

Wincomm's computers never hang

Wincomm implements the Auto WDT (Watchdog Timer) to further enhance product reliability.

Hsinchu, Taiwan, August 25, 2009 -- Wincomm designs the watchdog application software together with the external timer into its panel PC, medical all-in-one PC, digital signage large size display all-in-one systems and rugged PC engine boxes to further enhance the product reliability. This will be very helpful for those mission critical applications in industry automation, medical surgical room operations and the 7/24 non-stop digital signage applications.

For some applications, the embedded system products need to be self-reliant. It is usual impossible to wait for someone to reboot or reset the system in response to an invalid software state (e.g. stuck with endless loop). Such state can be as simple as a toggled register bit caused by software bug, an unusual sequence of external events, or electronic noise / interference. Some embedded products, such as space probes, are simply not accessible to human operators. If the system hangs or program execution is corrupted, the product is permanently disabled. In cases similar to these, a watchdog timer can help to solve the problem.

Base on these application requirements, Wincomm enhances its existing products with external type WDT design and associated application software / user interface to provide further product reliability and flexible usage.

1. Wincomm Auto WDT watchdog timer is external to the CPU processor (such as within the GPIO chip) and uses the low-power RC oscillator, even if the system's primary clock source (e.g. the crystal oscillator) is stopped under normal operation (e.g. in sleep mode), the WDT will continue to operate. (As figure 1.)

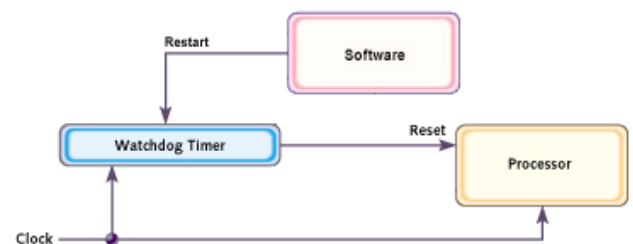


Figure 1. Wincomm's external type watchdog timer design

2. Wincomm Auto WDT application program with user interface is developed for Windows XP embedded and XP Pro for flexible and user friendly interaction --
- CD with the WDT program, related library / driver and user manual for easy installation.
 - A WDT program icon is created for easy access from the task bar.
 - Program user interface is available for user to enable / disable the WDT function, to set the time-out period (system default is 5 minutes), to test the WDT function with simulated system crash, and the current design for the WDT restart time is 6 seconds per cycle. (As below figure 2.)
3. Wincomm implements the Auto WDT to its whole series products except VIA-based WLP-6821-10/12/15 and WLP-6581-06.

With the watchdog timer implementation, Wincomm further enhances its product reliability against the system or environment uncertainties and brings more safeguarded usage expectation for all users and especially for those mission critical applications.

Appendix: How WDT works

A watchdog timer is a free-running timing device that can be used to automatically detect software anomalies and reset the processor if any occur. In general, a watch dog timer is based on a counter that counts down from some initial value to zero. The embedded software selects the counter's initial value and periodically restarts it (sometimes called "petting the dog" or "kicking the dog"). If the counter ever reaches zero (e.g. overflows or timeout) before the software restarts it, the software is presumed to be malfunctioning and the processor's reset signal is asserted. The processor (and the software it is running) will be restarted as if a human operator had cycled the power.



Figure 2. Wincomm WDT program icon & UI
(The WDT icon is magnified for better viewing)

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If you have any questions or requests to our products, please feel free to contact us anytime. Wincomm will offer you our best service. For more information, please contact our Sales representatives or mail directly to sales_support@wincomm.com.tw

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