

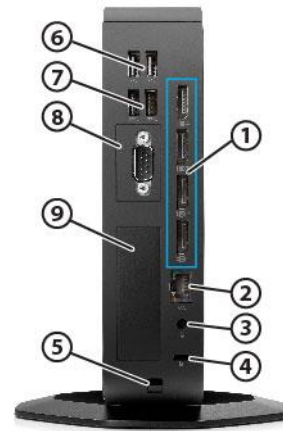
Overview

HP t740 Thin Client



FRONT

1. Power button (with integrated power indicator)
2. Flash memory activity indicator
3. (1) USB-A 3.1 Gen 1 port
4. (1) USB-A 3.1 Gen 2 port
5. (1) USB-C™ 3.1 Gen 2 port
6. 3.5 mm combo headset/audio jack
7. Access panel to information labels and VESA 100 mounting holes
8. System stand



BACK

1. (4) DisplayPort™ 1.2 digital video outputs
2. RJ45 GbE network interface connector
3. 19V DC power input
4. Cable lock slot
5. Rear I/O cover removal latch
6. (2) USB-A 2.0 ports
7. (2) USB-A 3.1 Gen 1 ports
8. Configurable Option Port - one of the following:
 - Blank; no optional configured port
 - Serial port with configurable power (shown)
 - External Wi-Fi antenna connector
9. PCI Express expansion slot; factory options include:
 - Discrete graphics card
 - Fiber Optic NIC interface

Overview

AT A GLANCE

- AMD Ryzen V1756B System on Chip; 3.25 – 3.60 GHz; 4 cores, 8 threads³
- AMD Memory Guard technology that encrypts data in main memory
- DDR4 dual-channel SDRAM system memory; up to 3200 MT/s transfer rate; two SODIMM slots
- (4) DisplayPort™ 1.2 video outputs supporting up to UHD/4K (3840 x 2160 @ 60 Hz) resolutions⁴

NOTE: DisplayPort cables and displays sold separately.

- Optional AMD Radeon E9173 PCI Express graphics card provides support for an additional 2 displays, bringing the system support total to six displays at up to UHD/4K (3840 x 2160 @ 60 Hz) resolution.⁴
- Solid-state flash memory storage; M.2 form factor modules; two slots
- All models rated for operation within an ambient operating temperature of up to 40 degree C; some models restricted to vertical orientation rated for up to 55 degree C ambient operating temperatures.
- Gigabit Ethernet (GbE) network connection; support for DASH out-of-band and remote management.
- Optional Allied Telesis PCI Express Fiber Optic NICs; Fast Ethernet (100 Mb/s) or Gigabit (1,000 Mb/s)
- Optional Intel Wireless-AC 9260 Wi-Fi/Bluetooth® adapter including antennas integrated internally in the chassis¹

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

- Optional remote external Wi-Fi antenna system
- Optional serial port
- Integrated PC speaker for basic audio playback; 3.5 mm combo headset/audio jack on front
- 90W non-PFC external power adapter
- Security features include a TCG certified TPM version 2.0 and a system UEFI (BIOS) designed to address NIST SP 800-147 BIOS protection guidelines and NIST SP800-155 BIOS integrity measurement guidelines. A cable lock slot is provided for use with a cable lock to enable the system's physical security
- Engineered with an active thermal solution including active thermal management technology that monitors the system operating temperatures, throttles SOC operation if appropriate and prevents unit thermal shutdown.
- ENERGY STAR® certified configurations available and EPEAT® Silver registered in the United States (except for some models configured with Fiber Optic NIC networking options). See <http://www.epeat.net> for registration status in other countries
- Post-consumer recycled plastics content greater than 25% total unit plastics (by weight)
- Low halogen² material content
- All models TAA compliant in North America

¹ Wireless access point and Internet access is required; availability of public wireless access points is limited

² This product is low halogen except for power cords, cables and peripherals, as well as the optional Fiber Optic NIC module; service parts obtained aftermarket may not be low halogen

³ Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.

