



FIRE Emulator for C166 Cell-Based-Core

- Dual-ported emulation memory
- Software compatible OCDS debugger system
- Interface with all compilers
- RTOS support
- CASE tool interface
- Windows9x, 2000, NT and X windows interface

C161U
C165H
C165UTAH
PMB6850_E-GOLD+

TRACE32-FIRE TRICORE module supports most members of the INFINEON Cell-Base-Core family. The modular and open technology of the system allows the fast integration of new chip designs.

Features

Basics of Operation

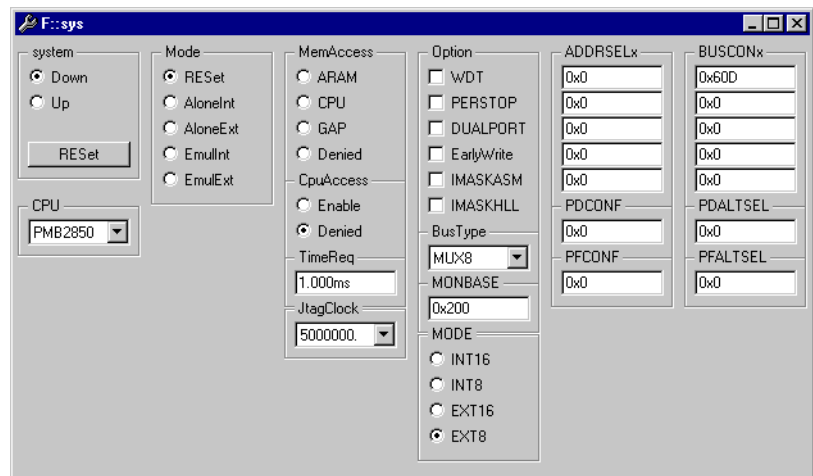
The emulator works with the production chip and uses the OCDS inface for emulation and dualport accesses.

Operating Modes

The Emulator can work in stand-alone mode with internal clock or in active mode with internal or the target clock. On power-down of the target system the emulator tristates its output buffers and isolates its internal emulation circuits.

The operation modes are as follows:

- Reset Down
- Alone Internal
- Alone External
- Emulation Internal
- Emulation External



Clock

- Operation with external or internal Clock
- 32 KHz Clock
- 1..40 MHz internal clock

Dual-Port Access

All TRACE32 memories are dual-ported. The dual-port access makes it possible to display and modify the con-

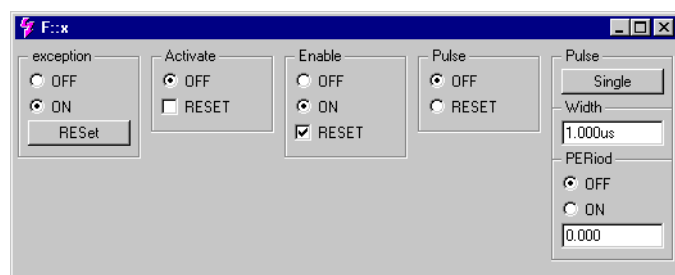
tents of the overlay memory, to set or delete breakpoints or use the flag memory while the application is running in real-time.

The external bus has 3 modes for dual-port access

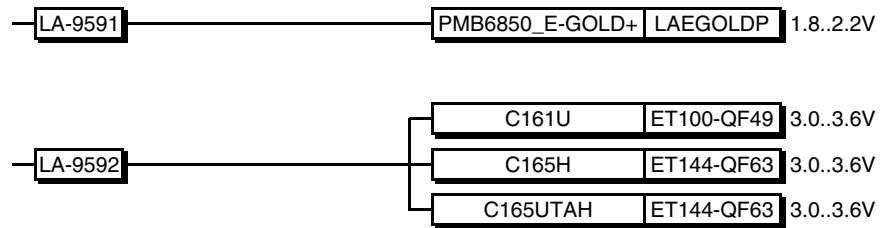
- GAP
- ARAM
- CPU

Exception Control

- Reset



Modules Overview



Debug Interfaces

TRACE32-PowerView supports most compilers, realtime operation systems and debuggers.

New integrations are mostly done on customers request. If your compiler or RTOS is not supported now, please ask us !

