

Optical engines

AccessWave50™

Seamless migration to 50G with DWDM tunability

Benefits

- Auto-tunable SFP56 pluggable transceiver for native transport of 50Gbit/s Ethernet and eCPRI over DWDM links up to 15km
- Adtran's patented distance-optimization and signal-shaping technology
- Electrically and mechanically compliant to SFP56 standard cages
- Health and status monitoring of remote-end plug through out-of-band communication channel
- Wavelength auto-tuning technology with full C-Band flexibility
- Hardened design for outdoor deployment, including in radio units
- Low power consumption (<3W)

Overview

Rising traffic demand is driving the need for 50Gbit/s line rates in 5G fronthaul networks.

Yet for many operators, upgrades can be costly and disruptive. AccessWave50™ provides a simple, innovative way to enable 50Gbit/s Ethernet (50GbE) and eCPRI services over DWDM links – directly from any device with an SFP56 port. With full C-band tunability and wavelength auto-tuning, it offers far greater flexibility and operational simplicity than fixed-wavelength solutions.

AccessWave50™ combines a standards-compliant SFP56 form factor with PAM4 direct detection technology to deliver plug-and-play connectivity to DWDM infrastructure. Supporting both 50GbE and 50Gbit/s eCPRI, AccessWave50™ is also designed for outdoor deployment thanks to its industrial-temperature (I-temp) design, making it ideal for 5G radio units. Our patented distance-optimization and signal-shaping technologies enable reach of up to 15km over SMF28 fiber.

AccessWave50™ is engineered to reduce operational costs and complexity. Its auto-tuning capabilities eliminate manual wavelength configuration, shorten setup time and reduce human error. The tunable C-band interface streamlines inventory and simplifies spares management, while an out-of-band communication channel allows monitoring of remote-end transceivers regardless of protocol. What's more, replacing two 25Gbit/s SFP28 transceivers with a single 50Gbit/s SFP56 improves efficiency without increasing power or footprint.

With these capabilities, AccessWave50™ offers a cost-effective and future-ready path to 50Gbit/s in 5G fronthaul networks.



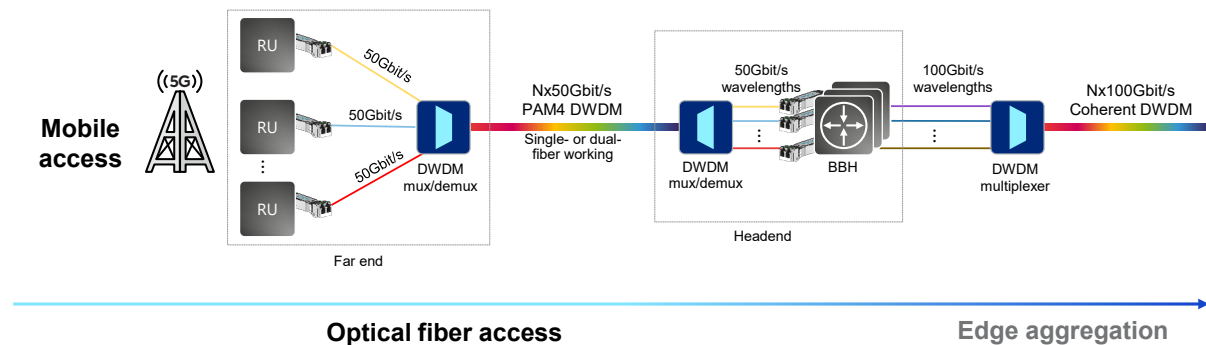
ACCESSWAVE50™

High-level technical specifications

Parameter	Minimum	Maximum
Operating wavelengths	1529.55nm	1567.5nm
Operating frequencies	191.25THz	196.0THz
Optical output power	-1dBm	3dBm
Line format/rate	PAM4 53.125Gbit/s (50G Ethernet)	
Reach		15km NDSF (KP4-FEC)
Side mode suppression ratio	35dB	
Optical reflectance	27dB	
Receiver input wavelength range	1260nm	1620nm
Receiver sensitivity		-16dBm (with host-side KP4-FEC)
Receiver overload	-7dBm	
Receiver damage threshold		-4dBm
CD tolerance	0ps/nm	260ps/nm
Clock accuracy	±100ppm	
Power consumption		<3W
Case temperature range	-40°C	85°C
Interface compliance		SFF-8402
Optical connector		Duplex LC
Mechanical compliance		SFF-8432 Rev. 5.2a
Management/electrical interfaces		SFF-8472 Rev 10.2, SFF-8690 Rev 1.4, SFF-8431

Applications in your network

50Gbit/s DWDM connectivity with up to 15km reach from any device with an SFP56 port



Updated March 27, 2025

