



# **Watch Dog Timer (WDT) Demo Application Specification**

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## 1 Introduction

As systems are continually becoming more complex, platforms are more likely to suffer a hard hang, an Operating System (OS) lockup, or an application lockup. The Watch Dog Timer (WDT) that is part of the Intel® 3100 chipset can be used to reboot or notify the OS that a lockup condition has occurred.

### 1.1 Scope

This specification describes the WDT demo utility “Wdtdemo.exe”. The demo tool is a MFC based dialog application that is used to control and monitor the WDT device in the Microsoft\* Windows\* OS environment. Wdtdemo.exe is to be used only for demonstration of the WDT’s functionality and **should not** be used as a customer solution.

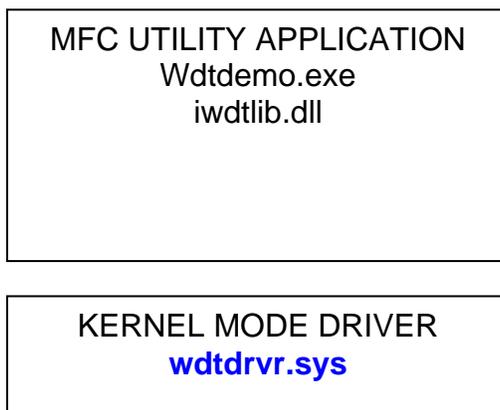


Figure 1 Watch Dog Timer (WDT) Software Stack

### 1.2 Supporting Documents

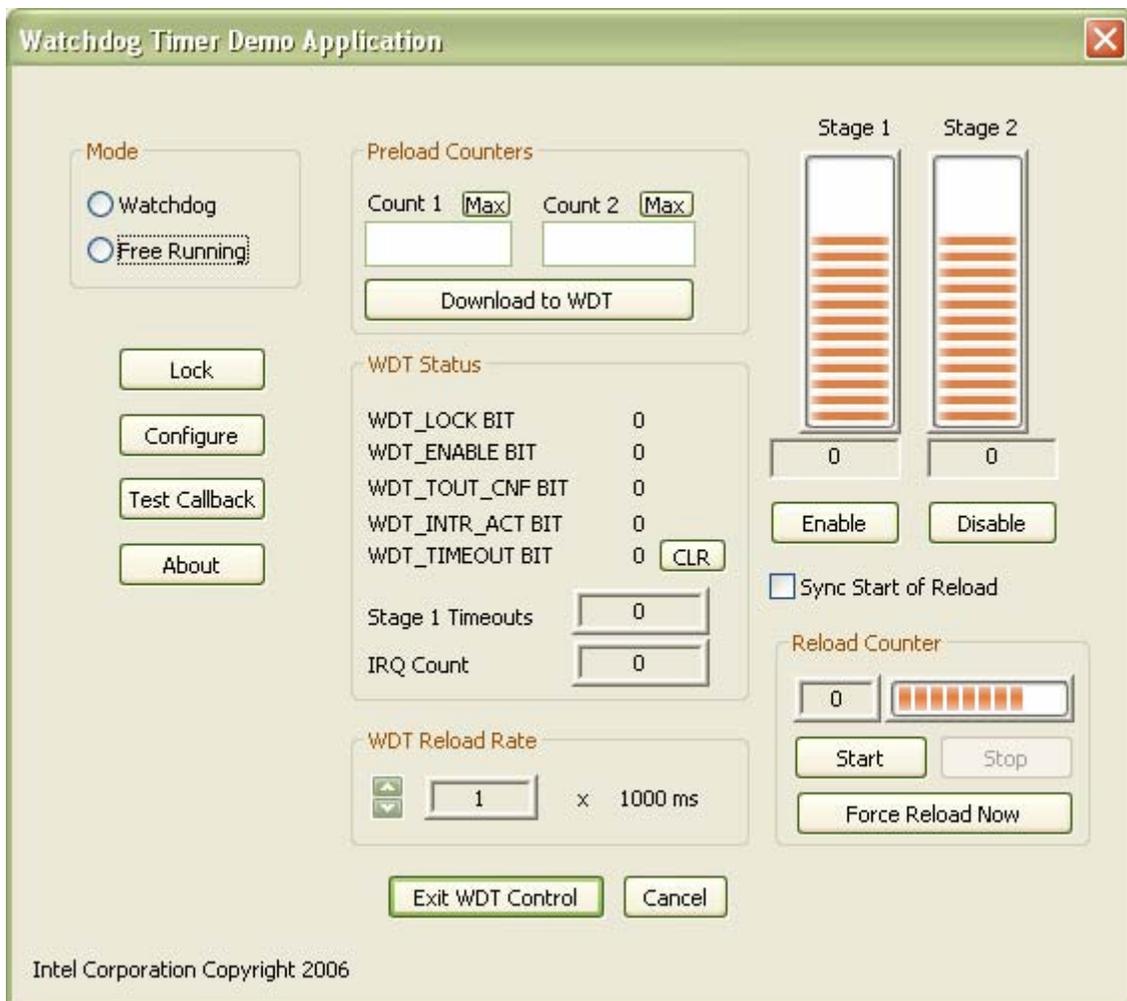
- *wtdriverspec.doc*



## 2 Using the Demo Application

The Wdtdemo.exe application has a number of buttons and text entry fields for configuring and controlling the Watch Dog Timer (WDT). Each of the following items has a corresponding button or entry field on the application screen.

