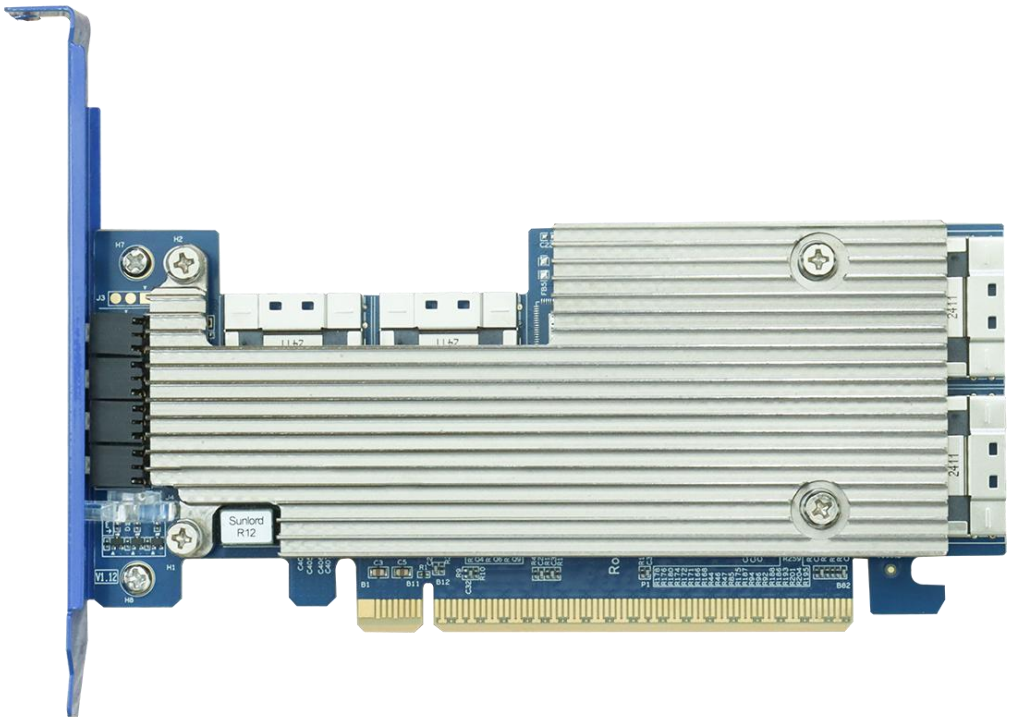
Rockket 1528D (R1528D)

NVMe Switch Adapter User Guide



V1.00 - Apr. 25, 2024

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1. Overview

The R1528D is the latest member of our PCIe Gen4 NVMe Switch Adapter product family.

HighPoint Rocket Series NVMe connectivity adapters address the needs of solution providers and system integrators that cater to vertical marketplaces for high-speed industrial, corporate, and media applications. They were designed for professional applications that demand uncompromised storage performance, scalability, and adaptability in a compact, easy-to-integrate package that is universally compatible with industry-standard x86-64 (Intel/AMD) platforms.

The R1528D's eight independent device ports can support U.2/U.3 NVMe SSDs via versatile cabling solutions.

All major Windows operating systems and current distributions of Linux natively support the R1528D. You won't need to juggle a series of device drivers, install a complex software suite, or master a specialized management interface. Your NVMe SSDs will be automatically recognized and can be prepped and mounted using the operating system's standard tool set.

1.1. Key Features

- Dedicated PCIe 4.0 x16 host interface
- Support data transfer rate 32GB/s
- Provide four internal SlimSAS (SFF-8654 x8) connectors
- Support eight dedicated U.2/U.3 NVMe devices
- Complies with SFF-9402 standard
- Provide a full-height bracket and a low-profile bracket
- True NVMe Hot-Plug & Hot-Swap capability
- FRU Inventory support
- Downstream port containment
- Read tracking
- Synthetic hierarchy
- Software Secure Boot
- Out-Of-band Support - BMC Support
- Complies with SFF-TA-1005 specification for Universal Backplane Management (UBM)
- Support VPP Backplane
- Support LED Management
- Support all the operating systems with a native NVMe driver

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 provided as an extension to the Vendor ID (or Subsystem Vendor ID) in the Configuration Space header. This 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. Synthetic Hierarchy

A synthetic hierarchy can be created to isolate the host from these physical PCIe topology changes and errors.

