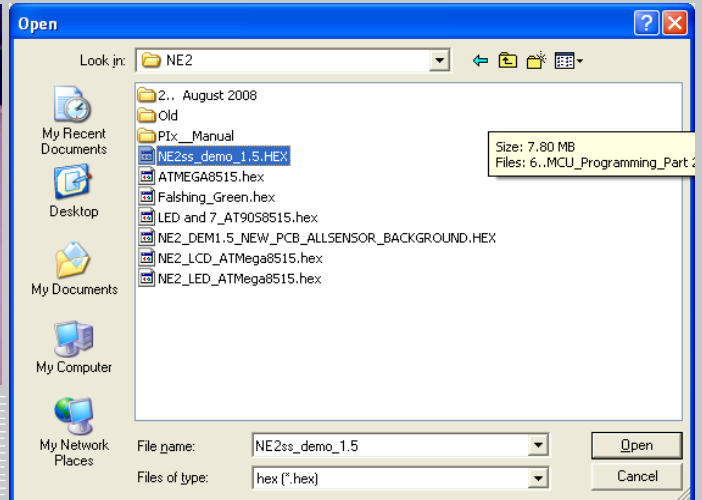
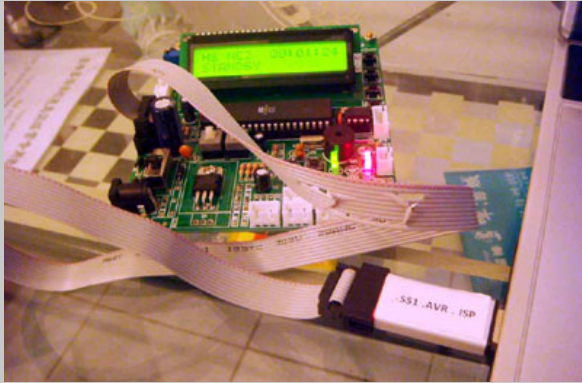


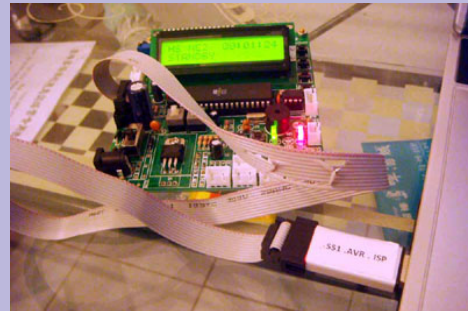
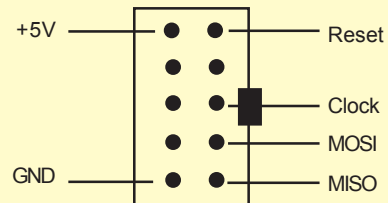
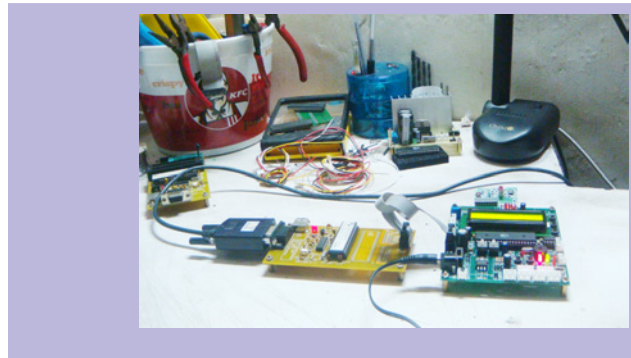
Atmel S51 AVR USB PROGRAMMER

myhobby Educational Trainer
Heart Systems EAF² Electronics Series



myhobby Educational Trainer
Heart Systems EAF² Electronics Series

User Manual



Heart Systems Electronics Center

Baguio City, 2600

The Philippines

<http://www.1diycentre.com>

1diy Team (Baguio City)

