

# EVA-A930

## 190 MHz ARM922T Networking-accelerated Processor with PCI and RS-232



CE FCC

### Features

- Embedded ARM922T processor
- Three 10/100 Fast Ethernet MACs
- 32-bit, 33 MHz PCI BUS controller
- Two UARTs
- 24 GPIO pins
- Built-in Hardware Packet Accelerator
- 324-pin BGA

### Introduction

With the soaring demand for broadband networking services in professional, industrial, office, and home environments, there is a great need and huge potential in the networking market. Advantech's ARM-based networking processor, EVA-A930, integrates 3-port 10/100 Ethernet, PCI, and RS-232 connectivity into an embedded 190 MHz ARM922T RISC microprocessor, providing the networking market a best price/performance SoC solution.

### High-Performance Networking Solution

The EVA-A930 employs a unique architecture featuring a "Hardware Packet Accelerator" to enhance its networking performance. This Hardware Packet Accelerator handles all table look-up, packet classification/forwarding, output-queue management, and QoS service, freeing the processor from all operations required to classify and forward TCP & UDP packets, regardless of packet length, operating system or other system conditions. Only protocol negotiation of application service levels (e.g. bandwidth management, billing, network management) are processed by the embedded ARM922T processor, allowing time-critical applications such as voice, video, and gaming to maintain guaranteed levels of service.

The EVA-A930 also features a PCI and UART interface integrated to support VPN, WLAN, and other industrial applications. It provides customers a cost-effective and high-performance solution for multi-service networking devices. These features, along with full support for ISP and network management, make the EVA-A930 an ideal platform and a perfect choice for networking devices such as routers, gateways, and firewalls in both existing and emerging broadband markets. The EVA-A930 provides a complete platform solution with full support tools, including hardware, ported Linux OS, protocol stacks and in-circuit emulation capability.

### Specifications

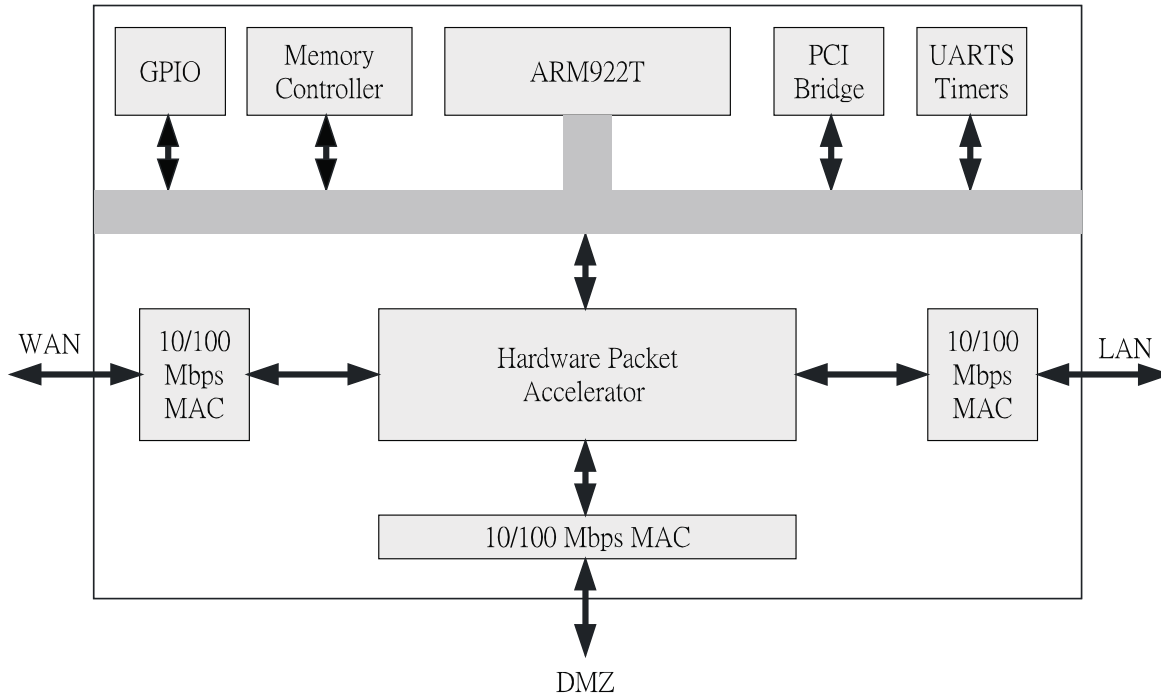
#### System

- Embedded 190 MHz ARM922T processor
- Supports up to 64 MB SDRAM and 64 MB Flash
- 32-bit, 33 MHz PCI BUS controller ver. 2.2
- Support for 4 external PCI master/target devices
- Three 10/100 Mbps Fast Ethernet MACs
- Selectable MII or RMIII Interface with hardware auto-negotiation via serial management Interface (MDIO)
- Two system timers (watchdog)
- Two UARTs (one with modem control)
- 24 GPIO pins
- 3.3 V I/O and 1.8 V core
- 324-pin BGA package

#### Hardware Packet Accelerator Support

- 128 rule classifier table for multi-field classification and filtering based on:
  - Source/Destination: IP address, TCP/UDP port and MAC address
  - Protocol ID
  - DiffServ Codepoint
  - Ether Type value
  - VLAN
  - Physical interface
  - TCP flags
- Per port traffic classification into 4 transmission queues, each with 2 programmable WRED drop precedence levels
- All queues programmable for Strict Priority Transmission scheduling and/or WFQ scheduling with programmable weightings
- IEEE 802.1p/Q compliant QoS
- Identification of encrypted or compressed packets with auto-forward to CPU
- Up to 4 PPPoE sessions in either PPPoE routing or PPPoE proxy modes
- PPP header insertion/deletion

## Board Diagram



## Specifications cont.

- PAT support in PPPoE routing mode
- QoS support in both PPPoE modes

### Software

- Linux o/s
- APIs
- Debug monitor
- Third party protocol suites

## Ordering Information

- **EVA-A930** 190 MHz ARM922T networking-accelerated processor with PCI and RS-232
- **EVA-ADK9300-B00** Evaluation kit based on EVA-A930