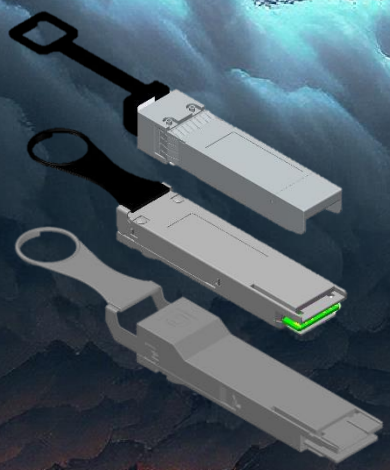
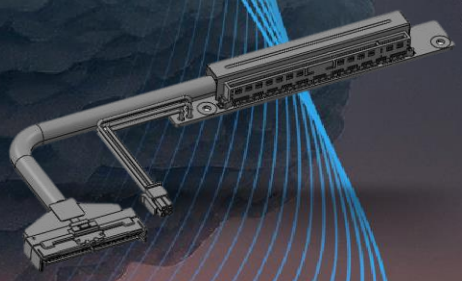
ACES genesis connected solutions

HSIO

Connect the servers together to facilitate high-speed data transmission and reception.





BtB Mezzanine 85ohm connector
CEM16x to 2xMCIO74p / MCIO148p
External DACs, Loopbacks

genesis
connected solutions

B2B Mezzanine 85ohm connector Supports PCIe Gen4

110-10008/10007/10013/10040 : Operation frequency up to 8Gbps, with mating height 28mm and 22mm options. Vertical board to board connectors which support customer's specific mezzanine application needs.

(110-10040: Male with metal shell)

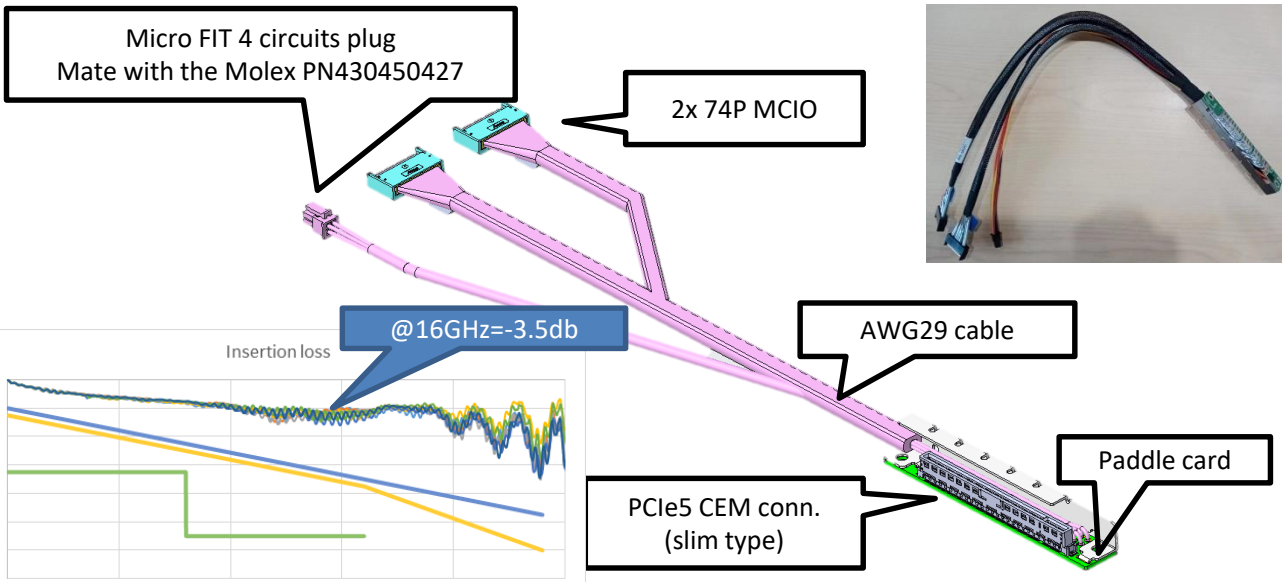
(110-10008: Female)

