

## Multi Exposure Trigger Mode

The data except this specification conform to those of IMX273 / IMX287.

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### Description

The function of multi exposure in one frame at Global shutter (Fast trigger mode) is described in this document.

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### Features

- ◆ Support the number of times of exposure from 2 to 4095.
- ◆ Support mode
  - Master mode only
- ◆ Support trigger mode
  - Global shutter (fast trigger mode) only

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## Register Map

The register map for Multi Exposure Trigger Mode is shown below.  
Please refer to the product specification for register setup other than those list.

Registers corresponding to Chip ID = 02h in Write mode. (I2C:30\*\*h)

Address	Bit	Register name	Description	Default Value after reset	Reflection timing
0Ah	0	XMSTA	Setting of master mode operation 0: Master mode operation start 1: Master mode operation stop	1	I
	1		Fixed to "0"	0	-
	2		Fixed to "0"	0	-
	3		Fixed to "0"	0	-
	4		Fixed to "0"	0	-
	5		Fixed to "0"	0	-
	6		Fixed to "0"	0	-
	7		Fixed to "0"	0	-
0Bh	0	TRIGEN	Global shutter mode setting 1: Trigger mode	0	S
	1		Fixed to "0"	0	-
	2		Fixed to "0"	0	-
	3		Fixed to "0"	0	-
	4		Fixed to "0"	0	-
	5		Fixed to "0"	0	-
	6		Fixed to "0"	0	-
	7		Fixed to "0"	0	-
36h	0		Fixed to "0"	0	-
	1		Fixed to "0"	0	-
	2		Fixed to "0"	0	-
	3		Fixed to "0"	0	-
	4	SYNCSEL	XHS, XVS pin setting 0h : Normal Output 3h : Hi-Z	0h	S
	5				
	6		Fixed to "1"	1	-
	7		Fixed to "1"	1	-
A3h	0	EXP_CNT_RESET	Reset the number of times of exposure at Multi Exposure Trigger Mode Refer to "Reset the number of times of exposure"	0	I
	1		Fixed to "0"	0	-
	2		Fixed to "0"	0	-
	3		Fixed to "0"	0	-
	4		Fixed to "0"	0	-
	5		Fixed to "0"	0	-
	6		Fixed to "0"	0	-
	7		Fixed to "0"	0	-

Address	Bit	Register name	Description	Default Value after reset	Reflection timing
A6h	0	EXP_MAX	LSB	001h	V
	1				
	2				
	3				
	4		Set the number of times of exposure at Multi Exposure Trigger Mode		
	5				
	6		Setting range:2 to 4095		
	7		Only Fast trigger mode can be set		
A7h	0				
	1				
	2				
	3		Fixed to "0"		
	4		Fixed to "0"	0	-
	5		Fixed to "0"	0	-
	6		Fixed to "0"	0	-
	7		Fixed to "0"	0	-
AEh	0	LOWLAGTRG	Selection of trigger mode 1 : Fast trigger mode	0	S
	1		Fixed to "0"	0	-
	2		Fixed to "0"	0	-
	3		Fixed to "0"	0	-
	4		Fixed to "0"	0	-
	5		Fixed to "0"	0	-
	6		Fixed to "0"	0	-
	7		Fixed to "0"	0	-

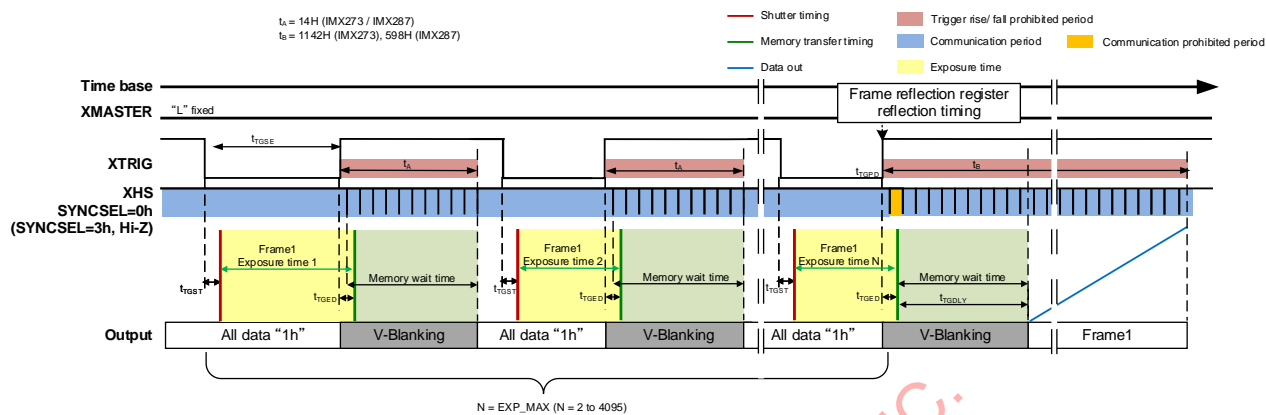
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## Exposure Timing