⁴ DisplayPort™ cables and displays sold separately.

Overview

Warranty

HP Customer Support: limited three-year hardware limited warranty in most regions; HP Care Packs are extended service contracts that go beyond your standard limited warranties; for more details visit <http://www.hp.com/go/cpc>

Technical Specifications

OPERATING SYSTEMS

HP ThinPro, including HP Smart Zero Core
Windows 10 IoT Enterprise LTSC 2019

PROCESSOR

Model	CPU Frequency Max/Base	Cores/Threads	GPU Type	GPU frequency
AMD Ryzen Embedded V1756B	3.60/3.25 GHz	4/8	Radeon Vega 8	1.1 GHz

DISPLAY SUPPORT

Number of displays supported

A maximum of 6 displays are supported.

Combination:

4 x DisplayPort(onboard)

4 x DisplayPort(onboard) + 2 x DisplayPort(optional discrete Graphics card)

Video outputs

4 x DisplayPort(onboard)

4 x DisplayPort(onboard) + 2 x DisplayPort(optional discrete Graphics card)

Video Resolution Support Matrix

Windows 10 IoT Enterprise LTSC 2019	FHD 1920 x 1080 @ 60 Hz	UHD 3840 x 2160 @ 60Hz	UHD 3840 x 2160 @ 60Hz
Memory configuration	Single/Dual Channel	Single Channel	Dual Channel
Maximum number of supported displays	6	1	6
1080p playback	✓	✓	✓
UHD/4K video playback	✓		✓

Windows 10 IoT RS5	≤6 x FHD 1920 X 1080 @ 60Hz	1 x UHD/4K 3840 x 2160 @ 60Hz	4 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)	6 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)
Static screen (no video)	✓	✓	✓	✓
1080 60fps(or below) video	✓	✓	✓	✓
4K 30fps video	✓	✓	✓	✓
4K 60fps video	✓	✓	✓	✓

Technical Specifications

Thinpro 7.1+SP8	≤6 x FHD 1920 X 1080 @ 60Hz	1 x UHD/4K 3840 x 2160 @ 60Hz	4 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)	6 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)
Static screen (no video)	✓	✓	✓	✓

NOTE: HP highly recommends configuring the HP t740 Thin Client with dual channel memory for optimized video performance. UHD/4K video playback results may vary based on hardware configuration and installed applications.

SYSTEM MEMORY

Type:	DDR4 dual channel SDRAM
Data Transfer Rate:	Up to 3,200 MT/s
Peak Transfer Rate:	Up to 25,600 MB/s
Number of Slots	2 x SODIMM
Capacities:	4, 8, 16 and 32 GB

NOTES:

- The actual transfer rates will be dependent upon the specification of the SODIMM modules used
- The Graphics Processing Unit (GPU) uses part of the total system memory. System memory dedicated to graphics performance is not available for use by other programs
- HP recommends dual channel memory (two SODIMMs) configurations for optimal system performance

Technical Specifications

UEFI

UEFI Specification Revision: 2.3.1

TPM 2.0: Meets requirements for Common Criteria, an independent third-party certification of trustworthiness

Meets requirements for FIPS 140-2, a standard for cryptographic integrity

Security features: System UEFI designed to address NIST SP 800-147 BIOS protection guidelines and NIST SP800-155 BIOS integrity measurement guidelines

STORAGE

Type: NAND flash memory; non-volatile

Number of Sockets: 1 x M.2 supporting eMMC and NVMe flash memory modules
1 x M.2 supporting SATA memory modules

Capacities: 16 GB M.2 eMMC flash module
32 GB M.2 eMMC flash module
64 GB M.2 eMMC flash module
128 GB M.2 SATA flash module
256 GB M.2 NVMe flash module
512 GB M.2 NVMe flash module

Input/Output

USB Interfaces: Front access: (1) USB-A 3.1 Gen 1 port
(1) USB-A 3.1 Gen 2 port
(1) USB-C™ 3.1 Gen 2 port

