

Introducing **High Speed Interconnect**

Connector Solutions Engineered to Empower the Technologies of Tomorrow



NETWORKING

SERVERS

STORAGE

TELECOM

With our design creativity and cost effectiveness, Amphenol leads the way in interconnect development for internet equipment, infrastructure, enterprise networks, and appliances.

Amphenol offers a full range of High Speed IO Connectors with data rates ranging from 1 Gb/s to 112 Gb/s and beyond, meeting our customers' varied requirements for high speed applications. Products include the ExtremePort™, ExpressPort®, and UltraPort™ Series of SFP, QSFP, QSFP DD, and OSFP, as well as OverPass™ micro-LinkOVER™ and DensiLink®, Mini-SAS, Mini-SAS HD, CFP2, and CFP4.

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SFP

Amphenol's SFP interconnect system is comprised of a 20-position hot swappable I/O connector enclosed in a metal cage mounted to a host PCB.



Amphenol's SFP product family supports applications for up to 6 Gbps per channel. The connector accepts multiple transceivers per INF-8074i and combines, transmits, and receives functions in a low cost, compact format. The cages are built for use with several board thicknesses and assembly processes to accommodate server and switch applications for cost optimized solutions. The cages have a two-piece construction with enhanced transceiver mating tabs available in a Press-Fit version or a solder tail version.

FEATURES

- Enables 6Gb/s NRZ per channel transmission
- Compatible with all mating connector & cage configurations - single port, ganged and stacked
- Advanced internal ground features provide improved crosstalk performance
- Custom solutions supported
- RoHS compliant

BENEFITS

- 6G aggregate bandwidth capacity
- Multiple ganged configurations availability
- Multiple stacked configurations availability
- Allows for use of DAC, short range and long range optical devices without concern for proper heat management
- Better signal integrity (SI) performance

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or gold flash options
Plating Mating Area: Gold

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 50 N max.
Contact Normal Force: 0.3 N min./PIN
PCB Thickness Single Side Mount (Cage): 1.57 mm (0.062 in.)
PCB Thickness Belly to Belly (Cage): 3.00 mm (0.118 in.)
Unmating Force (Cage): 11.5 N max.
Insertion Force to PCB (Cage):
1000 N for 2 port
2100 N for 4 port
3000 N for 6 port

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -55° to +85°C
RoHS & Halogen-Free

TOOLING INFORMATION

Configurations:
1xN (N =1,2,4,6)
2xN (N = 1,2,4,5,6,8)

TARGET MARKETS/APPLICATIONS



Cellular Infrastructure
Network Interface
Cards



Servers
Storage



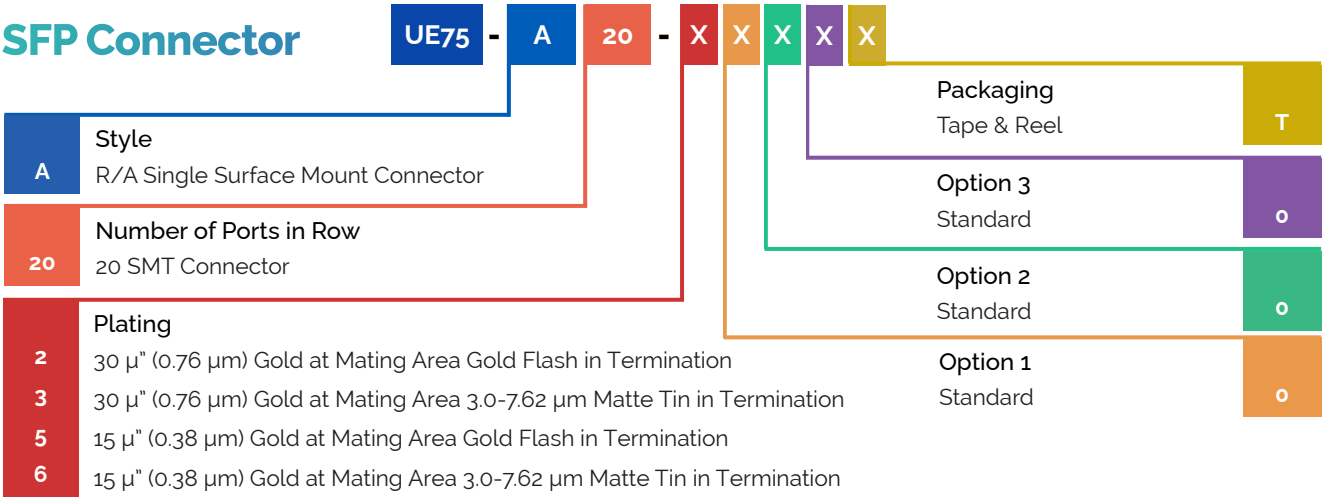
Test and
Measurement
Equipment



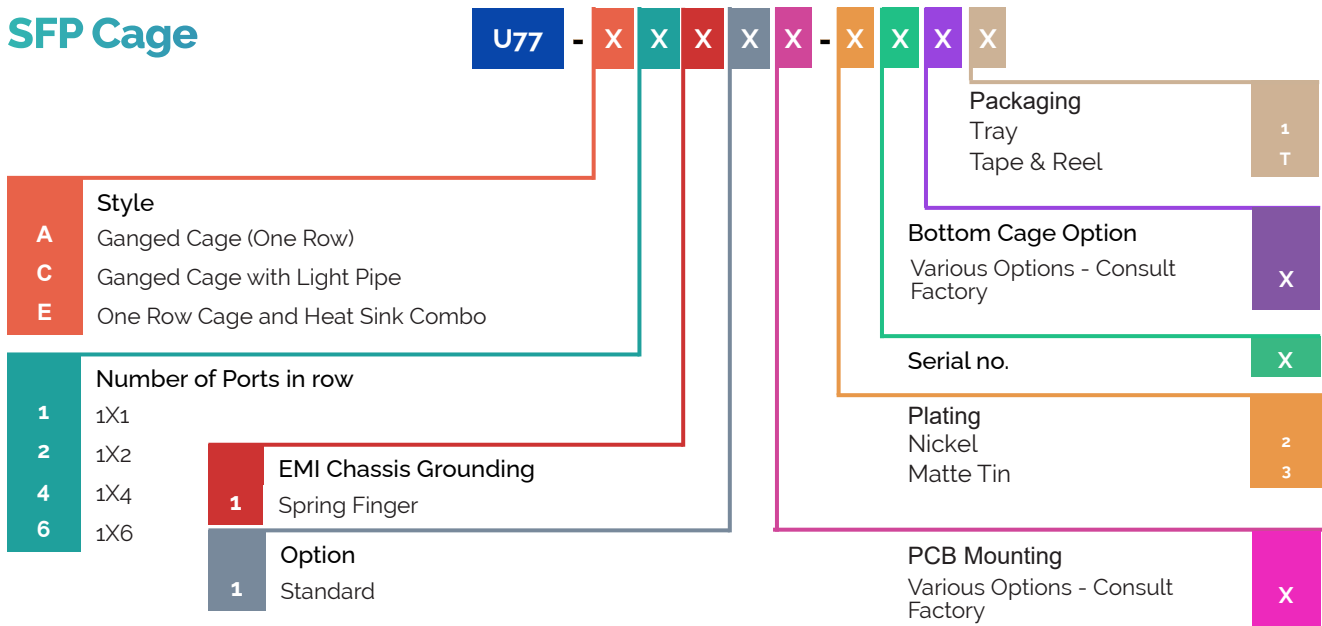
Medical
Equipment

PART NUMBER SELECTOR

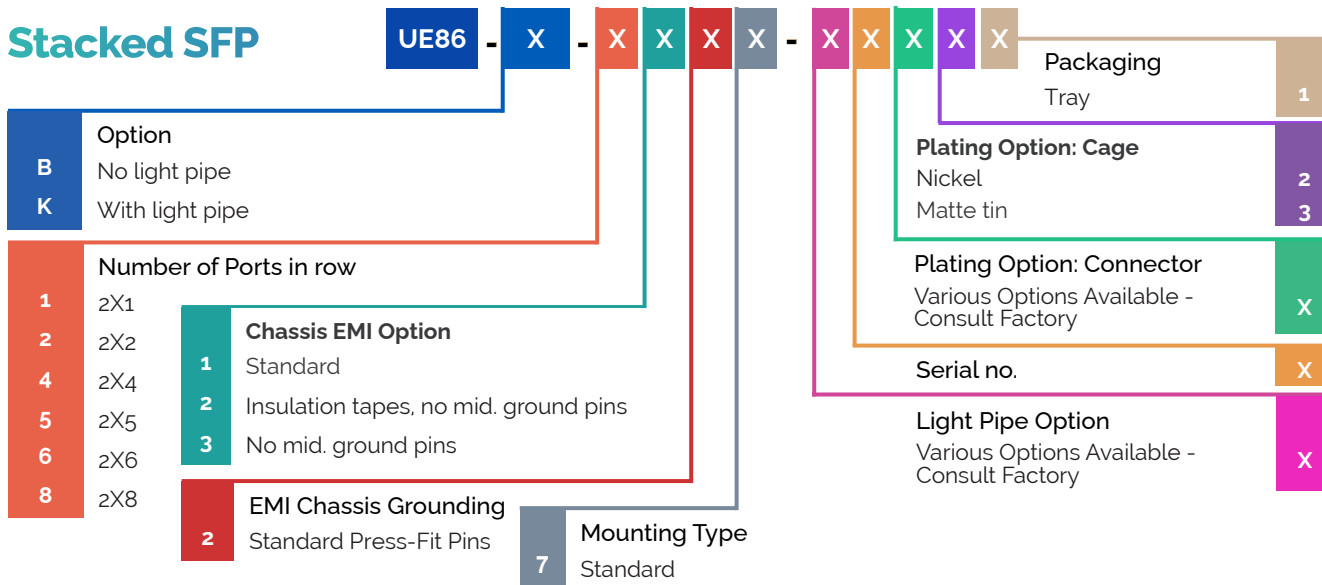
SFP Connector



SFP Cage



Stacked SFP



ExpressPort® SFP+

Amphenol's ExpressPort™ SFP+ interconnect system is comprised of a 20-position hot swappable I/O connector enclosed in a metal cage mounted to a host PCB.

The ExpressPort™ SFP+ interconnect system provides data transfer speeds of up to 16 Gbps. The design of the ExpressPort™ SFP+ connector minimizes impedance discontinuities and reflections at high data rates and provides a 10 to 20 dB improvement in Near-End Crosstalk. ExpressPort™ SFP+ unique cage construction features EMI shielding available in the form of metal spring fingers or elastomeric gaskets.

FEATURES	BENEFITS
Enables 16Gb/s NRZ per channel transmission	16G aggregate bandwidth capacity
Compatible with all mating connector & cage configurations - single port, ganged and stacked	Multiple ganged configurations availability
System design enables up to 1.5 watts per port independent of cage configuration	Multiple stacked configurations availability
Advanced internal ground features provide improved crosstalk performance	Allows for use of DAC, short range and long range optical devices without concern for proper heat management
Custom solutions supported	Better signal integrity (SI) performance
RoHS compliant	Environmentally friendly

TECHNICAL INFORMATION	
MATERIAL Housing: Black color, Glass reinforced, Lead Free Solder Reflow Process Compatible Thermo Plastic Contacts Base Material: Phosphor Bronze Plating Solder Tails: Matte tin or gold flash options Plating Mating Area: Gold	ELECTRICAL PERFORMANCE Operating Voltage: 30 VDC per contact Operating Current: 0.5 A per contact Differential Impedance: 100Ω +/- 10Ω
MECHANICAL PERFORMANCE Durability: 250 mating cycles Mating Force: 50 N max. Contact Normal Force: 0.3 N min./PIN PCB Thickness Single Side Mount (Cage): 1.57 mm (0.062 in.) PCB Thickness Belly to Belly (Cage): 3.00 mm (0.118 in.) Unmating Force (Cage): 11.5 N max. Insertion Force to PCB (Cage): 1000 N for 2 port 2100 N for 4 port 3000 N for 6 port	ENVIRONMENTAL Operating and (Storage) Temperature: -55° to +85°C RoHS & Halogen-Free
	TOOLING INFORMATION Configurations: 1xN (N =1,2,3,4,5,6,8) 2xN (N = 1,2,3,4,5,6,8)
	TARGET MARKETS/APPLICATIONS <div><div>Cellular Infrastructure Network Interface Cards</div><div>Servers Storage</div><div>Test and Measurement Equipment</div><div>Medical Equipment</div></div>

PART NUMBER SELECTOR

ExpressPort® SFP Connector

UE76 - A 20 - X X X X X

A

Style

R/A Single Surface Mount Connector

20

Number of Ports in Row

20 SMT Connector

2

Plating

30 μ" (0.76 μm) Gold at Mating Area Gold Flash in Termination

3

30 μ" (0.76 μm) Gold at Mating Area 3.0-7.62 μm Matte Tin in Termination

5

15 μ" (0.38 μm) Gold at Mating Area Gold Flash in Termination

6

15 μ" (0.38 μm) Gold at Mating Area 3.0-7.62 μm Matte Tin in Termination

Packaging

Tape & Reel

T

Option 3

Standard

0

Option 2

Standard

0

16Gbps

1

Option 1

Standard

0

ExpressPort® SFP+ Cage

U77 - X X X X X - X X X X

A

Style

Ganged Cage (One Row)

C

Ganged Cage with Light Pipe

E

One Row Cage and Heat Sink Combo

N

One Row Cage with Heatsink and Light pipes Combo

1

Number of Ports in row

1X1

2

1X2

3

1X3

4

1X4

5

1X5

6

1X6

8

1X8

4

EMI Chassis Grounding

Gasket

6

Spring Finger

X

Heat sink & Light Pipe Option

Various Options - Consult Factory

Packaging

Tray

1

Tape & Reel

T

Bottom cage Option

Various Options - Consult Factory

X

Serial no.

X

Plating

Nickel

2

Matte Tin

3

PCB Mounting

Various Options - Consult Factory

X

ExpressPort® Stacked SFP

UE86 - X - X X X X - X X X X X

B

Option

No light pipe

K

With light pipe

1

Number of Ports in row

2X1

2

2X2

3

2X3

4

2X4

5

2X5

6

2X6

8

2X8

4

Chassis EMI Option

Gasket

6

Spring Fingers

2

EMI Chassis Grounding

Standard Press-Fit Pins

7

Mounting Type

Standard

Packaging

Tray

1

Plating Option: Cage

Nickel

2

Matte tin

3

Plating Option: Connector

Various Options Available - Consult Factory

X

Serial no.

X

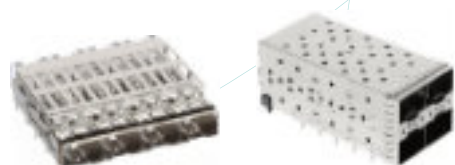
Light Pipe Option

Various Options Available - Consult Factory

X

UltraPort® SFP+

Amphenol's UltraPort™ SFP+ interconnect system is comprised of a 20-position hot swappable I/O connector enclosed in a metal cage mounted to a host PCB.



It supports 28Gb/s applications with a backward compatibility for next generation Ethernet and Fibre Channel applications.

UltraPort™ SFP+ connector shares the same unique mating interface and EMI cage dimensions as the SFP+ form factor. The cages are built for use with several board thicknesses and assembly processes to accommodate server and switch applications for cost optimized solutions. The connector accepts multiple transceivers per INF-8081 and combines, transmits, and receives functions in a low cost, compact and flexible format. Stacked versions (2XN) consist of a 2-row cage with integrated connectors.

