

DAVICOM Semiconductor, Inc.

DM9051A(I)N
SPI to Ethernet MAC Controller

Product Brief

1. General Description

The DM9051A(I) is a fully integrated and cost-effective low pin count single chip Fast Ethernet controller with SPI, a 10/100M PHY and 4K Dword SRAM. It is designed for low power consumption and high performance, featuring the SPI with 1.8~3.3V I/O.

The DM9051A(I) supports SPI to internal memory accesses for various processors. The PHY of the DM9051A(I) can interface to the UTP3, 4, 5 in 10Base-T and UTP5 in 100Base-TX with HP Auto-MDIX. It is fully compliant with the IEEE 802.3u Spec. Its auto-negotiation function will automatically configure the DM9051A(I) to take advantage of its capabilities. The DM9051A(I) also supports IEEE 802.3x full-duplex flow control.

2. Features

- Slave SPI with clock speeds up to 50MHz for high throughput applications
- Supports SPI clock mode 0 and 3
- Supports 10BASE-T and 100BASE-TX
- Supports 100M Fiber interface and multiple Fiber mode signal detection
- Supports HP Auto-MDIX crossover function in 10BASE-T and 100BASE-TX
- Supports IEEE 802.3az Energy Efficient Ethernet (EEE)
- Supports back pressure flow control for Half-Duplex mode
- Supports IEEE802.3x flow control for Full-Duplex mode
- Supports wake up frame, link status change and magic packet events to generate remote wake on LAN (WOL) signal
- Supports IPv4 IP/TCP/UDP checksum generation and checking
- Supports application for IPv6 IP/TCP/UDP protocol stack
- Configurable of internal transmit/receive buffers within 16K-Byte memory
- Built-in OTP memory suitable for MAC address
- Eliminates the need of bandgap resistor
- Supports printed circuit board level of data security
- Built-in integrated regulator for internal core use
- Reaches Class B EMI standard
- Industrial Temperature Range: - 40°C to +85°C
- Multi-Voltage I/O VDDIO Supply (1.8V, 2.5V, 3.3V)

3. Application

- Smart meter
- Industrial Control Sensor Devices
- Security, Motion Control
- Building Automation
- Voice over IP (VoIP)
- Internet Radio
- Industry 4.0

4. Ordering Information

Part Number	Description
DM9051AIN	32 PIN, QFN Package(Pb-Free), Industrial grade -40°C to +85°C
DM9051AN	32 PIN, QFN Package(Pb-Free), Commercial grade 0°C to +70°C

DAVICOM Semiconductor, Inc.

No.6, Li-Hsin Rd. VI, Science Park, Hsin-Chu, Taiwan

TEL: +886-3-5798-797

FAX: +886-3-5646-929

E-mail: sales@davicom.com.tw