

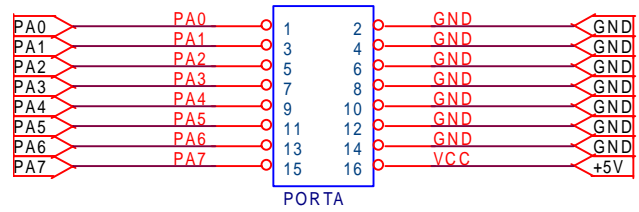
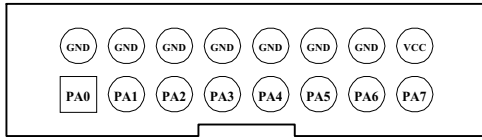
embmega32-e1

ROBUST EMBEDDED

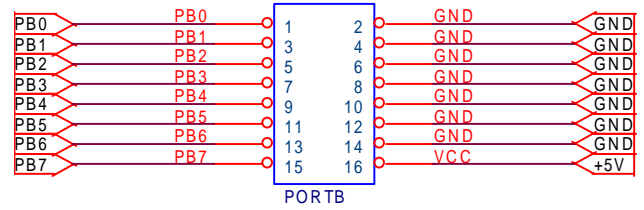
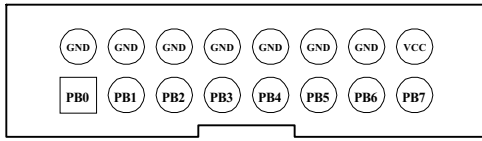
AVR Microcontroller Board

User's Manual

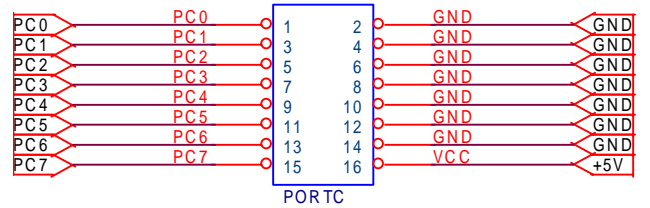
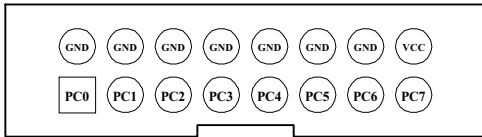
PORT CONNECTOR



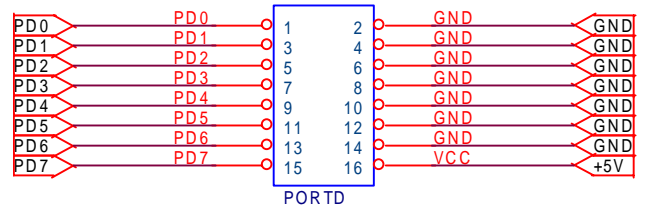
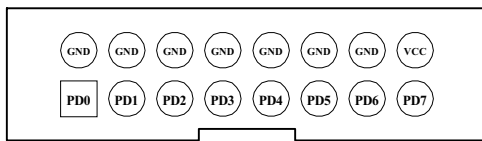
PORTA (TOP VIEW)



PORTB (TOP VIEW)



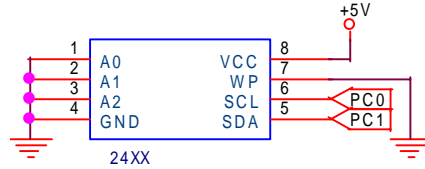
PORTC (TOP VIEW)



PORTD (TOP VIEW)

SERIAL EEPROM

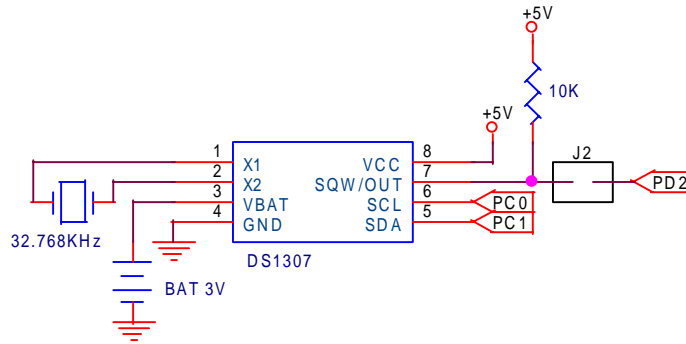
You can expand the serial eeprom memory (24xx family) in the control board by use the TWI port (PC0,PC1) of the ATmega32 for read and write the eeprom. The below is a circuit diagram of the serial eeprom on the EMBMEGA32-E1 control board.



