



RocketStor 8631D (RS8631D)

Gen5 External PCIe Chassis User Guide



V1.02 - June 29, 2026

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1. Overview

The RS8631D represents the latest addition to our portfolio of PCIe Gen5 external chassis solutions. Engineered specifically for GPU-accelerated computing, this PCIe 5.0 compliant chassis delivers a robust expansion platform for High-Performance Computing and data center environments. By leveraging the PCIe 5.0 interface, it achieves bidirectional data transfer speeds of up to 64 GB/s, providing ultra-low-latency and lossless high-speed connectivity for critical GPU workloads. The chassis ensures superior thermal performance and operational reliability during sustained full-load operation through its integrated active cooling system and modular design.

1.1. Key Features

- Dedicated PCIe 5.0 x16 host interface
- Provide one internal PCIe x16 slot
- Provide one CDFP Gen5 Version Host Port Type
- Support data transfer rate 64GB/s
- Support one GPU
- Support all GPU Dimension (Up to 370mm * 170mm * 88mm)
- Complies with CoopLink Copmliant standard
- FRU Inventory support
- Software Secure Boot
- Hardware Secure Boot
- Real-Time Power Measurement
- Support LED Management
- Support Smart Fan Control
- Support Alarming
- All the Operating Systems that support the PCIe standard

1.1.1. FRU

The *Field Replacement Unit (FRU)* ensures smooth operation and efficient maintenance of complex systems. The unit is designed to house and protect vital product data (VPD).

Information fields within a VPD resource type contain a three-byte header and some data. The three-byte header contains a two-byte keyword and a one-byte length. A keyword is a two-character (ASCII) mnemonic that uniquely identifies the information in the field. The last byte of the header is binary and represents the length value (in bytes) of the following data.

In the event of a hardware failure, the *FRU* can be quickly replaced, returning the device to a fully functional state without requiring extensive diagnostics or data recovery. This reduces downtime and minimizes the possibility of data loss, ensuring that critical operations can continue uninterrupted.

The following table describes the details and descriptions of the VPD.

Table 1: Details and Descriptions of the VPD

Key Word	Details	Descriptions
PN	AIC Part Number	This keyword is an extension to the Device ID (or Subsystem ID) in the Configuration Space header.
EC	Engineering Change Level	The characters are alphanumeric and represent the engineering change level for this add-in card.
MN	Manufacture ID	This keyword is an extension of the Vendor ID (or Subsystem Vendor ID) in the Configuration Space header. It allows vendors to identify an additional level of detail regarding the sourcing of this device.
SN	Serial Number	The characters are alphanumeric and represent the unique add-in card Serial Number.
Vx	Vendor Specific	This is a vendor-specific item, and the characters are alphanumeric. The keyword's second character (x) can be 0 through 9 or A through Z. V0 indicates the Vendor Name V1 indicates the Main Chip

1.1.2. Hardware Secure Boot

The secure boot feature permits only authenticated firmware to execute. The switch boots the root of the trusted firmware from the internal boot ROM (IBR) and uses that firmware to authenticate the external firmware stored in the SPI flash and prevent the execution of unauthenticated code.

2. RS8631D Hardware Description

2.1. RS8631D Layout

The layout of the RS8631D is presented in three parts.

2.1.1. Front View (External Chassis Device)

The following figure shows the key components of the Chassis front panel.



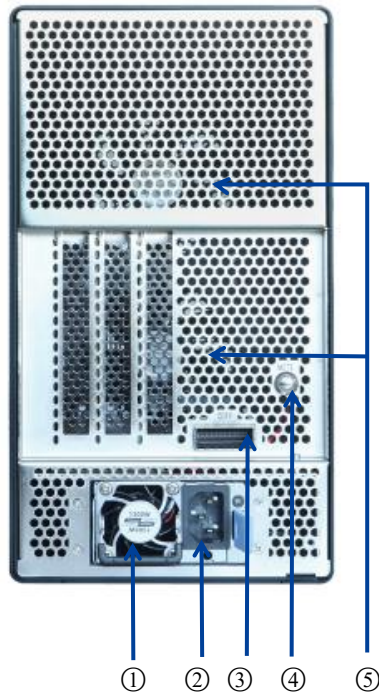
The following table describes the key components of the Chassis front panel.