November 2010

<http://www.1diycentre.com>

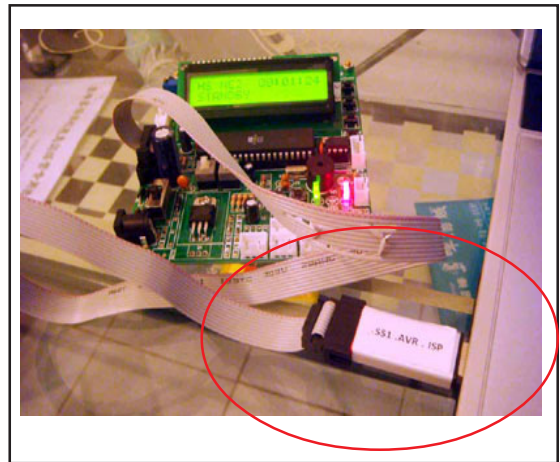
WHO Should read this

This User Manual described the NEW programmer acquired by 1diyTEAM of Heart Systems Electronics Center [HSEC]- Baguio City, Philippines.

If you are using Heart Systems Trainer Board, like the :

1. STARTER MCU-EB8051-2 Trainer Board
2. Digital Audio Tone Control Trainer Board
: DATC
3. Hobbyist Central Office Simulator
: Hob-COS
4. Night Eyes Security Systems ver. 2
: NE2ss

then, this programmer is for you.



HSEC support Programmer - history

HSEC has its own programmer, called **HS AT89 Flash MCU Programmer** which was designed in early days of 2002 to support Atmel 8051 Core MCU like the AT89C51, AT89C52, AT89C1051, AT89C2051. It was introduced to our fellow hobbyist in 2003 - first deployed in Baguio City. It was upgraded in 2005 to include ISP programming, trying to update to support popular Atmel ISP MCU like the AT89S51, AT89S52, AT89S53, AT89S8252, AT89S253, AT89S2051, AT89S2052, AT89LP2052 and AT89LP4052. It is further modify to support Atmel AVR core MCU like the AT90S8515, ATmega8515 but I am stuck up here 'till 2010.

The good thing is - a team of AVR guys developed the USBasp based on Atmel AVR chip - a programmer that is the same size as the common USB storage. It is USB interface to the PC supporting Notebook PC which do not have the RS232 COM port.



There was a problem however, in the first use of Windows software for this programmer, it comes with the AVR Fighter software which work best in Chinese Windows, but I have encountered several issue in English Windows.

Zhefeng (www.zhefengsoft.com), one of the AVR Team who developed the software released its English Version of its own software which can work best in English Windows.

This is it! The adventure start here! The team have another EAF² gadget : easy, affordable, fast and fun gadget when working with Atmel AVR and 8051 core MCU.

The 1diyTEAM is sharing it. I hope you will like it too.

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HSEC Support Programmer - history

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Any diy Kit?	..4
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Where to Find the Hardware ?

You can avail the S51 AVR USB Programmer from Heart Systems, Baguio City. Visit

<http://www.1diycentre.com>

for more information.

Where to Find the Software ?

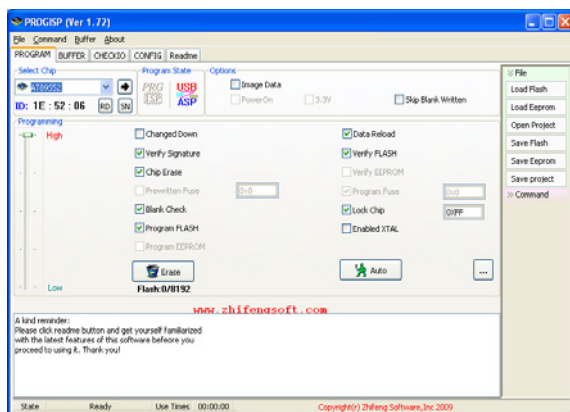
If you avail the the S51 AVR USB Programmer Hardware from Heart Systems, Baguio City, the software will be included in the CD ROM. You can also download from <http://www.1diycentre.com>.

