



“Stream-control” LLC

High-speed optical scanner

Characteristics

Camera:

Frame rate: 90000 Hz

Resolution: 4096x2

Type of shutter: global

ADC bits: 13

Objective lens: Nikon F

External interface: PCI-Express x4, PCIe wired repeater.

Software:

Windows[®] - driver

Software (in process of development):

Number recognition

Diagnostics of the geometry of rotating objects

The analysis of moving and lengthy objects



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Key applications of the device

The railways

Scanning of numbers of railway wagons and tanks.

Monitoring of the geometry of wheel sets and measuring of distances between rails.

Optical analysis of rails surfaces.

Counting of axles for dividing of train to wagons.

High-speed optical sensor.

Allows to measure:

- velocities and surfaces of objects;
- level of runouts and vibrations of rotating components.
- the magnitude of deviations of the geometrical dimensions of the objects from valid values;
- the value of objects offset;
- the direction of normal vector relatively to the axle of wheel set.



Monitoring of traffic

Measuring of velocities of vehicles.

The device allows gathering information about presence of vacant places on the car parking. Placing of device's sensors on the lighting poles and cellular operators masts allows to recognize and monitor the movement of vehicles on adjacent territory.

Energetic

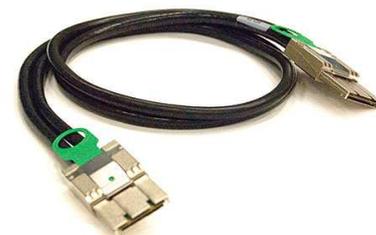
Diagnostics and monitoring of condition of energetic plants (wind power stations) vanes and paddles of turbines.



Communication capabilities of the device

In the process of working the device packages data from sensors and transmits them by PCI-Express to operate memory of personal computer in the mode of direct memory access. There is also a modification of device which transmits data by PCI-Express wire.

Herewith, the module that receives data stream from PCI-Express cable, which represents an extension card of PCI-Express x8 form factor, can be placed directly to personal computer which processes data, or to server.



Also the gathering of data from sensors with following transmission of them by UDP (low latency) protocol of Ethernet is possible. Due to it there was developed a software which provides minimum latencies of packet transmissions for the determined net topology.

The device can be used as a module of field level for the automatic systems of operations. In particular, it can be used for gathering of digital data from various high-speed sensors, including optical.

The module of signals digital processing

The device allows to:

- make stabilization and smoothing of wave diagram received from sensor.
- make normalization of values after digitizing of signal.
- measure the parameters of signal envelope, which is determined as a result of work of low frequencies filter for received signal.
- measure the values with taking into account the parameters of ongoing process

The period of data gathering by device and the moment of starting the given process are determined by external events and are operated automatically. The device provides possibilities of calibration and setting in the time of working.

The device has four independent channels from which the data can be separately processed, then be joined according to some principles and be transmitted to the external interface.