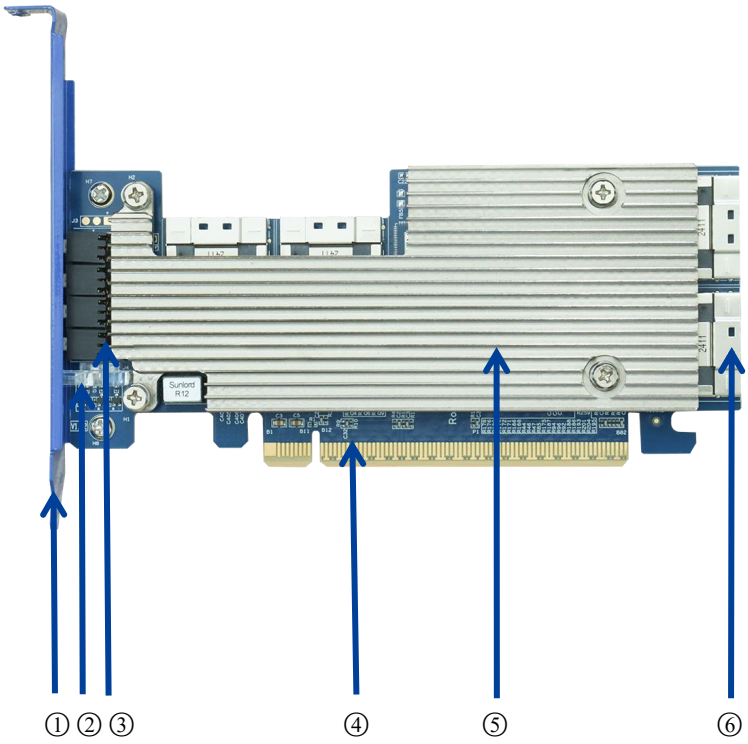
2. R1528D Hardware Description

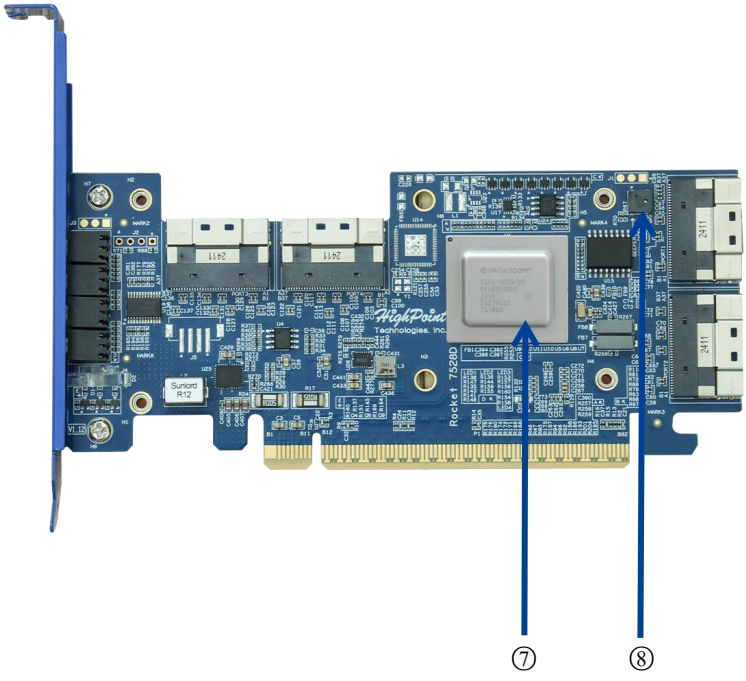
2.1. R1528D Layout

The layout of the R1528D is presented in two parts.

- **Front View**

The following figure shows the key components of the R1528D.





The following table describes the key components of the R1528D.

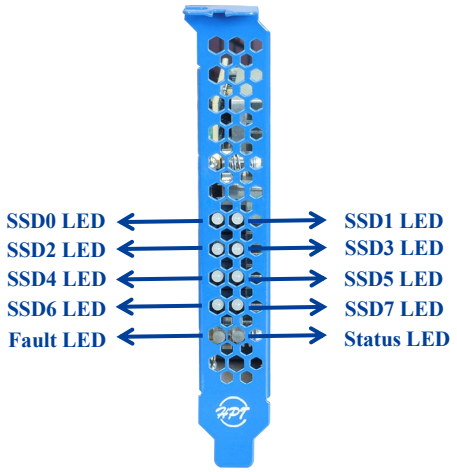
Table 2: Key component of the R1528D

Number	Type	Description
①	Bracket	Full-height bracket (optional low-profile bracket included). The R1528D is secured to the chassis by a bracket.
②	RGB	Status LED and Fault LED. ● Status LED -- The state of R1528D PCIe bandwidth. ● Fault LED -- The state of the Broadcom chipset temperature.
③	LED	Eight SSD LED. SSD LED indicates the state of SSD bandwidth.
④	PCIe Host Interface	PCIe 4.0 x16 host interface. The interface between the R1528D and the host system. With the PCIe interface, this connector provides power to the board.
⑤	Cooling System	Passive Heatsink. Used to dissipate heat from electronic components prone to heat generation.
⑥	Storage Interface	Four internal SFF-8654 connectors. Connect the R1528D by cable to the storage devices.
⑦	Chip	Broadcom PEX 88048 chip.
⑧	Beeper	Only to be used for field testing.

- **LED View**

The following figure shows the LED Indicators of the R1528D.

LED View



The following table describes the SSD LED, Status LED, and Fault LED of the R1528D.

Table 3: Description of LED

LED	Color	Status	Description
SSD LED		**OFF**	The R1528D is powered off, or the SSD is not detected.

		**Solid Green**	The SSD is detected.
		**Solid Red**	The SSD has failed.
Status LED		**OFF**	The R1528D is powered off.
		**Interval Flash Green**	The LED blinks green twice in the first second, then goes out for one second and continues to cycle this process. This indicates the R1528D's bandwidth is PCIe 4.0 x16.
		**Interval Flash Yellow**	The LED blinks yellow twice in the first second, then goes out for one second and continues to cycle this process. This indicates the R1528D's bandwidth is PCIe 4.0 x8 or PCIe 3.0 x16.
		**Interval Flash Cyan**	The LED blinks cyan twice in the first second, then goes out for one second and continues to cycle this process. This indicates the R1528D's bandwidth is PCIe 4.0 x4 or PCIe 3.0 x8.
		**Interval Flash White**	The LED blinks white twice in the first second, then goes out for one second and continues to cycle this process. This indicates the R1528D's bandwidth is PCIe 3.0 x4.
		**Interval Flash Red**	The LED blinks red twice in the first second, then goes out for one second and continues to cycle this process. This indicates the R1528D's bandwidth does not appear as above.
Fault LED		**OFF**	The R1528D is powered off.
		**Fast Flash Red**	The LED blinks red at 4 Hz to indicate that the Broadcom chipset temperature has exceeded the recommended temperature threshold (105℃).

2.2. PCIe Host Interface

The R1528D's PCIe 4.0 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 32GB/s

2.3. Storage Interface

The R1528D has four SFF-8654 interfaces. Other storage interface features include the following:

- Dedicated PCIe 4.0 x4 per port
- Supports up to eight NVMe devices (up to x4 lanes, U.2/U.3 media)
- Data transfer at 8GB/s

2.4. Basic Specifications

The following table describes the basic specifications of the R1528D.

Table 4: Basic Specifications of R1528D

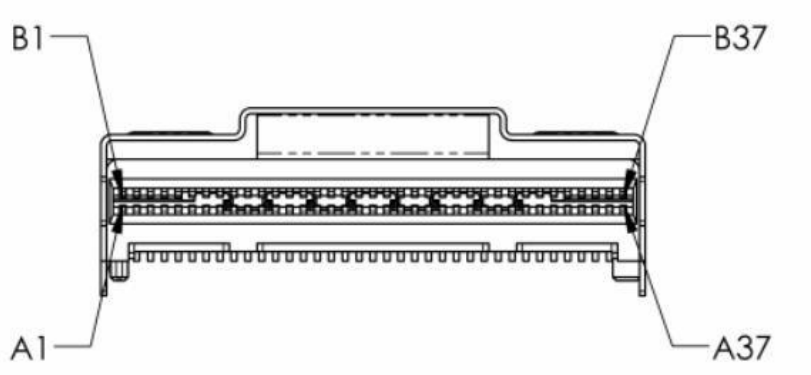
Model		**R1528D**
Form Factor		LP-MD2, Single Width
Weight		340g
Dimension	**Length**	6.10"
	Height	2.71"
Power consumption		29.58W
Power supply		PCIe: 12V, 3.3V
Work temperature		+5°C ~ + 55°C
Storage temperature		-20°C ~ +80°C
MTBF (Mean Time Before Failure)		> 5,000,000 hours at 40°C

3. R1528D SFF-8654 Connector

3.1. SFF-8654 Connector Pin Designation

The R1528D has four x8 SFF-8654 connectors, designated as A and B. It follows the SFF-9402 standard for connector sideband signal assignments.

The following figure shows the SFF-8654 connector pin designation.



3.2. SFF-8654 Connetor Pinout

The following table defines the R1528D's SFF-8654 connector pinouts.

