

Stereo-line-camera SZK971-xx
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Stereo-line-camera with high dynamics and integrated processing unit

Technical data:

Pixelcount	: approximately 2x800 (limited by 2/3" C-Mount-optics - sensor = 2048 pixels)
Conversion	: AD-converter 8/10/12 bit (black/white) normal or double scanning
Exposure	: 350ns...350ms (1/3.000.000 ... 1/3 s) regulation automatically (limits adjustable) type of regulation and speed programmable suppression of spotlights duplicate exposure with different parameters
Trigger impulse	: free running external, one line or a sequence of lines
evaluation	: 1 or 2 processors for control and evaluation storage up to 128 picture sets filtering, compression, summation / subtraction of pictures free programmable image processing
Transmission	: RS232 or RS485 only graphic data / only results or combinations of them with his own protocol calculator (8051 or RISC)

The **SZK971** and **SZK972** are cameras with a high own processing performance, what makes possible a complex picture processing and -evaluation. It is also possible to adapt to the users requirements through their very flexibly programmability.

Exposure

By the free Control of the sensors is a exposure time possible from about 350ns up to 350ms. The upper and lower limit is thereby selectable per parameters. The camera requires by the high dynamics no objective with adjustable aperture.

For the Regulation of exposure you can optimize between duration of exposure for the next picture or a integrating duration of exposure over a lot of pictures. Also the exclusion of spot lights from the regulation are possible.

The regulation always refer to the maximal possible signal amplitude at the sensor, by which the noise and sensor error becomes low. By the kind of control the affect of blooming on the pixels is poorly developed.

Image capture

The image capture takes place synchronous for each pixel off both sensors. It is optional a acquisition with the help of Sample-and-hold or multi-scanning possible. The conversion of the analogous sensor signal can success by 8, 10 or 12 bit.

Image editing

The camera processor is used for controlling the sensors as well as a (first) signal processing. To these functions appertain different filter, like e.g. Median filter, the correction of the picture information with a characteristic (Shading) or a direct preprocessing of the line.

One special possibility is the conversion of the dynamik in the picture by different compression methods. Like this a special method to compress a high dynamic picture to 8 bit by conservation the individual object structures at disposal.

An further specialty is the storage from up to 128 images in the camera with an following processing. Thereby be able to recorded a pictures in a faster sequence, followed by an evaluation cycle. Also a charging of several lines can successes among them.

The results of the acquisition and -evaluation will be send to the second processor (**SZK972**) or directly to a communication controller.

Processing unit (only SZK972)

This assembly is a free programmable arithmetic and logic unit, which can handle the picture's data. This unit get the data from the Sensor unit through a quick serial channel. The results transfered via a memory interface to the following communication controller.

Communication controller

The output of the result datas takes place over a separated controller, which is optional available for RS232 or RS485. The transmission rate lets adapt in a wide range. With the RS485 will a 4-wire-connection prefers, a bus configuration is possible. The data protokol is free definable by the used program.

Programming

The programming of the sensor- and processing unit takes place in a standard EPROM, who has 4 ranges with independent programs. The active program will selected via jumper.

Another way is to use the communication controller as program store. They boots the main processor from his storage area, what is possible up to program sizes of at present 4kByte. This program codes can be loaded into the Flash-memory via service connector.