Lenovo P360 Tiny

Version: 3.0 | 07/19/2023

Downloads

Hardware Maintenance Manual	P360 Tiny HMM
Drivers & Software	P360 Tiny Drivers & Software
Available Whitepapers	

SECTION I: Platform Overview

Description	Engineered to go where others can't, the ThinkStation P360 Tiny combines simple and efficient design with the professional power of a workstation. The industry's smallest workstation, at less than one-liter total volume, offers uncompromising performance in a form factor that is 96% smaller than a traditional desktop.

CPU

Processor Support	Intel Alder Lake Core Series
Socket Type	Socket-H (LGA 1700)

Operating Systems

Preloaded	Windows 11 Pro Windows 11 Home Windows 10 Pro 64-bit Windows 10 IOT LTSC Ubuntu 20.04 LTS

Supported	Ubuntu 22.04 LTS Ubuntu 20.04 LTS Red Hat Enterprise Linux 8.6

Memory

Slots	Up to 2 SODIMMs
Channels	Supports up to 2 SODIMM Sockets, 2 Channels
Type	262-pin, 4800MHz non-ECC SODIMM
ECC Support	No
Speed	Up to 4800MHz
Max DIMM Size	32GB DDR5 SODIMM
Max System Memory	64GB

Storage

PCIe	2 x M.2 PCIe Connectors, Gen 4 Onboard

Video

Integrated Graphics	Intel Integrated UHD Graphics 770
Discrete Graphics	PCIe Add-In-Card, Details in Section Below
Multi-GPU Support	Yes
Type	PCIe Add-In-Card
Bus Interface	PCIe x8 Gen 4 Routed From CPU

Front I/O

USB	2 x USB 3.2 Gen 2 Type-A 10Gb/s 1 x USB 3.2 Gen 2 Type-C 20Gb/s
Audio	1 x Combo Audio/Microphone Jack (3.5mm)
Disclaimers	Note: Actual USB throughout will vary depending on the type and quantity of USB devices used.

Rear I/O

USB	2 x USB 3.2 Gen 2 Type-A 10Gb/s

	2 x USB 3.2 Gen 1 Type-A 5Gb/s
Audio	NA
DisplayPort	1 x Standard Optional 2 x Rear Port
HDMI	1 x Standard Optional 2 x Rear Port
Type-C	Optional 1 x Rear Port
VirtualLink	NA
VGA Port	Optional 2 x Rear Port
Serial Port	Optional 2 x Rear Port
Ethernet	1 x Standard Optional 1 x Rear Port
PS/2	NA
IEEE 1394	NA
eSATA	NA
Parallel Port	NA
Optional USB Adapter	Optional Single Type-C + DP Port
Optional Network Adapter	Intel I350-T2 Quad Port Gigabit Ethernet Adapter Intel I350-T4 Quad Port Gigabit Ethernet Adapter
Disclaimers	Note: Actual USB throughout will vary depending on the type and quantity of USB devices used.

Ethernet

Vendor	Intel Jacksonville I219LM
Speeds	10/100/1000Mbps
Functions	PXE, ASF, WOL, Jumbo Frames, Teaming
Connectors	1 x RJ45

Audio

Vendor	Realtek
Type	Integrated Audio
Internal Speaker	Yes
Connectors	Mic + Headphone combo jack
Chipset	ALC256
Number of Channels	2 Channels
Number of Bits/Audio Resolution	2 Channels of DAC support 24-bit PCM format 2 Channels of ADC support 16-bit PCM format

Thermal

Temp Sensors	Ambient Sensor VR Sensor M.2 Sensor
Fans	1 x CPU Fans

Power Specifications

Power Supply	170W	230W
Power Efficiency	89% Efficient @ 50% Load	89% Efficient @ 50% Load
Operating Voltage Range	100 – 240V	100 – 240V
Rated Voltage Range	90-264VAC	90-264VAC
Rated Line Frequency	47Hz / 63Hz	47Hz / 63Hz
Operating Line Frequency Range	50Hz / 60Hz	50Hz / 60Hz
Rated Input Current	2.5A	3.5A
Graphics	No	No
Power Supply Fan	No	No
ENERGY STAR® Qualified (config dependent)	Yes	Yes
Aux Power Drop	No	No

