

# Power Configurator

Lenovo ThinkStation P2 Tower Gen 2



---

## Table of Contents

Overview .....	2
Section 1 – Key Architectural Design .....	3
Section 2 – Power Ratings for Key System Components.....	5
Section 3 – P2 Tower Power Configurations.....	7
Section 4 – Appendix .....	9

---

## Overview

The ThinkStation P2 Tower Gen 2 platform is the new desktop workstation that replaces the P2 Tower Gen 1. From a base power perspective, the power supply (PSU) options have changed from the P360 Tower and P2 Tower Gen 1, as shown here:

[P2 Tower Gen 2 PSU options:](#)

[500W and 750W](#)

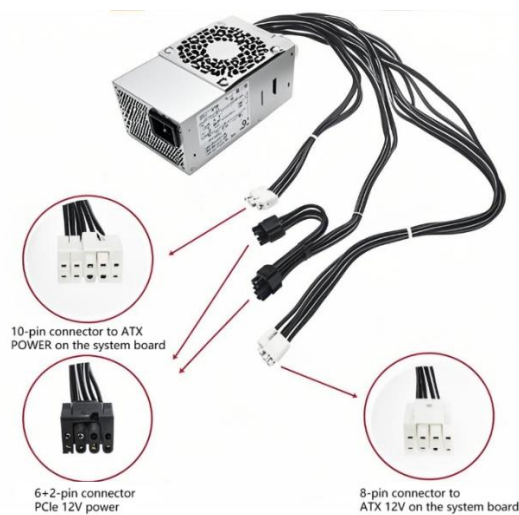
These power supplies allow the P2 Tower Gen 2 platform to support an expanded configuration of system components, notably the Intel Arrow Lake CPU family.

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

The P2 Tower Gen 2 utilizes a traditional approach to powering system components. All onboard components and add-in cards are powered through direct cable connections from the power supply. The diagrams in *Figure 1* show a high-level design on how the power supply directly attaches to the motherboard and add-in cards. Note that in configurations without aux-powered GPUs, the unused aux power cable is coiled up and the 6+2 pin connector is clipped to the rear of the front system fan.

*Figure 1 – Power Design 500W*



*Figure 2 – Power Design 750W*

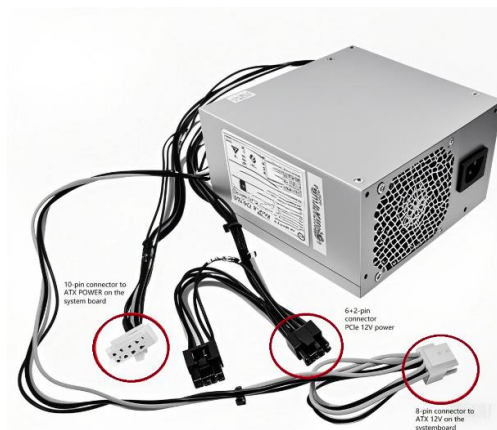
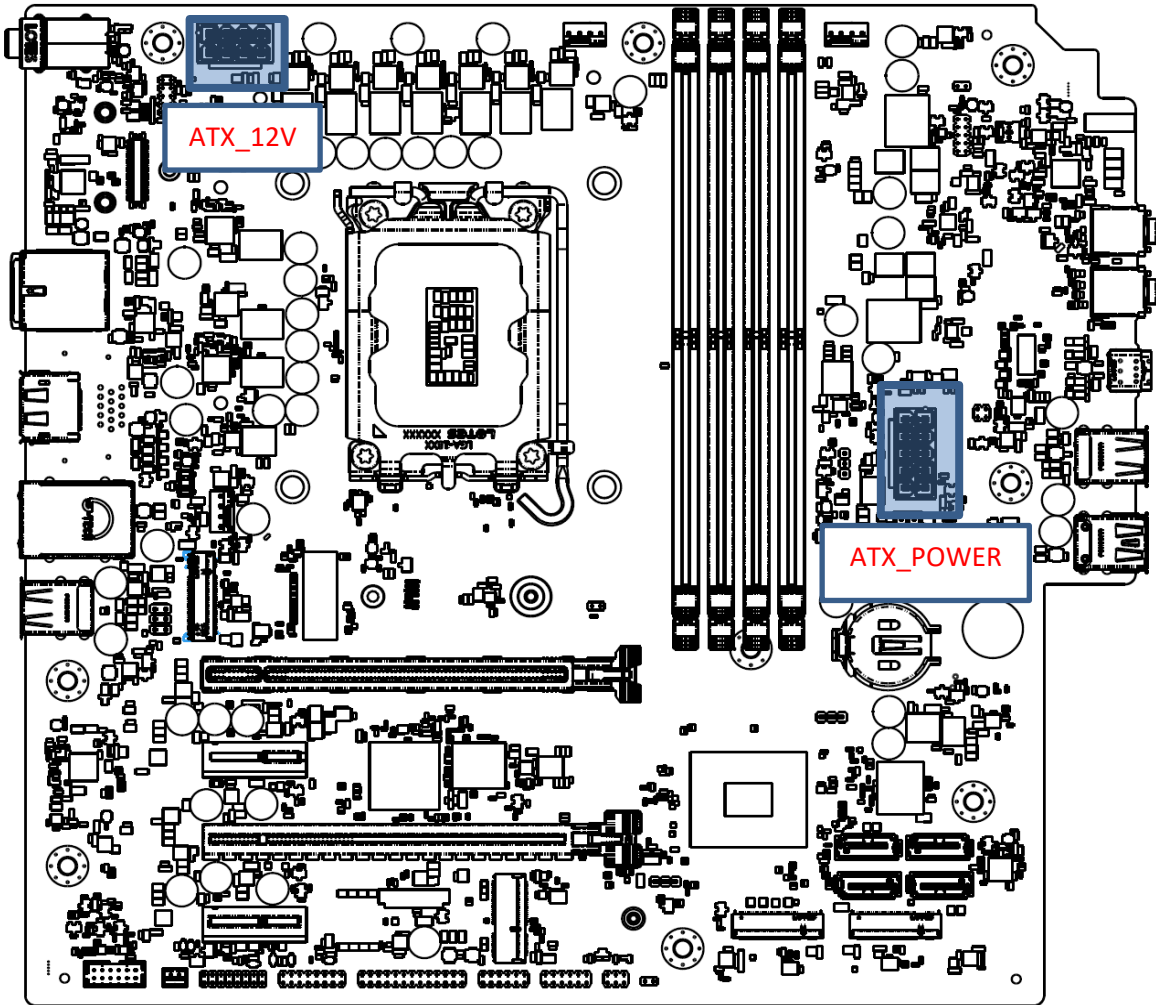