Table 5: SFF-8654 Connetor Pinouts

Pin	Name	Pin	Name
A1	GND	B1	GND
A2	PERp0	B2	PETp0
A3	PERn0	B3	PETn0
A4	GND	B4	GND
A5	PERp1	B5	PETp1
A6	PERn1	B6	PETn1
A7	GND	B7	GND
A8	NC	B8	U0_SCL
A9	NC	B9	U0_SDA
A10	GND	B10	GND
A11	SFF8654_LCK1_P	B11	PE_RESET#
A12	SFF8654_LCK1_N	B12	U0_CWAKE#

A13	GND	B13	GND
A14	PERp2	B14	PETp2
A15	PERn2	B15	PETn2
A16	GND	B16	GND
A17	PERp3	B17	PETp3
A18	PERn3	B18	PETn3
A19	GND	B19	GND
A20	PERp4	B20	PETp4
A21	PERn4	B21	PETn4
A22	GND	B22	GND
A23	PERp5	B23	PETp5
A24	PERn5	B24	PETn5
A25	GND	B25	GND
A26	NC	B26	U1_SCL
A27	NC	B27	U1_SDA
A28	GND	B28	GND
A29	SFF8654_LCK2_P	B29	PE_RESET#
A30	SFF8654_LCK2_N	B30	U1_CWAKE#
A31	GND	B31	GND
A32	PERp6	B32	PETp6
A33	PERn6	B33	PETn6
A34	GND	B34	GND
A35	PERp7	B35	PETp7
A36	PERn7	B36	PETn7
A37	GND	B37	GND

3.3. Backplane Connector Support

The R1528D supports the industry-standard SFF-TA-1005 Specification for Universal Backplane Management (UBM). UBM provides the following key features:

- Reports the backplane capabilities, including the following:
  - NVMe drive widths
  - Maximum speeds
  - Dual-port support
  - Support for drive power enable and disable (PWDIS)
- Supports cable order independence
  - Disk LED control and slot ID are not dependent on cable order
- Enables disk hot-plug insertion

3.3.1. UBM Backplane

The SFF-TA-1005 (UBM) standard-compliant backplanes are designed to transmit slot numbers to the R1528D automatically. This innovation eliminates the need to manually configure cables between the R1528D and the backplane connector, optimizing cable flexibility.

Most backplanes use x4 or x8 host connectors. Each x8 connector has an "A" side and a "B" side.

3.3.2. VPP Backplane

The R1528D supports the legacy implementation of Virtual Pin Port (VPP) backplane management. The cables must be connected according to the desired slot enumeration to identify the slots correctly. Connect the SFF-8654 connector of the R1528D to the backplane via the cable.

4. Cable Accessories

A wide selection of flexible cabling options is available for the R1528D, which enable the R1528D to mix configurations of U.2/U.3 NVMe SSDs via SFF-8639, SFF-8643, SFF-8654, SFF-8611, and MCIO connectors.

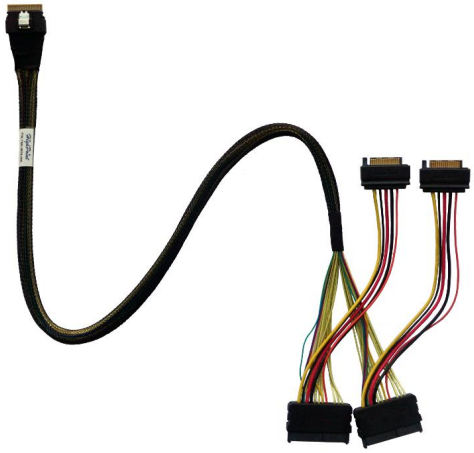
The following sections indicate the cable pinout and connection diagram for supported cable accessories.

4.1. TS8i-8639-060

SFF-8654 Host to U.2 SFF-8639 Device cable with a 15-pin SATA power connector. Each cable supports two U.2 NVMe SSDs. Length 0.6M.

4.1.1. Cable Diagram

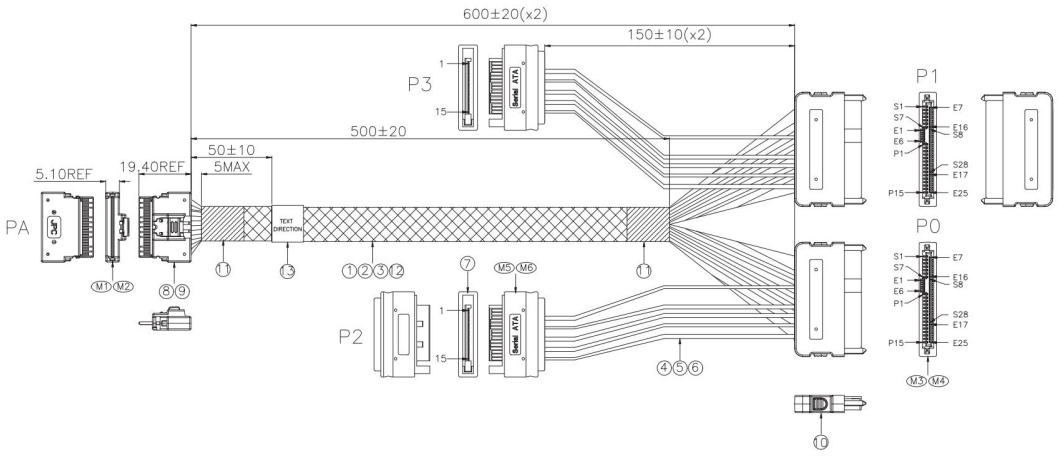
SFF-8654

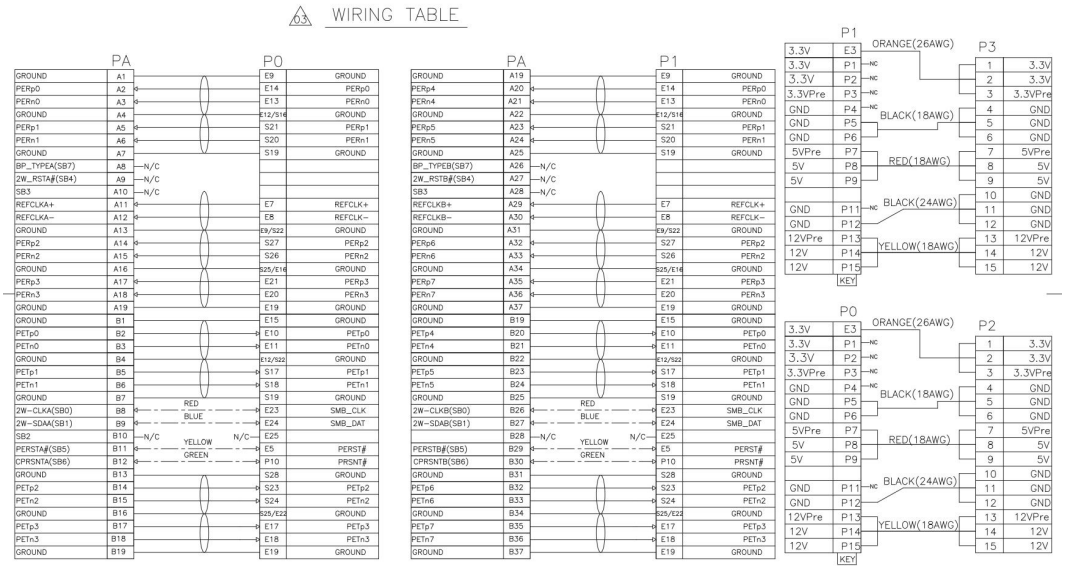


SFF-8639

4.1.2. Cable Drawings and Pinouts

The following figure shows the pinout for the HighPoint TS8i-8639-060 cable, one x8 SFF-8654 to two x4 SFF-8639 connection.