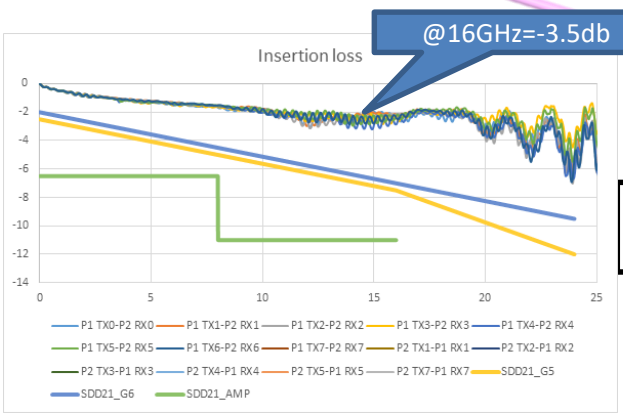
(110-10007/10013: Male)

(110-10040 mates with 110-10007)

Benefits: In some cases space is very limited and cables are too short to be produced. Using BtB connectors provides large pin count(in this case 64pins→4x high speed connection) at lower cost than cable solution.

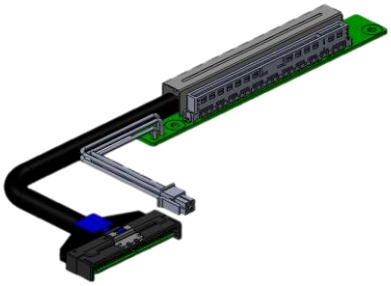
HSIO - CEM16x to 2xMCIO74p cable

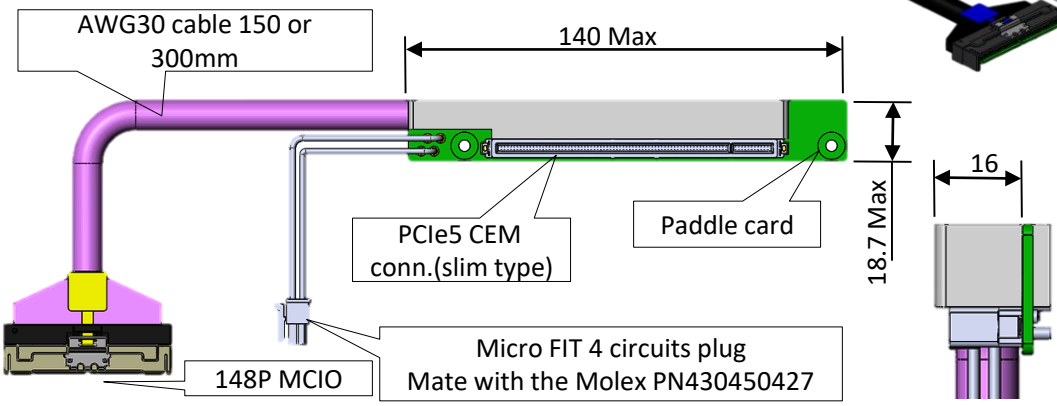




SI measurement result

CEM16x to MCIO148p cable

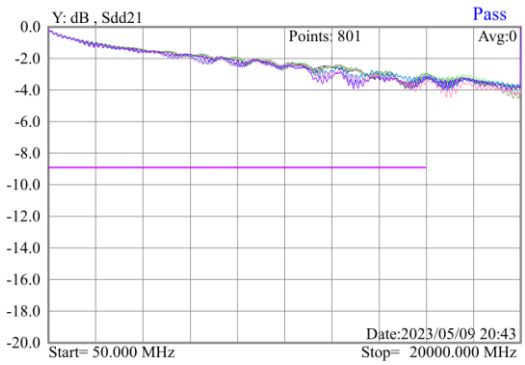




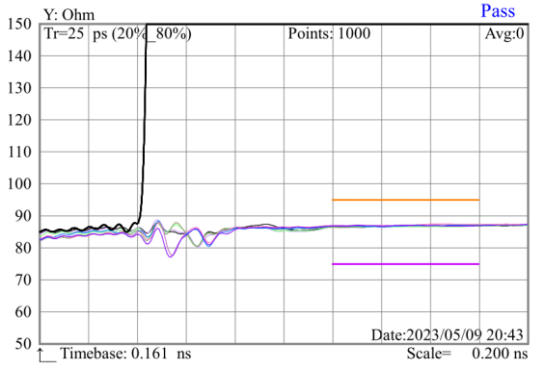
CEM16x to 2xMCIO74p / MCIO148p

Cable SI measurement result (de-embedded), 29AWG 400mm sample

Insertion Losss



