DM9161x / DM9162
Fast Ethernet Single PHY

Davicom´s single-port PHY series are low power Physical Layer Transceiver in LQFP-48 and QFN-32 packages. They are fully compliant to IEEE 802.3, IEEE 802.3u 10Base-T / 100 Base-TX and ANSI X3T12 TP-PMD 1995 standards.

The front-end can drive 10Base-T, 100Base-TX TP-transformer and FX-transceiver. Available Interfaces for connection to MAC layer chips, switches or microcontrollers with integrated MAC are MII, RMII and SNI/GPSI. An integrated wave filter saves external filters for the signal forwarding in 100Base-TX or 10Base-T modes.

DM9161 and DM9161A are based on a power saving analog manufacturing process. DM9161B and DM9162 are more cost-effective due to a digital signal process. All chips except DM9161 support HP´s Auto MDI-X feature.

DM9162 includes latest Davicom PHY technology. In RMII mode DM9162 can either internally generate the 50MHz reference clock-out or alternatively use the external 50MHz system clock. Most chips are available in commercial and industrial temperature range. DM9163 supports 8kV ESD and 3.3V at CT especially for industrial applications.

Product List

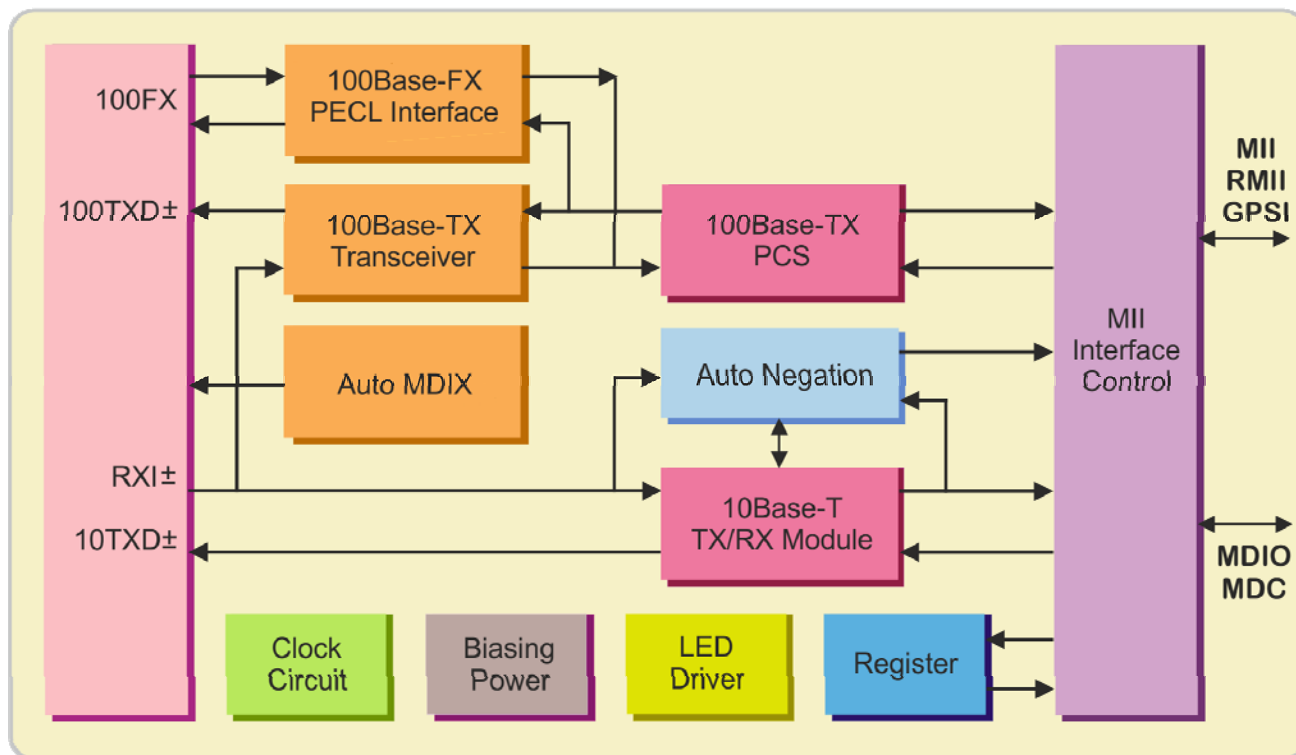| Parameter / Typ	Interface MII / RMII	Copper	Fiber	MDI-X	50 MHz RMII clock output	Temperature range 0°...70°C	Temperature range -40°...85°C	Current [max.] mA	Package
DM9161	✓	10/100M	100FX			✓		48+40*	48-LQFP
DM9161A	✓	10/100M		✓		✓		52+40*	48-LQFP
DM9162	✓	10/100M	100FX	✓	✓	✓	✓	90+40*	48-LQFP 32-QFN
DM9163	✓	10/100M		✓	✓		✓	90+40*	48-LQFP

