Xenon-IIIG GPON ONT and Residential Gateway SoC

CX95202-12Z

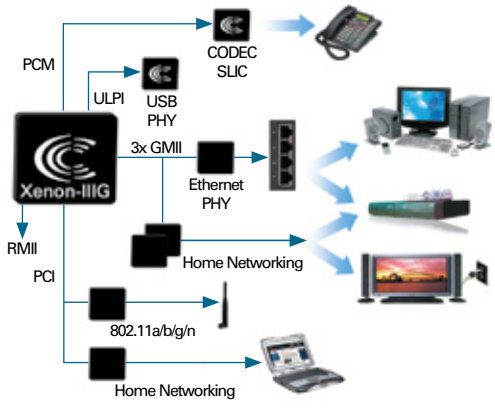
Conexant's portfolio includes a comprehensive suite of semiconductor solutions for communications and consumer applications.

Xenon-IIIG (CX95202-12Z) Gigabit Passive Optical Network (GPON) gateway is targeted at the Optical Network Terminals (ONTs) used on the client-side of Fiber-To-The-Premises (FTTP) PON connections. The System-on-Chip (SoC) supports the ITU-T G.984 GPON GEM service, GTC, and GPON PMA functions to implement GPON ONTs. It's the world's first GPON ONT SoC targeting Network Interface Device (NID) as well as residential gateway applications.

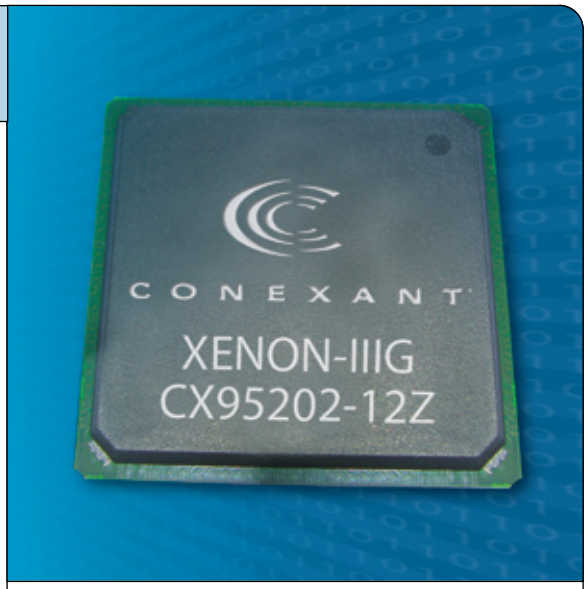
A Complete System-on-Chip

Xenon-IIIG is a highly integrated GPON ONT and gateway SoC that includes an integrated Serializer/Deserializer with clock and data recovery (SerDes/CDR) block to allow manufacturers to reduce the overall system cost of the ONT. In addition, the Xenon-IIIG incorporates the following features: ITU-T G.984 MAC/TC, AES, FEC, Integrated Voice Processing, Layer 3 Routing and Gateway Functions, advanced 802.1p Quality of Service (QoS) management, 802.1D VLAN tagging and bridging, and Layer 2, 3 and 4 based classification. The device also includes a very powerful packet processing engine to enable advanced 802.1p and 802.1Q-based QoS features for flexible data path mapping modes as well as time sensitive applications such as voice and video. Xenon-IIIG allows manufacturers to deliver the most integrated single chip, feature rich residential gateway ONT in the market with all the key residential data networking features.

Coupled with the company's integrated CODEC w/SLIC and USB PHY devices, Xenon-IIIG provides carriers and OEMs with a cost-effective system solution for GPON Fiber-To-The-Home (FTTH) Network Interface Device (NID) and residential gateway applications. Xenon-IIIG also provides carriers and OEMs with a complete system solution for Fiber-To-The-Node (FTTN) applications when combined with Conexant's market leading Accelity VDSL2 products.



