

ECED 3204 Microprocessor

Assignment #7

<http://www.jasongu.org/3204/assignments.html>

Due date: December 4 2017. Late submission will not be accepted.

Assignment #7 contains the following problems:

E14.1 Configure the MEGA SPI module with the following specified setting:

1. Master mode with all interrupt disabled
2. SCK signal idle high and sample data on the falling edge
3. Shift data least significant bit first
4. Baud rate set to 1 MHz assuming that the $f_{SYS}=16$ MHz

E14.4 Describe how to interface one MC14489 with the MEGA1280 using the SPI interface. Write a program to display the value 13579 on the 7-segment display driven by the MC14489 assuming that $f_{sys}=16$ MHz

E14.15 Write a program to display the character string AbcdEFyH35 on the 7-segment displays driven by the two MC14489s connected to the SPI module of the Mega2560

E15.6 Use the polling method to write an assembly subroutine to set up the TH or TL value to the DS1631A shown in Figure 15.26. The high byte and low byte of TH or TL are passed in r16 and r17, respectively.

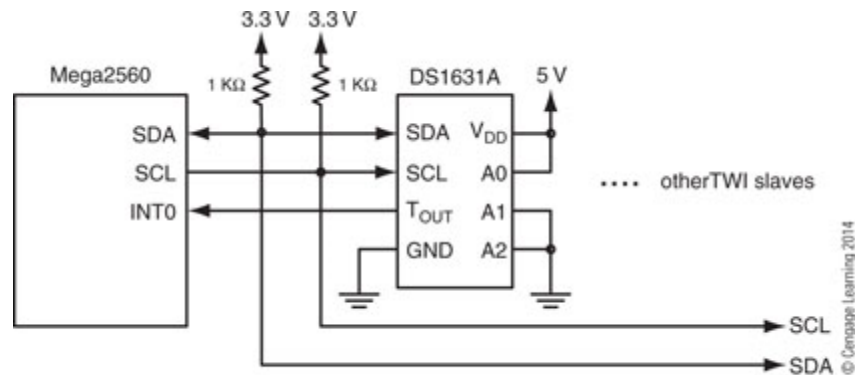


Figure 15.26 ■ Typical circuit connection between the Mega2560 and DS1631A