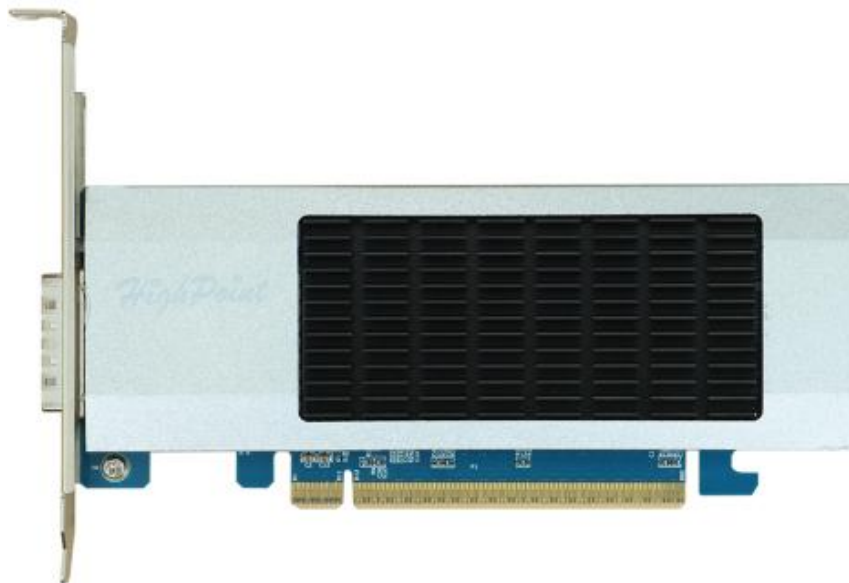




Rocket 7634D (R7634D)

Gen5 External Adapter User Guide



V1.00 - November 25, 2025

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1. Overview

The R7634D is the latest member of our PCIe Gen5 External Adapter product family. The R7634D employs cutting-edge PCIe 5.0 interface standards, building high-speed data pipelines for GPU-accelerated computing and parallel storage workloads through external expansion enclosures. This delivers unparalleled performance for enterprise-level data processing.

1.1. Key Features

- Dedicated PCIe 5.0 x16 host interface
- Provide one CDFP connector
- Support data transfer rate 64GB/s
- Support one Enclosure
- Complies with CoopLink Copmliant standard
- CDFP HotPlug
- Data Port Reconfiguration (Support either downstream configuration 1x16 /2x8 /4x4 /8x2 /16x1)
- FRU Inventory support
- Software Secure Boot (only Windows)
- Hardware Secure Boot
- Downstream port containment
- Real-Time Power Measurement
- Support LED Management
- Support Alarming
- Support the following Operating Systems:
 - Windows 11,10/ Server 2025,2022,2019,2016
 - RHEL/Debian/Ubuntu/Fedora/Proxmox/Rocky Linux

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.

