Seven Segment Display through AVR-Assembly

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CONTENTS

1 **Components** 2 **Controlling the Display** 2.1 Arduino

Display Control through Hardware 3

Abstract—The objective of this manual is to show how to control a seven segment display through the AVR-Assembly.

1 Components

Component	Value	Quantity		
Breadboard		1		
Resistor	≥ 220Ω	1		
Arduino	Uno	1		
Seven Segment	Common	1		
Display	Anode			
Jumper Wires		20		

TABLE 0

2 Controlling the Display

1. Complete Table 1 for all the digital pins using Fig. 1.

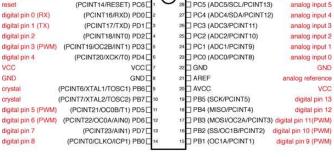
Port Pin	Digital Pin		
PD2	2		
PB5	13		

TABLE 1

- 2. Make connections according to Table 2.
- 3. Execute the following code. The number 2 should be displayed.

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Arduino function (PCINT14/RESET) PC6E PC5 (ADC5/SCL/PCINT13) analog input 5 PC4 (ADC4/SDA/PCINT12) PC3 (ADC3/PCINT11) PC2 (ADC2/PCINT10) PC1 (ADC1/PCINT9)



Atmega168 Pin Mapping

Digital Pins 11,12 & 13 are used by the ICSP header for MOSI. impedance loads on these pins when using the ICSP header

Fig. 1

	2	3	4	5	6	7	8
Arduino	PD2	PD3	PD4	PD5	PD6	PD7	PB0
Display	a	b	c	d	e	f	g
2	0	0	1	0	0	1	0

TABLE 2

wget https://raw.githubusercontent.com/gadepall /arduino/master/assembly/sevenseg/codes/ sevenseg.asm

4. Now generate the numbers 0-9 by modifying the above program.