



# DM9331AE Product Brief

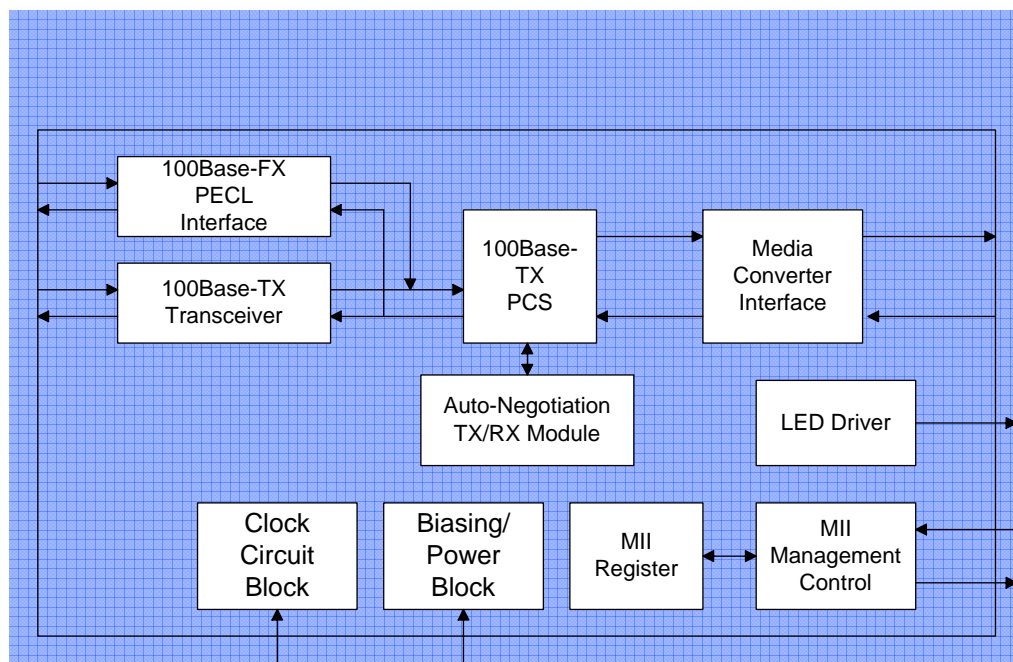
## 100 Mbps Twisted Pair/Fiber Ethernet Media Converter Chip

June 2008 Rev.1.0

The DM9331A is a physical-layer, single-chip, low power transceiver for media converter application. On the media side, it provides a direct interface either to Unshielded Twisted Pair Category 5 Cable 5 (UTP5) for 100BASE-TX Fast Ethernet, and it also provides PECL interface to connect the external fiber optical transceiver. Through the Media Converter Interface (MCI), the DM9331A connects to another DM9331A for the twisted pair to the fiber media converter, or fiber to fiber repeater.

The DM9331A uses a low-power and high-performance CMOS process. It contains the entire physical layer functions of 100BASE-TX as defined by IEEE802.3u, including the Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA), Twisted Pair Physical Medium Dependent Sublayer (TP-PMD) and a PECL compliant interface for a fiber optical module, compliant with ANSI X3.166. The DM9331A provides a strong support for the auto-negotiation function, utilizing automatic selection of full or half-duplex mode. Furthermore, due to the built-in wave-shaping filter, the DM9331A needs no external filter to transport signals to the media on the 100base-TX Ethernet operation.

### Block Diagram



## Specifications

- 100Base-TX to 100Base-FX media converter application chip set
- 100Base-FX to 100Base-FX repeater application chip set under full duplex mode
- 100Base-TX to 100Base-TX repeater application chip set under full duplex mode
- Optional Fault propagation on no link condition.
- Fully compliant with IEEE 802.3u 100Base-TX/FX
- Compliant with ANSI X3T12 TP-PMD 1995 standard
- Supports Auto-Negotiation function to 100 Mbps full/half duplex, compliant with IEEE 802.3u
- Remote fault detection capability
- Far end fault signaling option in FX mode
- Selectable twisted-pair or fiber mode output
- Selectable full-duplex or half-duplex operation
- Provides Loopback mode for easy system diagnostics
- LED status outputs indicate Link/Activity, Full/Half-duplex and Fault LED
- Single Low-Power Supply of 3.3V with 0.35 $\mu$ m CMOS technology
- Very Low Power consumption modes:
  - Power Reduced mode (cable detection)
  - Power Down mode
  - Selectable TX drivers for 1:1 or 1.25:1 transformers for additional power reduction
- Compatible with 3.3V and 5.0V tolerant I/Os
- 48-pin LQFP small package (1x1 cm)

## Application

1-to-1 100M Fiber converter  
Fiber IP STB, IPC, Internet Radio  
Fiber DVR, Router...

## Ordering Information

| Part Number | Pin Count | Package |
|-------------|-----------|---------|
| DM9331AE    | 48        | LQFP    |

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