Table 2: Key components of the Chassis front panel

Number	Type	Description
①	Power Switch	ON/OFF Switch. The power switch of the Chassis can be controlled by pressing the power switch. <i>Note: In the “On” state, the switch illuminates with a blue light; in the “Off” state, it remains unlit.</i>

2.1.2. Rear View (External Chassis Device)

The following figure shows the key components of the Chassis rear panel.



The following table describes the key components of the Chassis rear panel.

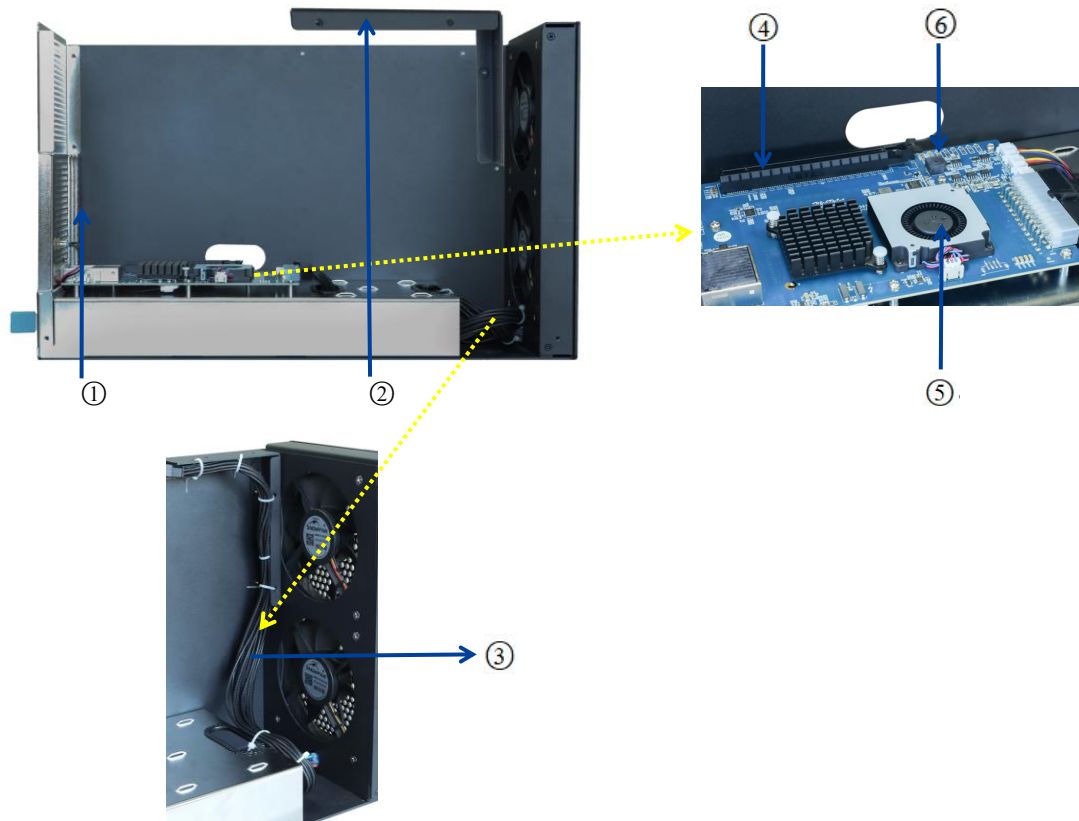
Table 3: Key components of the Chassis rear panel

Number	Type	Description	
①	AC Power IN	Used to connect the AC power cord.	
②	Power Supply Unit	1300w Power Supply Provide stable power supply for the Chassis.	
③	CDFP Connector	Upstream Port for the Chassis. Used to connect the host interface card via CDFP cable.	
④	Mute Button	Used to mute the beeper of the Chassis.	
⑤	Fan	Two Built-in Low-Decibel fans. Used to dissipate heat from GPU that are prone to heat generation.	
		Smart Fan Control	Lower Speed: The Retimer chip temperature is < 65°C.
			Linear Speed: The Retimer chip temperature is between 65°C and 75°C.
			Full Speed: The Retimer chip temperature is > 75°C.
		Note: The fan speed choice depends on the higher temperature.	
		Manual Fan	0: Ultra Low Speed (Around 0RPM)

		Control	1: Low Speed (Around 960 RPM)
			2: Medium Speed (Around 1380 RPM)
			3: High Speed (Around 1800 RPM)
			4: Full Speed (Around 2100 RPM)

2.1.3. Internal View (External Chassis Device)

The following figure shows the key components of the Chassis internal panel.