Figure 3 – P2 Tower Gen 2 Motherboard



P2 Tower Gen 2 Motherboard

---

## Section 2 – Power Ratings for Key System Components

To fully understand the power capabilities of the ThinkStation P2 Tower Gen 2, it is important to know the power ratings of the individual system components.

Figure 4 shows the power ratings for the various CPUs supported on P2 Tower Gen 2

*Figure 4 - Arrow Lake CPU Power Ratings*

	CPU Power	Additional CPU Information
<b>Ultra 9 285K</b>	125W	3.7GHz, 24Cores, 36MB, Up to DDR5 6400 MT/s
<b>Ultra 7 265K</b>	125W	3.9GHz, 20Cores, 30MB, Up to DDR5 6400 MT/s
<b>Ultra 5 245K</b>	125W	4.2GHz, 14Cores, 24MB, Up to DDR5 6400 MT/s
<b>Ultra 9 285</b>	65W	2.5GHz, 24Cores, 36MB, Up to DDR5 6400 MT/s
<b>Ultra 7 265</b>	65W	2.4GHz, 20Cores, 30MB, Up to DDR5 6400 MT/s
<b>Ultra 5 245</b>	65W	3.5GHz, 14Cores, 24MB, Up to DDR5 6400 MT/s
<b>Ultra 5 235</b>	65W	3.4GHz, 14Cores, 24MB, Up to DDR5 6400 MT/s
<b>Ultra 5 225</b>	65W	3.3GHz, 10Cores, 20MB, Up to DDR5 6400 MT/s

**Note:** All CPUs Listed supported on P2 Tower Gen 2 have integrated GPU.

Figure 5 - lists the power ratings for the various add-in cards supported on P2 Tower Add-in Card Power Ratings

Max Power Rating	Card Name	Card Type	Aux Power Connectors Required (if any)
<b>250W (Triple Slot)</b>	GeForce RTX 5070 (DPX3, HDMIX1) 12G* DDR7	Graphics Card (Triple Slot)	12VHPWR
<b>145W (Dual Slot)</b>	GeForce RTX 5060 (DPX3, HDMIX1) 8G* DDR7	Graphics Card (Dual Slot)	12VHPWR
<b>115W (Dual Slot)</b>	GeForce RTX 4060(DPX3, HDMIX1) 8G DDR6X	Graphics Card (Dual Slot)	8-Pin PCIe
<b>75W (Dual Slot)</b>	RTX 2000 Ada DS (16GB GDDR6)	Graphics Card (Dual Slot)	None
<b>70W (Dual Slot)</b>	NVIDIA GeForce RTX 3050 * * (1xDP,1xHDMI,1xDVI-D) - 6GB GDDR6	Graphics Card (Dual Slot)	None
<b>75W (Single Slot)</b>	RTX A400(4GB GDDR6), RTX A400(8GB GDDR6), T1000(8GB),	Graphics Card (Single Slot)	None
	I210-T1 Single Port PCIe x1 Gigabit Ethernet Adapter. I1350-T4 Quad Ports PCIe x4 Gigabit Ethernet Adapter. Bitland RTL8168H 1000M; PCIe x4 to M.2 (For NVMe SSD); Rear USB 3.2 Gen2x2 Type C PCIe x4 Adapter. RTL8125BGS 2.5G Lan Card ; USB Expansion Card (USB3.0); 4-Port Serial Expansion Card;	Networking (Single Slot) I/O Card	None

\* Availability dependent on geographic region

\* \* Availability for PRC Only

**Note:** GeForce RTX 5060 / 5070 needs to add the 12VHPWR cable adapter.

### The 8-pin PCIe to 12VHPWR

8-pin to 16-pin Power Cable 200mm – FRU# **5C10U58794**

## Section 3 – P2 Tower Power Configurations

P2 Tower supports 500W and 750W power supplies, which allow customers to tailor their system to best meet the requirements of the components they intend to support. The following diagrams and notes show allowable hardware configurations for systems with either power supply.