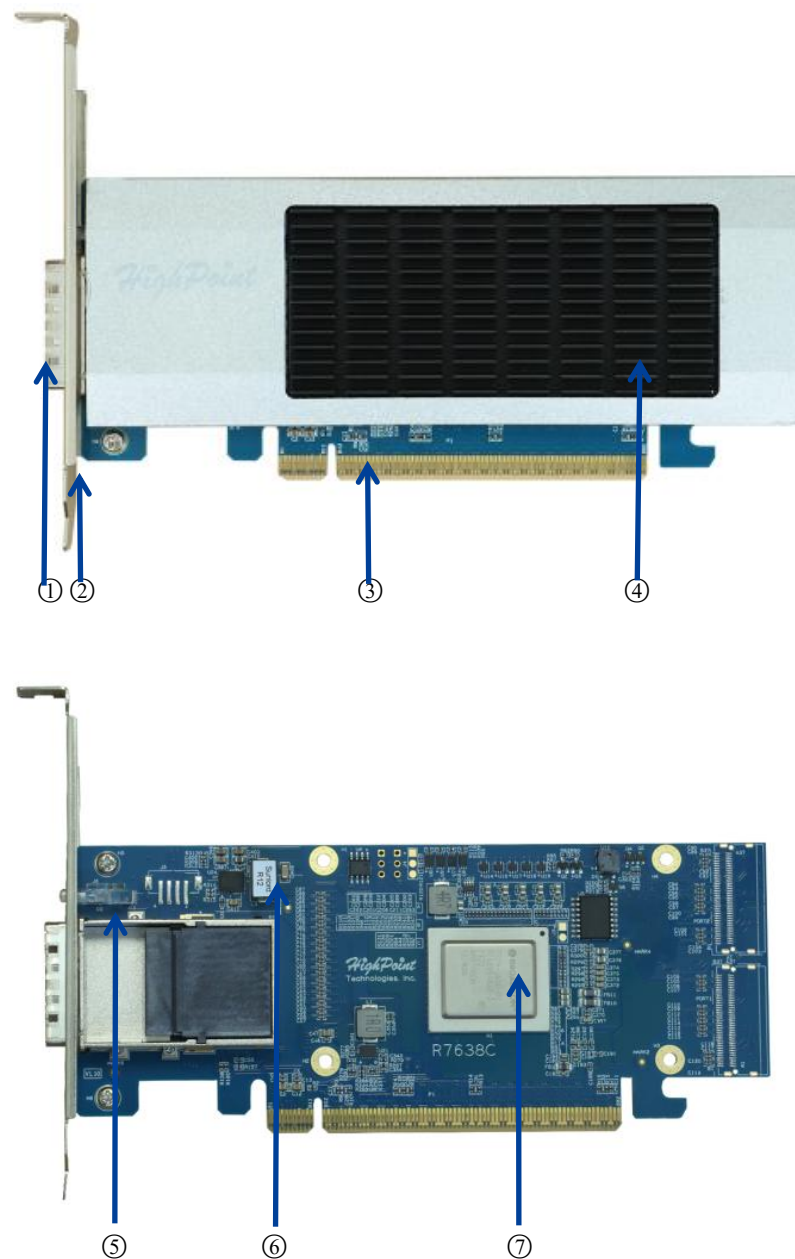
2. R7634D Hardware Description

2.1. R7634D Layout

The layout of the R7634D is presented in two parts.

2.1.1. Host Interface Card--Front View

The following figure shows the key components of the host interface card.



The following table describes the key components of the host interface card.

Table 2: Key component of the host interface card

Number	Type	Description
①	CDFP Connector	One CDFP connector. Connect the controller card using a CDFP cable to the Chassis.
②	Bracket	Full-height bracket. (optional low-profile bracket included). The R7634D is secured to the Enclosure by a bracket.
③	PCIe Host Interface	PCIe 5.0 x16 host interface. The interface between the host interface card and the host system. With the PCIe interface, this connector provides power to the board.
④	Cooling System	Passive Heatsink. Used to dissipate heat from electronic components prone to heat generation.
⑤	Diagnostic LED	CDFP Status LED and Host Status LED. ● CDFP Status LED -- The bandwidth of the Chassis MCU feedback. ● Host Status LED -- The status of the host interface card PCIe bandwidth.
⑥	Beeper	This beeper is for factory commissioning only.
⑦	Chip	Broadcom PEX 89048 chip.

2.1.2. Diagnostic LED View (Host Interface Card)

The following figure shows the LED Indicators of the host interface card.

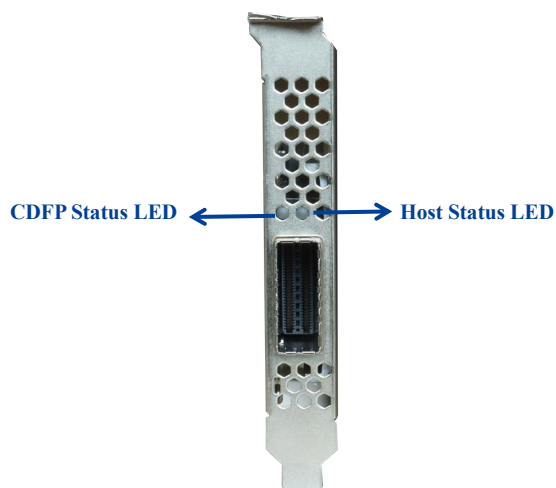


Table 3: LED Indicators of the host interface card

LED	Color	Status	Description
CDFP Status LED		OFF	The Enclosure is powered off.

		Solid Blue	The CDFP status is working at PCIe 5.0 with 1 x16 Mode. Note: When the GPU is in power-saving mode with no I/O, the link speed will be below the PCIe 5.0 standard, and bandwidth cannot reach its maximum value. At this time, the LED will flash blue.
		Solid Green	The CDFP status is working at PCIe 5.0 with 4 x4 Mode.
		Solid Red	Unknown Configuration.
		Flash Blue	The LED blinks red at 1 Hz to indicate that the CDFP status is working at not PCIe 5.0 but 1 x16 Mode.
		Flash Green	The LED blinks red at 1 Hz to indicate that the CDFP status is working at not PCIe 5.0 but 4 x4 Mode.
Host Status LED		OFF	The host interface card is powered off.
	Note: The following represents the bandwidth status of the host interface card.		
		Solid Blue	PCIe 5.0 x16.
		Solid Green	PCIe 5.0 x8 or PCIe 4.0 x16.
		Solid Yellow	PCIe 5.0 x4 or PCIe 4.0 x8 or PCIe 3.0 x16.
		Solid Cyan	PCIe 4.0 x4 or PCIe 3.0 x8.
		Solid White	PCIe 3.0 x4.
		Solid Red	Not appear as above.

