



**AX68300**  
In-Circuit **AX68302**  
Emulators



## Dedicated In-circuit Emulator



### Two Systems From Our AX-class For Motorola Controllers

For the powerful 16- and 32-Bit Motorola Controllers we offer emulator systems from our dedicated AX68300 in-circuit emulator line. The AX-series delivers "above its class features" for this price range. Two systems are available that support different controller classes. The AX68300 is suited to support all CPU32-core based controllers like MC68331, MC68332 up to MC68340. The AX68302 emulates derivatives based on the 68EC000 core. Each system allows for easy changing between derivatives by simply exchanging the adaptation board. Our AX68300 is able to emulate the derivatives MC68331, MC68332 and MC68334 with one adaptation cable. Other cables support MC68336 and MC68376 or MC68340. The AX68302 is tailored for the 68EC000 core and thus emulates MC68302, MC68LC302, MC68EN302, MC68PM302.



### 1 Different Models For Each Developer

Both of our AX68300 emulators are available in three different variants. Reflecting the needs of the developer we provide emulators with different trace buffer sizes. Also, the number of triggers and the PFA features vary among the models. All models share the same user interface HiTOP.



### 2 Breakpoints For Transparent Realtime Software Debugging

Our emulators are always equipped with hardware based breakpoints. That means debugger run-/stop-control is not restricted to RAM-areas but will also work for ROM or Flash memory. The program may reside in any kind of memory, therefore, a professional testing is always possible. The use of breakpoint regions is also very convenient. For example, supervising a number of switches within a case statement only uses one breakpoint region. Regardless of what case will be selected, the program will always stop within the selection.

### 3 Powerful Trigger System

The AX-Family has a powerful event recognition system (we call these triggers). Any bus information (address, data and status lines) as well as external signals may be combined to define an event. Each time (or after a specified number of times) this trigger is matched, it may result in several actions to be taken. These actions include trace recording, time measurements, generating an external signal (for use with an oscilloscope) or simply breaking the emulation. Triggers may be combined to build sequences. Trigger actions may be delayed by a number of clock cycles. All these features are non-intrusive to the target system.

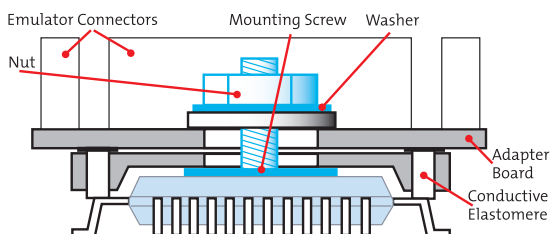


### 4 Adapters – The Bridge To Your Design

Our revolutionary patented PressOn adaptation technology is the safest way available to get the best contact for emulation. Using conductive silicon even TQFP packages can be adapted safely! This problem-solving PressOn technology is available only from Hitex.

The connection to the emulated system is done via the PressOn adapter which plugs into the soldered-in CPU on the hardware and into the AX-system.

There are various housings for different derivatives. The emulator and the adapter must be tailored to the type of derivative to be emulated. For all housings, adapters which clip-over your soldered-in CPU are available.



**5**

**Real-Time Tracing**

The trace buffer is able to record up to 8 K frames without affecting the real-time operation of the target system. Trace recording can be controlled by the trigger system which permits both start/stop and filtering. Filtering means that only those trace frames are recorded that satisfy a complex condition.

A special case is the exclusive recording of high-level language lines. Thanks to special recording modes, the program's behaviour can be recorded before, after, and around specific events.

The recorded data may be displayed in binary, assembler mnemonics, high-level language or as signal trace. The current trace buffer can be displayed while the emulator is running, without real-time violation of the application (snap shot).



**6**

**Performance Analysis**

The AX68300's efficient performance analysis function is an invaluable aid towards measuring the performance of any user application. Runtime measurement, timing event intervals, statistics, code coverage, etc. give detailed information on how to optimize your projects. All results may either be displayed in a tabular or histogram format which makes it easy to identify time-consuming procedures.



**7**

**Flexible Interrupt Handling**

High-speed real time applications rely on the fast interrupts that the 68k family devices provide. The AX-Family allows you to choose how you want interrupts to be handled during the debugging session. That is, you can:

- completely suppress interrupt servicing because one of the service routines is currently being tested in the foreground and the remaining sources must remain in synchronism.
- continue to execute interrupt routines during halted emulation or single-stepping so that watchdogs and other time-critical devices are serviced as normal.

**8**

**An Ultimate User Interface**

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

The emulator is able to communicate with HiTOP in a variety of ways. The serial interface supports up to 115 kBaud. However, even greater speeds are possible with a special parallel interface. Additionally, an ethernet connection is also possible if the emulator is to be operated as a "shared resource" on your network.

HiTOP is available as a Windows™ application for PCs. HiTOP uses our proprietary symbol format with pre-processors for tools from Microtec, Cosmic, SDS and HIWARE.



**HiTOP User Interface**





**The company**

**AX68300/AX68302**

FEATURE	MODEL:	AX68300-A AX68302-A	AX68300-B AX68302-B	AX68300-C Ax68302-C
Controller:		68331, 68332, 68334, 68336, 68340, 68376 68302, 68LC302, 68PM302, 68EN302		
Frequency		17 MHz	25 MHz	25 MHz
Low Voltage				
Types of adaptation		PressOn, in socket		
Emulation Memory		512 K	2048 K	2048 K
protection		256 K	1024 K	1024 K
Breakpoints:		1024 K	1024 K	1024K
Profiler:				
Trace:		-	4 K	8 K
access on the fly		-		
time stamp		-		
HLL/Linetrace		-		
filter		-		
external events		-		
logic analyzer trace		-		
Trigger:		2	2	4
changeable on the fly				
event sequencer				
counter/timer				
filter for trace		-		
Performance Analyzer:		no	no	
Code Coverage:		no	no	
Host Interface		serial 115 KBaud, Highspeed-PARA, Ethernet		

Hitex was formed in 1976 and has focused on efficient and professional solutions in the field of microprocessor development. Since then, we have been operating successfully in the fields of

**DEVELOPMENT TOOLS  
AUTOMATION ENGINEERING**

As a leading manufacturer of development tools for microprocessor systems, we are known worldwide by our customers, our partners and by the chip manufacturers. Our expert staff for automation engineering provides tailored solutions to your most complex design challenges.

In the field of DEVELOPMENT TOOLS each processor architecture has its own team. Each team member is well-acquainted with the relevant microprocessor and the entire tool chain. This ensures reliable support, including useful tips on application – at every stage.

**Hitex Development Tools**

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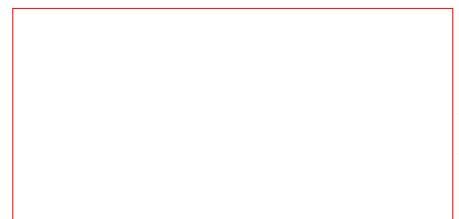
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