

## **Nitrogen™**

### **Nitrogen 210-80** **Ethernet Communications Processor**

The Nitrogen 210-80 Ethernet Communications Processor forms the core of a powerful, fully featured Home Router. With a WAN side Ethernet connection to a DSL or cable modem and the addition of a multi-port Ethernet switch and/or a PCMCIA 802.11b interface, this low-cost platform can form the base for a range of home router products. Integrating many common interface functions, it is designed for flexible, low-cost, high-functionality, high-performance products. It may be used in a broadband router/gateway or in a wireless access point.

Nitrogen 210-80 brings a new level of performance to the home router product space with its dual processor architecture. The first processor contains a Network Processor (NP) that controls and manages the direct connections to Ethernet and USB and handles Ethernet bridge filtering and advanced DMA functions. The second processor, the Protocol Processor (PP) handles real time tasks and external bus requests. The two processors communicate via the inter-processor gateway IPG.

This device runs GlobespanVirata's networking software including support for routing and bridging, stateful packet inspection firewall and UPnP IGD. Software flexibility, high-integration and built-in hardware debugging (ICE) support, development platforms and reference designs, allow rapid product development. This combination of hardware and software, Integrated Software on Silicon™ (ISOS™), provides a unique time-to-market advantage.



**Nitrogen 210-80\***

\* Chips as depicted are for representation only.  
Actual chips may vary from depiction.



## Specifications

### Processors

- Protocol Processor (PP) is an ARM7TDMI RISC core with an 8K cache
- Network Processor (NP) is an ARM7TDMI RISC core with 16K of SRAM

### USB

- USB 1.1 slave interface — up to 12 Mbps using Control, Interrupt, Bulk, and Isochronous endpoints and transfers.

### 10/100 Base-T Ethernet

- The device contains a 10/100 Ethernet MAC with a low power integrated PHY. The MII signals from the MAC are also available.

### HDLC

- Interface conforms to Q.921

### SDRAM

- JEDEC standard SDRAM interface, supporting 2 to 16 Mbytes, selectable 16- or 32-bit data bus.

### GPIO

- The General Purpose I/O bus contains 28 pins. Including support for: UART serial, serial EEPROM, Ethernet status indicators, PCMCIA mode support

### Expansion Bus

- Supports 8-bit Motorola, 16-bit Intel or 16-bit multiplexed modes, i960 and PCMCIA-master

## ISOS for Switched Routers Software

ISOS for Switched Routers offers design simplicity to achieve a time to market advantage. This software solution is packaged specifically to include all the key features required by the home router market.

- OS Kernel and C/C++ Library
- SNMP v1, v2, and v3
- Flash-FS and In Store-FS
- USB drivers for Windows® 98, ME and 2000
- Classical IP ARP server
- MAC-layer Bridge (Spanning Tree 802.1d)
- TCP/IP Stack
- IP Router - RIP1, RIP2
- TFTP Client and Server
- PPTP and L2TP pass through
- DHCP Client, Server, and Relay
- NAT with Smart Track Auto ALG
- DNS Relay and Client
- PPPoE Client and Relay Agent
- Full-featured Stateful Packet Inspection (SPI) firewall
- EmWeb Embedded Web Server
- Universal Plug and Play (UPnP) Internet Gateway Device (IGD) (including NAT traversal)
- Wireless Access Point
- DMZ ports

## Product Applications

- SOHO Ethernet-to-Ethernet Router
- SOHO Wireless Router
- Wireless Access Point



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