FEATURES

Enables 25Gb/s NRZ per channel transmission

Compatible with all mating connector & cage configurations - single port, ganged and stacked

System design enables up to 3.5 watts per port independent of cage configuration

Advanced internal ground features provide improved crosstalk performance

Custom solutions supported

RoHS compliant

BENEFITS

28G aggregate bandwidth capacity

Multiple ganged configurations availability

Multiple stacked configurations availability

Allows for use of DAC, short range and long range optical devices without concern for proper heat management

Better signal integrity (SI) performance

Environmentally friendly

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or gold flash options
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive
Polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
 Mating Force: 40 N max.
 Contact Normal Force: 0.3 N min./PIN
 PCB Thickness Single Side Mount (Cage): 1.57 mm
 (0.062 in.)
 PCB Thickness Belly to Belly (Cage): 3.00 mm (0.118
 in.)
 Unmating Force (Cage): 12.5 N max.
 Insertion Force to PCB (Cage):
 1000 N for 2 port
 2100 N for 4 port
 3000 N for 6 port

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: $100\Omega \pm 10\Omega$

ENVIRONMENTAL

Operating and (Storage) Temperature: -55° to +85°C
RoHS & Halogen-Free

TOOLING INFORMATION

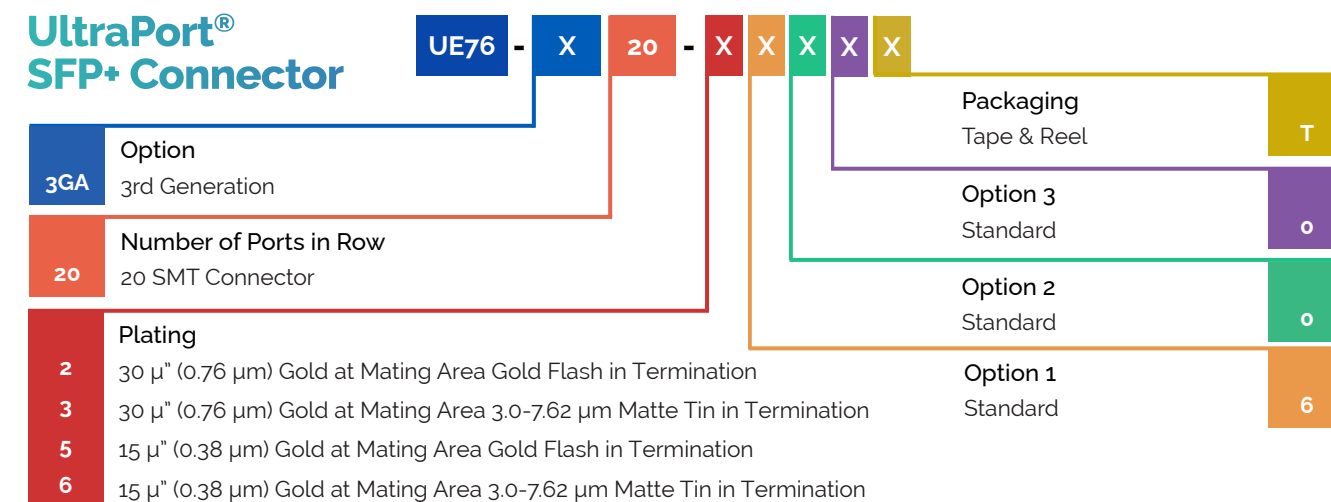
Configurations:
1xN (N =1,2,3,4,5,6,8)
2xN (N = 1,2,4,5,6,8,12)

ELECTRICAL PERFORMANCE

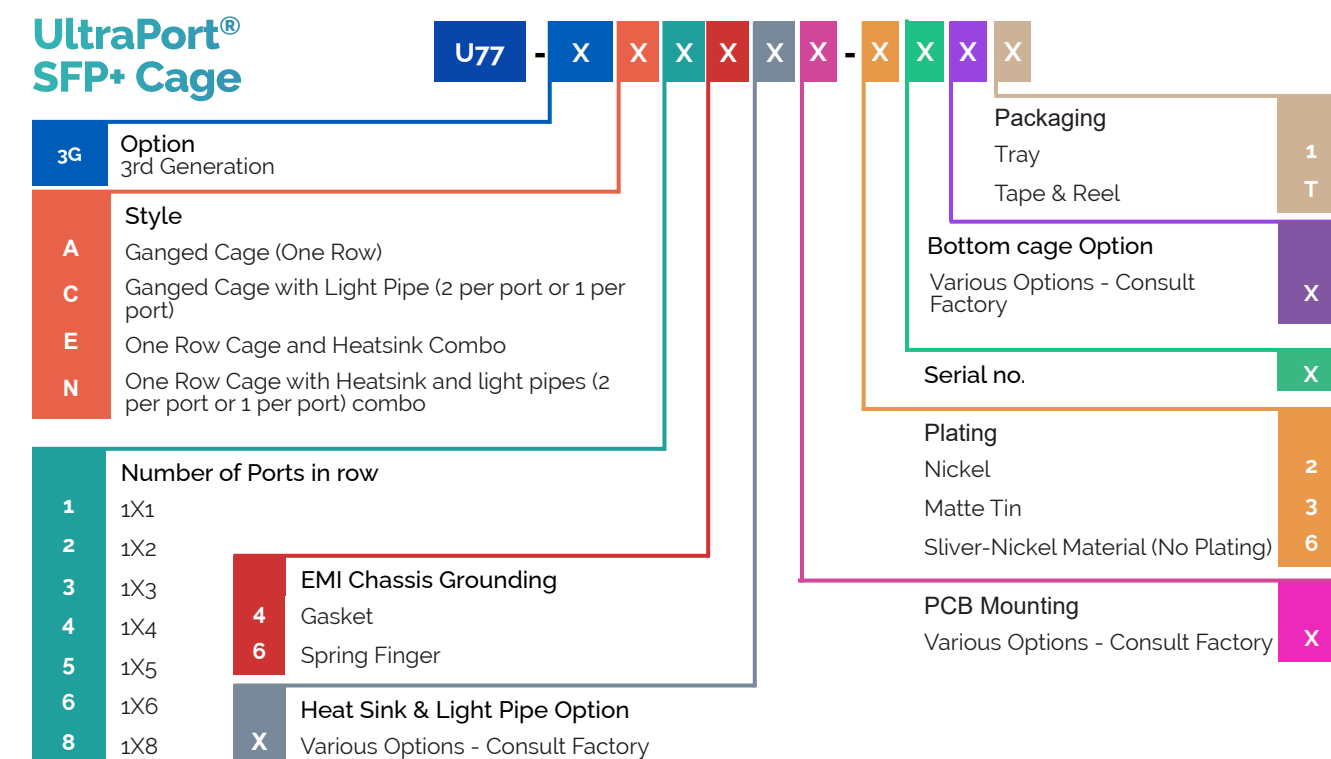
Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: $100\Omega \pm 10\Omega$

PART NUMBER SELECTOR

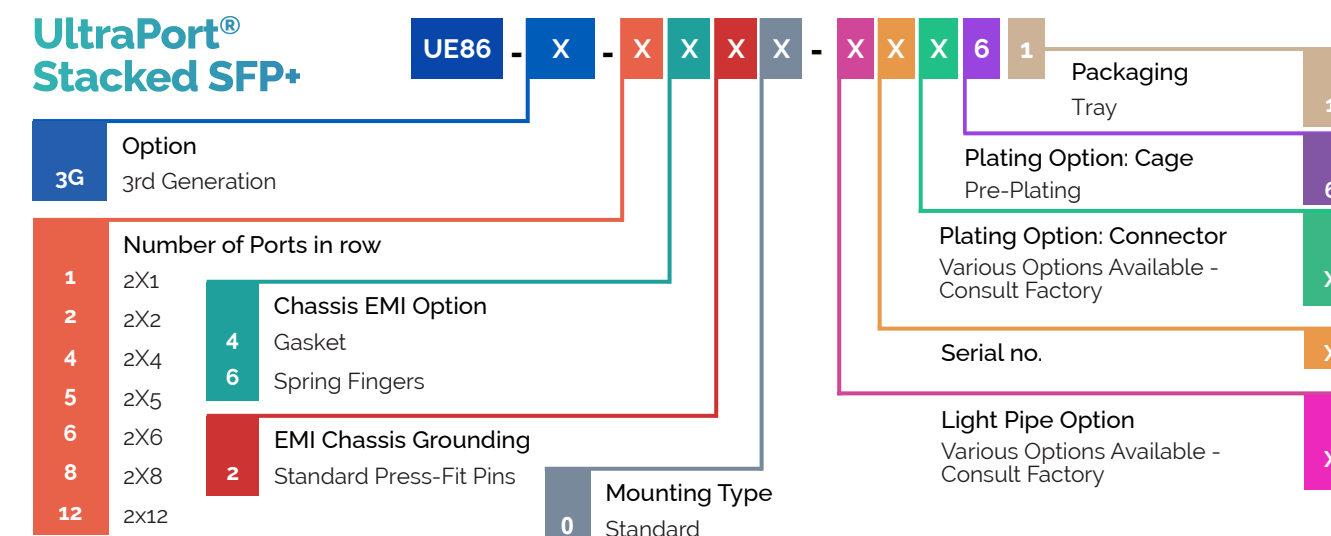
UltraPort®
SFP+ Connector



UltraPort® SFP+ Cage

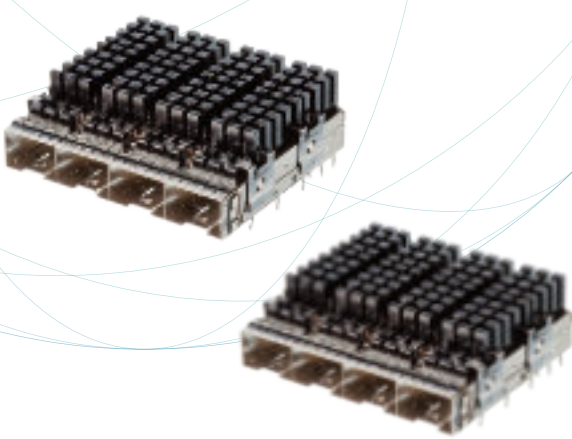


**UltraPort®
Stacked SFP+**



ExtremePort™ SFP+

Amphenol's ExtremePort™ SFP+ interconnect system is comprised of a 20-position hot swappable I/O connector enclosed in a metal cage mounted to a host PCB.



It supports up to 56Gb/s PAM4 aggregate bandwidth with a backward compatibility for next generation Ethernet and Fibre Channel applications. The ExtremePort™ SFP+ connector shares the same unique mating interface and EMI cage dimensions as the SFP+ form factor. The cages are built for use with several board thicknesses and assembly processes to accommodate server and switch applications for cost optimized solutions. The connector accepts multiple transceivers per INF-8081 and combines, transmits, and receives functions in a low cost, compact and flexible format. Stacked versions (2XN) consist of a 2-row cage with integrated connectors. We offer a wide variety of cage configurations, which have a two-piece construction with enhanced transceiver mating tabs available in press-fit or solder tail versions.

- Backwards compatible with SFP28
- Meets CEI-56GPAM4 VSR requirements
- Electrical interface employs 1 lane that operates up to 56Gb/s PAM4 modulation, providing solutions up to 56Gb/s aggregate bandwidth

FEATURES

- Enables 25Gb/s NRZ and 56Gb/s PAM4 per channel transmission
- Compatible with all mating connector & cage configurations - single port, ganged and stacked
- System design enables up to 3.5 watts per port independent of cage configuration
- Advanced internal ground features provide improved crosstalk performance
- Custom solutions supported

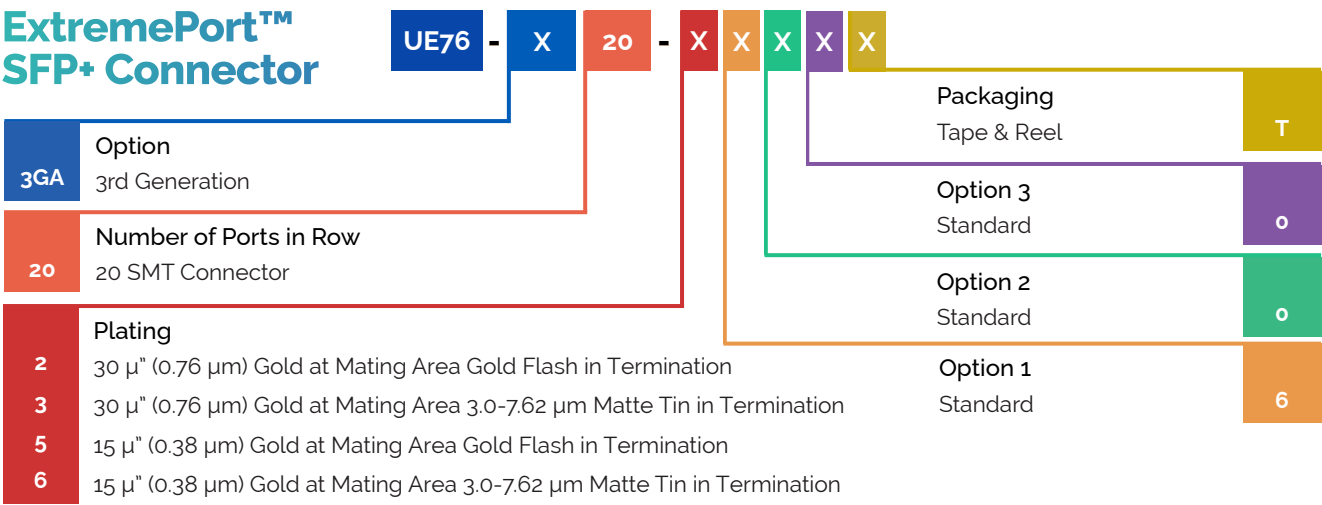
BENEFITS

- 56G aggregate bandwidth capacity
- Multiple ganged configurations availability
- Multiple stacked configurations availability
- Allows for use of DAC, short range and long range optical devices without concern for proper heat management
- Better signal integrity (SI) performance

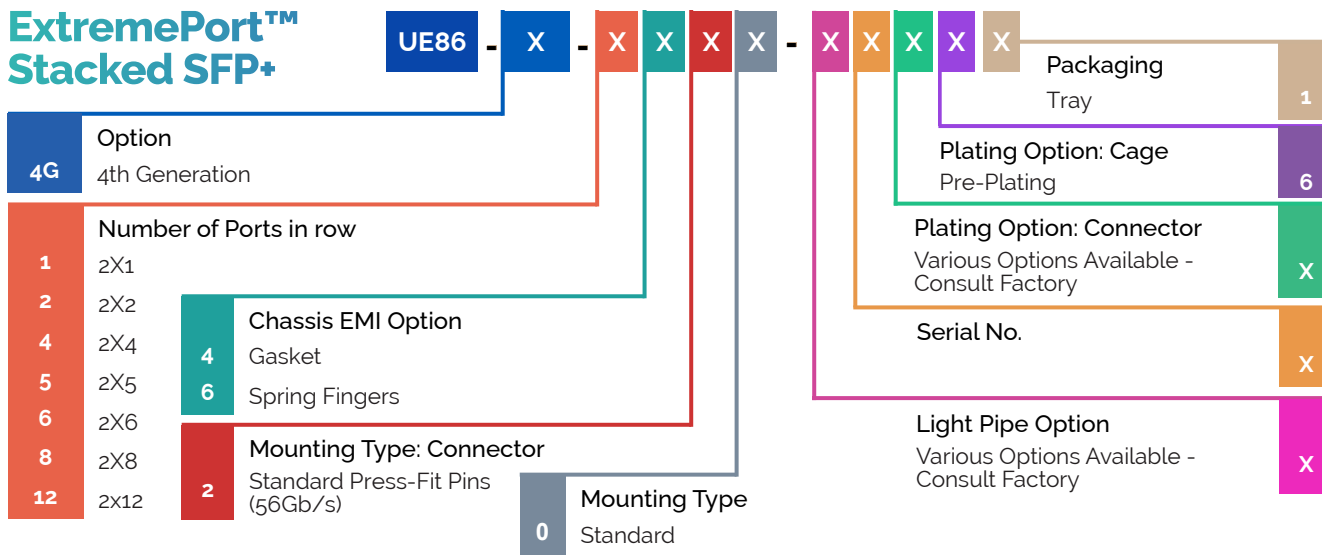
Ordering Information

PART NUMBER SELECTOR

ExtremePort™ SFP+ Connector



ExtremePort™ Stacked SFP+



TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free Solder Re-flow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Cage Base Material: Copper Alloy
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold
Resonance Dampening: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Contact Normal Force: 0.3N min./pin
Mating Force: 40N max.
Unmating Force: 12.50N max.
PCB Thickness Single Side (Cage): 1.57mm (0.062 in.) min.
PCB Thickness Belly to Belly (Cage): 3.00mm (0.118 in.) min.
Insertion Force to PCB (Cage):
1000N for 2 port, 2100N for 4 port, 3000N for 6 port

ENVIRONMENTAL

Operating and (Storage) Temperature: -55°C to 85°C
RoHS & Halogen-free

TOOLING INFORMATION

Configurations
1 X N (N=1,2,3,4,5,6,8)
2 X N (N=1,2,4,5,6,8, 12)

PACKAGING

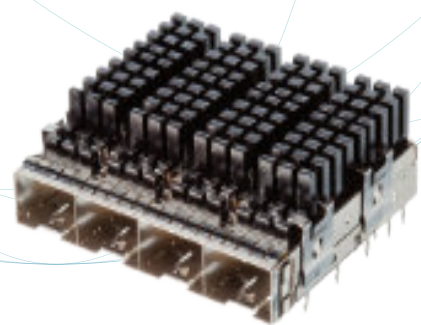
Connector: Tape and Reel
Cage: Tray, Tape and Reel Available for Single Port cage

ELECTRICAL PERFORMANCE

Operating Voltage: 30VDC per contact
Operating Current: 0.5A per contact

ExtremePort® SFP 112G

Amphenol's ExtremePort™ SFP112G interconnect system is comprised of a 20-position hot swappable I/O connector enclosed in a metal cage mounted to a host PCB.