Circuit of 24XX

REAL TIME CLOCK (DS1307)

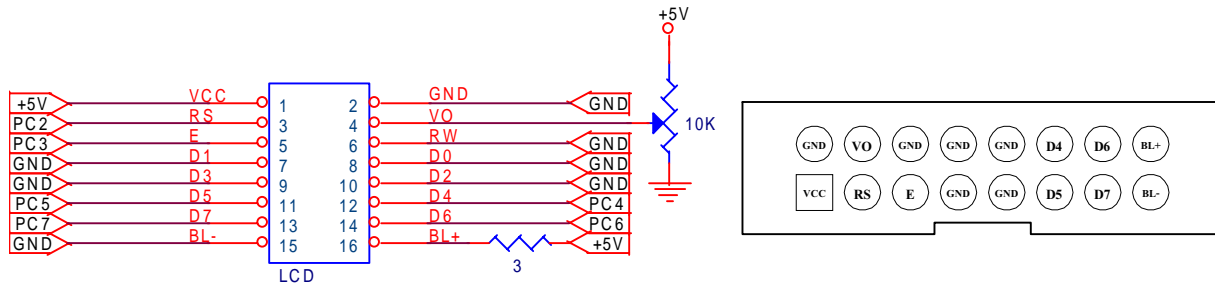
In the control board, the TWI port is the I2C bus that controls the real time clock (DS1307) and the serial eeprom. The DS1307 needs a 3-volt battery. The J2 jumper is used for SQW signal to interrupt pin of Atmega32. The below is a circuit diagram of the real time clock on the EMBMEGA32-E1 control board.



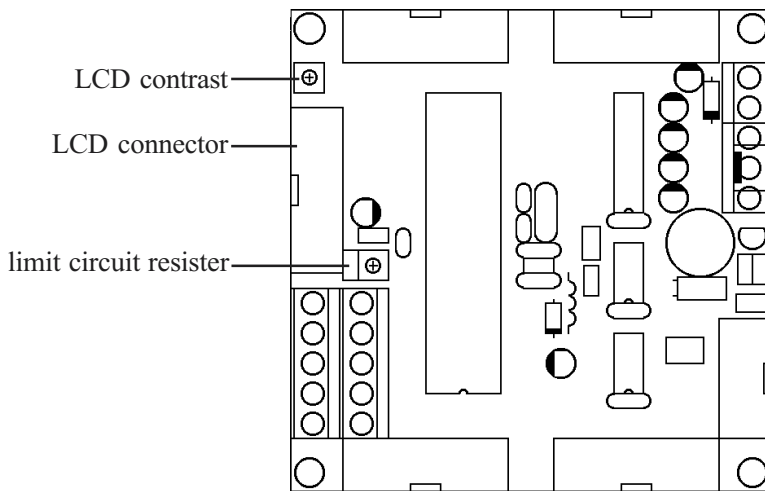
Circuit of real time clock (DS1307)

LCD MODULE

LCD module is controlled in 4-bit mode. On the control board, use 10K VR for adjust contrast of lcd module. If the lcd module with back-light is connected .Back-light current is limit by a resistor. You can change the resistor for different back-light current.

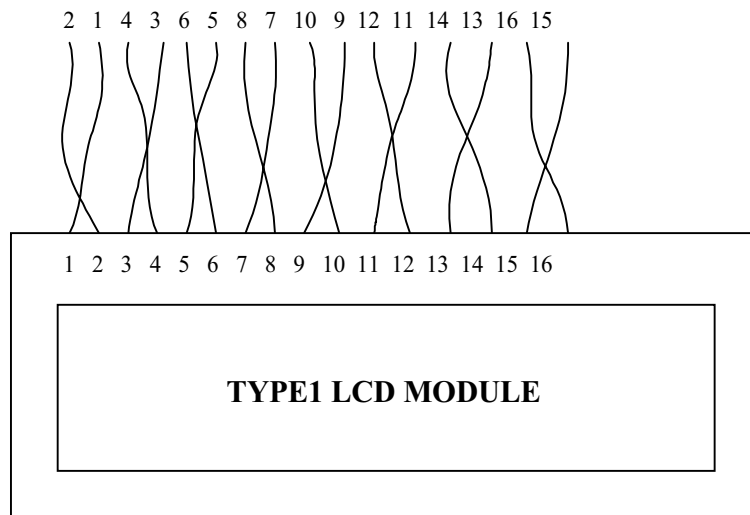


Circuit and Connector (TOP VIEW)

