



An Infineon Technologies Company

ADM5120

Product Brief

Infineon ADMtek

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Chapter 1 Product Overview

1.1 Overview

The ADM5120 is a high performance, integrated and highly flexible SOC (System-On-Chip) gateway controller. It's functionalities include a SOHO/SME Gateway, NAT Router, USB Print Server, Single / Multi band WLAN Access Point and VPN Gateway. The ADM5120 enables the sharing of IP-based broadband services throughout SOHO (Small Office/Home Office) and SME (Small and Medium Enterprise) networks using wired/wireless computers, entertainment equipment, printers and other intelligent devices.

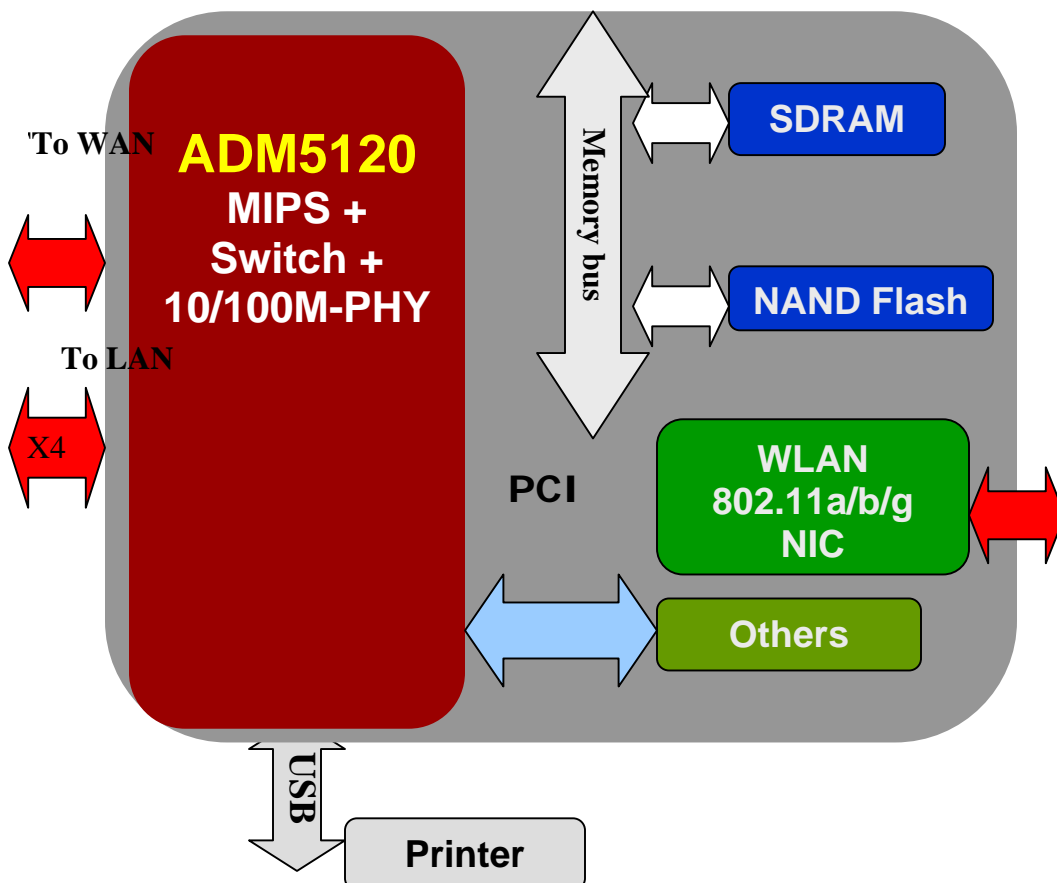
Internally, the ADM5120 ASIC consists of a high performance (227 MIPS) embedded MIPS CPU, an embedded switch engine, 10/100M PHY, an embedded PCI bridge, an embedded USB host, and interfaces for UART, SDRAM, Flash and VPN engines.

1.1.1 Product Order Information

The ADM5120 comes in two packaging formats as follows:

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1.2 Features

ASIC Features

Processor

- MIPS 4Kc CPU
- Embedded cache, 8K-byte I-cache, 8K D-cache
- Embedded memory management unit (MMU) – 32-entry TLB, organized as 16 entry pairs
- 175 MHz/227 MIPS

Network

- 6 ports
 - IEEE 802.3 Fast Ethernet
 - 5 auto-MDIX (auto-crossover) twisted paired LAN interfaces, embedded 10/100M PHY
 - 1 GMII(*)/MII interface
 - Flexible WAN port selection
- Embedded switch engine
 - Embedded Data-buffer/Address-look-up table
 - Look-up table read/write-able
 - MAC layer security
 - MAC clone solution
 - Multicast grouping (IGMP)
 - MAC filtering, Bandwidth control
- Class of Services (CoS) with two priority levels
- Shared dynamic data buffer management, embedded SSRAM
- Port grouping VLAN (overlap-able)
- TCP/IP accelerator

Memory interface

- SDRAM
 - Two bank support (2 chip select pins)
 - Each bank can support -- 1Mx32 up to 32Mx32bit (128M-byte)
- Flash
 - NAND Flash boot (*)
 - NOR Flash boot: Two bank support (2 chip select pins)
 - NOR Flash boot: Each bank can support – 1Mx8-bit, up to 1Mx32-bit (4M-byte)

System

- UART interface (support MODEM interface)
- PCI bridge that supports 3 master devices (*)
- GPIO (**)
- USB 1.1 host

- Clock source
 - 25MHz crystal for 10/100
 - 48MHz crystal for USB
- 0.18u CMOS process
- 1.8V/3.3V dual power
- BGA/PQFP

*** Available in BGA only, not PQFP**

**** PQFP has 4 GPIO pins v.s. BGA has 8 pins.**

Software Features

- Linux/Nucleus Real-Time OS
- Linux-based and Nucleus-based turn key support
- Telnet
- IEEE 802.3 Ethernet Driver
- IEEE 802.11 WLAN Driver
- RS232 Driver for Console User Interface
- DHCP Server/Client
- PPP over Ethernet (PPPoE)
- Network Address Translation (NAT) for IP Address Mapping/Sharing/Security
- DNS Proxy
- Simple Network Time Protocol (SNTP)
- Firewall
- Web-Based Configuration: WEB and HTTP
- TFTP upload/download

Typical Applications

IEEE 802.3 SOHO/SME Gateways

NAT Routers

Single band 802.11g Access Point

Multiple band 802.11a/b/g Access Points

USB Print Servers

VPN Gateways

12-port SME Gateways