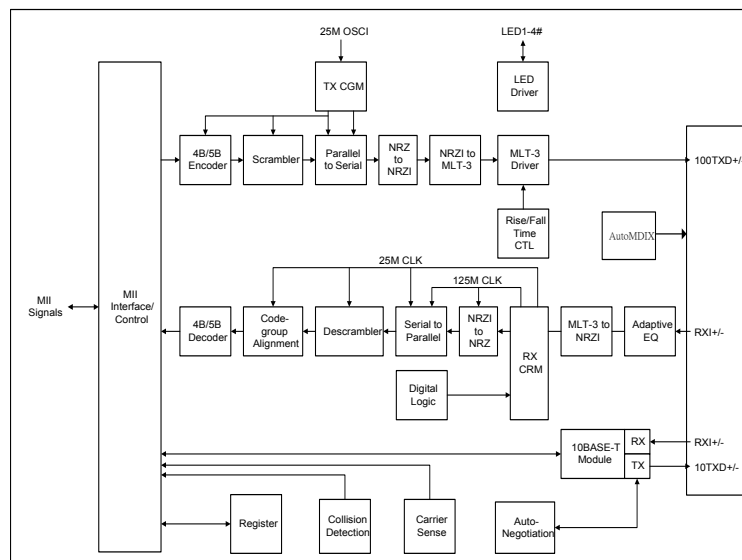# DM9161BIEP Product Brief

10/100 Mbps Fast Ethernet Physical Layer Single Chip Transceiver

November 2008 Rev.1.0

The DM9161BI is a physical layer, single-chip, and low power transceiver for 100BASE-TX and 10BASE-T operations. Supports Industrial-grade: -40℃ .~ +85℃ ,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 DM9161BI connects to the Medium Access Control (MAC) layer, ensuring a high inter operability from different vendors. TheDM9161BI uses a low power and high performance advanced 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 DM9161BI 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 DM9161BI needs no external filter to transport signals to the media in 100BASE-TXBASE-TX or 10BASE-TBASE-T Ethernet operation.

Block Diagram

Specifications

- Fully comply with IEEE 802.3 / IEEE 802.3u 10Base-T/ 100Base-TX, ANSI X3T12 TP-PMD 1995 standard
- Support MDI/MDI-X auto crossover function (Auto-MDI)
- Support Auto-Negotiation function, compliant with IEEE 802.3u
- Fully integrated Physical layer transceiver On-chip filtering with direct interface to magnetic   transformer
- Selectable repeater or node mode
- Selectable MII or RMII (Reduced MII) mode for 100Base-TX and 10Base-TX. Selectable   MII or GPSI (7-Wired) mode for 10Base-T
- 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. Support Dual-LED optional control
- Single low power Supply of 3.3V with an advanced 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. 1: 1 transformers only when HP Auto-MDIX Enable.
- Supports Industrial-grade: -40℃.~ +85℃,
- Compatible with 3.3V and 5.0V tolerant I/Os, 48-pin LQFP, 0.18 um process

Application

VoIP CPE (ATA, IP Phone, Video Phone)

IP STB, IPC, Internet Radio

IP CAM, DVR, Router…

Ordering Information

Part Number	Pin Count	Package
DM9161BIEP	48	LQFP(Pb-Free)