

KD-RD10x2-POFSW

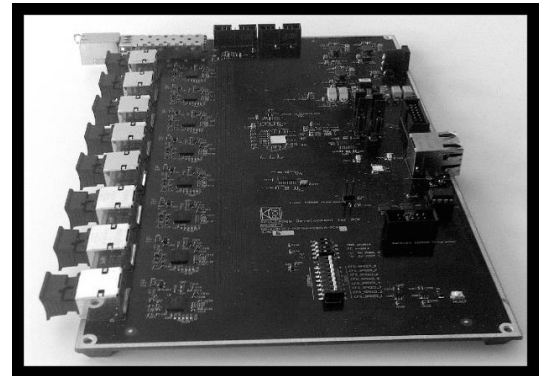
Ten-Port Gigabit Switch Reference Design



OVERVIEW

The KDPOF KD-RD10x2-POFSW Gigabit-POF Switch Reference Design is a development package to design and evaluate high-speed prototypes using the KDPOF KD1002 and KD1012 Gigabit Ethernet POF Transceiver ICs (7 mm x 7 mm, 88-pin, LGA plastic package). The design board has eight POF ports and two additional ones.

The KD-RD10x2-POFSW Gigabit-POF Switch Reference Design provides guidelines for design and evaluation capabilities in a flexible platform, enabling product designers to successfully shorten the time-to-market for KD1002/12-based end products.



KEY FEATURES

- One Gigabit operation as per VDE v 0885-763 (100BASE-P and xGBASE-P) pre-norm in the POF ports
- KD1012 supports long-reach operation as per VDE v 0885-763 (100BASE-P and xFBASE-P) pre-norm in the POF ports
- Eight Gigabit POF ports: five ports with SOHO connector from Avago, and three ports with automotive connector from Yazaki
- One Gigabit Ethernet port supporting 1000BASE-T, 100BASE-TX and 10BASE-T
- One SFP port supporting SGMII (100 Mbps / 1 Gbps), 1000BASE-X and 100BASE-X (only KD1012)
- Optional Adaptive Bit Rate on POF ports ensures reliable transmission with optimal channel capacity usage at maximum data rates
- Full duplex, 1 Gbps per direction, over 50 m of standard SI-POF for Gigabit operation (SOHO setup)
- Full duplex, 1 Gbps per direction, over 15 m of standard SI-POF with two automotive in-line connectors for Gigabit operation (automotive setup)
- Full duplex, 100 Mbps per direction, over 150 m of standard SI-POF for long-reach (only KD1012) (industrial setup)
- Optional pause frame support for flow control
- Guaranteed 10^{-10} BER at 1 Gbps according to RFC 2544
- Easy monitoring and control of KD10x2 through MDIO port

MAJOR BENEFITS

- Included documentation package provides product designers with valuable information
- Shortens time-to-market of end products
- Designed for demonstrating the operation of KD1002 and KD1012 transceivers integrated into high-speed and high-density systems
- Evaluation tool for different markets: home networking, professional and future KDPOF automotive family of transceivers
- Together with USB2All module (not included), enables real-time monitoring of the link, reporting key performance parameters, like local and remote received average optical power (dBm), local and remote link margin (dB), transmit and receive link speed, and local configuration
- Enables control of the local transceiver to provide different loopback and test modes, and resetting
- SDK included

