

# UDE PXROS-HR Support

## Debugging of Highly Reliable 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 highly reliable and safety critical applications, which are under control of the PXROS-HR real-time operating system from HighTec EDV Systeme.

- PXROS-HR support is provided as UDE Add-On and extends a UDE basic debugger license
- PXROS-HR Add-On consists of the PXROS-HR Support Window that provides a comprehensive and detailed view to information about PXROS-HR operating system objects
- The shown information is directly collected from the target system
- No additional description file necessary
- The information that is shown is updated as soon as the target microcontroller enters the HALT state (e.g. at a breakpoint).

OS	TASK	MEMORYCLASS	MESSAGE	MAILBOX	OBJECTPOOL	INTERRUPT	
	ID	Name	Priority	Events	Main Functi...	Stack Start	Stack End
	0x0003	InitTask_C0	0x00000001	0x00000000	0x80011F56	0x70000000	0x7000992
	0x0007	Namesrv	0x01000000	0x00000000	0x80004064	0x70009920	0x70009A1
	0x0009	Task 1	0x00008000	0x00000400	0x8001262C	0x7000A940	0x7000AA0
	0x1003	InitTask_C1	0x00000001	0x00000000	0x80011F56	0x60000000	0x6000892
	0x1006	LedServer	0x00002000	0x00000000	0x800124BE	0x60008940	0x6000898
	0x2003	InitTask_C2	0x00000001	0x00000000	0x80011F56	0x50000000	0x5000892
	0x2006	Task 2	0x00008000	0x00000400	0x80012792	0x50008940	0x50008A0
	0x2008	TtyTask	0x00001000	0x00000000	0x80012EF4	0x50008B00	0x50008C0
	0x3003	InitTask_C3	0x00000001	0x00000000	0x80011F56	0x40000000	0x4000892
	0x3006	Task 3	0x00008000	0x00000400	0x800128FC	0x40008940	0x40008A0

### Available Information of PXROS-HR Operating System Objects

OS	Message	Interrupt
Used cores and current running task	Type, sender and recipient, responsible mailbox, transmitted data	Object ID, interrupt number, interrupt handler information
Task	Mailbox	Timer
Name and ID, address of main function, priority, stack information, call back function, events, scheduling information, etc.	ID, mode, message and call back information	Type and subtype, timer specific information, triggered events
Memory Class	Object Pool	Inter-Core Communication
Information about memory regions	Pool parameters, object ID, pool type, object count	Information about communication between tasks and mailboxes

## Tracing and Virtualization of Tasks and Sequences

For microcontrollers with trace capability the PXROS-HR support of UDE offers also visualization of task and function execution sequences. The context menu within the PXROS-HR support window offers to open the trace configuration dialog.

OS	TASK	MEMORYCLASS	MESSAGE	MAILBOX	OBJE
	ID	Name	Priority	Core	Main
	0x0003	InitTask_C0	0x00000001	0x000	0x800
	0x0007	Copy Column	0x00000000	0x000	0x800
	0x0009	Column Selection	0x00000000	0x000	0x800
	0x1003	Export	0x00000001	0x001	0x800
	0x1006	Configure Trace	0x00000000	0x001	0x800
	0x2003	Task Trace	0x00000001	0x001	0x800
		Properties			

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

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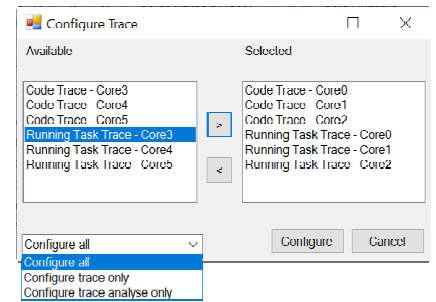
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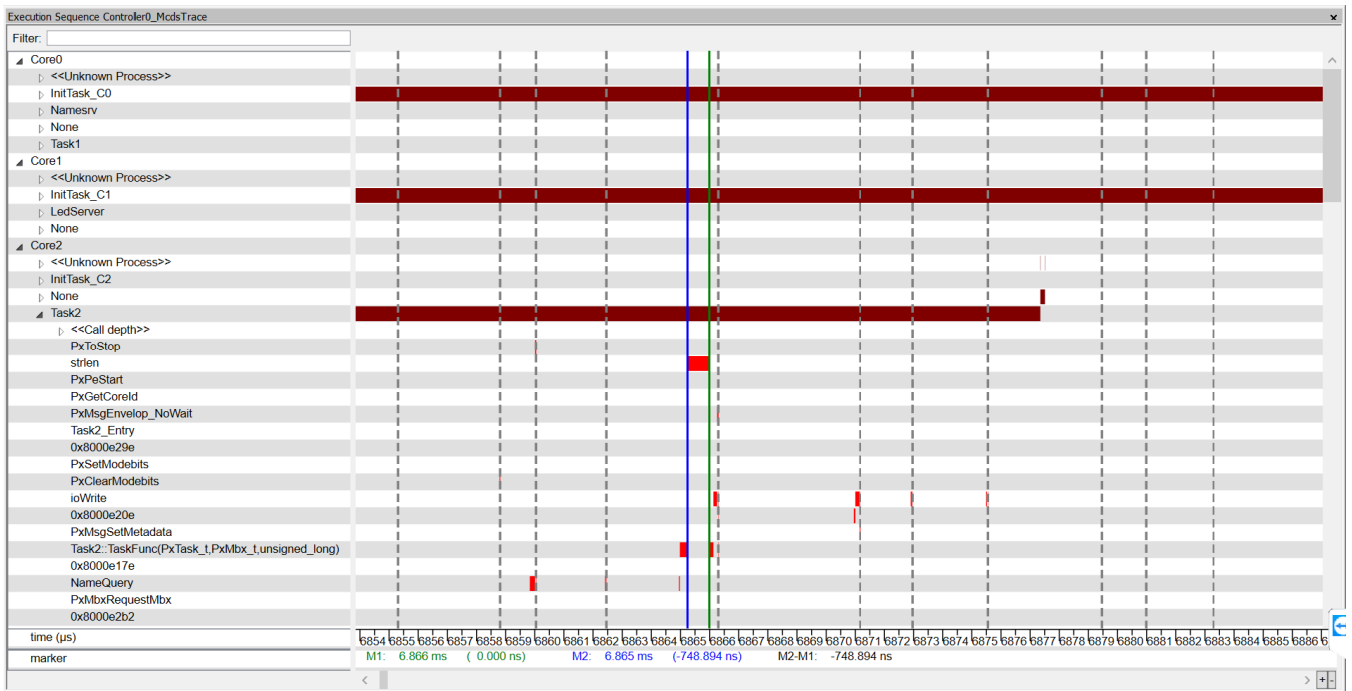
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 Development Tools

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For each core it is possible to select task trace and optional code trace to see not only the task changes but also the execution sequence of functions. Trace and analysis can be configured together or separately. Dynamically created tasks which was not known at trace start can be still also analyzed later with this feature.



The execution sequence chart shows the changes of tasks and the execution sequence of functions sorted by cores and tasks. Navigation along the time axis is possible. Free placeable markers offer easy time measurement between two trace points.



## Licensing

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

## About PXROS-HR

PXROS-HR from HighTec EDV Systeme is an object oriented real-time operating system for Infineon TriCore™ and AURIX™ and successor of the original real-time micro-kernel PXROS. PXROS-HR is officially safety approved and certified to be used for safety-related applications up to SIL3 (IEC61508) and ASIL-D (ISO 26262). It improves concepts of encapsulation and robustness by using the hardware protection mechanisms (MPU) of TriCore™ and AURIX™.

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

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