



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.

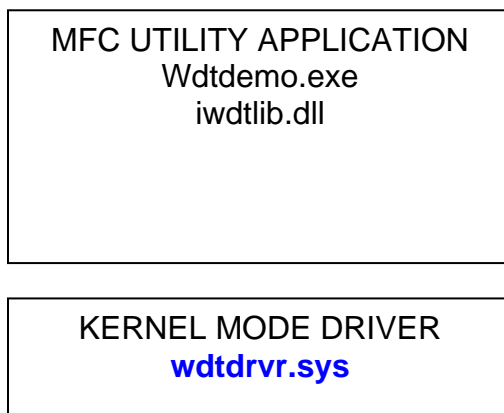


Figure 1 Watch Dog Timer (WDT) Software Stack

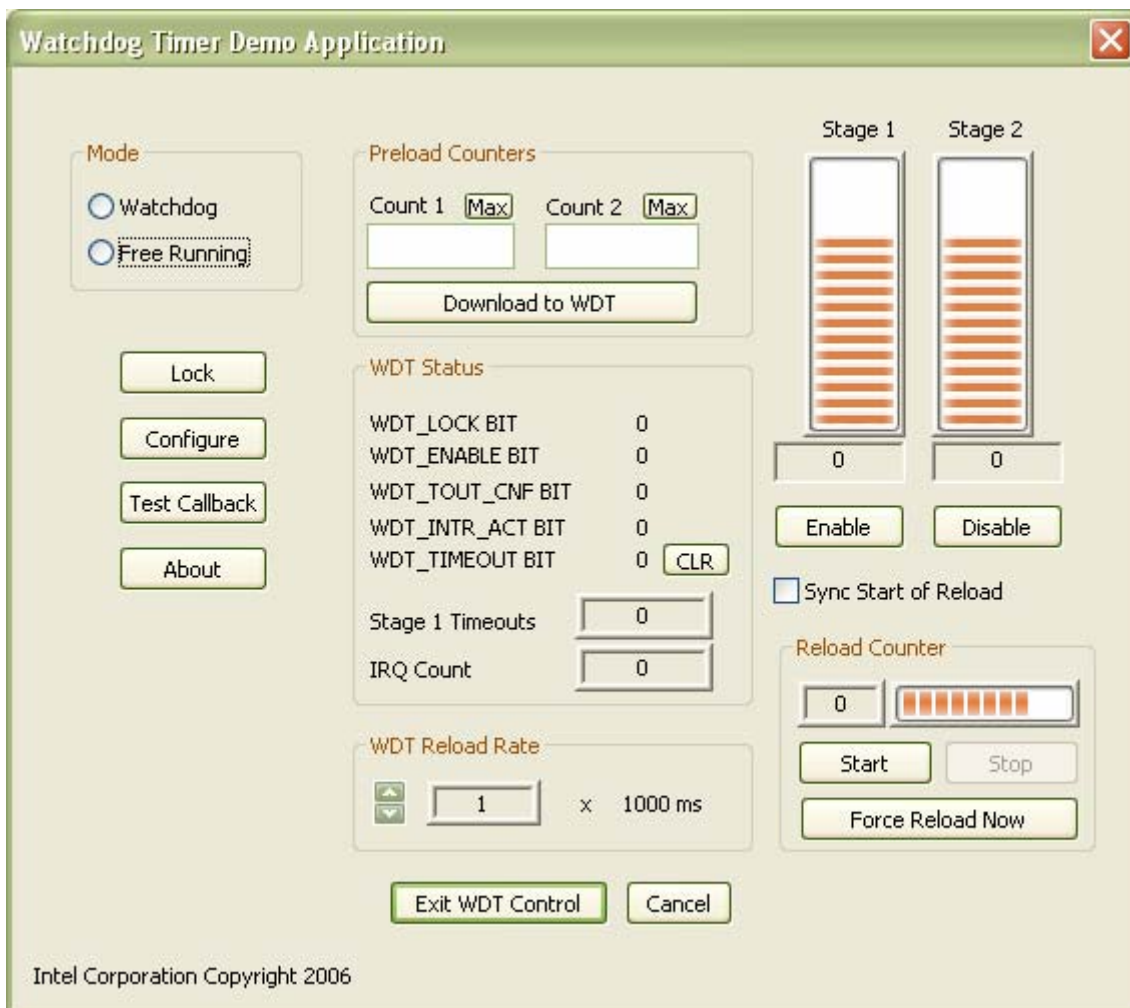
1.2 Supporting Documents

- *wdtdriverspec.doc*

2 Using the Demo Application

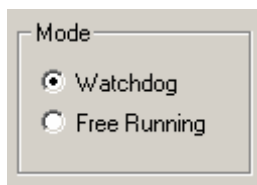
The Wdtdemo.exe application has a number of buttons and text entry fields for configuring and controlling the Watch Dog Timer (WDT). Each of the following items has a corresponding button or entry field on the application screen.

- 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

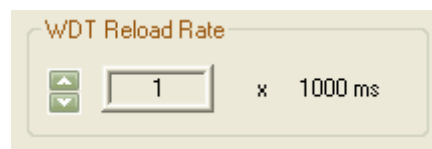
There are two edit boxes that specify Stage 1 and Stage 2 count-down values. Enter the values and then click the **Download to WDT** button to program the values from the application to the WDT device. Both counters are 35-bit counters that decrement using a 20-bit prescalar.

2.7 Information about WDT

This area shows status of the WDT.

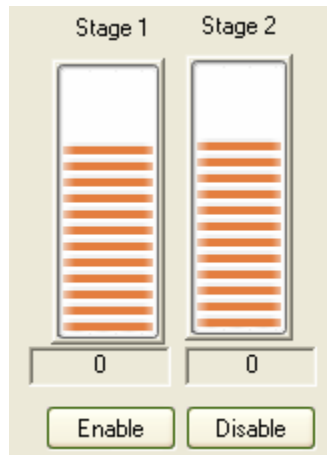
2.8 Setting the Reload Rate

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.