Rear access: (2) USB-A 2.0 ports
(2) USB-A 3.1 Gen 1 ports

Video Outputs: Standard: (4) DisplayPort™ 1.2 digital outputs
With optional graphics card: (6) DisplayPort™ 1.2 digital outputs

I/O Interfaces: Standard:

- RJ45 network interface
- 3.5 mm combo headset/audio jack

Option Port:

- Blank; no optional port
- Serial port with configurable power
- External Wi-Fi antenna connector

AUDIO/VIDEO

Audio Subsystem

- Internal amplified speaker system for basic audio playback
- 3.5 mm combo headset/headphone/analog microphone audio jack (front access)

Audio CODECs

- MP3
- AAC Stereo
- HE AAC
- Includes hardware acceleration support

Technical Specifications

- Video CODECs**
- MPEG-4 part 2 (DivX, Xvid)
 - MPEG-4 part 10 (H.264, AVC), Advanced Video Coding (AVC) (H.264 encode & decode)
 - MPEG-H part 2, High Efficiency Video Coding (HEVC, available with Windows 10 IoT Only) H.265 (8-bit / 10-bit) decode & (8-bit) encoding
 - WMV 7/8/9 VC-1 & ASF Demuxer
 - Includes hardware acceleration support

NETWORKING

- Local Area Networking:** Realtek RTL8111EPH-CG Gigabit Ethernet (GbE) Controller with support for DASH out-of-band remote management
- Wi-Fi Networking:** Intel® Wireless-AC 9260 Wi-Fi/Bluetooth® combo; 2x2 802.11ac Wi-Fi and Bluetooth 5

- NOTE:**
- Wireless access point and Internet access required. Availability of public wireless access points limited.
 - Wireless features, performance and support may vary depending on environmental variables such placement, settings and firmware of your access points. Please contact your wireless vendor for support of your wireless environment

FIBER OPTIC NETWORKING

Allied Telesis 2711 Series

AT-2711FX/ SC

PCI Express Fast Ethernet Fiber Adapter

- Key Features:**
- PCIe (PCI-Express) x1 interface
 - IEEE 802.1x flow control
 - IEEE 802.1p-based traffic prioritization
 - TCP checksum RX/TX supported
 - Wake-on-LAN (WoL) supported (enabled by default, utility to disable available in firmware)
 - Audio/Video Bridging (AVB)
 - Jumbo frame up to 9.6KB
 - Receive-Side Scaling (RSS)
 - MSI and MSI-x
 - RoHS compliant
 - IPv6
 - Compliant with Trade Agreement Act
 - SNMP

Allied Telesis 2914 Series

AT-2914 SX/SC or LC

PCI Express Gigabit Fiber Adapter

- Key Features:**
- Jumbo frames up to 9.6KB
 - Smart Load Balancing (SLB) and failover
 - Link aggregation (IEEE 802.3ad)
 - Generic trunking (FEC/GEC) / IEEE 802.3ad-draft static
 - UEFI network boot

Technical Specifications

SOFTWARE SUPPORT

Host Environment	Protocol	HP	Microsoft
		ThinPro	Windows 10 IoT Enterprise 2019
Remote Desktop Services	Remote FX (RFX), RDP	✓	✓
Citrix®	ICA, HDX	✓	✓
VMware® Horizon	RDP, PCoIP, Blast Extreme	✓	✓

Protocol Clients	HP	Microsoft
	ThinPro	Windows 10 IoT Enterprise 2019
Citrix® Workspace app	✓	✓
Microsoft Remote Desktop Client		✓
Free Remote Desktop Client	✓	
VMware™ Horizon View™ Client	✓	✓
HP Remote Graphics Software (RGS)	via add-on	✓
TurboSoft TTerm for Linux® Terminal emulation Software	via add-on	
TurboSoft TTWin Terminal emulation software		via add-on

Browser Support	HP	Microsoft
	ThinPro	Windows 10 IoT Enterprise 2019
Mozilla Firefox	✓	
Internet Explorer		✓

Security	HP	Microsoft
	ThinPro	Windows 10 IoT Enterprise 2019
Smart Card	✓	✓
Log-on Manager	✓	✓
Read only Operating System	✓	✓
802.1x	✓	✓
Microsoft Firewall		✓
HP Write Manager		✓

Technical Specifications

Microsoft Unified Write Filter		✓
NOTE: the HP Write Manager is the default active write filter. The Microsoft Unified Write Filter is disabled by default but can be enabled by the user if required.		