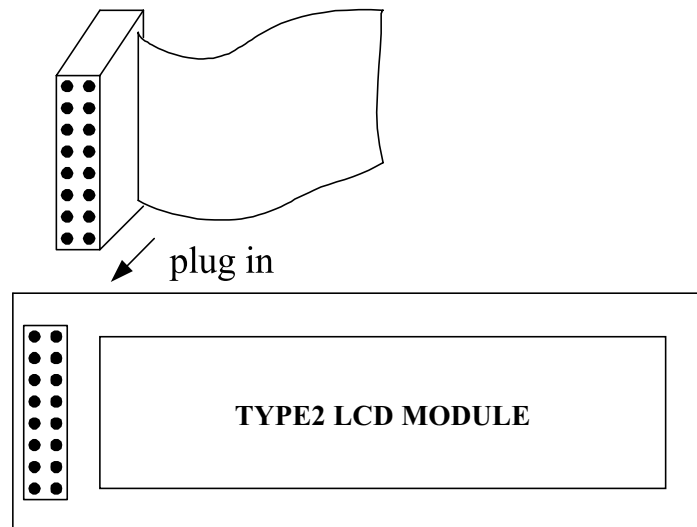


Circuit resistor for lcd back-light

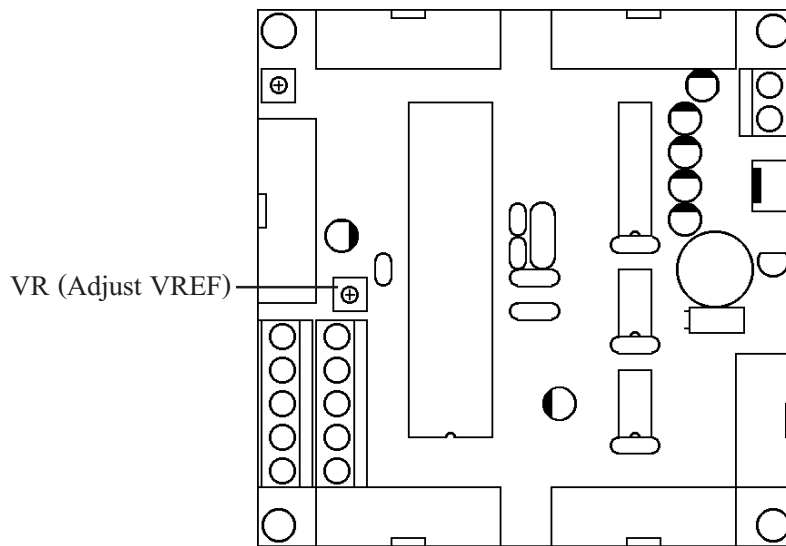
TYPE1 LCD MODULE



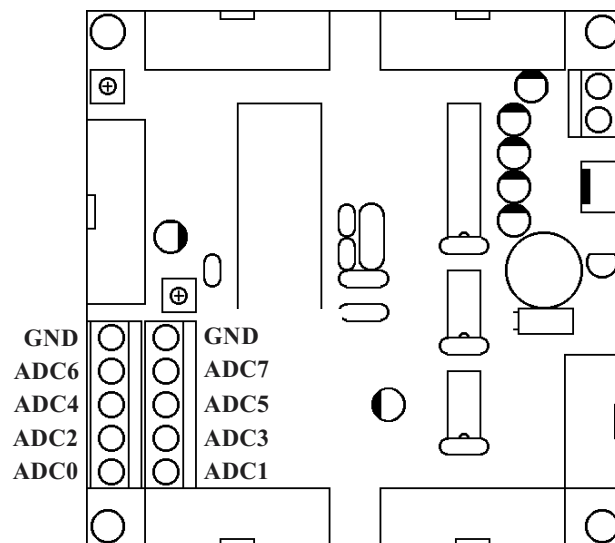
TYPE2 LCD MODULE



ANALOG TO DIGITAL

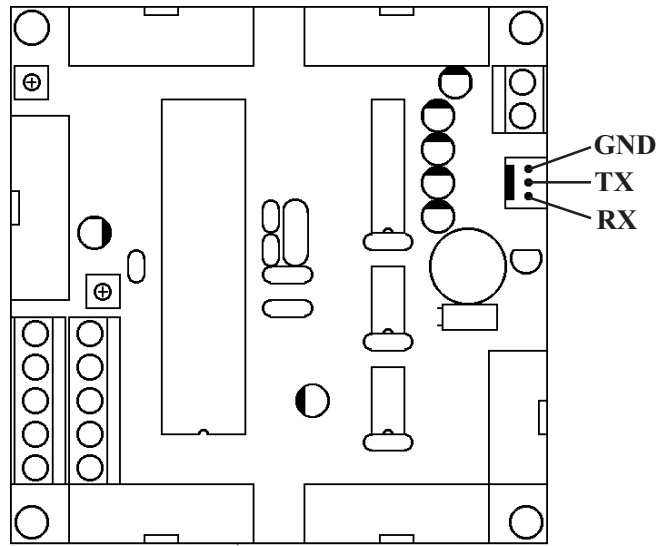


Position of VR

