

## In-Circuit Emulator for 68HC05 and 68HC08

**MC68HC05B16**  
**MC68HC05B32**  
**MC68HC05C**  
**MC68HC05D**  
**MC68HC05X**  
**MC68HC08AB**  
**MC68HC08AS**  
**MC68HC08AT**  
**MC68HC08AZ**  
**MC68HC08AZ0**  
**MC68HC08GP**  
**MC68HC08XL36**  
**MC68HC705-X32**

- Works with Cosmic, Metrowerks, Tasking and other compilers
- Up to 8MHz bus speed
- Support for 5V and 3.3V
- Dummy cycle blank-out in trace
- On chip EEPROM access
- Dual ported-memory
- Windows9x, NT and X windows interface

TRACE32-ICE08 supports most members of the 68HC05 and 68HC08 family from Motorola. The modular and open technology of the system allows the fast integration of new chip designs.

TRACE32-ICE is a state of the art In-Circuit Emulator, which offers unlimited hardware breakpoints and up to 16MByte dual-ported emulation memory. The real-time trace and trigger work up to the max. speed of the CPU. The analyzer offers selective trace as well as performance analysis and statistic functions.

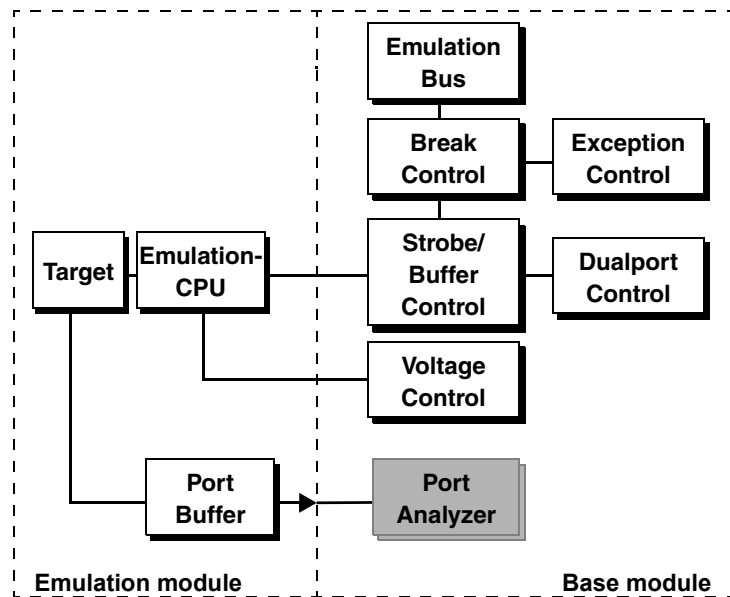
The system offers an interface to all C compilers.

TRACE32 works with the highest variety of host interfaces. The communication link to the host is done by the printer port, a fibre optic interface or ethernet allowing a high-speed transfer.

TRACE32-ICE08 is also available as a compact 8-bit In-Circuit Emulator.

## Features

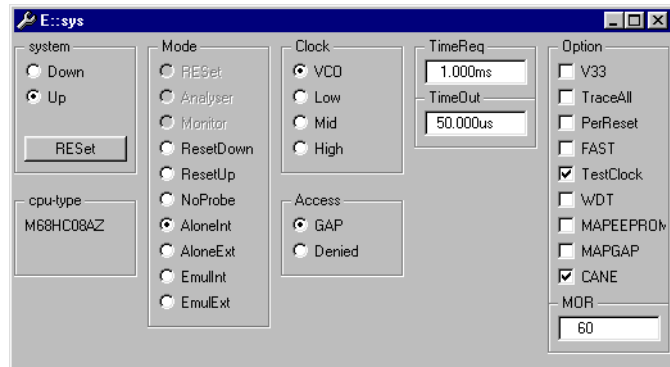
### Basics of Operation



The ICE-08 probe is a high-performance emulation system for many derivatives of the 68HC08 and the 68HC05 family. The change between different CPU types is done by chang-

ing the adapter board. The probe supports high-speed emulation. It runs together with the 8 bit controller ECC8 or the 32 bit controller ECU32.

