ARVOO

optic*link*™
LS

Datasheet optic*link*™ LS-16

Key features

- LVDS RS-644 video interface (optional RS-422)
- max 16 bit per pixel
- up to 55MHz pixel clock (optional 62.5 MHz)
- available in two models:
  - mm: multi mode fiber, maximum length: 500 meter
  - sm: single mode fiber, maximum length: 10 kilometer (optional: 40 to 60 km)
- transmission of:
  - video data and synchronisation
  - two RS-232 channels
  - control signals
- two units:
  - L2F converts LVDS data to fiber
  - F2L converts fiber back to digital video
- unit L2F connects directly to picasso™ PCI-FI and cPCI-FI framegrabber
- fiber link benefits:
  - does not radiate
  - is not susceptible of electromagnetic interference
  - difficult to tap (secure connection)
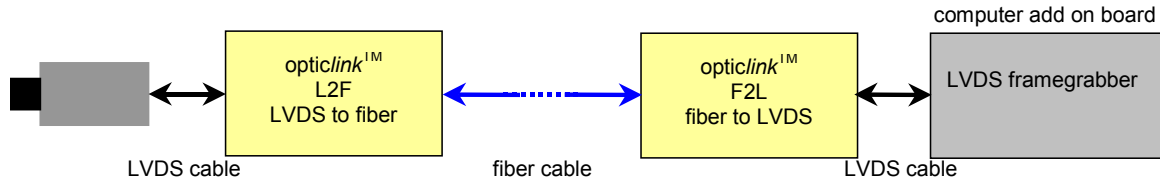 - no grounding problems

General

The optic*link*™ LS-16 offers long haul video transmission over fiber optics cable. This interface can be used for transmission of LVDS video data up to about 40 to 60 kilometer without optical repeaters.

It is a transparent interface, so it is compatible with almost all available LVDS cameras and third party framegrabbers. The optic*link*™ transmits not only video data from camera to framegrabber. Two bidirectional RS-232 channels and camera control signals from framegrabber to camera are transmitted too.
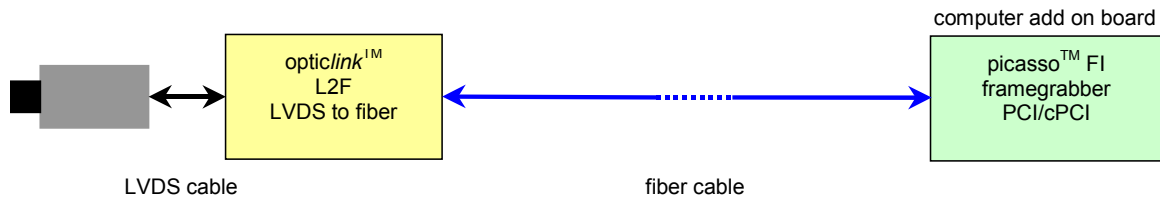
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System

