



SigmaStar Camera Timer 使用参考



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REVISION HISTORY

| Revision No. | Description | Date |
|--------------|---------------------|--------------|
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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 | REG304B | 7:0 | Default : 0x00 | Access : RO |
| (304Bh) | 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'. | |