Compiler Support

Language	Compiler	Company	Option	Comment
C	C166	ARM Germany GmbH	EOMF-166	
C	XC16X/ST10	Cosmic Software	ELF/DWARF	
C	GNU-GCC166	HighTec EDV-Systeme GmbH	DBX	
C	C166	TASKING	IEEE	
C++	GNU-CPP166	HighTec EDV-Systeme GmbH	DBX	
C++	CP166	TASKING	IEEE	

RTOS Support

Name	Company	Comment
ARTX-166	ARM Germany GmbH	
CMX-RTX	CMX Systems Inc.	
Elektrobit tresos	Elektrobit Automotive GmbH	via ORTI
Erika	Evidence	via ORTI
Nucleus PLUS	Mentor Graphics Corporation	
osCAN	Vector Informatik	via ORTI
OSE Basic	Enea OSE Systems	(OS166)
OSE Epsilon	Enea OSE Systems	(OS166), 3.x
OSEK	-	via ORTI

Name	Company	Comment
ProOSEK	Elektrobit Automotive GmbH	via ORTI
PXROS	HighTec EDV-Systeme GmbH	
RTX166/-tiny	ARM Germany GmbH	
RTXC 3.2	Quadros Systems Inc.	
RTXC Quadros	Quadros Systems Inc.	
Rubus OS	Articus Systems AB	
SDT-Cmicro	IBM Corp.	
uC/OS-II	Micrium Inc.	2.0 to 2.92

Debugger Support

CPU	Debugger	Company	Host
ALL	X-TOOLS / X32	blue river software GmbH	Windows
ALL	CODEWRIGHT	Borland Software Corporation	Windows
ALL	CODE CONFIDENCE TOOLS	Code Confidence Ltd	Windows
ALL	CODE CONFIDENCE TOOLS	Code Confidence Ltd	Linux
ALL	EASYCODE	EASYCODE GmbH	Windows
ALL	ECLIPSE	Eclipse Foundation, Inc	Windows
ALL	RHAPSODY IN MICROC	IBM Corp.	Windows
ALL	RHAPSODY IN C++	IBM Corp.	Windows
ALL	LDRA TOOL SUITE	LDRA Technology, Inc.	Windows
ALL	ATTOL TOOLS	MicroMax Inc.	Windows
ALL	VISUAL BASIC INTERFACE	Microsoft Corporation	Windows

CPU	Debugger	Company	Host
ALL	LABVIEW	NATIONAL INSTRUMENTS Corporation	Windows
ALL	CODE::BLOCKS	Open Source	-
ALL	C++TEST	Parasoft	Windows
ALL	RAPITIME	Rapita Systems Ltd.	Windows
ALL	DA-C	RistanCASE	Windows
ALL	SIMULINK	The MathWorks Inc.	Windows
ALL	WINDOWS CE PLATF. BUILDER	Windows	Windows
C166	SDT CMICRO	IBM Corp.	Windows

Operation Voltage and Frequency

The maximum operation frequency of TRACE32-FIRE depends on:

- The max. frequency of the CPU
- The access time of the overlay memory (10ns)
- The mapper mode (Slow or Fast)
- The number of waitstates (W0 = 0 waitstates
W1 = 1 waitstate)
- The dual-port access mode
- If no emulation memory is used, the frequency limit depends on the trace speed (TRACE)
- Some probes use extra high-speed memory on the emulation adapter (HEAD RAM)

Denied/ARAM/CPU Access

Module	CPU	F-W0-10	F-W1-10	S-W0-10	S-W1-10	CHIP	TRACE	HEAD RAM
-	C161U	38.0	38.0+	27.5	38.0+	38.0		
-	C165H	38.0	38.0+	27.5	38.0+	38.0		
-	C165UTAH	38.0	38.0+	27.5	38.0+	38.0		

Operation Voltage

This list contains information on probes available for other voltage ranges. Probes not noted here supply an operation voltage range from 4.5V to 5.5V.

