

# PIC16F877A

## Starter Kit User's Guide

### Chapter 1. PIC16F877A Starter Kit Overview

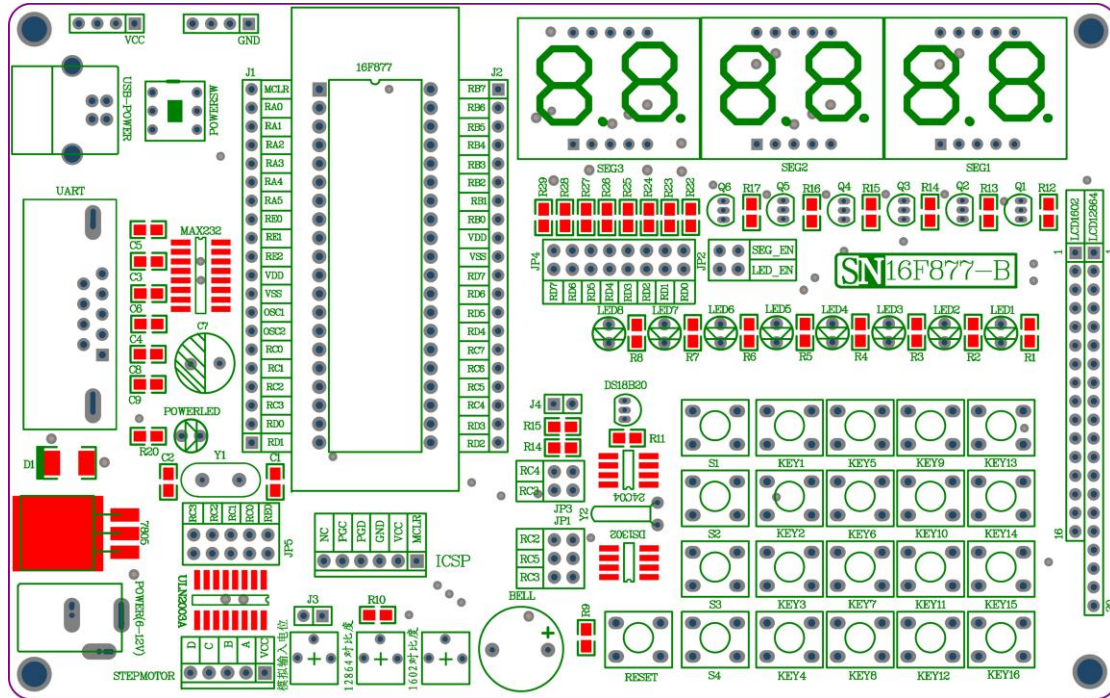
The PIC16F4877A Starter Kit is a demonstration and development platform for Microchip's PIC16F877A microcontrollers. The board provides a platform to highlight this new family's benchmark for lower power consumption and high-performance operation. It includes the development board, the User's guide, programming lessons and demos.

The starter kit includes:

The demonstration board includes:

1. 128x64 LED Display
2. 16x02 LED Display
3. 4x4 key board
4. 4 push buttons for user interfacing
5. 1 MCLR switch for resetting
6. 8 LEDs mapped to PORTD
7. Potentiometer for ADC6
8. 24Cx EEPROM
9. DS18B20 control unit
10. DS1302 control unit
11. RS232 Communication
12. 6bit 7-seg display
13. bell control unit
14. ICSP programming header
15. power interface
16. step motor interface driven by ULN2003A

## Chapter 2. PIC16F877A Starter Kit Layout



- ◆J1, PIC16F877A's pin
- ◆J2, PIC16F877A's pin
- ◆J3, ADC6's jumper
- ◆J4, 18b20's jumper Enabling
- ◆JP1, DS1302's jumper
- ◆JP2, Enabling jumper of LED and 6bit 7-seg display
- ◆JP3, 4C0X's jumper
- ◆JP4, 6bit 7-seg display jumper
- ◆JP5, Input jumper of ULN2003A

## Chapter 3. Troubleshooting

### 3.1 INTRODUCTION

This chapter describes common problems when using the PIC16F877A

Starter Kit board Board and their solutions.

#### 3.1.1 The board does not power up.

Make sure that the POWER LED has turned on. If the LED is not on, check to

see that the +9 V power supply or the USB power is properly connected. It is necessary to note that the +9 V power supply and the USB power cannot be connected simultaneously.

