

AT89S8252 Development Board V1.0

Manual

Chapter 1. Introduction

1.1 Introduction

This user's guide describes how to connect to and set-up the AT89S8252 Development Board, for program development using the Atmel AT89S8252 and a number of ancillary components. All port connections are also wired to terminals for connection to other equipment and components. To understand more about the AT89S8252 and the additional IC's, please refer to their particular data sheets. Connection and interface information to the various optional devices is given here and you can also find some sample code snippets on the included diskette.

1.2 Chapter Summary

This chapter describes the uses and purposes for the AT89S8252 Development Board. As well as the computer system necessary for the connection to the board.

1.3 What Is The AT89S8252 Development Board

The AT89S8252 Development Board is an easy to use program and project development board for fast and efficient program development using the AT89S8252 microcontroller. Programs can be downloaded directly into the onboard AT89S8252, the board is already pre-populated with sockets suitable for RS422/RS485 connections, RS232 connections, LCD units, SPI connections and ADC Connections.

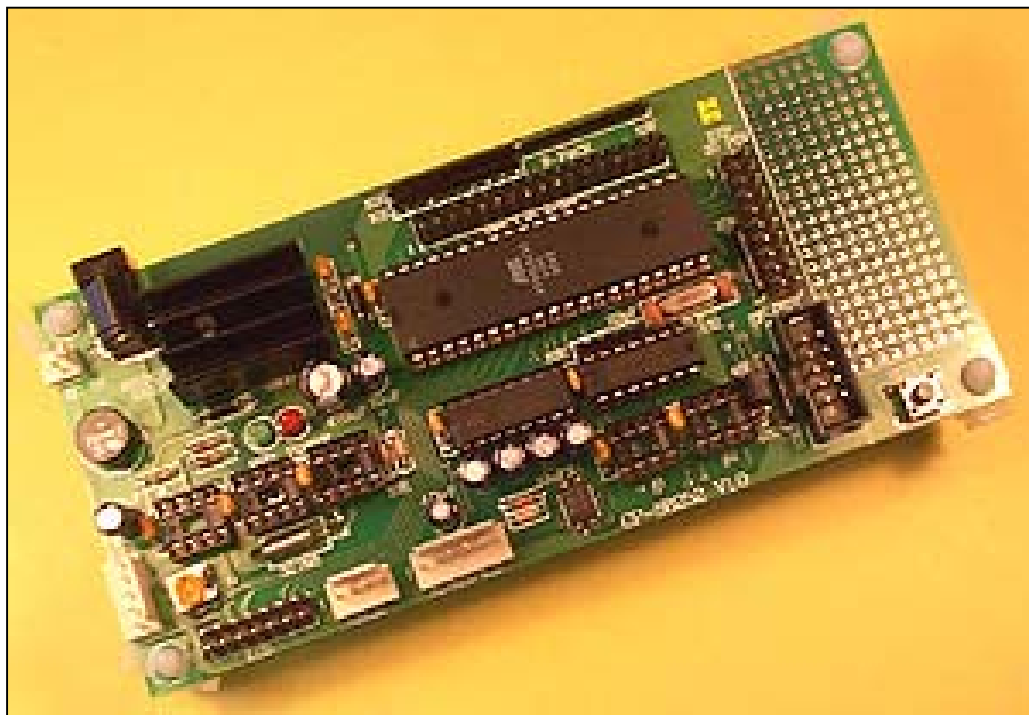


Figure 1: AT89S8252 Development Board

1.4 Uses For The AT90S8252 Development Board

The AT89S8252 Development Board will allow rapid program development through pre-prepared connections to typical components and easy download and modification of program code. Connection is direct from the computer's parallel port to the Development Board.

Various components can be easily added to the unit, for code development, together with easy to connect to header units for connection to external devices.

1.5 Host Computer System Requirements

Standard PC running Windows software, and also loaded with the download program.