CPU	Module	Adapter	Voltage Range
C161U	-	-	3.0 .. 3.6 V
C165H	-	-	3.0 .. 3.6 V
C165UTAH	-	-	3.0 .. 3.6 V
PMB6850_E-GOLD+	-	-	1.8 .. 2.2 V

Dimensions

Modules

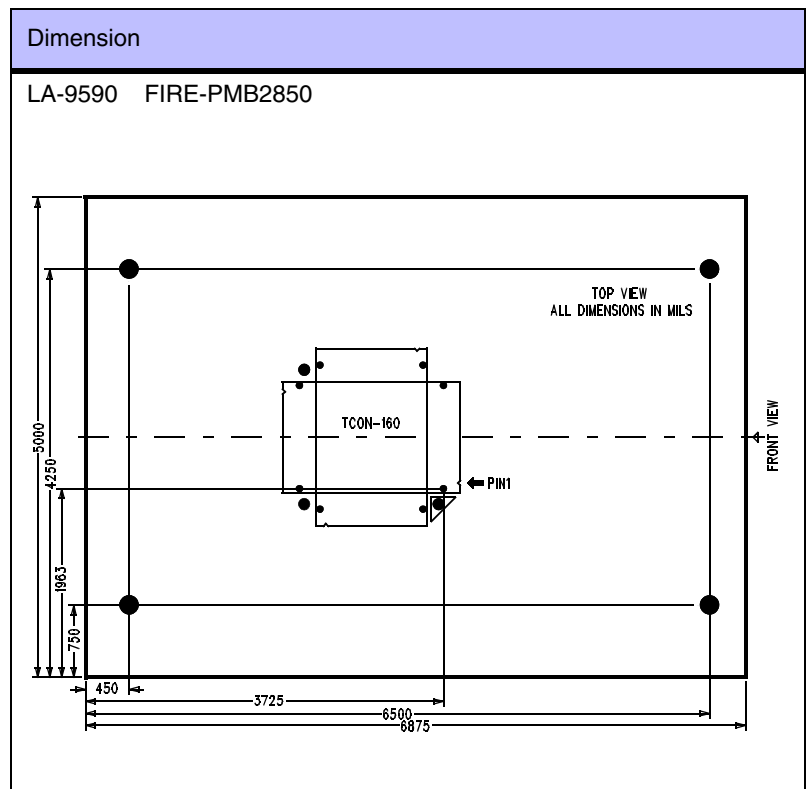


Table 1:

Dimension
<p>LA-9591 FIRE-PMB6850</p> <p>TOP VIEW ALL DIMENSIONS IN MILS</p> <p>TCOM-200</p> <p>PIN1</p> <p>5000 4250 838 750 450 3850 6500 6875</p> <p>FRONT VIEW</p>
<p>LA-9592 FIRE-C165UTAH</p> <p>TOP VIEW ALL DIMENSIONS IN MILS</p> <p>PIN1 100QF49</p> <p>PIN 1 144QF63</p> <p>5000 4250 1600 1350 750 450 2575 2625 6500 6875</p> <p>FRONT VIEW</p>

Table 1:

Connectors

On each emulation module there are half-size connectors to:

- ❑ Connect the emulation module directly to the target by providing the corresponding connectors also on the target hardware

- ❑ Connect a standard adapter from Emulation Technology, YAMAICHI, AMP, TOKYO ELETECH etc.

The following table lists the physical dimensions of these connectors.

CPU	Dimension
C161U	<p>ET100-QF49</p> <p>100-QF49 TOP-VIEW</p>
C165H C165UTAH	<p>ET144-QF63</p> <p>144-QF63 TOP-VIEW</p>

Adapter

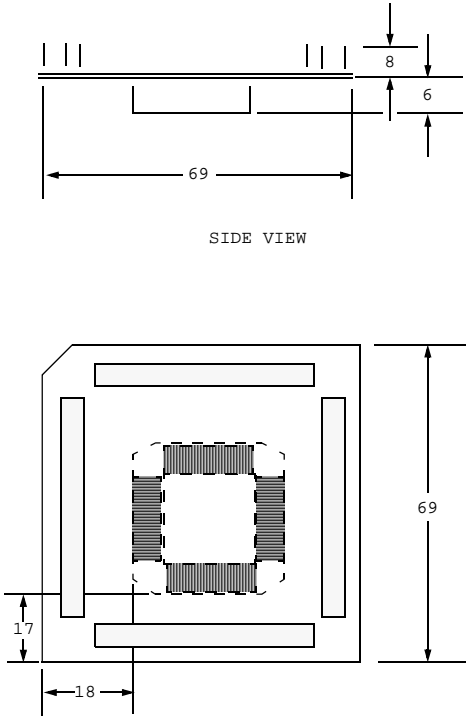
The adapters connect in different ways

- With Clip-Over Adapters the CPU can stay on the target board.
- With Solder-ON adapters the CPU must be removed

- YAMAICHI and AMP adapters fit to the CPU socket

The following table lists the physical dimensions of these adapters.