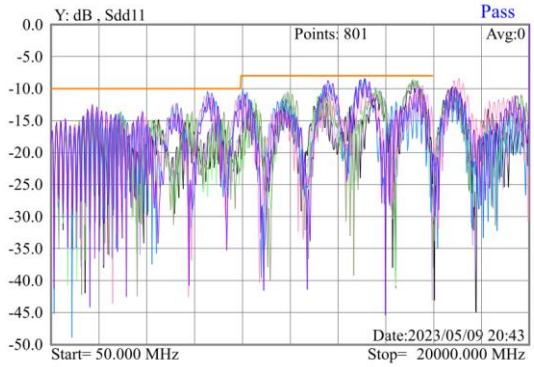
Differential Impedance



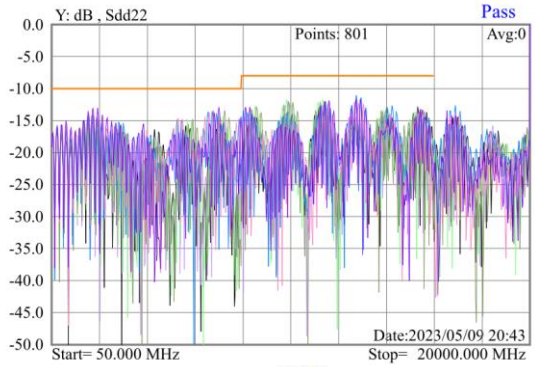
Insertion Losss

Start Freq	End Freq	Spec Max	Spec Min	P3-Tx0	P3-Tx1
50	50	--	-8.9	-0.181	-0.180
4000	4000	--	--	-1.485	-1.456
6000	6000	--	--	-1.841	-1.778
8000	8000	--	--	-2.068	-2.059
16000	16000	--	-8.9	-3.198	-3.063
50	16000	--	-8.90→-8.90	-3.910	-3.824
MHz	MHz	dB	dB	Pass	Pass

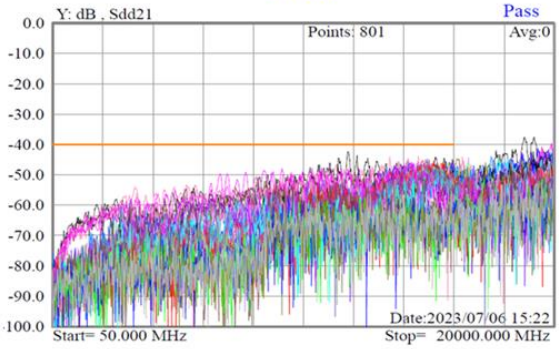
Return Loss



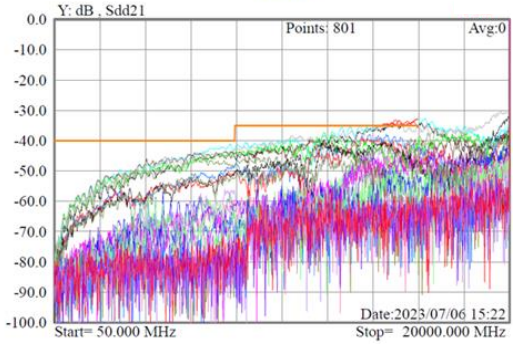
Return Loss SDD22



NEXT



FEXT



Result *(PCIe5 bandwidth:16GHz)*

	DDIL	DDRL	Impedance (Conn Area)	Impedance (Cable Area)	NEXT	FEXT	Result
Result	*Pass*	*Pass*	*Pass*	*Pass*	*Pass*	*Marginal*	*Pass*
@16GHz	*-3.2dB/0.4m*						