#### 3.1.2 Microcontroller is not executing code.

First check to make sure that the microcontroller has been programmed with the firmware that is intended to run. If the part is programmed, ensure that the Related jumpers are properly placed.

#### 3.1.3 The microcontroller will not program.

Check to make sure that the programmer/debugger is properly connected to the PC

and powered. Make sure that the board is also powered with the +9V power or the USB power supply.

# Appendix A. Board Schematics

## A.1 INTRODUCTION

This appendix contains the PIC16F877A Starter Kit board schematics, broken down into 13 sheets, as follows:

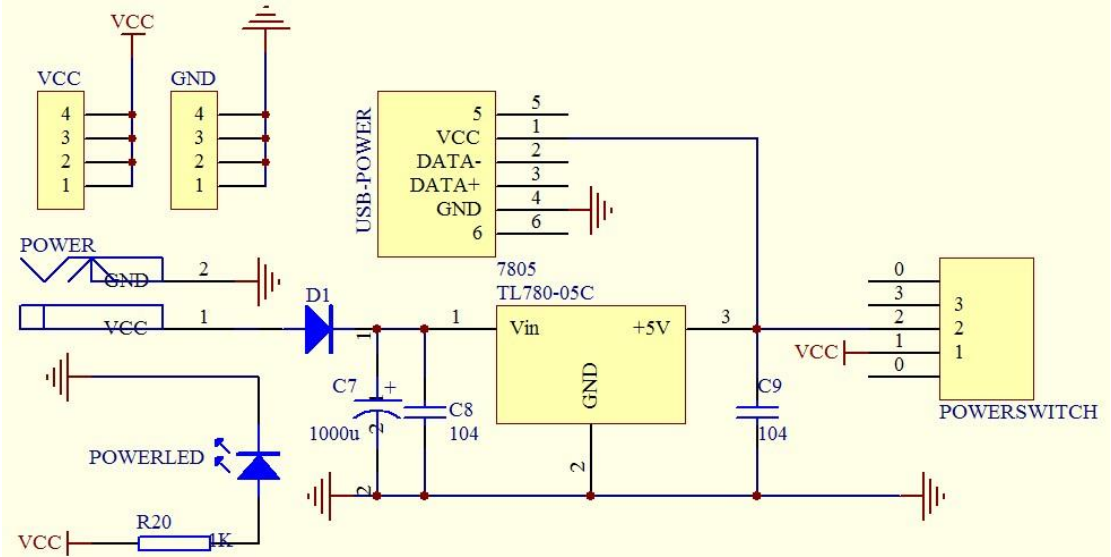