Software Installations

Uncompressed the file

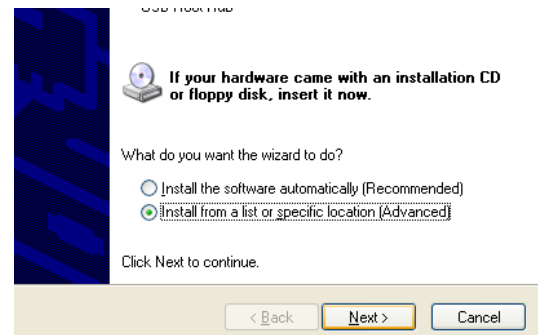
ProgISPv1.72.rar

After uncompressing, look for the progisp icon. Double Click this icon will open ProgISP version 1.72. Thanks to Zhefengsoft for the nice English Software for Windows Users.



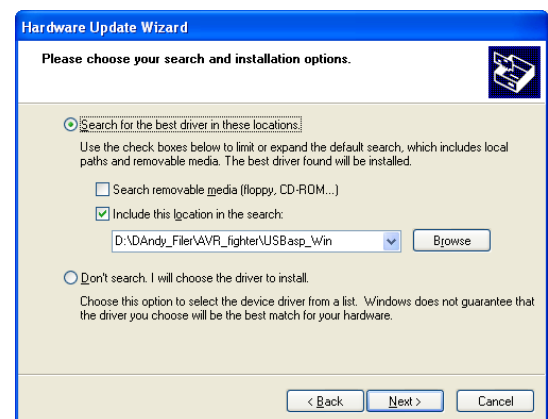
Software Driver Installations

- {1} Insert the Atmel S51 AVR USB Programmer into a free USB port of your PC. Choose a USB port that you will use now and will use in the future.
- {2} You will see that the Atmel S51 AVR USB Programmer LED will lit.
- {3} If the driver is not in package with the Windows, it will ask for the software driver.



Choose the, Install from a list of specific Location, then click Next

- {4} Click Browse and find the USBasp_win folder on the AVR Fighter main folder. Click Next.



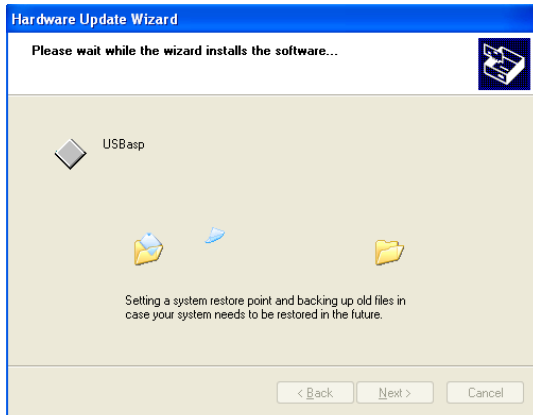


Atmel S51 AVR USB Programmer

For the Atmel 8051 Core and AVR Core MCU

2

- {5} The driver will be installed, click Finished once installation is finished.



- {6} Reboot your PC, do not remove the Atmel S51 AVR USB Programmer

- {7} Once it boot up into the Windows desktop and will not ask for the driver, it means that, you have successfully installed the AVR Fighter Hardware driver.

Now, you are ready to test the Functionality of your NE2ss and Programmer Hardware.

Testing

This test may not be applicable for you.

This test is for those with the NE2ss Trainer Boards.

Hardware Setup :

- {1} Connect the ISP Cable into the NE2ss ISP port.
- {2} Depressed the 2 switch, they should be in the down position.
- {3} Plug the Atmel S1 AVR USB Programmer into the USB port of the PC. You will see that the USB programmer LED will lit, the NE2ss red LED will also light.

