



## Gbit/s POF (Polymer Optical Fibre) Transceiver



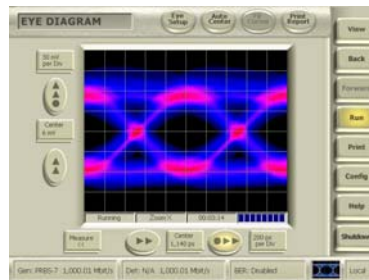
### Target Specification

- Applications: FireWire 1394b, Gbit-Ethernet
- Supply voltage: 5 V or 3.3 V
- Current consumption: < 200 mA
- Interface: LVPECL
- Data rate: 125 MBit/s – 1.25 GBit/s
- Fiber: 50 m OM-Giga @ 1GBit/s  
15 m SI-POF
- Operating temperature: -10 .. 70 °C
- Storage temperature: -40 .. 85 °C
- Laser: FP Laser
- Wavelength : 645 nm – 655 nm
- Laser output power: 3 mW - 5 mW (4.5 dBm - 7 dBm)
- Laser Class: 1M
- Fibre coupled power: 1 mW – 3 mW (0 dBm – 4,5 dBm)
- Receiver type: Si-PIN Diode
- Receiver sensitivity: < 30 uW (< -15 dBm)
- Dispersion Filter: non-adaptive electronic dispersion compensation

### Gbit/s POF transceiver design

Transceiver electronic with similar parameters already has been built at the Fraunhofer IIS. Eye diagrams of this optical transmission system developed in our labs are shown below. Only integration in a standard transceiver case (e.g. 2x5 style) has to be done.

The great advantage of POF compared to glass optical fiber is the simple installation without special tools.

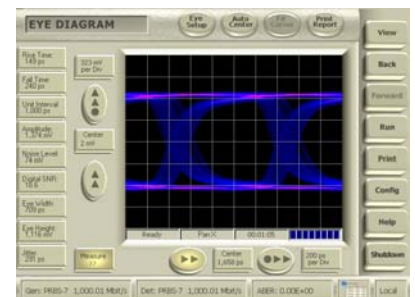


Eye diagram of 20 m standard SI-POF transmission at 1000 Mbit/s with dispersion filter

### New fibers for wider distances

New POF developments (e.g. GI-PMMA-POF) allow an increased transmission distance at a high data rate. The advantage of easy setup and installation can still be utilised with the new fibre with a core diameter of 1 mm.

Transceivers can also be designed for



Eye diagram of 50 m GI-PMMA-POF (OM-Giga) transmission at 1000 Mbit/s

all other kinds of fibers, e.g. Hard Clad Silica (HCS) or glass Multimode fiber. Please feel free to contact us.

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