1.6 Features of the AT89S8252

The AT89S8252 is a variation of the standard MCS-51 microcontroller core. The features of the AT89S8252 are as follows,

- Compatible with MCS-51 Product
- 12kB of In-System Re-programmable Download Flash Memory
- Full Static Operation: 0 Hz to 24 MHz
- Three level Program Memory Lock
- 256 x 8 Byte Internal RAM
- 32 Programmable I/O Lines
- Three 16 bit Timers / Counters
- Nine interrupt sources
- SPI Serial Interface
- Low Power Idle and Power Down Mode
- Programmable UART Serial Channel

Chapter 2. Installation and Set-Up

The Development Board will allow the program to be downloaded directly into the AT89S8252. There is no need to program the IC separately, and the AT89S8252 can remain within the IC socket.

The microcontroller program is first written using a standard text wordprocessor, and saved as a *.asm file. The file is then compiled into Intel hex format, which has an extension of *.hex. The program is then loaded into the microcontroller at the specified starting address. Two programs are available for downloading of the program into the microcontroller and they are included on the enclosed disks. S8252 is a dos based program and Wins8252 is a Windows based program for downloading of the program.

For downloading of the software a programming cable is required and this can be seen in the picture below.



Figure 2: Cable Connector

The connection is made from the computer parallel port to the Development Board.

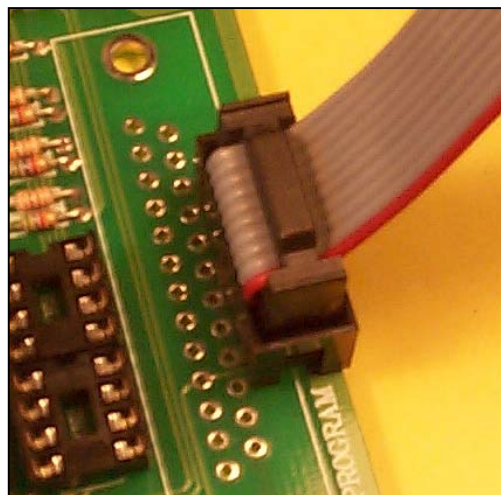


Figure 3: Programming Connection to Board

2.1 Connection to PC

1. Connect the programming cable to the 10 pin ET-PSPI socket at the bottom right of the Development Board.
2. Then connect the other end of the programming cable to the printer port of the computer.
3. Connect the power supply to the board, see section 10 for information on the power supply requirements.

When power supply is connected and turned on, the red LED will light. During program downloading the green LED will flash to indicate a download is in progress.

2.1 Software Installation

The software program for downloading of the AT89S8252 code, can be run under either DOS or Windows.

Dos: Copy the program s8252.exe onto the hard disk of the computer from the diskette. Alternatively the program can be run directly from the diskette if required. To run the software enter the program name on the command line, followed by the name of the program to download. If for example, the program is loaded on the C drive root directory, and the name of the program code for the AT89S8252 to download is *.hex, the command at the command line would be

```
C:\> s8252 *.hex <OPTION> <enter>
```

It is important to ensure the file has been properly compiled into Intel Hex format prior to download. This can be done using a number of compiler programs that are available free of charge from Atmel.

A number of options are available to control the downloading process. They are specified following the filename on the command line, they are

A = LPT1 (Download Program from port LPT1)

B = LPT2 (Download Program from port LPT2)

1-9 = Optional Delay Time for the case when the computer used is too fast and a small delay time needs to be introduced to successfully download the program.

An example is as follows,

```
C:\> s8252 lcd.hex -A -2 <enter>
```

Comments: If no options are specified the default values, will be used, of LPT1, delay=1.

Windows: Copy the program Wins8252.exe to the hard disk. The double-click on the file to run the program. To download a file,

1. Open the program, ensure that the cable is connected and the power supply to the Development board is on.
2. Select Program – Flash Memory from the Menu.
3. Then select the file you wish to download.
4. The file will then be downloaded into the AT89S8252 memory.

To specify the options required, select the various options from the menu bars shown.

Chapter 3. Power Supply Specifications

4.1 Introduction

The power supply circuit on the Development Board has been designed for heavy duty, and will maintain a 5V supply to the circuit under quite high load conditions. A standard plugpack can be used to supply power to the board.