BIOS

Vendor	AMI
Self-Healing BIOS	Yes

Chassis Information

Color	Raven Black
PSU	230W Power Brick (Chicony, A18-230P1A) Dimensions: 169.545*87.3125*25.4mm Weight: 680.389g Slim 170W Power Brick (Delta, ADP-170CB) Dimensions: 150*77*22mm Weight: 457g
Thermal Solutions	One System Fan Standard
Dimensions	37mm / 1.5" H 182.9mm / 7.2" D 179mm / 7.047" W
Weight	1.4kg / 3.84lbs

Packaging Dimensions

Height (mm/in)	141mm / 5.6″
Width (mm/in)	268mm / 10.6″
Depth (mm)	490mm / 19.3″
Weight (kgs/lbs)	2.8kg / 6 lbs

Security & Serviceability

TPM	Infineon SLB9670, FW 7.85, TPM 2.0
Asset ID	Yes, 1024 x 8bit
vPro	Intel vPro for WS (AMT 14.x)
Cable Lock Support	Yes, Optional Kensington Cable Lock
Serial, Parallel, USB, Audio, Network, Enable/Disable Port Control	Yes
Power-On Password	Yes
Setup Password	Yes
NIC LEDs (integrated)	Yes
Access Panel Key Lock	No
Boot Sequence Control	Yes
Padlock Support	No
Boot without keyboard and/or mouse	Yes
Access Panel	Tool-less Side Cover Removal
Optical Drive	Optional via External ODD Box
Hard Drives	Tool-less
Expansion Cards	Retained With Screws
Processor Socket	Tool-less
Color coded User Touch Points	Yes
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Retained With Screws
Restore CD/DVD/USB Set	Not Included, Restore Media Available via Lenovo Customer Support Center

Operating Environment

Air Temperature	Operating: 10°C to 35°C (50°F to 95°F)
Storage	Storage: -40°C to 60°C (-40°F to 140°F) in Original Shipping Carton Storage: -10°C to 60°C (14°F to 140°F) Without Carton
Humidity	Relative Humidity Operating: 20% to 80% (non-condensing) Relative Humidity Storage/Transit: 20% to 90% (non-condensing) Wet Bulb Temperature Operating: 25°C (77°F) max Wet Bulb Temperature Non-operating: 40°C (104°F) max
Altitude	Operating: -15.2m to 3048m (-50ft to 10000ft) Storage: -15.2m to 10668m (-50ft to 35000ft)
Vibration	Package Vibration: Random,1.04G at 2-200 Hz, 1 octave/min Operating Vibration: Random,0.27G at 5-500 Hz, 0.5 octave/min Non-Operating Vibration: Random,1.04G at 2-200 Hz, 1 octave/min
Shock	Operating Shock: Bottom half-sine pulse with a change in velocity of 37.4 cm/sec (14.7 inches/sec) Rack Operation Shock: 45-G faired square wave with a velocity change of 441 cm/sec (173.7 inches/sec) Non-operating Shock: 45-G faired square wave with a velocity change of 441 cm/sec (173.7 inches/sec)

SECTION II: Platform Detail

Board Size	6.75” x 6.89” (171.5mm x 175mm)
Layout	Custom ATX

Motherboard Core

Processor Support	Intel Alder Lake Core
Socket Type	Socket H (LGA 1700)
Memory Support	DDR5 up to 4800MHz SODIMM Memory (non-ECC)
Voltage Regulator	65W TDP Capable
Chipset (PCH)	Intel Q670 Chipset
Flash	32MB
Super I/O	Nuvoton NCT6692D
Clock	Intel Native isCLK
Audio	Realtek ALC233VB Codec
Ethernet	Intel Jacksonville I219LM

