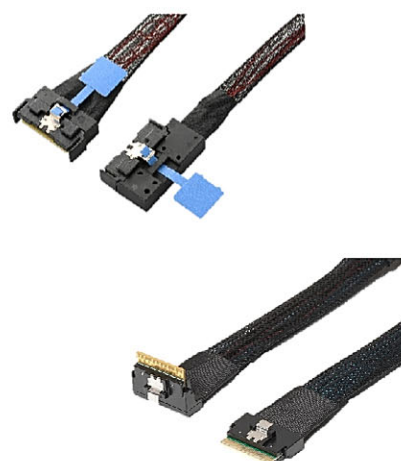www.acesconn.com

High-speed Computing Solutions – Internal / External Cable

Overview

ACES provides high-speed cable solutions for server, storage, IPC, and networking applications of the internal and external cable assemblies.

Internal Series

Cable Type	Data Rate	Channel
Slim SAS	SAS 4, PCIe 5	4x
		8x
MCIO	PCIe 5	4x(38pin)
		8x(74pin)
		16x(124pin)
		24x(148pin)
OCuLink	PCIe 4	4x
miniSAS-HD	SAS 4, PCIe 4	4x
		8x
GenZ 1c	SAS 4, PCIe 4	9x

External Series

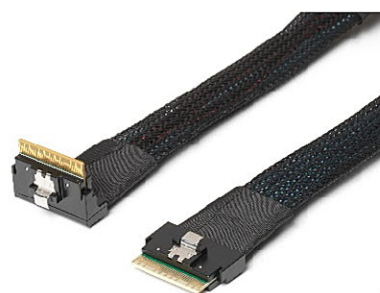| Cable Type	Data Rate	Channel
QSFP DD 112 Active	800G PAM4	8x
QSFP DD 56 Active	400G PAM4	8x
QSFP DD 56	400G PAM4	8x
OSFP 56	400G PAM4	8x
OSFP-RHS 56	400G PAM4	8x
QSFP 56	200G PAM4	4x
QSFP 28	100G NRZ	4x
QSFP+	40G NRZ	4x
SFP DD 56	100G PAM4	2x
SFP 112	100G PAM4	1x
SFP 56	50G PAM4	1x
SFP 28	25G NRZ	1x
SFP+	10G NRZ	1x
miniSAS-HD PCIe	PCIe 5	4x
miniSAS-HD	SAS 4	4x

Internal Series – Slim SAS

Overview

ACES offers different kinds of Slim SAS cables with various specifications. The customized cable will be designed based on the requirement.

Cable Type	Data Rate	Channel
Slim SAS	PCIe 5	4x, 8x
	SAS 4	4x, 8x

Products & Features

- High density, flexible and compact space
- Robust latch structure
- SFF-8654 and SAS 4.0 compliant (24Gbps data rates)
- Max length up to 1 meter.
- Cable impedance option: 85/100 Ohm
- Cable plug type: straight, right angle, side exit optional
- Cable type: 30AWG/32AWG Twinax

Applications

- Servers
- Workstations
- Storage Racks
- RAIDs
- Storage Systems
- Serial Data Transmissions
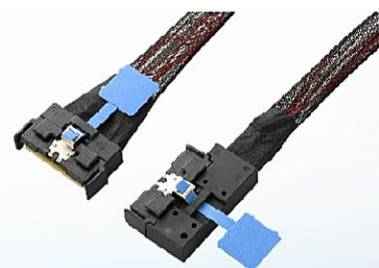
Internal Series – MCIO

Overview

ACES MCIO Cable Assembly is designed for low profile, high density, and high-speed solutions that can help server and networking equipment design for high data rate signal transmissions.
ACES offers the capability of transmitting a high-speed signal up to 56G PAM4/PCIe® Gen 5 based on your need.

Cable Type	Data Rate	Channel
MCIO	PCIe 5	4x(38pin), 8x(74pin) 16x(124pin),20x(148pin)

Products & Features

- 0.60mm pitch, vertical and right angle configurations.
- Straight, right angle, side exit, and customization cable plug are optional.
- High-speed – PCIe® Gen 5/ 56Gb/s PAM4 capability
- Patent Licensing from Amphenol.
- Allows internal/external system strategy and flexibility.
- Support 85/92 Ohm impedance applications.
- 4X(38pin), 8X(74pin), 16X(124pin), 20X(148) connectors are optional.
- 30AWG cable

Applications

- Servers/ Storage Devices
- Multi-lane Storage Devices
- Data center & Networking Equipment
- Bulk cable form factor restrictions

Internal Series – OCuLink

Overview

ACES OCuLink Cable Assembly supports PCIe Gen 4 & SAS 4.0 specifications, offering space and performance issues in download systems well into the future.

