



# DM9161EP Product Brief

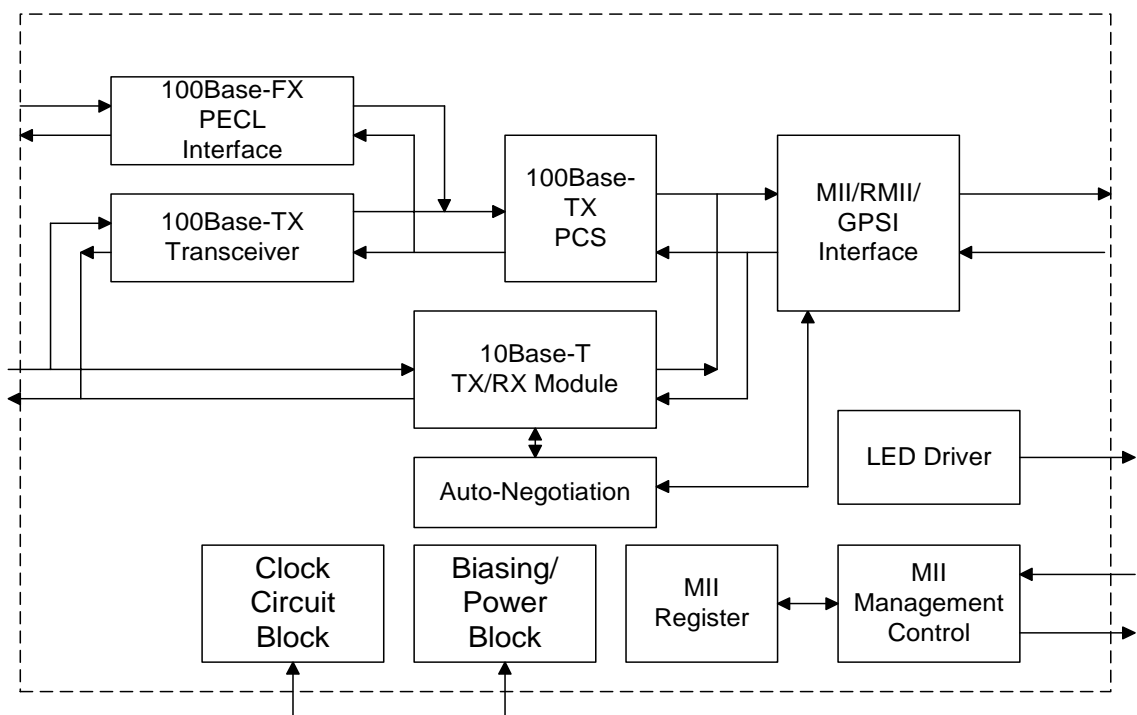
## 10/100 Mbps Fast Ethernet Physical Layer Single Chip Transceiver

June 2008 Rev.1.0

The DM9161EP is a physical layer, single-chip, and low power transceiver for 100BASE-TX 100BASE-FX and 10BASE-T operations. On the media side, it provides a direct interface either to Unshielded Twisted Pair Category 5 Cable (UTP5) for 100BASE-TX Fast Ethernet, or UTP5/UTP3 Cable for 10BASE-T Ethernet. Through the Media Independent Interface (MII), the DM9161EP connects to the Medium Access Control (MAC) layer, ensuring a high inter-operability from different vendors.

The DM9161EP 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), 10BASE-TX Encoder/Decoder (ENC/DEC), and Twisted Pair Media Access Unit (TPMAU). The DM9161EP provides a strong support for the auto-negotiation function, utilizing automatic media speed and protocol selection. Furthermore, due to the built-in wave-shaping filter, the DM9161EP needs no external filter to transport signals to the media in 100MBASE-TX or 10MBASE-T Ethernet operation.

### Block Diagram



## Specifications

- Fully complies with IEEE 802.3u 10Base-T/100Base-TX/FX
- Support Auto-Negotiation function, compliant with IEEE 802.3u
- Fully integrated Physical layer single chip with direct interface to magnetic
- Integrated 10Base-T and 100Base-TX transceiver
- Selectable repeater or node mode
- Far end fault signaling option in FX mode
- Selectable MII or RMII (Reduced MII) interface, at the 100BASE-TX
- Selectable GPSSI (7-Wired) or MII mode at the 10Base-T.
- Selectable twisted-pair or fiber mode output
- Selectable full-duplex or half-duplex operation
- MII management interface with maskable interrupt output capability
- Provide Loopback mode for easy system diagnostics
- LED status outputs indicate Link/ Activity, Speed10/100 and Full-duplex/Collision.
- 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

- VoIP CPE (ATA, IP Phone, Video Phone)
- IP STB, IPC, Internet Radio
- IP CAM, DVR, Router...

## Ordering Information

Part Number	Pin Count	Package
DM9161E	48	LQFP
DM9161EP	48	LQFP(Pb-Free)

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