Supported Components

Processor Level	Intel Alder Lake – Core
Processor	i9-12900 i9-12900T i7-12700 i7-12700T i5-12600 i5-12600T i5-12500 i5-12500T i5-12400 i5-12400T i3-12300 i3-12300T i3-12100 i3-12100T
Memory Type	SODIMM 4800 MHz
Memory	8GB 4800MHz DDR5 SDRAM SODIMM 16GB 4800MHz DDR5 SDRAM SODIMM 32GB 4800MHz DDR5 SDRAM SODIMM

Storage

M.2 PCIe Solid State Drive (SSD)	512GB M.2 PCIe SSD, Gen 4 x4, NVMe, OPAL 1024GB M.2 PCIe SSD, Gen 4 x4, NVMe OPAL 2048GB M.2 PCIe SSD, Gen 4 x4, NVMe OPAL

Optical Drive/Removable Media

DVD-ROM Drive	Optional via External ODD Box – Slim DVD-ROM Drive
DVD Burner/CD-RW Drive	Optional via External ODD Box – Slim DVD Burner/CD-RW Drive

Keyboard and Pointing Devices

Keyboard	Calliope USB Keyboard Traditional USB Keyboard
Pointing Devices	Calliope USB Mouse Fingerprint USB Mouse

PCIe Adapters

Network	Intel I350-T2 Dual Port Gigabit Ethernet Adapter Intel I350-T4 Quad Port Gigabit Ethernet Adapter
Thunderbolt	Rear Thunderbolt PCIe Adapter

WiFi Cards	Intel PCIe WiFi Card with BT External Antenna Kit (Intel AX201 non-vPro) Intel PCIe WiFi Card with BT External Antenna Kit (Intel AX211 vPro) Foxconn PCIe WiFi Card with BT External Antenna Kit (Foxconn RTL8852BE non-vPro) Foxconn PCIe WiFi Card with BT External Antenna Kit (Foxconn RZ616 non-vPro)

SECTION III: Supported Component Detail

CPU Specifications

CPU	Intel i9-12900 2.4GHz/16C/24T/30M 65W DDR5 4800 vPro	Intel i7-12700 2.1GHz/12C/20T/25M 65W DDR5 4800 vPro	Intel i5-12600 3.3GHz/6C/12T/18M 65W DDR5 4800 vPro	Intel i5-12500 3.0GHz/6C/12T/18M 65W DDR5 4800 vPro	Intel i5-12400 2.5GHz/6C/12T/18M 65W DDR5 4800	Intel i3-12300 3.5GHz/4C/8T/12M 60W DDR5 4800	Intel i3-12100 3.3GHz/4C/8T/12M 60W DDR5 4800	Intel i9-12900T 1.4GHz/16C/24T/30M 35W DDR5 4800 vPro	Intel i7-12700T 1.4GHz/12C/20T/25M 35W DDR5 4800 vPro	Intel i5-12600T 2.1GHz/6C/12T/18M 35W DDR5 4800 vPro	Intel i5-12500T 2.0GHz/6C/12T/18M 35W DDR5 4800 vPro	Intel i5-12400T 1.8GHz/6C/12T/18M 35W DDR5 4800	Intel i3-12300T 2.3GHz/4C/8T/12M 35W DDR5 4800	Intel i3-12100T 2.2GHz/4C/8T/12M 35W DDR5 4800
# of Cores	16	12	6	6	6	4	4	16	12	6	6	6	4	4
# of Threads	24	20	12	12	12	8	8	24	20	12	12	12	8	8
Processor Base Frequency	2.4G	2.1G	3.3G	3.0G	2.5G	3.5G	3.3G	1.4G	1.4G	2.1G	2.0G	1.8G	2.3G	2.2G
Max Turbo Frequency	5.1G(1-core)	4.9G(1-core)	4.8G(1-core)	4.6G(1-core)	4.4G(1-core)	4.4G(1-core)	4.3G(1-core)	4.8G(1-core)	4.7G(1-core)	4.6G(1-core)	4.4G(1-core)	4.2G(1-core)	4.2G(1-core)	4.1G(1-core)
Cache	30M	25M	18M	18M	18M	12M	12M	35M	25M	18M	18M	18M	12M	12M
TDP	65W	65W	65W	65W	65W	60W	60W	35W	35W	35W	35W	35W	35W	35W

