



Smart SFPs Now SyncE Synchronization/ Timing Compatible

Optical- and copper-based interface options with full JMEP and PP-IV smart SFP functionality



With the new EtherASSURE™ release 10.5 and the family of smart SFPs for 1000-BASE-T/EX/LX/ZX, Viavi Solutions® provides optical- and copper-based interface options with full JMEP and PP-IV smart SFP functionality—including extraction of SyncE synchronization/clocking.

Sync-E is a physical layer frequency distribution mechanism that can be recovered and used for retiming by a JMEP or PP-IV smart SFP. With these new SFPs, customers can transfer synchronization/clocking stability from a master clock source to network resources whether operating on copper or fiber media to ensure all network resources are using the same common synchronization/clocking frequency. This means that nodes that require upgrading to SyncE and do not have a master clock source can be upgraded to SyncE compatibility using either the JMEP or PP-IV smart SFPs. Using the smart SFPs for SyncE avoids expensive upgrades by using the smart SFP installed into the existing network element rather than a “forklift” network element replacement or adding additional equipment for SyncE capability.

Key Benefits

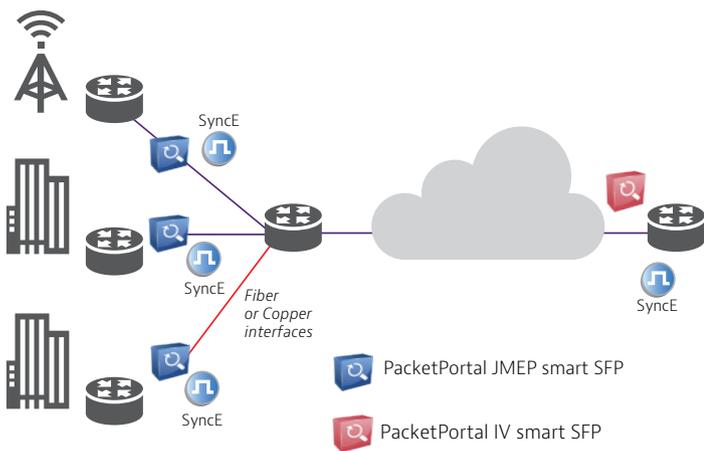
- Easy to use and deploy SFP 1 GE module
- Ensures that frequency timing is preserved through rate adaptation
- Eliminates expensive local oscillators or forklift upgrades at the base station

Key Features

- SyncE timing/synchronization for fiber and copper-based smart SFPs
- Copper- and fiber-based smart SFPs can extend SyncE timing over copper cabling even without smart SFP features enabled
- Smart SFPs can also provide test, performance monitoring, and troubleshooting features

Applications

- Ethernet mobile backhaul
- Access technologies and broadband equipment including PON, DSLAM, and RT-DSLAM
- IPTV
- VoIP
- Network equipment such as Core routers, edge routers, carrier Ethernet switches, timing and line cards, line rate converters, and carrier-grade timing cards



Mobile networks require SyncE synchronization

Time synchronization plays a crucial role in mobile backhaul networks. Cellular base stations derive their carrier radio frequencies from a highly accurate reference clock. This reference clock is typically derived from synchronous time division multiplexing (TDM) interfaces or from expensive GPS receivers located at the cellular base station. Timing information and frequency distribution are jointly intertwined. Without timing information traceable to a highly accurate primary reference clock, issues may occur with local interference between channel frequencies. Mutual interference with neighboring base stations can also occur, ultimately causing dropped calls and degrading the overall user experience. SyncE-compatible smart SFPs provide frequency synchronization to support time-of-day distribution to improve end-to-end performance in mobile backhaul networks.



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