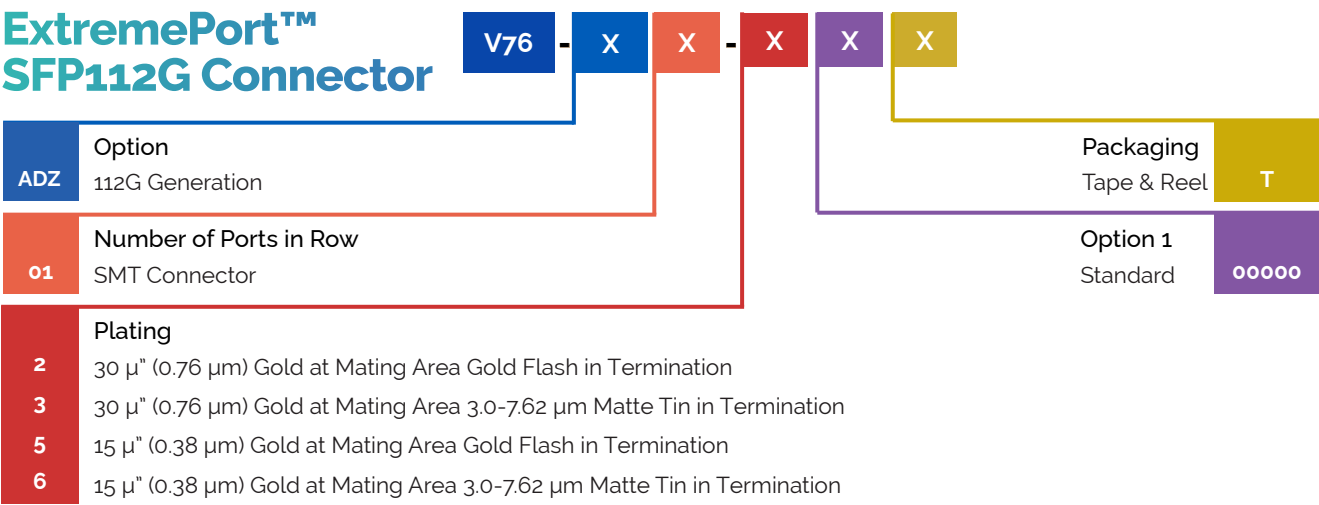


It supports up to 112Gb/s PAM4 aggregate bandwidth with a backward compatibility for next generation Ethernet and Fibre Channel applications. The ExtremePort™ SFP112G connector shares the same unique mating interface and EMI cage dimensions as the SFP+ form factor. The cages are built for use with several board thicknesses and assembly processes to accommodate server and switch applications for cost optimized solutions. The connector accepts multiple transceivers per INF-8081 and combines, transmits, and receives functions in a low cost, compact and flexible format. We offer a wide variety of cage configurations, which have a two-piece construction with enhanced transceiver mating tabs available in press-fit or solder tail versions.

- Backwards compatible with SFP28 / SFP56
- Meets CEI-112GPAM4 VSR requirements
- Electrical interface employs 1 lane that operates up to 112Gb/s PAM4 modulation, providing solutions up to 112Gb/s aggregate bandwidth

FEATURES	BENEFITS
Enables 112Gb/s PAM4 per channel transmission	112G aggregate bandwidth capacity
Compatible with all mating connector & cage configurations - single port, ganged and stacked	Multiple ganged configurations availability
System design enables up to 3.5 watts per port independent of cage configuration	Allows for use of DAC, short range and long range optical devices without concern for proper heat management
Advanced internal ground features provide improved crosstalk performance	Better signal integrity (SI) performance
Custom solutions supported	Environmentally friendly
RoHS compliant	

PART NUMBER SELECTOR



TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Re-flow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Cage Base Material: Copper alloy
Plating Solder Tails: Matte tin or gold flash options
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Contact Normal Force: 0.3N min./pin
Mating Force: 40N max.
Unmating Force: 12.50N max.
PCB Thickness Single Side (Cage): 1.57mm (0.062 in.) min.
PCB Thickness Belly to Belly (Cage): 3.00mm (0.118 in.) min.
Insertion Force to PCB (Cage):
1000N for 2 port
2100N for 4 port
3000N for 6 port

ELECTRICAL PERFORMANCE

Operating Voltage: 30VDC per contact
Operating Current: 0.5A per contact
Differential Impedance: 95Ω ± 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -55°C to 85°C
RoHS & Halogen-free

TOOLING INFORMATION

Configurations:
1 X N (N=1,2,3,4,5,6,8)
2 X N : Under development

PACKAGING

Connector: Tape and reel
Cage: Tray, tape and reel available for single port cage

ExpressPort® QSFP+

Amphenol's ExpressPort® QSFP interconnect system is comprised of a 38 position 0.8mm pitch SMT connector and a press-fit cage built for use in high speed serial applications.



With four channels of data in one pluggable, the system interface is capable of transferring data up to 16 Gbps, and, replacing up to 4 standard SFP+ receptacles. These features result in greater port density and overall cost savings over traditional SFP+ products. Supporting standards include, Gigabit Ethernet, InfiniBand, and SONET/SDH with different data rate options. ExpressPort™ QSFP includes cages in single, ganged and stacked configurations with multiple heat sink options supporting various thermal requirements and port status with light pipes options.

FEATURES

- 38 position, 0.8mm pitch, 4 lane per channel
- Electrical interface employs 4 lanes that operate up to 16 Gb/s per channel
- Available in ganged and stacked configurations and diversified heat sinks and light pipes options.
- Resonance dampening features

BENEFITS

- Offer 3X the density of traditional SFP ports
- 40-100Gb/s aggregated bandwidth solution
- Supports Gigabit Ethernet, Infiniband & SONET/SDH standards with different data rate options
- Optimized signal integrity

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 60 N max.
Unmating Force (Cage): 30 N max.

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -40° to +85° C
RoHS & Halogen-Free
Flammability Rating: UL 94V-0

TOOLING INFORMATION

Heat Sinks and Light Pipes: Available
Configurations:
1XN (N=1,2,3,4,5,6)
2XN (N=1,2,3)

PACKAGING

Connector: Tape and Reel
Cage: Tray

TARGET MARKETS/APPLICATIONS



Cellular Infrastructure
Network Interface Cards



Hubs
Switch
Servers
Storage



Test and Measurement Equipment

PART NUMBER SELECTOR

ExpressPort® QSFP+ Connector

FS	R38	X	o	X	X
Style	38 Position (QSFP 10G, ExpressPort® QSFP+ 12G+ & 16G)				
2	Plating				
3	30 μ" (0.76 μm) Gold Plating on Mating Area; Matte Tin Plating on Termination				
	15 μ" (0.38 μm) Gold Plating on Mating Area; Matte Tin Plating on Termination				
OPTION 1	Standard				

special - QSFP+ (12 Gbps & UP)
No Resonance Dampening, No Hold DownTabs
No Resonance Dampening, Hold DownTabs
Special - QSFP+ (16 Gbps)
Resonance Dampening, No Hold DownTabs
Resonance Dampening, Hold DownTabs

Option
QSFP Connector
QSFP+ Connector

ExpressPort® eQSFP+ Series

FS	X	38	X	X	X	X
Style	100 Ohm					
38	Number of Positions					
	38 Positions					
2	Plating					
3	30 μ" (0.76 μm) Gold Over 100 μ" (2.54 μm) min of Matte Tin on Solder Termination, 50 μ" (1.27 μm) - 75 μ" (1.91 μm) of Nickel Under Plate All Over					
	15 μ" (0.38 μm) Gold Over 100 μ" (2.54 μm) min of Matte Tin on Solder Termination, 50 μ" (1.27 μm) - 75 μ" (1.91 μm) of Nickel Under Plate All Over					

Special Option
QSFP+ Connector No Shorting Bars, No Hold Down Tabs

Option 1
Standard

Keying
No Key

ExpressPort® QSFP+ Cages

Ugo	X	X	X	X	X	X	X	X
Style	One Row Cage 0°, Through the Bezel (No Light Pipe)							
	One Row Cage 1°, Through the Bezel (1X1 Only No Light Pipe)							
	One Row Cage 0°, Hybrid with Elastomeric Gasket							
	One Row Cage 0°, Behind the Bezel							
	One Row Cage 0°, Through the Bezel with Optional Light Pipe							
	One Row Cage 0°, Through the Bezel with No Heat Sink Opening							
	One Row Cage 0°, No Pins on Back Wall							
	One Row Cage 0°, Behind the Bezel with Low Profile Heat Sink and Clip							
	One Row Cage 0°, Through the Bezel with Low Profile Heat Sink							
	One Row Cage 0°, Through the Bezel with Low Profile Heat Sink and Clip with Optional Light Pipe							
	One Row Cage 1°, Through the Bezel with No Rear Pin (1X1 Only No Light Pipe)							
1	Number of Ports in Raw							
2	1X1							
3	1X2							
4	1X3							
5	1X4							
6	1X6							

Packaging
Tray (Shipped Unassembled for Single Port)
Tape & Reel (1X1 Only)
Tray Heat Sink & Clip or Light Pipe Shipped Assembled

Light Pipe Option
Without Light Pipe
Round 1.4mm Outlet Light Pipe
Square 2.6x2.6mm Outlet Light Pipe, No EMI Gasket

Dust Cover Option
Without Dust Cover
With Dust Cover (Shipped Loose)

Plating
Nickel

Application
Press-Fit Pins (2.5mm Long)

Heat Sink Option
Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 6.5 mm)
Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 4.2 mm)
Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 13.5 mm)
Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 6.5 mm)
Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 4.2 mm)
Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 13.5 mm)

PART NUMBER SELECTOR

ExpressPort®
Stacked QSFP+

Ug6

X

X

X

X

X

X

X

X

X

X

X

Style

Z

Stacked (With Short Connector)

Number of Ports in Row

1

2

3

2X1

2X2

2X3

Heat Sink Option

0

No Heat Sink and No Clip Shipped With 4 Light Pipe (in MID-CAGE)

Application

5

Press fit pins - 2.0 mm Long

Cage & Connector Contact Player

4

0.76 µm Min.Gold over 1.27~3.81 µm of Nickel on mating area
0.381~1.52 µm of Matte Tin over 1.27~3.81 µm of Nickel on press fit tail area. Ni plating for cage

Optional Dust Cover

0

Without Dust Cover

D

With Dust Cover (Ship Loose)

Connector Footprint

Connector: standard foot print

0

Vent Holes and EMI Cover

LargeVent Holes & EMI Cover

SmallVent Holes & EMI Cover

Rectangular Vent Holes & EMI Cover

0

2

4

EMI Gasket

No gasket no gasket support

Chomerics 1273 Conductive Elastomer

Thru the bezel (no elastomeric gasket)

0

1

3

Packaging

Tray packaging no heat sink no heat sink clip

1

Optional Light Pipes

Light Pipes (Triangular Outlet); Left Arrow Pointing Bottom Port & Right Arrow Pointing Top Port

Without Light Pipes

With Light Pipes; Left Arrow Pointing Top Port & Right Arrow Pointing Bottom Port

6

7

8

ExpressPort®
Stacked QSFP+

Ug0

X

X

X

X

X

X

X

X

X

X

X

Style

B

Standard

Number of Points in Row

1

2

3

2X1

2X2

2X3

Heat Sink Option (No Light Pipe Available)

0

No Heat Sink Option

Application

5

Options Available - Consult Factory

Cage &Connector Contact Plating

4

30 µ" (0.76 µm) Gold Over 50 µ" (1.27 µm) to 150 µ" (3.81 µm) of Nickel; 15 µ" (0.38 µm) to 60 µ" (1.52 µm) of Matte Tin
Over 50 µ" (1.27 µm) to 150 µ" (3.81 µm) of Nickel on Press-Fit Tail Area; Nickel Plating for Cage

Dust Cover Option

0

Without Dust Cover

D

With Dust Cover

Connector Footprint

Standard

0

Vent Holes

LargeVent Holes & EMI Cover

SmallVent Holes & EMI Cover

Rectangular Vent Holes & EMI Cover

0

2

4

EMI Gasket Option

Chomerics 1273 Conductive Elastomer

Chomerics S6305 Conductive Elastomer

1

2

Packaging

Tray

1

Light Pipes

Light Pipes (Triangular Outlet); Left Arrow Pointing Bottom Outlet & Right Arrow Pointing Top Port

Without Light Pipes

With Light Pipes; Left Arrow Pointing Top Port & Right Arrow Pointing Bottom Port

6

7

8



UltraPort® QSFP+

Amphenol's UltraPort™ QSFP+ interconnect system is comprised of a 38-position, 0.8mm pitch connector built for use in high speed serial applications.



Each port offers 4 channels to increase port density which allows for more board real estate and cost optimized solutions. The UltraPort™ QSFP+ connector supports next generation 100G+ applications and transmits up to 28 Gb/s per channel. It features a stamped and formed contact design providing improved mechanical durability. The resonance dampening features of the design allows for superior signal integrity performance. The design minimizes crosstalk and transmission line impedance discontinuity across the connector interface.

FEATURES

- Electrical interface employs 4 lanes that operate up to 28 Gb/s per channel
- Passive copper and optical solutions
- Stamped and formed contact design
- Resonance dampening features
- Stacked SMT Connector and Cages are available

BENEFITS

- 100Gb/s aggregated bandwidth solution
- Support various application requirements
- Improved mechanical durability
- Minimizes crosstalk and transmission line impedance discontinuity and provides enhanced signal integrity
- 4 layers belly to belly is feasible with superior SI performance

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 60 N max.
Unmating Force (Cage): 30 N max.

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -40° to +85° C
RoHS & Halogen-Free
Flammability Rating: UL 94V-0

TOOLING INFORMATION

Heat Sinks and Light Pipes: Available
Configurations:
1XN (N=1,2,3,4,5,6)
2XN (N=1,2,3)
2XN SMT(N=1,2)

PACKAGING

Connector: Tape and Reel
Cage: Tray

TARGET MARKETS/APPLICATIONS



Cellular Infrastructure
Network Interface Cards



Hubs
Switch
Servers
Storage



Test and Measurement Equipment

PART NUMBER SELECTOR

UltraPort® QSFP+ Connector

FS1
Z38

Style

38 Position

Plating

- 2 30 μ" (0.76 μm) Gold Plating on Mating Area; Matte Tin Plating on Termination
- 3 15 μ" (0.38 μm) Gold Plating on Mating Area; Matte Tin Plating on Termination

Option 1

Standard

FS1 - Z38 X X X X X

Special Option

Rsonance Dampening.No hold DownTabs

60

Option 3

Standard

6

Option 2

Standard

Z

UltraPort® QSFP+ Cages

A
L
T
W

Style

- 0° One Rear Pin (1X1 Only)
- 0° No Rear Pin
- 0° Two Rear Pin (1XN: One Rear Pin, 1X1: Two Rear Pin)
- 1° No Rear Pin (1X1 Only)

Number of Ports in Row

- 1 1X1
- 2 1X2
- 3 1X3
- 4 1X4
- 5 1X5
- 6 1X6

Heat Sink Option

- 0 No Heat Sink or Clip Shipped, Closed Top With Vent Holes
- 1 No Heat Sink or Clip Shipped
- 5 Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm) - N/A with Quad Light Pipe
- 6 Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm) - N/A with Quad Light Pipe
- 7 Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)- N/A with Quad Light Pipe
- A Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm)
- B Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm)
- C Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)
- N Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm)
- P Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm)
- R Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)
- Y Extruded Custom Heat Sink for Front to Back Air Flow (Nickel Plated) & Clip (H = 6.94mm)
- W Extruded Custom Heat Sink for Front to Back Air Flow (Nickel Plated) & Clip (H = 8.72mm)

U95 - X X X X X X X X X

Packaging

- 1 Tray (Light Pipe and/or Heat Sink Shipped Unassembled if Ordered)
- A Tray (Light Pipe and/or Heat Sink Shipped Assembled)

Light Pipe Option

- 0 No Light Pipe
- 1 Dual Barrel Light Pipe - Round Outlet
- 4 Quad Barrel Light Pipe - Round Outlet
- 7 Single Barrel Light Pipe - Round Outlet
- F Quad Barrel Light Pipe -Square Outlet

Dust Cover Option

- 0 Without Dust Cover
- D With Dust Cover (Shipped Loose)

Plating

Nickel

1

Application

Press-Fit Pins

1

PART NUMBER SELECTOR

UltraPort®
Stacked QSFP+

U95

X

X

X

X

X

X

X

X

X

X

X

Z

Style

Standard

1

2

3

Number of Ports in Row

2x1

2x2

2x3

0

Heat Sink Option

No Heat Sink and No Clip Shipped

5

Application

Press fit pins (2mm Long)

