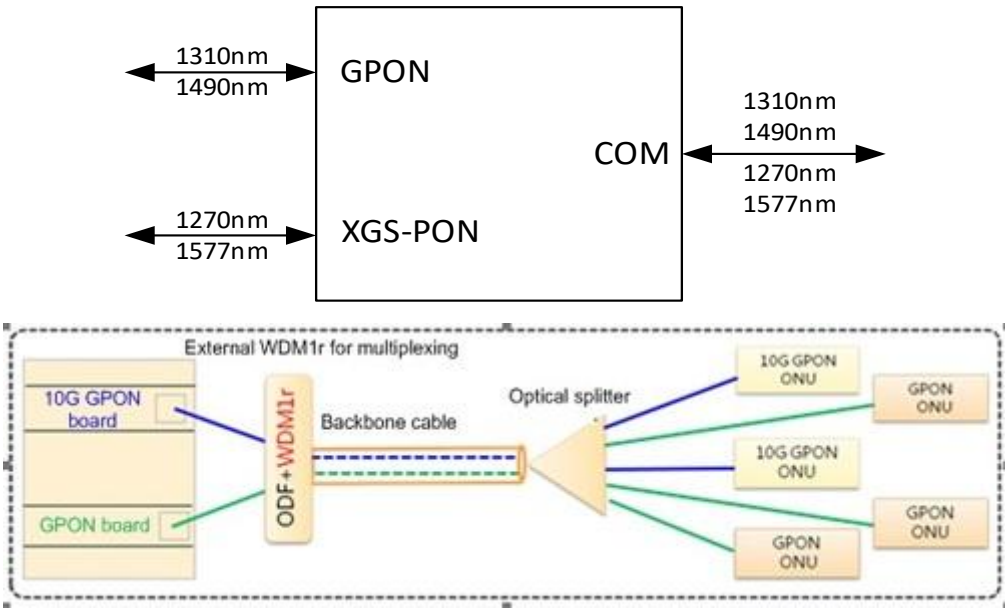
WDM1r for Evolution to 10G GPON Through Co-existence

With people's demand for high bandwidth demands, operators need to upgrade networks to next-generation 10G PON to enable gigabit access. However, existing networks are deployed using large numbers of operating GPON and EPON devices. Switching all of them to 10G PON devices immediately is impossible. Smoothly transitioning networks to 10G PON without affecting existing services economically, efficiently, and simply is crucial to the large-scale deployment of 10G PON and commercial application of gigabit bandwidth.

For GPON and 10G GPON, the upstream/downstream center wavelengths are 1310/1490 nm and 1270/1577 nm respectively. Their spectrums do not overlap. Theoretically, multiplexing can be used to allow the co-existence of GPON and 10G GPON. Specifically, with the optical distribution network (ODN) unchanged, a WDM1r (a multiplexer) can be added to the central office (CO) equipment room. Then, the WDM1r transmits GPON and 10G GPON signals over the ODN. GPON ONUs can then be replaced with 10G GPON ONUs gradually on the user side depending on service requirements. This smoothens evolution.

WDM1r Diagram



In the evolution to 10G GPON through co-existence, multiplexers must be deployed and fiber paths in CO equipment rooms must be reconstructed. This requires a high amount of effort. Is there any innovative product or solution available that reduces the effort and lowers cost?

WDM1r is a passive device packaged in cassette, which can be installed into the 3U high cabinet with 16 slots. Each WDM1r module supports two channels of multiplexed GPON and 10G GPON signals. The WDM1r can be installed in either the OLT or a

separate cabinet. In this solution, only a passive node must be added. Devices on the OLT side do not need to be changed. This solution is cost-effective, demand-based, flexible, and convenient. It is suitable in scenarios with enough equipment room space for OLT reconstruction.



