

TRIObox

Three-in-one device:

- Programmable Camera Trigger
- 3 Channels LED Light Driver
- 8/8 Digital inputs outputs

Optimized for Machine Vision:

- Opto-isolated USB / RS232 interface
- Small housing 50/71/120mm
- DIN rail mount
- Trigger-Camera-Light Synchronisation
- Distributed 24V DC opto-isolated IO
- Programmable Delay and Pulse Width
- 10us, 4 Fast track input-to-output pins
- 3 ways RGB light intensity regulation



TRIObox compact device efficiently combines three components often used in machine vision.

- ◆ Camera Trigger
- ◆ LED Light Driver
- ◆ Digital input-outputs

All three functions in one small industrial housing connected to host computer via single serial cable. TRIObox provide

- ◆ save space in electrical cabinet
- ◆ simple computer connection
- ◆ short IO (PLC) cabling
- ◆ ready software interface
- ◆ full galvanic isolation

Programmable Camera Trigger synchronize the start signal with light and camera. Signal from the sensor detecting presence of inspected object will trigger the LED light and camera with pre-defined time delay and pulse length. Minimal time step is 10us.

LED Light Driver which regulates light intensity by controlling LED current in 4096 steps and lighting time in range from 10us to second. Independent 3 channels control gives possibility to change light spectrum when three different wavelength LEDs

are used. E.g. Red Green & Blue.

Digital input-outputs interface machine vision system with host machine. 8 Inputs and 8 outputs are independently opto-isolated. NPN and PNP wiring compatible. IOs are isolated also from USB / RS232

USB/RS232 interface

Provides fast connection to host computer. Both USB and RS232 are galvanic isolated from 24V DC power supply, therefore whole host machine.

Simple protocol allows users to control TRIObox via standard (RS232) COM port or virtual COM port (over USB). In this case drivers installation or use of software libraries is not needed.

Software modules

makes TRIObox quick and easy implemented in your application. Examples are provided in C++, C#, VB or LabView programming languages

Test application

Utility provides test of communication, controls settings and

directly access Inputs / Outputs.

Communication protocol

Simple proprietary protocol with acknowledge and packet counting prevents from data loss. Protocol is public and visible on in test application. When using RS232 selected COM port parameters are: 115kb, 8bit, parity none, 1 stop bit.

Technical parameters

Power supply	10-25V DC
Operating temperature	0 - 40C
Dimensions	50x71x120
Digital Inputs/Outputs	8/8
Fast preprogrammed I/O	4
I/O Output	0-24V,100mA
I/O input voltage low	0-2V
I/O input voltage high	5-30V
Max LED light current	3A
Intensity levels	4096
Internal generator	2ms - 65s
Minimum delay time	10us
IO-PC response time	max. 5ms
Trigger-PC response time	max. 5ms

Industrial environment

housing can be placed in IP65 cabinet

TRIObox

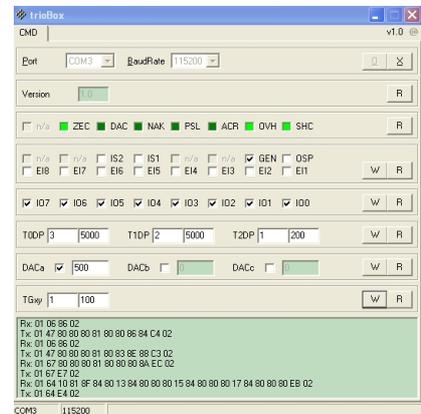
Reliable Hardware



Custom LED lights



Software tools



TRIObox is an ideal device for Machine Vision applications. It will precisely synchronise Light, Camera and machine's IO interface.

Metal housing, DIN rail mount and all opto isolated inputs and outputs, include USB, makes this device robust and reliable for industrial applications.

Firmware Watch-dog and package counters increase reliability for use with PC.

In price of LED light driver you will get

- Light intensity control
- Light pulsing
- Preprogrammed delay of Camera shutter or Light
- Internal generator
- Controlling 3 independent light sectors or balancing RGB colours
- 8 Inputs and 8 Outputs
- 4 fast preprogrammed IOs
- trouble free opto-isolation
- All controlled from your PC

Do you need to exchange light bulbs few times a year?

You don't need to. Most of latest Machine Vision systems are using LED light due to long lifetime of LEDs compare to other light sources. This lifetime can be even extended by pulsing the light when it is needed.

Lifetime in many applications can reach as much as 25 years (depending on application)

Is your fibre optic light system too expensive?

Due to flexible technology, we are prepared to accept very small volume orders. In price of standard LED light you will get your tailor-made LED light with long lifetime.

Company SevenTech can produce for you customized LED lights. Please send us description of the old lighting and we will prepare LED light replacement for you.

Easy to control your LED light

Software tools provided with TRIObox allows you comfortably set all parameters from your PC via USB or COM port. TRIObox can work then independently from PC. After power-down TRIObox stores last settings and continue in work as before.

If permanent control of IO and LED light settings is required you will benefit from reliable, ready to use, software components (.DLL, .VI). All with examples.

Software package contains also C, C++, LabView source code to implement TRIObox control fully into your application.

Pooling and Event generation modes are possible. Each input can be independently set to generate the event. Package counter and time stamp is implemented for higher reliability.