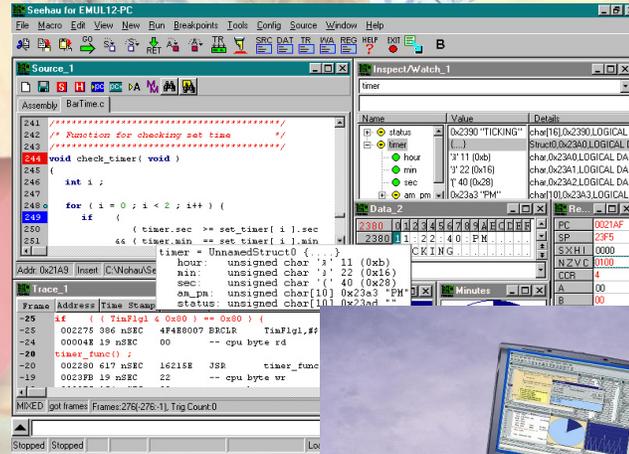


In-Circuit Emulator for the Motorola S12X Microcontrollers

Key Benefits

- Full emulator for the Motorola MC9S12X (S12X) family
- The MC9S12XDP512 (Bluefin) is supported first
- Full ICE performs to 40MHz bus speed
- Nohau carries full-emulator support for all HCS12 parts: MC9S12 A, B, C, D, E, H, K & T families
- Extensive debug support for the dual processors – S12X CPU and XGATE coprocessor
- The Emulator operates at both 5V and 3.3V
- Extensive support for all S12X operating modes: Resets, Power Downs, Limp-Home & Speed Changes
- Hardware trace of 1 Million frames, with sophisticated Triggers and Filters
- Code Coverage and Code Profiling
- Trace and Triggers are viewed and configured in real-time
- Internal S12X Trace support – built in
- High speed Flex-Cable and plain target adapters
- Seehau GUI: Windows 95, 98, NT, ME, 2000 and XP
- Compact handheld ICE goes anywhere; uses USB or LPT
- Unlimited number of no-skid hardware breakpoints
- All reconstructed ports provide CMOS voltage levels
- S12X FLASH and EEPROM programming built-in
- BDM Debugger also available



Product Overview - Full S12X Family Support

EMUL12-PC supports the entire S12X family. Nohau also offers Full-Emulator and BDM support for all the available HCS12 families. The S12X emulator performs to a bus speed of 40MHz, and works at both 5V and 3.3V. The emulator consists of an emulation board, a trace board and a controller personality module. Change only the personality module to suit your target depending on the S12X family. SeeHau, the Nohau user interface, is powerful, yet intuitive and easy to use.

Dual processor – S12X CPU and XGATE debug

The S12X has dual processors – the S12X CPU and the XGATE coprocessor. This requires special debug support, that is built into SeeHau and includes: Go & Break for either the S12X CPU code, or the XGATE code, or both, and Single-stepping through either S12X CPU or XGATE code. Two source-windows are included to display the code of the S12X CPU and the code of the XGATE. Two register windows display the S12X CPU and XGATE registers.

Hardware Trace Memory and Triggers

The trace memory and the triggers are configurable and viewable without stealing CPU cycles. Full pipeline decoding ensures only executed instructions and data read/writes are captured, and no false-triggering occurs. The hardware trace records up to 1 Million frames of S12X CPU activity. This large trace memory allows the hardware trace to record a long history of all the executed instructions, bus activity, time stamp, Misc. Signals, and more information, as opposed to only 128 or 64 change-of-flow instructions (as in the case of the internal trace). The hardware trace does not record the XGATE activity. To record and trigger on XGATE activity support for the internal S12X trace is built into SeeHau. The trace contents can be saved to a file. The types of cycles recorded are user defined. Triggers can be set on addresses and data ranges including SFR, RAM, EEPROM and Flash addresses internal to the S12X. Triggers control trace recording and can cause the emulator to stop the S12X depending on the options set. Trace and Triggering can record all internal and external S12X CPU accesses in real-time.

Modes Supported

EMUL12-PC for S12X extensively supports test and debug through all the S12X operating modes. These include: Single-Chip and Expanded Mode, Going through and out of Reset, STOP & WAIT Power-Down modes, S12X fast STOP wake-up & Self-Clock mode (not possible with BDMs), and full S12X PLL use, including frequent speed changes.

Flex-Cable Target Adapters

A variety of target adapters are offered to allow connecting the emulator to the specific S12X target board, using the 144, 112 or 80 pin pinouts. The Flex-Cable adapter is the most popular as it allows attachment to space-limited targets from any of 4 directions: 0, 90, 180, or 270 degrees. The Flex-Cable includes shielding and controlled-impedance to perform above 100 MHz.

ShadowRAM and Port Replacement Unit (PRU)

ShadowRAM allows S12X CPU data writes to be displayed in real-time, non-intrusively in the Data and the Inspect/Watch windows. The data can be displayed in many numerical and graphical formats. SFRs and memory reads and writes are also possible in real-time via the BDM interface. The PRU provides CMOS levels to the target, to accurately replicate ports A, B, C, D, E & K of the S12X. Nohau emulators are made in the USA. They are supported with a worldwide network of branch offices and local Nohau representatives. See our web site for more information, or call us today for the name of your local Nohau representative.

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