Solid State Storage Specifications

Drive	NVMe 2280 M.2 512GB PCIe SSD (OPAL)	NVMe 2280 M.2 1TB PCIe SSD (OPAL)	NVMe 2280 M.2 2TB PCIe SSD (OPAL)
Dimensions Millimeters (W x D x H)	22x80x2.38mm	22x80x2.38mm	22x80x2.38mm
Interface Type	PCIe Gen 4x4	PCIe Gen 4x4	PCIe Gen 4x4
Power Active (AVG)	5.8W	5.8W	5.8W
Power Idle	35mW	35mW	35mW
Typical Sequential Read	6000 MB/s	6400 MB/s	6400 MB/s
Typical Sequential Write	3200 MB/s	3800 MB/s	5000 MB/s
Burst Random Read (4K Queue Depth 32/8 thread);	500K IOPS	550K IOPS	550K IOPS
Burst Random Write (4K Queue Depth 32/8 thread)	370K IOPS	400K IOPS	400K IOPS
Operating Temperature Range	0 to 70°C	0 to 70°C	0 to 70°C
Endurance Rating (Lifetime Writes)	150 TB	300 TB	600 TB
Mean Time Between Failures (MTBF)	2.0M POH	2.0M POH	2.0M POH
Hardware Encryption	AES 256 bit	AES 256 bit	AES 256 bit

Optical Drive Specifications

Description	9mm Slim DVD ROM Drive	9mm Slim DVD Burner/CD-RW Drive
Interface Type	SATA 1.5 Gb/s	SATA 1.5 Gb/s
Dimensions	128±0.4x9.0 ±0.4x127±0.4(Max) Unit:mm （Without Bezel-W x H x D)	128±0.4x9.0 ±0.4x127±0.4(Max) Unit:mm （Without Bezel-W x H x D)
Disc Capacity	NA	NA
Type	DVDROM	DVDWriter
External Dimensions	NA	NA
Speed	NA	NA
Bay Type	9.0mm Tray	9.0mm Tray
Color	Business Black or without bezel	Business Black or without bezel
Removable	No	No
Internal Buffer Size	0.5MB Min	0.5MB Min
Writes	NA	8XDVD+R / 8XDVD+RW / 6XDVD+R DL 8XDVD-R / 6XDVD-RW / 6XDVD-R DL 24XCD-R / 16XCD-RW
Reads	8XDVD-ROM / 24XCD-ROM	8XDVD-ROM / 24XCD-ROM

Source	DC Power 5V	DC Power 5V
DC Power Requirements	+5V±5%	+5V±5%
DC Current	Max 2.5A@5v	Max 2.5A@5v
Operating Systems Supported	All Windows OS	All Windows OS
Temperature	Operating: 5ºC to 45 ºC Non-Operating:-30ºC to 60ºC	Operating: 5ºC to 45 ºC Non-Operating:-30ºC to 60ºC
Relative Humidity	Operating > Read: 15 % to 85 % (Non-Condensing) Write 15 % to 80 % (Depend on the Temperature) Storage/Transportation> 10 % to 80 % (Non-Condensing)	Operating > Read: 15 % to 85 % (Non-Condensing) Write 15 % to 80 % (Depend on the Temperature) Storage/Transportation> 10 % to 80 % (Non-Condensing)

Integrated Graphics Adapter

Type	Intel® UHD Graphics 770
Display Interface	1x DP 1.2, 1x HDMI 2.0
Video Resolution (max)	4096x2304 @ 60Hz (DP) ,4096x2160@60Hz (HDMI)