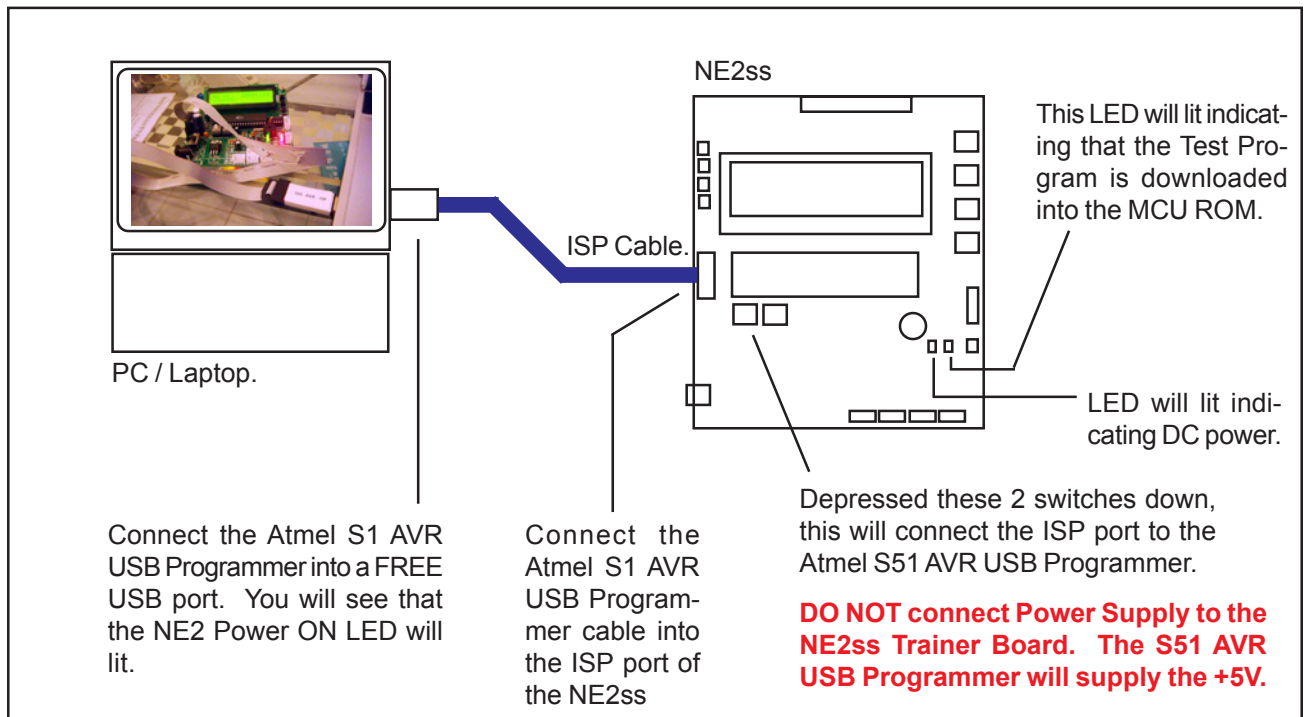


Figure 1-3 : THE Night Eyes Security Systems 2 to test the Atmel S51 AVR Programmer



Atmel S51 AVR USB Programmer

For the Atmel 8051 Core and AVR Core MCU

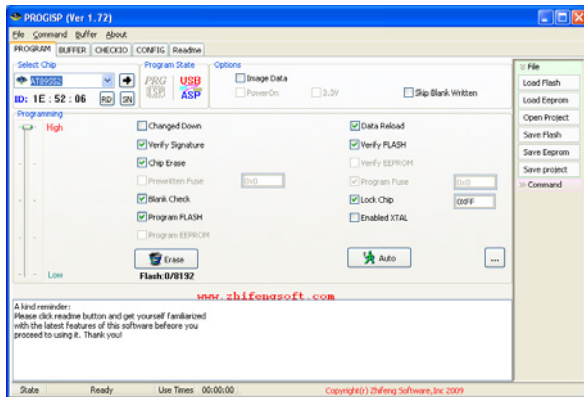
3

Software Download Test :

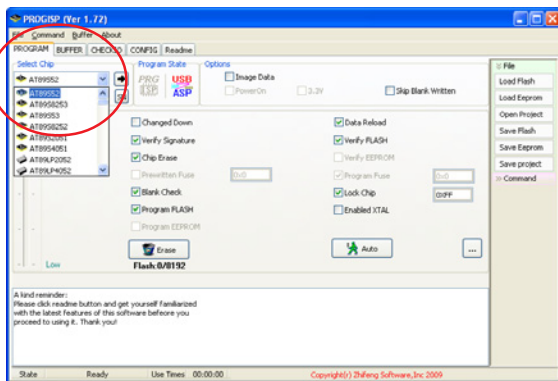
{1} On the Windows desktop, double click

