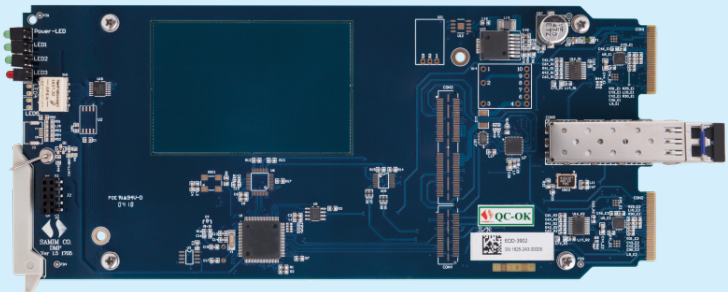# SAMIM
Media & Communication Technologies

EOD-3902

Dual Channel 3G/HD/SD-SDI
Electrical to Optical Converter

2024 Datasheet

The EOD-3902 is a 3G/HD/SD-SDI/ASI electrical signals to optical signals converter. The module can transmit two digital video signals over fiber optic links and additionally provide two re-clocked electrical outputs per input.

The EOD-3902 performs automatic input signal detection, two conversions on a single board, and input signal re-clocking. Users can use different SFPs with various output powers and wavelengths related to the link length and receiver sensitivity.

This module offers two distinct routing modes: manual and auto change-over. In manual mode, users can manually select from four different modes for built-in 2x2 crosspoint. In auto change-over mode, two sub-modes are available: single 1-to-2 and dual 1-to-1.

In the single 1-to-2 mode, users designate their preferred input, and the module automatically executes change-over function based on the carrier lock status of the input signals. In the dual 1-to-1 mode, each output receives signals from corresponding inputs unless an input becomes unlocked. Following a change trigger, the module can revert to the preferred input manually, automatically, or if the backup input becomes unlocked.
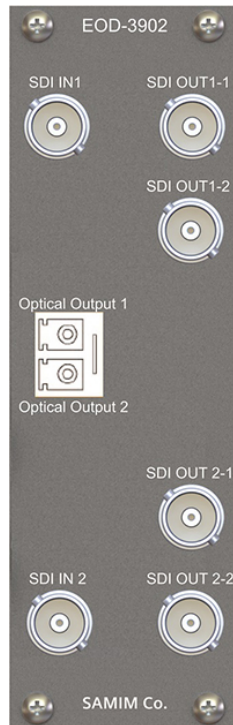
All adjustments and controls can be applied directly by onboard DIP switches and the web-based user interface. LED indicators on the front edge of the module, inform the user about the operational status of the module.
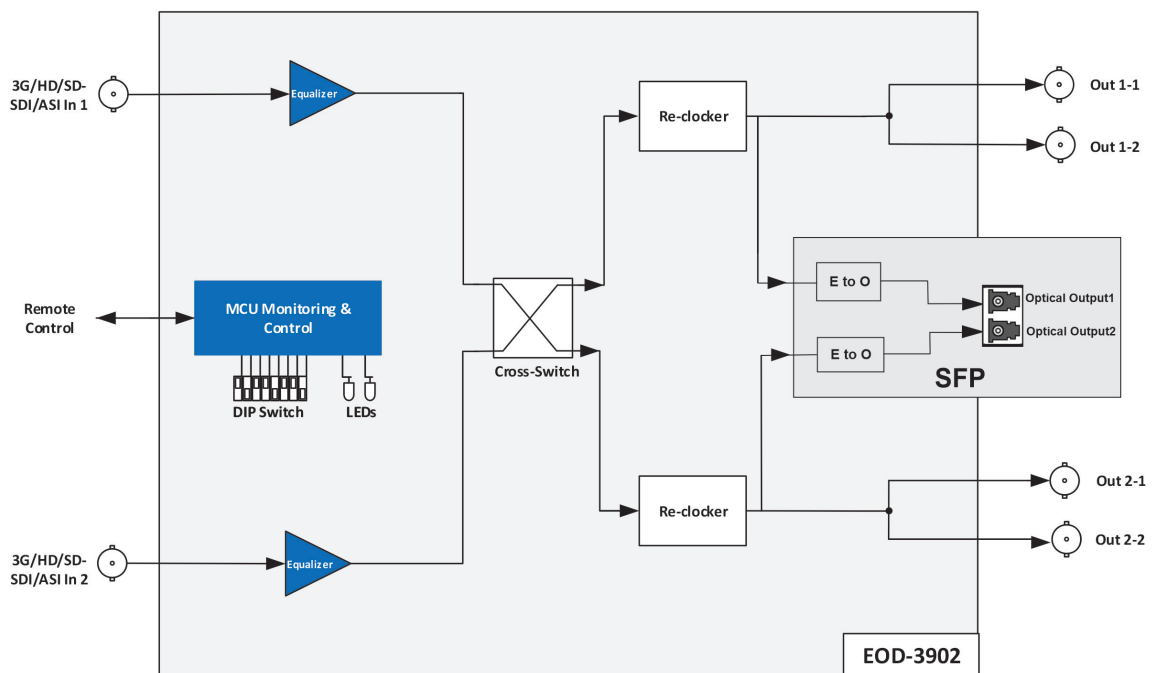
Key Features