2.2. PCIe Host Interface

The R7634D's PCIe 5.0 host interface provides maximum transmission. Other PCIe host interface features include the following:

- 16-lane PCIe host interface
- Support of x16 link width
- 16-lane aggregate bandwidth of up to 64GB/s

2.3. Enclosure Bus Interface

The R7634D has one CDFP connector. Other features include the following:

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

2.4. Basic Specifications

The following table describes the basic specifications of the R7634D.

Table 4: Basic Specifications of R7634D

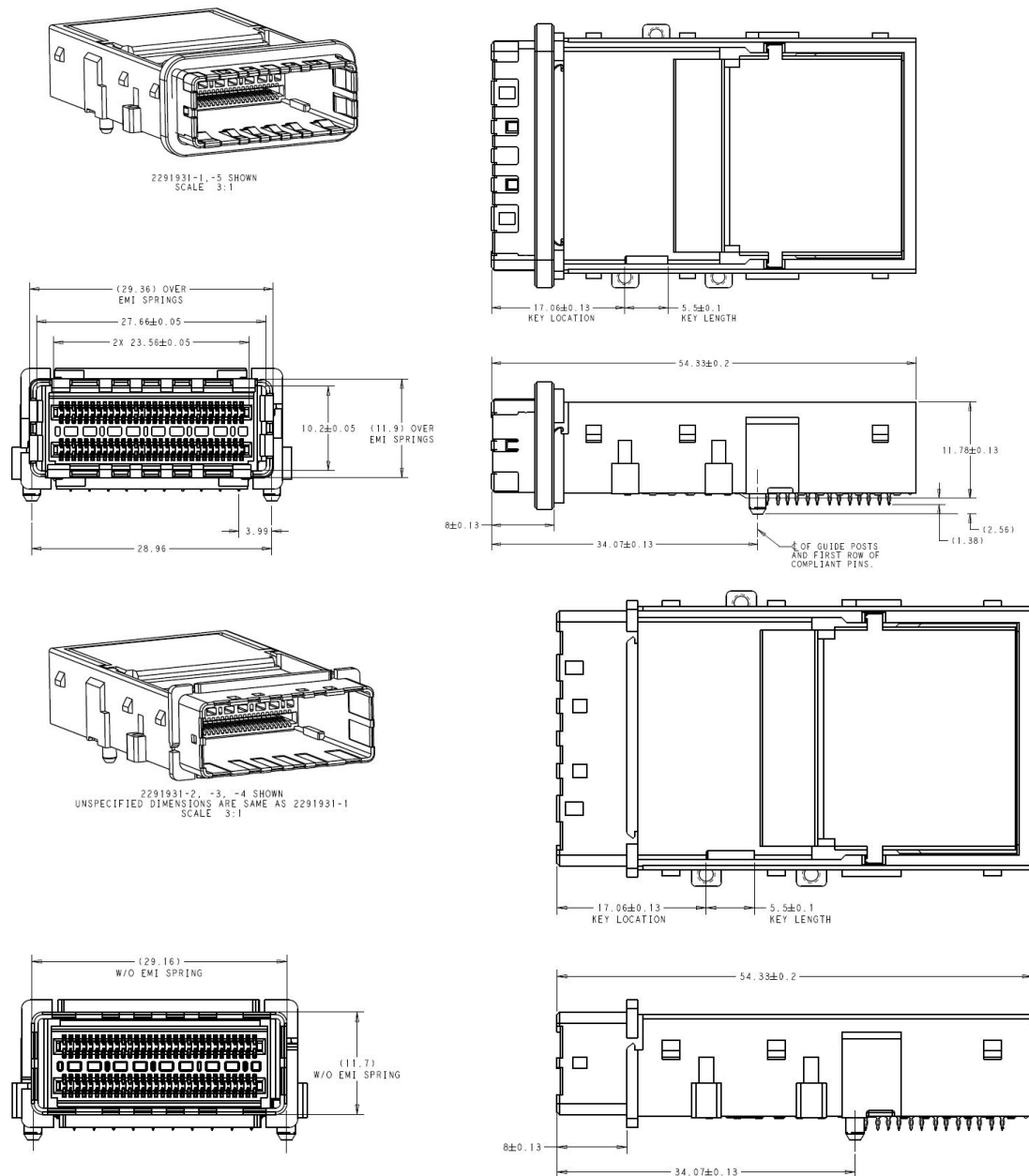
Model		R7634D
Form Factor		LP-MD2, Single Width
Weight		200g
Dimension	Depth	19.67mm
	Width	165mm
	Height	69mm
Power consumption		● Idle mode: 4.74W ● I/Os mode: 39.58W Notes: The I/Os mode power consumption is measured with the TUF-RX9070-016G-GAMING and RS8631C External Enclosure. Actual power consumption may differ based on system hardware and configuration.
Power supply		PCIe: 12V(±8%), 3.3V (±8%)
Work temperature		+5°C ~ + 55°C
Storage temperature		-20°C ~ +80°C
MTBF (Mean Time Before Failure)		> 5,000,000 hours at 40°C

