

Offset of the ExposureActive signal from the real exposure time

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Description

This document describes the particularity of the offset of the *ExposureActive* signal from the real exposure time of the sensor. Subsequently referred to simply as *ExposureActiveOffset*.

Products

Baumer cameras: LXG-500M, LXG-500C, LXC-500M, LXC-500C

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1 Introduction

The cameras of the LXG-500/LXC-500 exhibit an offset between the *ExposureActive* signal and the actual exposure time of the sensor (*ExposureActiveOffset*). The *ExposureActive* signal is issued around 96 μs prior to the actual exposure time of the sensor.

If the *ExposureActive* signal is used to activate external illumination, for example, this offset must be taken into account.

2 Description of the ACTUAL state

The real exposure time of the sensor starts approx. 96 μs (*ExposureTime.min*) later than the output of the *ExposureActive* signal.

The time behavior is shown in the following image.



Image 1: Time representation in the camera with *ExposureActiveOffset*

- 1 - yellow: *ExposureActive* signal in the camera
- 2 - magenta: Start and end of the real exposure of the sensor
- 3 - cyan: Trigger signal
- 4 - green: *ExposureActive* signal at the output of the camera

3 Moving the ExposureActive signal at the output of the camera

To allow the use of the *ExposureActive* signal for the control of external illumination even with short exposure times, the output signal must be delayed accordingly. This can be implemented, for example, via the internal timer of the camera. An option with Timer1 is described below.

```
TimerDelay = 96µs = ExposureTime.min
TimerDuration = ExposureTime (e.g. 96µs)
TimerTriggerActivation = "RisingEdge"
TimerTriggerSource = "ExposureActive"
LineSelector = Line1
LineSource = "Timer1Active"
```

Timer1 is activated with the rising edge of the *ExposureActive* signal and begins to count after the *TimerDelay* for the time of *TimerDuration*. This way, the length of the pulse at the output of the camera can be controlled via *TimerDuration*.

The following image shows the result of the delay of the *ExposureActive* signal.

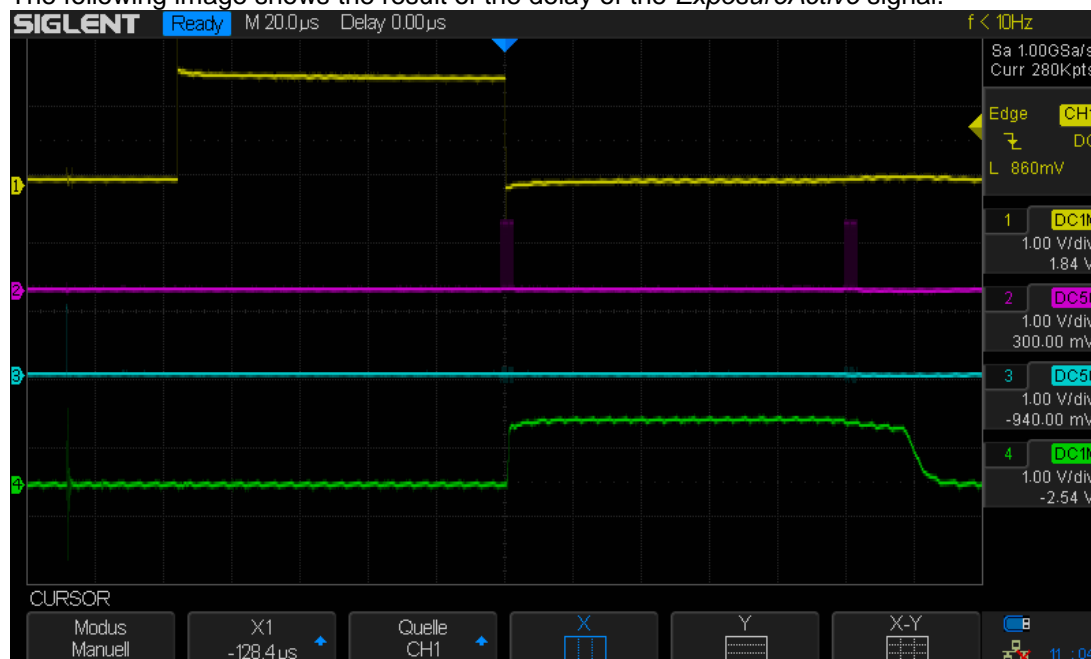


Image 2: Time representation in the camera without *ExposureActiveOffset*

- 1 - yellow: *ExposureActive* signal in the camera
- 2 - magenta: Start and end of the real exposure of the sensor
- 3 - cyan: Trigger signal
- 4 - green: *ExposureActive* signal at the output of the camera with delay by Timer1

As the time representation shows, the *ExposureActive* signal at the output of the camera was moved to the light-sensitive area of the sensor. The opto-decoupled outputs of the camera additionally extend the *ExposureActive* signal accordingly. However, in an application with external illumination, this is no longer relevant because the sensor is no longer light-sensitive.

4 Support

Please contact our Technical & Application Support Center with any questions.

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5 Legal information

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