

# OSFP MDI Proposal

S. Kocsis G. McSorley

Mar 06 2016

# 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.)

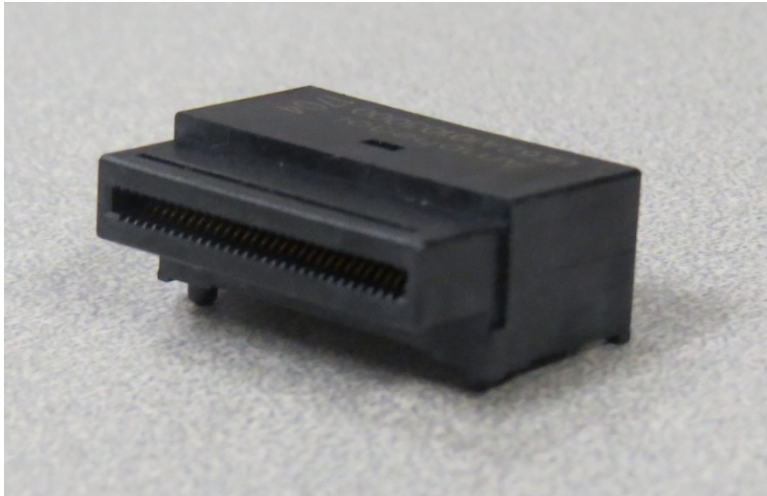
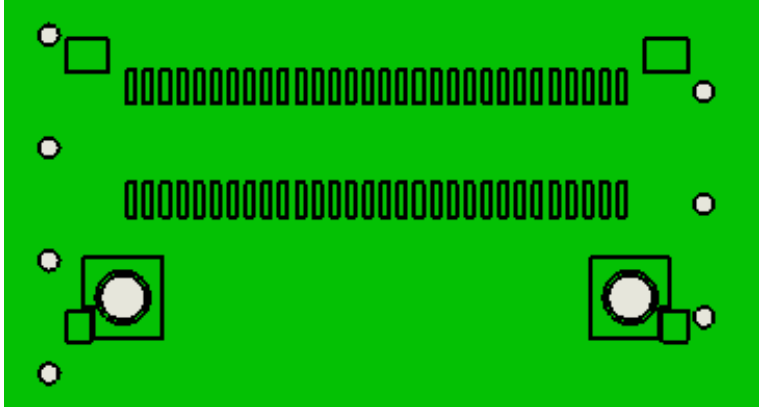
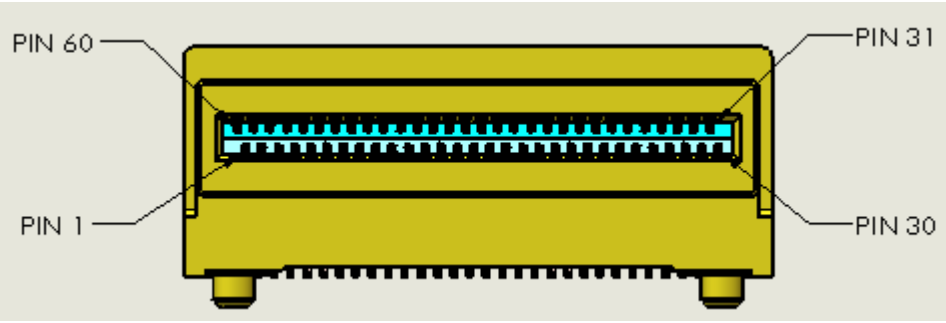
- Gérald Chrétien, Egide-Group
- Christophe Metivier, Arista
- Thananya Baldwin, Ixia
- Nelson Murga, Ixia
- Rick Rabinovich, Ixia
- Jerry Pepper, Ixia
- Dan Symes, Ixia

# 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 least 15W per port
- Heat sinks integrated into the module housing
- Pin definition and footprint optimized for routing breakout convenience and signal integrity performance