progisp icon

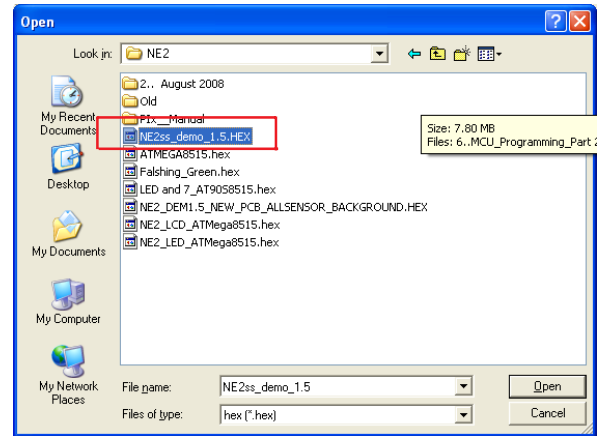
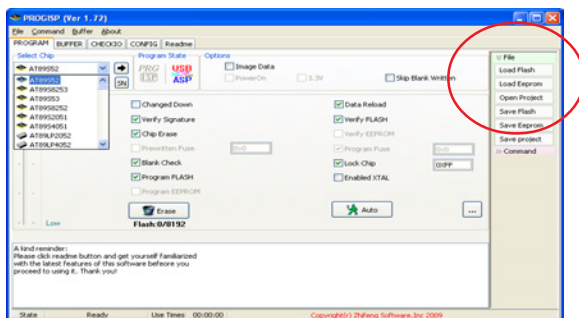
and the software will run into your Windows Desktop Environment.



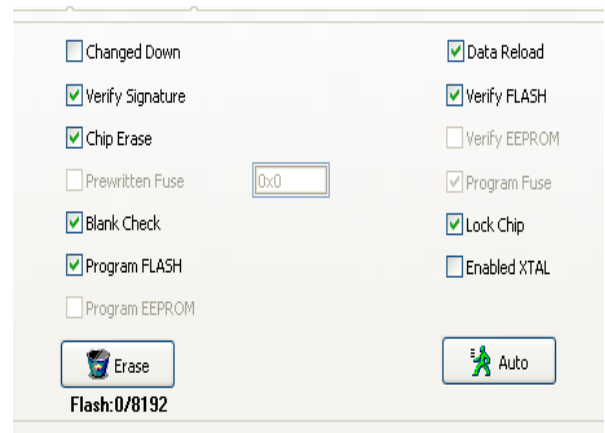
{2} Click Select MCU. You should choose AT89S52, you can select AT89S51 if your MCU is AT89S51.



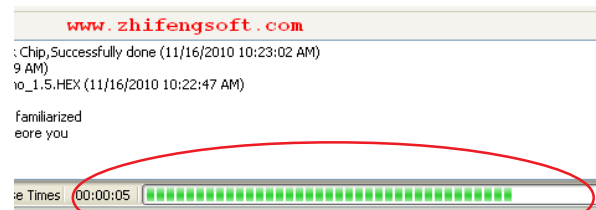
{3} Click the Load Flash, search for the HEX file. Example, NE2ss_demo_1.5.hex. Press Open.



{4} Check the following Programming Settings as below :



{5} Press **Erase**, click OK, then **Auto**. You will see that, the hex file is being downloaded into the MCU ROM.



The download is very quick, a.bout 5 seconds. Once it finished downloaded, the software will run immediately (with NE2ss).



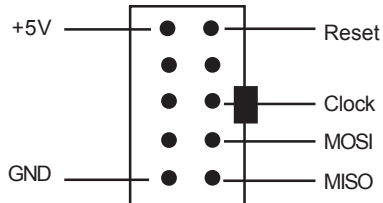
Atmel S51 AVR USB Programmer

For the Atmel 8051 Core and AVR Core MCU

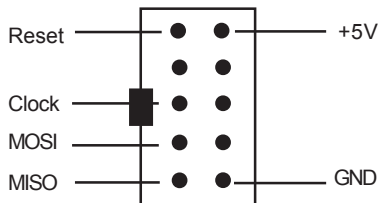
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ISP Interface

The Atmel S51 AVR USB Programmer In-System Programming Cable (ISP) interface is compatible to all HSEC Trainer Board.



