DIFFERENCES BETWEEN CEIBO 8051 EMULATORS

EB-51 is a system with less features than other Ceibo emulators. EB-51 supports 40-pin DIP and 44-pin PLCC 8051 derivatives from Philips Intel, Dallas, Atmel and other compatible derivatives at 3V or 5V. With the addition of mechanical adapters it supports Atmel low-pin count devices too. EB-51 does not have real-time trace memory or sophisticated hardware breakpoints, supporting only software breakpoints, meaning that code is replaced by a break instruction, and therefore it can only be applied to the code mapped into the emulator memory.

EB-51X2 is an enhanced version of EB-51, adding real-time trace, programmable clock generator and support for new faster derivatives with 6 clock per cycle (Philips, Atmel MW).

DS-51 supports all 8051 derivatives from 1.5V to 6V. DS-51 has hardware breakpoints, that can be applied to target memory as well, space, so if you have your program on an EPROM inside your target board, you may need the hardware breakpoints. The DS-51 real-time trace can be read "on the fly" and has testpoint clips to record any external signals as if you have a logic analyzer. These clips can be used also to start and stop the trace recording and generate breakpoints.

FE-xxxx series of emulators is now available for microcontrollers produced by Atmel MW, Dallas Semiconductors, Winbond and Philips. The Flash technology is being added to all new microcontrollers to implement the code memory. Flash technology includes ISP and IAP. The ISP (in-system programming) allows loading the user code without removing the chip from the target circuit. All the available emulators (EB-51, EB-51X2, DS-51) work in emulation mode or using bondouts or in ROMless mode, thus allows access to the internal buses. Therefore the actual code is in the emulator overlay RAM memory and not in the microcontroller Flash. So, ISP or IAP is never used by emulators. If you need to emulate ISP or IAP, the only available solution is FE-xxxx emulator.

FEATURES	FE-51RD2 and other FE-XXXX	EB-51	EB-51X2	DS-51
Frequency of Operation	42 MHz	42 MHz	42 MHz	42MHz
Emulation Memory	64K Code	64K Code and 64K Data	64K Code and 64K Data	Up to 512K memory with bank switching
Mapping Resolution	None	None	None	4K, 8K, 16K, 32K & 64K boundaries
Breakpoints	64K Software Breakpoints	64K Software Breakpoints	64K Software Breakpoints	512K Hardware Breakpoints
Break on Opcode Execution	Yes	Yes	Yes	Yes
Break on Data Read/Write	No	No	No	Yes
Break on External Signals	No	No	No	AND/OR combination of 2 external signals
Source Level Debugging C, PLM and ASM	Yes	Yes	Yes	Yes
Trace	No	No	1K Instructions	32K - displays address, status, trace clips and time stamps
Clocks / Cycle	4 / 6 / 12	4 (Dallas) or 12 (standard 8051)	6 / 12	4 / 6 / 12
LEDs and Switches for Experiments	Yes	Yes	Yes	No