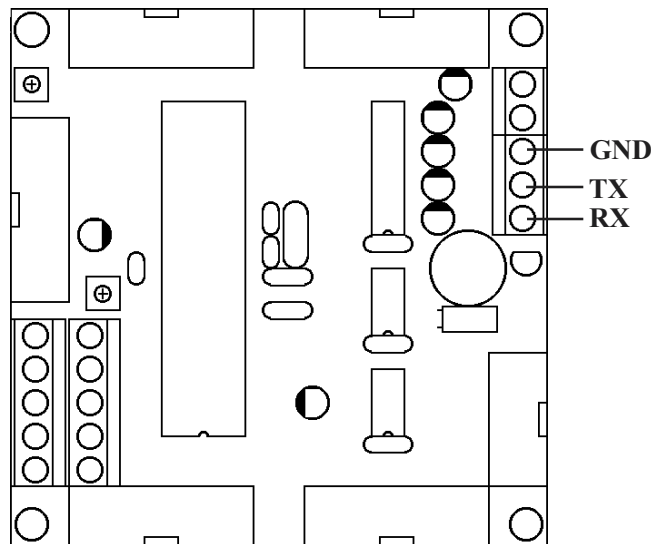


Terminal of ADC

RS232

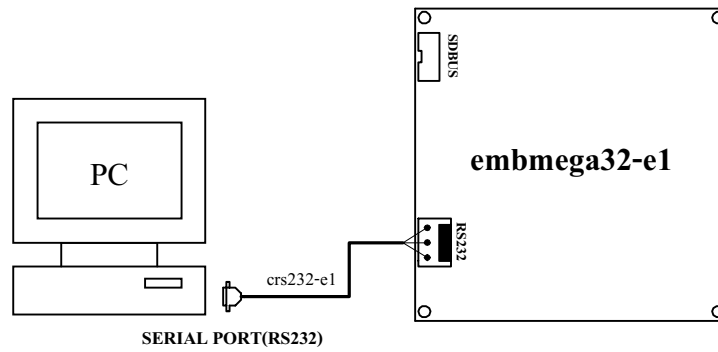


RS232 Connector

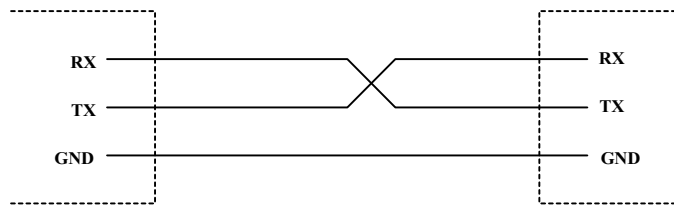


RS232 Terminal (option)

In the development, you can use a crs232-e1 cable link between control board and your computer.