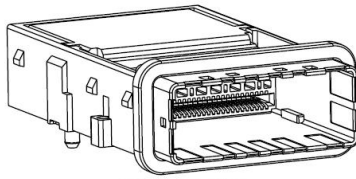
3. R7634D CDFP Connector

3.1. CDFP Connector Pin Designation

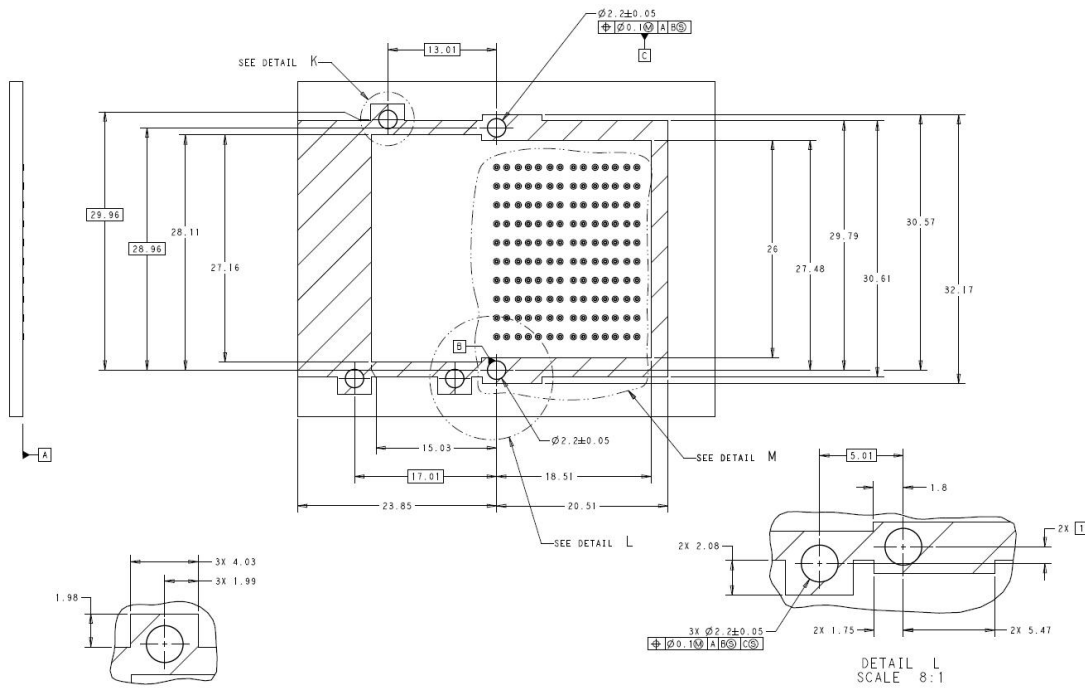
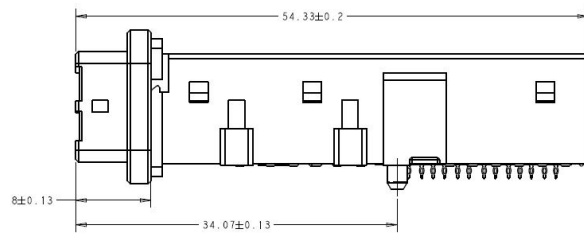
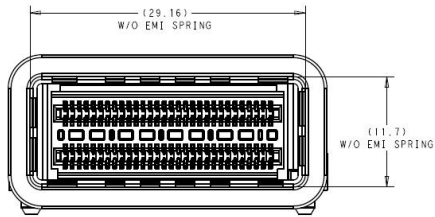
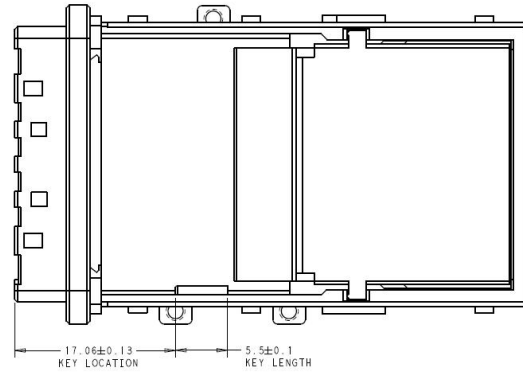
The R7634D has one CDFP connector.