Looking at to the Target Board ISP Interface



Looking at to the interfacing Cable.

Any diy Kit?

No! The Hardware uses SMT component (SMT = Surface Mounth Technology), it will be difficult to mount the component. Yes, it possible! But currently, the team is not offering the diy kit version.

Supported Chipset

Currently, with Zhefengsoft Windows Software, we have tested only the :

Atmel 8051 Core :
AT89S52, AT89S51

Atmel AVR Core :
ATmega8515

There are many supported chip by the software, but the programmer hardware may or may not be able to support all.

The AVR Figther Software can support also other chip which has been checked. The AVR Fighter softare is also in package with the CD ROM or you can download it from <http://www.1diycentre.com>. The User Guide is described in SMP_Quick_Start Guide.

Special Thanks to :

Zhefengsoft - English Version progISP 1.72

AVR Fighter Team

armok, manchao , andy, donkey

HJourAVR, testcode, ilan2003, gxlujd

JAMESKING, jimo, ecat, ilikemcu

alisha, cltemail, zjyxx, qwernet, avrboy

dfgeoff, ainet, 314forever, wxfhw, bluerain

www.ouravr.com
www.01mcu.net
www.mculib.com
www.chipart.cn
www.fjmcu.com
zhefengsoft.com
avrfreak.com
icavr.com

SIMPLE Micro Controller Unit PROGRAMMING

PART 1 For the Intel 8051 Micro Controller Unit ONE

A DIY Training Course Absolutely for Beginners

- I Software Programming versus Firmware Programming
- II PC Computer versus micro controller Unit (MCU)
- III The BASCOM 8051 Integrated Development Environment
 - Developed Firmware to Control LEDs
 - Software Simulation
- III Run Firmware on the Real Hardware
- IV Flow Chart Program Structure
- V Controlling LEDs and 7-segment LED Display

Shareware & Courseware



F. Dandy Menor

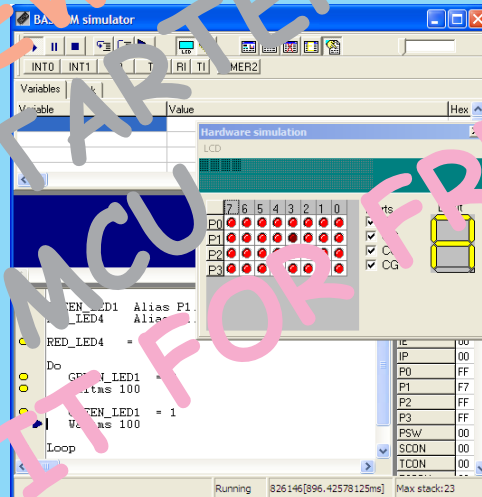
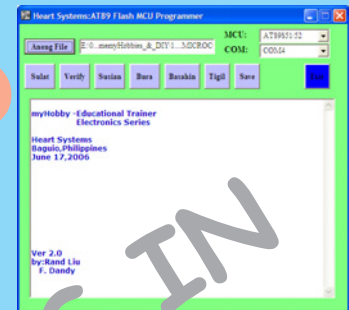
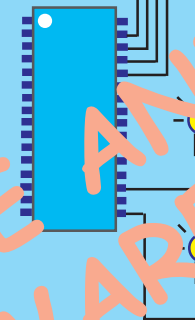


8051

myhobby Educational Trainer
Heart Systems EAF² Electronics Series

- Training Tools -

Hello. I am MCU
your friendly IC



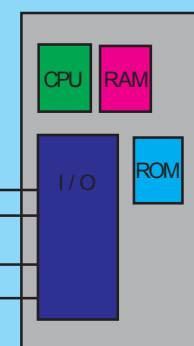
Software :
BASCOM 8051
www.bassec.com

Hello. I am MCU
your friendly IC

LCD



LED Light



Micro Controller Unit

Switch

Sensor

SIMPLE Micro Controller Unit PROGRAMMING

PART 2 For the Intel 8051 Micro Controller Unit TWO

A DIY Training Course
Absolutely for Beginners

A) **PART 1**

Software Programming versus Firmware Programming, PC Controller Versus Micro controller Unit (MCU) The PICSCOM 8051 Integrated Development Environment, Developed Firmware to Control LED, Software Simulation, Run Firmware On the Real Hardware, Flow Chart - Program Structure, Controlling LEDs and 7 segment LED Display