The following table describes the key components of the Chassis internal panel.

Table 4: Key components of the Chassis rear panel

Number	Type	Description
①	PCIe slot cover	Used to protect PCIe slots from dust and other physical damage.
②	Cable Trunking	Provide organized management for power cords.
③	Power Cable	Powering the GPU.
④	PCIe slot	Used to connect the GPU (Graphics Processing Unit).
⑤	Retimer Fan	Built-in Low-Decibel fans. Used to dissipate heat from the Retimer chip.
		Smart Fan Control
		Lower Speed: The Retimer chip temperature is < 65°C.
		Linear Speed: The Retimer chip temperature is between 65°C and 75°C.
		Full Speed: The Retimer chip temperature is > 75°C.

		Note: The fan speed choice depends on the higher temperature.	
		Manual Fan Control	0: Ultra Low Speed (Around 0 RPM)
			1: Low Speed (Around 3060 RPM)
			2: Medium Speed (Around 4320 RPM)
			3: High Speed (Around 5280 RPM)
			4: Full Speed (Around 5460 RPM)
⑥	Beeper	The beeper will appear in the following 3 beeping statuses: Notes: 1 means alarming, and 0 means not alarming. This setting takes effect temporarily, not permanently.	
		1-0-1-0-1-0	The Fan Speed is < 100 RPM. Note: This trigger mechanism only affects the two Fans on the rear panel and does not include the Retimer Fan.
		1-0-0-1-0-0	The Retimer chip temperature is > 100°C.
		1-1-1-1-1-1	Both “1-0-1-0-1-0” and “1-0-0-1-0-0” above occur simultaneously.

2.2. Chassis Bus Interface

The RS8631D has one PCIe slot. Other features include the following:

- Dedicated PCIe 5.0 x16 port
- Support one GPU
- Data transfer at 64GB/s

2.3. Basic Specifications

The following table describes the basic specifications of the RS8631D.

Table 5: Basic Specifications of RS8631D

Model	RS8631D
Chassis Dimensions	474mm * 286mm * 155mm (with feet pads)
Chassis Weight	6.08kg
Power Consumption	● Idle mode: 4.56W ● I/Os mode: 32.34W Notes: The I/Os mode power consumption is measured with the GIGABYTE GV-N 5090 GAMING OC-32GD and R7638D External Adapter. Actual power consumption may differ based on system hardware and configuration.
Operating Voltage	100V ~ 240V AC In; 1300W
Work Temperature	+5°C ~ +55°C
Storage Temperature	-20°C ~ +80°C
MTBF (Mean Time Before Failure)	920,585 Hours

3. Accessory

The RS8631D must be connected using the CDFP cable and PCIe External Adapter through the CDFP connector.

The following sections indicate the cable pinout and connection diagram for CDFP cable accessories and supported PCIe External Adapter.

3.1. CDFP-CDFP-1M Gen5 (CooprLink) Cable

CDFP Host to CDFP Device cable. Length 1M.