4

Cage &Connector Contact Plating

30 μ" (0.76 μm) Gold Over 50 μ" (1.27 μm) to 3.81 μm of Nickel; 15 μ" (0.38 μm) to 1.52 μm of Matte Tin Over 50 μ" (1.27 μm) to 3.81 μm of Nickel on Press-Fit Tail Area; Nickel Plating for Cage

0

D

Dust Cover Option

Without Dust Cover

With Dust Cover (Ship Loose)

1

Connector Footprint

Standard

0

2

4

Vent Holes

LargeVent Holes

SmallVent Holes

Rectangular Vent Holes

1

2

3

L

EMI Gasket

Chomerics 1273 Conductive Elastomer

Chomerics S6305 Conductive Elastomer

Through the Bezel

Longer Spring Finger

1

Packaging

Tray

6

7

8

Light Pipes Option

Light Pipes (Triangular Outlet); Left Arrow Pointing Bottom Port & Right Arrow Pointing Top Port

Without Light Pipes

With Light Pipes; Left Arrow Pointing Top Port & Right Arrow Pointing Bottom Port

UltraPort® Stacked QSFP+
SMT Connector

U95

A

100

J1

X

4

M

A

UltraPort Stacked SMT Connector

0

A

Packaging

Tape & Reel

Tray

UltraPort®
Stacked QSFP+ Cage

U95

X

X

X

X

X

X

X

X

X

X

X

B

Style

Standard

1

2

Number of Ports in Raw

2x1

2x2

0

Heat Sink Option

No Heat Sink and No Clip Shipped

7

Application

Press fit pins (2mm Long)

4

Cage & Caonnector Contact Plating

30 μ" (0.76 μm) Gold Over 50 μ" (1.27 μm) to 3.81 μm of Nickel; 15 μ" (0.38 μm) to 1.52 μm of Matte Tin Over 50 μ" (1.27 μm) to 3.81 μm of Nickel on Press-Fit Tail Area; Nickel Plating for Cage

0

D

Dust Cover Option

Without Dust Cover

With Dust Cover (Ship Loose)

1

Connector Footprint

Connector: enhanced foot print

C

Vent Holes Nd EMI Cover & Mylar Tape

16 Small Holes

T

EMI Gasket Option

Thru the bezel with long spring finger

1

Packaging

Tray packaging no heat sink no heat sink clip

7

8

9

Light Pipes Option

Without Light Pipes

LP on top w/o coating, with top heat sink

LP on top withcoating, with top heat sink

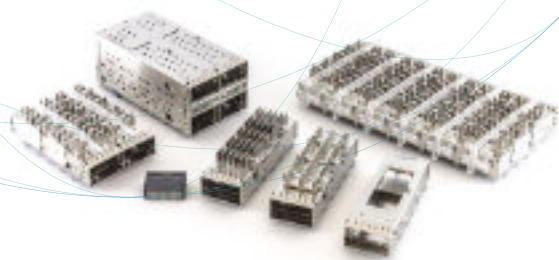


ExtremePort™ QSFP+

The ExtremePort™ QSFP+ connector employs 4 lanes that operate up to 56Gb/s PAM4 modulation, providing solutions up to 200Gb/s aggregate bandwidth. Backwards compatible with QSFP28 on plug interface and footprint.

Each port offers 4 channels to increase port density which allows for more board real estate and cost optimized solutions. The ExtremePort QSFP+ connector supports next generation 200G+ applications and transmits up to 56Gb/s PAM4 per channel. It features a stamped and formed contact design providing improved mechanical durability. The resonance dampening features of the design allow for superior signal integrity performance. The design minimizes crosstalk and transmission line impedance discontinuity across the connector interface.

- Electrical interface employs 4 lanes that operate up to 56Gb/s PAM4 modulation, providing solutions up to 200Gb/s aggregate bandwidth
- Backwards compatible with QSFP28
- Meets CEI-56GPAM4 VSR requirements



TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Cage Base Material: Copper Alloy
Plating Solder Tails: Matte tin
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 60 N max.
Unmating Force: 30 N max.

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -40° to +85° C
RoHS & Halogen-Free
Flammability Rating: UL 94V-0

TOOLING INFORMATION

Heat Sinks and Light Pipes: Available Configurations:
1XN (N=1,2,3,4,5,6)
2XN Press-fit(N=1,2,3,4,6)
2XN SMT(N=1,2)

PACKAGING

Connector: Tape and Reel
Cage: Tray

TARGET MARKETS/APPLICATIONS



Cellular Infrastructure
Network Interface Cards



Hubs
Switch
Servers
Storage



Test and Measurement Equipment

FEATURES

- 38 position, 0.8mm pitch, 4 lane per channel
- Electrical interface employs 4 lanes that operate up to 56Gb/s per channel
- Available in ganged and stacked configurations and diversified heat sinks and light pipes options.
- Resonance dampening features

BENEFITS

- Backwards compatible with QSFP28
- 200Gb/s aggregated bandwidth solution
- Supports Gigabit Ethernet, Infiniband & SONET/SDH standards with different data rate options
- Minimizes crosstalk and transmission line impedance discontinuity and provides enhanced signal integrity

PART NUMBER SELECTOR

ExtremePort QSFP+ Connector

FS1	-	K38	X	X	X	X	-	X	X	
Style		38 Position								
Plating		30 μ" (0.76 μm) Gold Plating on Mating Area; 100 μ" (2.54 μm) Matte Tin on Tails Over Nickel Underplate								
Option 1		Standard								
								Packaging Direction		
								Clockwise	0	
								Anticlockwise	1	
								Solder Rings		
								Without Solder Rings	A	
								With Solder Rings	4	
								Option 3		
								Standard	A	
								Option 2		
								Standard	Z	

ExtremePort™ QSFP+ Cage

U95	-	X	X	X	X	-	X	X	X	X	
Style		0", One Rear Pin (1X1 Only)									
		0", No Rear Pin									
		0", Two Rear Pin (1XN: One Rear Pin, 1X1: Two Rear Pin)									
		1", No Rear Pin (1X1 Only)									
Number of Ports in Raw		1X1									
		1X2									
		1X3									
		1X4									
		1X5									
		1X6									
Heat Sink Option		No Heat Sink or Clip Shipped, Closed Top With Vent Holes									
		No Heat Sink or Clip Shipped									
		Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm) - N/A with Quad Light Pipe									
		Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm) - N/A with Quad Light Pipe									
		Round Pin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)- N/A with Quad Light Pipe									
		Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm)									
		Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm)									
		Square Pin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)									
		Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 6.5mm)									
		Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 4.2mm)									
		Pin-Fin Style (Nickel Plated) Heat Sink & Clip (H = 13.5mm)									
		Extruded Custom Heat Sink for Front to Back Air Flow (Nickel Plated) & Clip (H = 6.94mm)									
		Extruded Custom Heat Sink for Front to Back Air Flow (Nickel Plated) & Clip (H = 8.72mm)									
								Packaging			
								Tray (Light Pipe and/or Heat Sink Shipped Unassembled if Ordered)	1		
								Tray (Light Pipe and/or Heat Sink Shipped Assembled)	A		
								Light Pipe Option			
								No Light Pipe	0		
								Dual Barrel Light Pipe - Round Outlet	1		
								Quad Barrel Light Pipe - Round Outlet	4		
								Single Barrel Light Pipe - Round Outlet	7		
								Quad Barrel Light Pipe -Square Outlet	F		
								Dust Cover option			
								Without Dust Cover	0		
								With Dust Cover (Shipped Loose)	D		
								Plating			
								Nickel	1		
								Application			
								Press-Fit Pins	1		

PART NUMBER SELECTOR

ExtremePort™ Stacked QSFP+

ExtremePort™ Stacked QSFP+		U95	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
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ExtremePort™ Stacked QSFP+ SMT Connector

QSFP+ SMT Connector												
U95	Series Designation				X	X	X	X	X	M	S	T
E	ExtremePort QSFP SMT stacked connector											
1	Serial Numbering											
O	Serial Numbering											
O	Serial Numbering											
					Plating 4 - 0.76 μm (30 μin) MIN. hard gold (mating area) 2.54~6.35 μm (100~250 μin) matte tin (solder area) 1.27~3.81 μm (50~150 μin) Nickel underplated.							
					Packaging Tape & reel Tray							
					Customer Option Normal							
					Serial Numbering Connector							

PART NUMBER SELECTOR

ExtremePort™ Stacked QSFP+ Cage

ExtremePort Stacked QSFP+ Cage

U95

E ExtremePort QSFP SMT stacked

1 Number of Ports in Row
2x1 ports

2 2x2 ports

1 Heat Sink Option #1
A With top and middle heatsink
Without top and middle heat sink

7 Application
Press-fit Pins (2.3 mm Long)

4 Plating
Ni plating for cage, 2.54 um MIN.

0 Optional Dust Cover
D No Dust Cover
With Dust Cover

1 Light Pipes Option, based on heat sink option #1, item 1
2 LP on top, inner, without coating

2 2 LP on top, outer, without coating

C 3 LP on top with coating, special for Celestica

D 4 LP on top with coating

E 4 LP on top without coating

4 Remove light pipe cap based on option "2"

7 No LP

8 8 LP on top without coating

9 8 LP on top with coating

Heat sink Option #2
No heat sink, close top
No heat sink, open top
Customer heat sink height dim "H"=29mm
Customer heat sink height dim "H"=35.5mm

Footprint
Standard, with 13 pcs of cage pins

Vent Hole Option
Circuit vent hole
Honeycomb vent hole

EMI Filters
With 3 hooks EMI spring fingers

Serial Numbering



ExtremePort™ QSFP 112G

Backwards plug compatible and superior signal integrity



Amphenol ACS' ExtremePort™ QSFP 112G interconnect system is comprised of a 38-position, 0.8mm pitch connector built for use in high speed serial applications. Each port offers 4 channels which increases port density, frees up board real estate and delivers a cost optimized solution. The ExtremePort™ QSFP 112G connector supports next generation 400G applications and transmits up to 112Gb/s PAM4 per channel. It features a stamped and formed contact design providing improved mechanical durability. The resonance dampening features of the design allow for superior signal integrity performance, minimized crosstalk, and minimized impedance discontinuity across the connector interface.

- 400Gb/s aggregated bandwidth solution
- Backwards plug compatible with QSFP28/56 optical transceivers
- Design minimizes crosstalk and transmission line impedance discontinuity and provides enhanced signal integrity

FEATURES

BENEFITS

Available in both 0.8LL footprint and 0.6JL footprint	Meet both MSA standards to meet variant market needs
Electrical interface employs 4 lanes that operate up to 112Gb/s per channel	400Gb/s aggregated bandwidth solution
Available in ganged and stacked configurations and diversified heat sinks and light pipes options.	Supports Gigabit Ethernet, Infiniband & SONET/SDH standards with different data rate options
Resonance dampening features	Minimizes crosstalk and transmission line impedance discontinuity and provides enhanced signal integrity

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, glass reinforced, lead free solder ref-low process compatible thermo plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold
Cage: SUS, no plating

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 60N max.
Unmating Force (Cage): 30N max.

ELECTRICAL PERFORMANCE

Operating Voltage: 30VDC per contact
Operating Current: 0.5A per contact
Differential Impedance: 100Ω ± 10

TARGET MARKETS/APPLICATIONS



Cellular Infrastructure
Network Interface Cards



Hubs
Switch
Servers
Storage



Test and Measurement Equipment

ENVIRONMENTAL

Operating and (Storage) Temperature: -40°C to +85°C
RoHS & Halogen-free
Flammability Rating: UL 94V-0

TOOLING INFORMATION

Heat Sinks and Light Pipes: Available
Configurations: 0.8LL 1x1 available
1XN 0.8LL(N=1)
2XN SMT 0.6JL(N=1,2,4)

PACKAGING

Connector: Tape and Reel
Cage: Tray

ExtremePort™ QSFP112 0.8LL SMT Connector

V95	Series Designation	ADZ01	0000	X	X	X
V95	QSFP112G					
ADZ01	Style	QSFP112G 0.8LL SMT Connector				
1	Connector Mounting	Standard, single side				
2	Solder Rings, Belly to Belly					
	Packaging	Tape and Reel				T
	Plating	30 u" min. gold on mating end with 100 u" min. of matte TIN on solder termination, 50 min.u" of nickel under plate all over.				1

ExtremePort™ QSFP112 0.8LL Cage

V95	X	X	X	X	X	X
AAZ01	Style	AAZ				
00	Heatstink Options	No Heat Sink, Top Closed				
01	No Heat Sink, Top Open					
02	Squad Pin Heat Sink, Pci Height, Nickel					
03	Squad Pin Heat Sink, San Height, Nickel					
04	Squad Pni Heat SniK, Pci Height, Black Anodize					
05	Squad Pin Heat Sink, San Height, Black Anodize					
06	Squad Pin Heat Sink, Tall Height, Black Anodize					
07	Squad Pin Heat Sink, Tal Height, Black Anodize					
08	Pin-Fin Style For Side To Side, Pci Height, Nickel					
09	Pin-Fin Style For Side To Side, San Height, Nickel					
10	Pin-Fin Style For Side To Side, TalL Height,Nickel					
11	Pin-Fin Style For Side To Side, Pci Height, Black Anodize					
12	Pin-Fin Style For Sdie Ot Sdie, San Height, Black Anodize					
13	Pin-Fin Style For Sdie Ot Sdie, TALL Height, Black Anodize					
14	Pin-Fin Style For Front - Back, Pci Height, Nickel					
15	Pin-Fin Style For Front - Back, San Height, Nickel					
16	Pin-Fin Style For Front - Back, TalL Height, Nickel					
17	Pin-Fin Style For Front - Back, Pci Height, Black Anodize					
18	Pin-Fin Style For Front - Back, San Height, Black Anodize					
19	Pin-Fin Style For Front - Back, TalL Height, Black nodize					
	EON Pin Options	With 0 Rear Pin				0
	With 1 Rear Pin					1
	With 2 Rear Pin					2
	Packaging Options	Tray Packaging (Heat sink & Clip shipped)				A
	Tape & Reel Packaging					T
	Dust Cover Options	Withtout Dust Cover				0
	With Dust Cover (Shipped Loose Piece)					D
	Light Pipe Options	No Light Pipe				0
	Single Light Pipe					1
	Dual Light Pipe					2
	Quad Light Pipe					3

ExtremePort™ QSFP112 0.6JL Stacked SMT Connector

V95	X	X	040	X	X	X
BEZ01	Style (Assembly)	2X1 Standard SMT connector with anchor pin				
3	Plating Option	30min (0.76 m) Min.Gold at mating area, 100min (2.54um) Min.Matte TNI termination,Nickel under platinig all over.				
0	Mylar Option	Without mylar				
	Packaging	Tape and Reel Packaging				0
	Hard Tray Packaging					A
	Solder Ring Option	Without Solder Ring				0
	With Solder Ring					1

ExtremePort™ QSFP112 0.8LL Cage

V95	X	X	X	X	X	X
BAZ01	Style	QSFP 112G, 2X1 Standard cage assembly				
BAZ07	QSFP 112G, 2X2 Standard cage assembly					
BAZ06	QSFP 112G, 2X4 Standard cage assembly					
5	Cage Material and Plating Option	Stainless steel				
00	Heatstink Options	No Heat Sink, Top Closed				
11	No Heat Sink, Top Open					
A0	Custom top extrude fin heat sink, Height dim "H"-33.0mm,with extrude middle heat sink					
B0	Plating: Natural colour anodized					
A1	Custom top zipper fin heat sink, Height dim "H"-33.0mm, with extrude middle heat sink					
B1	Plating: Natural colour anodized					
	Custom top extrude fin heat sink, Height dim "H"-33.0mm, with zipper middle heat sink					
	Plating: Natural colour anodized					
	Packaging	Tray packaging (Heat Sink and Clip Shipped Assembled)				A
	Light Pipe Option	No Light Pipe				0
	LP on Top w/o Coating, Outer					2
	Dust Cover Options	No Dust Cover				0
	With Dust Cover Shipped Loosen					D
	Front Vent Hole option	Hexagon Vent Hole				H

ExtremePort™ QSFP DD

Amphenol's QSFP DD interconnect system is comprised of a 76 position, 0.8mm pitch connector built for use in high speed serial applications.