Management Tools	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2019
HP Device Manager	✓	✓
HP ThinUpdate		✓
HP Easy Tools	✓	
HP Smart Zero Client Services	✓	
Microsoft SCCM/EDM agent		✓
HP USB Port Manager		✓

Additional Windows Components	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2019
HP Easy Shell		✓
Windows Media Player		✓
Microsoft Direct Access		✓
Microsoft BranchCache		✓
Microsoft AppLocker		✓
Microsoft Sideloading		✓
CyberLink		✓

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

Audio/Video CODECs	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2019
MP3	✓	✓
WMA stereo	✓	✓
AAC stereo & HE AAC	✓	
Microsoft AC3 encoder		✓
MPEG-1	✓	

Technical Specifications

MPEG-4 part 2 (DivX, Xvid, H.263)	✓	✓
MPEG-4 part 10 (H.264, AVC)	✓	✓
WMV 7/8/9/ VC-1 & ASF Demuxer	✓	✓

Recommended TC config for Microsoft Teams media optimization

	TC CPU	VMware Teams Optimization	Citrix Teams Optimization
t430	1.10 GHz 2 Core	-	-
t530	1.50 GHz 2 Core	-	-
t540	1.50 GHz 2 Core	-	-
t630	2.00 GHz 4 Core	✓	✓
t628	1.99 GHz 4 Core	-	✓
t638	2.00 GHz 4 Core	✓	✓
t640	2.40 GHz 2 Core	✓	✓
t730	2.70 GHz 4 Core	✓	✓
t740	3.25 GHz 4 Core	✓	✓
mt21	1.80 GHz 2 Core	-	✓
mt22	1.90 GHz 2 Core	-	✓
mt31	1.80 GHz 2 Core	-	✓
mt32	2.70 GHz 4 Core	✓	✓
mt45	2.10 GHz 4 Core	✓	✓
mt46	2.50 GHz 4 Core	✓	✓

- Not recommended, ✓ recommended

WEIGHTS & DIMENSIONS

W x D x H:
(vertical orientation) 50 x 210 x 210 mm

Volume: 2.2 liter

System Weight
(unit with stand) 1323g

Shipping Weight 3798g

NOTE: All measurements are approximate; the addition of optional modules will increase the weight

Technical Specifications

EXTERNAL POWER SUPPLY

90W non-PFC Smart external power adapter

Worldwide auto-sensing 100-240 VAC; nominal voltage is 120 VAC; 50-60 Hz

Energy saving automatic power-down; surge tolerant

1.8m output cable

External power adapters are sourced from several suppliers in order to ensure adequate supply and availability is maintained. The actual dimensions of the power brick will vary by supplier.

HP P/N	Vendor	Dimensions
L31819-002	Chicony	127 x 51 x 30 mm
L31819-003	Delta	126 x 51 x 30 mm

Technical Specifications

COMPLIANCE/CERTIFICATIONS

Accessibility:	Section 508 Accessibility. VPAT report available
Environmental Stewardship:	Worldwide (ENERGY STAR® configurations available, EPEAT 2.0, RoHS2, ERP, TCO, CECP& SEPA, HP GSE, WEEE, Low Halogen, etc.)
Product Safety:	Worldwide (UL, CB, GS, CCC, BSMI, etc.)
Electromagnetic Compliance (EMC):	Worldwide (FCC/CISPR/EN/VCCI/ICES/AS/NZS/CNS/KCC) “Class B” EMI regulations

ENVIRONMENTAL

Operating Temperature Range:	Standard: (any orientation and configured options)	50 deg to 104 deg F 10 deg to 40 deg C
	Advanced: (vertical orientation with empty PCIe slot)	50 deg to 122 deg F 10 deg to 50 deg C
Non-operating Temperature Range:	-22 deg to 140 deg F -30 deg to 60 deg C	
Humidity:	Condensing:	20% to 80%
	Non-condensing:	10% to 90%

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.

