

Versatile MIPS® SoC Enables Network Security

Performance, Flexibility with Lowest Power

Product Overview

The RMI Alchemy™ Au1550™ security network processor is a versatile high-performance, low-power, high integration security network System-on-a-Chip (SoC) designed for wired and wireless applications where security is important. The processor accelerates networking and remote access applications such as gateways and network addressable storage (NAS) units, wireless access points and Voice over Internet Protocol (VoIP) environments. Low power consumption enables the Au1550 processor to support battery and Power-over-Ethernet applications.

Highlights

Network Security and Performance

The Au1550 security network processor features integrated security technology developed by SafeNet, an industry leading provider of security solutions to public and private networks. The on-chip security engine directly supports virtual private network (VPN) solutions for both IPsec and SSL protocols, allowing designers flexibility in selecting security configurations and performance options. The configurable DDR or SDRAM memory interface extends



the power-performance range of the RMI Alchemy Solutions family of processors.

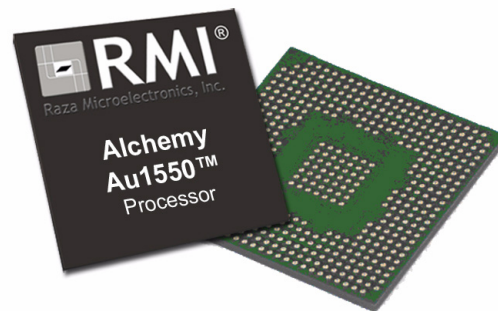
Low Power, Design Flexibility

The Au1550 security network processor is a complete SoC based on the MIPS32® instruction set. Designed for maximum performance at low power, the processor runs up to 500MHz. Power dissipation is typically less than 500mW for the 400-MHz version. Moreover, the integration of key peripherals with the high performance MIPS32-compatible core provides low system cost, small form factor, low system power, simple designs at multiple performance points and thus, short design cycles. Like the RMI Alchemy™ Au1500® processor, the Au1550 provides a PCI controller for flexible connectivity to external peripherals.

Key Features

Integrated Security Engine from SafeNet

- Accelerates both IPsec and SSL type VPN standards in hardware
- Directly supports DES, 3DES, AES, ARC-4, SHA-1, MD5
- Implements entire IPsec packet processing in hardware - no CPU burden
- True Random Number Generator (RNG) in hardware
- Robust security is ideal for most business network environments - meets U.S. government and banking industry requirements



DDR or SDRAM Memory Controller

- 16/32-bit data; 14-bit address
- Speeds up to DDR400
- Adds 1:1 system bus to memory controller ratio

Descriptor-based DMA (DDMA)

- Linked list of DMA transfer descriptors
- 16 channels
- Memory to memory, memory to peripheral, peripheral to memory
- Scatter/Gather and Strided accesses

Two Ethernet MAC Controller

- 10/100 Mbps

Static Controller

- 16/32-bit data; 29-bit address
- Support for NOR and NAND Flash
- PCMCIA and Compact Flash support

Four Programmable Serial Controllers (PSCs)

- Each supports independently programmed protocols
- Support for AC97, I²S, SPI, SMBus

High-Speed MIPS CPU Core

- 333, 400, or 500MHz
- MIPS32 Instruction Set
- 32-bit architecture

RMI Alchemy™ Au1550™ Processor

Security Network Processor

Highly Integrated System Peripherals

- 33/66MHz 32-bit PCI controller (PCI 2.2 compatible)
- Two 10/100 Ethernet MAC controllers
- USB 1.1 device and host controllers
- Four Programmable Serial Controllers (PSCs) supporting AC97, I²S, SPI, SMBus
- GPIO (43 total, 10 with dedicated system functions)
- Three UARTS
- PCMCIA interface