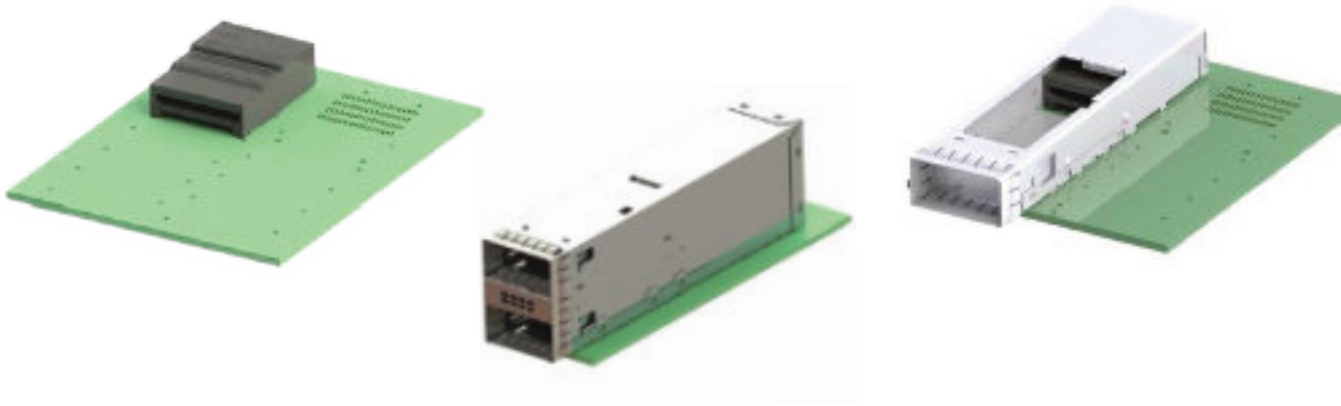
Each port supports up to 400Gb/s in aggregate over an 8 x 50Gb/s electrical interface. The cage and connector design provides backwards compatibility to QSFP28 modules which can be inserted into a QSFP DD port and connected to 4 of the 8 electrical channels. It is one of the industry's leading multi-lane pluggable form factors used across Ethernet, Fibre Channel and InfiniBand.

- Operating at 56Gb/s PAM-4 for up to 400Gb/s aggregated bandwidth solution
- QSFP series double density product with 8 channels per port
- Backwards mating compatible with QSFP
- Multiple connector and heat sink configurations

FEATURES

BENEFITS

Electrical interface employs 8 lanes that support 25Gb/s NRZ modulation or 56Gb/s PAM4, providing solutions up to 400Gb/s aggregate bandwidth	Enables 200G and 400G aggregate bandwidth per port
Enables up to 14.4Tb/s aggregate bandwidth in a single switch slot	A single switch slot can have 36 ports QSFP DD
Backwards mating compatible with QSFP	Allows for use of either QSFP or QSFP DD products in any port
Supports passive & active copper and optical solutions products	Enables use of DAC, short and long range optical
Multiple connector configurations	Single (1x1), ganged (1xN) and stacked (2xN) connector and cage configurations
MSA supported standard interface	Amphenol offering meets or exceeds MSA defined product specifications
Multiple heat sink options	Allows user to choose from multiple options to maximize heat dissipation
RoHS compliant	Environmentally friendly



TECHNICAL INFORMATION

MATERIAL

Housing: Black color, glass reinforced, lead free solder reflow process compatible thermo plastic
Contacts base material: High performance copper alloy
Plating solder tails: Matte tin
Plating mating area: Gold
Resonance dampening feature: Conductive polymer

MECHANICAL PERFORMANCE

Durability: 100 mating cycles
Mating Force: 90N max.
PCB thickness (Cage): 1.44mm min. for singlemounted (1xN)
Belly to belly (Cage): 2.35mm min. for 1xN
Unmating force (Cage): 50N max.
Insertion force to PCB (Cage):
780N for 1x1 port
1000N for 1x2 Ports
1700N for 1x4 Ports
2400N for 1x6 Ports
3000N for 2x1 Ports

ELECTRICAL PERFORMANCE

Operating Voltage: 30VDC per contact
Operating Current: 0.5A per signal contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and storage temperature: -40° to +85°C
RoHS & halogen free

TOOLING INFORMATION

Cage mounting: Thru bezel
EMI options: Spring fingers
Configurations:
1XN (N=1,2,3,4,5,6)
2XN (N=1,2)

TARGET MARKETS/APPLICATIONS

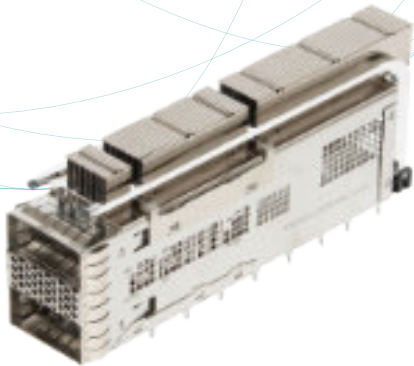
- Cellular Infrastructure
Network Interface Cards
SAN_Storage Attached Networks
- Hubs
Switch
Servers
Storage
- Test and Measurement Equipment

PART NUMBERS

Description	Part Numbers
56G QSFP-DD 1x1 SMT connector	UE36-A10X5-X000T (X represents various options)
QSFP-DD 1x1 cage assembly with heat sink & light pipe options	UE36-C16XXX-XXXXX (X represents various options)
QSFP-DD 1x2 cage assembly with heat sink & light pipe options	UE36-C26XXX-XXXXX (X represents various options)
QSFP-DD 1x3 cage assembly with heat sink & light pipe options	UE36-C36XXX-XXXXX (X represents various options)
QSFP-DD 1x4 cage assembly with heat sink & light pipe options	UE36-C46XXX-XXXXX (X represents various options)
QSFP-DD 1x5 cage assembly with heat sink & light pipe options	UE36-C56XXX-XXXXX (X represents various options)
QSFP-DD 2x1 press-fit connector and cage assembly with heat sink & light pipe options	UE36-E162XX-XXXXX (X represents various options)
QSFP-DD 2x2 press-fit connector and cage assembly with heat sink & light pipe options	UE36-E262XX-XXXXX (X represents various options)

ExtremePort™ QSFP DD 112G

Amphenol's ExtremePort™ QSFP DD 112G interconnect system is comprised of a 76 position, 0.80mm pitch connector built for use in high-speed serial applications.



Each port supports up to 800Gb/s in aggregate over an 8 x 112Gb/s electrical interface. The cage and connector design provides backward compatibility to QSFP56 modules, which can be inserted into a QSFP DD port and connected to 4 of the 8 electrical channels. It is one of the industry's leading multi-lane pluggable form factors used across Ethernet, Fibre Channel and InfiniBand.

- Operating at 112Gb/s PAM4 for up to 800Gb/s aggregated bandwidth solution
- QSFP series double density product with 8 channels per port
- Backward compatibility with QSFP
- Multiple connector and heat sink configurations

FEATURES

- Electrical interface employs 8 lanes that support 112Gb/s PAM4, providing solutions up to 800Gb/s aggregate bandwidth
- Enables up to 28.8Tb/s aggregate bandwidth in a single switch slot
- Backwards mating compatibility with QSFP56
- Supports passive & active copper and optical solutions products
- Multiple connector configurations
- MSA supported standard interface
- Multiple heat sink options
- RoHS compliant

BENEFITS

- Enables 400G and 800G aggregate bandwidth per port
- Single switch slot with 36 ports QSFP DD
- Allows for use of either QSFP or QSFP DD products in any port
- Enables use of DAC, short and long range optical
- Single (1x1), ganged (1xN) and stacked (2xN) connector and cage configurations
- Meets or exceeds MSA defined product specifications
- Allows user to choose from multiple options to maximize heat dissipation
- Meets environmental, health and safety standards

TECHNICAL INFORMATION

MATERIAL

- Housing: Black color, glass reinforced, lead free solder reflow process compatible thermo plastic
- Contacts Base Material: Copper alloy
- Plating Solder Tails: Matte tin over nickel
- Plating Mating Area: Gold
- Resonance Dampening Feature: Stainless steel

ELECTRICAL PERFORMANCE

- Operating Voltage: 30V DC per contact
- Operating Current: 0.5 A per signal contact; 1.5 A per power contact
- Differential Impedance: 100Ω ± 10Ω

MECHANICAL PERFORMANCE

- Durability: 100 mating cycles
- Mating Force: 90N max.
- Unmating Force: 50N max.
- PCB Thickness for 1xN Cage:
 - 1.44mm min. for single mounted
 - 2.35mm min. for belly to belly mounted

ENVIRONMENTAL

- Operating and (Storage) Temperature: -40° to +85° C
- RoHS & Halogen-Free

SPECIFICATIONS

- Cage Mounting: Through bezel
- EMI Options: Spring fingers
- Configurations:
 - 1xN (N = 1, 2, 3, 4, 5)
 - 2xN (N = 1, 2)

PACKAGING

- Tape and Reel (connector) or Tray (cage)

TARGET MARKETS/APPLICATIONS

- Switch
- Router and Server
- Wireless Base Station
- Telecom
- Consumer Electronics
- Datacom/Networking Equipoment
- Hubs
- Datacenter switching applications
- Storage System
- Supercomputer
- High Density Ethernet Switching/Routing Products
- Test Equipment
- Measuring Equipments

PART NUMBERS

Description	Part Numbers
ExtremePort QSFP-DD 112G 1x1 SMT connector	V36-ADZ01-X0X000T (X represents various options)
ExtremePort QSFP-DD 112G 2x1 stacked SMT connector, Anchor pin version	V36-BEZ01-X04100X (X represents various options)
ExtremePort QSFP-DD 112G 2x1 stacked SMT connector, Glue pad version	V36-BEZ02-X07100X (X represents various options)
QSFP-DD 1x1 cage assembly with heat sink & light pipe options	UE36-C16XXX-XXXXX (X represents various options)
QSFP-DD 1x2 cage assembly with heat sink & light pipe options	UE36-C26XXX-XXXXX (X represents various options)
QSFP-DD 1x3 cage assembly with heat sink & light pipe options	UE36-C36XXX-XXXXX (X represents various options)
QSFP-DD 1x4 cage assembly with heat sink & light pipe options	UE36-C46XXX-XXXXX (X represents various options)
QSFP-DD 1x5 cage assembly with heat sink & light pipe options	UE36-C56XXX-XXXXX (X represents various options)
ExtremePort QSFP-DD 112G 2x1 cage with heat sink and light pipe options for anchor pin 2x1 stacked connector	V36-BAZ17-XXXXXX (X represents various options)
ExtremePort QSFP-DD 112G 2x1 cage with heat sink and light pipe options for glue pad 2x1 stacked connector	V36-BAZ16-XXXXXX (X represents various options)

ExtremePort™ OSFP

Amphenol's OSFP interconnect system has 60 contacts per port, with a 0.6mm contact pitch and 8 high speed channels.



The OSFP footprint is optimized for signal integrity performance and built for use in high speed serial applications. The connector is enhanced for low crosstalk and has ground commoning for resonance dampening. It is also designed for 1U applications. An integrated heat sink is featured on the module side for optimal thermal performance.

- Operating at 56Gb/s PAM-4 for up to 400Gb/s aggregated bandwidth solution
- 60 contacts per port supports 16 high speed pairs and 10 power/control pins
- Supports power up to 16W per port
- Advanced internal ground features provide improved crosstalk performance
- Supports passive copper as well as short and long range optics

Test and Measurement Equipment

FEATURES

BENEFITS

Enables 25Gb/s NRZ and 56Gb/s PAM4 per channel transmission	200G / 400G aggregate bandwidth capacity
Compatible with all mating connector & cage configurations - single port, ganged and stacked	Allows for maximization of linear port to port density
System design enables up to 16 watts per port independent of cage configuration	Allows for use of DAC, short range and long range optical devices without concern for proper heat management
Advanced internal ground features provide improved crosstalk performance over QSFP28	Better signal integrity (SI) performance
Designed with considerations to support next generation operating speeds: 112Gb/s PAM4	Potential to upgrade to 112Gb/s PAM4
Custom solutions supported	Custom solutions from adapter cables to loopback cables and beyond
Part of Amphenol's overall OSFP interconnect system	Comprehensive OSFP product family offering cable and connector solutions for copper or optical based applications
RoHS compliant	Environmentally friendly

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin over Nickel
Plating Mating Area: Gold
Resonance Dampening Feature: Carbon fibre reinforced

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 40 N max.
Unmating Force: 40 N max.
Contact Normal Force: 40 grams min.

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current:
0.5 A per signal contact
1.5 A per low speed power contact
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -20° to +85° C
RoHS & Halogen-Free

TOOLING INFORMATION

Configurations:
1x1, 1x2, 1x3, 1x4
2x1, 2x4, 2x6

PACKAGING

Tape and Reel or Tray

TARGET MARKETS/APPLICATIONS

- Cellular Infrastructure
Telecommunications Hardware
- Servers
Storage
- Test and Measurement Equipment

PART NUMBERS

Description	Part Numbers
OSFP 56G 1x1 SMT connector	UE62-A1012-XX00X (X represents various options)
OSFP 1x1 cage assembly	UE62-B1620-02X21 (X represents various options)
OSFP 1x1 cage assembly with heat sink	UE62-B162G-021E1
OSFP 1x2 cage assembly	UE62-B2620-02XE1 (X represents various options)
OSFP 1x2 cage assembly with quad light pipes	UE62-C2624-02XE1 (X represents various options)
OSFP 1x3 cage assembly	UE62-B3620-0S1E1
OSFP 1x4 cage assembly	UE62-B4620-0XXX1 (X represents various options)
OSFP 1x4 cage assembly with heat sink	UE62-B462G-021E1
OSFP 1x4 cage assembly with dual light pipes	UE62-C4621-02X21 (X represents various options)
OSFP 1x1 RHS cage assembly (low profile)	UE62-F(D)162G-X2XX1 (X represents various options)
OSFP 1x2 RHS cage assembly (low profile)	UE62-F(D)262G-XSXX1 (X represents various options)
OSFP 1x4 RHS cage assembly (low profile)	UE62-F(D)462G-X2XX1 (X represents various options)
OSFP 56G 2x1 press-fit connector and cage assembly	UE62-M1620-B32A1
OSFP 56G 2x4 press-fit connector and cage assembly	UE62-M4620-B32A1
OSFP 56G 2x6 press-fit connector and cage assembly	UE62-M6620-B32A1

ExtremePort™ OSFP 112G

Amphenol's ExtremePort™ OSFP 112G interconnect system is comprised of a 60 position, 0.60mm pitch connector designed for high-speed serial applications.



Each port supports up to 800Gb/s in aggregate over an 8 x 112Gb/s electrical interface. The OSFP footprint is optimized for signal integrity performance. The stacked OSFP SMT connector is enhanced for low crosstalk and has ground communing for resonance dampening. It is also designed for 1U applications and features an integrated heat sink for optimal thermal performance.

Amphenol's ExtremePort OSFP 112G interconnect system is one of the industry's leading multi-lane pluggable form factors used across Ethernet, Fibre Channel and InfiniBand.

