

# VN1802 GPON mini-OLT

1-port GPON OLT MAC

## OVERVIEW

Poncan Semi's PON OLT MAC VN1802 is a dedicated single-chip GPON miniOLT SoC for FTTR GPON downlink in residence and business applications.

The product offers 2 SKUs in different package size and IO ports configuration. This allows customers to choose the best interface option based on their specific needs and requirements, with optimal cost.

VN180x integrates standard GPON MACs, Network Switch Engine (NSE), burst mode GPON SerDes, SoC subsystem, and NNI Ethernet Port that supports SGMII (1G), HSGMII (2.5G) and 10Gbps XFI, KR and USXGMII interfaces, along with many other common peripheral interfaces.

The NSE (Network Switching Engine) of the OLT SoC facilitates seamless interconnections between various interfaces, including PON OLT Port, 10GE Port, and High-Speed SoC Interfaces. It offers advanced multi-media switching and forwarding capabilities among OLT, 10GbE, and GbE interfaces. This versatile solution supports a range of protocols, including L2/L3/L4 Ethernet and IP/TCP, and provides comprehensive parser, lookup, and classification features. In addition, it offers VLAN support, QoS traffic policing, traffic shaping, and scheduling to optimize network performance and ensure efficient data transfer.

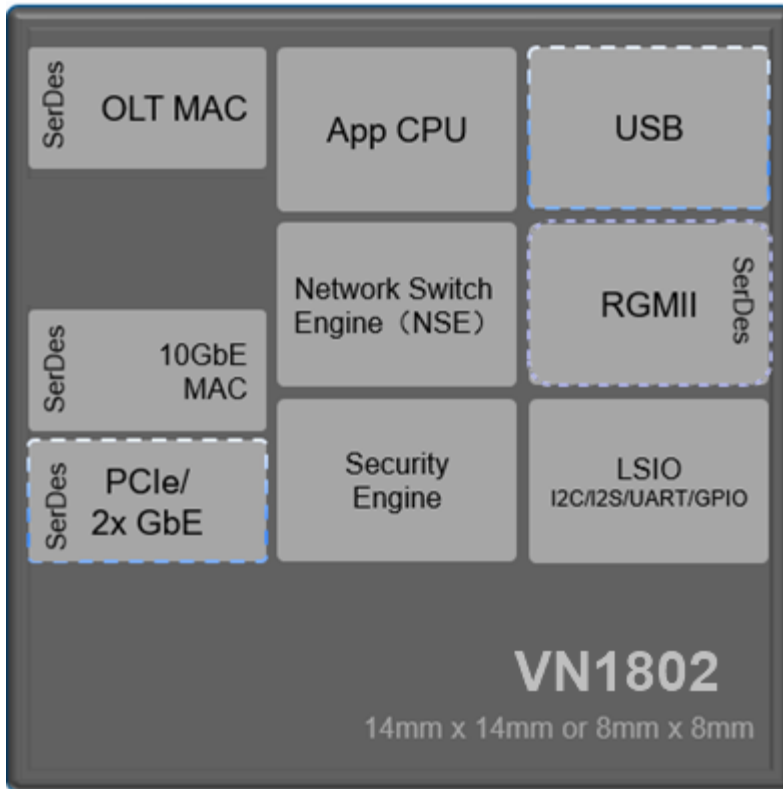
\*\* optional interface only available in 14x14 package

## MAIN FEATURES

- Integrate two multi-rate burst-mode PON SerDes circuitry enabling glue-less interfaces to OLT transceivers
- Integrate 10GE (NNI) SerDes circuitry supporting SGMII (1G), HSGMII (2.5G) and 10Gbps XFI, KR and USXGMII interfaces
- Integrate internal PLL, only need one 25MHz XO clock externally  
(\*customer application dependent)
- Support Flexible Upstream Hybrid Bandwidth Scheduler (DBA)
- Support Advanced Network Switch Engine (NSE)
- Support High-Speed Interfaces
  - 10Gb/2.5G/1.25G PON OLT MAC
  - 10GbE XFI/XGMII/USXGMII/SGMII
  - Optional PCIe G3 RC/EP or 2x GbE SFI/SGMII \*\*
  - Optional GbE RGMII/RMII \*\*
- Support Low-Speed Interfaces
  - UART, I2C, I2S, GPIOs, QSPI

# BLOCK DIAGRAM

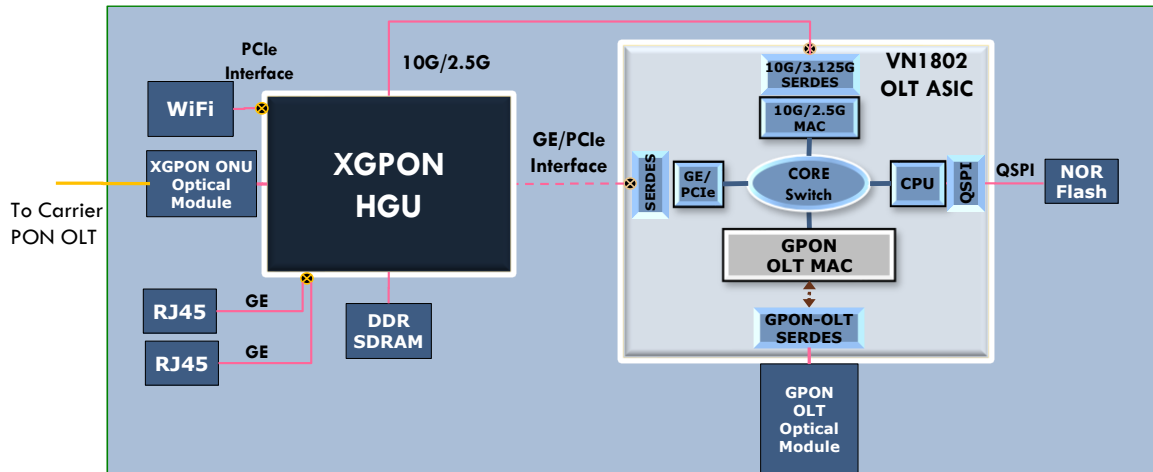
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VN1802 Block Diagram

# APPLICATIONS

- FTTR application: Mini-OLT for Main Gateway



FTTR Main Gateway consists of a standard XG(S)PON HGU and a mini-OLT.

VN1802 is a GPON mini-OLT that connects multiple sub-gateways (ONUs) in a house, supporting high-speed applications such as AR, VR, and 8K video. Unlike FPGA-based OLT solutions, VN1802 is a dedicated ASIC OLT chip with much lower power consumption and support for up to a 1:32 optical splitting ratio.

## ORDER INFORMATION

Part Number	Description	Package Info	Ambient Temperature
VN1802-B001	1-port GPON mini-OLT MAC (Support up to 16 or 32 ONUs)	14mm x 14mm, 441-ball FCCSP, 0.65 ball pitch	-40°C – 85°C
VN1802-B002	1-port GPON mini-OLT MAC (Support up to 16 or 32 ONUs)	8mm x 8mm, 225-ball FCCSP, 0.50 ball pitch	-40°C – 85°C