FIGURE A-1: Power supply

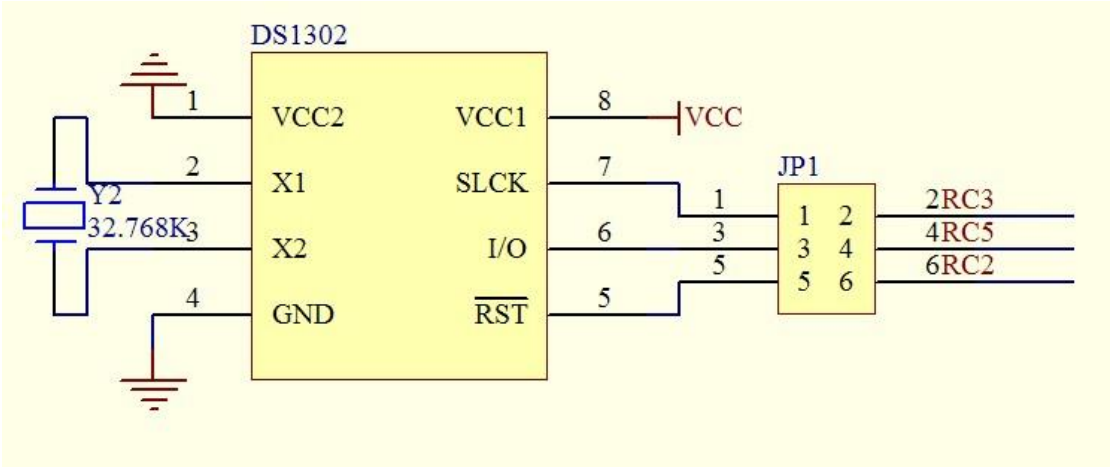


FIGURE A-2: DS1302

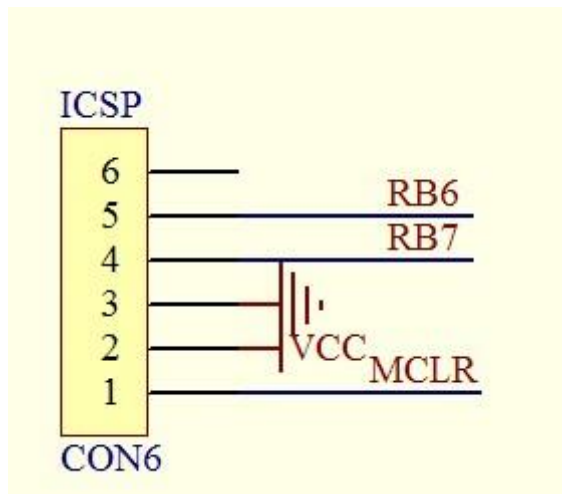


FIGURE A-3: ICSP Programming interface

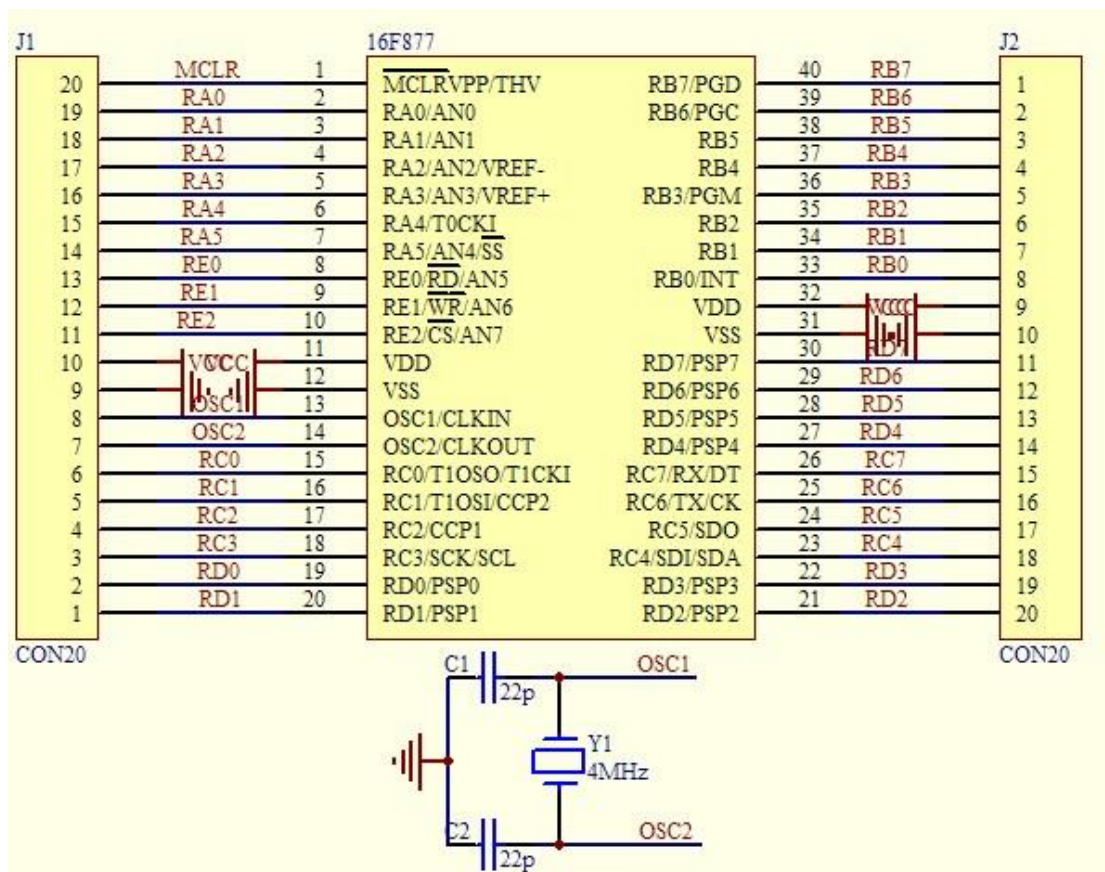