# 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

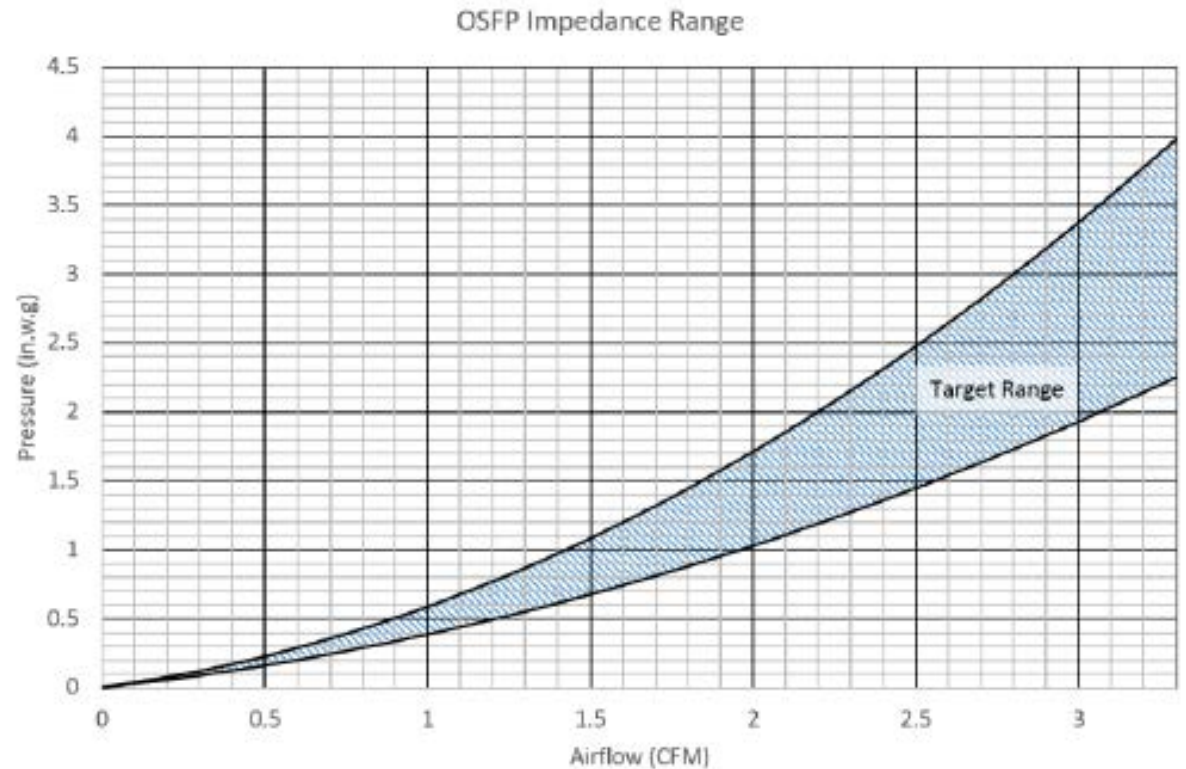