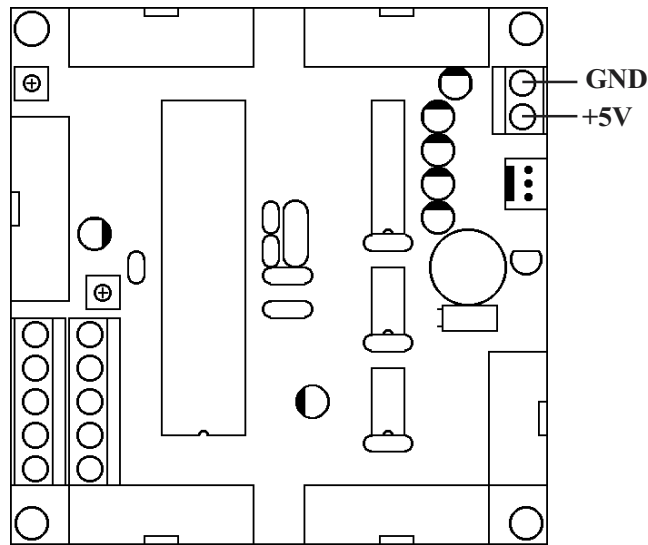
crs232-e1 cable (option)



rs232 cable diagram

POWER SUPPLY

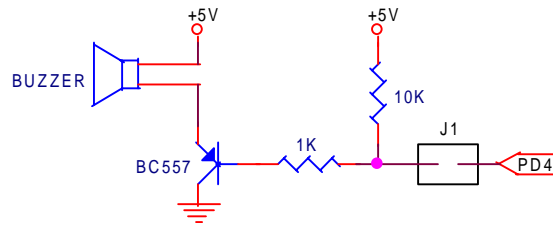
+5-volt power supply is connected to terminal on the control board.



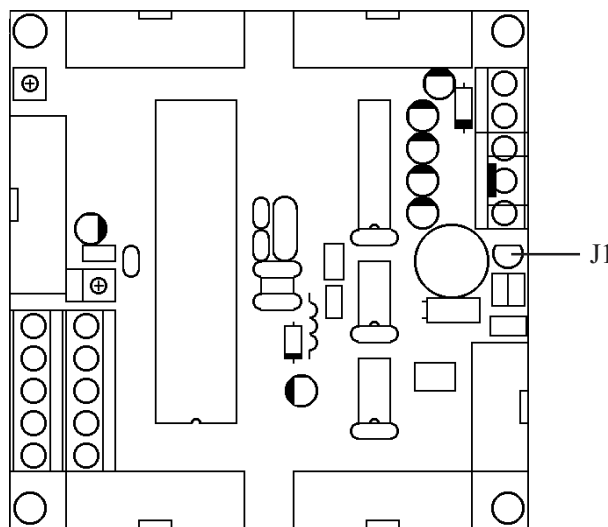
Supply +5V and GND

BUZZER

The buzzer is controlled by PD4. The buzzer need J1 jumper.



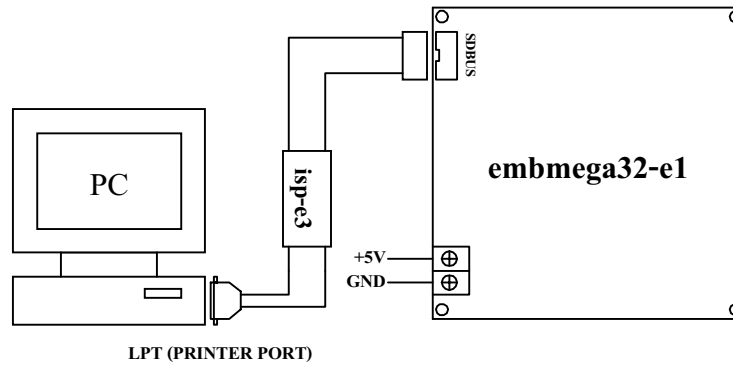
Circuit of buzzer



Position of J1

ISP loader(isp-e3)

1. Connect ISP-E3 downloader cable between LPT port on your computer and SDBUS conector on EMBMEGA32-E1 control board.
2. Supply +5V and GND.
3. Run MEGA32ISPEXE downloader program on your computer .



If you can't download program

1. Check RESET,PB5,PB6,PB7 of ATmega32.
2. Check +5V power supply.
3. Decreasing DOWNLOAD SPEED on the MEGA32ISPEXE downloader program.