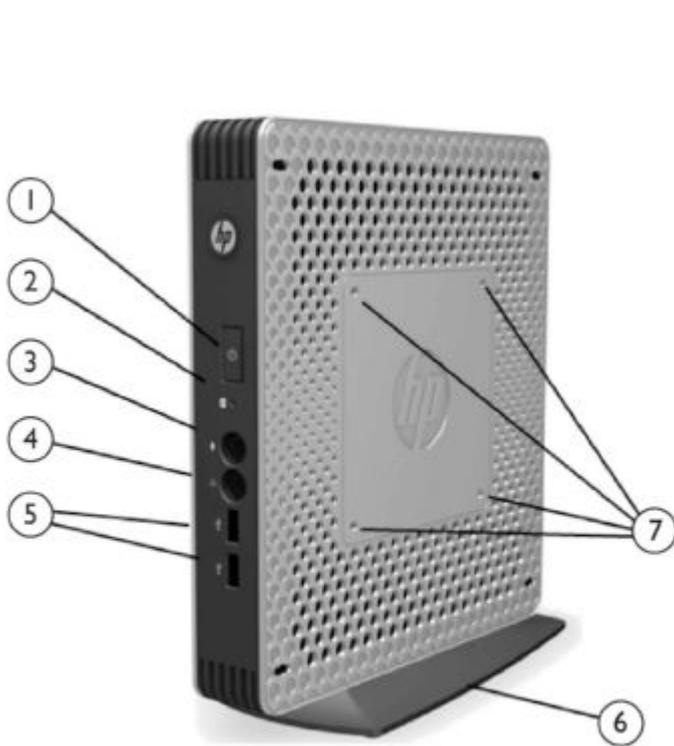


### Overview



#### FRONT

1. Power button (with integrated power indicator light)
2. Flash drive activity indicator light
3. Audio connector (mic/line in)
4. Audio connector (headphone/line out)
5. USB 2.0 connectors (two)
6. Removable stand for vertical orientation
7. Mounting points for HP Quick Release or other VESA mount



#### BACK

1. Mounting location for four (4) horizontal mounting feet
2. DVI-I monitor out
3. DisplayPort 1.1a monitor out
4. Ethernet RJ-45 connector
5. USB 2.0 connectors (2)
6. USB 3.0 connectors (2)
7. Serial connector
8. PS/2 keyboard connector
9. PS/2 mouse connector
10. +19V DC power input
11. Power cable retention slot
12. Cable lock slot

### Overview

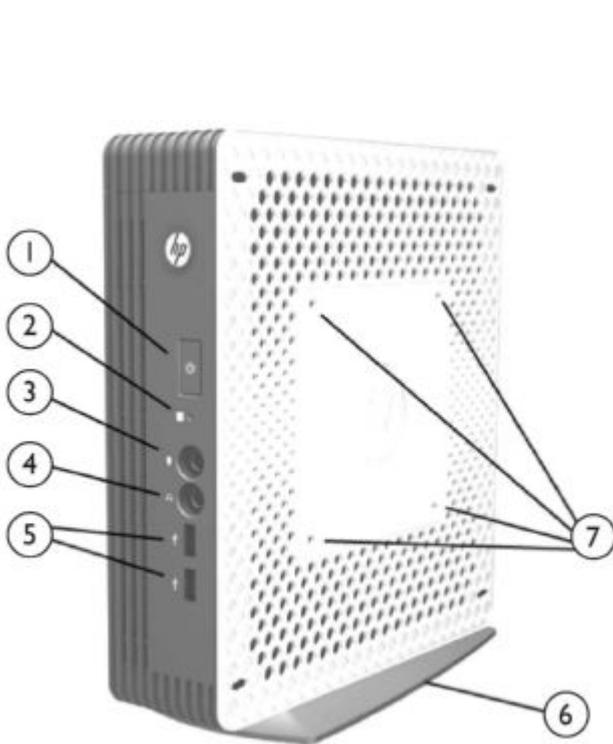
#### HORIZONTAL



1. Horizontal mounting feet installed

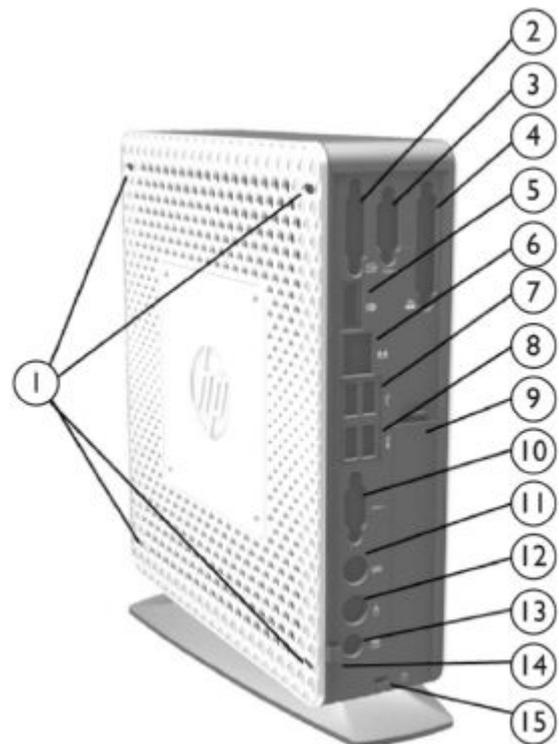
**NOTE:** Horizontal mounting feet **MUST BE INSTALLED** for proper device operation if device is mounted horizontally.