- Operates at 112Gb/s PAM-4 for up to 800Gb/s aggregated bandwidth
- OSFP series product with 8 channels per port
- Backwards mating compatible with 56G OSFP
- Multiple connector and heat sink configurations
- MSA supported standard interface

FEATURES

- Electrical interface employs 8 lanes that support 112Gb/s PAM4, providing solutions up to 800 Gb/s aggregate bandwidth
- Enables up to 28.8 Tb/s aggregate bandwidth in a single switch slot
- Backwards mating compatible with 56G OSFP
- Supports passive and active copper and optical solutions products
- Multiple connector configurations
- Multiple heat sink options
- RoHS & REACH compliant

BENEFITS

- Enables 400G and 800G aggregate bandwidth per port
- A single switch slot can have 36 ports OSFP
- Allows for use of either 56G OSFP or 112G OSFP products in any port
- Enables use of DAC, short and long range optical solutions products
- Single (1x1), ganged (1xN) and stacked (2xN) connector and cage configurations
- Allows user to choose from multiple options to maximize heat dissipation
- Meets environmental, health and safety standards

TECHNICAL INFORMATION

MATERIAL

- Housing: Black color, glass reinforced, lead free older reflow process compatible thermo plastic
- Contacts Base Material: Copper alloy
- Plating Solder Tails: Matte tin over nickel
- Plating Mating Area: Gold
- Resonance Dampening Feature: Stainless steel

MECHANICAL PERFORMANCE

- Durability: 100 mating cycles
- Mating Force: 40N max. (55N if the cage has riding heatsink)
- Unmating Force: 30N max. (45N if the cage has riding heatsink)
- PCB Thickness for 1xN Cage:
 - 1.40mm min. for single mounted
 - 2.20mm min. for belly to belly mounted

ELECTRICAL PERFORMANCE

- Operating Voltage: 30VDC per contact
- Operating Current: 0.5A per signal contact; 1.5A per power contact
- Differential Impedance: 100Ω ± 10Ω

PACKAGING

- Tape and Reel (connector)
- Tray (cage)

SPECIFICATION

- Cage mounting: Through bezel
- EMI options: Spring fingers
- Configurations:
 - 1xN (N = 1, 2, 3, 4)
 - 2xN (N = 1, 4, 6)

ENVIRONMENTAL

- Operating and (Storage) Temperature: -40° C to +85° C
- RoHS, REACH & Halogen-free

TOOLING INFORMATION

- Hard tooling

TARGET MARKETS/APPLICATIONS

- Switch
- Router and Server
- Wireless Base Station
- Telecom
- Consumer Electronics
- Datcom/Networking Equipments
- Hubs
- Data center Switching Applications
- Storage System
- Supercomputer
- High Density Ethernet Switching/Routing Products
- Test Equipment
- Measuring Equipment

PART NUMBERS

Description	Part Numbers
ExtremePort OSFP 112G 1x1 SMT connector	UE62-A1020-XX00X (X represents various options)
ExtremePort OSFP 112G 2x1 stacked SMT connector	UE62-G1012-X000X (X represents various options)
OSFP 1x1 cage assembly	UE62-B1620-02X21 (X represents various options)
OSFP 1x1 cage assembly with heat sink	UE62-B162G-021E1
OSFP 1x2 cage assembly	UE62-B2620-02XE1 (X represents various options)
OSFP 1x2 cage assembly with quad light pipes	UE62-C2624-02XE1 (X represents various options)
OSFP 1x3 cage assembly	UE62-B3620-0S1E1
OSFP 1x4 cage assembly	UE62-B4620-0XXX1 (X represents various options)
OSFP 1x4 cage assembly with heat sink	UE62-B462G-021E1
OSFP 1x4 cage assembly with dual light pipes	UE62-C4621-02X21 (X represents various options)
OSFP 1x1 RHS cage assembly (low profile)	UE62-F(D)162G-X2XX1 (X represents various options)
OSFP 1x2 RHS cage assembly (low profile)	UE62-F(D)262G-XSXX1 (X represents various options)
OSFP 1x4 RHS cage assembly (low profile)	UE62-F(D)462G-X2XX1 (X represents various options)
ExtremePort OSFP 112G 2x1 cage assembly	UE62-N1626-02XX2 (X represents various options)
ExtremePort OSFP 112G 2x1 cage assembly with dual light pipes	UE62-Q1626-022C1
ExtremePort OSFP 112G 2x4 cage assembly	UE62-N4626-02XX2 (X represents various options)
ExtremePort OSFP 112G 2x4 cage assembly with dual light pipes	UE62-Q4626-022C2
ExtremePort OSFP 112G 2x6 cage assembly	UE62-N6626-02XX2 (X represents various options)

CFP2

Amphenol’s CFP2 series offers a 104 position, 0.6mm pitch connector designed to be compatible with 100Gb/s Form Factor Pluggable (CFP) Multi-Source Agreement for Ethernet and other applications.

It is used in multi- hundred Gb/s systems and is comprised of insert molding assemblies for top contacts and press-fit cage assemblies. Rated for 25Gb/s per channel with resonance dampening for improved signal integrity, CFP2 has up to 60% lower power consumption versus CFP. An optional riding heat sink ensures proper thermal dissipation. Compatible with IEEE and ITU-T applications, the CFP2 footprint is compliant with other industry suppliers.

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 200 mating cycles
Mating Force: 80 N max.
Contact Normal Force: 30 grams
PCB Thickness (Cage): 3.00 mm (0.118 in.)
Unmating Force (Cage): 50 N
Recommended insertion force to PCB(Cage):

Seating Tool Kit #	Configuration	Required Application Force (N)
T1075-0069	CFP2 1x1	1000N
T1075-0070	CFP2 1x2	1500N

ELECTRICAL PERFORMANCE

Operating Voltage: 3.3 V DC per contact
Operating Current (per power pin): 0.5A maximum (Class 4 or lower) / 1.25A maximum (Class 5 and 6)

Please contact the manufacturer for specific requirements over 0.5A per pin
Operating Current (per signal pin): 0.5A maximum
Differential Impedance: 100Ω +/- 10Ω

ENVIRONMENTAL

Operating and (Storage) Temperature: -40°C to +85°C
RoHS & Halogen-Free

TOOLING INFORMATION

Configurations: 1X1, 1X2

TARGET MARKETS/APPLICATIONS



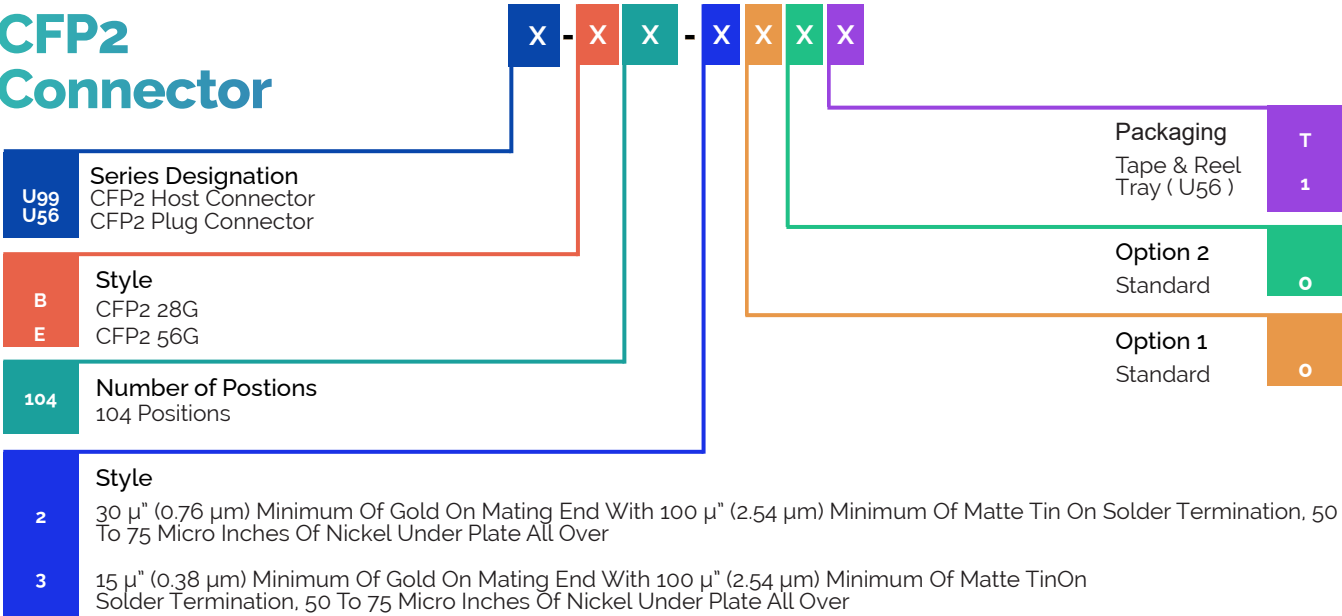
Metro Area Networks



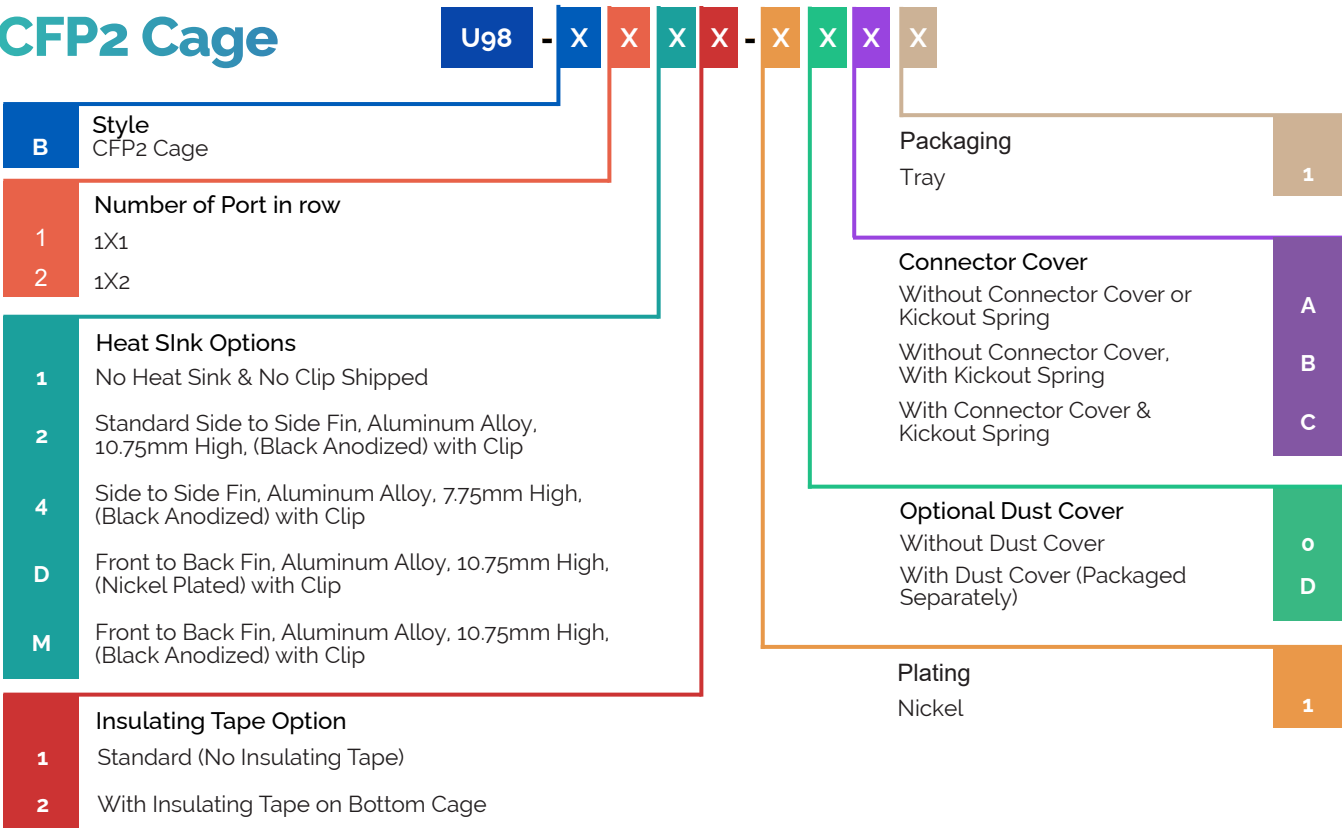
Carrier Network and Data centers
Large Data Center Campus Connectivity

PART NUMBER SELECTOR

CFP2 Connector



CFP2 Cage



CFP4

Amphenol’s CFP4 series offers a 56 position, 0.6mm pitch connector and is used in multi-hundred Gb/s systems.



It is comprised of insert molding assemblies for top side contacts and press-fit cage assemblies. Rated for 25Gb/s per channel with resonance dampening for improved signal integrity, CFP4 has up to 60% lower power consumption versus CFP. The CFP4 series includes a plug connector on the mating interface to improve accuracy and aid in delivering high speed performance. CFP4 has the ability to be a customized solution with an optional riding heat sink that ensures proper thermal dissipation. It is also compliant with IEEE and ITU-T applications.

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

MECHANICAL PERFORMANCE

Durability: 200 mating cycles
Mating Force: 60 N max.
Contact Normal Force: 38 grams
PCB Thickness (Cage): 3.00 mm (0.118 in.)
Unmating Force (Cage): 50 N
Recommended insertion force to PCB(Cage) :

Seating Tool Kit #	Configuration	Required Application Force (N)
T1075-0079	CFP4 1x1	700
T1075-0080	CFP4 1x2	1100
T1075-0081	CFP4 1x4	1700

ELECTRICAL PERFORMANCE

Operating Voltage: 3.3 V DC per contact
Operating Current: 1.87 A per contact

ENVIRONMENTAL

Operating and (Storage) Temperature: -40°C to +85°C
RoHS & Halogen-Free

TOOLING INFORMATION

Configurations: 1X1, 1X2, 1X4

TARGET MARKETS/APPLICATIONS



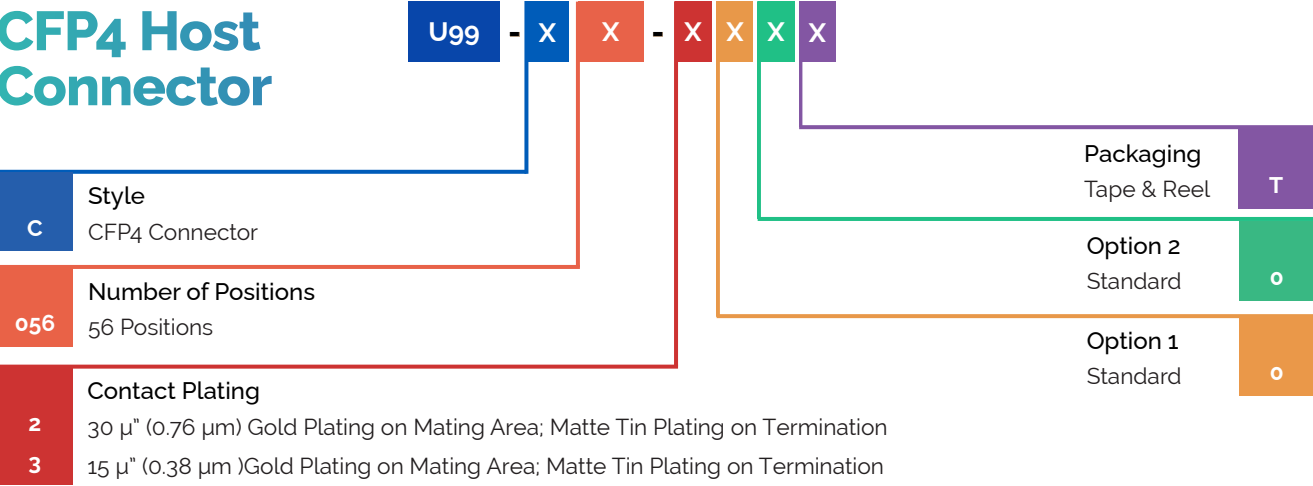
Metro Area Networks



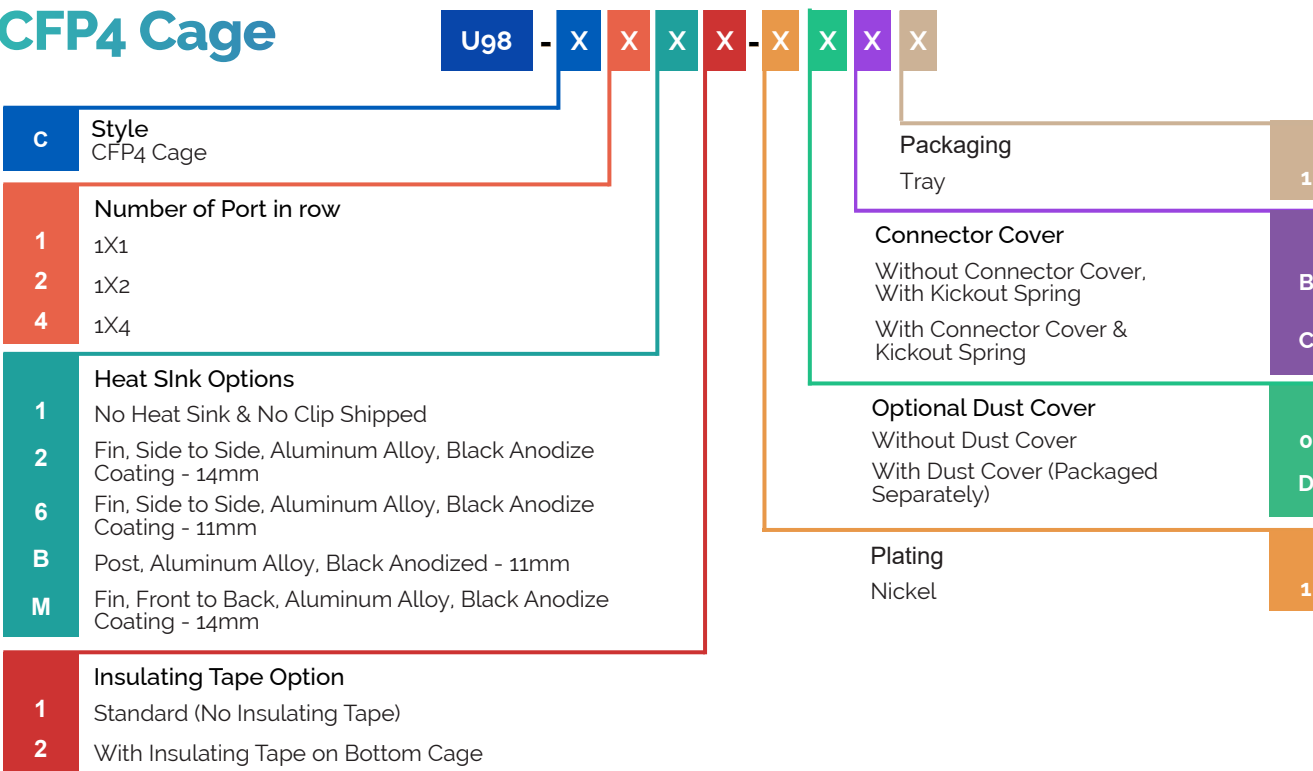
Carrier Network and Data centers
Large Data Center Campus Connectivity

PART NUMBER SELECTOR

CFP4 Host Connector

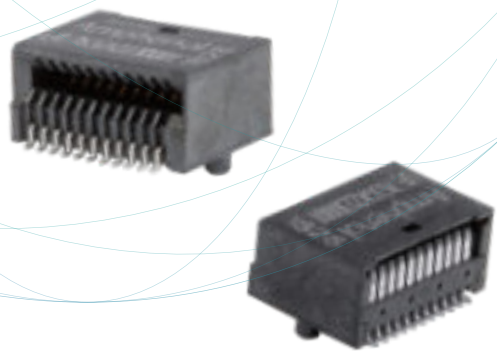


CFP4 Cage



DSFP
56G PAM4
SMT

DSFP offers dual high-speed lanes operating at 28Gb/s NRZ and 56Gb/s PAM-4 for a 50Gb and 100Gb aggregated bandwidth solution.



