

## **WIZnet** **W5300** Hardwired TCP/IP Embedded Internet-Controller

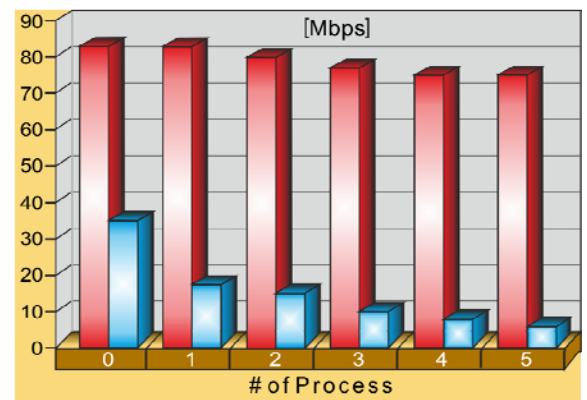
The gate level integrated TCP/IP Hardware-Stack of the W5300 supports all level-3 and -4 protocol layers like TCP, UDP, IPv4, ICMP, ARP, IGMP, PPPoE (ADSL) and Multicast. The HW-Stack also processes the handshaking and the controller is relieved of all protocol tasks. As TX/RX buffer 128kByte dual-port SRAM are available for up to 8 simultaneous Internet connections.

The 8/16bit address-/data bus supports **data rates up to 84MBit/s (DMA)**.

Open Source Drivers and examples for various  $\mu$ C-platforms & Linux-driver are available. An operating system is not needed for web, FTP or DHCP client and servers.

### Performance

- Loopback-Test, Hardware vs. Software Stack
- Graph: data thrupt vs. No. of simultaneous Tasks
- MCU: ARM9 (S3C2510)
- OS: Linux 2.4
- Testing Program: "iperf" Network Performance Test
- Task : 1,000,000 Factorial p/g



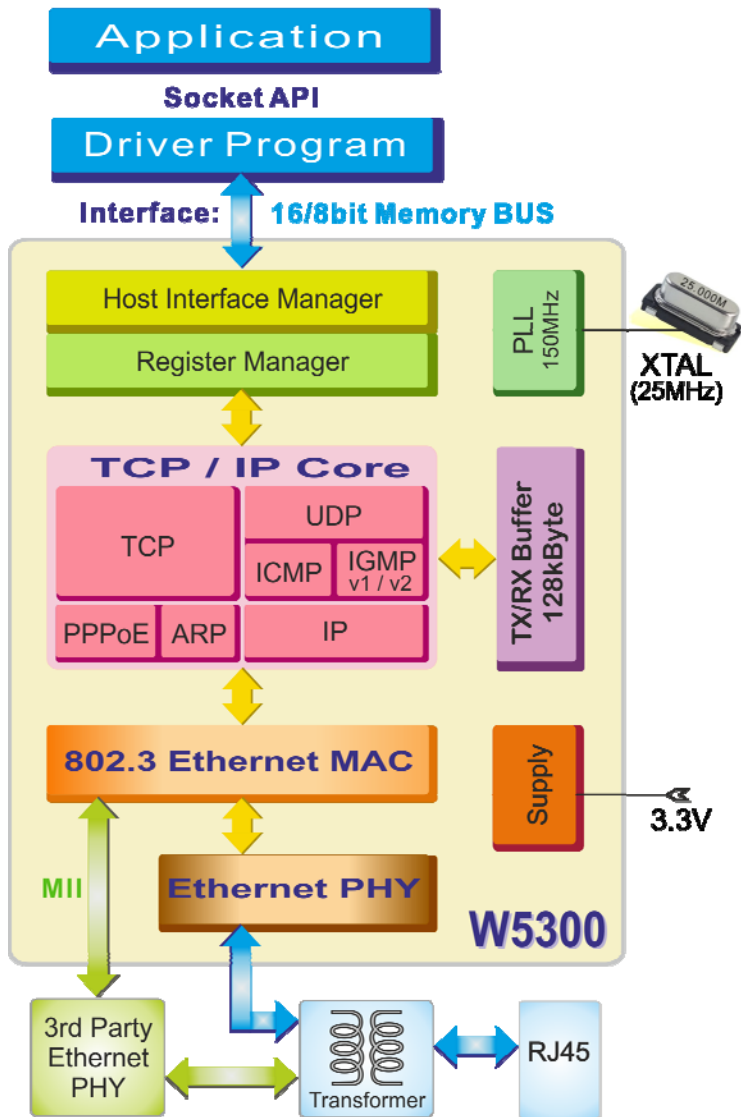
**W5300 vs. Software**

### General Features

- Hardwired TCP/IP protocols:
  - TCP, UDP, ICMP, IGMP, IPv4, ARP, Ethernet
  - Up to 8 independent sockets simultaneously
  - Supports hybrid TCP/IP stack for software protocols
  - Internal 128K Bytes Dual-Port-RAM (TX/RX buffer)
- Embedded Ethernet-MAC:
  - IEEE 802.3 (10Base-T) und 802.3u (100Base-TX)
  - Multicast
  - Connection PPPoE protocol with PAP/CHAP authentication mode for ADSL
- Embedded 10Base-T/100Base-TX PHY:
  - Auto Negotiation for full- and half-duplex
  - Auto MDI/MDIX for auto crossover
  - External MII interface to connect 3rd Party PHY or Switch Controller
- High networking performance:
  - Up to 50Mbps via Memory-Bus
  - Up to 84Mbps via DMA
- Interface: 8 & 16 Bit Address/Data Bus for direct- & indirect-mode
- Network Indicator LEDs: TX, RX, full/half duplex, collision, link, speed
- 3.3V operation with 5V I/O signal tolerance
- Temperature range: -40°C to 85°C
- 100-LQFP Package



## Block Diagram WIZ830MJ Module



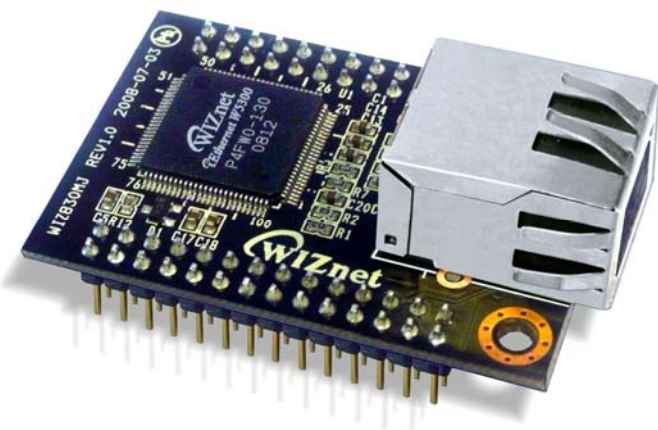
## Applications

- Home Network & Set-Top Boxes
- Serial-to-Ethernet - Gateways
- Smart Metering
- GPIO-to-Ethernet - Sensor Network
- Security Systems & Cameras
- Factory and Building Automation
- Medical Monitoring Equipment

## Hybrid Architecture

The W5300 supports up to 8 simultaneous connections over the TCP/IP-core. One of these sockets can be used as a normal MAC-controller over the "MAC-RAW"-mode. This hybrid architecture allows direct access to the MAC-layer. Therefore proprietary protocols can be implemented in software and additional connections can be established.

## WIZ830MJ Embedded Network Module



- Board size: 53 x 34mm<sup>2</sup>
- Interface Connector: two 2x14pin headers 2.54mm pitch