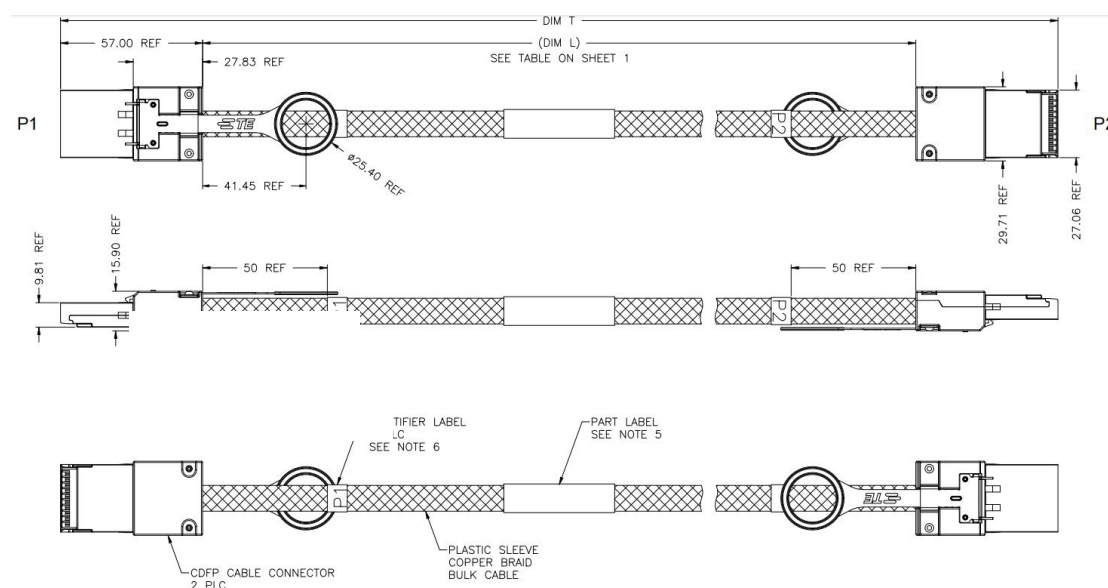
3.1.1. Cable Diagram

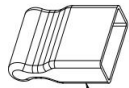
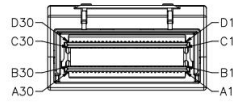


3.1.2. Cable Drawings and Pinouts

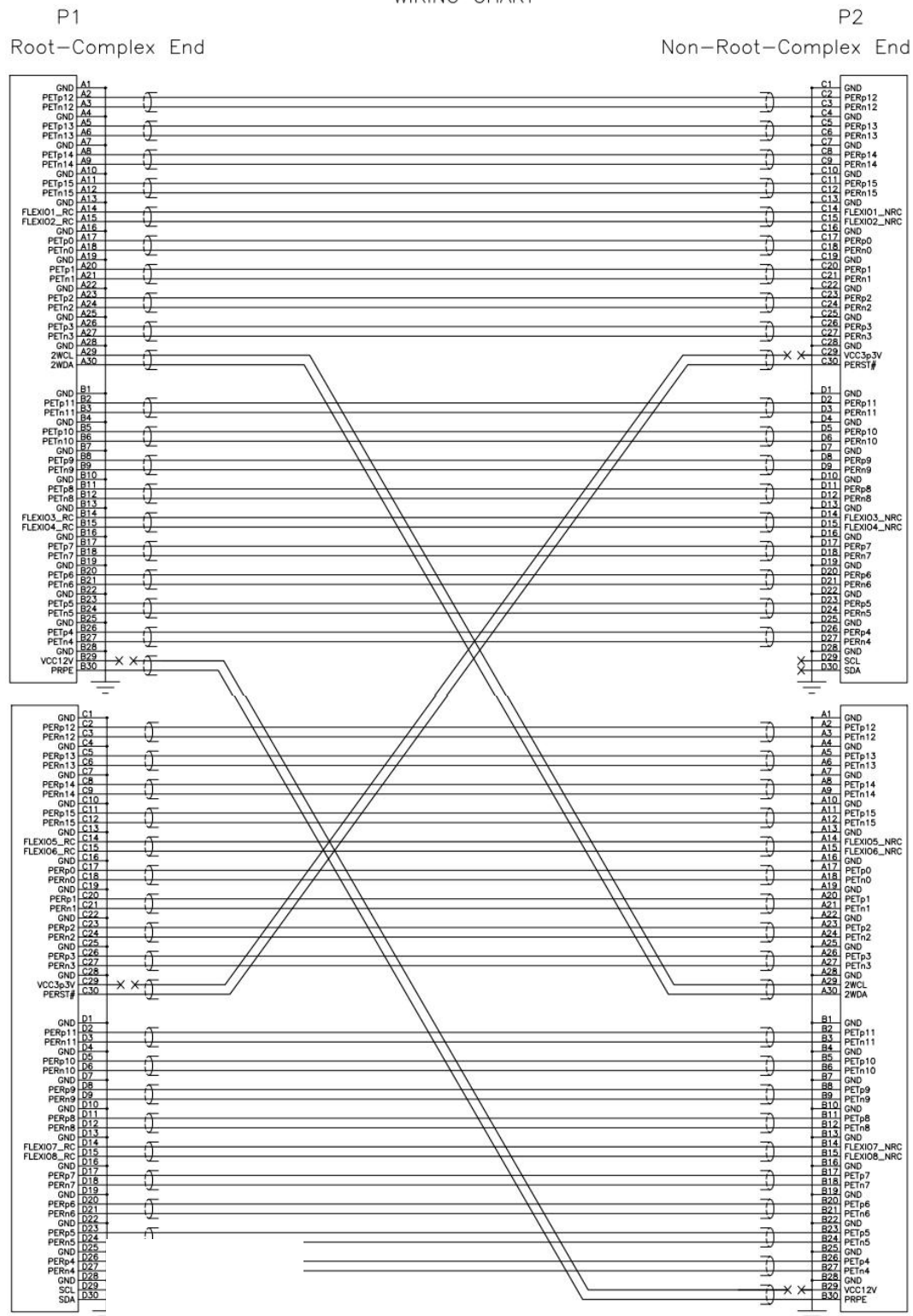
The following figure shows the pinout for the HighPoint CDFP-CDFP-1M Gen5 (CooprLink) cable, one x8 CDFP to one x8 CDFP connection.

