

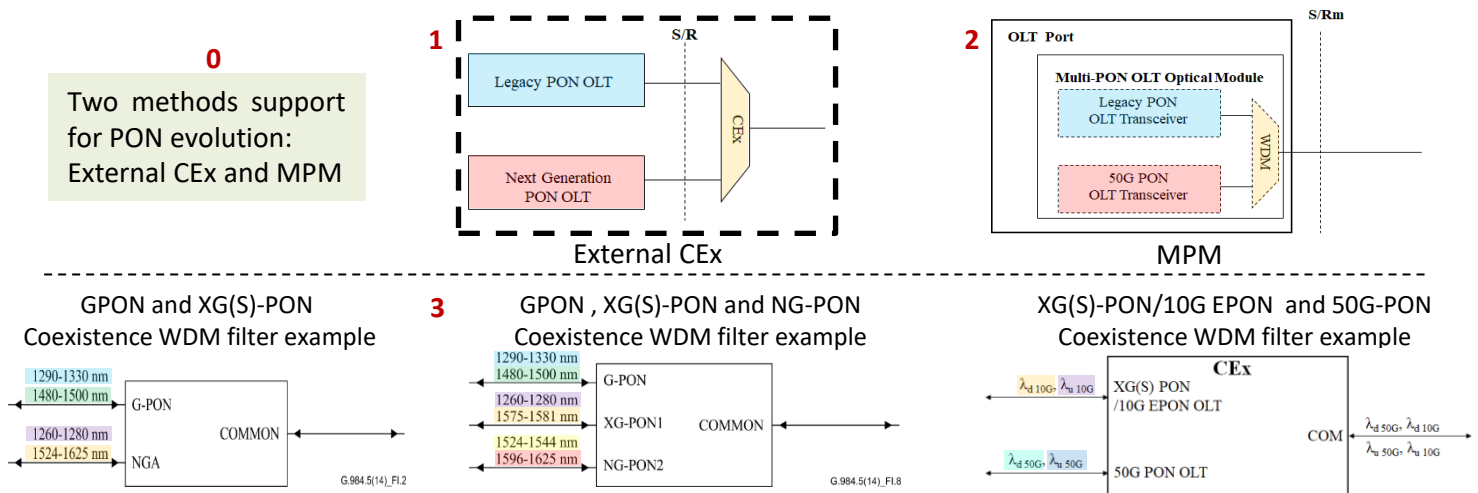
G.984.5 Amendment

Gigabit Passive Optical Networks: Enhancement band and PON Coexistence

ITU-T G.984.5 defines wavelength ranges reserved for additional service signals to be overlaid via WDM with G-PON, including:

- Wavelength ranges to be reserved as the enhancement band
- Reference diagram of coexistence element, and sample parameters of a discrete WDM filter that enables PON evolution

- Multi-PON modules with integrated WDM to support legacy PON and NG-PON coexistence
- X/S tolerance in PON optical network units (ONUs) and PON optical line terminals (OLTs)
- Methods for calculating required isolation for WDM/CE/CEM device



The detail specification of the coexistence filter and the calculation method are defined in G.984.5

0. ITU-T G.984.5 - Gigabit-capable passive optical networks (G-PON): Enhancement band

Defines wavelength ranges reserved for additional service signals to be overlaid via wavelength division multiplexing (WDM). Includes external coexistence element (CEX) and multi-PON module (MPM) methods to coexist multiple PON generations on a common optical distribution network (ODN) to reuse deployed fibre and splitters to evolve operator networks to higher capacity.

1. External coexistence element (CEX)

The external CEX method enables multiple PON generations coexistence in one ODN via an individual device. Insertion loss parameters with isolation and directivity calculation are provided in several appendices.

2. Multi-PON module (MPM) with integrated WDM

The optical line terminal (OLT) MPM contains an integrated WDM function. When a PON system is migrated from a legacy PON to a next generation (NG)-PON with the MPM method, operators can replace their existing legacy PON line cards with new line cards that support multiple PON technologies. This eliminates the need for an external CEX.

3. Examples of CEx are contained in ITU-T G.984.5. Example specifications for these elements are given for commonly encountered coexistence situations.