

OSFP MDI Proposal

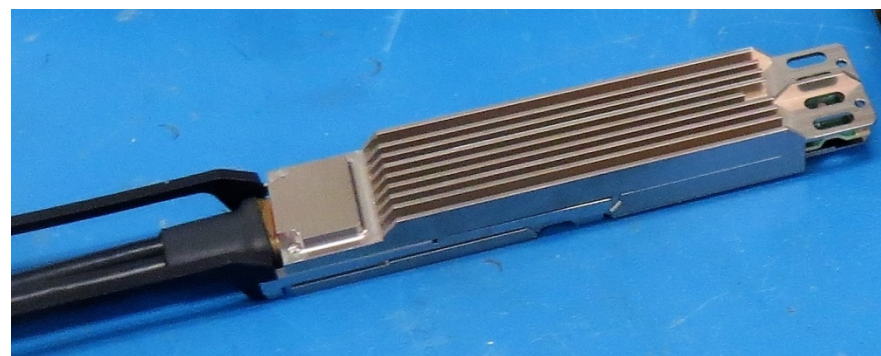
S. Kocsis G. McSorley

Mar 06 2016

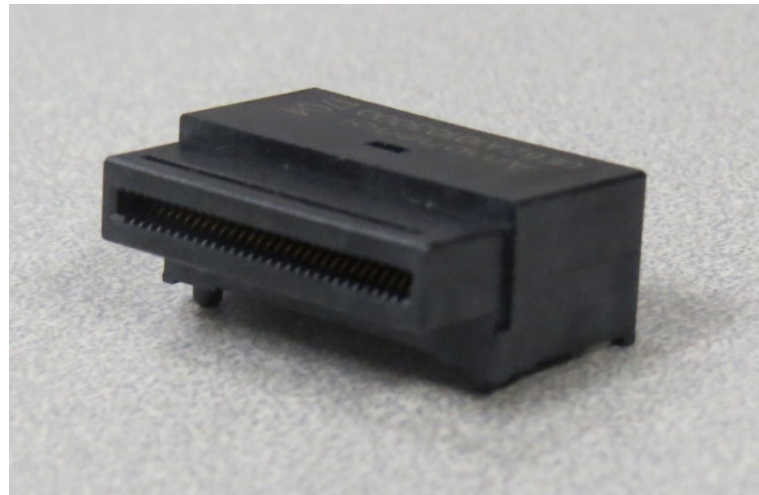
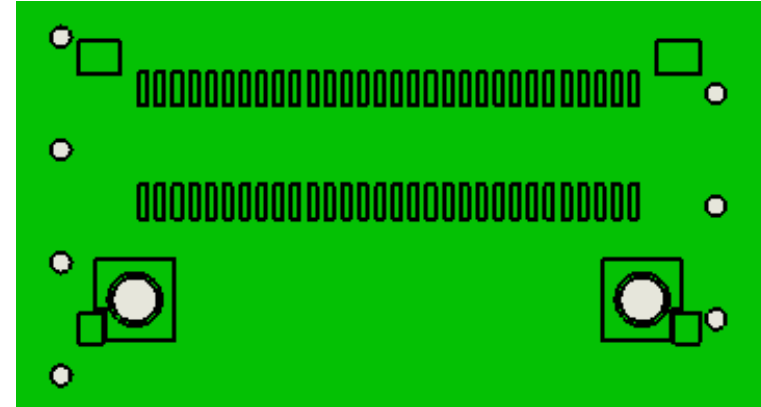
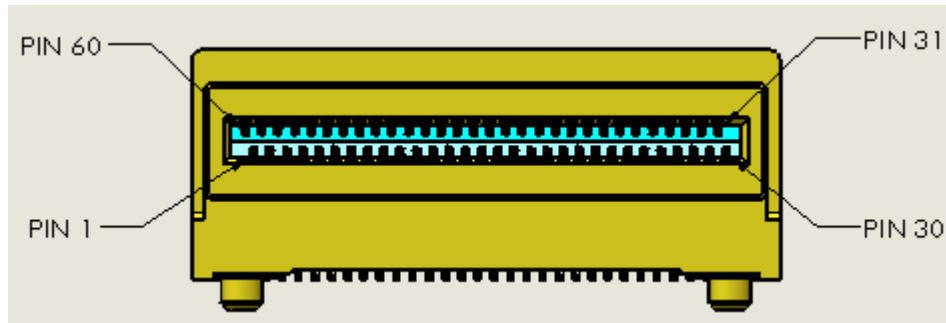
Supporters