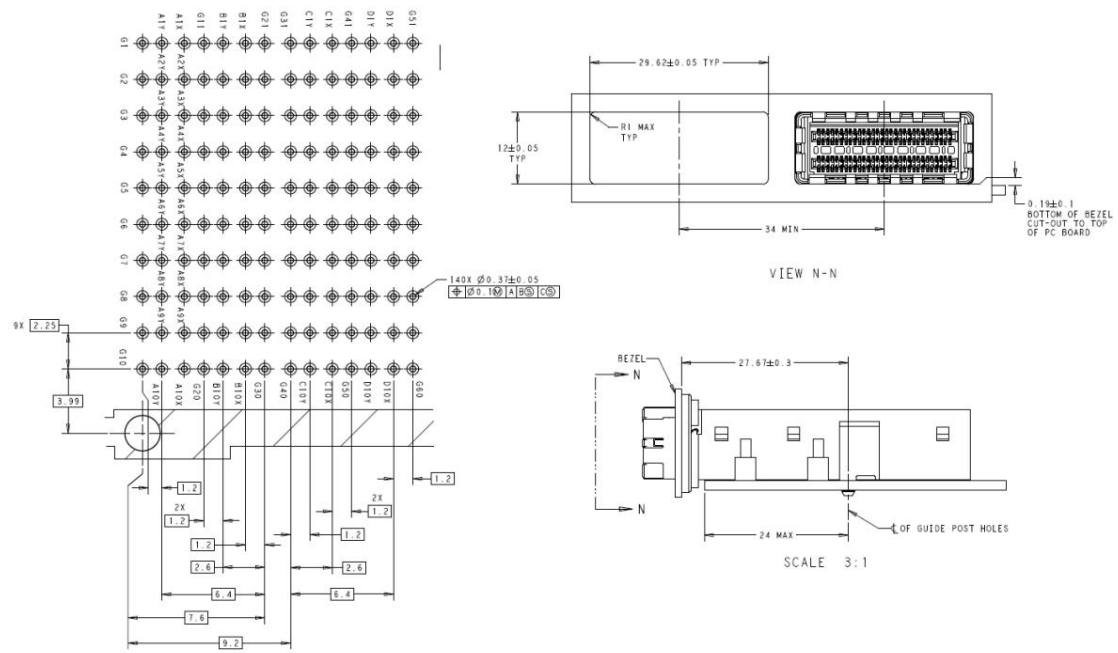
The following figure shows the connector pin designation.





2291931-6/-7 SHOWN
UNSPECIFIED DIMENSIONS ARE SAME AS 2291931-1
SCALE 3:1





3.2. CDFP Connector Pinout

The following table defines the R7634D's controller card CDFP connector pinouts.

Table 5: Connector Pinouts

Pin	Name	Pin	Name
G1	GND	G11	GND
A1X	TX14P	B1X	TX15P
A1Y	TX14N	B1Y	TX15N
G2	GND	G12	GND
A2X	TX12P	B2X	TX13P
A2Y	TX12N	B2Y	TX13N
G3	GND	G13	GND
A3X	TX10P	B3X	TX11P
A3Y	TX10N	B3Y	TX11N
G4	GND	G14	GND
A4X	TX8P	B4X	TX9P
A4Y	TX8N	B4Y	TX9N
G5	GND	G15	GND
A5X	REF0_CLK+	B5X	CDFP_ID_0
A5Y	REF0_CLK-	B5Y	CDFP_ID_1
G6	GND	G16	GND
A6X	TX06P	B6X	TX7P
A6Y	TX06N	B6Y	TX7N
G7	GND	G17	GND
A7X	TX4P	B7X	TX5P
A7Y	TX4N	B7Y	TX5N
G8	GND	G18	GND
A8X	TX2P	B8X	TX3P
A8Y	TX2N	B8Y	TX3N

G9	GND	G19	GND
A9X	TX0P	B9X	TX1P
A9Y	TX0N	B9Y	TX1N
G10	GND	G20	GND
A10X	RESET1#	B10X	PRSENT1#
A10Y	GPIO0	B10Y	PRSENT2#
G31	GND	G41	GND
C1X	RX14P	D1X	RX15P
C1Y	RX14N	D1Y	RX15N
G32	GND	G42	GND
C2X	RX12P	D2X	RX13P
C2Y	RX12N	D2Y	RX13N
G33	GND	G43	GND
C3X	RX10P	D3X	RX11P
C3Y	RX10N	D3Y	RX11N
G34	GND	G44	GND
C4X	RX8P	D4X	RX9P
C4Y	RX8N	D4Y	RX9N
G35	GND	G45	GND
C5X	I2C0_CLK	D5X	I2C1_CLK
C5Y	I2C0_SDA	D5Y	I2C1_SDA
G36	GND	G46	GND
C6X	RX6P	D6X	RX7P
C6Y	RX6N	D6Y	RX7N
G37	GND	G47	GND
C7X	RX4P	D7X	RX5P
C7Y	RX4N	D7Y	RX5N
G38	GND	G48	GND
C8X	RX2P	D8X	RX3P