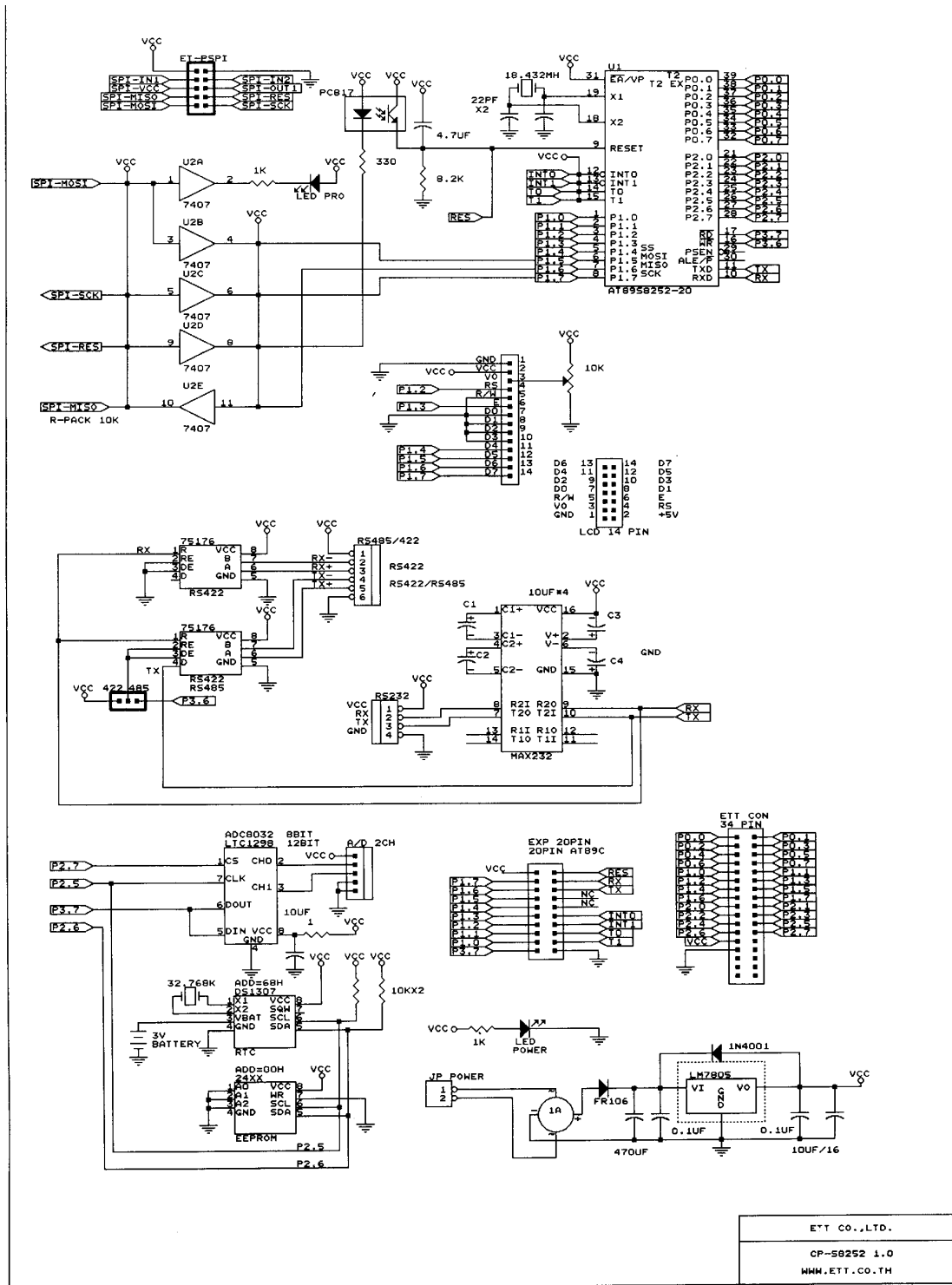
3.2 Power Supply Connection

The power supply can be connected to either the two pin header or the plugpack socket, as shown in the photo below. The DC input voltage can be between 9 and 12 V, and should be capable of supplying at least 800mA.

The red LED will come on to indicate the supply is okay.

Output voltage of 5Vdc is available at several points around the board.

Chapter 4. Schematic



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 CP-58252 1.0
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