## Operating Modes



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

## Max. Operation Frequency

- 8 MHz Bus Clock

## Emulation Mode

- Single-Chip

## Multitask Debugging

- 1 foreground task
- 1 background task

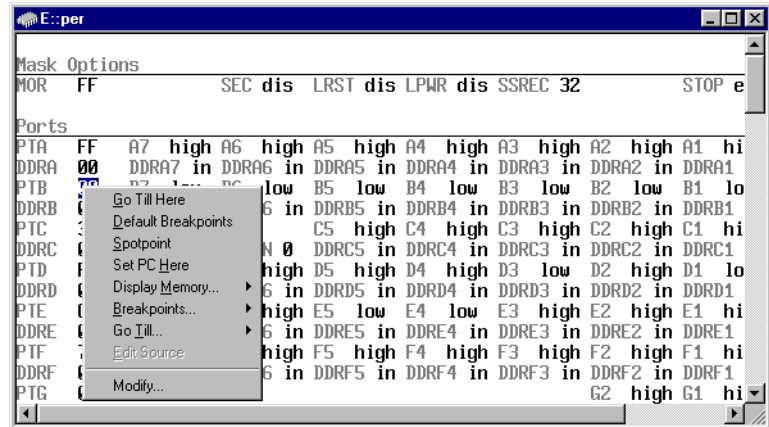
## Trace Control

- TraceReset
- TraceWait
- TraceAll
- By default no prefetch or idle cycles are traced

## Voltage and Clock Monitors for the Target System

- 3.3 ... 5V Operation
- Clock monitor may be switched off

## Peripheral Window



- Display of onchip peripherals
- User definable display of the onchip peripherals
- Definition is done interactive supported by softkeys
- Pull down menus for settings
- Additional description for each field
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## Exception Control



Exception system is used to control and simulate all special CPU lines like RESET or interrupt inputs. This is especially useful during the development phase, allowing to disable CPU input lines, or to simulate certain events.

- Static Exception Setting
  - Reset
- Target Exception Control
  - Reset
  - IRQ1
  - IRQ2
- Exception Trigger
  - Reset
  - IRQ1
  - IRQ2
  - Simulation
- Exception Simulation
  - Reset
  - IRQ1
  - IRQ2

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## Modules Overview

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## 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

CPU	Language	Compier	Compan y	Option
68HC08	C	CX68HC08	Cosmic Software	COSMIC
68HC08	C	HICROSS-68HC08	NXP Semicon ductors	HICROSS

## RTOS Support

Company	Product	Comment
-	OSEK	via ORTI
Elektrobit Automotive GmbH	ProOSEK	via ORTI
Micrium Inc.	uC/OS-II	2.0 to 2.8

## Debugger Support

CPU	Debugger	Company
	WINDOWS CE PLATF. BUILDER	-
	CODE::BLOC KS	-
	C++TEST	-
	ADENEO	-
	X-TOOLS / X32	blue river software GmbH
	CODEWRIGH T	Borland Software Corporation
	CODE CONFIDENC E TOOLS	Code Confidence Ltd
	CODE CONFIDENC E TOOLS	Code Confidence Ltd
	EASYCODE	EASYCODE GmbH
	ECLIPSE	Eclipse Foundation, Inc
	CHRONVIEW	Inchron GmbH
	LDRA TOOL SUITE	LDRA Technology, Inc.
	UML DEBUGGER	LieberLieber Software GmbH
	SIMULINK	The MathWorks Inc.
	ATTOL TOOLS	MicroMax Inc.
	VISUAL BASIC INTERFACE	Microsoft Corporation
	LABVIEW	NATIONAL INSTRUMENT S Corporation
	RAPITIME	Rapita Systems Ltd.
	RHAPSODY IN MICROC	IBM Corp.

CPU	Debugger	Company
	RHAPSODY IN C++	IBM Corp.
	DA-C	RistanCASE
	TRACEANALY ZER	Symtavigation GmbH
	TA INSPECTOR	Timing Architects GmbH
	UNDODB	Undo Software
	VECTORCAS T UNIT TESTING	Vector Software
	VECTORCAS T CODE COVERAGE	Vector Software



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## Operation Voltage and Frequency

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### Emulation Frequency

Module	CPU	FREQ.
LA-7126	MC68HC05B16	4.5+
LA-7121	MC68HC05B32	4.5+
LA-7123	MC68HC05C	4.5+
LA-7122	MC68HC05D	4.5+
LA-7120	MC68HC05X	4.5+
LA-7111	MC68HC08AB	8.0+
LA-7112	MC68HC08AS	8.0+
LA-7112	MC68HC08AT	8.0+
LA-7111	MC68HC08AZ	8.0+
LA-7110	MC68HC08XL36	8.0+
LA-7120	MC68HC705-X32	4.5+

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### Operation Voltage

All modules can work from 3.0V to 5.5V

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## Dimensions

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### Module Dimensions

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## 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.

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## 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.

Not necessary.

## 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.

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## Order Information

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### Module Description

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Detailed Order Information

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## Disclaimer

The information presented is intended to give overview information only. Changes and technical enhancements or modifications can be made without notice.



