ST6xxx-EMU2

REAL TIME EMULATION DEVELOPMENT TOOLS FOR ST6 MCU FAMILY

HARDWARE FEATURES

- Supports ST62 and ST63 family
- Real time emulation
- 32 KBytes of emulation memory
- Breakpoint on a single address or on an address area
- Break events can be defined on Program Space, Data space mixed with up to 4 external signals
- 2 full programmable output for synchronisation
- Read/Write registers on the fly (without wait state)
- Selective trace in Range or Start/Stop
- Break on Stack Overflow
- 1K of real trace memory
- Tracing of up to 32 bits including 4 external signals

SOFTWARE FEATURES

- Symbolic debugger at source level
- On-line assembler/disassembler
- Log files capable of storing any displayed screen
- Command files able to execute a set of debugger commands

GENERAL DESCRIPTION

The ST6 Real Time Development System is an advanced hardware development system designed and configured to provide comprehensive support for the ST6 family of MCU's.

This new mainframe consists of a basic part, common to all ST6 devices, and one ST62 or ST63 subfamily dedicated board depending on the device to emulate. This new emulator is fully compatible with the existing dedicated boards, except for the ST638X and ST631XX devices which have been designed on two boards. Only the dedicated board needs to be changed to emulate a new device within the ST62/ST63 subfamilies.

The debugger runs under the Microsoft Windows™ environment. The use of a parallel port allows a much faster communication transfer rate. The assembler source level debugger, software part of the real time emulation tool, can be run on a PC, and is common to all ST62 and ST63 devices. The debugger is a native Windows application; it can run under Windows 3.1x, Windows 95, Windows NT (specific drivers NT are provided). Full context sensitive on-line help is provided.

Once assembled, linked and debugged with the simulator, the application software is ready to be downloaded into the ST6-EMU. The device probe is connected to the application hardware. The development station performs a real-time emulation of the target device, thus allowing high performance testing and debugging of both application hardware and software.

The breakpoints allow the user to stop the MCU when the application software reaches selected addresses, and/or addresses within a selected ranges, and/or on data fetch (or read, or write, or both) cycles. The user is then able to read and modify any register and memory location. An on-line assembler/disassembler is also available to ease debugging. The internal break signal is output on OUT1 triggers on the front panel of the emulator. This feature enables the user to count events using to external equipment, when optimising software for example, or to synchronise an oscilloscope when debugging hardware.

The debugger provides the same interface for both simulator and emulator, allowing easy transition from the software simulation phase to the execution of the program in the target hardware with the emulator.

The assembler source level debugging capability allows program execution to be viewed in the source file written by the user. Mouse click functions are context sensitive. Depending on the program element selected, different actions are performed such as viewing a subroutine or variable.

In addition, the ST6-EMU2 architecture allows to read ST6 registers while the user program is running: such possibility is offered without any disturbance in the user program execution. Known as "Read on the Fly" feature, it allows to follow the modification of a system variable during execution. Moreover, modification of the registers contents is possible in the same conditions, without disturbing the execution of the program.

The logical analyser permanently records in real time on 32 bits: buses, flags, Bank registers and 4 external signals. It allows the user to display the last 1024 executed cycles. The displayed cycles are, either fetch, or fetch and data space accesses, chosen by a debugger command. Addresses, data, control/status bits and 4 user signals are displayed using mnemonic and user symbols. Log files offer the possibility to send any screen display to a text file. In particular, log files are very useful to save the contents of the logic analyser and/or the contents of data registers to be analysed or printed.

Command files can be used to execute a set of debugger commands in order to ease and speed up the emulation session.

A powerful help facility can be involved at any time to give additional information about the commands, the processor or the emulator.

A powerful hardware test allows to verify the good behaviour of the system.

When the program is fully debugged, the ST6 EPROM remote programming board can be used to program the emulation device with the INTEL hex format file produced by the linker.

ORDERING INFORMATION

Sales Type	Description
ST626X-EMU2	Complete emulator package for ST620X, ST621X, ST622X, ST625X and ST626X devices (including dedicated board, all probes and ST6-SW software package)
ST626X-DBE	Separate dedicated board for ST620X, ST621X, ST622X, ST625X and ST626X devices with probes
ST623X-EMU2	Emulator package for ST6218, ST6228 & ST623X devices, with probes for ST6218, ST6228, ST6230 and ST6232
ST623X-DBE	Separate dedicated board for ST6218, ST6228 & ST623X devices , with probes for ST6218, ST6228, ST6230 and ST6232
ST6240B-EMU2	Complete emulator package for ST6240 devices (including dedicated board, ST6240 QFP probe and ST6-SW software package)
ST6242B-EMU2	Complete emulator package for ST6242 devices (including dedicated board, ST6242 QFP probe and ST6-SW software package)
ST6246B-EMU2	Complete emulator package for ST6246 devices (including dedicated board, ST6246 SDIP probe and ST6-SW software package)
ST624XB-DBE	Separate dedicated board for ST624x devices
ST6240-P/QFP	Probe for ST6240
ST6242-P/QFP	Probe for ST6242
ST6246-P/QFP	Probe for ST6246
ST628X-EMU2	Emulator package for ST628X devices, without probes
ST628X-DBE	Separate dedicated board for ST628X devices
ST6280-P/QFP	Probe for ST6280
ST6285-P/QFP	Probe for ST6285
ST6280-EMU2	Complete emulator package for ST6280/81 devices (including dedicated board, ST6280 QFP probe and ST6-SW software package)
ST6285-EMU2	Complete emulator package for ST6285 devices (including dedicated board , ST6285 QFP probe and ST6-SW software package)

Notes: The emulator power supply can be adjusted to 220V or 110V

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