DAVICOM

Connectivity Beyond Limits

DM91xx
Fast Ethernet Single PHY

Davicom´s single-port PHY series are low power Physical Layer Transceiver in LQFP-48, QFN-32 and QFN-24 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.

DM9161 and DM9161A are based on a analog manufacturing process. DM9161B and DM9162 are based upon 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.

DM9111A is very cost effective due to 0,11µ technology. Signal transmission by voltage instead of current reduces the power consumption. It also supports IEEE802.3az.

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
DM9162	✓	10/100M	100FX	✓	✓	✓	✓	90+40*	48-LQFP 32-QFN
DM9111A	RMII	10/100M	100FX	✓	✓	✓	✓	58	24-QFN

*with transformer

General Features

- Small LQFP-48, 32-QFN and 24-QFN packages
- Fully compatible with IEEE 802.3u
- 10-BaseT, 100BaseTX/FX, ANSI X3T12 TP-PMD
- MDI/MDI-X auto crossover function
- Auto Negotiation compliant with IEEE 802.3u
- Compatible with 3.3V and 5.0V tolerant I/Os, DM9111A 2.5V/1.8V
- 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
- 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
- 50MHz clock out for RMII Applications
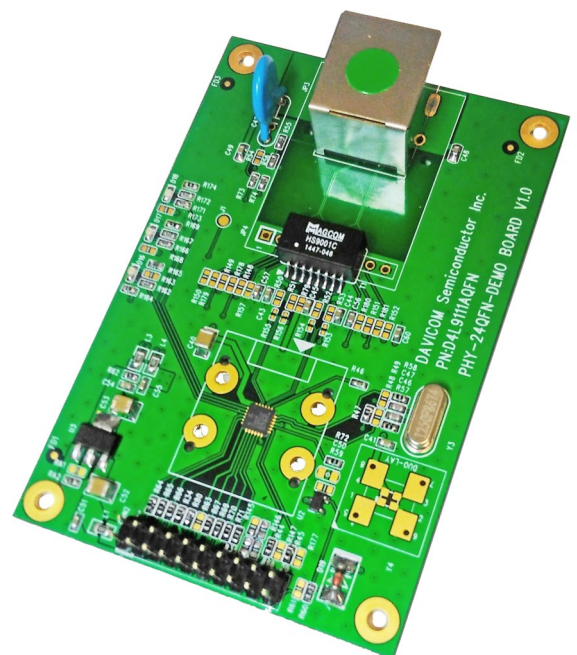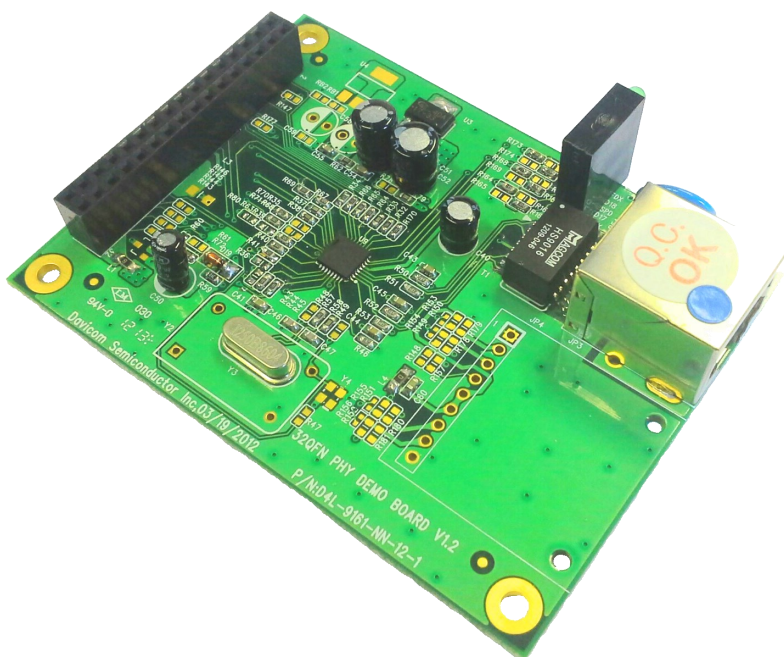- IEEE802.3az (DM9111A)
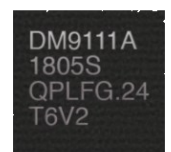
Block Diagram DM91xx
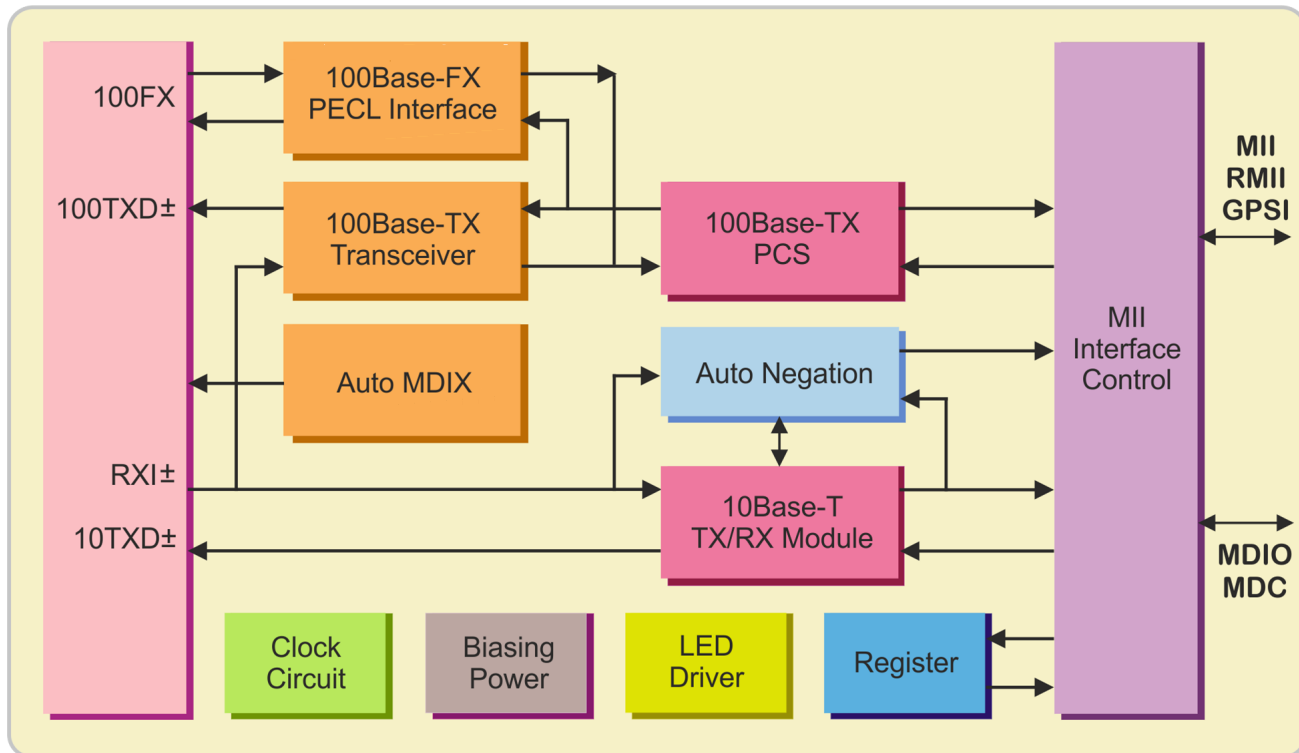
Applications

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

Evaluation Boards DM9162 / DM9111A