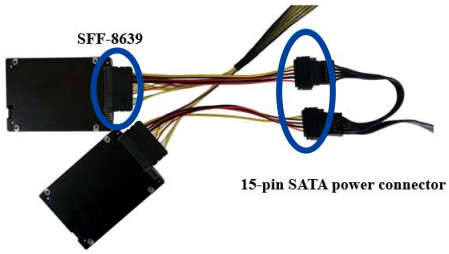




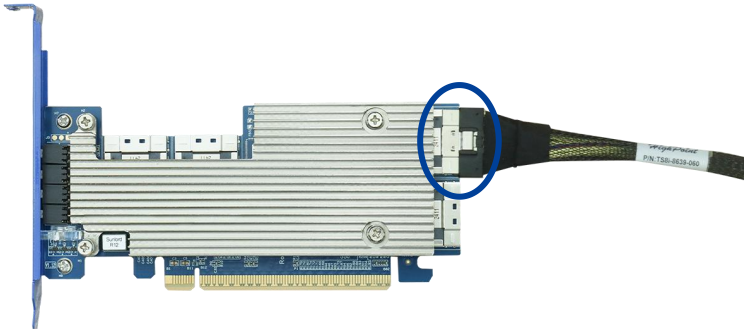
4.1.3. Cable Connection

The following steps show the connection of a U.2 SSD to the R1528D using the TS8i-8639-060 cable.

1. Connect the SFF-8639 connector of the TS8i-8639-060 cable to the NVMe SSD, and connect the 15-pin SATA power connector of the TS8i-8639-060 cable to the system power supply.



2. Connect the SFF-8654 connector of the TS8i-8639-060 cable to the R1528D.



4.2. 8654-8654-110

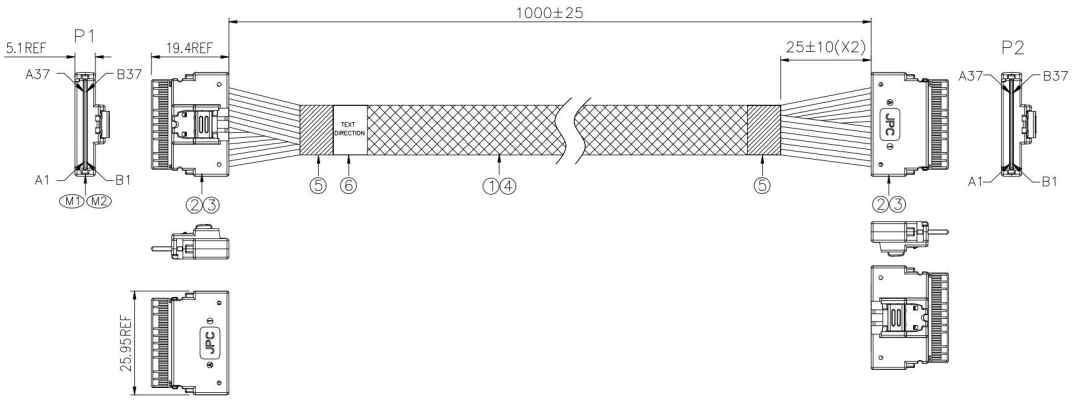
SFF-8654 Host to SFF-8654 Device cable. Each cable can host up to two NVMe SSDs. Length 1M.

4.2.1. Cable Diagram

SFF-8654 **SFF-8654**

4.2.2. Cable Drawings and Pinouts

The following figure shows the pinout for the HighPoint 8654-8654-110 cable, one x8 SFF-8654 to one x8 SFF-8654 connection.



WIRING TABLE

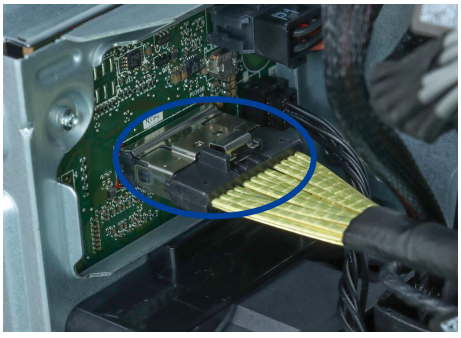
P1			P2		
GROUND	B37	B37	A37	A37	GROUND
TX7−	B36	B36	A36	A36	RX7−
TX7+	B35	B35	A35	A35	RX7+
GROUND	B34	B34	A34	A34	GROUND
TX6−	B33	B33	A33	A33	RX6−
TX6+	B32	B32	A32	A32	RX6+
GROUND	B31	B31	A31	A31	GROUND
SIDEBAND	B30	B30	A30	A30	SIDEBAND
SIDEBAND	B29	B29	A29	A29	SIDEBAND
GROUND	B28	B28	A28	A28	GROUND
SIDEBAND	B27	B27	A27	A27	SIDEBAND
SIDEBAND	B26	B26	A26	A26	SIDEBAND
GROUND	B25	B25	A25	A25	GROUND
TX5−	B24	B24	A24	A24	RX5−
TX5+	B23	B23	A23	A23	RX5+
GROUND	B22	B22	A22	A22	GROUND
TX4−	B21	B21	A21	A21	RX4−
TX4+	B20	B20	A20	A20	RX4+
GROUND	B19	B19	A19	A19	GROUND
TX3−	B18	B18	A18	A18	RX3−
TX3+	B17	B17	A17	A17	RX3+
GROUND	B16	B16	A16	A16	GROUND
TX2−	B15	B15	A15	A15	RX2−
TX2+	B14	B14	A14	A14	RX2+
GROUND	B13	B13	A13	A13	GROUND
SIDEBAND	B12	B12	A12	A12	SIDEBAND
SIDEBAND	B11	B11	A11	A11	SIDEBAND
GROUND	B10	B10	A10	A10	GROUND
SIDEBAND	B9	B9	A9	A9	SIDEBAND
SIDEBAND	B8	B8	A8	A8	SIDEBAND
GROUND	B7	B7	A7	A7	GROUND
TX1−	B6	B6	A6	A6	RX1−
TX1+	B5	B5	A5	A5	RX1+
GROUND	B4	B4	A4	A4	GROUND
TX0−	B3	B3	A3	A3	RX0−
TX0+	B2	B2	A2	A2	RX0+
GROUND	B1	B1	A1	A1	GROUND

