

Next Gen PMD CFP MSA Baseline Specifications

CFP MSA Member Companies:

Avago Technologies

Finisar Corp.

Fujitsu Optical Components

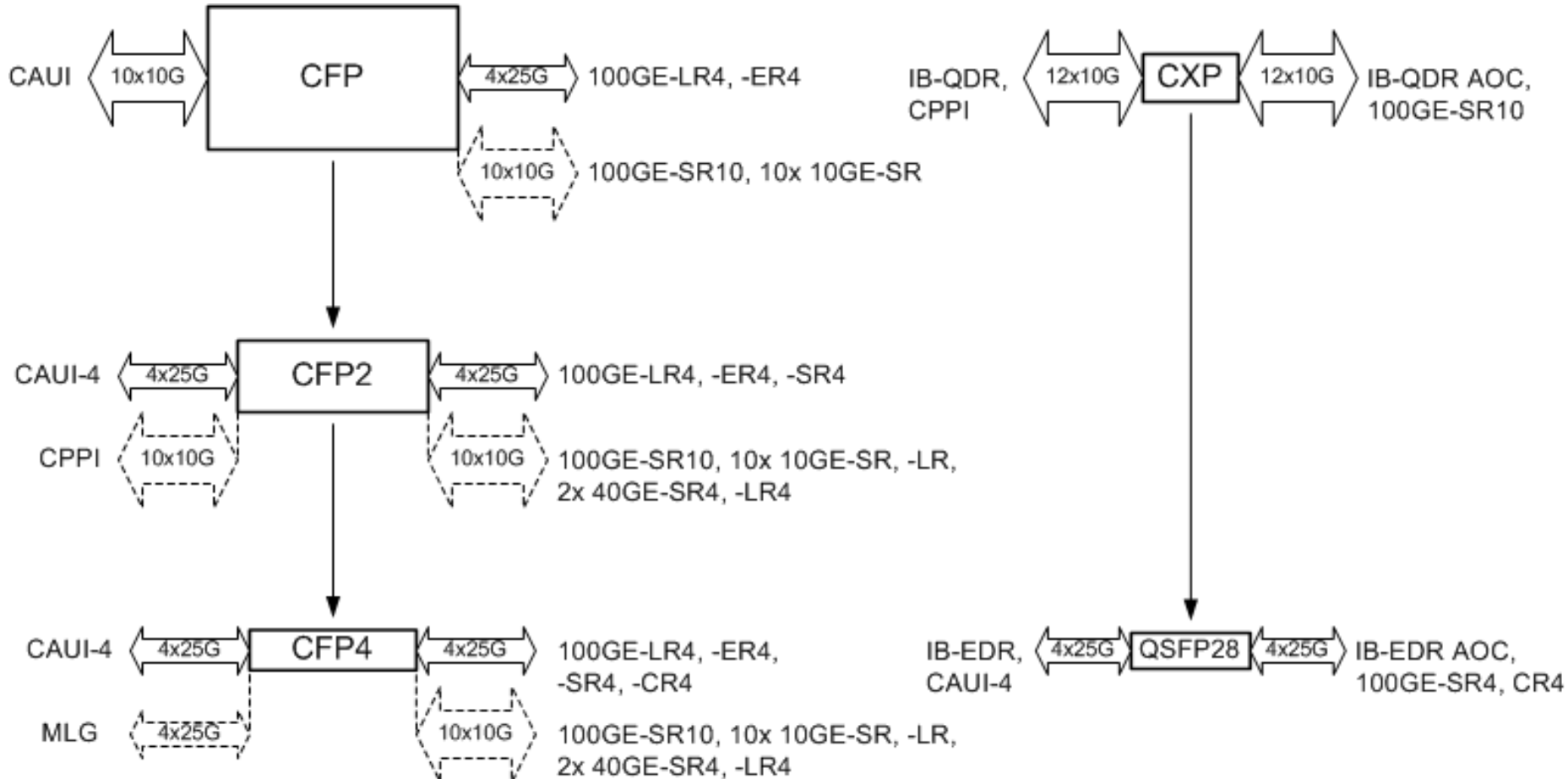
Oclaro, Inc.

