CW WDM MSA

Defining laser standards for AI, HPC and high-density optics

Preparing for the jump to 8, 16, and 32 wavelengths

Fast-evolving AI, HPC, and high-density optics applications are already pushing the limits of datacom optics defined by IEEE and MSA standards. To enable leaps in performance, efficiency, cost, and bandwidth scaling, the industry needs to move beyond single-and four-wavelength division multiplex (WDM) interfaces to higher wavelength counts.

Industry leaders in silicon photonics formed the Continuous-Wave Wavelength Division Multiplexing Multi-Source Agreement (CW-WDM MSA) to standardize WDM CW sources in O-band for emerging advanced integrated optics applications that are expected to move to 8, 16, and 32 wavelengths.

The goal of the MSA is to generate a set of specifications for optical power sources. Upon broad adoption of the standard, vendors will benefit from a robust supply chain and suppliers from a unified, large market to sell into.

A practical, flexible approach

To minimize the development effort required by suppliers and reduce product time-to-market, the CW-WDM MSA will leverage optical specifications in previous standards, including IEEE 100GBASE-LR4 and ITU-T DWDM G.694.1.

At the same time, the CW-WDM MSA is different from optical communication standards in that it focuses solely on defining optical source specifications instead of the full communication link. The standard is not targeted at any single application and will support many use cases. Our approach enables developers to fully optimize links without interoperability constraints while simultaneously creating a large business opportunity for optical source suppliers.

CW-WDM MSA highlights

- Frequency assignments for 8, 16, and 32 wavelength grid configurations with multiple grid spacings.
- Two physical configurations including a modular optical source with each output port carrying a single wavelength, and an integrated optical source with each output port carrying all the wavelengths.
- A range of output power classes targeting applications that require very low and very high output levels.
- Definitions of optical parameters and measurement methods, including relative intensity noise, side mode suppression ratio (SMSR), and linewidth.
- Fixed and flexible wavelength grid configurations to allow for deployment in a variety of environmental conditions.

Meet our Promoter Members

Promoter Members develop the specifications, contribute and license IP, and vote on the standard.

Meet our Observer Members

Observer Members are informed of the specification development details on an ongoing basis and can contribute to the specifications through Promoter Members.

Acacia Communications, Inc.
Alibaba Group
AMD
Advanced Micro Foundry
AXALUME
Broadcom
Cadence
Compound Semiconductor Centre
DenseLight Semiconductors
ePIXfab
Hisense Broadband
Freedom Photonics
Furukawa Electric Group
GlobalFoundries
Hewlett Packard Enterprise
Hitachi
Innolume
Inphi
Irixi
Keysight Technologies
Lightelligence
Liturex
MicroR systems
NeoPhotonics
NVIDIA
Octave Photonics
OpenLight
Phononic
POET Technologies
Quantifi Photonics
Samtec
SCINTIL Photonics
SEMTECH
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SiFotonics
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To learn more, access our technical specifications, or join the CW-WDM MSA, visit: cw-wdm.org