|  |  |
| --- | --- |
| Name: | TIMER\_PRESCALER |
| Type: | u8 |
| Range: | {  TIMER\_NO\_CLOCK\_SOURCE  TIMER\_PRESCALER\_1  TIMER\_PRESCALER\_8  TIMER\_PRESCALER\_32  TIMER\_PRESCALER\_64  TIMER\_PRESCALER\_128  TIMER\_PRESCALER\_256  TIMER\_PRESCALER\_1024  } |
| Configuration Type: | Pre Compile |
| Description: | TIMER PRESCALER configuration |

|  |  |
| --- | --- |
| Name: | TIMER\_MODE |
| Type: | u8 |
| Range: | {  TIMER\_OVER\_FLOW  TIMER\_COMPARE\_MATCH  TIMER\_PHASE\_CORRECT\_PWM  TIMER\_FAST\_PWM  } |
| Configuration Type: | Pre Compile |
| Description: | TIMER mode configuration |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** | Timer\_Mode\_e |  | |
| **Type:** | Enumeration |  | |
| **Range** | ModeNomal | 0 | Normal operation |
|  | ModeCTC | 1 | Clear Timer on Compare Match Mode |
|  | ModeFastPWM, | 2 | Fast PWM Mode |
|  | ModePhaseCorrectPWM | 3 | Phase Correct PWM Mode |
| **Description:** | Modes of the timer driver |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** | Timer\_ClkSrc\_e |  | |
| **Type:** | Enumeration |  | |
| **Range** | ClkPre\_0 | 0 | No Clock source (stop) |
|  | ClkPre\_1 | 1 | Clk/1 (No prescaler) |
|  | ClkPre\_8 | 2 | Clk/8 (from prescaler) |
|  | ClkPre\_16 | 3 | Clk/16 (from prescaler) |
|  | ClkPre\_64 | 4 | Clk/64(from prescaler) |
|  | ClkPre\_1024 | 5 | Clk/1024 (from prescaler) |
| **Description:** | Clock source to be used by the Timer |  | |

|  |  |  |
| --- | --- | --- |
| **Name:** | Timer\_Config\_t | |
| **Type:** | Structure | |
| **Elements:** | Mode | Stores the required Mode |
| Clock | Stores the required clock source |
| **Description:** | Stores the selected configuration from the user | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_vidInit | | | |
| Arguments: | Input | ConfigPtr | | -- |
|  |  | Pointer to a selected configuration structure | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | -- | -- | | |
|  | -- | -- | | |
| Description: | Initializes the timer with the required configuration | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_u8StartTimer | | | |
| Arguments: | Input | RegValue | | u8 |
|  |  | Description:Store the register value for the Timer | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Start the timer with the required value. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_u8StopTimer | | | |
| Arguments: | Input | -- | | -- |
|  |  | -- | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Stop the timer | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_u8EnableInt | | | |
| Arguments: | Input | -- | | -- |
|  |  | -- | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Enable the timer Interrupt | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | u8 TIMER\_u8DisableInt(void); | | | |
| Arguments: | Input | -- | | -- |
|  |  | -- | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Disable the timer Interrupt | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_u8SetCallBack | | | |
| Arguments: | Input | CallBackFunc | | pointer to void function |
|  |  | Pointer to the call back function | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Set the call back function. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function name: | Timer\_u8Handler | | | |
| Arguments: | Input | -- | | -- |
|  |  | -- | | |
|  | Output | -- | | -- |
|  |  | | |
|  | Input/Output | -- | | |
|  |
| Return | E\_OK | 0 | | |
|  | E\_NOK | 1 | | |
| Description: | Function for the software timer, to call the required call back function | | | |