### HP t610 PLUS Flexible Thin Client



#### FRONT

1. Power button (with integrated power indicator light)
2. Flash drive activity indicator light
3. Audio connector (mic/line in)
4. Audio connector (headphone/line out)
5. USB 2.0 connectors (two)
6. Removable stand for vertical orientation
7. Mounting points for HP Quick Release or other VESA mount



#### BACK

1. Mounting location for four (4) horizontal mounting feet
2. DVI-I monitor out
3. Serial connector
4. Parallel connector
5. DisplayPort 1.1a monitor out
6. Ethernet RJ-45 connector
7. USB 2.0 connectors (2)
8. USB 3.0 connectors (2)
9. PCI Express (half-height) card slot (in quad-head video configurations - 2 x DVI-I ports)
10. Serial connector
11. PS/2 keyboard connector
12. PS/2 mouse connector
13. USB 2.0 connectors
14. USB 3.0 connectors
15. Mounting location for horizontal mounting feet

### Overview

13. +19V DC power input
14. Power cable retention slot
15. Cable lock slot

### At A Glance

#### Hardware features:

- Two chassis: Standard (slim) and PLUS (expansion)
- AMD G-Series T56N 2nd generation 1.65 GHz dual-core 64-bit accelerated processing unit (APU) for excellent processing and graphics performance
- AMD Radeon HD 6320 integrated graphics with hardware acceleration of streaming video formats, DirectX 11 support, DVI-I and DisplayPort 1.1a video ports, DVI-to-VGA adapter included, supports video resolutions up to 2560x1600
- DDR3-1600 SODIMM (two slots) up to 4 GB supported (running at 1333 MHz)
- Active thermal management monitors component operating temperatures, throttles APU operation if appropriate, and prevents unit thermal shutdown
- HP t610 PLUS factory-installed quad-head video option: Dual-head AMD FirePro 2270 video card which, when combined with on-board video ports, provides up to 4 digital video ports output (WES 7 quad-head configurations require 4 GB RAM): Up to four digital monitors at 1920x1200 through one DisplayPort video port plus three DVI-I video ports or up to three digital monitors at 2560x1600 (using optional DMS-59-to-DisplayPort adapter)
- HP t610 PLUS factory-installed up to six-head video option: Quad-head AMD FirePro 2460 video card which, when combined with on-board video ports, provides up to 6 digital video ports output (WES 7 quad-head configurations require 4 GB RAM): Up to six digital monitors at 1920x1200 through one DVI-I video port and five DisplayPort video ports, or up to four digital monitors at 2560x1600
- LAN - 10/100/1000 Mb/s Ethernet
- Wi-Fi option: 802.11 a/b/g/N internal (Broadcom mini-PCIe) module plus dual internal antennas for superior performance and security
- USB ports: 2 x USB 2.0 on front, 2 x USB 2.0 on rear, and 2 x USB 3.0 on rear
- Legacy ports standard: PS/2 keyboard and PS/2 mouse, and 1 x Serial
- Legacy ports PLUS: PS/2 keyboard and PS/2 mouse, 2 x Serial, and 1 x Parallel
- Security features: TCG certified TPM chipset, BIOS designed to address NIST SP 800-147 guidelines, cable lock slot, and power cord retention slot to prevent accidental disconnects
- HP t610 PLUS expansion: Half-height PCI Express x4 (physically x16) expansion slot (not available with quad-head or six-head digital monitor configurations)
- Multiple solid-state drive options
- Qualified 3rd-party Fiber NIC PCIe card options (Allied Telesis)
- HP 100 Mbps Mini PCIe SC Fiber NIC factory-installed option on HP t610 PLUS (leaves PCIe slot open for video or other expansion cards)
- Energy Star® qualified and EPEAT® Gold registered where applicable/supported (except for models with quad-head or six-head video option installed). See <http://www.epeat.net> for registration status by country.
- Post-consumer recycled plastics content greater than 20% total unit plastics (by weight)
- Low halogen
- All models TAA Compliant (in North America)

#### Software features for HP t610 with HP ThinPro and HP Smart Zero Technology software:

- HP ThinPro and HP Smart Zero Technology are HP's purpose-built thin client operating systems built from Linux
- HP ThinPro offers an easy-to-use, easy-to-configure, locked-down interface -- HP Connection Manager -- that allows administrators to quickly create server connections for end users.
- HP Smart Zero Clients using Smart Zero Client Technology boot directly into a user log-in on the server or portal for which they are configured. No local thin client user interface means the end-user can get to work without special training on the access device.
- ICA and RDP support for accessing Citrix and Windows resources
- VMware Horizon View PCoIP support for accessing VMware Horizon View sessions
- VDI broker support includes VMware Horizon View, Citrix XenDesktop (with CDA mode utility)
- Multimedia and USB redirection support
  - Citrix HDX MediaStream (multimedia redirection)
  -

### Overview

- Citrix HDX Plug-n-Play (USB redirection)
- Quad-head and six-head video configurations support
- Integrated 802.11a/b/g/N with dual internal antennas configurations available
- Standard configurations: 1 GB Flash drive and 2 or 4 GB RAM
- Improved Quality of Experience for End User using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