- Setting the mode [Mode]
- Locking the WDT device [LOCK]
- Configuring the WDT device [Configure]
- Testing the user mode call function [Test Callback]
- Retrieving the driver and dynamic link version number [Lib Version]
- Downloading the Stage 1 and Stage 2 time-out values [Preload Counters]
- Information about WDT [WDT Status]
- Setting the refresh rate [WDT Reload Rate]
- Starting and Stopping the refresh of the WDT [Enable] [Disable]
- Synchronizing the start of reload [Synch Start of Reload]
- Starting and Stopping the reload counter [Reload Counter]





## 2.1 Setting the Mode

The mode can be set to either Watch Dog Mode or Free Running Mode using the radio select button at the upper left of the dialog.

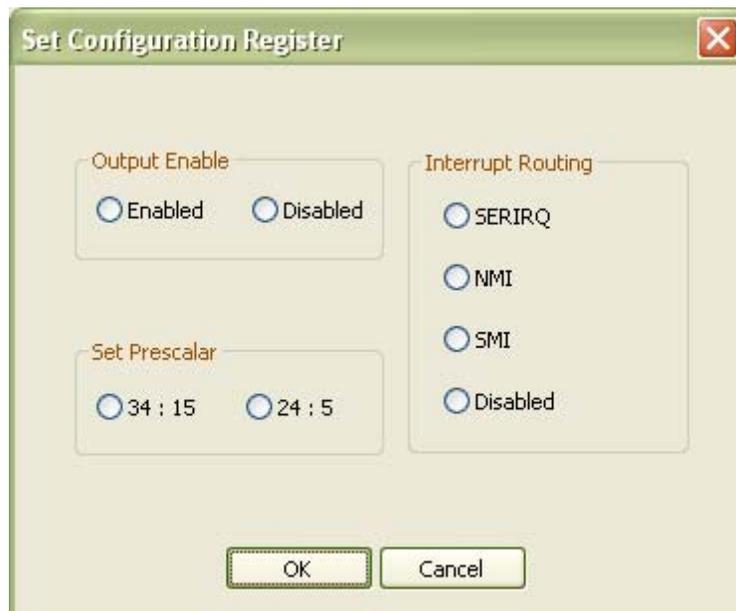


## 2.2 Locking the WDT Device

The WDT can be locked by software. The **LOCK** button locks the WDT so that no further changes to the configuration registers are possible until a system reset. A locked WDT cannot be enabled or disabled.

## 2.3 Configuring the WDT

Click the configure button to program the following three configuration options: **Output Enable**, **Set Prescaler** and **Interrupt Routing**.





### [Output Enable]

Enables or disables the toggling of the external output pin if the WDT times out.

### [Set Prescalar]

Specifies a prescalar value for the 35-bit, count-down counter. The default value is 34:15. See the *WDT Driver Specification* for details on pre-scalar.

### [Interrupt Routing]

Select one of the three interrupt methods (SERIRQ, NMI, or SMI) or “Disabled” to disable interrupt. When SERIRQ is selected, the System BIOS designated interrupt is retrieved from the WDT.

## 2.4 Testing the User Mode Call Function

This button verifies that the interrupt handler and callback mechanism are working correctly. Clicking the **Test Callback** button increments the Stage 1 interrupt count.

## 2.5 Retrieving the Driver and Dynamic Link Version Number

Click the **Lib Version** button to retrieve the driver and dynamic link version number.

## 2.6 Downloading the Stage 1 and Stage 2 Time-out Values

There are two edit boxes that specify Stage 1 and Stage 2 count-down values. Enter the values and then click the **Download to WDT** button to program the values from the application to the WDT device. Both counters are 35-bit counters that decrement using a 20-bit prescalar.

## 2.7 Information about WDT

This area shows status of the WDT.

## 2.8 Setting the Reload Rate

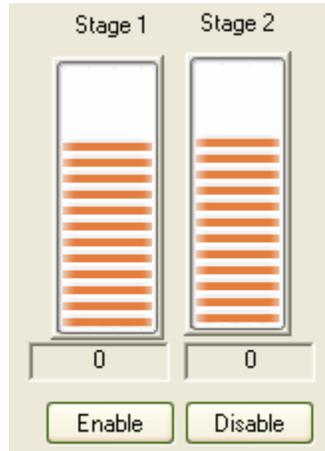
The reload rate is set by using the button control that is in the lower center of the application. The rate can be adjusted from between 0 and 100 seconds.





## 2.9 Starting and Stopping the Refresh of the WDT

Clicking the **Enable** button starts the WDT counting down. Click the **Disable** button to stop the WDT from counting down.



## 2.10 Starting and Stopping the reload counter

Click the **Start** button to begin refreshing the WDT. Click the **Stop** button to stop refreshing the WDT. You can force an immediate refresh of the WDT by clicking the **Force Reload Now** button. To prevent Stage 1 or Stage 2 timeouts you must start “refresh” and have a refresh rate that ensures that the timer is refreshed before the first stage and or second stage time out.

