

RA Ecosystem Partner Solution

PX5 RTOS



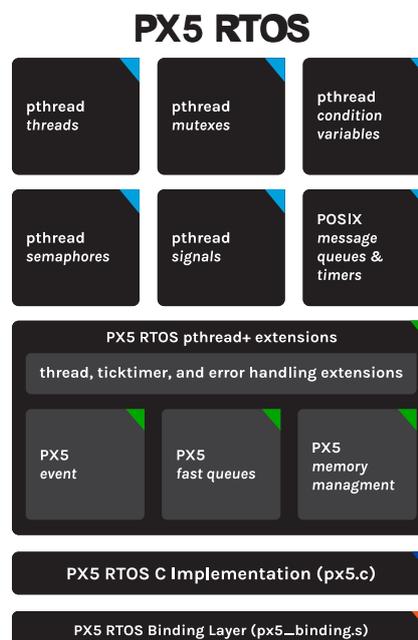
Solution Summary

The PX5 RTOS is an advanced, 5th generation RTOS that features a native implementation of the industry standard POSIX pthreads API, as well as best-in-class size and performance. As for safety and security, the PX5 RTOS provides unique Pointer/Data Verification (PDV) technology which developers can leverage at run-time to verify function return addresses, function pointers, system objects, global data, and memory pools. The PX5 RTOS is available today on the full range of the RA family of MCUs.

Features/Benefits

- Advanced, simple-to-use 5th generation RTOS
- Native implementation of the POSIX pthreads API instantly enables developers and makes firmware more portable
- The small footprint enables multi-threading in memory-constrained environments
- Low overhead and fast execution returns more cycles to the developer while reducing power
- Enhanced safety and security via unique Pointer/Data Verification (PDV) (patent pending)

Diagrams/Graphics



Target Markets and Applications

- Automotive
- Industrial IoT
- Smart Cities
- Smart Homes
- Smart Sensors
- Consumer Electronics

Enhance \ Simplify \ Unite EMBEDDED IoT DEVELOPMENT

Advanced PX5 RTOS uniting embedded industry with standard POSIX pthreads API

Advanced 5th Generation RTOS

Native RTOS Implementation of POSIX pthread API and real-time extensions

Protects firmware development investment by making firmware portable

Enables code sharing with embedded Linux
Reduces developer training via industry standard API

Best-of-class RTOS

Small footprint (minimal 1KB)
Fast execution (sub 1us APIs)
Pointer/Data Verification (PDV)

Easy to install and use

OUR MISSION

Our “why” at PX5 is to make embedded development easier and faster than ever before. Developers using the PX5 RTOS have less problems and are able to deliver better quality products to market in record time.

UNITING EMBEDDED

The PX5 RTOS features a native implementation of the industry standard POSIX pthreads API, which instantly enables a vast number of developers that are already fluent with POSIX pthreads. In addition to the native POSIX pthread support (semaphore, mutex, message queue, etc.), the PX5 RTOS also offers real-time extensions such as event flags, fast queues, tick timers, memory management, and more.

Given the PX5 RTOS industry-standard POSIX pthreads API support, a wide range of software stacks are instantly available to developers – both open source and commercial.

ADVANCED TECHNOLOGY

The PX5 RTOS also offers best-of-class size and performance and is designed for hard real-time environments. Its memory usage is minimal – taking as little as 1KB of FLASH and 1KB of RAM. Best of all, the PX5 RTOS memory usage automatically scales based on what the developer uses. No more dead code or complicated configuration options that might result in wasted memory.

Performance is both fast and deterministic, with many API calls and context switching taking less than one microsecond.

As for safety and security, the PX5 RTOS provides advanced Pointer/Data Verification (PDV) technology, which developers can leverage at run-time to verify function return addresses, function pointers, system objects, global data, and memory pools. This technology is unique to the PX5 RTOS.

SIMPLE TO USE

The PX5 RTOS is simple to use. Consisting of just two C and assembly source files, it’s easy to add the PX5 RTOS to any application build environment. It is also fully integrated with all the most popular development tools.

DOWNLOAD TO EVALUATE

Check the PX5 RTOS free evaluation demonstrations to see for yourself what the PX5 RTOS can do for you. Please download and try one today [here!](#)