P1			P2		
GROUND	A37	A37	B37	B37	GROUND
RX7−	A36	A36	B36	B36	TX7−
RX7+	A35	A35	B35	B35	TX7+
GROUND	A34	A34	B34	B34	GROUND
RX6−	A33	A33	B33	B33	TX6−
RX6+	A32	A32	B32	B32	TX6+
GROUND	A31	A31	B31	B31	GROUND
SIDEBAND	A30	A30	B30	B30	SIDEBAND
SIDEBAND	A29	A29	B29	B29	SIDEBAND
GROUND	A28	A28	B28	B28	GROUND
SIDEBAND	A27	A27	B27	B27	SIDEBAND
SIDEBAND	A26	A26	B26	B26	SIDEBAND
GROUND	A25	A25	B25	B25	GROUND
RX5−	A24	A24	B24	B24	TX5−
RX5+	A23	A23	B23	B23	TX5+
GROUND	A22	A22	B22	B22	GROUND
RX4−	A21	A21	B21	B21	TX4−
RX4+	A20	A20	B20	B20	TX4+
GROUND	A19	A19	B19	B19	GROUND
RX3−	A18	A18	B18	B18	TX3−
RX3+	A17	A17	B17	B17	TX3+
GROUND	A16	A16	B16	B16	GROUND
RX2−	A15	A15	B15	B15	TX2−
RX2+	A14	A14	B14	B14	TX2+
GROUND	A13	A13	B13	B13	GROUND
SIDEBAND	A12	A12	B12	B12	SIDEBAND
SIDEBAND	A11	A11	B11	B11	SIDEBAND
GROUND	A10	A10	B10	B10	GROUND
SIDEBAND	A9	A9	B9	B9	SIDEBAND
SIDEBAND	A8	A8	B8	B8	SIDEBAND
GROUND	A7	A7	B7	B7	GROUND
RX1−	A6	A6	B6	B6	TX1−
RX1+	A5	A5	B5	B5	TX1+
GROUND	A4	A4	B4	B4	GROUND
RX0−	A3	A3	B3	B3	TX0−
RX0+	A2	A2	B2	B2	TX0+
GROUND	A1	A1	B1	B1	GROUND

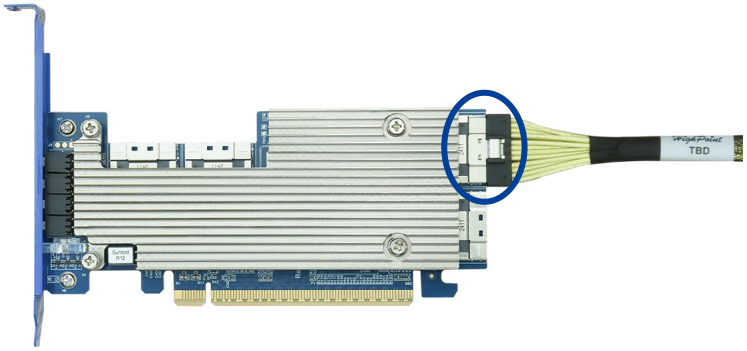
4.2.3. Cable Connection

The following steps show the connection of the backplane to the R1528D using the 8654-8654-110 cable.

1. Connect the SFF-8654 connector of the 8654-8654-110 cable to the backplane.



2. Connect the other SFF-8654 connector of the 8654-8654-110 cable to the R1528D.



4.3. 8654-CIO8-110

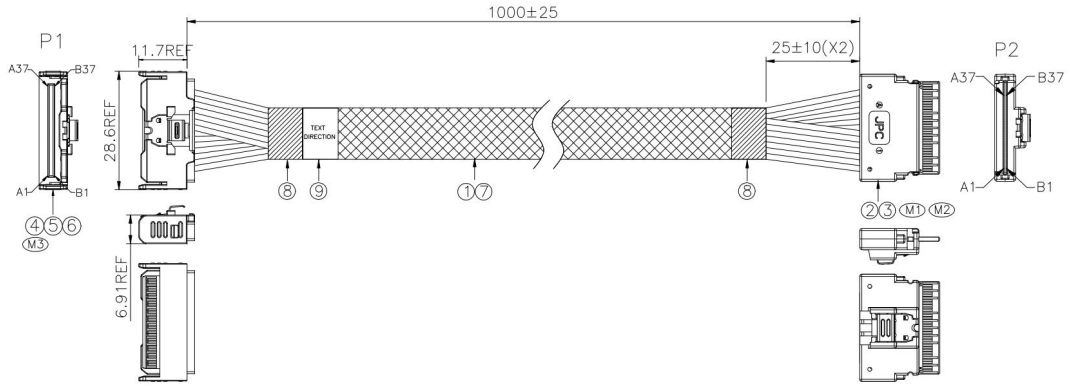
SFF-8654 Host to MCIO Device cable. Each cable can host up to two NVMe SSDs. Length 1M.

4.3.1. Cable Diagram

SFF-8654 **MCIO**

4.3.2. Cable Drawings and Pinouts

The following figure shows the pinout for the HighPoint 8654-CIO8-110 cable, one x8 SFF-8654 to one x8 MCIO connection.



