

## RTOS Debugger for PXROS



### C166 TriCore

- Display of all PXROS System Resources
- Task Related Breakpoints
- Dynamic Task Performance Measurement
- Download and Debug Tasks via Ethernet
- PXROS Specific Display of Real-Time Trace Listing
- Statistic Evaluation and Graphic Display of Task Run Times
- Statistic Evaluation and Graphic Display of Function Run Times
- PRACTICE Functions for OS Data
- PXROS Related Pull-Down Menu

The TRACE32 system includes a configurable RTOS debugger to provide symbolic debugging in real time operating systems. Our software package contains a ready-to-run configuration for the PXROS Real Time Operating System from HighTec.

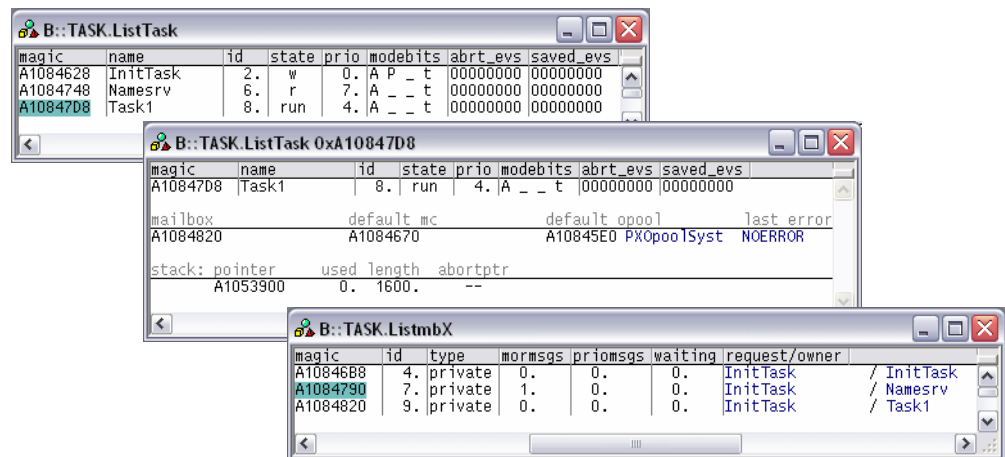
The PXROS awareness provides easy access to task lists and other kernel information, generates performance analysis data and enables you to do a most effective debugging with the TRACE32 systems on targets running PXROS.

## RTOS Awareness on TRACE32 with PXROS

### Real Time, Non-Intrusive Display of PXROS System Resources

The TRACE32 RTOS debugger for PXROS provides display functions to show the system resources of PXROS. All objects, such as tasks, mailboxes, messages etc. can be displayed and inspected. In addition, by using the processors capability of reading the target

memory while the application is running, or by using the emulators dual-port memory (if available), the display of all these regions can be viewed non-intrusively in real time. The tables are updated permanently ("On The Fly"), without affecting the application at all.

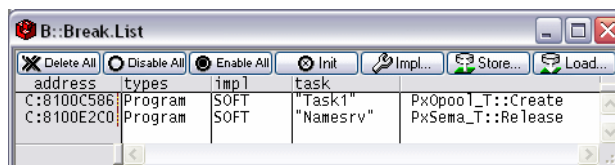


Task list window, detailed task window and mailbox list window

### Task Related Breakpoints

Any breakpoint set in the TRACE32 debugger can be set dependent to a specific task. This means, that the

breakpoint will then only halt, if hit by the specified task. This allows task related debugging even in shared code.



Breakpoint list with task dependent breakpoints

## Dynamic Task Performance Measurement

While PXROS is running, TRACE32 is capable of recurrently evaluating the current running task and collecting the results. The percentage, each task consumes of the system, is then dis-

played graphically and updated permanently. The longer time you let the measurement run, the more exact are the results. This feature is available even without any hardware trace.

## Download and Debug Tasks via Ethernet

TRACE32 added a new functionality to its software, which allows connecting to the PXROS-HR target via Ethernet. You can download tasks onto the running target using TRACE32, and you

can debug those tasks individually over the Ethernet connections - which enables you to debug your tasks even over the Internet.