Cable Type	Data Rate	Channel
OCuLink	PCIe 4	4x

Products & Features

- OCuLink supports PCIe Gen 4 & SAS 4.0 specifications.
- Compliant with SFF 8611, PCIe Gen 4, OCuLink.
- Data rates: 24 Gbps (SAS 4.0)
- Maximum aggregate data rate: 96Gb/s (4x24Gb/s)
- Wire AWG: 32 AWG
- Impedance for 85 Ohm
- RoHS compliant

Applications

- Data/Computing
- Data Center and Enterprise Storage Systems
- HBA (Host Bus Adapter) Servers
- JBODs
- RAIDs (Redundant Array of Individual Disks)
- Storage Racks
- Telecommunications/Networking
- Storage controllers
- Hubs
- Routers
- Servers
- Switches

ACES

Internal Series – miniSAS-HD

Overview

ACES Internal miniSAS-HD Cable Assembly is a high-speed interface capable, and supports SAS and PCIe specifications.

Cable Type	Data Rate	Channel
miniSAS-HD	PCIe 4	4x
	SAS 4	4x, 8x

Products & Features

- Supports SAS 3.0 & 4.0 specifications
- Data rates: 6 to 24 Gbps (SAS 4.0) (PCIe 4.0)
- Wire AWG: internal 30/32 AWG, external 26/28 AWG
- Impedance for 100 or 85 Ohm
- Length: 0.2-1.0 meter
- Compliance: SFF-8643, RoHS

Applications

- Enterprise Storages
- High-performance computing
- Networking
- Data Center Communication Systems

Internal Series – GenZ Sliver (EDSFF) Cable

Overview

ACES GenZ internal cable could be adopted in the interconnector based on the other protocol very flexibly. All pins could be configured to the interconnection based on 56G PAM4 SerDes protocol and evolved to 112G PAM4 in the future.

Cable Type	Data Rate	Channel
GenZ 1c	PCIe 4	9x
	SAS 4	9x

Products & Features

- Multiple lanes optional: 1C(56pos) is available; 2C(84pos) and 4C(140pos) are under development.
- Signal rates up to PCIe 5 32GT/s, SAS 4.0 24Gbps.
- Compatible with industry standards and protocols, including SAS, PCIe, and 25G Ethernet.
- Impedance: 85/92 Ohm are available.
- 30 AWG flexible ribbon cable and Twin X are available.
- RoHS compliant

Applications

- Servers
- RAID System
- Storage Racks
- HBA Interfaces
- Edge Computing
- AI Computing
- Switches

External Series – QSFP DD

Overview

ACES QSFP DD cable assembly can cover the Quad Small Form-factor Double Density 8x pluggable (QSFP DD) passive cable assembly series.
The QSFP DD passive cable assembly mates with the 0.80mm (0.31 inch) centerline Z-Axis Pluggable connectors.

Cable Type	Data Rate	Channel
QSFP DD 112 Active	800G PAM 4	8x
QSFP DD 56 Active	400G PAM 4	8x
QSFP DD	400G PAM 4	8x

Products & Features

- Compliant with QSFP-DD MSA specification.
- 32AWG-28AWG, 0.5-2.5 meters
- Data Rate: Up to 800 Gbps (8x112Gbps), 400 Gbps (8x56Gbps)
- Temperature Range: 0°C ~ 70°C
- Excellent Signal Integrity with low insertion loss and low crosstalk
- Compliance: QSFP DD MSA specification
  - QSFP DD CMIS 12C
  - IEEE 802.3cd
  - 200GBASE-CR4
  - InfiniBand HDR
  - ROHS

Applications

- Servers
- Storage
- Cellular Infrastructure
- Central Office Equipment
- Multi-platform Service Systems (DSL, cable data)
- Routers
- Switches

External Series – OSFP

Overview

ACES 112Gbps PAM 4 Interconnect System and Cable Assembly series provide single-port, 8-lane DAC for high-density switch applications.

