024 x 768
Max Color	16.7M
Contrast Ratio	800:1
Brightness	300 cd/m^2
Pixel Pitch	0.297mm
Viewing Angle	140° horizontally and 140° vertically
Response rate	2ms (rise time), 6ms (decay time)
Default Color Temperature	6488° K
Anti Glare Harness	3H
Color Gamut	61.56%
Backlight Units	2 CCFL

Memory

Dual-channel — DDR2 up to 4 GB DIMMS, 2 slots, supports 667/800 MHz; most configurations ship with 1 x 2GB or 1 x 1 GB + 1 x 2 GB (3 GB)

NOTE: DDR 2 800MHz will clock down to 667MHz

NIC

Realtek RTL8111C Ethernet Connection, 10/100/1000, with WOL support

LAN STATUS:	10MB	100MB	1000MB
Activity is occurring (Left LED):	Amber blink	Amber blink	Amber blink
Link Status (right LED):	None	Green	Orange

Keyboard

Keyboard not included. PS/2 or USB supported. NOTE: A keyboard is required to unbundle the software image.

Standard Features

Pointing Device	Pointing Device not included. USB supported. Pointing devices include a mouse, trackball, touch pad, etc…

Multi Track (3) Magnetic stripe reader (MSR)	Integrated MSR, conforms to ANSI/ISO 7810, 7811 1/5, 7812, and 7813; Supports OPOS and JPOS drivers layer; 3 tracks: IATA, ABA, THRIFT; bi-directional swipe, LED indicates status of reader

Vacuum Fluorescent Display (VFD) (Customer Facing)	2 line x20 character display (40 characters total), RS232 interface, DC5V (COM 2 port set to 5V at factory in BIOS setup). Supports complex character set, control commands, user-defined fonts and international fonts. Display pitch adjustment 80 degrees (10deg to 90 deg), no height adjustment. WARNING: VFD must be plugged into COM 1 or COM 2 (not COM3 since COM 3 does not support DC5V. Plugging the VFD into COM 3 may damage the VFD. COM 1 may be used for the VFD but 5V will need to be selected in BIOS Setup for COM 1. **NOTE:** The VFD occupies COM 2 from the factory. Although three COM ports are present on ap5000, COM 2 is occupied by the VFD; therefore, only two COM ports are available to the end user when the VFD is installed.

Advertisement panel	This non-electrical panel features a clear cover. It may be removed so that print material/advertisements can be displayed. HP provides a template for the advertisement panel.

Storage	**Hard Drive**	(2) 2.5" internal hard drive bays: 160 GB 2.5" (select models), 64 GB solid state drive 2.5" (select models)
	Optical Drive	External USB only (not included). **NOTE:** an optical drive is required to restore the software image.

I/O Panel	**VGA**	1
	Warning: This is a Powered VGA Port. Do not hot plug a monitor into the VGA port. Doing so may damage the monitor. Always power down the ap5000 when removing or attaching a monitor to the VGA port.	
	USB 2.0	6: 5 (located at bottom of main display behind access panel), 1 left side (behind access panel)
	Audio line out	1
	Microphone in	1
	Power connector	1: DC 19V for 130W AC power adapter
	RJ-45/Ethernet	1
	RS232 ports	3: Com 1 & 2 (5 V configurable in BIOS), Com 3 (12V configurable in BIOS) **NOTE:** 1 COM port is occupied by the VFD so only 2 are available. If the optional 10.4" CFD is installed, then all 3 COM ports become available.
	USB+power	1: 24 V
	Keyboard (PS/2)	1
	Parallel port	1
	Kensington Lock Hole	1 (lock kit sold separately)

I/O Panel Layout:

QuickSpecs

*Standard Features*

Audio/Visual		Intel integrated high-definition audio with 2-channel Via VT1708S codec
Software	**Preinstalled software**	PDF Complete, HP Client Automation Agent McAfee Total Protection (Windows 7 and Windows XP only)
Power Manager		Advanced Configuration and Power Management Interface (ACPI) allows the system to wake from a low power mode. **NOTE:** Power button is located on I/O panel and concealed under the I/O cover.
SMBIOS		System Management BIOS, previously known as DMI BIOS, for system management information
Security		Kensington Lock Support, Power-On password protection, Setup password protection, USB port disable.
Power Supply		130 W AC power adapter, ENERGY STAR 5.0 qualified, European Union 2005/32/EC (EUP LOT 6, EUP LOT 7), input 90 to 260 VAC; Frequency range 47 to 63 Hz
Service and Support		Standard 3/3/3 parts and labor and on-site service, two-year manufactured lifecycle but support available up to five years, OS support for 90 days; quick restore solution included (requires external optical drive/not included)