Sumitomo Electric Industries

21 September 2012

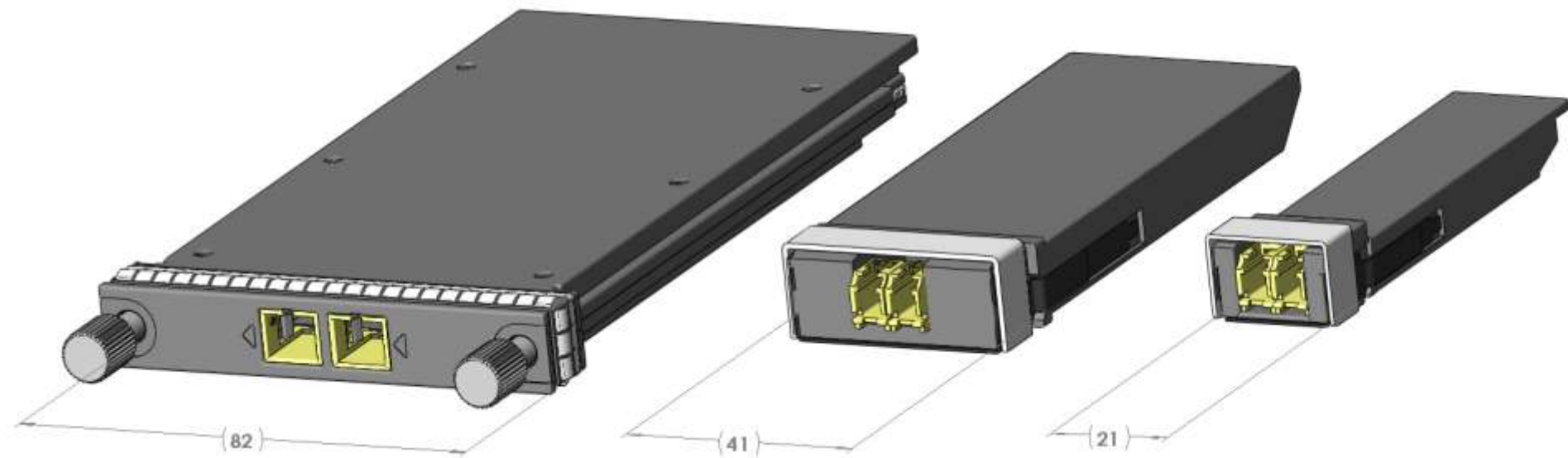


100G Modules

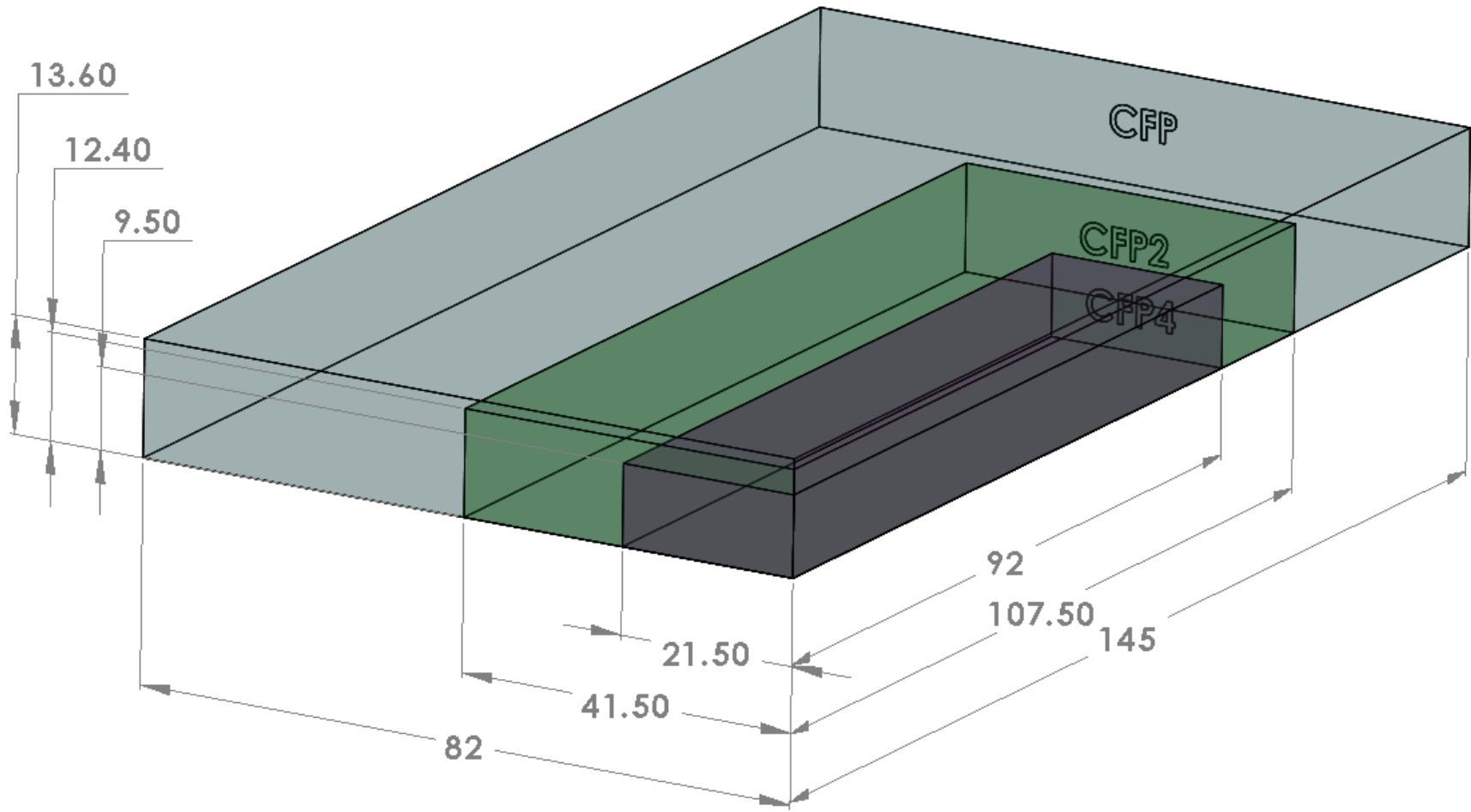


Module shapes all drawn approximately to same scale

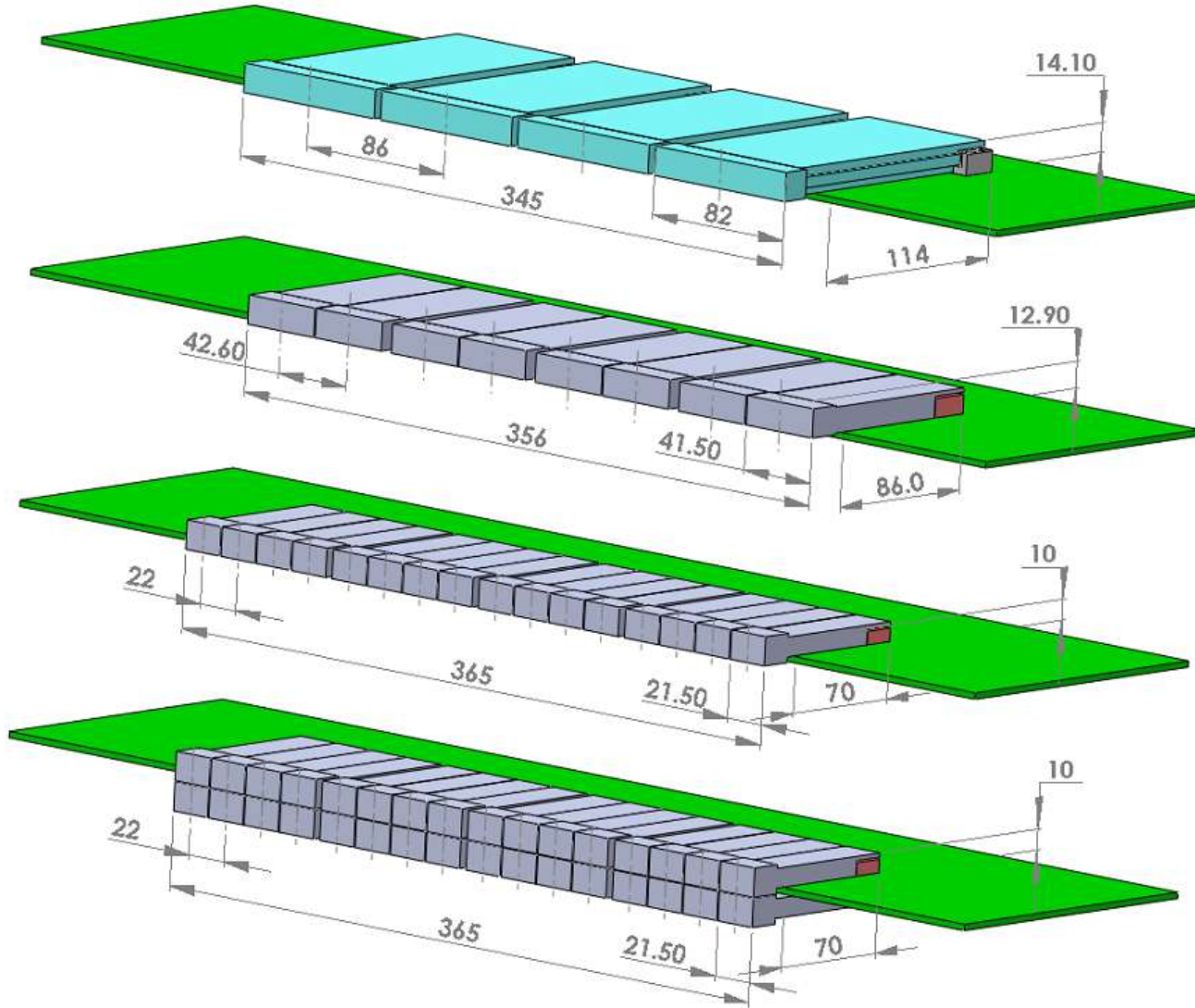
CFP 100G Module Relative Sizes



CFP 100G Module Relative Sizes



CFP 100G Module Densities



4x CFP
(or 5x)

8x CFP2
(or 10x)

16x CFP4
(or 20x)

32x CFP4
belly-to-belly
(or 40x)

Functional Specifications

Category	CFP	CFP2	CFP4	QSFP28
Applications	Ethernet, Telecom	Ethernet, Telecom	Ethernet, Telecom	Ethernet, IB
Host rates	10.3G, 11.2G	10.3G, 25.8G, 28G	10.3G, 25.8G, 28G	10.3G, 25.8G, 28G
Firmware MIS	CFP MSA MDIO	CFP MSA MDIO	CFP MSA MDIO	I2C
