OSFP MDI Proposal

S. Kocsis G. McSorley

Mar 06 2016

Amphenol®
High Speed Interconnects

Supporters

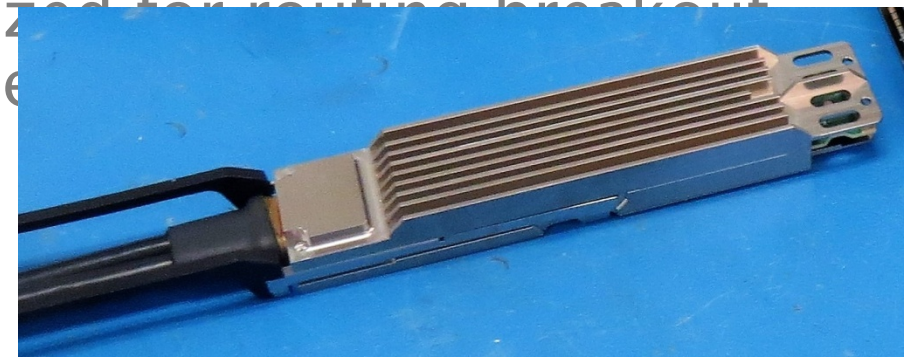
- Rob Stone, Broadcom
- Brian Kirk, Amphenol
- Dave Lewis, Lumentum
- David Piehler, (Dell EMC)
- Joshua Sechrist, Intel
- Nathan Tracy, TE Connectivity
- Ali Ghiasi, Ghiasi Quantum LLC
- Warren Meggit, Arista
- Ed Ulrichs, Source Photonics
- Kapil Shrikhande, Innovium
- Hong Liu, Google
- Scott Sommers, Molex
- Rich Mellitz, Samtec
- William Wang, Finisar
- Fadi Daou, Multilane
- Neil Narbonne, Fourte International Ltd.
- Kohichi R. Tamura, Oclaro
- Dr. Edward P. Sayre, Teraspeed
- Scott Kipp, Brocade

Supporters (cont.)

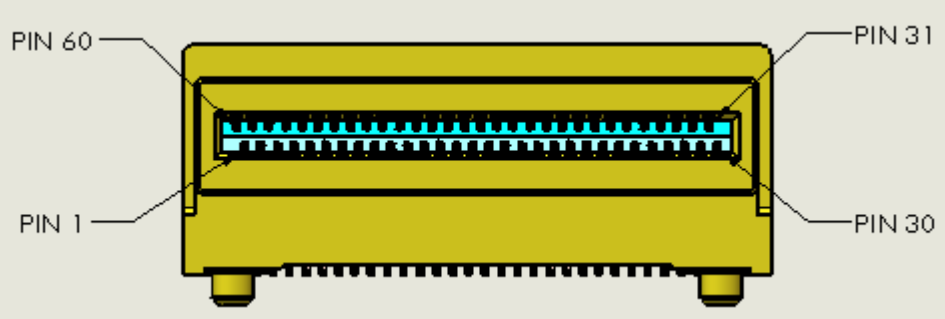
- Gérald Chrétien, Egide-Group
- Christophe Metivier, Arista
- Thananya Baldwin, Ixia
- Nelson Murga, Ixia
- Rick Rabinovich, Ixia
- Jerry Pepper, Ixia
- Dan Symes, Ixia