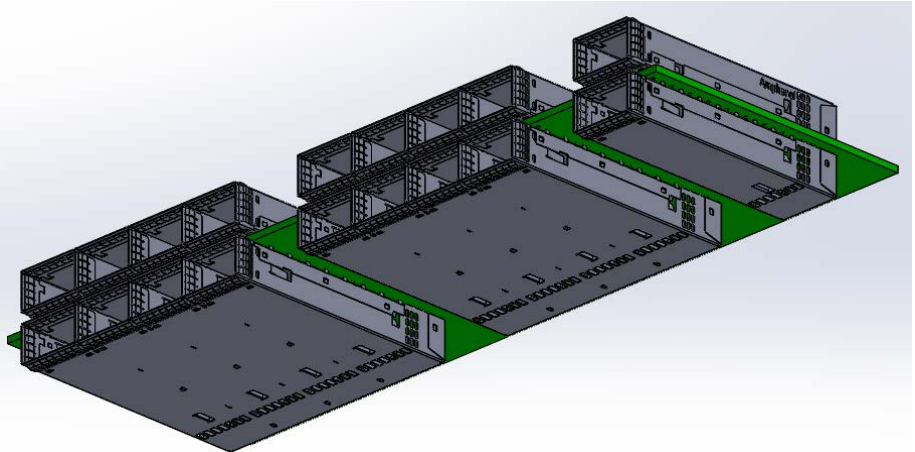
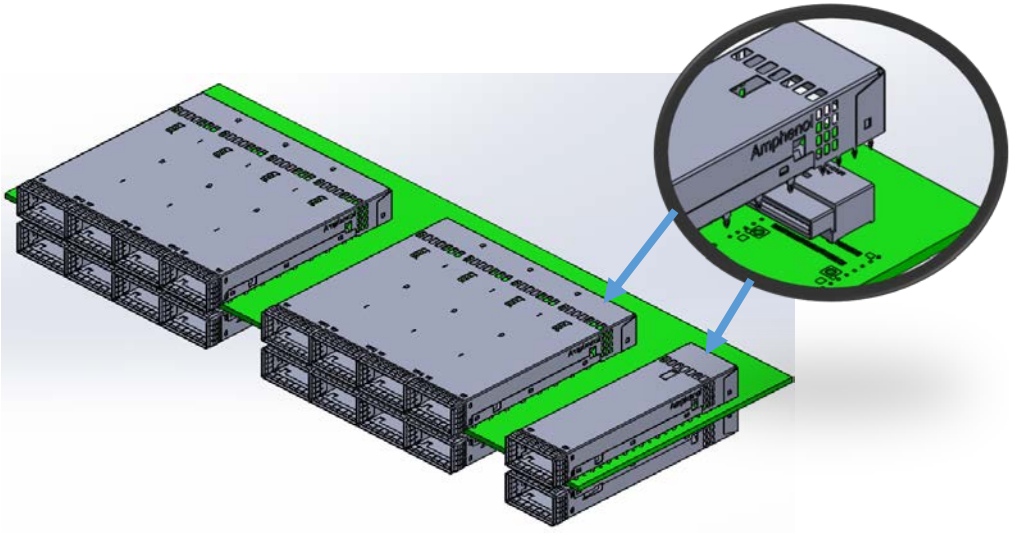
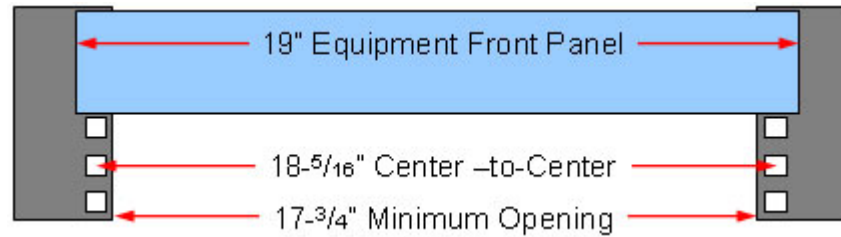