Hardware MIS	CFP MSA HW I/O	CFP MSA HW I/O	CFP MSA HW I/O	SFF HW I/O
Total pins	148	104	56	38
Voltages (V)	3.3	3.3	3.3	3.3, VccTx, VccRx
TX + RX (Diff. Pairs)	10+10, 11+11, 12+12	4+4, 8+8, 10+10	4+4	4+4
Monitor Clocks (Diff. Pairs)	2	2	1	No
REFCLK	Yes	Optional	Optional	No
Internal RX REF oscillator	Yes	Optional	Optional	No
Mechanism	Screws	Latch	Latch	Latch
Connector	CFP MSA 11G	CFP MSA 56G	CFP MSA 56G	SFF 8661
Heat Sink	riding (flat top)	riding (flat top)	riding (flat top)	riding (flat top)
Optical Connectors	SC/LC /MPO12/24	LC/MPO12/24	LC/MPO12/24	LC/MPO12

Mechanical and Thermal Specifications

Category	CFP				CFP2				CFP4				QSFP28			
Ports in 365 (445) mm faceplate	4 (5)				8 (10)				16 (20)				18 (22)			
Module width (mm)	82 (76 main top)				41.5				21.5				18.3			
Module length (mm)	145				107.5				92				74			
Module main body height (mm)	13.6				12.4				9.5				8.5			
Module PCB thickness (mm)	1.6				1				1				1			
Module top side space (mm)	7				7				4.1				4.1			
Module bottom side space (mm)	3				2.4				2.4				1.4			
Module ganged cage pitch (mm)	86				42.6				22				20			
Host depth (mm)	114				86				70				52			
Host height (mm)	14.1				12.9				10				10			
Connector pad pitch (mm)	0.8				0.6				0.6				0.8			
Connector cntr. to host PCB (mm)	5.3				4.4				4.4				3.4			
Power classes (W)	8.0	16	24	≥32	3.0	6.0	9.0	≥12	1.5	3.0	4.5	≥6.0	1.5	2.0	2.5	≥3.5
Power densities (W/inch ²)	0.6	1.1	1.7	≥2.2	0.6	1.1	1.7	≥2.2	0.7	1.3	2.0	≥2.6	1.2	1.6	2.0	≥2.8