C8Y	RX2N	D8Y	RX3N
G39	GND	G49	GND
C9X	RX0P	D9X	RX1P
C9Y	RX0N	D9Y	RX1N
G40	GND	G50	GND
C10X	GPIO1	D10X	GPIO2
C10Y	RESET2#	D10Y	GPIO3
G21	GND	G51	GND
G22	GND	G52	GND
G23	GND	G53	GND
G24	GND	G54	GND
G25	GND	G55	GND
G26	GND	G56	GND
G27	GND	G57	GND
G28	GND	G58	GND
G29	GND	G59	GND
G30	GND	G60	GND

4. Accessory

The R7634D offers a variety of flexible cabling options, connecting to the Enclosure through the CDFP connector.

The following sections indicate the cable pinout and connection diagram for supported cable accessories and supported Enclosure.

4.1. CDFP-CDFP-1M Gen5 (Cooprlink) Cable

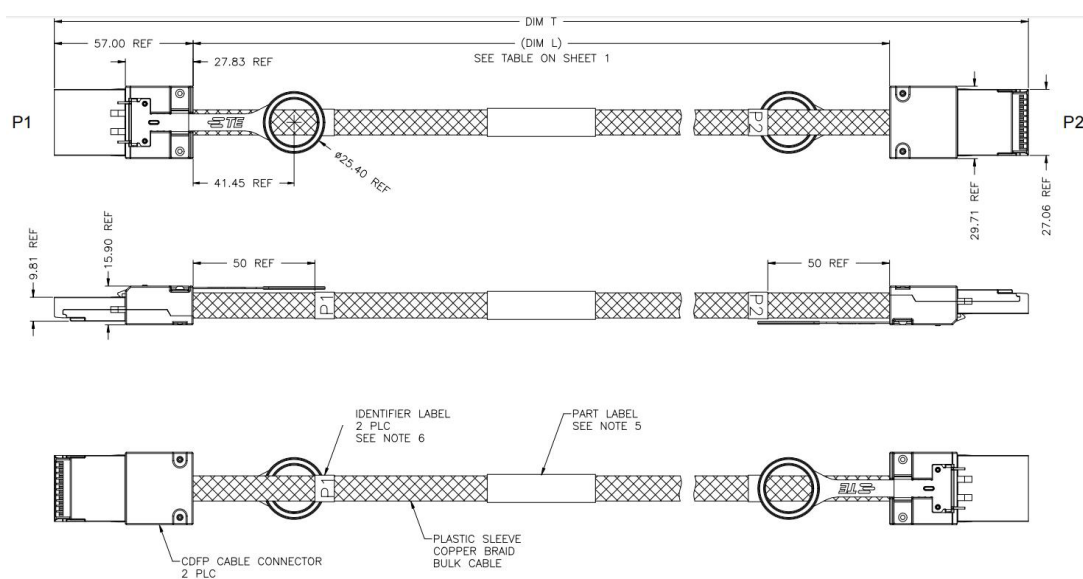
CDFP Host to CDFP Device cable. Length 1M.

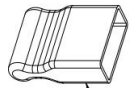
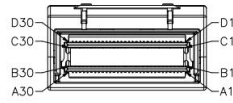
4.1.1. Cable Diagram