It has additional 2 pins compared to the SFP/SFP+ family, which enables it to have a second high speed channel with an identical connector form factor. Indeed, the DSFP shares the same unique mating interface and EMI cage dimensions as the whole range of SFP/SFP+ cages.

The connector is backward compatible with SFP/SFP+ modules and transceivers based on 20-contacts edge card. A wide variety of cage configurations, with a two-piece construction and enhanced transceiver mating tabs are offered in press-fit or solder tail version.

- Operating at 28Gb/s NRZ or 56Gb/s PAM4 per channel for up to 100Gb/s aggregated bandwidth solution.
- 22 contacts, 0.80mm pitch, 2 rows per port supports dual high-speed lanes
- Same form factor as SFP/SFP+ series cages.
- Backward compatible with SFP/SFP+ modules/ transceivers
- Designed to support a potential upgrade to 112Gb/s

FEATURES

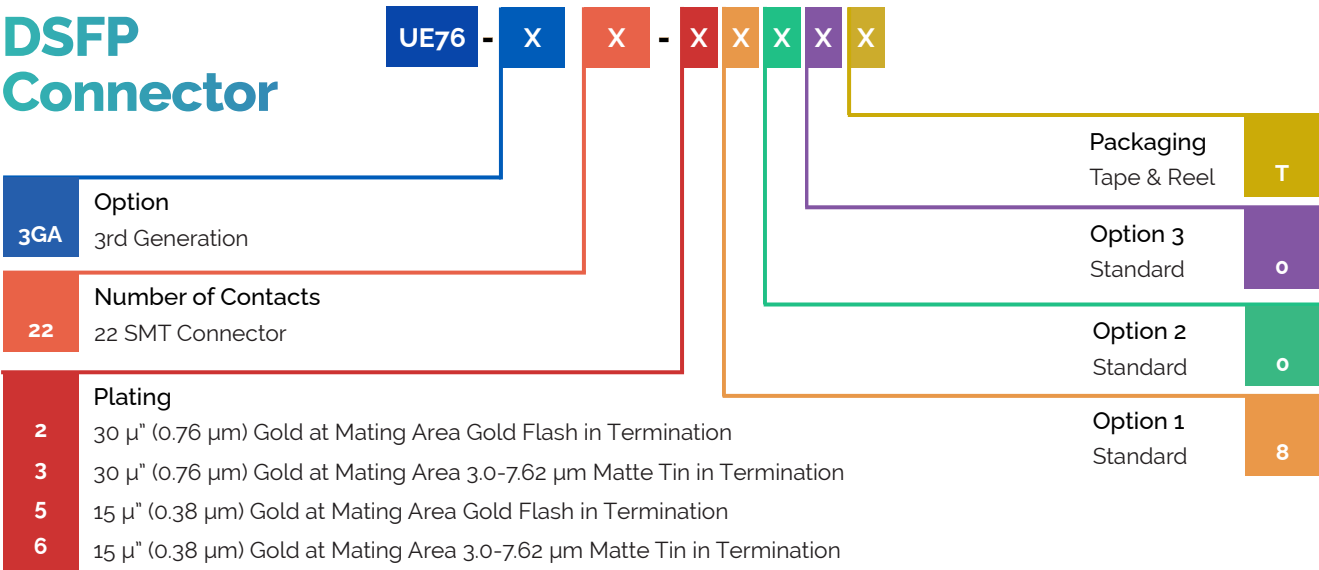
- Enables 25Gb/s NRZ and 56Gb/s PAM4 per channel transmission
- System design enables up to 3.5 watts per port independent of cage configuration
- Compatible with SFP28/SFP56 modules
- Advanced internal ground features provide improved crosstalk performance
- Use same cages as SFP28/SFP56
- RoHS compliant

BENEFITS

- 112G aggregate bandwidth capacity
- Multiple ganged configurations availability
- Allows for use of DAC, short range and long range optical devices without concern for proper heat management
- Better signal integrity (SI) performance
- Environmentally friendly

PART NUMBER SELECTOR

DSFP
Connector



TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free
Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold
Resonance Dampening Feature: Conductive Polymer

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Contact Normal Force: 0.3 N min./PIN
Mating Force: 40 N max.
Unmating Force: 12.50 N max.
PCB Thickness Single Side (Cage): 1.57 mm (0.062 in.) min.
PCB Thickness Belly to Belly (Cage): 3.00 mm (0.118 in.) min.

ENVIRONMENTAL

Operating and (Storage) Temperature: -55 C° to 85 C°
RoHS & Halogen-Free

TOOLING INFORMATION

Single and ganged cages:
1 X N (N=1,2,3,4,5,6,8)

PACKAGING

Connector: Tape and Reel
Cage: Tray, Tape and Reel Available for Single Port cage

APPROVALS & CERTIFICATION

UL E64911

TARGET MARKETS/APPLICATIONS

- Metro Area Networks
- Carrier Network and Data centers
Large Data Center Campus Connectivity
- Industry 4.0

Mini-SAS HD

Amphenol's Mini-SAS High Density receptacle is the next generation SAS system.

The SAS 2.1 standard meets SAS-3 next generation speed and density requirements that provides faster data transmission and more bandwidth for end users. The low-profile system provides 4X and 8X cable-plug options, and the external I/O connectors include eight sideband signals per 4X port, 1x4 configuration for up to 192Gb/s of total bandwidth. Mini-SAS HD is designed to save space with its increased density and reduced size as compared to the Mini-SAS 2.0, while following complacency with the standard. The Mini-SAS HD connector system has a 2-row, right angle connector with data rates reaching 32Gb/s per channel, which can meet SAS-4 and PCIe Gen4/5 application.



FEATURES

- SMT connector enables 32Gb/s per channel transmission
- Press fit cage/connector combo enables 24Gb/s per channel transmission
- x4 / x8 / x16 availability for both press-fit Combo and SMT version
- Advanced internal ground features provide improved crosstalk performance
- RoHS compliant

BENEFITS

- Support PCIe G4/G5 and SAS4 application
- Same footprint and same fit for both 12Gb/S and 24Gb/s press-fit solutions
- Allows for use of different cable solutions
- Better signal integrity (SI) performance
- Environmentally friendly

TECHNICAL INFORMATION

MATERIAL

Housing: Black color, Glass reinforced, Lead Free Solder Reflow Process Compatible Thermo Plastic
Contacts Base Material: Phosphor Bronze
Plating Solder Tails: Matte tin or Gold flash options
Plating Mating Area: Gold

MECHANICAL PERFORMANCE

Durability: 250 mating cycles
Mating Force: 62 N max.
Contact Normal Force: 50 grams min.
PCB Thickness (Cage): 3.00 mm (0.118in.) min.
Unmating Force (Cage): 30 N max.

ELECTRICAL PERFORMANCE

Operating Voltage: 30 VDC per contact
Operating Current: 0.5 A per contact
Differential Impedance: 100Ω +/- 10Ω

TOOLING INFORMATION

Configurations: 1X1, 1X2, 1X4

ENVIRONMENTAL

Operating and (Storage) Temperature: -40°C to +85°C
RoHS & Halogen-Free

TARGET MARKETS/APPLICATIONS



- Blade Server
- Patch Panels
- RAID
- Rack-Mount Server
- Router
- Servers
- Storage Rack
- Workstation

PART NUMBER SELECTOR

Mini-SAS HD Combo (Cage/Connector)

U92 - X X X X - X X X X - X X

L	Style	
	One Row Cage (12 Gb/s)	
M	One Row Cage (24 Gb/s)	
1	Number of Ports in row	1x1
		1x2
		1x4
1	Serial no.	N
0	EMI Shielding	Standard EMI Fingersv
		Extended EMI Fingers
Mounting Screws		0
No Screws		1
Mounting Screws (Standard Length of M2 X 0.4, 4.3 Long)		
Contact Plating		7
Mating Area Plating 30 μ" (0.76 μm) Gold Over 50 μ" (1.27 μm) to 150 μ" (3.81 μm) of Nickel; Press-Fit Tail Area Plating 15 μ" (0.38 μm) to 60 μ" (1.52 μm) of Matte Tin Over 50 μ" (1.27 μm) to 150 μ" (3.81 μm) of Nickel		
Packaging		1
Tray		A
Tray - Light Pipe Ship Assembled		
Options		0
Standard		
Optional Dust Cover		0
Without Dust Cover		D
With Dust Cover (Ship Loose)		
Plating		1
Nickel		

Mini-SAS HD SMT 92ohm Connector

V92 - A D Z 0 1 - X 0 9 2 X X X

2	EMI Shielding	30μ" [0.76m] Gold at mating area gold flash in termination nickel under plated over all.
		30μ" Gold plating on mating area 150-300μ" matte tin on termination over 50 μ" [1.27 μm] min. nickel under layer.
		15μ" [0.38m] Gold t mating area gold flash in termination nickel under plated over all.
		15μ" gold plating on mating area 150-300" matte tin on termination over 50n" [1.27um] min. nickel under layer.
Packaging		T
Tape And Reel		
Solder Ring Option		0
No Solder Ring		1
With Solder Ring		
Backside Peg Option		0
With Backside Peg		1
Withtout Backside Peg		

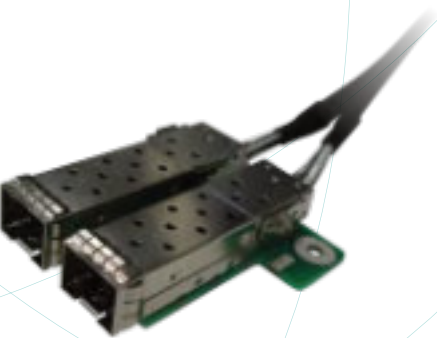
Mini-SAS HD Cage

V92 - A A Z XX - X X X X X X X

10	1x1 Cage	Packaging	
			Tray Packaging
			1
11	1x2 Cage		
12	1x4 Cage		

SFP OverPass™ Assemblies

Direct High Speed Connection from Chip Site to IO Port



SFP OverPass™ products help avoid high speed signaling through the PCB by creating a direct low loss connection between the ASIC and the external IO port. This helps to enable 28G and 56G hardware system designs, with a roadmap to future 112G and 224G solutions. Using these solutions results in lower signal loss, less PCB design complexity and reduced PCB and signal recovery costs. Fully compatible with SFP industry standards.

These cable assemblies lower system costs by eliminating the need for re-timers and expensive low loss PCB laminates. They can be paired with multiple near chip IO solutions including Amphenol's SlimSAS™, MiniCoolEdge, Flash and with cabled sidebands to either the near chip connector or a separate Minitex® cable connector.

- Lower loss interconnect from chip site to external port
- Enables 28G and 56G hardware system design
- Reduced overall system cost
- Direct wire attachment to connector contact and coupled with high performance differential pair cabling
- Fully engineered and tested cabling solution with straightforward assembly in systems

FEATURES

- Direct chip to IO port connection; accommodates straight and cross over wiring; custom IO mapping; heat sinks, light pipes and multiple cage configurations
- Full SFP industry standard compatibility
- Full support of 28G and 56G signaling speeds
- Integrated system solution including assembly aid
- 100% full performance testing and characterization
- Full vertical integration of product components
- Multiple near chip IO connector options
- Flexible sideband signal termination options

TECHNICAL INFORMATION

- Significant reduction in signal loss transmission; addresses system thermal and mechanical needs
- Assures proper mating of cables, AOC's and optical modules
- Full signal integrity performance compatibility
- Ease of assembly in hardware systems
- Assures full product functionality
- Connectors and cable supplied, processed, terminated and tested by Amphenol
- Choice of multiple IO solutions to address signal integrity performance and mechanical requirements

TECHNICAL INFORMATION

MATERIAL

- Contacts: High performance copper alloy
- Cages: Stainless steel
- Housings: High performance thermoplastics – UV94V-0
- Cable: Silver & tin plated copper wire, aluminized mylar shields, PTFE Insulation

ELECTRICAL PERFORMANCE

- 93Ω characteristic impedance
- Supports Ethernet protocol signaling speeds & performance – 10G, 28G and 56G
- EIA -364 series

MECHANICAL PERFORMANCE

- Durability: 25 cycles

ENVIRONMENTAL

- EIA-364-1000
- Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

- UL 94V-0

SPECIFICATION

- SFP OverPass™ product specification
- Mini Cool Edge product specification
- Flash product specification

PACKAGING

- Product Specific: Usually package in antistatic bags or clamshells
- Cable is bulked via either a series of cable wraps or snakeskin jacket
- Protective covers on cable ends for worry free system assembly

TARGET MARKETS/APPLICATIONS



- Switches
- Routers
- Wireless Infrastructure



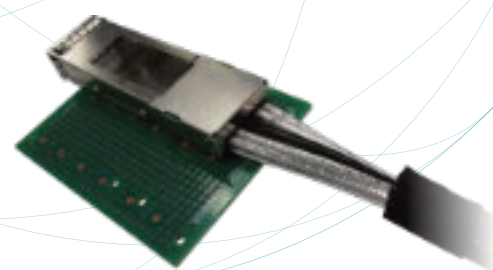
- Servers
- Data Centers
- Supercomputers

PART NUMBERS

Description	Part Numbers
Single SFP OverPass™ connector (no cage) to single 38 pos MCIO, straight cable exit, sidebands cabled to MCIO	10155151
Dual SFP OverPass™ connectors (no cage) to single 38 pos MCIO, straight cable exit, sidebands cabled to MCIO	10155152
Single SFP OverPass™ connector (no cage) to single 50 pos Flash 2.0, straight cable exit, sidebands cabled to Flash	10153973
1x1 SFP OverPass™ cage assembly and cover	U59-B1-K000-00000

QSFP OverPass™ Assemblies

28G And 56G Direct High Speed Connection from Chip Site to IO Port



QSFP OverPass™ products help avoid high speed signaling through the PCB by creating a four channel direct low loss interconnection between the ASIC and the external IO port. This helps enable efficient 28G and 56G hardware system designs with a roadmap to 112G and 224G solutions. Using these solutions results in lower signal loss, less PCB design complexity and reduced PCB and signal recovery costs. Fully compatible with QSFP industry standards with both high speed and sideband signal requirements.

These cable assemblies lower system costs by eliminating the need for re-timers and expensive low loss PCB laminates. They can be paired with multiple near chip IO solutions – micro-LinkOVER™, DensiLink®, Mini Cool Edge, Flash and SlimSAS™ with cabled sidebands to either the near chip connector, to a separate Minitex® cable connector or press fit terminated at the QSFP connector.