Figure 29: Target range of impediment to airflow of an OSFP module

# OSFP Cage Options



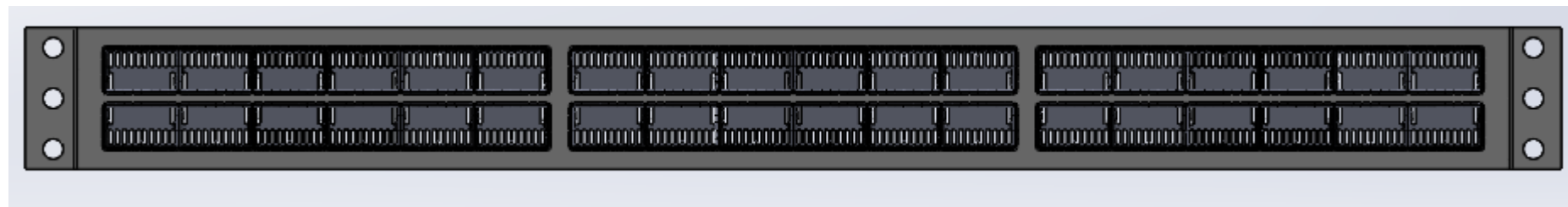
# OSFP Front Panel Density



Minimum spacing available  
per EIA spec for 1RU



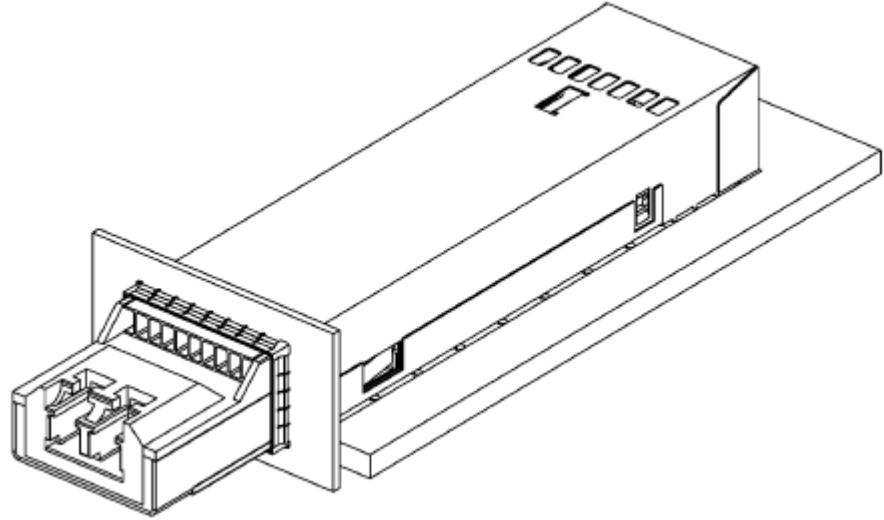
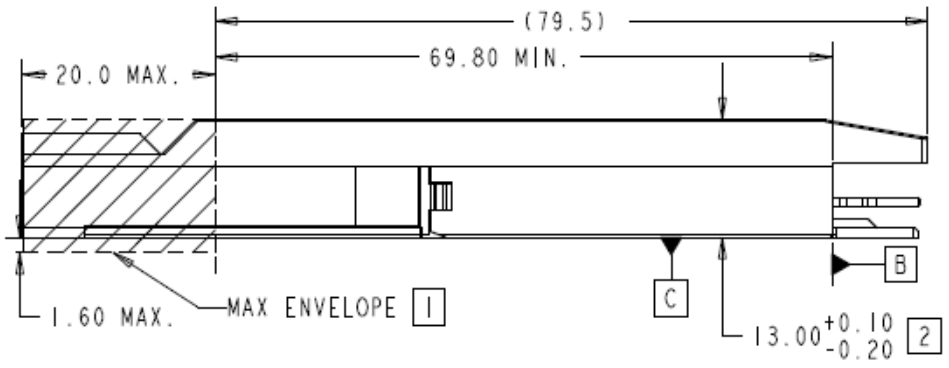
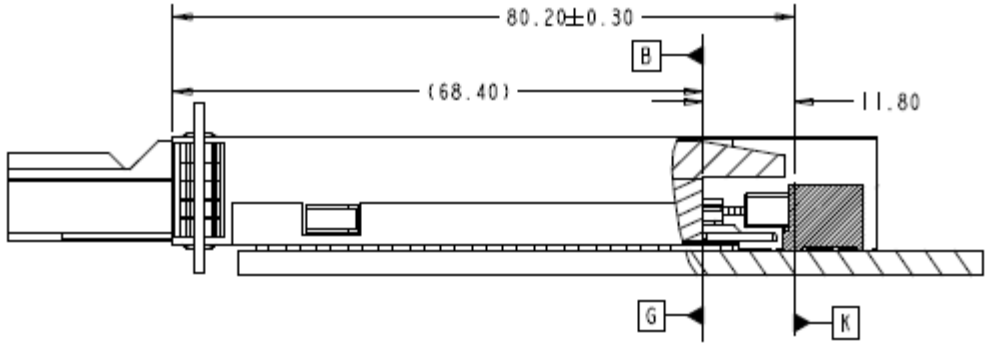
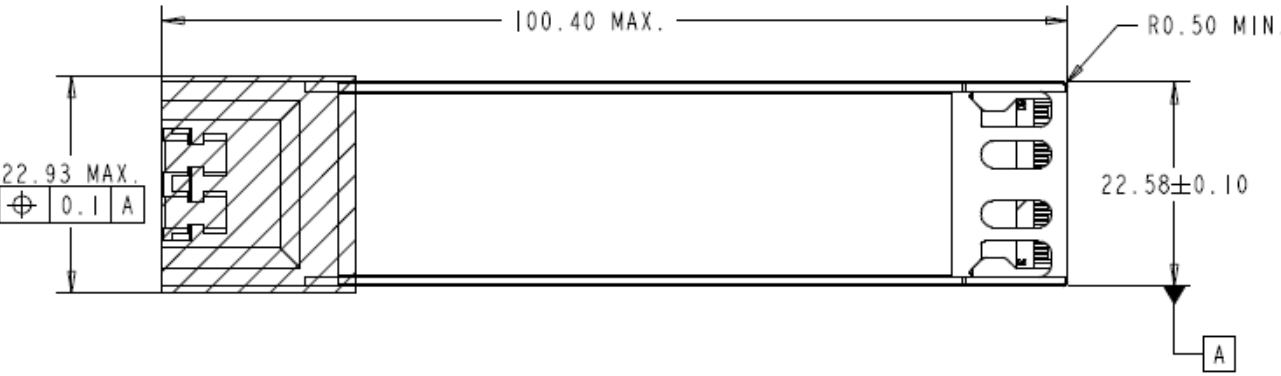
32 ports, OSFP  
28(25)/56(50)G  
4-1X4 belly to belly



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



# OSFP Module



# OSFP Module Pinout

Top Side (viewed from top)

