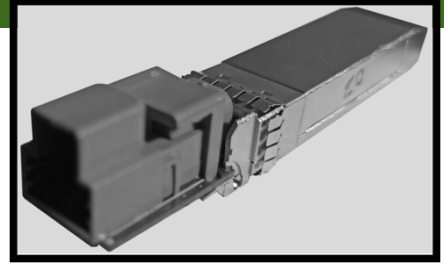
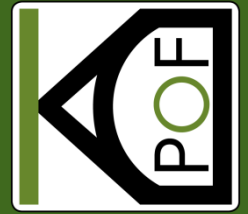


EVB9351-SFP Optical SFP Demo-Board

1000BASE-RHC SFP Automotive Test Tool



KD1050 FAMILY - Automotive

OVERVIEW

The KDPOF EVB9351-SFP is an automotive optical 1000BASE-RHC small form factor pluggable (SFP) module. It is based on the KDPOF KD1053 PHY and KD9351 FOT transceivers. The KD9351 IC (7 mm x 8 mm LGA-36) implements the PMD sublayer of the physical layer; while the KD1053 (7 mm x 7 mm QFN-56), the PCS and PMA sublayers, as defined in IEEE Std 802.3bv™-2017. The EVB9351-SFP can operate at 1000 and 100 Mbps.

The EVB9351-SFP module supports 1000BASE-X, 100BASE-X and SGMII at the SFP host data interface. The KD1053 can be configured, and its registers accessed, thanks to the I2C bus at the SFP management interface (MSA SFF-8472). This module has a narrow-width profile, which allows inserting two of them in dual or multiple SFP slots, avoiding mechanical issues.

The EVB9351-SFP is an excellent evaluation vehicle for the implementation of a 1000BASE-RHC physical layer based on the KDPOF KD9351 and KD1053, targeted to automotive OEM, TIER and test houses. Moreover, the board is a reference design for suppliers of test tools who want to integrate optical Ethernet in their test setups, without upgrading their test equipment. This module can replace the bulkier evaluation boards in demonstration setups, resulting in more compact demos.

Design documentation as well as SDK software is provided together with the board.

KEY FEATURES

- One-gigabit full-duplex operation according to the 1000BASE-RHC physical layer (IEEE Std 802.3bv™-2017) and hundred-megabit full-duplex operation according to the future 100BASE-H physical layer
- Operates at 1 Gbps with 15 m with up to three in-line connectors¹; and at 100 Mbps 40 m with up to four in-liners
- This board is compatible with diverse optical connectivity solutions from different suppliers (header connectors) available in the market
- Data host interface: support for SGMII, 1000BASE-X and 100BASE-X at the SFP electrical interface
- Management host interface: support for I2C at the SFP electrical interface. Easy monitoring and configuration of the KD1053 through the I2C bus
- Guaranteed 10^{-12} BER according to RFC 2544
- Operation temperature range from -40 to 105°C

MAJOR BENEFITS

- Ideal platform to test the functionality and the performance of KD9351 and KD1053 transceivers at 1000/100 Mbps.
- Enables compact demos of automotive optical 1000BASE-RHC links.
- The I2C bus enables real-time monitoring of the optical link, reporting key performance parameters (received average optical power (dBm), local and remote link margin (dB)) and configuration. Registers access is supported, and compatible with MSA SFF-8472.
- Withstands full automotive temperature range (grade 2)
- Documentation and SDK included.

CONFIGURATION

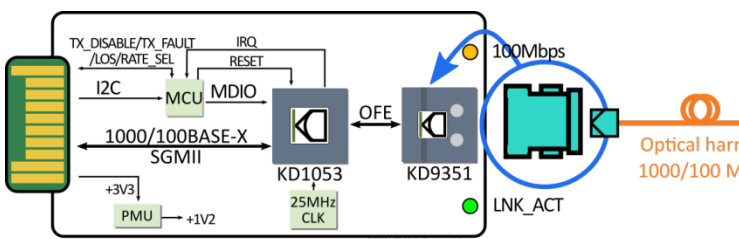


Figure 1. Block diagram of EVB9351-SFP

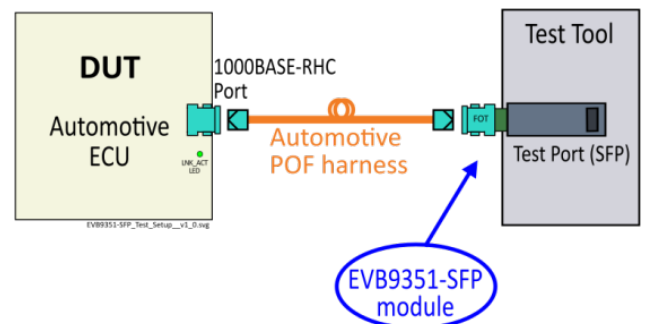


Figure 2. Typical test setup with an EVB9351-SFP

¹ More in-line connectors can be added for ambient temperatures below 105°C.