Application Note

AN001013

Mira130

Using the Sensor in Triggered Mode

v1-00 • 2021-Feb-03

Content Guide

1 Introduction

Mira130 supports 3 operation modes: normal mode, one frame trigger mode and continuous trigger mode.

We usually provide a normal mode configuration, and the other two operation modes can be converted by setting registers. Two trigger modes are available:

- One frame trigger mode: Pulse determines start of exposure.
- Continuous trigger mode: Pulse determines start of readout.

Continuous trigger mode can achieve maximum frame rate because exposure and data output overlap.

The exposure and data output of the single frame trigger mode are serial, and the longer the exposure time, the lower the frame rate.

2 Trigger Modes

2.1 One Frame Trigger Mode

Figure 1:
One Frame Trigger Mode

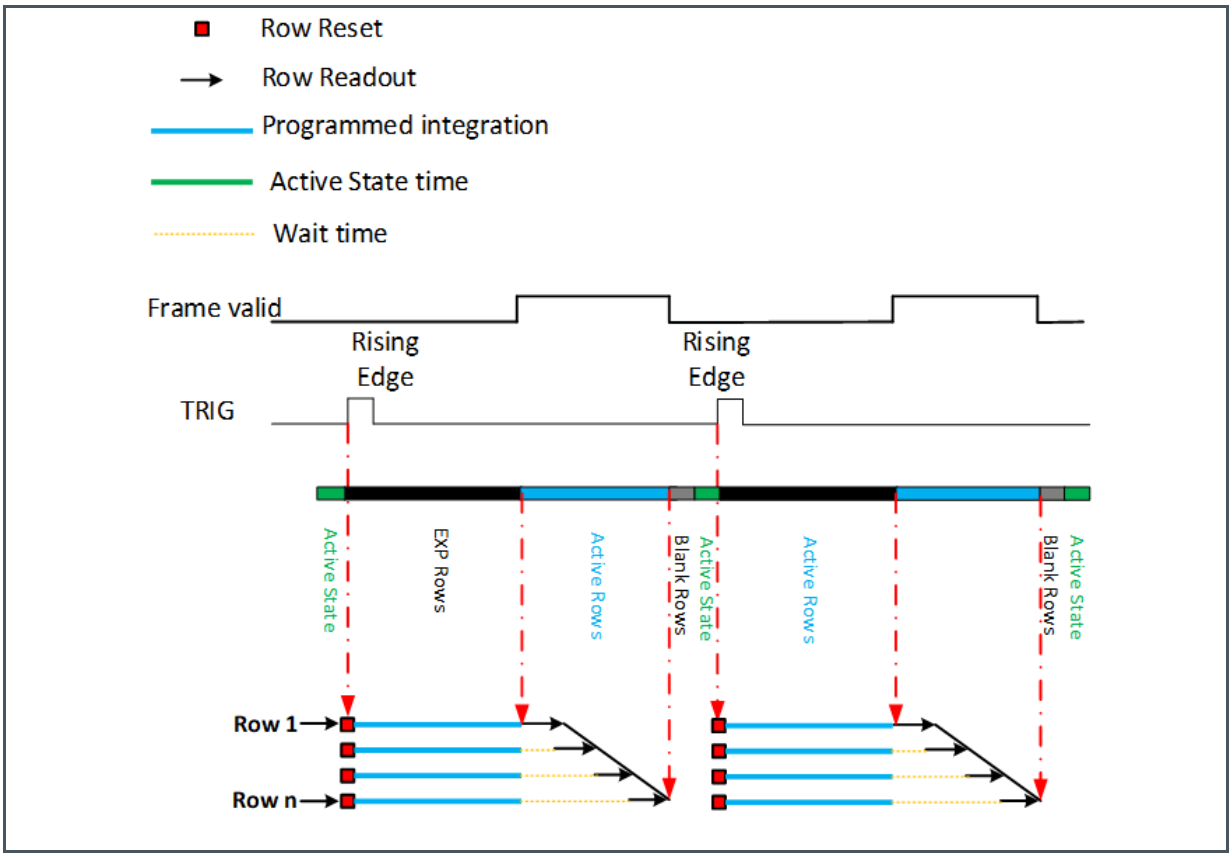

Figure 2:
One Frame Trigger Registers

Address	Default	Set	Description
0x300a[2:1]	0x66	2'b01	io_fsync_open
0x3222[1]	0x00	1'b1	Bit[1]:r_slave_mode 1-Slave mode 0-Master mode
0x3223[2]	0x40	1'b0	Bit[2]:vsync_end_man_en
0x3231[5]	0x08	1'b0	r_tc_r_pos_rst_op

Address	Default	Set	Description
0x3225	0x00	0x04	tc_cs_rst
0x3226	0x06	0x04	Bit[7:0]:Rows Before Read , for ini
0x3227	0x06	0x04	Bit[7:0]:Rows Before Read , for trig
0x322b	0x02	0x0b	Bit[7:0]:vsync_end_cs[7:0]
0x3228	0x00	0x00	Bit[7:0]: Blank Rows
0x3229	0x02	0x02	Bit[7:0]: Blank Rows
0x320e	0x05	0x3f	Bit[7:0]:vts[15:8]
0x320f	0x46	0xff	Bit[7:0]:vts[7:0]