Cable Type	Data Rate	Channel
OSFP RHS 56	400G PAM 4	8x
OSFP 56	400G PAM 4	8x

Products & Features

- RHS or Non-RHS plug bodies are available.
- 32AWG-28AWG, 0.5-3.5 meters
- Temperature Range: 0°C ~ 70°C
- Data Rate: Up to 800Gbps (8 x112Gbps), 400Gbps (8 x 56Gbps)
- Excellent Signal Integrity with low insertion loss and low crosstalk
- Compliance: OSFP MSA specification
  OSFP CMIS I2C
  IEEE 802.3cd 200GBASE-CR4
  ROHS

Applications

- High-density Switches

External Series – QSFP

Overview

ACES QSFP series passive cable assembly that can deliver data rates as high as 200 Gbps with a variety of lengths or customized options for greater design flexibility.

Cable Type	Data Rate	Channel
QSFP 56	200G PAM 4	4x
QSFP 28	100G NRZ	4x
QSFP+	40 NRZ	4x

Products & Features

- Compliant to SFF-8636/SFF-8679/SFF-8665
- 26AWG-30AWG, 0.5-5 meters (QSFP56 up to 3 meters)

Applications

- Networking Equipment
- Routers and Switches
- Servers
- Storages
- Telecommunications Hardware

External Series – SFP DD

Overview

ACES SFP DD cable assemblies provide a 2-lane electrical interface, transmitting 28G NRZ and 56G PAM-4, up to 50 or 100 Gbps aggregate. Also backward compatible with SFP.

Cable Type	Data Rate	Channel
SFP DD 56	100G PAM 4	2x

Products & Features

- Compliant with SFP DD MSA specification
- 32AWG-28AWG, 0.5-3 meters
- Temperature Range: 0°C ~ 70°C
- Compliance: SFP DD MSA specification
  SFP DD MIS I2C
  IEEE 802.3cd 100GBASE-CR2
  ROHS
- Excellent signal integrity with low insertion loss and low crosstalk.

Applications

- Networking Equipment
- Routers and Switches
- Servers
- Storages
- Telecommunications Hardware

External Series – SFP

Overview

ACES SFP series cable assembly supporting 10G NRZ to 100G PAM 4 DAC applications.

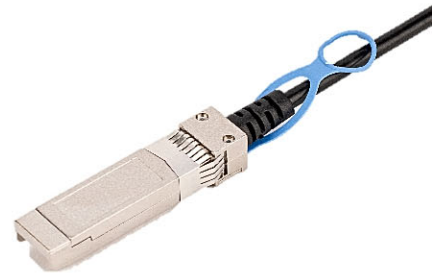| Cable Type	Data Rate	Channel
SFP 112	100G PAM 4	1x
SFP 56	50G PAM 4	1x
SFP 28	25G NRZ	1x
SFP+	10G NRZ	1x

Products & Features

SFP28/SFP56 Direct Attach Cables
- Up to 10Gbps NRZ/25Gbps NRZ/56Gbps/112Gbps PAM4
- 26AWG-30AWG options, 0.5-5 meters (SFP56 up to 3m)

SFP+ Direct Attach Cables (1Gbps-10Gbps)
- SFP MSA/SFF-8418/SFF-8419/SFF-8432/SFF-8472/SFF-8083
- 24AWG-30AWG, customized length up to 7 meters.

Applications

- Networking Equipment
- Routers and Switches
- Servers
- Storages
- Telecommunications Hardware

External Series – miniSAS-HD

Overview

ACES External miniSAS-HD Cable Assembly series is a high-speed interface capable, support SAS and PCIe specifications.

Cable Type	Data Rate	Channel
miniSAS-HD PCIe	PCIe 5	4x
miniSAS-HD	SAS 4	4x

Products & Features

● SFF-8644, 4x 36pos supporting 12G/24G applications.
● 26AWG-30AWG, 0.5-5 meters
● The CMI pinout version is available.
● Hybrid/Y cables
● Support SAS 3.0 & 4.0 specifications.
● Compliant with SFF-8643.
● Data rates: 6 to 24Gbps (SAS 4.0)
● Wire AWG: internal 30/32 AWG
　　　　　　　　external 26/28 AWG
● Impedance for 100 Ohm
● RoHS compliant

Applications

■ Servers
■ Storage racks
■ Switches

■ RAIDs
■ Workstations