CONFIGURATION

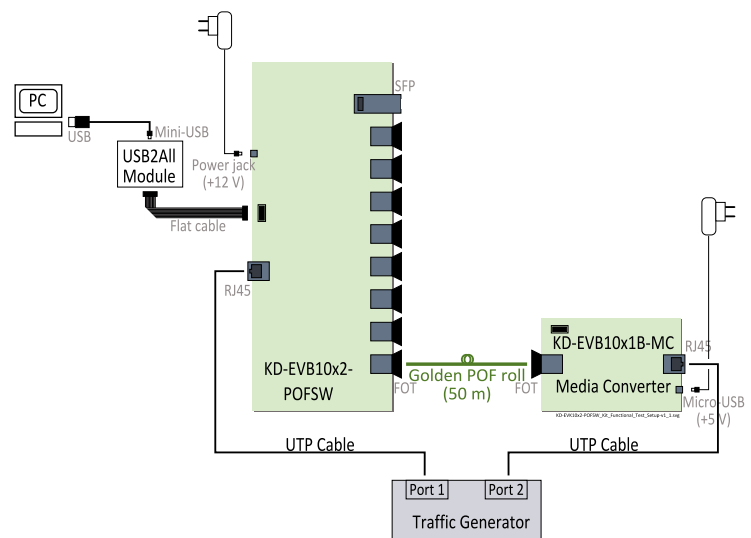


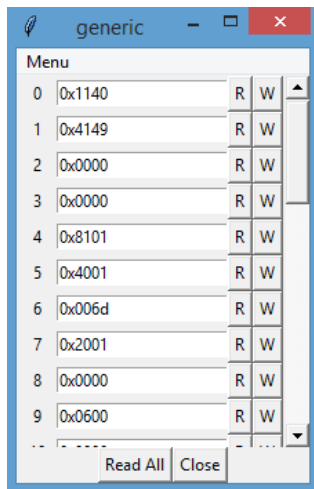
Figure 1. Configuration layout for KD-RD10x2-POFSW (Media Converter not included)

PRODUCT DESCRIPTION

The KDPOF KD-RD10x2-POFSW Gigabit-POF Reference Design is a flexible and valuable platform that enables evaluation of KDPOF Gigabit POF technology through its KD1002 or KD1012 Gigabit Ethernet POF transceiver chips. The reference design is based on the Marvel Gigabit Ethernet Switch 88E6185 in which the user can plug five home networking SI-POF fibers, three automotive SI-POF fibers, one uplink UTP cable, and a general-purpose SFP module while maintaining the performance of all the links.

In addition, control and status of the several KD1002/12 transceivers is accessed through the GUI, which is run on a computer connected via USB2All (not included). Using either the GUI or easily accessible on-board switches, the user can configure several chip options. The GUI, shown in Figure 2, includes several panels that provide complete access to the KD1002/12 transceivers, link status and parameters.

User and design documentation is provided in order to simplify the development process of end products.



PACKAGE CONTENTS

The reference design includes¹:

- One KD-EVB10x2-POFSW board with KD1002/12 transceivers
- Jumpers for debugging purposes
- Documentation package containing user manual, schematics, layout and bill of materials

¹ Neither USB2All module nor SFP module are included

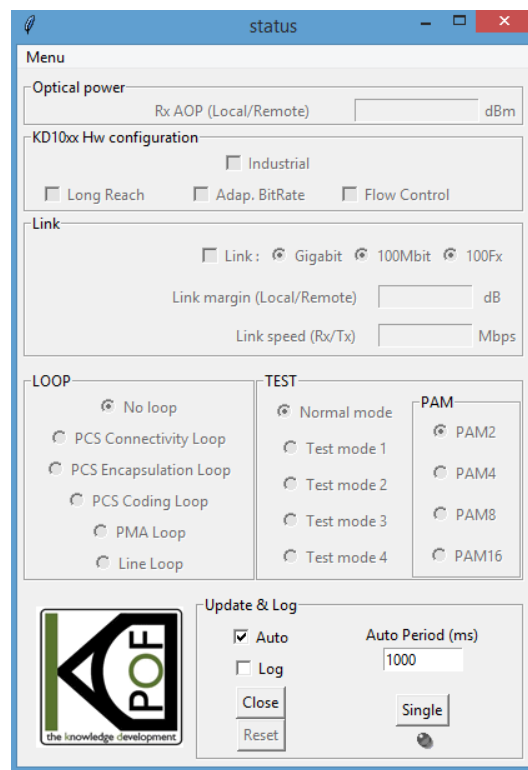


Figure 2. Multi-platform GUI tool



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