### Software features for Genuine Microsoft Windows® Embedded 8 Standard (WES8):

- The newest Microsoft embedded software based on Windows 8
- A 64-bit OS for improved performance and support for larger memory installations (up to 16 GB in HP t610 and HP t610 PLUS)
- Smooth, immersive experiences with technologies like Multi Touch and Windows 8 applications
- The latest RDP 8 and Remote FX client software
- WES8 offers a secure platform that is intelligent systems ready
- Internet Explorer 10 (IE10) for genuine Internet Explorer browsing with improved HTML 5 support and Web-application interfaces
- Latest protocol support from Citrix On-Line Plug-in (ICA) 13.3, RDP 8 w/RemoteFX, and VMware Horizon View Mgr 5.2
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Quad-head and six-head video configurations support
- Integrated 802.11a/b/g/N with dual internal antennas configurations available
- Standard configurations: 16 GB Flash drive and 4 GB RAM
- Improved Quality of Experience for End User using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

All Windows Embedded 8 devices must be activated. Customers have the option via Internet connection, telephone, or indirectly through a proxy for large deployments.

### Software features for Genuine Windows® Embedded Standard 7E (WES 7E):

- Microsoft® Windows® Embedded Standard 7 SP1 (WES 7E or WS7E) with support for RemoteFX and local applications, providing a richer user experience
- Internet Explorer 9 (IE9) for genuine Internet Explorer browsing and Web-application interfaces
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Latest protocol support from Citrix On-Line Plug in (ICA) 13.3, RDP 8 w/RemoteFX, and VMware Horizon View Mgr 5.2
- Enhanced Write Filter and File-Based Write Filter provide complete flexibility to protect the entire Flash disk, or configure areas of the disk for persistent access by local applications
- Microsoft Firewall for enhanced data security
- Support 802.1x LAN-based authentication for greater security
- HP Universal Print Driver provides instant access to a range of HP print devices without downloading separate drivers.
- Quad-head and six-head digital video configurations available
- Integrated 802.11a/b/g/N with dual internal antennas configurations available
- Standard configurations:
  - HP t610 standard chassis -16 GB Flash drive and 2 or 4 GB RAM
  - HP t610 PLUS chassis - 16 GB Flash drive and 4 GB RAM
  - Note: HP recommends 16 GB Flash and 4GB RAM for WES 7 configurations
- Improved Quality of Experience for End User using HP Velocity
  - Available only on HP thin clients

### Overview

- HP Velocity enables IT managers to monitor network activity and optimize end-user experience
- HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

### Software features for Genuine Windows® Embedded Standard 7P (WES 7P):

In addition to the software features in WES 7E:

- Internet Explorer 9 browser
- Windows Touch (Multi-touch support) for touch-screen monitors
- Multi-language support brings multilingual capabilities letting users select a preferred display language, or to easily install a number of other languages
- DirectAccess feature allows remote users to securely access enterprise shares, websites, and applications without connecting to VPN
- BrancheCache WAN optimization technology
- AppLocker application "whitelisting"
- AntiMalware and Windows Defender software providing additional protection from virus, worms, and spyware
- Snipping tool for easy screen capture copying and pasting
- Remote media streaming to enhance multimedia user experience
- Photo Viewer for easy image viewing
- Standard configurations:
  - HP t610 standard chassis -16 GB Flash drive and 4 GB RAM
  - HP t610 PLUS chassis -16 GB Flash drive and 4 GB RAM
- Improved Quality of Experience for End User using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

### Software features for Genuine Windows® Embedded Standard 2009:

- Windows Embedded Standard 2009 OS with support for local applications
- Internet Explorer 9 (IE9) for genuine Internet Explorer browsing and Web-application interfaces
- Great rich multimedia experience and enhanced USB device support in VDI environments
- Latest Protocol support from Citrix On-Line Plug in (ICA) 13.3, RDP 7.1, and VMware Horizon View Mgr 5.2
- Enhanced Write Filter and File-Based Write Filter provide complete flexibility to protect the entire Flash disk, or configure areas of the disk for persistent access by local applications
- Support 802.1x LAN-based authentication for greater security
- Integrated 802.11a/b/g/N with dual internal antennas configurations available
- Standard configurations: 2 GB Flash drive and 2 or 4 GB RAM
- Improved Quality of Experience for End User using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience

HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

### Warranty:

HP Total Care Warranty and Services: limited three-year hardware warranty in most regions. HP Care Pack Services extend service contracts beyond your standard warranties. For more details visit <http://www.hp.com/go/lookuptool>.

### Technical Specifications

## OPERATING SYSTEMS

HP t610 Flexible Series Thin Client models are pre-configured with one of the following operating systems.

- HP ThinPro
- HP Smart Zero Technology
- Genuine Windows® Embedded 8 Standard
- Genuine Windows® Embedded Standard 7E
- Genuine Windows® Embedded Standard 7P
- Genuine Windows® Embedded Standard 2009

## PROCESSOR / CHIPSET

AMD Dual-Core T56N 64-bit APU with Radeon HD 6320 Graphics (1.65 GHz, 1 MB L2 cache)  
AMD A55E chipset

## MEMORY

	ThinPro	HP Smart Zero Technology	WES 8	WES 7E	WES 7P	WES 2009
Flash (boot drive) memory	1 GB	1 GB	16 GB	4 or 16 GB	16 GB	2 GB
Standard system memory	2 GB or 4 GB		4 GB	2 or 4 GB	4 GB	2 or 4 GB
System memory reserved for graphics (minimum)	Depends on installed RAM size for default Auto setting:					
	<ul style="list-style-type: none"> <li>• 2 GB RAM and under auto-selects to 256 MB</li> <li>• Greater than 2 GB RAM auto-selects to 512 MB</li> </ul>					
Maximum system memory	4 GB 1600 MHz		16 GB DDR3 1600 MHz		4 GB DDR3 1600 MHz	
Memory slots	2 SODIMM					

