



Enhanced Electronic Engineering Sdn. Bhd.

(573815-V)

8X51 Programmer

User Manual

Version 1.01

26 May 2004

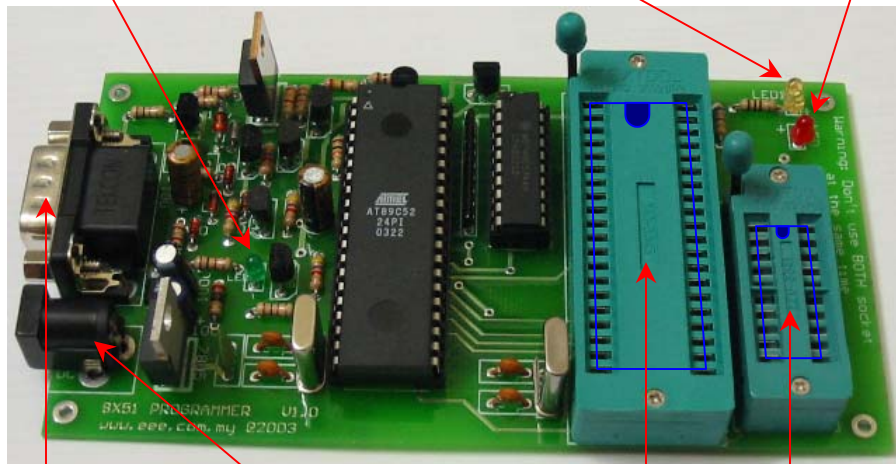


Features

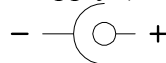
- Low cost MCS-51™ microcontroller programmer.
- Provide all programmer functionalities needed – erase, blank check, program, verify, read, set lock bit, save to file, and view/edit buffer.
- Fast programming speed.
- Support most 40-pin and 20-pin Atmel® MCS-51™ microcontrollers.
- Future upgradeability to support more target devices.
- Auto target device recognition.
- Support loading and saving Intel® HEX files and binary files.
- Ease to use buffer hex editor.
- Seamless graphical user interface.
- Hot plug and play.
- Auto programmer power on indicator.

Board Illustration

Programmer power indicator COM port activity indicator Target power indicator



To PC COM port DC supply (+13V) 40-pin device 20-pin device



Supported Target Devices

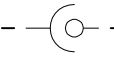
AT89C51	AT89C52	AT89C55	AT89C51RC	AT89C55WD
AT89LV51	AT89LV52	AT89LV55	AT89S51	
AT89C1051U	AT89C2051	AT89C2051X2	AT89C4051	
AT87F51	AT87F52	AT87F55WD	AT87F51RC	
AT89S51	AT89S52	AT89S53	AT89S8252	
AT89LS51	AT89LS52	AT89LS53	AT89LS8252	



System Requirements

1. Microsoft® Windows operating system
2. COM port

Using the 8X51 Programmer

1. Copy “8X51Programmer.EXE” file from the floppy disk into a folder in your computer.
2. Connect computer COM port to the programmer board using the serial cable.
3. Connect DC power supply (+13V, at least 600mA) to the power connector on the programmer board. Before connect, make sure the supply voltage and the polarity at the plug is correct . Check whether the programmer power indicator (green LED) on the programmer board is turned on. The other two indicators should be off.
4. Invoke the programmer software by double clicking its icon. If the programmer board is detected, the firmware version is shown on screen and the status indicator displays ‘on’. The programmer is now up and running.
Note: You can also observe that the COM port activity indicator (yellow LED) is blinking shortly on the programmer board. This indicates that the computer is communicating with the programmer board. The target power indicator (red LED) should still be off.
5. If the status indicator does not display ‘on’ status, try changing the COM port value. Your programmer might be connected to a different COM port. There are 4 possible port numbers. If all the port numbers have been attempted and none is working,
 - Check the DC power supply and serial cable connections to assure that they are properly attached.
 - Check and make sure the COM port in your computer is enabled.
 - Try connecting the serial cable to another COM port if your computer has more than one COM port connectors.
 - Contact the supplier for further assistance if after trying all these and it still does not work.
6. Put a supported target chip on the appropriate socket.
IMPORTANT:
 - Make sure the chip is put in the correct orientation, putting it in the wrong direction might damage the chip as well as the programmer itself.
 - Never put unsupported chip on the socket.
 - Never put two chips at the same time on the two sockets.
 - 20-pin device (e.g. AT89C2051) can only be put at the 20-pin socket.
7. Click on the **Initialize** button. The programmer will try to detect and recognize the target device. If successful, the device type, programming voltage, and device size will be shown. Also, the other buttons will be enabled.
8. You can now try to perform any programmer functions. Notice that whenever the programmer accesses the target chip, the target power indicator (Red LED) will turn on for a while, and the COM port activity indicator will blink longer and more frequently.



9. Most buttons and their respective functions are self-explanatory. Only a few things need to be highlighted here.
 - The software memorizes the last file being used shown in the **File** edit box. When the software is invoked, it automatically loads the file content to the programmer buffer.
 - If user changes the file name manually at the edit box, the **Load** button should be pressed to load the file content to the buffer.
 - If browse (>) button is pressed to choose source file, the file content is automatically loaded to the buffer.
 - Whenever you need to reload the file content, press the **Load** button.
 - Content read from the target device will also be put in the same buffer. User can save the content to a file by pressing **Save** button.
 - Buffer content can be viewed or modified by the **Edit** button. Buffer content being modified will only affect the buffer. It will not change the source file unless you explicitly save it.
 - To set lock bits, choose the lock level value at the drop down box, then press the **Set** button.
 - During device programming, the programmer will only write until the last byte in the buffer containing non-‘FF’ value.
10. Note that only a few devices (e.g. AT89S8252) support reading the lock bits. Most other devices support writing the lock bits only without reading capability. In this case, the lock value shown does not actually reflect its actual lock bits. Check the device’s datasheet for further details.