FIGURE A-4: PIC16F877A small system

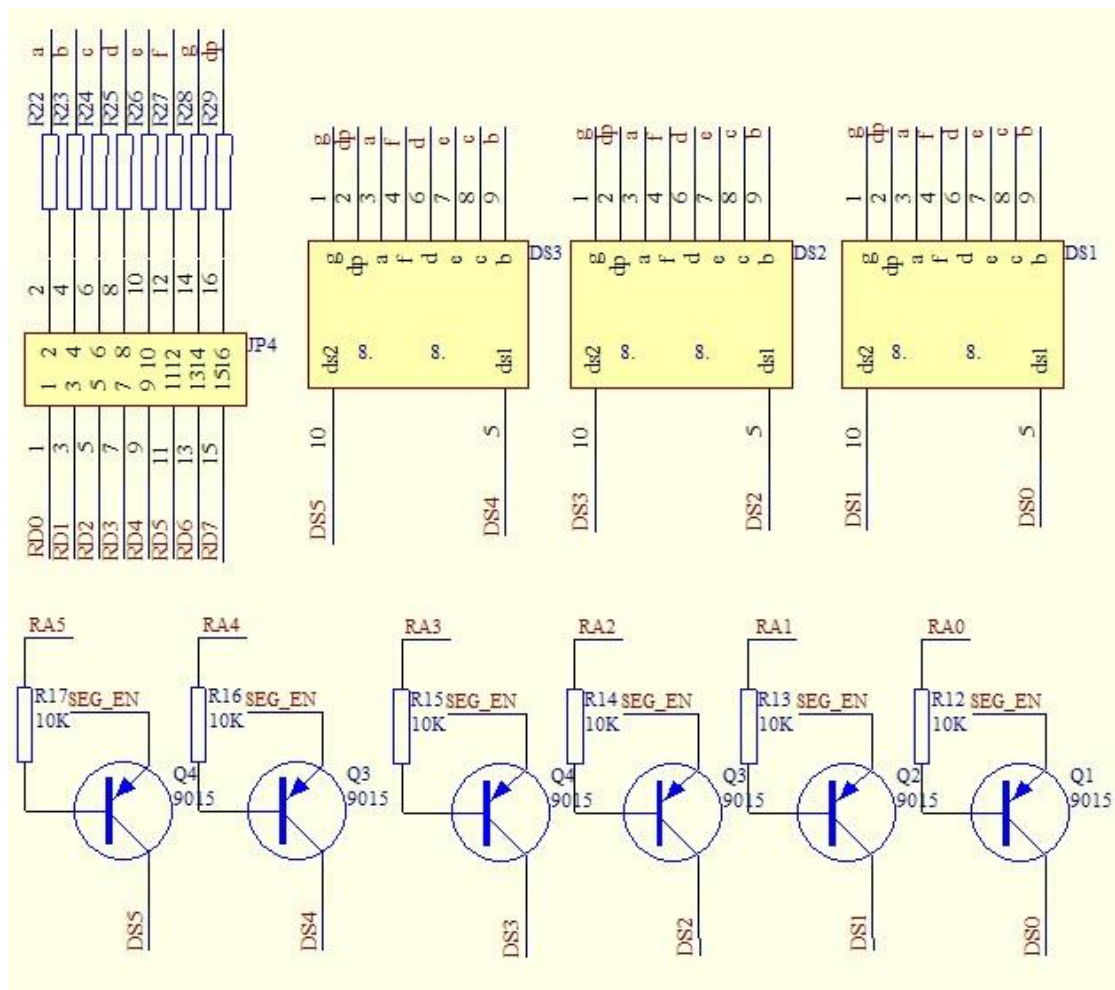


FIGURE A-5: 6-bit 7-seg display

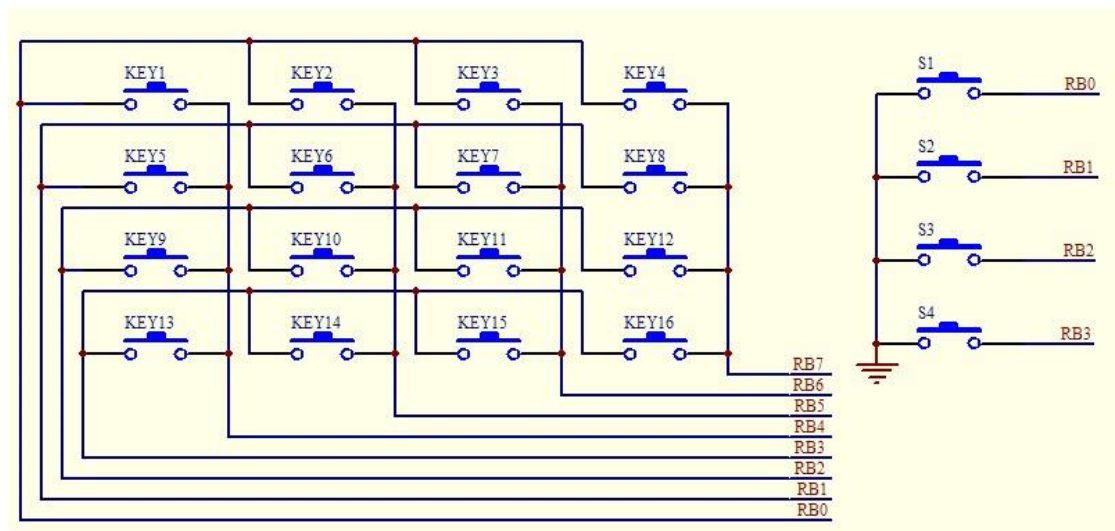


FIGURE A-6: Keypad



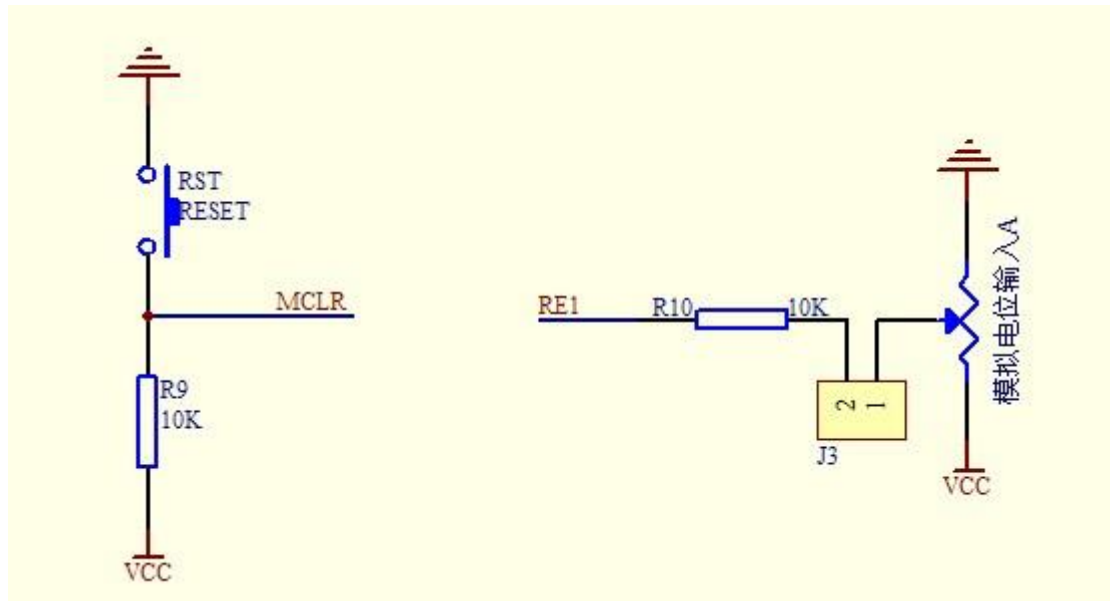


FIGURE A-7: Reset and ADC