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 maximum power of 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

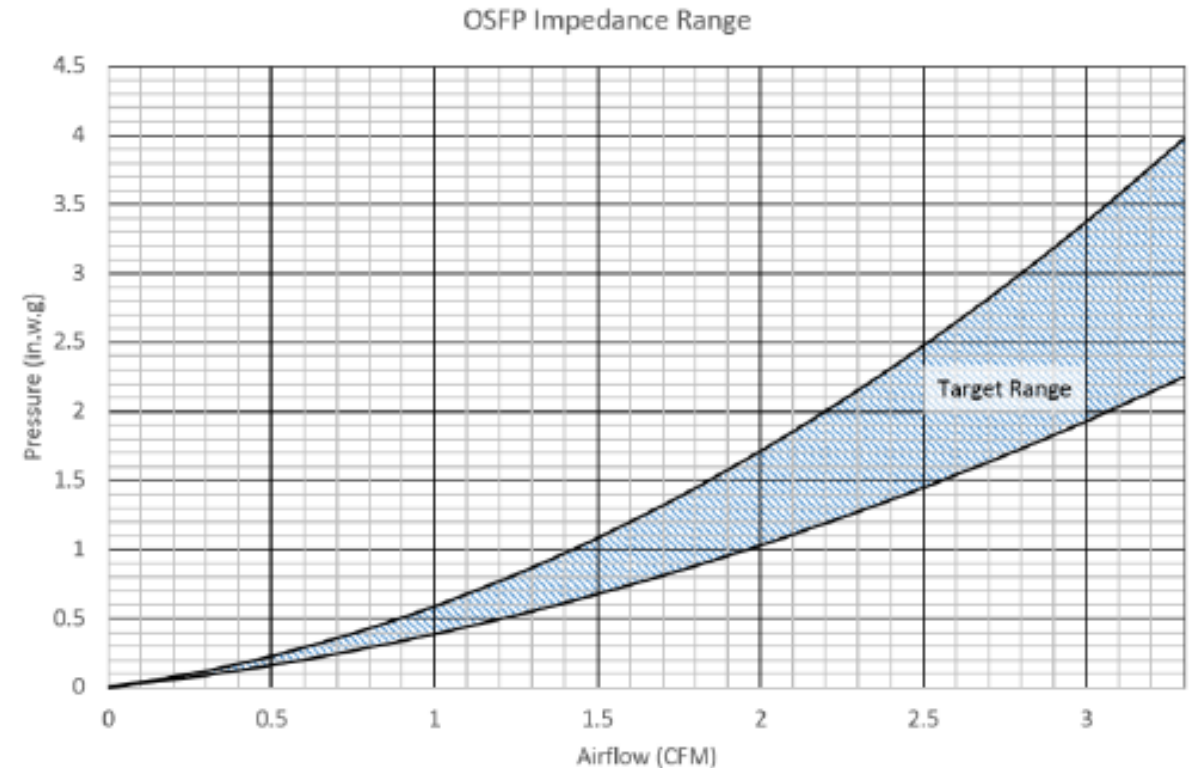
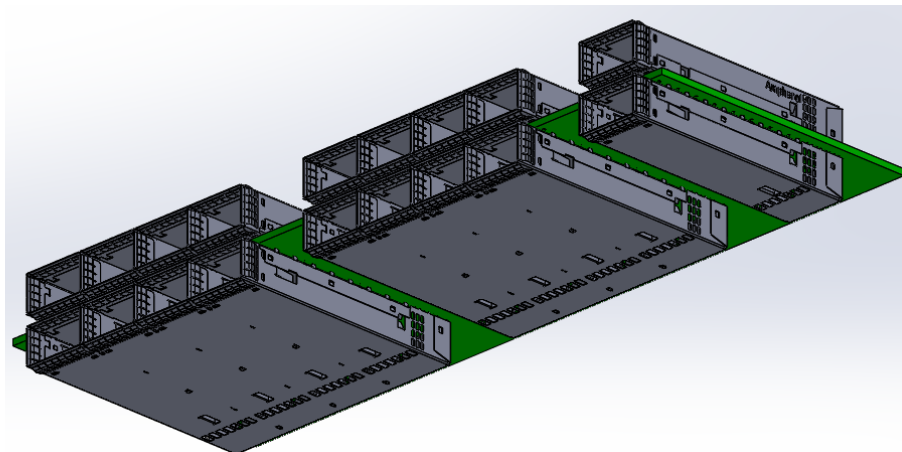
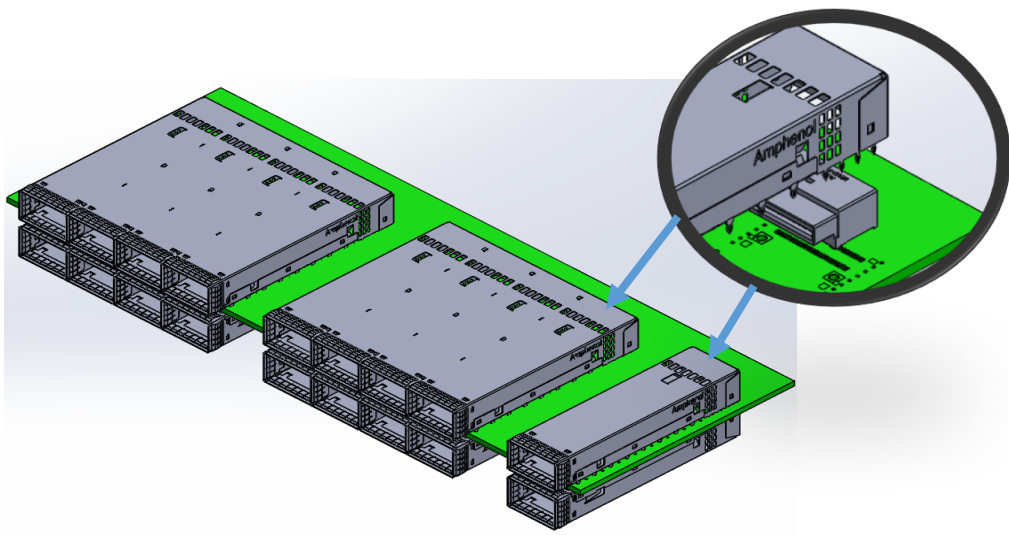
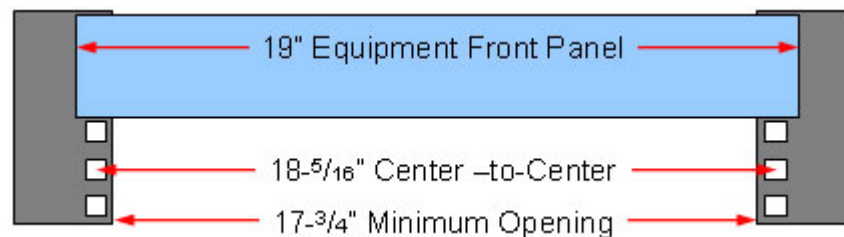