## PXROS Specific Display of Real-Time Trace Listing

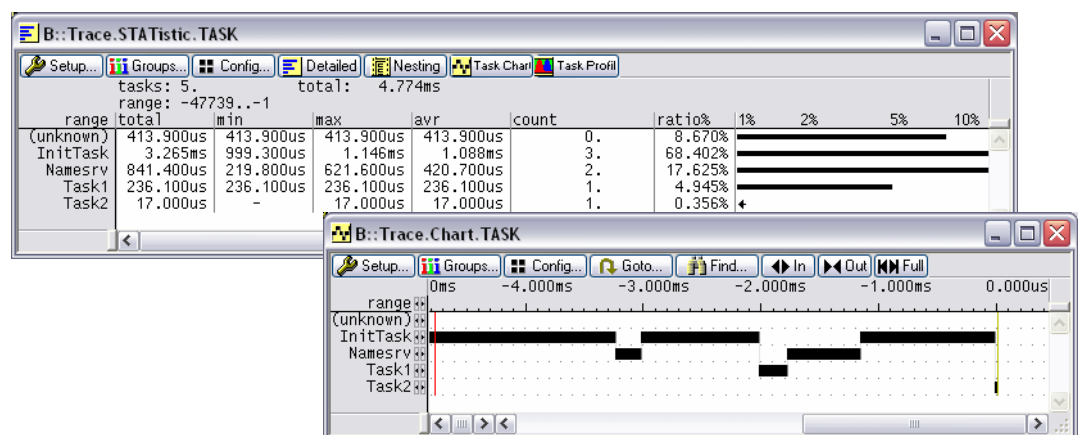
The data recorded in the real time trace buffer (if available) can be displayed and interpreted specific to the operat-

ing system. The task switches are displayed symbolically, either exclusively or in addition to other information.

## Statistic Evaluation and Graphic Display of Task Run Times

Out of the real time trace buffer (if available), the analyzer can calculate statistic tables of task run times and task switches. A graphical diagram shows

which task was active at a specific time, giving a clear view of the behaviour of the system.

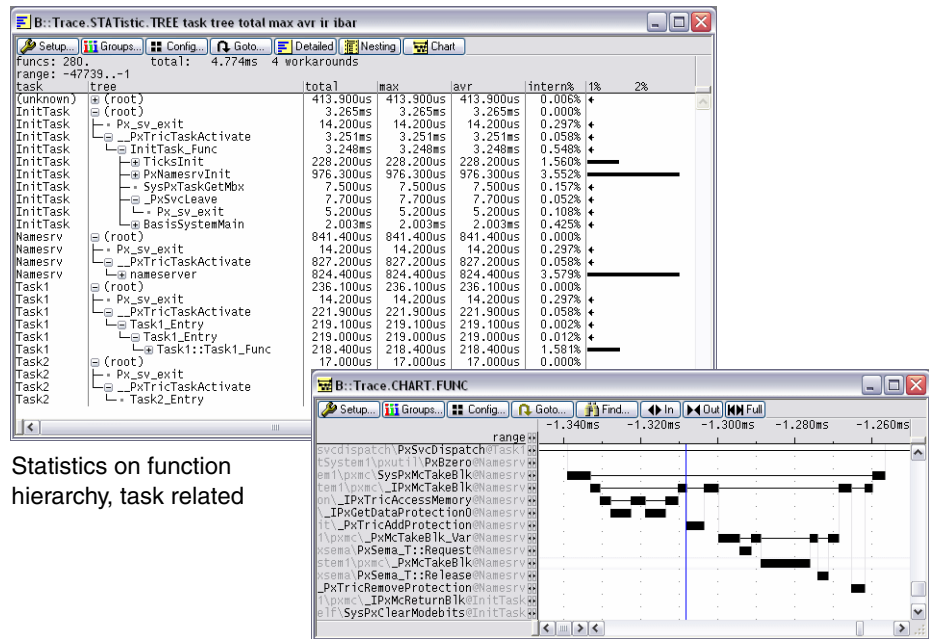


Statistics and flow of tasks

## Task Related Evaluation of Function Run Times

The statistic and graphic evaluation of function calls and function run times (if available) can be done dependant to the actual running task. This is neces-

sary, if different tasks call one single function at the same time, or if a task switch occurs in between the function.



Statistics on function hierarchy, task related

Flow of functions, related to the calling tasks

## PRACTICE Functions for OS Data.

The support includes extended PRACTICE functions for PXROS specific data, to be used in setup and test scripts. E.g. the function "task.con-

fig(magic)" returns the address of the so called magic value, which corresponds to the id of the current executing task.

## PXROS related pull-down menu

Because the menu bar of the TRACE32 user interface can be fully customized, you can create a new pull down menu, including operating system specific commands. We deliver

PXROS support with an example for such specific menus, which provides fast access to the PXROS awareness features.

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