WIRING TABLE

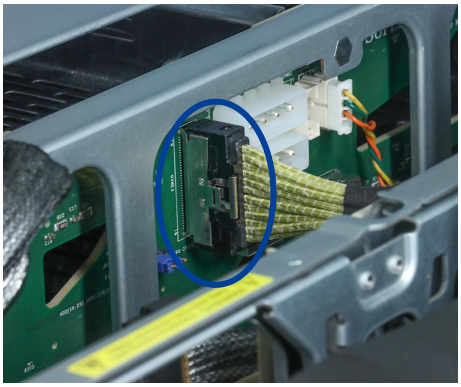
P1			P2		
GROUND	B37	B37	A37	A37	GROUND
TX7−	B36	B36	A36	A36	RX7−
TX7+	B35	B35	A35	A35	RX7+
GROUND	B34	B34	A34	A34	GROUND
TX6−	B33	B33	A33	A33	RX6−
TX6+	B32	B32	A32	A32	RX6+
GROUND	B31	B31	A31	A31	GROUND
SIDEBAND	B30	B30	A30	A30	SIDEBAND
SIDEBAND	B29	B29	A29	A29	SIDEBAND
GROUND	B28	B28	A28	A28	GROUND
SIDEBAND	B27	B27	A27	A27	SIDEBAND
SIDEBAND	B26	B26	A26	A26	SIDEBAND
GROUND	B25	B25	A25	A25	GROUND
TX5−	B24	B24	A24	A24	RX5−
TX5+	B23	B23	A23	A23	RX5+
GROUND	B22	B22	A22	A22	GROUND
TX4−	B21	B21	A21	A21	RX4−
TX4+	B20	B20	A20	A20	RX4+
GROUND	B19	B19	A19	A19	GROUND
TX3−	B18	B18	A18	A18	RX3−
TX3+	B17	B17	A17	A17	RX3+
GROUND	B16	B16	A16	A16	GROUND
TX2−	B15	B15	A15	A15	RX2−
TX2+	B14	B14	A14	A14	RX2+
GROUND	B13	B13	A13	A13	GROUND
SIDEBAND	B12	B12	A12	A12	SIDEBAND
SIDEBAND	B11	B11	A11	A11	SIDEBAND
GROUND	B10	B10	A10	A10	GROUND
SIDEBAND	B9	B9	A9	A9	SIDEBAND
SIDEBAND	B8	B8	A8	A8	SIDEBAND
GROUND	B7	B7	A7	A7	GROUND
TX1−	B6	B6	A6	A6	RX1−
TX1+	B5	B5	A5	A5	RX1+
GROUND	B4	B4	A4	A4	GROUND
TX0−	B3	B3	A3	A3	RX0−
TX0+	B2	B2	A2	A2	RX0+
GROUND	B1	B1	A1	A1	GROUND

P1			P2		
GROUND	A37	A37	B37	B37	GROUND
RX7−	A36	A36	B36	B36	TX7−
RX7+	A35	A35	B35	B35	TX7+
GROUND	A34	A34	B34	B34	GROUND
RX6−	A33	A33	B33	B33	TX6−
RX6+	A32	A32	B32	B32	TX6+
GROUND	A31	A31	B31	B31	GROUND
SIDEBAND	A30	A30	B30	B30	SIDEBAND
SIDEBAND	A29	A29	B29	B29	SIDEBAND
GROUND	A28	A28	B28	B28	GROUND
SIDEBAND	A27	A27	B27	B27	SIDEBAND
SIDEBAND	A26	A26	B26	B26	SIDEBAND
GROUND	A25	A25	B25	B25	GROUND
RX5−	A24	A24	B24	B24	TX5−
RX5+	A23	A23	B23	B23	TX5+
GROUND	A22	A22	B22	B22	GROUND
RX4−	A21	A21	B21	B21	TX4−
RX4+	A20	A20	B20	B20	TX4+
GROUND	A19	A19	B19	B19	GROUND
RX3−	A18	A18	B18	B18	TX3−
RX3+	A17	A17	B17	B17	TX3+
GROUND	A16	A16	B16	B16	GROUND
RX2−	A15	A15	B15	B15	TX2−
RX2+	A14	A14	B14	B14	TX2+
GROUND	A13	A13	B13	B13	GROUND
SIDEBAND	A12	A12	B12	B12	SIDEBAND
SIDEBAND	A11	A11	B11	B11	SIDEBAND
GROUND	A10	A10	B10	B10	GROUND
SIDEBAND	A9	A9	B9	B9	SIDEBAND
SIDEBAND	A8	A8	B8	B8	SIDEBAND
GROUND	A7	A7	B7	B7	GROUND
RX1−	A6	A6	B6	B6	TX1−
RX1+	A5	A5	B5	B5	TX1+
GROUND	A4	A4	B4	B4	GROUND
RX0−	A3	A3	B3	B3	TX0−
RX0+	A2	A2	B2	B2	TX0+
GROUND	A1	A1	B1	B1	GROUND

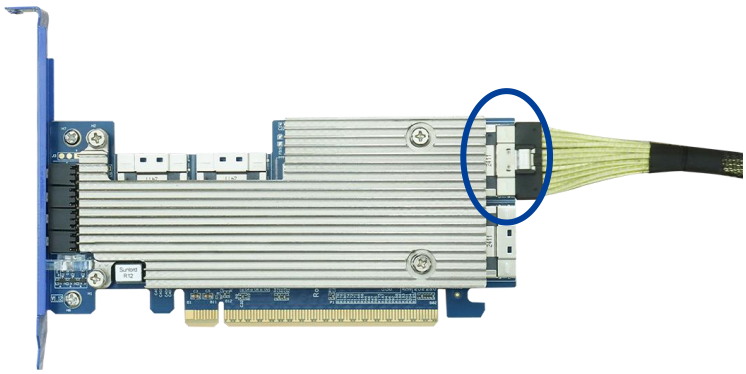
4.3.3. Cable Connection

The following steps show the connection of an NVMe SSD to the R1528D using the 8654-CIO8-110 cable.

1. Connect the MCIO connector of the 8654-CIO8-110 cable to the backplane.



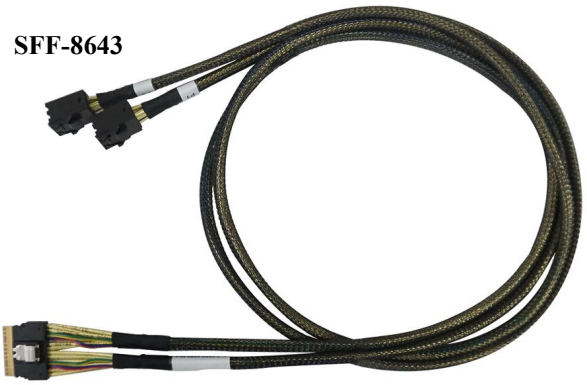
2. Connect the SFF-8654 connector of the 8654-CIO8-110 cable to the R1528D.



4.4. 8654-8643-210

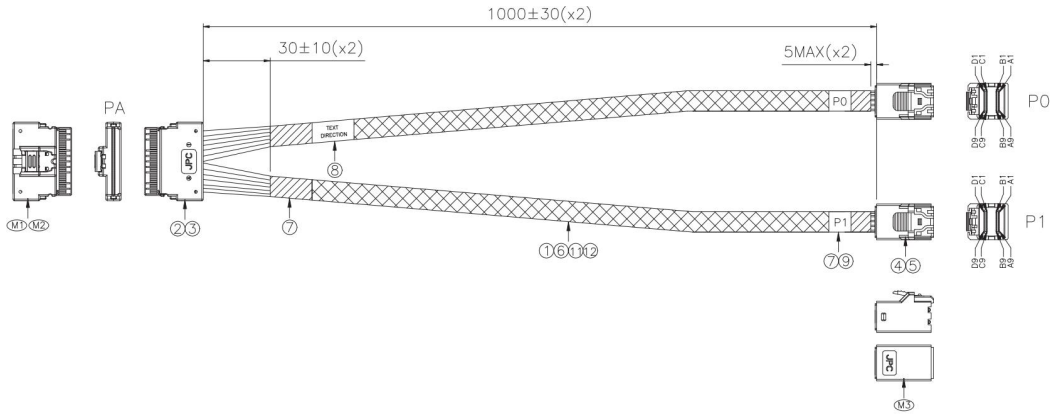
SFF-8654 Host to SFF-8643 Device cable. Each cable can host up to two NVMe SSDs. Length: 1M.

