



# MT793X IoT SDK for WDT User Guide

Version: 1.0  
Release date: 2021-08-05

Use of this document and any information contained therein is subject to the terms and conditions set forth in [Exhibit 1](#). This document is subject to change without notice.

## Version History

---

Version	Date	Description
1.0	2021-08-05	Initial draft

## Table of Contents

---

Version History .....	2
Table of Contents.....	3
<b>1 Overview .....</b>	<b>4</b>
1.1 API .....	4
1.2 Initialization.....	5
1.2.1 Initialize Reset Mode .....	5
1.2.2 Initialize Interrupt Mode.....	5
1.3 Feed Task.....	6
1.4 Software Reset .....	6
<b>Exhibit 1 Terms and Conditions.....</b>	<b>7</b>

# 1 Overview

## Terms and Acronyms

Terms	Details
<b>WDT</b>	Watchdog Timer.
<b>PMU</b>	Power Management Unit

The MT793X features the watchdog timer for the Cortex-M33 processor (CM33), which is used to recover the system to the initial status when the system hangs due to malfunction.

The WDT provides two ways to generate the WDT event:

- Triggered by time-out event. The WDT has an 11-bit counter that uses a 32 kHz-clock. The software regularly restarts the timer to prevent it from expiring. If the software fails to restart the WDT, the timer expires and generate a WDT event.
- Triggered by software programming.

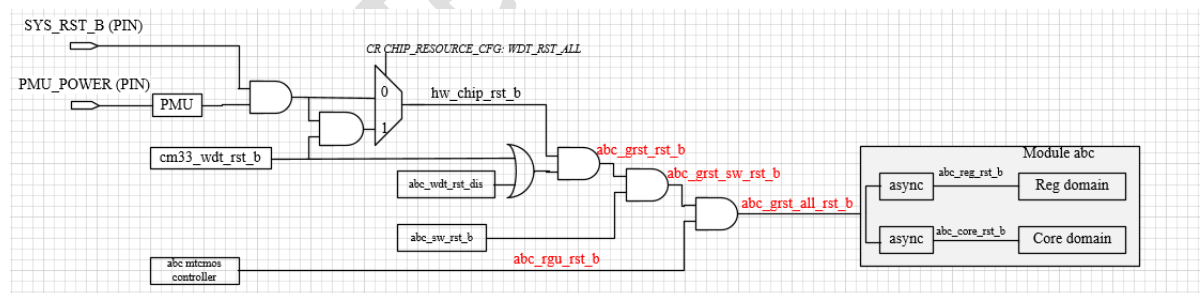
The WDT provides the following options when a WDT event is generated:

Reset mode: Reset CM33

Interrupt mode: Issue an interrupt to CM33 instead of resetting the whole chip or CM33 subsystem.

The WDT module can only be reset by the external reset (SYS\_RST\_N) and the PMU reset. Some WDT control registers feature a key protection mechanism such that an unintentional access is prevented.

The WDT also provides the capability for CM33 software to interrupt other core



## 1.1 API

### APIs

hal\_wdt\_init

hal\_wdt\_deinit

hal_wdt_register_callback
hal_wdt_feed
hal_wdt_software_reset
hal_wdt_enable
hal_wdt_disable
hal_wdt_get_reset_status
hal_wdt_get_enable_status
hal_wdt_get_mode
Hal_wdt_set_mode

## 1.2 Initialization

Enable `HAL_WDT_MOUDULE_ENABLED`

### 1.2.1 Initialize Reset Mode

```
hal_wdt_config_t wdt_config;
hal_wdt_status_t return_status;

wdt_config.mode = HAL_WDT_MODE_RESET; //reset mode
wdt_config.seconds = 15; //15s tiemout
return_status = hal_wdt_init(&wdt_config);
if(HAL_WDT_STATUS_OK != return_status ) {
    //error handle
}
return_status = hal_wdt_enable(HAL_WDT_ENABLE_MAGIC); //enable WDT to start
if(HAL_WDT_STATUS_OK != return_status ) {
    //error handle
}
//...
return_status = hal_wdt_feed(HAL_WDT_FEED_MAGIC); //feed the WDT //regularly.
if(HAL_WDT_STATUS_OK != return_status ) {
    //error handle
}
```

### 1.2.2 Initialize Interrupt Mode

```
hal_wdt_config_t wdt_init;

wdt_config.mode = HAL_WDT_MODE_INTERRUPT; //interrupt mode
wdt_config.seconds = 15; //15s timeout
```

```
hal_wdt_init(&wdt_config);  
hal_wdt_register_callback(wdt_timeout_handle);  
hal_wdt_enable(HAL_WDT_ENABLE_MAGIC);  
hal_wdt_feed(HAL_WDT_FEED_MAGIC); //feed the WDT //regularly.
```

### 1.3 Feed Task

Call the timer every X seconds;  $X < \text{wdt\_config.seconds}$

```
hal_wdt_feed();
```

### 1.4 Software Reset

```
hal_wdt_software_reset();
```

## Exhibit 1 Terms and Conditions

---

Your access to and use of this document and the information contained herein (collectively this “Document”) is subject to your (including the corporation or other legal entity you represent, collectively “You”) acceptance of the terms and conditions set forth below (“T&C”). By using, accessing or downloading this Document, You are accepting the T&C and agree to be bound by the T&C. If You don’t agree to the T&C, You may not use this Document and shall immediately destroy any copy thereof.

This Document contains information that is confidential and proprietary to MediaTek Inc. and/or its affiliates (collectively “MediaTek”) or its licensors and is provided solely for Your internal use with MediaTek’s chipset(s) described in this Document and shall not be used for any other purposes (including but not limited to identifying or providing evidence to support any potential patent infringement claim against MediaTek or any of MediaTek’s suppliers and/or direct or indirect customers). Unauthorized use or disclosure of the information contained herein is prohibited. You agree to indemnify MediaTek for any loss or damages suffered by MediaTek for Your unauthorized use or disclosure of this Document, in whole or in part.

MediaTek and its licensors retain titles and all ownership rights in and to this Document and no license (express or implied, by estoppels or otherwise) to any intellectual propriety rights is granted hereunder. This Document is subject to change without further notification. MediaTek does not assume any responsibility arising out of or in connection with any use of, or reliance on, this Document, and specifically disclaims any and all liability, including, without limitation, consequential or incidental damages.

THIS DOCUMENT AND ANY OTHER MATERIALS OR TECHNICAL SUPPORT PROVIDED BY MEDIATEK IN CONNECTION WITH THIS DOCUMENT, IF ANY, ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE. MEDIATEK SPECIFICALLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, COMPLETENESS OR ACCURACY AND ALL WARRANTIES ARISING OUT OF TRADE USAGE OR OUT OF A COURSE OF DEALING OR COURSE OF PERFORMANCE. MEDIATEK SHALL NOT BE RESPONSIBLE FOR ANY MEDIATEK DELIVERABLES MADE TO MEET YOUR SPECIFICATIONS OR TO CONFORM TO A PARTICULAR STANDARD OR OPEN FORUM.

Without limiting the generality of the foregoing, MediaTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does MediaTek assume any liability arising out of the application or use of any product, circuit or software. You agree that You are solely responsible for the designing, validating and testing Your product incorporating MediaTek’s product and ensure such product meets applicable standards and any safety, security or other requirements.

The above T&C and all acts in connection with the T&C or this Document shall be governed, construed and interpreted in accordance with the laws of Taiwan, without giving effect to the principles of conflicts of law.