

Power Configurator

Lenovo ThinkStation P3 Tiny



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Overview

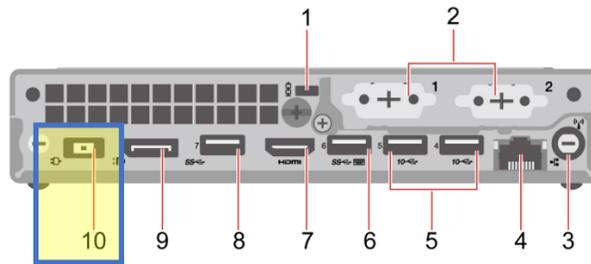
The ThinkStation P3 Tiny platform is the new desktop workstation that is the successor to the P360 Tiny in the ThinkStation family.

Same as the P360 Tiny, the P3 Tiny does not have an internal power supply. Instead, it is powered by an external power adapter, like that from a ThinkPad or ThinkStation Ultra SFF. There are three different power adapters available for P3 Tiny, each with a different power rating (Watts): 170W, 230W, and 300W.

The goal of this document is to highlight the specs of the system components with the highest power demand and allow you to make the best decisions when choosing the correct PSU for your hardware configuration.

Section 1 – Key Architectural Design

As mentioned above, the P3 Tiny is powered by an external power adapter that is connected to the rear of the system. Each of the three available power adapters are rated at 100-240V AC input with 20V DC output. The power cord connector is a standard 20V connector, available on many mobile ThinkStation notebook computers. The P3 Tiny rear 20V connector is shown in Figure 1:



Item	Description	Item	Description
1.	Security-lock slot	2.	Optional connectors*
3.	Wi-Fi® antenna slot*	4.	Ethernet connector
5.	USB-A 3.2 Gen 2 connectors	6.	USB-A 3.2 Gen 1 connector (with smart power-on feature)
7.	HDMI™ out connector	8.	USB-A 3.2 Gen 1 connector
9.	DisplayPort™ out connector	10.	Power adapter connector

Figure 1, Rear view

P3 Tiny has a single PCIe x16 slot to support select low-profile GPUs and other PCIe cards. This is done using a PCIe x16 riser card (for supported GPUs) or a PCIe x4 riser card (for other supported PCIe devices).