Discrete Graphics Adapter

Adapter	Nvidia T600(miniDP x4) – 4GB GDDR6	Nvidia T1000(miniDP x4) – 4GB GDDR6 Tiny LP	Nvidia T1000 – 8GB GDDR6 Tiny LP	Nvidia T400 （miniDP X3） 4GB	RTX 3060	WX3200
Bus Interface	PCI Express 3.0 x8	PCI Express 3.0 x8	PCI Express 3.0 x8	PCI Express 3.0 x8	PCIe 4.0 x16	PCIe 3.0 x8
Display Interface	Four mini-DisplayPort connectors	Four mini-DisplayPort connectors	Four mini-DisplayPort connectors	Three mini-DisplayPort connectors	HDMI*1: 7680*4320@60Hz DP*3： 5120*2880@60Hz	4 x mDP
Graphics Chipset	TU117-850	TU117-875	TU117-875	TU117-825		Dev team, pls help to fill in
Memory Clock Frequency (MHz)	5001MHz	5001MHz	5001MHz	5001MHz	8000MHz	Dev team, pls help to fill in
Memory Size	4GB	4GB	8GB	4GB	12GB GDDR6	4GB GDDR5
Memory Interface	128bit	128bit	128 bit	64bit	192-bit	128-bit
Memory Bandwidth	Up to 160GB/s	32.4 Gbps	32.4 Gbps	32.4 Gbps		
GPU Cores	640	896	896	384		

GPU Core Frequency (MHz)	Base:735 MHz Max Boost:2100 MHz	Base:1065 MHz Boost:1395 MHz Max Boost:2100 MHz	Base:1065 MHz Boost:1395 MHz Max Boost:2100 MHz	Base:420 MHz Boost:1425 MHz Max Boost:2100 MHz

Maximum Power Consumption	40W	50W	50W	30W	170W	55W

Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or Digital)	DisplayPort 1.4a Maximum pixel clock: 2660M Pixels per second Maximum bandwidth: 32.4 Gbps Example of maximum resolutions with CVT-RB timings: •7680 × 4320 × 24 bpp at 120 Hz •7680 × 4320 × 24 bpp at 60 Hz •5120 × 2880 × 24 bpp at 60 Hz HDMI™ 2.0b Maximum resolution: •7680 × 4320 × 24 bpp at 30 Hz Simultaneous display support Up to four simultaneous displays	DisplayPort 1.4a Maximum pixel clock: 2660M Pixels per second Maximum bandwidth: 32.4 Gbps Example of maximum resolutions with CVT-RB timings: •7680 × 4320 × 24 bpp at 120 Hz •7680 × 4320 × 24 bpp at 60 Hz •5120 × 2880 × 24 bpp at 60 Hz HDMI™ 2.0b Maximum resolution: •7680 × 4320 × 24 bpp at 30 Hz Simultaneous display support Up to four simultaneous displays	DisplayPort 1.4a Maximum pixel clock: 2660M Pixels per second Maximum bandwidth: 32.4 Gbps Example of maximum resolutions with CVT-RB timings: •7680 × 4320 × 24 bpp at 120 Hz •7680 × 4320 × 24 bpp at 60 Hz •5120 × 2880 × 24 bpp at 60 Hz HDMI™ 2.0b Maximum resolution: •7680 × 4320 × 24 bpp at 30 Hz Simultaneous display support Up to four simultaneous displays	DisplayPort 1.4a Maximum pixel clock: 2660M Pixels per second Maximum bandwidth: 32.4 Gbps Example of maximum resolutions with CVT-RB timings: •7680 × 4320 × 24 bpp at 120 Hz •7680 × 4320 × 24 bpp at 60 Hz •5120 × 2880 × 24 bpp at 60 Hz HDMI™ 2.0b Maximum resolution: •7680 × 4320 × 24 bpp at 30 Hz Simultaneous display support Up to four simultaneous displays	HDMI*1: 7680*4320 @60Hz DP*3：5120*2880@ 60Hz

Thermal Solution	Active	Ultra-quiet Active Fansink	Ultra-quiet Active Fansink	Active	Active Fansink	Active Fansink
Dimension	2.713 inches × 6.137 inches, single-slot	2.713 inches × 6.137 inches, single-slot	2.713 inches × 6.137 inches, single-slot	2.713 inches × 6.137 inches, single-slot	225.55mm *117.5mm* 35.8mm	6.6" L, single slot

Advanced Display	Not Available	Not Available
SLI/NVLink Support	Not Available	Not Available
Disclaimers		

Intel® Ethernet Specifications

Card	Intel Wi-Fi 6 AX201	2X2 AX RTL8852B	2X2 AX Foxconn	Intel AX211 Wi-Fi 6E	Intel I350-T2 Dual	Intel I350-T4 Quad