2.2 Continuous Trigger Mode

Figure 3:
Continuous Trigger Mode

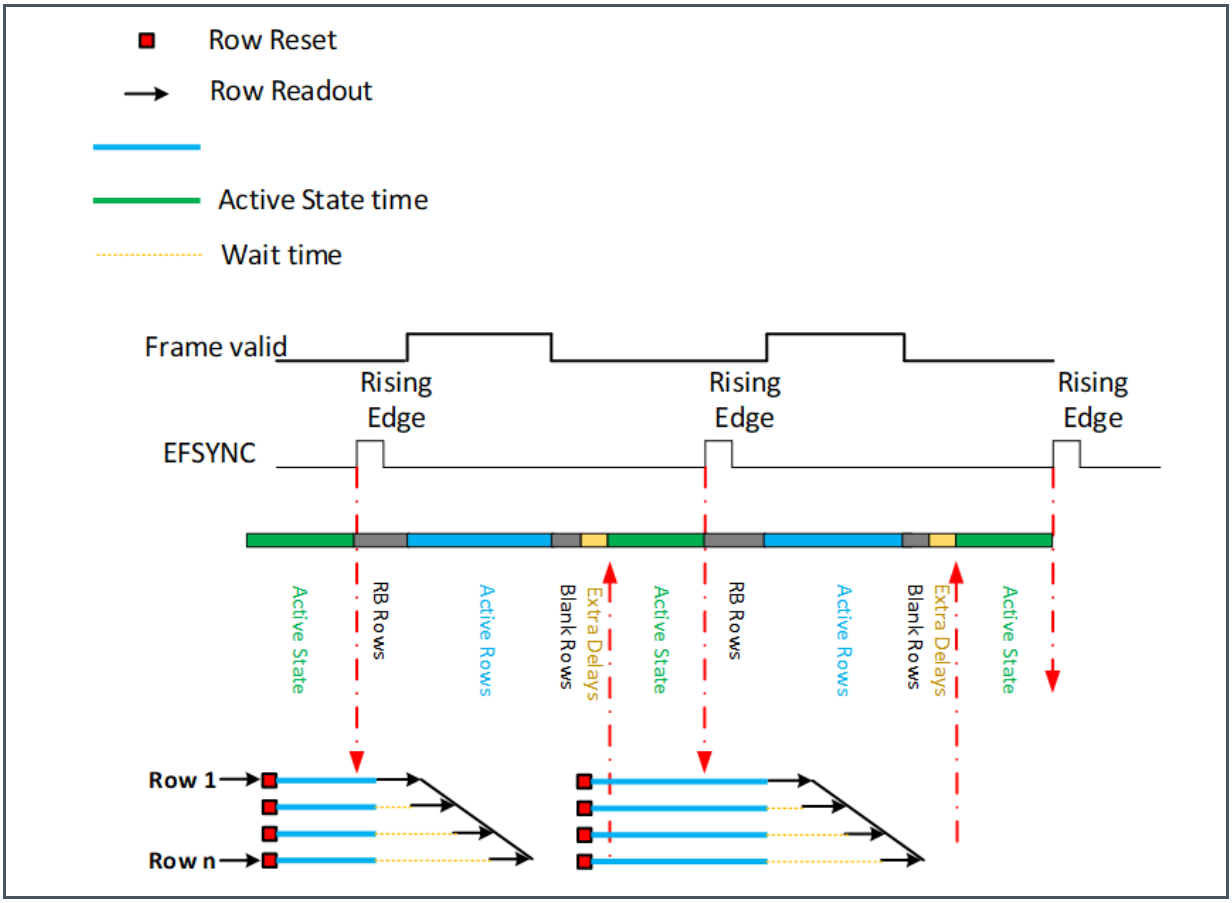

Figure 4:
Continuous Trigger Registers

Address	Default	Set	Description
0x300a[2:1]	0x66	2'b01	io_fsync_open
0x3222[1]	0x00	1'b1	Bit[1]:r_slave_mode 1-Slave mode 0-Master mode
0x3223[2]	0x40	1'b1	Bit[2]:vsync_end_man_en
0x3231[5]	0x08	1'b1	r_tc_r_pos_rst_op
0x3225	0x00	0x04	tc_cs_rst
0x3226	0x06	0x06	Bit[7:0]:Rows Before Read , for ini
0x3227	0x06	0x06	Bit[7:0]:Rows Before Read , for trig
0x322b	0x02	0x0b	Bit[7:0]:vsync_end_cs[7:0]
0x3228	0x00	-	Bit[7:0]: Active Rows + Blank Rows = VTS – RB Rows
0x3229	0x02	-	

Information

Please note that if you change the trigger frequency, you need to adjust the VTS to match the frame rate and then set the register {0x3228,0x3229} value = VTS-6.

3 Revision Information

Changes from previous version to current revision v1-00	Page
Initial version	

- Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
- Correction of typographical errors is not explicitly mentioned.

4 Legal Information

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