**NOTE:** HP t610 PLUS with WES 7 quad-head video configurations require 4 GB RAM for optimum operation.

## GRAPHICS

AMD Radeon HD 6320 graphics

Mode	Color depth	Refresh rate (Hz)
800 x 600	8/16/32 bit	60, 75, 85
1024 x 600	8/16/32 bit	60, 75, 85
1024 x 768	8/16/32 bit	60, 70, 75, 85
1152 x 864	8/16/32 bit	60, 75, 85
1280 x 720	8/16/32 bit	60, 75, 85
1280 x 768	8/16/32 bit	60, 75, 85
1280 x 800	8/16/32 bit	60
1280 x 960	8/16/32 bit	60, 75, 85
1280 x 1024	8/16/32 bit	60, 75, 85
1366 x 768	8/16/32 bit	60
1400 x 1050	8/16/32 bit	60, 75, 85
1440 x 900	8/16/32 bit	60, 75, 85
1600 x 900	8/16/32 bit	60
1600 x 1200	8/16/32 bit	60, 75, 85

### Technical Specifications

1680 x 1050	8/16/32 bit	60
1920 x 1080	8/16/32 bit	60, 75, 85
1920 x 1200	8/16/32 bit	60, 75
2048 x 1536 (DisplayPort, only)	8/16/32 bit	60
2560 x 1600 (DisplayPort, only)	8/16/32 bit	60

**NOTE:** This table represents a sample of possible modes that this controller is capable of displaying but various factors such as the capability and EDID information returned by the attached monitor, the interface used (DVI-I/DisplayPort or optional D-SUB with dongle), and dual monitor mode may limit the availability of modes, color depth, and/or refresh rate.

### QUAD-HEAD DIGITAL MONITOR CONFIGURATION

#### AMD FirePro™ 2270 Multi-View Professional Graphics dual-head graphics card

Up to two monitor ports on the dual-head card work in addition to the two monitor ports on the motherboard to provide quad-head capabilities at a bargain price. Optional output dongles can provide dual DisplayPort outputs from the graphics card if desired. With the DisplayPort adapter on the graphics card, two 2560x1600 displays can be connected simultaneously.

- Factory Installed Option
- Requires PLUS chassis and occupies PCIe slot
- 512MB memory
- PCIe 2.1, x1
- DMS-59 (ships with dual DVI-I dongle)
- Maximum resolution
  - DisplayPort: 2560x1600 (on motherboard)
  - DVI/VGA: 1920x1200 (1 on motherboard, 2 on graphics card)
- Maximum resolution with optional DMS-59 to DisplayPort adapter:
  - 3 x DisplayPort: 2560x1600 (1 on motherboard, 2 on graphics card)
  - 1 x DVI/VGA: 1920x1200 (1 on motherboard)
- OpenGL 4.1

### SIX-HEAD DIGITAL MONITOR CONFIGURATION

#### AMD FirePro™ 2460 Multi-View Professional Graphics quad-head graphics card

Up to four monitor ports on the quad-head card work in addition to the two monitor ports on the motherboard to provide support for up to six simultaneous digital monitors at a bargain price. Mini DisplayPort connectors on the rear of the card are supported with supplied mini-DisplayPort to standard DVI-D adapter cables. Up to four 2560x1600 displays can be connected simultaneously to the thin client.

- Factory Installed Option
- Requires PLUS chassis and occupies PCIe slot
- 512MB memory
- PCIe 2.1, x1
- 4 x mini-DisplayPort connectors out
- Maximum resolution
  - DisplayPort: 2560x1600
  - DVI/VGA: 1920x1200
- Supplied with four mini-DisplayPort to DVI-D adapter cables
- OpenGL 4.1

### Technical Specifications

#### INPUT/OUTPUT (peripheral support)

<b>Keyboard</b>	USB or PS/2 (varies by region)
<b>Mouse</b>	USB or PS/2 (varies by region)
<b>Printer</b>	Local and/or network printers (RDP, ICA, LPD)
<b>Video</b>	Standard configuration: AMD Radeon HD 6320 graphics: 1x DVI-I and 1x DisplayPort 1.1a (DVI-to-VGA adapter included) Quad-head video option: AMD FirePro™ 2270 Multi-View Professional Graphics dual-head graphics card (for up to four total digital monitors output) available as factory-installed option on PLUS models only (4 GB RAM required for quad-head WES 7 configurations): Up to 4 x 1920x1200, or 3 x 1920x1200 + 1 x 2560x1600, or with optional DMS-59 to DisplayPort adapter 1 x 1920x1200 + 3 x 2560x1600 Six-head video option: AMD FirePro 2460 Multi-View Professional Graphics quad-head graphics card (for up to six total digital monitors output) available as factory-installed option on PLUS models only (4 GB RAM required for six-head WES 7 configurations): UP to 6 x 1920x1200, or 4 x 2560x1600

