Lantiq™ GEMINAX™ XXS V3

Ultra-small, low-power, high-density ADSL2+ chipset for broadband linecard applications

Applications

- Multi-standard ADSL2+ DSLAM, DLC, MSAN linecards for Central Office and MDU applications

Features

- Supported Standards
  - ITU-T G.992.5 (ADSL2+), G.992.3 (ADSL2), G.992.4 (ADSL2 lite), Annex A, B, C
  - G.992.1 (G.dmt), G.992.2 (G.lite), Annex A, B, C
  - G.994.1 (G.hs)
  - ANSI T1.413 I2 and ETSI TS101388
  - ADSL2 Annex I, J (All Digital Loop) & M
  - ADSL2+ Annex I, J & M (up to 3Mbps)
  - Reach-extended ADSL (G.992.3 Annex-L)
  - Enhanced INP (ITU-T G.992.3/5, S0<=1/16, D0 up to 511 in downstream latencypath 0)
  - ITU-T, G.992.5, paragraph § 7.6.2 Optional 24000 bytes interleaver size
  - G.997.1 (G.ploam) & RFC 2662
  - Retranmission ITU-T G.998.4
  - ATM bonding ITU-T G.998.1 / NIPP-NAI, T1.427.01-2004
  - EFM bonding ITU-T G.998.2
- Power Consumption
  - 770 mW per channel in ADSL2+ mode
- Interfaces
  - 2 POS-PHY Level 2 interfaces
  - 2 Utopia Level 2 Interfaces
  - 2 SPI-3 Interfaces
  - 2 GMII Interfaces
  - 1 SGMII Interface
  - ITU-T G.999.1 (G.INT) compatible interface mode for SGMII and GMII Interface
  - SPI Interface
  - SSI Interface for control of MELT SLIC

The Lantiq™ GEMINAX™ XXS V3 is the latest ADSL2+ chipset of the GEMINAX™ chipset family. Targeted for CO, DLC, DSLAM and Multi-Service Access Networks (MSAN) and MDU applications, the GEMINAX™XXS V3 features full support of the latest international standards of ADSL / ADSL2 / ADSL2+. The high-density chipset consists of a 32 channel data pump in a 17 x 17 mm BGA package, an 8 channel AFE in an 10 x 10 mm BGA package and a low power line driver in a 4 x 4 mm VQFN package. This advanced chipset enables broadband access equipment vendors to develop compact, low-cost linecards that combine industry-leading performance with the lowest BOM, high port density, and best-in-class power consumption.

With its enhanced INP functionality and ITU-T standard-compliant retransmission on the PHY level enabling traffice discrimination, the chipset is perfectly tailored to support triple-play and IPTV services over ADSL2+.

A line testing controller for MELT measurements is integrated in the data pump thus enabling MELT on the DSL linecard when paired with Lantiq's 16 channel SLIC devices.

With Lantiq™ VINETIC™ Codec/SLIC™ solutions, the GEMINAX™XXS V3 chipset can migrate easily towards splitter-less Integrated Voice/Data (IVD) applications.
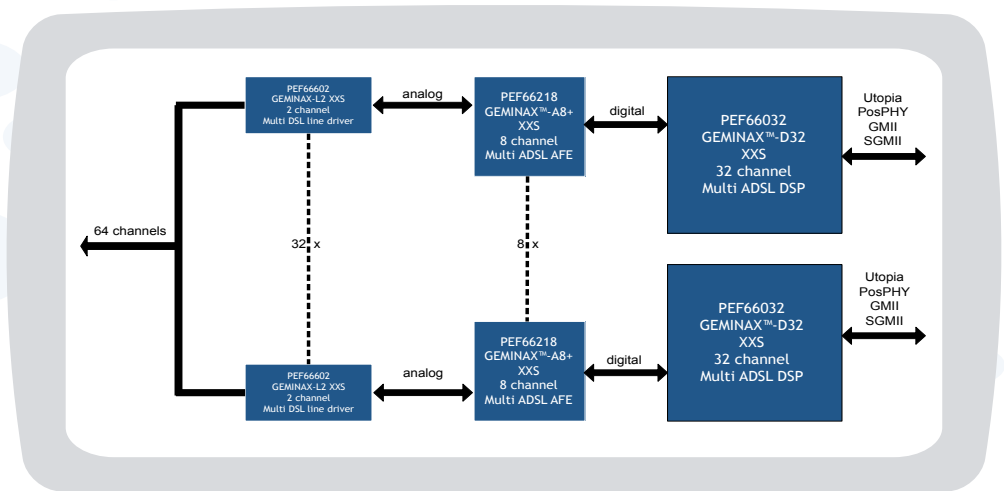
Features

- Compliant to ADSL2+, ADSL2(G.dmt.bis), ADSL full-rate(G.dmt) or ADSL-Lite (G.lite)
- Mixed ADSL2+/ADSL2/ADSL full-rate/ADSL-lite configuration possible (G.992.1, G.992.2, G.992.3, G.992.4, G.992.5, T1.413, etc.)
- 32 channels of mixed configuration of ADSL2+/ADSL2/ADSL1 and of mixed configuration of ATM/PTM
- Support of up to 32 channels of ADSL2(+)
- Up to 3 data streams per system interface port (e.g. for two data streams and a pre-emption stream)
- On-chip Memory and no external program memory required
- Support of virtual noise
- Support of Seamless Rate Adaptation (SRA)
- ATM and EFM bonding
- Support of physical layer retransmission according to ITU-T G.998.4
- Support of ATM header compression
- Support of ATM and PTM channel bonding selectable per channel
- Chip-level and linecard-level bonding functionality up to 8 ports
- Support of 64 octet/65 octet (dual latency and preemption)
- Support of MELT (Metallic Loop Testing) according to ITU-T 996.2, Annex E
- On-chip PLL
- Integrated temperature sensor
- Package: data pump P(G)-LF^{2}BGA-400; Analog Frontend P(G)-LFBGA-144, Line Driver P-VQFN-20
- Power supply of 1.0 V and 3.3 V only with tolerance of ±5%, 24V for the line driver
- Support of L2 and L3 power modes
- Operating temperature tolerance of -40°C to 85°C

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GEMINAX™XXS V3 Block Diagram 32 channels

Product Summary

Product	Sales Code	Description	Package
GEMINAX™-D32 XXS V3	PEF66032 E V3.1	32 channel ADSL2+ DSP	P(G)-LF^{2}BGA-400
GEMINAX™-A8+ XXS	PEF 66218 E V2.1	8 channel ADSL2+ Analog Front End	P(G)-LFBGA-144
GEMINAX™-L2 XXS	PEF66602 V V3.1	2 channel ADSL2+ low-power line driver	P-VQFN-20

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Information For further information on technology, delivery terms and conditions and prices, please contact the nearest Lantiq Office (www.Lantiq.com).

Warnings Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Lantiq Office. Lantiq components may be used in life-support devices or systems only with the express written approval of Lantiq, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.