### 500 Watt PSU

- Dual 8-pin PCIe auxiliary power drop\*
- Provides single dedicated 12V rail
- GPUs cannot be mixed in dual-GPU configs

CPU - up to 125W	All UDIMM Memory	No Storage Limitations	<b>GPU Support<sup>1</sup></b> 145W x 1 115W x 1 75W x 2 70W x 1 No AUX-powered discrete GPUs supported.
------------------	------------------	------------------------	---

### 750 Watt PSU

- Dual 6+2 pin PCIe auxiliary power drop
- Provides single dedicated 12V rail
- GPUs cannot be mixed in dual-GPU configs

CPU - up to 125W	All UDIMM Memory	No Storage Limitations <sup>2</sup>	<b>GPU Support</b> 250W x 1 145W x 1 115W x 1 75W x 2 70W x 1
------------------	------------------	-------------------------------------	--

<sup>1</sup>For additional considerations refer to Table 3

<sup>2</sup>SATA Bay 3 is not supported for 250W GPU require the 27L 125W CPU Standard Cooler assembly interference. (27L 125W CPU Standard Cooler cannot selected with 17L 2nd 3.5" HDD Cage Kit or 3.5" FASE Kit at the same time)

Figure 6 – CPU-Based Limitations

CPU Name	750W PSU	500W PSU
Ultra 9 285K	UP to 250W GPU can be supported ,(70W, 75W, 115W, 145W,250W, 2x 75W)	No support for any discrete GPU
Ultra 7 265K		
Ultra 5 245K	No GPU limitations	UP to one 75W GPU can be supported (70W, 75W)
Ultra 9 285		
Ultra 7 265		Only one UP to 145W GPU can be supported (70W, 75W, 115W, 145W)
Ultra 5 245		
Ultra 5 235		UP to 145W GPU can be supported ,(70W, 75W, 115W, 145W,2x 75W)
Ultra 5 225		

### P2 Tower Gen 2 Power Supply Configuration Notes:

Officially supported configurations could still be limited by additional factors not defined within this document.

Some supported GPU/add-in-card configurations might require additional cabling to be supported. See Section 4 – Appendix.

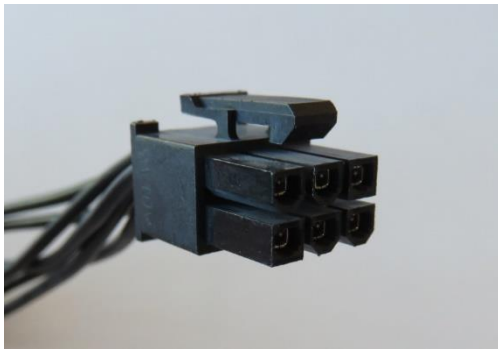
**For configurations that are not listed above but appear to be feasible, please work with the Technical Solutions Team to have the configuration validated/vetted.**

---

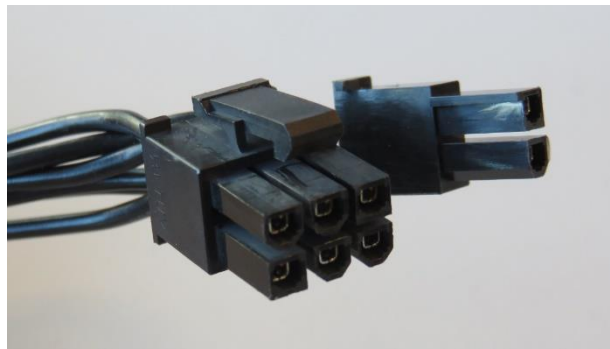
## Section 4 – Appendix

This section contains additional useful information about the hardware used to power adapter cards in ThinkStation systems.

### *PCIe Power Connectors*



***6-pin PCIe Power Connector***



***6+2 pin PCIe Power Connector***



***12HPWR Connector***




## Supported PCIe Power Cable Adapters



**8-pin (female) to 12VHPWR (male) Power Cable (FRU# 5C10U58794) 200mm**

**Only for GPU ≤450W**

Figure 7 – P3 Tower Gen 2 GPU Bracket & Extender Parts

GPU	Extender FRU#	Retainer FRU#	Screw FRU	Picture
RTX 2000 Ada	N/A	5M20U50977	5S10U51625	
RTX 3050	N/A	N/A	N/A	N/A
RTX 4060 RTX 5060	N/A	5M10U49998	N/A	
RTX 5070	N/A	N/A	M3x8, Cheesehead 5S10U51624 M3x8, Cheesehead Black 5S10U51625	

---

## Section 5 – Revision History

Version	Date	Author	Changes/Updates
1.0	6/18/2025	Zhu Zheng	Initial Release