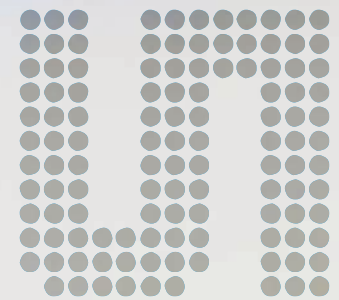# NanEye USB/HDMI Fiber Optic box

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NanEye Fiber Optic Box 2.0

- Fully embedded all in one image processing unit
- 1080p/60 video format for direct connect to a HDMI compatible monitor
- Adjustable fiber light source
- USB3 interface to the NanEye viewer for video transmission and
  NanEye sensor control

Sensing
is life.

General Description

NanEye Fiber Optic Box Demo Kit 2.0 is a fully embedded all in one image processing unit that interfaces the NanEye® micro camera head signals and provides an output of 1080p/60 format HDMI video signal which can be directly plugged to a HDMI compatible monitor. No additional PC or image processing is required.

The Demo Kit embeds advanced image processing algorithms to automatic control exposure settings, construct the color data from the raw binary stream and displays an output image of 750 x 750 pixels over an HDMI interface.

The USB3 interface allows the connection to the NanEye viewer running on a PC to get access to the sensors' raw images and control settings.

The Demo Kit includes a fiber light source, which provides light to the tip of the NanEye® Sensor probe via a 0.5mm plastic optic fiber. The fiber and NanEye® camera are housed in a 2.3mm diameter lumen of 1m length that can be plugged and unplugged easily from the processing and illumination unit. The illumination intensity is adjustable by a manual dial. The unit is supplied by a 12V wall charger and provides galvanic isolation to the camera head. It can interface to any standard monitor with HDMI input. The main body of the Demo Kit measures only 17cm x 17cm x 5.6cm and provides all necessary video processing and display driving plus the adjustable illumination.

For optimal color balancing, the Demo Kit is pre-calibrated to the NanEye® camera head purchased together with the kit.

Benefits

- Easy to use plug and play solution
- Stand alone video output via HDM (no PC required)
- High quality image output
- All in one eval kit with illumination
- Raw image data access and sensor control via USB3 and NanEye viewer

Features

- Supports up to 2 NanEye® 2D
- Integrated adjustabel fiber light source
- HDMI 1080p/60 video output
- USB3 PC interface to NanEye viewer
- Image processing, correction and enhancements
- Auto exposure

Fiber Obtic Box Block Diagram

NanEye 1
Sensor-IF, LED ring
Data Flash, User I2C

NanEye 2
Sensor-IF
Data Flash, User I2C

User I/O
Rotary Switch, Push
Button, Status LEDs

LED
Fiber Light Source

Processing System

Xilinx Artix-7 XC7A100T

SPI-FLASH 1x 64Mbit (configuration)

SPI-FLASH 2x 32Mbit (User)

DDR3L SDRAM 128M x 16

RTC

Crypto Authentication Device

HDMI
1080p / 60Hz

USB3

JTAG

Debug