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THIS SPEC IS OBSOLETE

Spec No: 001-15455

Spec Title: LUPA-1300 ANALOG OUTPUT BEHAVIOR AND
ADC SAMPLING - AN6008

Sunset Owner: Evelyn Beard (EYB)

Replaced by: None

AN6008

Author: Pieter Willems

Associated Project: No

Associated Part Family: CY1L1S*1300AA

Software Version: NA

Associated Application Notes: None

Application Note Abstract

This application note describes the behavior of the analog output channels in the LUPA 1300 image sensor.

Description

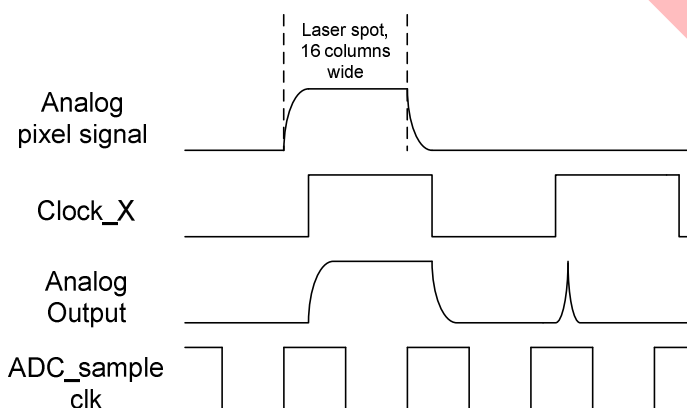
In the readout sequence of the LUPA 1300, 32 columns are output in one CLOCK_X period (16 columns on the rising edge and 16 columns on the falling edge). This is done by a shift register and a multiplexer. The shift register selects 32 columns at once on the rising edge of CLOCK_X and the multiplexer selects the first 16 columns on this rising edge. On the falling edge, the multiplexer selects the next 16 columns.

However, the LUPA 1300 is designed in such a way that the multiplexer selects the first block of 16 pixels before the shift register selects the next block of 32 pixels (for a very short

time). In case of a black/white transition, this causes a very small spike (± 5 ns) at the output of the LUPA 1300. See Figure 1 for more details.

This spike is unavoidable and should be as short as possible. You must make sure that the bandwidth of the analog path from the LUPA 1300 to the external analog-to-digital converters (ADCs) is high enough so that the little spike is not smeared. If the analog path is fast enough, sampling after this little spike is possible and it is not visible in the image. (See the ADC_sample clock signal in Figure 1, sampling on the rising edge). It is best to keep the ADC sampling point flexible. Properly setting the ADC sampling point is very important to obtain optimal image quality.

Figure 1. Analog Output Behavior



LUPA 1300 Analog Output Behavior and ADC Sampling

Summary

This application note describes the LUPA 1300 image sensor's analog output behavior.

Document History

Document Title: LUPA 1300 Analog Output Behavior and ADC Sampling – AN6008

Document Number: 001-15455

Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	1047227	FPW	05/07/2007	Existing Application Note in the web - Added spec no., new disclaimer and updated the copyright date. Please post in the web - overwrite the existing AN6008 file.
*A	3040719	NPA	09/28/2010	Sunset review; no technical updates. Updated template.
*B	4113912	MTA	09/11/2013	Obsolete specs.

In March of 2007, Cypress recataloged all of its Application Notes using a new documentation number and revision code. This new documentation number and revision code (001-xxxxx, beginning with rev. **), located in the footer of the document, will be used in all subsequent revisions.

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