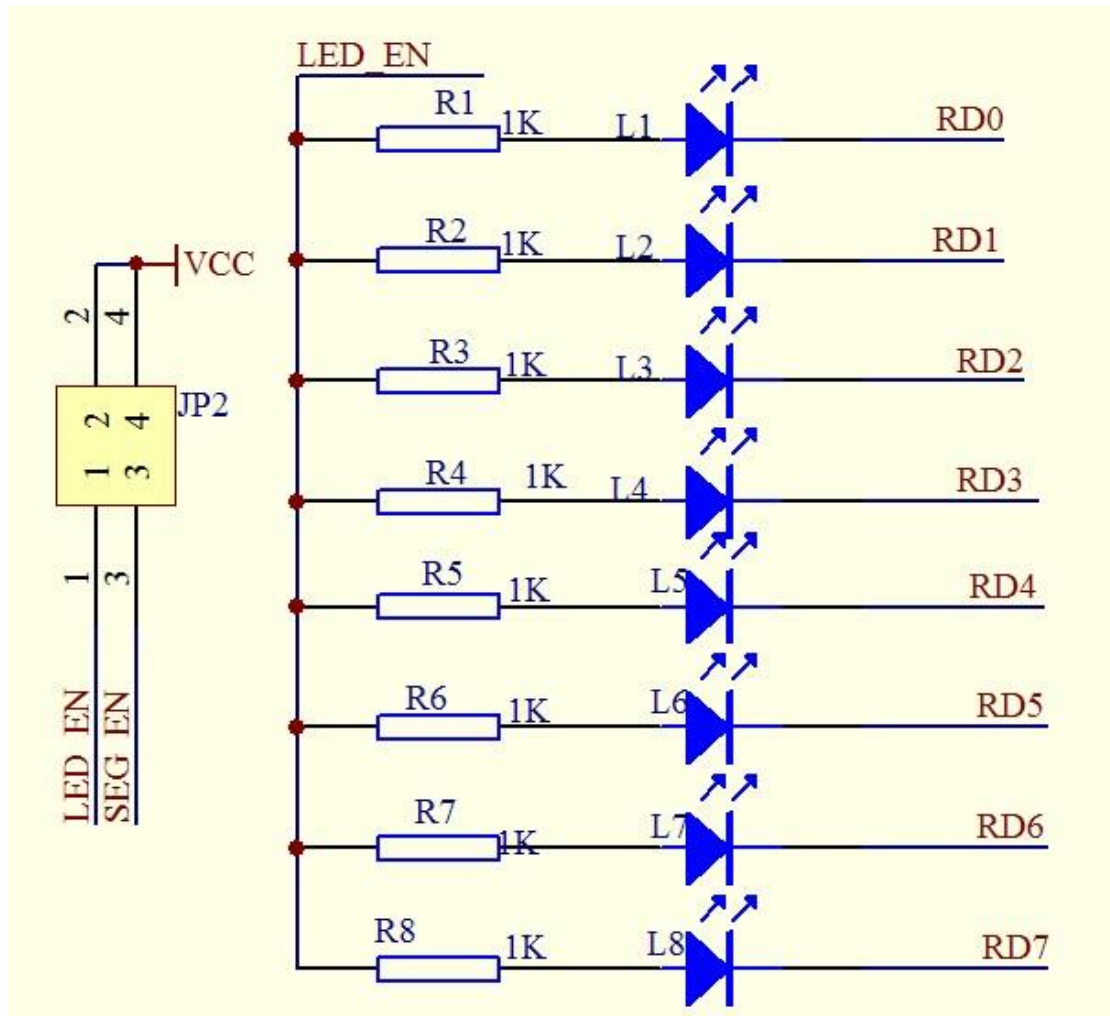


FIGURE A-8: LED

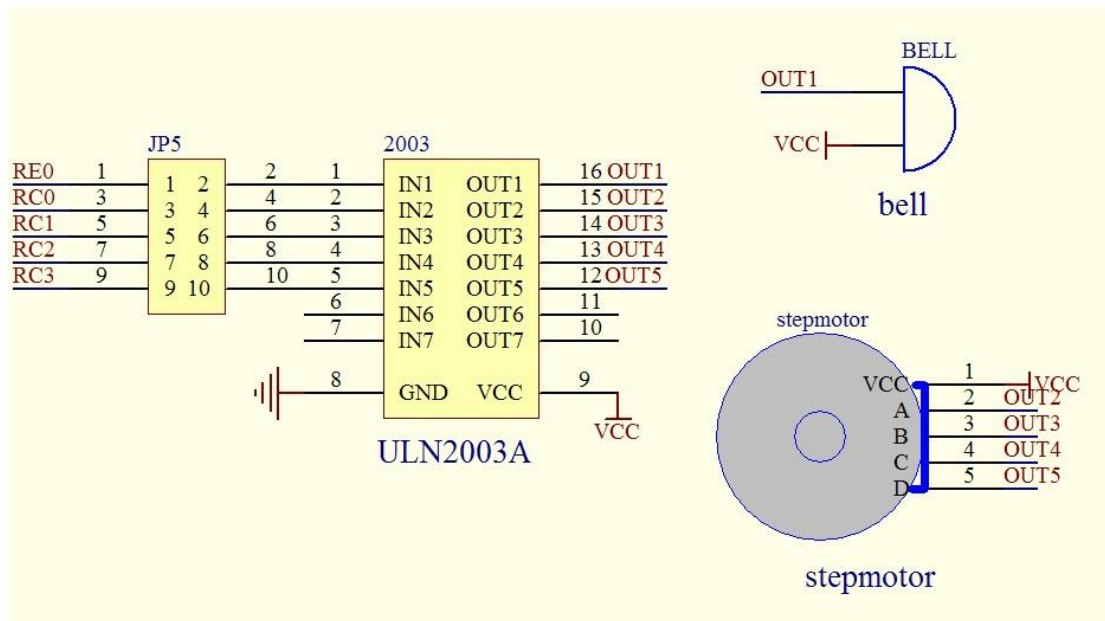


FIGURE A-9: Step motor and bell driven by ULN2003A

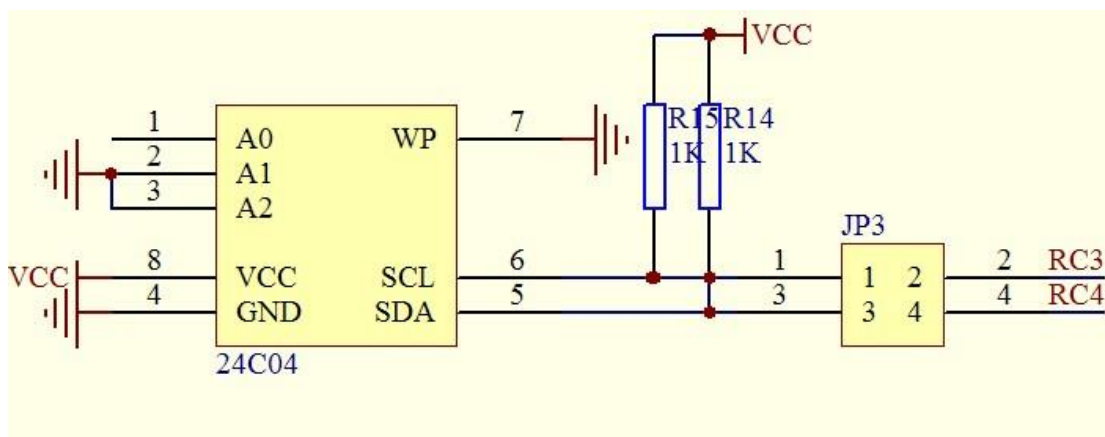


FIGURE A-10: EEPROM