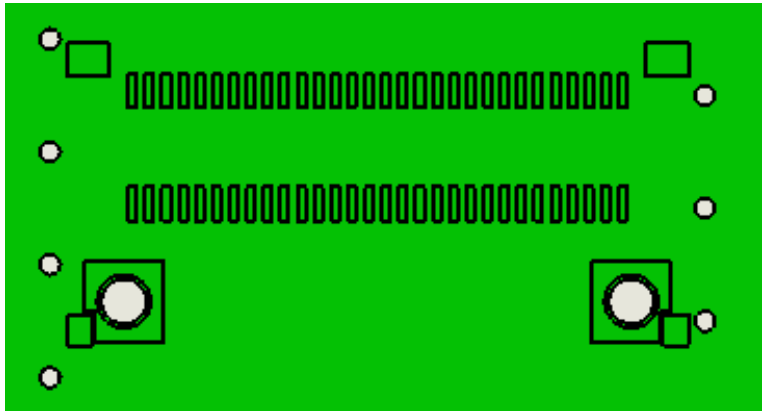
OSFP Features and Benefits

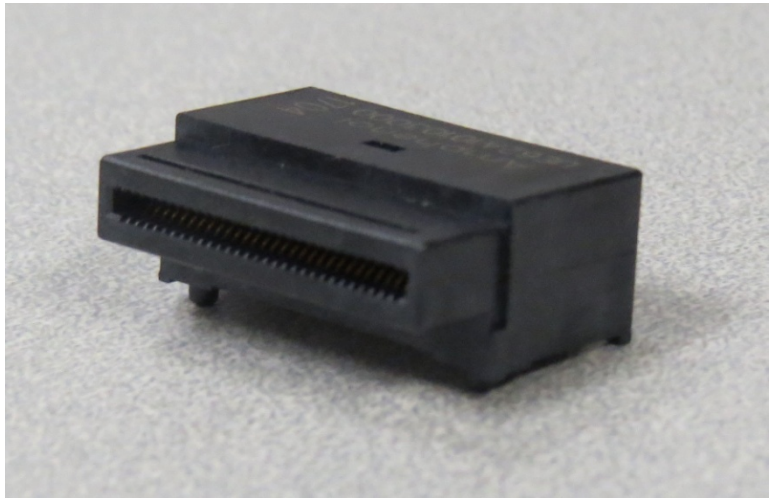
- OSFP interface employs 16 high-speed pairs operating at 25Gb/s NRZ or 50Gb/s PAM-4 for 200Gb and 400Gb aggregated bandwidth solution
- Total of 60 contacts per port defined as 16 differential pairs, 4 control lines, and 4 power pins
- Supports power of at least15W per port
- Heat sinks integrated into the module housing
- Pin definition and footprint optimiz[illegible] convenience and signal integrity pe[illegible]



OSFP Connector







Thermal Enhanced Module Design

- Airflow passes directly through the module (front-to-back)
- Same airflow is used to partially cool the system, so an impedance range is specified, shown on the right
- Simulation data projects that the OSFP module will support ~3x transceiver thermal power compared to QSFP, at the same airflow per port