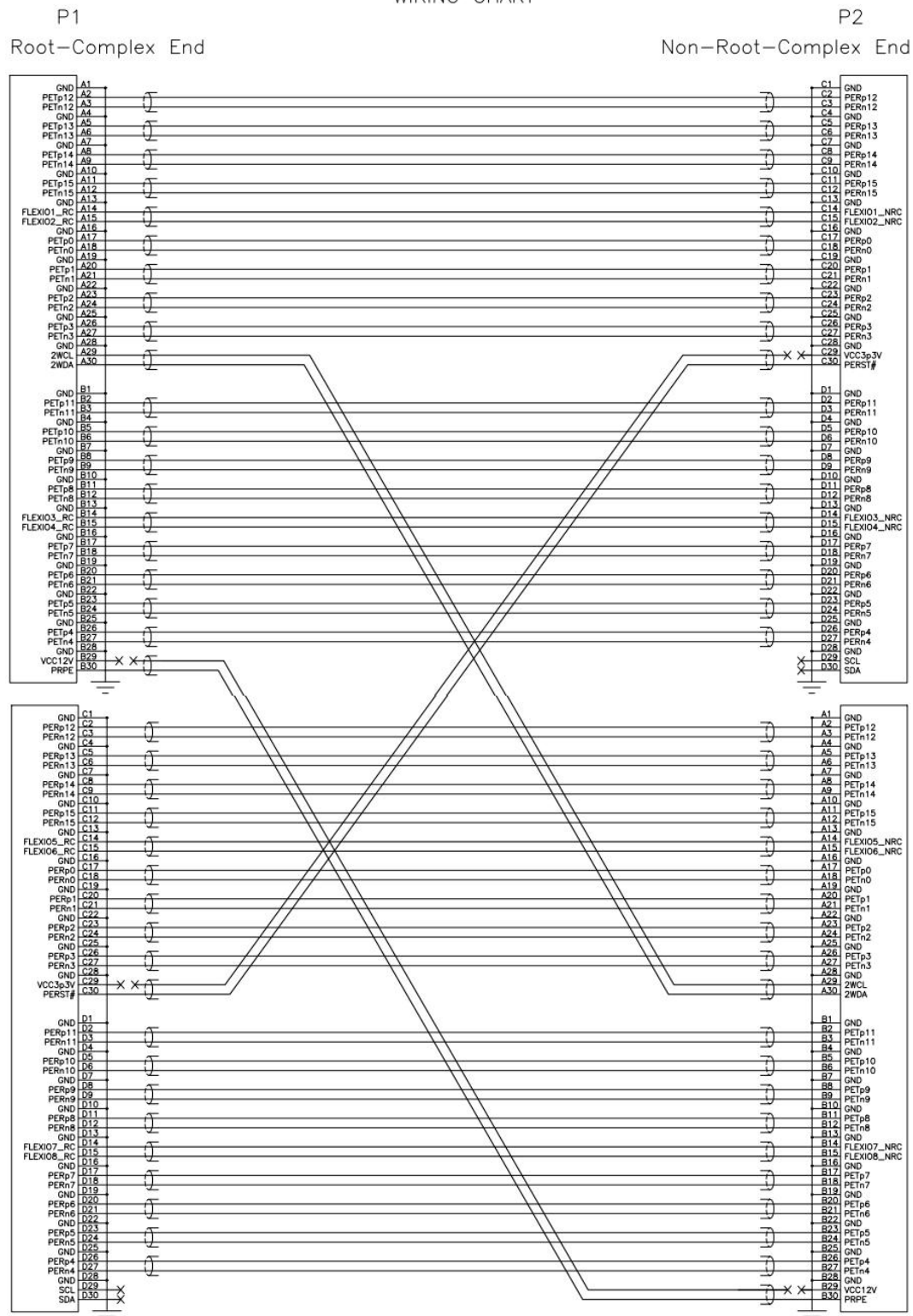
4.1.2. Cable Drawings and Pinouts

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



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

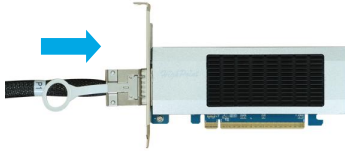
WIRING CHART



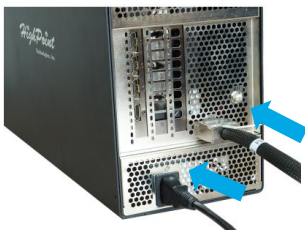
4.1.3. Cable Connection

The following steps show the connection of a Enclosure to the R7634D using the CDFP-CDFP-1M Gen5 (Cooplink) 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.



4.2. CDFP-CDFP-1M Gen4 Cable

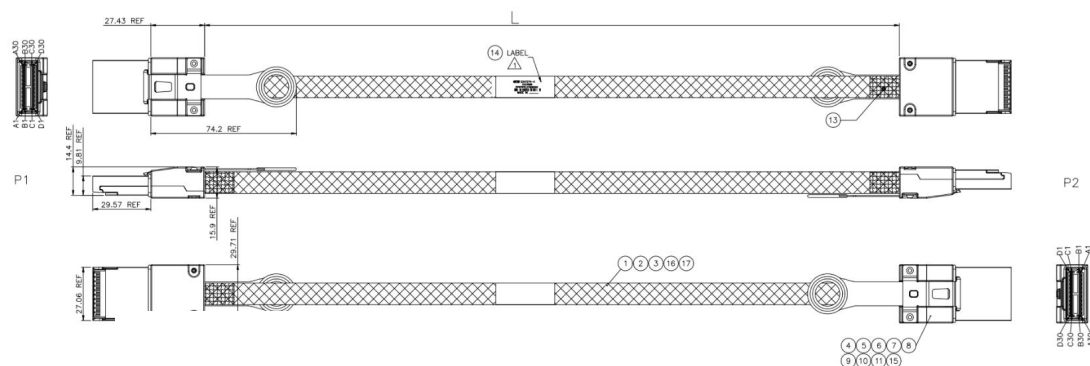
CDFP Host to CDFP Device cable. Length 1M.