HSIO - Loopbacks

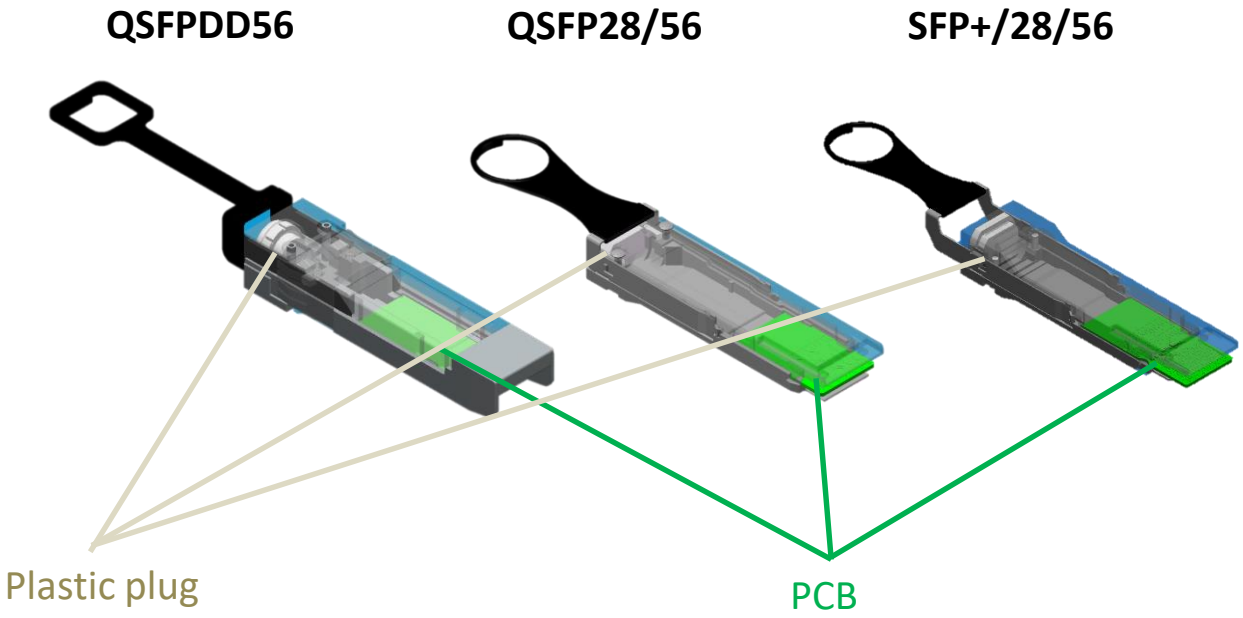
SFP28/QSFP28/QSFPDD Loopbacks

- Attenuation value options: 0dB, 3dB, 6dB for different port tests requirement;
- Support custom EEPROM contents / custom pull tabs;

Power dissipation loopbacks

- For thermal simulation/test requirement;
- Typical: SFP28 1watt, QSFP28 4watt, QSFPDD 12watt. Different power dissipation values can be customized to needs;

Product	Part Series
SFP	320-10462-xx
QSFP	320-10418-xx
QSFPDD	320-10420-xx



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

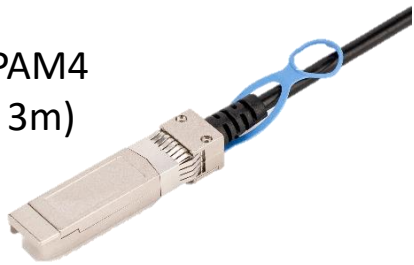
ACES SFP series cable assembly supporting 10G NRZ to 100G PAM 4 DAC applications.

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 – Mini SAS HD

Overview

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

Cable Type	Data Rate	Channel
Mini SAS HD PCIe	PCIe 5	4x
Mini SAS 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

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Achieve Your Ideas.