

Fusiv®

Vx180/IFE-6–IKF6850/FXS60IF1

Gateway Chipset Processor for Multi-mode VDSL2/ADSL2+ Residential Gateways

Target Markets

- FTTx Markets
- Quad Play CPE Equipment for Video, Data and Voice Service
- Multi-Dwelling, Multi-Tenant Units Markets

Target Applications

- Multi-mode DSL Residential Gateways
- Multi-mode DSL SoHo/SME Gateways

Fusiv Vx180

- Integrated Multi-mode DSL Datapump supporting VDSL2, ADSL2+, ADSL2 and ADSL
- Integrated Dedicated Voice Processing Engine
- Accelerator Processors
- 2x GMII/MII/RMII Interfaces
- PCI Interface
- 2 x USB 2.0 High Speed Host
- 32 GPIOs
- DDR Controller

IFE-6 (FXS60IF1) Software

- FusivWare™ advanced Linux-based operating software
- Integrated xDSL Line Driver
- Integrated xDSL ADC/DAC
- All VDSL2 band plans up to 17a
- ADSL2+/ADSL2/ADSL Annex A/B/M
- xDSL Drivers
- Full-Chain Voice Processing
- Network Management
- IP Middleware
- Wire speed Routing & Switching with QoS
- IPSec VPN



Ikanos' Fusiv® Vx180/IFE-6 chipset is a member of the high performance, highly integrated and cost-effective series of Fusiv gateway chipsets.

The Vx180 is a single chip, multimode VDSL2/ADSL2+ gateway processor that provides advanced processing power, VoIP, multi-mode DSL and security, while supporting best-in-class QoS and wire speed performance. The IFE-6 is a highly integrated multi-mode analog front end device.

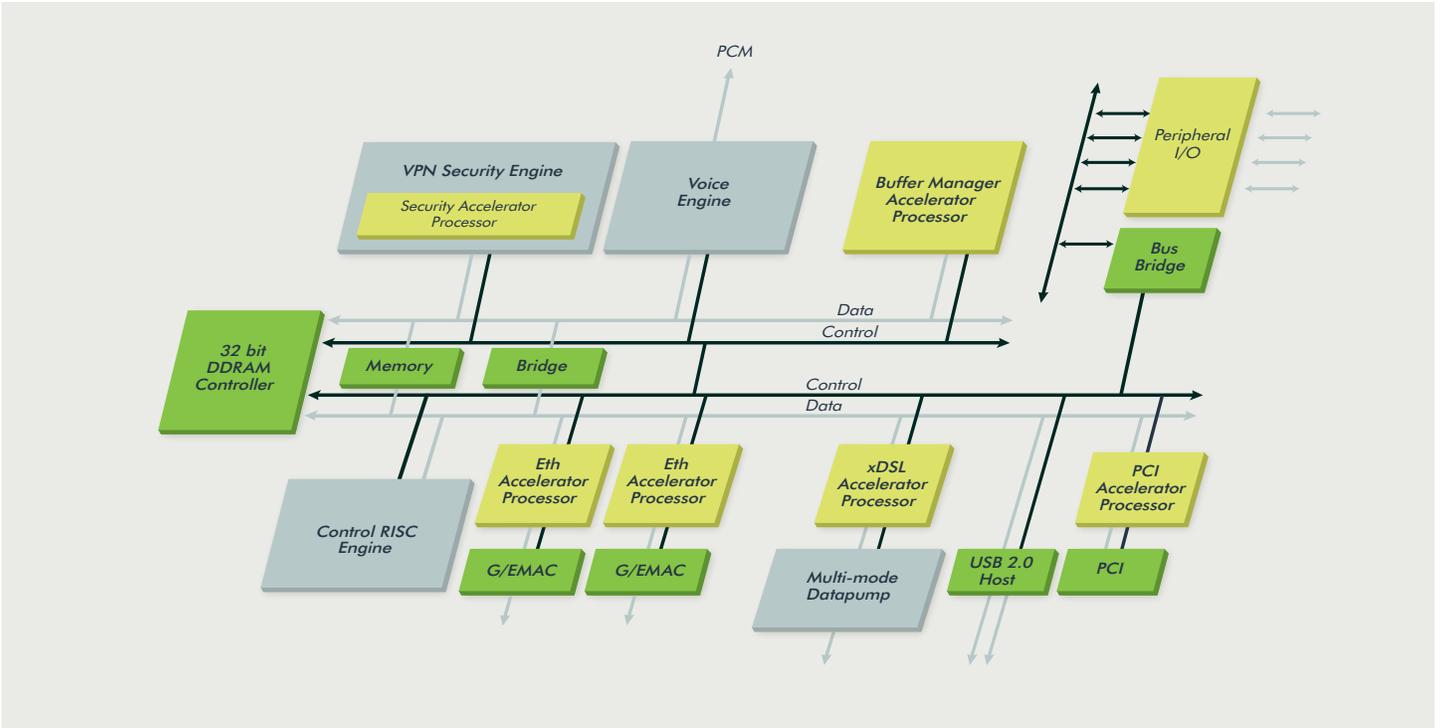
The Vx180 provides a MIPS-based™ CPU core to support CPU-intensive features like 802.11n and still have additional processing power for new applications. It achieves wire speed performance across all LAN and WAN interfaces using Ikanos' unique Accelerator Processor architecture and supports a rich set of interfaces that easily integrate with home networking technologies like MoCA™, HomePNA™, HomePlug® and 802.11n. The Vx180 delivers full-chain VoIP with a deployment-proven integrated DSP.