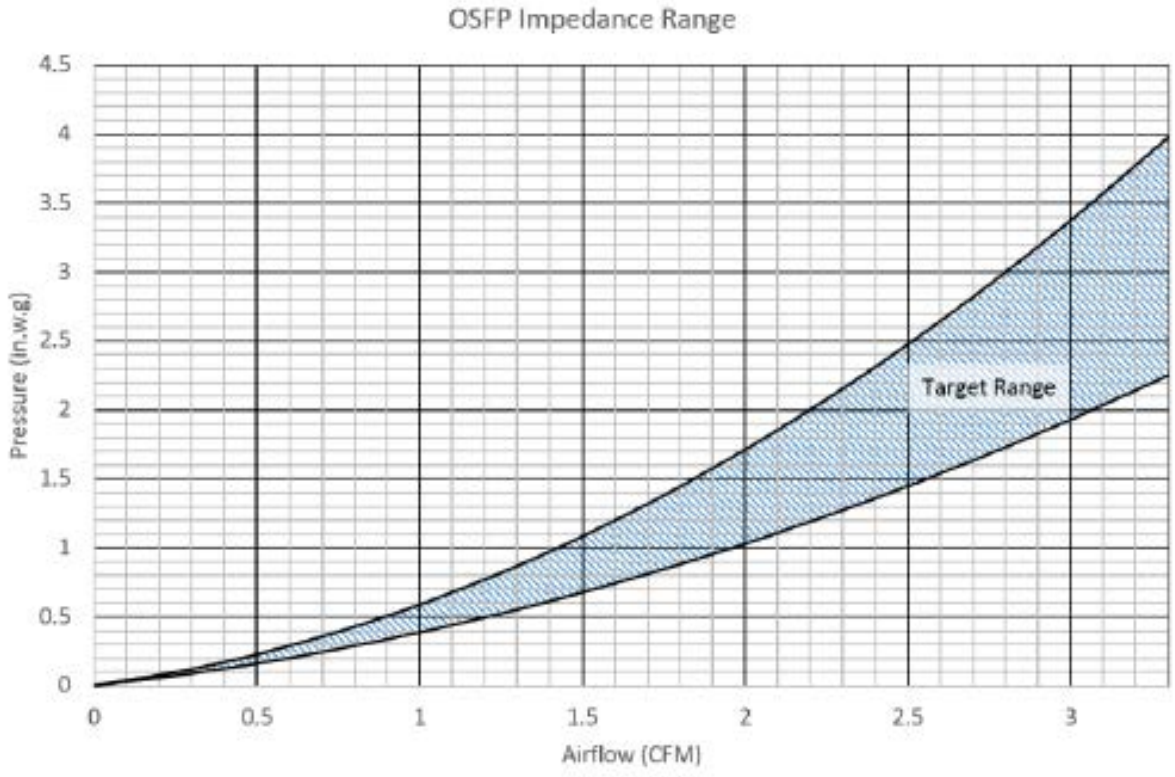
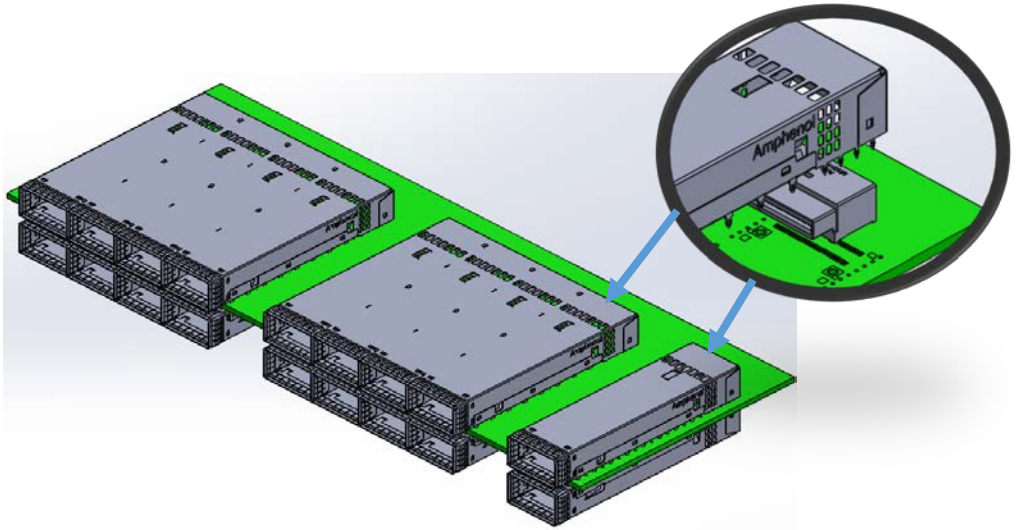
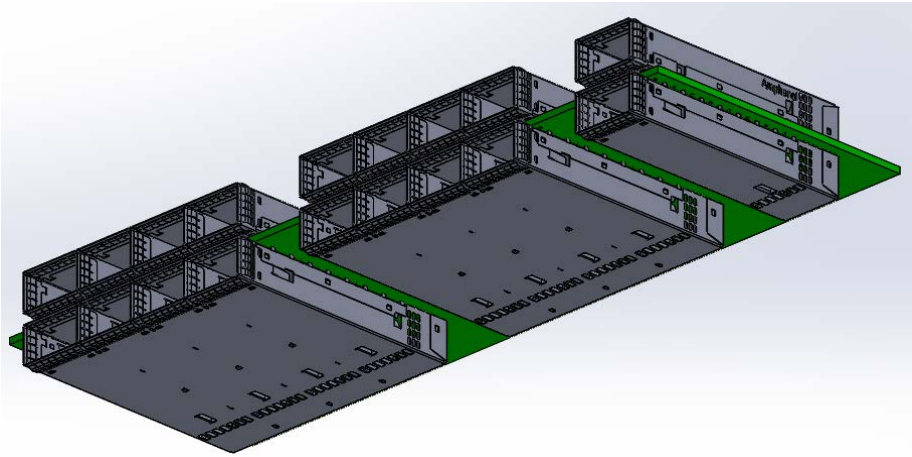