The following figure shows the pinout for the HighPoint CDFP-CDFP-1M Gen5 (CooprLink) cable, one x8 CDFP to one x8 CDFP connection.



DUST CAP
2 PLCPIN ASSIGNMENT
ODFP CABLE CONNECTOR
SCALE 2:1

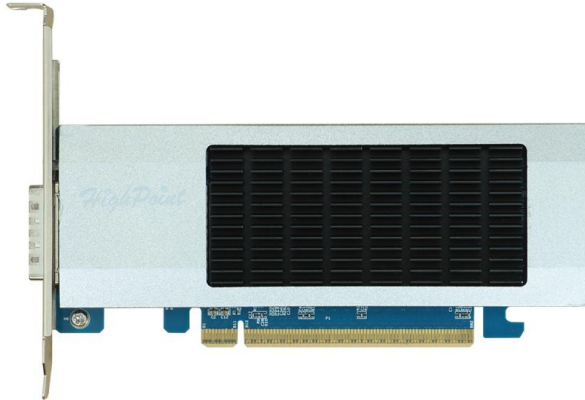
WIRING CHART



3.2. R7638D PCIe External Adapter

1x CDFP Connector and 2x MCIO Connectors PCIe 5.0 x16 External Adapter.

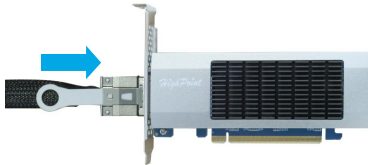
Dimensions: 6.50 In (L) × 0.77 In (W) × 2.72 In (H)



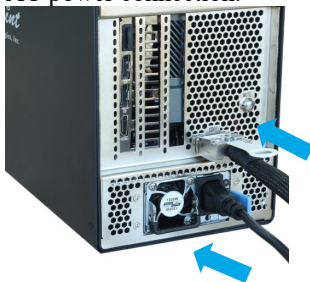
3.2.1. Connection

The following steps show the connection of a Enclosure to the R7638D using the CDFP-CDFP-1M Gen4 cable.

1. Connect the CDFP cable to the R7638D's CDFP port.



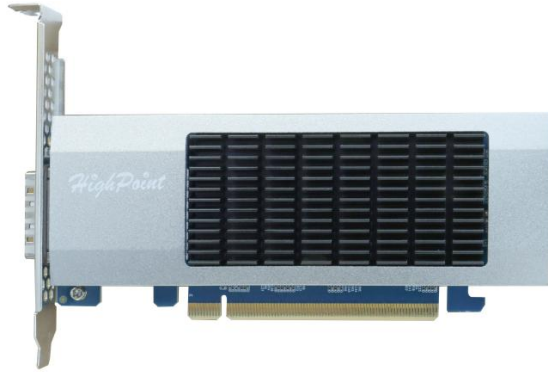
2. Connect the CDFP cable to the Enclosure's CDFP port and the UL power cord to the Enclosure for AC power connection.



3.3. R7634D PCIe External Adapter

1x CDFP Connector PCIe 5.0 x16 External Adapter.