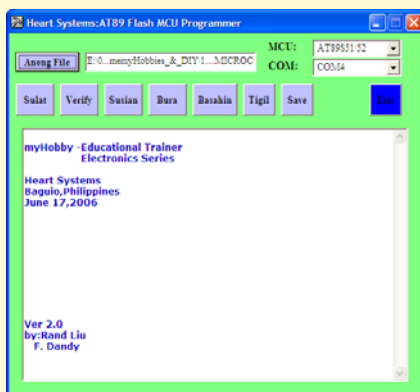
B) **PART 2**

VI Developed Firmware to Control the 16x2 LCD with amber backlight

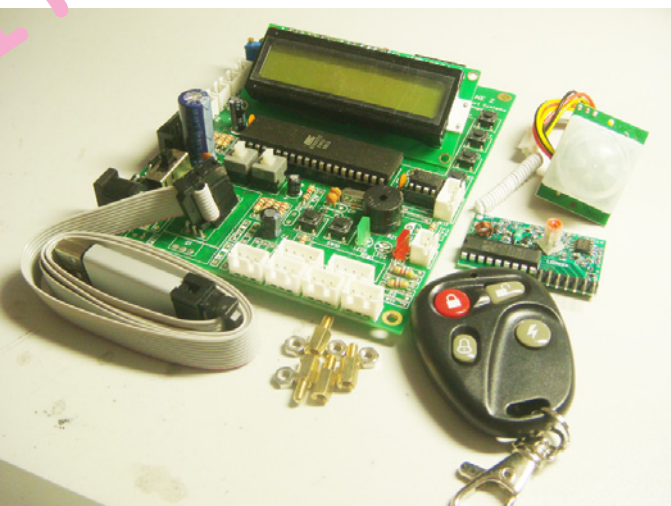
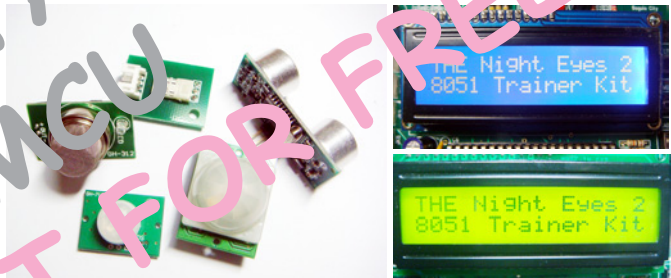
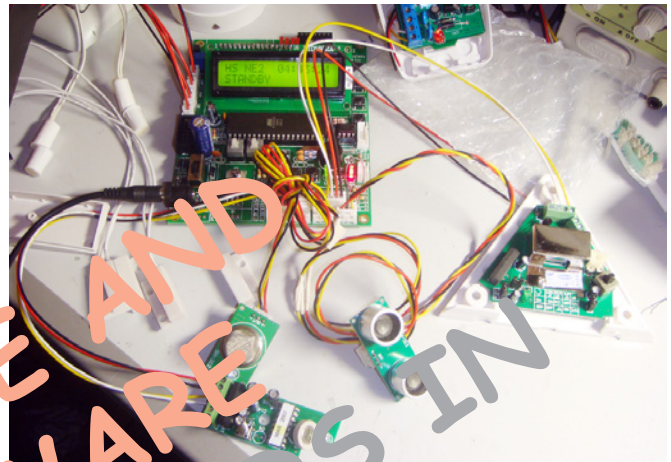
Play with the Buzzer + LCD Display

Input Command via Tack switch and other signal input to the MCU, *plus* interfacing with Sensors <Motion sensor, Gas Sensor, Ultrasonic sensor>

VII Interfacing with 315 Mhz RF module <RF Receiver Module and Key Chain Transmitter> *plus* more..!



8051 **myhobby** Educational Trainer
Heart Systems **EAF²** Electronics Series
- Trainer / Project -



Shareware & Courseware



F. Dandy Menor