Socket CPU	Adapter
ET100-QF49 C161U	<p>YA-1091 ET100-EYA-QF49 Emul. Adapter for YAMAICHI socket ET100-QF49</p> <p>SIDE VIEW</p> <p>TOP VIEW (all dimensions in mm)</p>

Socket CPU	Adapter
ET144-QF63 C165H C165UTAH	YA-1111 ET144-EYA-QF63 Emul. Adapter for YAMAICHI socket ET144-QF63  <p>The technical drawing consists of two views: a side view and a top view. The side view shows a rectangular component with a total length of 69 mm. It features a central section with a width of 8 mm and a height of 6 mm. The top view shows a square component with a side length of 69 mm. It has a central square area with a side length of 18 mm and a height of 17 mm. The central area is filled with a grid pattern, representing the socket pins.</p>

Available Tool Chain

TRACE32 provides a complete set of development tools for this family. This includes:

- The In-Circuit Emulator TRACE32-ICE
- The high speed RISC Emulator TRACE32-FIRE
- The BDM/JTAG/ONCE etc. based In-Circuit Debugger TRACE32-ICD
- The ROM Monitor based In-Circuit Debugger TRACE32-ICD
- The ICD Trace, a trace extension to the BDM/JTAG debuggers or ROM monitors
- Evaluation boards, which can be used until the target hardware is available.
- The Instruction Set Simulator (SIM), a software tool for code test without any hardware

The following list give an overview which development tools are available for the specific derivatives of this family.

CPU	ICE	FIRE	ICD DEBUG	ICD MONITOR	ICD TRACE	POWER INTEGRATOR	INSTRUCTION SIMULATOR
C161U		YES	YES	YES			YES
C165H		YES	YES	YES			YES
C165UTAH		YES	YES	YES			YES
PMB6850_E-GOLD+		YES	YES	YES	YES		YES

Order Information

Module Description

OrderNo Code	Text
LA-9590 FIRE-PMB2850	FIRE Emulator for PMB2850 FIRE Emulator for EGOLD, adaption to ADEGOLD, requires FIRE-ARAM
LA-9591 FIRE-PMB6850	FIRE Emulator for PMB6850 FIRE Emulator for EGOLD+, adaption to ADEGOLDP, requires FIRE-ARAM
LA-9592 FIRE- C165UTAH	FIRE Emulator for C165UTAH FIRE Emulator for C165UTAH, C161UTAH, C165H, adaption to ET144-QF63, ET100QF49, requires FIRE-ARAM

Detailed Order Information

Order No.	Code	Text
LA-9590	FIRE-PMB2850	FIRE Emulator for PMB2850
LA-9591	FIRE-PMB6850	FIRE Emulator for PMB6850
LA-9592	FIRE-C165UTAH	FIRE Emulator for C165UTAH
Additional Options		
TO-1250	ET100-ETO- QF49	Emul. Adapter for T0 socket ET100-QF49
TO-1255	ET100-ETO-SE	Emul. Adapter for T0 socket ET100-SE 0.4mm
YA-1091	ET100-EYA-QF49	Emul. Adapter for YAMAICHI socket ET100-QF49
ET-1092	ET100-SET-QF49	Surface Mountable Adapter for ET100-QF49
TO-1251	ET100-STO- QF49	Emul. Adapter TO-surface mount. ET100-QF49
TO-1310	ET144-ETO- QF63	Emul. Adapter for T0 socket ET144-QF63
YA-1111	ET144-EYA-QF63	Emul. Adapter for YAMAICHI socket ET144-QF63
ET-1110	ET144-SET-QF63	Surface Mountable Adapter for ET144-QF63
TO-1311	ET144-STO- QF63	Emul. Adapter TO-surface mount. ET144-QF63

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