Figure 29: Target range of impediment to airflow of an OSFP module

OSFP Cage Options



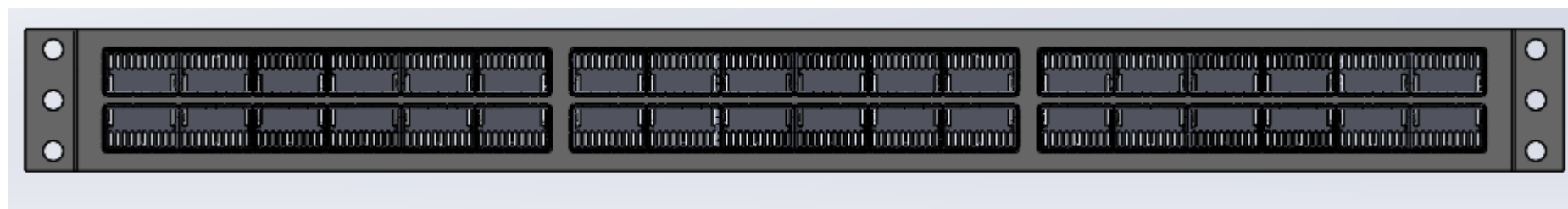
OSFP Front Panel Density



Minimum spacing available
per EIA spec for 1RU

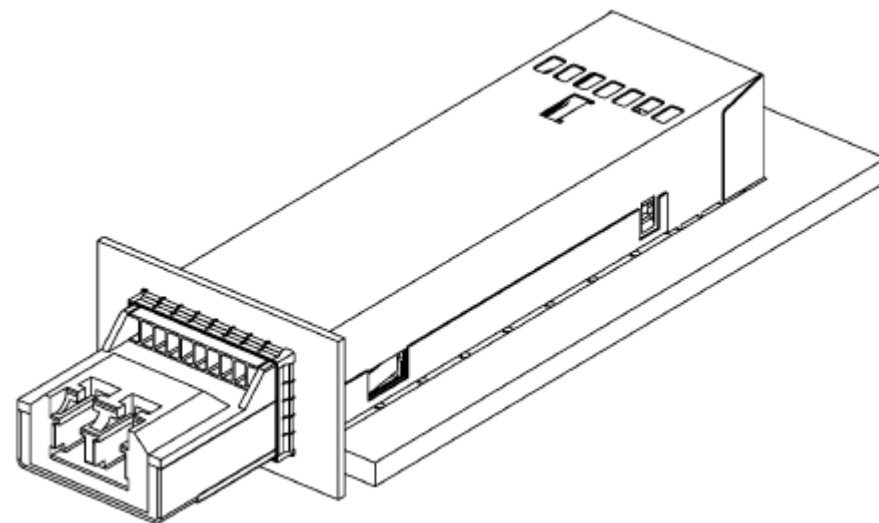
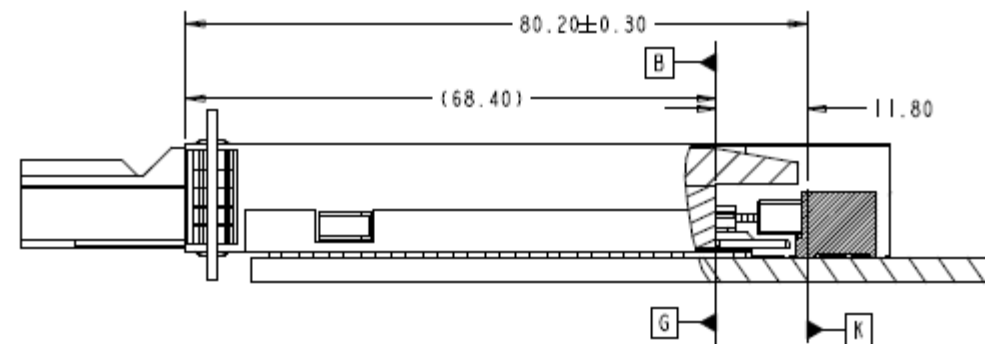
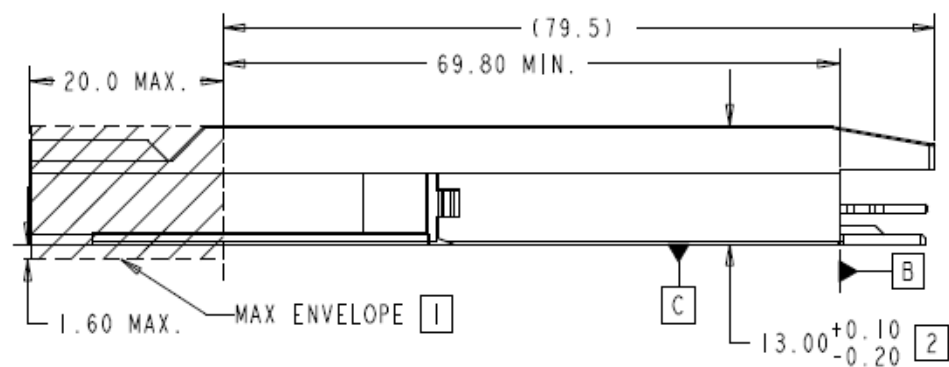
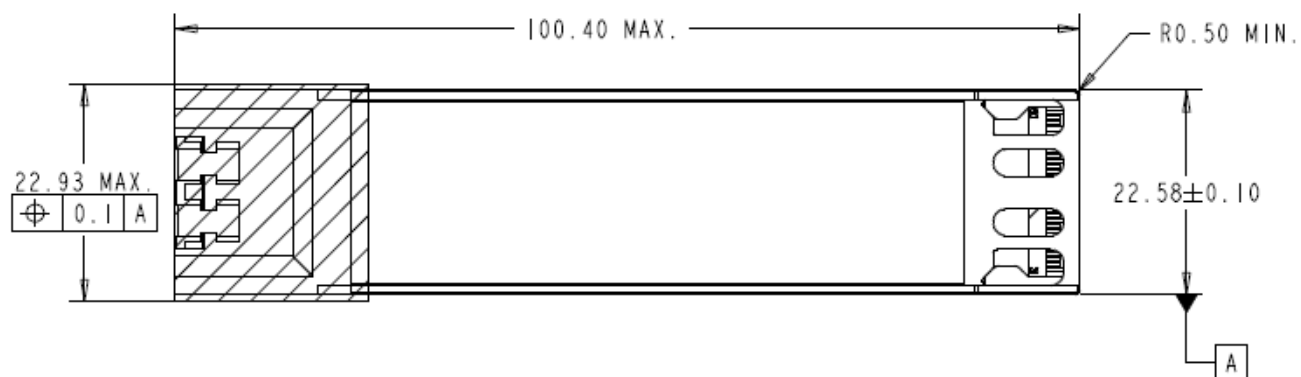