	2*2ax+BT 5.0 Non-vPro PCIE M.2 2230 Module (CNVi)	E WIFI 6 +BT5.1 PCIE M.2 WW	RZ616 WIFI6e +BT5.x PCIE M.2 2230 module	2*2ax+BT 5.x vPro CNVi PCIE M.2 module	Port Gigabit Ethernet Adapter (Stony Lake T2)	Port Gigabit Ethernet Adapter (Stony Lake T4)
Supplier PN	Coming soon	Coming soon	Coming soon	Coming Soon	I350T2G1P20, MM# 928941	I350T4G1P20, MM# 928942
Data Rates Supported	5G/2.4G WIFI	5G/2.4G WIFI	6G/5G/2.4G WIFI	6G/5G/2.4G WIFI	10/100/1000Mbps (Copper)	10/100/1000Mbps (Copper)
Controller Details	Coming soon	Coming soon	Coming soon	Coming Soon	Intel Ethernet Controller I350	Intel Ethernet Controller I351
Controller Bus Architecture	PCIe Gen3	PCIe Gen3	PCIe Gen3	PCIe Gen3	PCIe 2.1 (5GT/s)	PCIe 2.1 (5GT/s)
Data Transfer Mode	Wireless +BT	Wireless +BT	Wireless +BT	Wireless +BT	Ethernet	Ethernet
Power Consumption	Coming soon	Coming soon	Coming soon	Coming Soon	Copper: I350-T2 V2= 4.4W	Copper: I350T4V2 = 5W
IEEE Standards Compliance	802.11 abgn+acR2 +ax MIMO 2X2	802.11 abgn+acR2 +ax MIMO 2X2	802.11 abgn+acR2 +axR2 MIMO 2X2	802.11 abgn+acR2 +axR2 MIMO 2X2	IEEE 802.3/10BASE-T, 100BASE-TX, 1000BASE-T	IEEE 802.3/10BASE-T, 100BASE-TX, 1000BASE-T
Boot ROM Support	Core boot UEFI boot	Core boot UEFI boot	Core boot UEFI boot	Core boot UEFI boot	PXE boot, Intel iSCSI Remote Boot for Windows, Linux and Vmware, Intel BootAgent Software via PXE or BootP, WDMS or UEFI	PXE boot, Intel iSCSI Remote Boot for Windows, Linux and Vmware, Intel BootAgent Software via PXE or BootP, WDMS or UEFI
Network Transfer Mode (Full/Half Duplex)	Supported	Supported	Supported	Supported	Supported	Supported
Network Transfer Rate	Coming soon	Coming soon	Coming soon	Coming Soon	1,000Mbps Full Duplex	1,000Mbps Full Duplex
Operating System Driver Support	Windows 10/11, Linux	Windows 10/11, Linux	Windows 10/11, Linux	Windows 10/11, Linux	Windows 10/11, Linux, Free BSD, XEN,Vmware	Windows 10/11, Linux, Free BSD, XEN,Vmware
Manageability	Coming soon	Coming soon	Coming soon	Coming Soon	Supported	Supported
Manageability Capabilities Alerting	Coming soon	Coming soon	Coming soon	Coming Soon	Supported	Supported
TDP	Coming soon	Coming soon	Coming soon	Coming Soon	Firmware Based Thermal	Firmware Based Thermal

					Management	Management
Operating Temperature Range	0°C – 80°C	0°C – 80°C	0°C – 80°C	0°C – 80°C	0°C to 55°C (32°F to 131°F)	0°C to 55°C (32°F to 131°F)
# of Ports	2			4		
Data Rate Per Port	10/100/1000Mbps (copper), 1000Mbps (fiber)			10/100/1000Mbps (copper), 1000Mbps (fiber)		
System Interface Type	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen 2.1	PCIe Gen 2.1
NC Sideband Interface	Coming soon	Coming soon	Coming soon	Coming Soon	Not Available	Not Available
Jumbo Frames Supported	Coming soon	Coming soon	Coming soon	Coming Soon	Yes	Yes
1000Base-T	Coming soon	Coming soon	Coming soon	Coming Soon	Yes	Yes
IEEE 1588	Coming soon	Coming soon	Coming soon	Coming Soon	Supported	Supported
Supported Under vPro	No	No	No	Yes	Not Available	Not Available
Disclaimers						