Options

Customer Facing Display (CFD)	10" LCD Customer Display	AZ191AA
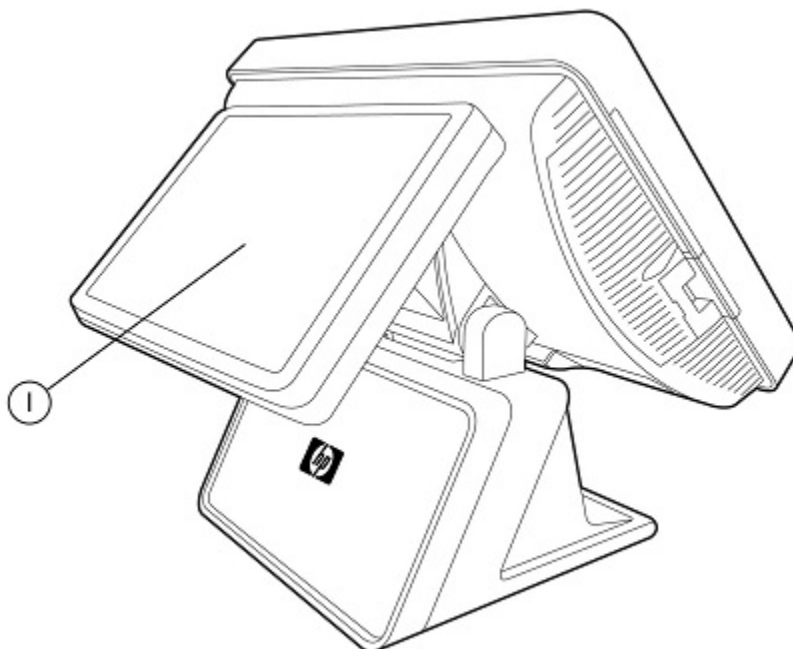
Description

10" LCD Customer Display

The optional Customer Facing Display (CFD) is a liquid crystal display (LCD) that can be used to display promotional messages and images. The CFD is mounted to the HP ap5000 All-in-One POS System in lieu of the 2-line Vacuum Florescent Display (VFD). The CFD will display full color graphics and video via the on-board VGA port. The display receives power from the VGA port so there is no need for a separate power adapter "brick". User buttons are located on the back of the CFD, recessed and out of sight to the customer. The CFD uses the VFD mounting mechanism. Simple procedures for removing the VFD and installing the CFD are included in the 10" LCD Customer Display documentation in AMO kit AZ191AA.

How the display is powered: The 10" LCD Customer Display does not require a separate power supply adapter. It is powered directly from the HP ap5000's VGA port (VGA+Power). When the display is first installed, 19V is delivered to the VGA port, pins 4 and 11. At POST, the ID of the display is read via the SMBUS. If the product ID is recognized as the HP ap5000 10" LCD Customer Display, then 19V remains on. If the product ID is recognized as something else, then 19V is turned off.

WARNING:
This is a Powered VGA Port. Do not hot plug a monitor into the VGA port. Doing so may damage the monitor. Always power down the ap5000 when removing or attaching a monitor to the VGA port.

10" LCD Customer Display Technical Specifications

- VGA+PWR architecture: Power on pins 4 and 11
- Display Area: 10.4" diagonal, 211.21mm (W) x 158.4mm (H)
- Resolution: 1024 x 768
- Max Color: 0.26M
- Contrast Ratio: 500:1
- Brightness: 300 cd/m2
- Pixel Pitch: 0.20625mm
- Viewing Angle: 140° horizontally and 120° vertically
- Response rate: 25ms
- Default Color Temperature: 6487.8° K
- Anti Glare Harness: 3H
- Color Gamut: 50%
- Backlight Unit: CCFL