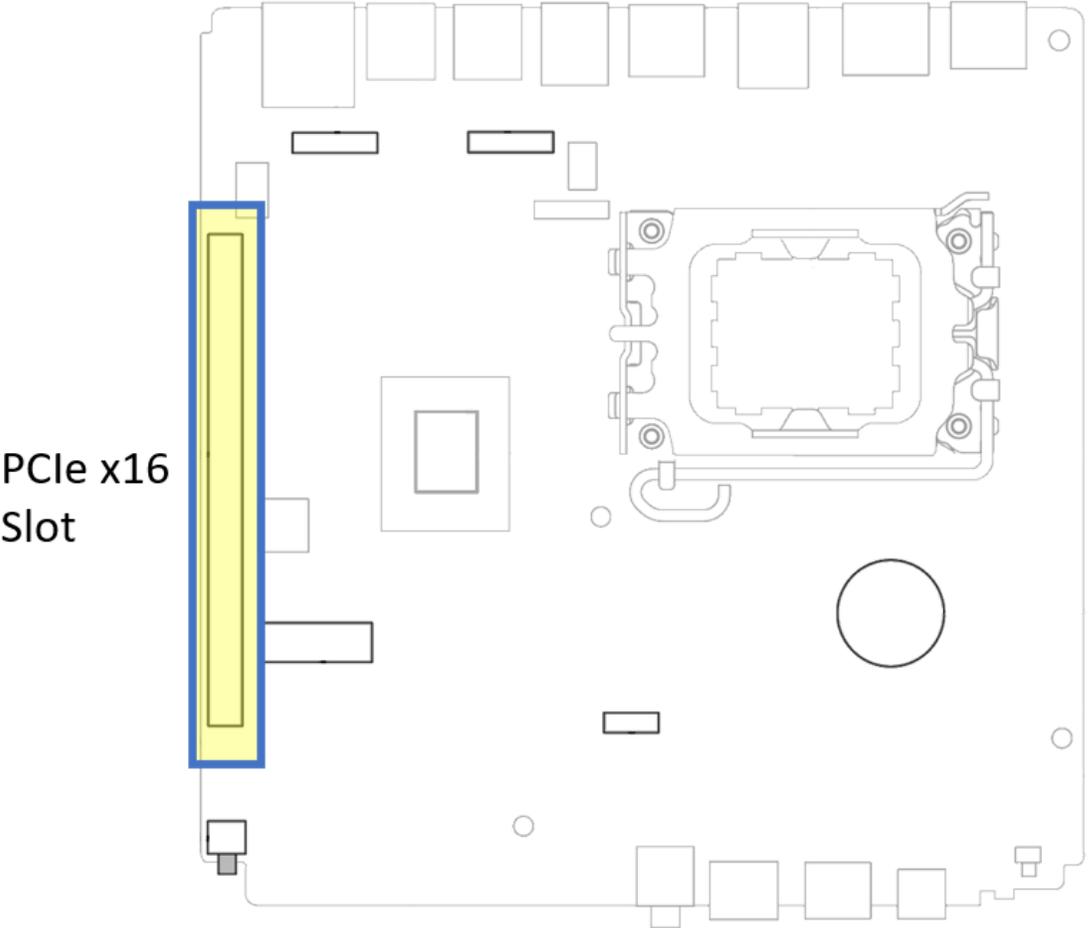


Figure 2, P3 Tiny Motherboard PCIe Slot

Section 2 – Power Ratings for Key System Components

To fully understand the power capabilities of the ThinkStation P3 Tiny, it is important to know the power ratings of the individual system components.

The tables below show the power ratings for the various CPUs supported on P3 Tiny. All supported CPUs have integrated graphics.

Table 1 - Raptor Lake CPUs Power Rating

CPU Name	CPU Power	Additional CPU information
Intel Core i9-13900 vPro	65W	2.0 GHz, 24 cores, DDR5-5600
Intel Core i7-13700 vPro	65W	2.1 GHz, 16 cores, DDR5-5600
Intel Core i5-13600 vPro	65W	2.7 GHz, 14 cores, DDR5-4800
Intel Core i5-13500 vPro	65W	2.5 GHz, 14 cores, DDR5-4800
Intel Core i5-13400	65W	2.5 GHz, 10 cores, DDR5-4800
Intel Core i3-13100	60W	3.4 GHz, 4 cores, DDR5-4800
Intel Core i9-13900T vPro	35W	1.1 GHz, 24 cores, DDR5-5600
Intel Core i7-13700T vPro	35W	1.4 GHz, 16 cores, DDR5-5600
Intel Core i5-13600T vPro	35W	1.8 GHz, 14 cores, DDR5-4800
Intel Core i5-13500T vPro	35W	1.6 GHz, 14 cores, DDR5-4800
Intel Core i5-13400T	35W	1.3 GHz, 10 cores, DDR5-4800
Intel Core i3-13100T	35W	2.5 GHz, 4 cores, DDR5-4800

Table 2 - Raptor Lake Refresh CPUs Power Rating

CPU Name	CPU Power	Additional CPU information
Intel Core i9-14900 vPro	65W	2.0 GHz, 24 cores, DDR5-5600
Intel Core i7-14700 vPro	65W	2.1 GHz, 20 cores, DDR5-5600
Intel Core i5-14600 vPro	65W	2.7 GHz, 14 cores, DDR5-5600
Intel Core i5-14500 vPro	65W	2.6 GHz, 14 cores, DDR5-4800
Intel Core i5-14400	65W	2.5 GHz, 10 cores, DDR5-4800
Intel Core-i3 14100	60W	3.5 GHz, 4 cores, DDR5-4800
Intel Core i9-14900T vPro	35W	1.1 GHz, 24 cores, DDR5-5600
Intel Core i7-14700T vPro	35W	1.3 GHz, 20 cores DDR5-5600
Intel Core i5-14600T vPro	35W	1.8 GHz, 14 cores DDR5-5600
Intel Core i5-14500T vPro	35W	1.7 GHz, 14 cores DDR5-4800
Intel Core i5-14400T	35W	1.4 GHz, 10 cores, DDR5-4800
Intel Core i3-14100T	35W	2.7 GHz, 4 cores, DDR5-4800