OS Support

- Microsoft® Windows® CE.NET
- Linux
- VxWorks

Development Tool Support

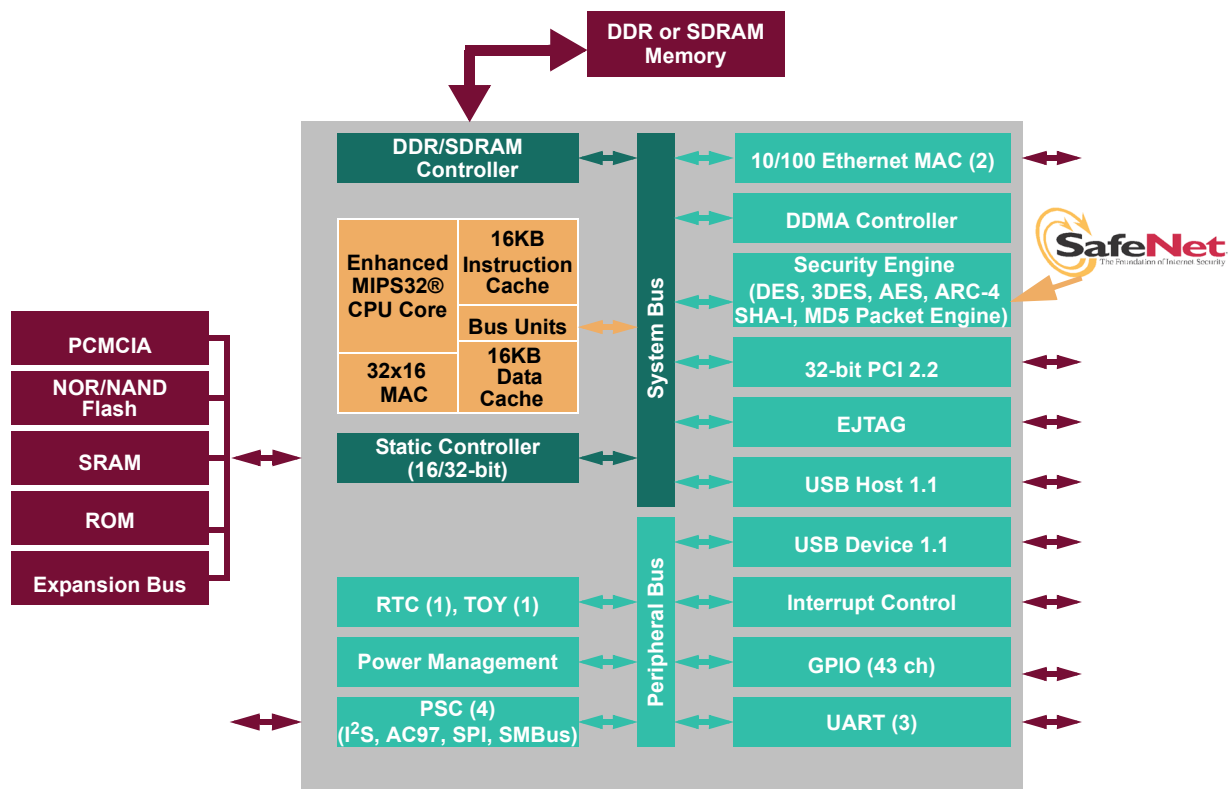
- DBAu1550™ Development Board
- Complete MIPS32® Compatible Tool Set
- Numerous 3rd-Party Compilers, Assemblers and Debuggers

Low System Power

- 400MHz, 500mW

Package

- 483-pin BGA
- 21mm x 21mm



About RMI

Raza Microelectronics, Inc. (RMI®) is a fabless semiconductor company providing highly-integrated feature-rich products ranging from power-optimized System-on-a-Chip (SoC) solutions to High-Performance Processors for the Digital Consumer, Wireless, Networking and Security markets. RMI offers the most advanced and most complete MIPS-Based™ processing solutions with both 32/64-bit architectures supporting frequencies from 300MHz to 1.2GHz. The company is headquartered in Cupertino, CA with offices in Texas, India, Korea, Japan and China. More information about RMI can be found on the company's website at www.RazaMicro.com

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