Basic Configuration (does not include a fiber optic NIC):

Energy Consumption	115 V ac, 60 Hz	230 V ac, 50 Hz	100 V ac, 60 Hz
Normal Operation (Short idle)	16.57 W	16.68 W	16.64 W
Normal Operation (Long idle)	16.22 W	16.29 W	16.24 W
Sleep	1.47 W	1.61 W	1.43 W
Off	1.32 W	1.32 W	1.31 W

Heat Dissipation*	115 V ac, 60 Hz	230 V ac, 50 Hz	100 V ac, 60 Hz
Normal Operation (Short idle)	57 BTU/hr	57 BTU/hr	57 BTU/hr
Normal Operation (Long idle)	55 BTU/hr	56 BTU/hr	55 BTU/hr
Sleep	5 BTU/hr	5 BTU/hr	5 BTU/hr
Off	5 BTU/hr	5 BTU/hr	4 BTU/hr

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

System configuration includes: HP Thin Pro 64bit operating system, 128 GB storage, 32 GB of system memory, USB keyboard & USB mouse

Optional Configuration (includes a fiber optic NIC):

Energy Consumption	115 V ac, 60 Hz	230 V ac, 50 Hz	100 V ac, 60 Hz
Normal Operation (Short idle)	18.21 W	TBD	TBD
Normal Operation (Long idle)	17.78 W	TBD	TBD
Sleep	2.45 W	TBD	TBD

Technical Specifications

Off	1.32 W	TBD	TBD
Heat Dissipation*	115 V ac, 60 Hz	230 V ac, 50 Hz	100 V ac, 60 Hz
Normal Operation (Short idle)	62 BTU/hr	TBD	TBD
Normal Operation (Long idle)	61 BTU/hr	TBD	TBD
Sleep	8 BTU/hr	TBD	TBD
Off	5 BTU/hr	TBD	TBD

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

System configuration includes: HP Thin Pro 64bit operating system, 128 GB storage, 32 GB of system memory, USB keyboard & USB mouse

Acoustic Noise Emission Declaration						
Measurement and declaration standards:	ISO 7779: Acoustics – Measurement of airborne noise emitted by information technology and telecommunications equipment					
	ISO 9296: Acoustics – Declared noise emission values of computer and business equipment					
Declared Noise Emission Values in accordance with ISO 9296						
Product Configuration or Operating Mode # (see section below for description)	Declared Sound Power Level, L_{Wad} Bels			Declared Sound Pressure Level, L_{pAm} dBA		
	Idle	Operating		Tested on ISO Table		
	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode
Vertical	2.6	2.7	3.8	14.8	14.9	25.5
Horizontal	2.7	2.7	3.7	N/A	N/A	N/A
The Product meets the acoustic noise limits of these voluntary Eco labels:				TCO Blue Angel Nordic Swan EU Flower		
NOTE: Measured under ISO 7779 and ISO 9296 measurement and declaration standards.						

Summary of Changes

Date of change:	Version History:	Type of change	Description of change:
September 10, 2019	From v1 to v2	Added	Acoustic Noise Emission Declaration section
		Changed	Format page 2, changed DISPLAY SUPPORT, Graphics, Memory, UEFI, WEIGHTS & DIMENSIONS and ENVIRONMENTAL sections
April 28, 2020	From v2 to v3	Changed	DISPLAY SUPPORT section
May 18, 2020	From v3 to v4	Changed	AUDIO/VIDEO section
October 14, 2020	From v4 to v5	Changed	Energy Star certification
January 14, 2021	From v5 to v6	Changed	SOFTWARE SUPPORT section

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