optic*link*™ set solution

computer add on board

	optic*link*™ L2F LVDS to fiber	optic*link*™ F2L fiber to LVDS	LVDS framegrabber

LVDS cable   fiber cable   LVDS cable
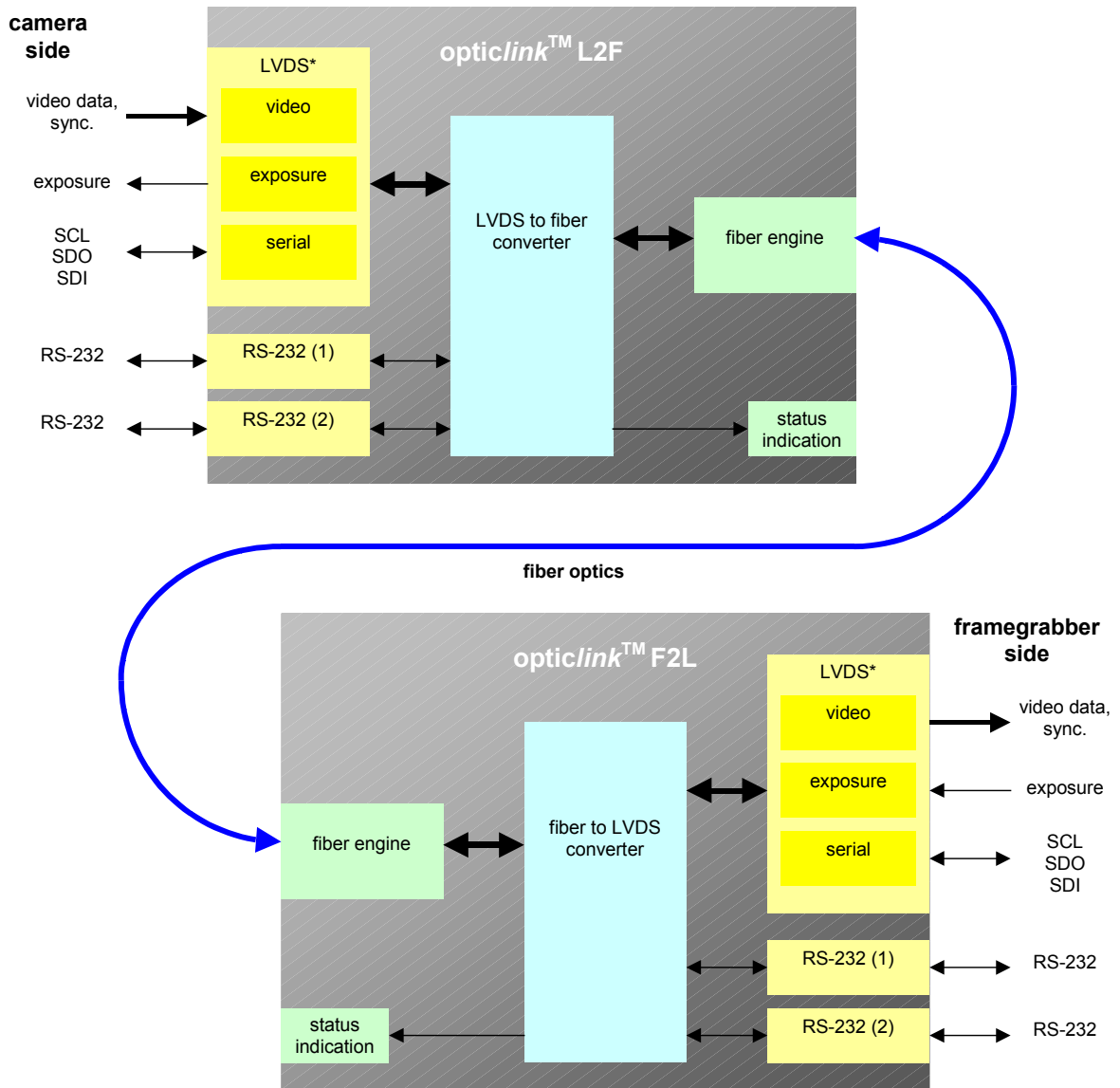
The generated LVDS signals of the camera will be converted to fiber signals by the optic*link*™ L2F. The optic*link*™ F2L converts the fiber data to the original LVDS signals and can be acquired by a framegrabber (eg. picasso™ LS).
The LVDS-fiber-LVDS conversions are entirely transparent, delays are not introduced.

compact solution

computer add on board

	optic*link*™ L2F LVDS to fiber	picasso™ FI framegrabber PCI/cPCI

LVDS cable   fiber cable

This system consists of one optic*link*™ L2F unit and one computer add on board: the picasso™ FI framegrabber, available for standard PCI and Compact PCI. This framegrabber has a direct fiber input.
This solution eliminates the optic*link*™ F2L unit.

Architecture

camera side

video data, sync.

exposure

SCL
SDO
SDI

RS-232

RS-232

optic*link*™ L2F

LVDS*

video

exposure

serial

RS-232 (1)

RS-232 (2)

LVDS to fiber converter

fiber engine

status indication

fiber optics

optic*link*™ F2L

fiber engine

status indication

fiber to LVDS converter

LVDS*

video

exposure

serial

RS-232 (1)

RS-232 (2)

framegrabber side

video data, sync.

exposure

SCL
SDO
SDI

RS-232

RS-232

* RS-644, optional RS-422 compatible

Technical Specifications

optic*link*™ *LS-16*

Fiber interface

Fiber type	multi mode or single mode
Max fiber length	multi mode: 500 meter single mode: 10 kilometer (optional: up to about 40 to 60 km)
Fiber tranceiver	1, full duplex
Fiber connector	1x SC-duplex
#duplex fibers in link	1

LVDS interface

LVDS interface	LVDS RS-644 (optional RS-422)
Pixel clock	10 to 55 MHz (optional 0 to 10 MHz or 10 to 62.5 MHz)
Pixel data	up to 16-bits
Video timing	LEN FEN Pixel clock Exposure
LVDS Serial	SDI SDO SCL
LVDS connector	AIA-standard 68-pin female

RS-232 interface

RS-232 channels	2, full duplex
RS-232 connectors	2x sub-D9

General

Power connector	4-pins subminiature round male connector
Dimensions (l x wx h)	160 x 105 x 44 mm
Supply voltage	5.5 V to 6.5 V
Power consumption	7.8 W typical
Operating temperature	0^0 C to 70^0 C

Options

Hardware modifications

RS-422 modification
pixel clock range: 0 to 10 MHz
pixel clock range: 10 to 62.5 MHz
extended fiber length modification (up to about 40 to 60 km)
DIN-rail enclosure
4 screw mount enclosure