Table 3 below lists the power ratings for the various PCIe add-in cards supported on P3 Tiny. Both T1000 versions have custom cooling solutions that are unique to this platform depending on the system's CPU power rating. All PCIe devices for P3 Tiny use customized PCIe brackets instead of standard low profile PCIe bracket. For more detail, see the [Appendix](#).

Table 3 – P3 Tiny GPU options

GPU	Card Name	Compatibility
	T1000 (8GB)	For 35W CPUs
	T1000 (8GB)	For 60W and 65W CPUs
	T400 (4GB)	For any CPU

Section 3 – P3 Tiny Power Configurations

As mentioned previously, P3 Tiny supports 170W, 230W, and 300W power adapters. The following table shows the minimum required power supply needed to support combinations of CPU and GPU.

Table 4 – P3 Tiny PSUs

Power Supply	CPU	GPU
170W	60W i3* or 35W i3/i5*	Any GPU*
230W	65W i5 or 35W i7/i9	Any GPU
	65W i5/i7/i9	<u>No GPU</u>
300W	65W i7/i9	Any GPU

*Either 170W or 230W can be used

P3 Tiny Power Configuration Notes:

- Using the T1000 with 35W cooling solution together with a 65W CPU is not supported. Any system with a 65W CPU + T1000 needs the T1000's 65W cooling solution.
- All supported GPUs must use the PCIe x16 riser. Other supported PCIe cards must use the PCIe x4 riser. See [Appendix](#) for more info.
- The premium speaker cannot be used if the system has a T1000 with 65W thermal solution.

Section 4 – Board-To-Board (BTB) Cards

P3 Tiny offers the ability to expand the system’s rear IO capabilities with the use of Board-To-Board (BTB) cards. Two BTB connectors on the motherboard allow for extensive customization based on user needs. This section will cover currently available BTB cards. It is important to note that while any BTB cards are installed in the system, no PCIe device can be installed in the PCIe x16 slot.

Check the [Appendix](#) for pictures and part numbers for all the supported BTB cards.