The Vx180 is designed to enable the development of a high performance, integrated residential gateway platform for quadruple play applications. The Vx180 integrates an xDSL customer premises equipment (CPE) PHY and its widely deployed

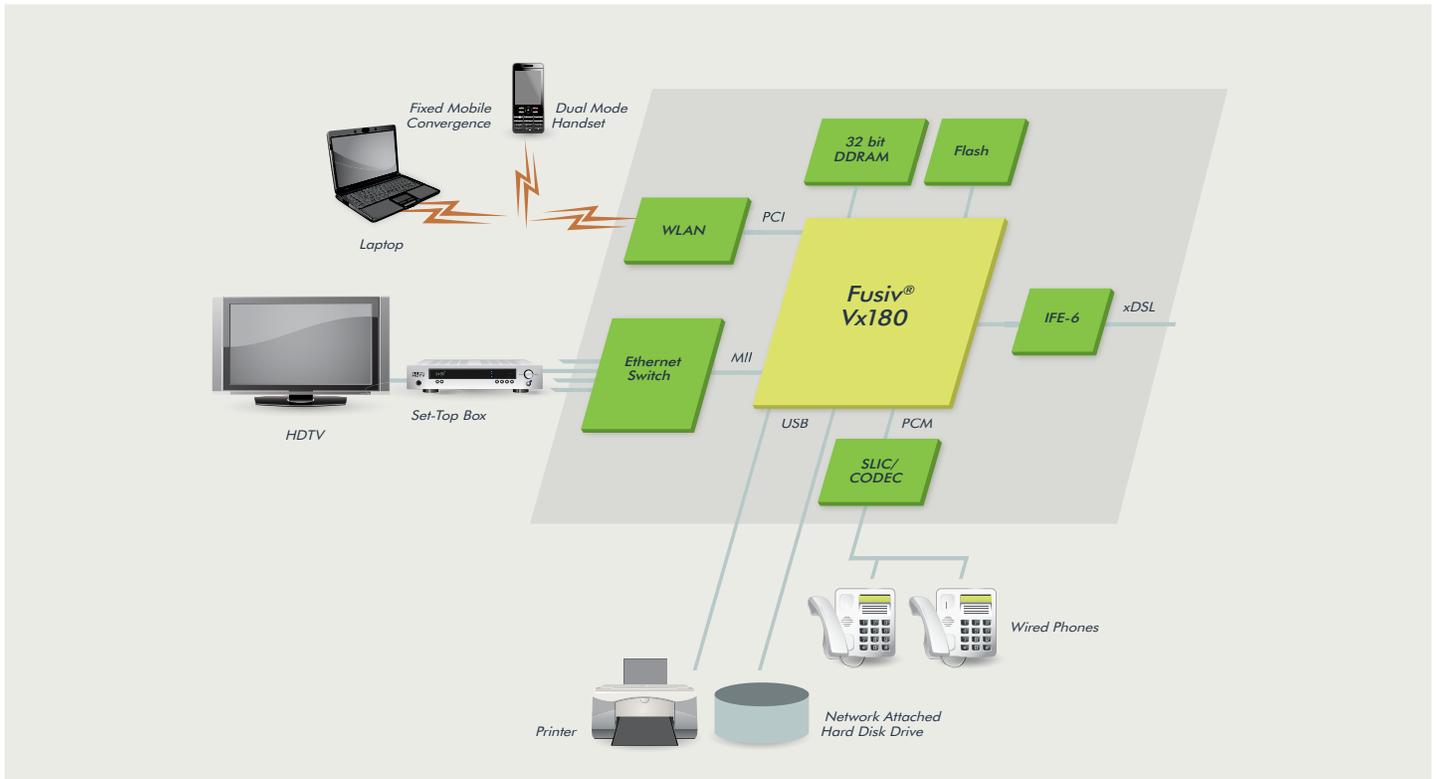
Fusiv network processor architecture onto a single chip. The Vx180 and IFE-6 combine to provide industry leading VDSL2 performance while also meeting DSL Forum requirements for ADSL and ADSL2+ (TR-067 and TR-100 respectively). Ikanos' Vx180 is hardware ready for IPTV and triple-play optimized features such as Ikanos' Rapid Rate Adaptation (RRA™), dynamic rate repartitioning (DRR) and seamless rate adaptation (SRA). The Vx180 also supports maximum interleaver and deinterleaver memory for high levels of impulse noise protection, as well as on-chip quality of service (QoS) and wire speed performance, all of which is intended to enable optimum viewing experience.