- Supports SMPTE 259M, SMPTE 292M, SMPTE 424M, and DVB-ASI standards
- Optical connection via various range of SFPs
- SFP parameters monitoring: wavelength, power, and temperature
- Input change-over in the event of input loss
- Input re-clocking
- Four 3G/HD/SD-SDI/ASI electrical outputs as distribution amplifier
- LED status indicators

- Web-based user interface
- Remote firmware upgrade

Back Panel

Block Diagram

Specifications

Digital Video Inputs	
Signal type	3G/HD/SD-SDI / DVB-ASI
Standards	SMPTE 259M, SMPTE 292M, SMPTE 424M
Number of inputs	2
Connector	BNC
Impedance	75Ω
Cable length	Automatic Compensation 3G: 60m (Belden 1694A) HD: 110m (Belden 1694A) SD: 250m (Belden 1505)

Optical Outputs	
Signal type	Optical SDI/ASI
Standard	SMPTE ST 297M
Number of outputs	2
SFP related parameters	Connector Type Wavelength Fiber Type Output Power

Environmental	
Temperature	5 °C to 40 °C
Humidity	0% to 90%

Digital Video Outputs	
Signal type	3G/HD/SD-SDI / DVB-ASI
Standard	SMPTE 259M, SMPTE 292M, SMPTE 424M
Number of outputs	2+2
Connector	BNC
Impedance	75
Voltage Level	800 mV ± 10%
Jitter	<0.2 UI (SD, HD) <0.3 UI (3G)
Return loss	>15 dB to 270Mb/s >12 dB to 1.5Gb/s >10 dB to 3Gb/s
Rise and fall time	0.4 to 1.5 ns (SD) <270 ps (HD) <135 ps (3G)
Overshoot	<10% Amplitude
DC Offset	0 V ± 0.5 V

Electrical	
Voltage	+12VDC (from frame)
Power	<5W (excluding SFP usage)

Mechanical	
Dimensions	220 mm × 100 mm (for 19", 3RU Samim frame)

System Requirements

Type	Product	Description
Frame	SRM-0645	1RU Frame with Controller
	SRM-0655	3RU Frame with Controller

Ordering Information

Order Code	Description	Type
EOD-3902	Dual Channel 3G/HD/SD-SDI Electrical to Optical Converter	Main Board
EOD-3902-3DRP	Back-panel for EOD-3902 (compatible with SRM-0655)	Back Panel
EOD-3902-1DRP	Back-panel for EOD-3902 (compatible with SRM-0645)	Back Panel
EOD-3902-3SRP	Single slot back-panel for EOD-3902 (compatible with SRM-0655) Only x1 loop output per channel	Back Panel
FBR-0003	Video SFP, Dual Transmitter, -5 to 0dbm, 10km, 0.27~3Gbps, 1310nm	Accessory
Contact Samim	An SFP with other power and wavelength specification	Accessory

With over two decades of extensive experience in the broadcast and media industry, Samim Group has emerged as a rapidly growing manufacturer and developer of professional-grade hardware and software solutions that cater to Broadcast Production Infrastructure, Intercom Systems, and Media Business Automation. We remain attuned to the latest technological advancements, ensuring we deliver high-standard solutions and products that can be marketed globally.

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