#### AUDIO/VIDEO

<b>Output</b>	Internal amplified speaker 1/8-inch mini jack Full 24-bit stereo up to 192-kHz sample rate.
<b>Input</b>	1/8-inch mini jack microphone 24-bit stereo, up to 192 kHz sample rate
<b>Audio CODECS with hardware acceleration support</b>	MP3 AAC stereo & HE AAC WMA stereo
<b>Video CODECS with hardware acceleration support</b>	MPEG-4 part 2 (DivX, Xvid) MPEG-4 part 10 (H.264, AVC) WMV 7/8/9/ VC-1 & ASF Demuxer

#### HARDWARE SECURITY

Security lock slot (cable lock sold separately)  
Built-in power cord retention clip

### Technical Specifications

#### NETWORKING

##### Hardware networking

10/100/1000 Gigabit Ethernet (RJ-45)  
 Wake on LAN (WOL)  
 PXE  
 TCP/IP with DNS and DHCP

##### Software networking

	ThinPro	HP Smart Zero Core	WES 7E WES 7P WES 8	WES 2009
Point-to-Point Protocol (PPP)			X	X
Point-to-Point over Ethernet (PPPoE)			X	X
Direct Connection through RS-232	X	X	X	X
Point-to-Point Tunneling Protocol (PPTP)	X	X	X	X
Layer-2 Tunneling Protocol (L2TP)	X	X	X	X
Server Network Time Protocol (SNTP)	X	X	X	X

#### WIRELESS LAN (select models)

<b>Adapter</b>	Broadcom 802.11a/b/g/n Wi-Fi Adapter
<b>Form Factor</b>	PCI-Express Half Mini Card with dual, internal antennas
<b>Security</b>	Supports 64- and 128-bit WEP, WPA, WPA2, AES, TKIP <u>HP ThinPro and HP Smart Zero Technology:</u> 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, LEAP <u>WES 2009, WES 7E, and WES 7P:</u> 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, LEAP

#### HP Fast Ethernet Mini PCIe SC Fiber Network Interface Card (factory-installed option)

<b>Adapter</b>	Allied Telesis AT-27MINI Fast Ethernet Fiber PCI Express MINI Network Interface Card
<b>Available in</b>	HP t610 PLUS chassis configurations, only
<b>Form Factor</b>	Custom-designed card plugs into PCI-Express Mini Card slot, and mounts into HDD bay in HP t610 PLUS chassis
<b>Management Features</b>	WMI, ACPI 2.0/w01, PXE 2.1 boot ROM, SNMP
<b>Ethernet</b>	IEEE 802.1p (Quality of Service) IEEE 802.2 (LLC) IEEE 802.3ac (MAC) IEEE 802.3u (100Mbps) IEEE 802.1as (Audio Bridging) P802.1Qav P802.1Qat (SRP) 1588-2000 (PTP)
<b>Network Controller</b>	Broadcom BCM57762
<b>Connectors</b>	SC

### Technical Specifications

<b>Optical Specifications</b>	Output Optical Power -20 (min) -17 (typ) -14 (max) dBm Optical Sensitivity -34 (typ) -32 (max) dBm
<b>Maximum Cabling Distance</b>	Full-duplex Up to 2000 m (5,560 ft) Half-duplex Up to 412 m (1,351 ft)
<b>Status Indicators</b>	LED 1 port On 100Mbps link up Blink Activity Off 100Mbps link down
<b>Power consumption</b>	2 Watts (typ)
<b>Compliance</b>	RoHS, UL, FCC/EN55022 Class A, TUV, EN55024, CE, C-TICK, VCCI
<b>Supported by thin client operating systems</b>	HP Smart Zero Technology and HP ThinPro Microsoft WES8, WES 7E, WES 7P, and WES 2009

### I/O PORTS, SLOTS & CONNECTORS

#### HP t610 (standard chassis)

4 USB 2.0 ports (two in front, two in rear)  
2 USB 3.0 ports (in rear)  
1 DVI-I (1 DVI-to-VGA adapter included in carton)  
1 DisplayPort  
2 PS/2  
1 serial  
1 RJ-45

#### HP t610 PLUS (expansion chassis)

4 USB 2.0 ports (two in front, two in rear)  
2 USB 3.0 ports (in rear)  
1 DVI-I (standard configuration)  
1 DisplayPort (standard configuration)  
2 PS/2  
2 serial  
1 parallel  
1 RJ-45  
1 half-height PCIe x4 card slot (occupied with quad-head / six-head video configuration)

### SERVER OS COMPATIBILITY/SUPPORT

Citrix XenApp 5 and later  
Citrix XenDesktop 3 and later  
Citrix Presentation Server 4.0 and later  
Windows Server 2003  
Windows Server 2008r2 Terminal Services  
Windows 2012 Server Remote Desktop services (WES Only)  
VMware Horizon View Virtual Desktop Infrastructure

### SOFTWARE for HP t610 and HP t610 PLUS

Host Environment	Protocol	Smart Zero	ThinPro	WES 8	WES 7E	WES 7P	WES 2009
Microsoft Remote Desktop Services	RemoteFX (RFX)	✓	✓	✓	✓	✓	
	RDP	✓	✓	✓	✓	✓	✓
Citrix	ICA	✓	✓	✓	✓	✓	✓
	HDX	✓	✓	✓	✓	✓	✓
VMware Horizon View	RDP	✓	✓	✓	✓	✓	✓
	PCoIP	✓	✓	✓	✓	✓	✓
Protocol Clients		Smart Zero	ThinPro	WES 8	WES 7E	WES 7P	WES 2009
Citrix Receiver*		12.1.5	12.1.5	3.3 (S)	3.3 (E)	3.3 (E)	3.3 (E)
Citrix Online Plugin		12.1.5	12.1.5	13.3	13.3	13.3	13.3
Microsoft Remote Desktop Client				8	8	8	7
VMware Horizon View Client*		1.7	1.7	5.2	5.2	5.2	5.2

