

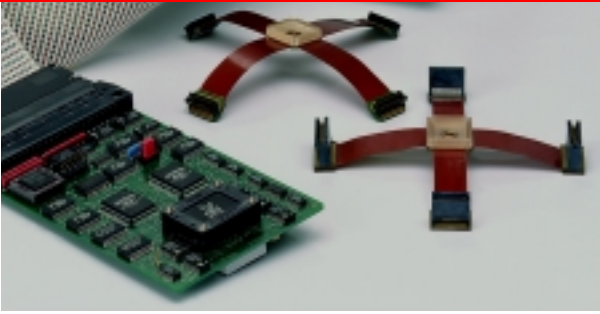
New:  
Support for  
Am186CC  
Derivatives  
up to 40 Mhz!



# **AX186**

## **In-Circuit Emulator**

# AX186



## The AX Class Special Performance Tool

Thousands of development labs worldwide have become the home of the teletest 16 during the last 12 years. There is no other tool that has such significant and almost legendary share in the embedded world today. And now time has come for Hitex to create a fully new "tomorrow's tool". Thousands of customer reports, field experiments and technology audits resulting from daily contacts to our customers over the years, have helped us to develop the AX186.

Our aim was to redesign the principles of "one-architecture debugging tools" by increasing functionality through highly integrated features, thus enabling the developer to focus on the target and not the emulator.



### 1 Family Emulator For The 186 Processor Derivatives

The AX186 offers complete derivative support up to 40 MHz processor frequency. You can easily change to new derivatives at little cost; this also includes the possibility to adapt your target with our revolutionary PressOn adaptation technology.



### 2 Breakpoints

Any number of hardware breakpoints can be set across a wide address range at any desired point you like. Each of these break-points can be set on both program execution or data reads and writes. A mouse-click in the high-level language window on a program line or variable is enough to define the desired breakpoint.

### 3 Extended Emulation Memory For The Whole Address Space

The emulation memory can be freely allocated in blocks of 1 kB as both code and data. Thus operation without target hardware is not a problem. This allows for program development and testing to begin at a very early phase in the project. With dual-ported memory, emulation memory can be read without affecting real-time operation, enabling your system to run on-the-fly completely undisturbed.



### 4 Coverage Analyzer Reveals The Gaps

The entire memory space can be observed during program execution with the processor leaving behind a trail of "address executed" flags in the coverage RAM. It is then easy to find out which program sections have not been executed during a system test. That gives valuable information as to whether you should either expand the scope of the test or start looking for program bugs.

### 5 Intelligent Triggers Supervise Complex Conditions

Two independent trigger systems monitor all external activities. The combination of sequences is possible. Control of trace recording and emulation halt is available so that, for example, you can rapidly find out what unintentionally overwrites your variables.



# 6

## Trace Buffer For A True Record

For a look back in time, a 32-K frame real-time trace buffer is provided. All important program information is recorded to give you a complete history of your system's behaviour. Extending the capabilities of the trace buffers, there are different display modes that help you track down possible errors quickly. Our AX186 offers a binary representation of the data and addresses and up to 16 external signals from your application under RAW display mode. This information is also available as a graphical signal trace, just like a logic analyzer. For software developers, the trace buffer can also be shown as assembler instructions or as a high-level language trace of C source line.



# 7

## Powerful Performance Analyzer Identifies Program Bottlenecks

A commonly asked question when undertaking optimization is "where exactly should tuning work be targeted to give the best performance advantage". The AX186 can quickly provide an authoritative answer. A statistical analysis based on the runtime profiles of selected program sections (e.g. modules, functions or specific address ranges), gives details of where the greatest rewards are to be found. Displaying the data either as a table or histogram shows you the troublespots in no time at all.



# 8

## Performance Data From Runtime Measurement

A time stamped trace is an invaluable aid when it comes to measuring important performance parameters of a system, such as interrupt latencies or the execution times of critical sections. Of course, non-intrusive time measurements are also possible with the separate real-time counter with 50 ns resolution.

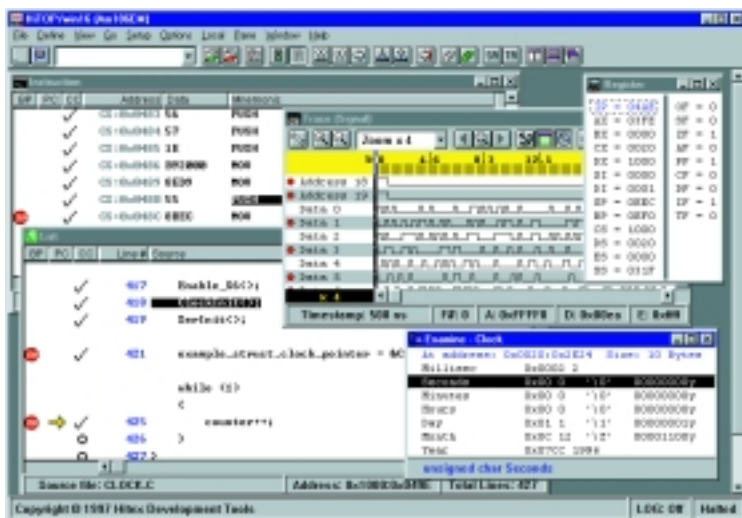


# 9

## HiTOP User Interface

HiTOP is the universal user interface for all our development tools. It provides complete HLL debugging and rapid access to all emulator resources. An extensive command language makes powerful test scripts, harnesses and end-of-production-line testing possible.

The emulator can communicate with HiTOP in a variety of ways. The serial interface also supports new PC cards capable of up to 230 kB. Yet greater speeds are also possible via a special parallel interface. Optionally, an ethernet connection is available so that the emulator can operate as a "shared resource" on your network. HiTOP uses our proprietary symbol format with preprocessors for tools producing OMF 86, such as tools from CAD-UL or Microtec Research. HiTOP offers compatibility with all programming tools from assembler to highlevel languages.



## Technical Data

<b>Emulation</b>	
Supported Processors: Am186/188 EM, ES, ER, ED, 80C186/188 Intel 80186/188, EA, EB, XL	
Maximum Frequency:	40 MHz
Types of Adaptation:	PressOn, Yamaichi, ICE-Plug
<b>Technical features</b>	
Emulation Memory:	Up to 1MByte; on the fly accessible
Breakpoints:	Execution and data breakpoints (read/write), expandable to breakpoint regions
Trigger System:	2 independent trigger systems to monitor all external activities; combination of sequences; control of trace recording and emulation halt
Trace:	32k * 112 bit frames; including time stamp; filter options for trace of interest recording
Time Measurement:	Via time stamps in the trace buffer (50ns resolution) or real time counter
Performance Analysis:	Execution profile, code coverage, data coverage
Signal Connections:	Depending on the processor derivative, signals like reset, NMI and others can be disabled
Inputs/Outputs:	16 external inputs via logic probes 8 outputs to display the system state
Host Communication:	Serial up to 230kBaud high speed parallel DMA option USB option
Power:	110-230W, 50-60Hz, 30W
<b>Development environment</b>	
User Interface:	HiTOP for 32 bit Windows
Compiler:	All compilers generating OMF86, especially CAD-UL or Microtec Research
Tool Support:	Source Integrity, Easy Case, CodeWright



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