

High-speed OFDM-based passive optical access network (Technion)

code: ENG-1260

As the demand for greater data throughputs is increasing exponentially, optical access networks are increasingly providing a key solution, with extended band-width, long-reach and long-term operational cost. The first generation of Passive Optical Networks (PON) is currently deployed around the globe, but demands for greater data-rates are expected to exceed far beyond the available throughput of current technology. There is an increasingly growing interest in cost-effective technology to improve spectral efficiency of optical networks while allowing flexible bandwidth allocation between users. The presented PON solution significantly reduces optical network unit (ONU) complexity by reducing ONU sampling rates. This solution enables low-cost home premises equipment at very high-performance rates, with flexible bandwidth allocation, and enables multiple ONUs to be supported over long distances.

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