Fusiv®

Vx155–IKF6835

For Customer Premises Equipment

Target Markets

- Multi-dwelling, Multi-tenant Units (MxU)
- FTTx Units
- CPE Equipment for Video, Data and Voice Service

Target Applications

- Residential Quadruple Play Gateway
- DSL/FTTx Residential Gateway
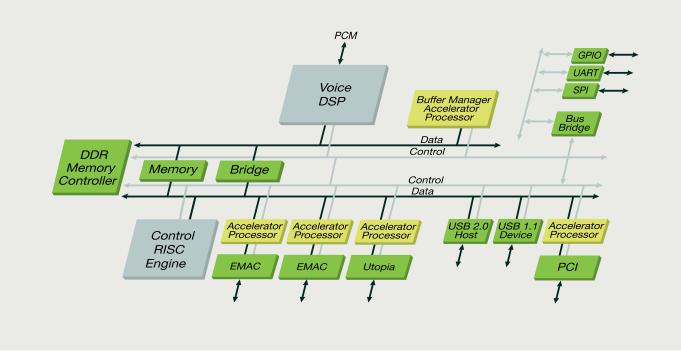
Fusiv Vx155-IKF6835

- Built-in Voice Engine with support for Wide-band CODECs
- 2 x MII Interfaces
- Utopia Interface
- PCI Interface
- USB 2.0 High Speed Host
- 32 GPIO's
- 2 x UART Supports Bluetooth for Fixed Mobile Convergence
- DDR Controller

Software

- FusivWare™ advanced Linux-based operating software
- Full-Chain Voice Processing
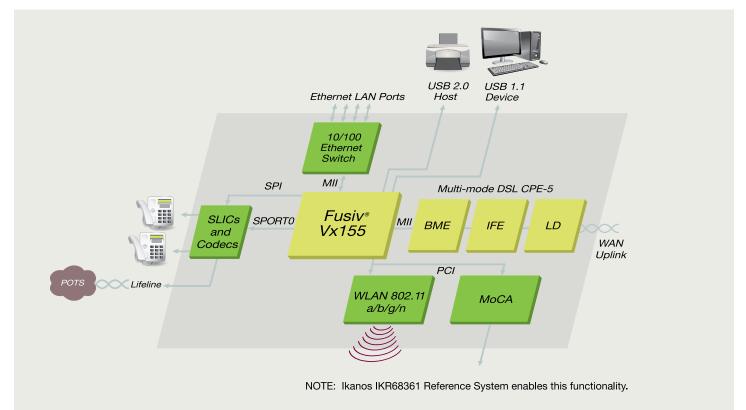- Network Management
- IP Middleware
- Routing/Switching

Ikanos' Fusiv® Vx155, IKF6835 processor is one among a family of high performance, highly integrated and cost-effective series of Fusiv gateway processors.

The Vx155 provides an unparalleled integration of full chain voice processing and signaling and network protocol processing on a single chip for developing quadruple play gateways. The Vx155 can be used in a variety of WAN topologies such as PON, DSL, WiMAX or Ethernet via one of the MII ports on the processor. The Fusiv Vx155 has an on-chip DSP/Voice Engine for handling up to 4 channels of full-chain VoIP. It also integrates a general purpose RISC host processor and several proprietary accelerator processors (APU) to create a high performance distributed processor architecture.

For customers wishing to develop a full featured residential gateway, the Vx155 adds a PCI interface to enable WLAN 802.11 a/b/g/n connectivity. Besides a PCI interface, it provides extra connectivity to meet expanding needs in the form of two MII ports that can be used to support either a home networking technology, like HomePlug A/V, HPNA, or MoCa or a DMZ network interface. A USB 2.0 host port is provided to interface to printers, disk drives (NAS), WLAN or home networking technologies. A USB 1.1 device is also included to connect to a PC. An extra UART port is also provided on Vx155 to support Bluetooth® connectivity for fixed mobile convergence (FMC) applications.

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Fusiv® Vx155 System Architecture

PCM

Voice DSP

Buffer Manager Accelerator Processor

GPIO
UART
SPI

Bus Bridge

Data
Control

DDR Memory Controller

Memory

Bridge

Control
Data

Control RISC Engine

Accelerator Processor

Accelerator Processor

Accelerator Processor

USB 2.0 Host

USB 1.1 Device

Accelerator Processor

EMAC

EMAC

Utopia

PCI

Fusiv® Vx155 and VDSL2 CPE-5 Residential Gateway

USB 2.0 Host

USB 1.1 Device

Ethernet LAN Ports

10/100 Ethernet Switch

SPI

MII

Multi-mode DSL CPE-5

SLICs and Codecs

SPORT0

Fusiv® Vx155

MII

BME

IFE

LD

WAN Uplink

POTS

Lifeline

PCI

WLAN 802.11 a/b/g/n

MoCA

NOTE: Ikanos IKR68361 Reference System enables this functionality.

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Key Features

- Highly integrated processor
  - 200 MHz 32-bit RISC host processor
  - Enables manufacturers to build cost-effective residential gateways and integrated access devices
  - Low BoM cost
  - Enables carriers to offer voice, data, video, and fixed mobile convergence (FMC) services over twisted pair copper, PON, fiber, wireless broadband (WiMAX), or Ethernet

- Dedicated voice Processing Engine
  - No external DSP engine required to process voice chain
  - Lowers BoM cost

- Wire speed packet processing
  - Can support high bandwidth intensive applications — 300,000 packets per second of performance with NAT/FW/routing software all running at the same time

- Accelerator Processing Engines — 5 x 200 MHz
  - Wire speed Ethernet and ATM processing
  - Highly scalable system — AP engines handle data path tasks leaving main CPU to handle control system tasks
  - Highly flexible system — future proof gateway design with 1.4 Giga-MIPS
  - of programmable processing capability

- DDR interface
  - Minimizes memory bottlenecks

- USB 2.0 host
  - Connects printer, USB HDD, digital camera, etc.

- 2 x UART interfaces
  - Supports external Bluetooth® peripherals for fixed mobile convergence applications

For more information, contact Ikanos.

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