ZottaOS

ZottaOS-Hard

A Real-Time Kernel with Minimal Overhead for Ultra-Low Power Microcontrollers

ZottaOS-Hard is the first and simplest member of the ZottaOS family of kernels, yet it can easily and painlessly accomplish the task of today's most influential kernels.

ZottaOS-Hard Specifications

- Supports periodic and event-driven threads;
- Hard real-time scheduling with Earliest Deadline First or Deadline Monotonic multithreaded scheduling;
- Common execution stack for all threads to minimize RAM usage;
- Lock-free (non-blocking) management of scheduling queues minimizing time periods in which interrupts are disabled;
- Maximum interrupt latency of 29 machine cycles;
- Interruptible context switching;
- Support for queued concurrent FIFO between tasks;
- Support for concurrent LIFO update of arbitrary sized datum between tasks;
- Flash memory usage: between 3kB and 5kB;
- RAM usage:
  - 54B + 24B per thread; (MSP430);
  - (26B + 3 * bufferSize) per I/O (MSP430);
- Easy to use API;
- Compatible user code for all ZottaOS kernels;
- Comes with ZottaOS MSP430 Configurator to easily switch between different MSP430 and CC430 microcontrollers;
- Currently available for any MSP430Fxxx and CC4340Fxxx.

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