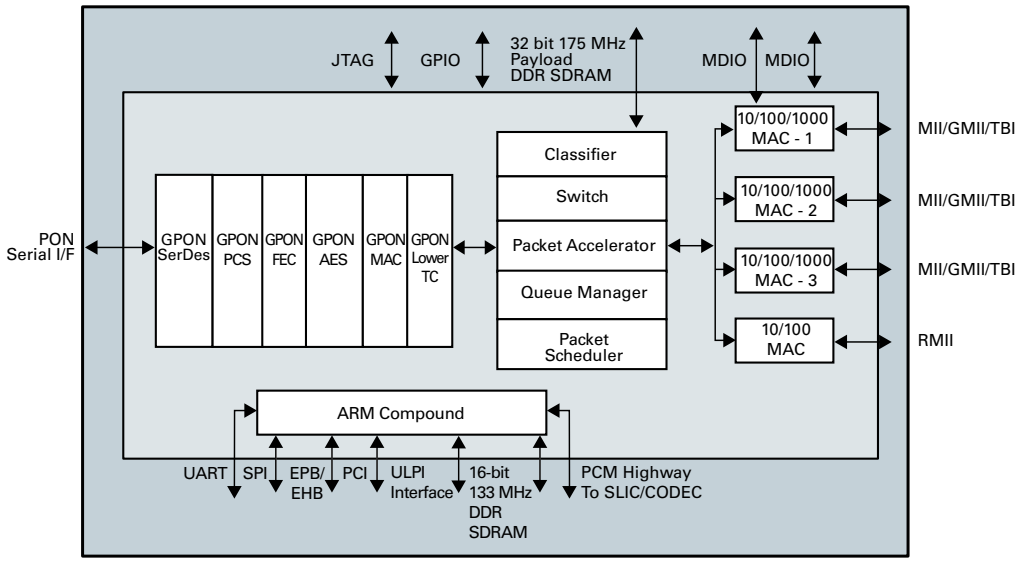
Conexant's GPON ONT Solution



Distinguishing Features

- GPON ONT SoC targeting NID and residential gateway applications
- Supports all interfaces required for Multiple Dwelling Units (MDU) and Multiple Tenant Units (MTU) applications
- Integrated 2.5 Gbps SerDes for PON optical interface
- Supports Layer 2 bridging for full line rate of 2.5 Gbps downstream and 1.2 Gbps upstream for all packet sizes
- Integrated voice processing to support G.711, G.726 and G.729A/B as well as three-way calling and T.38 Fax
- Wire speed Layer 2 802.1D/Q bridge processor with support for Layer 2, 3 and 4 deep classification
- Packet Accelerator for enhanced Layer 3 routing gateway performance
- Supports Layer 3 routing, NAPT, firewall and call control
- Embedded ARM-9 processor for configuration, control management and VoIP signaling
- Supports either parallel or serial flash
- ULPI interface to USB PHY
- Enables manufacturers to leverage common software investment across Conexant's ADSL, VDSL and GPON gateway solutions

Part Number	CX95202-12Z
Description	Xenon-IIIG GPON ONT and Residential Gateway SoC



Xenon-IIIG Block Diagram

Product Features

- Integerated GPON ITU-T G.984 MAC with Layer 2, 3 and 4 packet processor
- Integrated 2488 MHz clock and data recovery
- Support for up to 38 T-CONTs with independent Dynamic Bandwidth Assignment (DBA)
- Support for 1024 MAC addresses with aging
- Support for both MAC and IP address-based Accept and Deny Access Control Lists per port
- 802.1D bridging and 802.1D VLAN tagging with 64 VLAN tags
- Layer 2, Layer 3 and Layer 4 aware classification
- Wire rate engine for G.984 AES decryption
- Support for ITU-T G.984 upstream and downstream FEC
- Support for 256 GEM ports
- One 10/100 MAC with RMII and three 10/100/1000 MAC with MII/GMII/TBI interfaces
- 802.3x flow control
- Support for Linux and third-party OS
- ARM-9 based embedded control processor
- Up to four channels of voice with G.711, G.726 and G.729A/B with three-way calling
- Supports the following interfaces
  - 3 x 10/100/1000 MII/GMII/TBI
  - 1 x 10/100 RMII
  - 1 x EPB/EHB interface
  - 1 x UPLI to USB PHY
  - 1 x PCI interface
  - 1 x Interface to external SLAC (to support up to four voice channels)
  - 1 GPON serial interface
  - 1 x 16-bit DDR SDRAM interface (program/data memory)
  - 1 x 32-bit DDR SDRAM interface (dedicated payload storage)

Quality of Service

- Up to eight QoS queues per T-CONT based on 802.1p, ToS, or Diffserve paradigm
- Up to eight logical user interfaces per physical user interface
- Up to eight QoS queues per logical user interface
- Integrated Weighted Round Robin (WRR) and Strict Priority (SP) schedulers

Bridging Functionality

- Layer 2 MAC transparent bridge as specified in IEEE 802.1D and 802.1Q
- VLAN and 802.1p priority support
- Spanning Tree bridge IEEE 802.1D

Routing Functionality

- Hardware assisted Layer 3 routing functionality
- NAPT support

Conexant Product Portfolio

Conexant's comprehensive product portfolio includes solutions for imaging, audio, and video applications, and analog modems that enable cost-effective Internet access. The company's broadband access products include end-to-end solutions for xDSL networks, and PON solutions for fiber optic applications.

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