Ikanos provides a comprehensive suite of Vx180 software that includes operating system independent drivers for Ethernet, xDSL and integrated peripherals. FusivWare™, Ikanos' Linux-based software, includes a networking stack, voice processing and network management functions, making it possible for system vendors to quickly develop residential gateways.

Fusiv® Vx180 System Architecture



Vx180/IFE-6 Based – Quadruple Play Gateway



Key Features

- Highly integrated processor with field-proven Fusiv architecture:
 - 500 MHz 32-bit MIPS-based™ host processor
 - Dedicated voice processing engine (DSP subsystems)
 - Six accelerator processors running 333/400 MHz for microcoded data path computing
- Supports all VDSL2 profiles - 8a, 8b, 8c, 8d, 12a, 12b, and 17a - as well as VDSL, ADSL2+, ADSL2 and ADSL
- 32 KB local buffer and table memory
- Multiple on-chip buses to exploit the full bandwidth of the 333 MHz/32-bit DDR SDRAM Memory
- Interfaces:
 - Two 10/100/1000 Gigabit Ethernet Interfaces (GMII/MII/RMII)
 - 66 MHz 32-bit PCI 2.2 interface, which works in host and satellite modes
 - Two USB 2.0 HS/FS/LS host with UTMI-PHY
 - Two asynchronous serial UART ports (UART1 is Bluetooth capable)
 - Serial peripheral interface (SPI)
 - Two SPORT (TDM) Interfaces for the VoIP DSP subsystem
 - 32 general purpose IOs (GPIOs)
- General purpose timers
- On-chip asynchronous memory controller for asynchronous RAM, FLASH and external devices
- On-chip DDR controller for 32-bit DDR of 333 MHz
- IEEE 1149.1 compliant JTAG interface
- Software features:
 - Software drivers such as Linux board support package and voice framework
 - ATM WAN processing module
 - Network software for TCP/IP, routing protocols and network management
 - IP Services/QoS software for QoS/ bandwidth management and firewall applications
 - Security modules such as VPN, IPSEC, SSL, etc.
 - VoIP software for voice compression, echo cancellation, CNG, PLC, DTMF detection and generation, call progress tone generation, FSK caller ID generation, country-specific tones and fax pass through

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