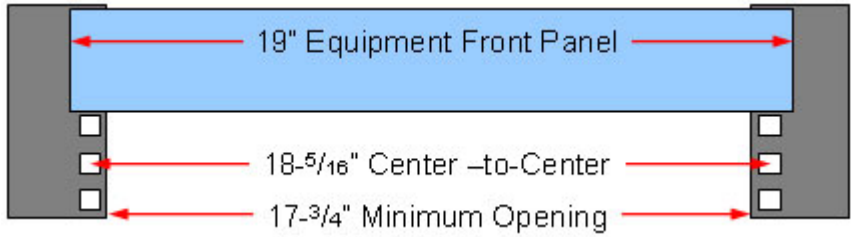
Figure 29: Target range of impediment to airflow of an OSFP module

OSFP Cage Options



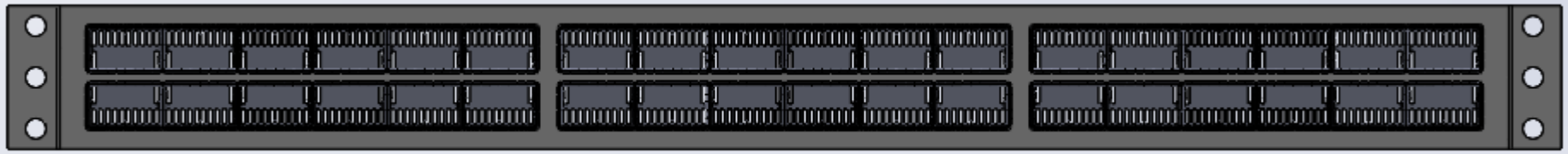


OSFP Front Panel Denisty



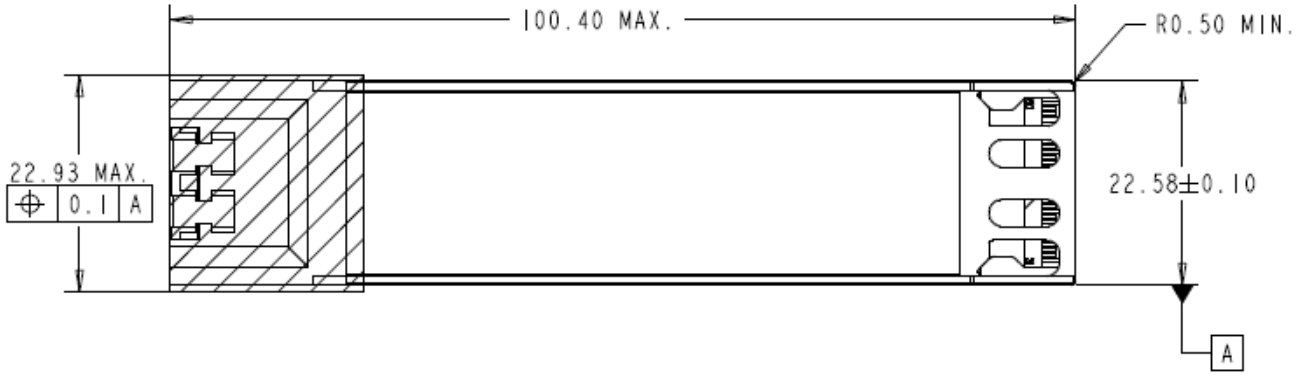
Minimum spacing available
per EIA spec for 1RU