### Technical Specifications

Remote Graphics Software (RGS)		via add-on	✓	✓	✓	✓
HP TeemTalk Terminal Emulator		7.3	7.3	7.3	7.3	7.3
Free RDP	1.0	1.0				
<b>Browser Support</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
Mozilla Firefox	19	19				
Internet Explorer			10	9	8	8
<b>Security</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
Smart Card	✓	✓	✓	✓	✓	✓
logon Manager			✓	✓	✓	✓
Read Only Operating System			✓	✓	✓	✓
802.1x	✓	✓	✓	✓	✓	✓
Enhanced Write Filter (EWF)						
File-Based Write Filter (FBWF)			UWF	EWF FBWF	EWF FBWF	EWF FBWF
Unified Write Filter (UWF)						
Microsoft Firewall			✓	✓	✓	✓
Microsoft AntiMalware & Windows Defender			✓		✓	
<b>Session brokers</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
Citrix XenDesktop	✓	✓	✓	✓	✓	✓
VMware Horizon View	1.7	1.7	5.2	5.2	5.2	5.2
Leostream Desktop Connection broker (available from vendor website)				from vendor site	from vendor site	
<b>Management Tools</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
HP Device Manager	✓	✓	✓	✓	✓	✓
HP ThinState		✓	✓	✓	✓	✓
HP Easy Tools		✓		✓		✓
HP Smart Zero Client Services	✓					
Microsoft SCCM/EDM agent				✓	✓	
<b>Additional Components</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
HP Velocity	✓	✓	✓	✓	✓	✓
HP Connection Manager		✓		✓	✓	✓
HP Universal Print Driver			✓	✓	✓	
Windows Media Player			12	12	12	11
Windows Touch (Multi-touch support)			✓ (advanced)		✓ (multi)	✓ (single)
Multilanguage support			✓		✓	
Microsoft DirectAccess					✓	
Microsoft BranchCache					✓	
Microsoft AppLocker					✓	
Microsoft Sideloading						
<b>Audio CODECs included</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
MP3	✓	✓	✓	✓	✓	✓
WMA stereo	✓	✓	✓	✓	✓	✓
AAC stereo & HE AAC	✓	✓				
Microsoft AC3 encoder			✓	✓	✓	✓
Microsoft Dolby audio decoder (AC-3, E-AC-3)			✓			
<b>Video CODECs included</b>	<b>Smart Zero</b>	<b>ThinPro</b>	<b>WES 8</b>	<b>WES 7E</b>	<b>WES 7P</b>	<b>WES 2009</b>
MPEG-1	✓	✓	✓	✓	✓	✓
MPEG-4 part 2 (DivX, Xvid, H.263)	✓	✓	✓	✓	✓	

### Technical Specifications

MPEG-4 part 10 (H.264, AVC)	✓	✓	✓	✓	✓	
WMV 7/8/9/ VC-1 & ASF Demuxer	✓	✓	✓	✓	✓	✓

**NOTE:** Other add-on software available (see: [www.hp.com/support](http://www.hp.com/support) for latest list of available add-ons). Software performance and support may vary depending on customer environment and backend.

\*Citrix provides two versions of Citrix Receiver, Standard (S) and Enterprise (E) for Windows Embedded Standard. Please go to [Citrix.com](http://Citrix.com) for more info. Citrix Receiver and VMware Horizon client versions vary depending on operating systems.

\*\*Customers will require volume licensing (VL) agreement with Microsoft to enable "Enterprise features". Availability: 2H2013.

### TEXT AND GRAPHICS TERMINAL EMULATIONS (provided by HP TeemTalk 7 in HP ThinPro, WES 7, and WES 2009 operating systems)

Emulation	Terminal ID
ADDS A2	
AIXTerm	
ANSI BBS	
AT 386	
ATT4410	
HP 700-92/96	70092, 70094, 70096, 2392A, 2622A
HZ1500	
IBM3151	Mod11, Mod31
IBM3270	3278-2 (24x80), 3278-3 (32x80), 3278-4 (43x80), 3278-5 (27x132), 3278-2-E (24x80), 3278-3-E (32x80), 3278-4-E (43x80), 3278-5-E (27x132), 3279-2 (24x80), 3279-3 (32x80), 3279-4 (43x80), 3279-5 (27x132), 3287-1
IBM5250	5291-1, 5292-2, 5251-11, 3179-2, 3196-A1, 3180-2, 3477-FC (27x132), 3477-FG (24x80), 3486-BA, 3487-HA, 3487-HC, 3812-1
SCO Console	
Stratus V102	
TA6530	
TVI910	
TVI920	
TVI925	
TVI950	
TVI955	
VT52, VT100, VT100+, VT500 (7- or 8-bit)	VT100, VT101, VT102, VT125, VT131, VT132, M2200, VT220, VT240, VT320, VT340, VT420, VT510, VT520, VT525
VT HP220, VT UTF8	VT100, VT101, VT102, VT125, VT220, VT240, VT320, VT340, VT420, VT131, VT132, M2200, VT510, VT520, VT525
VT PCTerm	
Wyse PCTerm	
WY50	
WY50+	
WY60	

**NOTE:** Wireless features, performance and support may vary depending on environmental variables such as placement, settings and firmware of your access points. Please contact your wireless vendor for support of your wireless environment.

