



embeddedssoftware
solutions

embOS[®]

Easily portable

Efficient

Profiling support

No royalties

Real Time Operating System

+++ 8 / 16 / 32 - bit +++

embOS is a Real Time Operating System designed for embedded applications with hard real time demands and minimal resource usage requirements.

Developing applications with embOS

embOS is available in source or object code form. Both come with a ready to go start project. Your first multi task program is running within five minutes. A start application and a set of ready-to-use samples are supplied in source code form. Libraries for all memory models and initialization of the controller in "C"-source are also included to tailor the system

```

.....
* @SEGGER MICROCONTROLLER GmbH & Co. KG
* Solutions for real time microcontroller applications
* .....
File : Start_2Tasks.c
Purpose : Skeleton program for OS
.....
#include "RTOS.h"
OS_STACKPTR int StackSP[100]; StackSP[100]; /* Task stacks */
OS_TASK_TCBSP TCBSP; /* Task-control blocks */
static void HPTask(void) {
while (1) {
OS_Delay (100);
}
}
static void LPTask(void) {
while (1) {
OS_Delay (100);
}
}
.....
int main(void) {
OS_Init(); /* Initially disable interrupts */
OS_InitUser(); /* Initialize OS */
OS_InitHW(); /* Initialize Hardware for OS */
/* You need to create at least one task here */
OS_CREATETASK(&HPTask, "HP Task", HPTask, 100, StackSP);
OS_CREATETASK(&LPTask, "LP Task", LPTask, 10, StackSP);
OS_Start(); /* Start multitasking */
return 0;
}
.....

```

Start project

to any application. You can find our free, fully functional trial versions available for download from our website www.segger.com.

Profiling using embOSView

embOSView communicates with the kernel via UART or JTAG and displays all available information of the tasks and major system variables for your review and inspection.

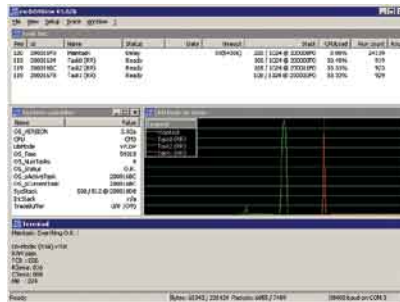
Profiling builds of the libraries are available to collect precise timing information for every

Features

- Preemptive multitasking
- Priority controlled scheduling
- Round robin scheduling
- No configuration needed
- Intertask communication
- Software timer
- Zero interrupt latency
- Fast & efficient
- Small footprint
- Easy to use start project
- Versatile
- Support directly by developers
- System analysis tool included
- Profiling support
- No royalties

task, which enables embOSView to show the CPU load.

All communication is done from within the communication interrupt routines. This means that it is non-intrusive if embOSView is not connected and minimally intrusive while embOSView is connected.



embOSView

Simulation environment

A simulation environment running under MS Windows is available. It can be used to write and test the entire application program on your PC (all routines are 100 % identical to your embedded application).

This makes debugging and development easy and convenient and saves development time. There is no need to wait for hardware development or a hardware modification. The simulation is an open environment, which also allows adding "C"-code to simulate the target specific hardware. embOS Simulation comes with a ready to go start project for MSVC++, but may also be used with other toolchains. A trial version is available upon request.



embOS simulation

Middleware available for embOS

To fully support the many features of todays microcontrollers, SEGGER offers several

middleware components. All of them integrate seamlessly with embOS and follow the same strict and efficient coding standard.

The middleware supports:

- Graphical User Interface (emWin)
- NOR and NAND flash memory (emFile)
- SD-cards (emFile)
- Journaling (emFile)
- TCP/IP (embOS/IP)
- USB device (emUSB)
- USB host (emUSB host)

Typical fields of application

Everything from battery-powered, single chip products to systems demanding ultra-fast response, flexibility and multiple processes are supported.

- Automotive
- Consumer Electronic
- Control Engineering
- Industrial
- Medical
- Telecommunication
- Transportation

Supported processor families

All major 8-, 16-, and 32-bit processor families can be supported upon customer request.

Current embOS availability:

- Altera: NIOS 2
- ARM: ARM 7/9 cores, Cortex-M/R/A
- Atmel: AT90, AVR, AVR32, ATmega, SAM3/7/9
- Fujitsu: F2MC-16LX/FX, FR30, FR50/60/70
- Freescall: Coldfire, S08, iMX, Kinetis
- Infineon: C16x
- Microchip: PIC18, PIC24/dsPIC30, PIC32
- MIPS: MIPS cores
- National: CR16C
- NEC: 78K0/K0S/K0R, 78K4, V850/ V850E
- Renesas: MELPS 7700, M16C, M32C, R8C, R32C, H8/H8S/H8SX, SH2/SH4, RX
- ST Micro: ST7, STR7/9, STM8, STM32
- Ti: DaVinci, MSP430, OMAP, Sitara, Stellaris
- Toshiba: TLCS-900, TX03, TX09