AHSI®

# ExpressPort® QSFP+

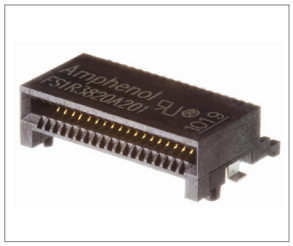
## Product Description

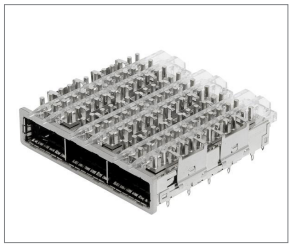
The ExpressPort® QSFP+ interconnect system is comprised of a 38 position 0.8mm pitch SMT connector, and a press-fit cage. With four channels of data in one pluggable, the system interface is capable of transferring data up to 28 Gbps/Channel, and replacing up to 4 standard SFP+ receptacles. These features 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.

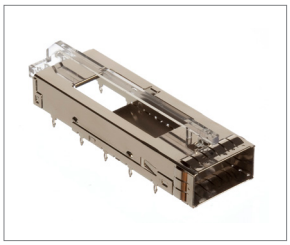
| Applications | |
|---|---|
| Data Servers | SAN, NIC cards |
| Router/Switches | HBA'S |
| Hubs | |

| SFF Supported Standards |
|---|
| **ExpressPort QSFP+** |
| Connector SFF-8682 |
| Cage SFF-8683 |

| Product Specifications - ExpressPort® QSFP+ | | | |
|---|---|---|---|
| **CONNECTOR** | | **CAGE** | |
| **Materials Specifications** | | | |
| **Housing** | Black color, Glass reinfor ced , Lead Free Solder Reflow Process Compatible Thermo Plastic | **PCB Thickness** | 1.44 mm MIN for single mounted. (1xN) |
| **Contacts Base Material** | Phosphor Bronze | **Belly to Belly** | 2.85 mm MIN for 1xN.<br>1.57 mm MIN for 2xN. |
| **Contact Normal Force** | 50 grams min. | | |
| **Plating Solder Tails** | Matte tin | | |
| **Plating Mating Area** | Gold | | |
| **Resonance Dampening Feature** | Conductive Polymer | | |
| **Operating & Storage Temperature** | -40° to +85° C | | |
| **Electrical Specifications** | | | |
| **Operating Voltage** | 30 VDC per contact | | |
| **Operating Current** | 0.5 A per contact | | |
| **Differential Impendance** | 100 Ω +/-10 Ω | | |
| **Mechanical Specifications** | | | |
| **Mating Force** | 40 N Maximum | **Unmating Force** | 30 N Maximum |
| **Durability** | 250 mating cycles | **Insertion Force to PCB** | 780 N for 1 port<br>1000 N for 2 Ports<br>1700 N for 4 Ports<br>2400 N for 6 Ports |
| **Options** | | | |
| **Packaging** | Tape and Reel | **Packaging** | Tray |
| **EMI Options** | Gasket, Spring Fingers | | |
| **Cage Mounting** | Behind Bezel, Thru Bezel, Hybrid | | |
| **Configurations** | 1XN (N=1,2,3,4,6)<br>2XN (N=1,2,3) | | |
| **Environmental Specifications** | | | |
| **RoHS** | Yes | | |
| **Halogen Free** | Yes | | |
| **Flammability Rating** | UL 94V-0 | | |





# Ordering Information

## ExpressPort® QSFP+ (Connector)

FS1 R38 X 0 XX XX

**FS1 — SERIES DESIGNATION**

**R38 — STYLE**
- **R38** - 38 Position (QSFP 10G, ExpressPort® QSFP+ 12G+ & 16G)

**X — 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

**0 — OPTION 1**
- **0** - Standard

**XX — OPTION 2**
- **00** - QSFP Connector
- **A2** - QSFP+ Connector

**XX — SPECIAL - QSFP+ (12 Gbps & UP)**
- **00** - No Resonance Dampening, No Hold Down Tabs
- **01** - No Resonance Dampening, Hold Down Tabs

**SPECIAL - QSFP+ (16 Gbps)**
- **10** - Resonance Dampening, No Hold Down Tabs
- **11** - Resonance Dampening, Hold Down Tabs

