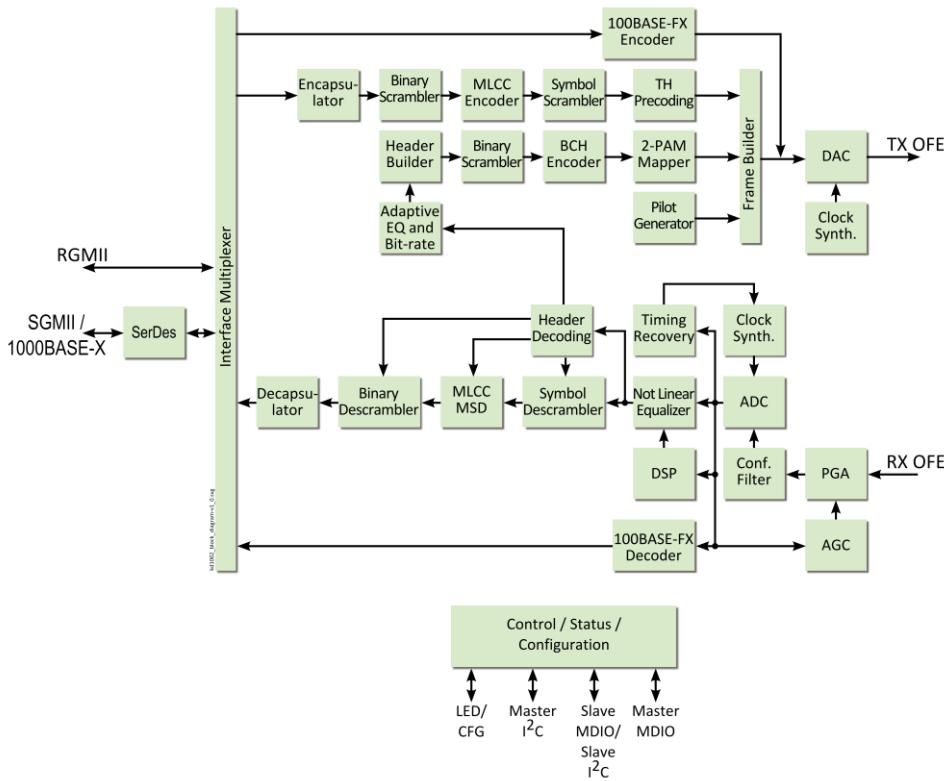


KD1002

Gigabit Ethernet POF Transceiver



KD1000 FAMILY



FEATURES

GENERAL

- Fully integrated Gigabit Ethernet POF transceiver for home and professional networking markets (commercial grade)

STANDARDS

- 1 Gbps operation; ETSI TS 105 175-1-2 compliant, fully compatible with optional Annex C providing Adaptive Bit Rate
- IEEE 802.3 100BASE-X PCS extension for backward compatibility
- Compliant with RGMII v2.0 and SGMII standards and with IEEE 802.3 Clauses 36 and 37 (1000BASE-X) operation
- Compliant with IEEE 802.3x for full-duplex operation
- Supports ETSI TS 105 175-1 (V2.0.0) and ETSI TS 105 175-1-1 (V2.1.0) specifications and specified for IEC 60793-2-40 A4a.2 POF
- Compliant with CENELEC EN 50173-1:2002 and CENELEC EN 50173-4:2007
- Tested according to IETF RFC 2544

DIGITAL DATA INTERFACE

- RGMII v2.0, SGMII & 1000BASE-X interfaces work as PHY or MAC side
- Hardware-configurable RGMII clock delay in TX & RX
- Supports 2.5V & 3.3V LVTTTL I/O standard on parallel interface; and 2.5V LVDS I/O on the serial ones
- Jumbo packets up to 16 KB
- Flow control support when ABR is enabled

DIGITAL CONTROL INTERFACE

- I2C master interface for reading optional boot memory
- Two MDC/MDIO interfaces: one slave for configuration and monitoring (that can be configured as I2C), and one master for link management in MAC operation

INTEGRATION

- Supports multiple FOT vendors
- Low-cost BOM
- Link / activity monitoring and speed LED outputs
- Hardware configuration pins (most are multi-function)
- Five loopback modes and four PMD test modes
- Monitoring and configuration capabilities via the slave MDC/MDIO interface

ASIC

- 65 nm CMOS process
- Low power, 500 mW
- 88-pin LGA package (7 x 7 mm)

OVERVIEW

The KD1002 fully integrated Gigabit Plastic Optical Fiber (POF) Ethernet serial transceiver is optimized for low-power and features a small footprint. This new transceiver implements the physical layer of the ETSI TS 105 175-1-2 to transmit data on standard SI-POF, MC-POF, or PCS (Plastic Clad Silica). Manufactured using a 65 nm CMOS Low-Power process, the KD1002 transceiver offers the best performance, lowest cost, and lowest power for Gigabit POF solutions.

The KD1002 transceiver leverages KDPOF's leading-edge digital communication technology, which is based on the company's reliable and short time-to-market ASIC architecture.

Home and small office networks are two of the key applications for future POF networking development. Designed to fulfill the requirements of the POF home and professional networking market, the KD1002 ASIC is the perfect device to integrate Gigabit capabilities into POF ports with a low-cost Bill of Materials (BOM). Its built-in analog interface simplifies connectivity to a Fiber Optic Transceiver (FOT).

POF ports based on the KD1002 ASIC can be implemented in many network components, including high-density switches, routers, wall plugs, media converters and Small Form Factor Plug-able (SFP) modules.

This device is designed to be used with current off-the-shelf photonics, including RCLED, LED, and PIN PD which are currently used in 100 Mbps products with an updated analog optoelectronics / interface.

The KD1002 transceiver supports 100BASE-FX for backward compatibility; and, in the digital data interface, standard RGMII (parallel) and SGMII/1000BASE-X/100BASE-X (serial) interfaces that simplifies system and board-level designs.