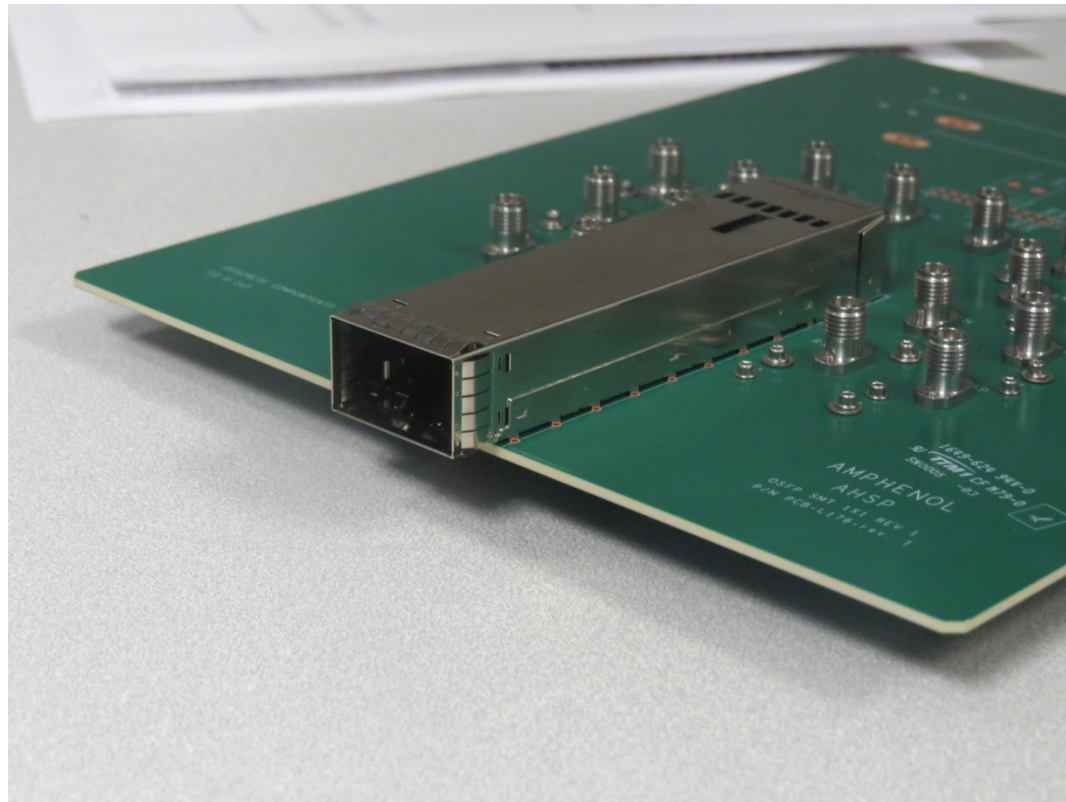
60	GND	Green
59	TX1p	Pink
58	TX1n	Pink
57	GND	Green
56	TX3p	Pink
55	TX3n	Pink
54	GND	Green
53	TX5p	Pink
52	TX5n	Pink
51	GND	Green
50	TX7p	Pink
49	TX7n	Pink
48	GND	Green
47	SDA	Purple
46	VCC	Orange
45	VCC	Orange
44	INT/RSTn	Purple
43	GND	Green
42	RX8n	Blue
41	RX8p	Blue
40	GND	Green
39	RX6n	Blue
38	RX6p	Blue
37	GND	Green
36	RX4n	Blue
35	RX4p	Blue
34	GND	Green
33	RX2n	Blue
32	RX2p	Blue
31	GND	Green

Bottom Side (viewed from bottom)

Green	GND	1
Pink	TX2p	2
Pink	TX2n	3
Green	GND	4
Pink	TX4p	5
Pink	TX4n	6
Green	GND	7
Pink	TX6p	8
Pink	TX6n	9
Green	GND	10
Pink	TX8p	11
Pink	TX8n	12
Green	GND	13
Purple	SCL	14
Orange	VCC	15
Orange	VCC	16
Purple	LPWn/PRSn	17
Green	GND	18
Blue	RX7n	19
Blue	RX7p	20
Green	GND	21
Blue	RX5n	22
Blue	RX5p	23
Green	GND	24
Blue	RX3n	25
Blue	RX3p	26
Green	GND	27
Blue	RX1n	28
Blue	RX1p	29
Green	GND	30

----- Module Card Edge -----

# 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](http://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

- 50GBASE-CR
- 100GBASE-CR2
- 200GBASE-CR4
  
- Formal comments with proposed language, figures, and tables to be provided