XT32H05x

XT32 microcontroller WDT-I

Application notes

Rev 0.0.0

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Revised :

Revision History

Release	Date	Author	Summary of Change
V0.0.0	28/09/2023	Shirling Liu	Initial

Contents

List of Figures

List of Tables

1 Introduce

This application note serves as a comprehensive guide for software developers, offering essential information on WDT-I (Independent watchdog). It covers fundamental concepts and provides guidelines to ensure proper utilization of WDT-I in software development projects. Whether you're a beginner or an experienced developer, this document will equip you with the necessary knowledge and best practices to effectively configure and utilize WDT-I in your applications.

1.1 Required peripherals

This application involves modules as table 1.

Table 1. Modules in example

Sub-module	Peripheral use	Note
I-WDT	32-bit down counter watchdog timer	

1.2 Compatible devices

This example is compatible with the devices in Table 2.

Table 2. Device list

Product	EVB
XT32H050	XB002823

2 Design description

2.1 Feature overview

WDT-I has a 32-bit down counter watchdog timer. After enable the WDT-I, it will count load the initial value and start to count. If the user did not kick the dog, system will be reset when WDT-I counter count to 0. When the user kicks dog, the counter will be loading the initial value and restarted.

2.2 Design steps

1. Configure WDT-I parameters: reset pulse length, wraps Range period.
2. Software feed dog to reload WDT-I counter, if else it will reset system.

2.3 Design considerations

2.4 Software flowchart

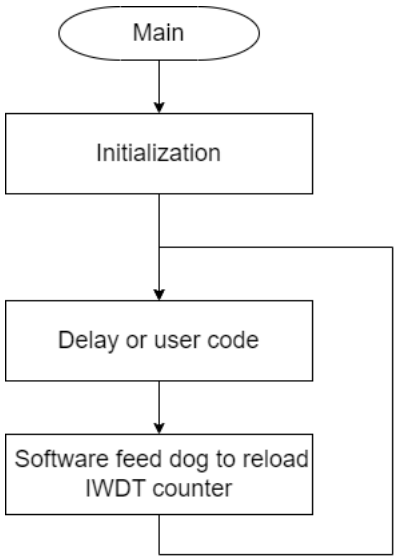

Figure 1. Application flow

2.5 Reference code

Configure Peripheral WDT-I using HAL_WDT_Init.

```
hwdti.Instance    = WDTI;
hwdti.Init.Rpl    = WDT_RPL_8; /* reset pulse length 8 pclk cycles */
hwdti.Init.Rmod   = WDT_RMOD_SYSRST;
hwdti.Init.Range = WDT_RANGE_PERIOD_7;
hwdti.Init.InitRange = WDT_RANGE_PERIOD_7;
if (HAL_WDT_Init(&hwdti) != HAL_OK)
{
  /* Error_Handler */
}
```

XT_Wdti_Task use to kick dog.

```
void XT_Wdti_Task(void)
{
    /* USER CODE */
    HAL_Delay(15);  //User code, here delay 15ms only for test purpose.
    HAL_WDT_Refresh(&hwdti);  /*Kick dog*/
}
```

2.6 Additional resources

- XT32H0xxB--reference manual