

Converged Interconnect Network (CIN):

DWDM multi-wavelength system solution for Remote PHY backhauling

Distributed Access Architectures (DAA) are on the brink of setting off a massive increase in performance and capacity in HFC networks. With this approach a remote PHY device (RPD) is replacing a traditional HFC fiber node, requiring a 10 G transmission link. The 10G DWDM multi-wavelength technology, known from metro and wide area networks, is accordingly the first choice for RPD backhauling. The terminal equipment is concentrated in headend sites and fiber links to hubs and fiber node locations with more than 120 km in length will thereby become a commodity.

For a DAA migration, the existing analog HFC networks are well suited because the physical network structures can easily be transformed into digital 10G DWDM networks. The optical budget and dispersion requirements are comparable with analog DWDM transmission systems.

10G is just the beginning

To guarantee the transmission quality for future data rates, the optical signal-to-noise ratio (OSNR) was not only successfully tested for conformity with 10G but also with 100G coherent links.

Furthermore, the transmission capacity can even be expanded to 176 wavelengths.

Durability achieved by innovation

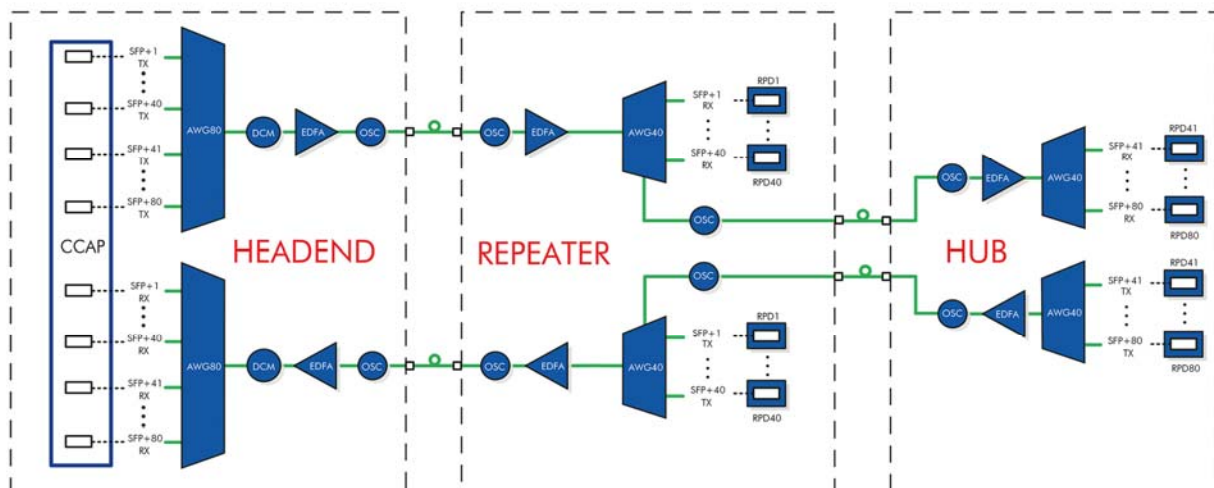
Using innovative technology, BKtel has solved all technical challenges required to meet stringent outdoor specifications and to optimally integrate the components into existing fiber-node locations. Being suitable for operation in a high temperature environment ensures a long operating life-span and durability.

The BKtel solution in detail:

- C-band 20-, 40- or 44 DWDM channel AWG-based MUX/DEMUX
- Optical Interleaver, enabling a 50 GHz DWDM grid with up to 88 bidirectional 10G transmission links
- SFP + optical transceivers with fixed DWDM channel or wavelength tunable, both suitable for 50 GHz grid
- Variable gain optical amplifiers (EDFA) allowing DWDM transmission systems with lengths exceeding 120 km

All new components are suitable for outdoor applications. They are available in 19-inch mountable housings (25 cm mounting depth) and in modular form factor fitting in BK sub racks.

Further information are available on request from the BKtel Technical Info (<mailto:info@bktel.com>) or on the website www.bktel.de.



Block diagram BKtel CIN DWDM system



Left: Optical multiplexer / demultiplexer in BK design. Right: Dual DWDM EDFA in 19`` housing