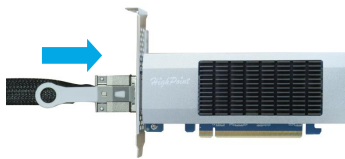
Dimensions: 6.50 In (L) × 0.77 In (W) × 2.72 In (H)



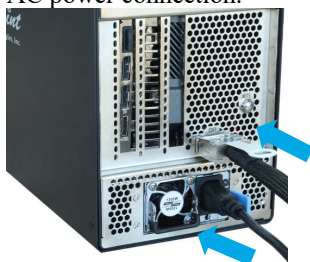
3.3.1. Connection

The following steps show the connection of a Enclosure to the R7634D using the CDFP-CDFP-1M Gen4 cable.

1. Connect the CDFP cable to the R7634D's CDFP port.



2. Connect the CDFP cable to the Enclosure's CDFP port and the UL power cord to the Enclosure for AC power connection.



4. RS8631D Installation Instructions

1. Use a wired ESD wrist strap that is properly grounded.
2. Unpack and remove the RS8631D and check it for damage.
If it appears damaged, please get in touch with HighPoint Technical Support.
3. Turn the thumbscrew counterclockwise and remove the four screws at the bottom of the left side and right side.



4. Gently Remove the RS8631D cover.

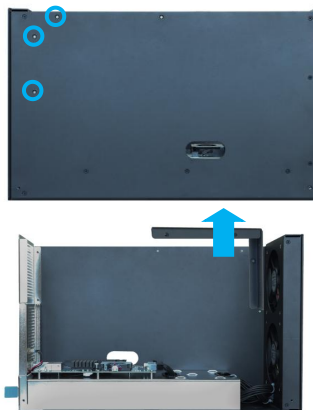


5. Remove the screw and PCIe slot cover.



Note: Remove the screw and PCIe slot cover according to the width of the accessed GPU (Maximum support for one triple-width GPU).

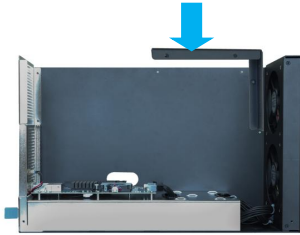
6. Remove the cable trunking by removing the three screws on the back of the Chassis.



7. Hold the GPU by its edges, insert it connector-down into the slot, and secure the GPU bracket with screws.



8. Install the cable trunking by reattaching the three screws on the back of the Chassis.



9. Connect the GPU power connector to the power connectors inside the Chassis.

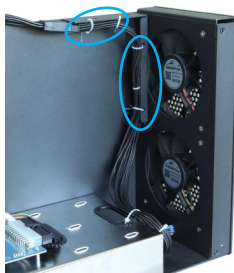


Note: If the GPU power cable is not long enough, refer to the following steps to connect the GPU using the 12V-HPWR to 2x4 connectors Power Cable.

- 1) Connect the 12VHPWR connector to the power connectors inside the Chassis.



- 2) Place the 12V-HPWR to 2x4 connectors Power Cable into the cable trunking and tie the cables with cable ties.

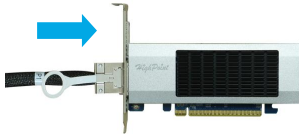


The recommended number of cable ties is between two and four, and the ties should be placed horizontally and vertically.

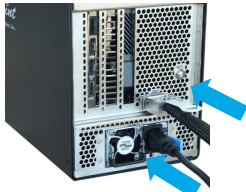
10. Close the RS8631D Chassis, and screw back screws and thumbscrew that were removed in step3.



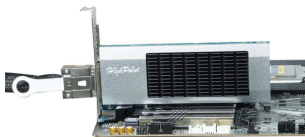
11. Connect the CDFP cable to the Host Interface Card's external port. (Take the R7638D as an example)



12. Connect the CDFP cable to the Chassis's CDFP port and the UL power cord to the Chassis for AC power connection.



13. Insert the Host Interface Card into the motherboard's PCIe x16 slot.



14. Press the power button to turn on the power up the RS8631D, then power up the motherboard.

Note: When powering off the system, the RS8631D must be powered off at the same time.



WARNING: If the GPU or other chassis-installed devices are not recognized, verify the correct power up sequence. Ensure the chassis is powered on before applying power to the motherboard.

5. Revision History

5.1. Version 1.00, November 13, 2025

Initial version.

5.2. Version 1.01, December 8, 2025

Update [Chassis Dimensions](#).

5.3. Version 1.02, June 29, 2026

Added WARNING regarding power-up sequence: If the GPU or other chassis-installed devices are not recognized, verify the correct power up sequence. Ensure the chassis is powered on before applying power to the motherboard.