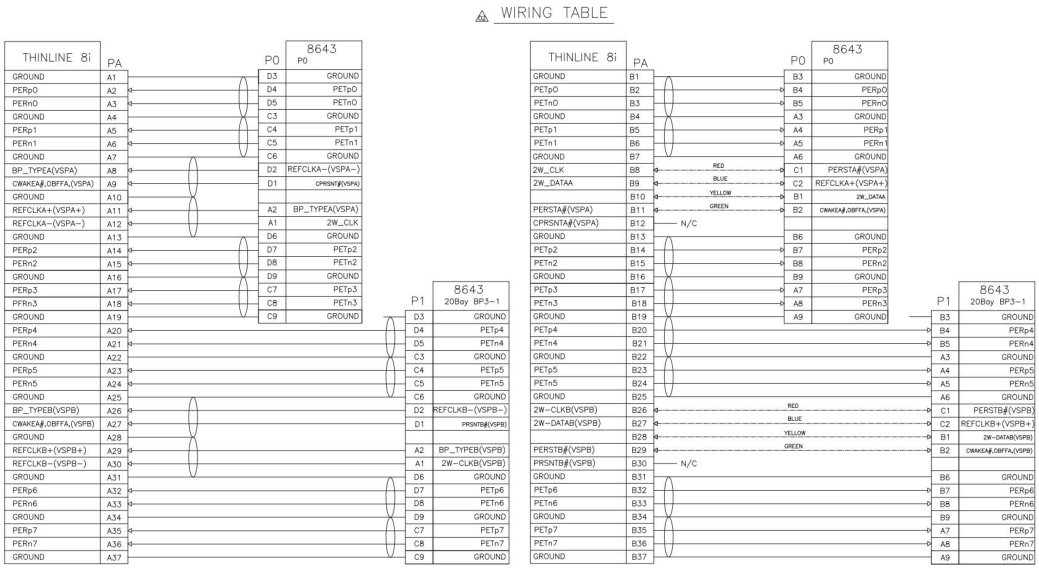
4.4.1. Cable Diagram



4.4.2. Cable Drawings and Pinouts

The following figure shows the HighPoint 8654-8643-210 cable pinout, one x8 SFF-8654 to two x4 SFF-8643 connection.

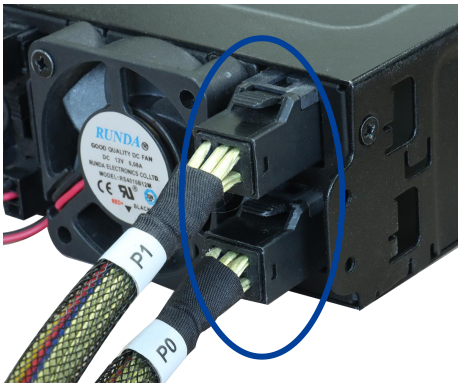




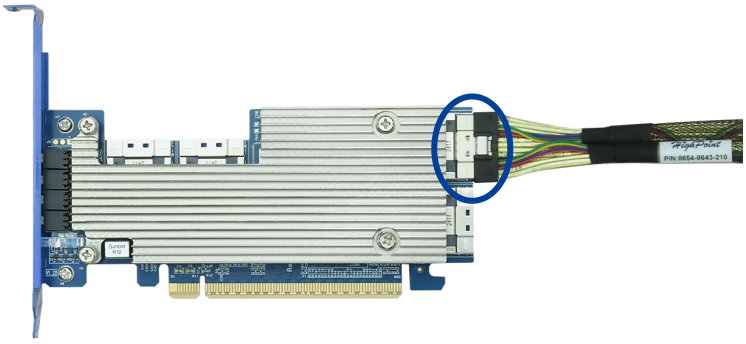
4.4.3. Cable Connection

The following steps show the connection of the SSD enclosure to the R1528D using the 8654-8643-210 cable.

1. Connect the SFF-8643 connector of the 8654-8643-210 cable to the SSD enclosure.



2. Connect the SFF-8654 connector of the 8654-8643-210 cable to the R1528D.



4.5. 8654-8611-205

SFF-8654 Host to SFF-8611 Device cable. Each cable can host up to two NVMe SSDs. Length: 0.5M.

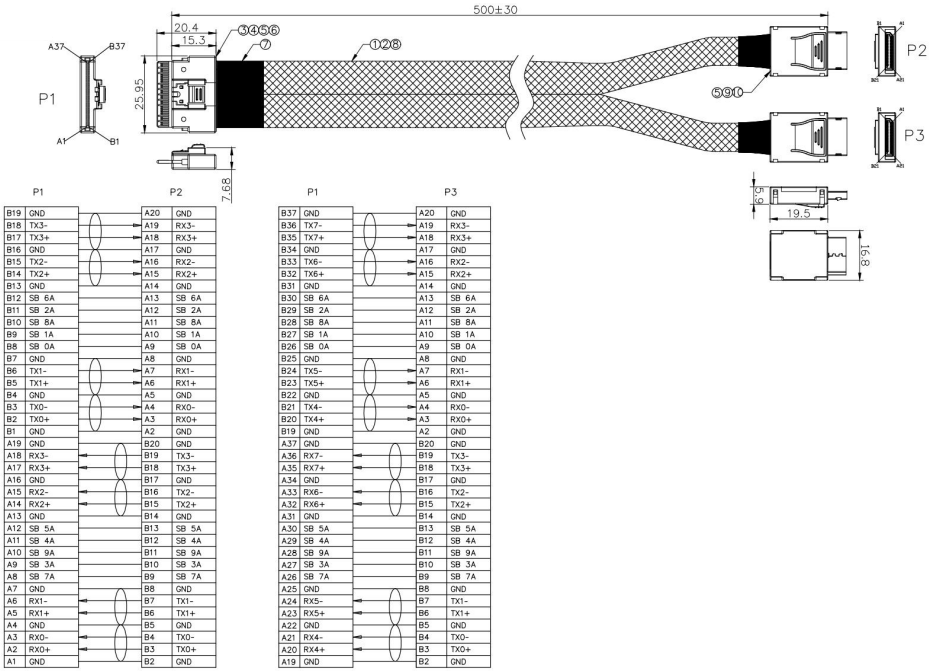
4.5.1. Cable Diagram

SFF-8611

SFF-8654

4.5.2. Cable Drawings and Pinouts

The following figure shows the HighPoint 8654-8611-205 cable pinout, one x8 SFF-8654 to two x4 SFF-8611 connection.