## ExpressPort® Stacked QSFP+

U90 B X 0 5 4 X X 1 X X 0

**U90 — SERIES DESIGNATION**

**B — STYLE**
- **B** - Standard

**X — NUMBER OF PORTS IN ROW**
- **1** - 2X1
- **2** - 2X2
- **3** - 2X3

**0 — HEAT SINK OPTION (No Light Pipe Available)**
- **0** - No Heat Sink Option

**5 — APPLICATION**
- **5** - Options Available - Consult Factory

**4 — 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

**X — DUST COVER OPTION**
- **0** - Without Dust Cover
- **D** - With Dust Cover

**X — LIGHT PIPE OPTION**
- **6** - Light Pipes (Triangular Outlet); Left Arrow Pointing Bottom Outlet & Right Arrow Pointing Top Port
- **7** - Without Light Pipes
- **8** - With Light Pipes; Left Arrow Pointing Top Port & Right Arrow Pointing Bottom Port

**1 — PACKAGING**
- **1** - Tray

**X — EMI GASKET OPTION**
- **1** - Chomerics 1273 Conductive Elastomer
- **2** - Chomerics S6305 Conductive Elastomer

**X — VENT HOLES**
- **0** - Large Vent Holes & EMI Cover
- **2** - Small Vent Holes & EMI Cover
- **4** - Rectangular Vent Holes & EMI Cover

**0 — CONNECTOR FOOTPRINT**
- **0** - Standard

## ExpressPort® QSFP+ Cages

U90 X X X 1 1 X X X

**U90 — SERIES DESIGNATION**

**X — STYLE**
- **A** - One Row Cage 0°, Through the Bezel (No Light Pipe)
- **C** - One Row Cage 1°, Through the Bezel (1X1 Only No Light Pipe)
- **D** - One Row Cage 0°, Hybrid with Elastomeric Gasket
- **G** - One Row Cage 0°, Behind the Bezel
- **H** - One Row Cage 0°, Through the Bezel with Optional Light Pipe
- **K** - One Row Cage 0°, Through the Bezel with No Heat Sink Opening
- **L** - One Row Cage 0°, No Pins on Back Wall
- **P** - One Row Cage 0°, Behind the Bezel with Low Profile Heat Sink and Clip
- **R** - One Row Cage 0°, Through the Bezel with Low Profile Heat Sink
- **T** - One Row Cage 0°, Through the Bezel with Low Profile Heat Sink and Clip with Optional Light Pipe
- **W** - One Row Cage 1°, Through the Bezel with No Rear Pin (1X1 Only No Light Pipe)

**X — NUMBER OF PORTS IN ROW**
- **1** - 1X1
- **2** - 1X2
- **3** - 1X3
- **4** - 1X4
- **6** - 1X6

**X — HEAT SINK OPTION**
- **1** - No Heat Sink or Clip Shipped
- **2** - Fin Style(Black Anodized) Heat Sink & Clip (H = 6.5 mm)
- **3** - Fin Style(Black Anodized) Heat Sink & Clip (H = 4.2 mm)
- **4** - Fin Style(Black Anodized) Heat Sink & Clip (H = 13.5 mm)
- **5** - Pin Style(Nickel Plated) Heat Sink & Clip (H = 6.5 mm)
- **6** - Pin Style(Nickel Plated) Heat Sink & Clip (H = 4.2 mm)
- **7** - Pin Style(Nickel Plated) Heat Sink & Clip (H = 13.5 mm)

**X — HEAT SINK OPTION**
- **D** - Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 6.5 mm)
- **E** - Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 4.2 mm)
- **F** - Pin-Fin Style(Black Anodized) Heat Sink & Clip (H = 13.5 mm)
- **N** - Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 6.5 mm)
- **P** - Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 4.2 mm)
- **R** - Pin-Fin Style(Nickel Plated) Heat Sink & Clip (H = 13.5 mm)

**1 — APPLICATION**
- **1** - Press-Fit Pins (2.5mm Long)

**1 — PLATING**
- **1** - Nickel

**X — DUST COVER OPTION**
- **0** - Without Dust Cover
- **D** - With Dust Cover (Shipped Loose)

**X — LIGHT PIPE OPTION**
- **0** - Without Light Pipe
- **1** - Round 1.4mm Outlet Light Pipe
- **3** - Square 2.6x2.6mm Outlet Light Pipe, No EMI Gasket

**X — PACKAGING**
- **1** - Tray (Shipped Unassembled for Single Port)
- **T** - Tape & Reel (1X1 Only)
- **A** - Tray Heat Sink & Clip or Light Pipe Shipped Assembled


Amphenol® High Speed Interconnects

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Product Applications; List represents common uses for the product but is not limited to these uses.
All specifications are subject to change without notice.
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TechBrochure_ExpressPortQSFP+_Rev.1.17

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