

CAST

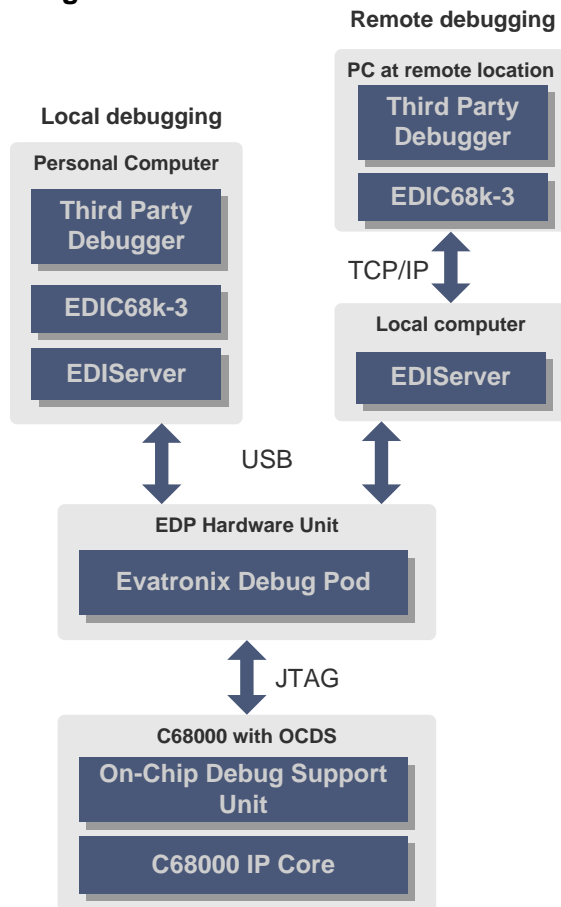
EASE-68000

Evatronix Application- Debugging Support Environment

The EASE-68000 is a combination of hardware and software elements for all variations of the C68000 microprocessor that allows in-system core debugging while a user application is being executed. The EASE is very easy to connect, configure and use thanks to an industry standard USB 2.0 interface between the system and the debugging environment. In addition, the modular architecture of the EASE enables remote debugging via the Internet. A complete solution includes the following components:

- C68000 On Chip Debug Support (OCDS) unit, which allows for control and execution of user programs, reading or writing memories and registers and many other functions such as single step, stop, and more
- Evatronix Debug Interface (EDIC68k-3) – a dedicated software package for Windows PC that works with the debugger environment
- Evatronix Debug Pod (EDP) – an external hardware unit. It transmits data between the debugger and the debug target through two interfaces: USB and JTAG. The first one is used to communicate with the PC while the second establishes connection with the C68000 Microcontroller.

Block Diagram



Features

- Program control and memory access
 - Program execution control reset, stop, go and step in ANSI C or ASM instruction mode
 - Software breakpoints (SWBP) to stop program execution on code fetch
 - Hardware breakpoints (HWBP) to stop program execution on code fetch from selected address or address range (data breakpoint)
- Register and memory access:
 - full read/write access to memory
 - read/write access for internal processor registers including program counter

Benefits

- Provides a convenient and fast environment for debugging all 68000-based applications thus speeding time to market
- Remote debugging via Internet network (using TCP/IP protocol)
- Simple and easy installation (user friendly Install Guide)

Applications

Embedded 16/32-bit C68000 based systems:

- Debugging and testing embedded software in the target environment. It is especially recommended when the project integrates a Real Time Operating System and/or advanced peripheral controllers such as USB or Ethernet devices
- Testing additional peripheral controllers via the debugger interface

Functional Description

The EASE-68000 is composed of modules as shown in the block diagram and described below.

EDIC68k-3

The EDIC68k-3 is the plug-in created for C68000 microprocessor and TASKING 68k-ColdFire CrossView Debugger. Thanks to its compatibility with the Advanced Generic Debug Interface standard, the original Tasking 68-ColdFire simulation environment can be easily replaced by this plug-in without losing any of the important debug features.

EDP

The Evatronix Debug Pod transfers data between the software on the PC and the target hardware. To communicate with the 68000 Series Microcontroller the EDP uses a JTAG interface. The USB 2.0 High Speed interface is used as the data exchange channel between the EDP and the PC.

EDIServer

The EDIServer is an application that transmits data from the debugger to the EDP device. Thanks to this unit, it is possible to communicate between the CrossView Debugger and the EDP over the network using the TCP/IP protocol.

C68000 with OCDS Unit

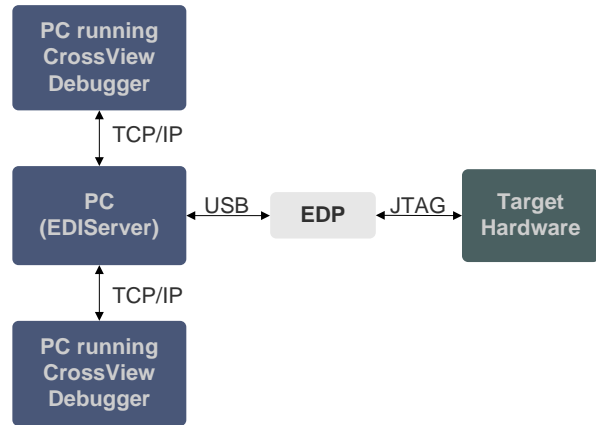
The C68000 is a fast, configurable IP core of a 32-bit microprocessor. Together with the OCDS hardware it simplifies embedded software development directly in the target system - either FPGA prototype or final ASIC.

Configuration Options

Thanks to the additional application which transmits data from the CrossView Debugger to the EDP device over any network via the TCP/IP protocol there are possibilities for either local or remote debugging. Both are shown below.



CrossView debugger is running on a PC and EDP with hardware target connected directly to it.



CrossView debugger is running on one PC while EDP with hardware target is connected to the other PC, so an engineer can work on target hardware which is placed in a different room, building or any other location. All he needs is a network connection.

At any given time only one connection between the CrossView Debugger and the target hardware may be active.

Standard Deliverables

The EASE-68000 is delivered with:

- EDP package (with full documentation, cables, etc.)
- EDIC68k-3 and EDIServer software installation pack with a user-friendly Install Guide
- User Manual and Installation Guide

Development Environment

To facilitate the assembly of a successful prototyping process, the following elements can be provided as an option

- EB-5 Tiny development board
- FPGA adapter with Xilinx® or Altera® FPGA

Related Products

C68000 – The C68000 is a powerful 16-/32-bit microprocessor IP core which executes the instruction list compatible with the Motorola™ MC68000 microprocessor. The C68000 can be used as a pin equivalent of the MC68000.

C68000 AHB - 32-bit only version of the C68000 core with a 32-bit AMBA™ AHB host interface.