Ethernet

Model	Intel I350-T2 Dual Port Gigabit Ethernet Adapter (Stony Lake T2)	Intel I350-T4 Quad Port Gigabit Ethernet Adapter (Stony Lake T4)	Intel Wi-Fi 6 AX201 2*2ax+BT 5.0 vPro PCIE M.2 2230 Module (CNVi)	2X2 AX RTL8852BE WIFI 6 +BT5.1 PCIE M.2 WW	2X2 AX Foxconn RZ616 WIFI6e +BT5.x PCIE M.2 2230 module	Intel AX211 Wi-Fi 6E 2*2ax+BT 5.x vPro CNVi PCIE M.2 module
Connector	2 x Ports RJ-45 Copper			4 x Ports RJ-45 Copper		
Website	i350 T2			i350 T4		
Auto-Negotiation	IEEE* 802.3* Auto-negotiaton	IEEE* 802.3* Auto-negotiaton	IEEE* 802.11ax* Auto-negotiaton	IEEE* 802.11ax* Auto-negotiaton	IEEE* 802.11ax* Auto-negotiaton	IEEE* 802.11ax* Auto-negotiaton
Intel® vPro™	Not Available			Not Available		
Intel® Standard Manageablity	Supported			Supported		
Power Optimizer Platform Low-power Management Systems	Supported			Supported		
Energy Efficient Ethernet	Supported			Supported		
TCP/UDP Checksum and Segmentation Offload (IPv4 and IPv6)	Supported	Supported	Supported	Supported	Supported	Supported
Receive Side Scaling	Supported			Supported		
Dual Tx and Rx Queues	Yes			Yes		

Jumbo Frames (up to 9KB)	Supported	Supported
Teaming	Supported	Supported
Wake from Deep Sx	Supported	Supported
Server Operating System Support	Windows Server 2008, 2012, 2016. 2019 Linux (RHEL/SLES), Free BSD, Xen, Vmware	Windows Server 2008, 2012, 2016. 2019 Linux (RHEL/SLES), Free BSD, Xen, Vmware
Network Proxy/ARP Support	Supported	Supported

SECTION IV: BIOS / Certifications / Standards / Environmental

BIOS Specifications

WMI Support	Compliant with Microsoft WBEM and the DMTF common information model
ROM-Based Setup Utility (F1)	System configuration setup program (text/graphic interface) available at power-on with F1 key
Bootblock Recovery	Recovers system BIOS if the flash ROM is corrupted
Replicated Setup	Saves system configuration settings to a file that can then be used to replicate the settings to other systems
Boot Control	Boot control available through ROM-based setup utility or with F12 key at power-on
Memory Change Alert	Power-on error message in the event of a decrease in system memory
Thermal Alert	Power-on error message in the event of a fan failure
Asset Tag	Supports ability to set SMBIOS type 2 baseboard asset tag field
System/Emergency ROM Flash Recovery with Video	Supports process to recover the system BIOS if the flash ROM is corrupted
Remote Wakeup/Remote Shutdown	System admin can power on/off a client computer from a remote location to provide maintenance
Quick Resume Time	Supports low power S3 (suspend to RAM) and prompt resume times
ROM Revision Level	System UEFI (BIOS) version reported in SMBIOS type 0 structure and in BIOS setup
Keyboard-less Operation	System can be booted without a keyboard
Per-port Control	Allows I/O ports to be individually enabled/disabled through ROM-based setup or WMI interface
Adaptive Cooling	Offers multiple settings for fan control ranging between better performance and better acoustics
Security	Supervisor, user and power-on passwords can protect boot and ROM-based setup – Chassis Intrusion Detection

