

ECE 2140 – Design of Logic Systems I

Experiment 8 – Seven Segment Decoder

Equipment and Parts required:

- 1 DIP Switch
- 1 DC Power Supply
- 1 Digital Voltmeter

Common Anode	Common Cathode
<ul style="list-style-type: none">• 1 BCD-to-7 Seg. Decoder (7447)• 1 7-segment Display (HDSP-5621)	<ul style="list-style-type: none">• 1 BCD-to-7 Seg. Decoder (7448)• 1 7-segment Display (HDSP-53037)

- 1. Find data sheet and specifications**
- 2. Fill out the truth table**

Find out how a 7-segment decoder operates from the data sheet, and fill out the following truth table:

Input	Output (a b c d e f g)
0000	
0001	
0010	
0011	
0100	
0101	
0110	
0111	
1000	
1001	

- 3. Connect a DIP Switch to the input ports**

Connect four contacts of a DIP switch (note that there are 8 contacts) to the input side of 7-segment decoder, and the other side of contacts to the ground.

4. Connect the 7-segment display to the output ports

Connect the output port to the 7-segment display.

5. Connect power supply

Adjust the power supply at 5 Volts and set the current limit to maximum. Then connect the power supply to Vcc and Gnd bus.

6. Test your circuit

Change the configuration of the DIP switch, and test if the circuit displays all 10 different digits.

Make sure to show your GTA your working lab to receive credit.