



# DM8606AFP Product Brief

## 6-Port Fast Ethernet Single Chip Switch Controller

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The DM8606AF is a high performance, low cost, highly integrated (Controller, PHY and Memory) four-port 10/100 Mbps TX/FX plus two 10/100 MAC port Ethernet switch controller with all ports supporting 10/100 Mbps Full/Half duplex. The DM8606AF is intended for applications to stand alone bridge for low cost SOHO markets such as 5Port, Router applications. The 2nd MAC can be configured as PCS type MII with 10/100 PHY integrated.

DM8606AF provides the most advance functions such as: 802.1p(Q.O.S.), 802.1q(VLAN), Port MAC address Locking, Management, Port Status, TP Auto-MDIX, 25M Crystal & Extra MII port functions to meet customer requests on Switch demand.

The DM8606AF also supports Back Pressure in Half-Duplex mode and 802.3x Flow Control Pause packet in Full-Duplex mode to prevent packet loss when buffers are full. When Back Pressure is enabled, and there is no receive buffer available for the incoming packet, the DM8606AF will issue a JAM pattern on the receiving port in Half Duplex mode and transmit the 802.3x Pause packet back to receiving end in Full Duplex mode.

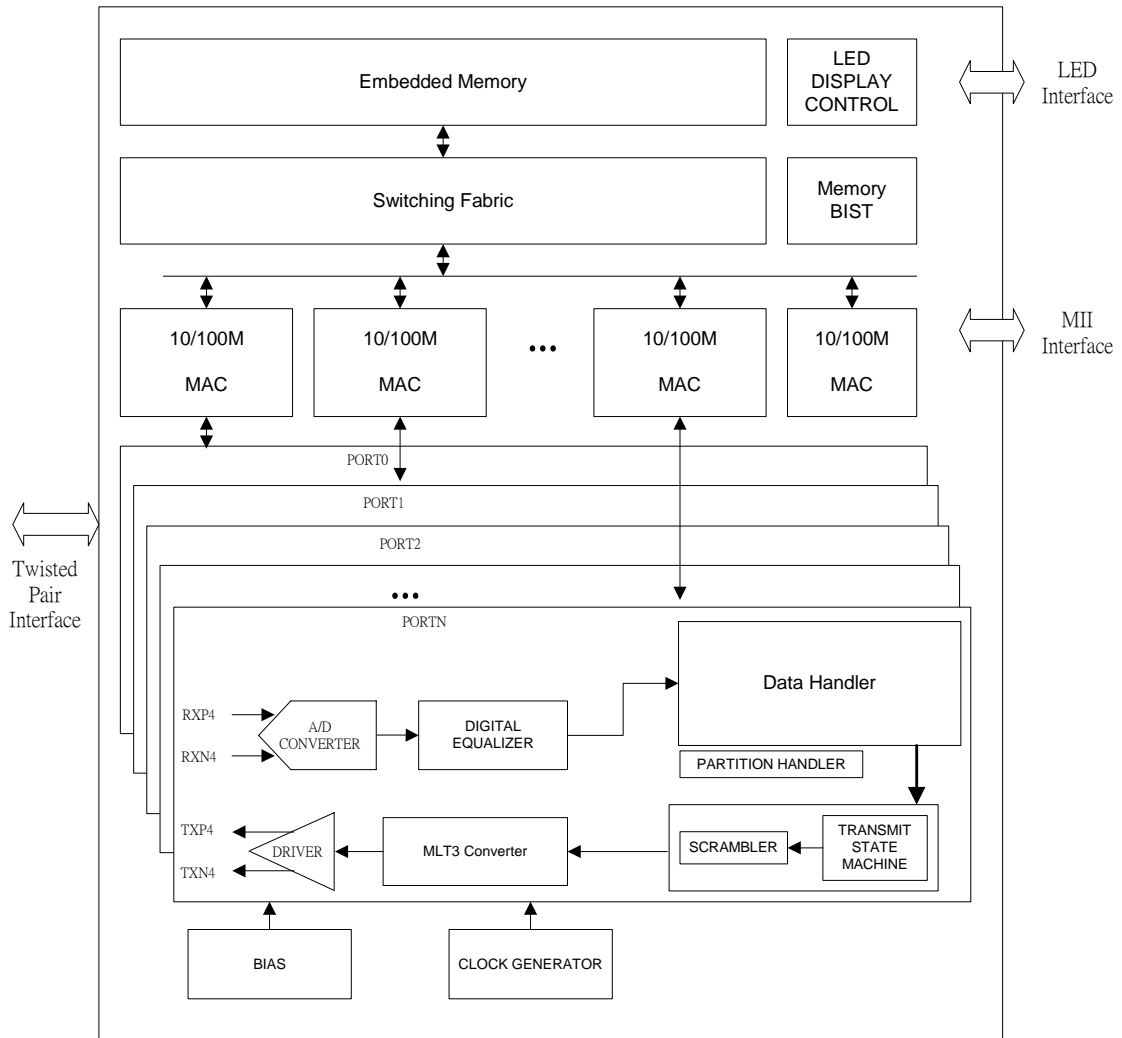
The built-in SRAM used for the packet buffer and address learning table is divided into 256 bytes/block to achieve the optimized memory utilization through complicated link list on packets with various lengths.

DM8606AF also supports priority features by Port-Base, VLAN and IP TOS field checking. Users can easily set different priority modes in individual ports, through a small low-cost micro controller to initialize or on-the-fly to configure. Each output port supports four queues in the way of fixed N: 1 fairness queuing to fit the bandwidth demand on various types of packet such as Voice, Video and data. 802.1Q, Tag/Untag, and up to 16 groups of VLAN are also supported.

An intelligent address recognition algorithm allows DM8606AF to recognize up to 2048 different MAC addresses and enables filtering and forwarding at full wire speed.

Port MAC address Locking function is also supported by DM8606AF to use on Building Internet access to prevent multiple users sharing one port traffic.

## Block Diagram



## Specifications

- Supports four 10M/100M auto-detect Half/Full duplex switch ports with **TX/FX** interfaces and two MII/GPSI ports.
- Supports 2048 MAC addresses table with 4-ways associative hash algorithm.
- Supports four queue for QoS
- Supports priority features by Port-Based, 802.1p VLAN & IP TOS of packets.
- Supports Store & Forward architecture and performs forwarding and filtering at non-blocking full wire speed.
- Supports buffer allocation with 256 bytes per block
- Supports Aging function Enable/Disable.

- Supports per port Single/Dual color mode with Power On auto diagnostic.
- Supports 802.3x Flow Control pause packet for Full Duplex in case buffer is full.
- Supports Back Pressure function for Half Duplex operation in case buffer is full.
- Supports packet lengths up to 1522/1522(Default)/1536/1784 bytes in maximum.
- Broadcast/Multicast Storming Filter function.
- Supports 802.1Q VLAN. Up to 16 VLAN groups are implemented by the last four bits of VLAN ID.
- 2bit MAC clone to support multiple WAN application
- Supports TP interface Auto MDIX function for auto TX/RX swap by strapping-pin.
- Easy Management 32-bits smart counter for per port RX/TX byte/packet count, error count and collision count, 16-bits smart counter for per port err count and collision count.
- Supports PHY status output for management system.
- 25M Crystal only for the whole system.
- 128 QFP package with 0.18um technology. 1.8V/3.3V power supply. 1.0W low power consumption.

## Application

- SOHO 5-port switch.
- 5-port switch + Router with MII CPU interface.

## Ordering Information

Part Number	Pin Count	Package
DM8606AF	128	QFP
DM8606AFP	128	QFP (Pb-Free)

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