	– UEFI Secure Boot Support – HDD Password Can Protect HDD Data – Windows UEFI Firmware Update Support – Device Guard Support – BIOS Guard, Boot Guard Support
Intel(R) AMT (includes ASF 2.0)	Allows system to be supported from a remote location
Intel(R) TXT	Intel(R) trusted execution technology provides a security foundation to build protections against software based attacks
Memory Modes	Supports mirroring, lock step, and sparing memory modes
Windows 10 Ready	Supports Windows 10 requirements for secure flash, UEFI v 2.7 device guard support spec

Industry Standard Specification Support

UEFI	Unified Extensible Firmware Interface v2.7
ACPI (Advanced Configuration and power Management Interface)	Advanced Configuration and Power Interface v6.2
ASF 2.0	DMTF Alert Standard Format Specification v2.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6)
CD Boot	El Torito Bootable CD-Rom Format Specification, v1.0
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision v1.0
PCI	PCI Local Bus v3.0 PC Firmware Specification 3.1
PCI Express	PCI Express Base Specification v4.0
SATA	Serial ATA Revision 3.0 Specification
TPM	Trusted Computing Group TPM Specification v2.0
UHCI	Universal Host Controller Interface Design Guide, Revision v1.1
USB	Universal Serial Bus Revision v1.1 Universal Serial Bus v2.0 Universal Serial Bus v3.0 Universal Serial Bus v3.2
SMBIOS	DMTF System Management Spec v3.2.1
XHCI	XHCI SPEC Revision v1.2

Social and Environmental Responsibility

Quality Control	Lenovo is a member of an eco declaration system that enforces regular independent quality control
Hazardous Substances and Preparation	• Products do not contain more than; 0.1% lead, 0.01% cadmium, 0.1% mercury, 0.1% hexavalent chromium, 0.1% polybrominated biphenyls (PBB) or 0.1% polybrominated diphenyl ethers (PBDE). (See legal reference and Note B1) • Products do not contain Asbestos • Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC),

	hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide • Products do not contain more than; 0.005% polychlorinated biphenyl (PCB), 0.005% polychlorinated terphenyl (PCT) in preparation • Products do not contain more than 0.1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP • Parts with direct and prolonged skin contact do not release nickel in concentrations above 0.5 microgram/cmÂ²/week REACH Article 33 information about substances in articles is available at: https://www.lenovo.com/us/en/social_responsibility/social_responsibility_resources/
Batteries	UN38.3,MSDS
Safety, EMC Connection to the Telephone Network and Labeling	Not applicable

Acoustic Noise Emissions Declaration

LWAd(bels) Idle	3.1
LWAd(bels) Oper	3.7

Safety, EMC Connection to the Telephone Network and Labeling

Industry Standard Specifications	not applicable
Remote Manageability Software Solutions	not applicable
System Software Manager	Lenovo ThinkStation supports software management tools by Lenovo Vantage.

Regulations & Standards

EMC & Safety	FCC/IC VCCI BSMI KC RCM TUV-GS cTUVus IEC60950-1&IEC62368 CB Report/Certificate Saudi Arabia EQM Kuwait KUCAS China CCC Mark South Africa SABS Russia/Belarus/Kazakhstan/Kyrgyzstan/Armenia-EAC Morocco-CM Mexico-NOM Serbia KVALITET Ukraine UKrCEPRO India-BIS

	China SRRC Indonesia-SDPPI Malaysia-SIRIM Philippines-NTC

Environmentals

Energy Star	ENERGY STAR 8.0
EPEAT	EPEAT Certification Available on Select Models
ErP Lot-3 2013	Yes
Hazardous Substances	• Products do not contain more than; 0.1% lead, 0.01% cadmium, 0.1% mercury, 0.1% hexavalent chromium, 0.1% polybrominated biphenyls (PBB) or 0.1% polybrominated diphenol ethers (PBDE) • Products do not contain Asbestos • Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide • Products do not contain more than; 0.005% polychlorinated biphenyl (PCB), 0.005% polychlorinated terphenyl (PCT) in preparation • Products do not contain more than 0.1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP • Parts with direct and prolonged skin contact do not release nickel in concentrations above 0.5 microgram/cm_/week
TCO Certification	9.0