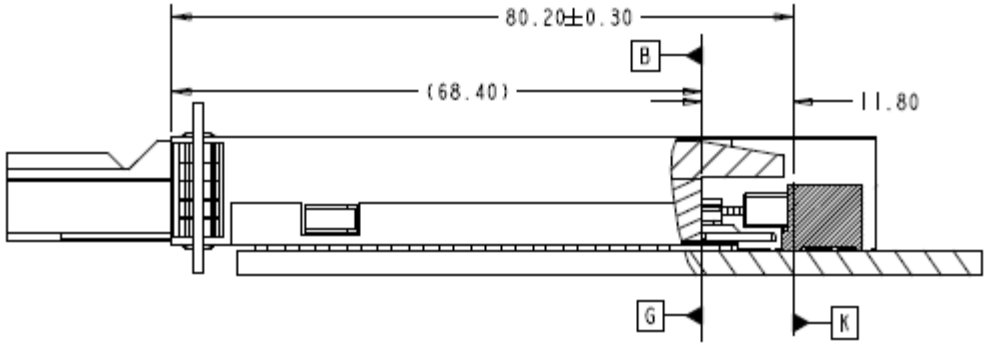
32 ports, OSFP
28(25)/56(50)G
4-1X4 belly to belly

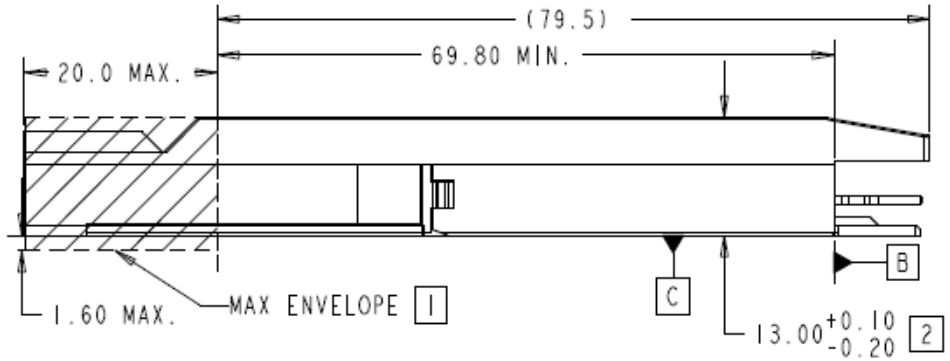


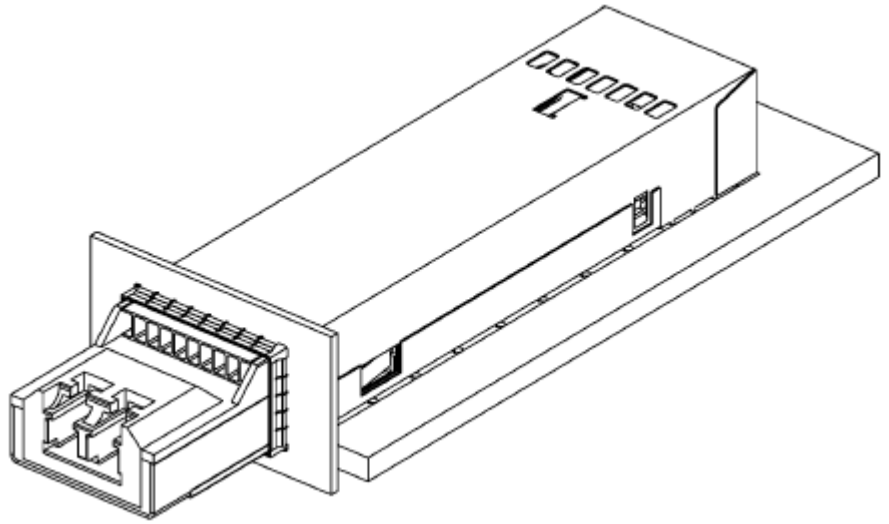
36 ports, OSFP
28(25)/56(50)G
3-1X6 belly to belly