4.2.1. Cable Diagram



4.2.2. Cable Drawings and Pinouts

The following figure shows the pinout for the HighPoint CDFP-CDFP-1M Gen4 cable, one x8 CDFP to one x8 CDFP connection.



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

-

-

4.3. RS8531A External Enclosure Device

The Enclosure is designed specifically for Gen4 (PCIe 4.0) GPU (Graphics Processing Unit).

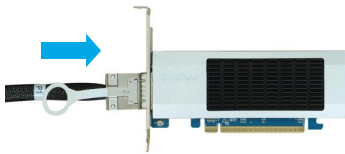
4.3.1. Enclosure View



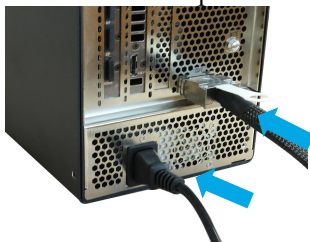
4.3.2. Enclosure Connection

The following steps show the connection of the RS8531A 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 RS8531A Enclosure for AC power connection.



4.4. RS8631C External Enclosure Device

The Enclosure is designed specifically for Gen5 (PCIe 5.0) GPU (Graphics Processing Unit).

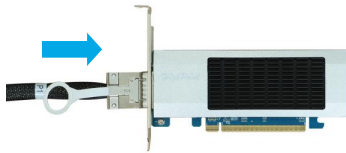
4.4.1. Enclosure View



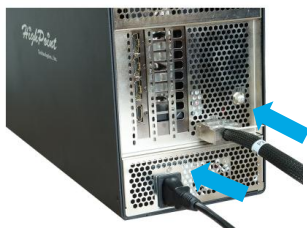
4.4.2. Enclosure Connection

The following steps show the connection of the RS8631C to the R7634D using the CDFP-CDFP-1M Gen5 (Cooplink) 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 RS8631C Enclosure for AC power connection.



4.5. RS8631D External Enclosure Device

The Enclosure is designed specifically for Gen5 (PCIe 5.0) GPU (Graphics Processing Unit).

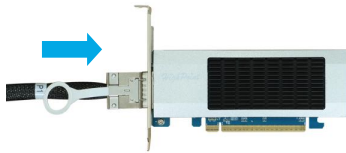
4.5.1. Enclosure View



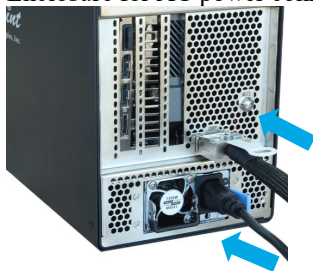
4.5.2. Enclosure Connection

The following steps show the connection of the RS8631D to the R7634D using the CDFP-CDFP-1M Gen5 (Cooplink) cable.

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



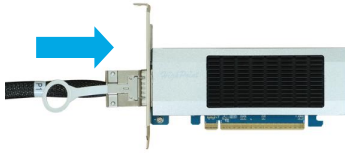
2. Connect the CDFP cable to the Enclosure's CDFP port and the UL power cord to the RS8631D Enclosure for AC power connection.



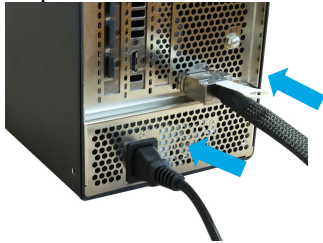
5. R7634D Installation Instructions

The R7634D provides one CDFP connector compatible with HighPoint's certified cable accessories. The following steps show how to connect Enclosure directly to the R7634D.

1. Use a wired ESD wrist strap that is properly grounded.
2. Unpack and remove the R7634D and check it for damage. If it appears damaged, please get in touch with HighPoint Technical Support.
3. Shut down the system and disconnect the AC power cord.
4. Connect the CDFP cable to the R7634D's CDFP port.



5. Press down gently but firmly to seat the R7634D correctly in the available slot.
6. Connect the CDFP cable to the Enclosure's CDFP port and the UL power cord to the Enclosure for AC power connection.



7. Power up the Enclosure, then power up the motherboard.

6. Revision History

Version 1.00, November 25, 2025

Initial version.