P1		P2	
B19	GND	A20	GND
B18	TX3-	A19	RX3-
B17	TX3+	A18	RX3+
B16	GND	A17	GND
B15	TX2-	A16	RX2-
B14	TX2+	A15	RX2+
B13	GND	A14	GND
B12	SB 6A	A13	SB 6A
B11	SB 2A	A12	SB 2A
B10	SB 8A	A11	SB 8A
B9	SB 1A	A10	SB 1A
B8	SB 0A	A9	SB 0A
B7	GND	A8	GND
B6	TX1-	A7	RX1-
B5	TX1+	A6	RX1+
B4	GND	A5	GND
B3	TX0-	A4	RX0-
B2	TX0+	A3	RX0+
B1	GND	A2	GND
A19	GND	B20	GND
A18	RX3-	B19	TX3-
A17	RX3+	B18	TX3+
A16	GND	B17	GND
A15	RX2-	B16	TX2-
A14	RX2+	B15	TX2+
A13	GND	B14	GND
A12	SB 5A	B13	SB 5A
A11	SB 4A	B12	SB 4A
A10	SB 9A	B11	SB 9A
A9	SB 3A	B10	SB 3A
A8	SB 7A	B9	SB 7A
A7	GND	B8	GND
A6	RX1-	B7	TX1-
A5	RX1+	B6	TX1+
A4	GND	B5	GND
A3	RX0-	B4	TX0-
A2	RX0+	B3	TX0+
A1	GND	B2	GND

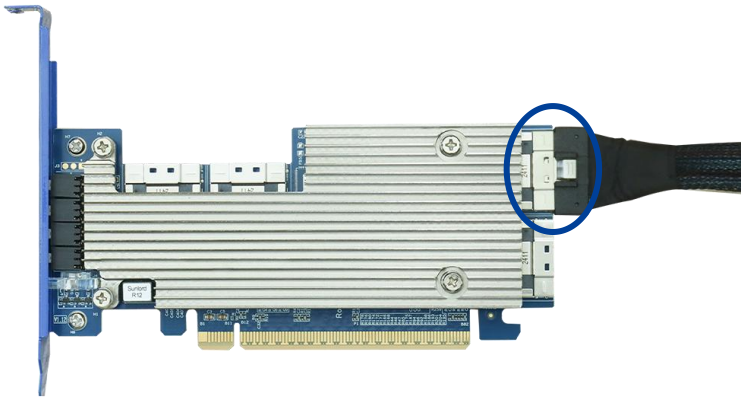
P1		P3	
B37	GND	A20	GND
B36	TX7-	A19	RX3-
B35	TX7+	A18	RX3+
B34	GND	A17	GND
B33	TX6-	A16	RX2-
B32	TX6+	A15	RX2+
B31	GND	A14	GND
B30	SB 6A	A13	SB 6A
B29	SB 2A	A12	SB 2A
B28	SB 8A	A11	SB 8A
B27	SB 1A	A10	SB 1A
B26	SB 0A	A9	SB 0A
B25	GND	A8	GND
B24	TX5-	A7	RX1-
B23	TX5+	A6	RX1+
B22	GND	A5	GND
B21	TX4-	A4	RX0-
B20	TX4+	A3	RX0+
B19	GND	A2	GND
A37	GND	B20	GND
A36	RX7-	B19	TX3-
A35	RX7+	B18	TX3+
A34	GND	B17	GND
A33	RX6-	B16	TX2-
A32	RX6+	B15	TX2+
A31	GND	B14	GND
A30	SB 5A	B13	SB 5A
A29	SB 4A	B12	SB 4A
A28	SB 9A	B11	SB 9A
A27	SB 3A	B10	SB 3A
A26	SB 7A	B9	SB 7A
A25	GND	B8	GND
A24	RX5-	B7	TX1-
A23	RX5+	B6	TX1+
A22	GND	B5	GND
A21	RX4-	B4	TX0-
A20	RX4+	B3	TX0+
A19	GND	B2	GND

4.5.3. Cable Connection

The following steps show the connection of the SSD enclosure to the R1528D using the 8654-8611-205 cable.

1. Connect the SFF-8611 connector of the 8654-8611-205 cable to the SSD enclosure.

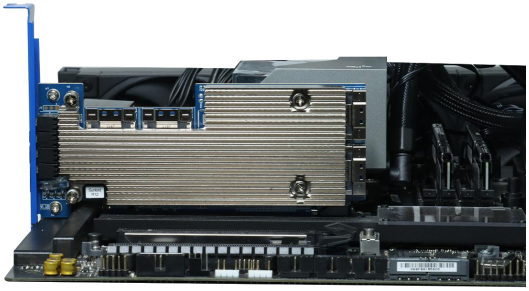
2. Connect the SFF-8654 connector of the 8654-8611-205 cable to the R1528D.



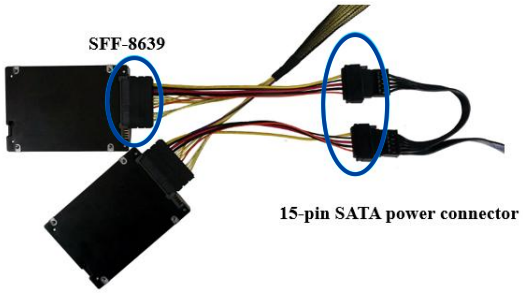
5. R1528D Installation Instructions

The R1528D provides four SFF-8654 connectors. These connectors accept a variety of HighPoint Certified Cable Accessories (see the Accessories section towards the end of this guide for more information). The following steps explain how to connect U.2 NVMe SSDs directly to the R1528D using the HighPoint TS8i-8639-060 cable.

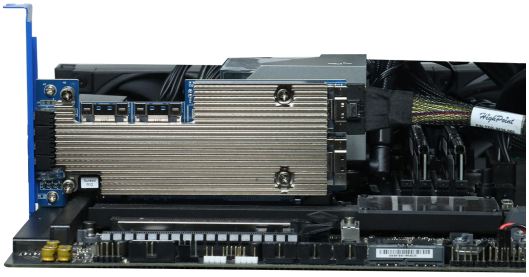
1. Use a wired ESD wrist strap that is properly grounded.
2. Unpack and remove the R1528D and check it for damage. If it appears damaged, please get in touch with HighPoint Technical Support.
3. Shut down the system and disconnect the AC power cord.
4. Align the R1528D to one of the motherboard's available slots. Press down gently but firmly to seat the R1528D correctly in the slot.



5. Connect the SFF-8639 connector of the TS8i-8639-060 cable to the NVMe SSD, and connect the 15-pin SATA power connector to the power supply



6. Connect the SFF-8654 connector of the TS8i-8639-060 cable to the R1528D.



7. Connect the remaining NVMe SSDs to the R1528D as described above.
8. Turn on the power to the system.

6. Revision History

Version 1.00, Apr. 25, 2024

Initial version.