OSFP Module

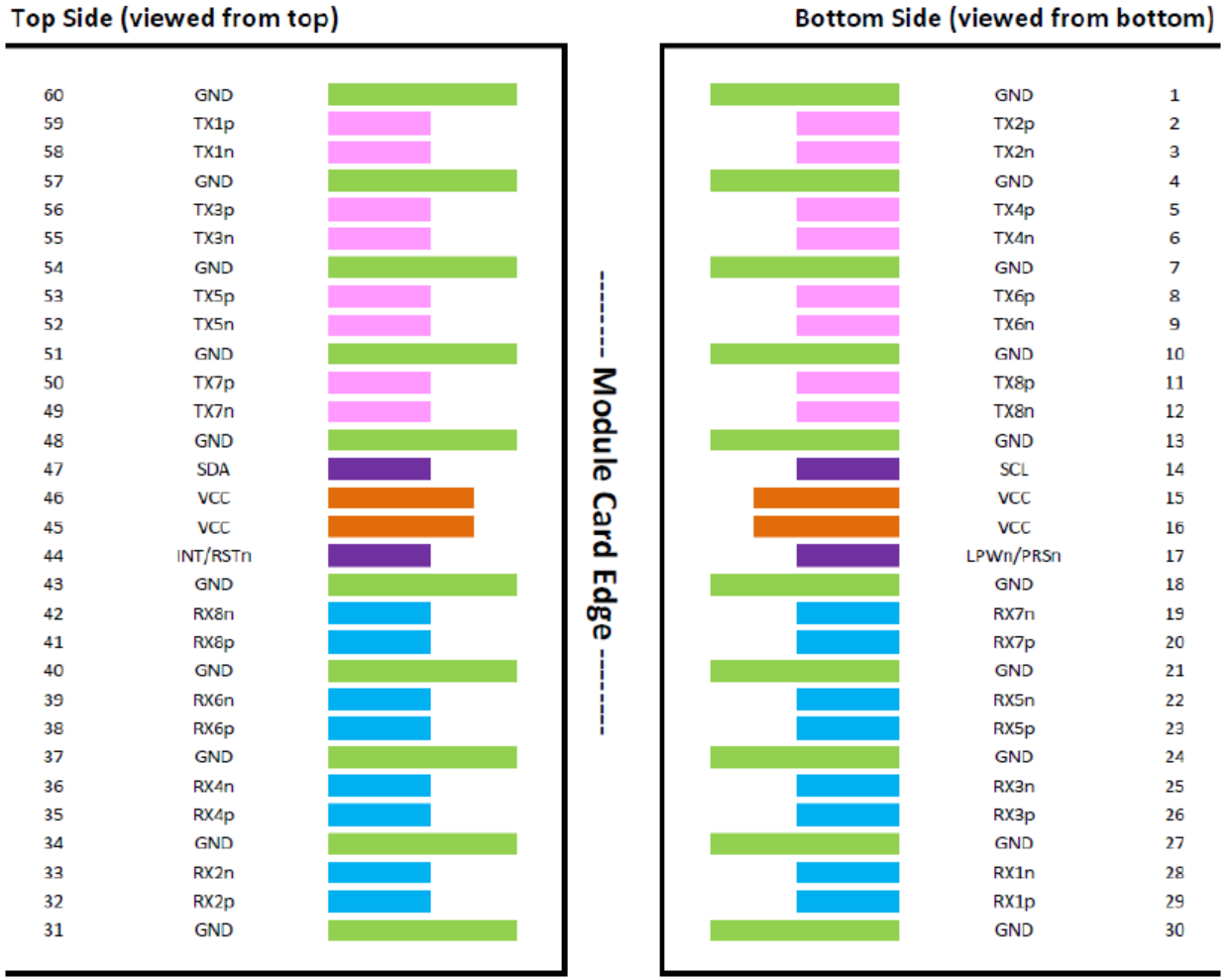

100.40 MAX.
R0.50 MIN.
22.93 MAX.
0.1 A
22.58±0.10
A


80.20±0.30
B
(68.40)
11.80
G
K

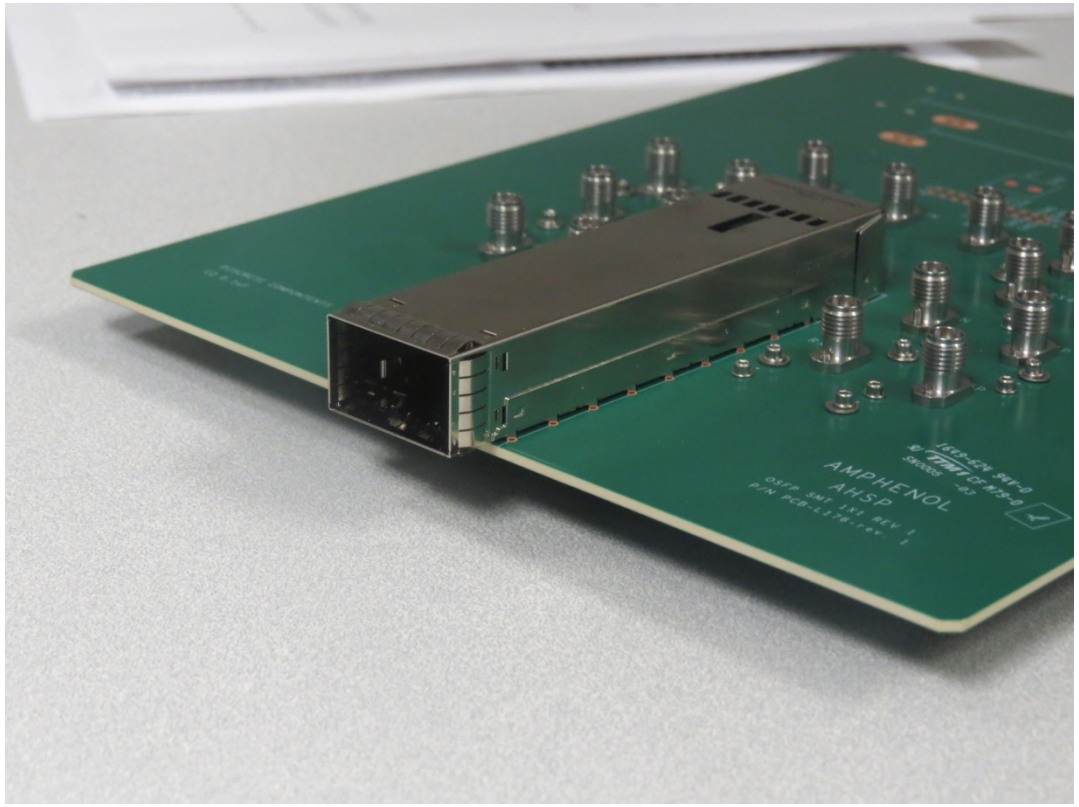

(79.5)
69.80 MIN.
20.0 MAX.
1.60 MAX.
MAX ENVELOPE 1
C
B
13.00 +0.10 -0.20 2



OSFP Module Pinout



OSFP MCB & Cable



OSFP Status

- 2nd draft of the OSFP MSA revision 0.91 is currently being reviewed by the OSFP MSA members.
- Incremental design changes expected as part of the review process
- Updated samples expected in May
- OSFP MSA (www.osfpmsa.org)
- All OSFP MSA documentation is available from the OSFP MSA website
  - Module Specification
  - Management Specification
  - Design Files

Proposal for OSFP MDI to 802.3cd

AHSI®

- 50GBASE-CR
- 100GBASE-CR2
- 200GBASE-CR4

- Formal comments with proposed language, figures, and tables to be provided