### Technical Specifications

#### LANGUAGES (Local User Interface)

The following local user interface languages are available for Windows Embedded Standard 7 and Windows Embedded Standard 2009:

English, French, German, Spanish, Dutch, Norwegian, Korean, Simplified Chinese, Traditional Chinese, and Japanese

The following local user interface languages are available for HP ThinPro and HP Smart Zero Technology:  
English, French, German, Spanish, Korean, Simplified Chinese, Traditional Chinese, and Japanese

#### DIMENSIONS (WxDxH)

	<b>HP t610</b> (standard chassis - vertical orientation)	<b>HP t610 PLUS</b> (expansion chassis - vertical orientation)
<b>Without stand</b>	8.7 x 1.6 x 9.4 in 22 x 4 x 24 cm	8.7 x 2.6 x 9.4 in 22 x 6.5 x 24cm
<b>With stand</b>	8.7 x 1.6 x 9.9 in 22 x 4 x 25.1 cm	8.7 x 2.6 x 9.9 in 22 x 6.5 x 25.1 cm

**NOTE:** Dimensions are approximate

#### WEIGHT

	<b>HP t610</b> (standard chassis)	<b>HP t610 PLUS</b> (expansion chassis)
<b>Without stand</b>	3.285 lbs 1.49 kg	4.365 lbs 1.98 kg
<b>With stand</b>	3.417 lbs 1.55 kg	4.497 2.04 kg

**NOTE:** Weights are approximate

#### POWER

##### HP t610 (standard chassis)

65 W  
Worldwide auto-sensing 100-240 VAC, 50-60 Hz  
Energy-saving automatic power-down  
Surge-tolerant

##### HP t610 PLUS (expansion chassis)

85 W  
Worldwide auto-sensing 100-240 VAC, 50-60 Hz  
Energy-saving automatic power-down  
Surge-tolerant

### Technical Specifications

#### ENVIRONMENTAL

<b>Operating temperature range</b>	<u>Standard</u> 50° to 104° F (10° to 40° C)
	<u>Using Quick Release with a flat panel monitor</u> 50° to 95° F (10° to 35° C)
	<u>Using PCIe Expansion Card</u> 50° to 104° F (10° to 40° C)
<b>Non-operating temperature range</b>	-22° to 140° F (-30° to 60° C)
<b>Humidity</b>	<u>Condensing</u> 20% to 80%
	<u>Non-condensing</u> 10% to 90% non-condensing

**NOTE:** Specifications are at sea level with altitude derating of 1° C/300m (1.8° F/1000ft) to a maximum of 3 Km (10,000 ft), with no direct, sustained sunlight. Upper limit may be limited by the type and number of options installed.

#### REGULATORY COMPLIANCE

<b>Safety</b>	UL 1950, CSA 950; TÜV-GS (EN60 950); approved
<b>RF Interference</b>	FCC Class B; CE Mark; EN55022B; VCCI

### 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 markets:

- ENERGY STAR® Category B
- EPEAT® Gold registered where applicable/supported, see [www.epeat.net](http://www.epeat.net) for registration status by country
- Quad-head and six-head display models using the AMD FirePro™ graphics cards do not meet ENERGY STAR® or EPEAT® requirements.
- Models using the factory-installed HP 100 Mbps Mini PCIe Fiber NIC do not meet ENERGY STAR® or EPEAT® requirements.

### ENERGY CONSUMPTION

	115 VAC (60Hz)	230 VAC (50Hz)	100 VAC (60Hz)
<b>Standard models</b>			
Idle State:	12.17 W	12.42 W	12.17 W
Off Mode:	0.78 W	0.88 W	0.78 W
<b>PLUS chassis models</b>			
<b>PLUS chassis</b>			
Idle State:	12.41 W	12.74 W	12.41 W
Off Mode:	0.77 W	0.82 W	0.77 W

**NOTE:** These measurements represent HP t610 with WES 2009, 2 GB Flash and 8 GB RAM installed. Other OS configurations may vary, but do not significantly exceed these measurements.

**NOTE:** This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled. Off Mode measurements are made with WOL disabled.

**NOTE:** The actual power consumption at your location could vary and is dependent on many factors including but not limited to software load on the thin client, attached peripherals, and environmental factors.

### HEAT DISSIPATION (BTU/hr)

	115 VAC (60Hz)	230 VAC (50Hz)	100 VAC (60Hz)
<b>Standard models</b>			
Idle State:	41.53	42.38	41.53
Off Mode:	2.66	3.00	2.66
<b>PLUS chassis models</b>			
<b>PLUS chassis</b>			
Idle State:	42.34	43.47	42.34
Off Mode:	2.63	2.80	2.63

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

### Environmental Data

#### DECLARED NOISE EMISSIONS

(in accordance with ISO 7779 and ISO 9296)

	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
<b>Standard models</b>		
No rotating part, not tested		
<b>PLUS chassis models</b> (Fans on, HDD spinning if applicable)		
Idle	3.0	21
Operation	3.1	21
Configuration tested included one AMD FT1(18W) processor, one 320 GB 7200 rpm SATA hard drive		

#### 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:

- 6 USB ports
- 1 Serial Port (HP t610 standard chassis) or 2 Serial Ports / 1 Parallel Port (HP t610 PLUS)
- 2 memory slots
- 1 empty PCIe x16 slot (x4 channels) (HP t610 PLUS models without quad-head or six-head video options installed)
- 1 internal HDD drive slot (HP t610 PLUS models)