Multi exposure timing is as below.

This sensor exposes the value of EXP\_MAX, and the data of the frame is output after the last exposure.

Refer to the Datasheet about the spec of each timing



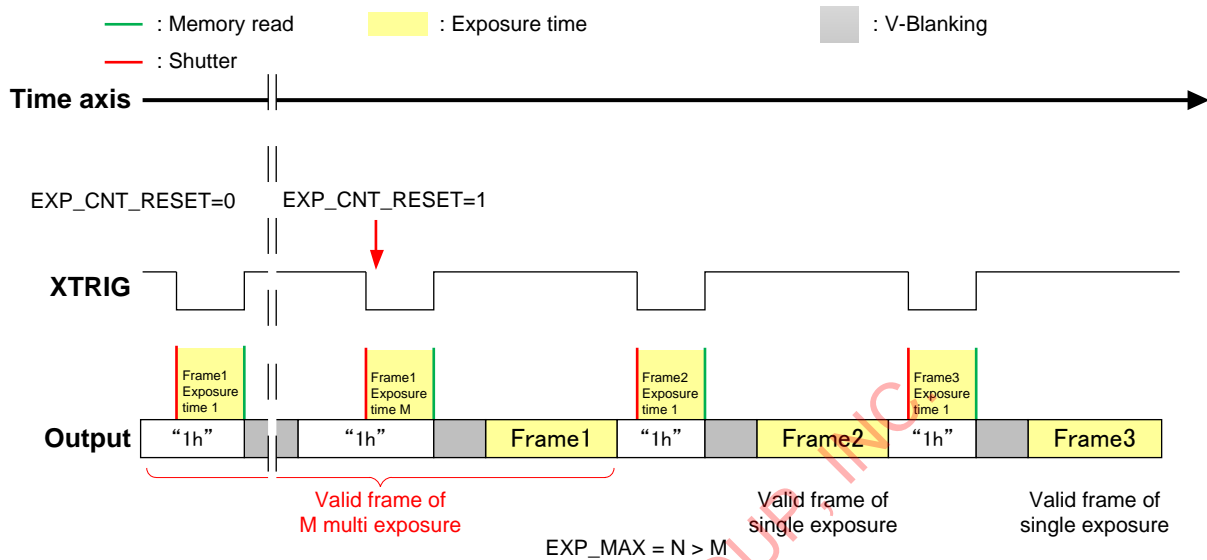
Exposure timing in case of EXP\_MAX = N (4-wire)

