

# **CEIBO FE-RE2**

## **Development System**



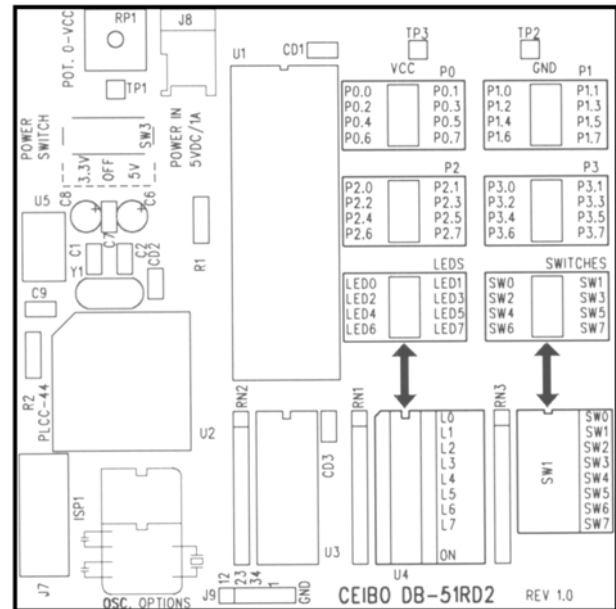
*Development System for Atmel AT89C51IE2  
and AT89C51RE2 Microcontrollers*

**CEIBO**  
*Development Tools of Choice*  
**www.ceibo.com**

## **FEATURES**

- *Emulates Atmel AT89C51IE2/RE2 and others*
- *128K Emulation Memory*
- *Real-Time and Transparent Emulation*
- *Frequency up to fmax 60MHz*
- *3V and 5V Support*
- *Software Trace*
- *Debugger For C/C++ And Assembler*
- *44-PLCC Emulation Header*
- *Target Board and ISP Programmer Included*
- *RS-232 and USB Interface*
- *64K C/ASM and 8K C++ Included*

Ceibo FE-RE2 is a development tool that supports Atmel AT89C51RE2/IE2 and other microcontrollers at any frequency allowed by the devices. It is serially or USB linked to a PC or compatible systems and can emulate the microcontrollers using any clock. Emulation is carried out by loading the system with the user software and an embedded monitor program. FE-RE2 locates the monitor in the upper 2K of the code memory space, together with the ISP routines. The system uses standard devices for real-time and transparent emulation. The emulator is not frequency or voltage restricted, so it can be used to emulate the microcontroller in the complete range of parameters defined by the device. Two working modes are available: real-time and simulator. In the real-time mode the user software is executed transparently and without interfering with the microcontroller speed. Breakpoints can be added to stop program execution at a specific address. The simulation is intended only for software debugging of the basic 8051 functions. FE-RE2 may be disconnected while using the simulation mode. The software includes 64K C Compiler and Assembler, Source Level Debugger, On-line Assembler and Disassembler, 8K C++ Compiler. The system is supplied with MS-Windows debugger software, RS-232 cable, power supply, Emulator, ISP Programmer and Development Board.



the future. The standard supported package for emulation is PLCC. QFP and DIP adapters are optional.

## FREQUENCY

FE-RE2 frequencies is defined by a programmable clock generator, which can be set under software control. The minimum and maximum frequencies are determined by the emulated chip characteristics, up to  $f_{max} = 60\text{MHz}$  for the current silicon version.

## HOST CHARACTERISTICS

PC or compatible systems with 8 MByte of RAM, one RS-232C interface card for the PC or USB, Windows 98 or later.

## INPUT POWER

5V, 1.5A power supply supplied.

## ITEMS SUPPLIED AS STANDARD

Development system including emulator, programmer and development board, PLCC emulation header, Windows software with source level debugger, on-line assembler and disassembler, user manual, RS-232 cable and power supply.

## OPTIONS

QFP-44 and DIP-40 adapters.

## PARTS OF THE SYSTEM

The system includes 3 main hardware boards:

1. FE-RE2 - In-circuit Emulator
2. DB-51RD2 - Development Board
3. MP-RE2 - Microcontroller Programmer

# SPECIFICATIONS

## SYSTEM MEMORY

FE-RE2 provides 128K of code memory. However, only 126K are available for user programs while emulating because the system comes with an embedded monitor program that uses the upper 2K of the memory space. Code memory is mapped as belonging to the FE-RE2 Emulator.

## BREAKPOINTS

Breakpoints allow real-time program execution until an opcode is executed at a specified address.

## SOFTWARE TRACE

Trace can be used to display the last executed instructions and it is variable in depth, showing backward all the sequential instructions until the last branch instruction occurred.

## WINDOWS DEBUGGER

The FE-RE2 software includes a source level debugger for Assembler and high-level languages C and others with the capability of executing lines of the program while displaying the state of any variable. The debugger uses symbols contained in the absolute file generated by the most commonly used Assemblers and High Level Language Compilers. The CEIBO Windows Debugger runs only under Windows 98 or later. Includes 64K C/ASM and 8K C++.

## SUPPORTED MICROCONTROLLERS

The supported microcontrollers are Atmel AT89C51RE2/IE2 microcontrollers and other derivatives that will be announced in



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