32 ports, OSFP
28(25)/56(50)G
4-1X4 belly to belly



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

OSFP Module



OSFP Module Pinout

Top Side (viewed from top)

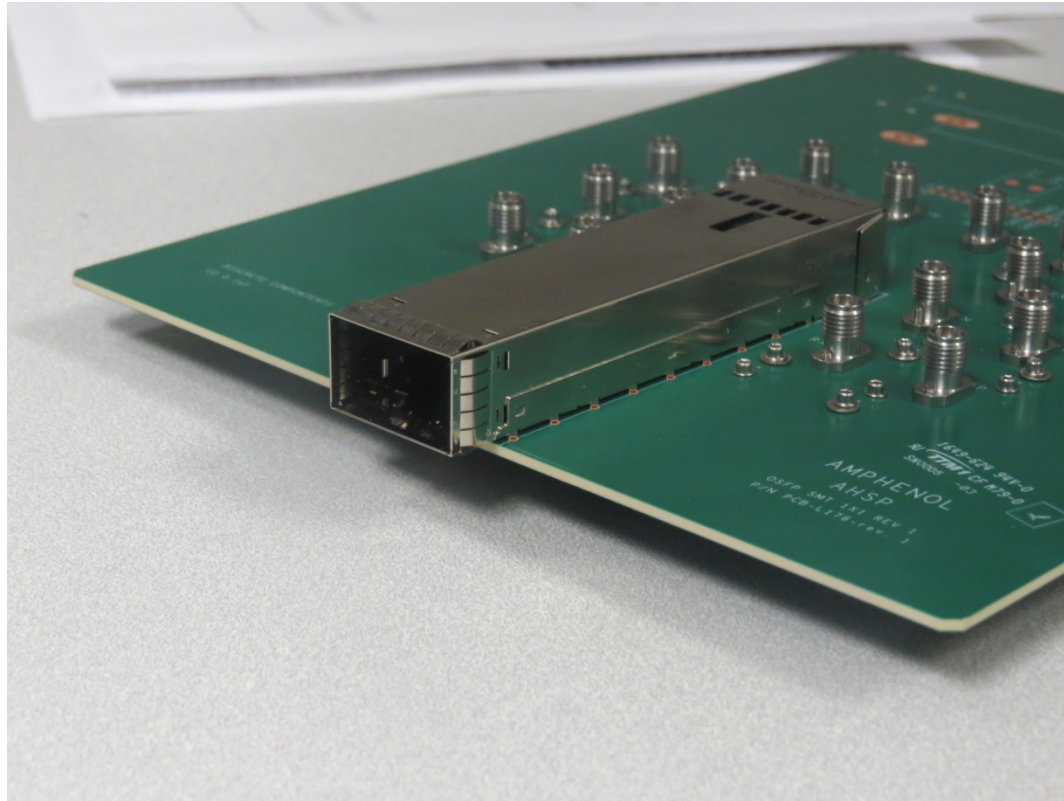
60	GND	
59	TX1p	
58	TX1n	
57	GND	
56	TX3p	
55	TX3n	
54	GND	
53	TX5p	
52	TX5n	
51	GND	
50	TX7p	
49	TX7n	
48	GND	
47	SDA	
46	VCC	
45	VCC	
44	INT/RSTn	
43	GND	
42	RX8n	
41	RX8p	
40	GND	
39	RX6n	
38	RX6p	
37	GND	
36	RX4n	
35	RX4p	
34	GND	
33	RX2n	
32	RX2p	
31	GND	

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

Bottom Side (viewed from bottom)

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

OSFP MCB & Cable



OSFP Status

- OSFP Baseline Design Rev? is now in formal comment resolution by OSFP MSA Mechanical working group
- 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

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