## Reset the number of times of exposure

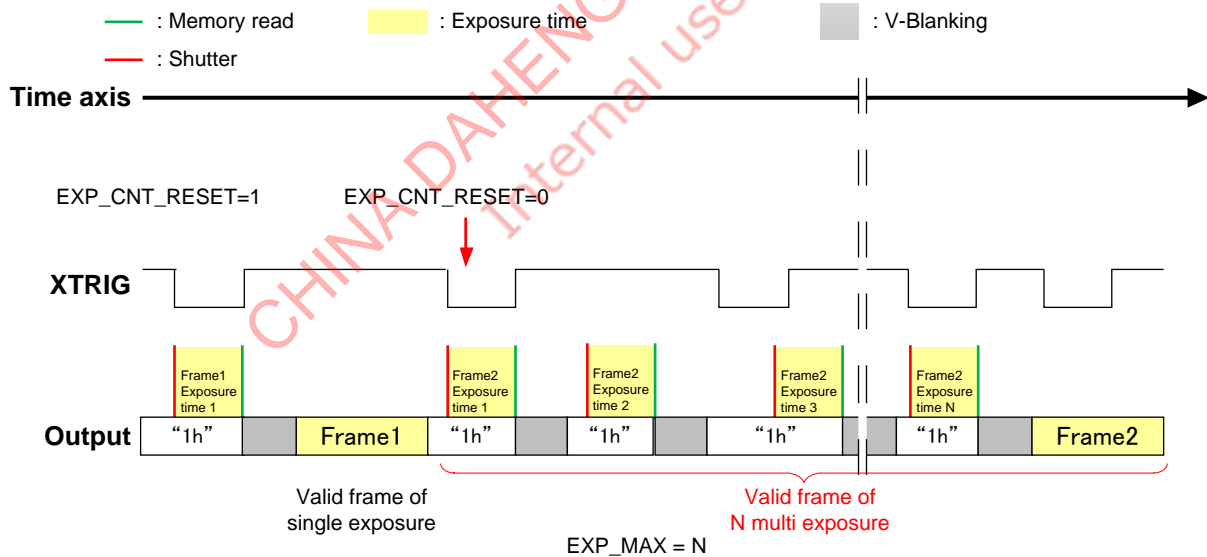
During the Multi Exposure Trigger Mode, The number of times of exposure which is set by EXP\_MAX can be reset.

EXP\_CNT\_RESET = 0 → 1: The condition becomes Single Exposure mode

EXP\_CNT\_RESET = 1 → 0: The condition becomes Multi Exposure mode



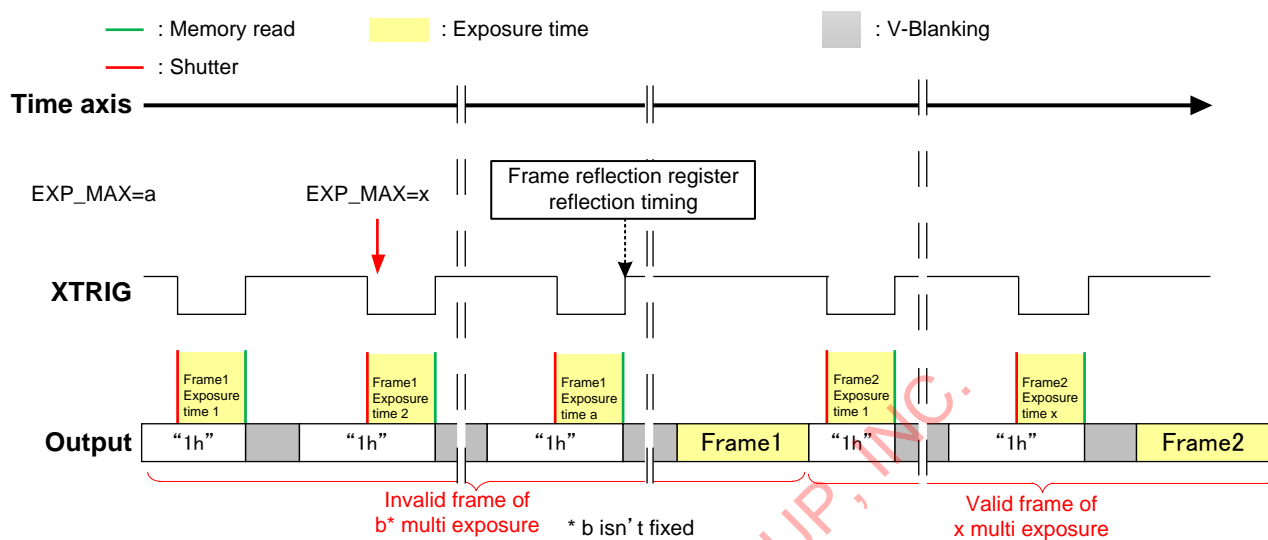
In case of EXP\_CNT\_RESET = 0 → 1 (4-wire)



In case of EXP\_CNT\_RESET = 1 → 0 (4-wire)

## Mode Transitions

In case of transition between Multi Exposure Trigger Mode and the other mode, set via sensor standby.  
During the Multi Exposure Trigger Mode, changing the value of EXP\_MAX is possible, but the transition setting frame become invalid.



The reflection timing of changing EXP\_MAX

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**Revision History**

Version	Date	Page	Remarks
Rev.0.1	20 – Jan. – 17	–	First Edition
Rev.1.0	6 – Oct. – 17	–	First Edition (Official Version)

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