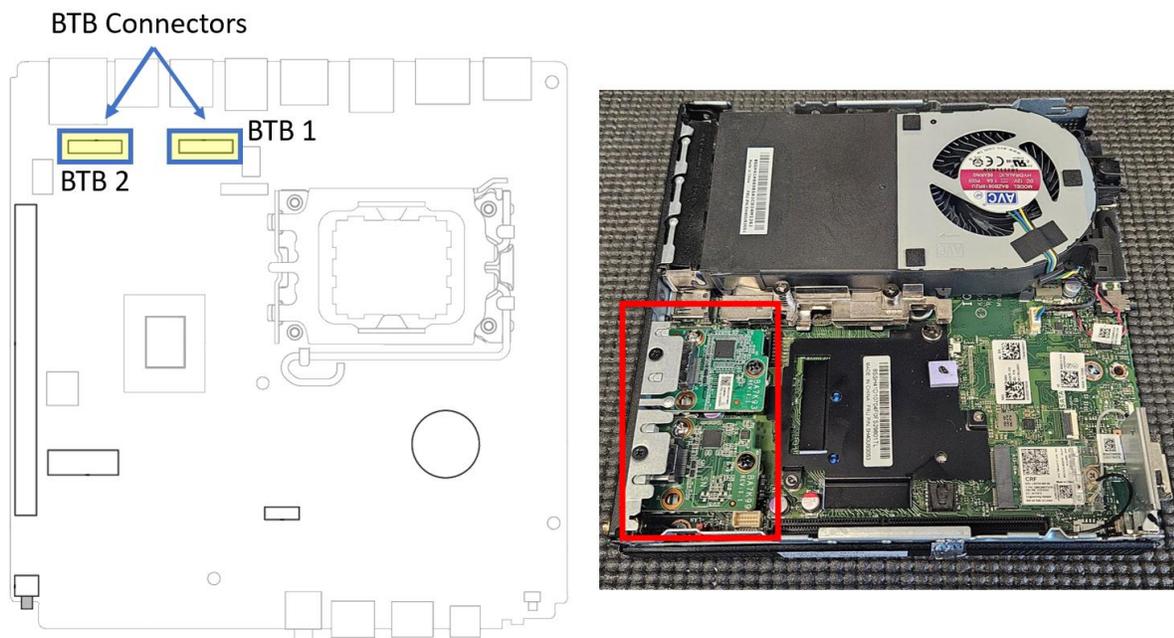


Figure 3, P3 Tiny Motherboard BTB Slots



Figure 4, P3 Tiny Motherboard BTB Slots, Rear View

P3 Tiny BTB Configuration Notes:

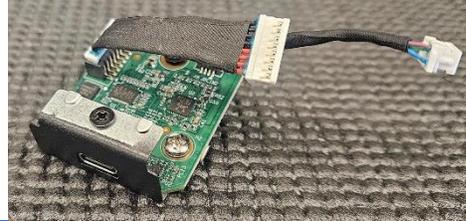
- The Dual & Quad USB BTB cards occupy the full width of the rear IO, so no other BTB cards can be installed at the same time.
- Single width BTB cards can be mixed.
- P3 Tiny can support up to two of the following BTB cards:
 - DP, HDMI2.0, VGA, COM
- P3 Tiny can support up to one 2.5G Lan BTB card. Must go in BTB2 port.
- P3 Tiny can support up to one USB-C BTB card. Must go in BTB1 port.

Appendix

This section contains additional useful information about the relevant hardware used in P3 Ultra systems. Table 5 below lists available BTB cards for P3 Tiny as of the time of this writing.

Table 5 – P3 Tiny BTB Cards

Part	Description	Part Number (FRU#)
	Tiny Punch Out Bracket	5M11C16882
	Dual USB 3.2 BTB Card	5C50W00918
	Quad USB 3.2 BTB Card	5C50W00919 OR 5C50W00896
	DisplayPort BTB Card	5C50W00931

	<p>HDMI 2.0 BTB Card</p>	<p>5C50W00905</p>
	<p>USB-C BTB Card*</p>	<p>5C50W00907</p>
	<p>2.5G Lan BTB Card</p>	<p>5C50W00908 OR 5C50W00942</p>
	<p>VGA BTB Card</p>	<p>5C50W00901</p>
	<p>COM BTB Card</p>	<p>5C50W00902</p>

*5Gbps with DisplayPort and PD 3.0 functions

Table 6 – P3 Tiny Custom PCIe Brackets

Part	Description	Part Number (FRU#)
	T1000 Custom PCIe Bracket	5M10U50348
	T400 Custom PCIe Bracket	5M11H28402
	I350-T2 Custom PCIe Bracket	5M10U50349
	I350-T4 Custom PCIe Bracket	5M10U50350
	BCM 5720 Custom PCIe Bracket	5M11H28444
<p style="text-align: center;">TBD</p>	BCM 5719 Custom PCIe Bracket	5M11H28443

	
<p>230W AC Adapter</p>	<p>300W AC Adapter</p>
<p>4X21L38738*</p>	<p>4X21L18243*</p>

*Option Kit P/N will differ based on region. Please refer to the ThinkStation Options Compatibility Matrix (OCM) for more details.



PCIe risers are installed at the factory based on system configuration. If no PCIe device is selected during initial purchase, no riser will be installed in the system. The part numbers for the risers are below. Additionally, an M3x6 screw is recommended to secure the riser to the side of the chassis.

- PCIe x16 Riser - 5C50W00933
- PCIe x4 Riser - 5C50W00909

Revision History

Version	Date	Author	Changes/Updates
1.0	10/3/24	Chris C.	Initial Release