

# UDE SAFERTOS® Support

## Debugging of Real-Time and Safety Critical Applications

The **Universal Debug Engine® (UDE)** is a powerful development platform for debugging, testing and system analysis of microcontroller applications. With an additional add-on, UDE provides extended functions for software development of real-time and safety critical applications, which are under control of the **SAFERTOS®** real-time operating system from WITTENSTEIN high integrity systems.

- SAFERTOS® support is provided as UDE Add-On and extends a UDE basic debugger license
- SAFERTOS Add-On consists of the **SAFERTOS Support Window** that provides a comprehensive and detailed view to information about SAFERTOS® resources and objects
- The shown information is directly collected from the target system
- No separate description file or similar is needed
- Available information depends on particular SAFERTOS® configuration. Configuration is determined at compile time and does not change during run-time.

SAFERTOS/FreeRTOS Support

Tasks	Queues	Semaphores and Mutexes	Timers	Configuration			
Name	Address	State	Event Container	Priority	Stack Bas...	Top of St	^
LEDx	0xD0003AA8	eBlocked	0x00000000	1	0xD0007990	0xD0007...	
LEDx	0xD0003988	eBlocked	0x00000000	1	0xD0007890	0xD0007...	
LIM_INC	0xD0003500	eSuspended	0x00000000	1	0xD0007010	0xD0007...	
Notified	0xD0002628	eBlocked	0x00000000	1	0xD0008FA8	0xD0009...	
PolSEM1	0xD0003FC8	eReady	0x00000000	0	0xD00084B0	0xD0008...	
PolSEM2	0xD00040E8	eReady	0x00000000	0	0xD00086B0	0xD0008...	
Privileged Task 1	0xD0001A78	eReady	0x00000000	0	0xD0004880	0xD0004...	
Privileged Task 2	0xD0001B98	eRunning	0x00000000	0	0xD0004900	0xD0004...	
Privileged Task 3	0xD0001CB8	eReady	0x00000000	0	0xD0004980	0xD0004...	
Privileged Task 4	0xD0001DD8	eReady	0x00000000	0	0xD0004A00	0xD0004...	
QConsB1	0xD0000F28	eBlocked	BlockQ #1.Tasks...	1	0xD0004A80	0xD0004...	
QConsB3	0xD0001168	eReady	0x00000000	0	0xD0004E80	0xD0005...	
QConsB5	0xD00013A8	eBlocked	BlockQ #3.Tasks...	0	0xD0005280	0xD0005...	▼

The information that is shown in UDE's SAFERTOS Support Window is updated as soon as the target microcontroller enters the HALT state (e.g. at a breakpoint).

### Available Information for Resources and Objects

#### Tasks

Name, address, state, stack information and utilization, priority, events, mutexes, notifications, etc.

#### Queues

Name, address, storage information, queued items, blocked tasks and reason for blocking, etc.

#### Semaphores and Mutexes

Name, address, type, semaphore count, waiting tasks, etc.

#### Timers

ID, name and address, timer period, call back, etc.

#### Configuration

Current SAFERTOS® configuration, which was set for the SAFERTOS® build.

## Licensing

An additional license (UDE SAFERTOS) is required to use the SAFERTOS support add-on within a UDE base license.

## About SAFERTOS®

SAFERTOS® is a preemptive, pre-certified real-time operating system that delivers unprecedented levels of determinism and robustness to embedded systems. With an imperceptible boot time, SAFERTOS® is the ideal choice for systems that need to respond quickly to safety events, when the system must be placed into a safe state in the shortest possible time. SAFERTOS® is available pre-certified to IEC 61508 SIL 3 and ISO 26262 ASILD by TÜV SÜD.

**If you have any questions about our products, please feel free to contact us:**

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Development Tools

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