Options

CFD User buttons	ON/OFF: Powers CFD on or off.	
	DOWN/LEFT: Move DOWN or move LEFT inside a menu.	
	UP/RIGHT: Move UP or move RIGHT inside a menu.	
	MENU/EXIT: ENTER into a menu or sub menu screen or EXIT from a menu or submenu screen.	
	RESET/EXIT: Push to automatically calibrate the CFD. Push again to EXIT.	
Hard Drives	HP 160-GB SATA (NCQ/Smart IV) 3.0-Gb/s Hard Drive	PY277AA
	HP 64 GB Solid State Drive for HP Business Desktop PCs	VG679AA
Optical Drives	External USB CD/DVD R/RW Drive	FS943UT
Input/Output Devices	HP USB 2- Button Optical Scroll Mouse	DC172ATB
	HP USB Washable Keyboard	VF097AA
POS Peripherals	HP Cash Drawer	FK182AA
	HP USB Barcode Scanner	EY022AA
	HP USB Single Station Thermal Receipt Printer	FK022AA
	HP Pole Display	FK225AA
Memory (DIMMs)	HP 1 GB PC2-6400 (DDR2 800 MHz)*	AH058AA
	HP 2 GB PC2-6400 (DDR2 800 MHz)*	AH060AA
	* Runs at maximum speed of 667 MHz.	
Security	Kensington Security Lock Kit	PC766A

Technical Specifications

System Unit			
	Dimensions (HxWxD)	(17.16 x 13.86 x 18.98 in) 43.6 x 35.2 x 48.2 cm	
	Weight	24.36 lb (11.05 kg)	
	Stand-Alone Power Requirements	Electrical Ratings	90 to 264 VAC; 47 to 63 Hz
		Average Operating Power	47.3W under normal operation
		Max Operating Power	130 watts
	Temperature	Operating	50° to 104° F (10 to 40° C)
		Non-operating	-20° to 140° F (-30° to 60° 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)
	Industry Standard Certifications	UL, CSA, FCC Compliance, ENERGY STAR®, EPEAT TBD®	

For accessibility information on HP products, please visit: http://www.hp.com/accessibility.

ROM BIOS Information

Key features of the HP BIOS in the ap5000 include:

- Security - Power on password, F-10 Setup password, USB port disable,
- Thermal and power management - The BIOS provides and enables thermal and power management technologies
- 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. Provides power conservation features under Windows XP.
- Ability to disable the internal speaker

Other Features	Description
ACPI-Ready Hardware	Advanced Configuration and Power Management Interface (ACPI) allows the system to wake from a low power mode.
SMBIOS Ver. 2.4	System Management BIOS, previously known as DMI BIOS, for system management information
Dual-State Power Button	Power button acts as both an on/off button and suspend-to-sleep button

Serviceability Features of System		
Dual Color Power LED on Front of Computer (Indicates Normal Operations and Fault Conditions)		
Diagnostic LED Explanation Table		Number of repeated red LED blinks: 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 recover mode
• Flash Recovery with Video	• DIMM Connectors for easy Upgrade	• Socketed Processort for easy Upgrade
• Restore CD	• NIC LEDs (integrated) (Green, yellow, & Amber)	• DIMM Connectors for easy Upgrade

Technical Specifications

Serviceability Features of Chassis	
- Dual Color Power LED - To indicate normal operations and fault conditions - System memory can be upgraded - Tool-less removal power supply	
Feature	**Description**
ASF 2.0 support (Alert Standard Format)	Industry-standard specification for network alerting and remote control in operating system-absent environments
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 - Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count - By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure

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:

- US ENERGY STAR®
- IT ECO declaration
- EPEAT Silver where HP registers commercial desktop products. See http://www.epeat.net for registration status in your country.

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	34 W	29 W	33.5 W
Sleep (Energy Star low power mode)	1 W	1.1 W	1 W
Off	0.8 W	0.9 W	0.8 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	116 BTU/hr	99 BTU/hr	115 BTU/hr
Sleep	3 BTU/hr	4 BTU/hr	3 BTU/hr
Off	3 BTU/hr	3 BTU/hr	3 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)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.6	26.9
Fixed Disk (random writes)	4.4	34

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 5ppm by weight
- Cadmium greater than 10ppm by weight

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

Technical Specifications

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/supplychain/gen_specifications.html):

- 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   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   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

Technical Specifications