SigmaStar Camera
Timer 使用参考

REVISION HISTORY

Revision No.	Description	Date
{000001}	• {Initial release}	{07/28/2018}

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1. 使用说明

1.1. Enable Timer

1. Enable Timer engine – set "TIMER_EN" to 1
2. Trigger counter – set" TIMER_TRIG" to 1.
3. Read timer from register "TIMER_CAP[31:0]"

1.2. Set Maximum

1. Set the value to "TIMER_MAX[31:0]".
2. Enable timer
3. If counter over the "TIMER_MAX[31:0]", then "TIMER_HIT" will assert.

2. REGISTER TABLE

2.1. TIMER0 Register (Bank = 30)

TIMER0 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
10h (3020h)	**REG3020**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:2	Reserved.	
	TIMER_TRIG	1	set: Enable timer counting one time (from 0 to max, then stop). clear: By reset itself OR set reg_timer_en.	
	TIMER_EN	0	set: Enable timer counting rolled (from 0 to max, then rolled). clear: By reset itself OR set reg_timer_trig.	
10h (3021h)	**REG3021**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:1	Reserved.	
	TIMER_INT_EN	0	set: Enable interrupt. clear: By reset itself.	
11h (3022h)	**REG3022**	**7:0**	**Default : 0x00**	**Access : RO**
	-	7:1	Reserved.	
	TIMER_HIT	0	assert: When counter enabled and matches reg_timer_max. deassert: By write 1 OR set reg_timer_en, reg_timer_once, reg_timer_max.	
12h (3024h)	**REG3024**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[7:0]	7:0	Timer maximum value.	
12h (3025h)	**REG3025**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[15:8]	7:0	See description of '3024h'.	
13h (3026h)	**REG3026**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[23:16]	7:0	See description of '3024h'.	
13h (3027h)	**REG3027**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[31:24]	7:0	See description of '3024h'.	
14h (3028h)	**REG3028**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[7:0]	7:0	Timer current value.	

TIMER0 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
			Note: With non-32-bit-data system, please read from LSB.	
14h (3029h)	**REG3029**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[15:8]	7:0	See description of '3028h'.	
15h (302Ah)	**REG302A**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[23:16]	7:0	See description of '3028h'.	
15h (302Bh)	**REG302B**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[31:24]	7:0	See description of '3028h'.	

2.2. TIMER1 Register (Bank = 30)

TIMER1 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
20h (3040h)	**REG3040**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:2	Reserved.	
	TIMER_TRIG	1	set: Enable timer counting one time (from 0 to max, then stop). clear: By reset itself OR set reg_timer_en.	
	TIMER_EN	0	set: Enable timer counting rolled (from 0 to max, then rolled). clear: By reset itself OR set reg_timer_trig.	
20h (3041h)	**REG3041**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:1	Reserved.	
	TIMER_INT_EN	0	set: Enable interrupt. clear: By reset itself.	
21h (3042h)	**REG3042**	**7:0**	**Default : 0x00**	**Access : RO**
	-	7:1	Reserved.	
	TIMER_HIT	0	assert: When counter enabled and matches reg_timer_max. deassert: By write 1 OR set reg_timer_en, reg_timer_once, reg_timer_max.	
22h (3044h)	**REG3044**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[7:0]	7:0	Timer maximum value.	
22h (3045h)	**REG3045**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[15:8]	7:0	See description of '3044h'.	
23h (3046h)	**REG3046**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[23:16]	7:0	See description of '3044h'.	
23h (3047h)	**REG3047**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[31:24]	7:0	See description of '3044h'.	
24h (3048h)	**REG3048**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[7:0]	7:0	Timer current value. Note: With non-32-bit-data system, please read from LSB.	
24h (3049h)	**REG3049**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[15:8]	7:0	See description of '3048h'.	
25h	**REG304A**	**7:0**	**Default : 0x00**	**Access : RO**

TIMER1 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
(304Ah)	TIMER_CAP[23:16]	7:0	See description of '3048h'.	
25h (304Bh)	**REG304B**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[31:24]	7:0	See description of '3048h'.	

2.3. TIMER2 Register (Bank = 30)

TIMER2 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
30h (3060h)	**REG3060**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:2	Reserved.	
	TIMER_TRIG	1	set: Enable timer counting one time (from 0 to max, then stop). clear: By reset itself OR set reg_timer_en.	
	TIMER_EN	0	set: Enable timer counting rolled (from 0 to max, then rolled). clear: By reset itself OR set reg_timer_trig.	
30h (3061h)	**REG3061**	**7:0**	**Default : 0x00**	**Access : R/W**
	-	7:1	Reserved.	
	TIMER_INT_EN	0	set: Enable interrupt. clear: By reset itself.	
31h (3062h)	**REG3062**	**7:0**	**Default : 0x00**	**Access : RO**
	-	7:1	Reserved.	
	TIMER_HIT	0	assert: When counter enabled and matches reg_timer_max. deassert: By write 1 OR set reg_timer_en, reg_timer_once, reg_timer_max.	
32h (3064h)	**REG3064**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[7:0]	7:0	Timer maximum value.	
32h (3065h)	**REG3065**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[15:8]	7:0	See description of '3064h'.	
33h (3066h)	**REG3066**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[23:16]	7:0	See description of '3064h'.	
33h (3067h)	**REG3067**	**7:0**	**Default : 0xFF**	**Access : R/W**
	TIMER_MAX[31:24]	7:0	See description of '3064h'.	
34h (3068h)	**REG3068**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[7:0]	7:0	Timer current value. Note: With non-32-bit-data system, please read from LSB.	
34h (3069h)	**REG3069**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[15:8]	7:0	See description of '3068h'.	
35h	**REG306A**	**7:0**	**Default : 0x00**	**Access : RO**

TIMER2 Register (Bank = 30)				
Index (Absolute)	**Mnemonic**	**Bit**	**Description**	
(306Ah)	TIMER_CAP[23:16]	7:0	See description of '3068h'.	
35h (306Bh)	**REG306B**	**7:0**	**Default : 0x00**	**Access : RO**
	TIMER_CAP[31:24]	7:0	See description of '3068h'.	