*with transformer

General Features

- Small LQFP-48 and 32-QFN 5x5mm package (DM9162)
- Fully compatible with IEEE 802.3u
- 10-BaseT, 100BaseTX/FX, ANSI X3T12 TP-PMD
- MDI/MDI-X auto crossover function (DM9161A, DM9162)
- Auto Negotiation compliant with IEEE 802.3u
- Compatible with 3.3V and 5.0V tolerant I/Os
- Supports MII, Reduced MII (RMII) and SMI/GPSI Interfaces
- MII management interface with mask-able Interrupt output capability diagnostics
- Selectable full-duplex or half-duplex operation
- Selectable TX or FX output (DM9161, DM9162)
- LED status outputs indicate Link/Activity, Speed and Full-duplex/Collision
- Loopback mode for easy system diagnostics
- Very Low Power consumption mode:
  - Power Reduced mode (cable detection)
  - Power Down mode
- Selectable TX drivers for 1:1 or 1.25:1 transformers for additional power reduction
- 8kV Isolation Voltage (DM9163)
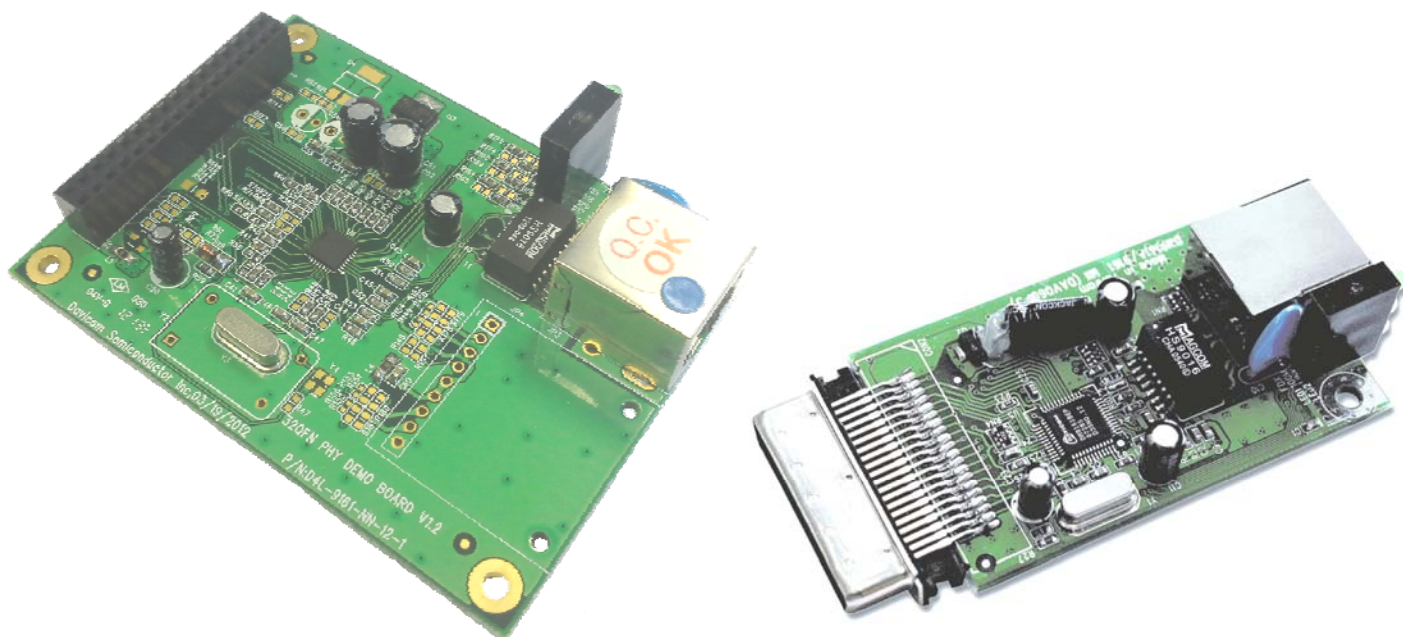- 3.3V at Center Tab (DM9163)

Block Diagram DM916x

Applications

- VoIP CPE (ATA, IP Phone, Video Phone)
- IP STB, IPC, Internet Radio
- Industrial-/Home-Automation, Networking
- POS -/Medical-Terminals, Security

Evaluation Boards DM9162 / DM9161