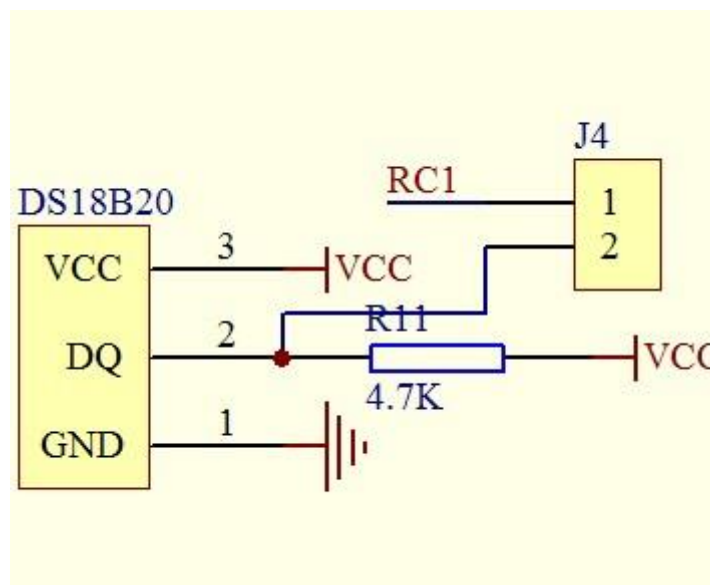


FIGURE A-11: DS18B20

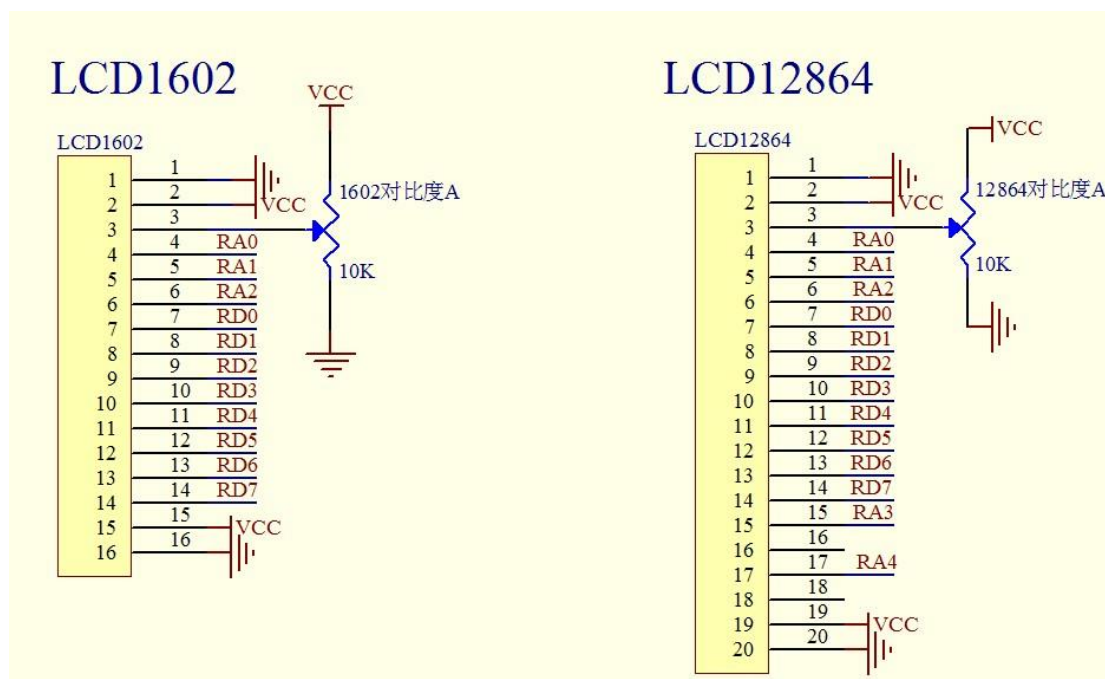


FIGURE A-12: LCD12864 and LCD1602 display

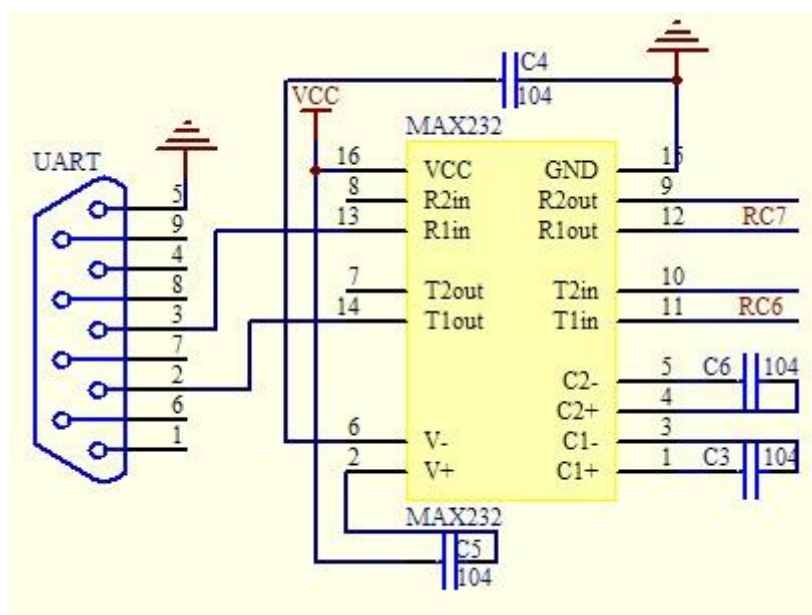


FIGURE A-13: RS232 communication