- Low loss interconnect from chip site to external port
- Enables 28G and 56G hardware system design with roadmap to 112G and 224G designs
- Delivers superior signal integrity performance
- Fully engineered and tested cabling solution with straight forward application and assembly into systems

FEATURES

BENEFITS

Direct chip to IO port connection; accommodates straightand cross over wiring; custom IO mapping; heat sinks and light pipes	Significant reduction in signal loss transmission; addresses system thermal and mechanical needs
Direct wire attachment to connector contact & robust shield termination coupled with high performance differential pair cabling	Delivers superior signal integrity performance
Full QSFP industry standard compatibility	Assures proper mating of cables, AOC's and optical modules
Full support of 28G and 56G signaling speeds	Full signal integrity performance compatibility
Integrated system solution including assembly aids	Ease of assembly into hardware systems
100% full performance testing and characterization	Assures full product functionality
Full vertical integration of product components	Connectors and cable supplied, processed, terminated & tested by Amphenol
Multiple near chip / on package IO connector options	Choice of multiple IO solutions to address signal integrity performance and mechanical requirements
Flexible sideband signal termination options	Cabled to either Minitex® cable connector, to the near chip IO connector or press fit terminated at QSFP connector

TECHNICAL INFORMATION

MATERIAL

Contacts: High performance copper alloy
Cages: Stainless steel
Housings: High performance thermoplastics – UV94V-0
Cable: Silver & tin plated copper wire, aluminized mylar shields, PTFE Insulation

ELECTRICAL PERFORMANCE

93Ω characteristic impedance
Supports Ethernet protocol signaling speeds & performance – 10G, 28G and 56G
EIA -364 series

MECHANICAL PERFORMANCE

Durability: 25 cycles

ENVIRONMENTAL

EIA-364-1000
Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

UL 94V-0

SPECIFICATION

QSFP OverPass™ product specification
Mini Cool Edge product specification
Flash product specification

PACKAGING

Product Specific: Usually package in antistatic bags or clamshells
Cable is bulked via either a series of cable wraps or snakeskin jacket
Protective covers on cable ends for worry free system assembly

TARGET MARKETS/APPLICATIONS



Switches
Routers
Wireless Infrastructure



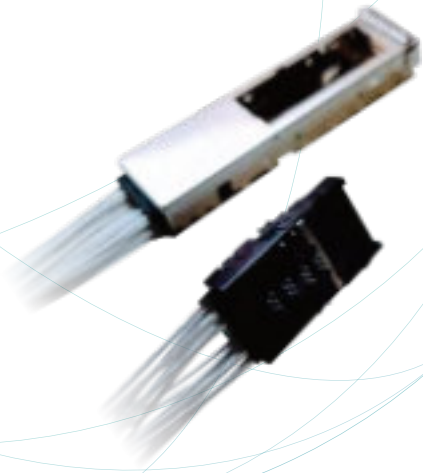
Servers
Data Centers
Supercomputers

PART NUMBERS

Description	Part Numbers
1x1 QSFP OverPass™ connector and cage to single 38 pos MCIO, right angle exit, sidebands cabled to MCIO	10150418
1x1 QSFP OverPass™ connector and cage to single 38 pos MCIO, right angle exit, sidebands cabled to Minitex®	10150419
1x1 QSFP OverPass™ connector and cage to single 38 pos MCIO, straight cable exit, sidebands cabled to MCIO	10155153
1x1 QSFP OverPass™ connector and cage to single 38 pos MCIO, straight cable exit, sidebands cabled to Minitex®	10155154
1x1 QSFP OverPass™ connector and cage to single 50 pos Flash, straight cable exit, sidebands cabled to Flash	10153972

QSFP DD OverPass™ Assemblies

Direct High Speed Connection
from Chip Site to IO Port



QSFP DD OverPass™ products help avoid high speed signaling through the PCB by creating an eight channel direct low loss connection between the ASIC and the external QSFP-DD IO port. This helps enable efficient 56G and 112G hardware system designs with a roadmap to future 224G systems. Using these solutions results in lower signal loss, less PCB design complexity and reduced PCB and signal recovery costs. Fully compatible with QSFP DD industry standards and with both high speed and sideband signal requirements.

These cable assemblies lower system costs by eliminating the need for re-timers and expensive low loss PCB laminates. They can be paired with multiple near chip IO solutions including Flash, Mini Cool Edge, micro-LinkOVER™ and DensiLink®.

- Lower loss interconnect from chip site to external port
- Full support of 56G & 112G signaling speeds and anticipated 224G
- Superior signal integrity performance
- Fully engineered and tested cabling solution with straight forward application and assembly into systems

FEATURES

Direct chip to IO port connection; accommodates straightand cross over wiring; custom IO mapping; heat sinks and light pipes

Direct wire attachment to connector contact & robust shield termination coupled with high performance differential pair cabling

Full QSFP DD industry standard compatibility

Full support of 56G & 112G signaling speeds and anticipated 224G

Integrated system solution including assembly aids

100% full performance testing and characterization

Full vertical integration of product components

Multiple near chip / on package IO connector options

BENEFITS

Significant reduction in signal loss transmission; addresses system thermal and mechanical needs

Delivers superior signal integrity performance

Assures proper mating of cables, AOC's and optical modules

Full signal integrity performance compatibility

Ease of assembly into hardware systems

Assures full product functionality

Connectors and cable supplied, processed, terminated & tested by Amphenol

Choice of multiple IO solutions to address signal integrity performance and mechanical requirements

TECHNICAL INFORMATION

MATERIAL

Contacts: High performance copper alloy
Cages: Stainless steel
Housings: High performance thermoplastics UV94V-0
Cable: Silver & tin plated copper wire, aluminized mylar shields, fluorinated polymer insulation

ELECTRICAL PERFORMANCE

93Ω characteristic impedance
Supports Ethernet protocol signaling speeds & performance – 10G, 28G, 56G and 112G
EIA -364 series

MECHANICAL PERFORMANCE

Durability: 25 cycles

ENVIRONMENTAL

EIA-364-1000
Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

UL 94V-0

SPECIFICATION

QSFP-DD Overpass Product Specification : HS-07-0005
QSFP-DD Overpass Application Specification : HS-08-0025

PACKAGING

Product specific: Usually package in antistatic bags or plastic clamshells
Cable is bulked via either a series of cable wraps or snakeskin acket
Protective covers on cable ends for worry free system assembly

TARGET MARKETS/APPLICATIONS



Switches
Routers
Wireless Infrastructure
Telecom
Optical Transport



Servers
Data Centers
Supercomputers
Datacom

PART NUMBERS

Description

Part Numbers

1x1 QSFP-DD 56G OverPass connector & cage to single 16DP DensiLink® cable connector, PF sidebands

KDAZ01-15

1x1 QSFP-DD 56G OverPass connector & cage to single 16DP micro-LinkOVER™ cable connector, SMT mount, PF sidebands

V59-YB007

1x1 QSFP-DD 56G OverPass connector & cage to single 16DP micro-LinkOVER™ cable connector, Screw mount, PF sidebands

V59-YB008

OSFP OverPass™ Assemblies

Direct High Speed Connection from Chip Site to IO Port



OSFP OverPass™ products help avoid high speed signaling through the PCB by creating an eight channel direct low loss connection between the ASIC and the external OSFP IO port. This helps enable efficient 56G and 112G hardware system designs with a roadmap to future 224G systems. Using these solutions results in lower signal loss, less PCB design complexity and reduced PCB and signal recovery costs. Fully compatible with OSFP industry standards.

These cable assemblies lower system costs by eliminating the need for re-timers and expensive low loss PCB laminates. They can be paired with multiple near chip IO solutions including micro-LinkOVER™ and DensiLink®.

- Lower loss interconnect from chip site to external port
- Full support of 56G & 112G signaling speeds and anticipated 224G
- Superior signal integrity performance
- Fully engineered and tested cabling solution with straight forward application and assembly into systems

TECHNICAL INFORMATION

MATERIAL

Contacts: High performance copper alloy
Cages: Stainless steel
Housings: High performance thermoplastics UV94V-0
Cable: Silver & tin plated copper wire, aluminized mylar shields, fluorinated polymer insulation

ELECTRICAL PERFORMANCE

93Ω characteristic impedance
Supports Ethernet protocol signaling speeds & performance – 10G, 28G, 56G and 112G
EIA -364 series

MECHANICAL PERFORMANCE

Durability: 25 cycles

ENVIRONMENTAL

EIA-364-1000
Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

UL 94V-0

SPECIFICATION

OSFP Overpass Product Specification : HS-07-0029

PACKAGING

Product specific: Usually package in antistatic bags or plastic clamshells
Cable is bulked via either a series of cable wraps or snakeskin acket
Protective covers on cable ends for worry free system assembly

TARGET MARKETS/APPLICATIONS



Switches
Routers
Wireless Infrastructure
Telecom
Optical Transport



Servers
Data Centers
Supercomputers
Datacom

FEATURES

Direct chip to IO port connection; accommodates straight and cross over wiring; custom IO mapping; heat sinks, light pipes and multiple cage configurations

Direct wire attachment to connector contact & robust shield termination coupled with high performance differential pair cabling

Full OSFP industry standard compatibility

Full support of 56G & 112G signaling speeds and anticipated 224G

Integrated system solution including assembly aids

100% full performance testing and characterization

Full vertical integration of product components

Multiple near chip / on package IO connector options

BENEFITS

Significant reduction in signal loss transmission; addresses system thermal and mechanical needs

Delivers superior signal integrity performance

Assures proper mating of cables, AOC's and optical modules

Full signal integrity performance compatibility

Ease of assembly into hardware systems

Assures full product functionality

Connectors and cable supplied, processed, terminated & tested by Amphenol

Choice of multiple IO solutions to address signal integrity performance and mechanical requirements

PART NUMBERS

Description	Part Numbers
1x1 OSFP OverPass™ connector & cage to single 16DP DensiLink® cable connector, PF sidebands	KEDZ05-15
1x1 OSFP OverPass™ connector & cage to single 16DP micro-LinkOVER™ cable connector, SMT mount, PF sidebands	V59-YC027
1x1 OSFP OverPass™ connector & cage to single 16DP micro-LinkOVER™ cable connector, Screw mount, PF sidebands	V59-YC028

micro-LinkOVER™ OverPass Assemblies

Ultra low-profile, high-performance cable interconnects



micro-LinkOVER™ OverPass™ products help avoid high speed signaling through the PCB by providing a double ended, high performance cabled interconnect solution with an ultra low-profile connector plug. These cables enable 56G and 112G signaling in hardware system designs with a roadmap to future 224G signaling.

These products create a low loss connection from the chip site to the external port. This cabled solution lowers system costs by eliminating the need for re-timers and expensive low loss PCB laminates.

The ultra low-profile of the micro-LinkOVER™ allows for mounting the connector plug end under the chip's heat sink, enabling optimal thermal management along with the lowest possible trace insertion loss.

- Removes the high speed signaling from the PCB
- Creates low loss interconnection from the chip to the external port
- Full support of 56G & 112G signaling speeds and anticipated 224G
- Reduces overall system cost
- Enables arrayed connector layouts for near chip / on package IO solutions

FEATURES

Direct point-to-point connection; single connector compression connection to PCB

SMT or screw hold down mounting options

Direct wire attachment to connector contact & robust shield termination coupled with high performance differential pair cabling

Full support of 56G & 112G signaling speeds and anticipated 224G

Straightforward application & termination; alignment pins assure proper connector location

100% full performance testing and characterization

Full vertical integration of product components

Pairs with OSFP, QSFP DD and QSFP OverPass™ interfaces to combine high speed external IO port products with a direct link to processor chips

BENEFITS

Significant reduction in signal loss transmission; addresses system thermal and mechanical needs

Robust connector mounting & reliability

Delivers superior signal integrity performance; short signal length from cable to board pad

Full signal integrity performance compatibility

Ease of assembly into hardware systems

Assures full product functionality

Connectors and cable supplied, processed, terminated & tested by Amphenol

Choice of multiple IO solutions to address differential pair count and performance

TECHNICAL INFORMATION

MATERIAL

Contacts: High performance copper alloy
Connector Cover: Zinc
SMT Actuation Spring: Stainless steel
Housings: High performance thermoplastics – UV94V-0
Cable: Silver & tin plated copper wire, aluminized mylar shields, fluorinated polymer insulation

ELECTRICAL PERFORMANCE

93Ω characteristic impedance
Supports ethernet protocol signaling speeds & performance – 10G, 28G, 56G and 112G
EIA -364 series

MECHANICAL PERFORMANCE

Durability: 25 cycles

ENVIRONMENTAL

EIA-364-1000
Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

UL 94V-0

SPECIFICATION

DensiLink® Product Specification: HS-07-0017

PACKAGING

Product Specific: Usually package in antistatic bags or plastic clamshells
Protective covers on cable ends for worry free system assembly
Cable is bulked via either a series of cable wraps or snakeskin jacket

TARGET MARKETS/APPLICATIONS



Switches
Routers
Wireless Base Station
Telecom



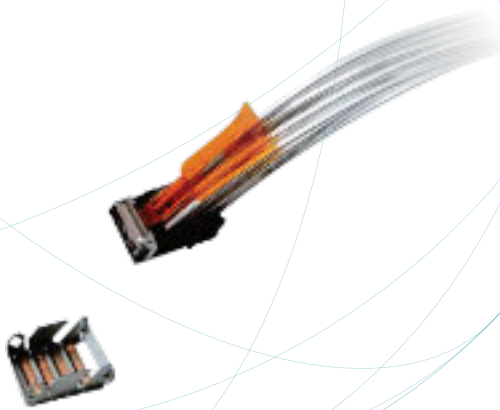
Servers
Data Centers
Supercomputers
Datacom
Optical Transport

PART NUMBERS

Description	Part Numbers
Double ended 16DP micro-LinkOVER™ cable assembly, Screw mount	V59-Y1Z02
Double ended 16DP micro-LinkOVER™ cable assembly, SMT mount	V59-Y1Z03
16DP micro-LinkOVER™ PCB anchor and carrier	V59-DDZ05
16DP micro-LinkOVER™ SMT mount install tool	K2AT01-31-0010000
16DP micro- LinkOVER SMT mount anchor carrier extraction tool	K2AT02-31-0021000

DensiLink® OverPass™ Assemblies

Double Ended High-Density, High-Performance Cable Interconnects



DensiLink® OverPass™ products help avoid high speed signaling through the PCB by providing a double ended, high-density, high performance cabled interconnect solution. These cables enable 56G and 112G signaling in hardware system designs with a roadmap to future 224G signaling.

These products create a low loss connection from the chip site to the external port. Deploying these cables results in less PCB design complexity and reduced PCB and signal recovery costs.

DensiLink® enables arrayed connector layouts for near chip and on package IO solutions, providing the highest differential pair count interconnection near or around the chip site on the market.

- Lower loss interconnect from chip site to external port
- Full support of 56G & 112G signaling speeds and anticipated 224G
- Reduced overall system cost
- Delivers superior signal integrity performance
- Short signal length from cable to board pad

FEATURES

Direct point-to-point connection; hi-density two piece IO connector & cable system
SMT or SMT / through hole leg board connector mounting
Full support of 56G & 112G signaling speeds and anticipated 224G
Straightforward application & termination; pick-n-place board connector & guided cable mating
100% full performance testing and characterization
Full vertical integration of product components
16 differential pair configuration; 32 and 64 pair in development
Pairs with OSFP, QSFP DD and QSFP OverPass™ interfaces to combine high speed external IO port products with a direct link to processor chips
Eliminates the need for re-timers and expensive low loss PCB laminates

BENEFITS

Up to 10x Reduction in signal loss; addresses system thermal and mechanical needs
Robust connector mounting & reliability
Full signal integrity performance compatibility
Ease of assembly into hardware systems
Highest density internal cable solution on the market
Connectors and cable supplied, processed, terminated and tested by Amphenol
Choice of multiple IO solutions to address differential pair count and performance
Fully engineered and vertically integrated 8 channel assembly solutions for 56G, 112G and future 224G signaling systems
Lowers system costs

TECHNICAL INFORMATION

MATERIAL

Contacts: High performance copper alloy
Board Connector Frame: Stainless steel
Pull Tab: Polypropylene
Housings: High performance thermoplastics UV94V-0
Cable: Silver & tin plated copper wire, aluminized mylar shields, fluorinated polymer insulation

ELECTRICAL PERFORMANCE

93Ω characteristic impedance
Supports Ethernet protocol signaling speeds & performance – 10G, 28G, 56G and 112G
EIA: 364 series

MECHANICAL PERFORMANCE

Durability: 25 cycles

ENVIRONMENTAL

EIA-364-1000
Operating Temperature Range: -40°C to +85 °C

APPROVALS AND CERTIFICATIONS

UL 94V-0

SPECIFICATION

DensiLink® Product Specification: HS-07-0017

PACKAGING

Product Specific: Usually package in antistatic bags or plastic clamshells
Protective covers on cable ends for worry free system assembly
Cable is bulked via either a series of cable wraps or snakeskin jacket

TARGET MARKETS/APPLICATIONS



Switches
Routers
Wireless Base Station
Telecom



Servers
Data Centers
Supercomputers
Datacom
Optical Transport

PART NUMBERS

Description	Part Numbers
Double ended 16DP DensiLink® cable assembly, one end up and one end down	V59-YD009
Double ended 16DP DensiLink® cable assembly, both ends down	V59-YD008
16DP board connector, SMT mount	V59-DAZ38-2F0000T (With guide frame) V59-DAZ48-2B0000T (Without guide frame)
16DP board connector, SMT and thru hole leg mount	V59-DAZ49-2A0000T
16 DP DensiLink® Loopback	V59-DAZ52

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