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

#### BATTERIES

This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000ppm by weight.
- Battery size: CR2032 (coin cell)
- Battery type: Lithium

#### RECYCLED MATERIAL

<b>Product</b>	<ul style="list-style-type: none"> <li>• This product contains 20% or more post-consumer recycled plastics (by weight).</li> <li>• This product is over 90% (by weight) recyclable when disposed of properly at end of life.</li> </ul>
<b>Packaging</b>	<ul style="list-style-type: none"> <li>• The packaging for this product is 90% or more (by weight) recyclable when disposed of properly.</li> </ul>

#### 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.

### Environmental Data

#### 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](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/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.

### Environmental Data

#### **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://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

### Options and Accessories (sold separately)

		<b>Part #</b>	
<b>Accessories</b>	HP Quick Release Kit	EM870AA	
	HP Integrated Work Center Stand	LH526AA	
<b>Memory Upgrade</b>	HP 2GB DDR3-1600 SODIMM Kit	B4U38AA/B4U38AT	
<b>Communications</b> <sup>2, 3</sup>	Allied Telesis PCIe x1 Fast Ethernet Fiber Network Interface Card <sup>1</sup>	AT-2711FX	
	Allied Telesis PCIe x1 Gigabit Fiber Network Interface Card <sup>1</sup>	AT-2972SX	
	Belkin USB-to-Serial Adapter <sup>1</sup>	EM449AA	
<b>Input Devices</b>	HP PS/2 Standard Keyboard	DT527A	
	HP USB Standard Keyboard	DT528A	
	HP USB CCID Smartcard Keyboard	BV813AA	
	HP PS/2 2-Button Optical Mouse	EY703AA	
	HP USB 2-Button Optical Scroll Mouse	DC172B	
<b>Monitors</b>	HP L5009tm Touchscreen Monitor <sup>7</sup>	VK202AA	
	ELO Touch 1529L Flat Panel - USB/serial combo <sup>2,5,7</sup>	E926109	
	HP CPQ LA2206x 21.5-In LED LCD	XN376AA	
	HP LA2206tm 21.5" LED LCD Touchscreen Monitor <sup>8</sup> (2 touch Optical technology)	B0L56AA	
	HP L6015tm 15" Touchscreen Monitor <sup>8</sup> (5 touch Projective Capacitive)	A1X78AA	
	HP L6017tm 17" Touchscreen Monitor <sup>8</sup> (5 touch Projective Capacitive)	A1X77AA	
	LD 4220tm 42" LCD Interactive Touch Display, Digital Display <sup>8</sup>	XH216A8	
	LD 4720tm 47" LCD Interactive Touch Display, Digital Display <sup>8</sup>	XH217AA	
<b>Graphics</b>	HP DisplayPort to DVI-D Adapter	FH973AA FH973AT	
	HP DMS-59 to dual VGA Adapter (for use with pre-configured quad-head models only)	GS567AA	
	HP DMS-59 to dual DVI-I Adapter (for use with pre-configured quad-head models only)	DL139A	
	HP DMS-59 to dual DisplayPort Adapter (for use with pre-configured quad-head models only)	XP688AA	
	<b>Storage</b>	HP v115w 16GB USB 2.0 Flash Drive <sup>6</sup>	P-FD16GHP115-EF
		HP v115w 8GB USB 2.0 Flash Drive	P-FD8GB-HP115-EF
HP v115w 4GB USB 2.0 Flash Drive		P-FD4GB-HP115-EF	
<b>Security</b>	HP USB CCID Smartcard Keyboard	BV813AA	
	Gemalto PC USB-TR Card Reader <sup>1</sup>	HWP117685A	
	Gemalto .NET v2+ Smart Card <sup>1</sup>	HWP115303B HWP115647C	
	SCM SCR331 USB Smart Card Reader <sup>1</sup>	904054	
	HP Keyed Cable Lock	BV411AA	
<b>Care Pack Services</b> <sup>4</sup>	9x5 Next-Business-Day Advanced Exchange - 3 Years	331653-001	

### Options and Accessories (sold separately)

9x5 Next-Business-Day On-Site Coverage - 3 Years

U4847E<sup>5</sup>

331655-001

U4849E<sup>5</sup>

Hardware Installation

331686-001;

UJ865E

<sup>1</sup> Option, drivers, warranty, and support are available directly from third party.

<sup>2</sup> Drivers must be installed. For a complete list of monitors compatible with HP thin clients, it is important to cross-reference the supported video resolutions of the HP thin client to the supported resolutions of the monitor. Most HP monitors have one or more supported resolutions that match HP thin client products.

<sup>3</sup> Only serial is supported.

<sup>4</sup> Service levels and response times for HP Care Pack Services may vary depending on your geographic location. Restrictions and limitations apply. For details, visit:

[www.hp.com/go/carepack](http://www.hp.com/go/carepack).

<sup>5</sup> U4847E is available in all regions; U4849E is available in Latin America and Asia-Pacific/Japan.

<sup>6</sup> Not supported with HP ThinPro or HP Smart Zero Technology HP t610 thin clients.

<sup>7</sup> Supported on HP t610 WES2009 and WES7P OS thin clients

<sup>8</sup> Multi-touch only supported on HP t610 WES7P OS thin clients

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